



Circuit Protection Products for the Electrical Industry



New Products for All Markets



Alternative Energy

- PVS-R RK5 Fuses37
- DCM/KLM Fuses47
- Solar PV Fuses48
- DC Safety Switches 244
- Solar Combiner Boxes245-246
- 1000Vdc CHPV & 600Vdc
CHM Modular Fuse Holders...257-258
- 200kA SCCR PDBFS/PDB
Power Distribution Blocks 295-96



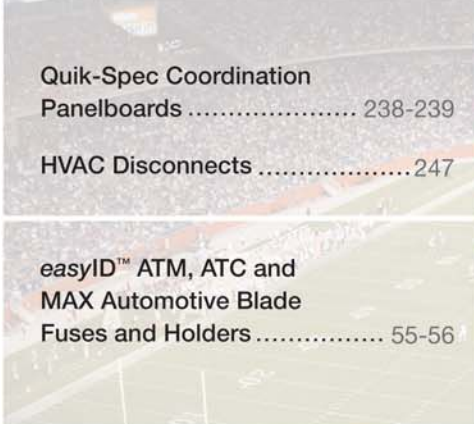
Industrial

- Fused & Non-Fused
Disconnect Switches 330-386
- MV Fuses - E-rated,
5.5-38kV, 10E-900E *coming soon*



OEM

- Non-Indicating
CUBEFuses & Holders20-21
- CCP Compact Circuit
Protectors326-329
- Design Software OSCAR 2.0...419-420
- DC Traction Fuses
750-4200Vdc, 1-1600A *coming soon*



Contractor

- Quik-Spec Coordination
Panelboards 238-239
- HVAC Disconnects 247
- easyID™ ATM, ATC and
MAX Automotive Blade
Fuses and Holders 55-56



Automotive

Table of Contents

RED indicates **NEW** information

Selecting Circuit Protection6-10

2005 NEC® guide to fuse selection for various applications6-10

Low Voltage, Branch Circuit Rated Fuses11-42

Holders & blocks for branch circuit rated fuses12-14

Dimensions data for branch circuit rated fuses15-16

Class CC

LP-CC Low-Peak®17

FNQ-R CC-Tron®18

KTK-R Limitron®19

Class CF

TCF, TCF_RN & TCFH_N CUBEFuse® and holders20-21

Class G

SC22

Class J

LPJ-_SP & LPJ-_SPI Low-Peak23

JKS Limitron24

Class K5 & H

NON (250V) & NON (600V) One time25

Class L

KRP-C_SP Low-Peak26-27

KRP-CL27

KTU & KLU Limitron28

Class RK1

LPN-RK_SP & LPN-RK_SPI (250V) Low-Peak29-31

LPS-RK_SP & LPS-RK_SPI (600V) Low-Peak29-31

KTN-R (250V) Limitron32

KWS-R (600V) Limitron33

Class RK5

DLN-R (250V) & DLS-R (600V) Dura-Lag34

FRN-R (250V) Fusetron®35

FRS-R (600V) Fusetron36

PVS-R (600V) Limitron PV fuse37

Class T

JJN (300V) T-Tron®38

JJS (600V) T-Tron39

Edison Base & Rejection Plug Fuses

Plug Fuses (S, SL, T, TL & W)40-41

MB Edison Base Circuit Breakers42

SA Rejection-base plug fuse adapters42

Low Voltage Supplementary Fuses43-56

Holders & blocks for supplemental fuses44-45

Cable (K Series) & Welder (64000/68000 Series) Limiters46

$\frac{1}{32}$ " x $1\frac{1}{2}$ " fuses BAF, KTK, KLM & DCM47

10x38mm Solar PV fuse48

$\frac{1}{32}$ " x $1\frac{1}{2}$ " fuses FNM & FNQ49

Low Voltage Supplementary Fuses (Continued)

$\frac{1}{32}$ " x $1\frac{1}{2}$ " fuses BBS & KTQ50

Pin indication fuses GBA/GLD, MIC & MIN, FNA, MIS & KAZ51-52

Limiters & blocks ANL & ANN52

In-line size rejecting fuses and holders GLQ, GMQ, HLQ53

In-line non-rejecting fuses and holders GLR, GMF, GRF, HLQ54

Automotive blade fuses and holders ATM, ATC, MAX55-56

Electronic - PC Board and Small Dimension

Fuses57-70

5 x 15mm Ferrule fuses C515, C516, C517, C518, C519, C520 ..58

5 x 20mm European (IEC) fuses

S500, S501, S505, S506, GDA, GDB, GDC59-60

5 x 20mm North American (UL) fuses GMA, GMC, GMD-61

$\frac{1}{4}$ " Diameter x $\frac{5}{8}$ " to 1" length ferrule fuses AGA, AGW, AGX62

$\frac{1}{4}$ " Diameter x $1\frac{1}{4}$ " length fast-acting ferrule fuses ABC,

AGC, GBB63

$\frac{1}{4}$ " Diameter x $1\frac{1}{4}$ " length time-delay ferrule fuses MDA,

MDL, MDQ64

PC Board mount fuse holders HTC-, HBH-, HBV-, HBW-, FBI,

FBM65-66

PC Board fuseclips HTC-_M, 1A_, 56_67-70

Medium Voltage Fuses71-91

Introduction72

E-Rated fuses for transformers & feeders73-75

E-Rated fuses: CL-14 & bolt-in76-77

E-Rated fuses for potential & small power transformers78-79

R-Rated fuses for motor circuit protection80-82

British Standard IEC fuses for motor circuit protection83

DIN IEC fuses for transformers84

Potential transformer fuses85

British Standard IEC fuses for oil filled switchgear86-87

EEL-NEMA Type K & T, and Type H & N fuses88

BBU Boric acid fuses BBU89-90

Fuseclips for medium voltage fuses91

High Speed Semiconductor Fuses93-216

General Applications94-95

North American fuses and accessories

DFJ, FWA, FWH, FWJ, FWP, FWX, KAC, KBC,96-113

Square body fuses and accessories

DIN 43 620, DIN 43 653, flush-end contact, French Style,

US Style 170E, 170F, 170H, 170M114-186

British BS 88 fuses and accessories

CT, ET, EET, FE, FEE, FM, FMM, LCT, LET, LMMT, LMT,

MMT, MT187-195

Ferrule fuses and accessories

FWA, FWC, FWH, FWJ, FWK, FWL, FWP, FWS, FWX196-216

Cooper Bussmann circuit protection solutions comply with major industrial standards and agency requirements such as: BS, IEC, DIN, UL, NEMA, CSA, CE, C-UL, etc. and are manufactured at facilities that are ISO 9000 certified.

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Table of Contents

RED indicates **NEW** information

IEC & British Standard Fuses217-235

Application Data217-218
 CSA Type P and Type D fuses CDN, CDS, PON219
 HRC Form II Class C Tron® fuses CGL220
 HRCI Industrial ceramic body fuses CIF221
 HRCI-J Fast-acting fuses CJ222
 MRCI-Miscellaneous Type K fuses CIH, CIK, CIL223
 HRC Form II Current-limiting fuses H07C, K07C, L09C, L14C,
 M09C, M14C, P09C, P11C, R11C224
 BS 88 British Standard low voltage fuses AAO, AC, AD, BAO, BC,
 BD, CD, CEO, DD, DEO, ED, EF, EFS, ESD, FF, FG, GF, GG, GH,
 NITD, NSD, OSD, SSD, STD225-226
 DIN Type D and Neozed low voltage fuses D16, D27, D33,
 D125, NZ227
 NH HRC Fuse links & bases NHG228-231
 Class gG/gL IEC 60 269 fuses C08G, C08M, C10G, C10M,
 C14G, C14M, C22G, C22M232-234
 HRC Fuse holders CAMaster, SAFEloc235

Quik-Spec™ Electrical Gear237-247

Quik-Spec™ Coordination Panelboards238-239
 Quik-Spec™ Power Module™ Elevator Disconnect
 Switches & Panels PS, PMP240-241
 Quik-Spec™ DC Safety Switches BD242
 Quik-Spec™ Solar Combiner Boxes243-244
 Quik-Spec™ AC Safety Switches CF245-246
 HVAC Disconnects B221, B222247

Fuse Holders and Blocks249-291

Optima® - fuse holder module and disconnect switch250
 Optima fuse holder module251
 Optima NG 3-pole overcurrent protection module252-253
 CH Series Class J global modular fuse holders CH254
 Safety J Class J (finger-safe) fuse holder JT, JTN255-256
 CH Series Class CC, midget & metric global modular fuse holders
 CHCC, CHPV, CHM, CH08, CH14, CH22257-258
 SAMI™ fuse covers SAMI259
 Class H(K) and R fuse blocks - 250V260-262
 Class H(K) and R fuse blocks - 600V263-265
 Class J fuse blocks J600, JP266-268
 Class T fuse blocks - 300V269-270
 Class T fuse blocks - 600V271-272
 Add-on fuse blocks BCA, BMA273
 Class CC, Type M and Class G fuse blocks BC, BCCM,
 BG, BM, G274
 Modular fuse blocks BH275
 Box cover units for plug fuses SCY, SKA, SOU, SOW, SOX, SOY, SRU,
 SRW, SRX, SRY, SSN, SSU, SSW, SSX, SSY, STY,276
 In-line fuse holders HFA, HFB, HHB, HHT, HM, HR, HRK277-278
 Tron® in-line fuse holders HEB, HEC, HEG, HEH, HEJ, HET,
 HEX, HEY279-280
 Panel mounted fuse holders (including indicating) HJL, HK, HKP, HLD,
 HPC, HPD, HPF, HPG, HPM, HPS, HPS, HTB, HTC281-287
 Fuse blocks for ¼" x 1 ¼" and ¼" x 1" fuses288-289

Fuse Holders and Blocks (Continued)

Fuse blocks for 1½" x 1 ½" fuses290
 Rail mount fuse blocks & holders291

Power Distribution Blocks293

Power Distribution Block Selection Chart294
 PDBFS Series finger-safe power distribution blocks295
 PDB Series power distribution blocks296
 163 Series power terminal blocks297-298
 Series 11675 & 11725 power terminal blocks299
 Series 160, 162, 163 & 165 power terminal blocks299
 Series 162, 163 & 165 power stud terminal blocks300
 Series 160, 162, 163 & 165 power splicer terminal blocks300
 Series 14002 (barrier) & 14004 (dead front) terminal blocks301

Connectors303-324

Rail mount terminal and disconnect terminal blocks304-308
 Sectional terminal blocks309-310
 Quick connect terminal blocks311
 Series TB100, 200 and 300/345 double row terminal blocks 312-317
 Marking options and covers for double row terminal blocks .318-319
 Series TB400 double row terminal blocks320
 Series KU double row terminal blocks321
 Standard, flat and raised terminal blocks322-324

Disconnects325-386

Compact Circuit Protector (CCP) fused disconnect switches .326-329
 Fused, dead front disconnect switches329
 Fusible Disconnect Switch Overview330
 30A Base & DIN rail mount fusible disconnect switches . . .331-333
 60-100A Base & DIN rail mount fusible disconnect switches 334-336
 200A Base & DIN rail mount fusible disconnect switches . .337-339
 400-800A Base & DIN rail mount fusible disconnect switches .340-343
 30-400A Side operated fusible disconnect switches344
 30-100A Flange operated fusible disconnect switches345
 30-800A Cable operated fusible disconnect switches346
 UL/cULus & IEC Technical data for fusible disconnect switches .347-349
 Non-fusible Disconnect Switch Overview350-351
 16-100A Base & DIN rail mount non-fusible disconnect
 switches352-355
 16-100A Door mounted non-fusible disconnect switches . .356-358
 125A Non-fusible disconnect switches359-360
 200A Non-fusible disconnect switches361-362
 400A Non-fusible disconnect switches363-364
 600-800A Non-fusible disconnect switches365-366
 1200-1350A Non-fusible disconnect switches367-368
 30-600A Side operated non-fused disconnects369
 30-200A Flange operated non-fused disconnects370
 30-200A Cable operated non-fused disconnects371
 UL/cULus & IEC Technical data for non-fusible disconnect
 switches372-377
 30-800A Enclosed fusible disconnect switches378-380
 16-3150A Enclosed fusible disconnect switches381-383
 Technical data for enclosed non-fusible disconnect switches 384-386

Table of Contents

RED indicates **NEW** information

| | |
|---|-------------------|
| Telcom Protection Devices | 387-404 |
| Telpower® compact fused disconnect switch | 388 |
| Telpower miniature fused disconnect switch | 389 |
| Fused disconnect switches for TPA fuses | 390-391 |
| Fused disconnect switches for TPS fuses | 392 |
| Fused disconnect switches | 393-399 |
| Telpower specialty fuses | 400-401 |
| Telpower high-current switch | 400-401 |
| Filtered terminal blocks | 402 |
| Power feed through terminal blocks | 403-404 |
| Surge Protection Devices | 405-407 |
| Transient voltage surge protectors TVS | 406 |
| Transient surge protection limiters TVSS | 407 |
| Accessories | 409 |
| Cooper Bussmann service kits and assortments | 410-412 |
| Clip clamps and rail adapters (DIN & American) | 413 |
| Spare fuse holders, pullers, testers and cabinets | 414 |
| Fuse reducers and dummy "neutrals" | 415 |
| Services & Application Guide | 417 |
| Engineering Services | 418 |
| OSCAR™ 2.0 Compliance Software | 419-420 |
| Training | 421 |
| Testing | 422 |
| Custom Products | 423 |
| <i>Application Guide</i> | 424-434 |
| Bussmann fuse technology | 424 |
| Motor Circuit Branch Circuit Protection | 431 |
| Glossary | 432-434 |
| Out-of-Stock Substitutions/Upgrades | 434 |
| Commercial & industrial fuse applications | 435 |
| Index by Part Number | 436-440 |
| Competitive Fuse Cross Reference and Low-Peak® Upgrade | Inside back cover |

| Catalog Sections | Page | |
|--|-------------|---------------------------------|
| Low Voltage, Branch Circuit Rated Fuses | 11 | Low Voltage Branch Circuit |
| Low Voltage Supplementary Fuses | 43 | Low Voltage Supplementary Fuses |
| Electronic - PC Board and Small Dimension Fuses | 57 | Electronic Fuses |
| Medium Voltage Fuses and Fuse Links | 71 | Medium Voltage Fuses |
| High Speed Fuses | 93 | High Speed Fuses |
| IEC & British Standard Fuses | 217 | IEC & British Fuses |
| Quik-Spec™ Electrical Gear | 237 | Quik-Spec™ Electrical Gear |
| Fuse Holders and Blocks | 249 | Fuse Holders & Blocks |
| Power Distribution & Terminal Blocks | 293 | Power Distribution Blocks |
| Connectors | 303 | Wire Connection Products |
| Disconnects | 325 | Disconnects |
| Telecom Protection Devices | 387 | Telecom Protection Devices |
| Surge Protection Devices | 405 | Surge Protection Devices |
| Accessories | 409 | Accessories |
| Services & Application Guide | 417 | Services & Application Guide |

Selecting Circuit Protection

The following fuse selection guides are based on the 2005 NEC® and provided fuse recommendations for the various applications listed.

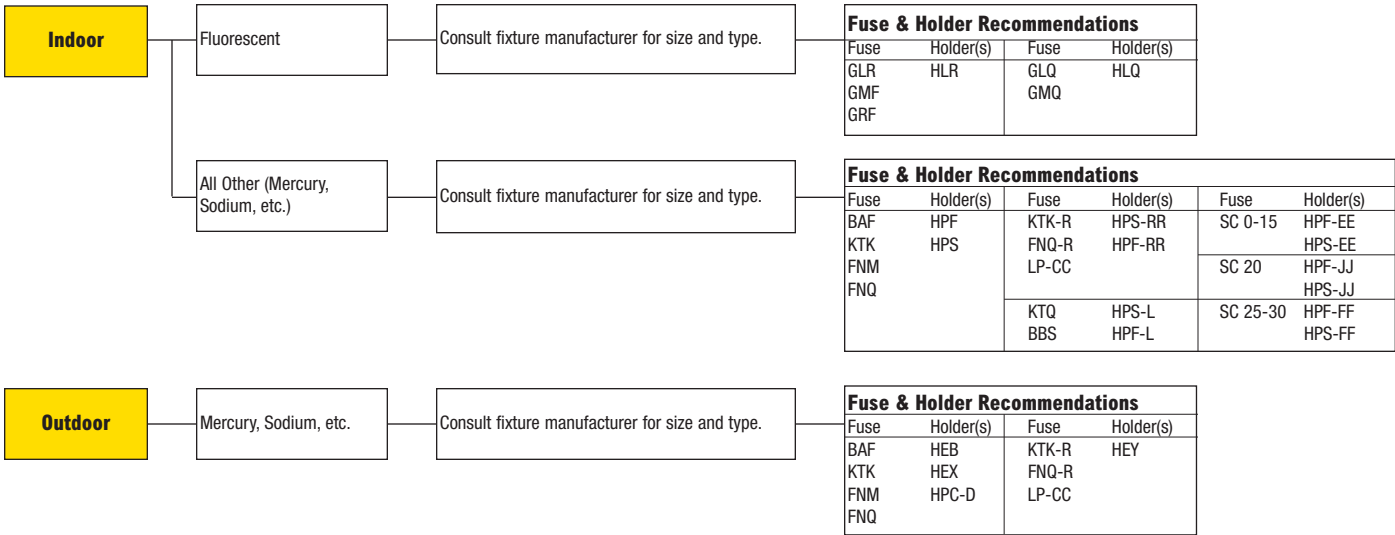
These are only suggestions. Final fuse selection should be performed only by qualified personnel able to fully assess an application's circuit protection requirements. If you need assistance in selecting a fuse for a particular application, call the Cooper Bussmann Application Engineering team. This

team is staffed by degreed electrical engineers and available by phone for technical and application support Monday – Friday, 8:00 a.m. – 5:00 p.m. Central Time.

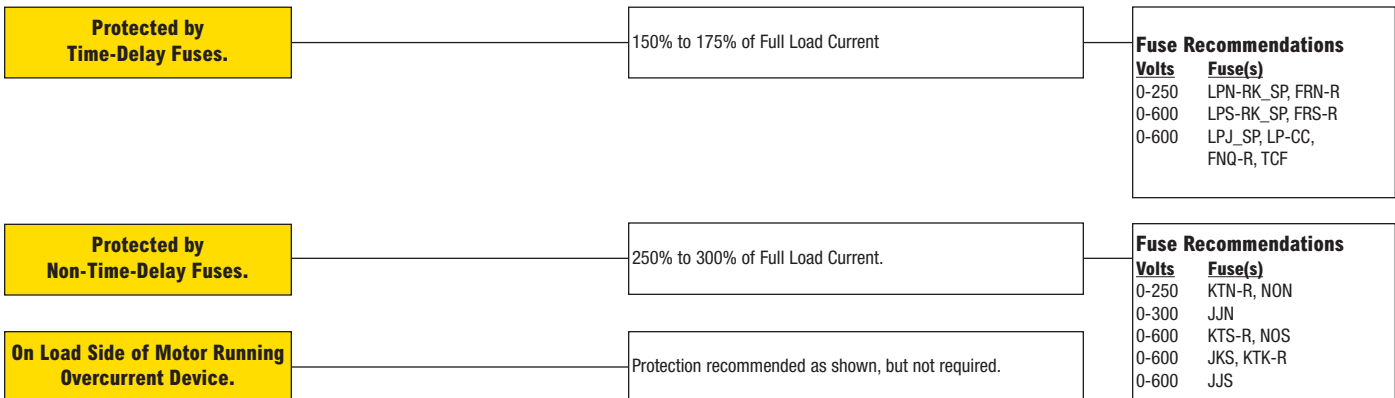
Application Engineering can be reached via phone, fax or e-mail:

- Phone: 636-527-1270
- Fax: 636-527-1607
- E-mail: fusetech@cooperindustries.com

Ballasts

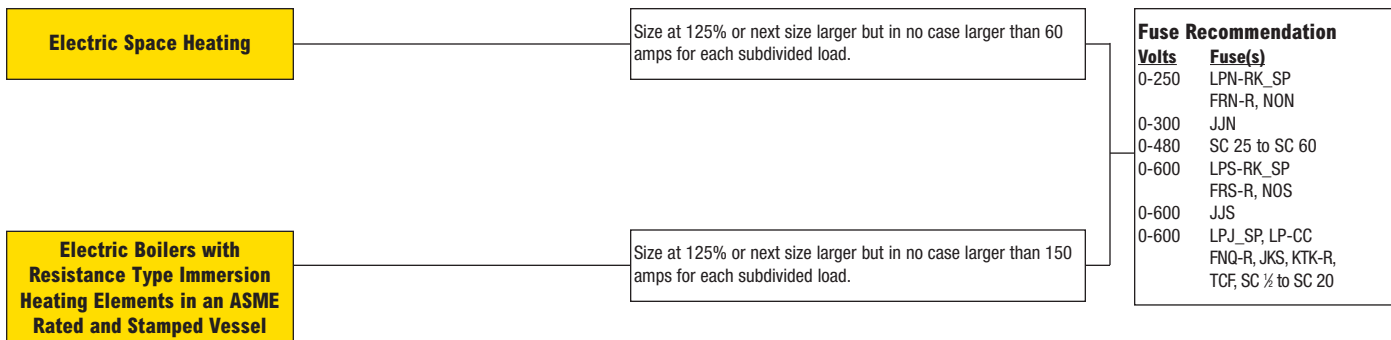


Capacitors (NEC® 460)

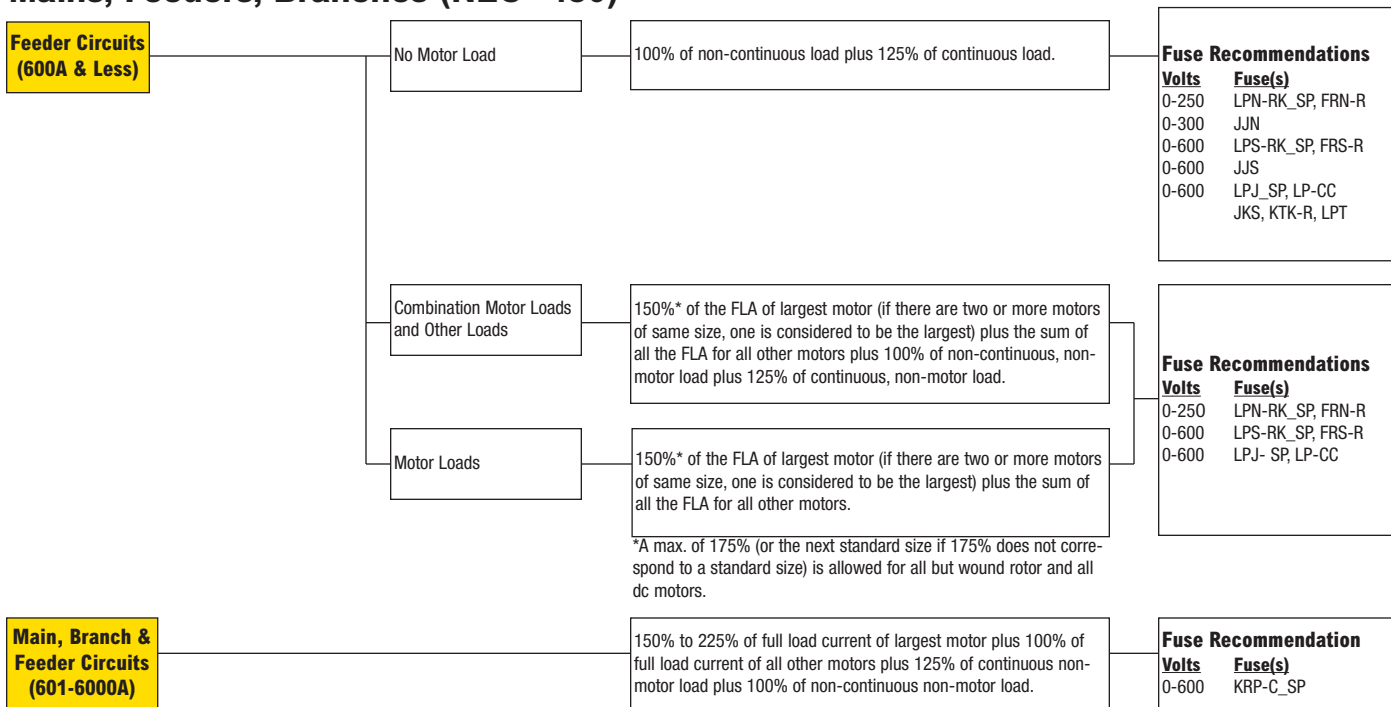


Selecting Circuit Protection

Electric Heat (NEC® 424)

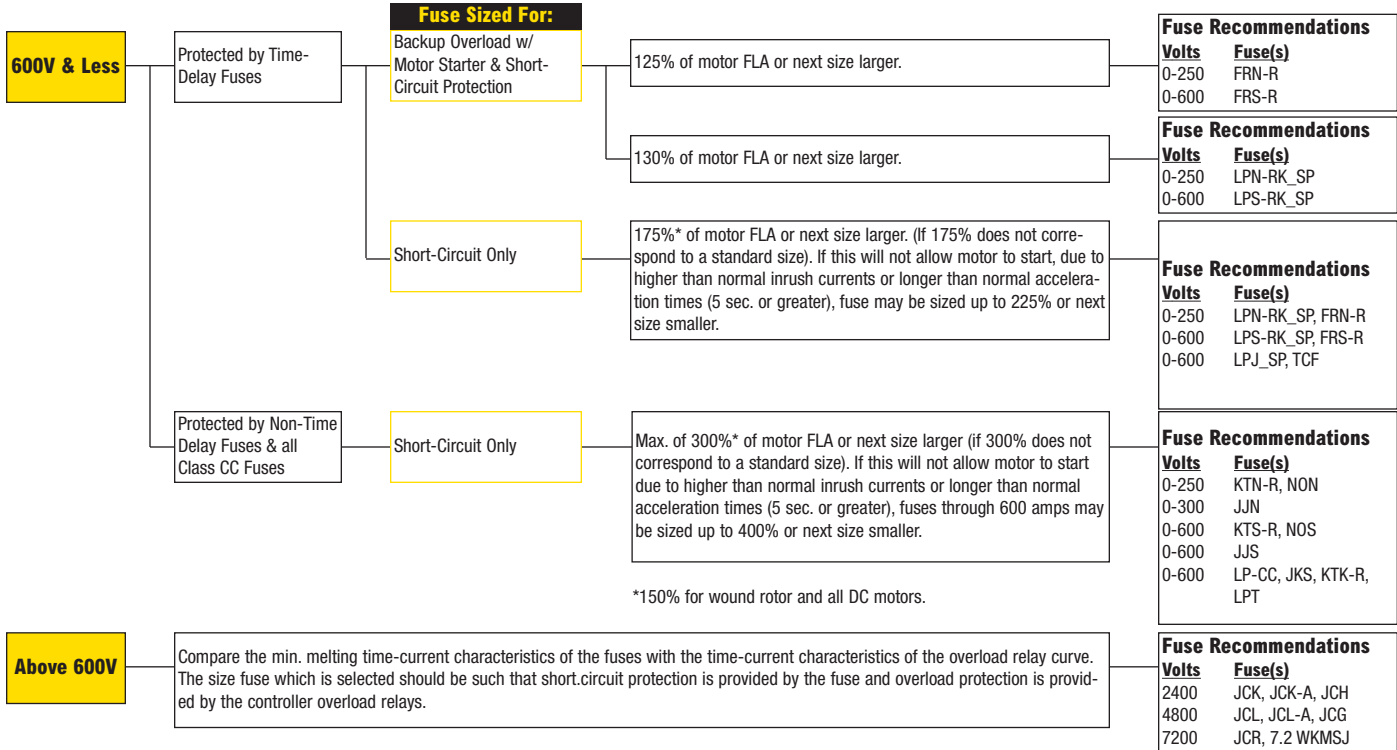


Mains, Feeders, Branches (NEC® 430)

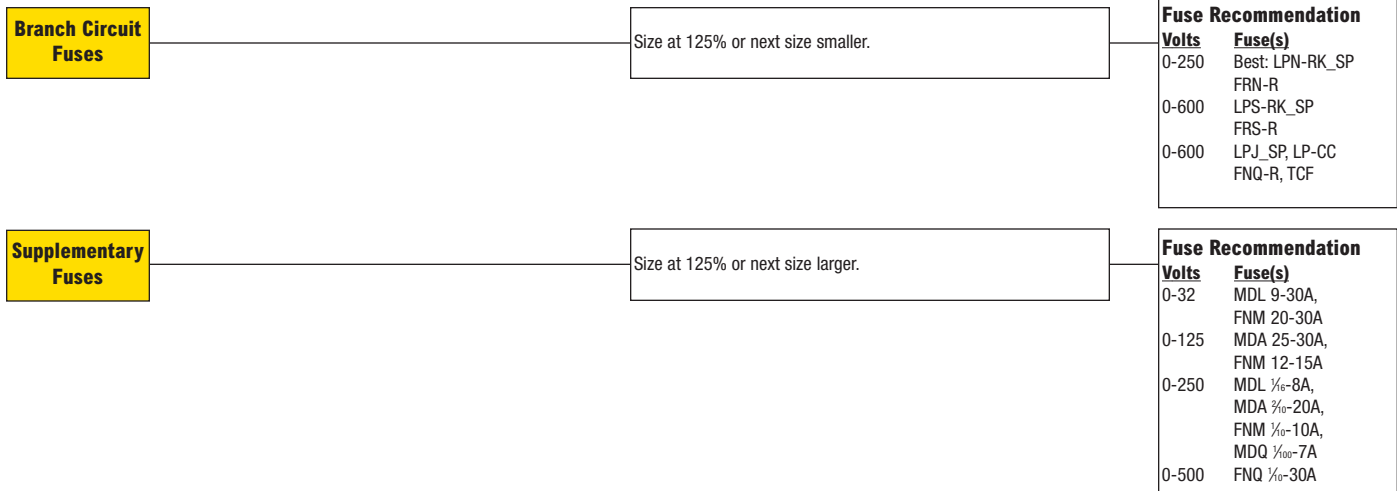


Selecting Circuit Protection

Motor Loads (NEC® 430)

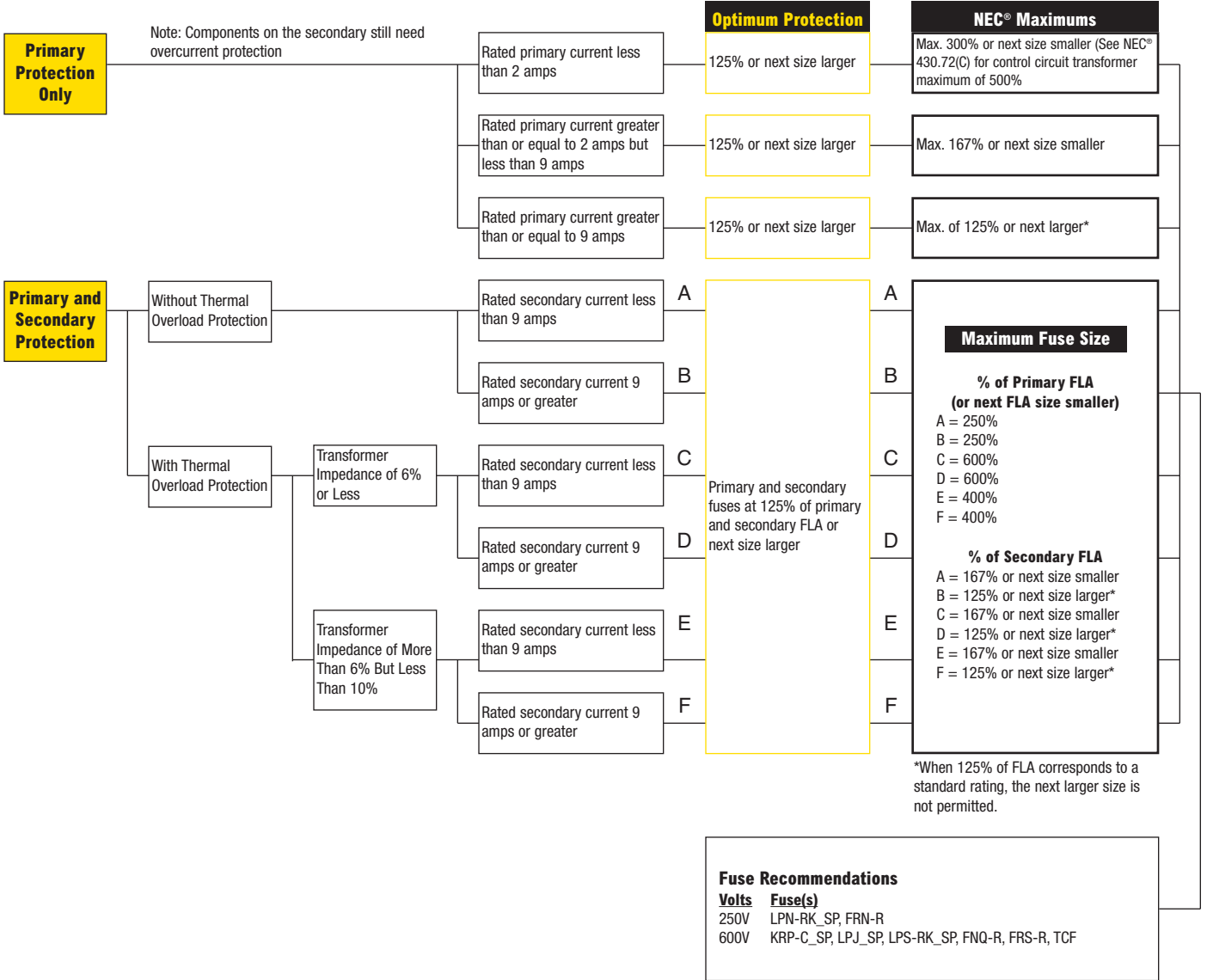


Solenoids (Coils)



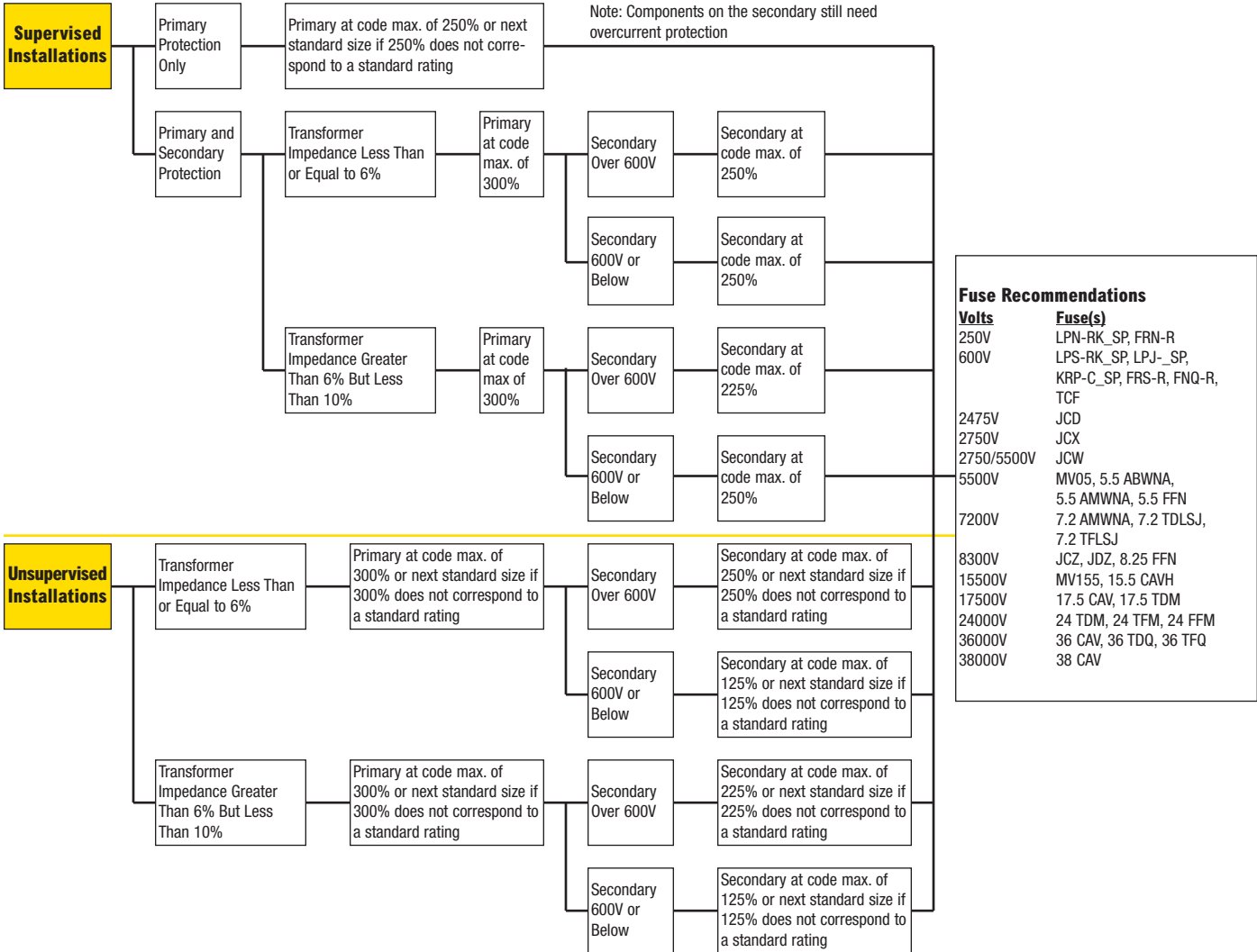
Selecting Circuit Protection

Transformers 600V Nominal or Less (NEC® 450.3)

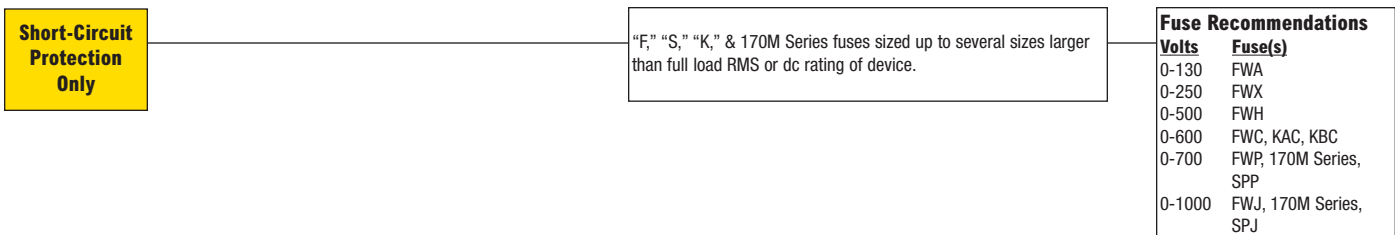


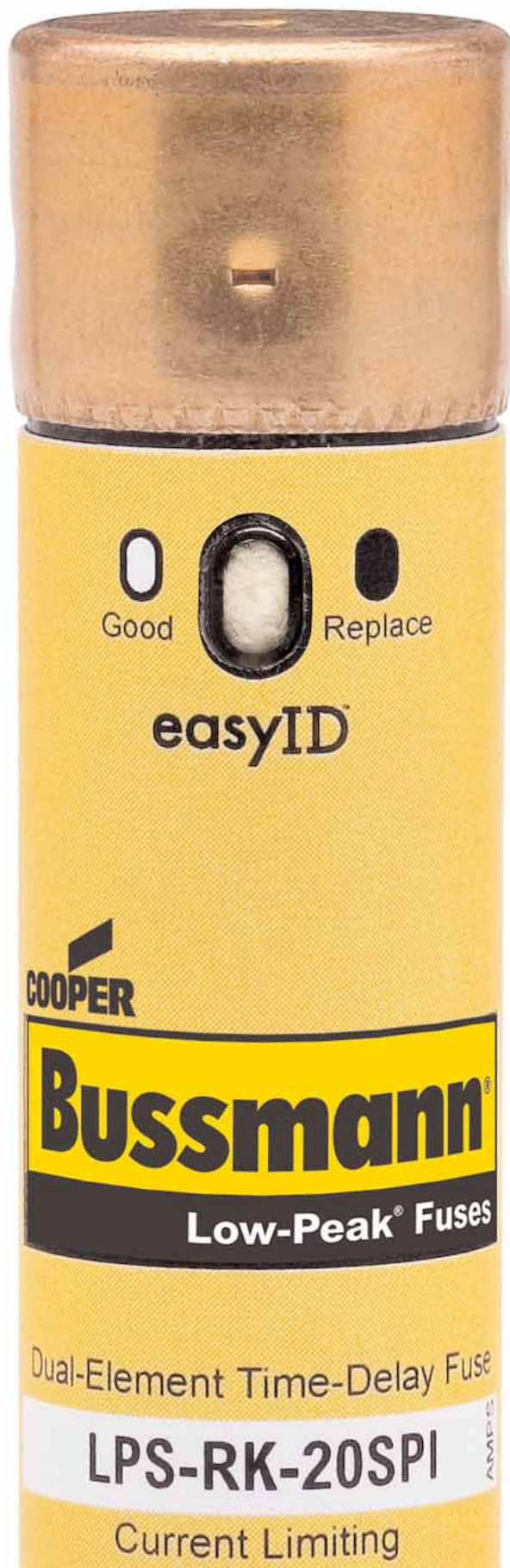
Selecting Circuit Protection

Transformers Over 600V Nominal (NEC® 450.3)



Solid State Devices (Diodes, SCRs, Triacs, Transistors)





Low Voltage, Branch Circuit Rated Fuses

Low Voltage Branch Circuit Fuses

| | |
|-------------------------------------|------------|
| Fuse Holder & Block Selection Guide | Page 12-14 |
| Class Fuse Dimensions | 15-16 |
| Fuses By Fuse Class | |

| <u>Class</u> | <u>Fuses</u> | <u>Volts</u> | |
|--------------|--------------------------|-------------------|-----------|
| CC | LP-CC | 600V | 17 |
| | FNQ-R | 600V | 18 |
| | KTK-R | 600V | 19 |
| CF | TCF* & TCFH_N | 600V | 20-21 |
| | *Class J performance | | |
| G | SC | 600/480V .. | 22 |
| J | LPJ-_SP | 600V | 23 |
| | LPJ-_SPI Indicator | 600V | 23 |
| | JKS | 600V | 24 |
| K5 & H ... | NON | 250V | 25 |
| | NOS | 600V | 25 |
| L | KRP-C_SP | 600V | 26-27 |
| | KRP-CL | 600V | 27 |
| | KLU | 600V | 28 |
| | KTU | 600V | 28 |
| | | | |
| RK1 | LPN-RK_SP | 250V | 29-31 |
| | LPN-RK_SPI Indicator ... | 250V | 29-31 |
| | LPS-RK_SP | 600V | 29-31 |
| | LPS-RK_SPI Indicator ... | 600V | 29-31 |
| | KTN-R | 250V | 32 |
| | KWS-R | 600V | 33 |
| RK5 | DLN-R | 250V | 34 |
| | DLS-R | 600V | 34 |
| | FRN-R | 250V | 35 |
| | FRS-R | 600V | 36 |
| | PVS-R | 600V | 37 |
| T | JJN | 300V | 38 |
| | JJS | 600V | 39 |
| Plug Fuses | W, SL, TL, S, | | |
| | T, P, TC Series & MB | | |
| | Edison Base Circuit | | |
| | Breakers, SA | 125V | 40-42 |

RED indicates NEW information

Holders & Blocks For Branch Circuit Rated Fuses

| Class | Fuses | Volts | Page |
|-------|-------|------------|------|
| CC | LP-CC | 600V | 17 |
| | FNQ-R | 600V | 18 |
| | KTK-R | 600V | 19 |

Holders

| | |
|---|-----|
| • OPM-NG-SC3 3-pole, panel/DIN rail mount | 252 |
| • OPM-1038R 3-pole, panel/DIN rail mount | 251 |
| • OPM-1038RSW 3-pole w/ switch, panel/DIN rail mount .. | 250 |
| • CHCC_D 1 to 3-pole, DIN rail mount | 257 |
| • HPF-RR, front panel mount | 286 |
| • HPS-RR, front panel mount | 286 |

Blocks

| | |
|--------------------------------|-----|
| • BC Series, panel mount | 274 |
|--------------------------------|-----|

Disconnects

| | |
|---|-----|
| • CDF30J3 fusible disconnect switches | 330 |
| • FD400J3 fusible disconnect switches | 340 |



OPM-NG-SC3



OPM-1038R &
OPM-1038RSW



CHCC_D



HPF-RR



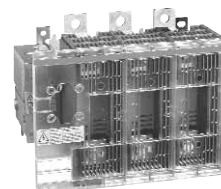
HPS-RR



BC Series



CFD30J3



FD400J3



EFJ30X-3PB6

| Class | Fuses | Volts | Page |
|-------|-------|----------------|------|
| G | SC | 600/480V | 22 |

Holders

| | |
|---|-----|
| • HP Series front panel accessible, front panel mount | 286 |
|---|-----|

Blocks

| | |
|---|-----|
| • BG Series, panel/DIN rail with adapters | 274 |
| • G Series, panel/DIN rail with adapters | 274 |



HP Series



BG & G Series

| Class | Fuses | Volts | Page |
|--------|-------|------------|------|
| K5 & H | NON | 250V | 25 |
| | NOS | 600V | 25 |

Blocks

| | |
|--|-----|
| • Modular Type Fuse Blocks 250/600V, panel mount | 275 |
| • H250 Series 1 to 3-pole 250V, panel mount | 260 |
| • H600 Series 1 to 3-pole 600V, panel mount | 263 |



Modular Type



H250 Series



H600 Series

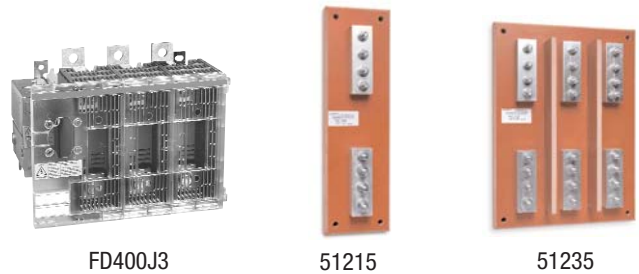
Holders & Blocks For Branch Circuit Rated Fuses

| Class | Fuses | Volts | Page |
|-------|----------|------------|------|
| L | KRP-C_SP | 600V | 26 |
| | KRP-CL | 600V | 27 |
| | KLU | 600V | 28 |
| | KTU | 600V | 28 |

Blocks

- 51215 1-pole, panel mount*
- 51235 3-pole, panel mount*

*Call our customer satisfaction team at 636-527-3877 for more information.



FD400J3

51215

51235

Low Voltage Branch Circuit Fuses

Disconnects

- FD800L3 fusible disconnect switches 340

| Class | Fuses | Volts | Page |
|-------|-----------|------------|------|
| RK1 | LPN-RK_SP | 250V | 29 |
| | LPS-RK_SP | 600V | 29 |
| | KTN-R | 250V | 32 |
| | KWS-R | 600V | 33 |

Blocks

- R250 Series 1- to 3-pole 250V, panel mount 260
- R600 Series 1- to 3-pole 600V, panel mount 263



R250 Series

R600 Series

| Class | Fuses | Volts | Page |
|-------|-------|------------|------|
| RK5 | DLN-R | 250V | 34 |
| | DLS-R | 600V | 34 |
| | FRN-R | 250V | 35 |
| | FRS-R | 600V | 36 |

Blocks

- R250 Series 1- to 3-pole 250V, panel mount 260
- R600 Series 1- to 3-pole 600V, panel mount 263



R250 Series

R600 Series

| Class | Fuses | Volts | Page |
|-------|-------|------------|------|
| T | JJN | 300V | 38 |
| | JJS | 600V | 39 |

Blocks

- BH Series modular-style, panel mount (<60A) 275
- T300 Series 1 to 4-pole 300V, panel mount 269
- T600 Series 1 to 3-pole 600V, panel mount 271

Disconnects

- CDF30J3 fusible disconnect switches..... 330
- FD400J3 fusible disconnect switches 340



BH Series

T300 Series

T600 Series

Holders & Blocks For Branch Circuit Rated Fuses

| Class | Fuses | Volts | Page |
|-------|--------|------------|------|
| J, CF | TCF* | 600V | 20 |
| | LPJ-SP | 600V | 23 |
| | JKS | 600V | 24 |

*Class J performance

Holders

| | |
|--|-------|
| • TCFH CUBEFuse™ holder, panel/DIN rail mount | 20-21 |
| • CH Series Class J modular 1- to 3-pole, panel/ DIN rail mount | 254 |
| • Safety J™ Series modular holders, panel/DIN rail mount | 255 |

Blocks

| | |
|--|-----|
| • Modular Type Fuse Blocks 600V, panel mount | 275 |
| • J600 Series, panel mount | 266 |
| • JP Series pyramid blocks, panel mount | 267 |
| • BH Series modular-style open blocks, panel mount | 275 |

Disconnects

Disconnects

| | |
|---|-----|
| • CDF30J3 fusible disconnect switches | 330 |
| • FD400J3 fusible disconnect switches | 340 |



TCFH

CH Series

Safety J™ Series

Modular Type



J600 Series



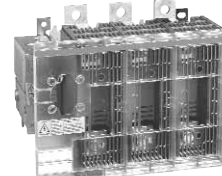
JP Series



BH Series



CDF30J3



FD400J3



EFJ30X-3PB6

| Class | Fuses | Volts | Page |
|------------|--|------------|-------|
| Plug Fuses | W, SL, TL, S, T, P and TC Series | 125V | 40-41 |

Box Cover Units

| | |
|--|-----|
| • Standard electrical box mounting | 276 |
|--|-----|



Fuse Only



With Grounded
Outlet



With Switch

Fuse Reducers For Class R Fuses 250V

| Equipment Fuse Clip Amps | Desired Fuse (Case) Amp Size | Catalog No. (Pairs) 250V |
|--------------------------|------------------------------|--------------------------|
| 60 | 30 | NO.263-R |
| 100 | 30 | NO.213-R |
| | 60 | NO.216-R |
| 200 | 60 | NO.226-R |
| | 100 | NO.2621-R |
| 400 | 100 | NO.2641-R |
| | 200 | NO.242-R |
| 600 | 100 | NO.2661-R |
| | 200 | NO.2662-R |
| | 400 | NO.2664-R* |

*Single reducer only (pair not required).

Fuse Reducers For Class R Fuses 600V

| Equipment Fuse Clip Amps | Desired Fuse (Case) Amp Size | Catalog No. (Pairs) 600V |
|--------------------------|------------------------------|--------------------------|
| 60 | 30 | NO.663-R |
| 100 | 30 | NO.216-R |
| | 60 | NO.616-R |
| 200 | 60 | NO.626-R |
| | 100 | NO.2621-R |
| 400 | 100 | NO.2641-R |
| | 200 | NO.642-R |
| 600 | 100 | NO.2661-R |
| | 200 | NO.2662-R |
| | 400 | NO.2664-R* |

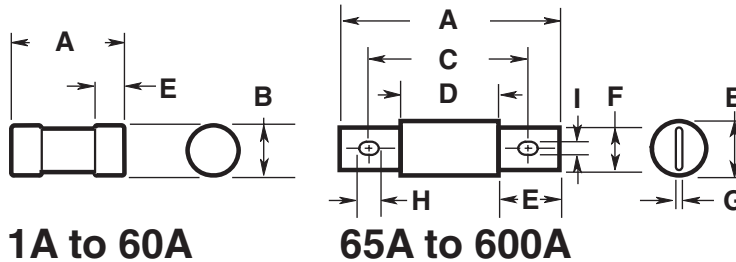
*Single reducer only (pair not required).

Branch Circuit Rated Fuse Dimensions

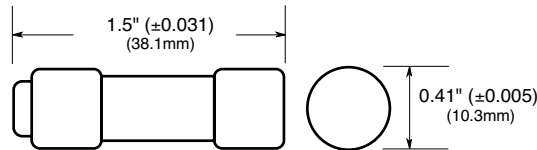
Class J Dimensions - in (mm)

Low-Peak® and Limitron® Fuses
LPJ & JKS — 600V

| Amp Range | A | B | C | D | E | F | G | H | I |
|-----------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1-30 | 2.25 (57.2) | 0.81 (20.6) | — | — | 0.50 (12.7) | — | — | — | — |
| 35-60 | 2.38 (60.3) | 1.06 (27.0) | — | — | 0.63 (15.9) | — | — | — | — |
| 65-100 | 4.63 (117.5) | 1.13 (28.6) | 3.63 (92.1) | 2.63 (66.7) | 1.00 (25.4) | 0.75 (28.6) | 0.13 (3.2) | 0.41 (10.4) | 0.28 (7.1) |
| 110-200 | 5.75 (146.1) | 1.63 (41.4) | 4.38 (111.1) | 3.00 (76.2) | 1.38 (34.9) | 1.13 (28.6) | 0.19 (4.8) | 0.38 (9.5) | 0.28 (7.1) |
| 225-400 | 7.12 (181.0) | 2.11 (53.6) | 5.25 (133.3) | 3.26 (82.8) | 1.87 (47.6) | 1.62 (41.2) | 0.25 (6.4) | 0.56 (14.2) | 0.40 (10.3) |
| 450-600 | 8.00 (203.2) | 2.60 (66.0) | 6.00 (152.4) | 3.31 (84.0) | 2.12 (54.0) | 2.00 (50.8) | 0.53 (13.5) | 0.72 (18.3) | 0.53 (13.5) |



Class CC Dimensions - in (mm)

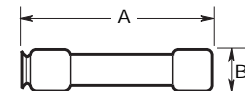


Class RK1 & RK5 Dimensions - in (mm)

Basic dimensions are same as Class H (formerly NEC) One-Time (NON & NOS) and Superlag Renewable RES & REN fuses.
NOTE: These fuses can be used to replace existing Class H, RK1 and RK5 fuses relating to dimensional compatibility.

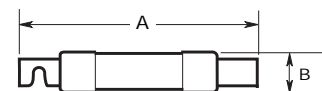
Ferrule Styles

| Amp Range | 250V | | 600V | |
|-----------|----------|-------------|-------------|-------------|
| | A | B | A | B |
| 1/16-30 | 2 (50.8) | 0.56 (14.3) | 5.0 (127.0) | 0.81 (20.6) |
| 35-60 | 3 (76.2) | 0.81 (20.6) | 5.5 (139.7) | 1.06 (27.0) |



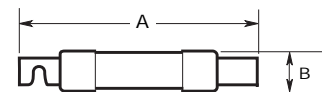
Fusetron® — (FRN-R & FRS-R) & Limitron® — (KTN-R & KTS-R)

| Amp Range | 250V | | 600V | |
|-----------|---------------|-------------|---------------|-------------|
| | A | B | A | B |
| 70-100 | 5.88 (149.2) | 1.06 (26.9) | 7.88 (200.0) | 1.34 (34.0) |
| 110-200 | 7.13 (181.0) | 1.56 (39.6) | 9.63 (244.5) | 1.84 (46.7) |
| 225-400 | 8.63 (219.1) | 2.38 (60.5) | 11.63 (295.3) | 2.59 (65.8) |
| 450-600 | 10.38 (263.5) | 2.88 (73.2) | 13.38 (339.7) | 3.13 (79.5) |



Low-Peak® — (LPN-RK & LPS-RK)

| Amp Range | 250V | | 600V | |
|-----------|---------------|-------------|---------------|-------------|
| | A | B | A | B |
| 70-100 | 5.88 (149.2) | 1.16 (29.5) | 7.88 (200.0) | 1.16 (29.5) |
| 110-200 | 7.13 (181.0) | 1.66 (42.2) | 9.63 (244.5) | 1.66 (42.2) |
| 225-400 | 8.63 (219.1) | 2.38 (60.5) | 11.63 (295.3) | 2.38 (60.5) |
| 450-600 | 10.38 (263.5) | 2.88 (73.2) | 13.38 (339.7) | 2.88 (73.2) |



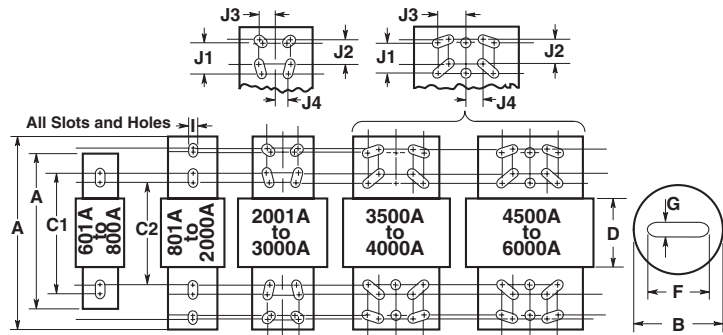
Branch Circuit Rated Fuse Dimensions

Class L Dimensions - in (mm)

Low-Peak® and Limitron® Fuses

| Amp Range | A | B | C1 | C2 | D | F | G | I | J1 | J2 | J3 | J4 |
|-----------|---------------|--------------|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 601-800 | 8.63 (219.1) | 2.40 (61.0) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 2.00 (50.8) | 0.38 (9.5) | 0.63 (15.9) | — | — | — | — |
| 801-1200 | 10.75 (273.1) | 2.40 (61.0) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 2.00 (50.8) | 0.38 (9.5) | 0.63 (15.9) | — | — | — | — |
| 1350-1600 | 10.75 (273.1) | 3.00 (76.2) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 2.38 (60.3) | 0.44 (11.1) | 0.63 (15.9) | — | — | — | — |
| 1800-2000 | 10.75 (273.1) | 3.50 (88.9) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 2.75 (69.9) | 0.50 (12.7) | 0.63 (15.9) | — | — | — | — |
| 2001-2500 | 10.75 (273.1) | 4.80 (122.0) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 3.50 (88.9) | 0.75 (19.1) | 0.63 (15.9) | 1.75 (44.5) | 1.38 (34.9) | 0.88 (22.2) | 0.81 (20.6) |
| 3000 | 10.75 (273.1) | 5.00 (127.0) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 4.00 (101.6) | 0.75 (19.1) | 0.63 (15.9) | 1.75 (44.5) | 1.38 (34.9) | 0.88 (22.2) | 0.81 (20.6) |
| 3500-4000 | 10.75 (273.1) | 5.75 (146.1) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 4.75 (120.7) | 0.75 (19.1) | 0.63 (15.9) | 1.75 (44.5) | 1.38 (34.9) | 1.63 (41.3) | 0.88 (22.2) |
| 4500-5000 | 10.75 (273.1) | 6.25 (158.8) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 5.25 (133.4) | 1.00 (25.4) | 0.63 (15.9) | 1.75 (44.5) | 1.38 (34.9) | 1.63 (41.3) | 0.88 (22.2) |
| 6000 | 10.75 (273.1) | 7.13 (181.0) | 6.75 (171.5) | 5.75 (146.1) | 3.75 (95.3) | 5.75 (146.1) | 1.00 (25.4) | 0.63 (15.9) | 1.75 (44.5) | 1.38 (34.9) | 1.63 (41.3) | 0.88 (22.2) |

NOTE: KRP-CL (150A to 600A) fuses have same dimensions as 601-800A case size. KTU (200-600A) have same dimensions, except tube 3" length x 2" diameter (76.2 x 50.8mm); terminal 1½" width x 1¼" thick (41.3 x 31.8mm).



Class T Dimensions - in (mm)

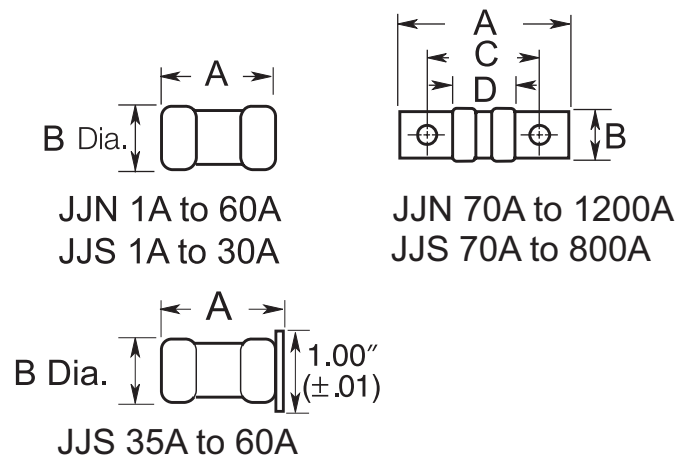
T-Tron® Fuses

JJN — 300V

| Amp Range | A | B | C | D |
|-----------|--------------|-------------|-------------|-------------|
| 1-30 | 0.88 (22.2) | 0.41 (10.3) | — | — |
| 35-60 | 0.88 (22.2) | 0.56 (14.3) | — | — |
| 70-100 | 2.16 (54.8) | 0.75 (19.1) | 1.56 (39.7) | 0.84 (21.4) |
| 110-200 | 2.44 (61.9) | 0.88 (22.2) | 1.69 (42.9) | 0.84 (21.4) |
| 225-400 | 2.75 (69.9) | 1.00 (25.4) | 1.84 (46.8) | 0.86 (21.8) |
| 450-600 | 3.06 (77.8) | 1.25 (31.8) | 2.03 (51.6) | 0.88 (22.2) |
| 601-800 | 3.38 (85.7) | 1.75 (44.5) | 2.22 (56.4) | 0.89 (22.6) |
| 801-1200 | 4.00 (101.6) | 2.00 (50.8) | 2.53 (64.3) | 1.08 (27.4) |

JJS — 600V

| Amp Range | A | B | C | D |
|-----------|--------------|-------------|-------------|-------------|
| 1-30 | 1.50 (38.1) | 0.56 (14.3) | — | — |
| 35-60 | 1.56 (39.7) | 0.81 (20.6) | — | — |
| 70-100 | 2.95 (75.0) | 0.75 (19.1) | 2.36 (59.9) | 1.64 (41.7) |
| 110-200 | 3.25 (82.6) | 0.88 (22.2) | 2.50 (63.5) | 1.66 (42.1) |
| 225-400 | 3.63 (92.1) | 1.00 (25.4) | 2.72 (69.1) | 1.73 (44.1) |
| 450-600 | 3.98 (101.2) | 1.25 (31.8) | 2.96 (75.0) | 1.78 (45.2) |
| 601-800 | 4.33 (109.9) | 1.75 (44.5) | 3.17 (80.6) | 1.88 (47.6) |



Low-Peak™ Time-delay, Rejection-Type Fuses

Low Voltage Branch Circuit Fuses

LP-CC Class CC

Specifications

Description: Time-delay, current-limiting, rejection-type fuse – 12 seconds (minimum) at 200% rated amps.

Dimensions: 1 1/2" x 1 1/2" (10.3 x 38.1mm).

Ratings:

- Volts — 600Vac (or less)
- 300Vdc (1/2-2 1/2A & 20-30A)
- 150Vdc (2 3/4-15A)
- Amps — 1/2-30A
- IR — 200kA RMS Sym.
- 20kA DC



Agency Information: CE, Std. 248-4, Class CC, UL Listed, Guide JDDZ, File E4273, CSA Certified; Class 1422-02, File 53787.

Features and Benefits

- Time-delay coupled with Class CC current-limiting response provides close sizing on small motor and relay circuits, and maximum component short-circuit current rating protection.
- 200kA interrupting rating provides high ratings for control circuit locations.
- Class CC rejection feature, with appropriate fuse block, prevents inserting lesser-rated supplementary fuses.
- Inventory consolidation of 1 1/2 x 1 1/2 inch supplementary fuses reduces SKU investment and minimizes potential for misapplying fuse.
- Selective coordination ratio of 2:1 (within Low-Peak fuse family) prevents electrical shutdowns from extending beyond the failed circuit.

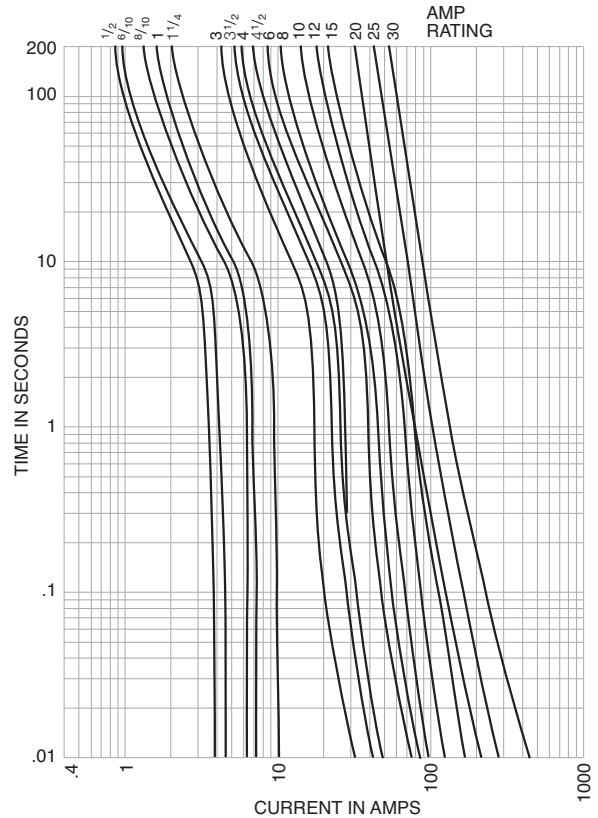
Typical Applications

- Specialized Circuits
- Industrial Control
- Isolated, In-Line Fuse Holder

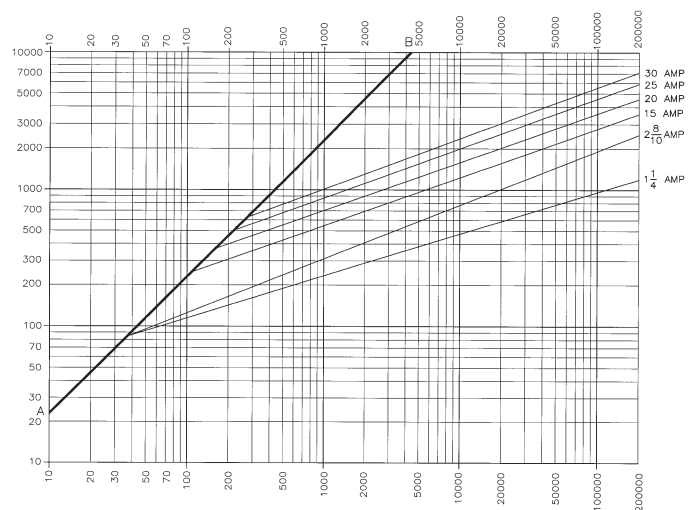
Catalog Numbers (Amps)

| | | |
|--------------|--------------|-------------|
| LP-CC-1/2 | LP-CC-2-1/2 | LP-CC-7 1/2 |
| LP-CC-3/10 | LP-CC-2-3/10 | LP-CC-8 |
| LP-CC-3/10 | LP-CC-3 | LP-CC-9 |
| LP-CC-1 | LP-CC-3-3/10 | LP-CC-10 |
| LP-CC-1-1/2 | LP-CC-3-1/2 | LP-CC-12 |
| LP-CC-1-1/4 | LP-CC-4 | LP-CC-15 |
| LP-CC-1-3/10 | LP-CC-4-1/2 | LP-CC-20 |
| LP-CC-1-1/2 | LP-CC-5 | LP-CC-25 |
| LP-CC-1-3/10 | LP-CC-5-3/10 | LP-CC-30 |
| LP-CC-1-3/10 | LP-CC-6 | |
| LP-CC-2 | LP-CC-6-1/4 | |

Time Current Characteristics—Average Melt



Current Limitation Curves



Recommended Fuse Holders & Blocks For Class CC Fuses

- See page 18

CC-Tron® Rejection-type Fuses

FNQ-R Class CC

Specifications

Description: Time-delay, branch circuit, rejection-type fuse.

Dimensions: $1\frac{3}{32}$ " x $1\frac{1}{2}$ " (10.3 x 38.1mm).

Ratings:

Volts — 600Vac (or less); 300Vdc (15-20A)

Amps — $\frac{1}{4}$ -30A

IR — 200kA RMS Sym.; 20kA DC

Agency Information: CE, Std. 248-4, Class CC, UL Listed, Guide JDDZ, File E4273 CSA Certified, Class 1422-01, File 53787.



Features and Benefits

- Time delay compatible with inrush characteristic of small control transformers.
- Current limitation at Class CC levels provides maximum component short-circuit current rating protection.
- 200kA interrupting rating provides high ratings for control circuit locations.
- Class CC rejection feature, with appropriate fuse block, prevents inserting lesser-rated supplementary fuses.

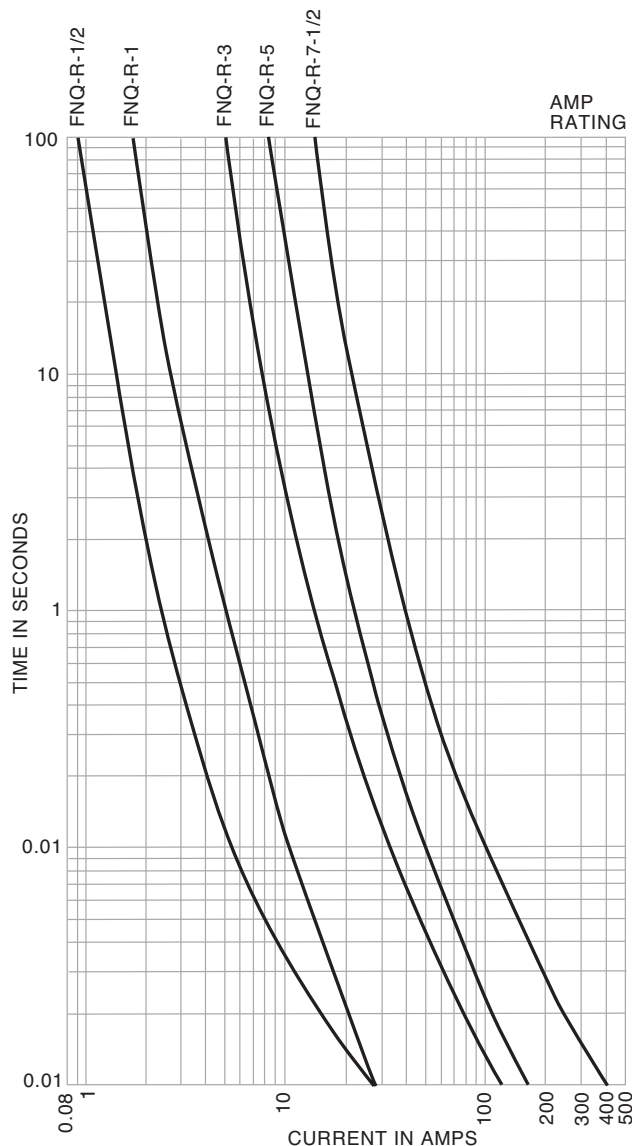
Typical Applications

- Line Protection, Small Control Transformers
- Industrial Control
- Isolated, In-Line Fuse Holders

Catalog Numbers (Amps)

| | | |
|-------------------------|-------------------------|-------------------------|
| FNQ-R- $\frac{1}{4}$ | FNQ-R-1- $\frac{9}{10}$ | FNQ-R-6 |
| FNQ-R- $\frac{3}{10}$ | FNQ-R-1- $\frac{7}{10}$ | FNQ-R-6- $\frac{1}{4}$ |
| FNQ-R- $\frac{1}{10}$ | FNQ-R-2 | FNQ-R-7 |
| FNQ-R- $\frac{1}{2}$ | FNQ-R-2- $\frac{1}{4}$ | FNQ-R-7- $\frac{1}{2}$ |
| FNQ-R- $\frac{9}{10}$ | FNQ-R-2- $\frac{1}{2}$ | FNQ-R-8 |
| FNQ-R- $\frac{3}{4}$ | FNQ-R-2- $\frac{9}{10}$ | FNQ-R-9 |
| FNQ-R- $\frac{9}{10}$ | FNQ-R-3 | FNQ-R-10 |
| FNQ-R-1 | FNQ-R-3- $\frac{9}{10}$ | FNQ-R-12 |
| FNQ-R-1- $\frac{1}{10}$ | FNQ-R-3- $\frac{1}{2}$ | FNQ-R-15 |
| FNQ-R-1- $\frac{1}{4}$ | FNQ-R-4 | FNQ-R-17- $\frac{1}{2}$ |
| FNQ-R-1- $\frac{3}{10}$ | FNQ-R-4- $\frac{1}{2}$ | FNQ-R-20 |
| FNQ-R-1- $\frac{1}{10}$ | FNQ-R-5 | FNQ-R-25 |
| FNQ-R-1- $\frac{1}{2}$ | FNQ-R-5- $\frac{9}{10}$ | FNQ-R-30 |

Time-Current Characteristic Curves—Average Melt



For superior electrical protection, Cooper Bussmann recommends upgrading FNQ-R fuse applications to Low-Peak LP-CC fuses See page 17.

Recommended Fuse Holders & Blocks For Class CC
600V Fuses

- See page 12

Limitron® Rejection-type Fuses

KTK-R Class CC

Specifications

Description: Fast-acting, branch circuit, rejection-type fuse.

Dimensions: 1½" x 1 ½" (10.3 x 38.1mm).

Ratings:

Volts — 600Vac (or less)

Amps — 1/10-30A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-4, Class CC, UL Listed, Guide JDDZ, File E4273 CSA Certified, File 53787, Class 1422-02.



Features and Benefits

- Current limitation at Class CC levels provides maximum component short-circuit current protection.
- 200kA interrupting rating provides high ratings for control circuit locations.
- Class CC rejection feature, with appropriate fuse block, prevents inserting lesser-rated supplementary fuses.

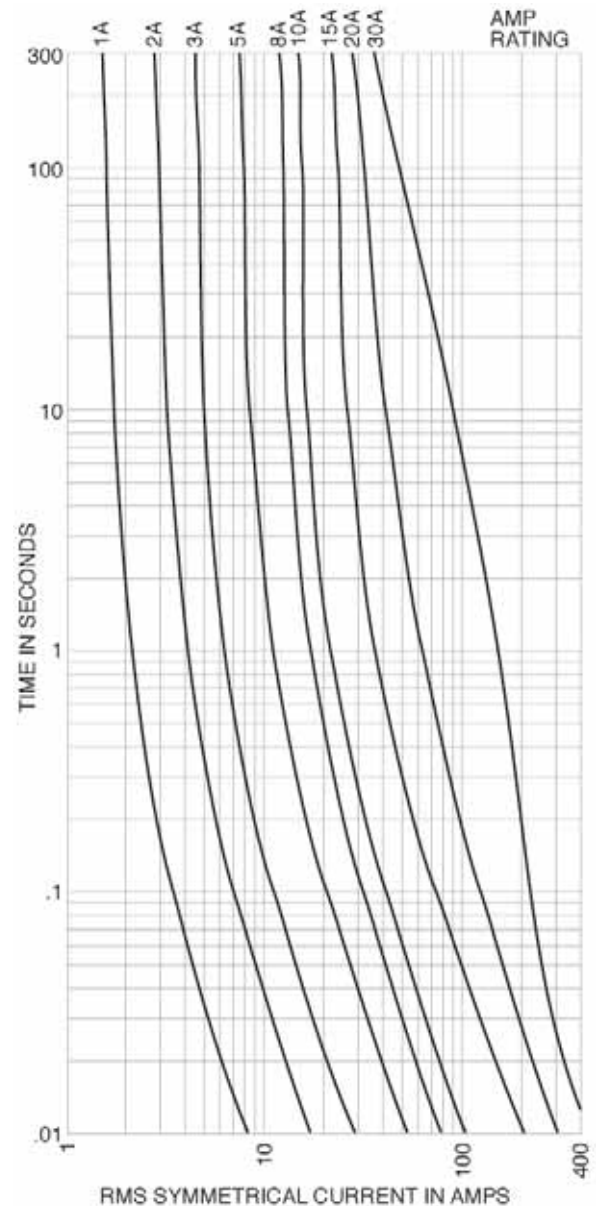
Typical Applications

- Specialized Circuits
- Industrial Control
- Isolated, In-Line Fuse Holders (street lighting)

Catalog Numbers (Amps)

| | | |
|------------|-------------|----------|
| KTK-R-1/10 | KTK-R-1 | KTK-R-7 |
| KTK-R-1/8 | KTK-R-1-1/2 | KTK-R-8 |
| KTK-R-2/10 | KTK-R-2 | KTK-R-9 |
| KTK-R-1/4 | KTK-R-2-1/2 | KTK-R-10 |
| KTK-R-3/10 | KTK-R-3 | KTK-R-12 |
| KTK-R-1/2 | KTK-R-3-1/2 | KTK-R-15 |
| KTK-R-5/10 | KTK-R-4 | KTK-R-20 |
| KTK-R-3/8 | KTK-R-5 | KTK-R-25 |
| KTK-R-1/2 | KTK-R-6 | KTK-R-30 |

Time-Current Characteristic Curves—Average Melt



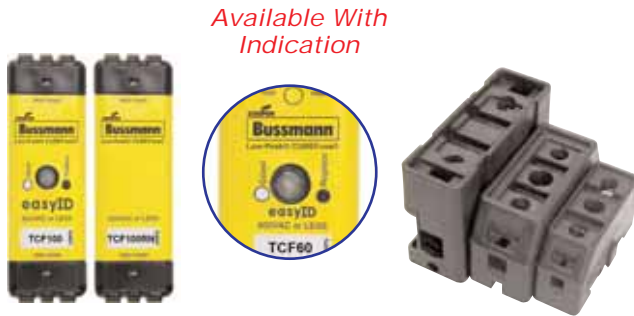
For superior electrical protection, Cooper Bussmann recommends upgrading KTK-R fuse applications to Low-Peak LP-CC fuses See page 17.

Recommended Fuse Holders & Blocks For Class CC Fuses

- See page 12

CUBEFuse® Finger-safe Fuse and Fuse Holder System

TCF & TCF_RN (fuse) Class CF
TCFH_N (holder)



Available With Indication

Specifications

Description: Finger-safe fuse and fuse holder system; dual-element, time-delay fuse; 10 seconds minimum operating time at 500% rated amps.

Dimensions: See Dimensions illustration.

Poles: 1-pole (gangable)

Ratings:

- Volts — 600Vac (or less)
- 300Vdc (or less)

Amps — 1-100A

- IR — 300kA RMS Sym. (UL)
- 200kA RMS Sym. (CSA)
- 100kA DC (UL & CSA)

Agency Information: CE, UL Listed Guide JFHR, File E4273, CSA Certified Fuse: Class 1422- 02, File 53787, UL Listed Fuse holder: Guide IZND, File E214079, CSA Certified Fuse holder: Class 6225-01, File 47235.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for sizing of high inrush loads linked with Class J current limitation.
- Selective coordination ratio of 2:1 (within Low-Peak fuse family) prevents electrical shutdowns from extending beyond the failed circuit.
- Smallest footprint of any Class CC, J, T or RK fuse provides substantial space savings and installation flexibility.
- IEC 60529 and finger-safe rating provides enhanced workplace safety.

Typical Applications

- Electrical Panelboards
- Machinery Disconnects
- Industrial Control
- Required Finger-Safe Systems

Fuse Catalog Numbers Indicating (Amps)

| | | | |
|---------|-------|-------|--------|
| TCF6 | TCF25 | TCF50 | TCF100 |
| TCF10 | TCF30 | TCF60 | |
| TCF15 | TCF35 | TCF70 | |
| TCF17-½ | TCF40 | TCF80 | |
| TCF20 | TCF45 | TCF90 | |

Fuse Catalog Numbers Non-Indicating (Amps)

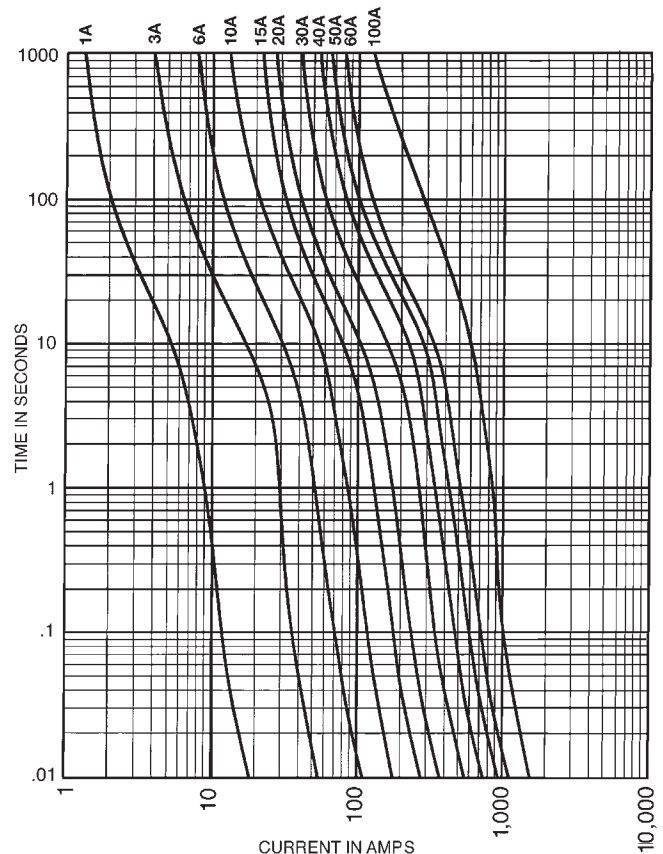
| | | | |
|---------|-----------|---------|----------|
| TCF1RN | TCF17-½RN | TCF40RN | TCF80RN |
| TCF3RN | TCF20RN | TCF45RN | TCF90RN |
| TCF6RN | TCF25RN | TCF50RN | TCF100RN |
| TCF10RN | TCF30RN | TCF60RN | |
| TCF15RN | TCF35RN | TCF70RN | |

Fuse Holder Catalog Numbers

| Catalog Numbers | Amp Range | Wire Range* Single Wire | Dual Wire |
|-----------------|-----------|----------------------------|----------------|
| TCFH30N | 1-30 | 14 to 8 AWG Cu | 18 to 10 AWG |
| TCFH60N | 1-60 | 14 to 4 AWG Cu | 10 to 6 AWG Cu |
| TCFH100N | 1-100 | 10 to 1 AWG Cu | 6 AWG Cu |

*75°C minimum Cu wire only.

Time-Current Characteristic Curves—Average Melt

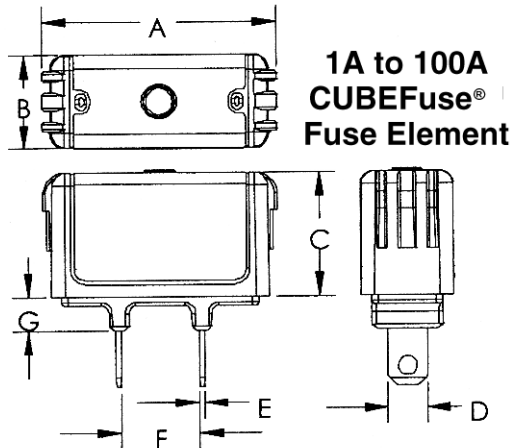


Data Sheet: 9000 (fuses) and 9007 (holders)

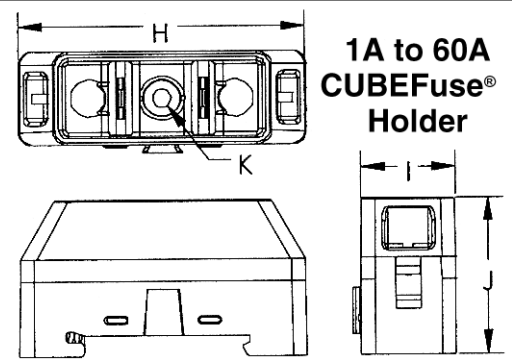
CUBEFuse® Finger-safe Fuse and Fuse Holder System

Low Voltage Branch Circuit Fuses

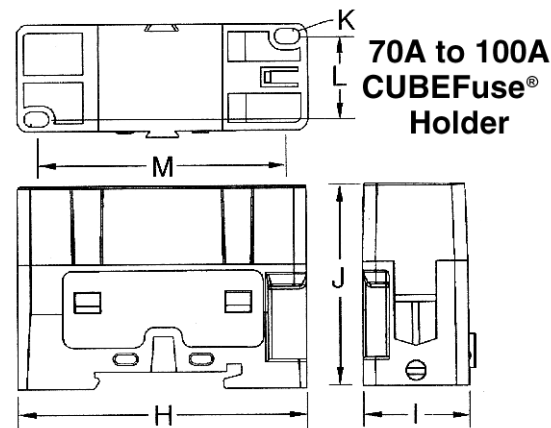
Dimensions for CUBEFuse® Fuse and Fuse Holder



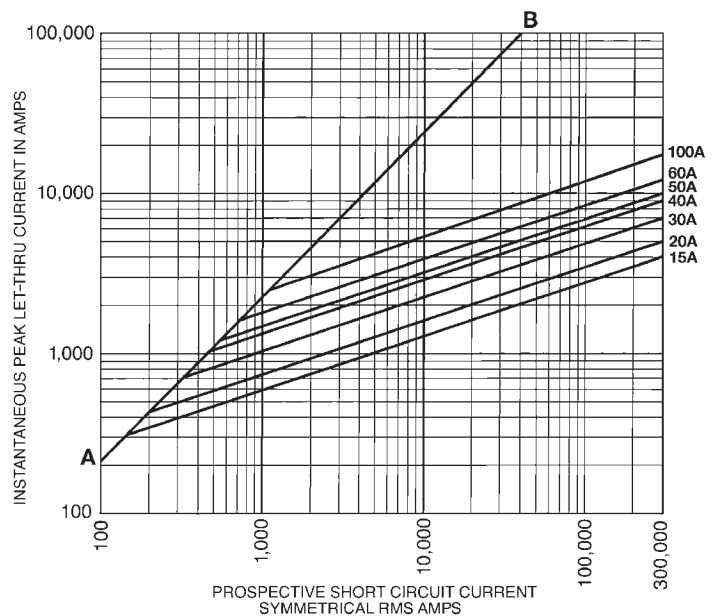
| Fuse Amps | Dimensions - in (mm) | | | | | | |
|-----------|----------------------|--------------|--------------|--------------|-------------|--------------|-------------|
| | A | B | C | D | E | F | G |
| 1-15 | 1.88 (47.75) | 0.75 (19.05) | 1.00 (25.40) | 0.23 (5.84) | 0.04 (1.02) | 0.63 (15.88) | 0.27 (6.86) |
| 17.5-20 | 1.88 (47.75) | 0.75 (19.05) | 1.00 (25.40) | 0.27 (6.86) | 0.04 (1.02) | 0.63 (15.88) | 0.27 (6.86) |
| 25-30 | 1.88 (47.75) | 0.75 (19.05) | 1.00 (25.40) | 0.31 (7.94) | 0.04 (1.02) | 0.63 (15.88) | 0.27 (6.86) |
| 35-40 | 2.13 (54.10) | 1.00 (25.40) | 1.13 (28.58) | 0.36 (9.14) | 0.04 (1.02) | 0.63 (15.88) | 0.38 (9.65) |
| 45-50 | 2.13 (54.10) | 1.00 (25.40) | 1.13 (28.58) | 0.40 (10.16) | 0.04 (1.02) | 0.63 (15.88) | 0.38 (9.65) |
| 60 | 2.13 (54.10) | 1.00 (25.40) | 1.13 (28.58) | 0.44 (11.11) | 0.04 (1.02) | 0.63 (15.88) | 0.38 (9.65) |
| 70-100 | 3.01 (76.45) | 1.00 (25.40) | 1.26 (32.00) | 0.57 (14.4) | 0.06 (1.60) | 0.63 (15.88) | 0.39 (9.93) |



| Holder | H | I | J | K | L | M |
|----------|--------------|--------------|---------------|-------------|--------------|--------------|
| TCFH30N | 2.30 (58.50) | 0.76 (19.37) | 1.357 (34.24) | 0.15 (3.76) | - | - |
| TCFH60N | 2.60 (66.12) | 1.03 (26.23) | 1.60 (40.64) | 0.17 (4.34) | - | - |
| TCFH100N | 2.91 (73.81) | 1.05 (26.74) | 2.01 (50.93) | 0.15 (3.81) | 0.80 (20.39) | 2.51 (63.65) |



Current Limitation Curves



Time-delay Fuses

SC Class G

Specifications

Description: Fast-acting (½-6A), time-delay (7-60A) fuse.

Dimensions: See dimensions illustration.

Ratings:

- Volts — 600Vac (½-20A)
- 480Vac (25-60A)
- 170Vdc (½-20A)
- 300Vdc (30 & 60A only)

Amps — ½-60A

- IR — 100kA RMS Sym.
- 10kA DC

Agency Information: CE, Std. 248-5, Class G, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-01, File 53787.

Features and Benefits

- Current limiting for component protection, providing Class G energy-limitation for branch circuit protection.
- 100kA interrupting rating provides cost-effective branch pcircuit fusing.
- Variations in length help prevent overfusing.

Typical Applications

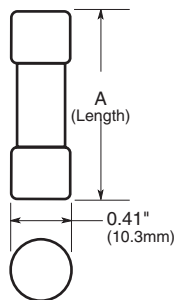
- Fusible Branch Panelboards
- HVAC Branch Circuit Protection

Catalog Numbers (Amps)

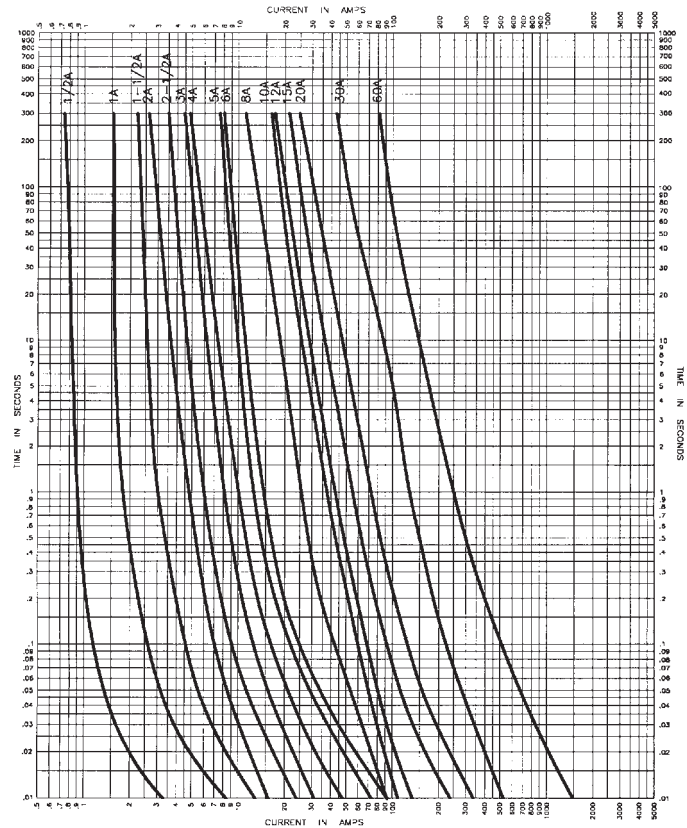
| | | | | | |
|--------|--------|------|-------|-------|-------|
| SC-½ | SC-2-½ | SC-6 | SC-10 | SC-25 | SC-45 |
| SC-1 | SC-3 | SC-7 | SC-12 | SC-30 | SC-50 |
| SC-1-½ | SC-4 | SC-8 | SC-15 | SC-35 | SC-60 |
| SC-2 | SC-5 | SC-9 | SC-20 | SC-40 | |

Dimensions -in (mm)

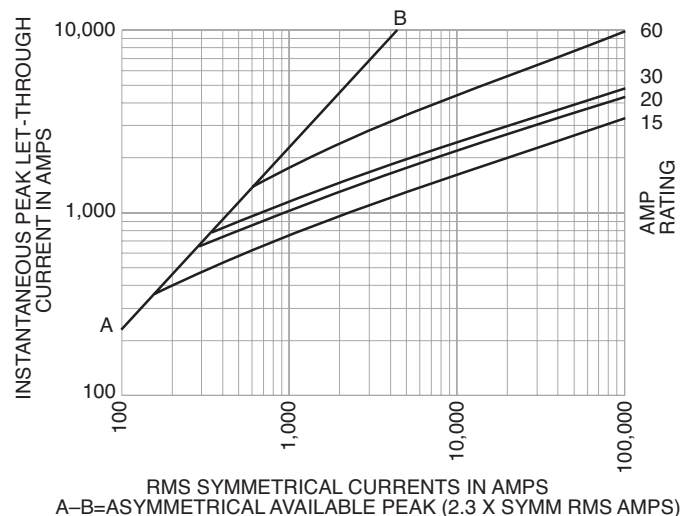
| Fuse Amps | Length | Diameter |
|--------------|-------------|--------------|
| SC-½ to -15 | 1.31 (33.3) | 0.41" (10.4) |
| SC-20 | 1.41 (35.8) | 0.41" (10.4) |
| SC-25 to -30 | 1.62 (41.2) | 0.41" (10.4) |
| SC-35 to -60 | 2.25 (57.1) | 0.41" (10.4) |



Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Recommended Fuse Holders & Blocks For Class G Fuses

- See page 12

Low-Peak® Dual-element, Time-delay Fuses

LPJ_SP Class J

Available With
Indication



Specifications

Description:
Dual-element,
time-delay fuse;
10 seconds (minimum) at 500% rated amps. Now
available with optional indication on select ratings
(see Catalog Numbers table).

Dimensions: See page 11 for Class J dimensions.
Ratings:

- Volts — 600Vac (or less)
- 300Vdc (or less)
- Amps — 1-600A
- IR — 300kA RMS Sym.
- 100kA dc

Agency Information: CE, UL Listed - Special Purpose*,
Guide JFHR, File E56412, CSA Certified (200k AIR) Class J
per CSA-22.2 No. 248.8, Class 1422-02, File 53787.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for sizing of high inrush loads linked with Class J current limitation.
- Selective coordination ratio of 2:1 (within Low-Peak fuse family) prevents electrical shutdowns from extending beyond the failed circuit.
- Series combination ratings with branch circuit breakers allows broad range of coverage, independent of breaker manufacturer.

Typical Applications

- Power Panelboards
- Branch Circuit Breaker Panelboard Mains
- Machinery Disconnects
- Industrial Control

Catalog Numbers (Amps)

| | | | |
|-----------|--------------|-------------|-------------|
| LPJ-1SP | LPJ-4-½SP | LPJ-25SP** | LPJ-125SP** |
| LPJ-1-¼SP | LPJ-5SP | LPJ-30SP** | LPJ-150SP** |
| LPJ-1-⅝SP | LPJ-5-⅝SP | LPJ-35SP** | LPJ-175SP** |
| LPJ-1-⅞SP | LPJ-6SP** | LPJ-40SP** | LPJ-200SP** |
| LPJ-2SP | LPJ-7SP** | LPJ-45SP** | LPJ-225SP** |
| LPJ-2-¼SP | LPJ-8SP** | LPJ-50SP** | LPJ-250SP** |
| LPJ-2-½SP | LPJ-9SP** | LPJ-60SP** | LPJ-300SP** |
| LPJ-2-⅝SP | LPJ-10SP** | LPJ-70SP** | LPJ-350SP** |
| LPJ-3SP | LPJ-12SP** | LPJ-80SP** | LPJ-400SP** |
| LPJ-3-¼SP | LPJ-15SP** | LPJ-90SP** | LPJ-450SP** |
| LPJ-3-½SP | LPJ-17-½SP** | LPJ-100SP** | LPJ-500SP** |
| LPJ-4SP | LPJ-20SP** | LPJ-110SP** | LPJ-600SP** |

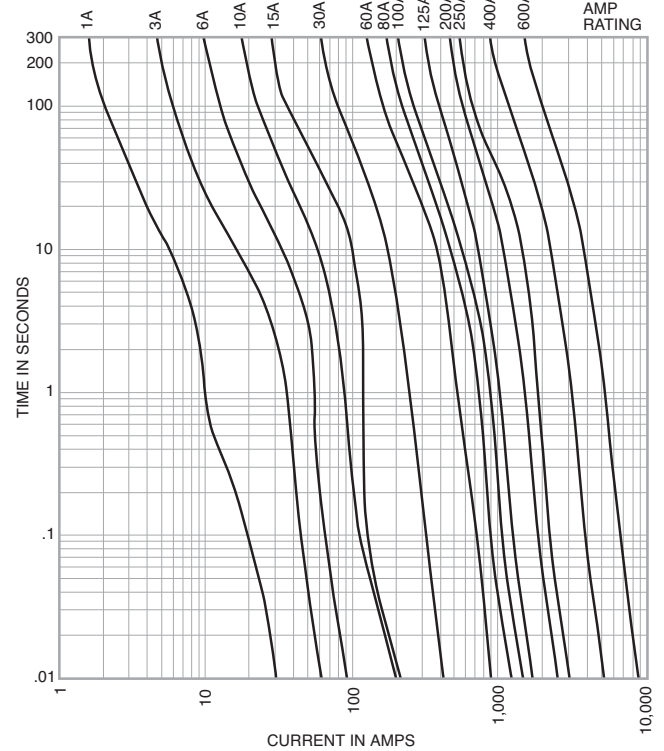
*Meets all performance requirements of UL Standard 248-8 for Class J fuses.

**Available with optional permanent replace fuse indication. To order, place "I" at end of catalog number. Example: LPJ-6SPI.

Available with silver plated terminals. Add SP/ in front of Catalog Number.

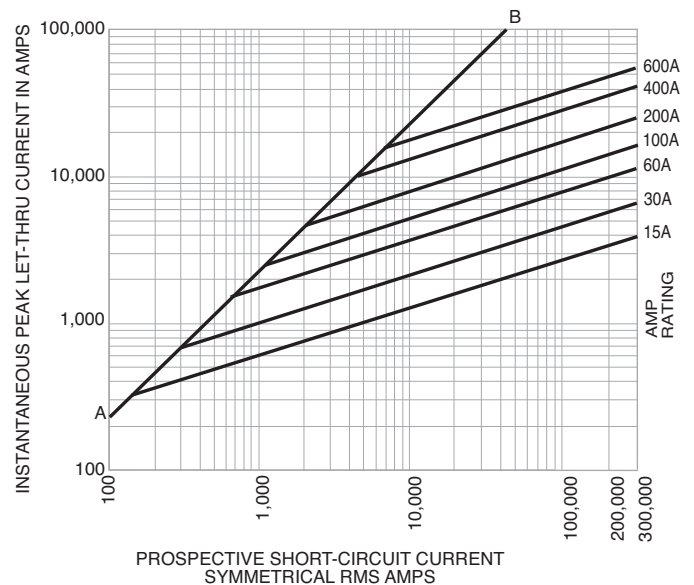
Data Sheets: 1006 (0-60) and 1007 (70-600)
With indication 1062 (6-60) and 1063 (70-600)

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves

LPJ Current Limitation Curves



Recommended Fuse Holders & Blocks For Class J Fuses
• See page 14

Limitron® Fast-acting Fuses

JKS Class J



Specifications

Description: Fast-acting, current-limiting fuse.

Dimensions: See page 15 for Class J dimensions.

Ratings:

Volts — 600Vac (or less)

Amps — 1-600A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-8, Class J, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- Current limitation for non-inductive circuits provides Class J current-limiting response to maximum ground fault and short-circuit conditions.
- 200kA interrupting rating provides high ratings at all circuit locations.
- Economical solutions for high-fault circuits.

Typical Applications

- Power Panelboards
- Machinery Disconnects

Catalog Numbers (Amps)

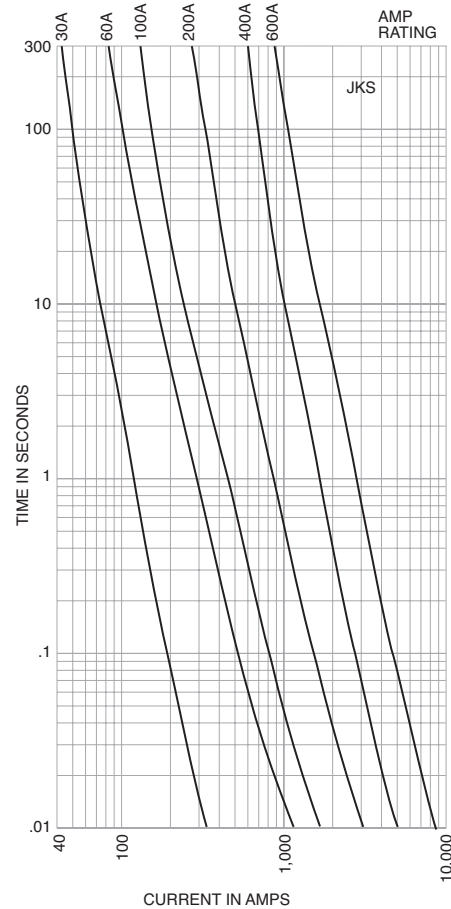
| | | | |
|--------|--------|---------|---------|
| JKS-1 | JKS-15 | JKS-70 | JKS-225 |
| JKS-2 | JKS-20 | JKS-80 | JKS-250 |
| JKS-3 | JKS-25 | JKS-90 | JKS-300 |
| JKS-4 | JKS-30 | JKS-100 | JKS-350 |
| JKS-5 | JKS-35 | JKS-110 | JKS-400 |
| JKS-6 | JKS-40 | JKS-125 | JKS-450 |
| JKS-8 | JKS-45 | JKS-150 | JKS-500 |
| JKS-10 | JKS-50 | JKS-175 | JKS-600 |
| JKS-12 | JKS-60 | JKS-200 | |

For superior electrical protection, Cooper Bussmann recommends upgrading JKS fuse applications to Low-Peak LPJ fuses See page 23.

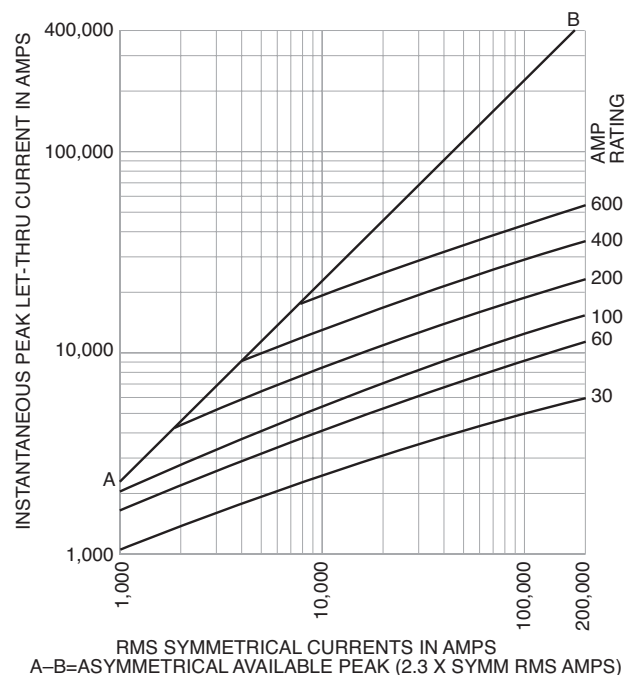
Recommended Fuse Holders & Blocks For Class J Fuses

- See page 14

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



One-time General Purpose Fuses

Low Voltage
Branch
Circuit
Fuses

NON (250Vac/125Vdc) Class K5 & H
NOS (600Vac) Class K5 & H

Specifications
Description: General purpose, non-current-limiting fuses.

Dimensions: See page 15 for dimensions.

Ratings:

- Volts — NON:
 - 250Vac
 - 125Vdc (0-100A)
- NOS:
 - 600Vac

Amps — 1/2-600A

- IR — 50kA RMS Sym. (NON & NOS Class K5 0-60A)
- 10kA RMS Sym. (NON & NOS Class H65-600A)
- 50kA @ 125Vdc (NON Class K5 0-60A)
- 10kA @ 125Vdc (NON Class H 65-100A)

Agency Information: CE, UL Listed – 250V: Class K5 (0-60A), Std. 248-9, Class H (65-600A), Std. 248-6, (125Vdc: NON 0-100), 600V: Class K5 (0-60A), Std. 248-9, Class H (70-600A), Std. 248-6, Guide JDDZ, File E4273, CSA Certified – 250V: (0-12, 65-600)†, 600V: (0-600), Class 1421-01, File 53787.

† For CSA Certified 15-60A Ratings, see PON Data Sheet 4126

Features and Benefits

- Original fuse providing circuit protection.

Typical Applications

- Light Duty Circuit Locations

NON (250Vac) Catalog Numbers (Amps)

| | | | |
|-----------|-----------|---------|---------|
| NON-1/2 | NON-5 | NON-40 | NON-175 |
| NON-1/2 | NON-6 | NON-45 | NON-200 |
| NON-3/4 | NON-6-1/2 | NON-50 | NON-225 |
| NON-1 | NON-7 | NON-60 | NON-250 |
| NON-1 | NON-8 | NON-65 | NON-300 |
| NON-1-1/2 | NON-9 | NON-70 | NON-350 |
| NON-1-1/2 | NON-10 | NON-75 | NON-400 |
| NON-1-3/4 | NON-12 | NON-80 | NON-450 |
| NON-2 | NON-15 | NON-90 | NON-500 |
| NON-2-1/2 | NON-20 | NON-100 | NON-600 |
| NON-3 | NON-25 | NON-110 | |
| NON-3-3/4 | NON-30 | NON-125 | |
| NON-4 | NON-35 | NON-150 | |

NOS (600Vac) Catalog Numbers (Amps)

| | | | |
|--------|--------|---------|---------|
| NOS-1 | NOS-12 | NOS-70 | NOS-200 |
| NOS-2 | NOS-15 | NOS-75 | NOS-225 |
| NOS-3 | NOS-20 | NOS-80 | NOS-250 |
| NOS-4 | NOS-25 | NOS-90 | NOS-300 |
| NOS-5 | NOS-30 | NOS-100 | NOS-350 |
| NOS-6 | NOS-35 | NOS-110 | NOS-400 |
| NOS-7 | NOS-40 | NOS-125 | NOS-450 |
| NOS-8 | NOS-45 | NOS-150 | NOS-500 |
| NOS-9 | NOS-50 | NOS-175 | NOS-600 |
| NOS-10 | NOS-60 | | |

Recommended Fuse Reducers

| 250V Fuse Amp Size | Clip Amp Size | Catalog Number (Pair) | 600V Fuse Amp Size | Clip Amp Size | Catalog Number (Pair) |
|--------------------|---------------|-----------------------|--------------------|---------------|-----------------------|
| 30 | 60 | NO.263 | 30 | 60 | NO.663 |
| 30 | 100 | NO.213 | 30 | 100 | NO.216 |
| 60 | 100 | NO.216 | 60 | 100 | NO.616 |
| 60 | 200 | NO.226 | 60 | 200 | NO.626 |
| 100 | 200 | NO.2621 | 100 | 200 | NO.2621 |
| 100 | 400 | NO.2641 | 100 | 400 | NO.2641 |
| 200 | 400 | NO.2642 | 200 | 400 | NO.2642 |
| 100 | 600 | NO.2661 | 100 | 600 | NO.2661 |
| 200 | 600 | NO.2662 | 200 | 600 | NO.2662 |
| 400 | 600 | NO.2664 | 400 | 600 | NO.2664 |

For superior electrical protection, Cooper Bussmann recommends upgrading NON (250Vac) and NOS (600Vac) fuse applications to Low-Peak LPN-RK (250Vac) and LPS-RK (600Vac) fuses See page 29.

Recommended Fuse Holders & Blocks For Class K5 & H
250V & 600V Fuses

- See page 12

Low-Peak® Time-delay Fuses

KRP-C_SP Class L

Specifications

Description: Time-delay fuse – 4 seconds (minimum) at 500% rated amps.

Dimensions: See page 16 for Class L dimensions.

Ratings:

- Volts — 600Vac (or less)
- 300Vdc (601-2000A)
- Amps — 601-6000A
- (use KRP-CL for current ratings under 601A)
- IR — 300kA RMS Sym.
- 100kA DC



Agency Information: CE, UL Listed-Special Purpose (meets all performance requirements of UL Standard 248-10 for Class L fuses), Guide JFHR, File E56412, CSA Certified (200k AIR), Class 1422-02, File 53787, Class L per CSA C22.2, No. 248.10.

Features and Benefits

- Time delay of four seconds at five times rating allows closer sizing on large motor loads combined with Class L current limitation.
- Selective coordination ratio of 2:1 (within Low-Peak fuse family) prevents electrical shutdowns from extending beyond the failed circuit.
- Interrupting rating of 300kA RMS symmetrical provides adequate ratings without obsolescence for all electrical systems, big or small.
- Quality construction, using high-grade materials, provides lower watts loss and operating temperatures with superior arc quenching during current-limiting action.

Typical Applications

- Large Distribution Switchboards
- Power Panelboards
- Large Machinery Disconnects

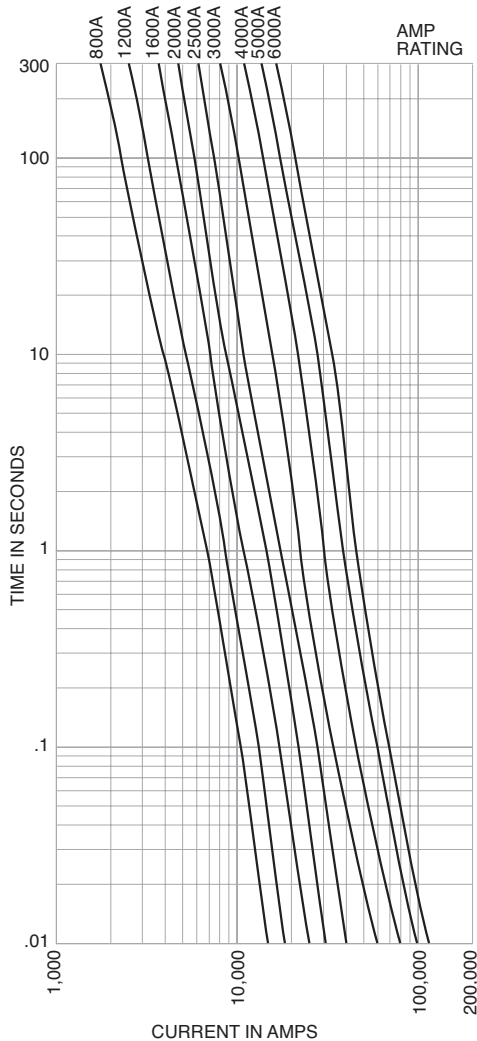
Catalog Numbers (Amps)

| | | | |
|-------------|--------------|--------------|--------------|
| KRP-C-601SP | KRP-C-1000SP | KRP-C-1800SP | KRP-C-3500SP |
| KRP-C-650SP | KRP-C-1100SP | KRP-C-1900SP | KRP-C-3800SP |
| KRP-C-700SP | KRP-C-1200SP | KRP-C-2000SP | KRP-C-4000SP |
| KRP-C-750SP | KRP-C-1350SP | KRP-C-2001SP | KRP-C-4500SP |
| KRP-C-800SP | KRP-C-1400SP | KRP-C-2400SP | KRP-C-5000SP |
| KRP-C-801SP | KRP-C-1500SP | KRP-C-2500SP | KRP-C-6000SP |
| KRP-C-900SP | KRP-C-1600SP | KRP-C-3000SP | |

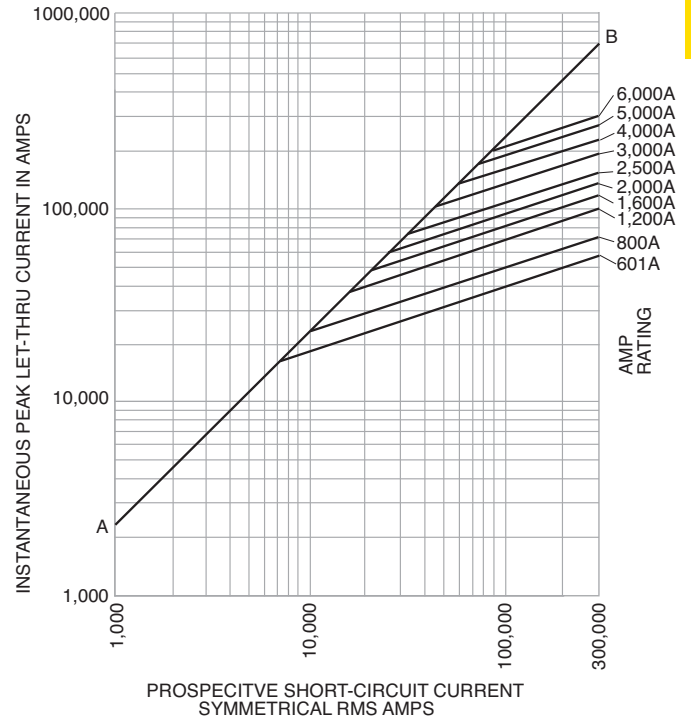
Recommended Fuse Holders & Blocks For Class L Fuses
 • See page 13

Low-Peak® Time-delay Fuses

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Data Sheets: 1008 and 1009

KRP-CL Current-limiting, time-delay fuses

Specifications

Description: Current-limiting, time-delay fuse.

Dimensions: See page 16 for Class L dimensions.

Ratings:

Volts — 600Vac (or less)

Amps — 150-600A

IR — 200kA RMS Sym.

Features and Benefits

- Time-delay of four seconds at five times rating allows closer sizing inductive loads coupled with an equivalent Class L current limitation.

- Class L case size for amp ratings from 150A to 600A allows downsize fusing of large Class L fused switches for improved circuit protection.

Typical Applications

- Large Distribution Switchboards
- Power Panelboards
- Machinery Disconnects

Catalog Numbers (Amps)

| | | |
|------------|------------|------------|
| KRP-CL-150 | KRP-CL-300 | KRP-CL-500 |
| KRP-CL-200 | KRP-CL-350 | KRP-CL-600 |
| KRP-CL-225 | KRP-CL-400 | |
| KRP-CL-250 | KRP-CL-450 | |

Recommended Fuse Holders & Blocks For Class L Fuses

- See page 13

Data Sheet: 1016

Limitron® Fuses

KTU Class L

Specifications

Description: Fast-acting, bolt-mount fuse.

Dimensions: See page 16 for Class L dimensions.

Ratings:

Volts — 600Vac (or less)

Amps — 601-6000A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-10, Class L, UL Listed, Guide JDDZ, File E4273 CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- 200kA interrupting rating provides high ratings at all circuit locations.
- Economical solutions for high-fault circuits.
- Quality construction using high-grade materials provides lower watts loss and operating temperatures with superior arc quenching during current-limiting action.

Typical Applications

- Large Distribution Switchboards
- Power Panelboards

Catalog Number (Amps)

| | | |
|----------|----------|----------|
| KTU-601 | KTU-1100 | KTU-2400 |
| KTU-650 | KTU-1200 | KTU-2500 |
| KTU-700 | KTU-1350 | KTU-3000 |
| KTU-750 | KTU-1400 | KTU-3001 |
| KTU-800 | KTU-1500 | KTU-4000 |
| KTU-801 | KTU-1600 | KTU-4500 |
| KTU-900 | KTU-1800 | KTU-5000 |
| KTU-1000 | KTU-2000 | KTU-6000 |



KLU Class L

Specifications

Description: Time-delay, bolt-mount fuse - 5 seconds (minimum) at 500% rated amps. See KRP-CL for amp ratings below 601A.

Dimensions: See page 16 for Class L dimensions.

Ratings:

Volts — 600Vac (or less)

Amps — 601-4000A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-10, Class L, UL Listed, Guide JDDZ, File E4273, CSA Certified, CSA Class 1422-02, File 53787.

Features and Benefits

- 200kA interrupting rating provides high ratings at all circuit locations.
- Economical solutions for high fault circuits.

Typical Applications

- Large Distribution Switchboards
- Power Panelboards
- Large Machinery Disconnects

Catalog Numbers (Amps)

| | | |
|----------|----------|----------|
| KLU-601 | KLU-1200 | KLU-2500 |
| KLU-650 | KLU-1500 | KLU-3000 |
| KLU-700 | KLU-1600 | KLU-4000 |
| KLU-800 | KLU-1800 | |
| KLU-1000 | KLU-2000 | |



For superior electrical protection, Cooper Bussmann recommends upgrading KTU fuse applications to Low-Peak KRP-C fuses See page 26.

Recommended Fuse Holders & Blocks For Class L Fuses

- See page 13

For superior electrical protection, Cooper Bussmann recommends upgrading KLU fuse applications to Low-Peak KRP-C fuses See page 26.

Recommended Fuse Holders & Blocks For Class L Fuses

- See page 13

Low-Peak® Dual-element, Time-delay Fuses

Low Voltage Branch Circuit Fuses

LPN-RK_SP (250V) Class RK1
LPS-RK_SP (600V) Class RK1

Available With
Indication



Specifications
Description:
Current-limiting,
dual-element,
time-delay fuse; 10 seconds
(minimum) at 500% rated
amps (8 seconds for 0-30A
sizes). Now available with
optional indication on select
ratings (see Catalog Numbers
table).

Dimensions: See page 15 for Class RK1 dimensions.
Ratings:

- Volts LPN-RK:
— 250Vac (or less)
— 125Vdc (0-60A)
— 250Vdc (70-600A)
LPS-RK:
— 600Vac (or less)
— 300Vdc
Amps — 1/10-600A
IR — 300kA RMS Sym.
— 100kA DC

Agency Information: CE, UL Listed – Special Purpose*,
Guide JFHR, File E56412, CSA Certified (200k AIR), Class
RK1 per CSA C22.2, No. 248.12, Class 1422-02, File 53787.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for close sizing of high inrush loads linked with RK1 current-limitation and selective coordination ratio of 2:1 (within Low-Peak fuse family) prevents widespread blackouts.
- Inventory consolidation of Class RK1, RK5 and H fuses for reduced SKU investment and minimizing potential for misapplying fuse.
- 300kA RMS symmetrical interrupting rating provides adequate ratings without obsolescence for all electrical systems, big or small.
- Insulated end caps reduces exposure to live parts and extends air gap to distance between blades of adjacent mounted fuses or to housing.

- Typical Applications
- Large Distribution Switchboards
 - Power Panelboards
 - Motor Control Centers
 - Machinery Disconnect Switches

LPN Catalog Numbers (Amps)

| | | |
|-----------------|-----------------|----------------|
| LPN-RK-1/10SP | LPN-RK-3-1/2SP | LPN-RK-60SP** |
| LPN-RK-1/20SP | LPN-RK-4SP | LPN-RK-70SP** |
| LPN-RK-1/30SP | LPN-RK-4-1/2SP | LPN-RK-80SP** |
| LPN-RK-1/40SP | LPN-RK-5SP | LPN-RK-90SP** |
| LPN-RK-1/50SP | LPN-RK-5-1/2SP | LPN-RK-100SP** |
| LPN-RK-1/60SP | LPN-RK-6SP | LPN-RK-110SP** |
| LPN-RK-1/70SP | LPN-RK-6-1/2SP | LPN-RK-125SP** |
| LPN-RK-1/80SP | LPN-RK-8SP | LPN-RK-150SP** |
| LPN-RK-1SP | LPN-RK-9SP | LPN-RK-175SP** |
| LPN-RK-1-1/2SP | LPN-RK-10SP | LPN-RK-200SP** |
| LPN-RK-1-1/4SP | LPN-RK-12SP | LPN-RK-225SP** |
| LPN-RK-1-1/30SP | LPN-RK-15SP | LPN-RK-250SP** |
| LPN-RK-1-1/40SP | LPN-RK-17-1/2SP | LPN-RK-300SP** |
| LPN-RK-1-1/50SP | LPN-RK-20SP | LPN-RK-350SP** |
| LPN-RK-2SP | LPN-RK-25SP | LPN-RK-400SP** |
| LPN-RK-2-1/2SP | LPN-RK-30SP | LPN-RK-450SP** |
| LPN-RK-2-1/4SP | LPN-RK-35SP** | LPN-RK-500SP** |
| LPN-RK-2-1/30SP | LPN-RK-40SP** | LPN-RK-600SP** |
| LPN-RK-3SP | LPN-RK-45SP** | |
| LPN-RK-3-1/2SP | LPN-RK-50SP** | |

*Meets all performance requirements of UL Standard 248-12 for Class RK1 fuses.
**Available with optional indication. To order, place "I" at end of Catalog Number. Example:
LPN-RK-35SP-I.
0-60A fuses available with Nickel plate option. (Ex: LPS-RK30SPNP) 70-600A fuses available
with Tin plate option. Example: LPS-RK-100SP-TP.

LPS Catalog Numbers - (Amps)

| | | | |
|-----------------|-------------------|-------------------|----------------|
| LPS-RK-1/10SP | LPS-RK-2-1/2SP | LPS-RK-12SP** | LPS-RK-110SP** |
| LPS-RK-1/20SP | LPS-RK-2-1/40SP | LPS-RK-15SP** | LPS-RK-125SP** |
| LPS-RK-1/30SP | LPS-RK-3SP | LPS-RK-17-1/2SP** | LPS-RK-150SP** |
| LPS-RK-1/40SP | LPS-RK-3-1/20SP | LPS-RK-20SP** | LPS-RK-175SP** |
| LPS-RK-1/50SP | LPS-RK-3-1/2SP | LPS-RK-25SP** | LPS-RK-200SP** |
| LPS-RK-1/60SP | LPS-RK-4SP | LPS-RK-30SP** | LPS-RK-225SP** |
| LPS-RK-1/70SP | LPS-RK-4-1/2SP | LPS-RK-35SP** | LPS-RK-250SP** |
| LPS-RK-1SP | LPS-RK-5SP | LPS-RK-40SP** | LPS-RK-300SP** |
| LPS-RK-1-1/2SP | LPS-RK-5-1/20SP | LPS-RK-45SP** | LPS-RK-350SP** |
| LPS-RK-1-1/40SP | LPS-RK-6SP** | LPS-RK-50SP** | LPS-RK-400SP** |
| LPS-RK-1-1/50SP | LPS-RK-6-1/20SP** | LPS-RK-60SP** | LPS-RK-450SP** |
| LPS-RK-1-1/60SP | LPS-RK-7SP** | LPS-RK-70SP** | LPS-RK-500SP** |
| LPS-RK-1-1/70SP | LPS-RK-8SP** | LPS-RK-80SP** | LPS-RK-600SP** |
| LPS-RK-1-1/80SP | LPS-RK-9SP** | LPS-RK-90SP** | |
| LPS-RK-2-1/2SP | LPS-RK-10SP** | LPS-RK-100SP** | |

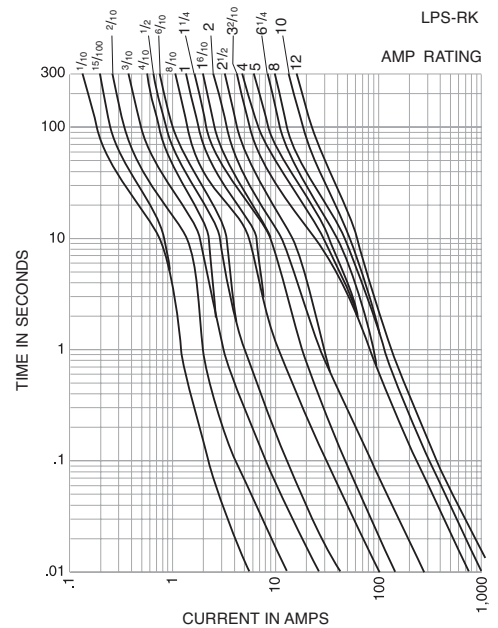
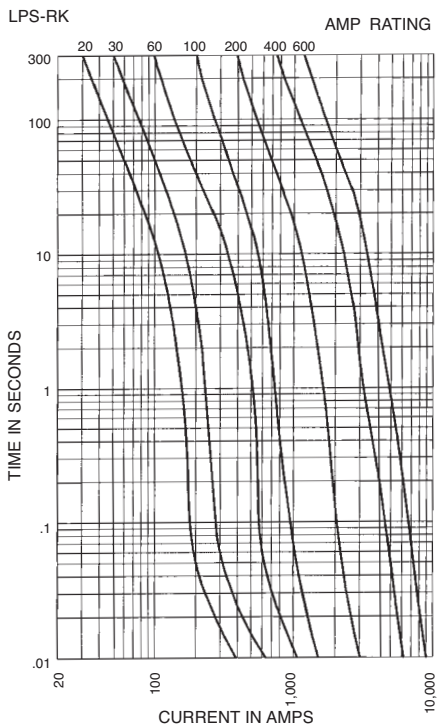
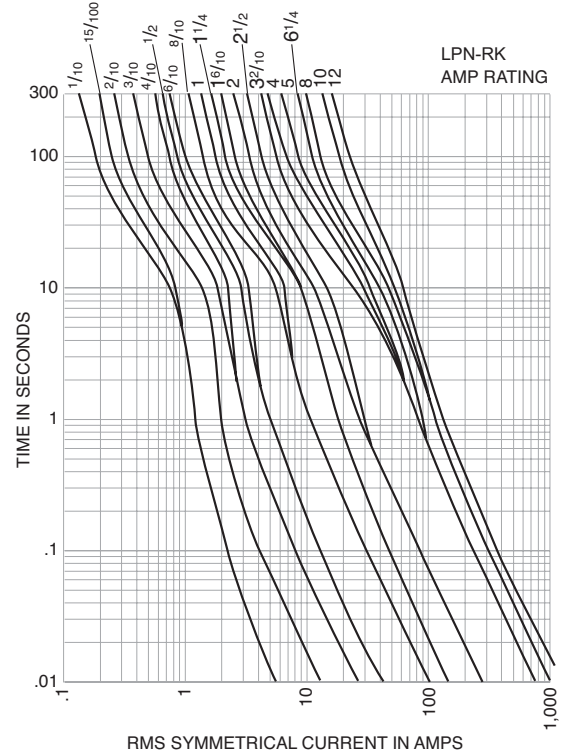
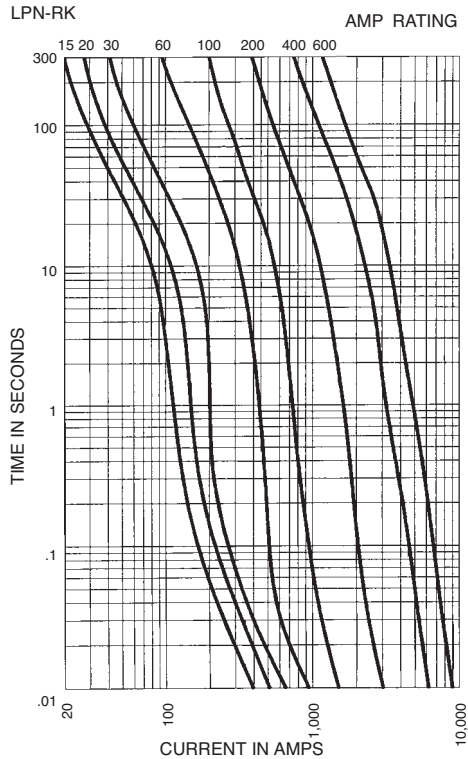
*Meets all performance requirements of UL Standard 248-12 for Class RK1 fuses.
**Available with optional replace fuse indication. To order, place "I" at end of Catalog
Number. Example: LPS-RK-15SP-I.

Data Sheets: LPN-RK — 1003 (0-60) and 1004 (70-600)
LPN-RK with indication — 1066 (70-600)
LPS-RK — 1001 (0-60) and 1002 (70-600)
LPS-RK with indication — 1061 (0-60) and
1064 (70-600)

Recommended Fuse Holders & Blocks For Class RK1 Fuses
• See page 13

Low-Peak® Dual-element, Time-delay Fuses

Time-Current Characteristic Curves—Average Melt



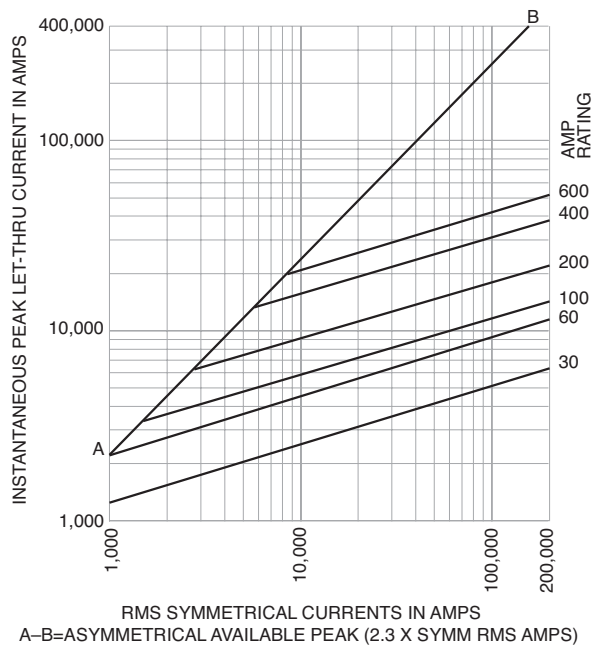
Recommended Fuse Holders & Blocks For Class RK1 Fuses
 • See page 13

Data Sheets: LPN-RK — 1003 (0-60) and 1004 (70-600)
 Data Sheets: LPS-RK — 1001 (0-60) and 1002 (70-600)

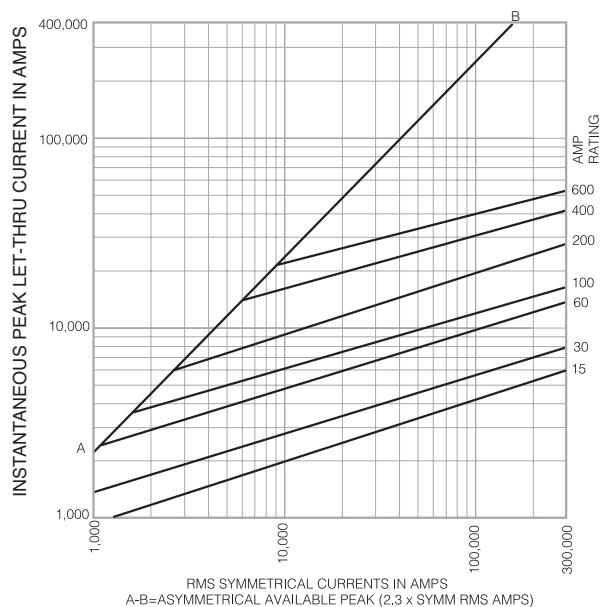
Low-Peak® Dual-element, Time-delay Fuses

Low Voltage
Branch
Circuit
Fuses

Current Limitation Curves—LPN-RK



Current Limitation Curves—LPS-RK



Data Sheets: LPN-RK — 1003 (0-60) and 1004 (70-600)
Data Sheets: LPS-RK — 1001 (0-60) and 1002 (70-600)

Recommended Fuse Holders & Blocks For Class RK1 Fuses
• See page 13

Limitron® Fast-acting Fuses

KTN-R (250V) Class RK1

Specifications

Description: Fast-acting, current-limiting fuse.

Dimensions: See page 15 for Class RK1 dimensions.

Ratings:

Volts — 250Vac (or less)

Amps — 1-600A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-12, Class RK1, UL Listed, Guide JDDZ, File E54273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- Current limitation for non-inductive circuits provides Class RK1 current-limiting response to maximum ground fault and short-circuit conditions.
- 200kA interrupting rating provides high ratings at all circuit locations.
- Economical solutions for high-fault circuits.

Typical Applications

- Panelboards

Catalog Numbers (Amps)

| | | |
|----------|-----------|-----------|
| KTN-R-1 | KTN-R-30 | KTN-R-125 |
| KTN-R-2 | KTN-R-35 | KTN-R-150 |
| KTN-R-3 | KTN-R-40 | KTN-R-175 |
| KTN-R-4 | KTN-R-45 | KTN-R-200 |
| KTN-R-5 | KTN-R-50 | KTN-R-225 |
| KTN-R-6 | KTN-R-60 | KTN-R-250 |
| KTN-R-8 | KTN-R-70 | KTN-R-300 |
| KTN-R-10 | KTN-R-75 | KTN-R-350 |
| KTN-R-12 | KTN-R-80 | KTN-R-400 |
| KTN-R-15 | KTN-R-90 | KTN-R-450 |
| KTN-R-20 | KTN-R-100 | KTN-R-500 |
| KTN-R-25 | KTN-R-110 | KTN-R-600 |

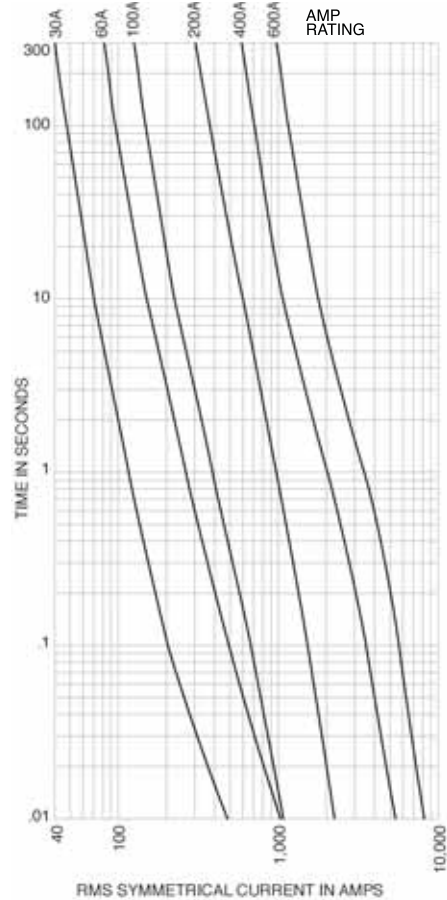
For superior electrical protection, Cooper Bussmann recommends upgrading KTN-R fuse applications to Low-Peak LPN-RK fuses See page 29.

Recommended Fuse Holders & Blocks For Class RK1 Fuses

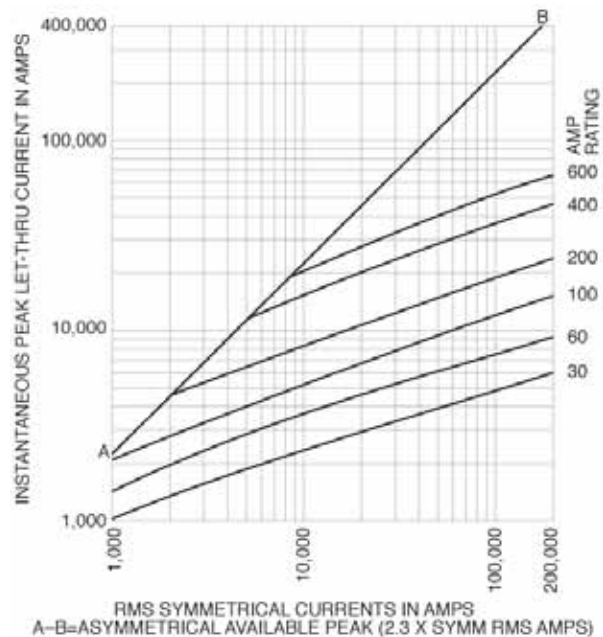
- See page 13



Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Limitron® Fast-acting Fuses

KWS-R (600Vac/dc) Class RK1

Specifications

Description: Fast-acting, current-limiting fuse.

Dimensions: See page 15 for Class RK1 dimensions.

Ratings:

Volts — 600Vac (or less); 600Vdc (20-600A)

Amps — 1-600A

IR — 200kA RMS Sym. AC

IR — 100kA DC

Agency Information: CE, Std. 248-12, Class RK1, UL Listed, Guide JDDZ, File E54273.



Features and Benefits

- Current limitation for non-inductive circuits provides Class RK1 current-limiting response to maximum ground fault an short-circuit conditions.
- 200kA interrupting rating provides high ratings at all circuit locations.
- Economical solutions for applications with high available short-circuit current.

Typical Applications

- Photovoltaic systems
- Inverters
- Panelboards

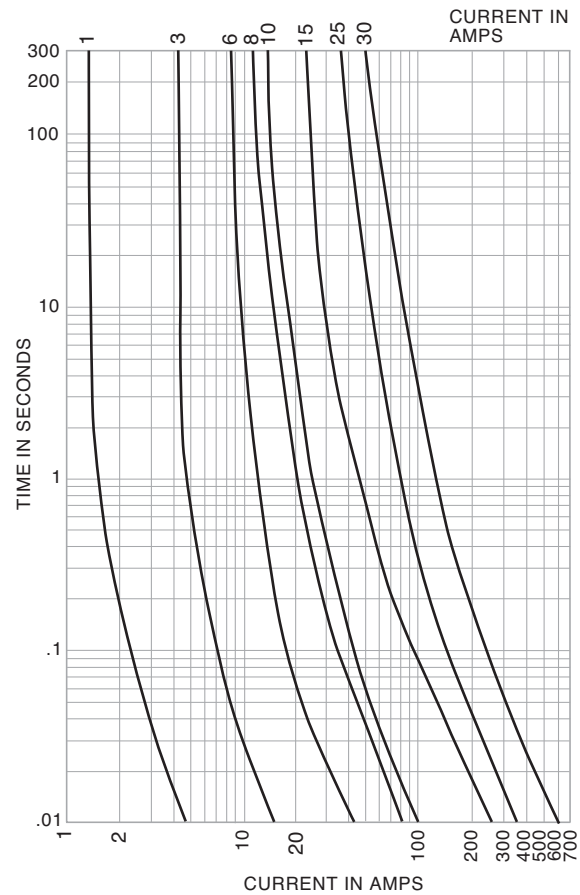
Catalog Numbers (Amps)

| | | |
|----------|-----------|-----------|
| KWS-R-1 | KWS-R-25 | KWS-R-125 |
| KWS-R-2 | KWS-R-30 | KWS-R-150 |
| KWS-R-3 | KWS-R-35 | KWS-R-175 |
| KWS-R-4 | KWS-R-40 | KWS-R-200 |
| KWS-R-5 | KWS-R-45 | KWS-R-225 |
| KWS-R-6 | KWS-R-50 | KWS-R-250 |
| KWS-R-8 | KWS-R-60 | KWS-R-300 |
| KWS-R-10 | KWS-R-70 | KWS-R-350 |
| KWS-R-12 | KWS-R-80 | KWS-R-400 |
| KWS-R-15 | KWS-R-90 | KWS-R-500 |
| KWS-R-20 | KWS-R-100 | KWS-R-600 |

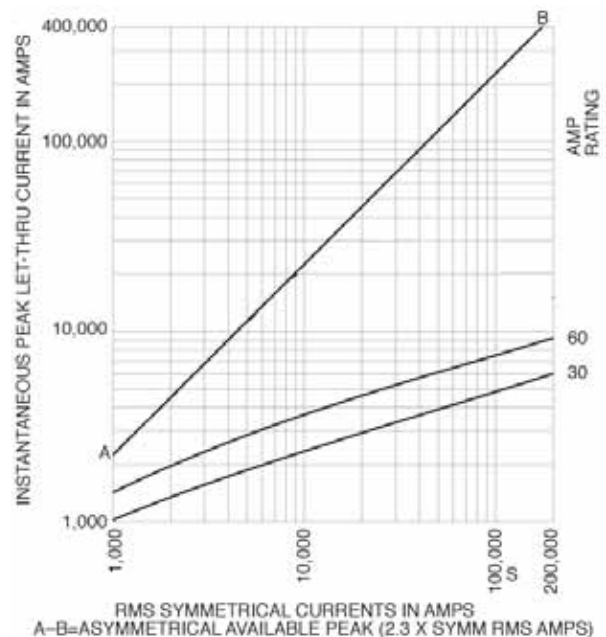
Recommended Fuse Holders & Blocks For Class RK1 Fuses

- See page 13

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Dura-Lag™ Dual-element, Time-delay Fuses

DLN-R (250V) Class RK5

Specifications

Description: Dual-element, time-delay fuse – 10 seconds (minimum) at 500% rated amps (8 seconds for 0-30A sizes).

Dimensions: See page 15 for Class RK5 dimensions.

Ratings:

- Volts — 250Vac (or less)
- Amps — 1-600A
- IR — 200kA RMS Sym.
- 20kA DC

Agency Information: CE, Std. 248-12, Class RK5, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02 File 53787.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for close inductive load sizing, linked with RK5 current limitation.
- 200kA interrupting rating provides high ratings at all circuit locations.

Typical Applications

- Power Panelboards
- Machinery Disconnects

Catalog Numbers (Amps)

| | | |
|-----------|----------|-----------|
| DLN-R-1 | DLN-R-15 | DLN-R-100 |
| DLN-R-2 | DLN-R-20 | DLN-R-125 |
| DLN-R-2-½ | DLN-R-25 | DLN-R-150 |
| DLN-R-3 | DLN-R-30 | DLN-R-175 |
| DLN-R-3-¾ | DLN-R-35 | DLN-R-200 |
| DLN-R-4 | DLN-R-40 | DLN-R-225 |
| DLN-R-5 | DLN-R-45 | DLN-R-250 |
| DLN-R-6 | DLN-R-50 | DLN-R-300 |
| DLN-R-6-¾ | DLN-R-60 | DLN-R-400 |
| DLN-R-8 | DLN-R-70 | DLN-R-600 |
| DLN-R-10 | DLN-R-80 | |
| DLN-R-12 | DLN-R-90 | |

For superior electrical protection, Cooper Bussmann recommends upgrading DLN-R fuse applications to Low-Peak LPN-RK fuses See page 29.

Recommended Fuse Holders & Blocks For Class RK5 Fuses

- See page 13

Data Sheet: 1021

DLS-R (600V) Class RK5

Specifications

Description: Dual-element, time-delay fuse – 10 seconds (minimum) at 500% rated amps.

Dimensions: See page 15 for Class RK5 dimensions.

Ratings:

- Volts — 600Vac (or less)
- Amps — 1-600A
- IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-12, Class RK5, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02 File 53787.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for close inductive load sizing, linked with RK5 current limitation.
- 200kA interrupting rating provides high ratings at all circuit locations.

Typical Applications

- Power Panelboards
- Machinery Disconnects

Catalog Numbers (Amps)

| | | |
|-----------|------------|-----------|
| DLS-R-1 | DLS-R-12 | DLS-R-100 |
| DLS-R-1-½ | DLS-R-15 | DLS-R-110 |
| DLS-R-2 | DLS-R-17-½ | DLS-R-125 |
| DLS-R-2-½ | DLS-R-20 | DLS-R-150 |
| DLS-R-3 | DLS-R-25 | DLS-R-175 |
| DLS-R-3-¾ | DLS-R-30 | DLS-R-200 |
| DLS-R-4 | DLS-R-35 | DLS-R-225 |
| DLS-R-5 | DLS-R-40 | DLS-R-250 |
| DLS-R-6 | DLS-R-45 | DLS-R-300 |
| DLS-R-6-¾ | DLS-R-50 | DLS-R-350 |
| DLS-R-7 | DLS-R-60 | DLS-R-400 |
| DLS-R-8 | DLS-R-70 | DLS-R-500 |
| DLS-R-9 | DLS-R-80 | DLS-R-600 |
| DLS-R-10 | DLS-R-90 | |

For superior electrical protection, Cooper Bussmann recommends upgrading DLS-R fuse applications to Low-Peak LPS-RK fuses See page 29.

Recommended Fuse Holders & Blocks For Class RK5 Fuses

- See page 13

Data Sheet: 1022

Fusetron® Dual-element, Time-delay Fuses

Branch Circuit Fuses

FRN-R (250V) Class RK5

Specifications

Description: Dual-element, time-delay fuse – 10 seconds (minimum) at 500% rated amps (8 seconds for 0-30A sizes). Available with indication on select ratings (see Catalog Numbers table).

Dimensions: See page 15 for Class RK5 dimensions.

Ratings:

- Volts — 250Vac (or less)
- 125Vdc ($\frac{1}{10}$ -60A, 110-200A)
- 250Vdc (225-600A)
- Amps — $\frac{1}{10}$ -600A
- IR — 200kA RMS Sym.
- 20kA DC



Available With Indication

Agency Information: CE, Std. 248-12, Class RK5, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-01, File 53787.

Features and Benefits

- Separate overload and short-circuit elements provide time delay for sizing as close as 125% of motor FLA.
- 2:1 selective coordination amp ratio (within the Cooper Bussmann RK5 fuse family) prevents overcurrent events from opening upstream Fusetron fuses.
- Insulated end caps for 225A-600A fuses reduces exposure to live parts and extends air gap to distance between blades of adjacent mounted fuses or to housing.

Typical Applications

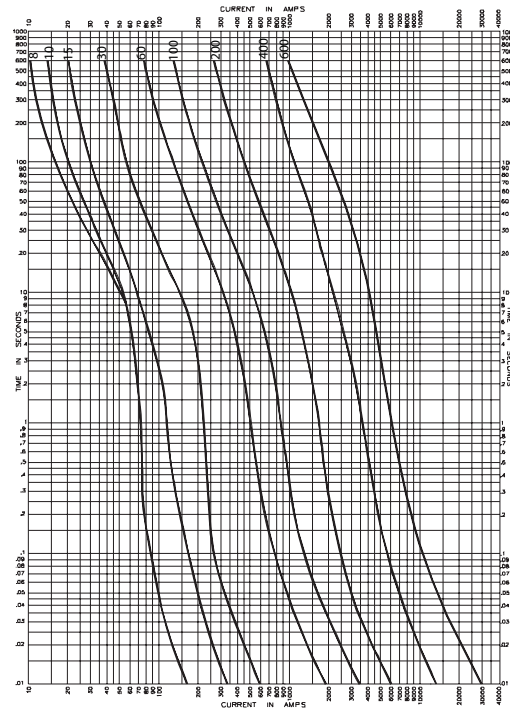
- Power Panelboards
- Motor Control Centers
- Combination Starters
- Machinery Disconnects

Catalog Numbers (Amps)

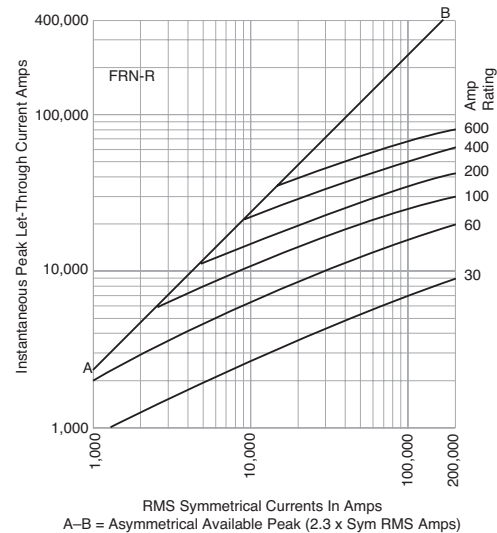
| | | | |
|-------------------------|-------------------------|---------------------------|-----------|
| FRN-R- $\frac{1}{10}$ | FRN-R-2 | FRN-R-10* | FRN-R-100 |
| FRN-R- $\frac{1}{8}$ | FRN-R-2- $\frac{1}{4}$ | FRN-R-12* | FRN-R-110 |
| FRN-R- $\frac{1}{4}$ | FRN-R-2- $\frac{1}{2}$ | FRN-R-15* | FRN-R-125 |
| FRN-R- $\frac{3}{16}$ | FRN-R-2- $\frac{3}{16}$ | FRN-R-17- $\frac{1}{2}$ * | FRN-R-150 |
| FRN-R- $\frac{1}{4}$ | FRN-R-3 | FRN-R-20* | FRN-R-175 |
| FRN-R- $\frac{3}{16}$ | FRN-R-3- $\frac{3}{16}$ | FRN-R-25* | FRN-R-200 |
| FRN-R- $\frac{1}{4}$ | FRN-R-3- $\frac{1}{2}$ | FRN-R-30* | FRN-R-225 |
| FRN-R- $\frac{1}{2}$ | FRN-R-4 | FRN-R-35* | FRN-R-250 |
| FRN-R- $\frac{3}{16}$ | FRN-R-4- $\frac{1}{2}$ | FRN-R-40* | FRN-R-300 |
| FRN-R- $\frac{3}{16}$ | FRN-R-5 | FRN-R-45* | FRN-R-350 |
| FRN-R-1 | FRN-R-5- $\frac{1}{10}$ | FRN-R-50* | FRN-R-400 |
| FRN-R-1- $\frac{1}{8}$ | FRN-R-6 | FRN-R-60* | FRN-R-450 |
| FRN-R-1- $\frac{1}{4}$ | FRN-R-6- $\frac{1}{4}$ | FRN-R-70 | FRN-R-500 |
| FRN-R-1- $\frac{3}{16}$ | FRN-R-7 | FRN-R-75 | FRN-R-600 |
| FRN-R-1- $\frac{1}{2}$ | FRN-R-7- $\frac{1}{2}$ | FRN-R-80 | |
| FRN-R-1- $\frac{3}{16}$ | FRN-R-8* | FRN-R-85 | |
| FRN-R-1- $\frac{3}{16}$ | FRN-R-9* | FRN-R-90 | |

*Available with indication. To order, place "ID" at the end of the catalog number.

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



For superior electrical protection, Cooper Bussmann recommends upgrading FRN-R fuse applications to Low-Peak® LPN-RK fuses. See page 29.

Recommended Fuse Holders & Blocks For Class RK5 Fuses

- See page 13

Recommended Fuse Reducers For Class R Fuses

- See page 14

Data Sheets: 1019 (0-60) and 1020 (70-600)
Data Sheet: 1169 (8-60) FRN-R with indication

Fusetron® Dual-element, Time-delay Fuses

FRS-R (600V) Class RK5

Specifications

Description: Dual-element, time-delay fuse – 10 seconds (minimum) at 500% rated amps. Now available with optional indication on select ratings (see Catalog Numbers table).

Dimensions: See page 15 for Class RK5 dimensions.

Ratings:

- Volts — 600Vac (or less)
- 300Vdc
- Amps — 1/10-600A
- IR — 200kA RMS Sym.
- 20kA @ 300Vdc



Available
With
Indication



Agency Information: CE, Std. 248-12, Class RK5, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- 2:1 selective coordination ratio (within RK5 fuse family) prevents electrical shutdowns from extending beyond the failed circuit.
- Insulated end caps for 70-600A fuses reduces exposure to live parts and extends air gap to distance between blades of adjacent mounted fuses or to housing.

Typical Applications

- Power Panelboards
- Combination Starters
- Motor Control Centers
- Machinery Disconnects

Catalog Numbers (Amps)

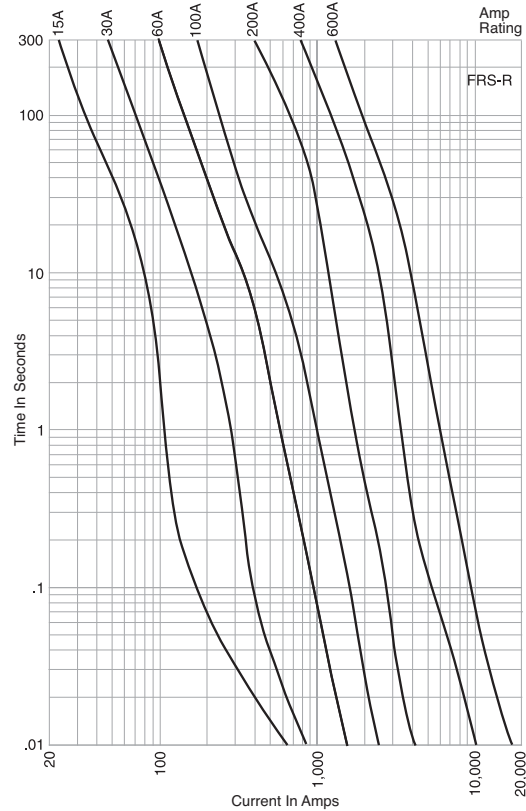
| | | | |
|-------------|--------------|---------------|-----------|
| FRS-R-1/10 | FRS-R-2 | FRS-R-10* | FRS-R-100 |
| FRS-R-1/8 | FRS-R-2-1/4 | FRS-R-12* | FRS-R-110 |
| FRS-R-1/6 | FRS-R-2-1/2 | FRS-R-15* | FRS-R-125 |
| FRS-R-1/4 | FRS-R-2-3/4 | FRS-R-17-1/2* | FRS-R-150 |
| FRS-R-3/8 | FRS-R-3 | FRS-R-20* | FRS-R-175 |
| FRS-R-1/2 | FRS-R-3-1/4 | FRS-R-25* | FRS-R-200 |
| FRS-R-3/4 | FRS-R-3-1/2 | FRS-R-30* | FRS-R-225 |
| FRS-R-5/8 | FRS-R-4 | FRS-R-35* | FRS-R-250 |
| FRS-R-7/8 | FRS-R-4-1/2 | FRS-R-40* | FRS-R-300 |
| FRS-R-1 | FRS-R-5 | FRS-R-45* | FRS-R-350 |
| FRS-R-1-1/8 | FRS-R-5-1/4 | FRS-R-50* | FRS-R-400 |
| FRS-R-1-1/4 | FRS-R-6* | FRS-R-60* | FRS-R-450 |
| FRS-R-1-1/2 | FRS-R-6-1/4* | FRS-R-65 | FRS-R-500 |
| FRS-R-1-3/4 | FRS-R-7* | FRS-R-70 | FRS-R-600 |
| FRS-R-2 | FRS-R-7-1/2* | FRS-R-75 | |
| FRS-R-2-1/4 | FRS-R-8* | FRS-R-80 | |
| FRS-R-2-1/2 | FRS-R-9* | FRS-R-90 | |

*Available with indication. To order, place "ID" at the end of the catalog number. Example: FRS-R-7ID.

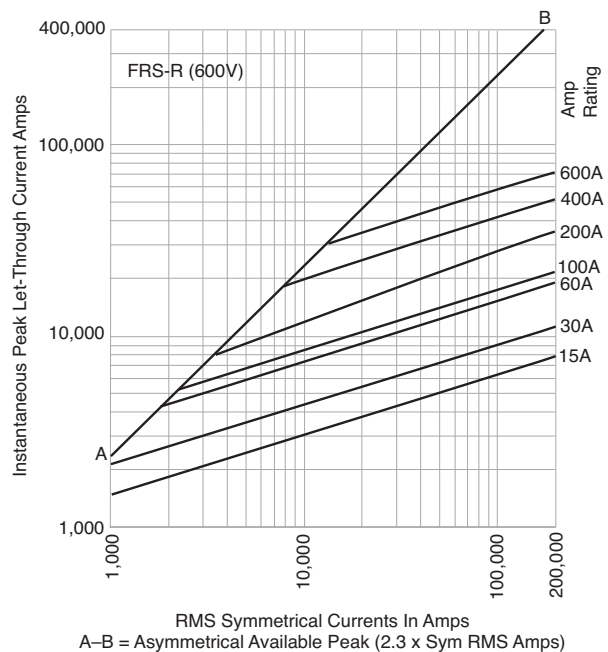
For superior electrical protection, Cooper Bussmann recommends upgrading FRS-R fuse applications to Low-Peak LPS-RK fuses. See page 29.

Data Sheet: 1017 (0-60), 1018 (70-600)
Data Sheet: 1070 (6-60) FRS-R with Indication

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Recommended Fuse Holders & Blocks For Class RK5 Fuses

- See page 13

Recommended Fuse Reducers For Class R Fuses

- See page 14

Limitron® Fast-acting Fuses

PVS-R (600Vac/dc) Class RK5

Specifications

Description: A range of UL 2579 fast-acting 600Vdc Class RK5 fuses specifically designed to protect solar power systems in extreme ambient temperature, high cycling and low level fault current conditions (reverse current, multi-array fault).

Dimensions: See page 15 for Class RK5 dimensions.

Ratings:

- Volts — 600Vac to UL 248-12
600Vdc to UL 2579
- Amps — 20-350A
- IR — 200kA RMS Sym. AC
20kA DC (20-60A)
10kA DC (70-350A)

Agency Information: UL Std. 248-12, Class RK5, UL Listed, Guide JFGA, File E335324. Photovoltaic to UL 2579, CSA Component Certified C22.2.

Features and Benefits

- Current limitation for non-inductive circuits provides Class RK5 current-limiting response to ground fault and short-circuit conditions.
- Designed for the protection and isolation of photovoltaic systems.

Typical Applications

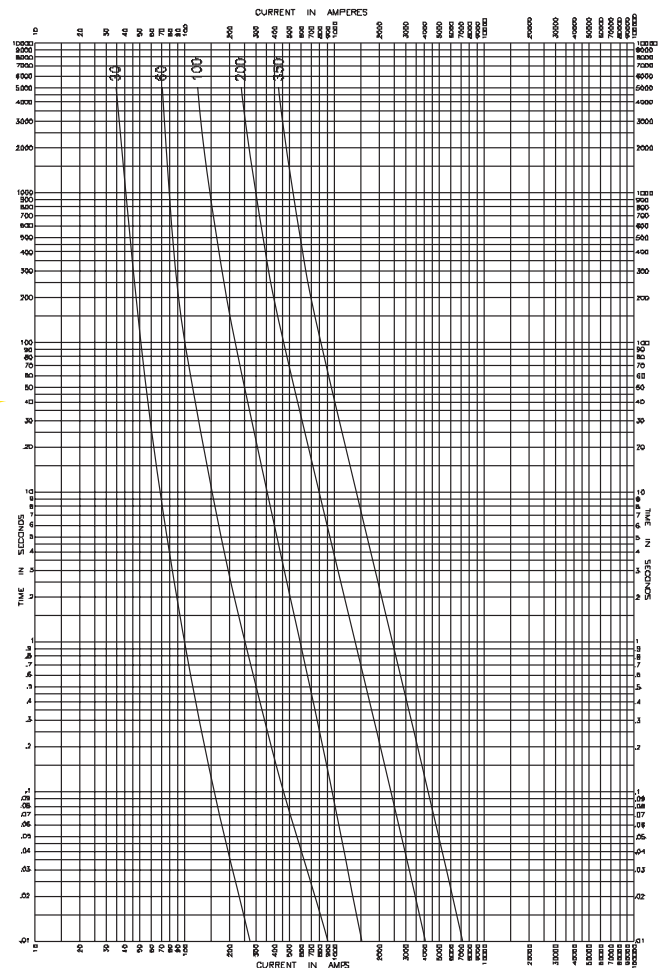
- Photovoltaic systems
- Inverters

Catalog Numbers (Amps)

| | | |
|----------|-----------|-----------|
| PVS-R-20 | PVS-R-70 | PVS-R-200 |
| PVS-R-25 | PVS-R-80 | PVS-R-225 |
| PVS-R-30 | PVS-R-90 | PVS-R-250 |
| PVS-R-35 | PVS-R-100 | PVS-R-300 |
| PVS-R-40 | PVS-R-125 | PVS-R-350 |
| PVS-R-50 | PVS-R-150 | |
| PVS-R-60 | PVS-R-175 | |



Time-Current Characteristic Curves—Average Melt



Low Voltage Branch Circuit Fuses

Recommended Fuse Holders & Blocks For Class RK5 Fuses

- See page 13

T-Tron® Fast-acting Fuses

JJN Class T

Specifications

Description: Fast-acting, current-limiting fuse.

Dimensions: See page 16 for Class T dimensions.

Ratings:

- Volts — 300Vac (or less)
- 160Vdc (15-600A)
- 170Vdc (601-1200A)
- Amps — 1-1200A
- IR — 200kA RMS Sym.
- 20kA DC @ 160Vdc
- 100kA DC @ 170Vdc

Agency Information: CE, Std. 248-15, Class T, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- Series combination ratings with branch circuit breakers allows broad range of coverage, independent of breaker manufacturer.
- Current limitation for non-inductive circuits provides Class T current-limiting response to maximum ground fault and short-circuit conditions.
- 200kA interrupting rating provides high ratings at all circuit locations.
- Small footprint allows more efficient use of available space.

Typical Applications

- Large Apartment Complexes
- Multi-Family Meter Stacks
- VFD Line Protection

Catalog Numbers (Amps)

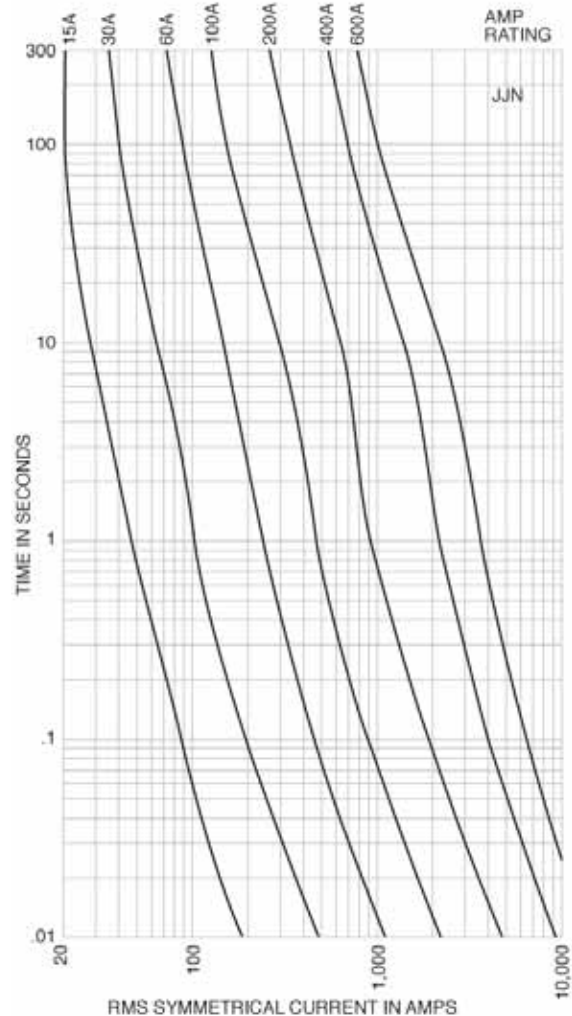
| | | | | | | |
|--------|--------|--------|---------|---------|---------|----------|
| JJN-1 | JJN-15 | JJN-40 | JJN-80 | JJN-150 | JJN-300 | JJN-600 |
| JJN-2 | JJN-20 | JJN-45 | JJN-90 | JJN-175 | JJN-350 | JJN-700 |
| JJN-3 | JJN-25 | JJN-50 | JJN-100 | JJN-200 | JJN-400 | JJN-800 |
| JJN-6 | JJN-30 | JJN-60 | JJN-110 | JJN-225 | JJN-450 | JJN-1000 |
| JJN-10 | JJN-35 | JJN-70 | JJN-125 | JJN-250 | JJN-500 | JJN-1200 |

Recommended Fuse Holders & Blocks For Class T Fuses

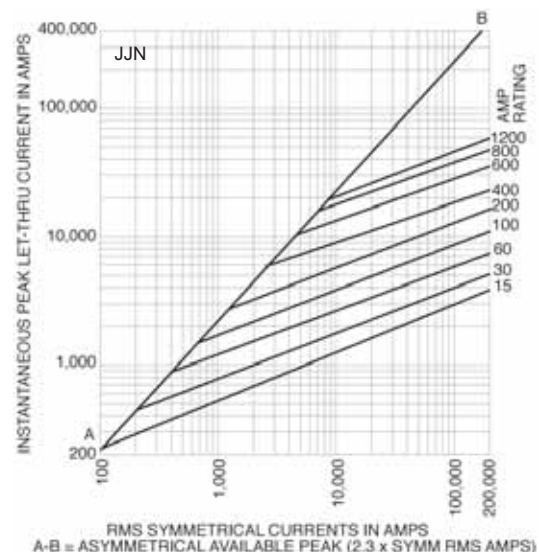
- See page 13



Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



T-Tron® Fast-acting Fuses

JJS Class T

Specifications

Description: Very fast-acting, current-limiting fuse.

Dimensions: See page 16 for Class T dimensions.

Ratings:

Volts — 600Vac (or less)

Amps — 1-800A

IR — 200kA RMS Sym.

Agency Information: CE, Std. 248-15, Class T, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- Series combination ratings with branch circuit breakers allows broad range of coverage, independent of breaker manufacturer.
- Current limitation for non-inductive circuits provides Class T current-limiting response to maximum ground fault and short-circuit conditions.
- 200kA interrupting rating provides high ratings at all circuit locations.
- Small footprint allows more efficient use of available space.

Typical Applications

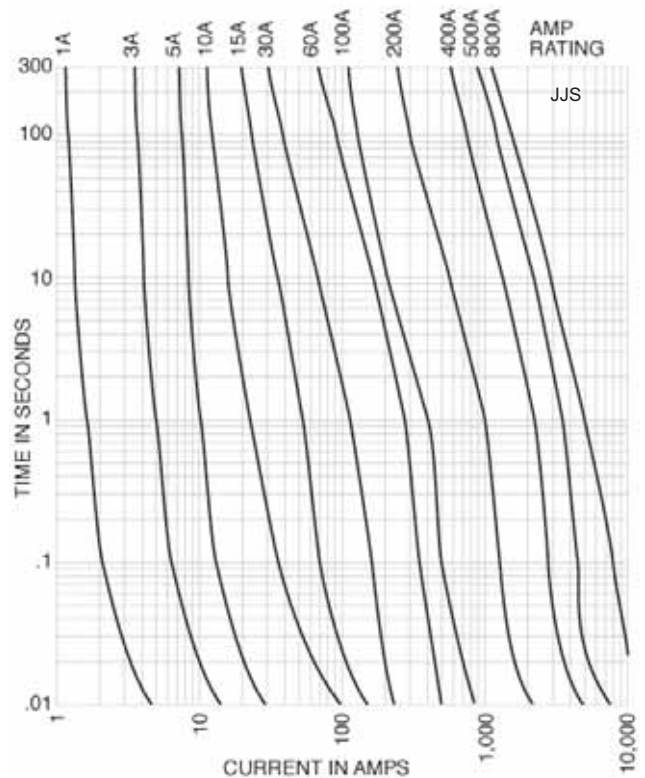
- Large Apartment Complexes
- Multi-Family Meter Stacks
- VFD Line Protection

Catalog Numbers (Amps)

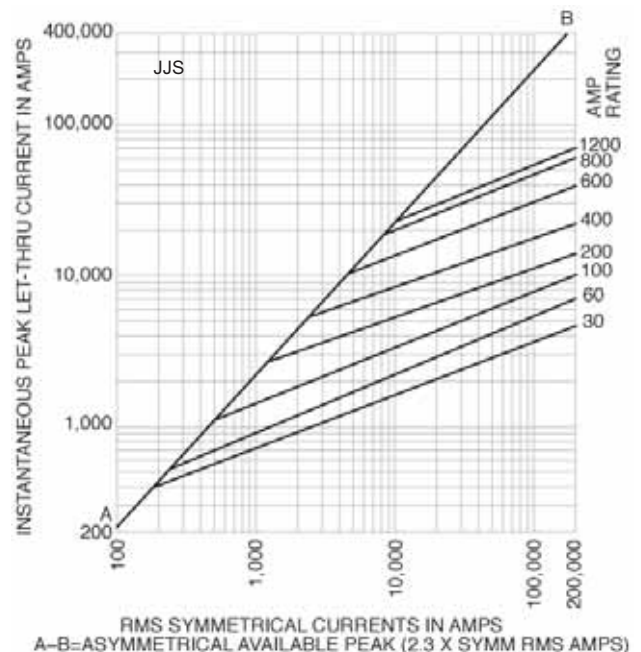
| | | | | | | |
|--------|--------|--------|---------|---------|---------|---------|
| JJS-1 | JJS-15 | JJS-40 | JJS-80 | JJS-150 | JJS-300 | JJS-600 |
| JJS-2 | JJS-20 | JJS-45 | JJS-90 | JJS-175 | JJS-350 | JJS-800 |
| JJS-3 | JJS-25 | JJS-50 | JJS-100 | JJS-200 | JJS-400 | |
| JJS-6 | JJS-30 | JJS-60 | JJS-110 | JJS-225 | JJS-450 | |
| JJS-10 | JJS-35 | JJS-70 | JJS-125 | JJS-250 | JJS-500 | |



Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



Recommended Fuse Holders & Blocks For Class T Fuses

- See page 13

Plug Fuses

W Series

Specifications

Description: Fast-acting plug fuse.

Dimensions: Edison base plug.

Construction: Brass threads with plastic body.

Ratings:

Volts — 125Vac

Amps — ½-12A

IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-11, UL Listed, Guide JEFV, File E12112.

Features and Benefits

- Dependable, fast-acting circuit protection with 10kA interrupting rating for added safety when applied to existing plug fuse systems and 125-volt single-phase control circuits.

Typical Applications

- Replacement only in existing systems.
- For general purpose circuit protection.
- Use for lighting and other non-motor circuits.

Catalog Numbers* (Amps)

| | | | |
|-------|-------|-------|-----------|
| W-½ | W-2 ½ | W-6 | W-10 |
| W-1 | W-3 | W-6 ½ | W-12 |
| W-1 ⅙ | W-4 | W-7 | W-DUMMY** |
| W-2 | W-5 | W-8 | |

*W-15, W-20, W-25, and W-30 plug fuses obsoleted. Suggest replacing with either T-(Amp) or TL-(Amp) plug fuses.

** Non-conductive dummy base. Not a fuse.



SL and TL Series

Specifications

Description: Time-delay, loaded link plug fuse.

Dimensions:

SL — Rejection base

TL — Edison base

Construction:

SL — Plastic base with rejection threads

TL — Brass threads with plastic body

Ratings:

Volts — 125Vac

Amps — 15-30A

IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-11, UL Listed, Guide JEFV, File E12112.

Features and Benefits

- Time-delay loaded link TL Series Edison base plug fuses pass motor overload starting currents without opening and allow closer sizing to motor load for added protection.
- Time-delay loaded link SL Series fuses provide a rejection feature (when used alone or with Fustat adapters to retrofit Edison base holders) to help prevent overfusing.

Typical Applications

- Small motor and inductive load circuits with high in-rush current levels.
- Used with box cover units to provide equipment protection.
- Applications benefiting from fuse rejection (SL Series only).

SL Catalog Numbers (Amps)

| | | | |
|-------|-------|-------|-------|
| SL-15 | SL-20 | SL-25 | SL-30 |
|-------|-------|-------|-------|

TL Catalog Numbers (Amps)

| | | | |
|-------|-------|-------|-------|
| TL-15 | TL-20 | TL-25 | TL-30 |
|-------|-------|-------|-------|

EDA*** EDN****

*** Non-conductive Edison base dummy. Not a fuse.

**** Conductive Edison base dummy. Not a fuse.



Data Sheet: 1036

Recommended Fuse Holders For W Series Plug Fuses

- See page 14

Data Sheets: 1033 (SL) & 1035 (TL)

Recommended Fuse Holders For SL & TL Series Plug Fuses

- See page 14
- See page 42 for Fustat adapters for use with SL Series

Plug Fuses

S and T Series

Specifications

Description: Dual-element, time-delay plug fuse.

Dimensions:

- S — Rejection base
- T — Edison base

Construction:

- S — Plastic base with rejection threads
- T — Brass threads with plastic body

Ratings:

- Volts — 125Vac
- Amps — S Series: ¼-30A
- T Series: ⅓₁₀-30A
- IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-11, Type S and T; UL Listed (0-6¼) Guide JFHR, File E56412 (7-30A) Guide JEFV, File E12112; CSA Certified, Class 1423-01, File 53787.

Features and Benefits

- Time-delay, dual-element T Series Edison base plug fuses provide small motor overload protection when used with box cover units.
- Time-delay, dual-element S Series plug fuses provide a rejection feature (when used alone or with Fustat adapters to retrofit Edison base holders) to prevent overfusing of branch circuits.

Typical Applications

- S Series — Residential Load Centers
- T Series — Box Cover Units for small motor overload protection
- Applications benefiting from fuse rejection (S Series only)

S Series Catalog Numbers (Amps)

| | | | | | | |
|-------------------|---------------------|---------------------|---------------------|-------|------|------|
| S-¼ | S-⅓ ₁₀ | S-1-⅓ ₁₀ | S-2-½ | S-4 | S-7 | S-14 |
| S-⅓ ₁₀ | S-1 | S-1-⅓ ₁₀ | S-2-⅓ ₁₀ | S-4-½ | S-8 | S-15 |
| S-⅓ ₁₀ | S-1-½ | S-2 | S-3 | S-5 | S-9 | S-20 |
| S-½ | S-1-¼ | S-2-¼ | S-3-⅓ ₁₀ | S-6 | S-10 | S-25 |
| S-⅓ ₁₀ | S-1-⅓ ₁₀ | S-5-⅓ ₁₀ | S-3-½ | S-6-¼ | S-12 | S-30 |

T Series Catalog Numbers (Amps)

| | | | | | |
|-------------------|---------------------|---------------------|---------------------|------|-------|
| T-⅓ ₁₀ | T-1-½ | T-2-¼ | T-4 | T-7 | T-15 |
| T-⅓ ₁₀ | T-1-¼ | T-2-½ | T-4-½ | T-8 | T-20 |
| T-½ | T-1-⅓ ₁₀ | T-2-⅓ ₁₀ | T-5 | T-9 | T-25 |
| T-⅓ ₁₀ | T-1-⅓ ₁₀ | T-3 | T-5-⅓ ₁₀ | T-10 | T-30 |
| T-⅓ ₁₀ | T-1-⅓ ₁₀ | T-3-⅓ ₁₀ | T-6 | T-12 | EDA* |
| T-1 | T-2 | T-3-½ | T-6-¼ | T-14 | EDN** |

* Non-conductive Edison base dummy. Not a fuse.
 ** Conductive Edison base dummy. Not a fuse.

Data Sheet: 1032 (S) & 1034 (T)
 Recommended Fuse Holders For S & T Series Plug Fuses

- See page 14
- See page 42 for Fustat adapters for use with S Series

P & TC Series

Specifications

Description:

- P Series - Type P Dual-element fuse
- TC Series - Type D Dual-element, Time-delay fuse

Dimensions: Edison base

Construction: Brass threads with plastic body

Ratings:

- Volts — 125Vac or less
- Amps — 15-30A
- IR — 10kA

Agency Information:

- P Series - CSA Certified
- TC Series - CSA Certified (Class 1423-01, File # 53787)

Features and Benefits

P Series

- “P” rating for Canadian applications.
- Non-time delay for non-inductive loads

TC Series

- “D” rating for Canadian applications
- Heavy duty TC fuses are industrial strength products, featuring dual-element construction.
- This spring loaded design provides superior short-circuit and overload protection.
- The TC fuses have more time-delay than the medium duty fuses in order to better protect industrial motors and residential circuits.

Typical Applications

- P Series — Non-inductive loads, residential load centers
- TC Series — Box Cover Units for small motor overload protection

P Series Catalog Numbers (Amps)

| | | | |
|------|------|------|------|
| P-15 | P-20 | P-25 | P-30 |
|------|------|------|------|

TC Series Catalog Numbers (Amps)

| | | | |
|-------|-------|-------|-------|
| TC-15 | TC-20 | TC-25 | TC-30 |
|-------|-------|-------|-------|

Data Sheet: 1039 (TC Series only)

- Recommended Fuse Holders For P & TC Series Plug Fuses
- See page 14
 - See page 42 for Fustat adapters for use with S Series

Low Voltage Branch Circuit Fuses

Plug Fuses

MB Edison Base Circuit Breakers



Specifications

Description: Edison base manual reset circuit breakers.

Dimensions: Edison base

Construction: Brass threads with plastic body

Ratings:

Volts — 125Vac only

Amps — 15-20A

IR — 10kA RMS Sym.

Agency Information: UL Listed, File E14942

Features and Benefits

- Fit standard Edison base fuse receptacles.
- Resettable upon overload event.

Typical Applications*

- Replacing Edison base plug fuses in residential fuse panels.

Catalog Numbers* (Amps)

MB-15

MB-20

* Not for use in box cover units or for inductive loads.

Fustat Fuse Adapters



Specifications

Description: Adapters for using Type S and SL rejection fuses in Edison base fuse sockets.

Features and Benefits

- Fustat adapters screw into the “Edison” thread fuse sockets of standard fuse boxes making it easy to retrofit existing fuse installations
- Available in various amp ratings to cover a wide range of rating requirements

Typical Applications

- Plug fuse installations where it is desirable to restrict fuse amp ratings

Catalog Numbers (Amps)

| | | |
|-------------------------------------|-------------------------------------|---------|
| SA-1* | SA-3- $\frac{3}{10}$ * [*] | SA-10* |
| SA-1- $\frac{1}{4}$ * [*] | SA-4* | SA-15** |
| SA-1- $\frac{5}{10}$ * [*] | SA-5* | SA-20** |
| SA-2* | SA-6- $\frac{1}{4}$ * [*] | SA-30** |
| SA-2- $\frac{1}{2}$ * [*] | SA-8* | |

* Single motor circuits.

** Branch circuits.

Fustat® Adapters for Small Motor Protection*

| Adapter | Accepts Fuses |
|----------------------|--|
| SA-1 | S-1 or smaller |
| SA-1- $\frac{1}{4}$ | S-1- $\frac{1}{4}$ or smaller |
| SA-1- $\frac{5}{10}$ | S-1- $\frac{5}{10}$ or smaller |
| SA-2 | S-2 or S-1- $\frac{5}{10}$ |
| SA-2- $\frac{1}{2}$ | S-2- $\frac{1}{2}$ to S-1- $\frac{5}{10}$ |
| SA-3- $\frac{3}{10}$ | S-3- $\frac{3}{10}$ to S-1- $\frac{5}{10}$ |
| SA-4 | S-4 to S-3- $\frac{1}{2}$ |
| SA-5 | S-5 to S-3- $\frac{1}{2}$ |
| SA-6- $\frac{1}{4}$ | S-6- $\frac{1}{4}$ to S-3- $\frac{1}{2}$ |
| SA-8 | S-8 to S-7 |
| SA-10 | S-10 to S-7 |
| SA-15 | S-15 to S-7 |
| SA-20 | S-20 |
| SA-30 | S-30 to S-20 |

* Both motor running and short-circuit protection.

Fustat® Adapters for Branch Circuit Protection

| Adapter | Accepts Fuses |
|---------|---------------|
| SA-15 | S-15 to S-7 |
| SA-20 | S-20 |
| SA-30 | S-25 |
| SA 30 | S-30 to S-20 |

RED indicates NEW information



Low Voltage Supplementary Fuses

Section Contents

| | Page |
|--|-------|
| Fuse Holder & Block Selection Guide | 44-45 |
| Cable limiters & welder limiters | |
| K Series cable limiters 600V | 46 |
| 64000 & 68000 welder limiters . . . 600V | 46 |
| $1\frac{3}{32}$ " x $1\frac{1}{2}$ " Fast-acting supplementary fuses | |
| BAF 250V | 47 |
| KTK 600V | 47 |
| KLM 500V | 47 |
| DCM 600Vac/dc | 47 |
| Solar PV 250V | 48 |
| $1\frac{3}{32}$ " x $1\frac{1}{2}$ " Time-delay supplementary fuses | |
| FNM 250V | 49 |
| FNQ 500V | 49 |
| $1\frac{3}{32}$ " x $1\frac{3}{8}$ " Fast-acting supplementary fuses | |
| BBS 600V | 50 |
| KTQ 600V | 50 |
| Pin indication fuses and actuator | |
| GBA 125V | 51 |
| GLD 125V | 51 |
| MIC 250V fast-acting | 51 |
| MIN 250V fast-acting | 51 |
| FNA 250V time-delay | 51 |
| MIS 600V | 52 |
| KAZ 600V | 52 |
| Limiters | |
| ANN 125V fast-acting | 52 |
| ANL 80Vdc time-delay | 52 |
| 4164 & 4164-FR fuse blocks | 52 |
| In-line size rejecting fuses and fuse holders | |
| GLQ 300V | 53 |
| GMQ 300V | 53 |
| In-line non-rejecting fuses and fuse holders | |
| GLR 300V | 54 |
| GMF 300V | 54 |
| GRF 300V | 54 |
| Automotive blade-type fuses | |
| ATC 32Vdc | 55 |
| ATC_ID 32Vdc | 55 |
| ATM 32Vdc | 55 |
| ATM_ID 32Vdc | 55 |
| MAX 32Vdc | 55 |
| MAX_ID 32Vdc | 55 |
| Automotive blade-type fuse holders | |
| HHC, HHD, HHF, HHG, ATC-FHID for ATC fuses | 56 |
| HHL, HHM, ATC-FHID for ATM fuses | 56 |
| HHX for MAX fuses | 56 |

Low Voltage Supplementary Fuses

Holders & Blocks for Low Voltage Supplementary Fuses

Limiters

| Catalog Number | Volts | Page |
|-----------------------------------|------------------------|------|
| K Series | 600V | 46 |
| 68000 Series | 600V | 46 |
| 64000 Series | 600V | 46 |
| ANN Fast acting limiter | 125Vac/80Vdc | 52 |
| ANL Time-delay limiter | 80Vdc | 52 |

Holders

- CH Series Class J modular 1 to 3-pole, panel/DIN rail mount . .254
- Safety J™ Series modular holders, panel/DIN rail mount255

Blocks

- Modular Type Fuse Blocks 250/600V, panel mount275
- H250 Series 1- to 3-pole 250V, panel mount260
- H600 Series 1- to 3-pole 600V, panel mount263

Blocks

- Modular Type Fuse Blocks 600V, panel mount 275
- J600 Series, panel mount 266
- JP Series pyramid blocks, panel mount 268
- BH Series modular-style open blocks, panel mount 275

Limiter Blocks - ANN & ANL

- Blocks for 4164 & 4164-FR 52



CH Series



Safety J™ Series



Modular Type



H250 Series



H600 Series



J600 Series



JP Series



BH Series



4164 & 4164-FR

¹³/₃₂" X 1 ¹/₂" Fuses

| Catalog Number | Volts | Page |
|--------------------|---------------------|------|
| BAF | 250V | 47 |
| KTK | 600V | 47 |
| KLM | 600Vac/dc | 47 |
| DCM | 600Vac/dc | 47 |
| Solar PV | 250V | 48 |
| FNM | 250V | 49 |
| FNQ | 500V | 49 |

Holders

- OPM-NG-SC3 3-pole, panel/DIN rail mount252
- OPM-1038R 3-pole, panel/DIN rail mount251
- OPM-1038RSW 3-pole w/ switch, panel/DIN rail mount250
- CH Series Global 1- to 3-pole, DIN rail mount259
- HPG Panel mount fuse holder286
- HPC-D Panel mount fuse holder287
- HPM Panel mount fuse holder287
- HPS Series Panel mount fuse holder286
- HPF Series Panel mount fuse holder286
- HEB Series 1-Pole in-line fuse holder279
- HEX & HEY Series 2-Pole in-line fuse holders279
- NDNF1-WH Fuse holding rail mount terminal block 291

Blocks

- BM Series, panel/DIN rail with adapters 274
- 3723, 3742 and 3743 multi-pole add-on fuse blocks 290



OPM-NG-SC3



OPM-1038R & OPM-1038RSW



CH Series



HPG



HPC-D



HPM



HPS



HPF



HEB Series



HEX & HEY Series



NDNF1-WH



BM Series

Holders & Blocks for Low Voltage Supplementary Fuses

1 3/32" X 1 3/8" Fuses

| Catalog Numbers | Volts | Page |
|---|------------|------|
| BBS | 600V | 50 |
| KTO | 600V | 50 |
| Holder | | |
| • HPS-L Panel mount holder | | 286 |
| Blocks | | |
| • BM Series, panel/DIN rail with adapters | | 274 |
| • 3723, 3742 and 3743 multi-pole add-on fuse blocks | | 290 |



HPS-L



BM Series

Low Voltage Supplementary Fuses

Pin Indicating Fuses

| 1/4" X 1 1/4" Fuse Catalog Numbers | Volts | Page |
|------------------------------------|------------|------|
| GBA 1/4" X 1 1/4" | 125V | 51 |
| GLD 1/4" X 1 1/4" | 125V | 51 |
| MIC 1 3/32" X 1 1/2" | 250V | 51 |
| MIN 1 3/32" X 1 1/2" | 250V | 51 |
| FNA 1 3/32" X 1 1/2" | 250V | 51 |
| MIS 1 3/32" X 2" | 600V | 52 |
| KAZ 1 3/32" X 2" | 600V | 52 |



HLD



HK Series

Holders

- 1/4" X 1 1/4": HLD Panel mount visual indication 285
- 1/4" X 1 1/4": HK Series Panel mount lamp indicating 285

Blocks

- 1/4" X 1 1/4": Series 8000 for visual indication 288
- 1 3/32" X 1 1/2": 1-Pole signal block cat. # 3839 (not shown in catalog)*
- 1 3/32" X 2": 1-Pole signal block cat. # 2778 (not shown in catalog)*
- 1 3/32" X 2": 2-Pole signal block cat. # 2837 (not shown in catalog)*
- 1 3/32" X 2": 3-Pole signal block cat. # 2838 (not shown in catalog)*

*Call our customer satisfaction team at 636-527-3877 for more information.



Series 8000

Automotive Blade-type Fuses

| Catalog Numbers | Volts | Page |
|-----------------|-------------|------|
| ATC | 32Vdc | 55 |
| ATM | 32Vdc | 55 |
| MAX | 32Vdc | 55 |

Holders

- ATC: HHC, HHD, HHF, HHG & ATC-FHID In-line holders 56
- ATM: HHL, HHM & ATC-FHID In-line holders 56
- MAX: HHX In-line holders 56



HHC, HHD, HHF & HHG



HHL & HHM



HHX

In-Line Rejecting and Non-Rejecting Fuses

| Catalog Number | Volts | Page |
|------------------------------|------------|------|
| GLQ rejecting fuse | 300V | 53 |
| GMQ rejecting fuse | 300V | 53 |
| GLR non-rejecting fuse | 300V | 54 |
| GMF non-rejecting fuse | 300V | 54 |
| GRF non-rejecting fuse | 300V | 54 |

Holders

- GLQ & GMQ: HLO Rejection holder 53
- GLR, GMF & GRF: HLR & HLR-2A non-rejection holders 54



HLO³ Fuse Holders



HLR Fuse Holder

Cable Limiters & Welder Limiters

K Series

Specifications

Description: Cable limiters.

Ratings:

- Volts — 600Vac
- IR — 200,000A RMS Sym.
@ 600Vac

Agency Information: UL

Listing: KDM, KDR, KDP and KFM, KCM, KCM-B and KCR.

Features and Benefits

- Sizes and ratings available to meet many applications.

Typical Applications

- Protecting low voltage distribution and service entrance cables against short-circuit currents.

Catalog Numbers

Copper Cable Limiter — 600 Volts

| Catalog Number | Cable Size | Catalog Number | Cable Size |
|----------------|------------|----------------|------------|
|----------------|------------|----------------|------------|

Tubular Terminals

| | | | |
|--------------------|-----|---|----------|
| KCY | #4 | KCF | 4/0 |
| KCZ | #3 | KCH | 250 MCM |
| KCA | #2 | KCJ ^{1,2} | 350 MCM |
| KCB | #1 | KCM ^{1,2,3} , KCM-B ¹ | 500 MCM |
| KCC | 1/0 | KCV | 600 MCM |
| KCD ^{1,2} | 2/0 | KCR ^{1,2} | 750 MCM |
| KCE | 3/0 | KCS | 1000 MCM |

Tubular Terminal and Offset Bolt-Type Terminal

| | | | |
|-----|-----|----------------------|---------|
| KQV | #12 | KDD ¹ | 2/0 |
| KQT | #10 | KDE | 3/0 |
| KFZ | #8 | KDF | 4/0 |
| KIG | #6 | KDH | 250 MCM |
| KDY | #4 | KDJ ^{1,2} | 350 MCM |
| KDA | #2 | KDM ^{1,2,3} | 500 MCM |
| KDB | #1 | KDU | 600 MCM |
| KDC | 1/0 | KDR ^{1,2} | 750 MCM |

Compression Connector Rod and Tubular Terminals

| | | | |
|-------|---------|------------------|---------|
| KEX | 4/0 | KQO | 350 MCM |
| KFH-A | 250 MCM | KDT ¹ | 500 MCM |

*Center Bolt-Type Terminal and Off-Set Bolt-Type Terminal

| | | | |
|------------------|---------|------------------|---------|
| KPF | 4/0 | KDP ¹ | 500 MCM |
| KFT ¹ | 250 MCM | KFM ¹ | 750 MCM |
| KEW ¹ | 350 MCM | | |

¹Copper or aluminum cable; sizes of all other limiters pertain to copper only.

²UL Listed (File E90818).

³Available with shrink tube "V" suffix.

⁴Available with molded rubber boots. Add "-B" to end of part number.

Accessories

Boots can be purchased separately.

For KCM Boot-KCM

For KDM Boot-KDM

Installation tools can be purchased separately from Thomas and Betts

• Crimp Tool: TBM-14M

• Die: 15506 KDM/15515 KDR

64000 & 68000 Series

Specifications

Description: Welder limiters.

Ratings:

- Volts — 600Vac (or less)
- IR — 200,000A RMS Sym.

Features and Benefits

- Current-limiting devices designed specially for use on welder circuits only
- Time-current characteristics are designed to hold on the intermittent overloading encountered in welder operation, while providing short-circuit protection to the circuit and equipment
- Welder limiters have excess current capacity in the operating range as needed for this type of service

Typical Applications

- Welder circuits
- Because welder limiters have special characteristics, they are not intended for application on general-use circuits

Catalog Numbers

| Catalog Numbers | Fuse Holder Type | Nominal Amp Rating |
|-----------------|------------------|--------------------|
| 68150 | Class H | 150 |
| 68200 | Class H | 200 |
| 68300 | Class H | 300 |
| 68400 | Class H | 400 |
| 68600 | Class H | 600 |
| 64200 | Class J | 200 |
| 64300 | Class J | 300 |
| 64400 | Class J | 400 |
| 64600 | Class J | 600 |

Recommended Fuse Blocks For 68000 & 64000 Series limiters

- See page 44

1 3/32" x 1 1/2" Fast-acting Fuses

BAF

Specifications
 Class: Supplemental
 Description: Fast-acting supplementary fuse.
 Dimensions: 1 3/32" x 1 1/2" (10.3 x 38.1mm).

Ratings:
 Volts — 250Vac (or less)
 Amps — 3/10-30A

- IR — 10kA @ 125Vac (3/10-30A)
- 35A (3/10-1A @ 250Vac)
- 100A (1 1/2-3A @ 250Vac)
- 200A (4-10A @ 250Vac)
- 750A (12A- 15A @ 250Vac)
- 200A (20-30A @ 250Vac)

Agency Information: CE, Std. 248-14, UL 0-15/250V, Guide JDYX, File E19180 CSA Certified, 0-15/250V, Class 1422-01, File 53787.

Features and Benefits

- Low cost supplemental protection of 125V and 250V non-inductive circuits.
- Upgrade with LP-CC product to reduce SKU investment and minimize potential arc-flash hazards. (and minimize potential for misapplying fuse.)

Typical Applications

- General Purpose Circuits
- Lighting Circuit Protection
- Meter Circuits

Catalog Numbers (Amps)

| | | |
|------------|-----------|--------|
| BAF-3/10 | BAF-2 | BAF-8 |
| BAF-1/4 | BAF-2-1/2 | BAF-9 |
| BAF-1/2 | BAF-3 | BAF-10 |
| BAF-3/10 | BAF-4 | BAF-12 |
| BAF-3/10 | BAF-5 | BAF-15 |
| BAF-1 | BAF-6 | BAF-20 |
| BAF-1-1/2 | BAF-6-1/4 | BAF-25 |
| BAF-1-3/10 | BAF-7 | BAF-30 |

*All have interrupting rating of 10,000A at 125V.

For superior electrical protection, Cooper Bussmann recommends upgrading BAF and fuse applications to Low-Peak LP-CC fuses See page 17.

Data Sheet: 2011 (0-30)



KTK

Specifications
 Class: Supplemental
 Description: Fast-acting supplementary fuse.

Dimensions: 1 3/32" x 1 1/2" (10.3 x 38.1mm).

Ratings:
 Volts — 600Vac (or less)

Amps — 1/10-30A
 IR — 100kA RMS Sym. (UL)

Agency Information: CE, Std. 248-14, UL Listed, Guide JDYX, File E19180.

Features and Benefits

- Low cost supplemental protection of 600V or less non-inductive circuits.
- Upgrade with LP-CC product to reduce SKU investment and minimize potential arc-flash hazards.

Typical Applications

- Control Circuits
- Lighting Circuit Protection
- Meter Circuits

Catalog Numbers (Amps)

| | | | | |
|----------------------------|-----------|-----------|---------|---------|
| 600Vac - UL Listed and CSA | | | | |
| KTK-3/10 | KTK-1/4 | KTK-4 | KTK-12 | KTK-50* |
| KTK-1/8 | KTK-1 | KTK-5 | KTK-15 | |
| KTK-3/10 | KTK-1-1/4 | KTK-6 | KTK-20 | |
| KTK-1/4 | KTK-1-1/2 | KTK-7 | KTK-25 | |
| KTK-3/10 | KTK-2 | KTK-7-1/2 | KTK-30 | |
| KTK-3/10 | KTK-2-1/2 | KTK-8 | KTK-35* | |
| KTK-1/2 | KTK-3 | KTK-9 | KTK-40* | |
| KTK-3/10 | KTK-3-1/2 | KTK-10 | KTK-45* | |

*Rated for no more than 24A continuous.

For superior electrical protection, Cooper Bussmann recommends upgrading KTK fuse applications to Low-Peak LP-CC fuses See page 17.

Data Sheet: 1011



DCM & KLM

Specifications
 Class: Supplemental
 Description: Full range, fast-acting, DC midget fuse.

Dimensions: 1 3/32" x 1 1/2" (10.3 X 38.1mm).

Ratings:
 Volts — 600Vac/dc
 Amps — 1/10-30A
 IR — 100kA AC
 — 50kA DC

Agency Information: CE, UL Listed: STD. 248-14, (FILE #E19180, GUIDE #JDYX), CSA Certified, C22.2 NO. 248. 14 (CLASS #1422-01, FILE #53787).

Features and Benefits

- Full range, fast-acting, 600Vac/dc midget fuse.
- Minimum interrupting rating or 200% rated current at 600Vdc.

Typical Applications

- DC Control Circuits Requiring Fast-Acting Fuses.
- Solar power energy sources.

Catalog Numbers (Amps) - DCM

| | | | |
|----------|-----------|--------|--------|
| DCM-3/10 | DCM-1 | DCM-5 | DCM-15 |
| DCM-1/8 | DCM-1-1/4 | DCM-6 | DCM-20 |
| DCM-3/10 | DCM-1-1/2 | DCM-7 | DCM-25 |
| DCM-1/4 | DCM-2 | DCM-8 | DCM-30 |
| DCM-3/10 | DCM-2-1/2 | DCM-9 | |
| DCM-1/2 | DCM-3 | DCM-10 | |
| DCM-3/10 | DCM-4 | DCM-12 | |

Catalog Numbers (Amps) - KLM

| | | | |
|----------|-----------|--------|--------|
| KLM-3/10 | KLM-1 | KLM-5 | KLM-20 |
| KLM-1/8 | KLM-1 | KLM-6 | KLM-25 |
| KLM-3/10 | KLM-1-1/2 | KLM-8 | KLM-30 |
| KLM-1/4 | KLM-2 | KLM-10 | |
| KLM-3/10 | KLM-3 | KLM-12 | |
| KLM-1/2 | KLM-4 | KLM-15 | |

Data Sheet: DCM 2038 KLM 2020



Low Voltage Supplementary Fuses

Recommended fuse blocks/fuse holders for 1 3/32" x 1 1/2" fuses

- See page 44

Fuses for Solar Panel Applications

PV

Specifications

Class: gPV

Description: A range of fuses specifically designed for the protection and isolation of photovoltaic strings.

Dimensions: 1 1/2" x 1 1/2"
(10.3 x 38.1mm).

Ratings:

Volts — 1000Vdc

Amps — 1-15A

IR — 33kAdc

IR (Min) — 1.3 x I_n

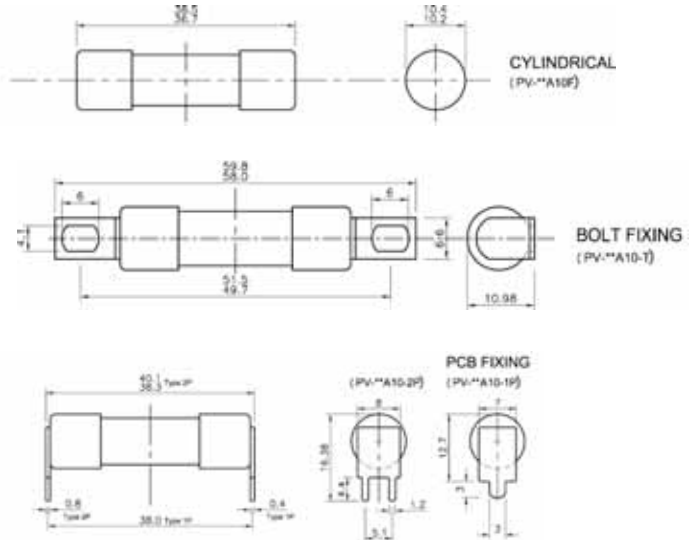
Agency Information: UL Pending, CE, IEC 60269.

Features and Benefits

- Capable of interrupting low over currents associated with faulted PV strings.
- High DC voltage rating.
- Variety of mounting options for flexibility.



Dimensions - (mm)

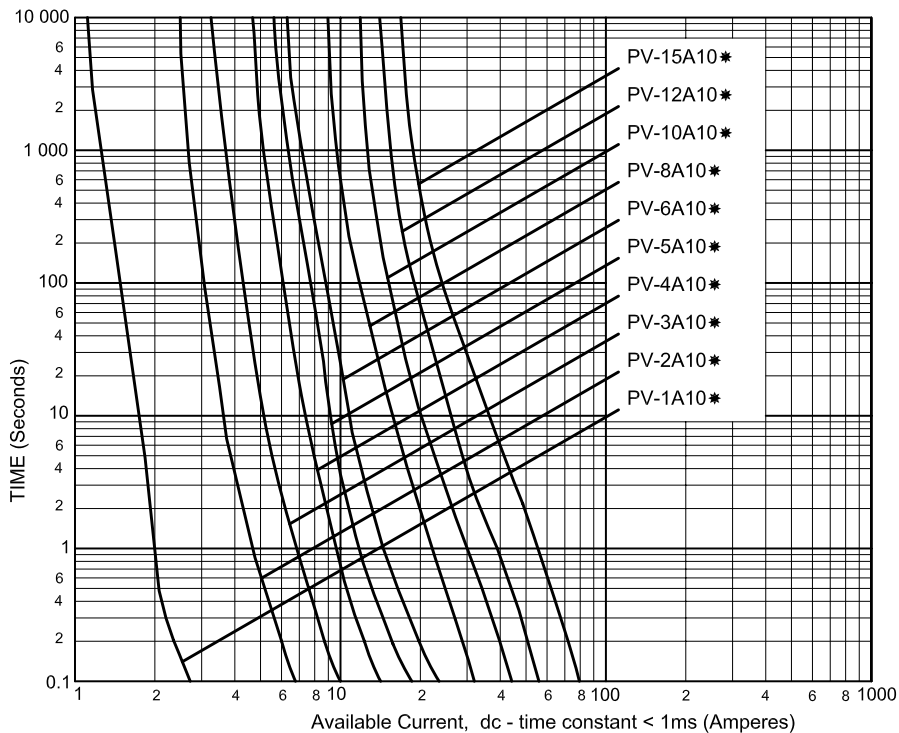


Catalog Numbers (Amps)

| | | | | |
|----------|----------|----------|-----------|-----------|
| PV-1A10F | PV-3A10F | PV-5A10F | PV-8A10F | PV-12A10F |
| PV-2A10F | PV-4A10F | PV-6A10F | PV-10A10F | PV-15A10F |

For bolt-on tabs, replace 'F' with '-T'
For PCB mounting, replace 'F' with '-1P' or '-2P'

Time-Current Characteristic Curves—Average Melt



1³/₃₂" x 1¹/₂" Time-delay Fuses

FNM

Specifications

Class: Supplemental

Description: Time-delay supplementary fuse.

Dimensions: 1³/₃₂" x 1¹/₂" (10.3 x 38.1mm).

Ratings:

Volts — 250Vac (or less)

Amps — 1/10-30A

- IR — 35A (1/10-1A @ 250Vac)
- 100A (1 1/8-3 1/2A @ 250Vac)
- 200A (4-10A @ 250Vac)
- 10kA (1/10-10A @ 125Vac)
- 10kA (12-30A @ 250Vac)

Agency Information: CE, Std. 248-14, UL Listed, 0-30/250Vac; File E19180, Guide JDYX, CSA Certified, 1-30/250Vac; Class 1422-01, File 53787.

Features and Benefits

- Low cost supplemental protection of 125V and 250V inductive circuits.

Typical Applications

- General Purpose Circuits
- Lighting Circuit Protection
- Meter Circuits
- Upgrading to LP-CC product will reduce SKU investment and minimize potential for misapplying fuse.

Catalog Numbers (Amps)

| | | | | | |
|------------|------------|------------|------------|-----------|--------|
| FNM-1/10 | FNM-1/2 | FNM-1-1/2 | FNM-3 | FNM-6 | FNM-15 |
| FNM-1/8 | FNM-3/10 | FNM-1-3/10 | FNM-3-3/10 | FNM-6-1/4 | FNM-20 |
| FNM-15/100 | FNM-3/4 | FNM-1-9/10 | FNM-3-1/2 | FNM-7 | FNM-25 |
| FNM-7/10 | FNM-1 | FNM-2 | FNM-4 | FNM-8 | FNM-30 |
| FNM-1/4 | FNM-1-1/8 | FNM-2-1/4 | FNM-4-1/2 | FNM-9 | |
| FNM-3/10 | FNM-1-1/4 | FNM-2-1/2 | FNM-5 | FNM-10 | |
| FNM-1/10 | FNM-1-1/10 | FNM-2-9/10 | FNM-5-9/10 | FNM-12 | |



FNQ

Specifications

Class: Supplemental

Description: Time-delay supplementary fuse.

Dimensions: 1³/₃₂" x 1¹/₂" (10.3 x 38.1mm).

Ratings:

Volts — 500Vac (or less)

Amps — 1/10-30A

IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-14, UL Listed, Guide JDYX, File E19180 CSA Certified, Class 1422-01, File 53787.

Features and Benefits

- Low cost supplemental protection of transformers and relays at 500V or less.

Typical Applications

- Control Transformer 480V Primary Protection
- Lighting Circuit Protection
- Meter Circuits

Catalog Numbers (Amps)

| | | | | | |
|------------|-----------|------------|------------|--------|--------|
| FNQ-1/10 | FNQ-1/10 | FNQ-1-1/2 | FNQ-3-1/2 | FNQ-7 | FNQ-20 |
| FNQ-1/8 | FNQ-1/2 | FNQ-1-3/10 | FNQ-4 | FNQ-8 | FNQ-25 |
| FNQ-15/100 | FNQ-3/10 | FNQ-2 | FNQ-4-1/2 | FNQ-9 | FNQ-30 |
| FNQ-3/16 | FNQ-9/10 | FNQ-2-1/4 | FNQ-5 | FNQ-10 | |
| FNQ-7/10 | FNQ-1 | FNQ-2-1/2 | FNQ-5-9/10 | FNQ-12 | |
| FNQ-1/4 | FNQ-1-1/8 | FNQ-3 | FNQ-6 | FNQ-14 | |
| FNQ-1/10 | FNQ-1-1/4 | FNQ-3-3/10 | FNQ-6-1/4 | FNQ-15 | |



$1\frac{3}{32}$ " x $1\frac{3}{8}$ " Fast-acting Fuses

BBS

Specifications

Class: Supplemental

Description: Fast-acting supplementary fuse.

Dimensions: $\frac{1}{32}$ " x $1\frac{3}{8}$ " (10.3 x 34.9mm).

Construction: Fiber cartridge.

Ratings:

- Volts — 600Vac ($\frac{1}{10}$ -5A)
- 250Vac (6 - 10A)
- 48Vac (12-30A)

Amps — $\frac{1}{10}$ -30A

IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-14, UL Listed, 0-5A/600V, Guide JDYX, File E19180, CSA Certified, 0-5A/600V, Class 1422-01, File 53787.

Features and Benefits

- Low cost supplemental protection of non-inductive circuits
- Reduced interchangeability with other supplemental fuses minimizes misapplication

Typical Applications

- Control Circuits
- Lighting Ballasts
- Meter Circuits

Catalog Numbers (Amps)

| | | | |
|---------------------|-----------------------|--------|--------|
| BBS- $\frac{1}{10}$ | BBS- $\frac{1}{10}$ | BBS-4 | BBS-15 |
| BBS- $\frac{1}{10}$ | BBS-1 | BBS-5 | BBS-20 |
| BBS- $\frac{1}{4}$ | BBS-1- $\frac{1}{2}$ | BBS-6 | BBS-25 |
| BBS- $\frac{1}{10}$ | BBS-1- $\frac{1}{10}$ | BBS-7 | BBS-30 |
| BBS- $\frac{1}{2}$ | BBS-1- $\frac{3}{10}$ | BBS-8 | |
| BBS- $\frac{1}{10}$ | BBS-2 | BBS-10 | |
| BBS- $\frac{1}{4}$ | BBS-3 | BBS-12 | |



KTQ

Specifications

Class: Supplemental

Description: Fast-acting supplementary fuse.

Dimensions: $\frac{1}{32}$ " x $1\frac{3}{8}$ " (10.3 x 34.9mm).

Construction: Fiber cartridge.

Ratings:

- Volts — 600Vac
- Amps — 1-6A
- IR — 10kA RMS Sym.

Agency Information: CE, Std. 248-14, UL Recognized, 4-6A, Guide JDYX2, File E19180.

Features and Benefits

- Low cost supplemental protection of non-inductive circuits
- Rated for application in circuits at 600V or less.
- Reduced interchangeability with other supplemental fuses minimizes misapplication

Typical Applications

- Control Circuits
- Lighting Ballasts
- Meter Circuits

Catalog Numbers (Amps) (600Vac)

| | | |
|-----------------------|-------|-------|
| KTQ-1 | KTQ-3 | KTQ-6 |
| KTQ-1- $\frac{1}{10}$ | KTQ-4 | |
| KTQ-2 | KTQ-5 | |



Recommended fuse blocks/fuse holders for $1\frac{3}{32}$ " x $1\frac{3}{8}$ " fuses

- Page 45

Pin Indication Fuses

GBA

GLD

Specifications
Class: Supplemental
Description: Fast-acting, pin indication fuse.

Dimensions: $\frac{1}{4}$ " x $1\frac{1}{4}$ "
(6.6 x 31.7mm) 3AG.

Ratings:

Volts — See Agency Info below

Amps — $\frac{1}{2}$ -15A

IR — See Agency Info below

Agency Information: CE, Std. 248-14, UL Listed, 0-5A/125Vac, 10,000 AIC, Guide JDYX, File E19180, UL Recognized, 6A/125Vac, 1000AIC 8-15A/50Vac/dc, 300 AIC Guide JDYX2, File E19180, CSA Certified: 0-5A/125Vac, 10,000 AIC Class 1422-01, File 53787.

Features and Benefits

- Type GBA has a "red" pin indicator providing visual identification of failed circuits, resulting in faster troubleshooting (reduced circuit downtime).
- Type GLD has a plated pin to activate transmitting a electrical signal to indicate the location of opened circuits, resulting in reduced downtime.

Typical Applications

- Control Circuits
- Electronic Circuits

GLD Catalog Numbers (Amps)

| | | |
|----------------------|-------|--------|
| GLD- $\frac{1}{2}$ | GLD-2 | GLD-6 |
| GLD- $\frac{3}{4}$ | GLD-3 | GLD-10 |
| GLD-1 | GLD-4 | GLD-12 |
| GLD-1- $\frac{1}{2}$ | GLD-5 | GLD-15 |

GBA Catalog Numbers (Amps)

| | | |
|----------------------|-------|--------|
| GBA- $\frac{1}{2}$ | GBA-2 | GBA-8 |
| GBA- $\frac{3}{4}$ | GBA-3 | GBA-10 |
| GBA-1 | GBA-4 | GBA-15 |
| GBA-1- $\frac{1}{2}$ | GBA-5 | |

Recommended fuse blocks/fuse holders for $\frac{1}{4}$ " x $1\frac{1}{4}$ " indicating fuses

• Page 45

Data Sheet: 2012

MIC & MIN

Specifications
Class: Supplemental
Description: Fast-acting, pin indication fuse.

Dimensions:
 $1\frac{3}{32}$ " x $1\frac{1}{2}$ " (10.3 x 38.1mm) 5AG.

Ratings:

Volts — 250Vac
(1-15A)
— 32V (20-30A)

Amps — 1-30A

IR — 35A (1A @250Vac)
— 100A (2-3A @250Vac)
— 200A (5-10A @250Vac)
— 750A (15A @250Vac)
— 10kA (20-30A @32V)
— 35A (1A @250Vac)

Agency Information: CE, Std. 248-14, MIC—0-15A UL Listed, 125Vac/10kA IR Guide JDYX, File E19180, MIN—1-5A CSA Certified, Class 1422-01, File 53787.

Features and Benefits

- Type MIN has a "red" pin indicator providing visual identification of failed circuits, resulting in faster trouble shooting (reduced circuit downtime).
- Type MIC has silver-plated pin transmitting an electrical signal indicating location of a failed circuit, resulting in faster troubleshooting (reduced circuit downtime).

Typical Applications

- Control Circuits
- PLC Circuits
- Electronic Circuits

MIC Catalog Numbers (Amps)

| | | |
|-------|--------|--------|
| MIC-1 | MIC-5 | MIC-20 |
| MIC-2 | MIC-10 | MIC-25 |
| MIC-3 | MIC-15 | MIC-30 |

MIN Catalog Numbers (Amps)

| | | |
|-------|--------|--------|
| MIN-1 | MIN-5 | MIN-20 |
| MIN-2 | MIN-10 | MIN-25 |
| MIN-3 | MIN-15 | MIN-30 |

Recommended signal block for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " indicating fuses

• Page 45

Data Sheet: 2047

FNA

Specifications
Class: Supplemental
Description: Time-delay, pin indication fuse.

Dimensions: $1\frac{3}{32}$ " x $1\frac{1}{2}$ "
(10.3 x 38.1mm).

Ratings:

Volts — 250Vac ($\frac{1}{10}$ - $\frac{3}{10}$ A)
— 125Vac (1-15A)
— 32V (20-30A)

Amps — $\frac{1}{10}$ -30A

IR — 35A ($\frac{1}{10}$ - $\frac{3}{10}$ A @ 250Vac)
— 10kA ($\frac{1}{10}$ -15A @ 125Vac)
— 1kA (20-30A @ 32V)

Agency Information: CE, Std. 248-14, UL Listed $\frac{1}{10}$ - $\frac{3}{10}$ A, IR 35A@ 250V, IR 10kA@ 125V, 1-15A, IR 10kA@ 125V, Guide JDYX, File 19180, CSA Certified, 0- $\frac{3}{10}$ A/250V, 1-10A/125V, Class 1422-01, File 53787.

Features and Benefits

- FNA has a pin indicator providing visual identification of failed circuits, resulting in reduced circuit downtime.
- Time-delay response allows close sizing on control transformers and relays

Typical Applications

- Control Circuits
- Electronic Circuits

Catalog Numbers (Amps)

| | | | |
|------------------------|-----------------------|-----------------------|----------------------|
| FNA- $\frac{1}{10}$ | FNA- $\frac{3}{10}$ | FNA-2- $\frac{1}{2}$ | FNA-6- $\frac{1}{4}$ |
| FNA- $\frac{1}{8}$ | FNA-1 | FNA-2- $\frac{9}{10}$ | FNA-7 |
| FNA-1- $\frac{1}{100}$ | FNA-1- $\frac{1}{8}$ | FNA-3 | FNA-8 |
| FNA- $\frac{3}{10}$ | FNA-1- $\frac{1}{4}$ | FNA-3- $\frac{2}{10}$ | FNA-9 |
| FNA- $\frac{1}{4}$ | FNA-1- $\frac{4}{10}$ | FNA-3- $\frac{1}{2}$ | FNA-10 |
| FNA- $\frac{3}{10}$ | FNA-1- $\frac{1}{2}$ | FNA-4 | FNA-12* |
| FNA- $\frac{9}{10}$ | FNA-1- $\frac{9}{10}$ | FNA-4- $\frac{1}{2}$ | FNA-15* |
| FNA- $\frac{1}{2}$ | FNA-1- $\frac{9}{10}$ | FNA-5 | FNA-20* |
| FNA- $\frac{9}{10}$ | FNA-2 | FNA-5- $\frac{9}{10}$ | FNA-25* |
| FNA- $\frac{3}{4}$ | FNA-2- $\frac{1}{4}$ | FNA-6 | FNA-30 |

*12-30A versions are dual-tube construction

Recommended signal block for

$1\frac{3}{32}$ " x $1\frac{1}{2}$ " indicating fuses

• Page 45

Data Sheet: 2029

Pin Indication Fuse and Actuator, and Limiters

ANN & ANL Limiters

Specifications

Description: Circuit limiters.

ANN: Very fast-acting limiter.

ANL: Time-delay limiter.

Dimensions: 1/8" x 3 3/16"
(22.2 x 81.0mm).

Ratings:

ANN:

- Volts — 125Vac
- 80Vdc

Amps — 10-800A

- IR — 2500A @ 125Vac
- 2700A @ 80Vdc

ANL:

Volts — 80Vdc

Amps — 35-750A

- IR — 2700A @ 80Vdc
- 6000A @ 32Vdc

Agency Information:

ANN: 35-400A @ 125Vac, IR=2500A and 500A @ 80Vdc, IR=2700A: UL Recognized Guide JFHR2, File E56412; CSA Certified Class 1422-30, File 53787, CE for 35-400A.

ANL: UL Recognized, CSA Certified, 35-750A @ 80Vdc, IR = 2700A, Guide JFHR2, File E56412, Class 1422-30, File 53787, SAE J1171.

Features and Benefits

- Fast-acting circuit protection (ANN).
- Time-delay sizing for inductive circuits (ANL).
- Small footprint saves space.
- Window shows limiter status.

Typical Applications

- Fork lifts, Marine, Aviation

ANN Catalog Numbers (Amps)

| | | | |
|--------|---------|---------|---------|
| ANN-10 | ANN-90 | ANN-225 | ANN-400 |
| ANN-35 | ANN-100 | ANN-250 | ANN-500 |
| ANN-40 | ANN-125 | ANN-275 | ANN-600 |
| ANN-50 | ANN-150 | ANN-300 | ANN-700 |
| ANN-60 | ANN-175 | ANN-325 | ANN-800 |
| ANN-80 | ANN-200 | ANN-350 | |

ANL Catalog Numbers (Amps)

| | | | |
|---------|---------|---------|---------|
| ANL-35 | ANL-125 | ANL-250 | ANL-500 |
| ANL-40 | ANL-130 | ANL-275 | ANL-600 |
| ANL-50 | ANL-150 | ANL-300 | ANL-675 |
| ANL-60 | ANL-175 | ANL-325 | ANL-750 |
| ANL-80 | ANL-200 | ANL-350 | |
| ANL-100 | ANL-225 | ANL-400 | |



MIS

Specifications

Class: Supplemental

Description: Non time-delay pin indication fuse.

Dimensions: 1/2" x 2"
(10.3 x 50.8mm).

Ratings:

- Volts — 600Vac
- Amps — 1-12A
- IR — 200kA

Features and Benefits

- Type MIS has a pin indicator providing visual identification of failed circuits, resulting in faster troubleshooting (reduced circuit downtime).
- Type MIS can be used in circuits rated 600V or less.
- Type MIS has an interrupting rating of 200kA.

Typical Applications

- 480V Control Circuits
- PLC Circuits

Catalog Numbers (Amps)

| | | |
|-------|-------|--------|
| MIS-1 | MIS-4 | MIS-10 |
| MIS-2 | MIS-5 | MIS-12 |
| MIS-3 | MIS-8 | |

Test Specifications

| Fuse | Load | Opening Time |
|-------|------|-----------------|
| All | 110% | 0 4 hrs. (min.) |
| 1-5A | 150% | 0 6 min. (max.) |
| 6-12A | 150% | 12 min. (max.) |

Recommended signal block for

1/2" x 2" indicating fuses

- Page 45



KAZ

Specifications

Description: Non-Fuse actuator.

Dimensions: 1/2" x 2"
(10.3 x 50.8mm).

Ratings:

- Volts — 600Vac
- Amps — N/A
- IR — 200kA

Agency Information: CE, UL Listed, Guide JDVS, File E58836.

Features and Benefits

- Bussmann signal blocks 2778, 2837 or 2838 with KAZ actuators mounted in parallel with fuses having a rating of 50A or larger to provide blown fuse dropout of shunt-trip fused switches.
- Type KAZ can be used in circuits rated 600V or less.
- Type KAZ has an interrupting rating of 200kA.

Typical Applications

- Large, Shunt-Trip Fused Switches
- Fuse Protected Circuits Rated 50A or Larger With Shunt-Trip Devices.

Catalog Number: KAZ

Recommended signal block for

1/2" x 2" indicating fuses

- Page 45

Data Sheet: 2021



4164 & 4164-FR Limiter Blocks

Specifications

Description: Limiter fuse blocks for ANL & ANN.

- 4164 furnished with nylon inserted locknuts
- 4164-FR furnished with standard hex nuts

Dimensions: Length: 3.38"

Width: 0.95"

Height: 1.62"

Studs center to center: 2.43"



Ratings:

- Volts — 125Vac
- 80Vdc

Amps — 10-800A

Poles: 1 - stud terminal

In-line Size Rejecting Fuses and Fuse Holders

GLQ

Specifications

Class: Supplemental

Description: Fast-acting, size-rejecting in-line fuse.

Construction: Glass tube.

Ratings:

Volts — 300Vac (or less)

Amps — 1-10A

IR — 10kA

Agency Information: CE, Std. 248-14, UL Listed (Guide JDYX, File E19180), CSA Certified, (Class 1422-01, File 53787).

Features and Benefits

- In-Line, fast-acting circuit protection.
- Rejection feature prevents overfusing.

Typical Applications

- In-line Lighting Ballast Protection

Catalog Numbers (Amps) and Rejection Holders

| Fuse | Holder ^{1, 2} | Fuse | Holder ^{1, 2} |
|-----------------------|------------------------|--------|------------------------|
| GLQ-1 | HLQ-1- $\frac{9}{10}$ | GLQ-3 | HLQ-3- $\frac{2}{10}$ |
| GLQ-1- $\frac{1}{2}$ | HLQ-1- $\frac{9}{10}$ | GLQ-4 | HLQ-5 |
| GLQ-1- $\frac{9}{10}$ | HLQ-1- $\frac{9}{10}$ | GLQ-5 | HLQ-5 |
| GLQ-2 | HLQ-3- $\frac{2}{10}$ | GLQ-9 | HLQ-10 |
| GLQ-2- $\frac{1}{2}$ | HLQ-3- $\frac{2}{10}$ | GLQ-10 | HLQ-10 |

- Carrier is UL Recognized, Guide IZLT2, File E14853 and CSA Certified, Class 6225-01, File 47235 10A, 300Vac.
- Units can be panel-mounted either in a knockout hole with a separate steel clip (BK/A-104) or in a keyhole punch using separate mounting clip #6374 for panels of thickness 0.043" to 0.062" or #4909 for thickness 0.030" to 0.042".
- Do not put tension on line (rear) terminal of fuse holder.

Data Sheet: 2033



GMQ

Specifications

Class: Supplemental

Description: Time-delay, size-rejecting in-line fuse.

Construction: Ceramic tube.

Ratings:

Volts — 300Vac (or less)

Amps — $\frac{1}{2}$ -6 $\frac{3}{4}$ A

IR — 10kA

Agency Information: CE, Std. 248-14, UL Listed (Guide JDYX, File E19180), CSA Certified, (Class 1422-01, File 53787)

Features and Benefits

- In-line, fast-acting circuit protection.
- Rejection feature prevents overfusing.

Typical Applications

- In-Line Lighting Ballast Protection

Catalog Numbers (Amps) and Rejection Holders

| Fuse | Holders ^{3, 4} | Fuse | Holders ^{3, 4} |
|-----------------------|-------------------------|-----------------------|-------------------------|
| GMQ- $\frac{1}{2}$ | HLQ- $\frac{1}{2}$ | GMQ-2- $\frac{1}{2}$ | HLQ-3- $\frac{2}{10}$ |
| GMQ- $\frac{3}{10}$ | HLQ-1- $\frac{9}{10}$ | GMQ-3 | HLQ-3- $\frac{2}{10}$ |
| GMQ- $\frac{2}{10}$ | HLQ-1- $\frac{9}{10}$ | GMQ-3- $\frac{2}{10}$ | HLQ-3- $\frac{2}{10}$ |
| GMQ-1 | HLQ-1- $\frac{9}{10}$ | GMQ-4 | HLQ-5 |
| GMQ-1- $\frac{1}{4}$ | HLQ-1- $\frac{9}{10}$ | GMQ-6 | HLQ-8 |
| GMQ-1- $\frac{9}{10}$ | HLQ-1- $\frac{9}{10}$ | GMQ-6- $\frac{1}{4}$ | |
| GMQ-2 | HLQ-3- $\frac{2}{10}$ | | |

- Carrier is UL Recognized, Guide IZLT2, File E14853 and CSA Certified, Class 6225-01, File 47235 10A, 300Vac.
- Units can be panel-mounted either in a knockout hole with a separate steel clip (BK/A-104) or in a keyhole punch using separate mounting clip #6374 for panels of thickness 0.043" to 0.062" or #4909 for thickness 0.030" to 0.042".
- Do not put tension on line (rear) terminal of fuse holder.

Data Sheet: 2030



Low Voltage Supplementary Fuses



HLQ³ Fuse Holders for both GLQ & GMQ fuses.

In-line Non-rejecting Fuses and Fuse Holders

GLR

Specifications
 Class: Supplemental
 Description: Fast-acting, non-rejection, in-line fuse.
 Construction: Glass tube.
 Ratings:
 Volts — 300Vac (or less)
 Amps — $\frac{3}{16}$ -15A
 IR — 10kA
 Agency Information: CE, Std. 248-14, UL Listed, 0-15A/300Vac (Guide JDYX, File E19180), CSA Certified, 0-10A/300V (Class 1422-01, File 53787).

- Features and Benefits
- In-line, fast-acting circuit protection.
- Typical Applications
- In-Line Lighting Ballast Protection



GMF

Specifications
 Class: Supplemental
 Description: Time-delay, non-rejection, in-line fuse.
 Construction: Glass tube.
 Ratings:
 Volts — 300Vac (or less)
 Amps — $\frac{3}{10}$ -10A
 IR — 10kA
 Agency Information: CE, Std. 248-14 0-10A, UL Listed (Guide JDYX, File E19180), CSA Certified, (Class 1422-01, File 53787).

- Features and Benefits
- In-line, time-delay circuits protection.
- Typical Applications
- In-Line Lighting Ballast Protection



Catalog Numbers (Amps) and Non-Rejection Holders

| Fuse | Holder ^{1, 2*} | Fuse | Holder ^{1, 2*} |
|----------------------|-------------------------|--------|-------------------------|
| GLR- $\frac{3}{16}$ | HLR | GLR-5 | HLR |
| GLR- $\frac{1}{2}$ | HLR | GLR-6 | HLR |
| GLR-1 | HLR | GLR-7 | HLR |
| GLR-1- $\frac{1}{2}$ | HLR | GLR-8 | HLR |
| GLR-1- $\frac{3}{4}$ | HLR | GLR-9 | HLR |
| GLR-2 | HLR | GLR-10 | HLR |
| GLR-3 | HLR | GLR-12 | HLR |
| GLR-4 | HLR | GLR-15 | HLR-2A |

1) Carrier is UL Recognized, Guide IZLT2, File E14853 and CSA Certified, Class 6225-01, File 47235 12A, 300Vac.
 2) Units can be panel-mounted either in a knockout hole with a separate steel clip (BK/A-104) or in a keyhole punch using separate mounting clip #6374 for panels of thickness 0.043" to 0.062" or #4909 for thickness 0.030" to 0.042".

- *** For two leads (one each for line and loadside) order HLR-2A, 15A, 300V**
- An alternative to the HLR fuse holder is the A fuse holder. The A fuse holder comes WITHOUT leads. The customer inserts #18 insulated solid copper wire into the line side receptacle as well as into the load side receptacle. It has the same body dimensions, utilizes the same mounting hole, and takes the same mounting clips as the HLR. The A fuse holder is UL Recognized, 10A, 300Vac, Guide IZLT2, File E14853 and CSA Certified, 10A, 300Vac, Class 6225-01, File 47235.
- Do not put tension on line (rear) terminal of fuse holder.

Data Sheet: 2032



HLR-2A Fuse Holder

Catalog Numbers (-Amps) and Non-Rejection Holders

| Fuse | Holder ^{3, 4*} | Fuse | Holder ^{3, 4*} |
|-----------------------|-------------------------|-----------------------|-------------------------|
| GMF- $\frac{3}{10}$ | HLR | GMF-3 | HLR |
| GMF- $\frac{1}{2}$ | HLR | GMF-3- $\frac{3}{10}$ | HLR |
| GMF- $\frac{3}{4}$ | HLR | GMF-4 | HLR |
| GMF- $\frac{9}{10}$ | HLR | GMF-5 | HLR |
| GMF-1 | HLR | GMF-6- $\frac{1}{4}$ | HLR |
| GMF-1- $\frac{1}{4}$ | HLR | GMF-10 | HLR |
| GMF-1- $\frac{3}{10}$ | HLR | GRF-7 | HLR |
| GMF-2 | HLR | GRF-8 | HLR |
| GMF-2- $\frac{1}{2}$ | HLR | GRF-10 | HLR |
| GMF-2- $\frac{3}{10}$ | HLR | | |

3) Carrier is UL Recognized, Guide IZLT2, File E14853 and CSA Certified, Class 6225-01, File 47235 12A, 300Vac.
 4) Units can be panel-mounted either in a knockout hole with a separate steel clip (BK/A-104) or in a keyhole punch using separate mounting clip #6374 for panels of thickness 0.043" to 0.062" or #4909 for thickness 0.030" to 0.042".

***For two leads order HLR-2A, 15A, 300V**

- An alternative to the HLR fuse holder is the A fuse holder. The A fuse holder comes WITHOUT leads. The customer inserts #18 insulated solid copper wire into the line side receptacle as well as into the load side receptacle. It has the same body dimensions, utilizes the same mounting hole, and takes the same mounting clips as the HLR. The A fuse holder is UL Recognized, 10A, 300Vac, Guide IZLT2, File E14853 and CSA Certified, 10A, 300Vac, Class 6225-01, File 47235.
- Do not put tension on line (rear) terminal of fuse holder.

Data Sheet: 2031



HLR Fuse Holder

Automotive Blade-type Fuses

Low Voltage Supplementary Fuses

ATC® fuse



(Actual Size)

Available With Indication

Specifications

Description: Fast-acting blade fuse.

Construction: Colored plastic housing with zinc fuse element.

Ratings:

- Volts — 32Vdc
- Amps — 1-40A
- IR — 1000A

Agency Information: UL Recognized, (3-40A) (Guide JFHR2, File E56412), SAE Standard J1284.

Features and Benefits

- Color coded plastic housing for easy identification of fuse ratings

Typical Applications

- Automotive

Catalog Numbers (Amps)

| Catalog No. Non-Indicating | Indicating | Color |
|----------------------------|-------------|------------|
| ATC-1 | | Black |
| ATC-2 | | Gray |
| ATC-3 | ATC-3ID | Violet |
| ATC-4 | | Pink |
| ATC-5 | ATC-5ID | Tan |
| ATC-7-1/2 | ATC-7-1/2ID | Brown |
| ATC-10 | ATC-10ID | Red |
| ATC-15 | ATC-15ID | Blue |
| ATC-20 | ATC-20ID | Yellow |
| ATC-25 | ATC-25ID | Clear |
| ATC-30 | ATC-30ID | Green |
| ATC-35 | ATC-35ID | Blue-Green |
| ATC-40 | ATC-40ID | Orange |

Recommended in-line fuse holder for blade type fuses

- Page 56

Data Sheet: 2009

ATM Fuse



(Actual Size)

Available With Indication

Specifications

Description: Fast-acting blade fuse.

Construction: Colored plastic housing with zinc fuse element.

Ratings:

- Volts — 32Vdc
- Amps — 2-30A
- IR — 1000A

Features and Benefits

- Color coded plastic housing for easy identification of fuse ratings

Typical Applications

- Automotive

Catalog Numbers (Amps)

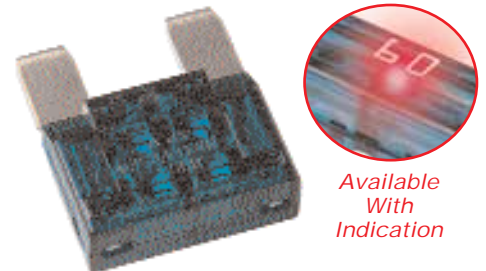
| Part No. Non-Indicating | Indicating | Low-Profile | Color |
|-------------------------|-------------|-------------|--------|
| ATM-2 | | | Gray |
| ATM-3 | ATM-3ID | | Violet |
| ATM-4 | | | Pink |
| ATM-5 | ATM-5ID | ATM-5LP | Tan |
| ATM-7-1/2 | ATM-7-1/2ID | ATM-7-1/2LP | Brown |
| ATM-10 | ATM-10ID | ATM-10LP | Red |
| ATM-15 | ATM-15ID | ATM-15LP | Blue |
| ATM-20 | ATM-20ID | ATM-20LP | Yellow |
| ATM-25 | ATM-25ID | ATM-25LP | Clear |
| ATM-30 | ATM-30ID | ATM-30LP | Green |

Recommended in-line fuse holder for blade type fuses

- Page 56

Data Sheet: 2048

MAX Maxi-Fuse®



(Actual Size)

Available With Indication

Specifications

Description: Fast-acting blade fuse.

Construction: Colored plastic housing with zinc fuse element.

Ratings:

- Volts — 32Vdc
- Amps — 20-80A
- IR — 1000A

Features and Benefits

- Color coded plastic housing for easy identification of fuse ratings

Typical Applications

- Automotive

Catalog Numbers (Amps)

| Catalog No. Non-Indicating | Indicating | Color |
|----------------------------|------------|--------|
| MAX-20 | MAX-20ID | Yellow |
| MAX-25 | | Gray |
| MAX-30 | MAX-30ID | Green |
| MAX-35 | | Brown |
| MAX-40 | MAX-40ID | Orange |
| MAX-50 | MAX-50ID | Red |
| MAX-60 | MAX-60ID | Blue |
| MAX-70 | MAX-70ID | Tan |
| MAX-80 | MAX-80ID | Clear |
| | MAX-100ID | Purple |

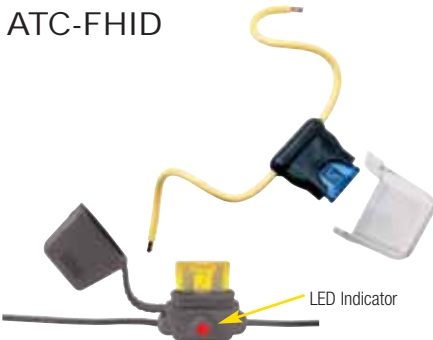
Recommended in-line fuse holder for blade type fuses

- Page 56

Data Sheet: 2049

Automotive Blade-type Fuse Holders

HHC, HHD, HHF, HHG & ATC-FHID



easyID™ LED Indicating Holder

Specifications

Description: In-line fuse holders for ATC® Blade-Type fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 32Vdc

Amps: — 80% continuous of fuse rating. See Catalog Numbers table for individual fuses sizes.

Catalog Numbers

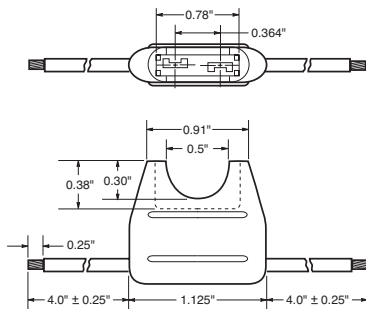
| Catalog Numbers | Fuse Holder Description | Fuse Amps | Electrical Connection |
|-----------------|----------------------------------|-----------|-----------------------|
| HHC | Yellow | 1-20 | #16 black leadwire |
| HHD | Black | 1-30 | #12 yellow leadwire |
| HHD-C | HHD Cover only | — | Clear polycarbonate |
| HHF | Black w/ cover | 1-20 | #16 yellow leadwire |
| HHG | Black w/ cover | 1-30 | #12 yellow leadwire |
| ATC-FHID | Indicating Holder Black w/ cover | 1-20 | #16 black leadwire |

Bulk Products (Quantity - 1000 Pieces)

| Catalog Numbers | Fuse Holder Description | Fuse Amps | Electrical Connection |
|-----------------|-------------------------|-----------|-----------------------|
| BK/HHC-R | Yellow | 1-20 | #16 red leadwire |
| BK/HHF-B | Black w/ cover | 1-20 | #16 black leadwire |

A fuse must be properly and fully inserted into the holder to provide a solid connection. Poor or improper insertion of the fuse can result in failure of the fuse and holder, thus not protecting the device for which it was intended.

HHC & HHD Dimensions - in



Data Sheet: 2107

HHL, HHM & ATM-FHID



easyID™ LED Indicating Holder

Specifications

Description: In-line fuse holders for ATM Fuses.

Ratings:

Volts: — 32Vdc

Amps: — 80% continuous of fuse rating. See Catalog Numbers table for individual fuses sizes.

Catalog Numbers

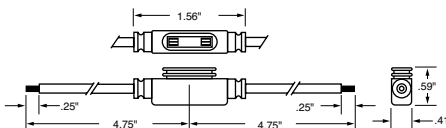
| Catalog Numbers | Fuse Holder Description | Fuse Amps | Electrical Connection |
|-----------------|----------------------------------|-----------|--|
| HHL | Black w/ cover | 2-20 | #16 black leadwire, 4" length stripped to 1/4" |
| HHL-B | Black - body only | 2-20 | #16 black leadwire, 4" length stripped to 1/4" |
| HHM | Black w/ cover | 2-30 | #12 red leadwire, 4" length stripped to 1/4" |
| HHM-B | Black - body only | 2-30 | #12 red leadwire, 4" length stripped to 1/4" |
| HHM-C | Black - cover only | — | — |
| ATM-FHID | Indicating Holder Black w/ cover | 1-20 | #16 black leadwire |

Bulk Products (Quantity - 1000 Pieces)

| Catalog Numbers | Fuse Holder Description | Fuse Amps | Electrical Connection |
|-----------------|-------------------------|-----------|--|
| BK/HHL-R | Black - w/cover | 2-20 | #16 red leadwire, 4" length stripped to 1/4" |
| BK/HHL-B | Black - body only | 2-20 | #16 black leadwire, 4" length stripped to 1/4" |

A fuse must be properly and fully inserted into the holder to provide a solid connection. Poor or improper insertion of the fuse can result in failure of the fuse and holder, thus not protecting the device for which it was intended.

HHL & HHM Dimensions - in



Data Sheet: 2128

HHX



Specifications

Description: In-line fuse holders for MAXI® Fuses.

Ratings:

Volts: — 32Vdc

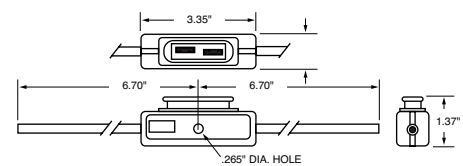
Amps: — 80% continuous of fuse rating. See Catalog Numbers table for individual fuses sizes.

Catalog Numbers

| Catalog Numbers | Fuse Holder Description | Fuse Amps | Electrical Connection |
|-----------------|-------------------------|-----------|-------------------------------------|
| HHX | Black w/ cover | 20-60 | #6 red leadwire, 5" with blunt ends |
| HHX-B | Black - body only | 20-60 | #6 red leadwire, 5" with blunt ends |
| HHX-C | Black cover only | — | — |

A fuse must be properly and fully inserted into the holder to provide a solid connection. Poor or improper insertion of the fuse can result in failure of the fuse and holder, thus not protecting the device for which it was intended.

Dimensions - in



Data Sheet: 2129

Electronic fuses

Section Contents

| | Page |
|---|-------|
| 5 x 15mm ferrule fuses | 58 |
| 5 x 20mm European (IEC) ferrule fuses | 59-60 |
| 5 x 20mm North American (UL) ferrule fuses | 61 |
| ¼" Dia. x ½" to 1" length ferrule fuses | 62 |
| ¼" Dia. x 1 ¼" length fast-acting ferrule fuses | 63 |
| ¼" Dia. x 1 ¼" length time-delay ferrule fuses | 64 |
| PCB mount fuse holders | 65-66 |
| PCB fuseclips for 5mm dia. fuses | 67 |
| PCB fuseclips for ¼" dia. fuses | 68 |
| PCB fuseclips for 13/32" dia. and ATC® fuses | 69 |
| PCB fuseclips for ¼", 5/32", 13/32" & 5/16" fuses | 70 |



5 x 15mm Ferrule Fuses

C515 (axial leads)

C519

Specifications
Description:
Time-delay fuse.
Dimensions:
5 x 15mm
(0.197" X 0.591").
Construction:
Glass tube.
Ratings:

- Volts — 125Vac (3.5-7A)
- 250Vac (125mA-3A)
- Amps — 125mA-7A
- IR — 25A (350mA @ 600Vac)
- 35A (125mA-1A @ 250Vac)
- 100A (1.25-3A @ 250Vac)
- 400A (3.5-7A @ 125Vac)
- 10kA (125mA-3A @ 125Vac)

Agency Information: CE, UL Listed File E19180, Guide JDYX 125mA-250mA and 375mA-3A, UL Recognized, File E19180, Guide JDYX2, 350mA and 3.5A-7A, CSA Certification File 53787, Class 1422-01, 125mA-250mA and 375mA-3A.

- Features and Benefits
- Time-delay for closer sizing on inductive circuits.

Typical Application

- Electronic Circuits
- Printed Circuit Boards

Catalog Numbers (Amps)

| With Axial Leads | | |
|---------------------|-------------|-------------|
| C515-125-R | C515-800-R | C515-2.5-R |
| C515-250-R | C515-1-R | C515-3-R |
| C515-350-R | C515-1.25-R | C515-3.5-R |
| C515-375-R | C515-1.5-R | C515-4-R |
| C515-500-R | C515-1.6-R | C515-5-R |
| C515-600-R | C515-2-R | C515-6-R |
| C515-750-R | C515-2.25-R | C515-7-R |
| Without Axial Leads | | |
| C519-125-R | C519-750-R | C519-2.25-R |
| C519-250-R | C519-1-R | C519-2.5-R |
| C519-350-R | C519-1.25-R | C519-3-R |
| C519-375-R | C519-1.5-R | C519-3.5-R |
| C519-500-R | C519-1.6-R | C519-4-R |
| C519-600-R | C519-2-R | C519-5-R |



C518 (axial leads)

C520

Specifications
Description:
Fast-acting fuse.
Dimensions:
5 x 15mm
(0.197" X 0.591").
Construction:
Glass tube.
Ratings:

- Volts — 250Vac
- Amps — 100mA-5A
- IR — 35A (100mA-750mA @ 250Vac)
- 10kA (100mA-5A @ 125Vac)
- 100A (1.5-3.5A @ 250Vac)
- 200A (4-5A @ 250Vac)

Agency Information: CE, UL Recognized File E19180, Guide JDYX2CSA Certification File 53787, Class 1422-01.

Features and Benefits

- Small footprint saves space in equipment.
- Fast-acting for maximum component protection.
- Available in ferrule and axial leaded configurations

Typical Applications

- Electronic Circuits
- Printed Circuit Boards

Catalog Numbers (Amps)

| With Axial Leads | | |
|---------------------|------------|------------|
| C518-100-R | C518-750-R | C518-4-R |
| C518-125-R | C518-2-R | C518-5-R |
| C518-250-R | C518-2.5-R | |
| C518-375-R | C518-3-R | |
| C518-500-R | C518-3.5-R | |
| Without Axial Leads | | |
| C520-100-R | C520-750-R | C520-3.5-R |
| C520-125-R | C520-1.5-R | C520-4-R |
| C520-250-R | C520-2-R | C520-5-R |
| C520-375-R | C520-2.5-R | |
| C520-500-R | C520-3-R | |



C517 (axial leads)

Specifications
Description: Fast-acting fuse.
Construction: Glass tube.
Ratings:
Volts — 350Vac*
Amps — 3A
IR — 100A @ 350Vac
— 100A @ 250Vac
— 10kA @ 125Vac

*350Vac/100A is UL Recognized

Agency Information:

CE, UL Listing File E19180, Guide JDYX, CSA Certification File 53787, Class 1422-01, UL Recognized, File E19180, Guide JDYX2.

- Small footprint saves space in equipment.
- Fast-acting for maximum component protection.
- 350Vac rating for 277V ballast circuit protection.

Typical Applications

- Electronic Circuits
- Printed Circuit Boards
- Electronic Ballast Protection

Catalog Number (Amps)

With Axial Leads
C517-3-R



5 x 20mm European (IEC) Ferrule Fuses

Electronic Fuses

S500-V (GDB-V)* (axial leads)

S500 (GDB)*

Specifications
Description: Fast-acting, low-breaking capacity fuse.

Construction:
Glass tube, nickel-plated brass endcaps (silver-plated endcaps, 32-125mA).

Ratings:
Volts — 250Vac (or less)

Amps — 32mA-10A

IR — See catalog table

Agency Information: CE, cURus, CSA, SEMKO, VDE, BSI, IMQ, CCC.

See data sheet for complete agency information. Not all approvals apply to all ratings.

Features and Benefits

- Fast-acting for maximum protection, conforms to IEC 60127-2 (160mA-10A).

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| Catalog Numbers | IR (Amps) | I ² t | Max Voltage Drop (mV) |
|-----------------|-----------|------------------|-----------------------|
| S500-32-R | 35 | 0.000047 | 3200 |
| S500-40-R | 35 | 0.00011 | 2500 |
| S500-50-R | 35 | 0.00020 | 2400 |
| S500-63-R | 35 | 0.00057 | 2000 |
| S500-80-R | 35 | 0.0012 | 1200 |
| S500-100-R | 35 | 0.003 | 1100 |
| S500-125-R | 35 | 0.005 | 1000 |
| S500-160-R | 35 | 0.008 | 2000 |
| S500-200-R | 35 | 0.016 | 1700 |
| S500-250-R | 35 | 0.028 | 1400 |
| S500-315-R | 35 | 0.058 | 1300 |
| S500-400-R | 35 | 0.018 | 1100 |
| S500-500-R | 35 | 0.018 | 220 |
| S500-630-R | 35 | 0.035 | 220 |
| S500-800-R | 35 | 0.067 | 190 |
| S500-1-R | 35 | 0.60 | 200 |
| S500-1.25-R | 35 | 0.84 | 200 |
| S500-1.6-R | 35 | 1.6 | 190 |
| S500-2-R | 35 | 4.2 | 150 |
| S500-2.5-R | 35 | 6.1 | 150 |
| S500-3.15-R | 35 | 13 | 130 |
| S500-4-R | 40 | 22 | 130 |
| S500-5-R | 50 | 42 | 120 |
| S500-6.3-R | 63 | 69 | 120 |
| S500-8-R | 80 | - | 120 |
| S500-10-R | 100 | — | 120 |

Options

Axial leads, put "V" in P/N,

*When ordering GDB version, do not add "-R" suffix to part number.

Data Sheet: 2052 (S500), 2015 (GDB)



S501-V (GDA-V)* (axial leads)

S501 (GDA)*

Specifications
Description: Fast-acting, high-breaking capacity fuse.

Construction:
Ceramic tube, nickel-plated brass endcaps (silver-plated endcaps 50mA-400mA).

Ratings:
Volts — 250Vac (or less)

Amps — 50mA-10A**

IR — 1500A @ 250Vac

Agency Information: CE, cURus, SEMKO, VDE, IMQ, CCC, CSA, BSI.

See data sheet for complete agency information. Not all approvals apply to all ratings.

Features and Benefits

- Fast-acting for maximum protection.
- High break capacity for use in higher fault energy electronic circuitry.
- Conforming to IEC standards.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| Catalog Numbers | I ² t | Typical Voltage Drop (mV) |
|-----------------|------------------|---------------------------|
| S501-50-R | 0.0017 | 9000 |
| S501-63-R | 0.0005 | 3300 |
| S501-80-R | 0.0011 | 2600 |
| S501-100-R | 0.0018 | 2300 |
| S501-125-R | 0.0037 | 1900 |
| S501-160-R | 0.008 | 1600 |
| S501-200-R | 0.020 | 1350 |
| S501-250-R | 0.027 | 1300 |
| S501-315-R | 0.010 | 1400 |
| S501-400-R | 0.018 | 1200 |
| S501-500-R | 0.038 | 1050 |
| S501-630-R | 0.064 | 1200 |
| S501-800-R | 0.097 | 490 |
| S501-1-R | 0.146 | 330 |
| S501-1.25-R | 0.313 | 297 |
| S501-1.6-R | 0.748 | 239 |
| S501-2-R | 2.0 | 205 |
| S501-2.5-R | 3.9 | 190 |
| S501-3.15-R | 8.1 | 160 |
| S501-4-R | 14 | 160 |
| S501-5-R | 25 | 155 |
| S501-6.3-R | 48 | 150 |
| S501-8-R | N/A | N/A |
| S501-10-R | N/A | N/A |

Options

Axial leads, put "V" in P/N.

*When ordering GDA version, do not add "-R" suffix to part number.

**GDA is not available above 6.3A.

Data Sheet: 2051 (S501), 2014 (GDA)



S505-V (axial leads)

S505

Specifications
Description: Time-delay, high-breaking capacity fuse.

Construction:
Ceramic tube, silver-plated brass endcaps.

Ratings:
Volts — 250Vac (or less)

Amps — 500mA-12A

IR — 1500A @ 250Vac

Agency Information: UL, CSA, SEMKO, VDE, BSI, IMQ, PSE/JET, CCC, EK, FIMKO.

See data sheet for complete agency information. Not all approvals apply to all ratings.

Features and Benefits

- Time-delay performance ideal for inductive circuits.
- Conforming to IEC standards.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| Catalog Numbers | Typical I ² t | Max Voltage Drop (mV) |
|-----------------|--------------------------|-----------------------|
| S505-500-R | 0.188* | 295 |
| S505-800-R | 0.632* | 189 |
| S505-1-R | 1.28 | 152.5 |
| S505-1.25-R | 2.22 | 150 |
| S505-1.6-R | 6.78 | 125 |
| S505-2-R | 9.60 | 118.5 |
| S505-2.5-R | 16.60 | 115 |
| S505-3.15-R | 36.60 | 102.5 |
| S505-4-R | 38.45* | 86.5 |
| S505-5-R | 71.30* | 77.5 |
| S505-6.3-R | 197 | 75 |
| S505-8-R | 311 | 75 |
| S505-10-R | 397 | 72 |
| S505-12-R | 713.7* | 77 |

*The typical I²t value was measured at 10 times of rated current under DC

Options

Axial leads, put "V" in P/N.

Data Sheet: 2037



5 x 20mm European (IEC) Ferrule Fuses

S506-V (GDC-V)* (axial leads)

S506 (GDC)*

Specifications

Description: Time-delay, low-breaking capacity fuse.

Construction: Glass tube, nickel-plated brass endcaps.

Ratings:

- Volts — 250Vac (or less)
- Amps — 32mA-15A**
- IR — 35A @ 250Vac



Agency Information: UR, CSA, cURus, SEMKO, VDE, BSI, IMQ, PSE/JET, CCC.

See data sheet for complete agency information. Not all approvals apply to all ratings.

Features and Benefits

- Time-delay compatibility for inductive circuits.
- Conforming to IEC standards.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| Catalog Numbers | Typical I ² t | Max Voltage Drop (mV) |
|-----------------|--------------------------|-----------------------|
| S506-32-R | 0.0051 | 1050 |
| S506-40-R | 0.0072 | 920 |
| S506-50-R | 0.0095 | 800 |
| S506-63-R | 0.021 | 760 |
| S506-80-R | 0.038 | 580 |
| S506-100-R | 0.045 | 490 |
| S506-125-R | 0.063 | 390 |
| S506-160-R | 0.093 | 320 |
| S506-200-R | 0.114 | 340 |
| S506-250-R | 0.265 | 270 |
| S506-315-R | 0.621 | 250 |
| S506-400-R | 0.872 | 210 |
| S506-500-R | 0.827 | 140 |
| S506-630-R | 1.33 | 150 |
| S506-800-R | 2.78 | 75 |
| S506-1-R | 6.45 | 87.5 |
| S506-1.25-R | 10.05 | 86 |
| S506-1.6-R | 21.7 | 82 |
| S506-2-R | 31.6 | 77 |
| S506-2.5-R | 59.4 | 72.5 |
| S506-3.15-R | 96.4 | 68.5 |
| S506-4-R | 71.8 | 67 |
| S506-5-R | 142.5 | 60.5 |
| S506-6.3-R | 237.6 | 54 |
| S506-8-R | 255.8 | 55 |
| S506-10-R | 450 | 54 |
| S506-12.5-R | 1019.5 | 45 |
| S506-15-R | 1091.7 | 65.5 |

Options

Axial leads, put "V" in P/N.

*When ordering GDC version, do not add "-R" suffix to part number.

**GDC series is not available above 6.3A.

Data Sheet: 2016 (GDC), 4332 (S506)

5 x 20mm North American (UL) Ferrule Fuses

GMA-V (axial leads)

GMA

Specifications
Description:
Fast-acting fuse.

Dimensions:
5 x 20mm
(0.197" x 0.788").

Construction:
Glass tube,
nickel-plated brass
endcaps.

Ratings:

- Volts — 250Vac (63mA-2.5A)
- 125Vac (3.15-15A)
- Amps — 63mA-15A
- IR — 35A (63mA- 1A @ 250Vac,
p.f. = 0.7-0.8)
- 10kA (63mA-6A @ 125Vac,
p.f. = 0.7-0.8)
- 100A (1.25-2.5A @ 250Vac,
p.f. = 0.7-0.8)
- 200A (7-8A @ 125Vac, p.f. = 1.0)
- 150A (10-15A @ 125Vac,
p.f. = 1.0)

Agency Information: CE, Std. 248-14
248-14 UL Listed Guide JDYX, File E19180, 0-6A, UL Recognized, Guide JDYX2, File E19180, 7-15A, CSA Certified, Class 1422-01, File 53787, 0-6.

Features and Benefits

- Fast-acting for maximum protection.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|-------------|--------------|------------|
| GMA-V-63-R | GMA-V-800-R | GMA-V-4-R |
| GMA-V-100-R | GMA-V-1-R | GMA-V-5-R |
| GMA-V-125-R | GMA-V-1.25-R | GMA-V-6-R |
| GMA-V-200-R | GMA-V-1.5-R | GMA-V-7-R |
| GMA-V-250-R | GMA-V-1.6-R | GMA-V-8-R |
| GMA-V-300-R | GMA-V-2-R | GMA-V-10-R |
| GMA-V-500-R | GMA-V-2.5-R | GMA-V-15-R |
| GMA-V-600-R | GMA-V-3.15-R | |
| GMA-V-750-R | GMA-V-3.5-R | |

Without Axial Leads

| | | |
|-----------|------------|----------|
| GMA-63-R | GMA-800-R | GMA-4-R |
| GMA-100-R | GMA-1-R | GMA-5-R |
| GMA-125-R | GMA-1.25-R | GMA-6-R |
| GMA-200-R | GMA-1.5-R | GMA-7-R |
| GMA-250-R | GMA-1.6-R | GMA-8-R |
| GMA-300-R | GMA-2-R | GMA-10-R |
| GMA-500-R | GMA-2.5-R | GMA-15-R |
| GMA-600-R | GMA-3.15-R | |
| GMA-750-R | GMA-3.5-R | |

Data Sheet: 2017

GMC-V (axial leads)

GMC

Specifications
Description: Medium
time-delay fuse.

Dimensions: 5 x 20mm
(0.197" x 0.788").

Construction: Glass
tube, nickel-plated brass
endcaps.

Ratings:

- Volts — 250Vac (63mA-3.15A)
- 125Vac (3.5-10A)
- Amps — 63mA-10A
- IR — 35A (63mA- 1A @ 250Vac,
p.f. = 0.7-0.8)
- 10kA (63mA-6A @ 125Vac, p.f. = 0.7-0.8)
- 100A (1.25-3.15A @ 250Vac,
p.f. = 0.7-0.8)
- 200A (6.3-10A @ 125Vac, p.f. = 1.0)

Agency Information: CE, Std. 248-14,
UL Listed Guide JDYX, File E19180, 0-6.3A, UL Recognized, Guide JDYX2, File E19180, 7-8A, CSA Certified, Class 1422-01, File 53787, 0-6.3A.

Features and Benefits

- Conforming to UL standards.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|-------------|--------------|------------|
| GMC-V-63-R | GMC-V-500-R | GMC-V-2.5 |
| GMC-V-80-R | GMC-V-600-R | GMC-V-3.15 |
| GMC-V-100-R | GMC-V-630-R | GMC-V-3.5 |
| GMC-V-125-R | GMC-V-750-R | GMC-V-4 |
| GMC-V-150-R | GMC-V-800-R | GMC-V-5 |
| GMC-V-200-R | GMC-V-1-R | GMC-V-6 |
| GMC-V-250-R | GMC-V-1.25-R | GMC-V-6.3 |
| GMC-V-300-R | GMC-V-1.5-R | GMC-V-7 |
| GMC-V-315-R | GMC-V-1.6-R | GMC-V-8 |
| GMC-V-400-R | GMC-V-2-R | GMC-V-10 |

Without Axial Leads

| | | |
|-----------|------------|------------|
| GMC-63mA | GMC-500-R | GMC-2.5-R |
| GMC-80mA | GMC-600-R | GMC-3.15-R |
| GMC-100mA | GMC-630-R | GMC-3.5-R |
| GMC-125mA | GMC-750-R | GMC-4-R |
| GMC-150mA | GMC-800-R | GMC-5-R |
| GMC-200mA | GMC-1-R | GMC-6-R |
| GMC-250mA | GMC-1.25-R | GMC-6.3-R |
| GMC-300mA | GMC-1.5-R | GMC-7-R |
| GMC-315mA | GMC-1.6-R | GMC-8-R |
| GMC-400mA | GMC-2-R | GMC-10-R |

Data Sheet: 2018

GMD-V (axial leads)

GMD

Specifications
Description: Time-
delay fuse.

Dimensions:
5 x 20mm
(0.197" x 0.788").

Construction:
Glass tube, nickel-
plated brass
endcaps.

Ratings:

- Volts — 250Vac
- Amps — 125mA-4A
- IR — 10kA (125mA-3A @
125Vac, p.f. = 0.7-0.8)
- 10kA (4A @ 125Vac,
p.f. = 1.0)
- 35A (125mA-1A @ 250Vac,
p.f. = 0.7-0.8)
- 100A (1.2A-3A @ 250Vac,
p.f. = 0.7-0.8)
- 200A (4A @ 250Vac,
p.f. = 1.0)

Agency Information: CE, UL Listed
Guide JDYX, File E19180, 125mA-3A,
UL Recognized, Guide JDYX2, File E19180, 4A, CSA Certified, Class 1422-01, File 53787, 0-4A, PSE/JET. File 1641-31003-1001, 1.2A-4A.

Features and Benefits

- Time-delay compatibility for inductive circuits.
- Conforming to UL standards.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|-------------|--------------|-------------|
| GMD-V-125-R | GMD-V-500-R | GMD-V-1.5-R |
| GMD-V-150-R | GMD-V-600-R | GMD-V-1.6-R |
| GMD-V-200-R | GMD-V-630-R | GMD-V-2-R |
| GMD-V-250-R | GMD-V-750-R | GMD-V-2.5-R |
| GMD-V-300-R | GMD-V-800-R | GMD-V-3-R |
| GMD-V-315-R | GMD-V-1-R | GMD-V-4-R |
| GMD-V-375-R | GMD-V-1.2-R | |
| GMD-V-400-R | GMD-V-1.25-R | |

Without Axial Leads

| | | |
|-----------|------------|-----------|
| GMD-125-R | GMD-500-R | GMD-1.5-R |
| GMD-150-R | GMD-600-R | GMD-1.6-R |
| GMD-200-R | GMD-630-R | GMD-2-R |
| GMD-250-R | GMD-750-R | GMD-2.5-R |
| GMD-300-R | GMD-800-R | GMD-3-R |
| GMD-315-R | GMD-1-R | GMD-4-R |
| GMD-375-R | GMD-1.2-R | |
| GMD-400-R | GMD-1.25-R | |

Data Sheet: 2019



1/4" Dia. x 5/8" to 1" Length Ferrule Fuses

AGA-V (axial leads)

AGA

Specifications
Description: Fast-acting fuse.

Dimensions:
1/4" x 5/8"
(6.4 x 15.9mm).

Construction:
Glass tube.

Ratings:

- Volts — 125Vac (or less)
- Amps — 1-30A
- IR — 10kA (1-1 1/2A @ 125Vac)
- 200A (2-5A @ 125Vac)
- 1000A (6-30A @ 32Vac)

Agency Information: CE, Std. 248-14, UL File E19180, UL Listed, Guide JDYX 0-1 1/2A UL Recognized, Guide JDYX2 2-12A.

Features and Benefits

- Fast-acting for maximum protection.
- Size rejects insertion of other fuse types.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads*

| | | |
|-------------|-------------|----------|
| AGA-V-1 | AGA-V-5 | AGA-V-15 |
| AGA-V-1-1/2 | AGA-V-6 | AGA-V-20 |
| AGA-V-2 | AGA-V-7 | AGA-V-25 |
| AGA-V-2-1/2 | AGA-V-7-1/2 | AGA-V-30 |
| AGA-V-3 | AGA-V-10 | |

Without Axial Leads

| | | |
|-----------|-----------|--------|
| AGA-1 | AGA-5 | AGA-15 |
| AGA-1-1/2 | AGA-6 | AGA-20 |
| AGA-2 | AGA-7 | AGA-25 |
| AGA-2-1/2 | AGA-7-1/2 | AGA-30 |
| AGA-3 | AGA-10 | |

*AGA-V is UL Listed 0-5A, UL Recognized 6-12A.



AGW

Specifications
Description: Fast-acting fuse.

Dimensions: 1/4" x 7/8"
(6.4 x 22.2mm).

Construction: Glass tube.

Ratings:

- Volts — 32Vac
- Amps — 1-30A

Features and Benefits

- Fast-acting for maximum protection.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| | | |
|-----------|-----------|--------|
| AGW-1 | AGW-4 | AGW-15 |
| AGW-1-1/2 | AGW-5 | AGW-20 |
| AGW-2 | AGW-6 | AGW-25 |
| AGW-2-1/2 | AGW-7-1/2 | AGW-30 |
| AGW-3 | AGW-10 | |



AGX

Specifications
Description: Fast-acting fuse.

Dimensions: 1/4" x 1"
(6.4 x 25.4mm).

Construction: Glass tube.

Ratings:

- Volts — 250Vac (1/200-2A)
- 125Vac (2 1/2-7A)
- 32V (8-30A)
- Amps — 1/4-30A
- IR — 35A (1/4-1/2A @ 250Vac)
- 100A (3/4-2A @ 250Vac)
- 10kA (1/4-5A @ 125Vac)
- 1000A (5-6A @ 125Vac)
- 1000A (8-30A @ 32Vac)

Agency Information: CE, Std. 248-14, UL File E19180 UL Listed, Guide JDYX, 0-5A UL Recognized, Guide JDYX2, 6-20A CSA File 53787; Class 1422-01.

Features and Benefits

- Size rejects insertion of other fuse types.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

| | | |
|-----------|-----------|--------|
| AGX-1/4 | AGX-1-1/2 | AGX-8 |
| AGX-3/16 | AGX-2 | AGX-10 |
| AGX-3/8 | AGX-2-1/2 | AGX-15 |
| AGX-1/2 | AGX-3 | AGX-20 |
| AGX-3/4 | AGX-4 | AGX-25 |
| AGX-1 | AGX-5 | AGX-30 |
| AGX-1 | AGX-6 | |
| AGX-1-1/4 | AGX-7 | |



1/4" Dia. x 1 1/4" Length Fast-acting Ferrule Fuses

AGC (AGC-V axial leads)

Specifications
Description:
Fast-acting fuse.
Dimensions: 1/4" x 1 1/4"
(6.4 x 31.7mm).

Construction: Glass tube with nickel-plated brass endcaps.

Ratings:

Volts — 250Vac (1/20-10A)
— 32Vac (12-30A)

Amps — 1/20-30A

IR — 35A (1/20-1A @ 250Vac)
— 100A (1 1/4-3A @ 250Vac)
— 200A (4-10A @ 250Vac)
— 10kA (1/20-10A @ 125Vac)
— 1000A (12-30A @ 32Vac)

Agency Information: CE, UL Listed, Guide JDYX, File E19180, 0-10A UL Recognized, Guide JDYX2, File E19180, 12-30A CSA Certification, Class 1422-01, File 053787, 1/20-30A.

Features and Benefits

- Original electronic glass tube fuse.
- Fast-acting for maximum protection.
- Wide amp/volt ratings allow versatility of protecting electronic circuits.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|--------------|---------------|---------------|
| AGC-V-1/20-R | AGC-V-1-R | AGC-V-7-1/2-R |
| AGC-V-1/10-R | AGC-V-1-1/4-R | AGC-V-8-R |
| AGC-V-1/10-R | AGC-V-1-1/2-R | AGC-V-9-R |
| AGC-V-1/8-R | AGC-V-2-R | AGC-V-10-R |
| AGC-V-1/10-R | AGC-V-2-1/4-R | AGC-V-12-R |
| AGC-V-1/10-R | AGC-V-2-1/2-R | AGC-V-14-R |
| AGC-V-1/8-R | AGC-V-3-R | AGC-V-15-R |
| AGC-V-1/10-R | AGC-V-4-R | AGC-V-20-R |
| AGC-V-1/8-R | AGC-V-5-R | AGC-V-25-R |
| AGC-V-1/8-R | AGC-V-6-R | AGC-V-30-R |
| AGC-V-1/4-R | AGC-V-7-R | |

Without Axial Leads

| | | |
|------------|-------------|-------------|
| AGC-1/20-R | AGC-1-R | AGC-7-1/2-R |
| AGC-1/10-R | AGC-1-1/4-R | AGC-8-R |
| AGC-1/10-R | AGC-1-1/2-R | AGC-9-R |
| AGC-1/8-R | AGC-2-R | AGC-10-R |
| AGC-1/10-R | AGC-2-1/4-R | AGC-12-R |
| AGC-1/10-R | AGC-2-1/2-R | AGC-14-R |
| AGC-1/8-R | AGC-3-R | AGC-15-R |
| AGC-1/10-R | AGC-4-R | AGC-20-R |
| AGC-1/8-R | AGC-5-R | AGC-25-R |
| AGC-1/8-R | AGC-6-R | AGC-30-R |
| AGC-1/4-R | AGC-7-R | |



ABC (ABC-V axial leads)

Specifications
Description: Fast-acting fuse.
Dimensions:
1/4" x 1 1/4" (6.4 x 31.7mm).

Construction: Ceramic tube with nickel-plated brass endcaps.

Ratings:

Volts — 250Vac/125Vdc (1/4-15A, 20-30A)*

— 250Vac (18A)

Amps — 1/4-30A

IR** — 35A (1/4-1A @ 250Vac)

— 100A (1 1/4-3A @ 250Vac)

— 200A (4-10A @ 250Vac)

— 750A (12-15A @ 250Vac)

— 400A (18-20A @ 250Vac)

— 10kA (1/4-15A @ 125Vac)

— 1kA (18-30A @ 125Vac)

— 10kA (1/4-15, 20A @ 125Vdc)

— 400A (25-30A @ 125Vdc)

— 200A (25-30A @ 250Vac)

*CSA approvals for 25A and 30A are at 125Vac – IR 1000A and Vdc – IR 400A (IR 1000A at 75Vdc)

**Interrupting ratings measured at 70% – 80% power factor on AC. The interrupting ratings for 18A and 20A were measured at 85%-95% power factor on AC. The interrupting ratings for 25A and 30A were measured at 89% power factor on AC.

Agency Information: CE, Std. 248-14 UL Listed, Guide JDYX File E19180, 1/4-15A; UL Recognized, Guide JDYX2, File E19180, 18-30A; CSA Certification, Class 1422-01 & 1422-30, File 53787, 1/4-30A.

Features and Benefits

- Ceramic body allows for higher amp/volt rating combinations.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|---------------|------------|------------|
| ABC-V-1/4-R | ABC-V-3-R | ABC-V-12-R |
| ABC-V-1/2-R | ABC-V-4-R | ABC-V-15-R |
| ABC-V-3/4-R | ABC-V-5-R | ABC-V-18-R |
| ABC-V-1-R | ABC-V-6-R | ABC-V-20-R |
| ABC-V-1-1/2-R | ABC-V-7-R | ABC-V-25-R |
| ABC-V-2-R | ABC-V-8-R | ABC-V-30-R |
| ABC-V-2-1/2-R | ABC-V-10-R | |

Without Axial Leads

| | | |
|-------------|----------|----------|
| ABC-1/4-R | ABC-3-R | ABC-12-R |
| ABC-1/2-R | ABC-4-R | ABC-15-R |
| ABC-3/4-R | ABC-5-R | ABC-18-R |
| ABC-1-R | ABC-6-R | ABC-20-R |
| ABC-1-1/2-R | ABC-7-R | ABC-25-R |
| ABC-2-R | ABC-8-R | ABC-30-R |
| ABC-2-1/2-R | ABC-10-R | |



GBB (GBB-V axial leads)

Specifications
Description: Very fast-acting fuse.

Dimensions:
1/4" x 1 1/4"
(6.4 x 31.7mm).

Construction: Ceramic cartridge with nickel-plated brass endcaps.

Ratings:

Volts — 250Vac/125Vdc

Amps — 1-30A

IR — 200A @ 250Vac

— 200A (20-30A @ 125Vac/dc)
— 10,000A (1A -15A @ 125Vac/dc)

Agency Information:

CE, Std. 248-14, UL Recognized, 1-30,125Vdc/250Vac, File E56412, Guide JFHR2, CSA Accepted, 1-30, 125Vdc/250Vac, File 53787, Class 1422-30.

Features and Benefits

- Very fast-acting performance allows protection of highly sensitive electronic circuitry.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|---------------|------------|------------|
| GBB-V-1-R | GBB-V-6-R | GBB-V-15-R |
| GBB-V-1-1/4-R | GBB-V-7-R | GBB-V-20-R |
| GBB-V-2-R | GBB-V-8-R | GBB-V-25-R |
| GBB-V-3-R | GBB-V-9-R | GBB-V-30-R |
| GBB-V-4-R | GBB-V-10-R | |
| GBB-V-5-R | GBB-V-12-R | |

Without Axial Leads

| | | |
|-------------|----------|----------|
| GBB-1-R | GBB-6-R | GBB-15-R |
| GBB-1-1/4-R | GBB-7-R | GBB-20-R |
| GBB-2-R | GBB-8-R | GBB-25-R |
| GBB-3-R | GBB-9-R | GBB-30-R |
| GBB-4-R | GBB-10-R | |
| GBB-5-R | GBB-12-R | |



Electronic Fuses

1/4" Dia. x 1 1/4" Length Time-delay Ferrule Fuses

MDL-V (axial leads)

MDL

Specifications
Description: Time-delay fuse.
Dimensions: 1/4" x 1 1/4" (6.4 x 31.7mm).
Construction: Glass tube with nickel-plated brass endcaps.
Ratings:

- Volts — 250Vac (1/16-8A)
- 32Vac (9-30A)
- Amps — 1/16-30A
- IR* — 35A (1/16-1A @ 250Vac)
- 100A (1 1/4-3A @ 250Vac)
- 200A (4-8A @ 250Vac)
- 10000A (1/16-8A @ 125Vac)
- 1000A (9-30A @ 32Vac)



*Interrupting ratings were measured at 70% – 80% power factor on AC, and at a time constant described in UL 198L.

Agency Information: CE, UL Listed, Guide JDYX, File E19180, 1/16-8A; CSA Certification Class 1422-01, 1/16-8A; UL Recognized, Guide JDYX2, File E19180, 9-30A; CSA Component Acceptance, Class 142230, 9-30A.

Features and Benefits

- Time-delay allows close sizing on inductive circuits.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|--------------|---------------|------------|
| MDL-V-1/16-R | MDL-V-1-R | MDL-V-7-R |
| MDL-V-1/8-R | MDL-V-1-1/4-R | MDL-V-8-R |
| MDL-V-1/4-R | MDL-V-1-1/2-R | MDL-V-9-R |
| MDL-V-3/16-R | MDL-V-2-R | MDL-V-10-R |
| MDL-V-1/8-R | MDL-V-2-1/4-R | MDL-V-12-R |
| MDL-V-1/4-R | MDL-V-2-1/2-R | MDL-V-15-R |
| MDL-V-3/16-R | MDL-V-3-R | MDL-V-20-R |
| MDL-V-1/8-R | MDL-V-4-R | MDL-V-25* |
| MDL-V-1/2-R | MDL-V-5-R | MDL-V-30* |
| MDL-V-3/4-R | MDL-V-6-R | |

Without Axial Leads

| | | |
|------------|-------------|----------|
| MDL-1/16-R | MDL-1-R | MDL-7-R |
| MDL-1/8-R | MDL-1-1/4-R | MDL-8-R |
| MDL-1/4-R | MDL-1-1/2-R | MDL-9-R |
| MDL-3/16-R | MDL-2-R | MDL-10-R |
| MDL-1/8-R | MDL-2-1/4-R | MDL-12-R |
| MDL-1/4-R | MDL-2-1/2-R | MDL-15-R |
| MDL-3/16-R | MDL-3-R | MDL-20-R |
| MDL-1/8-R | MDL-4-R | MDL-25* |
| MDL-1/2-R | MDL-5-R | MDL-30* |
| MDL-3/4-R | MDL-6-R | |

*MDL-25 & MDL-30 are not available in RoHS compliant construction.

Data Sheet:2004

MDQ-V (axial leads)

MDQ

Specifications
Description: Dual-element, time-delay fuse.
Dimensions: 1/4" x 1 1/4" (6.4 x 31.7mm).
Construction: Glass tube with nickel-plated brass endcaps.
Ratings:

- Volts — 250Vac (1/100-7A)
- 32Vac (7 1/2-15A)
- Amps — 1/100-15A
- IR — 35A (1/100-1A @ 250Vac)
- 100A (1 1/4-3A @ 250Vac)
- 200A (4-7A @ 250Vac)
- 1000A (7 1/2-12A @ 32Vac)



Agency Information: Std. 248-14, UL Listed, File E19180; Guide JDYX, 1/16-7A CSA Certification, File 47233, Class 1422-01, 1/16-7A, UL Recognized, Guide JDYX2, File E19180, 7.1-30A.

Features and Benefits

- Dual-element design allows closer sizing to inductive circuits than any other fuses.

Typical Applications

- Electronic Relay and Control Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | | |
|----------------|-------------|-------------|-------------|
| MDQ-V-1/100 | MDQ-V-1/50 | MDQ-V-1-1/2 | MDQ-V-5 |
| MDQ-V-1/2 | MDQ-V-3/4 | MDQ-V-1-3/4 | MDQ-V-6 |
| MDQ-V-1/4 | MDQ-V-1/2 | MDQ-V-1-3/8 | MDQ-V-6-1/4 |
| MDQ-V-1/8 | MDQ-V-1/4 | MDQ-V-2 | MDQ-V-7 |
| MDQ-V-1/16 | MDQ-V-1/8 | MDQ-V-2-1/4 | MDQ-V-7-1/2 |
| MDQ-V-1 1/2000 | MDQ-V-3/8 | MDQ-V-2-1/2 | MDQ-V-8 |
| MDQ-V-1/8 | MDQ-V-1/2 | MDQ-V-2-3/4 | MDQ-V-9 |
| MDQ-V-3/16 | MDQ-V-1 | MDQ-V-3 | MDQ-V-10 |
| MDQ-V-1/4 | MDQ-V-1-1/8 | MDQ-V-3-3/8 | MDQ-V-12 |
| MDQ-V-1/2 | MDQ-V-1-1/4 | MDQ-V-4 | MDQ-V-15 |

Without Axial Leads

| | | | |
|--------------|-----------|-----------|-----------|
| MDQ-1/100 | MDQ-1/50 | MDQ-1-1/2 | MDQ-5 |
| MDQ-1/2 | MDQ-3/4 | MDQ-1-3/4 | MDQ-6 |
| MDQ-1/4 | MDQ-1/2 | MDQ-1-3/8 | MDQ-6-1/4 |
| MDQ-1/8 | MDQ-1/4 | MDQ-2 | MDQ-7 |
| MDQ-1/16 | MDQ-1/8 | MDQ-2-1/4 | MDQ-7-1/2 |
| MDQ-1 1/2000 | MDQ-3/8 | MDQ-2-1/2 | MDQ-8 |
| MDQ-1/8 | MDQ-1/2 | MDQ-2-3/4 | MDQ-9 |
| MDQ-3/16 | MDQ-1 | MDQ-3 | MDQ-10 |
| MDQ-1/4 | MDQ-1-1/8 | MDQ-3-3/8 | MDQ-12 |
| MDQ-1/2 | MDQ-1-1/4 | MDQ-4 | MDQ-15 |

Data Sheet: 2044

MDA-V (axial leads)

MDA

Specifications
Description: Time-delay fuse.
Dimensions: 1/4" x 1 1/4" (6.35 x 31.75mm).
Construction: Ceramic tube with nickel-plated brass endcaps.
Ratings:

- Volts — 250Vac (or less)
- 125Vdc (20A- 30A)
- Amps — 1/4-30A
- IR** — 35A (1/4-1A @ 250Vac)
- 100A (1 1/2-2A @ 250Vac)
- 200A (2 1/2-10A @ 250Vac)
- 750A (12-15A @ 250Vac)
- 1500A (20-30A @ 250Vac)
- 10kA (1/4-30A @ 125Vac)
- 10kA (20-30A @ 125Vdc)



**Interrupting ratings were measured at 70% – 80% power factor on AC, and at a time constant described in UL 248.

Agency Information: CE, Std. 248-14, UL Listed, Guide JDYX, File E19180, 0-20A CSA Certification, Class 1422-01, File 53787, 0-20A. UL Recognized, Guide JDYX2, File E19180, 25-30A, CSA Component Acceptance, Class 1422-30, 25-30A

Features and Benefits

- Ceramic body allows for higher amp/volt rating combinations.
- Inventory consolidation by replacing MDL fuses allows for reduced SKU investment and minimizing potential for misapplying fuse.

Typical Applications

- Electronic Circuits

Catalog Numbers (Amps)

With Axial Leads

| | | |
|---------------|------------|------------|
| MDA-V-1/4-R | MDA-V-3-R | MDA-V-12-R |
| MDA-V-1/2-R | MDA-V-4-R | MDA-V-15-R |
| MDA-V-3/4-R | MDA-V-5-R | MDA-V-20-R |
| MDA-V-1-R | MDA-V-6-R | MDA-V-25-R |
| MDA-V-1-1/4-R | MDA-V-7-R | MDA-V-30-R |
| MDA-V-2-R | MDA-V-8-R | |
| MDA-V-2-1/2-R | MDA-V-10-R | |

Without Axial Leads

| | | |
|-------------|----------|-----------|
| MDA-1/4-R | MDA-3-R | MDA-12-R |
| MDA-1/2-R | MDA-4-R | MDA-15-R |
| MDA-3/4-R | MDA-5-R | MDA-20-R |
| MDA-1-R | MDA-6-R | MDA-25A-R |
| MDA-1-1/4-R | MDA-7-R | MDA-30A-R |
| MDA-2-R | MDA-8-R | |
| MDA-2-1/2-R | MDA-10-R | |

Data Sheet: 2002

PC Board Mount Fuse Holders

HTC-45M



PCB Vertical Mount

Specifications

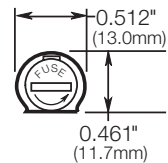
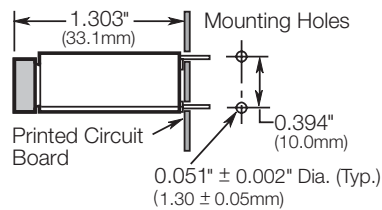
Description: PCB vertical mount bayonet cap and fuse holder.

Dimensions: See Dimensions illustration.

Ratings:

See Specifications table.

Dimensions - in (mm)



Data Sheet 2110

HTC-50M



PCB Horizontal Mount

Specifications

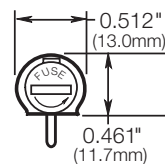
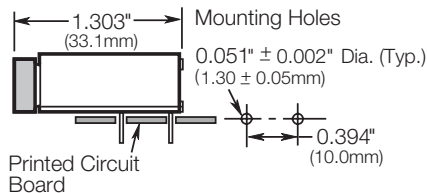
Description: PCB horizontal mount bayonet cap and fuse holder.

Dimensions: See Dimensions illustration.

Ratings:

See Specifications table.

Dimensions - in (mm)



Data Sheet 2110

HTC-60M, HTC-65M



PCB Stand-Off Mount

Specifications

Description: Four-leg PCB stand-off fuse holder.

Dimensions: See Dimensions illustration.

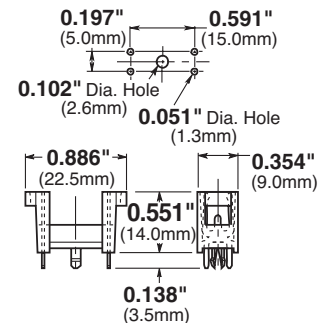
Ratings:

Volts: — 250V

Amps: — 6.3A

Dimensions - in (mm)

HTC-65M (4-Leg)



Data Sheet 2110

Specifications

Volts: 250V

Amps: UR: 10A, VDE: 6.3A

Terminals: For HTC-45M, HTC-50M Tin-plated.

Molded Materials: High temperature thermoplastic that meets the flammability ratings of UL 94V0; Glow Wire Test: 960°C per IEC 695-2-1.

Solderability: In accordance with IEC 68-2-20.

Electrical: Contact Resistance: ≤ 10mΩ; Insulation Resistance: ≥ 10 megohm; Dielectric Strength ≥ 2000 Vac.

Shock Safety: PC2 (fuse holders).

Agency Information: CE, HTC-45M, HTC-50M UL Recognized, (Guide IZLT8, File E14853; VDE HTC-45M & HTC-50M File: 40004456; HTC-65M File: 40004455.

Packaging: Standard Qty 10 (No Prefix), Bulk Qty 100 (Prefix Catalog Number with BK/).

PC Board Mount Fuse Holders

HBH-I (for 1/4" x 1 1/4" fuses)
HBH-M (for 5 x 20mm fuses)

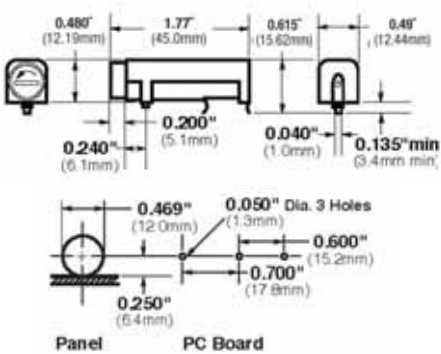
PCB Horizontal Mount

Specifications
 Description: PCB horizontal mount fuse holder.

Dimensions: See Dimensions illustration.

Ratings: See Specifications table.

Dimensions - in (mm)



Data Sheet: 2118

HBV-I (for 1/4" x 1 1/4" fuses)
HBV-M (for 5 x 20mm fuses)

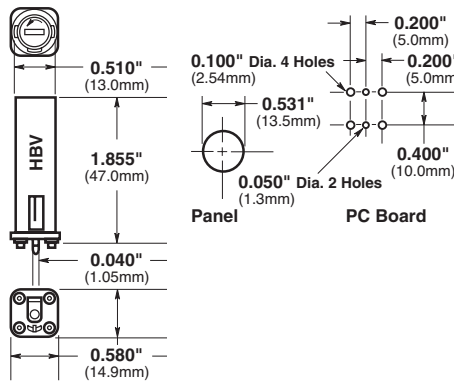
PCB Vertical Mount with Stability Pins

Specifications
 Description: PCB vertical mount fuse holder with stability pins.

Dimensions: See Dimensions illustration.

Ratings: See Specifications table.

Dimensions - in (mm)



Data Sheet: 2118

HBW-I (for 1/4" x 1 1/4" fuses)
HBW-M (for 5 x 20mm fuses)

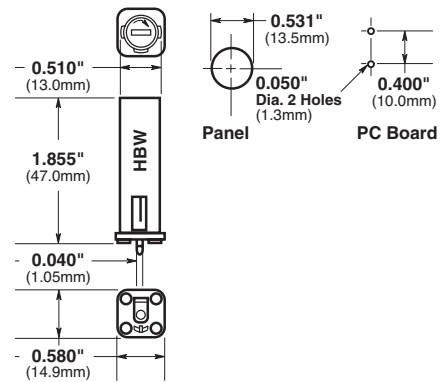
PCB Vertical Mount without Stability Pins

Specifications
 Description: PCB vertical mount fuse holder without stability pins.

Dimensions: See Dimensions illustration.

Ratings: See Specifications table.

Dimensions - in (mm)



Data Sheet: 2118



FBI



FBM

Fuse Holder Caps (Fit all three shown above)

Specifications

Electrical Ratings: UL — 16A @ 250V; CSA — 12A @ 250V; VDE — 6.3A @ 250V; SEMKO — 10A @ 250V
 Insulation resistance — 10 megohm at 500Vdc. Contact resistance — less than 0.005 ohms @ 200mV. Dielectric strength — over 200V/mil.

Molded Material: High dielectric molded phenolic with a UL 94V0 flammability rating.

Fuse Carrier & Knob: Spring-loaded, bayonet-type. Tin plated brass. Screwdriver slotted.

Mounting: "Kicked" terminals (all models) and stabilizer pins on HBV & HBW models for increased stability.

Temperature Rating (RTI): Body: 150°C, Knob: 130°C

Agency Information: CE, UL Recognized — Guide IZLT2, File EI4853;
 CSA Certified — Class 6225-01, File 47235
 VDE — 4009241 (HBV, HBW)
 SEMKO — 800444

PC Board Fuseclips for 5mm Diameter Fuses

Electronic Fuses

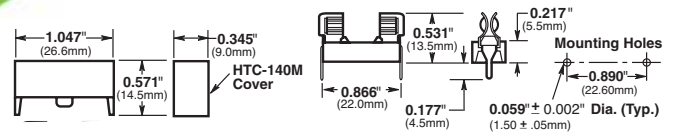
HTC-15M, HTC-140M

PCB Mounted Fuse Holder & Snap-On Cover

Voltage Rating: 250V, 6.3A, 1.6W

HTC-15M (fuse holder), HTC-140M (natural cover),
HTC-150M* (transparent cover)

*Available in bulk only. Use this format: BK/HTC-150M
Data Sheet: 2110



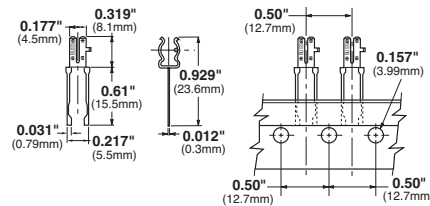
HTC-200M

PCB Mounted Fuseclip

Construction: Tin-plated bronze

Tape and Fan Fold packed

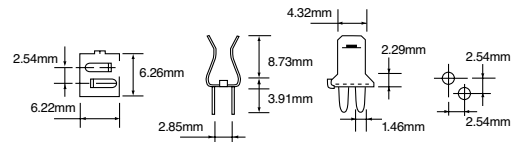
Ammo Pack (AP/HTC-200M) 1000 pieces per box
Data Sheet: 2110



HTC-210M

PCB Mounted Fuseclip with End Stops

Data Sheet: 2110

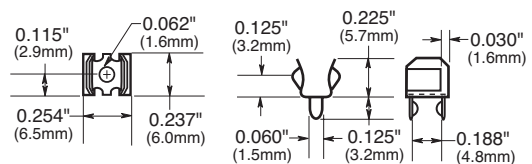


1A3399 Series

PCB Fuseclips with End Stops & Straight Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|------------|
| 1A3399-01 | Beryllium copper* | Silver |
| 1A3399-04-R | Beryllium copper* | Bright tin |
| 1A3399-10-R | Spring bronze | Bright tin |

*Beryllium copper recommended for amps higher than 15 amps.
Data Sheet: 2131

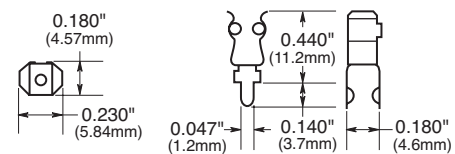


1A5018 Series

PCB High Profile Fuseclips with End Stops & Straight Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|----------------|------------|
| 1A5018-7 | Spring bronze | Silver |
| 1A5018-10-R | Spring bronze | Bright tin |

*Beryllium copper recommended for amps higher than 15 amps.
Data Sheet: 2131

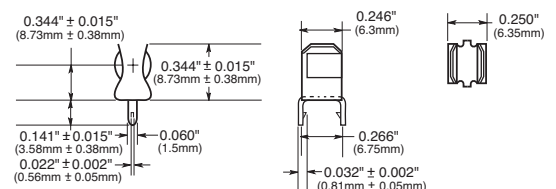


1A5601 Series

PCB Fuseclips (0-7A)

| Catalog Number | Clip Material | Finish |
|----------------|-----------------|------------|
| 1A5601 | Cartridge brass | Bright tin |

Data Sheet: 2131

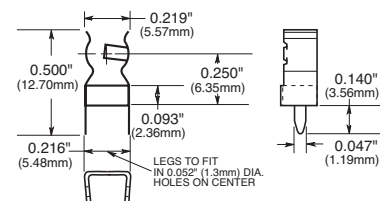


1A5602 Series

PCB Fuseclips (0-7A)

| Catalog Number | Clip Material | Finish |
|----------------|-----------------|------------|
| 1A5602 | Cartridge brass | Bright tin |

Data Sheet: 2131

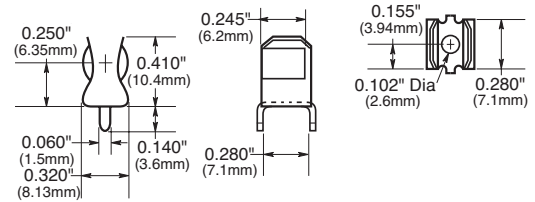


PC Board Fuseclips for 1/4" Diameter Fuses

1A3398 Series

PCB Fuseclips without End Stops with Straight Leads

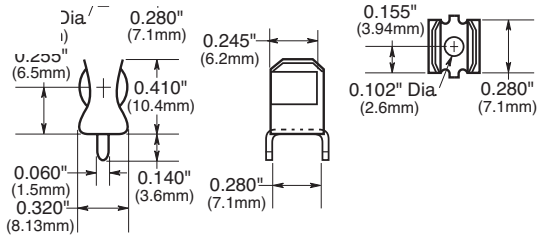
| Catalog Numbers | Clip Material | Finish |
|-----------------|-----------------|------------|
| 1A3398-07-R | Cartridge brass | Bright tin |



1A1907 Series

PCB Fuseclips with End Stops & Straight Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|--------------------|
| 1A1907-02 | Cartridge brass | None/bright dipped |
| 1A1907-03-R | Beryllium copper* | Bright tin |
| 1A1907-05 | Beryllium copper* | Silver |
| 1A1907-06-R | Cartridge brass | Bright tin |

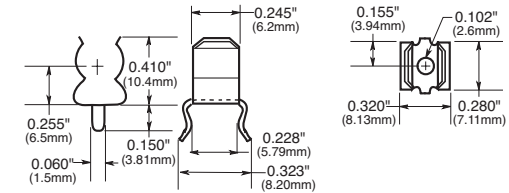


*Beryllium copper recommended for amps higher than 15A.
Data Sheet: 2131

1A4533 Series

PCB Fuseclips without End Stops or Angled Out Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|------------|
| 1A4533-01-R | Beryllium copper* | Bright tin |
| 1A4533-06-R | Cartridge brass | Bright tin |

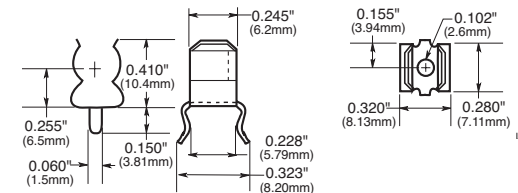


*Beryllium copper recommended for amps higher than 15A.
Data Sheet: 2131

1A4534 Series

PCB Fuseclips with End Stops & Angled Out Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|------------|
| 1A4534-01-R | Beryllium copper* | Bright tin |
| 1A4534-06-R | Cartridge brass | Bright tin |

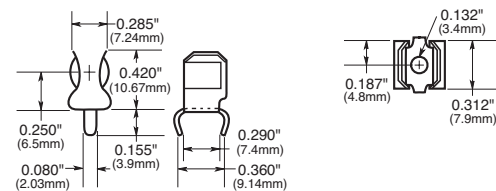


*Beryllium copper recommended for amps higher than 15A.
Data Sheet: 2131

1A1119 Series

Fuseclips with End Stops & Angled In Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|------------|
| 1A1119-04-R | Beryllium copper* | Bright tin |
| 1A1119-05 | Beryllium copper* | Silver |
| 1A1119-10-R | Cartridge brass | Bright tin |

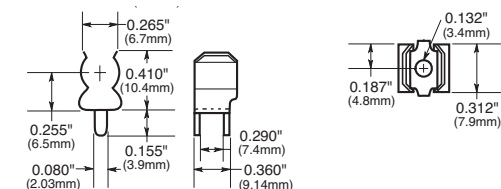


*Beryllium copper recommended for amps higher than 15A.
Data Sheet: 2131

1A1120 Series

PCB Fuseclips without End Stops or Angled In Leads

| Catalog Numbers | Clip Material* | Finish |
|-----------------|-------------------|--------------------|
| 1A1120-02 | Cartridge brass | None/bright dipped |
| 1A1120-05 | Beryllium copper* | Silver |
| 1A1120-06-R | Beryllium copper* | Bright tin |
| 1A1120-09-R | Cartridge brass | Bright tin |



*Beryllium copper recommended for amps higher than 15A.
Data Sheet: 2131

PC Board Fuseclips for $1\frac{3}{32}$ " Diameter, ATM and ATC® fuses

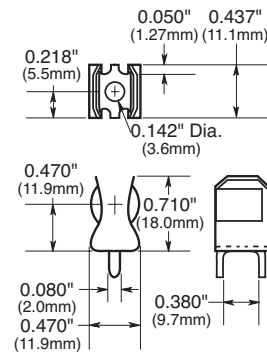
Electronic Fuses

1A3400 Series

PCB Fuseclips for $1\frac{3}{32}$ " diameter fuses with End Stops & Straight Leads

| Catalog Number | Amp Rating | Clip Material | Finish |
|----------------|------------|---------------|------------|
| 1A3400-09 | 20A Max. | Spring bronze | Bright tin |

Data Sheet 2131

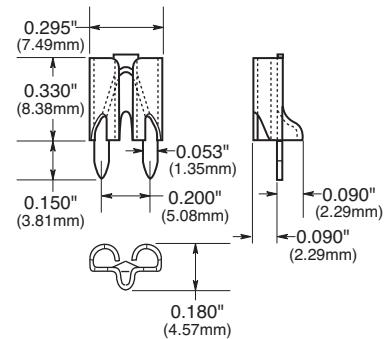


1A5600 Series

PCB Fuseclips for ATC Fuses (0-20A)

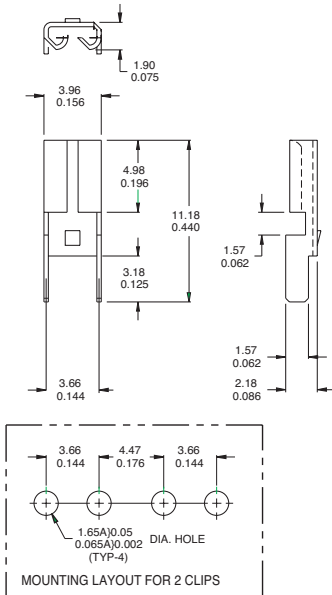
| Catalog Number | Clip Material | Finish |
|----------------|---------------|------------------|
| 1A5600 | Brass | Satin finish tin |

Data Sheet 2131



1A5778

PCB Fuseclips for ATM Fuses

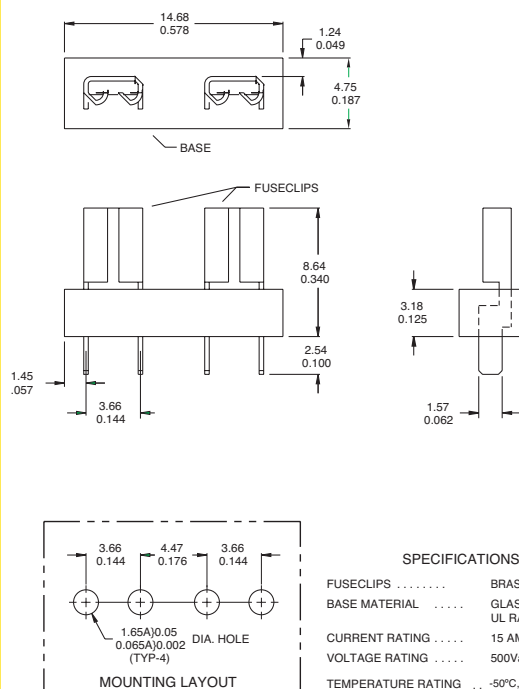


MATERIAL: BRASS, NICKEL PLATED, 0.30 0.012 THICK

Data Sheet 2131

1A5779 Series

PCB Fuseclips for ATM Fuses



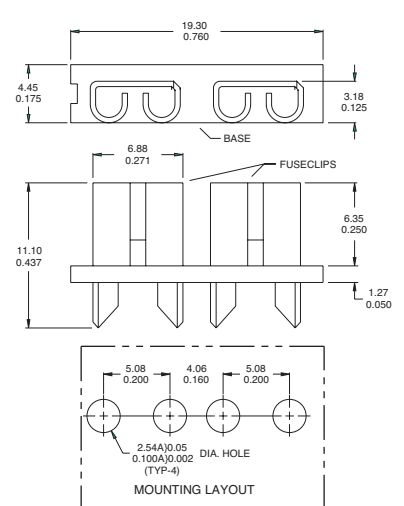
SPECIFICATIONS

| | |
|--------------------|-----------------------------------|
| FUSECLIPS | BRASS, NICKEL PLATED |
| BASE MATERIAL | GLASS FILLED NYLON, UL RATED 94V0 |
| CURRENT RATING | 15 AMPS |
| VOLTAGE RATING | 500Vac |
| TEMPERATURE RATING | -50°C, -58°F TO 145°C, 292°F |

Data Sheet 2131

1A5780 Series

PCB Fuseclips for ATC Fuses



SPECIFICATIONS

| | |
|--------------------|-----------------------------------|
| FUSECLIPS | BRASS, NICKEL PLATED |
| BASE MATERIAL | GLASS FILLED NYLON, UL RATED 94V0 |
| CURRENT RATING | 15 AMPS |
| VOLTAGE RATING | 500Vac |
| TEMPERATURE RATING | -50°C, -58°F TO 145°C, 292°F |

Data Sheet 2131

PC Board Fuseclips for 1/4", 9/32", 13/32" and 9/16" Diameter Fuses

5681 & 5682 Series

PCB Fuseclips with Mounting Holes For 1/4" Diameter Fuses

| Catalog Number | End Stop | Clip Mat.** | Finish | Dimensions (Inches) | | | | | Hole Dia. | Ref. |
|----------------|----------|-------------|------------|---------------------|-------------|------------|-----------|-------|-----------|------|
| | | | | B (To End Stop) | C (Contact) | D (Height) | E (Width) | | | |
| 5681-01 | No | BeCu | Silver | † | 0.265 | 0.41 | 0.32 | 0.132 | Fig. 2 | |
| 5681-08 | | Spg. Br. | Nickel | | | | | | | |
| 5681-15-R | | Spg. Br. | Bright Tin | | | | | | | |
| 5682-01 | Yes | BeCu | Silver | 0.108 | 0.262 | 0.41 | 0.32 | 0.132 | Fig. 1 | |
| 5682-02 | | BeCu | Silver | | | | | | | |
| 5682-11-R | | BeCu | Bright Tin | 0.131 | | | | | | |
| 5682-41-R | | Spg. Br. | Bright Tin | 0.106 | | | | | | |
| 5682-44-R | | Spg. Br. | Bright Tin | 0.132 | | | | | | |

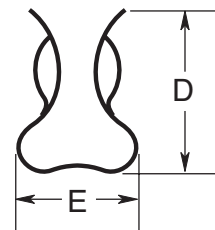
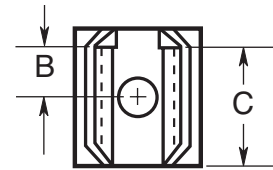


Figure 1

5672 & 5674 Series

PCB Fuseclips with Mounting Holes For 9/32" Diameter Fuses

| Catalog Number | End Stop | Clip Mat.** | Finish | Dimensions (Inches) | | | | | Hole Dia. | Ref. |
|----------------|----------|-------------|------------|---------------------|-------------|------------|-----------|-------|-----------|------|
| | | | | B (To End Stop) | C (Contact) | D (Height) | E (Width) | | | |
| 5672-11 | No | Spg. Br. | Bright Tin | † | 0.362 | 0.52 | 0.38 | 0.172 | Fig. 2 | |
| 5674-01 | Yes | BeCu | Silver | 0.168 | 0.356 | 0.52 | 0.38 | 0.172 | Fig. 1 | |
| 5674-10 | | BeCu | Bright Tin | | | | | | | |
| 5674-41 | | Spg. Br. | Bright Tin | | | | | | | |



5956 & 5960 Series

PCB Fuseclips with Mounting Holes For 13/32" Diameter Fuses

| Catalog Number | End Stop | Clip Mat.** | Finish | Dimensions (Inches) | | | | | Hole Dia. | Ref. |
|----------------|----------|-------------|-------------|---------------------|-------------|------------|-----------|-------|-----------|------|
| | | | | B (To End Stop) | C (Contact) | D (Height) | E (Width) | | | |
| 5956-16 | No | Spg. Br. | Bright Tin | † | 0.312 | 0.71 | 0.47 | 0.172 | Fig. 2 | |
| 5960-07 | Yes | BeCu | Silver | 0.168 | 0.387 | 0.71 | 0.47 | 0.196 | Fig. 1 | |
| 5960-09 | | BeCu | Silver | 0.20 | | | | 0.172 | | |
| 5960-44 | | Spg. Br. | Nickel | 0.20 | | | | 0.197 | | |
| 5960-51 | | Spg. Br. | Bright Dip* | 0.168 | | | | 0.196 | | |
| 5960-53 | | Spg. Br. | Bright Dip* | 0.20 | | | | 0.172 | | |
| 5960-61-R | | Spg. Br. | Bright Tin | 0.168 | | | | 0.196 | | |
| 5960-62-R | | Spg. Br. | Bright Tin | 0.168 | | | | 0.132 | | |
| 5960-63-R | | Spg. Br. | Bright Tin | 0.20 | | | | 0.172 | | |
| 5960-64-R | | Spr. Br. | Bright Tin | 0.20 | | | | 0.128 | | |

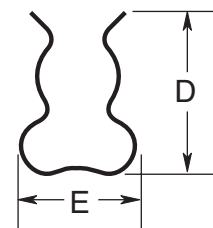
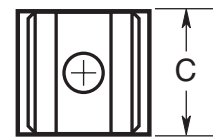


Figure 2

5591 & 5592 Series

PCB Fuseclips with Mounting Holes For 9/16" Diameter Fuses

| Catalog Number | End Stop | Clip Mat.** | Finish | Dimensions (Inches) | | | | | Hole Dia. | Ref. |
|----------------|----------|-------------|-------------|---------------------|-------------|------------|-----------|-------|-----------|------|
| | | | | B (To End Stop) | C (Contact) | D (Height) | E (Width) | | | |
| 5591-42 | Yes | Spg. Br. | Bright Dip* | 0.26 | 0.51 | 0.89 | 0.60 | 0.172 | Fig. 1 | |
| 5591-52-R | | Spg. Br. | Bright Tin | | | | | | | |
| 5592-01 | No | BeCu | Silver | 0.252 | 0.56 | 0.875 | 0.60 | 0.20 | Fig. 2 | |
| 5592-11 | | Spg. Br. | Silver | | | | | 0.20 | | |



* Bright Dip is actually treated bare metal with no plating.
 ** Spg. Br. — Spring Bronze; BeCu — Beryllium Copper.
 † Hole in center of both clip and contact area.

Medium Voltage Fuses



Section Contents

| | Page |
|--|-------|
| Introduction | 72 |
| E-Rated Fuses | |
| For transformers & feeders | 75 |
| CL-14 & bolt-in | 76 |
| CL-14 | 77 |
| For potential & small power transformers | 78-79 |
| R-Rated fuses for motor circuit protection | 80-82 |
| British IEC fuses for motor circuit protection | 83 |
| DIN IEC fuses for transformer protection | 84 |
| Potential transformer fuses | 85 |
| British IEC fuses for oil-filled switchgear | 86 |
| Fast-acting fuses | 87 |
| EEL-NEMA Type K & T and Type H & N fuses | 88 |
| BBU Boric acid fuses | 89-90 |
| Fuseclips for medium and high voltage fuses | 91 |

Medium Voltage Fuses

Worldwide Circuit Protection Solutions

Cooper Bussmann is a world-leading supplier of medium voltage fuses. Each product is backed by an efficient worldwide distribution network with unrivaled service and technical support. Cooper Bussmann circuit protection solutions comply with major international standards: ANSI, BS, DIN, IEC and UL.

Fuse Types

Medium voltage fuses generally fit into two categories – expulsion fuses and current limiting fuses. The definitions per ANSI C37.40 are:

Expulsion Fuse: “A vented fuse in which the expulsion effect of the gases produced by internal arcing, either alone or aided by other mechanisms results in current interruption.” Expulsion fuses will limit the duration of an overcurrent event, but they will not limit the magnitude of fault current. Cooper Bussmann offers two types of expulsion fuses: replacement fuse links for fused cutouts and boric acid fuses.

Current Limiting Fuse: “A fuse unit that, when in its current-responsive element is melted by a current within the fuse’s specified current-limiting range, abruptly introduces a high resistance to reduce current magnitude and duration, resulting in subsequent current interruption.” A current limiting fuse will reduce the magnitude a fault current as well as limit the duration of the overcurrent event when operating in its current limiting range. Cooper Bussmann offers a broad range of current limiting fuses for protection of feeders, transformers and motor circuits designed to ANSI, BS, DIN and IEC standards.

Medium Voltage Current Limiting Fuses

Current limiting fuses are classified into three categories:

1. **Full Range** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum rated interrupting current down to the minimum continuous current that causes the melting of the fusible element(s), when the fuse is applied at the maximum ambient temperature specified by the manufacturer.” It is able to interrupt any current that will melt its element.

2. **General Purpose** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum rated interrupting current down to the current that causes melting of the fusible element(s) in one hour.” Not all currents fall within this range. It is possible for the fuse to be exposed to an overcurrent lower than the value given by the one hour criteria. In that case, a different overcurrent protection device would be required to interrupt the overcurrent.

3. **Back-up** – defined by ANSI C37.40 as “a fuse capable of interrupting all currents from the maximum interrupting rating current down to the minimum interrupting current.”

The minimum interrupting current is the lowest current that the fuse will be able to clear properly. This creates a need to place a low current interrupting device, such as motor overloads, in series with the back-up rated fuse.

E- and R-Rated Fuses

In North America, current limiting fuses typically fall into the category of E-Rated fuses and R-Rated fuses. Cooper Bussmann also offers a wide range of current limiting fuses designed to BS, DIN and IEC standards.

E-Rated fuses are used to protect feeder circuits, power transformers and potential transformers. E-Rated fuses have defined current response times specified by ANSI C37.46. E-Rated fuses 100A and below must melt in 300sec at an rms current within the range of 200% to 240% of the continuous current rating. E-Rated fuses above 100A must melt in 600sec at an rms current within the range of 240% to 264% of the continuous current rating of the fuse. Cooper Bussmann offers a wide variety of full range and general purpose E-Rated fuses from 2.4kV up to 38kV.

R-Rated fuses are back-up fuses that provide short-circuit protection for motor circuits. They are applied with MV motor starters which provide the overload protection for the circuit. R-Rated fuses also have defined current response times specified by ANSI C37.46. R-Rated fuses will melt in a range of 15 – 35sec at a current equal to 100 times the “R” rating. Cooper Bussmann offers 2.4kV, 5.08kV, 7.2kV and 8.3kV R-Rated fuses for motor circuit protection.

E-rated Fuses for Transformers and Feeders

MV055 and MV155



Specifications
Description: E-rated medium, voltage current-limiting fuses: for transformer and feeder protection.

Dimensions: See Catalog Numbers table.

Construction: Silver ribbon element surrounded by silica filler housed in a fiberglass tube and plated endcaps. An epoxy paint protects the fuse tube from the surrounding environment.

Ratings:

- Volts: — 5.5kV (5-450A)
- 15.5kV (5-200A)

- Amps: — 5-450A (5.5kV)
- 5-200A (15.5kV)

IR: — 50kA Sym. Max

Agency Information: Meets E requirements per ANSI C37.46, Meets full range requirements per ANSI C37.40.

MV055 Features and Benefits

- Standard clip center distance of 12 inches with 2 and 3 inch barrel diameters for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Full range rating with 50,000 Interrupting Rating
- Double pulsed at 90% of minimum I₂t to establish manufacturing reliability

MV055 Typical Applications

- 5.0kV Transformer Primary Protection
- 5.0kV Feeder Circuit Protection
- 5.0kV Voltage Switches
- 5.0kV Metal-enclosed Switchgear

MV155 Features and Benefits

- Standard clip center distance of 15 and 18 inches with 2 and 3 inch barrel diameters for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Full range rating with 50,000 Interrupting Rating
- Double pulsed at 90% of minimum I₂t to establish manufacturing reliability

MV155 Typical Applications

- 15.0kV Transformer Primary Protection
- 15.0kV Feeder Circuit Protection
- 15.0kV Voltage Switches
- 15.0kV Metal-enclosed Switchgear

5.5kV Catalog Numbers

| Catalog Numbers | Amp Rating | Min Melt Pt | Max Clear Pt | Dimensions (In)* | | | |
|-----------------|------------|-------------|--------------|------------------|------|-------------|---------|
| | | | | Length | Dia. | Clip Center | Barrels |
| MV055F1CAX5E | 5 | 180 | 2,400 | 15.75 | 2 | 12 | 1 |
| MV055F1CAX7E | 7 | 850 | 8,000 | | | | |
| MV055F1CAX10E | 10 | 850 | 8,000 | | | | |
| MV055F1CAX15E | 15 | 2,070 | 11,000 | | | | |
| MV055F1CAX20E | 20 | 2,370 | 23,000 | | | | |
| MV055F1CAX25E | 25 | 4,650 | 31,000 | | | | |
| MV055F1CAX30E | 30 | 9,490 | 45,000 | | | | |
| MV055F1CAX40E | 40 | 9,490 | 45,000 | | | | |
| MV055F1CAX50E | 50 | 13,600 | 90,000 | | | | |
| MV055F1CAX65E | 65 | 30,700 | 181,000 | | | | |
| MV055F1DAX10E | 10 | 850 | 8,000 | | | | |
| MV055F1DAX15E | 15 | 2,070 | 12,000 | | | | |
| MV055F1DAX20E | 20 | 2,370 | 23,000 | | | | |
| MV055F1DAX25E | 25 | 4,650 | 31,000 | | | | |
| MV055F1DAX30E | 30 | 9,490 | 45,000 | | | | |
| MV055F1DAX40E | 40 | 9,490 | 45,000 | | | | |
| MV055F1DAX50E | 50 | 13,600 | 90,000 | | | | |
| MV055F1DAX65E | 65 | 30,700 | 181,000 | | | | |
| MV055F1DAX80E | 80 | 54,600 | 270,000 | | | | |
| MV055F1DAX100E | 100 | 116,200 | 580,000 | | | | |
| MV055F1DAX125E | 125 | 167,400 | 600,000 | | | | |
| MV055F1DAX150E | 150 | 218,700 | 786,000 | | | | |
| MV055F1DAX175E | 175 | 227,900 | 1,100,000 | | | | |
| MV055F1DAX200E | 200 | 297,600 | 1,520,000 | | | | |
| MV055F2DAX250E | 250 | 669,600 | 2,400,000 | | | | |
| MV055F2DAX300E | 300 | 874,800 | 3,149,000 | | | | |
| MV055F2DAX350E | 350 | 911,600 | 4,376,000 | | | | |
| MV055F2DAX400E | 400 | 1,190,400 | 6,071,000 | | | | |
| MV055F2DAX450E | 450 | 1,555,000 | 9,796,000 | | | | |

*1" = 25.4mm

Recommended Fuse Clips - see page 91

Data Sheet: 6700

15.5kV Catalog Numbers

| Catalog Numbers | Amp Rating | Min Melt Pt | Max Clear Pt | Dimensions* | | | |
|-----------------|------------|-------------|--------------|-------------|------|-------------|---------|
| | | | | Length | Dia. | Clip Center | Barrels |
| MV155F1CBX5E | 5 | 180 | 2,900 | 18.75 | 2 | 15 | 1 |
| MV155F1CBX7E | 7 | 850 | 8,000 | | | | |
| MV155F1CBX10E | 10 | 850 | 8,000 | | | | |
| MV155F1CBX15E | 15 | 2,070 | 12,000 | | | | |
| MV155F1CBX20E | 20 | 2,370 | 23,000 | | | | |
| MV155F1CBX25E | 25 | 4,650 | 31,000 | | | | |
| MV155F1CBX30E | 30 | 9,490 | 45,000 | | | | |
| MV155F1DBX10E | 10 | 850 | 8,000 | | | | |
| MV155F1DBX15E | 15 | 2,070 | 12,000 | | | | |
| MV155F1DBX20E | 20 | 2,370 | 23,000 | | | | |
| MV155F1DBX25E | 25 | 4,650 | 31,000 | | | | |
| MV155F1DBX30E | 30 | 9,490 | 45,000 | | | | |
| MV155F1DBX40E | 40 | 9,490 | 45,000 | | | | |
| MV155F1DBX50E | 50 | 13,600 | 90,000 | | | | |
| MV155F1DBX65E | 65 | 30,700 | 181,000 | | | | |
| MV155F1DBX80E | 80 | 54,600 | 270,000 | | | | |
| MV155F1DBX100E | 100 | 116,200 | 600,000 | | | | |
| MV155F2DBX125E | 125 | 123,000 | 677,000 | | | | |
| MV155F2DBX150E | 150 | 218,700 | 1,287,000 | | | | |
| MV155F2DBX175E | 175 | 314,700 | 1,689,000 | | | | |
| MV155F2DBX200E | 200 | 465,100 | 2,405,000 | | | | |
| MV155F1DCX65E | 65 | 30,700 | 181,000 | | | | |
| MV155F1DCX80E | 80 | 54,600 | 270,000 | | | | |
| MV155F1DCX100E | 100 | 116,200 | 600,000 | | | | |
| MV155F2DCX125E | 125 | 123,000 | 677,000 | | | | |
| MV155F2DCX150E | 150 | 218,700 | 1,287,000 | | | | |
| MV155F2DCX175E | 175 | 314,700 | 1,689,000 | | | | |
| MV155F2DCX200E | 200 | 465,100 | 2,405,000 | | | | |

*1" = 25.4mm.

Recommended Fuse Clips - see page 91

Data Sheet: 6701 (MV155)

Medium Voltage Fuses

E-rated Fuses for Transformer & Feeders

JCX, JCY, JCU, JCZ and JDZ

Specifications

Description: Indoor/enclosure E-rated medium voltage, current-limiting fuses for feeders and power transformers with blown fuse indication.

Dimensions: See Catalog Numbers table.

Construction: plated ferrules.

Ratings:

Volts: — 2750-8300V (See Catalog Numbers table for details)

Amps: — ½-750A

IR: — 40-63kA Sym

— 60-100kA ASYM

— See Catalog Numbers table for details



Features and Benefits

- Physically dimensioned for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Full range ANSI classification

Typical Applications

- Medium Voltage Transformer Primary Protection
- Medium Voltage Feeder Circuit Protection
- Medium Voltage Switches
- Medium Voltage Metal-enclosed Switchgear

Catalog Numbers

| Catalog Numbers | Amp Rating | Maximum Design Voltage | Construction | Maximum Interrupting Capacity | | Dimensions - in (mm) | |
|----------------------------------|------------|------------------------|--------------|-------------------------------|-------------|----------------------|-------------|
| | | | | Amps (Asym.) | Amps (Sym.) | Length | Diameter |
| 2400V; E-Rated; Indoor/Enclosure | | | | | | | |
| JCX-½E | 0.5 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-1E | 1 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-2E | 2 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-3E | 3 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-5E | 5 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-7E | 7 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-10E | 10 | 2750 | Single | 60,000 | 40,000 | 9.19 (233.38) | 2 (50.8) |
| JCX-15E | 15 | 2750 | Single | 80,000 | 50,000 | 9.5 (241.3) | 2.1 (53.34) |
| JCX-20E | 20 | 2750 | Single | 80,000 | 50,000 | 9.5 (241.3) | 2.1 (53.34) |
| JCX-25E | 25 | 2750 | Single | 80,000 | 50,000 | 9.5 (241.3) | 2.1 (53.34) |
| JCX-30E | 30 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-40E | 40 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-50E | 50 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-65E | 65 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-80E | 80 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-100E | 100 | 2750 | Single | 80,000 | 40,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-125E | 125 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-150E | 150 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-200E | 200 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-225E | 225 | 2750 | Single | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-250E/280X | 250/280 | 2750 | Double | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-300E/325X | 300/325 | 2750 | Double | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-350X | 350 | 2750 | Double | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-400X | 400 | 2750 | Double | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| JCX-450X | 450 | 2750 | Double | 80,000 | 50,000 | 10.81 (276.35) | 3 (76.2) |
| 5500V; E-Rated; Indoor/Enclosure | | | | | | | |
| JCY-½E | 0.5 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-1E | 1 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-2E | 2 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-3E | 3 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-5E | 5 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-7E | 7 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-10E | 10 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-15E | 15 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-20E | 20 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |
| JCY-25E | 25 | 5500 | Single | 60,000 | 40,000 | 11.19 (284.18) | 2 (50.8) |

Contact Cooper Bussmann for the latest product information on E-Rated fuses for transformer and feeder protection. Recommended fuseclips: see page 91 - 1A0065, 9078A67G04, A3354730

E-rated Fuses for Transformer & Feeders

Medium Voltage Fuses

Catalog Numbers: E-Rated; Indoor/Enclosure

| Catalog Numbers | Amp Rating | Maximum Design Voltage | Construction | Maximum Interrupting Capacity | | Dimensions - In (mm) | |
|----------------------------------|------------|------------------------|--------------|-------------------------------|--------------|----------------------|-------------|
| | | | | Amps. (Asym.) | Amps. (Sym.) | Length | Diameter |
| 5500V; E-Rated; Indoor/Enclosure | | | | | | | |
| JCU-10E | 10 | 5500 | Single | 80,000 | 50,000 | 17.81 (452.4) | 3 (76.2) |
| JCU-15E | 15 | 5500 | Single | 80,000 | 50,000 | 12.88 (327.0) | 2.1 (53.34) |
| JCU-20E | 20 | 5500 | Single | 80,000 | 50,000 | 12.88 (327.0) | 2.1 (53.34) |
| JCU-25E | 25 | 5500 | Single | 80,000 | 50,000 | 12.88 (327.0) | 2.1 (53.34) |
| JCU-30E | 30 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-40E | 40 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-50E | 50 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-65E | 60 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-80E | 80 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-100E | 100 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-125E | 125 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-150E | 150 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-175E | 175 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-200E | 200 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-250E | 250 | 5500 | Single | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-300E | 300 | 5500 | Double | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-350E | 350 | 5500 | Double | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-400E | 400 | 5500 | Double | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-450E | 450 | 5500 | Double | 100,000 | 63,000 | 17.88 (454.15) | 3 (76.20) |
| JCU-600E | 600 | 5500 | * | 80,000 | 50,000 | 28.81 (731.77) | 4 (101.60) |
| JCU-750E | 750 | 5500 | * | 80,000 | 50,000 | 28.81 (731.77) | 4 (101.60) |
| 8300V; E-Rated; Indoor/Enclosure | | | | | | | |
| JCZ-15E | 15 | 8300 | Single | 80,000 | 50,000 | 15.51 (393.95) | 2.1 (53.34) |
| JCZ-20E | 20 | 8300 | Single | 80,000 | 50,000 | 15.51 (393.95) | 2.1 (53.34) |
| JCZ-25E | 25 | 8300 | Single | 80,000 | 50,000 | 15.51 (393.95) | 2.1 (53.34) |
| JCZ-30E | 30 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-40E | 40 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-50E | 50 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-65E | 65 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-80E | 80 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-100E | 100 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-125E | 125 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-150E | 150 | 8300 | Single | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JCZ-200E | 200 | 8300 | Double | 80,000 | 50,000 | 17.88 (454.15) | 3 (76.2) |
| JDZ-20E | 20 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-25E | 25 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-30E | 30 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-40E | 40 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-50E | 50 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-65E | 65 | 8300 | Single | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-80E | 80 | 8300 | Double | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-100E | 100 | 8300 | Double | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |
| JDZ-125E | 125 | 8300 | Double | 80,000 | 50,000 | 15.88 (403.2) | 3 (76.2) |

Recommended fuseclips: see page 91 - 1A0065, 9078A67G04, A3354730

General Notes:

- All fuses are fitted with a striker pin which can be used for indication or tripping purposes.
- The fuses are suitable for use either indoors or outdoors.
- These fuses are interchangeable with corresponding fuses produced by most other leading North American manufacturers. Contact Cooper Bussmann for the latest product information on E-Rated fuses for transformer and feeder protection.

*Bolt on mounting

E-rated Fuses: CL-14 & Bolt-In

ECL055

Specifications

Description: E-rated medium voltage, current-limiting fuses for transformer and feeder protection.

Construction: Filament wound, glass epoxy fuse tube, with silica filler, and silver-plated copper terminals and endcaps containing a silver element in a double concentric helical configuration.

Ratings:

Volts: — 5.5kV

Amps: — 10-900A

IR: — 63kA Sym. Max

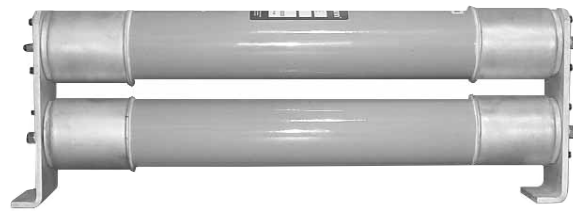
Agency Information: Meets E requirements per ANSI C37.46, Meets General Purpose requirements per ANSI C37.40.

Features and Benefits

- Clip-lock and bolt-in style available in double and triple barrel fuse designs for application flexibility
- The filament wound, glass epoxy fuse tube provides UV and moisture protection, making these medium voltage fuses suitable for both indoor and outdoor applications
- Open fuse indication (indicator travel distance is 16mm) easily integrates into automation schemes
- 50/60Hz operating frequency make these fuses applicable world-wide

Typical Applications

- 5.0kV Transformer Primary Protection
- 5.0kV Feeder Circuit Protection
- 5.0kV Voltage Switches
- 5.0kV Metal-enclosed Switchgear



Catalog Numbers

| Catalog Numbers | Amp Rating | Voltage | IR Max Sym. | # of Barrels | Style |
|-----------------|------------|---------|-------------|--------------|-----------|
| ECL055-10E | 10 | 5.5kV | 63kA | 1 | Clip-Lock |
| ECL055-15E | 15 | — | | | |
| ECL055-20E | 20 | — | | | |
| ECL055-25E | 25 | — | | | |
| ECL055-30E | 30 | — | | | |
| ECL055-40E | 40 | — | | | |
| ECL055-50E | 50 | — | | | |
| ECL055-65E | 65 | — | | | |
| ECL055-80E | 80 | — | | | |
| ECL055-100E | 100 | — | | | |
| ECL055-125E | 125 | — | | | |
| ECL055-150E | 150 | — | | | |
| ECL055-200E | 200 | — | | | |
| ECL055-250E | 250 | — | | | |
| ECL055-300E | 300 | — | | | |
| ECL055-400E | 400 | — | 63kA | 2 | Clip-Lock |
| ECL055-450E | 450 | — | | | |
| ECL055-500E | 500 | — | | | |
| ECL055-600E | 600 | — | | | |
| ECL055-750E | 750 | — | | | |
| ECL055-900E | 900 | — | | | |
| ECL055-900E | 900 | — | | 3 | Bolt-In |

Catalog Number Construction (Example)

| Catalog Number | Voltage Rating | Amp Rating |
|----------------|----------------|------------|
| ECL | 055 | 500E |
| | 055 = 5.5 kV | |

Catalog Number Cross Reference

| Cooper Bussmann Catalog Numbers | Ferraz-Shawmut New Catalog # | Ferraz-Shawmut Old Catalog # |
|---------------------------------|------------------------------|------------------------------|
| ECL055-10E | A055C1DORO-10E | 225-007-937 |
| ECL055-15E | A055C1DORO-15E | 225-007-938 |
| ECL055-20E | A055C1DORO-20E | 225-007-939 |
| ECL055-25E | A055C1DORO-25E | 225-007-940 |
| ECL055-30E | A055C1DORO-30E | 225-007-941 |
| ECL055-40E | A055C1DORO-40E | 225-007-942 |
| ECL055-50E | A055C1DORO-50E | 225-007-943 |
| ECL055-65E | A055C1DORO-65E | 225-007-944 |
| ECL055-80E | A055C1DORO-80E | 225-007-945 |
| ECL055-100E | A055C1DORO-100E | 225-007-946 |
| ECL055-125E | A055C1DORO-125E | 225-007-947 |
| ECL055-150E | A055C1DORO-150E | 225-007-948 |
| ECL055-200E | A055C1DORO-200E | 225-007-949 |
| ECL055-250E | A055C1DORO-250E | 225-007-950 |
| ECL055-300E | A055C1DORO-300E | 225-007-951 |
| ECL055-400E | A055C1DORO-400E | 225-007-952 |
| ECL055-450E | A055C2DORO-450E | 225-007-953 |
| ECL055-500E | A055C2DORO-500E | 225-007-954 |
| ECL055-600E | A055C2DORO-600E | 225-007-955 |
| ECL055-750E | A055B3DORO-750E | A055X750E-4 |
| ECL055-900E | A055B3DORO-900E | A055X900E-4 |

Data Sheet: 9002

E-rated Fuses: CL-14

ECL155

Specifications

Description: E-rated medium voltage, current-limiting fuses for transformer and feeder protection.

Construction: Filament wound, glass epoxy fuse tube, with silica filler, and silver-plated copper terminals and endcaps containing a silver element in a double concentric helical configuration.

Ratings:

Volts: — 15.5kV

Amps: — 10-300A

IR: — 63kA Sym. (10-200A)

— 50kA Sym. (250-300A)

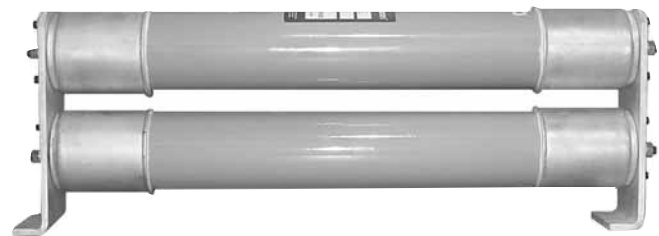
Agency Information: Meets E requirements per ANSI C37.46, Meets General Purpose requirements per ANSI C37.40.

Features and Benefits

- Clip-lock double barrel fuse design assures positive installation
- The filament wound, glass epoxy fuse tube provides UV and moisture protection, making these medium voltage fuses suitable for both indoor and outdoor applications
- Open fuse indication (indicator travel distance is 16mm) easily integrates into automation schemes
- 50/60 Hz operating frequency make these fuses applicable world-wide

Typical Applications

- 15.0kV Transformer Primary Protection
- 15.0kV Feeder Circuit Protection
- 15.0kV Voltage Switches
- 15.0kV Metal-enclosed Switchgear



Catalog Numbers

| Catalog Numbers | Amp Rating | Voltage | IR Voltage Max Sym. | # of Barrels | Style |
|-----------------|------------|---------|---------------------|--------------|-----------|
| ECL155-10E | 10 | 15.5kV | 63kA | 1 | Clip-Lock |
| ECL155-15E | 15 | | | | |
| ECL155-20E | 20 | | | | |
| ECL155-25E | 25 | | | | |
| ECL155-30E | 30 | | | | |
| ECL155-40E | 40 | | | | |
| ECL155-50E | 50 | | | | |
| ECL155-65E | 65 | | | | |
| ECL155-80E | 80 | | | | |
| ECL155-100E | 100 | | | | |
| ECL155-125E | 125 | | | | |
| ECL155-150E | 150 | | | | |
| ECL155-200E | 200 | | | 50kA | |
| ECL155-250E | 250 | | | | |
| ECL155-300E | 300 | | | | |

Medium Voltage Fuses

Catalog Number Construction (Example)

| Catalog Number | Voltage Rating | Amp Rating |
|----------------|----------------|------------|
| ECL | 155 | 300E |
| | 155 = 15.5 kV | |

Catalog Number Cross Reference

| Cooper Bussmann Catalog Numbers | Ferraz-Shawmut New Catalog # | Ferraz-Shawmut Old Catalog # |
|---------------------------------|------------------------------|------------------------------|
| ECL155-10E | A155C1DORO-10E | 225-007-967 |
| ECL155-15E | A155C1DORO-15E | 225-007-968 |
| ECL155-20E | A155C1DORO-20E | 225-007-969 |
| ECL155-25E | A155C1DORO-25E | 225-007-970 |
| ECL155-30E | A155C1DORO-30E | 225-007-971 |
| ECL155-40E | A155C1DORO-40E | 225-007-972 |
| ECL155-50E | A155C1DORO-50E | 225-007-973 |
| ECL155-65E | A155C1DORO-65E | 225-007-974 |
| ECL155-80E | A155C1DORO-80E | 225-007-975 |
| ECL155-100E | A155C1DORO-100E | 225-007-976 |
| ECL155-125E | A155C2DORO-125E | 225-007-977 |
| ECL155-150E | A155C3DORO-150E | 225-007-978 |
| ECL155-200E | A155C3DORO-200E | 225-007-979 |
| ECL155-250E | A155C3DORO-250E | 225-007-980 |
| ECL155-300E | A155C3DORO-300E | 225-007-981 |

E-rated Fuses for Potential & Small Power Transformers

JCD, JCW, JCQ, JCI & JCT



Specifications

Description: Indicating and non-indicating E-rated medium voltage, current-limiting fuses for potential and small power transformers.

Dimensions: See Catalog Numbers table.

Construction: Plated ferrules.

Ratings:

Volts: — 2.4-15.5kV (See Catalog Numbers table for details)

Amps: — ½-10A

IR: — 25-80kA Sym

— 40-130kA ASYM

— See Catalog Numbers table for details

Features and Benefits

- Sized for retrofitting in existing hardware
- Space saving size

Typical Applications

- Primary protection of medium voltage potential transformers
- Primary protection of small medium voltage service transformers
- Primary protection of small medium voltage control transformers

Catalog Numbers

| Catalog Numbers | Amp Rating | Maximum Design Voltage | IR RMS Sym. | Dimensions - in (mm) | |
|---|------------|------------------------|-------------|----------------------|---------------|
| | | | | Length | Diameter |
| 2400V; E-Rated Fuse; Non-Indicating | | | | | |
| JCD-½E | 0.5 | 2.75kV | 63kA | 4.50 (114) | 0.80 (20.32) |
| JCD-1E | 1 | 2.75kV | 40kA | 4.50 (114) | 0.80 (20.32) |
| JCD-2E | 2 | 2.75kV | 40kA | 4.50 (114) | 0.80 (20.32) |
| JCD-5E | 5 | 2.75kV | 25kA | 4.50 (114) | 0.80 (20.32) |
| 2450/5500V; E-Rated Fuse; Non-Indicating | | | | | |
| JCW-½E | 0.5 | 2.75/5.5kV | 40kA | 7.312 (185.72) | 1.563 (39.70) |
| JCW-1E | 1 | 2.75/5.5kV | 40kA | 7.312 (185.72) | 1.563 (39.70) |
| JCW-2E | 2 | 2.75/5.5kV | 40kA | 7.312 (185.72) | 1.563 (39.70) |
| JCW-3E | 3 | 2.75/5.5kV | 40kA | 7.312 (185.72) | 1.563 (39.70) |
| JCW-5E | 5 | 2.75/5.5kV | 40kA | 7.312 (185.72) | 1.563 (39.70) |
| 5500V; E-Rated Fuse; Indicating | | | | | |
| JCQ-½E | 0.5 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCQ-1E | 1 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCQ-1½E | 1.5 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCQ-3E | 3 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCQ-5E | 5 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCQ-10E | 10 | 5.5kV | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| 8300V; E-Rated Fuse; Indicating | | | | | |
| JCI-½E | 0.5 | 8.3kA | 80kA | 9.5 (241.3) | 1.6 (40.64) |
| JCI-3E | 3 | 8.3kA | 80kA | 12.88 (327.15) | 1.6 (40.64) |
| JCI-5E | 5 | 8.3kA | 50kA | 12.88 (327.15) | 1.6 (40.64) |
| JCI-10E | 10 | 8.3kA | 50kA | 12.88 (327.15) | 1.6 (40.64) |
| 15,500V; E-Rated Fuse; Indicating | | | | | |
| JCT-½E | 0.5 | 15.5kV | 80kA | 12.93 (328.42) | 1.6 (40.64) |
| JCT-1E | 1 | 15.5kV | 80kA | 12.93 (328.42) | 1.6 (40.64) |
| JCT-1-½E | 1.5 | 15.5kV | 80kA | 12.93 (328.42) | 1.6 (40.64) |
| JCT-3E | 3 | 15.5kV | 80kA | 17.5 (444.5) | 1.6 (40.64) |
| JCT-5E | 5 | 15.5kV | 80kA | 17.5 (444.5) | 1.6 (40.64) |
| JCT-10E | 10 | 15.5kV | 80kA | 17.5 (444.5) | 1.6 (40.64) |

Fuse clip for 1.56 and 1.6 inch diameter fuses - 1A0835.
Fuse clip for 0.81 inch diameter fuses - 1A1837.

E-rated Fuses for Potential & Small Power Transformers

AB, AD, AM and
CAV



Ratings:

Volts: — 5.5-38kV

Amps: — 0.5-15A

IR: — 40kA-80kA Sym.

— See Catalog Numbers table for details

Features and Benefits

- Sized for retrofitting in existing hardware
- Space saving size

Typical Applications

- Primary protection of medium voltage potential transformers
- Primary protection of small medium voltage service transformers
- Primary protection of small medium voltage control transformers

Specifications

Description: Indicating and non-indicating E-rated medium voltage, current-limiting fuses for potential and small power transformers.

Dimensions: See Catalog Numbers table.

Catalog Numbers

| Catalog Numbers | Amp Rating | Maximum Design Voltage | IR RMS Sym. | Dimensions - In (mm) | |
|-----------------|------------|------------------------|-------------|----------------------|-------------|
| | | | | Length | Diameter |
| 5.5ABWNA0.5E | 0.5 | 5.5kV | 50kA | 5.6 (142.2) | 1 (25.4) |
| 5.5ABWNA1E | 1 | 5.5kV | 50kA | 5.6 (142.2) | 1 (25.4) |
| 5.5ABWNA2E | 2 | 5.5kV | 50kA | 5.6 (142.2) | 1 (25.4) |
| 5.5ABWNA3E | 3 | 5.5kV | 50kA | 5.6 (142.2) | 1 (25.4) |
| 5.5ABWNA5E | 5 | 5.5kV | 50kA | 5.6 (142.2) | 1 (25.4) |
| 5.5AMWNA0.5E | 0.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5AMWNA1.0E | 1.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5AMWNA2.0E | 2.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5AMWNA3.0E | 3.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5AMWNA4.0E | 4.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5AMWNA5.0E | 5.5 | 5.5kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 5.5CAVH0.5E | 0.5 | 5.5kV | 63kA | 7.375 (187.3) | 1.63 (41.4) |
| 5.5CAVH1E | 1 | 5.5kV | 63kA | 7.375 (187.3) | 1.63 (41.4) |
| 5.5CAVH2E | 2 | 5.5kV | 63kA | 7.375 (187.3) | 1.63 (41.4) |
| 5.5CAV15E | 15 | 5.5kV | 63kA | 7.375 (187.3) | 1.63 (41.4) |
| 7.2AMWNA0.5E | 0.5 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 7.2AMWNA1.0E | 1 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 7.2AMWNA2.0E | 2 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 7.2AMWNA3.0E | 3 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 7.2AMWNA4.0E | 4 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 7.2AMWNA5.0E | 5 | 7.2kV | 50kA | 5.6 (142.2) | 0.81 (20.6) |
| 15.5CAV(H)0.5E* | 0.5 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 15.5CAV(H)1E* | 1 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 15.5CAV(H)2E* | 2 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 15.5CAV3E | 3 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 15.5CAV5E | 5 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 15.5CAV7E | 7 | 15.5kV | 80kA | 12.87 (326.9) | 1.63 (41.4) |
| 38ADMNA7E | 7 | 38kV | 40kA | 17.4 (442) | 2 (50.8) |
| 38ADMNA10E | 10 | 38kV | 40kA | 17.4 (442) | 2 (50.8) |
| 38CAV(H)0.5E* | 0.5 | 38KV | 40kA | 17.32 (439.9) | 1.63 (41.4) |
| 38CAV(H)1E* | 1 | 38KV | 40kA | 17.32 (439.9) | 1.63 (41.4) |
| 38CAV(H)2E* | 2 | 38KV | 40kA | 17.32 (439.9) | 1.63 (41.4) |
| 38CAV4E | 4 | 38KV | 40kA | 17.32 (439.9) | 1.63 (41.4) |

*Type CAVH fuses are fitted with a striker pin for indication. Omit 'H' for non-indicating fuses.

Fuseclip for 0.8 inch diameter fuses - 1A1837.

Fuseclip for 1 inch diameter fuses - A3354705.

Fuseclip for 1.6 inch diameter fuses - 1A0835.

R-rated Fuses for Motor Circuit Protection

JCG, JCH, JCK,
JCK-A, JCK-B, JCL,
JCL-A, JCL-B, JCR-A,
& JCR-B



Agency Information: UL Recognized: 2540Vac — JCK, JCK-A, 5080Vac — JCL, JCL-A, UL Recognized (Guide #MSSS2, File #E96676).

Features and Benefits

- Physically dimensioned for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Available with optional Cutler Hammer® hookeye for ease of insertion and removal
- Classified as back-up fuses for current-limited protection of medium voltage motor controllers

Specifications

Description: Indoor/enclosure R-rated medium voltage, current-limiting fuses for motor circuit protection.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 2.4-7.2kV (See Catalog Numbers table for details)

Amps: — 25-450A (See Catalog Numbers table for details)

IR: — 50kA Sym

— 80kA ASYM

— See Catalog Numbers table for details

Typical Applications

- Medium Voltage Motor Controllers

Dimensions - mm (in)

Figure 1

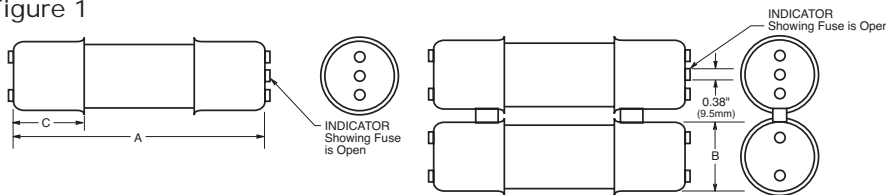


Figure 2

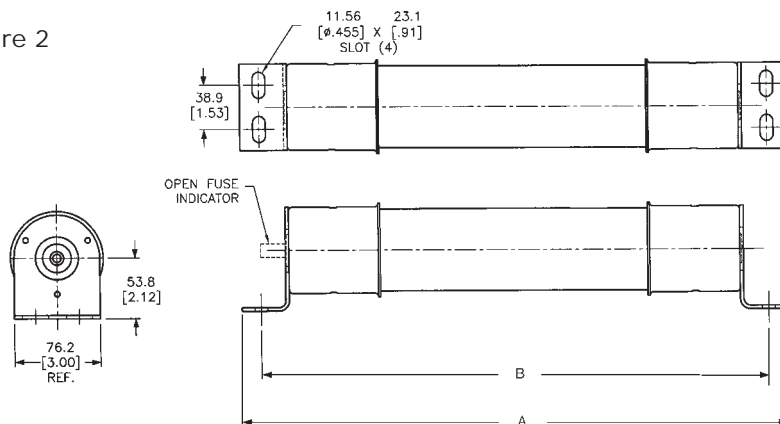
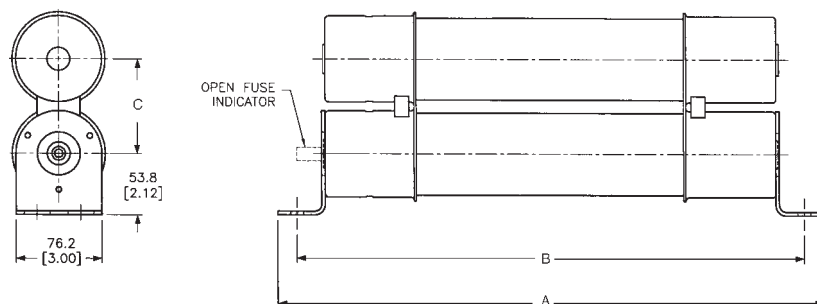


Figure 3



R-rated Fuses for Motor Circuit Protection

Catalog Numbers: R-Rated; Indoor/Enclosure

| Catalog Numbers | Amp Ratings | Maximum Design Voltage | Dimensions - In (mm)* | | | Construction | Max Int. Cap. Amps (Asym.) | Amps (Sym.) | Min Int. Cap. Amps (Sym.) |
|----------------------|-------------|------------------------|-----------------------|------------|------------|--------------|----------------------------|-------------|---------------------------|
| | | | A | B | C | | | | |
| 2400V (See Figure 1) | | | | | | | | | |
| JCK-2R | 70 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 165 |
| JCK-3R | 100 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 220 |
| JCK-4R | 130 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 320 |
| JCK-5R | 150 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 410 |
| JCK-6R | 170 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 480 |
| JCK-9R | 200 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 720 |
| JCK-12R | 230 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 970 |
| JCK-18R | 390 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,430 |
| JCK-24R | 450 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,880 |

2400V — With Westinghouse Ampguard Hookeye (See Figure 1)

| | | | | | | | | | |
|-----------|-----|------|---------------|------------|------------|--------|--------|--------|-------|
| JCK-A-2R | 70 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 165 |
| JCK-A-3R | 100 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 220 |
| JCK-A-4R | 130 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 320 |
| JCK-A-5R | 150 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 410 |
| JCK-A-6R | 170 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 480 |
| JCK-A-9R | 200 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 720 |
| JCK-A-12R | 230 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 970 |
| JCK-A-18R | 390 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,430 |
| JCK-A-24R | 450 | 2540 | 11.24 (285.5) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,880 |

2400V — Bolt-On (See Figures 2 & 3)

| | | | | | | | | | |
|-----------|-----|------|---------------|---------------|-------------|--------|--------|--------|-------|
| JCK-B-30 | 25 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 90 |
| JCK-B-2R | 70 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 170 |
| JCK-B-3R | 100 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 245 |
| JCK-B-4R | 130 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 340 |
| JCK-B-5R | 150 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 430 |
| JCK-B-6R | 170 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 500 |
| JCK-B-9R | 200 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 1,000 |
| JCK-B-12R | 230 | 2540 | 14.18 (360.2) | 12.81 (325.4) | - | Single | 80,000 | 50,000 | 1,250 |
| JCK-B-18R | 390 | 2540 | 14.18 (360.2) | 12.81 (325.4) | 3.56 (90.4) | Double | 80,000 | 50,000 | 1,700 |
| JCK-B-24R | 450 | 2540 | 14.18 (360.2) | 12.81 (325.4) | 3.56 (90.4) | Double | 80,000 | 50,000 | 2,120 |

2400V — Hermetically Sealed, For Use with Ampguard Motor Starters (See Figure 1)

| | | | | | | | | | |
|---------|-----|------|---------------|------------|------------|--------|--------|--------|-------|
| JCH-30 | 25 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 90 |
| JCH-2R | 70 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 170 |
| JCH-3R | 100 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 245 |
| JCH-4R | 130 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 340 |
| JCH-5R | 150 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 430 |
| JCH-6R | 170 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 500 |
| JCH-9R | 200 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 1,000 |
| JCH-12R | 230 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 1,250 |
| JCH-18R | 390 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,700 |
| JCH-24R | 450 | 2540 | 10.81 (275.6) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 2,100 |

4800V (See Figure 1)

| | | | | | | | | | |
|---------|-----|------|---------------|------------|------------|--------|--------|--------|-------|
| JCL-2R | 70 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 165 |
| JCL-3R | 100 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 220 |
| JCL-4R | 130 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 320 |
| JCL-5R | 150 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 410 |
| JCL-6R | 170 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 480 |
| JCL-9R | 200 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 720 |
| JCL-12R | 230 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 970 |
| JCL-18R | 390 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,430 |
| JCL-24R | 450 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,880 |

* See previous page Figure 2 for single construction and Figure 3 for double construction information.
Recommended fuseclips: see page 91 - 1A0065, A3354730, 9078A67G04.

R-rated Fuses for Motor Circuit Protection

Catalog Numbers: R-Rated; Indoor/Enclosure

| Catalog Numbers | Amp Ratings | Maximum Design Voltage | Dimensions - In (mm) | | | Construction | Max Int. Cap. Amps (Asym.) | Amps (Sym.) | Min Int. Cap. Amps (Sym.) |
|---|-------------|------------------------|----------------------|------------|------------|--------------|----------------------------|-------------|---------------------------|
| | | | A | B | C | | | | |
| 4800V — With Westinghouse Ampguard Hookeye (See Figure 1) | | | | | | | | | |
| JCL-A-2R | 70 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 165 |
| JCL-A-3R | 100 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 220 |
| JCL-A-4R | 130 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 320 |
| JCL-A-5R | 150 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 410 |
| JCL-A-6R | 170 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 480 |
| JCL-A-9R | 200 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 720 |
| JCL-A-12R | 230 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 970 |
| JCL-A-18R | 390 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,430 |
| JCL-A-24R | 450 | 5080 | 15.76 (400.3) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,880 |

4800V — Bolt-On (See Figures 2 & 3)

| | | | | | | | | | |
|-----------|-----|------|---------------|---------------|-------------|--------|--------|--------|-------|
| JCL-B-30 | 30 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 95 |
| JCL-B-2R | 70 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 180 |
| JCL-B-3R | 100 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 270 |
| JCL-B-4R | 130 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 350 |
| JCL-B-5R | 150 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 450 |
| JCL-B-6R | 170 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 540 |
| JCL-B-9R | 200 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 700 |
| JCL-B-12R | 230 | 5080 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 1,000 |
| JCL-B-18R | 390 | 5080 | 19.25 (488.9) | 17.88 (454.1) | 3.31 (84.1) | Double | 80,000 | 50,000 | 1,450 |
| JCL-B-24R | 450 | 5080 | 19.25 (488.9) | 17.88 (454.1) | 3.31 (84.1) | Double | 80,000 | 50,000 | 2,000 |

4800V — Hermetically Sealed, For Use with Ampguard Motor Starters (See Figure 1)

| | | | | | | | | | |
|-----------|-----|------|---------------|------------|------------|--------|--------|--------|-------|
| JCG-30 | 30 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 95 |
| JCG-2R | 70 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 180 |
| JCG-3R | 100 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 270 |
| JCG-4R | 130 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 350 |
| JCG-5R | 150 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 450 |
| JCG-6R | 170 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 540 |
| JCG-9R | 200 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 700 |
| JCG-12R | 230 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 1,000 |
| JCG-A-18R | 390 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,450 |
| JCG-A-24R | 450 | 5080 | 15.91 (404.1) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 2,000 |

7200V — With Ampguard Hookeye (See Figure 1)

| | | | | | | | | | |
|-----------|-----|------|---------------|------------|------------|--------|--------|--------|-------|
| JCR-A-2R | 70 | 8300 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 160 |
| JCR-A-3R | 100 | 8300 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 250 |
| JCR-A-4R | 130 | 8300 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 325 |
| JCR-A-5R | 150 | 8300 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 390 |
| JCR-A-6R | 170 | 8300 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 500 |
| JCR-A-9R | 200 | 7200 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 750 |
| JCR-A-12R | 230 | 7200 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Single | 80,000 | 50,000 | 1,000 |
| JCR-A-18R | 390 | 7200 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 1,450 |
| JCR-A-24R | 450 | 7200 | 15.85 (402.6) | 3.0 (76.2) | 3.0 (76.2) | Double | 80,000 | 50,000 | 2,500 |

7200V — Bolt-On (See Figures 2 & 3)

| | | | | | | | | | |
|-----------|-----|------|---------------|---------------|-------------|--------|--------|--------|-------|
| JCR-B-2R | 70 | 8300 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 160 |
| JCR-B-3R | 100 | 8300 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 250 |
| JCR-B-4R | 130 | 8300 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 325 |
| JCR-B-5R | 150 | 8300 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 390 |
| JCR-B-6R | 170 | 8300 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 500 |
| JCR-B-9R | 200 | 7200 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 750 |
| JCR-B-12R | 230 | 7200 | 19.25 (488.9) | 17.88 (454.1) | - | Single | 80,000 | 50,000 | 1,000 |
| JCR-B-18R | 390 | 7200 | 19.25 (488.9) | 17.88 (454.1) | 3.31 (84.1) | Double | 80,000 | 50,000 | 1,450 |
| JCR-B-24R | 450 | 7200 | 19.25 (488.9) | 17.88 (454.1) | 3.31 (84.1) | Double | 80,000 | 50,000 | 2,500 |

Recommended fuseclips: see page 91 - 1A0065, A3354730, 9078A67G04.

British Standard Dimensioned IEC Fuses for Motor Circuit Protection

The Cooper Bussmann range of motor fuses are designed to meet the specific requirements necessary for motor protection. During the starting cycle of direct on-line motors, the fuse elements will reach a considerably higher temperature than during normal operation; (this is due to the high amount of current the motor will draw as it starts, typically, six times its normal load current value). This results in expansion and contraction of the fuse elements and could cause premature operation of the fuse.

Cooper Bussmann motor fuses encompass an advanced design to minimize this effect. This therefore, negates the need to over specify the fuse rating due to high values of motor starting current.

Cooper Bussmann motor fuses operate extremely quickly under heavy fault currents, resulting from the time / current characteristic. Low power dissipation ensures low temperature rise, important in multi-tier starters for example. Switching (arc), voltages are lower than permitted values, therefore, 5.5kV fuses are also suitable for 4.8kV and 2.4kV circuits.



Medium Voltage Fuses

Table of Ratings

| Basic Cat. Number | Volts | Breaking Capacity | Amp Ratings | Dimensions - In (mm) | | Dimensional Standard |
|-------------------|-------|-------------------|---|----------------------|------------|---|
| | | | | Length | Diameter | |
| 3.6WJON6 | 3.6kV | 50kA | 5, 6.3, 10, 16, 20, 25, 31.5, 40, 50 | 7.56 (192) | 1.4 (35.6) | BS 2692 (TA1) Interchangeable with GEC type K2 PA |
| 3.6WDOH6 | 3.6kV | 50kA | 50, 63, 80, 100, 125 | 7.56 (192) | 2 (50.8) | BS 2692 (TA1) or DIN 43625 |
| 3.6WFOH6 | 3.6kV | 50kA | 160, 200 | 7.56 (192) | 3 (76.2) | BS 2692 (TA1) or DIN 43625 |
| 3.6WDLSJ | 3.6kV | 50kA | 50, 63, 80, 100, 125 | 11.5 (292.1) | 2 (50.8) | DIN 43625 |
| 3.6WFLSJ | 3.6kV | 50kA | 160, 200 | 11.5 (292.1) | 3 (76.2) | DIN 43625 |
| 3.6WDFHO | 3.6kV | 50kA | 50, 63, 80, 100, 125 | 10 (254) | 2 (51) | BS 2692 (TA2) |
| 3.6WFFHO | 3.6kV | 50kA | 160, 200 | 10 (254) | 3 (76.2) | BS 2692 (TA2) |
| 3.6WKFHO | 3.6kV | 50kA | 250, 315, 355, 400 | 10 (254) | 3 (76.2) | BS 2692 (TA2) |
| 5.5VFNHA | 5.5kV | 60kA | 2R-6R | 15.86 (402.8) | 3 (76.2) | ANSI R-rated |
| 5.5VKNHA | 5.5kV | 60kA | 9R-24R | 15.86 (402.8) | 3 (76.2) | ANSI R-rated |
| 7.2WFNHO | 7.2kV | 40kA | 25, 31.5, 40, 50, 63, 80, 100, 125, 160 | 15.86 (402.8) | 3 (76.2) | BS 2692 (TA4) |
| 7.2WKNHO | 7.2kV | 40kA | 200, 224, 250, 315 | 15.86 (402.8) | 3 (76.2) | BS 2692 (TA4) |
| 7.2WFMSJ | 7.2kV | 63kA | 25, 31.5, 40, 50, 63, 80, 125, 160 | 17.40 (442) | 3 (76.2) | DIN 43625 |
| 7.2WKMSJ | 7.2kV | 63kA | 200, 224, 250, 315, 355 | 17.40 (442) | 3 (76.2) | DIN 43625 |

Catalog Number Build-A-Code

kV Basic Catalog Number Amps

DIN Dimensioned IEC Fuses for Transformer Protection

DIN Dimension Fuses

To Spec. DIN 43625



Specifications

Catalog Symbol: See Basic Catalog Numbers table.

Description: DIN dimension fuses to Specification DIN 43625 covering current-limiting fuses with performance in compliance with IEC 60282-1. These are in accordance with the R10 and, in some cases, the R20 series of preferred numbers.

Dimensions: See Catalog Numbers table.

Volts: — See voltage associated with the Basic Catalog Numbers in the table.

Amps: — See amp rating associated with the Basic Catalog Numbers in the table.

IR: — See IR associated with the Basic Catalog Numbers in the table.

Agency Information: Comply with DIN dimensional standard DIN 43625, VDE 0670 part 4, VDE 0670 part 40Z and with IEC 60282-1 (2005).

Features and Benefits

- DIN dimensioned for retrofitting in existing hardware
- Open fuse indicator for ease in troubleshooting
- Designed for use in IEC equipment

Typical Applications

- Medium Voltage IEC designed equipment

Catalog Number Build-A-Code

kV Basic Catalog Number Amps
 --- --- ---

Catalog Numbers

| kV | Catalog Numbers | Amp Ratings | Dimensions - in (mm) Diameter x Length | IR RMS Sym |
|------|-----------------|---|--|------------|
| 3.6 | 3.6AD0SJ(amp) | 6.3, 10, 16, 20, 25, 31.5, 40 | 2.00 x 7.56 (51 x 192) | 50kA |
| | 3.6WD0SJ(amp) | 50, 63, 80, 100, 125 | 2.00 x 7.56 (51 x 192) | |
| | 3.6WF0SJ(amp) | 160, 200 | 3.00 x 7.56 (76 x 192) | |
| | 3.6ADLSJ(amp) | 25, 40 | 2.00 x 11.50 (51 x 292) | |
| | 3.6WDLSJ(amp) | 50, 63, 80, 100, 125 | 2.00 x 11.50 (51 x 292) | |
| | 3.6WFLSJ(amp) | 160, 200 | 3.00 x 11.50 (76 x 292) | |
| 7.2 | 3.6WKL0SJ(amp) | 250, 315, 400 | 3.00 x 11.50 (76 x 292) | 40kA |
| | 7.2TDLSJ(amp) | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63 | 2.00 x 11.50 (51 x 292) | |
| | 7.2TFLSJ(amp) | 80, 100, 125, 160 | 3.00 x 11.50 (76 x 292) | |
| 12 | 7.2WKMSJ(amp) | 200, 225, 250, 315, 355 | 3.00 x 17.41 (76 x 442) | 63kA |
| | 12TDLEJ(amp) | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63 | 2.00 x 11.50 (51 x 292) | |
| | 12THLEJ(amp) | 80, 100 | 2.52 x 11.50 (64 x 292) | |
| | 12TKLEJ(amp) | 125 | 3.00 x 11.50 (76 x 292) | |
| 17.5 | 12TXLEJ(amp)* | 160, 200 | 3.50 x 11.50 (88 x 292) | 35.5kA |
| | 17.5TDLSJ(amp)* | 6.3, 10, 16, 20, 25, 31.5, 40 | 2.00 x 11.50 (51 x 292) | |
| | 17.5TFLSJ(amp)* | 50 | 3.00 x 11.50 (76 x 292) | |
| | 17.5TDMEJ(amp) | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63 | 2.00 x 17.41 (51 x 442) | |
| | 17.5THMEJ(amp) | 80, 100 | 2.52 x 17.41 (64 x 442) | |
| 24 | 17.5TKMEJ(amp) | 125 | 3.00 x 17.41 (76 x 442) | 50kA |
| | 24TDMEJ(amp) | 6.3, 10, 16, 20, 25, 31.5, 40, 50 | 2.00 x 17.41 (51 x 442) | |
| | 24THMEJ(amp) | 63 | 2.52 x 17.41 (64 x 442) | |
| | 24TFMEJ(amp) | 80, 100* ¹ | 3.00 x 17.41 (76 x 442) | |
| 36 | 24TXMEJ(amp)* | 125 ² , 160 | 3.46 x 17.41 (88 x 442) | 31.5kA |
| | 36TDQSJ(amp) | 3.15 ³ , 6.3, 10, 16, 20, 25 | 2.00 x 21.16 (51 x 537) | |
| | 36TFQSJ(amp) | 31.5, 40, 50 | 3.00 x 21.16 (76 x 537) | |
| | 36TXQEJ(amp)* | 63 | 3.46 x 21.16 (88 x 537) | |

Recommended fuseclips for DIN style fuses – 270303, A3354745 see page 91.

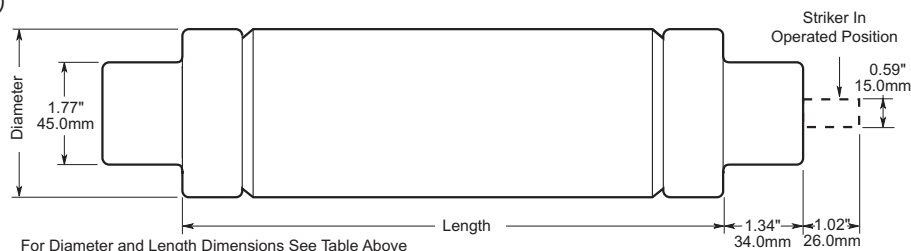
*Not compliant with VDE 0670, part 402.

¹-IR RMS Sym is 63kA

²-IR RMS Sym is 40kA

³-IR RMS Sym is 20kA

Dimensions - In (mm)



Potential Transformer Fuses

AB, AM and CAV



Specifications

Description: British Standard VT fuses with low current ratings for use in voltage transformers or operating transformers to provide isolation of the associated system in the event of faults in the transformer circuit.

Dimensions: See Basic Catalog Numbers table.

Ratings:

E-Rated: — See single asterisk in Basic Catalog Numbers table

Volts: — 3.6-38kV (See Basic Catalog Numbers table)

Amps: — 2-15A (See Basic Catalog Numbers table)

IR: — 25-80kA (See Basic Catalog Numbers table)

Agency Information: BS2692-1 and IEC60282-1

Features and Benefits

- Physically dimensioned for retrofitting in existing hardware.
- Space saving size.

Typical Applications

- Medium Voltage Potential Transformers
- Small Medium Voltage Service Transformers

Medium Voltage Fuses

Basic Catalog Numbers for "AB" & "AM" Series

| Basic Cat. Numbers | Volts | Amp Ratings | Type | Dimensions - In (mm) | | IR |
|--------------------|--------|------------------------------|------|----------------------|-------------|--------|
| | | | | Length | Diameter | |
| 3.6ABWNA | 3.6kV | 3.15, 6.3 | AB | 5.6 (142.2) | 1 (25.4) | 50KA |
| 3.6ABCNA | 3.6kV | 3.15, 6.3, 10 | AB | 7.69 (195.3) | 1 (25.4) | 50KA |
| 5.5ABWNA* | 5.5kV | 0.5, 1, 2, 3, 5 | AB | 5.6 (142.2) | 1 (25.4) | 50KA |
| 5.5AMWNA* | 5.5kV | 0.5, 1.0, 2.0, 3.0, 4.0, 5.0 | AM | 5.6 (142.2) | 0.81 (20.6) | 50KA |
| 7.2ABWNA | 7.2kV | 3.15, 6.3 | AB | 5.6 (142.2) | 1 (25.4) | 45KA |
| 7.2ABCNA | 7.2kV | 3.15, 6.3 | AB | 7.69 (195.3) | 1 (25.4) | 45KA |
| 12ABCNA | 12.0kV | 3.15 | AB | 7.69 (195.3) | 1 (25.4) | 45KA |
| 15.5ABFNA | 15.5kV | 3.15 | AB | 10.00 (254) | 1 (25.4) | 32KA |
| 17.5ABGNA | 17.5kV | 3.15 | AB | 14.13 (358.9) | 1 (25.4) | 35KA |
| 24ABGNA | 24.0kV | 3.15 | AB | 14.13 (358.9) | 1 (25.4) | 25KA |
| 36ABGNA** | 36.0kV | 3.15 | AB | 14.13 (358.9) | 1 (25.4) | 31.5KA |

Recommended fuse clip for 1 diameter fuses – A3354705.

Basic Catalog Numbers for "CAV" Series

| Basic Cat. Number | Volts | Amp Ratings | Dimensions - In (mm) | | IR |
|-------------------|--------|--------------------|----------------------|-------------|------|
| | | | Length | Diameter | |
| 3.6CAV | 3.6kV | 2 | 8.66 (220) | 1.63 (41.4) | 50KA |
| 5.5CAV* | 5.5kV | 15 | 7.375 (187.3) | 1.63 (41.4) | 63KA |
| 5.5CAVH* | 5.5kV | 0.5, 1, 2 | 7.375 (187.3) | 1.63 (41.4) | 63KA |
| 7.2CAV | 7.2kV | 2, 4, 6, 10 | 8.66 (220) | 1.63 (41.4) | 63KA |
| 12CAV | 12kV | 2 | 8.66 (220) | 1.63 (41.4) | 40KA |
| 15.5CAV* | 15.5kV | 0.5, 1, 2, 3, 5, 7 | 12.87 (326.9) | 1.63 (41.4) | 80KA |
| 15.5CAVH* | 15.5kV | 0.5, 1, 2 | 12.87 (326.9) | 1.63 (41.4) | 80KA |
| 17.5CAV | 17.5kV | 2, 4, 6, 10 | 8.66 (220) | 1.63 (41.4) | 40KA |
| 24CAV | 24kV | 2, 3, 4 | 13.39 (340.1) | 1.63 (41.4) | 40KA |
| 36CAV | 36kV | 2, 4 | 17.32 (439.9) | 1.63 (41.4) | 40KA |
| 36CAVH | 36kV | 2 | 17.32 (439.9) | 1.63 (41.4) | 40KA |
| 38CAV* | 38kV | 4 | 17.32 (439.9) | 1.63 (41.4) | 40KA |
| 38CAVH* | 38kV | 0.5, 1, 2 | 17.32 (439.9) | 1.63 (41.4) | 40KA |

Type CAVH are fitted with a striker pin for indication.

* E-Rated fuses

**For clean indoor applications only.

Catalog Number Build-A-Code

kV Basic Catalog Number Amps

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Recommended Fuse Clips: 1" dia. - A3354705, 1.63" dia. - 1A0835, .819 dia. - 1A1837
Contact Cooper Bussmann for complete specifications on potential transformer fuses

British Standard IEC Fuses for Use in Oil Filled Distribution Switchgear

OEFMA

Specifications

Description: BS 2692-1 medium voltage fuses for use on the primary circuit of three-phase 50Hz transformers in oil field switchgear. Fitted with powerful pyrotechnic striker pin.

Ratings:

Volts: — 3.6-24kV

Amps: — 6.3-200A

IR: — 25-50kA (See Catalog Number table below)

Agency Information: Fuses comply with IEC 60282-1, BS2692-1 and ESI Standard 12-8. 7.2 and 12kV fuses tested at highest system voltage and approved by the UK Electricity Association approvals panel.

Features and Benefits

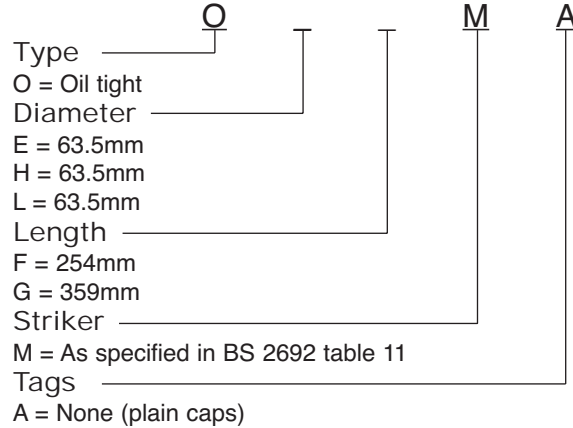
- Physically sized for replacement of British Standard fuse links

Typical Applications

- Medium Voltage BS Designed Equipment

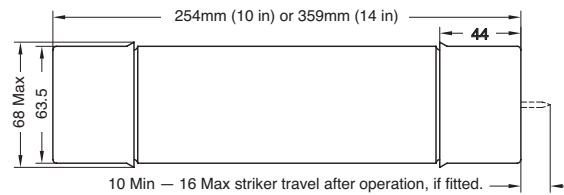


Code Number Reference



Dimensions:

Current-limiting fuse for use in oil switchgear
 Fuse types: OEF, OEG, OHF, OHG, OLG



Catalog Numbers

| Transformer | Catalog Numbers/Transformer Primary Voltage | | | |
|-------------|---|--------------|--------------------|---------------|
| kVA | 3.3kV | 6.6kV | 11kV/ESI 12-8 Ref. | 13.8kV |
| 200 | 3.6OEFMA63 | 12OEFMA31.5 | 12OEFMA25/01 | 15.5OEFMA16 |
| 250 | 3.6OEFMA80 | 12OEFMA40 | 12OEFMA25/— | 15.5OEFMA20 |
| 300/315 | 3.6OEFMA100 | 12OEFMA50 | 12OEFMA31.5/02 | 15.5OEFMA25 |
| 400 | 3.6OEFMA125 | 12OEFMA63 | 12OEFMA40/— | 15.5OEFMA31.5 |
| 500 | 3.6OEFMA160 | 12OHFMA71 | 12OEFMA50/03 | 15.5OEFMA40 |
| 630 | 3.6OEFMA200 | 7.2OEFMA100 | 12OEFMA63/— | 15.5OEFMA50 |
| 750/800 | 3.6OLGMA250 | 7.2OHGMA125 | 12OHFMA80/04 | 15.5OEFMA63 |
| 1000 | 3.6OLGMA250* | 7.2OHGMA140 | 12OHGMA90**/05 | 15.5OHGMA71 |
| 1250 | — | 7.2OHGMA160* | 12OHGMA100/— | 15.5OHGMA90 |
| 1600 | — | — | 12OLGMA125*/— | 15.5OLGMA100* |

This Catalog Number selection table is based upon the following criteria:

1. Withstand against magnetizing inrush current taken as 12 times full-load current for 0.1 second.
2. Withstand against 150% permissible overload current. Recommendations marked with asterisks have the following significance:-
 *Limited to permissible overloads of 130%.
 **Permits use of a 12kV OHFMA 80A fuse with a 100kVA transformer where permissible overload does not exceed 130%.
3. For 6.6kV systems, 12kV fuses are recommended where possible in the interests of standardization.
4. Wherever possible, 10 inch long FO1 fuses are offered rather than equivalent 14 inch FO2 types.
5. The above recommendations are not generally applicable to transformers feeding motor circuits with starting currents in excess of the transformer full load current. In this event, please consult Cooper Bussmann.

Catalog Numbers

| Basic Cat. Number | Voltage | Dimensional Ref. BS 2692 | Amp Ratings | Breaking Capacity (kA) |
|-------------------|---------|--------------------------|---|------------------------|
| 3.6OEFMA | 3.6kV | FO1 | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200 | 50 |
| 3.6OEGMA | 3.6kV | FO2 | 100, 125, 160, 200 | 50 |
| 3.6OLGMA | 3.6kV | FO2 | 250 | 50 |
| 7.2OEFMA | 7.2kV | FO1 | 80, 100, 112 | 45 |
| 7.2OHGMA | 7.2kV | FO2 | 125, 140, 160 | 45 |
| 12OEFMA | 12.0kV | FO1 | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63 | 40 |
| 12OHFMA | 12.0kV | FO1 | 71, 80 | 40 |
| 12OHGMA | 12.0kV | FO2 | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 71, 80, 90, 100 | 40 |
| 12OLGMA | 12.0kV | FO2 | 125 | 40 |
| 15.5OEFMA | 15.5kV | FO1 | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63 | 40 |
| 15.5OHGMA | 15.5kV | FO2 | 71, 80, 90 | 40 |
| 15.5OLGMA | 15.5kV | FO2 | 100 | 40 |
| 17.5OHGMA | 17.5kV | FO2 | 6.3, 10, 16, 20, 25, 31.5, 40, 50, 63, 80 | 35 |
| 24OEGMA | 24.0kV | FO2 | 6.3, 10, 16, 20, 25, 31.5, 40, 50 | 25 |

Catalog Number Build-A-Code
 kV Basic Catalog Number Amps

Contact Cooper Bussmann for complete specifications on medium voltage fuses.

Fast-acting Fuses

HVA, HVB,
HVJ, HVL,
HVR, HVT,
HVU, HVW &
HVX



Specifications

Description: Medium voltage, non-time delay, fast-acting fuses.

Dimensions: See Basic Catalog Numbers table.

Ratings:

Volts: — 1-10kV (See Basic Catalog Numbers table)

Amps: — 1/6-10A (See Basic Catalog Numbers table)

Features and Benefits

- Physical size varies with electrical rating of fuse to prevent over-fusing.
- Space saving size.

Typical Applications

- Medium Voltage Instrument Protection
- Medium Voltage Circuit Protection

Test Specifications

| Basic Catalog Numbers | Load / Opening Time |
|-------------------------|---|
| HVA, HVB, HVJ, HVL | 110% / 4 Hours (min) 135% / 1 Hour (max) |
| HVR, HVT, HVU, HVW, HVX | 100% / 4 Hours (min) 150% / 1 Hour (max) |



Fuse blocks: 4528, 4529, 4530 & 2960

Voltage Rating: 1000 to 10,000V

| Basic Catalog Numbers | Fuse Block Catalog Number | Fuse Clip Catalog Number |
|-----------------------|---------------------------|--------------------------|
| HVA, HVR | 4528 | 5960 |
| HVB, HVT | 4529 | 5960 |
| HVJ, HVU | 4530 | 4180 |
| HVL, HVX | 2960 | 4180 |

Use #8 screws on blocks 4528 and 4529.

Use #10 screws on blocks 4530 and 2960.

| Basic Catalog Number | kV | Amp Ratings | Maximum S.C. | Dimensions - in (mm) | |
|----------------------|-----|--|--------------------|----------------------|--------------|
| | | | | Diameter | Length |
| HVA | 1 | 1/6, 1/10, 1/8, 3/10, 1/4, 3/10, 3/8, 1/2, 3/4, 1, 1 1/2, 2, 3, 4, 6, 10 | 20kW dc/30kVA ac | 0.41 (10.4) | 3 (76.1) |
| HVB | 2.5 | 1/2, 3/4, 1, 1 1/2, 2, 3 | 20kW dc/30kVA ac | 0.41 (10.4) | 4.5 (114.2) |
| HVJ | 5 | 1/6, 1/8, 1/4, 1/2, 3/4, 1, 1 1/2, 2, 4, 6, 10 | 20kW dc/30kVA ac | 0.81 (20.6) | 5 (126.9) |
| HVL | 10 | 1/6, 1/8, 1/4, 1/2, 1, 1 1/2, 2, 3 | 20kW dc/30kVA ac | 0.81 (20.6) | 10 (254) |
| HVR | 1 | 1/2, 1, 2, 3, 4, 5 | kVA-500 ac only | 0.41 (10.4) | 3 (76.2) |
| HVW | 1.2 | 1, 2, 3, 4, 5, 8 | kVA-12,000 ac only | 0.41 (10.4) | 2.25 (57.1) |
| HVT | 2.5 | 1/2, 1, 2, 3, 5 | kVA-1250 ac only | 0.41 (10.4) | 4.5 (114.2) |
| HVU | 5 | 1/2, 1, 2, 3, 4, 5 | kVA-2500 ac only | 0.81 (20.6) | 5 (126.9) |
| HVX | 10 | 1/2, 1, 3, 5 | kVA-5,000 ac only | 0.41 (10.4) | 10.0 (253.8) |

Catalog Number Build-A-Code

Basic Catalog Number Amps

----- ---

E EI-NEMA Type K & T and Type H & N

FL: Type H and EEI-NEMA Type K & T Fuses



Specifications

Description: Medium voltage fuses: Type H (high surge), EEI-NEMA Type K (fast-acting), EEI-NEMA Type T (slow-acting).

Ratings:

Amps: — 1-200A
(See Catalog Numbers tables)

Features and Benefits

- Wide range of EEI-NEMA type fuse links for use in open fuse cutouts
- Voltage ratings up to 27kV.
- Can be coordinated with other overcurrent protective devices for sectionalizing to isolate feeder branches.

Typical Applications

- Medium Voltage Fused Cutouts

High-Surge Type H Fuses

High-surge, Type H fuses are manufactured in ratings of 1, 2, 3, 5, and 8A. They have been developed principally for primary fusing of small-sized transformers. Type H links are manufactured in the universal buttonhead design.

Type N Fuses

Type N fuses conform to previous NEMA standards and have been superseded by Type K and T links. Type N fuses are manufactured in the universal button design in ratings of 5 through 200A for use in NEMA standard dimensioned cutouts rated through 27kV.

Catalog Numbers

EEI-NEMA and High-Surge Universal Tin Element

Fuses for Cutouts — Rated to 27kV

Non-Removable Button-Head For Standard Open or Enclosed Cutouts

| Catalog Numbers | | | |
|---------------------|------------------------|------------------------|------|
| Type H (High Surge) | EEI-NEMA Type K (Fast) | EEI-NEMA Type T (Slow) | Amps |
| FL11H1 | FL11K1 | FL11T1 | 1 |
| FL11H2 | FL11K2 | FL11T2 | 2 |
| FL11H3 | FL11K3 | FL11T3 | 3 |
| FL11H5 | FL11K5 | FL11T5 | 5 |
| — | FL11K6 | FL11T6 | 6 |
| FL11H8 | FL11K8 | FL11T8 | 8 |
| — | FL11K10 | FL11T10 | 10 |
| — | FL11K12 | FL11T12 | 12 |
| — | FL11K15 | FL11T15 | 15 |
| — | FL11K20 | FL11T20 | 20 |
| — | FL11K25 | FL11T25 | 25 |
| — | FL11K30 | FL11T30 | 30 |
| — | FL11K40 | FL11T40 | 40 |
| — | FL11K50 | FL11T50 | 50 |
| — | FL11K65 | FL11T65 | 65 |
| — | FL11K80 | FL11T80 | 80 |
| — | FL11K100 | FL11T100 | 100 |
| — | FL11K140 | FL11T140 | 140 |
| — | FL11K200 | FL11T200 | 200 |

Removable Button-Head For Cutouts Requiring Removable-Button Links

| Catalog Numbers | | |
|------------------------|------------------------|------|
| EEI-NEMA Type K (Fast) | EEI-NEMA Type T (Slow) | Amps |
| FL3K1 | FL3T1 | 1 |
| FL3K2 | FL3T2 | 2 |
| FL3K3 | FL3T3 | 3 |
| FL3K5 | FL3T5 | 5 |
| FL3K6 | FL3T6 | 6 |
| FL3K8 | FL3T8 | 8 |
| FL3K10 | FL3T10 | 10 |
| FL3K12 | FL3T12 | 12 |
| FL3K15 | FL3T15 | 15 |
| FL3K20 | FL3T20 | 20 |
| FL3K25 | FL3T25 | 25 |
| FL3K30 | FL3T30 | 30 |
| FL3K40 | FL3T40 | 40 |
| FL3K50 | FL3T50 | 50 |
| FL3K65 | FL3T65 | 65 |
| FL3K80 | FL3T80 | 80 |
| FL3K100 | FL3T100 | 100 |
| FL3K140 | FL3T140 | 140 |
| FL3K200 | FL3T200 | 200 |

Adapter-type removable-button links with ferrule adapter to convert to double-leader links are available in K and T types. Order by description.

EEI-NEMA Type K Universal Silver-Element Fuses

for Cutouts — Rated through 27kV

Non-Removable Button-Head For Standard Open or Enclosed Cutouts

| Catalog Numbers | |
|-----------------|------|
| EEI-NEMA Type K | Amps |
| FL12K8 | 8 |
| FL12K10 | 10 |
| FL12K12 | 12 |
| FL12K15 | 15 |
| FL12K25 | 25 |
| FL12K50 | 50 |

BBU Boric Acid Fuses

BBU

Specifications

Description: Boric acid fuses for power transformers, feeder circuits, distribution transformers, metal-enclosed and pad-mounted switchgear

Construction:

Principle parts of the replaceable BBU fuse unit are shown in the cross section views. A glass epoxy tube encloses the assembly containing the silver fuse element, arcing rod, boric acid cylinder and spring. Using a pure silver element and nichrome wire strain element makes the BBU less susceptible to failure caused by vibration, corona corrosion and fuse element aging. The components are housed in a fiberglass reinforced resin tube with plated copper contacts. BBU fuses can directly replace competitive equivalent units.



Element Melts

Rod withdraws, elongating arc and vaporizing Boric Acid

Vapor quenches arc at first current zero

Operation: The BBU fuse uses boric acid to create the de-ionizing action to interrupt the arc. At high temperatures, boric acid decomposes to produce a blast of water vapor and inert boric anhydride. Fault interruption is achieved by an arcing rod and a charged spring

that elongate the arc through a boric acid chamber upon release by the fuse element to interrupt short circuits within one-half cycle and prevent the arc from re-striking after a current zero.

BBU End Fittings: BBU end fittings complete the electrical connection between the fuse unit and the fuse mounting. Positioned on the top and bottom of the fuse, unit end fittings can be used over again if they remain undamaged. They are completely interchangeable with other manufacturers' equivalent fuse units and mountings.

Indoor Fittings: The indoor end fittings are made of high-impact plastic and high-conducting copper alloy. The blown fuse indicator, located on the top end fitting, provides visual indication of a faulted fuse unit. When engaged into the mounting, the spring-loaded plastic mounting handle actuates the latch mechanism and readily accepts a hookstick to install or remove the assembled fuse unit.

The bottom indoor fitting is threaded to accept a muffler constructed of a plated steel housing, containing copper mesh screening, that absorbs and contains the noise and exhaust materials during a fault condition, and prevents contamination of indoor components and mechanisms located within the switchgear. Containment also prevents accidental flash-over from phase-to-phase or phase-to-ground by limiting airborne particles and gases.

BBU Melt Curve Constructions: The BBU fuse is offered in three constructions to meet specific melt curves for an application. The construction is designated in the Catalog Number suffix as follows;

- E (Standard)
- K (Fast), and
- SE (Slow)

The curves for the SE construction are less inverse and allow for more of a time-delay at high currents. Consult Cooper Bussmann for application assistance.

Ratings:

Volts: — The maximum voltage rating of the BBU fuse is the highest RMS voltage at which the fuse

is designed to operate. Its dielectric withstand level corresponds to insulation levels of power class equipment, thus the name "power fuse."

Maximum voltage ratings for BBU fuses are: 17kV, 27kV and 38kV.

Amps:— The continuous amp rating of a BBU fuse should equal or exceed the maximum load current where the fuse is applied. They are designed to carry their rated continuous current without exceeding the temperature rise outlined in the NEMA and ANSI standards. The BBU is available with continuous current ratings up to 200 amps. The current ratings carry an "E" designation as defined by ANSI and NEMA. For example, the current responsive element rated 100E amps or below will melt in 300 seconds at an RMS current within the range of 200 to 240 percent of the continuous current ratings. Above 100E amps, melting takes place in 600 seconds at an RMS current within the range of 220 to 264 percent of the continuous current rating.

IR:— BBU fuses have interrupting capabilities from 10kA to 14kA symmetrical.

Features and Benefits

- Voltage ratings of up to 38kV coupled with ratings to 200A provide a wide range of circuit protection.
- Time-current characteristics allow for easier coordination with downstream devices.
- Provides replacement of a variety of existing systems.

Typical Applications

- Power and Distribution Transformer Protection
- Medium Voltage Feeder Circuit Protection
- Distribution Transformers
- Medium Voltage Metal-enclosed Switchgear
- Medium Voltage Pad-mounted Switches

BBU Boric Acid Fuses for Indoor Use

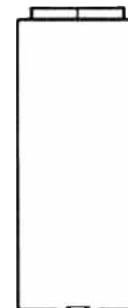
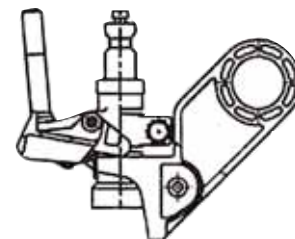
| Catalog Numbers* | Amps | Fuse Type | Voltage kV | Max Int. kA Sym. | Catalog Numbers* | Amps | Fuse Type | Voltage kV | Max Int. kA Sym. | Catalog Numbers | Amps | Fuse Type | Voltage kV | Max Int. kA Sym. | | | | | | | | | |
|------------------|------|-------------|------------|------------------|------------------|------|-------------|------------|------------------|-----------------|-----------|-----------|------------|------------------|----|---|----|------|-----------|----|---|----|----|
| BBU17-3K | 3 | K | 17 | 14 | BBU27-3K | 3 | K | 27 | 12.5 | BBU38-3K | 3 | K | 38 | 10 | | | | | | | | | |
| BBU17-6K | 6 | | | | BBU27-6K | 6 | | | | BBU38-6K | 6 | | | | | | | | | | | | |
| BBU17-8K | 8 | | | | BBU27-8K | 8 | | | | BBU38-8K | 8 | | | | | | | | | | | | |
| BBU17-10K | 10 | | | | BBU27-10K | 10 | | | | BBU38-10K | 10 | | | | | | | | | | | | |
| BBU17-12K | 12 | | | | BBU27-12K | 12 | | | | BBU38-12K | 12 | | | | | | | | | | | | |
| BBU17-15K | 15 | | | | BBU27-15K | 15 | | | | BBU38-15K | 15 | | | | | | | | | | | | |
| BBU17-20K | 20 | | | | BBU27-20K | 20 | | | | BBU38-20K | 20 | | | | | | | | | | | | |
| BBU17-25K | 25 | | | | BBU27-25K | 25 | | | | BBU38-30K | 30 | | | | | | | | | | | | |
| BBU17-30K | 30 | | | | BBU27-30K | 30 | | | | BBU38-40K | 40 | | | | | | | | | | | | |
| BBU17-40K | 40 | | | | BBU27-40K | 40 | | | | BBU38-50K | 50 | | | | | | | | | | | | |
| BBU17-50K | 50 | | | | BBU27-50K | 50 | | | | BBU38-65K | 65 | | | | | | | | | | | | |
| BBU17-65K | 65 | | | | BBU27-65K | 65 | | | | BBU38-80K | 80 | | | | | | | | | | | | |
| BBU17-80K | 80 | | | | BBU27-80K | 80 | | | | BBU38-100K | 100 | | | | | | | | | | | | |
| BBU17-100K | 100 | | | | BBU27-100K | 100 | | | | BBU38-140K | 140 | | | | | | | | | | | | |
| BBU17-140K | 140 | | | | BBU27-140K | 140 | | | | BBU38-200K | 200 | | | | | | | | | | | | |
| BBU17-200K | 200 | | | | BBU27-200K | 200 | | | | BBU38-5E | 5 | | | | | | | | | | | | |
| BBU17-5E | 5 | | | | E | 17 | | | | 14 | BBU27-5E | | | | 5 | E | 27 | 12.5 | BBU38-7E | 7 | E | 38 | 10 |
| BBU17-7E | 7 | | | | | | | | | | BBU27-7E | | | | 7 | | | | BBU38-10E | 10 | | | |
| BBU17-10E | 10 | | | | | | | | | | BBU27-10E | | | | 10 | | | | BBU38-13E | 13 | | | |
| BBU17-13E | 13 | | | | | | | | | | BBU27-13E | | | | 13 | | | | BBU38-15E | 15 | | | |
| BBU17-15E | 15 | BBU27-15E | 15 | BBU38-20E | | | 20 | | | | | | | | | | | | | | | | |
| BBU17-20E | 20 | BBU27-20E | 20 | BBU38-25E | | | 25 | | | | | | | | | | | | | | | | |
| BBU17-25E | 25 | BBU27-25E | 25 | BBU38-30E | | | 30 | | | | | | | | | | | | | | | | |
| BBU17-30E | 30 | BBU27-30E | 30 | BBU38-40E | | | 40 | | | | | | | | | | | | | | | | |
| BBU17-40E | 40 | BBU27-40E | 40 | BBU38-50E | | | 50 | | | | | | | | | | | | | | | | |
| BBU17-50E | 50 | BBU27-50E | 50 | BBU38-65E | | | 65 | | | | | | | | | | | | | | | | |
| BBU17-65E | 65 | BBU27-65E | 65 | BBU38-80E | | | 80 | | | | | | | | | | | | | | | | |
| BBU17-80E | 80 | BBU27-80E | 80 | BBU38-100E | | | 100 | | | | | | | | | | | | | | | | |
| BBU17-100E | 100 | BBU27-100E | 100 | BBU38-125E | | | 125 | | | | | | | | | | | | | | | | |
| BBU17-125E | 125 | BBU27-125E | 125 | BBU38-150E | | | 150 | | | | | | | | | | | | | | | | |
| BBU17-150E | 150 | BBU27-150E | 150 | BBU38-175E | | | 175 | | | | | | | | | | | | | | | | |
| BBU17-175E | 175 | BBU27-175E | 175 | BBU38-200E | | | 200 | | | | | | | | | | | | | | | | |
| BBU17-200E | 200 | BBU27-200E | 200 | BBU38-15SE | | | 15 | | | | | | | | | | | | | | | | |
| BBU17-15SE | 15 | SE | 17 | 14 | | | BBU27-15SE | 15 | SE | | 27 | 12.5 | BBU38-20SE | 20 | SE | | | | 38 | 10 | | | |
| BBU17-20SE | 20 | | | | | | BBU27-20SE | 20 | | | | | BBU38-25SE | 25 | | | | | | | | | |
| BBU17-25SE | 25 | | | | | | BBU27-25SE | 25 | | | | | BBU38-30SE | 30 | | | | | | | | | |
| BBU17-30SE | 30 | | | | BBU27-30SE | 30 | BBU38-40SE | 40 | | | | | | | | | | | | | | | |
| BBU17-40SE | 40 | | | | BBU27-40SE | 40 | BBU38-50SE | 50 | | | | | | | | | | | | | | | |
| BBU17-50SE | 50 | | | | BBU27-50SE | 50 | BBU38-65SE | 65 | | | | | | | | | | | | | | | |
| BBU17-65SE | 65 | | | | BBU27-65SE | 65 | BBU38-80SE | 80 | | | | | | | | | | | | | | | |
| BBU17-80SE | 80 | | | | BBU27-80SE | 80 | BBU38-100SE | 100 | | | | | | | | | | | | | | | |
| BBU17-100SE | 100 | | | | BBU27-100SE | 100 | BBU38-125SE | 125 | | | | | | | | | | | | | | | |
| BBU17-125SE | 125 | | | | BBU27-125SE | 125 | BBU38-150SE | 150 | | | | | | | | | | | | | | | |
| BBU17-150SE | 150 | | | | BBU27-150SE | 150 | BBU38-175SE | 175 | | | | | | | | | | | | | | | |
| BBU17-175SE | 175 | | | | BBU27-175SE | 175 | BBU38-200SE | 200 | | | | | | | | | | | | | | | |
| BBU17-200SE | 200 | BBU27-200SE | 200 | | | | | | | | | | | | | | | | | | | | |

* BBU Melt Curve Constructions: The BBU fuse is offered in three constructions to meet specific melt curves for an application. The construction is designated in the Catalog Number suffix: E (Standard), K (Fast) and SE (Slow). Contact Cooper Bussmann for application details.

Application Notes

Low currents, usually referred to as overload currents, must be considered as BBU fuses have a rather low thermal capacity. They cannot carry overloads of the same magnitude/duration as motors and transformers of equal continuous currents. For this reason, the BBU fuse must be sized with the full load current in mind so the fuse does not open on otherwise acceptable overloads and inrush conditions. Coordination should be considered to help determine what type of fuse is applied. The BBU fuse interrupts at a natural current zero in the current wave and allows a minimum of a half-cycle of fault current to flow before the fault is cleared. The time-current characteristics associated with a BBU fuse has a rather gradual slope making it easier to coordinate with downstream equipment. In addition, the BBU is ideal for higher voltage (up to 38kV) and high current applications (up to 200A). It is important to examine the minimum melting and total clearing time-current characteristics of this fuse.

End Fitting Detail



Note: Muffler can be ordered separately. Order Catalog number BBU-MFLR.

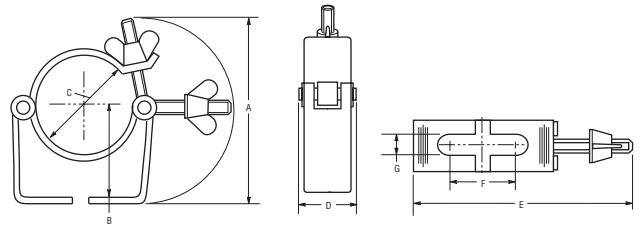
Data Sheet: 1123

Fuseclips for Medium & High Voltage Fuses

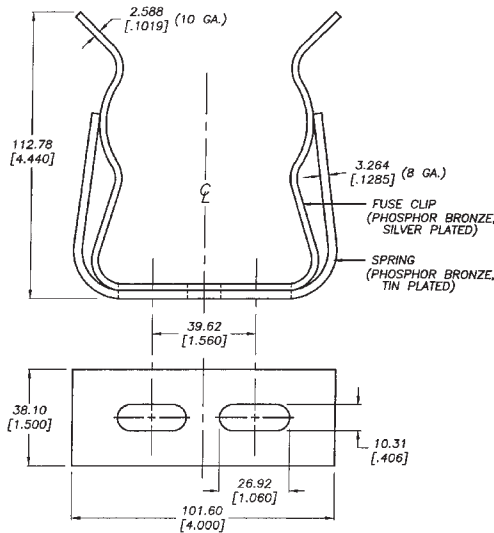
Recommended Fuseclips for Medium Voltage Fuses

| Catalog Numbers | Fuse Diameter - In (mm) | Clip Dimensions (In) | | | | | | |
|-----------------|-------------------------|----------------------|-------|-------|-------|-------|-------|-------|
| | | A | B | C | D | E | F | G |
| A3354710 | 2 (50.8) | 3.749 | 1.979 | 2.009 | 1.189 | 4.539 | 1.509 | 0.399 |
| A3354730 | 3 (76) | 4.139 | 2.449 | 3.009 | 1.189 | 5.639 | 1.509 | 0.399 |
| A3354745 | 1.77 (45) | 3.50 | 2.50 | 1.77 | 1.19 | 4.50 | 1.50 | 0.38 |

Fuseclips are for single barrel applications only. Are not sold in pairs.

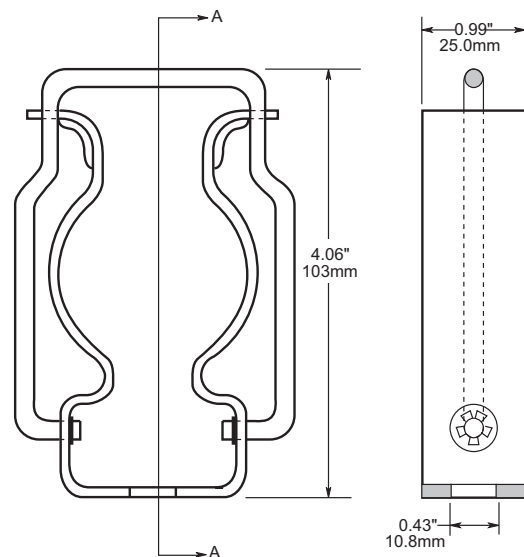


1A0065
3" Diameter Clip



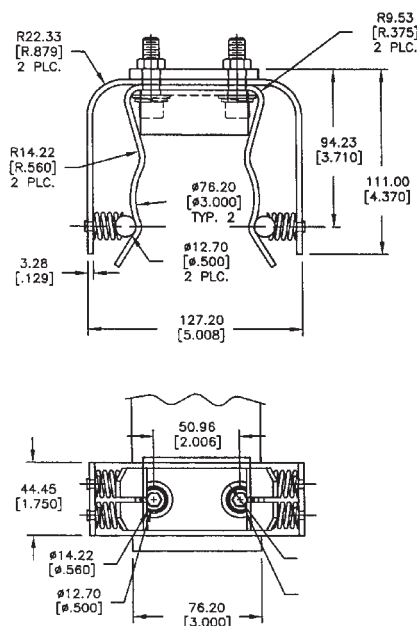
2 CLIP ASSEMBLIES PER PACKAGE.
DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

270303
DIN Fuseclip



Medium Voltage Fuses

9078A67G04
3" Diameter Clip



2 Cup assemblies per package.
Dimensions shown are for reference only.



High Speed Fuses

Extensive Selection to Deliver Precise Protection to Critical Loads

High Speed Fuses

Section Contents

| | Page |
|--|-----------|
| General Applications | 94-95 |
| North American fuses & accessories | 94-113 |
| DFJ - High speed Class J fuse | 97 |
| Square Body fuses & accessories | 114-176 |
| BS 88 fuses & accessories | 177-185 |
| Ferrule fuses & accessories. | 186-206 |



General Applications

Rated Voltage

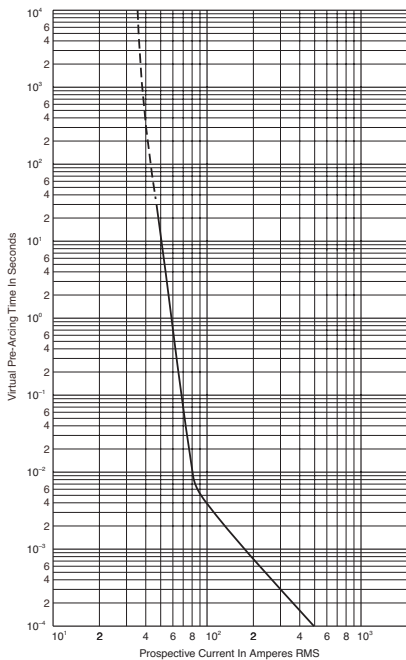
The AC voltage rating of Cooper Bussmann® fuses is given in volts rms. Fuses tested to IEC are tested at 5% above their rated voltage. British Style BS 88 fuses are tested at 10% above its rated voltage. UL recognition tests are performed at the rated voltage.

Rated Current

Rated current is given in amps rms. Cooper Bussmann fuses can continuously carry the rated current.

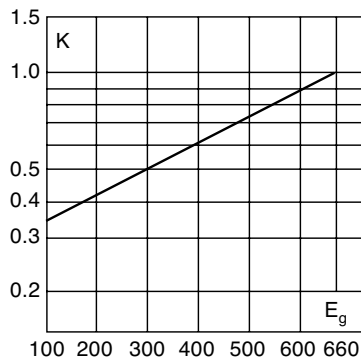
Melting Characteristic

The melting characteristic shows the virtual melting time in seconds as a function of the prospective current in amperes rms. The fuses are specially constructed for short-circuit protection against high level fault currents. Loading and operation of the fuse in the non-continuous/dashed section of the melt curve must be avoided. The curve can also be read as the real melting time as a function of the RMS value of the pre-arc current.



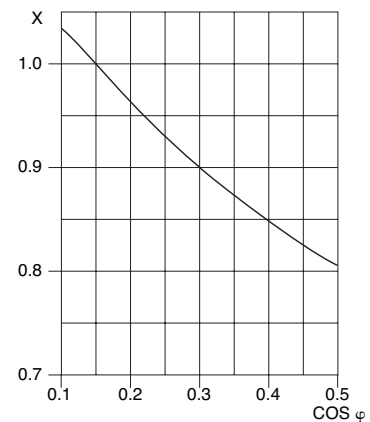
Clearing Integrals

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



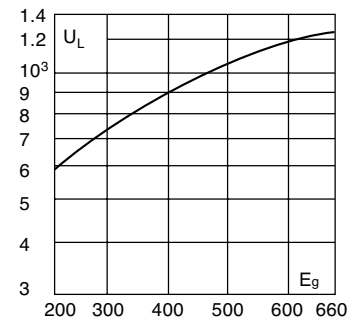
Power Factor

For other power factor values, the total clearing integral can be calculated as a multiple of the clearing integrals, the correction factor K and the correction factor X.



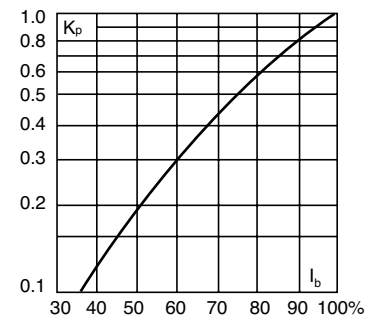
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



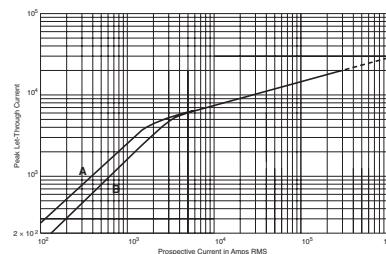
Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Cut-Off Current

A fuse operation relating to short-circuits only. When a fuse operates in its current-limiting range, it will clear a short-circuit in less than 1/2 cycle. Also, it will limit the instantaneous



peak let-through current to a value substantially less than that obtainable in the same circuit if that fuse were replaced

General Applications

with a solid conductor of equal impedance.

- A asymmetrical current
- B symmetrical current

Parallel Connection

When fuses are connected in parallel it is recommended that the applied voltage does not exceed $0.9 U_N$ (the rated voltage of the fuse). This is due to the fact that the energy released within the fuses may be unevenly shared between the parallel connected barrels.

When fuses are connected in parallel, one must take into account that the current sharing is not necessarily equal. And it must be checked, that the maximum load current is not exceeded.

Series Connection

Fuses in series may not equally divide the applied voltage. It is recommended that series connected fuses should only be operated at fault currents that yield melting times less than 10 ms and a recovery voltage per fuse of less than or equal to $0.9 U_N$ (the rated voltage of the fuse).

Mounting Guidance

The recommendations below have to be followed when mounting a Cooper Bussmann fuse with end plate threaded holes.

1. Screw in studs: 5 N•m Max, 3 N•m Min
2. Attachment of the fuse to bussbar by means of nut and washer:

| Thread Configuration | Torque (N•m)* | |
|----------------------|---------------|-----|
| | Max | Min |
| 5/16" – 18, M8 | 25 | 20 |
| 3/8" – 16, M10 | 45 | 40 |
| 1/2" – 24 | 45 | 40 |
| 1/2" – 13, M12 | 65 | 50 |
| 3/4" – 20 | 65 | 50 |

*1 N•m = 0.7375 lb-ft

Overloads

The design of Cooper Bussmann® fuses is such that they can be operated under rather severe operating conditions imposed by overloads (any load current in excess of the maximum permissible load current).

In applications, there will be a maximum overload current, I_{max} , which can be imposed on the fuse with a corresponding duration and frequency of occurrence.

Time durations fall into two categories:

1. Overloads longer than one second
2. Overloads less than one second termed "impulse" loads.

The following table gives general application guidelines which, in the expression $I_{max} < (\% \text{ factor}) \times I_t$, I_t is the

melting current corresponding to the time "t" of the overload duration as read from the time-current curve of the fuse. The guidelines in the table below determine the acceptability of the selected fuses for a given I_{max} .

| Frequency of Occurrence | Overloads (> 1 sec) | Impulse Loads (< 1 sec) |
|--------------------------|-----------------------------|-----------------------------|
| Less than once per month | $I_{max} < 80\% \times I_t$ | $I_{max} < 70\% \times I_t$ |
| Less than twice per week | $I_{max} < 70\% \times I_t$ | $I_{max} < 60\% \times I_t$ |
| Several times per day | $I_{max} < 60\% \times I_t$ | — |

When impulse loads are an intrinsic/normal parameter of the load current either as single pulse or in trains of pulses or when their level is higher than the melting current at 0.01 seconds (per time-current curve), contact Cooper Bussmann for application assistance.

In addition to the parameters set forth in the preceding table, the RMS value of the load current as calculated for any period of 10 minutes or more should not exceed the maximum permissible load current.

Furthermore, it is important that a fuse should not be applied in the non-continuous/dashed portion of the associated time-current curve.

Any time-current combination point which falls in the non-continuous/dashed portion of the time-current curve is beyond the capability of the fuse to operate properly.

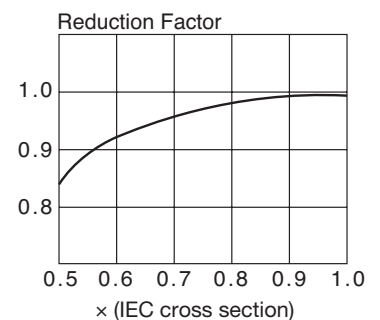
DC Operation

Depending upon the short-circuit time constant and the magnitude of the prospective short-circuit current, the dc voltage at which a fuse can be applied may be less than its ac rating. Long time constants require a lower dc voltage. Conversely, however, higher available prospective short-circuit currents result in faster fuse openings and thus permit a fuse to be operated at a higher DC voltage.

Consult Cooper Bussmann for additional information and application assistance when fuses have to operate under DC conditions.

Load Current Versus Conductor Cross Section

Reduction of permissible load current when the conductor cross section is less than that given in IEC Publication 269-1 & 4 valid for Cooper Bussmann high speed fuses.



Application Assistance

If you have application problems or need a fuse outside our standard program, please contact the nearest Cooper Bussmann representative. Phone numbers are shown on the back cover.

North American Fuses



Introduction

North American Contents

| Catalog Number | Volts | Amp Range | Page |
|----------------|-------|-----------|---------|
| DFJ | 600 | 1-600 | 97 |
| FWA | 130 | 1000-4000 | 98-99 |
| FWA | 150 | 70-1000 | 100-101 |
| FWX | 250 | 35-2500 | 102-103 |
| FWH | 500 | 35-1600 | 104-105 |
| KAC | 600 | 1-1000 | 106 |
| KBC | 600 | 35-800 | 107 |
| FWP | 700 | 5-1200 | 108-110 |
| FWJ | 1000 | 35-2000 | 111-112 |

Accessories

Fuse Bases 113

North American Fuse Ranges

| Amps | Volts | AC | DC |
|-----------|-------|----|----|
| 1000-4000 | 130 | X | X |
| 70-1000 | 150 | X | X |
| 35-2500 | 250 | X | X |
| 35-1600 | 500 | X | X |
| 1-1000 | 600 | X | — |
| 5-1200 | 700 | X | X |
| 40-600 | 800 | — | X |
| 35-2000 | 1000 | X | — |

General Information

Cooper Bussmann offers a complete range of North American blade and flush-end style fuses and accessories. Their design and construction were optimized to provide:

- Low energy let-through (I²t)
- Low watts loss
- Superior cycling capability
- Low arc voltage
- Excellent DC performance

North American style fuses provide an excellent solution for medium power applications. While there are currently no published standards for these fuses, the industry has standardized on mounting centers that accept Cooper Bussmann fuses.

Voltage Rating

All Cooper Bussmann® North American style fuses are tested at their rated voltage. Cooper Bussmann should be consulted for applications exceeding those values.

Accessories

External and internal open fuse indication is available for selected portions of the North American line. Fuse blocks are available for most applications.

Drive Fuse High Speed Fuses

DFJ Class J



Specifications

Description: High speed, current-limiting fuse. The Cooper Bussmann® Drive Fuse will provide maximum protection for AC and DC drives and controllers and meet NEC® branch circuit protection requirements. The Drive Fuse has the lowest I^2t of any branch circuit fuse to protect power semiconductor devices that utilize diodes, GTOs, SCRs and SSRs.

Dimensions: See page 15 for Class J dimensions.

Construction: Melamine tube with silver fuse element.

Ratings:

Volts — 600Vac (or less), 450Vdc (or less)

Amps — 1-600A

IR — 200kA RMS Sym., 100kA DC

Agency Information: CE, Std. 248-8, Class J, UL Listed, Guide JDDZ, File E4273, CSA Certified, Class 1422-02, File 53787.

Features and Benefits

- Easily coordinated with existing and new variable speed drives and electric controllers.
- Standard Class J dimensions allowing the use of readily available fuse blocks, holders, and switches.
- Allows the lowest let-thru energy of any branch circuit overcurrent protective device.

Typical Applications

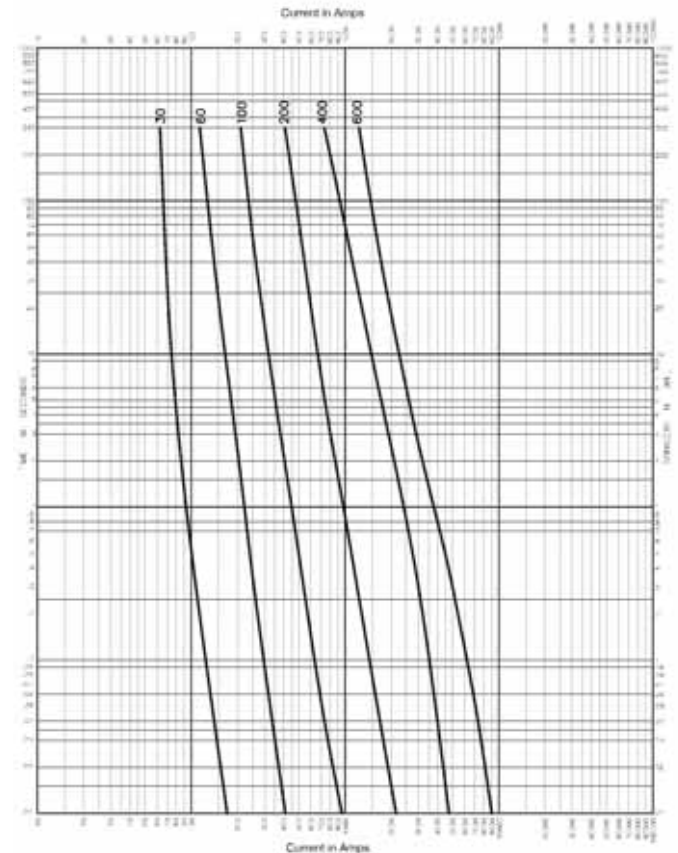
- Protection of ac & dc drives
- Equipment using power semi-conductor devices

Catalog Numbers (Amps)

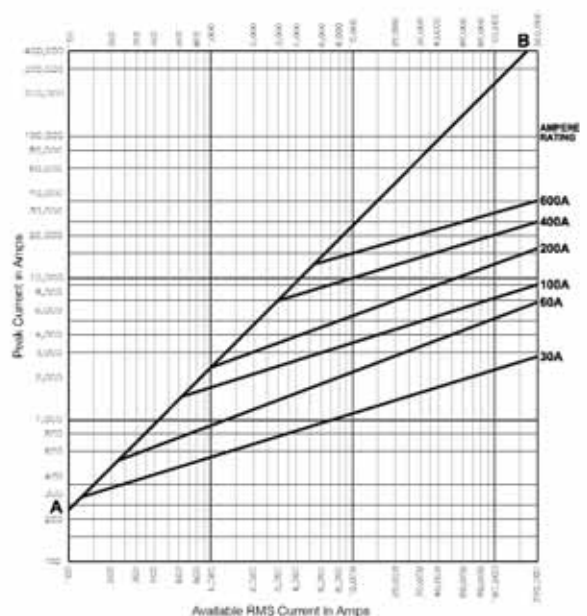
| | | | |
|--------|--------|---------|---------|
| DFJ-1 | DFJ-15 | DFJ-70 | DFJ-225 |
| DFJ-2 | DFJ-20 | DFJ-80 | DFJ-250 |
| DFJ-3 | DFJ-25 | DFJ-90 | DFJ-300 |
| DFJ-4 | DFJ-30 | DFJ-100 | DFJ-350 |
| DFJ-5 | DFJ-35 | DFJ-110 | DFJ-400 |
| DFJ-6 | DFJ-40 | DFJ-125 | DFJ-450 |
| DFJ-8 | DFJ-45 | DFJ-150 | DFJ-500 |
| DFJ-10 | DFJ-50 | DFJ-175 | DFJ-600 |
| DFJ-12 | DFJ-60 | DFJ-200 | |

Data Sheet: 1048

Time-Current Characteristic Curves—Average Melt



Current Limitation Curves



North American — FWA 130V: 1000-4000A

FWA

Specifications
 Description: North American style flush-end high speed fuses.
 Dimensions: See Dimensions illustrations.

Ratings:

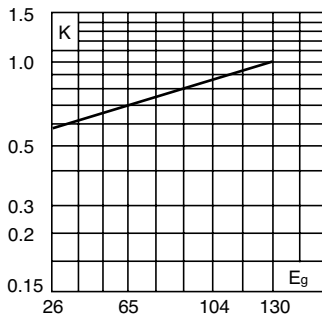
- Volts: — 130Vac
- Amps: — 1000-4000A
- IR: — 200kA RMS Sym.
- 50kA @130Vdc

Agency Information: CE, UL Recognized on 1000-2000A fuses

Electrical Characteristics

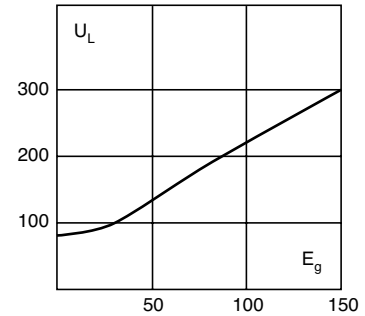
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



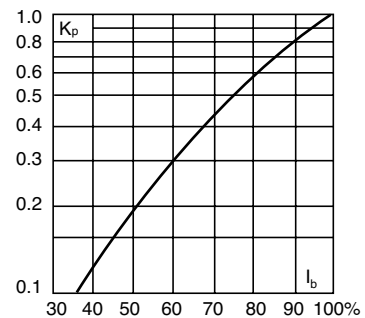
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Electrical Characteristics | | | |
|-----------------|----------------------------|-------------------------|------------------|------------|
| | Rated Current RMS-Amps | Pt (A ² Sec) | | Watts Loss |
| | | Pre-arc | Clearing at 130V | |
| FWA-1000AH | 1000 | 170000 | 460000 | 60 |
| FWA-1200AH | 1200 | 270000 | 730000 | 70 |
| FWA-1500AH | 1500 | 520000 | 1400000 | 78 |
| FWA-2000AH | 2000 | 860000 | 2400000 | 108 |
| FWA-2500AH | 2500 | 1500000 | 4100000 | 130 |
| FWA-3000AH | 3000 | 2100000 | 5700000 | 150 |
| FWA-4000AH | 4000 | 3400000 | 9200000 | 257 |

• Watts loss provided at rated current.
 • See accessories on page 113.

Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

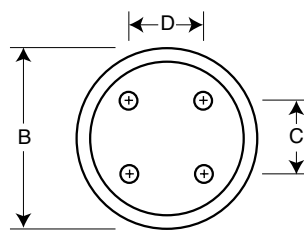
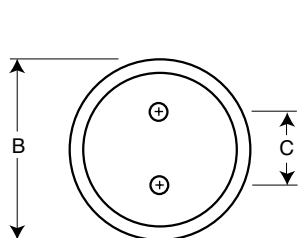
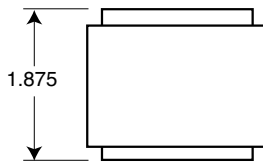
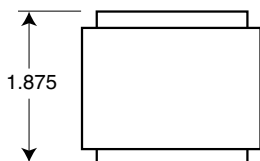
Dimensions (in)

| Catalog Number | Fig. | B | C | D | Thread Depth |
|-------------------|------|-----|-----|-----|---|
| FWA-1000AH-2000AH | 1 | 2.0 | 1.0 | — | Tapped $\frac{3}{8}$ "-24 x $\frac{1}{2}$ " |
| FWA-2500AH-3000AH | 1 | 3.0 | 1.5 | — | Tapped $\frac{1}{2}$ "-20 x $\frac{1}{2}$ " |
| FWA-4000AH | 2 | 3.5 | 1.5 | 1.5 | Tapped $\frac{1}{2}$ "-20 x $\frac{1}{2}$ " |

1mm 0.0394 / 1 25.4mm

ig. 1 1000-3000A

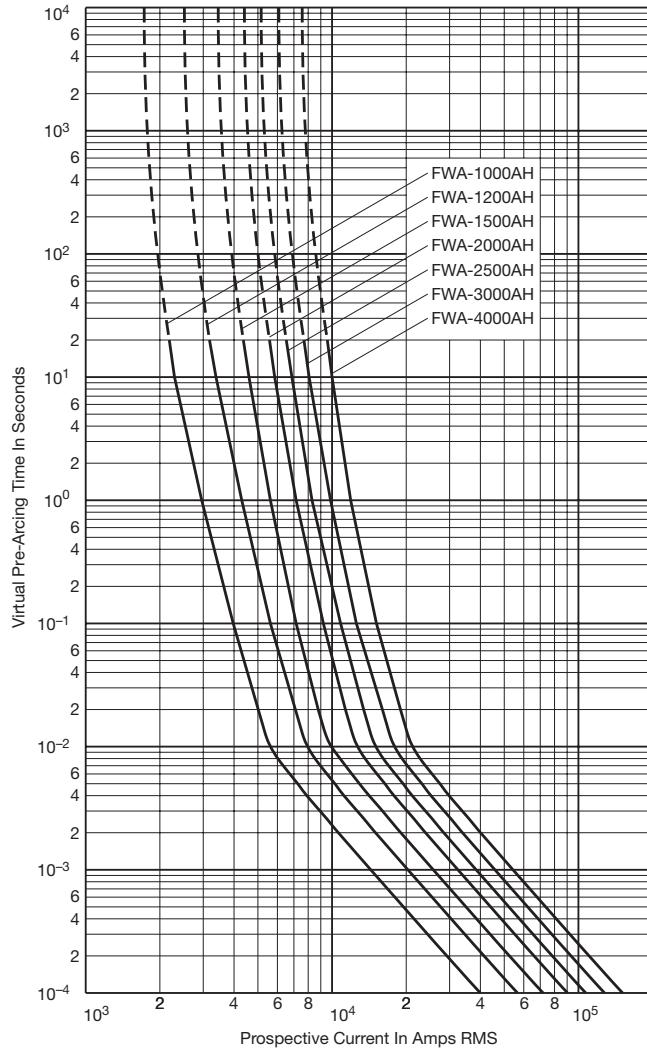
ig. 2 4000A



North American — FWA 130V: 1000-4000A

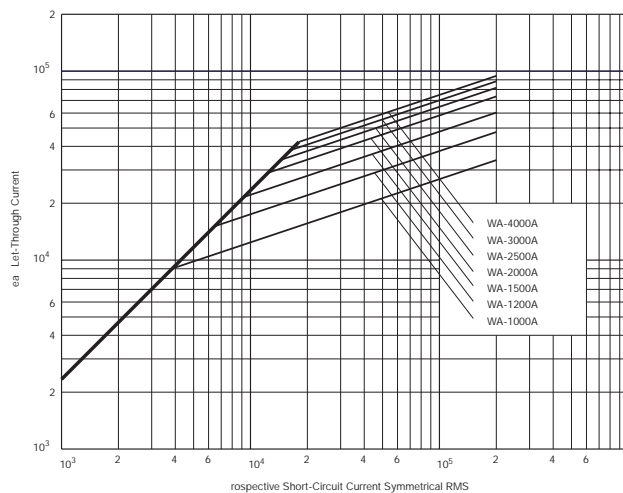
FWA 1000-4000A: 130V

Time-Current Curve



High Speed Fuses

Peak Let-Through Curve



Data Sheet: 35785301

North American — FWA 150V: 70-1000A

FWA

Specifications

Description: North American style stud-mount fuses.

Dimensions: See Dimensions illustrations.

Ratings:

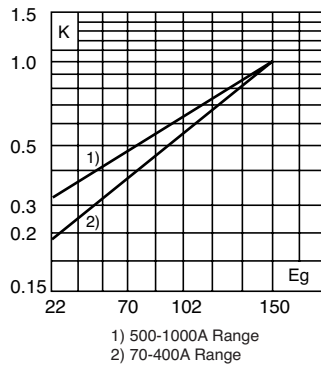
- Volts: — 150Vac/dc
- Amps: — 70-1000A
- IR: — 100kA Sym. (70-400A)
- 200kA Sym. (450-1000A)
- 20kA @ 150Vdc (70-800A)
- 100kA @ 80Vdc (70-400A)

Agency Information: CE, UL Recognized

Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



Dimensions (in)

Fig. 1: 70-400A

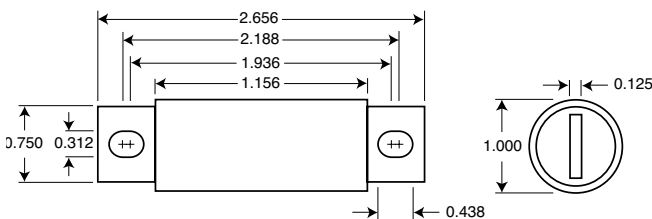
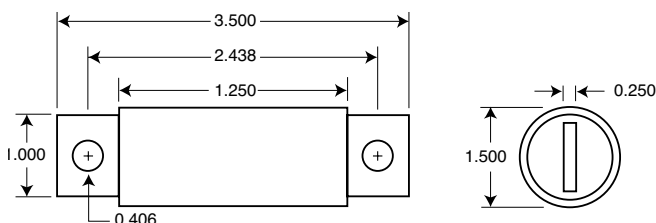


Fig. 2: 500-1000A



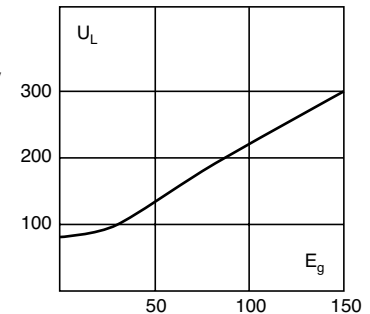
1mm = 0.0394" / 1" = 25.4mm

Data Sheet: 720002



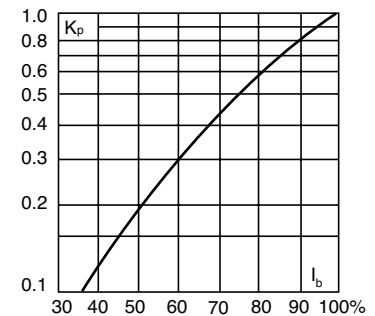
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Number | Rated Current RMS-Amps | Electrical Characteristics | | |
|----------------|------------------------|----------------------------|------------------|------------|
| | | Pt (A ² Sec) | | Watts Loss |
| | | Pre-arc | Clearing at 150V | |
| FWA-70B | 70 | 470 | 4000 | 6.9 |
| FWA-80B | 80 | 670 | 6000 | 7.7 |
| FWA-100B | 100 | 1200 | 12000 | 9.0 |
| FWA-125B | 125 | 1870 | 18000 | 11.2 |
| FWA-150B | 150 | 2700 | 26000 | 13.5 |
| FWA-200B | 200 | 4780 | 45000 | 17.6 |
| FWA-250B | 250 | 7470 | 70000 | 22.5 |
| FWA-300B | 300 | 10760 | 100000 | 27.0 |
| FWA-350B | 350 | 15700 | 140000 | 30.6 |
| FWA-400B | 400 | 20300 | 180000 | 35.2 |
| FWA-500A | 500 | 39000 | 120000 | 35.0 |
| FWA-600A | 600 | 46000 | 140000 | 47.0 |
| FWA-700A | 700 | 75000 | 220000 | 49.0 |
| FWA-800A | 800 | 92000 | 280000 | 58.0 |
| FWA-1000A | 1000 | 170000 | 510000 | 60.0 |

• Watts loss provided at rated current.
• See accessories on page 113.

Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

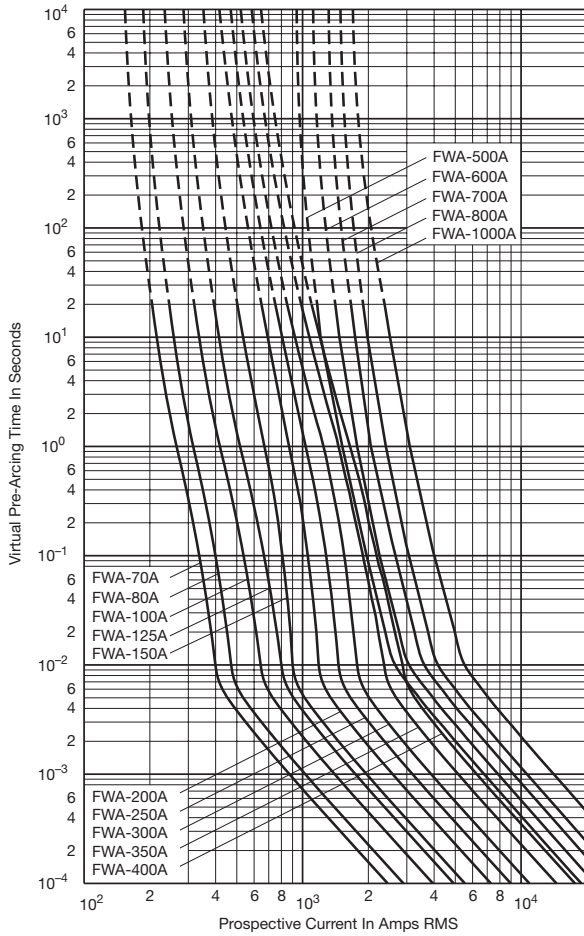
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

North American — FWA 150V: 70-1000A

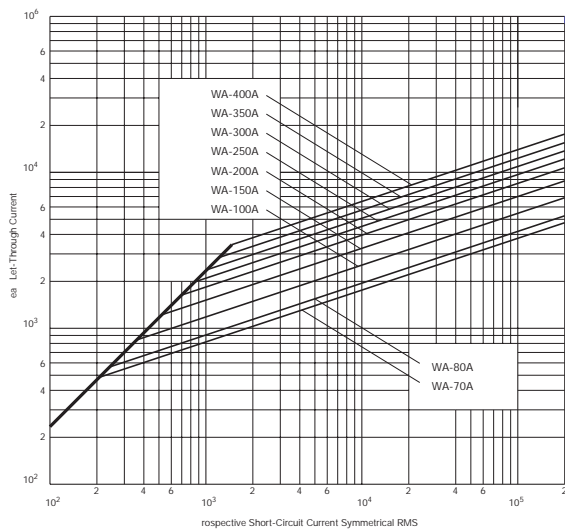
FWA 70-1000A: 150V

Time-Current Curve



High Speed Fuses

Peak Let-Through Curve



Data Sheet: 35785310

North American — FWX 250V: 35-2500A

FWX

Specifications

Description: North American style stud-mount and flush-end fuses.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 250Vac/dc

Amps: — 35-2500A

IR: — 200kA RMS Sym.

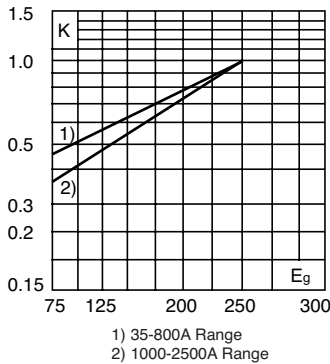
Agency Information: CE, UL Recognized & CSA Component Acceptance on 35-800A fuses (20kA IR @250Vdc).



Electrical Characteristics

Total Clearing I²t

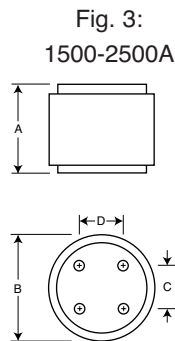
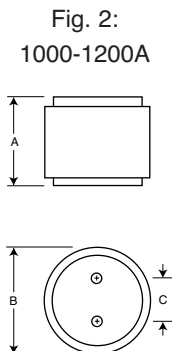
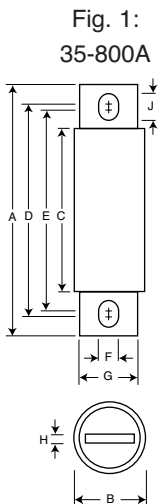
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



Dimensions (in)

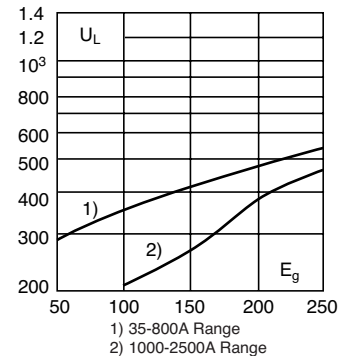
| Amp Range | Fig. | A | B | C | D | E | F | G | H | J | Tapped Thread Depth |
|-----------|------|------|------|------|------|------|------|------|------|------|---------------------|
| 35-60 | 1 | 3.19 | 0.81 | 1.59 | 2.59 | 2.25 | 0.34 | 0.63 | 0.13 | 0.52 | — |
| 70-200 | 1 | 3.13 | 1.22 | 1.59 | 2.44 | 2.19 | 0.34 | 1.00 | 0.19 | 0.47 | — |
| 225-600 | 1 | 3.84 | 1.50 | 1.59 | 2.94 | 2.25 | 0.41 | 1.00 | 0.25 | 0.75 | — |
| 700-800 | 1 | 3.84 | 2.00 | 1.59 | 3.03 | 2.28 | 0.41 | 1.50 | 0.25 | 0.78 | — |
| 1000-1200 | 2 | 2.59 | 3.00 | 1.50 | — | — | — | — | — | — | 3/8"-24 x 1/2" |
| 1500-2500 | 3 | 2.59 | 3.50 | 1.50 | 1.50 | — | — | — | — | — | 3/8"-24 x 1/2" |

1mm = 0.0394" / 1" = 25.4mm



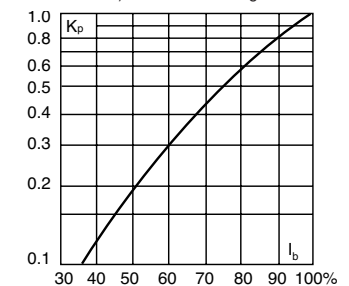
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Catalog Numbers

| Catalog Number | Rated Current RMS-Amps | Electrical Characteristics | | |
|----------------|------------------------|----------------------------|------------------|------------|
| | | Pt (A ² Sec) | | Watts Loss |
| | | Pre-arc | Clearing at 250V | |
| FWX-35A | 35 | 50 | 230 | 4.2 |
| FWX-40A | 40 | 60 | 310 | 5.2 |
| FWX-45A | 45 | 80 | 390 | 5.7 |
| FWX-50A | 50 | 100 | 520 | 6.0 |
| FWX-60A | 60 | 140 | 740 | 8.1 |
| FWX-70A | 70 | 330 | 1400 | 7.2 |
| FWX-80A | 80 | 430 | 1850 | 8.1 |
| FWX-90A | 90 | 570 | 2450 | 9.0 |
| FWX-100A | 100 | 740 | 3150 | 10.0 |
| FWX-125A | 125 | 1130 | 4850 | 12.5 |
| FWX-150A | 150 | 1620 | 6950 | 15.7 |
| FWX-175A | 175 | 2170 | 9300 | 18.5 |
| FWX-200A | 200 | 2790 | 12000 | 22 |
| FWX-225A | 225 | 3210 | 14700 | 24 |
| FWX-250A | 250 | 3960 | 18100 | 27 |
| FWX-275A | 275 | 4720 | 21600 | 31 |
| FWX-300A | 300 | 6000 | 27300 | 32 |
| FWX-350A | 350 | 10600 | 48600 | 39 |
| FWX-400A | 400 | 14500 | 66100 | 44 |
| FWX-450A | 450 | 22100 | 101000 | 49 |
| FWX-500A | 500 | 28000 | 128000 | 54 |
| FWX-600A | 600 | 41100 | 188000 | 62 |
| FWX-700A | 700 | 48800 | 190000 | 72 |
| FWX-800A | 800 | 59000 | 230000 | 84 |
| FWX-1000AH | 1000 | 44000 | 360000 | 100 |
| FWX-1200AH | 1200 | 92000 | 750000 | 103 |
| FWX-1500AH | 1500 | 120000 | 880000 | 140 |
| FWX-1600AH | 1600 | 160000 | 1200000 | 140 |
| FWX-2000AH | 2000 | 320000 | 2300000 | 151 |
| FWX-2500AH | 2500 | 670000 | 4700000 | 163 |

• Watts loss provided at rated current. • See accessories on page 113.

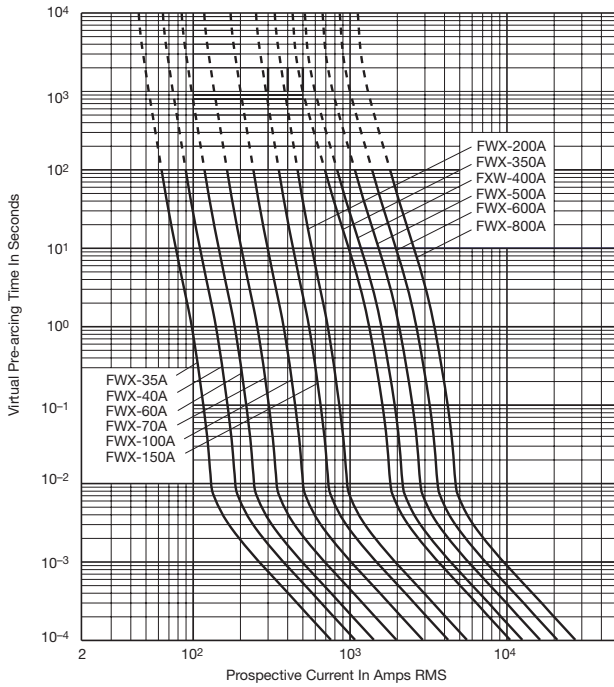
- #### Features and Benefits
- Excellent DC performance
 - Low arc voltage and low energy let-through (I²t)
 - Superior cycling capability

- #### Typical Applications
- DC common bus
 - DC drives
 - Power converters/rectifiers
 - Reduced voltage starters

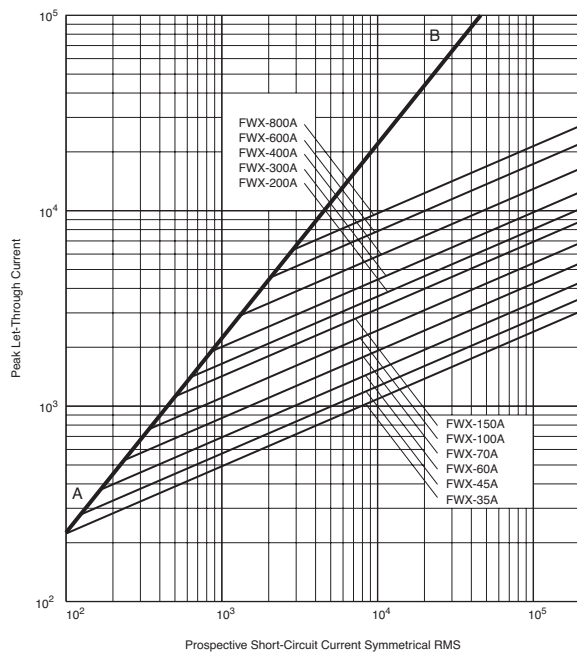
North American — FWX 250V: 35-2500A

FWX 35-800A: 250V

Time-Current Curve

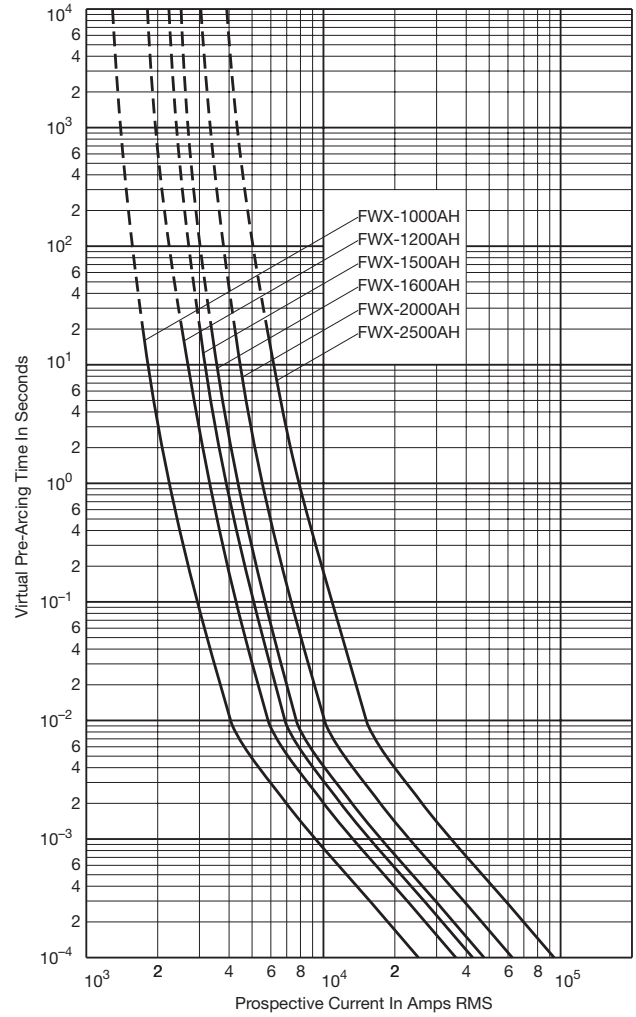


Peak Let-Through Curve

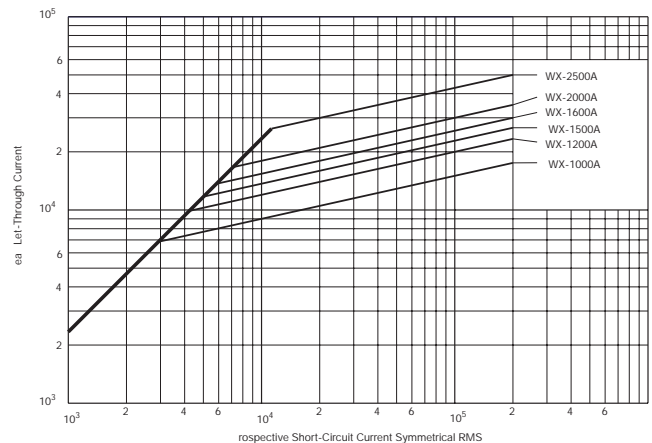


FWX 1000-2500A(H): 250V

Time-Current Curve



Peak Let-Through Curve



High Speed Fuses

North American — FWH 500V: 35-1600A

FWH

Specifications

Description: North American style stud-mount fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 500Vac/dc

Amps: — 35-1600A

IR: — 200kA Sym.

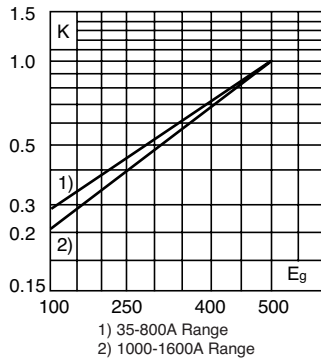
— 50kA @ 500Vdc

Agency Information: CE, UL Recognition & CSA Component Acceptance on 35-800A only (50kA IR@500Vdc). UL Recognition on 35-1200A only, CSA Component Acceptance: 35-1600A.

Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



Dimensions (in)

| Amp Range | Fig. | A | B | C | D | E | F | G | H | J |
|-----------|------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 35-60 | 1 | 3.188 | 0.813 | 1.593 | 2.541 | 2.193 | 0.344 | 0.719 | 0.125 | 0.518 |
| 70-100 | 1 | 3.625 | 0.947 | 1.736 | 2.853 | 2.807 | 0.352 | 0.750 | 0.125 | 0.375 |
| 125-200 | 1 | 3.625 | 1.156 | 1.836 | 2.892 | 2.768 | 0.344 | 1.000 | 0.188 | 0.406 |
| 225-400 | 1 | 4.340 | 1.500 | 2.090 | 3.440 | 2.750 | 0.410 | 1.000 | 0.250 | 0.750 |
| 450-600 | 1 | 4.340 | 2.000 | 2.090 | 3.530 | 2.780 | 0.410 | 1.500 | 0.250 | 0.780 |
| 700-800 | 1 | 6.340 | 2.500 | 2.090 | 4.970 | 3.440 | 0.530 | 2.000 | 0.380 | 1.300 |
| 1000-1200 | 1 | 6.969 | 3.000 | 3.219 | 5.465 | 4.475 | 0.625 | 2.375 | 0.438 | 1.120 |
| 1400-1600 | 2 | See Drawing | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-1200A

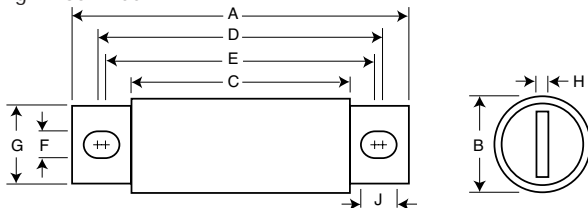
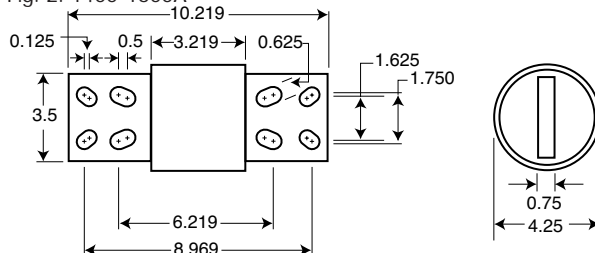
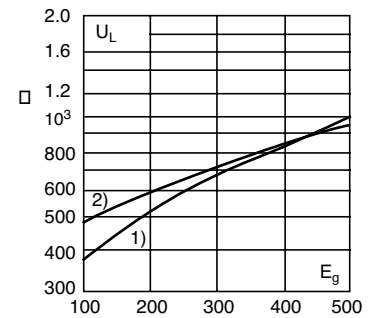


Fig. 2: 1400-1600A



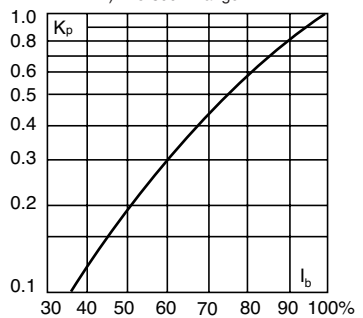
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Rated Current RMS-Amps | Electrical Characteristics | | |
|-----------------|------------------------|----------------------------|------------------|------------|
| | | Pre-arc | Clearing at 500V | Watts Loss |
| FWH-35B | 35 | 34 | 150 | 8 |
| FWH-40B | 40 | 76 | 320 | 7.5 |
| FWH-45B | 45 | 105 | 450 | 7.5 |
| FWH-50B | 50 | 135 | 670 | 7.5 |
| FWH-60B | 60 | 210 | 900 | 9.9 |
| FWH-70B | 70 | 210 | 900 | 10.6 |
| FWH-80B | 80 | 305 | 1400 | 12.7 |
| FWH-90B | 90 | 360 | 1600 | 15 |
| FWH-100B | 100 | 475 | 2000 | 17 |
| FWH-125B | 125 | 800 | 3500 | 25 |
| FWH-150B | 150 | 1100 | 4600 | 30 |
| FWH-175B | 175 | 1450 | 6200 | 35 |
| FWH-200B | 200 | 1900 | 8500 | 40 |
| FWH-225A | 225 | 4600 | 23300 | 39 |
| FWH-250A | 250 | 6300 | 32200 | 41 |
| FWH-275A | 275 | 7900 | 40300 | 46 |
| FWH-300A | 300 | 9800 | 49800 | 51 |
| FWH-325A | 325 | 13700 | 63800 | 53 |
| FWH-350A | 350 | 14500 | 72900 | 58 |
| FWH-400A | 400 | 19200 | 96700 | 65 |
| FWH-450A | 450 | 24700 | 127000 | 74 |
| FWH-500A | 500 | 29200 | 149000 | 84 |
| FWH-600A | 600 | 41300 | 206000 | 108 |
| FWH-700A | 700 | 55000 | 298000 | 120 |
| FWH-800A | 800 | 76200 | 409000 | 129 |
| FWH-1000A | 1000 | 92000 | 450000 | 145 |
| FWH-1200A | 1200 | 122000 | 600000 | 180 |
| FWH-1400A | 1400 | 200000 | 1000000 | 210 |
| FWH-1600A | 1600 | 290000 | 1400000 | 230 |

* Watts loss provided at rated current.

* See accessories on page 113.

Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Superior cycling capability

Typical Applications

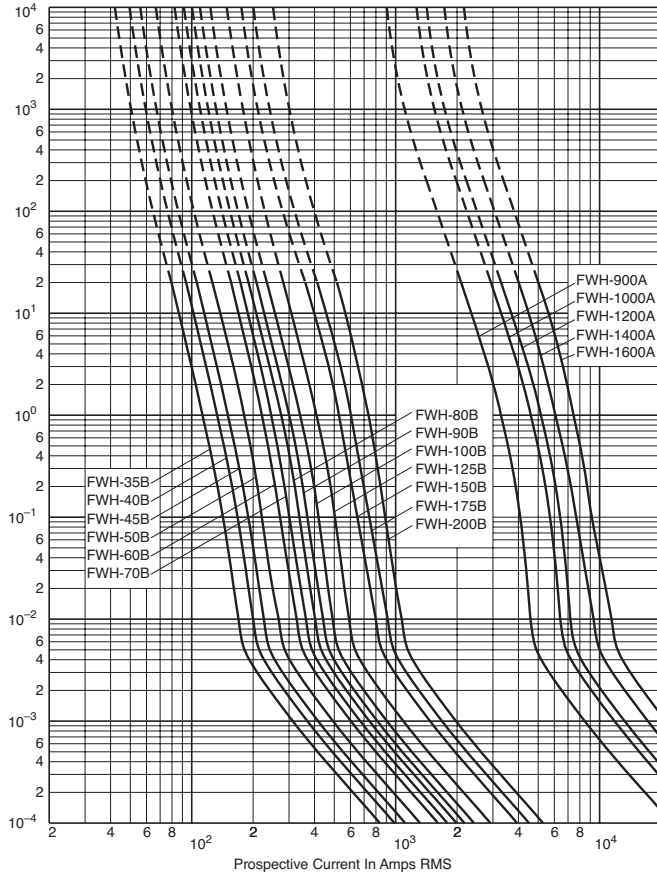
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Data Sheet: 720007

North American — FWH 500V: 35-1600A

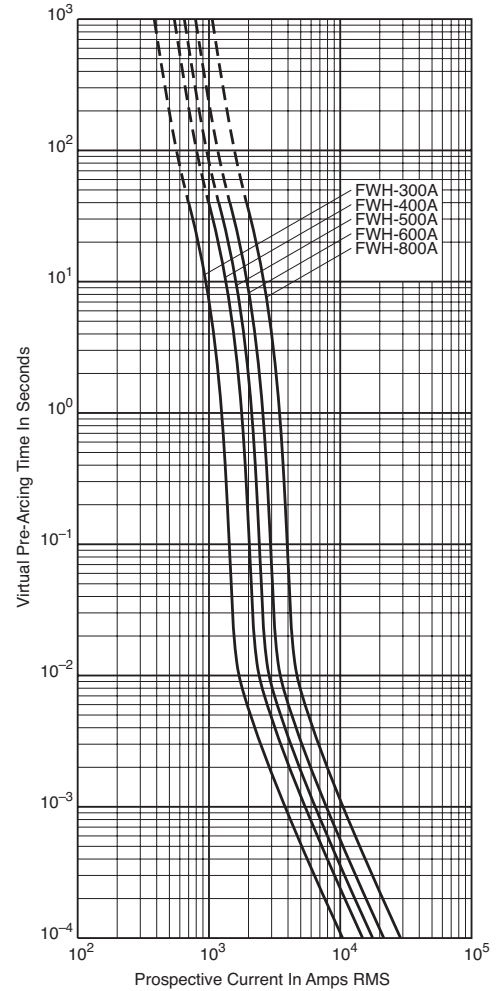
FWH 35-200A(B) & 900-1600A(A): 500V

Time-Current Curve



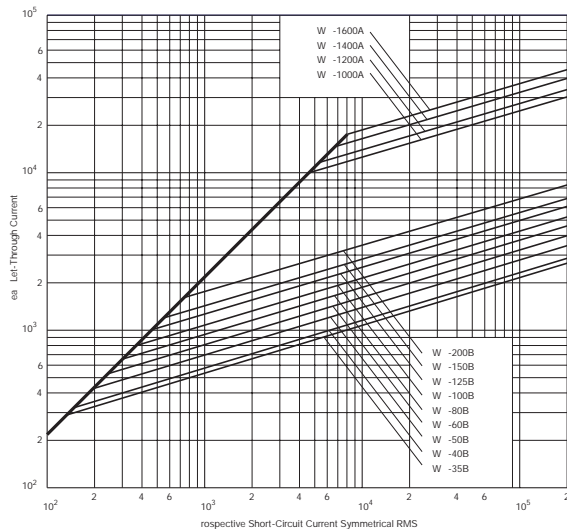
FWH 250-800A: 500V

Time-Current Curve

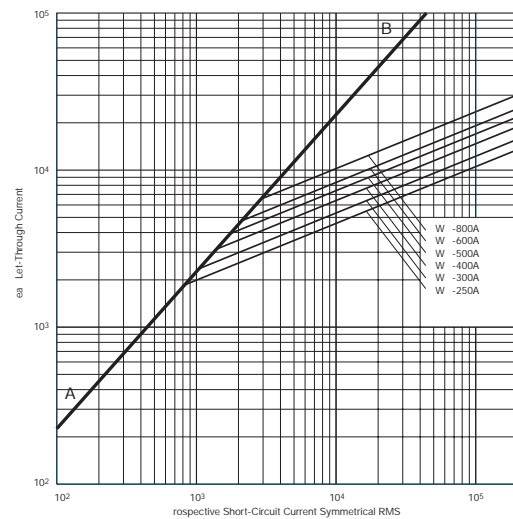


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



North American — KAC 600V: 1-1000A

KAC

Specifications

Description: North American style stud-mount fuses. These 600V fuses are supplied as replacements only. For new installations, Cooper Bussmann recommends the 700V FWP Series fuse.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac

Amps: — 1-1000A

IR: — 200kA RMS Sym.

Agency Information: CE, UL Recognition on 1-600A only.



Catalog Numbers (Amps)

| | | |
|----------|---------|----------|
| KAC-1 | KAC-25 | KAC-175 |
| KAC-2 | KAC-30 | KAC-200 |
| KAC-3 | KAC-35 | KAC-225 |
| KAC-4 | KAC-40 | KAC-250 |
| KAC-5 | KAC-45 | KAC-300 |
| KAC-6 | KAC-50 | KAC-350 |
| KAC-7 | KAC-60 | KAC-400 |
| KAC-8 | KAC-70 | KAC-450 |
| KAC-9 | KAC-80 | KAC-500 |
| KAC-10 | KAC-90 | KAC-600 |
| KAC-12 | KAC-100 | KAC-700 |
| KAC-15 | KAC-110 | KAC-800 |
| KAC-17.5 | KAC-125 | KAC-1000 |
| KAC-20 | KAC-150 | |

• See accessories on page 113.

Features and Benefits

- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

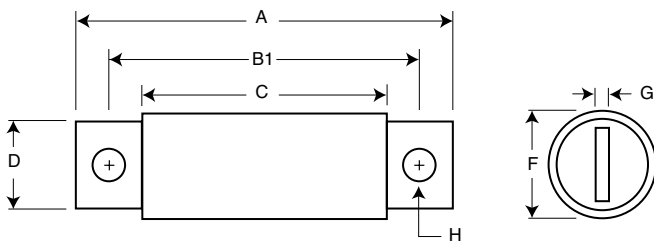
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (in)

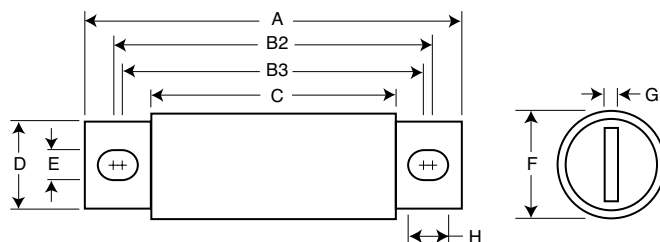
| Amp Range | Fig. | A | B1 | B2 | B3 | C | D | E | F | G | H |
|-----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1-30A | 1 | 2.875 | 2.500 | — | — | 1.875 | 0.406 | — | 0.563 | 0.063 | 0.257 |
| 35-60A | 2 | 4.375 | — | 3.750 | 3.500 | 2.750 | 0.625 | 0.343 | 0.813 | 0.094 | 0.468 |
| 70-100A | 2 | 5.000 | — | 4.063 | 3.656 | 2.750 | 0.750 | 0.406 | 1.000 | 0.125 | 0.609 |
| 110-200A | 2 | 5.140 | — | 4.390 | 3.766 | 2.906 | 1.000 | 0.406 | 1.500 | 0.188 | 0.718 |
| 225-400A | 2 | 6.182 | — | 4.815 | 4.565 | 3.000 | 1.625 | 0.562 | 2.000 | 0.250 | 0.687 |
| 450-800A | 1 | 6.250 | 4.750 | — | — | 3.063 | 2.000 | — | 2.500 | 0.250 | 0.563 |
| 1000A | 1 | 7.250 | 4.750 | — | — | 3.063 | 2.750 | — | 3.500 | 0.375 | 0.563 |

1mm = 0.0394" / 1" = 25.4mm

ig. 1 1-30 450-1000A



ig. 2 35-400A



North American — KBC 600V: 35-800A

KBC

Specifications

Description: North American style stud-mount and flush-end fuses. These 600V fuses are supplied as replacements only. For new installations, Cooper Bussmann recommends the 700V FWP Series fuse.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac

Amps: — 35-800A

IR: — 200kA RMS Sym.

Agency Information: CE, UL Recognition on 35-600A only.



Catalog Numbers (Amps)

| | | |
|--------|---------|---------|
| KBC-35 | KBC-100 | KBC-300 |
| KBC-40 | KBC-110 | KBC-350 |
| KBC-45 | KBC-125 | KBC-400 |
| KBC-50 | KBC-150 | KBC-450 |
| KBC-60 | KBC-175 | KBC-500 |
| KBC-70 | KBC-200 | KBC-600 |
| KBC-80 | KBC-225 | KBC-800 |
| KBC-90 | KBC-250 | |

• See accessories on page 113.

Features and Benefits

- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- Power converters/rectifiers
- Reduced voltage starters

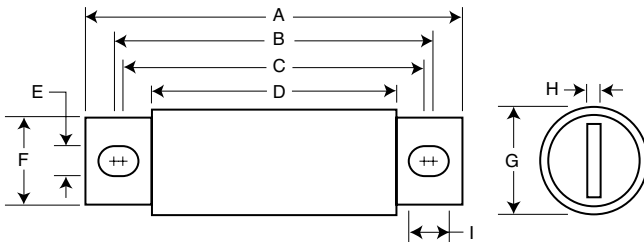
High Speed Fuses

Dimensions (in)

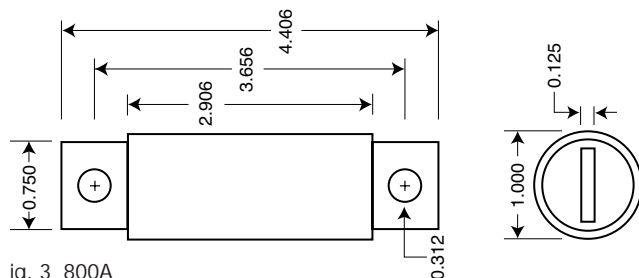
| Amp Range | Fig. | A | B | C | D | E | F | G | H | I | |
|-----------|------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| 35-60A | 1 | 4.375 | 3.750 | 3.500 | 2.750 | 0.343 | 0.625 | 0.813 | 0.094 | 0.468 | |
| 70-100A | 2 | See Drawing | | | | | | | | | |
| 110-200A | 1 | 4.406 | 3.719 | 3.594 | 2.906 | 0.312 | 0.875 | 1.219 | 0.187 | 0.375 | |
| 225-400A | 1 | 5.125 | 4.188 | 3.563 | 2.906 | 0.406 | 1.000 | 1.500 | 0.250 | 0.719 | |
| 450-600A | 1 | 5.125 | 4.389 | 3.687 | 2.875 | 0.406 | 1.500 | 2.000 | 0.250 | 0.757 | |
| 800A | 3 | See Drawing | | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

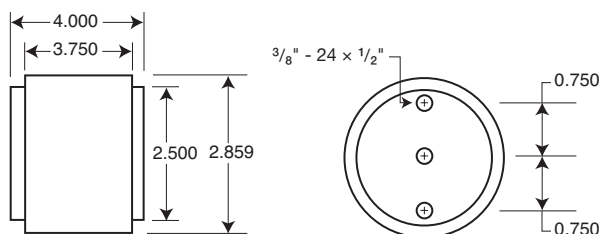
ig. 1 35-60 and 110-600A



ig. 2 70-100A



ig. 3 800A



Data Sheet: 720010

North American — FWP 700V: 5-1200A

FWP

Specifications

Description: North American style stud-mount fuses.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 700Vac/dc

Amps: — 5-1200A

IR: — 200kA RMS Sym.

— 50kA @700Vdc

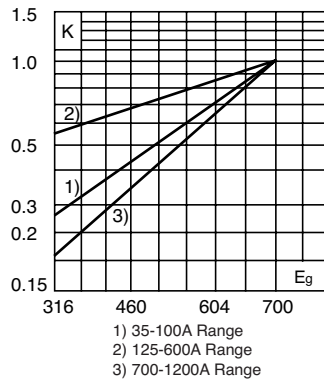
Agency Information: CE, UL Recognition & CSA Component Acceptance on 5-800A



Electrical Characteristics

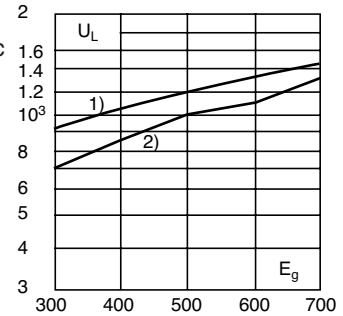
Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_G, (rms).



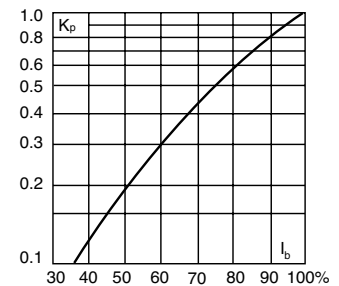
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_G, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Catalog Numbers

| Catalog Numbers | Rated Current RMS-Amps | Electrical Characteristics | | |
|-----------------|------------------------|----------------------------|------------------|------------|
| | | Pt (A ² Sec) | | Watts Loss |
| | | Pre-arc | Clearing at 700V | |
| FWP-5B | 5 | 1.6 | 10 | 1.5 |
| FWP-10B | 10 | 3.6 | 20 | 4 |
| FWP-15B | 15 | 10 | 75 | 5.5 |
| FWP-20B | 20 | 26 | 180 | 6 |
| FWP-25B | 25 | 44 | 340 | 7 |
| FWP-30B | 30 | 58 | 450 | 9 |
| FWP-35B | 35 | 34 | 160 | 12 |
| FWP-40B | 40 | 76 | 320 | 12 |
| FWP-50B | 50 | 135 | 600 | 12 |
| FWP-60B | 60 | 210 | 950 | 15.5 |
| FWP-70B | 70 | 305 | 2000 | 18 |
| FWP-80B | 80 | 360 | 2400 | 21 |
| FWP-90B | 90 | 415 | 2700 | 25 |
| FWP-100B | 100 | 540 | 3500 | 27 |
| FWP-125A | 125 | 1800 | 7300 | 28 |
| FWP-150A | 150 | 2900 | 11700 | 32 |
| FWP-175A | 175 | 4200 | 16700 | 35 |
| FWP-200A | 200 | 5500 | 22000 | 43 |
| FWP-225A | 225 | 7700 | 31300 | 45 |
| FWP-250A | 250 | 10500 | 42500 | 48 |
| FWP-300A | 300 | 17600 | 71200 | 58 |
| FWP-350A | 350 | 23700 | 95600 | 65 |
| FWP-400A | 400 | 31000 | 125000 | 78 |
| FWP-450A | 450 | 36400 | 137000 | 94 |
| FWP-500A | 500 | 45200 | 170000 | 107 |
| FWP-600A | 600 | 66700 | 250000 | 122 |
| FWP-700A | 700 | 54000 | 300000 | 125 |
| FWP-800A | 800 | 78000 | 450000 | 140 |
| FWP-900A | 900 | 91500 | 530000 | 150 |
| FWP-1000A | 1000 | 120000 | 600000 | 170 |
| FWP-1200A | 1200 | 195000 | 1100000 | 190 |

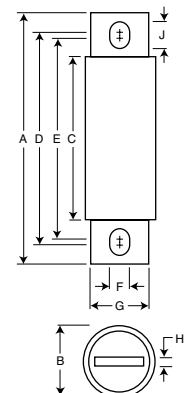
* Watts loss provided at rated current. * See accessories on page 113.

Dimensions (in)

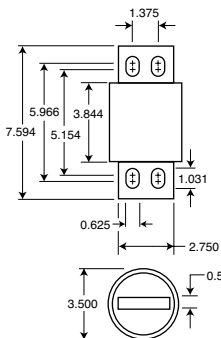
| Amp Range | Fig. | A | B | C | D | E | F | G | H | I |
|-----------|------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5-30 | 1 | 2.870 | 0.563 | 1.855 | 2.477 | 2.477 | 0.250 | 0.405 | 0.063 | 0.250 |
| 35-60 | 1 | 4.375 | 0.813 | 2.750 | 3.708 | 3.312 | 0.344 | 0.725 | 0.125 | 0.542 |
| 70-100 | 1 | 4.406 | 0.947 | 2.594 | 3.625 | 3.563 | 0.344 | 0.750 | 0.125 | 0.375 |
| 125-200 | 1 | 5.090 | 1.500 | 2.840 | 4.190 | 3.500 | 0.410 | 1.000 | 0.250 | 0.750 |
| 225-400 | 1 | 5.090 | 2.000 | 2.840 | 4.280 | 3.530 | 0.410 | 1.500 | 0.250 | 0.780 |
| 450-600 | 1 | 7.090 | 2.500 | 2.840 | 5.720 | 4.190 | 0.530 | 2.000 | 0.380 | 1.300 |
| 700-800 | 1 | 6.630 | 2.000 | 2.844 | 5.562 | 5.062 | 0.625 | 1.500 | 0.250 | 0.875 |
| 900-1000 | 2 | See Drawing | | | | | | | | |
| 1200 | 3 | See Drawing | | | | | | | | |

1mm = 0.0394" / 1" = 25.4mm

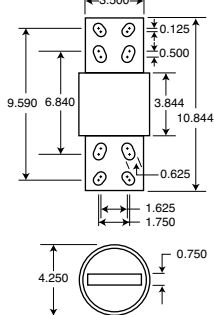
ig. 1 5-800A



ig. 2 900-1000A



ig. 3 1200A



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Superior cycling capability

Typical Applications

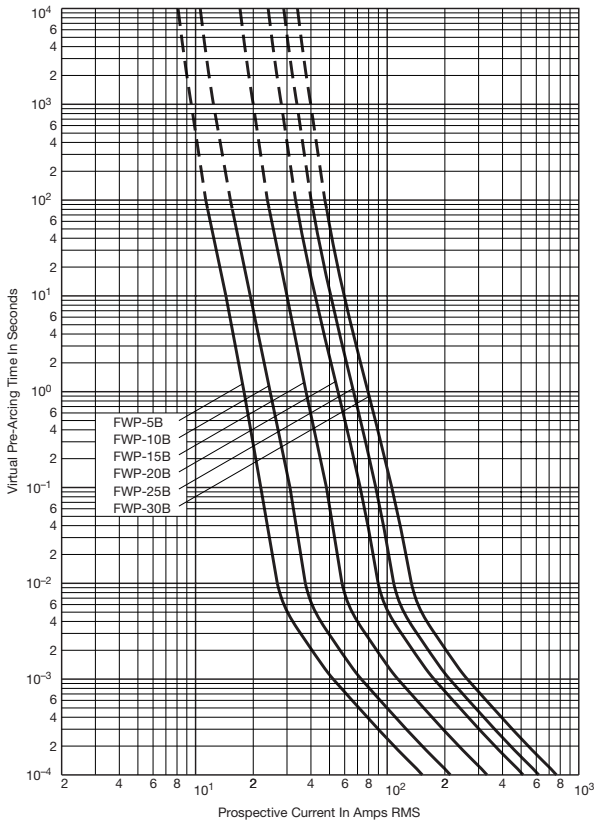
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Data Sheet: 720012

North American — FWP 700V: 5-1200A

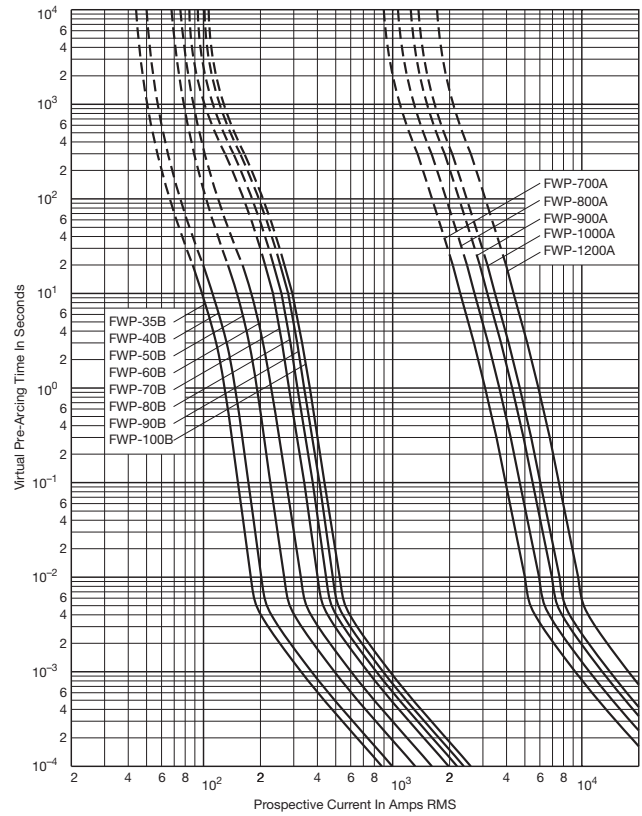
FWP 5-30A(B): 700V

Time-Current Curve



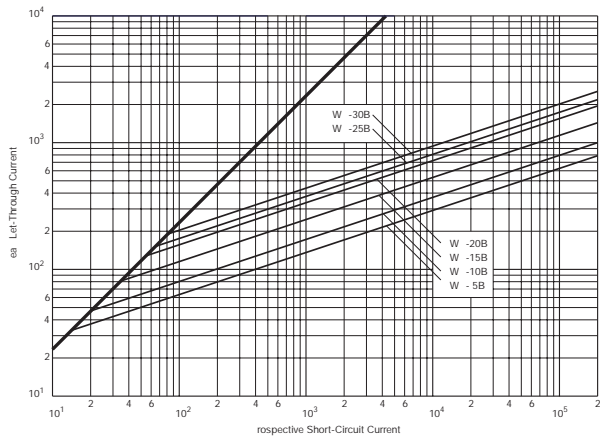
FWP 35-100A(B) & 700-1200A(A): 700V

Time-Current Curve

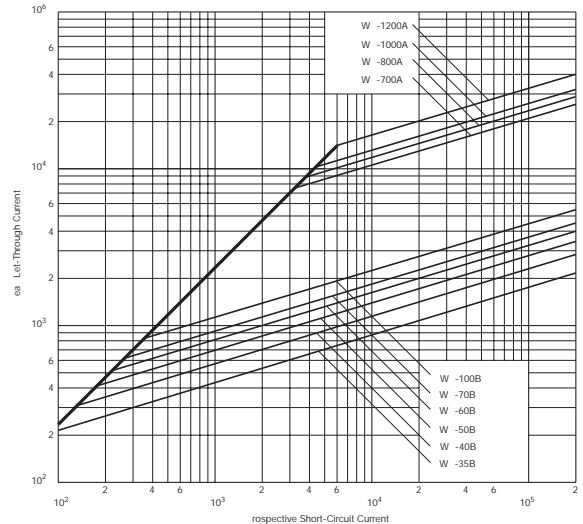


High Speed Fuses

Peak Let-Through Curve



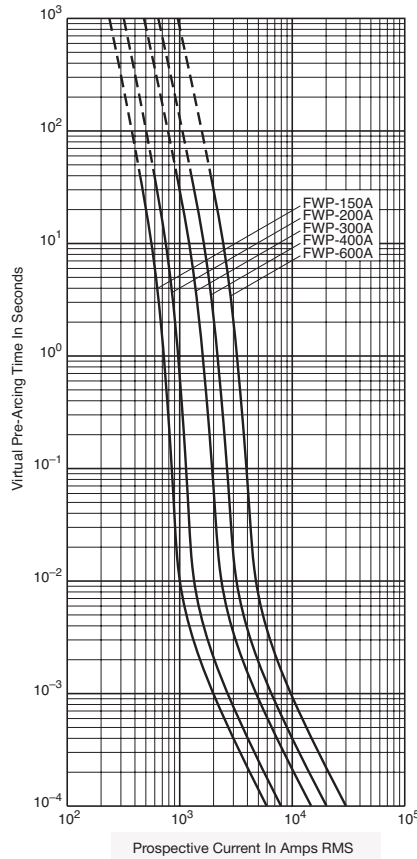
Peak Let-Through Curve



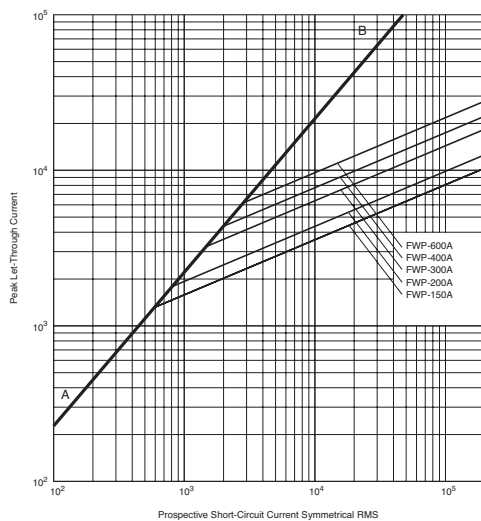
North American — FWP 700V: 5-1200A

FWP 150-600A: 700V

Time-Current Curve



Peak Let-Through Curve



North American — FWJ 1000V: 35-2000A

FWJ

Specifications

Description: North American style stud-mount fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 1000Vac

Amps: — 35-2000A

IR: — 25kA (35-200A)

— 100kA (250-2000A)

— 50kA @ 800Vdc (35-200A, 450-600A)

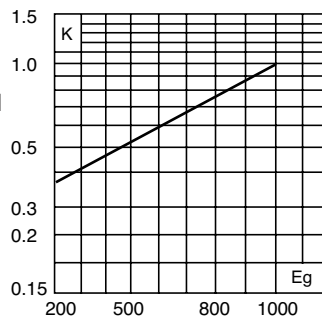
Agency Information: CE, UL Recognition File E91958 on 35-600A only.



Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

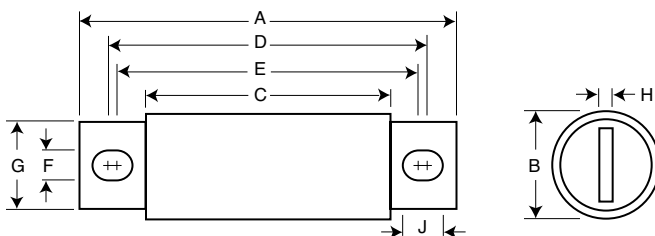


Dimensions (in)

| Amp Range | Fig. | A | B | C | D | E | F | G | H | I |
|-----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 35-60 | 1 | 5.000 | 0.940 | 3.110 | 4.235 | 4.180 | 0.352 | 0.750 | 0.125 | 0.380 |
| 70-100 | 1 | 4.932 | 1.125 | 3.085 | 4.266 | 4.156 | 0.352 | 1.000 | 0.188 | 0.407 |
| 125-200 | 1 | 5.685 | 1.526 | 3.261 | 4.803 | 4.055 | 0.445 | 1.000 | 0.250 | 0.819 |
| 250-400 | 1 | 5.768 | 2.000 | 3.500 | 4.811 | 4.150 | 0.433 | 1.500 | 0.250 | 0.764 |
| 500-600 | 1 | 7.201 | 2.500 | 3.465 | 5.984 | 4.706 | 0.562 | 2.000 | 0.375 | 1.201 |
| 800-2000 | 1 | 6.811 | 3.500 | 3.312 | 5.472 | 4.962 | 0.625 | 2.750 | 0.500 | 0.880 |

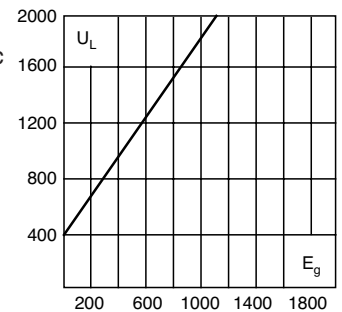
1mm = 0.0394" / 1" = 25.4mm

Fig. 1: 35-2000A



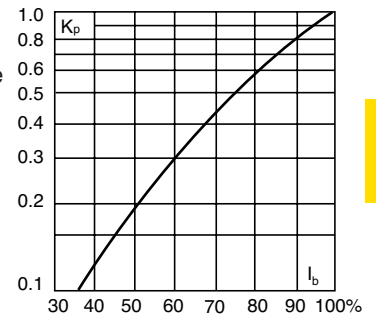
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Rated Current RMS-Amps | Electrical Characteristics | | Watts Loss |
|-----------------|------------------------|----------------------------|-------------------|------------|
| | | I^2t (A2 Sec) | | |
| | | Pre-arc | Clearing at 1000V | |
| FWJ-35A | 35 | 210 | 2000 | 7 |
| FWJ-40A | 40 | 300 | 2500 | 8 |
| FWJ-50A | 50 | 470 | 3500 | 10 |
| FWJ-60A | 60 | 670 | 5000 | 11 |
| FWJ-70A | 70 | 1100 | 6900 | 12 |
| FWJ-80A | 80 | 1550 | 9700 | 13 |
| FWJ-90A | 90 | 1900 | 12000 | 14 |
| FWJ-100A | 100 | 2800 | 17500 | 15 |
| FWJ-125A | 125 | 4800 | 35000 | 16 |
| FWJ-150A | 150 | 6300 | 45000 | 25 |
| FWJ-175A | 175 | 7500 | 65000 | 30 |
| FWJ-200A | 200 | 11700 | 80000 | 32 |
| FWJ-250A | 250 | 16000 | 112000 | 50 |
| FWJ-300A | 300 | 23500 | 164000 | 56 |
| FWJ-350A | 350 | 33000 | 231000 | 62 |
| FWJ-400A | 400 | 47000 | 330000 | 67 |
| FWJ-500A | 500 | 39500 | 329000 | 95 |
| FWJ-600A | 600 | 61000 | 520000 | 105 |
| FWJ-800A | 800 | 87000 | 500000 | 182 |
| FWJ-1000A | 1000 | 190000 | 1100000 | 206 |
| FWJ-1200A | 1200 | 370000 | 2100000 | 240 |
| FWJ-1400A | 1400 | 470000 | 2700000 | 248 |
| FWJ-1600A | 1600 | 700000 | 4000000 | 267 |
| FWJ-1800A | 1800 | 925000 | 5300000 | 239 |
| FWJ-2000A | 2000 | 1330000 | 7600000 | 244 |

• Watts loss provided at rated current.
• See accessories on page 113.

Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

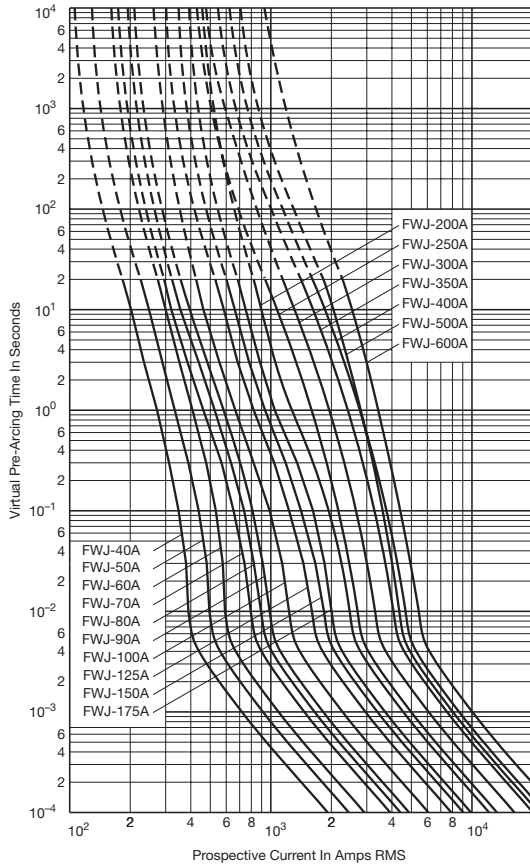
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

North American — FWJ 1000V: 35-2000A

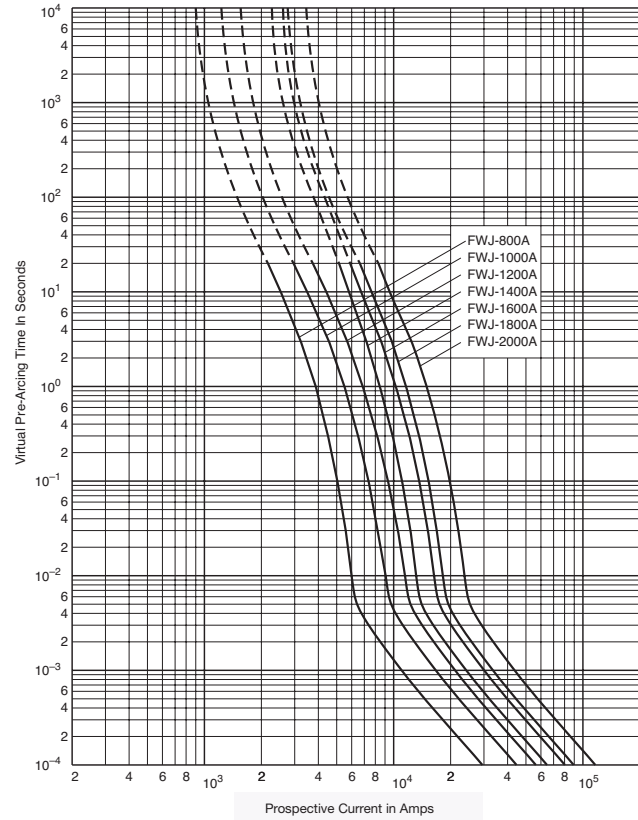
FWJ 35-600A: 1000V

Time-Current Curve



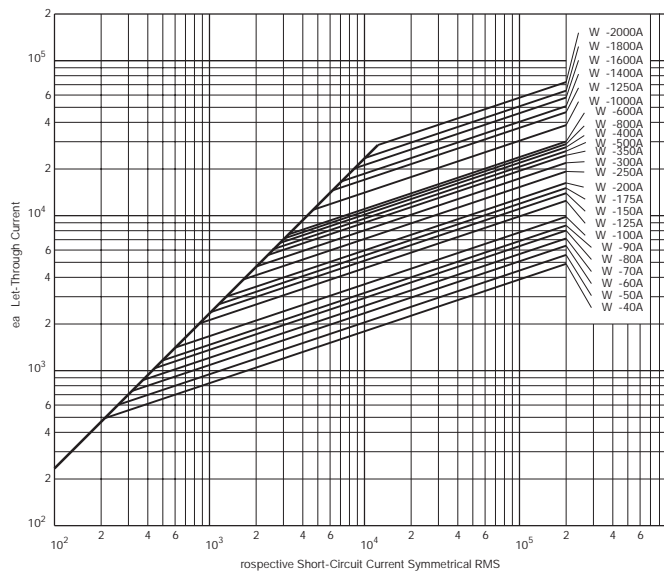
FWJ 800-2000A: 1000V

Time-Current Curve



Data Sheet: 35785309

Peak Let-Through Curve



Data Sheet: 35785303

North American Fuse Accessories

Fuse Bases (Blocks)

Modular Style

Cooper Bussmann offers a comprehensive line of fuse bases that provide the user with design and manufacturing flexibility. Two identical half bases make up a Cooper Bussmann® modular fuse base. These “split” units can be panel mounted any distance apart to accommodate any length fuse.

Stud Type (Not sold in pairs)

The simpler design is the C5268 Series modular fuse base. With this design, the fuse terminal and cable (with termination) are mounted on the same stud, minimizing labor needed for installation. The stud type base is available in the configuration shown in the table below.

| Catalog Number | Max Fuse Amp Rating | Stud Height (In) | Stud Dia. & Threads |
|----------------|---------------------|------------------|---------------------|
| C5268-1 | 200 | 1.00 | 5/16"-18 |
| C5268-2 | 200 | 1.75 | 5/16"-18 |
| C5268-3 | 200 | 0.75 | 5/16"-18 |
| C5268-4 | 100 | 1.00 | 1/4"-20 |
| C5268-5 | 100 | 1.75 | 1/4"-20 |

Connector Type

Cooper Bussmann also offers a modular style fuse base that utilizes a tin-plated connector (for wire termination and heat dissipation) and a plated-steel stud (for fuse mounting). The connector type fuse base is available in the configurations shown below. Consult Cooper Bussmann for additional product details.

| Modular Base Style | Max Voltage | Max Fuse Amp Rating | Data Sheet Number |
|--------------------|-------------|---------------------|-------------------|
| 1BS101 | 600 | 100 | 1206 |
| 1BS102 | 600 | 400 | 1207 |
| 1BS103 | 600 | 400 | 1208 |
| 1BS104 | 600 | 600 | 1209 |
| BH-0xxx | 700 | 100 | 1200 |
| BH-1xxx | 2500 | 400 | 1201 |
| BH-2xxx | 5000 | 400 | 1202 |
| BH-3xxx | 1250 | 700 | 1203 |

Refer to page 275 for BH style holders.

Fixed Center Base Style

Cooper Bussmann offers a comprehensive line of fixed mount style fuse bases under the trademark TRON® rectifier fuse blocks. The cable and fuse connections are similar to the stud type fuse base — both are mounted on the same stud. Consult Cooper Bussmann for complete product details.



High Speed Fuses

Square Body Fuses



Introduction

| | |
|-------------------------|---------|
| Square Body Contents | Page |
| Application Information | 115-116 |

| Volts (IEC/UL) | Size | Class | Fuse Style | Page | |
|--------------------|-------------|-------------|-------------------|-------------------|---------|
| 690/700 | 000,00 | aR | DIN 43 653 | 117-119 | |
| | | aR | Flush End Contact | 117-119 | |
| | | aR | DIN 43 620 | 120-121 | |
| | 1*, 1, 2, 3 | aR | DIN 43 653 | 122-123 | |
| | | | Flush End Contact | 124-125 | |
| | | | US Style | 126-127 | |
| | | 4 | aR | French Style | 128-129 |
| | | | aR | Fuse Curves | 130-131 |
| | | | aR | DIN 43 620 | 132-134 |
| | | | aR | Flush End Contact | 135-136 |
| 1000 | 23, 24 | aR | Flush End Contact | 137-139 | |
| | | aR | DIN 43 620 | 140-143 | |
| | | aR | DIN 43 653 | 144-145 | |
| | 1*, 1, 2, 3 | aR | DIN 43 653 | 146-147 | |
| | | | Flush End Contact | 148-149 | |
| | | | US Style | 150-151 | |
| | | 4 | aR | Fuse Curves | 152-153 |
| | aR | | Flush End Contact | 154-156 | |
| | aR | | Flush End Contact | 157-159 | |
| | 1250/1300 | 1*, 1, 2, 3 | aR | DIN 43 653 | 160-161 |
| aR | | | Flush End Contact | 162-163 | |
| aR | | | US Style | 164-165 | |
| 4 | | aR | Fuse Curves | 166-167 | |
| | | aR | Flush End Contact | 168-170 | |
| | | aR | Flush End Contact | 171-172 | |
| 1000-2000 DC Fuses | 5 | aR | Flush End Contact | 173 | |
| | | | | 174-184 | |

| | |
|------------------|------|
| Accessories | Page |
| Indicator System | 185 |
| Fuse Bases | 186 |

Square Body Fuse Ranges

| Amps | Volts | AC | DC |
|---------|-------|----|----|
| 10-7500 | 690 | X | — |
| 50-1400 | 1250 | X | — |

General Information

Designed and tested to:

- IEC 60269: Part 4
- UL Recognized

Cooper Bussmann offers a complete range of square body style fuses and accessories. Their unique design and construction provide:

- Minimal energy let-through (I²t)
- Low operating temperature
- Low watts loss

Square body style fuses are a very attractive solution for high power applications which require a compact design with superior performance. The construction and design of square body style fuses make it easy for Cooper Bussmann to manufacture custom products. Our cataloged offering provides only a sample of the wide variety of product which is available.

Each square body style fuse is available with a number of different end fittings. Options include:

- DIN 43 653
- DIN 43 620
- Flush End (Metric/US)
- French Style
- US Style

Voltage Rating

All Cooper Bussmann square body style fuses are tested to IEC 60269: Part 4. This standard requires a test voltage which is 5% higher than the rated voltage. In North America, fuses are required to clear only their rated voltage.

Accessories

Square Body style fuses are available with three different open fuse indicator systems. Options include visual indication and indication utilizing a microswitch. Fuse blocks are also available for most applications.

Square Body Applications

Maximum Permissible Load Current

The rated current value of Cooper Bussmann fuses is based on the ambient temperature in the space immediately below the fuse of 20°C. The following graph gives correction factors (k) for a range of temperatures (-40°C to +80°C). Maximum permissible continuous load currents can be calculated by applying the following formula:

$$I_b \leq I_n \approx k \approx (1 + 0.05 V) \times K_b$$

where

I_b = Maximum permissible continuous load current

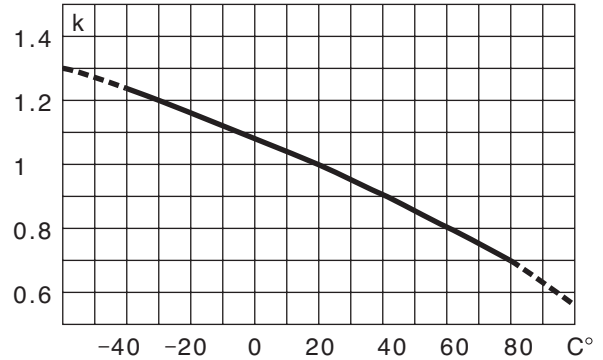
I_n = Rated current of fuse

k = Temperature correction factor

v = Velocity of cooling air in m/s (max. 5 m/s).

K_b = Fuse load constant 1.0

Temperature Correction Curve



The maximum permissible continuous load current I_b of a fuse can be checked empirically (i.e., by satisfying the formula below) by making simple voltage and temperature measurements under actual operating conditions after the fuse has been installed in its operating location and loaded at the calculated I_b value:

$$\frac{E_2}{E_1} \approx (0.92 + 0.004t) \leq N$$

where

E_1 = Voltage drop across fuse after 5 seconds

E_2 = Voltage drop across fuse after 2 hours

t = Air temperature at start of test (°C)

N = Constant

| Fuse Rated Voltage (IEC) N | |
|----------------------------|-----|
| 690 | 1.5 |
| 1250 | 1.6 |

Body Cross Section

Standard fuse program includes barrels with different cross sections.

| Size | 000 | 00 | 1 | 1 | 2 | 3 | 4 |
|----------------------------|---------|---------|---------|---------|---------|---------|-----------|
| Maximum Cross-section (mm) | 21 × 36 | 30 × 47 | 45 × 45 | 53 × 53 | 61 × 61 | 76 × 76 | 105 × 105 |
| | | | | | | | |

Square Body Applications

Example Application of Square Body High Speed Fuses Subject to Overload and Impulse Loading

Select a short-blade indicating fuse with indicator/adaptor to permit the use of a single-pole microswitch for remote indication and determine if the fuse selected will meet the following application parameters.

Application Parameters

Load Currents Expected

| Load Type | Duration | Frequency of Occurrence | Amps |
|---------------|-------------------|--------------------------|-------|
| (1) Normal | Continuous | — | 300A |
| (2) Overload | 60 Seconds | Once Per Hour | 500A |
| (3a) Overload | 10 Seconds | 2-3 Times Per Week | 700A |
| (3b) Overload | 20 Seconds (max.) | Once Per Month | |
| (4) Impulse | 0.5 Seconds | Less Than Once Per Month | 1100A |

Voltage Data

| | |
|--|------|
| (5) Voltage Applied to Fuse During Fault Conditions (+10%) | 400V |
|--|------|

Temperature Data

| | |
|---|------|
| (6) Temperature Inside Cubicle in Which Fuse is Located (Natural Convection Cooling Only) | 60°C |
|---|------|

Thyristor Data

| | |
|--|------------------------|
| (7) Thyristor Peak Voltage Withstand | 1000V |
| (8) Thyristor I ² t Withstand at 10 Milliseconds* | 90,000A ² s |

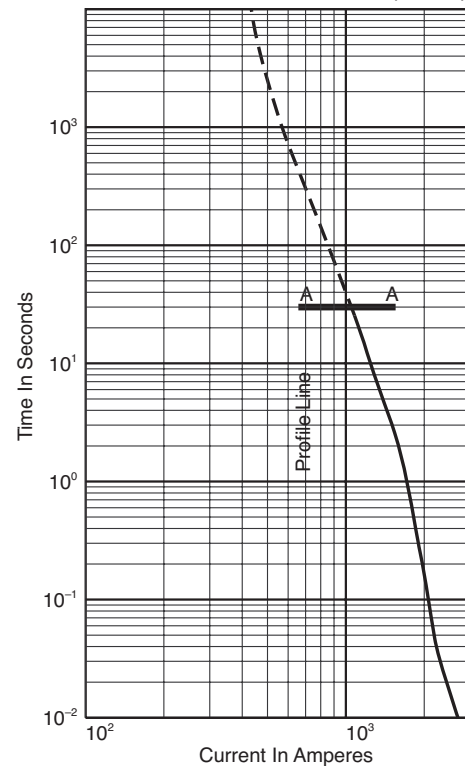
*Note: The I²t withstand of the thyristor may be given for other impulse durations (i.e., 1.5 ms, 3.5 ms, or 8.3 ms); however, the stated fuse I²t is valid for all impulse durations of 10 ms or less.

Application Procedure

| Step | Procedure | Remarks |
|--|---|---------|
| (1) Select a short-blade fuse to permit mounting of microswitch 170H0069 | 1.1 Taking into consideration only the continuous load current and ambient temperature, from Table on page 127 tentatively select fuse 170M3669 (400A, 690V). | — |
| (2) Determine I ² t (total clearing) at 440V. | 2.1 See Table, page 127. Note I ² t is 105,000A ² s at rated voltage of 690V. 2.2 From the figure on page 126, note that correction factor K = 0.65. 2.3 I ² t _{660V} × K = I ² t _{440V} 105,000 × 0.65 = 68,250 | OK |
| (3) Determine maximum arc voltage at 440V | 3.1 From the figure on page 126, note that maximum voltage at 440V is 900V | OK |
| (4) Determine maximum permissible continuous load current I _b . | 4.1 Per page 115 data, I _b = I _n × k × (1 + 0.05V) × K _p I _b = 400A × 0.8 × (1 + 0) × 1 I _b = 320A | — |
| (5) Plot a "line profile" showing the expected load and overload currents. Determine that overload and impulse load currents do not exceed their maximum permissible values. | 5.0 Calculate I _{max} per Table, High Speed Fuse Application Guide page 16, for each overload and impulse load. | — |
| (Item 2) | 5.1 I _{max} < 60% × I _t 500A < 60% × 950A 500A < 570A | OK |
| (Item 3a) | 5.2 I _{max} < 60% × I _t 700A < 60% × 1360A 700A < 780A | OK |
| (Item 3b) | 5.3 I _{max} < 70% × I _t 700A < 70% × 1150A 700A < 805A | OK |
| (Item 4) | 5.4 I _{max} < 70% × I _t 1100A < 70% × 1800A 1100A < 1260A | OK |

The tentatively selected fuse 170M3669 with microswitch 170H0069 meets all application parameters; no further selection would be necessary.

170M3669 (400A)



Calculation of Watt Loss

From the Table on page 127, watt loss at 400 amps is 60 watts. The continuous load current of 300A is 75% of rated current (400A). From page 126, the correction factor $K_p = 0.5$.

$$\begin{aligned} \text{Watt Loss } 75\% &= \text{Watt Loss } 100\% \times K_p \\ &= 60W \times 0.5 \\ &= 30 \text{ watts} \end{aligned}$$

Special Fuses

Other high speed fuses are available from Cooper Bussmann with voltage ratings of 380 to 10,000V and current ratings up to 10,000A in a single unit configuration. Fuses can be supplied with open fuse, "pin" indicators. Various types of microswitches are also available (see page 185).

Square Body DIN 43 653 — 690V/700V (IEC/UL): 10-400A

690V/700V (IEC/UL) 10-400A

Specifications

Description: Square body DIN 43-653 stud mount high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 10-400A

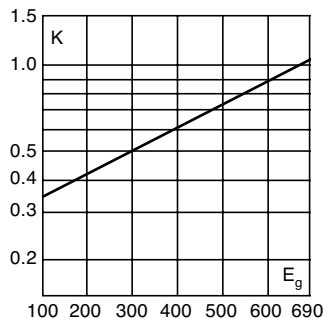
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. UL Recognition/CSA Component Acceptance on Size 000.

Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

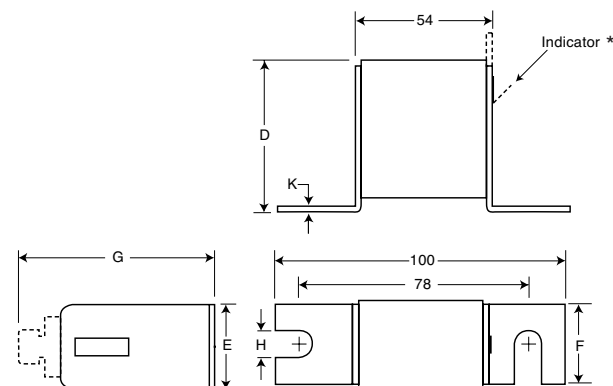


Dimensions (mm)

Type -U/80, -/80, -TN/80

| Size | D | E | F | G | H | K |
|------|----|----|----|----|----|---|
| 000 | 40 | 21 | 20 | 51 | 8 | 2 |
| 00 | 51 | 30 | 28 | 67 | 10 | 2 |

1mm = 0.0394" / 1" = 25.4mm

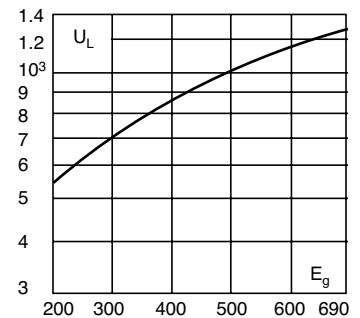


* Indication for Size 00 fuses is a red pin.



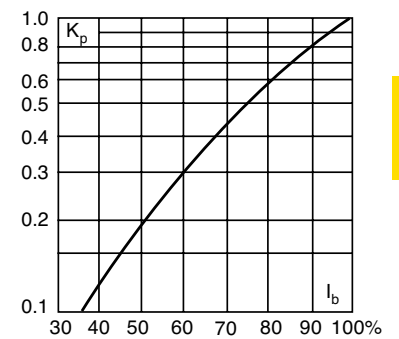
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

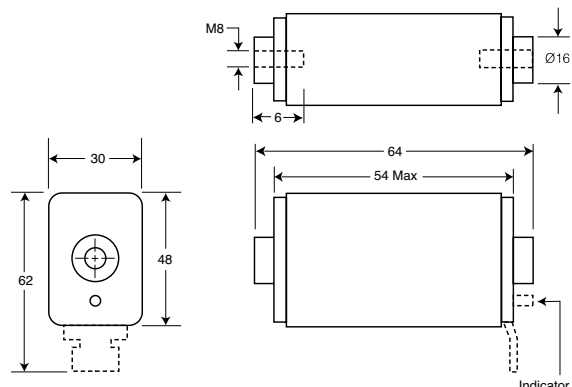
For Other Voltage Ratings in This Body Style

- See page 144 (1000V)

Dimensions (mm)

Type 00B/60, 00BTN/60

1mm = 0.0394" / 1" = 25.4mm



Square Body DIN 43 653 — 690V/700V (IEC/UL): 10-400A

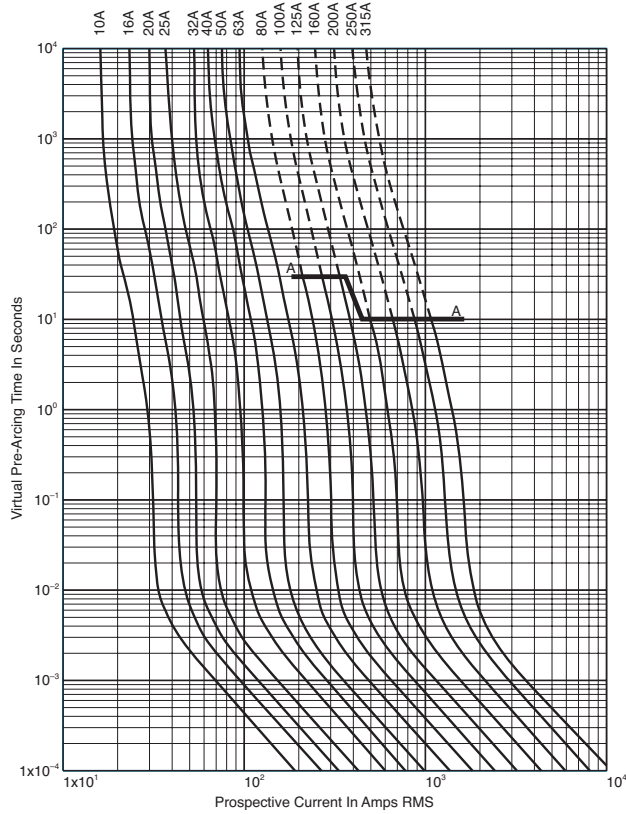
Catalog Numbers

| Catalog Numbers | | | | | Size | Electrical Characteristics | | | |
|-------------------------------|----------------------------|--|-------------------------------|--|------|------------------------------|-------------|---------------------|---------------|
| -U/80 Without Indicator | -80 Visual Indicator | -TN/80 Type T Indicator for Micro | 00B/60 Visual Indicator | 00BTN/60 Type T Indicator for Micro | | Rated Current RMS-Amps | Pt (A² Sec) | | Watts Loss |
| | | | | | | | Pre-arc | Clearing at 660V | |
| 170M1308 | 170M1358 | 170M1408 | | | 10 | 3.8 | 25.5 | 3.0 | |
| 170M1309 | 170M1359 | 170M1409 | | | 16 | 7.2 | 48 | 5.5 | |
| 170M1310 | 170M1360 | 170M1410 | | | 20 | 11.5 | 78 | 7 | |
| 170M1311 | 170M1361 | 170M1411 | | | 25 | 19 | 130 | 9 | |
| 170M1312 | 170M1362 | 170M1412 | | | 32 | 40 | 270 | 10 | |
| 170M1313 | 170M1363 | 170M1413 | | | 40 | 69 | 460 | 12 | |
| 170M1314 | 170M1364 | 170M1414 | | | 50 | 115 | 770 | 15 | |
| 170M1315 | 170M1365 | 170M1415 | | | 63 | 215 | 1450 | 16 | |
| 170M1316 | 170M1366 | 170M1416 | | | 80 | 380 | 2550 | 19 | |
| 170M1317 | 170M1367 | 170M1417 | | | 100 | 695 | 4650 | 24 | |
| 170M1318 | 170M1368 | 170M1418 | | | 125 | 1200 | 8500 | 28 | |
| 170M1319 | 170M1369 | 170M1419 | | | 160 | 2300 | 16000 | 32 | |
| 170M1320 | 170M1370 | 170M1420 | | | 200 | 4200 | 28000 | 37 | |
| 170M1321 | 170M1371 | 170M1421 | | | 250 | 7750 | 51500 | 42 | |
| 170M1322 | 170M1372 | 170M1422 | | | 315 | 12000 | 80500 | 52 | |
| | 170M2608 | 170M2658 | 170M2708 | 170M2758 | | 25 | 19 | 130 | 6 |
| | 170M2609 | 170M2659 | 170M2709 | 170M2759 | | 32 | 28.5 | 195 | 7 |
| | 170M2610 | 170M2660 | 170M2710 | 170M2760 | | 40 | 50 | 360 | 9 |
| | 170M2611 | 170M2661 | 170M2711 | 170M2761 | | 50 | 95 | 640 | 10 |
| | 170M2612 | 170M2662 | 170M2712 | 170M2762 | | 63 | 170 | 1200 | 12 |
| | 170M2613 | 170M2663 | 170M2713 | 170M2763 | | 80 | 310 | 2100 | 15 |
| | 170M2614 | 170M2664 | 170M2714 | 170M2764 | 00 | 100 | 620 | 4150 | 20 |
| | 170M2615 | 170M2665 | 170M2715 | 170M2765 | | 125 | 1000 | 6950 | 25 |
| | 170M2616 | 170M2666 | 170M2716 | 170M2766 | | 160 | 1900 | 13000 | 30 |
| | 170M2617 | 170M2667 | 170M2717 | 170M2767 | | 200 | 3400 | 23000 | 35 |
| | 170M2618 | 170M2668 | 170M2718 | 170M2768 | | 250 | 6250 | 42000 | 45 |
| | 170M2619 | 170M2669 | 170M2719 | 170M2769 | | 315 | 10000 | 68500 | 55 |
| | 170M2620 | 170M2670 | 170M2720 | 170M2770 | | 350 | 13500 | 91500 | 60 |
| | 170M2621 | 170M2671 | 170M2721 | 170M2771 | | 400 | 18000 | 125000 | 70 |

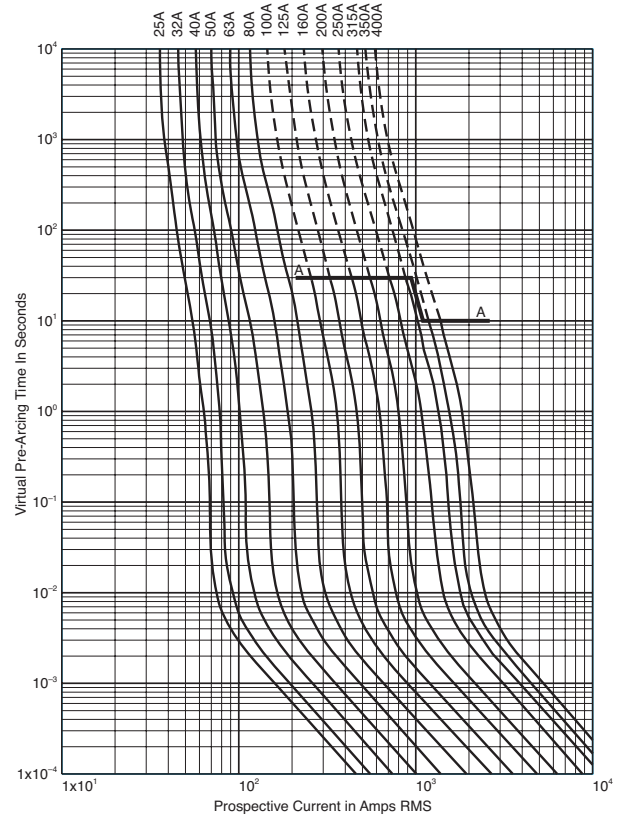
- Watts loss provided at rated current.
- Microswitch indicator ordered separately.
- See accessories on pages 185-186.
- For fuse curves see page 119.

Square Body Size 000, 00 — 690V/700V (IEC/UL): 10-400A

Size 000 — 10-315A: 690V
Time-Current Curve

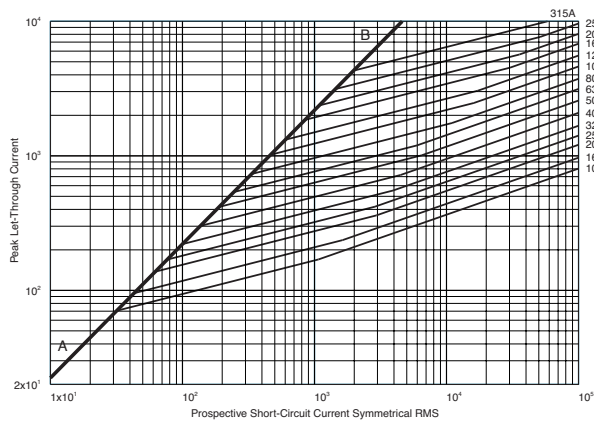


Size 00 — 25-400A: 690V
Time-Current Curve

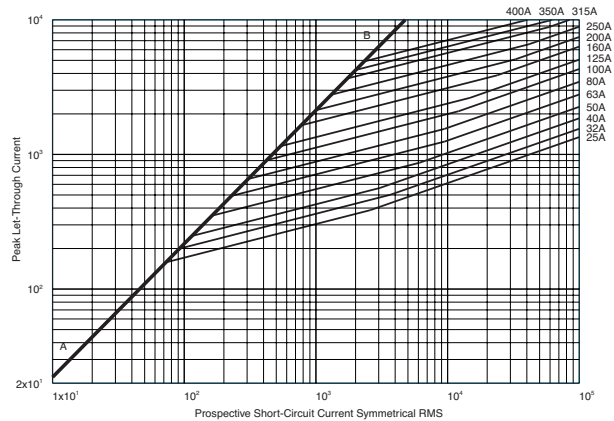


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: 17056310

Data Sheet: 172056312

Square Body DIN 43 620 — 690V (IEC/UL): 10-315A

690V (IEC/UL) 10-315A

Specifications

Description: Square body DIN 43 620 blade style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac

Amps: — 10-315A

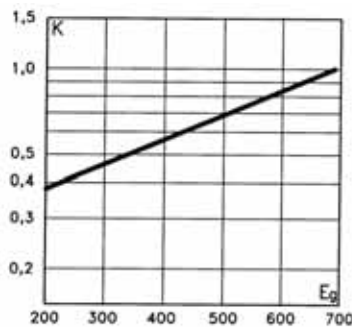
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

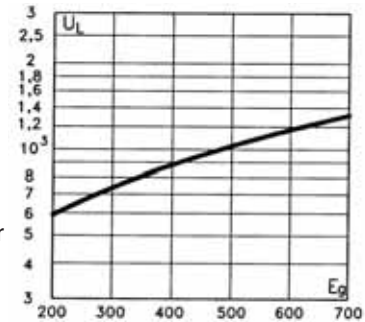
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



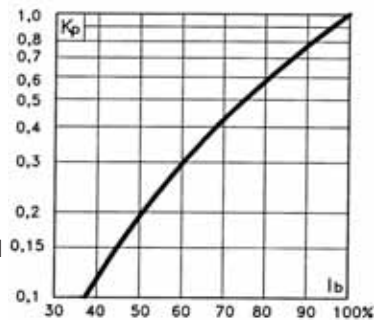
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

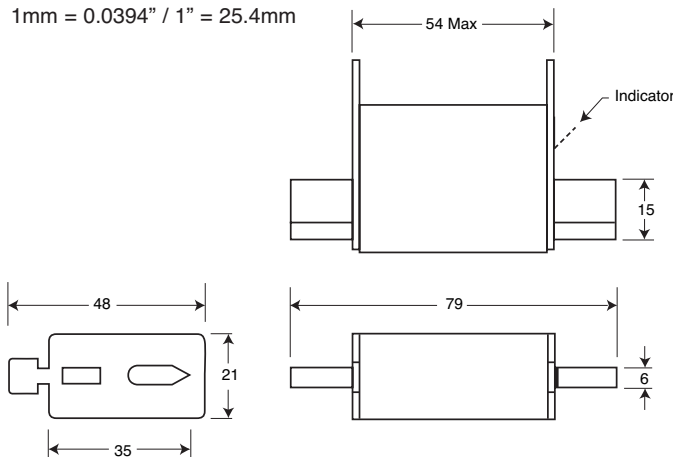
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

DIN 000 Type T

1mm = 0.0394" / 1" = 25.4mm



Square Body DIN 43 620 — 690V (IEC/UL): 10-315A

Catalog Numbers

| Catalog Numbers DIN Type T Indicator for Micro | Size | Electrical Characteristics | | | | |
|--|------|------------------------------|-------------------------|---------------------|---------------|----|
| | | Rated Current RMS-Amps | Pt (A ² Sec) | | Watts Loss | |
| | | | Pre-arc | Clearing at 660V | | |
| 170M1558D | 000 | 10 | 4 | 27 | 2.5 | |
| 170M1559D | | 16 | 7 | 51 | 4 | |
| 170M1560D | | 20 | 11.5 | 82.5 | 5 | |
| 170M1561D | | 25 | 19 | 140 | 6 | |
| 170M1562D | | 32 | 40 | 285 | 7 | |
| 170M1563D | | 40 | 65 | 490 | 8.5 | |
| 170M1564D | | 50 | 115 | 815 | 9.5 | |
| 170M1565D | | 63 | 215 | 1550 | 11.5 | |
| 170M1566D | | 80 | 380 | 2700 | 15 | |
| 170M1567D | | 100 | 695 | 4950 | 16.5 | |
| 170M1568D | | 125 | 1180 | 8250 | 21.5 | |
| 170M1569D | | 160 | 2300 | 16500 | 25 | |
| 170M1570D | | 200 | 4350 | 31000 | 29.5 | |
| 170M1571D | | 250 | 7900 | 56000 | 35.5 | |
| 170M1572D | | 00 | 315 | 12000 | 84500 | 45 |

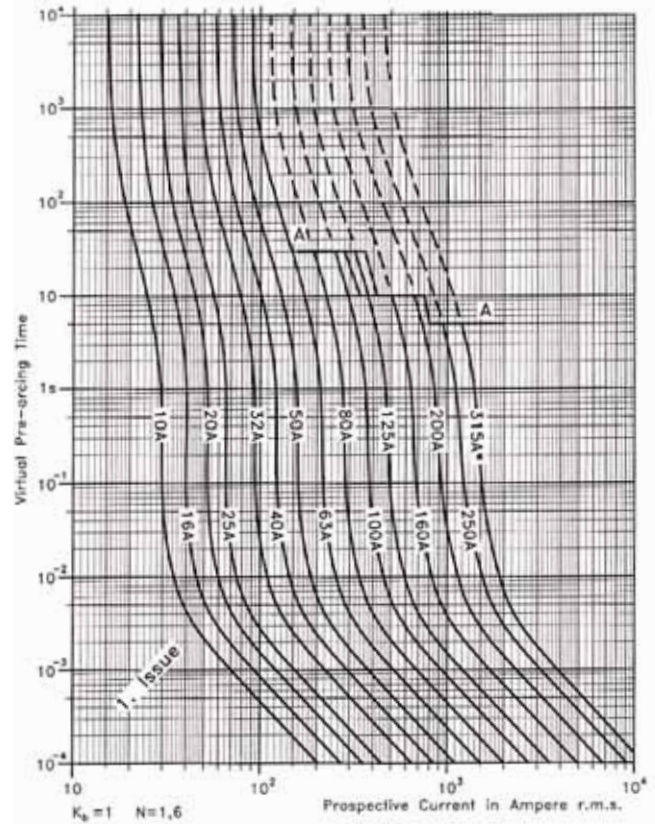
- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 185-186.

Rated Current

The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses with a rated current higher than 125A must be derated. Please contact Cooper Bussmann for application assistance.

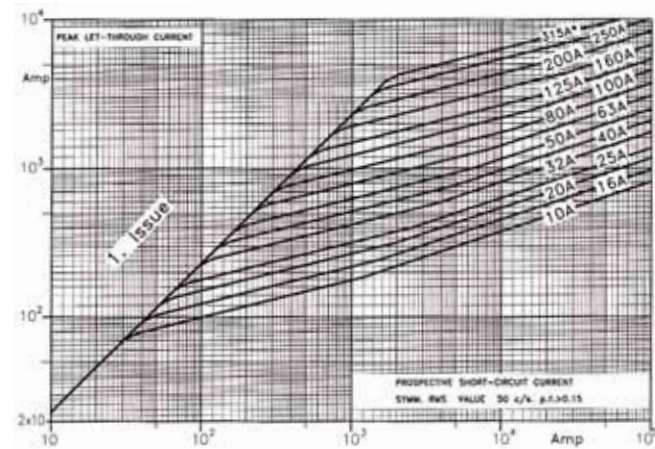
Size 000 — 10-315A: 690V

Time-Current Curve



High Speed Fuses

Peak Let-Through Curve



Data Sheet: 72056310

Square Body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

690V/700V (IEC/UL) 40-2000A

Specifications

Description: Square body DIN 43 653 stud-mount high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 40-2000A

IR: — 200kA RMS Sym.

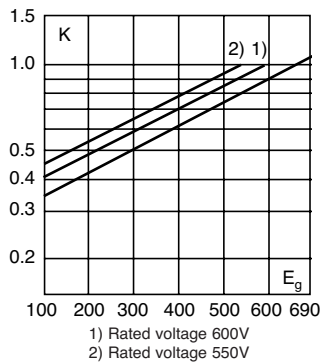
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.



Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



Dimensions (mm)

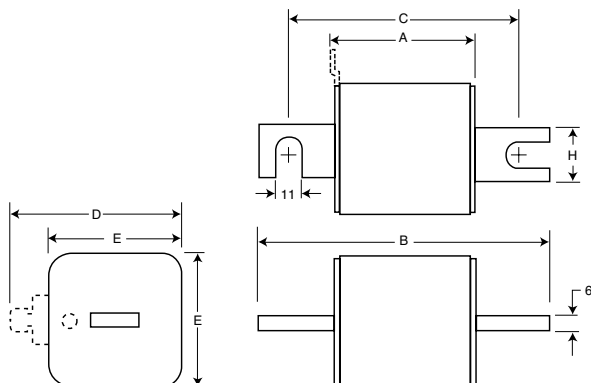
| Size | A | B | B** | C | C** | D*** | E | H |
|------|----|-----|-----|----|-----|------|----|----|
| 1* | 50 | 104 | 134 | 78 | 108 | 58 | 45 | 22 |
| 1 | 50 | 108 | 138 | 78 | 108 | 66 | 53 | 25 |
| 2 | 50 | 108 | 138 | 78 | 108 | 75 | 61 | 25 |
| 3 | 51 | 109 | 139 | 78 | 108 | 90 | 76 | 30 |

**Valid for fuses type -/110, -TN/110.

***Microswitch.

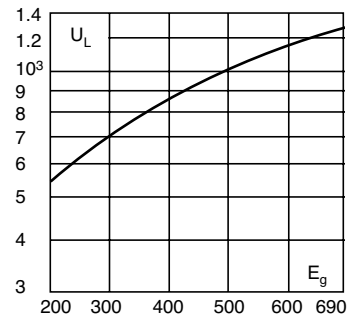
1mm = 0.0394" / 1" = 25.4mm

Type -/80, -TN/80, -/110, -TN/110.



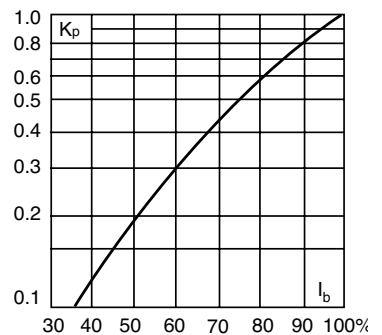
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

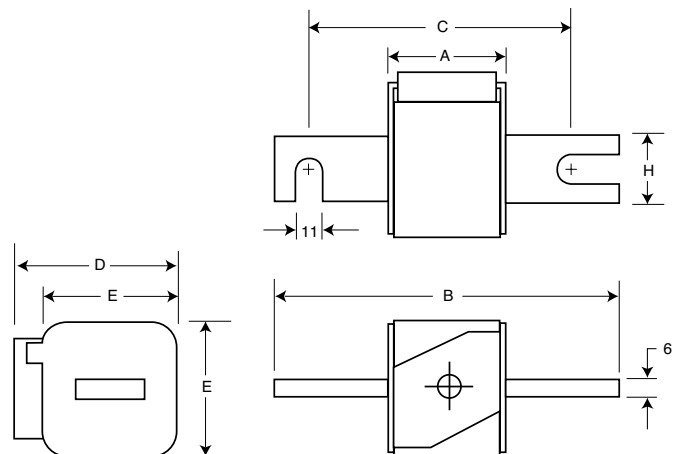
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 146 (1000V) and 160 (1250V/1300V)

Type -KN/80, -KN/110



Square Body DIN 43 653 — 690V/700V (IEC/UL): 40-2000A

Catalog Numbers

| Catalog Numbers | | | | | | Size | Electrical Characteristics | | | |
|--------------------------------------|--|--|------------------------------|---|--|-------|----------------------------|-------------------------|---------|------------------|
| -/80 Visual Watts Indicator | -TN/80 Type T Indicator for Micro | -KN/80 Type K Indicator for Micro | -/110 Visual for Micro | -TN/110 Type T Indicator for Micro | -KN/110 Type K Indicator -KN/80 | | Rated RMS-Amps | Pt (A ² Sec) | | Clearing Loss |
| | | | | | | | | Current Pre-arc | at 660V | |
| 170M3008 | 170M3058 | 170M3108 | 170M3158 | 170M3208 | 170M3258 | 40 | 40 | 270 | 9 | |
| 170M3009 | 170M3059 | 170M3109 | 170M3159 | 170M3209 | 170M3259 | 50 | 77 | 515 | 11 | |
| 170M3010 | 170M3060 | 170M3110 | 170M3160 | 170M3210 | 170M3260 | 63 | 115 | 770 | 14 | |
| 170M3011 | 170M3061 | 170M3111 | 170M3161 | 170M3211 | 170M3261 | 80 | 185 | 1250 | 18 | |
| 170M3012 | 170M3062 | 170M3112 | 170M3162 | 170M3212 | 170M3262 | 100 | 360 | 2450 | 21 | |
| 170M3013 | 170M3063 | 170M3113 | 170M3163 | 170M3213 | 170M3263 | 125 | 550 | 3700 | 26 | |
| 170M3014 | 170M3064 | 170M3114 | 170M3164 | 170M3214 | 170M3264 | 160 | 1100 | 7500 | 30 | |
| 170M3015 | 170M3065 | 170M3115 | 170M3165 | 170M3215 | 170M3265 | 200 | 2200 | 15000 | 35 | |
| 170M3016 | 170M3066 | 170M3116 | 170M3166 | 170M3216 | 170M3266 | 250 | 4200 | 28500 | 40 | |
| 170M3017 | 170M3067 | 170M3117 | 170M3167 | 170M3217 | 170M3267 | 315 | 7000 | 46500 | 50 | |
| 170M3018 | 170M3068 | 170M3118 | 170M3168 | 170M3218 | 170M3268 | 350 | 10000 | 68500 | 55 | |
| 170M3019 | 170M3069 | 170M3119 | 170M3169 | 170M3219 | 170M3269 | 400 | 15000 | 105000 | 60 | |
| 170M3020 | 170M3070 | 170M3120 | 170M3170 | 170M3220 | 170M3270 | 450 | 21000 | 140000 | 65 | |
| 170M3021 | 170M3071 | 170M3121 | 170M3171 | 170M3221 | 170M3271 | 500 | 27000 | 180000 | 70 | |
| 170M3022 | 170M3072 | 170M3122 | 170M3172 | 170M3222 | 170M3272 | 550 | 34000 | 230000 | 75 | |
| 170M3023 | 170M3073 | 170M3123 | 170M3173 | 170M3223 | 170M3273 | 630 | 48500 | 325000 | 80 | |
| 170M4008 | 170M4058 | 170M4108 | 170M4158 | 170M4208 | 170M4258 | 200 | 1650 | 11500 | 45 | |
| 170M4009 | 170M4059 | 170M4109 | 170M4159 | 170M4209 | 170M4259 | 250 | 3100 | 21000 | 55 | |
| 170M4010 | 170M4060 | 170M4110 | 170M4160 | 170M4210 | 170M4260 | 315 | 6200 | 42000 | 58 | |
| 170M4011 | 170M4061 | 170M4111 | 170M4161 | 170M4211 | 170M4261 | 350 | 8500 | 59000 | 60 | |
| 170M4012 | 170M4062 | 170M4112 | 170M4162 | 170M4212 | 170M4262 | 400 | 13500 | 91500 | 65 | |
| 170M4013 | 170M4063 | 170M4113 | 170M4163 | 170M4213 | 170M4263 | 450 | 17000 | 120000 | 70 | |
| 170M4014 | 170M4064 | 170M4114 | 170M4164 | 170M4214 | 170M4264 | 500 | 25000 | 170000 | 72 | |
| 170M4015 | 170M4065 | 170M4115 | 170M4165 | 170M4215 | 170M4265 | 550 | 34000 | 230000 | 75 | |
| 170M4016 | 170M4066 | 170M4116 | 170M4166 | 170M4216 | 170M4266 | 630 | 52000 | 350000 | 80 | |
| 170M4017 | 170M4067 | 170M4117 | 170M4167 | 170M4217 | 170M4267 | 700 | 69500 | 465000 | 85 | |
| 170M4018 | 170M4068 | 170M4118 | 170M4168 | 170M4218 | 170M4268 | 800 | 105000 | 725000 | 95 | |
| 170M4019 | 170M4069 | 170M4119 | 170M4169 | 170M4219 | 170M4269 | ±900 | 155000 | ±850000 | 100 | |
| 170M5008 | 170M5058 | 170M5108 | 170M5158 | 170M5208 | 170M5258 | 400 | 11000 | 74000 | 65 | |
| 170M5009 | 170M5059 | 170M5109 | 170M5159 | 170M5209 | 170M5259 | 450 | 15500 | 105000 | 70 | |
| 170M5010 | 170M5060 | 170M5110 | 170M5160 | 170M5210 | 170M5260 | 500 | 21500 | 145000 | 75 | |
| 170M5011 | 170M5061 | 170M5111 | 170M5161 | 170M5211 | 170M5261 | 550 | 28000 | 190000 | 80 | |
| 170M5012 | 170M5062 | 170M5112 | 170M5162 | 170M5212 | 170M5262 | 630 | 41000 | 275000 | 90 | |
| 170M5013 | 170M5063 | 170M5113 | 170M5163 | 170M5213 | 170M5263 | 700 | 60500 | 405000 | 95 | |
| 170M5014 | 170M5064 | 170M5114 | 170M5164 | 170M5214 | 170M5264 | 800 | 86000 | 575000 | 105 | |
| 170M5015 | 170M5065 | 170M5115 | 170M5165 | 170M5215 | 170M5265 | 900 | 125000 | 840000 | 110 | |
| 170M5016 | 170M5066 | 170M5116 | 170M5166 | 170M5216 | 170M5266 | 1000 | 180000 | 1250000 | 115 | |
| 170M5017 | 170M5067 | 170M5117 | 170M5167 | 170M5217 | 170M5267 | 1100 | 245000 | 1600000 | 120 | |
| 170M5018 | 170M5068 | 170M5118 | 170M5168 | 170M5218 | 170M5268 | 1250 | 365000 | 2400000 | 130 | |
| 170M6008 | 170M6058 | 170M6108 | 170M6158 | 170M6208 | 170M6258 | 500 | 14000 | 95000 | 95 | |
| 170M6009 | 170M6059 | 170M6109 | 170M6159 | 170M6209 | 170M6259 | 550 | 19500 | 135000 | 100 | |
| 170M6010 | 170M6060 | 170M6110 | 170M6160 | 170M6210 | 170M6260 | 630 | 31000 | 210000 | 105 | |
| 170M6011 | 170M6061 | 170M6111 | 170M6161 | 170M6211 | 170M6261 | 700 | 44500 | 300000 | 110 | |
| 170M6012 | 170M6062 | 170M6112 | 170M6162 | 170M6212 | 170M6262 | 800 | 69500 | 465000 | 115 | |
| 170M6013 | 170M6063 | 170M6113 | 170M6163 | 170M6213 | 170M6263 | 900 | 100000 | 670000 | 120 | |
| 170M6014 | 170M6064 | 170M6114 | 170M6164 | 170M6214 | 170M6264 | 1000 | 140000 | 945000 | 125 | |
| 170M6015 | 170M6065 | 170M6115 | 170M6165 | 170M6215 | 170M6265 | 1100 | 190000 | 1300000 | 130 | |
| 170M6016 | 170M6066 | 170M6116 | 170M6166 | 170M6216 | 170M6266 | 1250 | 290000 | 1950000 | 140 | |
| 170M6017 | 170M6067 | 170M6117 | 170M6167 | 170M6217 | 170M6267 | 1400 | 370000 | 2450000 | 155 | |
| 170M6018 | 170M6068 | 170M6118 | 170M6168 | 170M6218 | 170M6268 | 1500 | 460000 | 3100000 | 160 | |
| 170M6019 | 170M6069 | 170M6119 | 170M6169 | 170M6219 | 170M6269 | 1600 | 580000 | 3900000 | 160 | |
| 170M6020 | 170M6070 | 170M6120 | 170M6170 | 170M6220 | 170M6270 | ±1800 | 880000 | ±5250000 | 165 | |
| 170M6021 | 170M6071 | 170M6121 | 170M6171 | 170M6221 | 170M6271 | ±2000 | 1150000 | ±6350000 | 175 | |

High Speed Fuses

†Rated voltage (IEC) 600V.
‡Rated voltage (IEC) 550V.
• Watts loss provided at rated current.
• Microswitch indicator ordered separately. See accessories on pages 185-186.
• For fuse curves see pages 130 and 131.

Square Body Flush End Contact — 690V/700V (IEC/UL): 40-2000A

690V/700V (IEC/UL) 40-2000A

Specifications

Description: Square body flush end contact high speed fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 690Vac (IEC)

— 700Vac (UL)

Amps: — 40-2000A

IR: — 200kA RMS Sym.

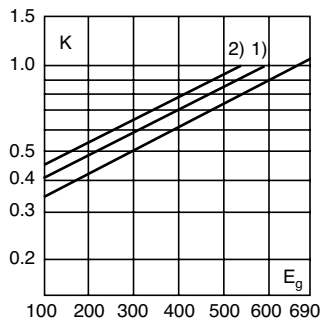
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition / CSA Component Acceptance Status.



Electrical Characteristics

Total Clearing I²t

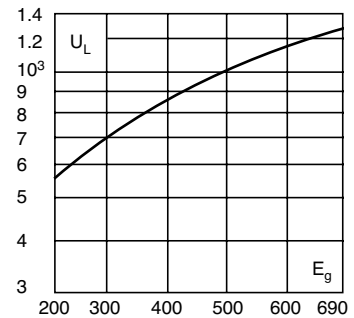
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



1) Rated voltage 600V.
2) Rated voltage 550V

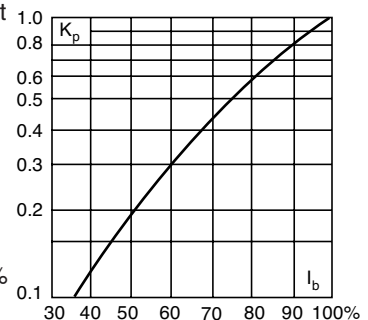
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 148 (1000V) and 162 (1250V/1300V)

Dimensions (mm)

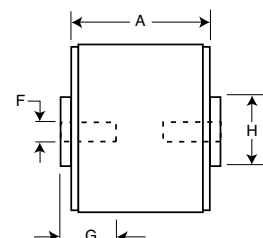
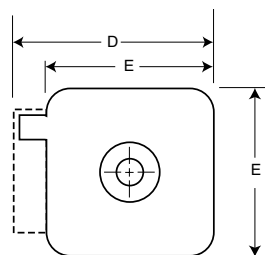
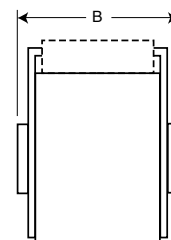
Type -B/-, -BKN/-, -G/-, -GKN/-

| Size | A | B | D | E | F | F** (In) | G | H |
|------|----|----|----|----|-----|-------------------|----|-----|
| 1* | 50 | 51 | 59 | 45 | M8 | 5/16" - 18 UNC-2B | 5 | ø17 |
| 1 | 50 | 51 | 69 | 53 | M8 | 5/16" - 18 UNC-2B | 8 | ø20 |
| 2 | 50 | 51 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | ø24 |
| 3 | 51 | 53 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | ø30 |

**Valid for fuses type -G/- & -GKN/-

NB: B = 65 for: Size 2, 1100-1250A
Size 3, 1600-2000A

1mm = 0.0394" / 1" = 25.4mm



Square Body Flush End Contact — 690V/700V (IEC/UL): 40-2000A

Catalog Numbers

| Catalog Numbers | | | | Size | Electrical Characteristics | | | | |
|-----------------------------|---|-----------------------------|---|------|------------------------------|-------------------------|---------------------|---------------|----|
| -B/- Visual Indicator | -BKN- Type K Indicator for Micro | -G/- Visual Indicator | -GKN- Type K Indicator for Micro | | Rated Current RMS-Amps | Pt (A ² Sec) | | Watts Loss | |
| | | | | | | Pre-arc | Clearing at 660V | | |
| 170M3408 | 170M3458 | 170M3508 | 170M3558 | 1* | 40 | 40 | 270 | 9 | |
| 170M3409 | 170M3459 | 170M3509 | 170M3559 | | 50 | 77 | 515 | 11 | |
| 170M3410 | 170M3460 | 170M3510 | 170M3560 | | 63 | 115 | 770 | 14 | |
| 170M3411 | 170M3461 | 170M3511 | 170M3561 | | 80 | 185 | 1250 | 18 | |
| 170M3412 | 170M3462 | 170M3512 | 170M3562 | | 100 | 360 | 2450 | 21 | |
| 170M3413 | 170M3463 | 170M3513 | 170M3563 | | 125 | 550 | 3700 | 26 | |
| 170M3414 | 170M3464 | 170M3514 | 170M3564 | | 160 | 1100 | 7500 | 30 | |
| 170M3415 | 170M3465 | 170M3515 | 170M3565 | | 200 | 2200 | 15000 | 35 | |
| 170M3416 | 170M3466 | 170M3516 | 170M3566 | | 250 | 4200 | 28500 | 40 | |
| 170M3417 | 170M3467 | 170M3517 | 170M3567 | | 315 | 7000 | 46500 | 50 | |
| 170M3418 | 170M3468 | 170M3518 | 170M3568 | | 350 | 10000 | 68500 | 55 | |
| 170M3419 | 170M3469 | 170M3519 | 170M3569 | | 400 | 15000 | 105000 | 60 | |
| 170M3420 | 170M3470 | 170M3520 | 170M3570 | | 450 | 21000 | 140000 | 65 | |
| 170M3421 | 170M3471 | 170M3521 | 170M3571 | | 500 | 27000 | 180000 | 70 | |
| 170M3422 | 170M3472 | 170M3522 | 170M3572 | | 550 | 34000 | 230000 | 75 | |
| 170M3423 | 170M3473 | 170M3523 | 170M3573 | | 630 | 48500 | 325000 | 80 | |
| 170M4408 | 170M4458 | 170M4508 | 170M4558 | | 1 | 200 | 1650 | 11500 | 45 |
| 170M4409 | 170M4459 | 170M4509 | 170M4559 | | | 250 | 3100 | 21000 | 55 |
| 170M4410 | 170M4460 | 170M4510 | 170M4560 | | | 315 | 6200 | 42000 | 58 |
| 170M4411 | 170M4461 | 170M4511 | 170M4561 | 350 | | 8500 | 59000 | 60 | |
| 170M4412 | 170M4462 | 170M4512 | 170M4562 | 400 | | 13500 | 91500 | 65 | |
| 170M4413 | 170M4463 | 170M4513 | 170M4563 | 450 | | 17000 | 120000 | 70 | |
| 170M4414 | 170M4464 | 170M4514 | 170M4564 | 500 | | 25000 | 170000 | 72 | |
| 170M4415 | 170M4465 | 170M4515 | 170M4565 | 550 | | 34000 | 230000 | 75 | |
| 170M4416 | 170M4466 | 170M4516 | 170M4566 | 630 | | 52000 | 350000 | 80 | |
| 170M4417 | 170M4467 | 170M4517 | 170M4567 | 700 | | 69500 | 465000 | 85 | |
| 170M4418 | 170M4468 | 170M4518 | 170M4568 | 800 | | 105000 | 725000 | 95 | |
| 170M4419 | 170M4469 | 170M4519 | 170M4569 | ‡900 | 155000 | ‡850000 | 100 | | |
| 170M5408 | 170M5458 | 170M5508 | 170M5558 | 2 | 400 | 11000 | 74000 | 65 | |
| 170M5409 | 170M5459 | 170M5509 | 170M5559 | | 450 | 15500 | 105000 | 70 | |
| 170M5410 | 170M5460 | 170M5510 | 170M5560 | | 500 | 21500 | 145000 | 75 | |
| 170M5411 | 170M5461 | 170M5511 | 170M5561 | | 550 | 28000 | 190000 | 80 | |
| 170M5412 | 170M5462 | 170M5512 | 170M5562 | | 630 | 41000 | 275000 | 90 | |
| 170M5413 | 170M5463 | 170M5513 | 170M5563 | | 700 | 60500 | 405000 | 95 | |
| 170M5414 | 170M5464 | 170M5514 | 170M5564 | | 800 | 86000 | 575000 | 105 | |
| 170M5415 | 170M5465 | 170M5515 | 170M5565 | | 900 | 125000 | 840000 | 110 | |
| 170M5416 | 170M5466 | 170M5516 | 170M5566 | | 1000 | 180000 | 1250000 | 115 | |
| 170M5417 | 170M5467 | 170M5517 | 170M5567 | | 1100 | 245000 | 1600000 | 120 | |
| 170M5418 | 170M5468 | 170M5518 | 170M5568 | | 1250 | 365000 | 2400000 | 130 | |
| 170M6408 | 170M6458 | 170M6508 | 170M6558 | 3 | 500 | 14000 | 95000 | 95 | |
| 170M6409 | 170M6459 | 170M6509 | 170M6559 | | 550 | 19500 | 135000 | 100 | |
| 170M6410 | 170M6460 | 170M6510 | 170M6560 | | 630 | 31000 | 210000 | 105 | |
| 170M6411 | 170M6461 | 170M6511 | 170M6561 | | 700 | 44500 | 300000 | 110 | |
| 170M6412 | 170M6462 | 170M6512 | 170M6562 | | 800 | 69500 | 465000 | 115 | |
| 170M6413 | 170M6463 | 170M6513 | 170M6563 | | 900 | 100000 | 670000 | 120 | |
| 170M6414 | 170M6464 | 170M6514 | 170M6564 | | 1000 | 140000 | 945000 | 125 | |
| 170M6415 | 170M6465 | 170M6515 | 170M6565 | | 1100 | 190000 | 1300000 | 130 | |
| 170M6416 | 170M6466 | 170M6516 | 170M6566 | | 1250 | 290000 | 1950000 | 140 | |
| 170M6417 | 170M6467 | 170M6517 | 170M6567 | | 1400 | 370000 | 2450000 | 155 | |
| 170M6418 | 170M6468 | 170M6518 | 170M6568 | | 1500 | 460000 | 3100000 | 160 | |
| 170M6419 | 170M6469 | 170M6519 | 170M6569 | | 1600 | 580000 | 3900000 | 160 | |
| 170M6420 | 170M6470 | 170M6520 | 170M6570 | | ‡1800 | 880000 | ‡5250000 | 165 | |
| 170M6421 | 170M6471 | 170M6521 | 170M6571 | | ‡2000 | 1150000 | ‡6350000 | 175 | |

†Rated voltage (IEC) 600V.

‡Rated voltage (IEC) 550V.

* Watts loss provided at rated current.

• Microswitch indicator ordered separately. See accessories on pages 185-186.

• For fuse curves see pages 130 and 131.

High Speed Fuses

Square Body US Style — 690V/700V (IEC): 40-2000A

690V/700V (IEC) 40-2000A

Specifications

Description: Square body US style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)

— 700Vac (UL)

Amps: — 40-200A

IR: — 200kA RMS Sym.

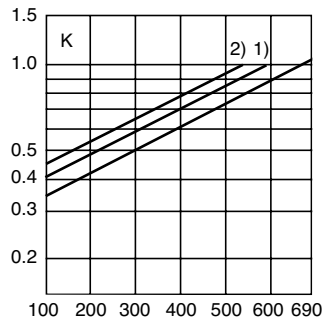
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/ CSA Component Acceptance status.



Electrical Characteristics

Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



1) Rated voltage 600V.
2) Rated voltage 550V

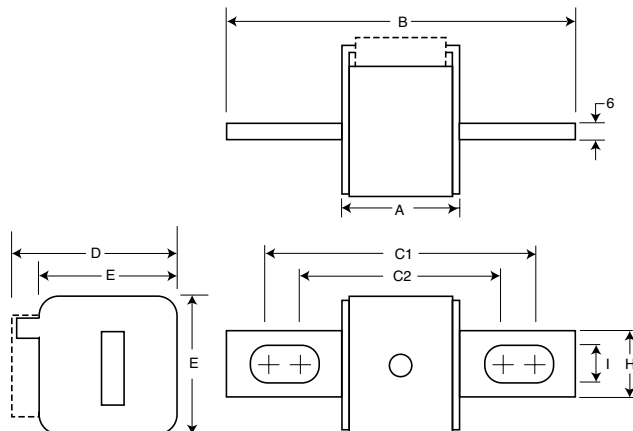
Dimensions (mm)

Type -FU/-, -FKE/-, FU/115-, -FKE/115

| Size | A | B | B** | C1 | C1** | C2 | C2** | D | E | H | I |
|------|----|-----|-----|-----|------|----|------|----|----|----|----|
| 1* | 50 | 110 | 148 | 85 | 123 | 72 | 110 | 59 | 45 | 20 | 10 |
| 1 | 50 | 136 | 157 | 104 | 126 | 78 | 100 | 69 | 53 | 25 | 14 |
| 2 | 50 | 135 | 159 | 105 | 125 | 78 | 99 | 77 | 61 | 25 | 14 |
| 3 | 51 | 135 | 155 | 106 | 125 | 77 | 97 | 92 | 76 | 36 | 16 |

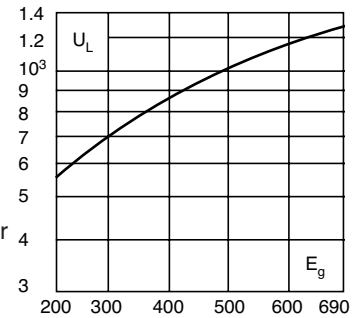
**Valid for fuses type -FU/115 & -FKE/115.

1mm = 0.0394" / 1" = 25.4mm



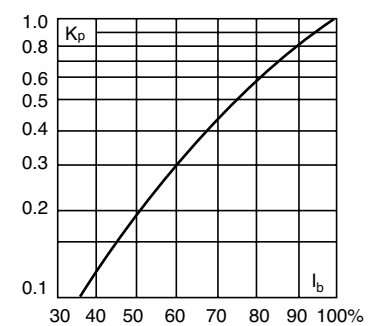
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 150 (1000V) and 164 (1250V/1300V)

Square Body US style — 690V/700V (IEC): 40-2000A

Catalog Numbers

| Catalog Numbers | | | | Size | Electrical Characteristics | | | |
|------------------------------|---|---------------------------------|--|------|------------------------------|-------------------------|---------------------|---------------|
| -FU/ Without Indicator | -FKE/ Type K Indicator for Micro | -FU/115 Without Indicator | -FKE/115 Type K Indicator for Micro | | Rated Current RMS-Amps | Pt (A ² Sec) | | Watts Loss |
| | | | | | | Pre-arc | Clearing at 660V | |
| 170M3608 | 170M3658 | 170M3708 | 170M3758 | 1* | 40 | 40 | 270 | 9 |
| 170M3609 | 170M3659 | 170M3709 | 170M3759 | | 50 | 77 | 515 | 11 |
| 170M3610 | 170M3660 | 170M3710 | 170M3760 | | 63 | 115 | 770 | 14 |
| 170M3611 | 170M3661 | 170M3711 | 170M3761 | | 80 | 185 | 1250 | 18 |
| 170M3612 | 170M3662 | 170M3712 | 170M3762 | | 100 | 360 | 2450 | 21 |
| 170M3613 | 170M3663 | 170M3713 | 170M3763 | | 125 | 550 | 3700 | 26 |
| 170M3614 | 170M3664 | 170M3714 | 170M3764 | | 160 | 1100 | 7500 | 30 |
| 170M3615 | 170M3665 | 170M3715 | 170M3765 | | 200 | 2200 | 15000 | 35 |
| 170M3616 | 170M3666 | 170M3716 | 170M3766 | | 250 | 4200 | 28500 | 40 |
| 170M3617 | 170M3667 | 170M3717 | 170M3767 | | 315 | 7000 | 46500 | 50 |
| 170M3618 | 170M3668 | 170M3718 | 170M3768 | | 350 | 10000 | 68500 | 55 |
| 170M3619 | 170M3669 | 170M3719 | 170M3769 | | 400 | 15000 | 105000 | 60 |
| 170M3620 | 170M3670 | 170M3720 | 170M3770 | | 450 | 21000 | 140000 | 65 |
| 170M3621 | 170M3671 | 170M3721 | 170M3771 | | 500 | 27000 | 180000 | 70 |
| 170M3622 | 170M3672 | 170M3722 | 170M3772 | | 550 | 34000 | 230000 | 75 |
| 170M3623 | 170M3673 | 170M3723 | 170M3773 | | 630 | 48500 | 325000 | 80 |
| 170M4608 | 170M4658 | 170M4708 | 170M4758 | | 1 | 200 | 1650 | 11500 |
| 170M4609 | 170M4659 | 170M4709 | 170M4759 | 250 | | 3100 | 21000 | 55 |
| 170M4610 | 170M4660 | 170M4710 | 170M4760 | 315 | | 6200 | 42000 | 58 |
| 170M4611 | 170M4661 | 170M4711 | 170M4761 | 350 | | 8500 | 59000 | 60 |
| 170M4612 | 170M4662 | 170M4712 | 170M4762 | 400 | | 13500 | 91500 | 65 |
| 170M4613 | 170M4663 | 170M4713 | 170M4763 | 450 | | 17000 | 120000 | 70 |
| 170M4614 | 170M4664 | 170M4714 | 170M4764 | 500 | | 25000 | 170000 | 72 |
| 170M4615 | 170M4665 | 170M4715 | 170M4765 | 550 | | 34000 | 230000 | 75 |
| 170M4616 | 170M4666 | 170M4716 | 170M4766 | 630 | | 52000 | 350000 | 80 |
| 170M4617 | 170M4667 | 170M4717 | 170M4767 | 700 | | 69500 | 465000 | 85 |
| 170M4618 | 170M4668 | 170M4718 | 170M4768 | 800 | | 105000 | 725000 | 95 |
| 170M4619 | 170M4669 | 170M4719 | 170M4769 | ±900 | 155000 | ±850000 | 100 | |
| 170M5608 | 170M5658 | 170M5708 | 170M5758 | 2 | 400 | 11000 | 74000 | 65 |
| 170M5609 | 170M5659 | 170M5709 | 170M5759 | | 450 | 15500 | 105000 | 70 |
| 170M5610 | 170M5660 | 170M5710 | 170M5760 | | 500 | 21500 | 145000 | 75 |
| 170M5611 | 170M5661 | 170M5711 | 170M5761 | | 550 | 28000 | 190000 | 80 |
| 170M5612 | 170M5662 | 170M5712 | 170M5762 | | 630 | 41000 | 275000 | 90 |
| 170M5613 | 170M5663 | 170M5713 | 170M5763 | | 700 | 60500 | 405000 | 95 |
| 170M5614 | 170M5664 | 170M5714 | 170M5764 | | 800 | 86000 | 575000 | 105 |
| 170M5615 | 170M5665 | 170M5715 | 170M5765 | | 900 | 125000 | 840000 | 110 |
| 170M5616 | 170M5666 | 170M5716 | 170M5766 | | 1000 | 180000 | 1250000 | 115 |
| 170M5617 | 170M5667 | 170M5717 | 170M5767 | | 1100 | 245000 | 1600000 | 120 |
| 170M5618 | 170M5668 | 170M5718 | 170M5768 | | 1250 | 365000 | 2400000 | 130 |
| 170M6608 | 170M6658 | 170M6708 | 170M6758 | 3 | 500 | 14000 | 95000 | 95 |
| 170M6609 | 170M6659 | 170M6709 | 170M6759 | | 550 | 19500 | 135000 | 100 |
| 170M6610 | 170M6660 | 170M6710 | 170M6760 | | 630 | 31000 | 210000 | 105 |
| 170M6611 | 170M6661 | 170M6711 | 170M6761 | | 700 | 44500 | 300000 | 110 |
| 170M6612 | 170M6662 | 170M6712 | 170M6762 | | 800 | 69500 | 465000 | 115 |
| 170M6613 | 170M6663 | 170M6713 | 170M6763 | | 900 | 100000 | 670000 | 120 |
| 170M6614 | 170M6664 | 170M6714 | 170M6764 | | 1000 | 140000 | 945000 | 125 |
| 170M6615 | 170M6665 | 170M6715 | 170M6765 | | 1100 | 190000 | 1300000 | 130 |
| 170M6616 | 170M6666 | 170M6716 | 170M6766 | | 1250 | 290000 | 1950000 | 140 |
| 170M6617 | 170M6667 | 170M6717 | 170M6767 | | 1400 | 370000 | 2450000 | 155 |
| 170M6618 | 170M6668 | 170M6718 | 170M6768 | | 1500 | 460000 | 3100000 | 160 |
| 170M6619 | 170M6669 | 170M6719 | 170M6769 | | 1600 | 580000 | 3900000 | 160 |
| 170M6620 | 170M6670 | 170M6720 | 170M6770 | | †1800 | 880000 | †5250000 | 165 |
| 170M6621 | 170M6671 | 170M6721 | 170M6771 | | ±2000 | 1150000 | ±6350000 | 175 |

†Rated voltage (IEC) 600V.

‡Rated voltage (IEC) 550V.

• Watts loss provided at rated current.

• Microswitch indicator ordered separately. See accessories on pages 185-186.

• For fuse curves see pages 130 and 131.

High Speed Fuses

Square Body French Style — 690V/700V (IEC/UL): 40-1500A

690V/700V (IEC/UL) 40-1500A

Specifications

Description: Square body French style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)

— 700Vac (UL)

Amps: — 40-1500A

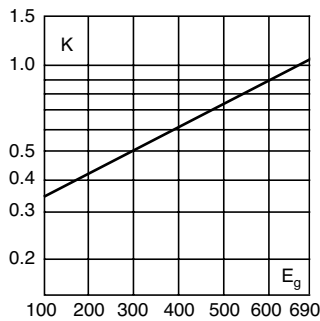
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

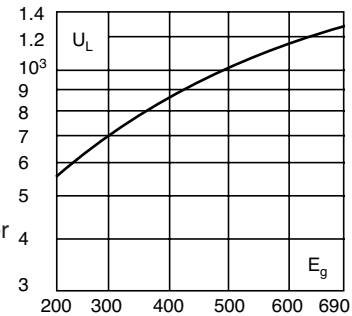
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



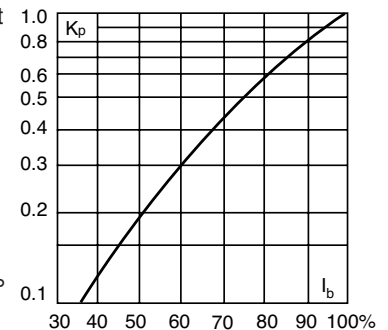
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

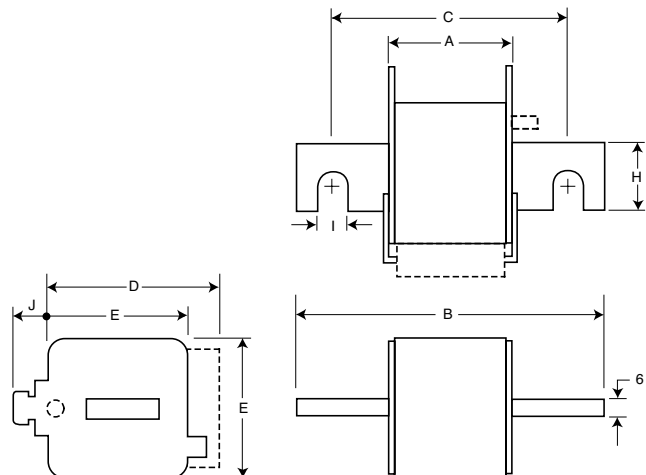
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

Type -E/-, -EKN/-

| Size | A | B | C | D | E | H | I | J |
|------|----|-----|----|----|----|----|----|----|
| 1* | 50 | 102 | 76 | 59 | 45 | 18 | 9 | 13 |
| 1 | 50 | 111 | 86 | 69 | 53 | 25 | 11 | 11 |
| 2 | 50 | 126 | 91 | 77 | 61 | 30 | 13 | 12 |
| 3 | 51 | 126 | 91 | 92 | 76 | 36 | 13 | 13 |

1mm = 0.0394" / 1" = 25.4mm



Square Body French Style — 690V/700V (IEC/UL): 40-1500A

Catalog Numbers

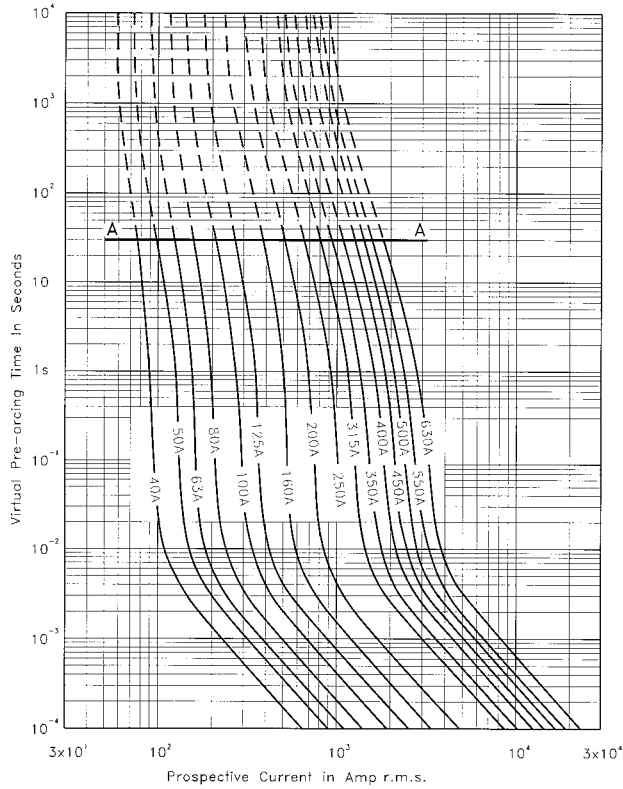
| Catalog Numbers | | Size | Electrical Characteristics | | | |
|---|---|------|------------------------------|---------------------------------------|---------------------|---------------|
| -E/ Type T Indicator For Micro | -EKN/ Type K Indicator for Micro | | Rated Current RMS-Amps | I ² t (A ² Sec) | | Watts Loss |
| | | | | Pre-arc | Clearing at 660V | |
| 170M3308 | 170M3358 | 1* | 40 | 40 | 270 | 9 |
| 170M3309 | 170M3359 | | 50 | 77 | 515 | 11 |
| 170M3310 | 170M3360 | | 63 | 115 | 770 | 14 |
| 170M3311 | 170M3361 | | 80 | 185 | 1250 | 18 |
| 170M3312 | 170M3362 | | 100 | 360 | 2450 | 21 |
| 170M3313 | 170M3363 | | 125 | 550 | 3700 | 26 |
| 170M3314 | 170M3364 | | 160 | 1100 | 7500 | 30 |
| 170M3315 | 170M3365 | | 200 | 2200 | 15000 | 35 |
| 170M3316 | 170M3366 | | 250 | 4200 | 28500 | 40 |
| 170M3317 | 170M3367 | | 315 | 7000 | 46500 | 50 |
| 170M3318 | 170M3368 | | 350 | 10000 | 68500 | 55 |
| 170M3319 | 170M3369 | | 400 | 15000 | 105000 | 60 |
| 170M3320 | 170M3370 | | 450 | 21000 | 140000 | 65 |
| 170M3321 | 170M3371 | | 500 | 27000 | 180000 | 70 |
| 170M4308 | 170M4358 | 1 | 200 | 1650 | 11500 | 45 |
| 170M4309 | 170M4359 | | 250 | 3100 | 21000 | 55 |
| 170M4310 | 170M4360 | | 315 | 6200 | 42000 | 58 |
| 170M4311 | 170M4361 | | 350 | 8500 | 59000 | 60 |
| 170M4312 | 170M4362 | | 400 | 13500 | 91500 | 65 |
| 170M4313 | 170M4363 | | 450 | 17000 | 120000 | 70 |
| 170M4314 | 170M4364 | | 500 | 25000 | 170000 | 72 |
| 170M4315 | 170M4365 | | 550 | 34000 | 230000 | 75 |
| 170M4316 | 170M4366 | | 630 | 52000 | 350000 | 80 |
| 170M4317 | 170M4367 | | 700 | 69500 | 465000 | 85 |
| 170M4318 | 170M4368 | 800 | 105000 | 725000 | 95 | |
| 170M5308 | 170M5358 | 2 | 400 | 11000 | 74000 | 65 |
| 170M5309 | 170M5359 | | 450 | 15500 | 105000 | 70 |
| 170M5310 | 170M5360 | | 500 | 21500 | 145000 | 75 |
| 170M5311 | 170M5361 | | 550 | 28000 | 190000 | 80 |
| 170M5312 | 170M5362 | | 630 | 41000 | 275000 | 90 |
| 170M5313 | 170M5363 | | 700 | 60500 | 405000 | 95 |
| 170M5314 | 170M5364 | | 800 | 86000 | 575000 | 105 |
| 170M5315 | 170M5365 | | 900 | 125000 | 840000 | 110 |
| 170M5316 | 170M5366 | 1000 | 180000 | 1250000 | 115 | |
| 170M6308 | 170M6358 | 3 | 500 | 14000 | 95000 | 95 |
| 170M6309 | 170M6359 | | 550 | 19500 | 135000 | 100 |
| 170M6310 | 170M6360 | | 630 | 31000 | 210000 | 105 |
| 170M6311 | 170M6361 | | 700 | 44500 | 300000 | 110 |
| 170M6312 | 170M6362 | | 800 | 69500 | 465000 | 115 |
| 170M6313 | 170M6363 | | 900 | 100000 | 670000 | 120 |
| 170M6314 | 170M6364 | | 1000 | 140000 | 945000 | 125 |
| 170M6315 | 170M6365 | | 1100 | 190000 | 1300000 | 130 |
| 170M6316 | 170M6366 | | 1250 | 290000 | 1950000 | 140 |
| 170M6317 | 170M6367 | | 1400 | 370000 | 2450000 | 155 |
| 170M6318 | 170M6368 | 1500 | 460000 | 3100000 | 160 | |

- * Watts loss provided at rated current.
- * Microswitch indicator ordered separately. See accessories on pages 185-186.
- * For fuse curves see pages 130 and 131.

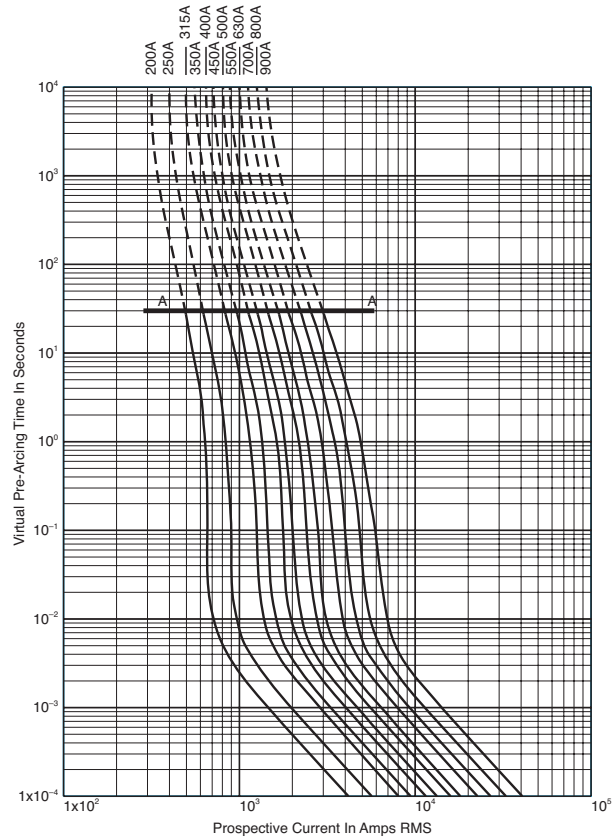
High Speed Fuses

Square Body Size 1*, 1 — 690V/700V (IEC/UL): 40-2000A

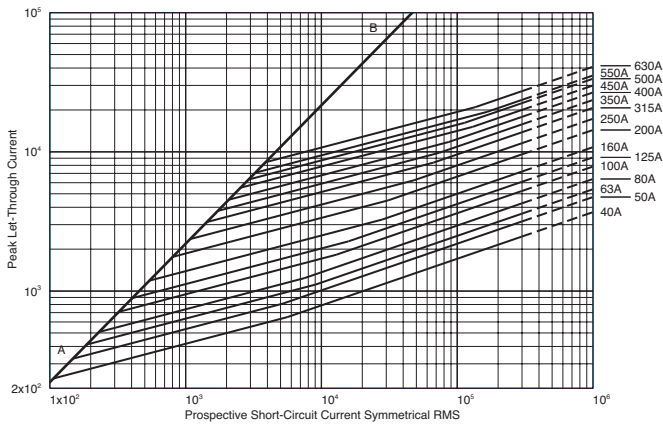
Size 1* — 40-630A: 690V
Time-Current Curve



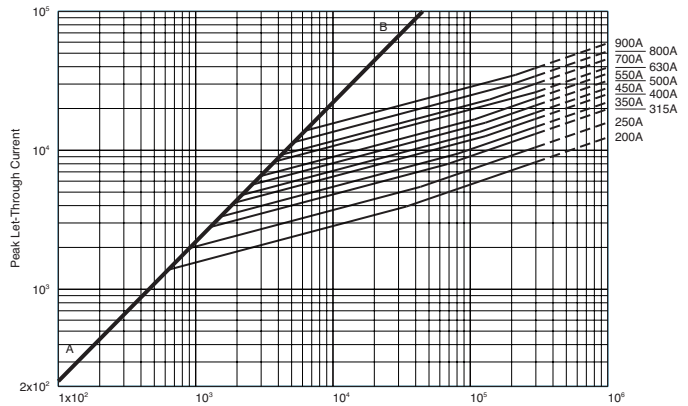
Size 1 — 200-900A: 690V
Time-Current Curve



Peak Let-Through Curve



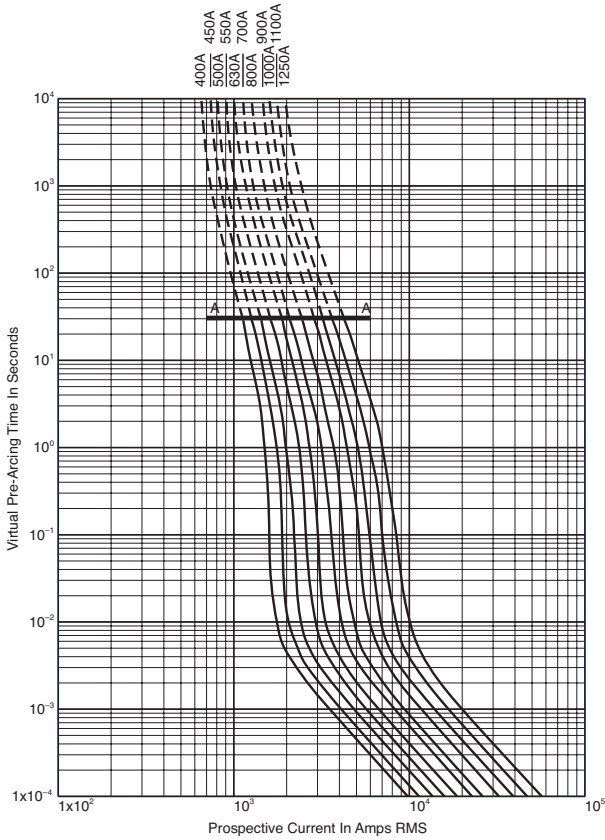
Peak Let-Through Curve



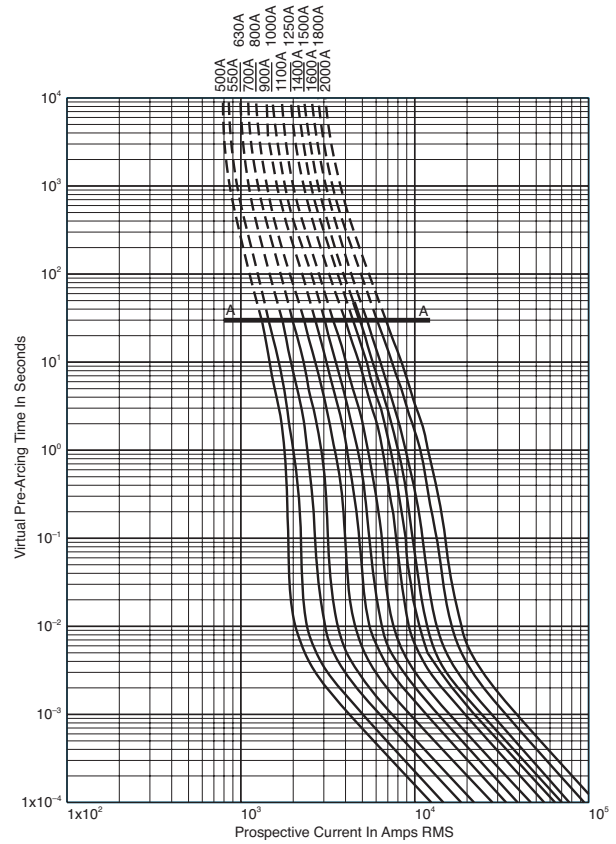
900 amp fuse is derated to 550V (IEC).

Square Body Size 2, 3 — 690V/700V (IEC/UL): 40-2000A

Size 2 — 400-1250A: 690V
Time-Current Curve

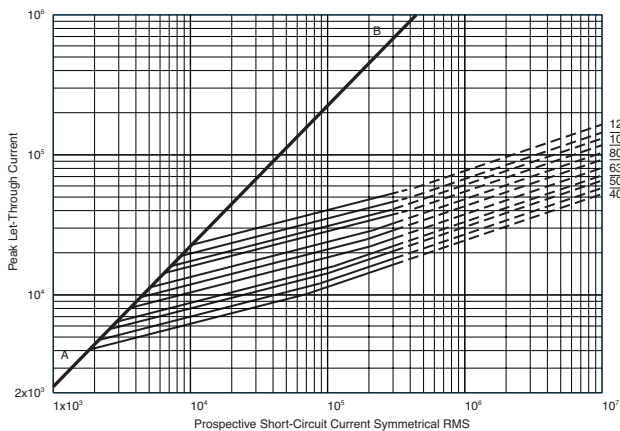


Size 3 — 500-2000A: 690V
Time-Current Curve

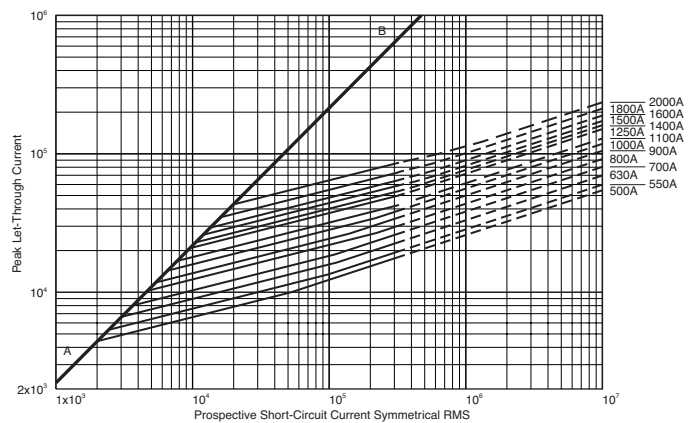


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



1800A fuse is derated to 600V (IEC).
2000A fuse is derated to 550V (IEC).

Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-1000A

690V/700V (IEC/UL) 40-1000A

Specifications

Description: Square body DIN 43 620 blade style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)
— 700Vac (UL)

Amps: — 40-1000A

IR: — 200kA RMS Sym.

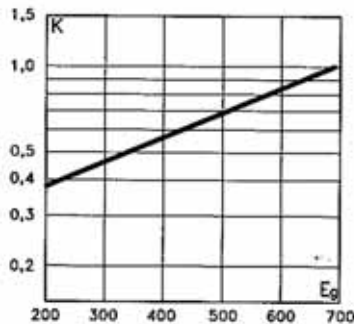
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.



Electrical Characteristics

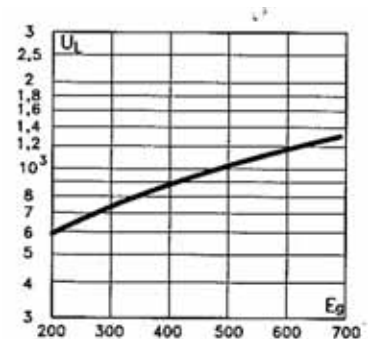
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K , given as a function of applied working voltage, E_g , (rms).



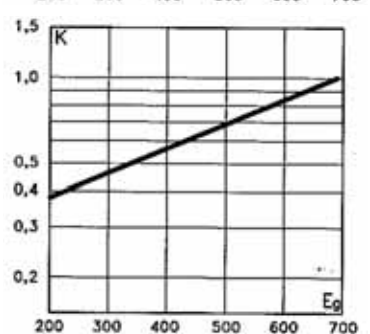
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Full Range Fuses in This Body Style

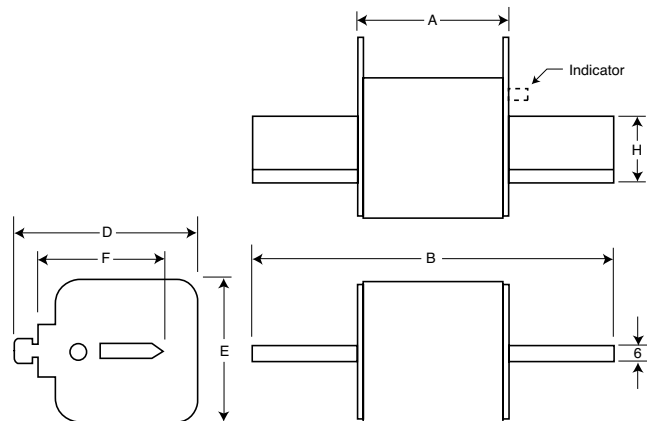
- See page 140

Dimensions (mm)

Type DIN 1*, DIN 2, DIN 3

| Size | A | B | D | E | F | H |
|------|----|-----|----|----|----|----|
| 1* | 69 | 135 | 58 | 45 | 40 | 20 |
| 2 | 69 | 150 | 71 | 55 | 48 | 26 |
| 3 | 68 | 150 | 88 | 76 | 60 | 33 |

1mm = 0.0394" / 1" = 25.4mm



Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-600A

Catalog Numbers

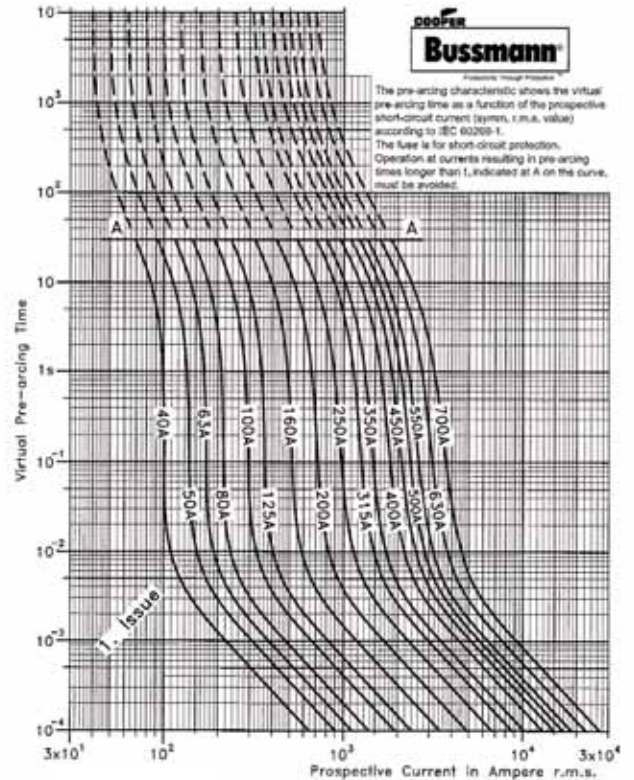
| Catalog Numbers DIN Type T Indicator for Micro | Size | Electrical Characteristics | | | |
|--|------|------------------------------|-------------------------|---------------------|---------------|
| | | Rated Current RMS-Amps | Pt (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 660V | |
| 170M3808D | 1* | 40 | 40 | 285 | 4 |
| 170M3809D | | 50 | 78 | 550 | 4.5 |
| 170M3810D | | 63 | 120 | 850 | 6.5 |
| 170M3811D | | 80 | 185 | 1350 | 8.5 |
| 170M3812D | | 100 | 360 | 2600 | 10 |
| 170M3813D | | 125 | 550 | 3900 | 11 |
| 170M3814D | | 160 | 1150 | 8250 | 12 |
| 170M3815D | | 200 | 2300 | 16500 | 12.5 |
| 170M3816D | | 250 | 4350 | 31000 | 16 |
| 170M3817D | | 315 | 7300 | 52000 | 20 |
| 170M3818D | | 350 | 10000 | 73000 | 21.5 |
| 170M3819D | | 400 | 16000 | 115000 | 60 |
| 170M4863D | | 450 | 21500 | 155000 | 26.3 |
| 170M4864D | | 500 | 27000 | 190000 | 28.5 |
| 170M4865D | | 550 | 33500 | 240000 | 33 |
| 170M4866D | | 630 | 48500 | 345000 | 37.5 |
| 170M4867D | | 700 | 69500 | 495000 | 39 |
| 170M5808D | 2 | 400 | 11000 | 79000 | 29 |
| 170M5809D | | 450 | 16000 | 115000 | 32 |
| 170M5810D | | 500 | 21500 | 155000 | 34 |
| 170M5811D | | 550 | 29000 | 215000 | 36 |
| 170M5812D | | 630 | 41000 | 295000 | 42 |
| 170M5813D | | 700 | 60500 | 430000 | 43 |
| 170M5814D | | 800 | 86000 | 610000 | 48 |
| 170M5820D | | 900 | 125000 | 895000 | 52 |
| 170M5816D | | 1000 | 180000 | 1300000 | 53 |
| 170M5817D | | 1100 | 245000 | 1750000 | 56 |
| 170M6808D | 3 | 500 | 14000 | 99500 | 43 |
| 170M6809D | | 550 | 19500 | 140000 | 44 |
| 170M6810D | | 630 | 31000 | 220000 | 45 |
| 170M6811D | | 700 | 45000 | 320000 | 46 |
| 170M6812D | | 800 | 69500 | 490000 | 48 |
| 170M6813D | | 900 | 100000 | 720000 | 50 |
| 170M6814D | | 1000 | 140000 | 985000 | 56 |
| 170M6892D | | 1100 | 190000 | 1400000 | 57 |
| 170M8554D | | 1250 | 300000 | 2150000 | 61 |
| 170M8555D | | 1400 | 380000 | 2700000 | 70 |
| 170M8556D | | 1500 | 470000 | 3350000 | 72 |
| 170M8557D | | 1600 | 585000 | 4150000 | 74 |

- Watts loss provided at rated current.
- Microswitch indicator ordered separately. See accessories on pages 185-186.
- For fuse curves see page 134.

Rated Current

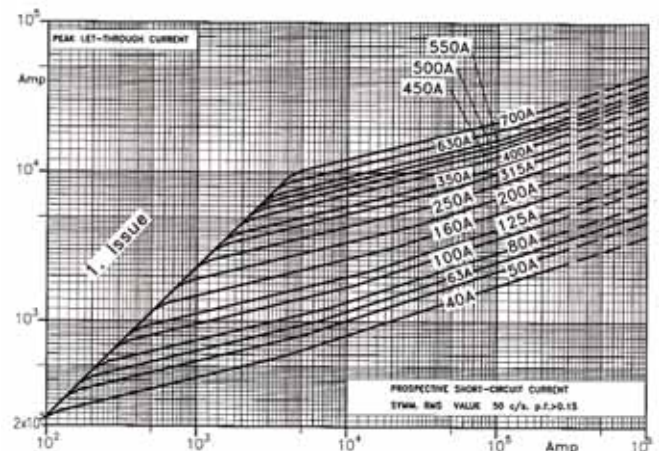
The rated current of this fuse range has been given with copper conductors that have a current density of 1.3 A/mm² (IEC 60269-4). For conductor cross section according to IEC 60269-1, the fuses must be derated. Please contact Cooper Bussmann for application assistance.

Size 1* — 40-630A: 690V Time-Current Curve



High Speed Fuses

Peak Let-Through Curve

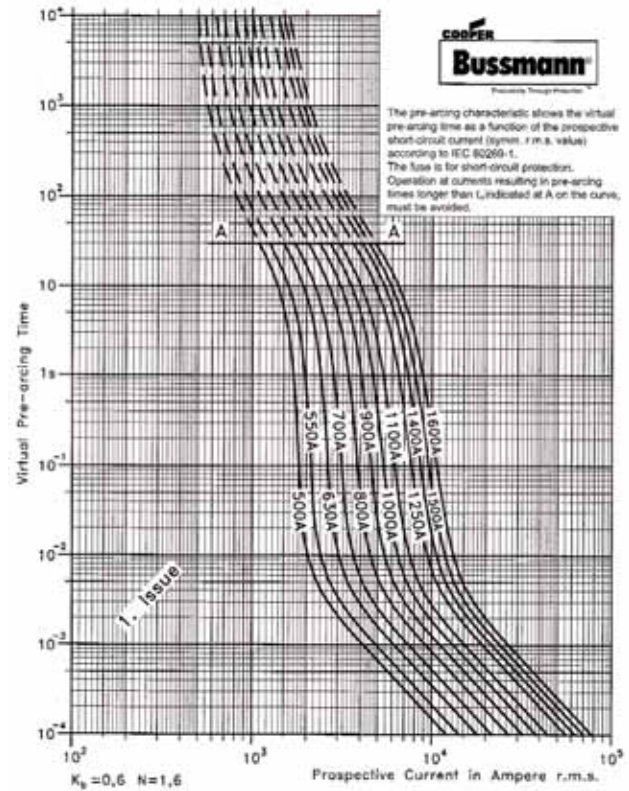
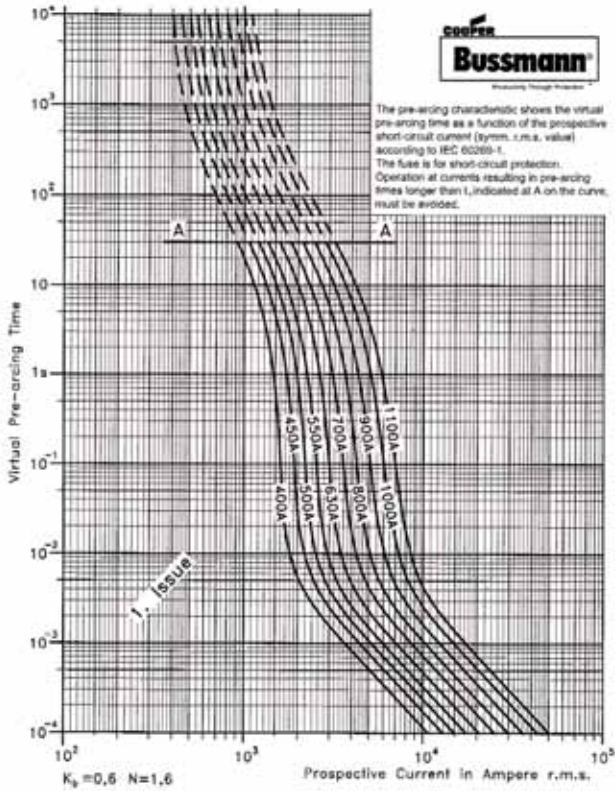


Data Sheet: 17056314

Square Body DIN 43 620 — 690V/700V (IEC/UL): 40-1000A

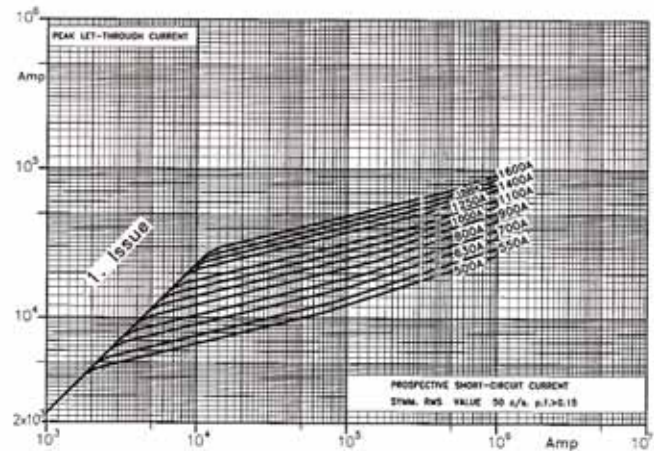
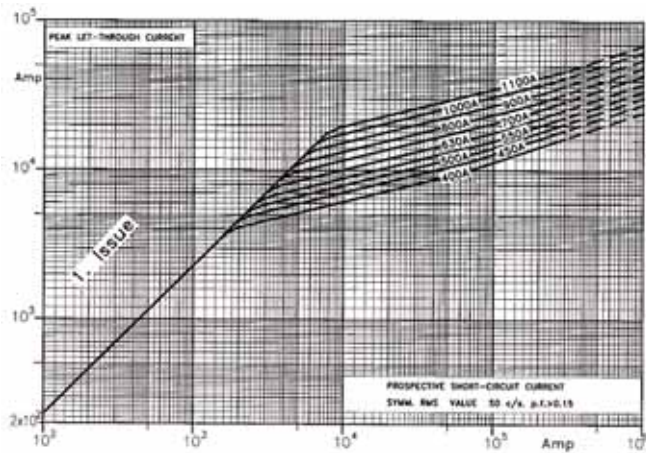
Size 2 — 400-1250A: 690V
Time-Current Curve

Size 3 — 500-2000A: 690V
Time-Current Curve



Peak Let-Through Curve

Peak Let-Through Curve



Square Body Flush End Contact — 690/700V (IEC/UL): 1000-4000A

690V (IEC) 1000-4000A

Specifications

Description: Square body flush end contact high speed fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 690Vac

Amps: — 1000-4000A

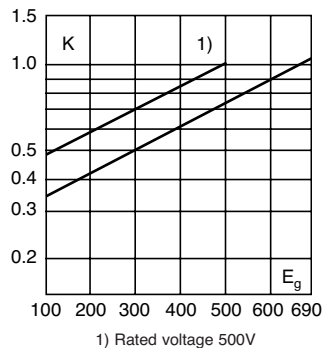
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

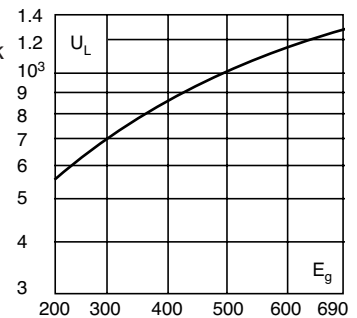
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



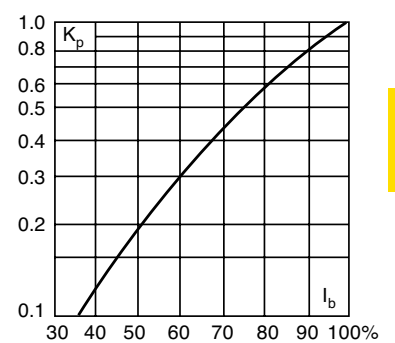
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

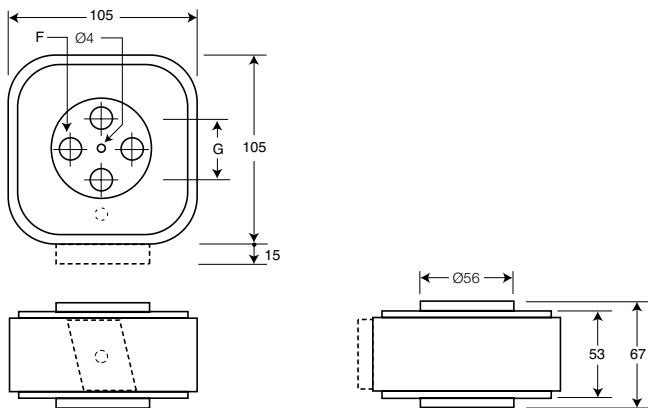
- See pages 154 (1000V) and 168 (1250V)

Dimensions (mm)

Type 4B/-, 4BKN/-, 4G/-, 4GKN/-

| Size | F (In) | G |
|------|-----------------------|----|
| 4B | M10 10 deep | 33 |
| 4G | ½" -13 UNC-2B 10 deep | 38 |

1mm = 0.0394" / 1" = 25.4mm



High Speed Fuses

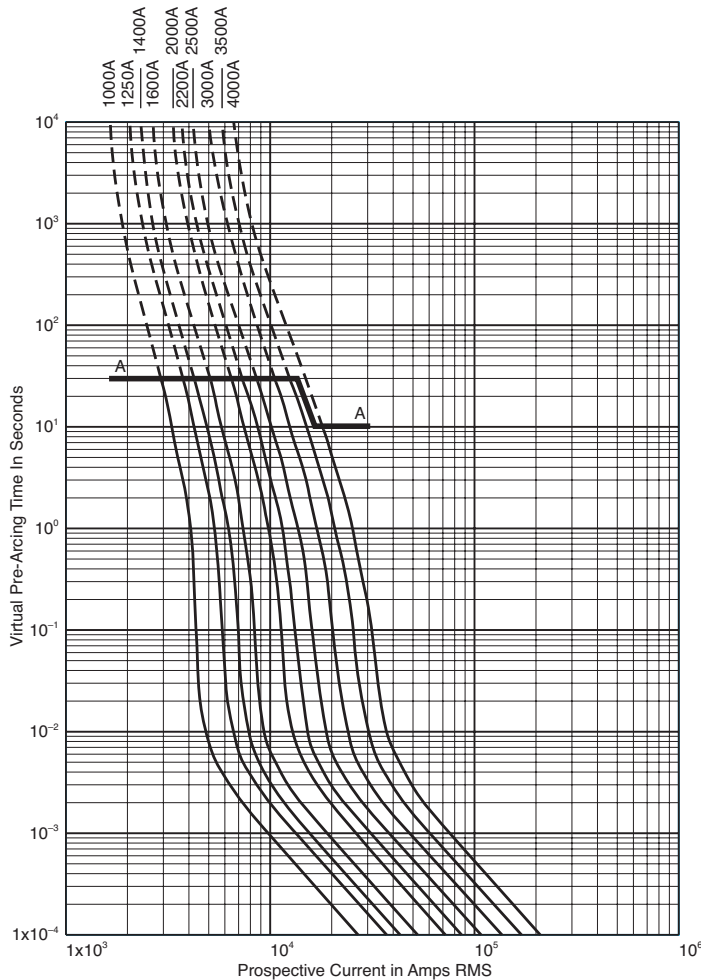
Square Body Flush End Contact — 690V (IEC): 1000-4000A

Catalog Numbers

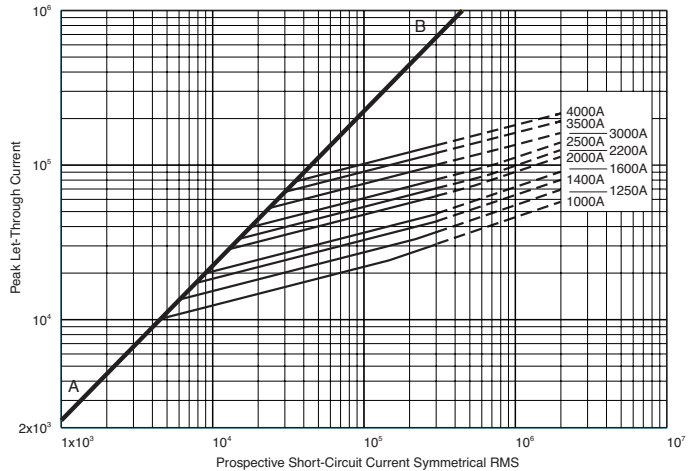
| Catalog Numbers | | | | Size | Electrical Characteristics | | | | | |
|-----------------------------|---|-----------------------------|---|------|----------------------------|-----------------|---------------------------------------|---------------------|----------------|-----------------|
| -B/- Visual Indicator | -BKN- Type K Indicator for Micro | -G/- Visual Indicator | -GKN- Type K Indicator for Micro | | Rated Current RMS | | I ² t (A ² Sec) | | Watts Loss | |
| | | | | | Norm. Cool. | Liquid Cool. | Pre-arc | Clearing at 660V | Norm. Cool. | Liquid Cool. |
| 170M7058 | 170M7078 | 170M7098 | 170M7118 | 4 | 1000 | 1350 | 76000 | 505000 | 175 | 315 |
| 170M7059 | 170M7079 | 170M7099 | 170M7119 | | 1250 | 1700 | 145000 | 965000 | 195 | 355 |
| 170M7060 | 170M7080 | 170M7100 | 170M7120 | | 1400 | 1900 | 205000 | 1400000 | 205 | 375 |
| 170M7061 | 170M7081 | 170M7101 | 170M7121 | | 1600 | 2200 | 305000 | 2050000 | 220 | 405 |
| 170M7062 | 170M7082 | 170M7102 | 170M7122 | | 2000 | 2700 | 600000 | 3950000 | 245 | 445 |
| 170M7063 | 170M7083 | 170M7103 | 170M7123 | | 2500 | 3400 | 1200000 | 7800000 | 275 | 495 |
| 170M7064 | 170M7084 | 170M7104 | 170M7124 | | 3000 | 4100 | 2000000 | 13500000 | 305 | 555 |
| 170M7065 | 170M7085 | 170M7105 | 170M7125 | | 3500 | 4700 | 3250000 | 22000000 | 325 | 585 |
| 170M7066 | 170M7086 | 170M7106 | 170M7126 | | †4000 | †5400 | 4700000 | †28000000 | 355 | 640 |

- †Rated voltage (IEC) 500V.
- Watts loss provided at rated current.
- Liquid Cool. = Liquid cooling. Temperature on the terminals not to exceed 60°C.
- Microswitch indicator ordered separately. See accessories on pages 185-186.

Size 4 — 1000-4000A: 690V Time-Current Curve



Peak Let-Through Curve



4000A fuse is derated to 500V (IEC).

Data Sheet: 17056328

Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

660V (IEC) 1000-7500A

Specifications

Description: High speed square body fuses, for the protection of the power rectifier section of the equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 660Vac

Amps: — 1000-4000A

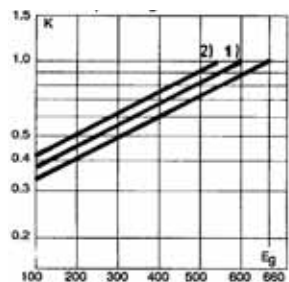
IR: — 300kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

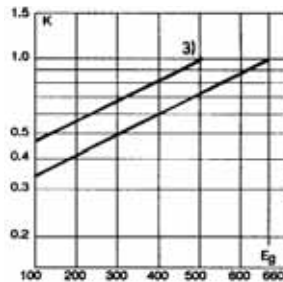


Electrical Characteristics

Total clearing I^2t



Size 23



Size 24

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

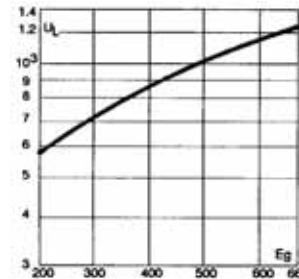
Features and Benefits

- Low watts loss
- Superior cycling capability

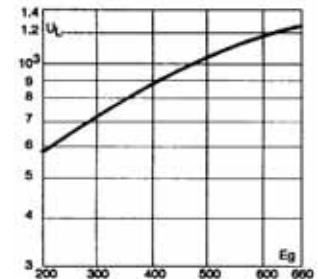
Typical Applications

- Power converters/rectifiers
- Reduced voltage starters

Arc Voltage



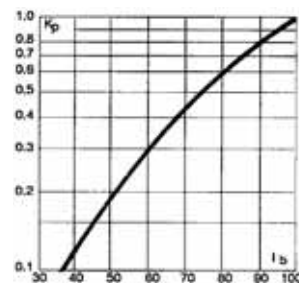
Size 23



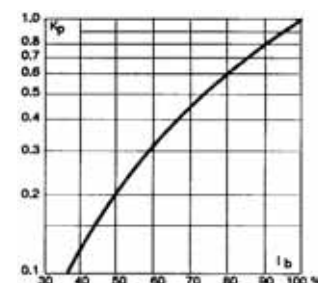
Size 24

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.

Power Losses



Size 23



Size 24

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.

For Other Voltage Ratings in This Body Style

- See pages 157 (1000V) and 171 (1250V)

Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

| Fuse Size | Catalogue Number | | | | | | Electrical Characteristics | | | | | |
|-----------|-------------------------|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|----------------------------|-----------------------|---------------------------------------|------------|---------------|-------|
| | -BU/55 Visual Indicator | -BKE/55 Type K Indicator | -BKN/55 Type K Indicator | -GU/55 Visual Indicator | -GKE/55 Type K Indicator | -GKN/55 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I ² t (A ² Sec) | | Watt Loss (W) | |
| | Pre-arc | Clearing at 660V | | | | | | | | | | |
| 23 | 170M6858 | 170M6898 | 170M6878 | 170M6918 | 170M6958 | 170M6938 | 660 | 1000 | 79,000 | 530,000 | 170.0 | |
| | 170M6859 | 170M6899 | 170M6879 | 170M6919 | 170M6959 | 170M6939 | | 1100 | 95,000 | 635,000 | 185.0 | |
| | 170M6860 | 170M6900 | 170M6880 | 170M6920 | 170M6960 | 170M6940 | | 1250 | 155,000 | 1,050,000 | 190.0 | |
| | 170M6861 | 170M6901 | 170M6881 | 170M6921 | 170M6961 | 170M6941 | | 1400 | 200,000 | 1,350,000 | 210.0 | |
| | 170M6862 | 170M6902 | 170M6882 | 170M6922 | 170M6962 | 170M6942 | | 1500 | 240,000 | 1,650,000 | 215.0 | |
| | 170M6863 | 170M6903 | 170M6883 | 170M6923 | 170M6963 | 170M6943 | | 1600 | 315,000 | 2,150,000 | 220.0 | |
| | 170M6864 | 170M6904 | 170M6884 | 170M6924 | 170M6964 | 170M6944 | | 1800 | 450,000 | 3,050,000 | 230.0 | |
| | 170M6865 | 170M6905 | 170M6885 | 170M6925 | 170M6965 | 170M6945 | | 2000 | 625,000 | 4,200,000 | 240.0 | |
| | 170M6866 | 170M6906 | 170M6886 | 170M6926 | 170M6966 | 170M6946 | | 2200 | 805,000 | 5,400,000 | 255.0 | |
| | 170M6867 | 170M6907 | 170M6887 | 170M6927 | 170M6967 | 170M6947 | | 2500 | 1,250,000 | 8,350,000 | 265.0 | |
| | 170M6868 | 170M6908 | 170M6888 | 170M6928 | 170M6968 | 170M6948 | | 3000 | 2,250,000 | 15,500,000 | 285.0 | |
| | 170M6869 | 170M6909 | 170M6889 | 170M6929 | 170M6969 | 170M6949 | | 600 | 3500 | 3,450,000 | 21,000,000 | 315.0 |
| | 170M6870 | 170M6910 | 170M6890 | 170M6930 | 170M6970 | 170M6950 | | 550 | 4000 | 5,000,000 | 27,500,000 | 340.0 |

Data Sheet: 170K6326

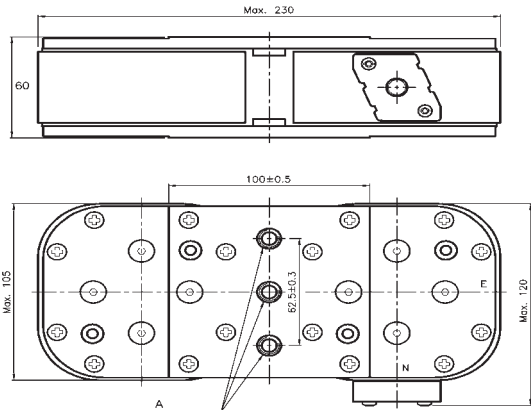
Catalog Numbers:

| Fuse Size | Catalogue Number | | | | Electrical Characteristics | | | | | |
|-----------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|-----------------------|---------------------------------------|-----------|----------------|-----|
| | -BU/60 without Indicator | -BKN/60 Type K Indicator | -GU/60 without Indicator | -GKN/60 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I ² t (A ² Sec) | | Watts Loss (W) | |
| | Pre-arc | Clearing at 660V | | | | | | | | |
| 24 | 170M7138 | 170M7158 | 170M7198 | 170M7218 | 690 | 2000 | 340000 | 2300000 | 340 | |
| | 170M7139 | 170M7159 | 170M7199 | 170M7219 | | 2500 | 650000 | 4350000 | 390 | |
| | 170M7140 | 170M7160 | 170M7200 | 170M7220 | | 3000 | 1100000 | 7300000 | 430 | |
| | 170M7141 | 170M7161 | 170M7201 | 170M7221 | | 3500 | 1800000 | 12000000 | 460 | |
| | 170M7142 | 170M7162 | 170M7202 | 170M7222 | | 4000 | 2700000 | 18000000 | 490 | |
| | 170M7143 | 170M7163 | 170M7203 | 170M7223 | | 4500 | 3800000 | 25500000 | 520 | |
| | 170M7144 | 170M7164 | 170M7204 | 170M7224 | | 5000 | 5450000 | 36500000 | 540 | |
| | 170M7145 | 170M7165 | 170M7205 | 170M7225 | | 5500 | 7400000 | 49500000 | 560 | |
| | 170M7146 | 170M7166 | 170M7206 | 170M7226 | | 6000 | 9600000 | 64000000 | 580 | |
| | 170M7147 | 170M7167 | 170M7207 | 170M7227 | | 6500 | 12500000 | 83000000 | 600 | |
| | 170M7148 | 170M7168 | 170M7208 | 170M7228 | | 7000 | 15000000 | 100000000 | 630 | |
| | 170M7149 | 170M7169 | 170M7209 | 170M7229 | | 500 | 7500 | 18500000 | †93000000 | 660 |

† A's @ 500V
Data Sheet: 170K6332

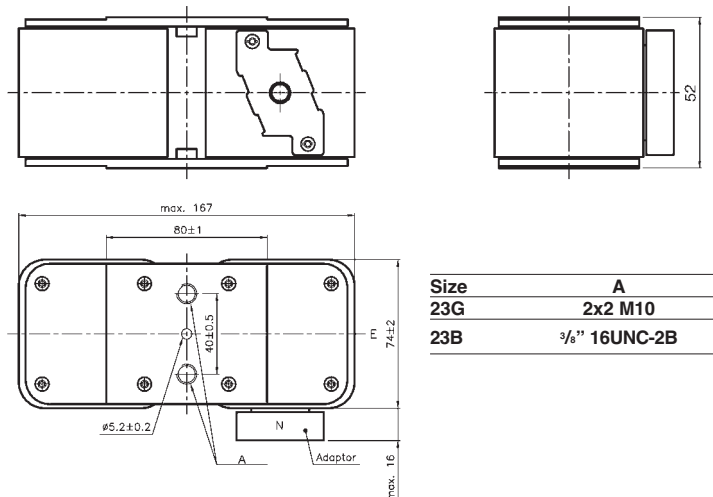
Size 24 Dimensions (mm):

Type - BU/55, -BKE/55, -BKN/55, -GU/55, -GKE/55, -GKN/55



Size 23 Dimensions (mm):

Type - BU/55, -BKE/55, -BKN/55, -GU/55, -GKE/55, -GKN/55

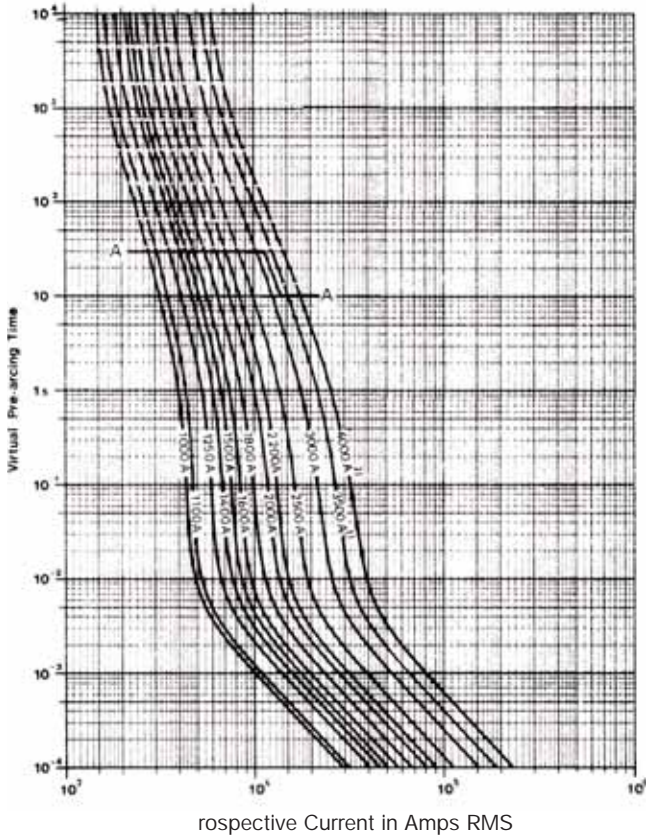


| Size | A |
|-------|-------------------|
| 24BKN | 2x3 M12 |
| 24GKN | 2x3 1/2" 16UNC-2B |

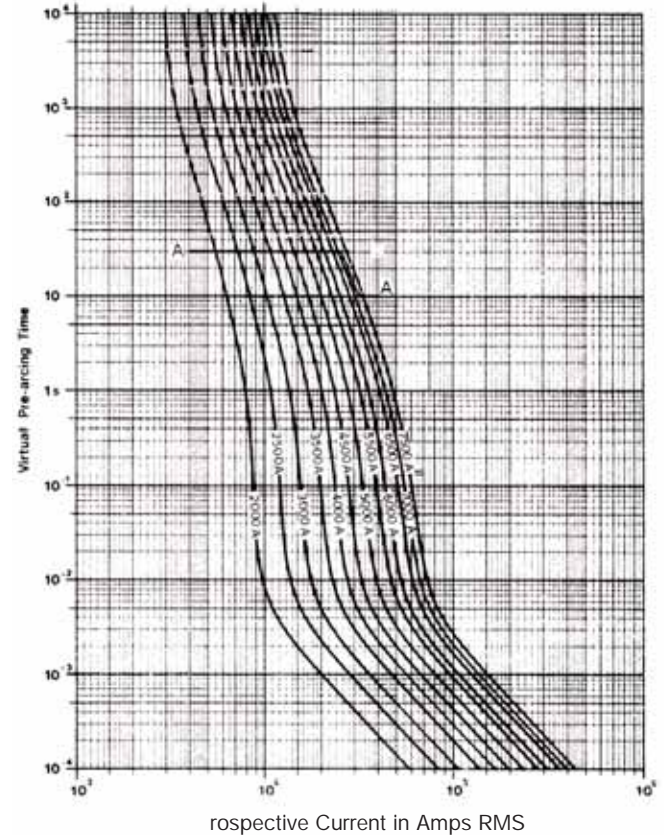
| Size | A |
|------|---------------|
| 23G | 2x2 M10 |
| 23B | 3/8" 16UNC-2B |

Square Body Flush End Contact Size 23, 24 — 660V (IEC): 1000-7500A

Size 23 — 10000-4000A: 660V
Time-Current Curve

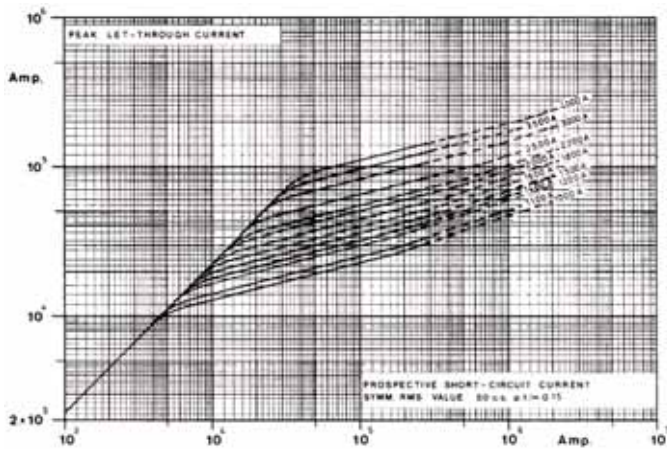


Size 24 — 2000-7500A: 660V
Time-Current Curve

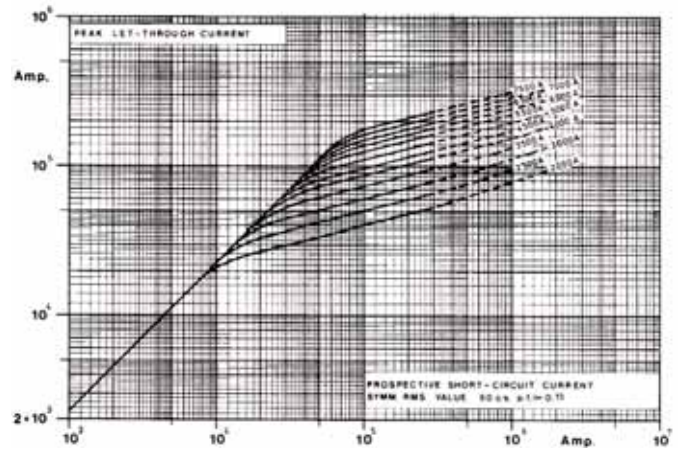


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body DIN 43 620 — 690V (IEC): 10-800A Class gR — Full Range Fuses

690V (IEC) 10-800A

Specifications

Description: Square body DIN 43 620 blade style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 690Vac (IEC)

Amps: — 10-800A

IR: — 300kA RMS Sym.

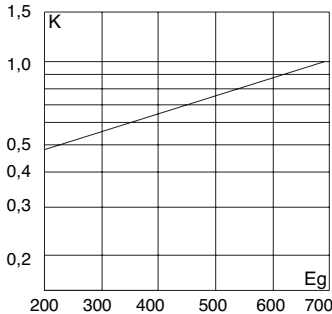
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical

Characteristics

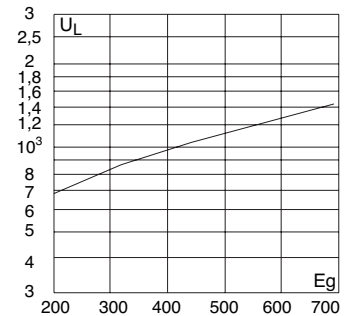
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



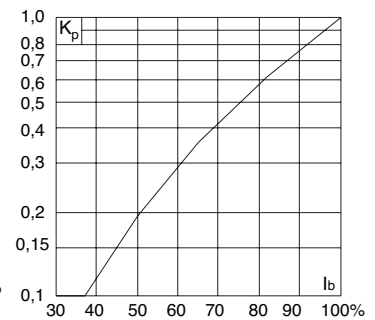
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Operating Class aR Fuses in This Body Style

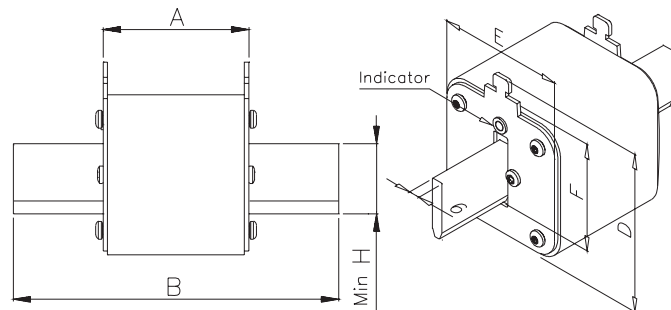
- See page 132

Dimensions (mm)

Type DIN 00, DIN 1, DIN 2, DIN 3

| Size | A | B Max | D Max | E | F Min | H |
|------|----|-------|-------|----|-------|----|
| 00 | 49 | 78.5 | 60 | 30 | 35 | 15 |
| 1 | 68 | 135 | 66 | 52 | 40 | 20 |
| 2 | 68 | 150 | 74 | 60 | 48 | 25 |
| 3 | 68 | 150 | 89 | 75 | 60 | 32 |

1 mm = 0.0394" 1" = 25.4 mm



Square Body DIN 43 620 — 690V (IEC): 10-800A Class gR — Full Range Fuses

Catalog Numbers

| Catalog Numbers Type T Indicator For Micro | Size | Electrical Characteristics | | | |
|---|------|----------------------------|-------------------------|---------------------|---------------|
| | | RMS Amp Rating* | Pt (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 600V | |
| 170M2691 | 00 | 10 | 3.8 | 20 | 3.5 |
| 170M2692 | | 16 | 7.2 | 38 | 5.5 |
| 170M2693 | | 20 | 13 | 70 | 6 |
| 170M2694 | | 25 | 24 | 125 | 8 |
| 170M2695 | | 32 | 53 | 275 | 9 |
| 170M2696 | | 40 | 95 | 490 | 10 |
| 170M2697 | | 50 | 185 | 1000 | 11 |
| 170M2698 | | 63 | 345 | 1800 | 14 |
| 170M2699 | | 80 | 695 | 3600 | 16 |
| 170M2700 | | 100 | 1250 | 6650 | 19 |
| 170M2701 | | 125 | 2300 | 12000 | 23 |
| 170M2702 | | 160 | 4350 | 22500 | 29 |
| 170M4176 | 1 | 50 | 135 | 705 | 12 |
| 170M4177 | | 63 | 245 | 1300 | 15 |
| 170M4178 | | 80 | 500 | 2600 | 17 |
| 170M4179 | | 100 | 950 | 4850 | 20 |
| 170M4180 | | 125 | 1850 | 9500 | 23 |
| 170M4181 | | 160 | 3450 | 18000 | 28 |
| 170M4182 | | 200 | 6750 | 34500 | 31 |
| 170M4183 | | 250 | 13500 | 70500 | 35 |
| 170M4184 | | 315 | 26000 | 135000 | 41 |
| 170M4185 | | 350 | 34000 | 175000 | 45 |
| 170M4186 | | 400 | 48500 | 250000 | 48 |
| 170M5881 | | 2 | 200 | 5650 | 29000 |
| 170M5882 | 250 | | 10000 | 52500 | 40 |
| 170M5883 | 315 | | 19500 | 105000 | 46 |
| 170M5884 | 350 | | 26000 | 135000 | 50 |
| 170M5885 | 400 | | 39500 | 205000 | 53 |
| 170M5886 | 450 | | 55500 | 290000 | 59 |
| 170M5887 | 500 | | 73000 | 375000 | 66 |
| 170M5888 | 550 | | 100000 | 515000 | 70 |
| 170M5889 | 630 | | 150000 | 770000 | 79 |
| 170M6080 | 3 | | 350 | 23000 | 120000 |
| 170M6081 | | 400 | 34000 | 175000 | 59 |
| 170M6082 | | 450 | 48500 | 250000 | 62 |
| 170M6083 | | 500 | 64000 | 330000 | 67 |
| 170M6084 | | 550 | 84500 | 435000 | 70 |
| 170M6085 | | 630 | 125000 | 645000 | 85 |
| 170M6086 | | 700 | 160000 | 840000 | 93 |
| 170M6087 | | 800 | 245000 | 1300000 | 99 |

*The RMS amp rating of this fuse range is given with open fuse bases connected to copper conductors according to IEC 60269, Part 1, table 10. When used in enclosed fuse bases/ disconnects, derating factors have to be observed.

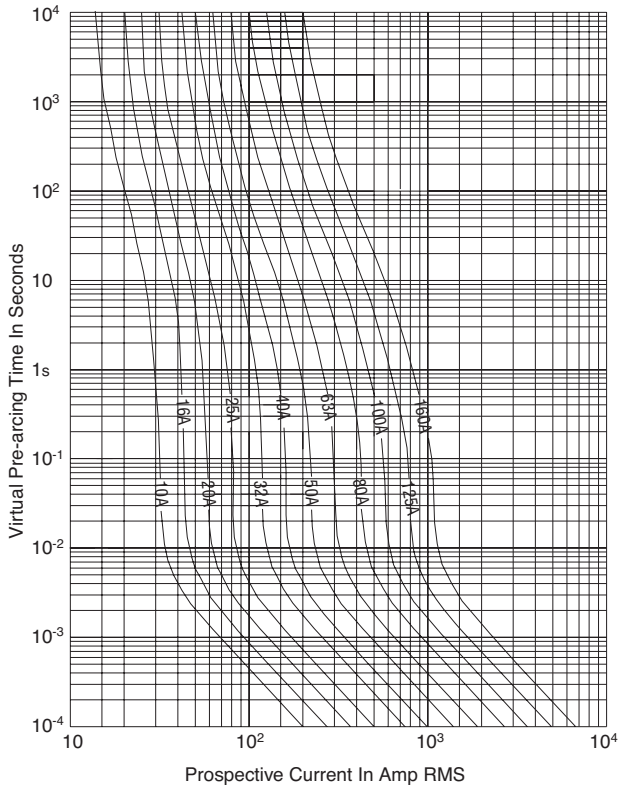
Please contact Cooper Bussmann for application assistance.

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 185-186.
- For fuse curves see pages 142 and 143.

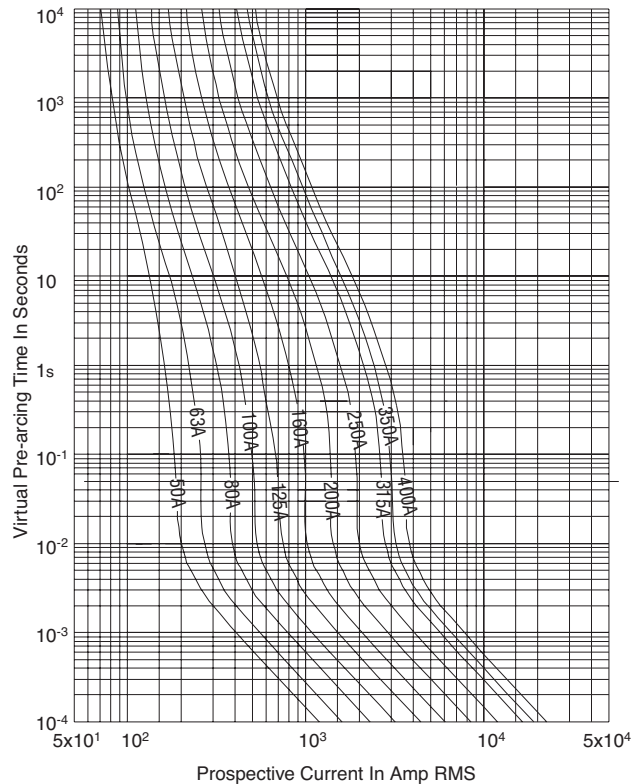
High Speed Fuses

Square Body Size 00, 1 — 690V (IEC): 10-800A Class gR — Full Range Fuses

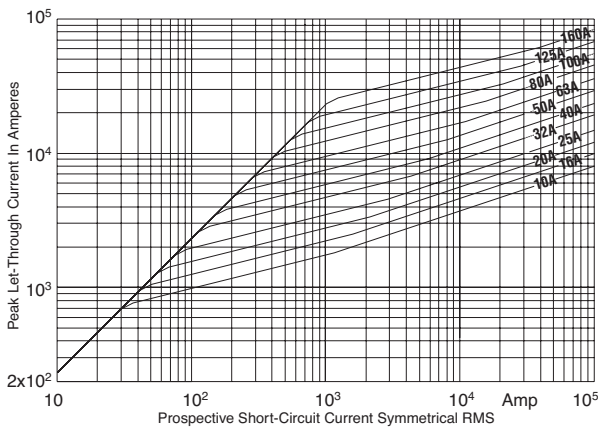
Size 00 — 10-160A: 690V
Time-Current Curve



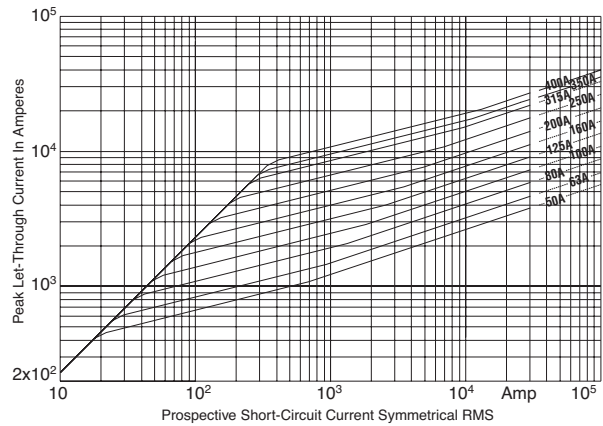
Size 1 — 50-400A: 690V
Time-Current Curve



Peak Let-Through Curve

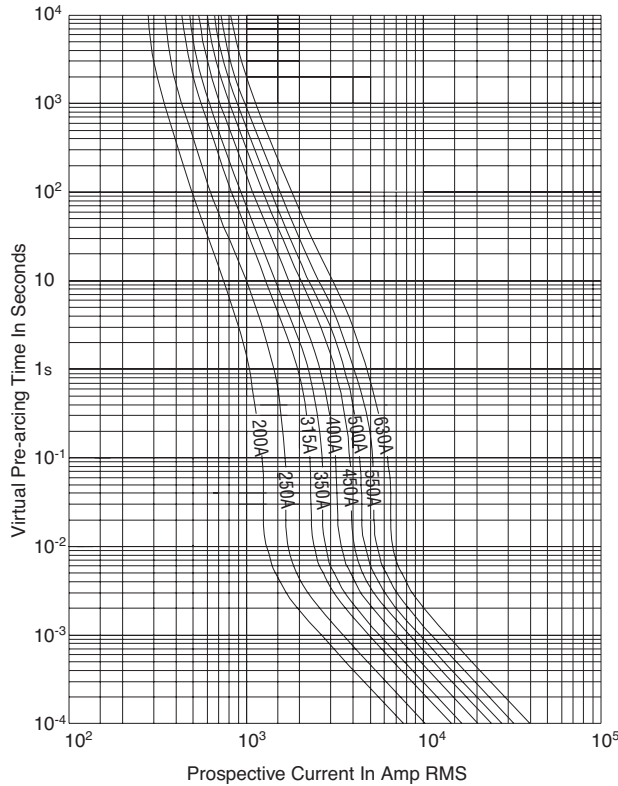


Peak Let-Through Curve

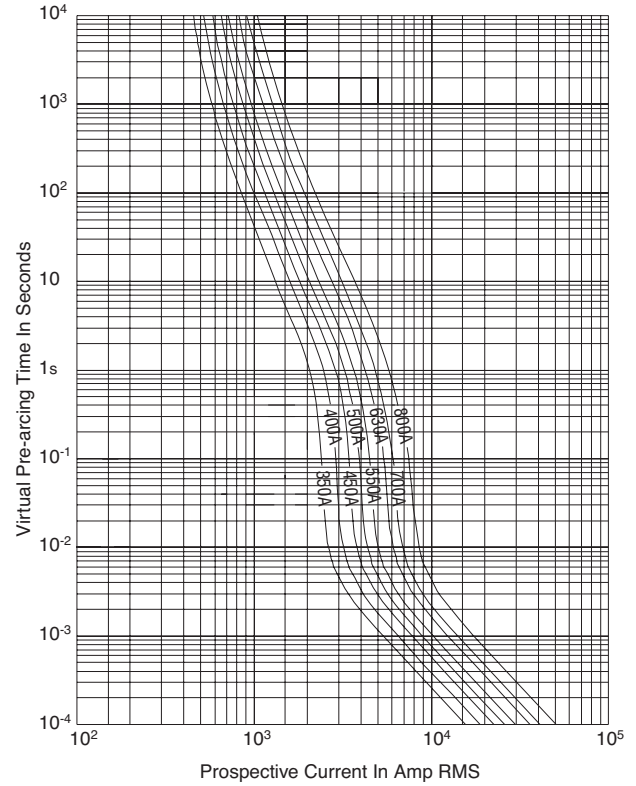


Square Body Size 2, 3 — 690V (IEC): 10-800A Class gR — Full Range Fuses

Size 2 — 200-630A: 690V
Time-Current Curve

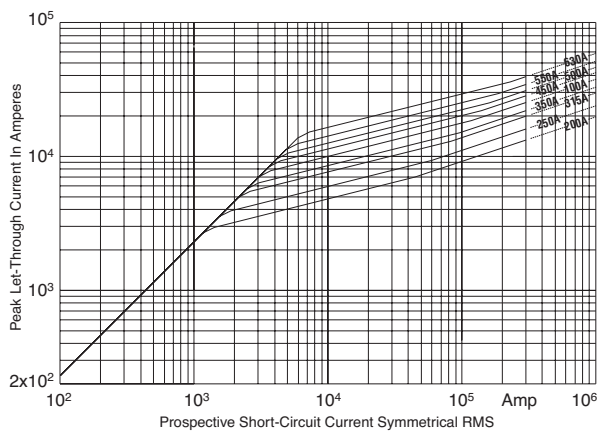


Size 3 — 350-800A: 690V
Time-Current Curve

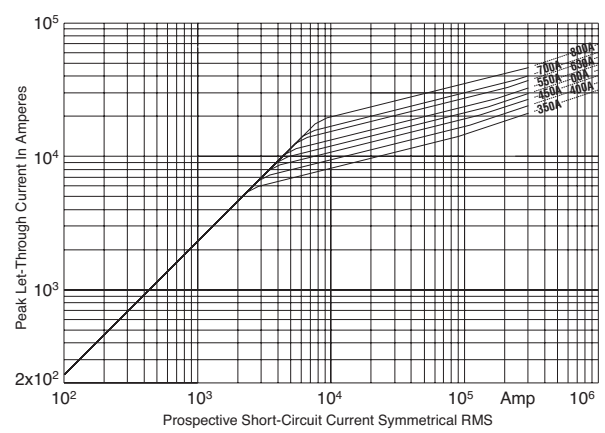


High Speed
Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Square Body DIN 43 653 — 1000V (IEC): 20-315A

1000V (IEC) 20-315A

Specifications

Description: Square body DIN 43 653 stud-mount high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac (20-250A)

— 900Vac (315A)

Amps: — 20-315A

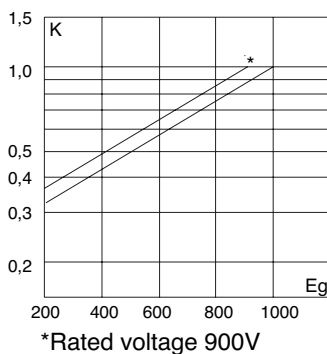
IR: — 150kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

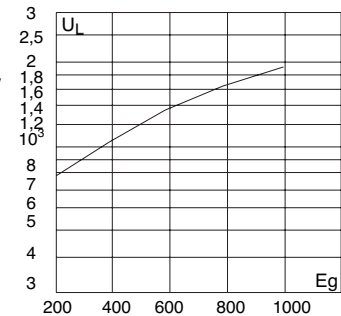
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



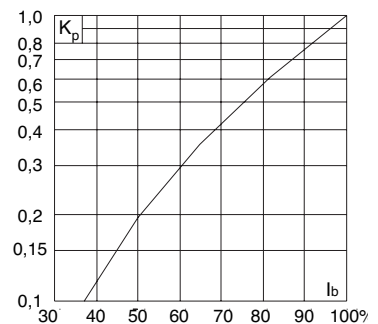
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

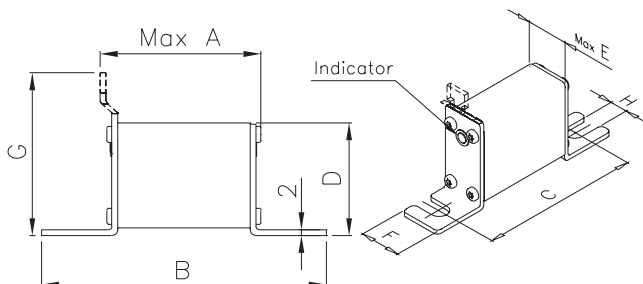
- See page 117 (690V/700V)

Dimensions (mm)

Type 00TN/80 – 00/80

| Size | Max A | B | C | D | Max E | F | G | H |
|---------|-------|----|----|----|-------|----|----|----|
| 00/80 | 54 | 98 | 78 | 51 | 30 | 28 | 10 | |
| 00TN/80 | 54 | 98 | 78 | 51 | 30 | 28 | 67 | 10 |

1mm = 0.0394" / 1" = 25.4mm



Square Body DIN 43 653 — 1000V (IEC): 20-315A

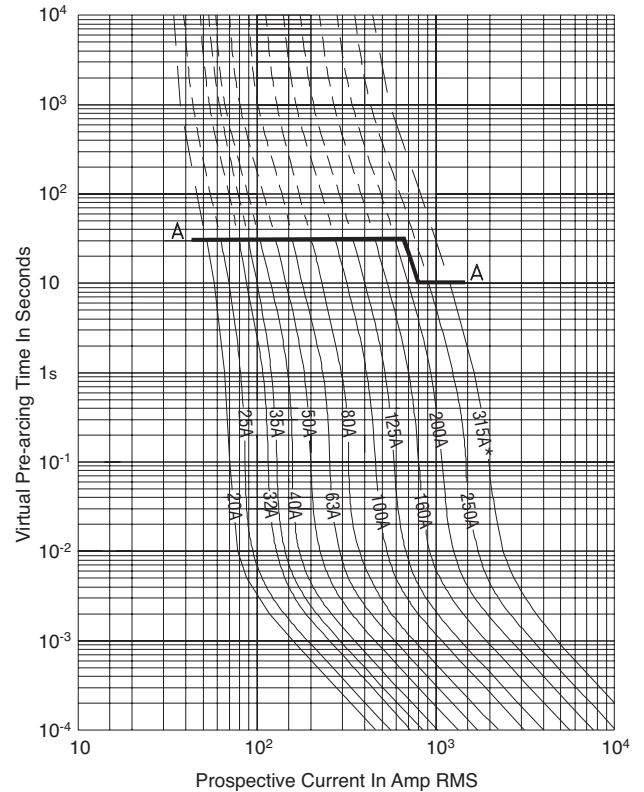
Catalog Numbers

| Catalog Numbers | | Size | Rated Voltage | Rated Current RMS Amps | Electrical Characteristics | | | Watts Loss |
|----------------------------------|------------------------------------|------|---------------|------------------------|----------------------------|------------------|---------------------------|------------|
| 00/80 Visual Indicator for Micro | 00TN/80 Type T Indicator for Micro | | | | Pt (A ² Sec) | | Clearing at Rated Voltage | |
| | | | | | Pre-arc | at Rated Voltage | | |
| 170M4802 | 170M4822 | 00 | 1000 | 20 | 20 | 140 | 5 | |
| 170M4803 | 170M4823 | | 1000 | 25 | 30 | 210 | 7 | |
| 170M4804 | 170M4824 | | 1000 | 32 | 55 | 390 | 9 | |
| 170M4805 | 170M4825 | | 1000 | 35 | 69 | 500 | 10 | |
| 170M4806 | 170M4826 | | 1000 | 40 | 100 | 690 | 11 | |
| 170M4807 | 170M4827 | | 1000 | 50 | 170 | 1200 | 13 | |
| 170M4808 | 170M4828 | | 1000 | 63 | 280 | 2000 | 18 | |
| 170M4809 | 170M4829 | | 1000 | 80 | 500 | 3500 | 22 | |
| 170M4810 | 170M4830 | | 1000 | 100 | 950 | 6850 | 25 | |
| 170M4811 | 170M4831 | | 1000 | 125 | 1500 | 11500 | 33 | |
| 170M4812 | 170M4832 | | 1000 | 160 | 3000 | 22000 | 37 | |
| 170M4813 | 170M4833 | | 1000 | 200 | 5600 | 40500 | 40 | |
| 170M4814 | 170M4834 | | 1000 | 250 | 10000 | 74000 | 48 | |
| 170M4815 | 170M4835 | | 900 | 315 | 18000 | 115000 | 58 | |

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 185-186.

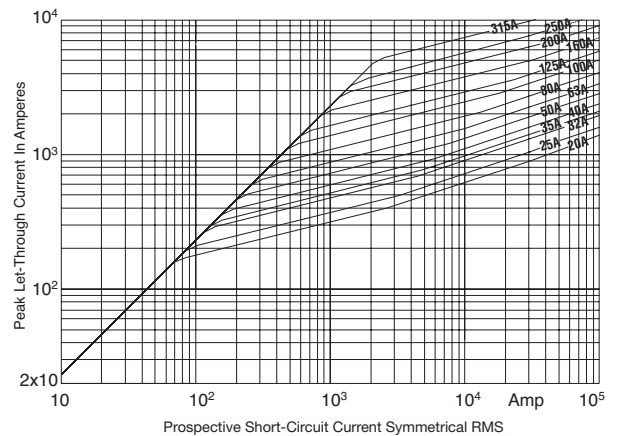
Size 00 — 20-315A: 1000V

Time-Current Curve



High Speed Fuses

Peak Let-Through Curve



* 315A fuse is derated to 900V

Square Body DIN 43 653 — 1000V (IEC): 50-1400A

1000V (IEC) 50-1400A

Specifications

Description: Square body mount high speed fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 1000Vac.

Amps: — 50-1400A

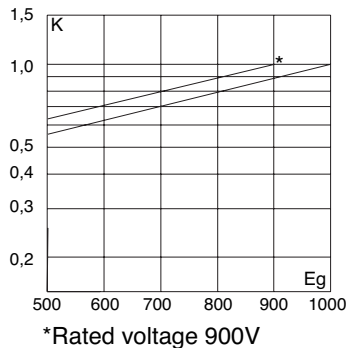
IR: — 150kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

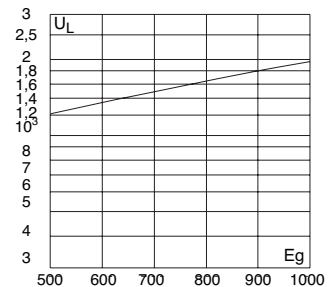
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



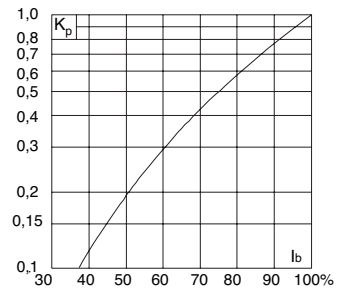
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 122 (690V/700V) and 160 (1250V/1300V)

Dimensions (mm)

Type -KN/110

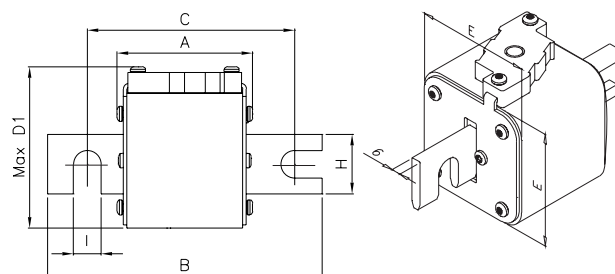
| Size | A | B | C | Max D1 | E | G | H | I |
|----------|----|-----|-----|--------|----|---|----|----|
| 1*KN/110 | 80 | 138 | 108 | 61 | 43 | 6 | 22 | 11 |
| 1KN/110 | 80 | 138 | 108 | 69 | 51 | 6 | 25 | 11 |
| 2KN/110 | 80 | 138 | 108 | 77 | 59 | 6 | 25 | 11 |
| 3KN/110 | 81 | 139 | 108 | 92 | 74 | 6 | 30 | 11 |

Type -TN/110

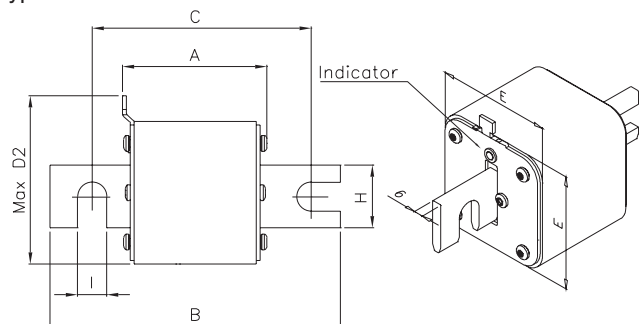
| Size | A | B | C | Max D2 | E | G | H | I |
|----------|----|-----|-----|--------|----|---|----|----|
| 1*TN/110 | 80 | 138 | 108 | 61 | 43 | 6 | 22 | 11 |
| 1TN/110 | 80 | 138 | 108 | 69 | 51 | 6 | 25 | 11 |
| 2TN/110 | 80 | 138 | 108 | 75 | 59 | 6 | 25 | 11 |
| 3TN/110 | 81 | 139 | 108 | 90 | 74 | 6 | 30 | 11 |

1mm = 0.0394" / 1" = 25.4mm

Type-KN/110



Type-TN/110



Square Body DIN 43 653 — 1000V (IEC): 50-1400A

Catalog Numbers

| Catalog Numbers | | Size | Rated Voltage | Electrical Characteristics | | | Watts Loss | |
|---|---|------|---------------|---------------------------------|-------------------------|---------------------------------|------------|----|
| -KN/110 Type K Indicator for Micro | -TN/110 Type T Indicator for Micro | | | Rated Current RMS Amps | Pt (A ² Sec) | | | |
| | | | | | Pre-arc | Clearing at Rated Voltage | | |
| 170M3965 | 170M3981 | 1* | 1000 | 50 | 135 | 815 | 20 | |
| 170M3966 | 170M3982 | | 1000 | 63 | 215 | 1300 | 25 | |
| 170M3967 | 170M3983 | | 1000 | 80 | 460 | 2750 | 30 | |
| 170M3968 | 170M3984 | | 1000 | 100 | 860 | 5100 | 35 | |
| 170M3969 | 170M3985 | | 1000 | 125 | 1450 | 8600 | 40 | |
| 170M3970 | 170M3986 | | 1000 | 160 | 2850 | 17500 | 45 | |
| 170M3971 | 170M3987 | | 1000 | 200 | 4950 | 29500 | 48 | |
| 170M3972 | 170M3988 | | 1000 | 250 | 9550 | 57000 | 50 | |
| 170M3973 | 170M3989 | | 1000 | 315 | 21500 | 130000 | 60 | |
| 170M3974 | 170M3990 | | 1000 | 350 | 29000 | 175000 | 65 | |
| 170M3975 | 170M3991 | | 1000 | 400 | 42000 | 250000 | 70 | |
| 170M4965 | 170M4980 | | 1 | 1000 | 160 | 2200 | 13500 | 40 |
| 170M4966 | 170M4981 | | | 1000 | 200 | 4150 | 24500 | 45 |
| 170M4967 | 170M4982 | 1000 | | 250 | 7750 | 46000 | 52 | |
| 170M4968 | 170M4983 | 1000 | | 315 | 16500 | 98500 | 60 | |
| 170M4969 | 170M4984 | 1000 | | 350 | 21500 | 130000 | 65 | |
| 170M4970 | 170M4985 | 1000 | | 400 | 31000 | 185000 | 70 | |
| 170M4971 | 170M4986 | 1000 | | 450 | 44500 | 265000 | 80 | |
| 170M4972 | 170M4987 | 1000 | | 500 | 63000 | 375000 | 85 | |
| 170M4973 | 170M4988 | 1000 | | 550 | 84500 | 500000 | 90 | |
| 170M4974 | 170M4989 | 1000 | | 630 | 125000 | 755000 | 98 | |
| 170M5966 | 170M5981 | 2 | 1000 | 250 | 6750 | 40000 | 65 | |
| 170M5967 | 170M5982 | | 1000 | 315 | 13500 | 81500 | 75 | |
| 170M5968 | 170M5983 | | 1000 | 350 | 16500 | 99000 | 80 | |
| 170M5969 | 170M5984 | | 1000 | 400 | 26000 | 155000 | 85 | |
| 170M5970 | 170M5985 | | 1000 | 450 | 35500 | 210000 | 90 | |
| 170M5971 | 170M5986 | | 1000 | 500 | 49500 | 295000 | 95 | |
| 170M5972 | 170M5987 | | 1000 | 550 | 66000 | 390000 | 100 | |
| 170M5973 | 170M5988 | | 1000 | 630 | 93500 | 555000 | 110 | |
| 170M5974 | 170M5989 | | 1000 | 700 | 130000 | 770000 | 115 | |
| 170M5975 | 170M5990 | | 1000 | 800 | 195000 | 1200000 | 125 | |
| 170M8614 | 170M8629 | 3 | 1000 | 315 | 9200 | 54500 | 90 | |
| 170M8615 | 170M8630 | | 1000 | 350 | 13000 | 77500 | 95 | |
| 170M8616 | 170M8631 | | 1000 | 400 | 19000 | 115000 | 105 | |
| 170M8617 | 170M8632 | | 1000 | 450 | 27000 | 160000 | 107 | |
| 170M8618 | 170M8633 | | 1000 | 500 | 37500 | 225000 | 110 | |
| 170M8619 | 170M8634 | | 1000 | 550 | 52000 | 310000 | 115 | |
| 170M8620 | 170M8635 | | 1000 | 630 | 82500 | 490000 | 120 | |
| 170M8621 | 170M8636 | | 1000 | 700 | 115000 | 700000 | 125 | |
| 170M8622 | 170M8637 | | 1000 | 800 | 170000 | 1050000 | 135 | |
| 170M8623 | 170M8638 | | 1000 | 900 | 250000 | 1500000 | 145 | |
| 170M8624 | 170M8639 | | 1000 | 1000 | 340000 | 2050000 | 150 | |
| 170M8625 | 170M8640 | | 1000 | 1100 | 460000 | 2750000 | 155 | |
| 170M8626 | 170M8641 | | 1000 | 1250 | 575000 | 3400000 | 175 | |
| 170M8627 | 170M8642 | | 900 | 1400 | 795000 | 4200000 | 185 | |

- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on page 185-186.
- For fuse curves see pages 152 and 153.

High Speed Fuses

Square Body Flush End Contact — 1000V (IEC): 50–1400A

1000V (IEC) 50–1400A

Specifications

Description: Square body flush end contact high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac.

Amps: — 50-1400A

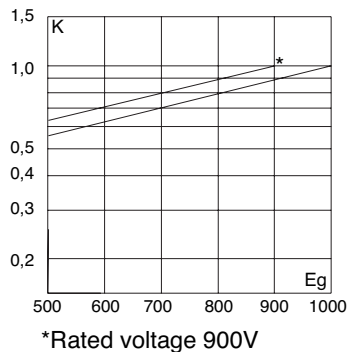
IR: — 150kA (Est. 300kA) RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

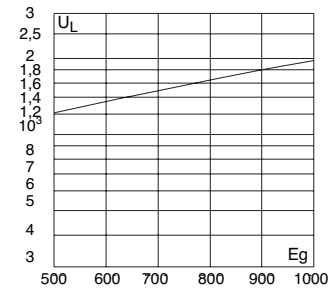
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



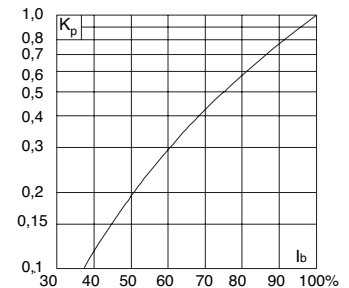
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 124 (690V/700V) and 162 (1250V/1300V)

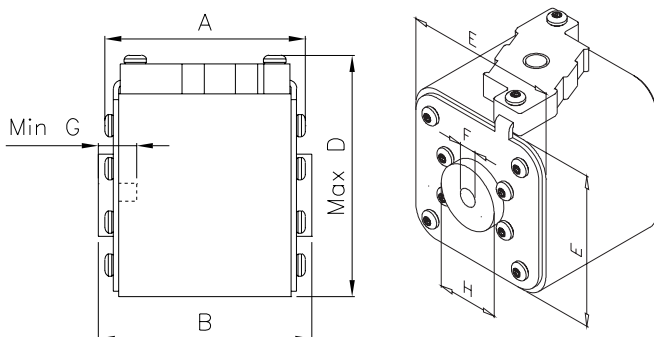
Dimensions (mm)

Type -BKN/- and -GKN/-

| Size | A | B | Max D | E | F | F* (In) | Min G | H |
|-----------------|------|------|-------|----|-----|-------------------|-------|-------|
| 1*BKN/75+GKN/75 | 72.5 | 74 | 61 | 43 | M8 | 5/16" - 18 UNC-2B | 5 | ø17.5 |
| 1BKN/75+GKN/75 | 73.2 | 74 | 69 | 52 | M8 | 5/16" - 18 UNC-2B | 8 | ø20 |
| 2BKN/75+GKN/75 | 73.2 | 74.4 | 77 | 59 | M10 | 3/8" - 16 UNC-2B | 10 | ø24 |
| 3BKN/75+GKN/75 | 73.3 | 75.4 | 92 | 74 | M12 | 1/2" - 13 UNC-2B | 10 | ø30 |
| 3BKN/90+GKN/90 | 80.3 | 91.4 | 92 | 74 | M12 | 1/2" - 13 UNC-2B | 10 | ø30 |

* Valid for fuses type -GKN/-.

1mm = 0.0394" / 1" = 25.4mm



Square Body Flush End Contact — 1000V (IEC): 50–1400A

Catalog Numbers

| Catalog Numbers | | Electrical Characteristics | | | | | |
|---|---|----------------------------|------------------|------------------------------|---------------------------------------|---------------------------------|---------------|
| -BKN/ Type K Indicator for Micro | -GKN/ Type K Indicator for Micro | Size | Rated Voltage | Rated Current RMS-Amps | I ² t (A ² Sec) | | Watts Loss |
| | | | | | Pre-arc | Clearing at Rated Voltage | |
| 170M3951 | 170M3921 | 1* | 1000 | 50 | 135 | 815 | 20 |
| 170M3952 | 170M3922 | | 1000 | 63 | 215 | 1300 | 25 |
| 170M3953 | 170M3923 | | 1000 | 80 | 460 | 2750 | 30 |
| 170M3954 | 170M3924 | | 1000 | 100 | 860 | 5100 | 35 |
| 170M3955 | 170M3925 | | 1000 | 125 | 1450 | 8600 | 40 |
| 170M3956 | 170M3926 | | 1000 | 160 | 2850 | 17500 | 45 |
| 170M3957 | 170M3927 | | 1000 | 200 | 4950 | 29500 | 48 |
| 170M3958 | 170M3928 | | 1000 | 250 | 9550 | 57000 | 50 |
| 170M3959 | 170M3929 | | 1000 | 315 | 21500 | 130000 | 60 |
| 170M3960 | 170M3930 | | 1000 | 350 | 29000 | 175000 | 65 |
| 170M3961 | 170M3931 | | 1000 | 400 | 42000 | 250000 | 70 |
| 170M4951 | 170M4921 | | 1 | 1000 | 160 | 2200 | 13500 |
| 170M4952 | 170M4922 | 1000 | | 200 | 4150 | 24500 | 45 |
| 170M4953 | 170M4923 | 1000 | | 250 | 7750 | 46000 | 52 |
| 170M4954 | 170M4924 | 1000 | | 315 | 16500 | 98500 | 60 |
| 170M4955 | 170M4925 | 1000 | | 350 | 21500 | 130000 | 65 |
| 170M4956 | 170M4926 | 1000 | | 400 | 31000 | 185000 | 70 |
| 170M4957 | 170M4927 | 1000 | | 450 | 44500 | 265000 | 80 |
| 170M4958 | 170M4928 | 1000 | | 500 | 63000 | 375000 | 85 |
| 170M4959 | 170M4929 | 1000 | | 550 | 84500 | 500000 | 90 |
| 170M4960 | 170M4930 | 1000 | | 630 | 125000 | 755000 | 98 |
| 170M5952 | 170M5922 | 2 | 1000 | 250 | 6750 | 40000 | 65 |
| 170M5953 | 170M5923 | | 1000 | 315 | 13500 | 81500 | 75 |
| 170M5954 | 170M5924 | | 1000 | 350 | 16500 | 99000 | 80 |
| 170M5955 | 170M5925 | | 1000 | 400 | 26000 | 155000 | 85 |
| 170M5956 | 170M5926 | | 1000 | 450 | 35500 | 210000 | 90 |
| 170M5957 | 170M5927 | | 1000 | 500 | 49500 | 295000 | 95 |
| 170M5958 | 170M5928 | | 1000 | 550 | 66000 | 390000 | 100 |
| 170M5959 | 170M5929 | | 1000 | 630 | 93500 | 555000 | 110 |
| 170M5960 | 170M5930 | | 1000 | 700 | 130000 | 770000 | 115 |
| 170M5961 | 170M5931 | | 1000 | 800 | 195000 | 1200000 | 125 |
| 170M8600 | 170M8500 | 3 | 1000 | 315 | 9200 | 54500 | 90 |
| 170M8601 | 170M8501 | | 1000 | 350 | 13000 | 77500 | 95 |
| 170M8602 | 170M8502 | | 1000 | 400 | 19000 | 115000 | 105 |
| 170M8603 | 170M8503 | | 1000 | 450 | 27000 | 160000 | 107 |
| 170M8604 | 170M8504 | | 1000 | 500 | 37500 | 225000 | 110 |
| 170M8605 | 170M8505 | | 1000 | 550 | 52000 | 310000 | 115 |
| 170M8606 | 170M8506 | | 1000 | 630 | 82500 | 490000 | 120 |
| 170M8607 | 170M8507 | | 1000 | 700 | 115000 | 700000 | 125 |
| 170M8608 | 170M8508 | | 1000 | 800 | 170000 | 1050000 | 135 |
| 170M8609 | 170M8509 | | 1000 | 900 | 250000 | 1500000 | 145 |
| 170M8610 | 170M8510 | | 1000 | 1000 | 340000 | 2050000 | 150 |
| 170M8611 | 170M8511 | | 1000 | 1100 | 460000 | 2750000 | 155 |
| 170M8612** | 170M8512** | | 1000 | 1250 | 575000 | 3400000 | 175 |
| 170M8613** | 170M8513** | | 900 | 1400 | 795000 | 4200000 | 185 |

**Overall length is 90mm, for all other fuses the overall length is 75mm.

• Watts loss provided at rated current.

• Microswitch ordered separately. See accessories on page 185-186.

• For fuse curves see pages 152 and 153.

Square Body US style — 1000V (IEC): 50-1400A

1000V (IEC) 50-1400A

Specifications

Description: Square body US style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

- Volts: — 1000Vac.
- Amps: — 50-1400A
- IR: — 150kA RMS Sym.

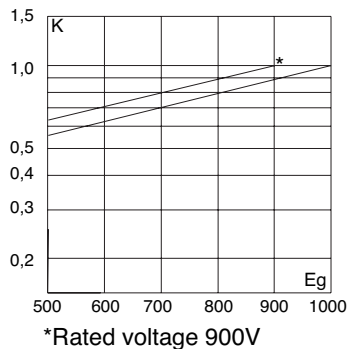
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.



Electrical Characteristics

Total clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).

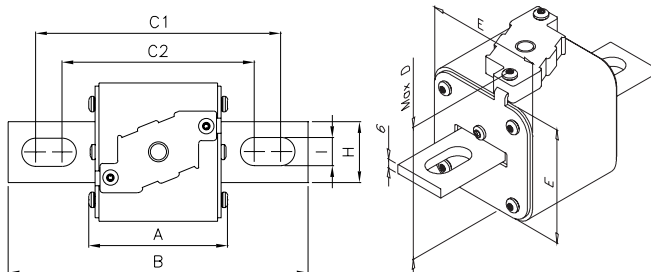


Dimensions (mm)

Type -FKE/115

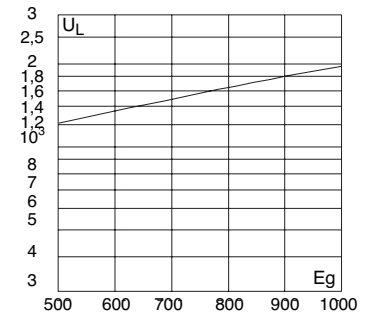
| Size | B | C1 | C2 | D | E | H | I |
|-----------|-----|-----|-----|----|----|----|----|
| 1*FKE/115 | 156 | 130 | 101 | 59 | 45 | 20 | 10 |
| 1FKE/115 | 160 | 127 | 102 | 69 | 53 | 25 | 14 |
| 2FKE/115 | 160 | 127 | 102 | 77 | 61 | 25 | 14 |
| 3FKE/115 | 159 | 128 | 101 | 92 | 76 | 36 | 16 |

1mm = 0.0394" / 1" = 25.4mm



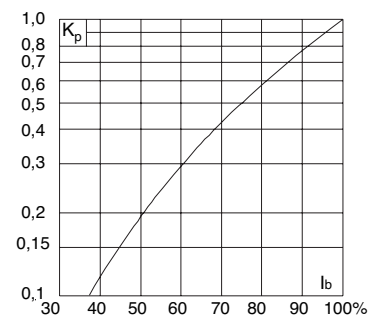
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 126 (690V/700V) and 164 (1250V/1300)

Square Body US style — 1000V (IEC): 50-1400A

Catalog Numbers

| Catalog Numbers -FKE/115 Type K Indicator for Micro | Size | Electrical Characteristics | | | |
|---|------|------------------------------|---------------------------------------|----------------------|---------------|
| | | Rated Current RMS-Amps | I ² t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 1000V | |
| 170M3531 | 1* | 50 | 135 | 815 | 20 |
| 170M3532 | | 63 | 215 | 1300 | 25 |
| 170M3533 | | 80 | 460 | 2750 | 30 |
| 170M3534 | | 100 | 860 | 5100 | 35 |
| 170M3535 | | 125 | 1450 | 8600 | 40 |
| 170M3536 | | 160 | 2850 | 17500 | 45 |
| 170M3537 | | 200 | 4950 | 29500 | 48 |
| 170M3538 | | 250 | 9550 | 57000 | 50 |
| 170M3539 | | 315 | 21500 | 130000 | 60 |
| 170M3540 | | 350 | 29000 | 175000 | 65 |
| 170M3541 | 400 | 42000 | 250000 | 70 | |
| 170M4531 | 1 | 160 | 2200 | 13500 | 40 |
| 170M4532 | | 200 | 4150 | 24500 | 45 |
| 170M4533 | | 250 | 7750 | 46000 | 52 |
| 170M4534 | | 315 | 16500 | 98500 | 60 |
| 170M4535 | | 350 | 21500 | 130000 | 65 |
| 170M4536 | | 400 | 31000 | 185000 | 70 |
| 170M4537 | | 450 | 44500 | 265000 | 80 |
| 170M4538 | | 500 | 63000 | 375000 | 85 |
| 170M4539 | | 550 | 84500 | 500000 | 90 |
| 170M4540 | | 630 | 125000 | 755000 | 98 |
| 170M5531 | 2 | 250 | 6750 | 40000 | 65 |
| 170M5532 | | 315 | 13500 | 81500 | 75 |
| 170M5533 | | 350 | 16500 | 99000 | 80 |
| 170M5534 | | 400 | 26000 | 155000 | 85 |
| 170M5535 | | 450 | 35500 | 210000 | 90 |
| 170M5536 | | 500 | 49500 | 295000 | 95 |
| 170M5537 | | 550 | 66000 | 390000 | 100 |
| 170M5538 | | 630 | 93500 | 555000 | 110 |
| 170M5539 | | 700 | 130000 | 770000 | 115 |
| 170M5540 | | 800 | 195000 | 1200000 | 125 |
| 170M8531 | 3 | 315 | 9200 | 54500 | 90 |
| 170M8532 | | 350 | 13000 | 77500 | 95 |
| 170M8533 | | 400 | 19000 | 115000 | 105 |
| 170M8534 | | 450 | 27000 | 160000 | 107 |
| 170M8535 | | 500 | 37500 | 225000 | 110 |
| 170M8536 | | 550 | 52000 | 310000 | 115 |
| 170M8537 | | 630 | 82500 | 490000 | 120 |
| 170M8538 | | 700 | 115000 | 700000 | 125 |
| 170M8539 | | 800 | 170000 | 1050000 | 135 |
| 170M8540 | | 900 | 250000 | 1500000 | 145 |
| 170M8541 | | 1000 | 340000 | 2050000 | 150 |
| 170M8542 | | 1100 | 460000 | 2750000 | 155 |
| 170M8543 | | 1250 | 575000 | 3400000 | 175 |
| 170M8544* | | 1400 | 795000 | 4200000* | 185 |

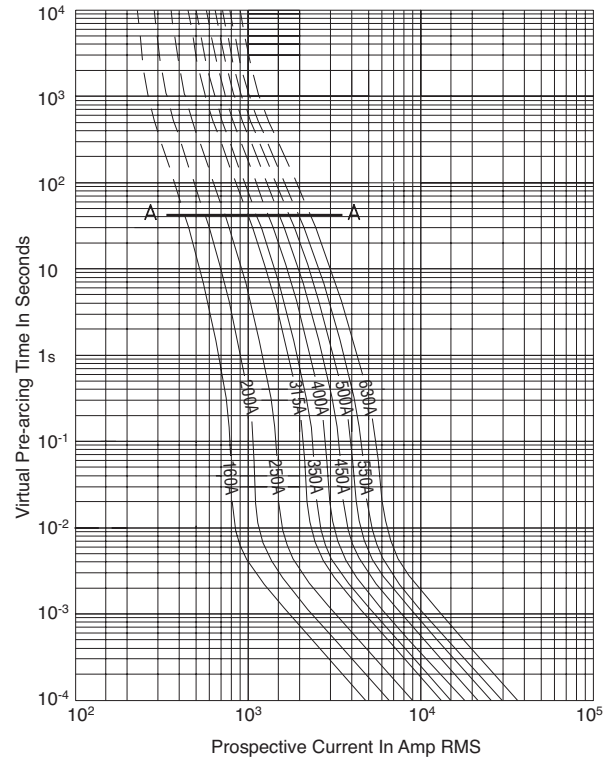
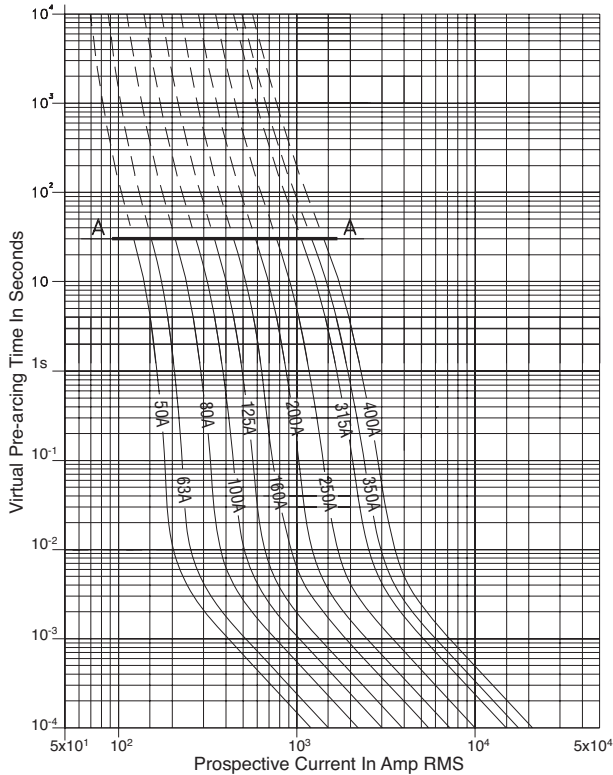
- * Rated voltage 900V.
- Watts loss provided at rated current.
- Microswitch ordered separately. See accessories on pages 185-186.
- For fuse curves see pages 152 and 153.

High Speed Fuses

Square Body Size 1*, 1 — 1000V (IEC): 50-1400A

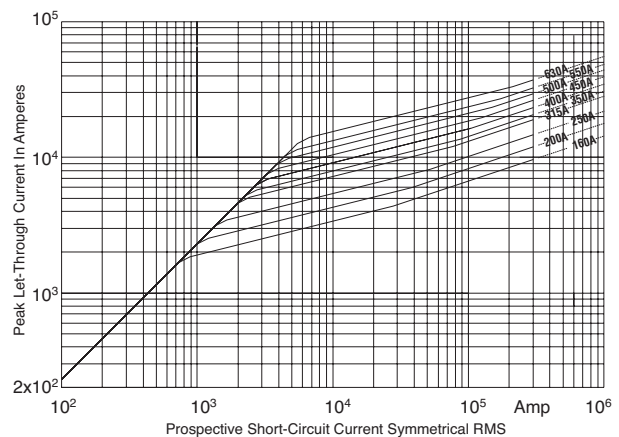
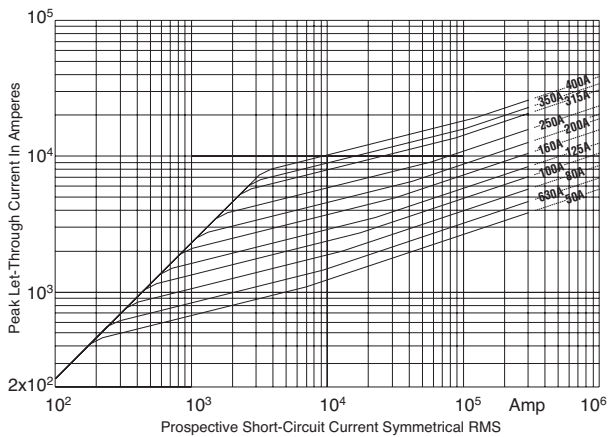
Size 1* — 50-400A: 1000V
Time-Current Curve

Size 1 — 160-630A: 1000V
Time-Current Curve



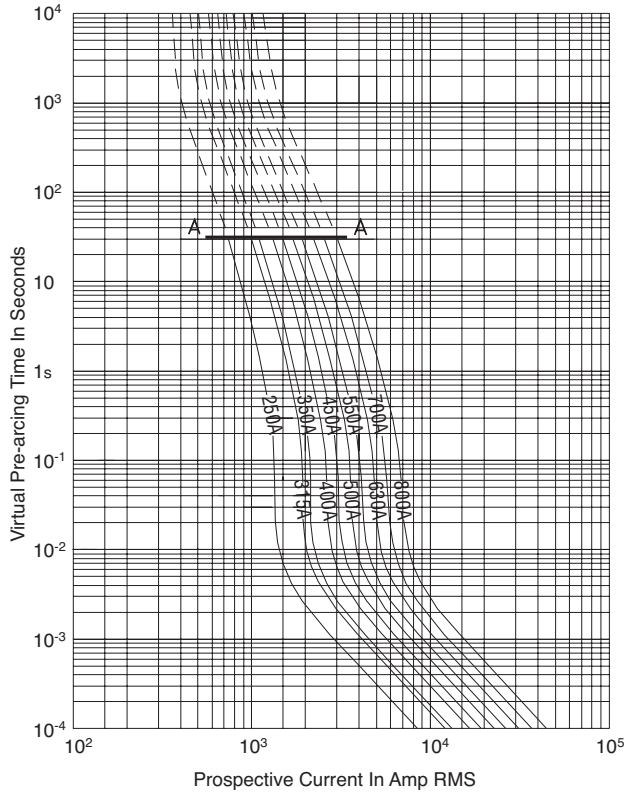
Peak Let-Through Curve

Peak Let-Through Curve

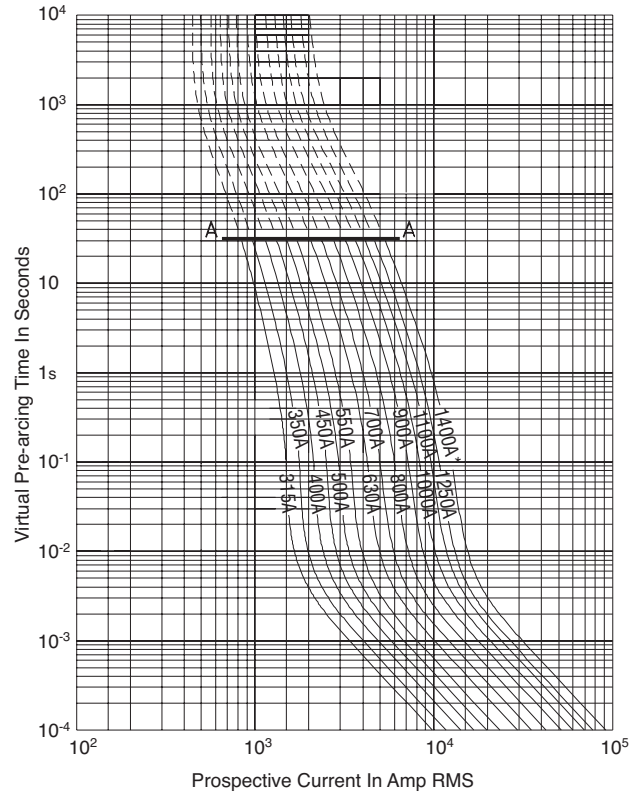


Square Body Size 2, 3 — 1000V (IEC): 50-1400A

Size 2 — 250-800A: 1000V
Time-Current Curve

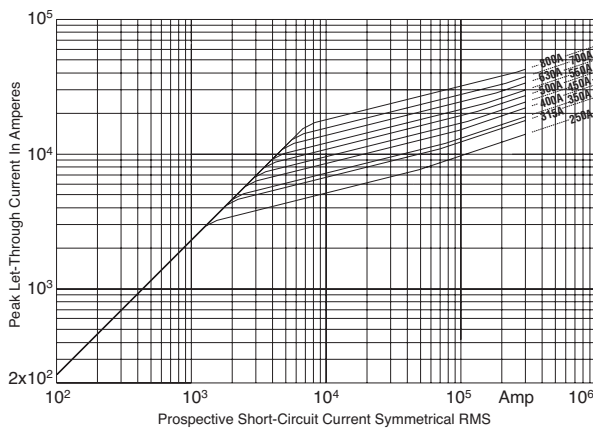


Size 3 — 315-1400A: 1000V
Time-Current Curve

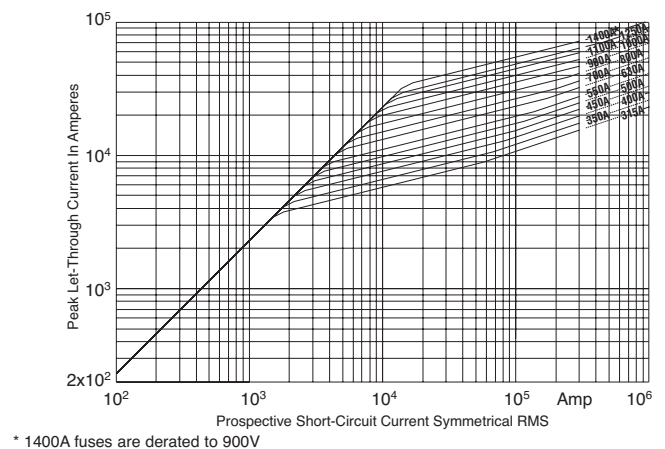


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

1000V (IEC) 1000-2700A

Specifications

Description: Square body DIN 43 620 blade style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac (IEC)

Amps: — 1000-2700A

IR: — 125kA RMS Sym.

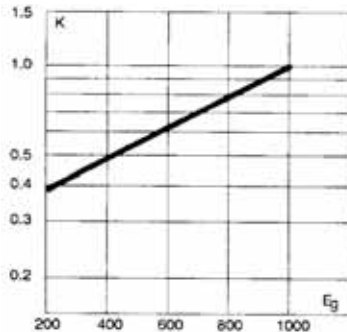
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.



Electrical Characteristics

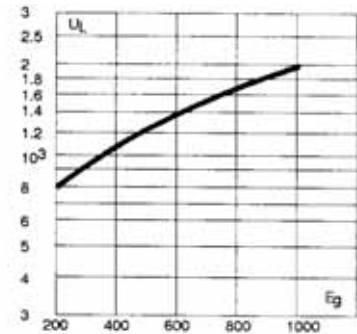
Total clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_G, (rms).



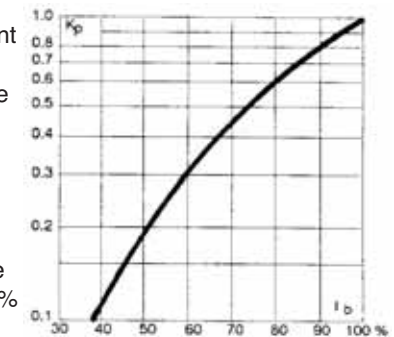
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage E_G, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 135 (690V/700V) and 168 (1250V)

Catalog Numbers

| Fuse Size | Catalog Number | | Electrical Characteristics | | | | |
|-----------|--------------------------------|---------------------------------|----------------------------|-----------------------------|---------------------------------------|----------------------|---------------------|
| | -BKN/95 Type K Indicator | -SBKN/90 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I ² t (A ² Sec) | | Watt Loss (W) |
| | | | | | Pre-arc | Clearing at 1000V | |
| 4 | | 170M7542 | 1000 | 1000 | 180000 | 1100000 | 195 |
| | | 170M7031 | | 1100 | 250000 | 1500000 | 200 |
| | 170M7636 | 170M7548 | | 1500 | 600000 | 3600000 | 250 |
| | 170M7639 | 170M7034 | | 1700 | 850000 | 5000000 | 260 |
| | 170M7963 | 170M7544 | | 2000 | 1450000 | 8600000 | 270 |
| | 170M7090 | 170M7035 | | 2200 | 2000000 | 12000000 | 280 |
| | 170M7640 | 170M7036 | | 2500 | 3000000 | 18000000 | 295 |
| | 170M7658 | 170M7037 | | 2700 | 3700000 | 22000000 | 310 |

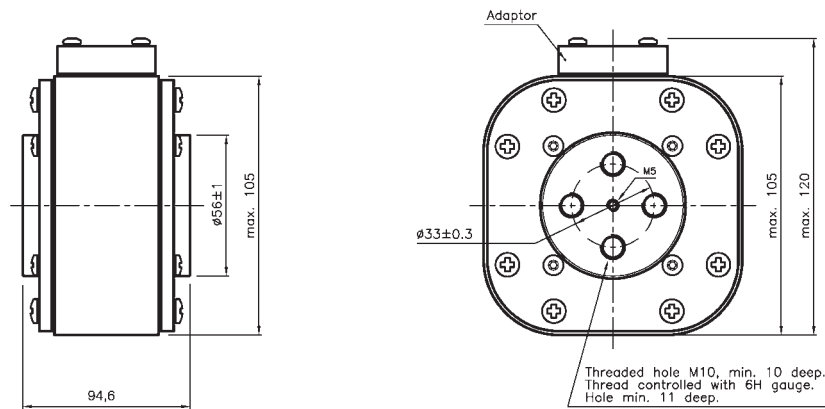
Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

Flush End Contact - Size 4

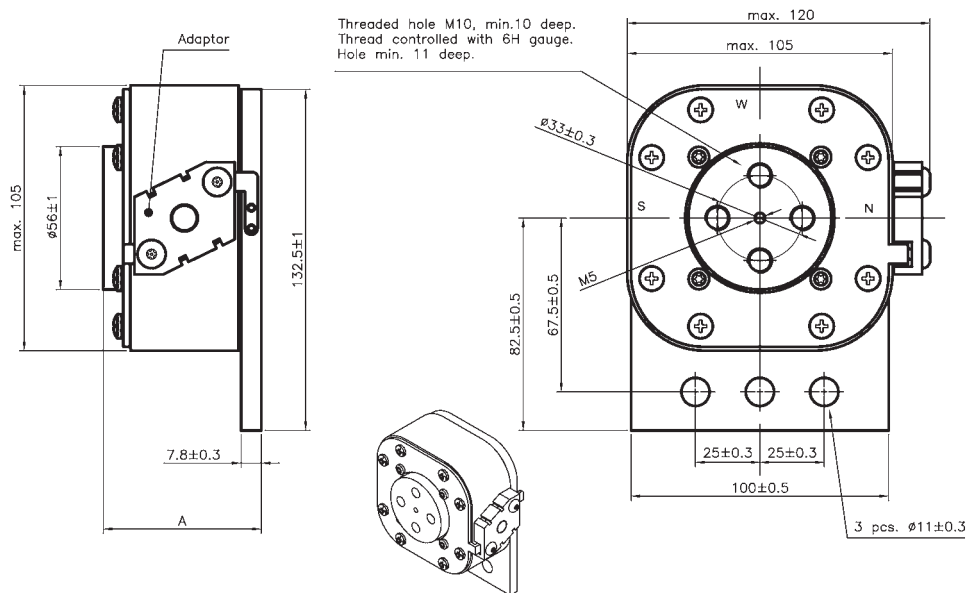
1000V : 1000 – 2700A

Dimensions (mm):

Type 4BKN/95



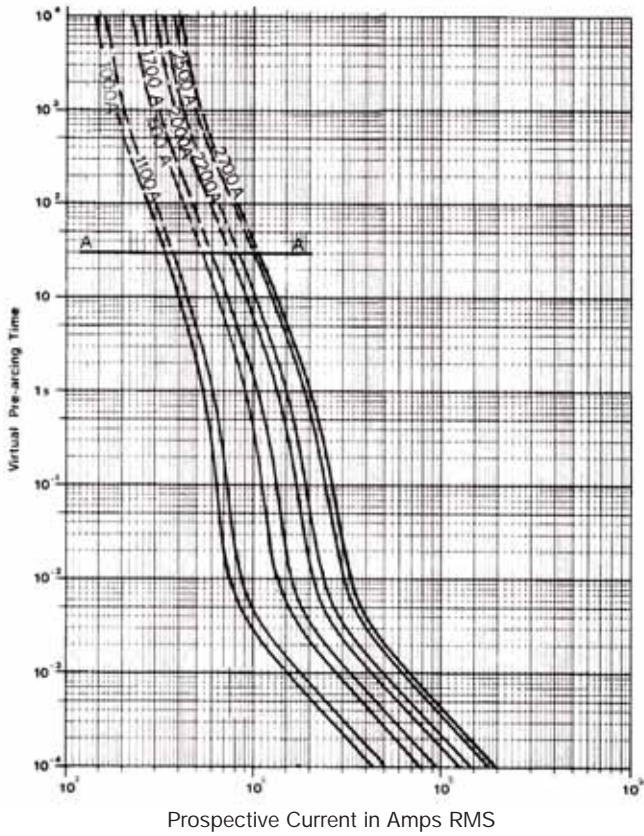
Type 4SBKN/95



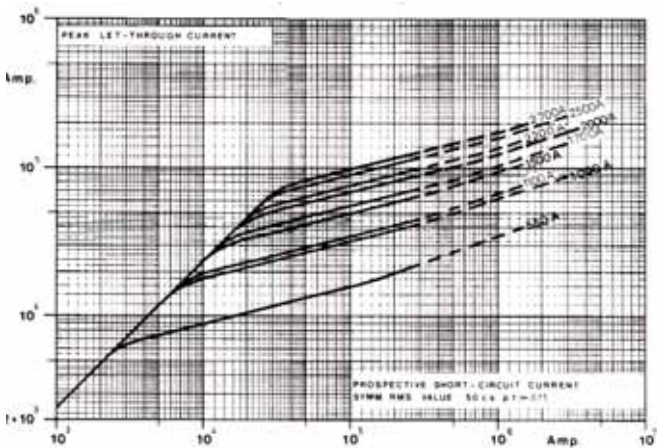
High Speed
Fuses

Square Body Flush End Contact Size 4 — 1000V (IEC): 1000-2700A

Size 4 — 1000-2700A: 660V
Time-Current Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Square Body Flush End Contact Size 24 — 1000V (IEC): 2000-5000A

1000V (IEC) 2000-5000A

Specifications

Description: High speed square body fuses, for the protection of the power rectifier section of the equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac

Amps: — 2000-5000A

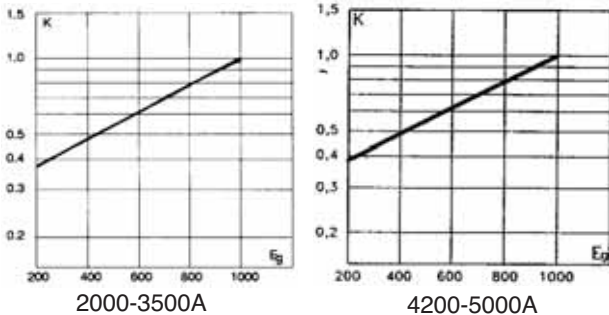
IR: — 300kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.



Electrical Characteristics

Total clearing I^2t



The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

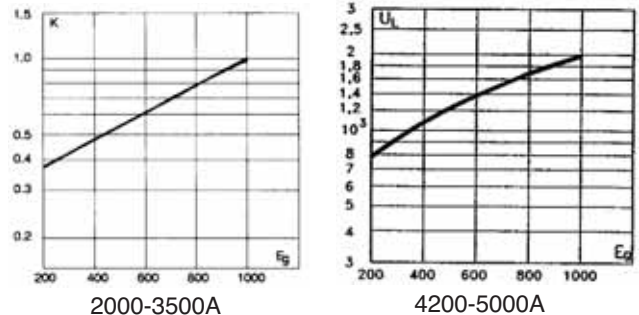
Features and Benefits

- Low watts loss
- Superior cycling capability

Typical Applications

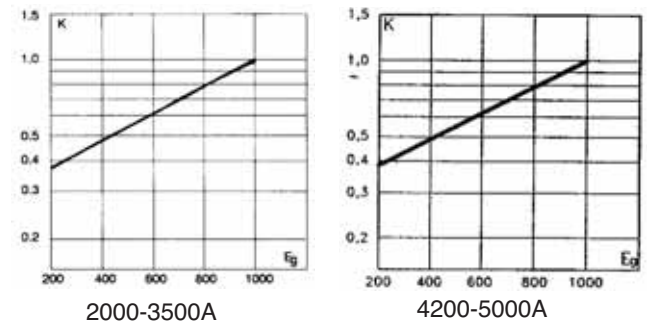
- Power converters/rectifiers
- Reduced voltage starters

Arc Voltage



This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.

Power Losses



Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.

For Other Voltage Ratings in This Body Style

- See pages 137 (660V) and 171 (1250V)

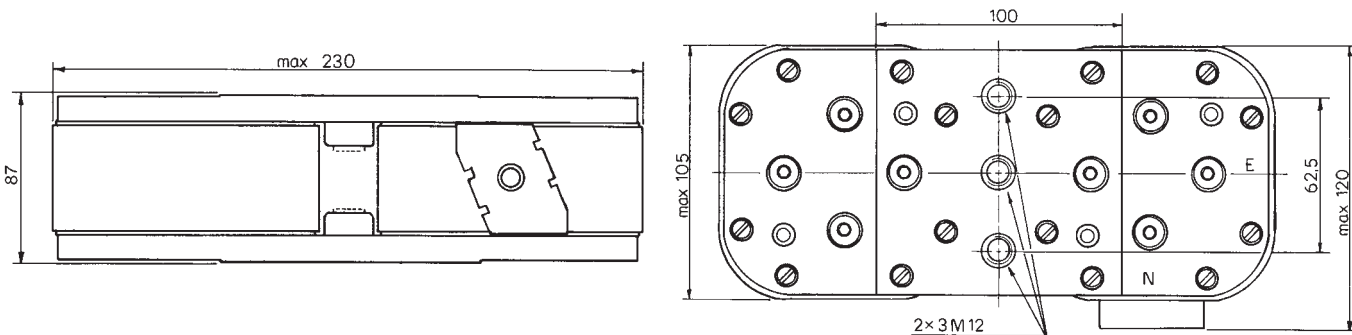
Square Body Flush End Contact Size 24 — 1000V (IEC): 2000-5000A

Catalog Numbers

| Fuse Size | Cat. Number | Rated Voltage (V) | Rated Current RMS-Amp | Electrical Characteristics | | Watt Loss (W) |
|-----------|-------------|-------------------|-----------------------|-----------------------------|-------------------|---------------|
| | | | | I^2t (A ² Sec) | | |
| | | | | Pre-arc | Clearing at 1000V | |
| 24 | 170M7608 | 1000 | 2000 | 885000 | 5700000 | 345 |
| | 170M7680 | | 3000 | 2900000 | 19000000 | 430 |
| | 170M7567 | | 3200 | 3300000 | 20000000 | 440 |
| | 170M7568 | | 3500 | 4500000 | 27000000 | 450 |
| | 170M7569 | | 4000 | 6800000 | 40000000 | 475 |
| | 170M7498 | | 4200 | 8000000 | 47500000 | 485 |
| | 170M7488 | | 4500 | 10000000 | 59000000 | 495 |
| | 170M7622 | | 5000 | 14000000 | 82500000 | 540 |

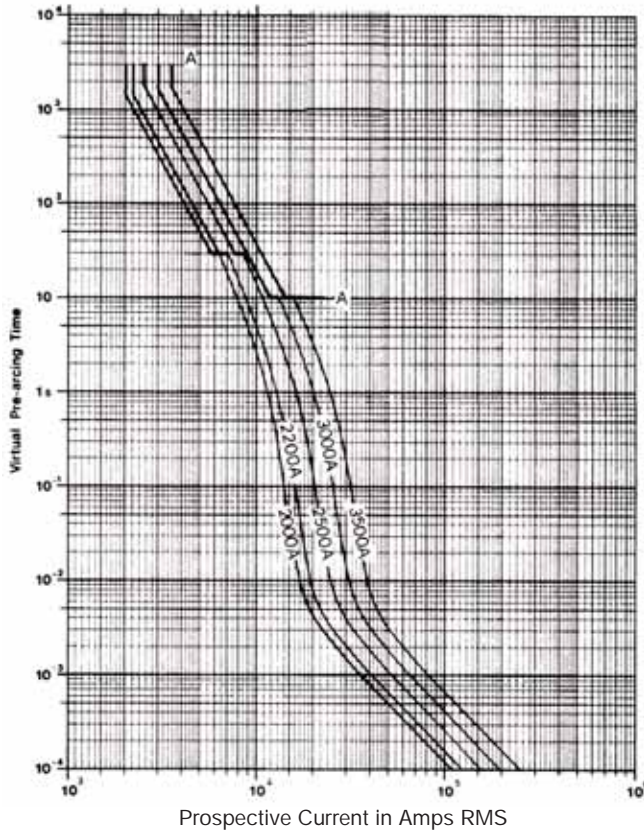
Data Sheet: 170K7540, 170K8514

Dimensions (mm):

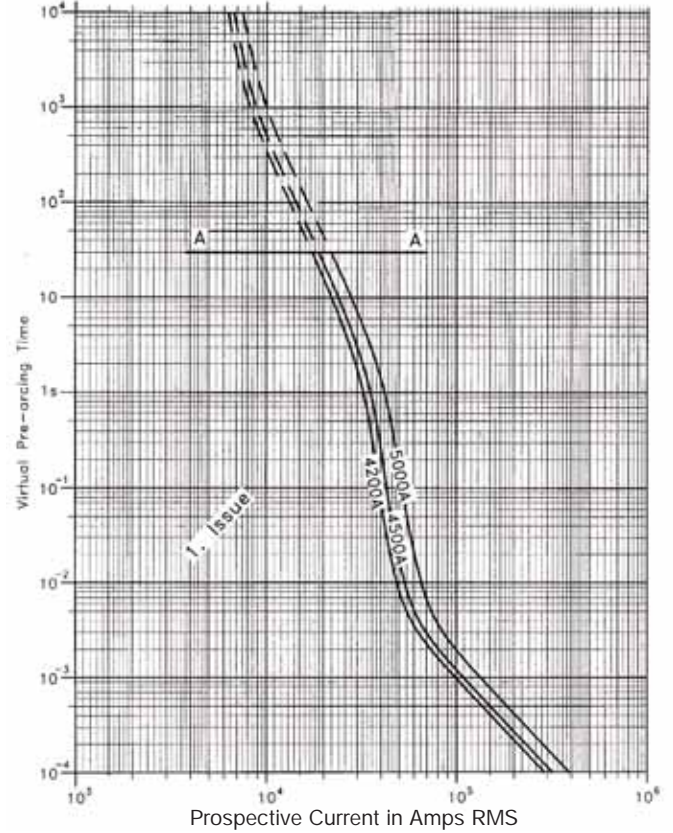


Square Body Flush End Contact Size 24 — 1000V (IEC): 2000-5000A

Size 24 — 2000-3500A: 1000V
Time-Current Curve

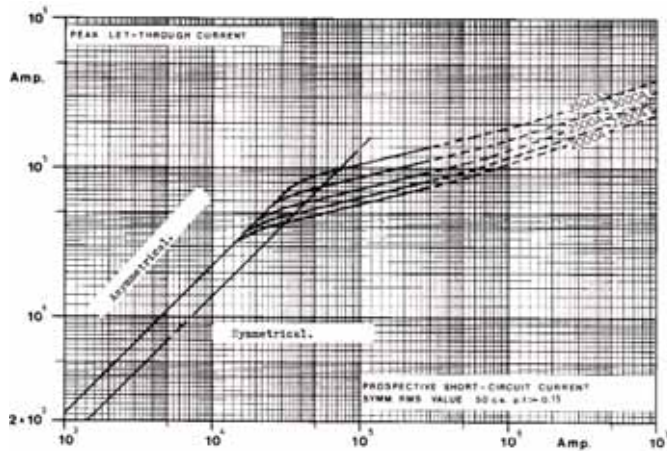


Size 24 — 4200-5000A: 1000V
Time-Current Curve

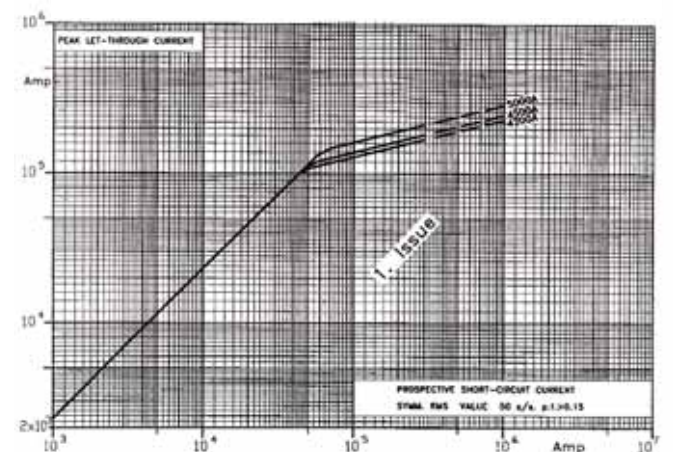


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

1250V/1300V (IEC/UL) 50-1400A

Specifications

Description: Square body DIN 43 653 stud-mount high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1250Vac (IEC)
— 1300Vac (UL)

Amps: — 50-1400A

IR: — 100kA RMS Sym.

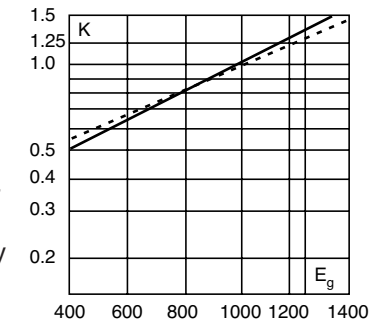
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.



Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

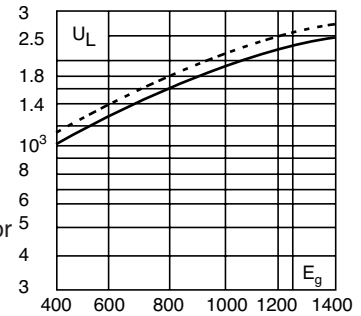


Dashed lines (-----) apply to the following amperages:.

| Size | Amps. |
|------|-----------|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

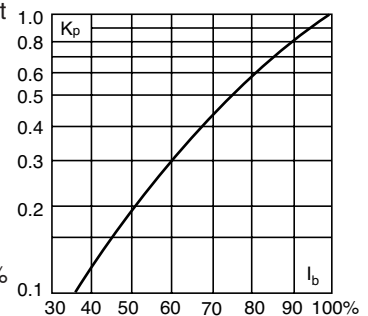
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 122 (690V/700V) and 146 (1000V)

Dimensions (mm)

Type -KN/110

| Size | A | B | D | E | H |
|------|----|-----|----|----|----|
| 1* | 80 | 138 | 58 | 45 | 20 |
| 1 | 80 | 138 | 66 | 53 | 25 |
| 2 | 80 | 138 | 75 | 61 | 25 |
| 3 | 81 | 139 | 90 | 76 | 30 |

1mm = 0.0394" / 1" = 25.4mm

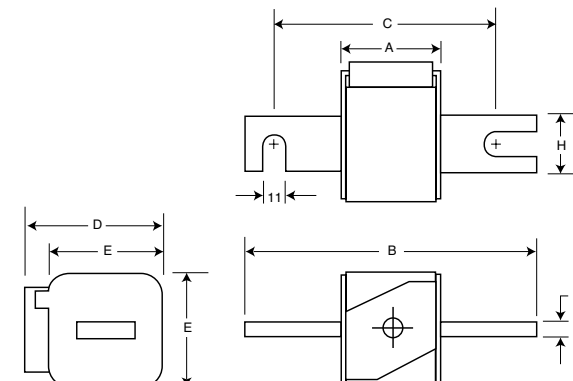
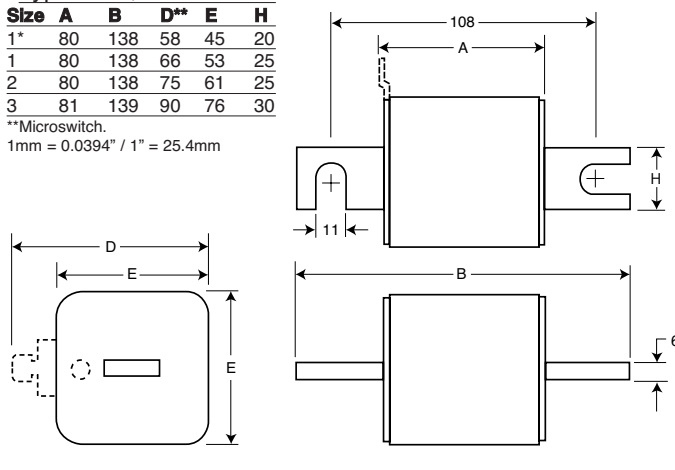
Dimensions (mm)

Type -/110, -TN/110

| Size | A | B | D** | E | H |
|------|----|-----|-----|----|----|
| 1* | 80 | 138 | 58 | 45 | 20 |
| 1 | 80 | 138 | 66 | 53 | 25 |
| 2 | 80 | 138 | 75 | 61 | 25 |
| 3 | 81 | 139 | 90 | 76 | 30 |

**Microswitch.

1mm = 0.0394" / 1" = 25.4mm



Square Body DIN 43 653 — 1250V/1300V (IEC/UL): 50-1400A

Catalog Numbers

| Catalog Numbers | | | Size | Electrical Characteristics | | | | Watts Loss |
|------------------------------|---|---|-------|------------------------------|---------------------------------------|----------------------|----------------------|------------|
| -I110 Visual Indicator | -TN/110 Type T Indicator for Micro | -KN/110 Type K Indicator for Micro | | Rated Current RMS-Amps | I ² t (A ² Sec) | | | |
| | | | | | Pre-arc | Clearing at 1000V | Clearing at 1250V | |
| 170M3138 | 170M3188 | 170M3238 | 1* | 50 | 135 | 815 | 1100 | 15 |
| 170M3139 | 170M3189 | 170M3239 | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3140 | 170M3190 | 170M3240 | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3141 | 170M3191 | 170M3241 | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3142 | 170M3192 | 170M3242 | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3143 | 170M3193 | 170M3243 | | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3144 | 170M3194 | 170M3244 | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3145 | 170M3195 | 170M3245 | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3146 | 170M3196 | 170M3246 | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3147 | 170M3197 | 170M3247 | | 350 | 27000 | 165000 | 220000 | 65 |
| 170M3148 | 170M3198 | 170M3248 | 400 | 53000 | 265000 | 335000 | 70 | |
| 170M4138 | 170M4188 | 170M4238 | 1 | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4139 | 170M4189 | 170M4239 | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4140 | 170M4190 | 170M4240 | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4141 | 170M4191 | 170M4241 | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4142 | 170M4192 | 170M4242 | | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4143 | 170M4193 | 170M4243 | | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4144 | 170M4194 | 170M4244 | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4145 | 170M4195 | 170M4245 | | 500 | 69500 | 340000 | 435000 | 85 |
| 170M4146 | 170M4196 | 170M4246 | | 550 | 95000 | 465000 | 590000 | 95 |
| 170M4147 | 170M4197 | 170M4247 | | 630† | 130000 | 660000 | | 100 |
| 170M5138 | 170M5188 | 170M5238 | 2 | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5139 | 170M5189 | 170M5239 | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5140 | 170M5190 | 170M5240 | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5141 | 170M5191 | 170M5241 | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5142 | 170M5192 | 170M5242 | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5143 | 170M5193 | 170M5243 | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5144 | 170M5194 | 170M5244 | | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5145 | 170M5195 | 170M5245 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5146 | 170M5196 | 170M5246 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5147 | 170M5197 | 170M5247 | | 700 | 160000 | 795000 | 1050000 | 115 |
| 170M5148 | 170M5198 | 170M5248 | 800 | 245000 | 1200000 | 1550000 | 120 | |
| 170M5149 | 170M5199 | 170M5249 | 900‡ | 360000 | 1750000 | | 125 | |
| 170M5150 | 170M5200 | 170M5250 | 1000‡ | 480000 | 2350000 | | 135 | |
| 170M6138 | 170M6188 | 170M6238 | 3 | 315 | 9500 | 58000 | 77500 | 85 |
| 170M6139 | 170M6189 | 170M6239 | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6140 | 170M6190 | 170M6240 | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6141 | 170M6191 | 170M6241 | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6142 | 170M6192 | 170M6242 | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6143 | 170M6193 | 170M6243 | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6144 | 170M6194 | 170M6244 | | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6145 | 170M6195 | 170M6245 | | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6146 | 170M6196 | 170M6246 | | 800‡ | 205000 | 995000 | 1300000 | 125 |
| 170M6147 | 170M6197 | 170M6247 | | 900‡ | 305000 | 1500000 | 1900000 | 130 |
| 170M6148 | 170M6198 | 170M6248 | 1000‡ | 450000 | 2150000 | 2750000 | 135 | |
| 170M6149 | 170M6199 | 170M6249 | 1100‡ | 575000 | 2800000 | 3600000 | 140 | |
| 170M6150 | 170M6200 | 170M6250 | 1250‡ | 810000 | 3950000 | | 145 | |
| 170M6151 | 170M6201 | 170M6251 | 1400‡ | 1250000 | 6000000 | | 150 | |

†Rated voltage (IEC) 1100V.

‡Rated voltage (IEC) 1250V.

• Watts loss provided at rated current.

• Microswitch indicator ordered separately. See accessories on pages 185-186.

• For fuse curves see pages 166 and 167.

High Speed
Fuses

Square Body Flush End Contact — 1250V/1300V (IEC/UL): 50-1400A

1250V/1300V (IEC/UL) 50-1400A

Specifications

Description: Square body flush end contact high speed fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 1250Vac (IEC)

— 1300Vac (UL)

Amps: — 50-1400A

IR: — 100kA RMS Sym.

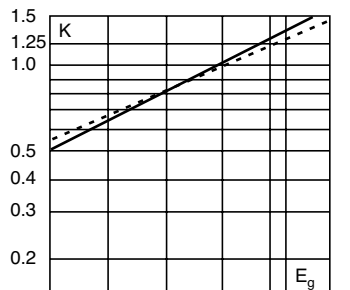
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.



Electrical Characteristics

Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



Dashed lines (-----) apply to the following amperages:

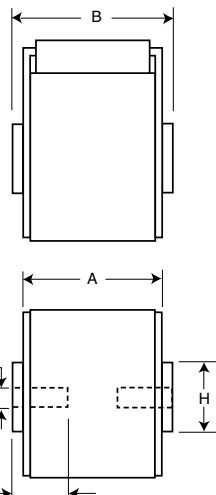
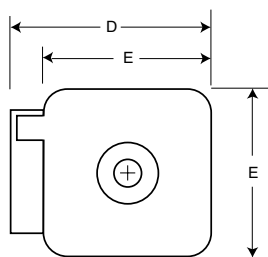
| Size | Amps. |
|------|-----------|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

Dimensions (mm)

Type -BKN/-, -GKN/-

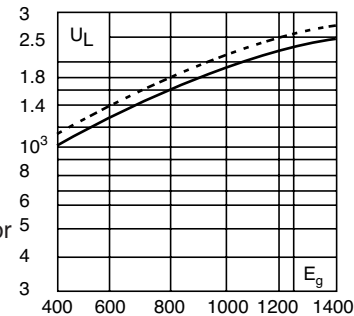
| Size | Type | A | B | D | E | F | F** (In) | G | H |
|------|--------------|----|----|----|----|-----|-------------------|----|-----|
| 1* | BKN + GKN/75 | 74 | 75 | 59 | 45 | M8 | 5/16" - 18 UNC-2B | 5 | Ø17 |
| 1* | BKN/80 | 80 | 81 | 59 | 45 | M8 | | 5 | Ø17 |
| 1 | BKN + GKN/75 | 74 | 75 | 69 | 53 | M8 | 5/16" - 18 UNC-2B | 8 | Ø20 |
| 1 | BKN/80 | 80 | 81 | 69 | 53 | M8 | | 8 | Ø20 |
| 2 | BKN + GKN/75 | 74 | 75 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | Ø24 |
| 2 | BKN/80 | 80 | 81 | 77 | 61 | M10 | | 10 | Ø24 |
| 2 | BKN + GKN/90 | 80 | 91 | 77 | 61 | M10 | 3/8" - 16 UNC-2B | 10 | Ø24 |
| 3 | BKN + GKN/75 | 74 | 76 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | Ø30 |
| 3 | BKN/80 | 81 | 83 | 92 | 76 | M12 | | 10 | Ø30 |
| 3 | BKN + GKN/90 | 81 | 91 | 92 | 76 | M12 | 1/2" - 13 UNC-2B | 10 | Ø30 |

**Valid for fuses type -GKN/-.
1mm = 0.0394" / 1" = 25.4mm



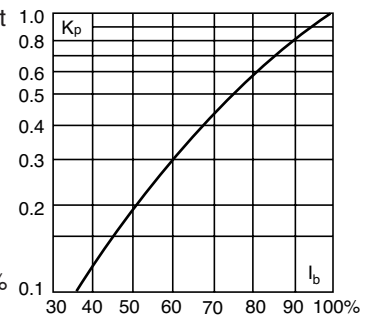
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 124 (690V/700V) and 148 (1000V)

Square Body Flush End Contact — 1250V/1300V (IEC/UL): 50-1400A

Catalog Numbers

| Catalog Numbers | | | | | Electrical Characteristics | | | | | |
|---|---|---|---|---|----------------------------|----------------------------------|---------------------------------------|----------------------|----------------------|---------------|
| -BKN/75 Type K Indicator for Micro | -BKN/80 Type K Indicator for Micro | -BKN/90 Type K Indicator for Micro | -GKN/75 Type K Indicator for Micro | -GKN/90 Type K Indicator for Micro | Size | Rated Current RMS- Amps | I ² t (A ² Sec) | | | Watts Loss |
| | | | | | | | Pre-arc | Clearing at 1000V | Clearing at 1250V | |
| 170M3388 | 170M3438 | | 170M3488 | | 1* | 50 | 135 | 815 | 1100 | 15 |
| 170M3389 | 170M3439 | | 170M3489 | | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3390 | 170M3440 | | 170M3490 | | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3391 | 170M3441 | | 170M3491 | | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3392 | 170M3442 | | 170M3492 | | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3393 | 170M3443 | | 170M3493 | | | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3394 | 170M3444 | | 170M3494 | | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3395 | 170M3445 | | 170M3495 | | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3396 | 170M3446 | | 170M3496 | | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3397 | 170M3447 | | 170M3497 | | | 350 | 27000 | 165000 | 220000 | 65 |
| | 170M3448 | | | | 400 | 53000 | 265000 | 335000 | 70 | |
| 170M4388 | 170M4438 | | 170M4488 | | 1 | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4389 | 170M4439 | | 170M4489 | | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4390 | 170M4440 | | 170M4490 | | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4391 | 170M4441 | | 170M4491 | | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4392 | 170M4442 | | 170M4492 | | | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4393 | 170M4443 | | 170M4493 | | | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4394 | 170M4444 | | 170M4494 | | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4395† | 170M4445 | | 170M4495† | | | 500 | 69500 | 340000 | 435000 | 85 |
| 170M4396‡ | 170M4446 | | 170M4496‡ | | | 550 | 95000 | 465000 | 590000 | 95 |
| 170M4397‡ | 170M4447† | | 170M4497‡ | | | 630 | 130000 | 660000 | | 100 |
| 170M5388 | 170M5438 | | 170M5588 | | 2 | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5389 | 170M5439 | | 170M5589 | | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5390 | 170M5440 | | 170M5590 | | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5391 | 170M5441 | | 170M5591 | | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5392 | 170M5442 | | 170M5592 | | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5393 | 170M5443 | | 170M5593 | | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5394 | 170M5444 | 170M5494 | 170M5594 | 170M5644 | | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5395 | 170M5445 | 170M5495 | 170M5595 | 170M5645 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5396† | 170M5446 | 170M5496 | 170M5596† | 170M5646 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5397‡ | 170M5447† | 170M5497 | 170M5597‡ | 170M5647 | | 700 | 160000 | 795000 | 1050000 | 115 |
| 170M5398‡ | 170M5448‡ | 170M5498 | 170M5598‡ | 170M5648 | 800 | 245000 | 1200000 | 1550000 | 120 | |
| | | 170M5499 | | 170M5649 | 900† | 360000 | 1750000 | | 125 | |
| | | 170M5500 | | 170M5650 | 1000† | 480000 | 2350000 | | 135 | |
| 170M6338 | 170M6538 | | 170M6588 | | 3 | 315 | 9500 | 58000 | 77500 | 85 |
| 170M6339 | 170M6539 | | 170M6589 | | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6340 | 170M6540 | | 170M6590 | | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6341 | 170M6541 | | 170M6591 | | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6342 | 170M6542 | | 170M6592 | | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6343 | 170M6543 | | 170M6593 | | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6344 | 170M6544 | 170M6494 | 170M6594 | 170M6644 | | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6345 | 170M6545 | 170M6495 | 170M6595 | 170M6645 | | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6346† | 170M6546 | 170M6496¥ | 170M6596† | 170M6646¥ | | 800 | 205000 | 995000 | 1300000 | 125 |
| 170M6347‡ | 170M6547† | 170M6497¥ | 170M6597‡ | 170M6647¥ | | 900 | 305000 | 1500000 | 1900000 | 130 |
| 170M6348‡ | 170M6548† | 170M6498¥ | 170M6598‡ | 170M6648¥ | 1000 | 450000 | 2150000 | 2750000 | 135 | |
| 170M6349‡ | 170M6549‡ | 170M6499¥ | 170M6599‡ | 170M6649¥ | 1100 | 575000 | 2800000 | 3600000 | 140 | |
| | | 170M6500 | | 170M6650 | 1250† | 810000 | 3950000 | | 145 | |
| | | 170M6501 | | 170M6651 | 1400† | 1250000 | 6000000 | | 150 | |

†Rated voltage (IEC) 1100V.

‡Rated voltage (IEC) 1000V.

¥Rated voltage (IEC) 1250V.

• Watts loss provided at rated current.

• Microswitch indicator ordered separately. See accessories on pages 185-186.

• For fuse curves see pages 166 and 167.

High Speed Fuses

Square Body US Style — 1250V/1300V (IEC/UL): 50-1400A

1250V/1300V (IEC/UL) 50-1400A

Specifications

Description: Square body US style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

- Volts: — 1250Vac (IEC)
- 1300Vac (UL)

Amps: — 50-1400A

IR: — 100kA RMS Sym.

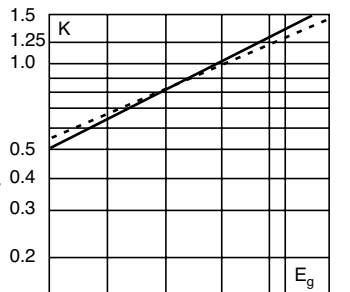
Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized. Consult Cooper Bussmann for UL Recognition/CSA Component Acceptance status.



Electrical Characteristics

Total Clearing I²t

The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



Dashed lines (- - - -) apply to the following amperages:

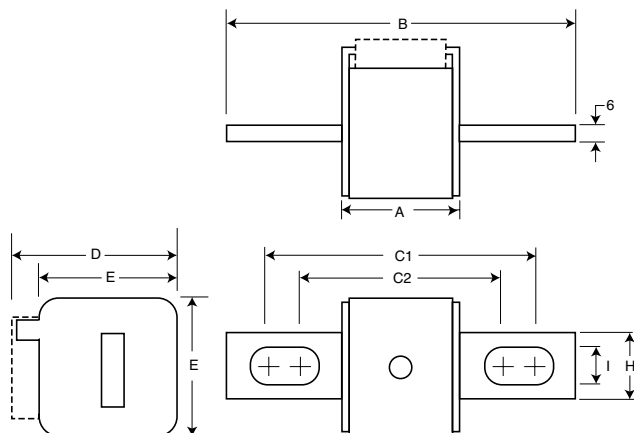
| Size | Amps. |
|------|-----------|
| 1* | 400A |
| 1 | 500-630A |
| 2 | 630-1000A |
| 3 | 800-1400A |

Dimensions (mm)

Type -FU/115, -FKE/115

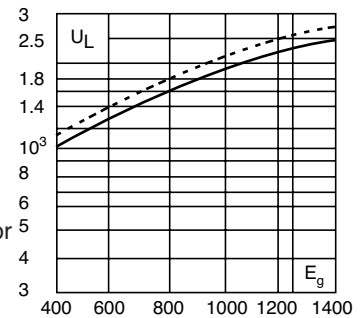
| Size | B | C1 | C2 | D | E | H | I |
|------|-----|-----|-----|----|----|----|----|
| 1* | 156 | 130 | 101 | 59 | 45 | 20 | 10 |
| 1 | 160 | 127 | 102 | 69 | 53 | 25 | 14 |
| 2 | 160 | 127 | 102 | 77 | 61 | 25 | 14 |
| 3 | 159 | 128 | 101 | 92 | 76 | 36 | 16 |

1mm = 0.0394" / 1" = 25.4mm



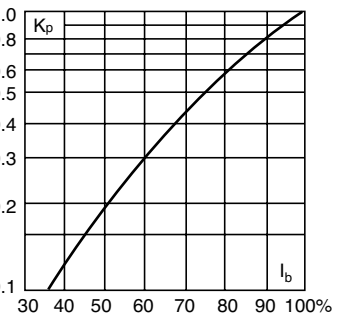
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 126 (690V/700V) and 150 (1000V)

Square Body US Style — 1250V/1300V (IEC/UL): 50-1400A

Catalog Numbers

| Catalog Numbers | | Size | Electrical Characteristics | | | | |
|---------------------------------|--|-------|------------------------------|---------------------------------------|----------------------|----------------------|---------------|
| -FU/115 Without Indicator | -FKE/115 Type K Indicator for Micro | | Rated Current RMS-Amps | I ² t (A ² Sec) | | | Watts Loss |
| | | | | Pre-arc | Clearing at 1000V | Clearing at 1250V | |
| 170M3688 | 170M3738 | 1* | 50 | 135 | 815 | 1100 | 15 |
| 170M3689 | 170M3739 | | 63 | 215 | 1300 | 1750 | 20 |
| 170M3690 | 170M3740 | | 80 | 420 | 2500 | 3350 | 25 |
| 170M3691 | 170M3741 | | 100 | 750 | 4450 | 5950 | 30 |
| 170M3692 | 170M3742 | | 125 | 1450 | 9000 | 11500 | 35 |
| 170M3693 | 170M3743 | | 160 | 2600 | 16000 | 21000 | 40 |
| 170M3694 | 170M3744 | | 200 | 5150 | 31000 | 41000 | 45 |
| 170M3695 | 170M3745 | | 250 | 9200 | 54500 | 73000 | 55 |
| 170M3696 | 170M3746 | | 315 | 18500 | 115000 | 150000 | 60 |
| 170M3697 | 170M3747 | | 350 | 27000 | 165000 | 220000 | 65 |
| 170M4688 | 170M4738 | 1 | 160 | 1900 | 11500 | 15500 | 45 |
| 170M4689 | 170M4739 | | 200 | 3800 | 22500 | 30000 | 50 |
| 170M4690 | 170M4740 | | 250 | 7750 | 46000 | 61500 | 60 |
| 170M4691 | 170M4741 | | 315 | 15000 | 90000 | 120000 | 65 |
| 170M4692 | 170M4742 | | 350 | 20000 | 125000 | 165000 | 70 |
| 170M4693 | 170M4743 | | 400 | 29500 | 175000 | 235000 | 75 |
| 170M4694 | 170M4744 | | 450 | 42000 | 250000 | 335000 | 80 |
| 170M4695 | 170M4745 | | 500† | 69500 | 340000 | | 85 |
| 170M4696 | 170M4746 | | 550‡ | 95000 | 465000 | | 95 |
| 170M4697 | 170M4747 | | 630‡ | 130000 | 660000 | | 100 |
| 170M5688 | 170M5738 | 2 | 250 | 6500 | 38500 | 51500 | 65 |
| 170M5689 | 170M5739 | | 280 | 9350 | 55500 | 74500 | 70 |
| 170M5690 | 170M5740 | | 315 | 13000 | 77500 | 105000 | 75 |
| 170M5691 | 170M5741 | | 350 | 16500 | 97500 | 135000 | 80 |
| 170M5692 | 170M5742 | | 400 | 23000 | 140000 | 180000 | 85 |
| 170M5693 | 170M5743 | | 450 | 34000 | 205000 | 270000 | 90 |
| 170M5694 | 170M5744 | | 500 | 48000 | 285000 | 380000 | 95 |
| 170M5695 | 170M5745 | | 550 | 62000 | 370000 | 495000 | 100 |
| 170M5696 | 170M5746 | | 630 | 115000 | 575000 | 730000 | 110 |
| 170M5697 | 170M5747 | | 700† | 160000 | 795000 | | 115 |
| 170M5698 | 170M5748 | 800‡ | 245000 | 1200000 | | 120 | |
| 170M5699 | 170M5749 | 900‡ | 360000 | 1750000 | | 125 | |
| 170M5700 | 170M5750 | 1000‡ | 480000 | 2350000 | | 135 | |
| 170M6688 | 170M6738 | 3 | 315 | 9500 | 58000 | 77500 | 185 |
| 170M6689 | 170M6739 | | 350 | 13500 | 81500 | 110000 | 90 |
| 170M6690 | 170M6740 | | 400 | 19500 | 120000 | 160000 | 95 |
| 170M6691 | 170M6741 | | 450 | 31000 | 185000 | 245000 | 100 |
| 170M6692 | 170M6742 | | 500 | 39000 | 235000 | 310000 | 105 |
| 170M6693 | 170M6743 | | 550 | 55000 | 325000 | 435000 | 110 |
| 170M6694 | 170M6744 | | 630 | 83500 | 495000 | 665000 | 115 |
| 170M6695 | 170M6745 | | 700 | 115000 | 705000 | 940000 | 120 |
| 170M6696 | 170M6746 | | 800 | 205000 | 995000 | 1300000 | 125 |
| 170M6697 | 170M6747 | | 900 | 305000 | 1500000 | 1900000 | 130 |
| 170M6698† | 170M6748† | 1000¥ | 450000 | 2150000 | | 135 | |
| 170M6699† | 170M6749† | 1100¥ | 575000 | 2800000 | | 140 | |
| 170M6700‡ | 170M6750‡ | 1250¥ | 810000 | 3950000 | | 145 | |
| 170M6701‡ | 170M6751‡ | 1400¥ | 1250000 | 6000000 | | 150 | |

†Rated voltage (IEC) 1100.

‡Rated voltage (IEC) 1000V.

¥ UL Recognition at 1000V.

• Watts loss provided at rated current.

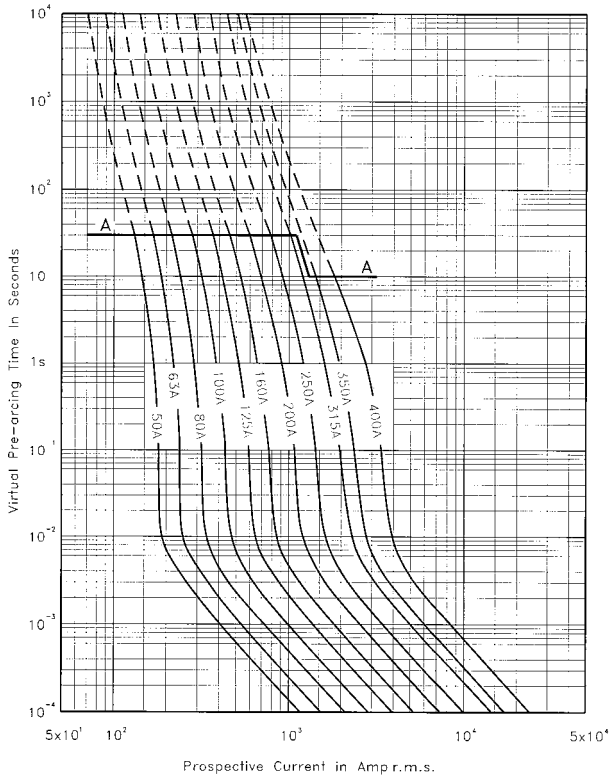
• Microswitch indicator ordered separately. See accessories on pages 185-186.

• For fuse curves see pages 166 and 167.

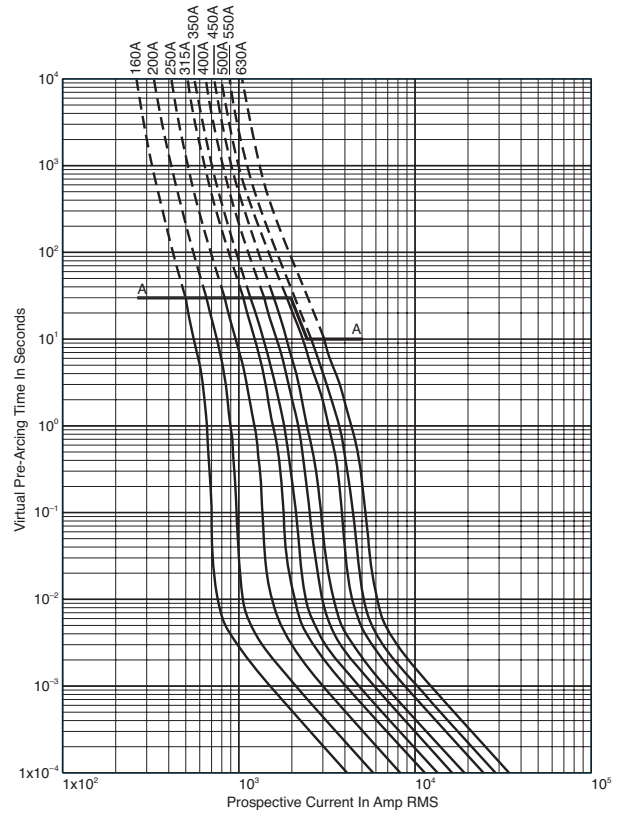
High Speed Fuses

Square Body Size 1*, 1 — 1250V/1300V (IEC/UL): 50-1400A

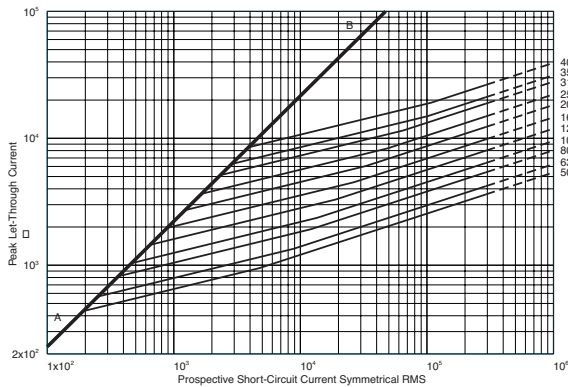
Size 1* — 50-400A:1250V
Time-Current Curve



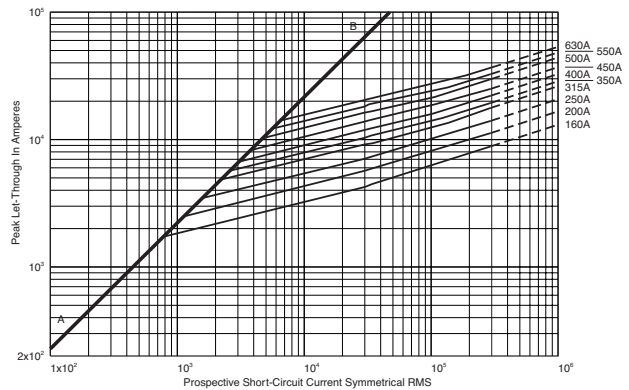
Size 1 — 160-630A: 1250V
Time-Current Curve



Peak Let-Through Curve



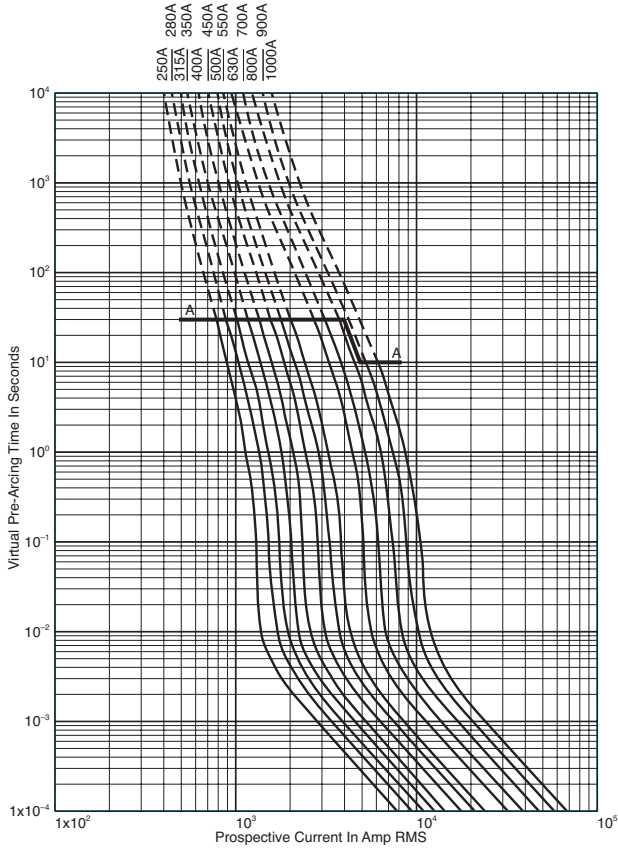
Peak Let-Through Curve



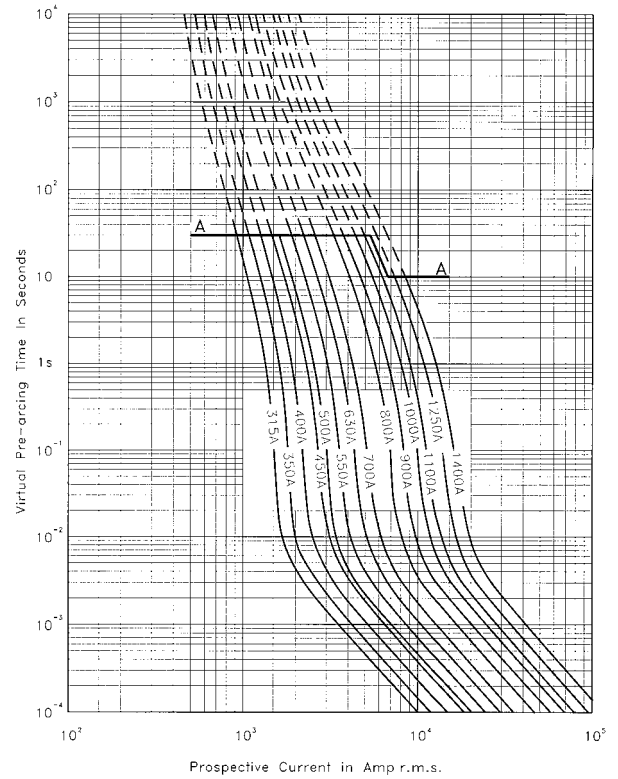
630A fuse is derated to 1100V (IEC).

Square Body Size 2, 3 — 1250V/1300V (IEC/UL): 50-1400A

Size 2 — 250-1000A: 1250V
Time-Current Curve

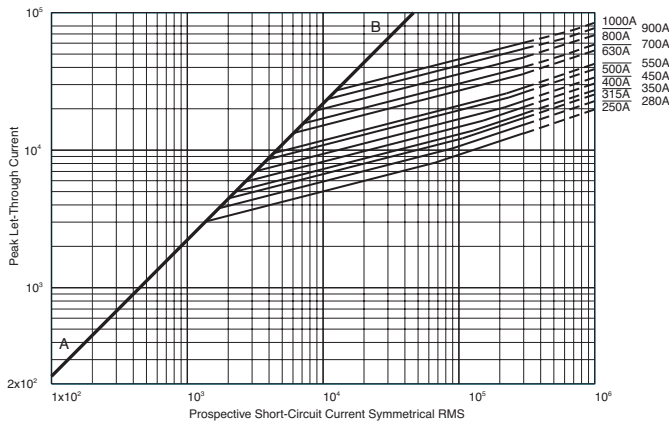


Size 3 — 315-1400A: 1250V
Time-Current Curve



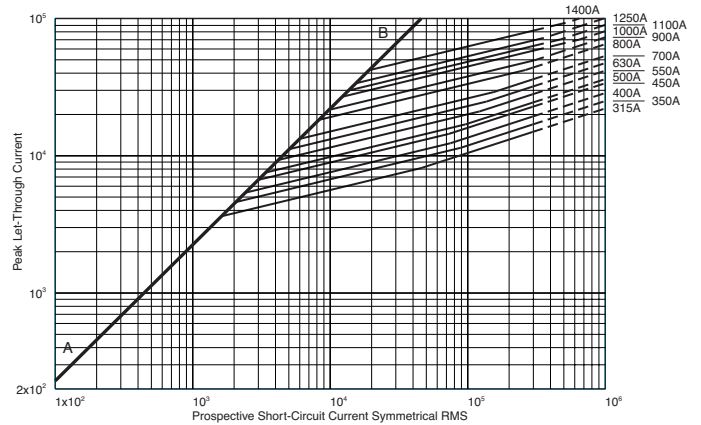
High Speed Fuses

Peak Let-Through Curve



900-1000A fuses are derated to 1100V (IEC).

Peak Let-Through Curve



1250-1400A fuses are derated to 1100V (IEC).

Data Sheet: 17056634

Data Sheet: 17056636

Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

1250V (IEC) 1400-2500A

Specifications

Description: High speed square body fuses, for the protection of the power rectifier section of the equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1250Vac (IEC)

Amps: — 1400-2500A

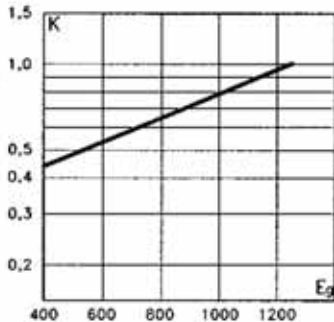
IR: — 125kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

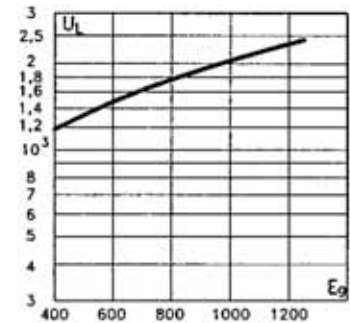
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



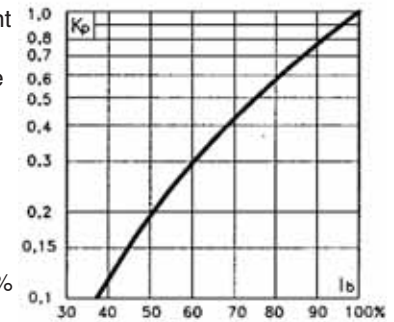
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 135 (690V/700V) and 154 (1000V)

Catalog Numbers

| Fuse Size | Catalog Number | | Electrical Characteristics | | | | |
|-----------|---------------------------|----------------------------|----------------------------|-----------------------|-----------------------------|-------------------|---------------|
| | -BKN/105 Type K Indicator | -SBKN/105 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I^2t (A ² Sec) | | Watt Loss (W) |
| | | | | | Pre-arc | Clearing at 1250V | |
| 4 | 170M7217 | 170M7512 | 1250 | 1400 | 800000 | 5000000 | 195 |
| | 170M7597 | 170M7510 | | 1500 | 1000000 | 6200000 | 200 |
| | 170M7676 | 170M7511 | | 1700 | 1400000 | 8700000 | 220 |
| | 170M7532 | 170M7976 | | 1800 | 1700000 | 11000000 | 225 |
| | 170M7633 | 170M7513 | | 2000 | 2300000 | 14500000 | 235 |
| | 170M7592 | 170M7546 | | 2200 | 3100000 | 19500000 | 245 |
| | 170M7107 | 170M7516 | | 2400 | 4000000 | 25000000 | 255 |
| | 170M7595 | 170M7978 | | 2500 | 4500000 | 28000000 | 260 |

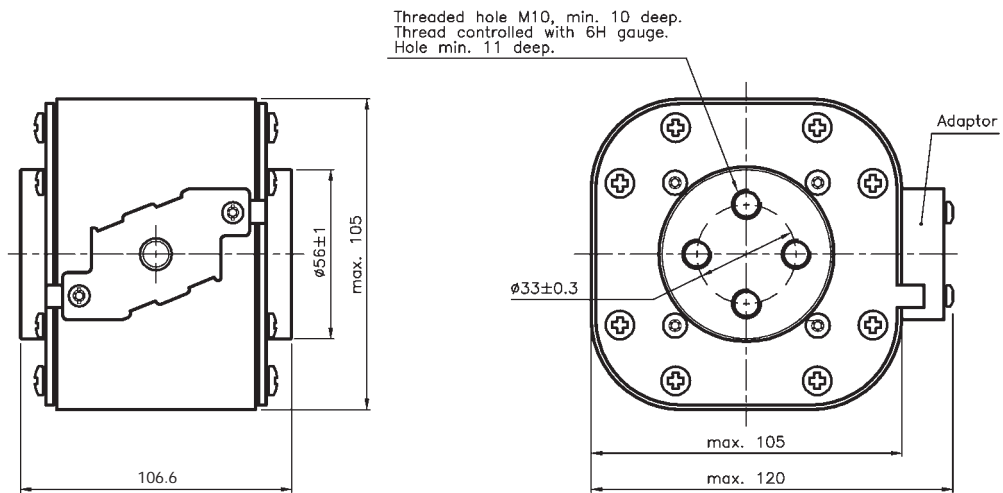
Data Sheet: 170K6640 , 170K6642

Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

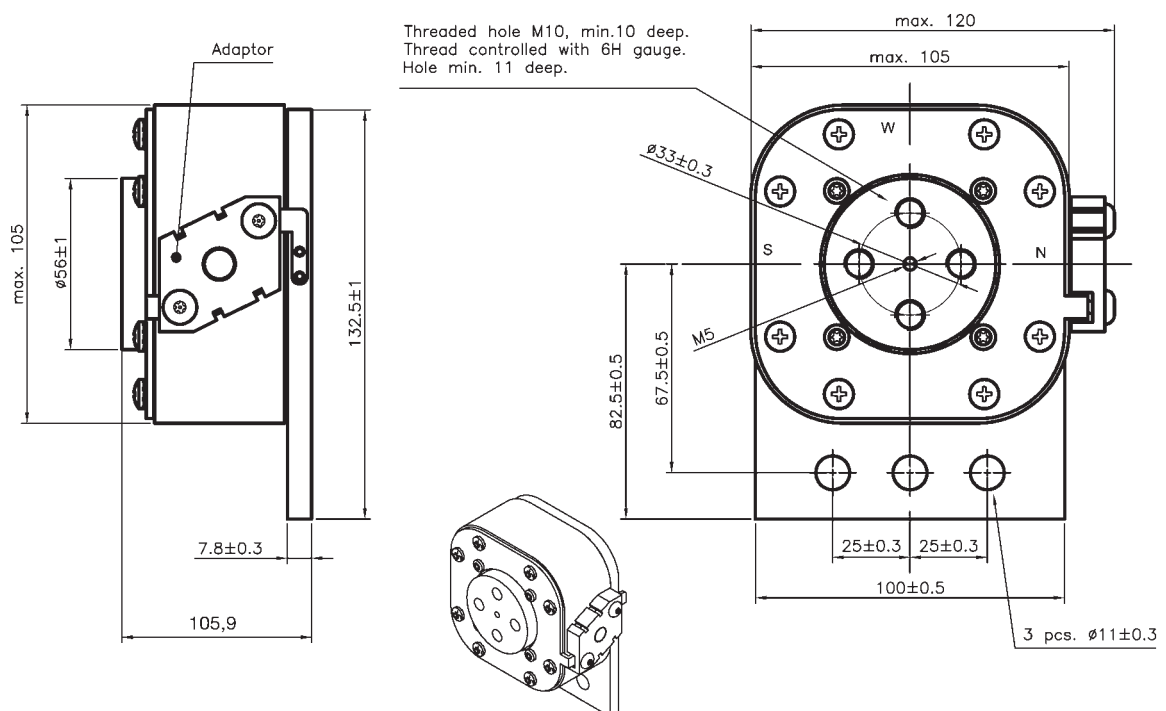
Flush End Contact - Size 4
1250V (IEC) / 1400 – 2500A

Dimensions (mm):

Type 4BKN/105

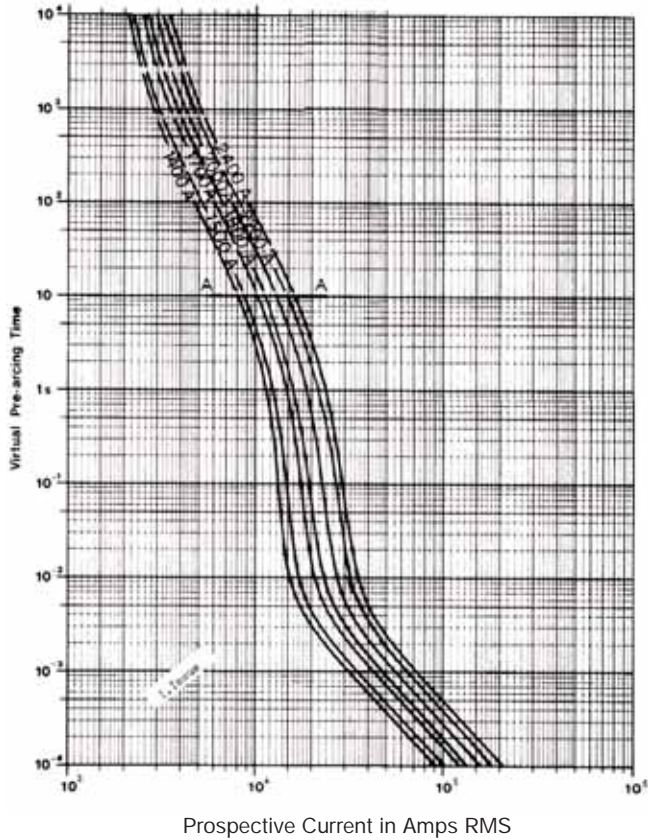


Type 4SBKN/105

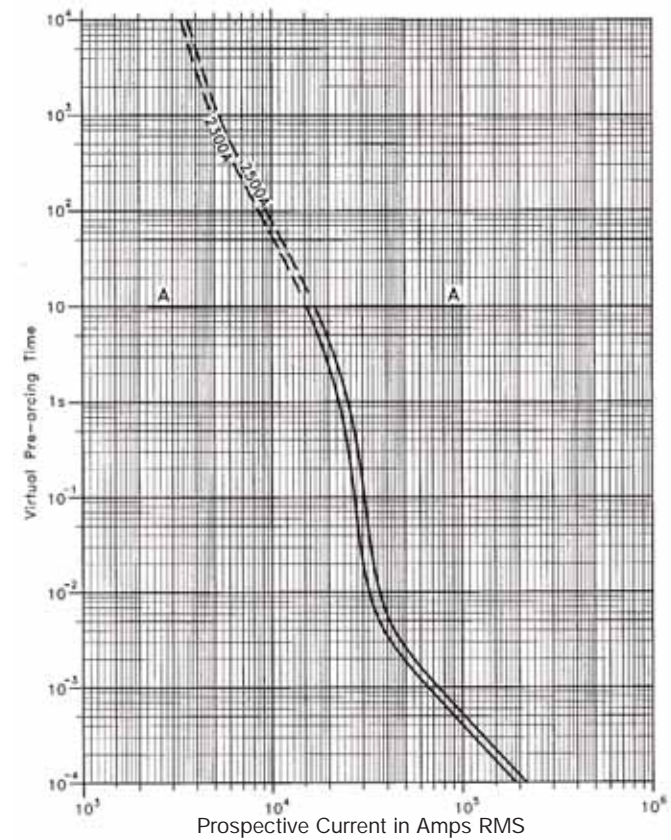


Square Body Flush End Contact Size 4 — 1250V (IEC): 1400-2500A

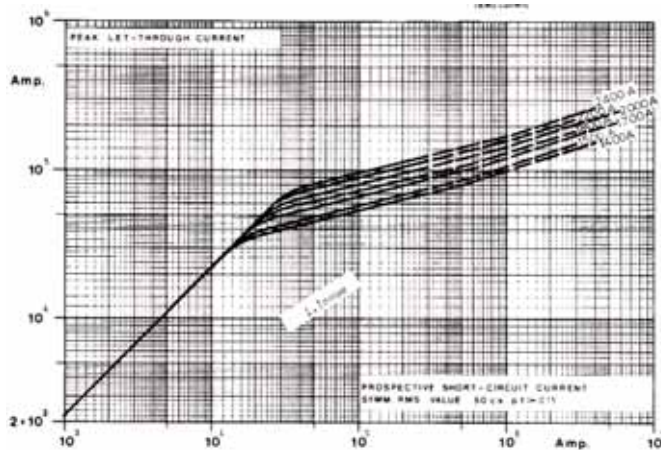
Size 4 — 1400-2400A: 1250V
Time-Current Curve



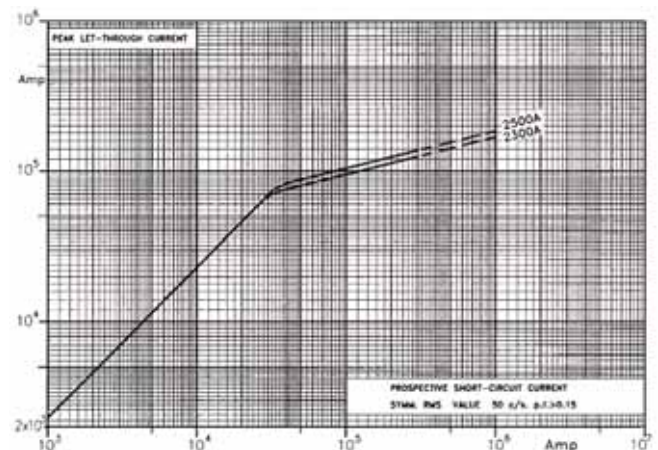
Size 4 — 2300-2500A: 1250V
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body Flush End Contact Size 23— 1250V (IEC/UL): 630-2800A

1250V (IEC) 630-2800A

Specifications

Description: High speed square body fuses, for the protection of the power rectifier section of the equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1250Vac (IEC)

Amps: — 630-2800A

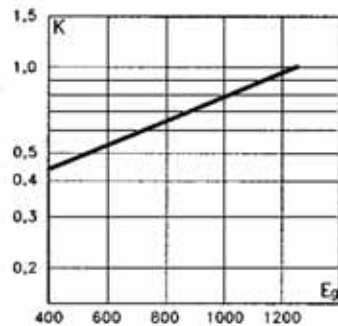
IR: — 125kA RMS Sym.

Agency Information: CE, Designed and tested to IEC 60269: Part 4, UL Recognized.

Electrical Characteristics

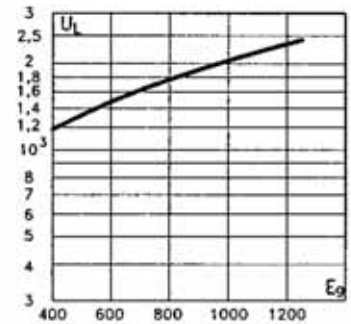
Total clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



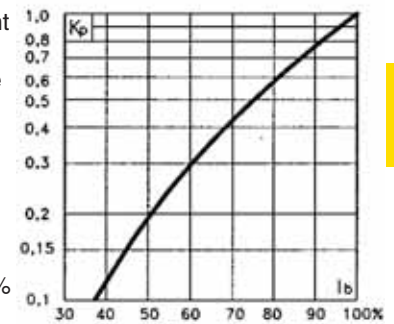
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

For Other Voltage Ratings in This Body Style

- See pages 137 (660V) and 157 (1000V)

Catalog Numbers

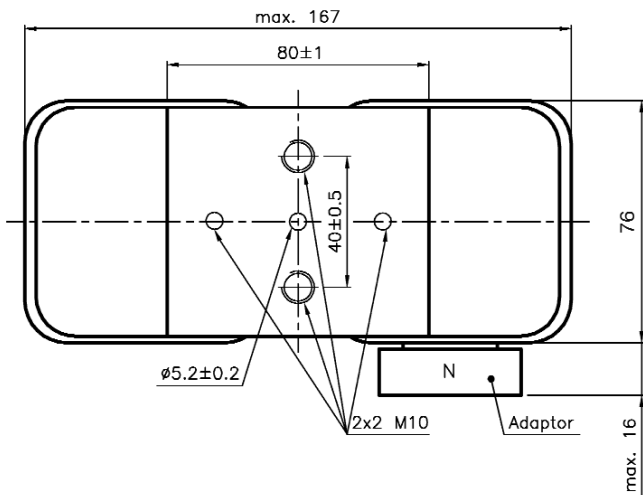
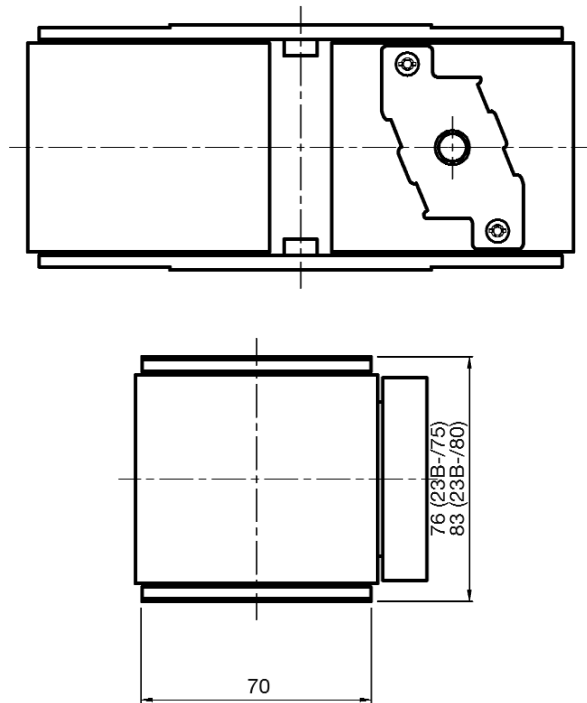
| Fuse Size | Catalog Number | | | | | | Electrical Characteristics | | | | |
|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|-----------------------|-----------------------------|-------------------|----------------|
| | -BU/75 without Indicator | -BKE/75 Type K Indicator | -BKN/75 Type K Indicator | -BU/80 without Indicator | -BKE/80 Type K Indicator | -BKN/80 Type K Indicator | Rated Voltage (V) | Rated Current RMS-Amp | I^2t (A ² Sec) | | Watts Loss (W) |
| | | | | | | | | | Pre-arc | Clearing at 1250V | |
| 23 | 170M6775 | 170M6795 | 170M6785 | | | | 1250 | 630 | 38000 | 310000 | 170 |
| | 170M6776 | 170M6796 | 170M6786 | | | | | 700 | 54000 | 440000 | 180 |
| | 170M6777 | 170M6797 | 170M6787 | | | | | 800 | 78000 | 640000 | 190 |
| | 170M6805 | 170M6807 | 170M6806 | | | | | 900 | 120000 | 980000 | 200 |
| | 170M6778 | 170M6798 | 170M6788 | | | | | 1000 | 155000 | 1250000 | 210 |
| | 170M6779 | 170M6799 | 170M6789 | | | | | 1100 | 220000 | 1750000 | 220 |
| | 170M6780 | 170M6800 | 170M6790 | | | | | 1250 | 330000 | 2700000 | 230 |
| | 170M6781 | 170M6801 | 170M6791 | | | | | 1400 | 460000 | 3800000 | 240 |
| | 170M6782 | 170M6802 | 170M6792 | | | | | 1600 | 820000 | 5200000 | 250 |
| | 170M6783 | 170M6803 | 170M6793 | | | | | 1800 | 1200000 | 7600000 | 260 |
| | | | | 170M6784 | 170M6804 | 170M6794 | 2000 | 1800000 | 11000000 | 270 | |
| | | | | 170M6815 | 170M6833 | 170M6827 | 2200 | 2300000 | 14500000 | 280 | |
| | | | | 170M6816 | 170M6834 | 170M6828 | 1100 | 2500 | 3200000 | †16000000 | 290 |
| | | | | 170M6817 | 170M6835 | 170M6829 | | 2800 | 5000000 | †24000000 | 300 |

† A²s @ 1000V
Data Sheet: 170K6638

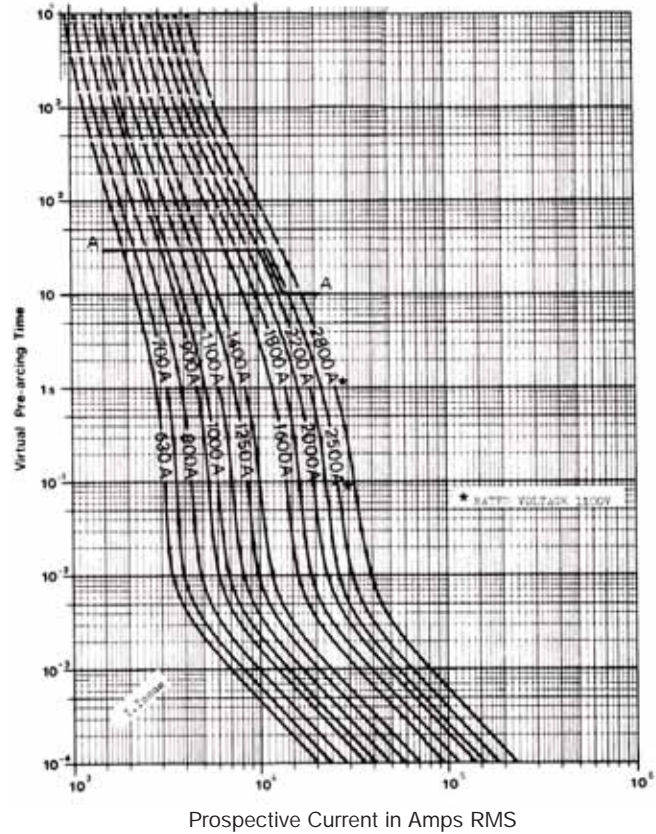
Square Body Flush End Contact Size 23— 1250V (IEC/UL): 630-2800A

Flush End Contact - Size 23
1250V (IEC) / 1000 - 4000A

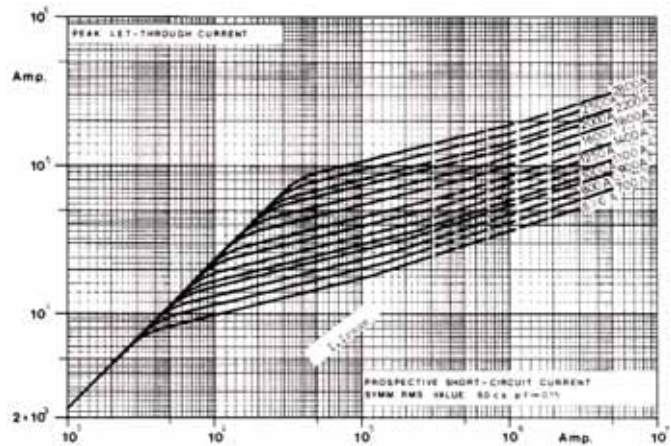
Dimensions (mm):



Size 23 — 630-2800A: 1250V
Time-Current Curve



Peak Let-Through Curve



Square Body Flush End Contact Size 5— 1000V-2000V: 1800-5000A

1000V (IEC) 1800-5000A

Specifications

Description: High speed square body fuses, for the protection or isolation for components such as diodes, silicon controlled rectifiers (SCRs), Gate turn-Off Thyristors (GTOs) and IGBTs.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000-2000Vac (IEC)

Amps: — 1800-5000A

IR: — 300kA RMS Sym. estimated, 197kA tested

Agency Information: Consult Cooper Bussmann.
bulehighspeedtechnical@cooperindustries.com

Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- AC and DC drives
- High power converters/rectifiers

Dimensions - mm (in)



This dimension drawing is an example of the range of size 5 fuses available.

Contact Cooper Bussmann for available parts and technical information.

Square Body DC Fuses — 750Vdc: 63-500A

750Vdc 63-500A

Specifications

Description: High speed fuses, for the protection of DC circuits in equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 750Vdc

Amps: — 63-500A

IR: — 750Vdc IR: 100kA, L/R = 100 ms.

— 1000Vdc IR: 100kA, L/R = 40 ms

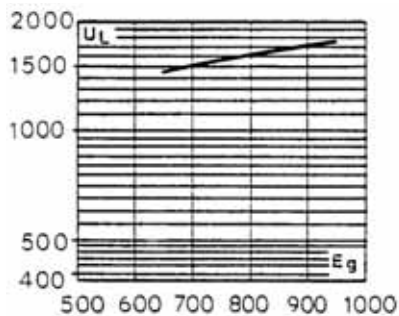
Agency Information: Consult Cooper Bussmann.



Electrical Characteristics

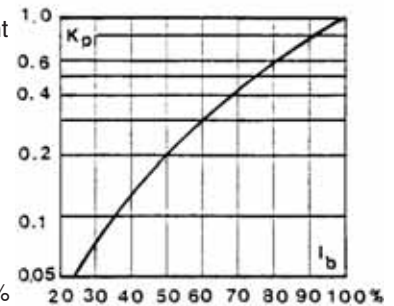
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g .



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Catalog Numbers

| Fuse Size | Catalog Numbers | | Electrical Characteristics | | |
|-----------|-----------------|----------|----------------------------|-----------------------|---------------|
| | -BK/130 | -EK/- | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
| 1* | 170E3577 | 170E3583 | 750 | 63 | 10.0 |
| | 170E3578 | 170E3584 | | 80 | 13.0 |
| | 170E3579 | 170E3585 | | 100 | 16.0 |
| | 170E3580 | 170E3586 | | 125 | 21.0 |
| | 170E3581 | 170E3587 | | 160 | 26.0 |
| 1 | 170E5417 | 170E5420 | | 200 | 37.0 |
| | 170E5418 | 170E5421 | | 250 | 46.0 |
| 2 | 170E8335 | 170E8345 | | 250 | 47.0 |
| | 170E8336 | 170E8346 | | 315 | 57.0 |
| | 170E8337 | 170E8347 | | 400 | 73.0 |
| 3 | 170E9681 | 170E9685 | | 500 | 91.0 |

Data Sheet: Size 1*: 170K3620

Size 1: 170K3622

Size 2: 170K3624

Size 3: 170K3626

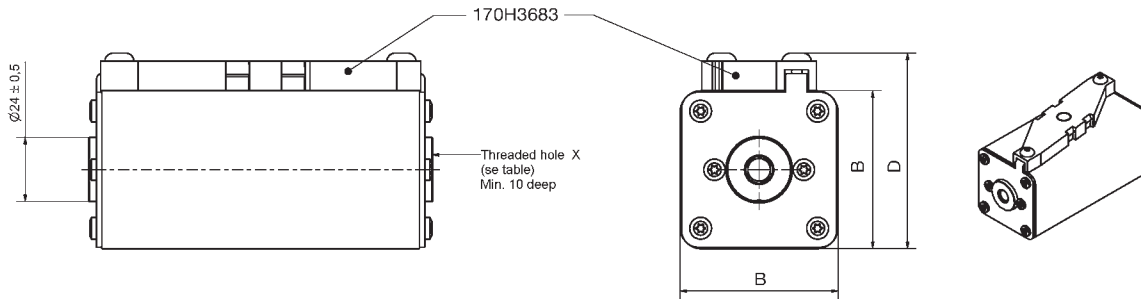
Microswitch: 170H0069, 170H3027 (gold)

Square Body DC Fuses — 750Vdc: 63-500A

Square Body DC Fuses 750Vdc / 63 - 500A

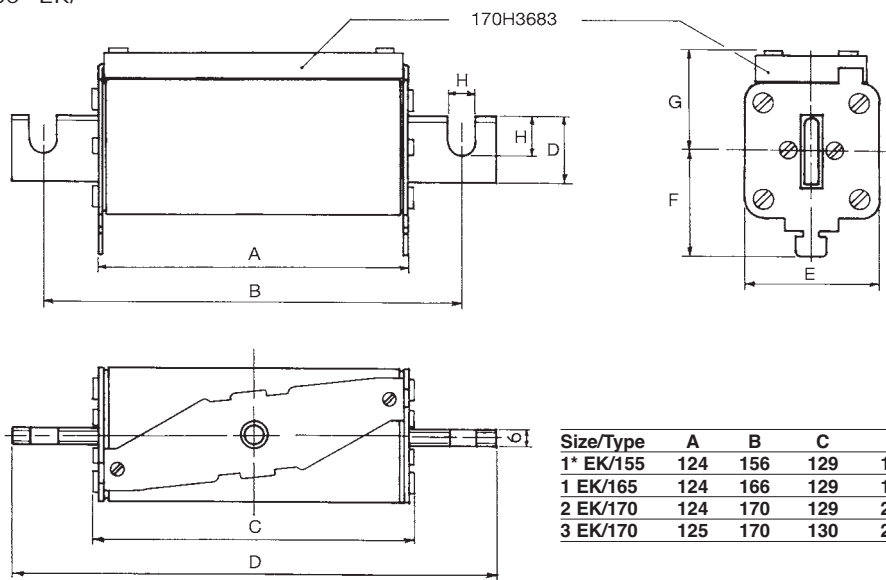
(mm):

Type -BK/130



| Size/Type | A | B | D |
|-----------|-----|----|----|
| 1* BK/130 | 129 | 43 | 61 |
| 1 BK/130 | 130 | 51 | 69 |
| 2 BK/130 | 130 | 59 | 77 |
| 3 BK/130 | 131 | 74 | 90 |

Type -EK/-

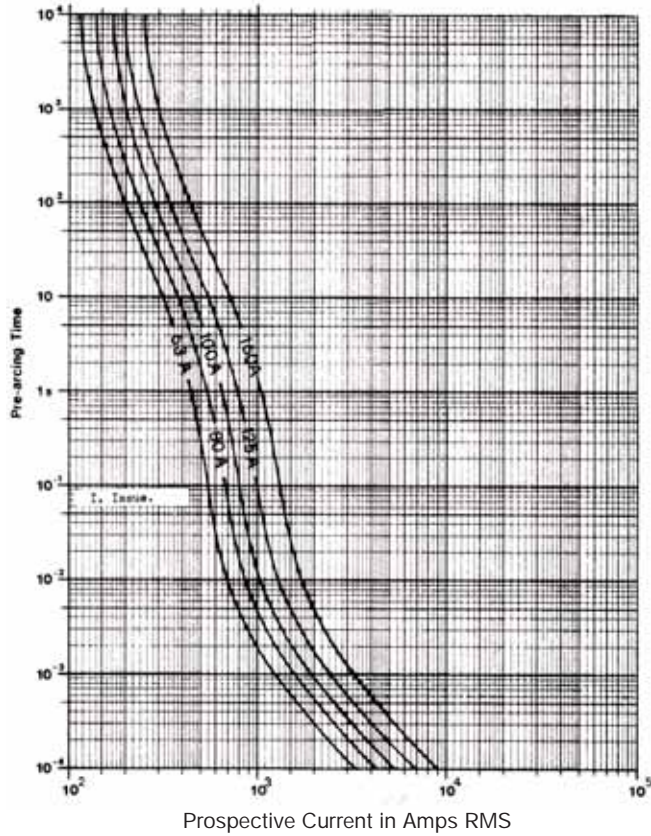


| Size/Type | A | B | C | D | E | F | G | H | I | J |
|-----------|-----|-----|-----|-----|----|----|----|----|----|----|
| 1* EK/155 | 124 | 156 | 129 | 180 | 43 | 36 | 41 | 9 | 9 | 18 |
| 1 EK/165 | 124 | 166 | 129 | 191 | 51 | 37 | 41 | 11 | 14 | 25 |
| 2 EK/170 | 124 | 170 | 129 | 205 | 59 | 42 | 48 | 13 | 21 | 30 |
| 3 EK/170 | 125 | 170 | 130 | 206 | 74 | 51 | 56 | 13 | 20 | 36 |

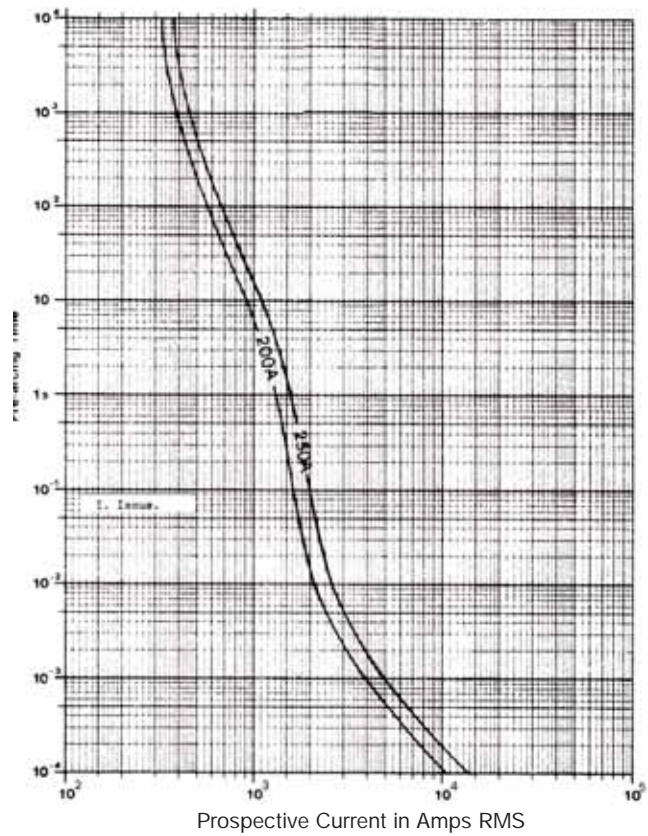
High Speed Fuses

Square Body DC Fuses — 750Vdc: 63-500A

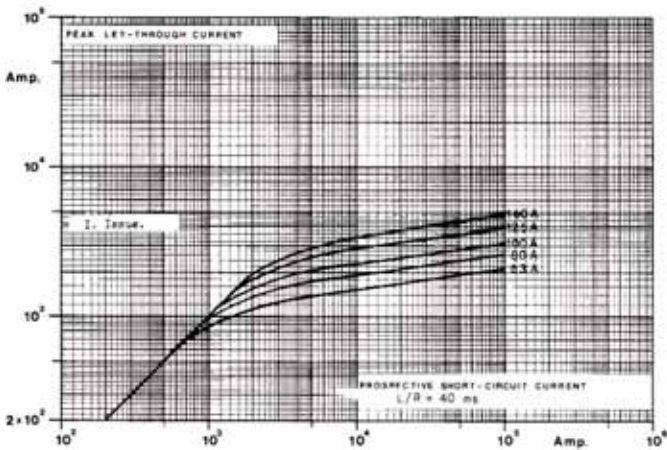
Square Body DC Fuse — 63-160A: 750V
Time-Current Curve



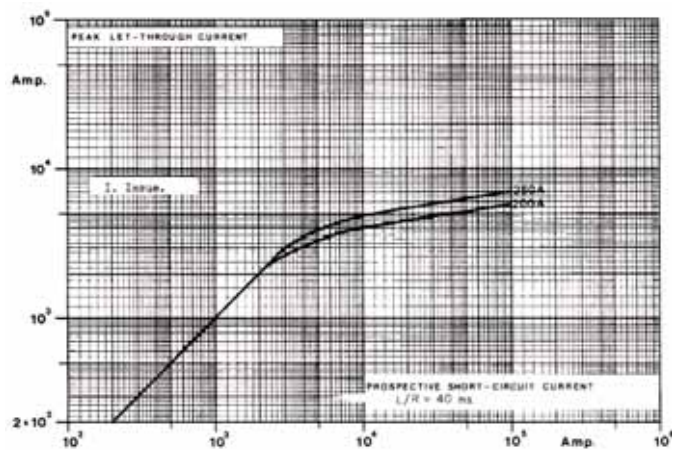
Square Body DC Fuse — 200-250A: 750V
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve

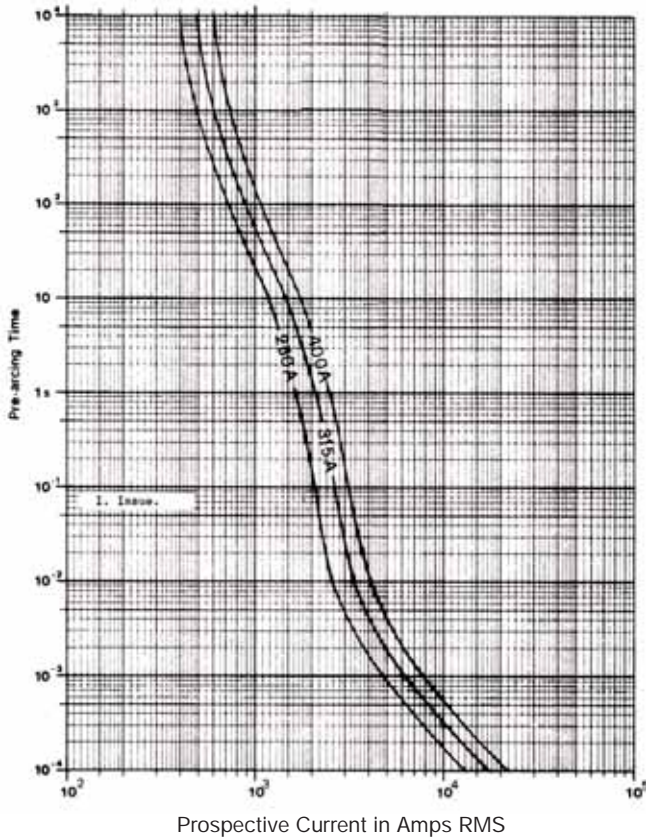


Data Sheet: Available upon request

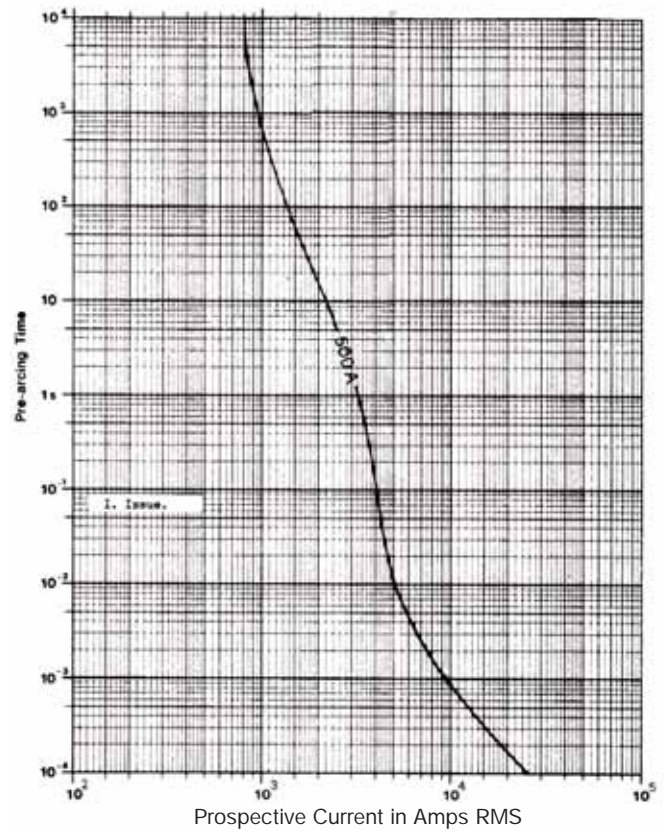
Data Sheet: Available upon request

Square Body DC Fuses — 750Vdc: 63-500A

Square Body DC Fuse — 250-400A: 750V
Time-Current Curve

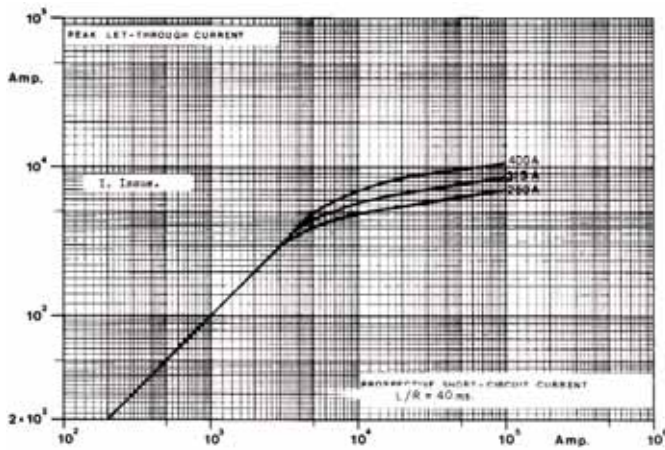


Square Body DC Fuse — 500A: 750V
Time-Current Curve

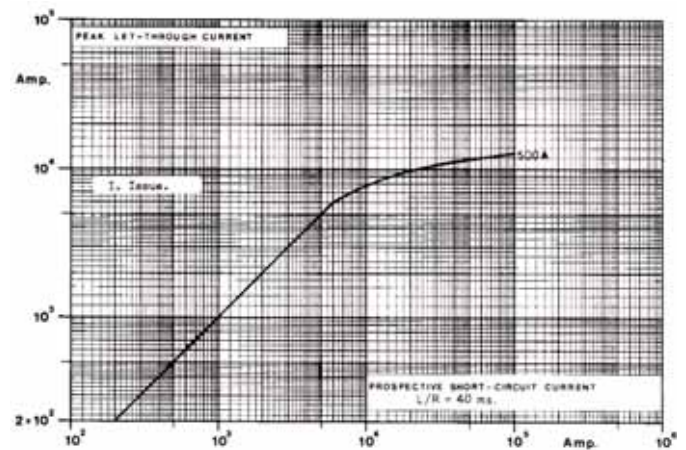


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body DC Fuses — 1200Vdc: 160-420A

1200Vdc 160-420A

Specifications

Description: High speed fuses that provides superior protection in light and heavy harsh DC traction applications as 1200Vdc and below circuits, and as DC link/power converters.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1200Vdc

Amps: — 160-420A

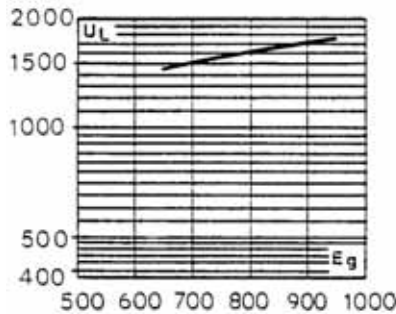
IR: — 1200Vdc = 100kA L/R: 15 ms.

Agency Information: Consult Cooper Bussmann.

Electrical Characteristics

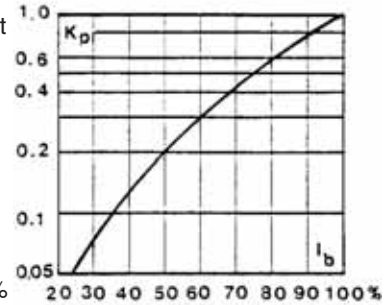
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g .



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

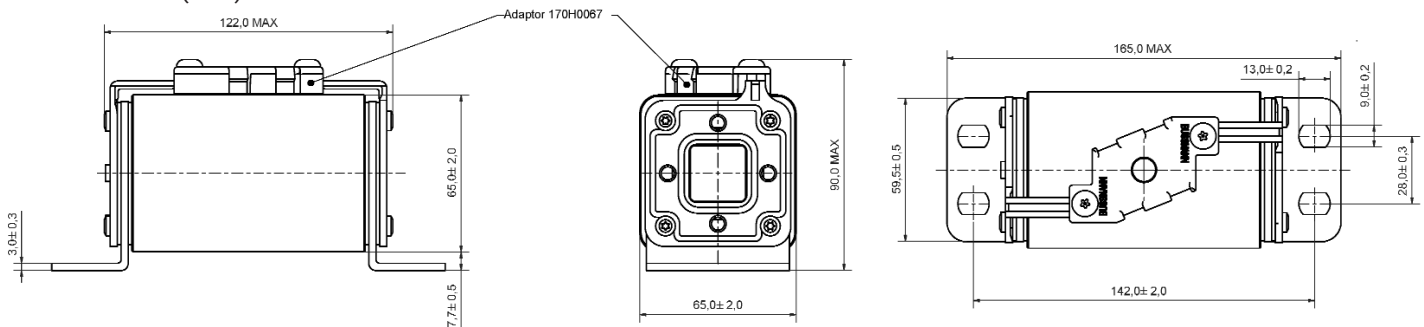
Catalog Numbers

| Fuse Type | Cat. Numbers -SKNB/140 Type K Indicator | Rated Voltage (Vdc) | Rated Current RMS-Amp | Electrical Characteristics | | Watts Loss (W) |
|------------|--|------------------------|--------------------------|---|------------|-------------------|
| | | | | Max I^2t (A ² Sec) @ 1000Vdc | | |
| | | | | L/R = 15ms | L/R = 45ms | |
| 2SKN / 140 | 170F8230 | 1200 | 160 | 12000 | 20000 | 75.0 |
| | 170F8231 | | 200 | 20000 | 35000 | 85.0 |
| | 170F8232 | | 250 | 43000 | 75000 | 94.0 |
| | 170F8233 | | 315 | 87000 | 150000 | 104.0 |
| | 170F8234 | | 400 | 180000 | 310000 | 120.0 |
| | 170F8235 | | 420 | 215000 | 375000 | 122.0 |

Data Sheet: 170K5520

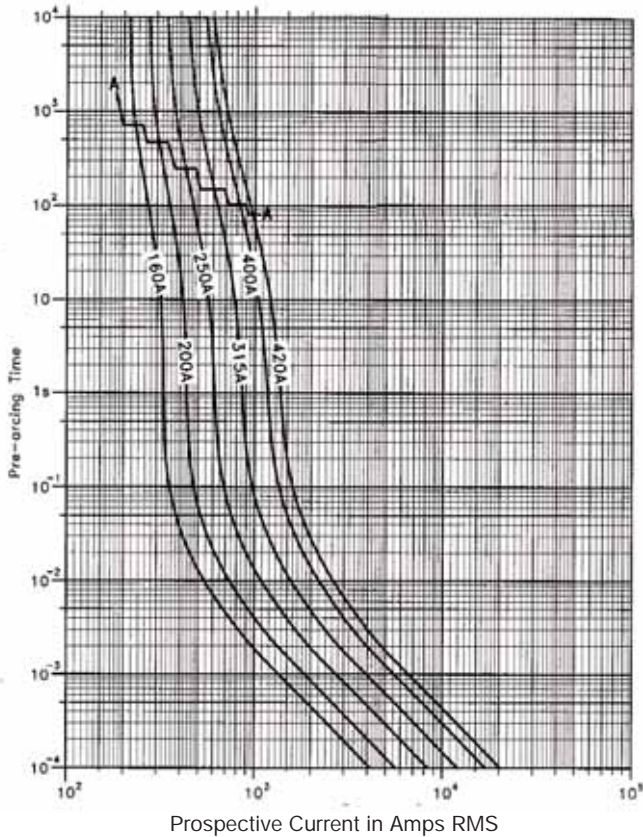
Microswitch: 170H0069, 170H3027 (gold)

Dimensions (mm):



Square Body DC Fuses — 1200Vdc: 160-420A

Square Body DC Fuse — 160-420A: 1200V
Time-Current Curve



High Speed Fuses

Data Sheet: Available upon request

Square Body DC fuses — 2000Vdc: 10-125A

2000Vdc 10-125A

Specifications

Description: High speed fuses for the protection of DC circuits in equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1200Vdc

Amps: — 160-420A

IR: — 1200Vdc = 100kA L/R: 15 ms.

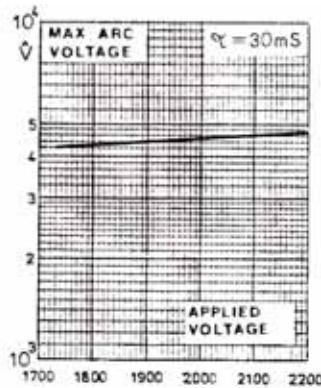
Agency Information: Consult Cooper Bussmann.



Electrical Characteristics

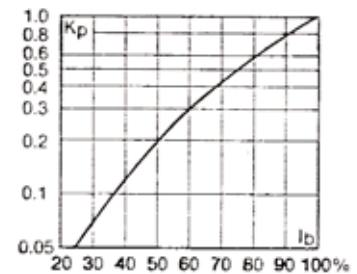
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g .



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

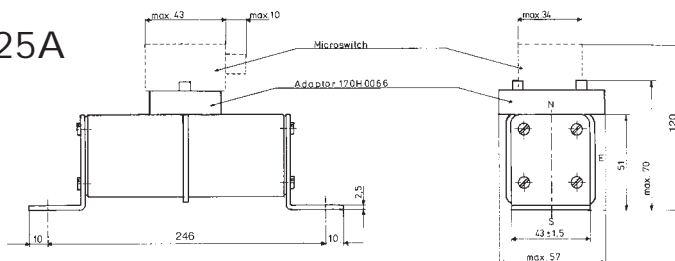
Catalog Numbers

| Fuse Type | Cat. Number -SKN/246 Type K Indicator | Electrical Characteristics | | |
|-----------|--|----------------------------|-----------------------|---------------|
| | | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
| 1*SKN/246 | 170E3976 | 2000 | 10 | 7 |
| | 170E3970 | | 16 | 11 |
| | 170E3950 | | 20 | 13 |
| | 170E3951 | | 25 | 17 |
| | 170E3952 | | 32 | 22 |
| | 170E3953 | | 40 | 27 |
| | 170E3954 | | 50 | 34 |
| | 170E3955 | | 63 | 43 |
| | 170E3956 | | 80 | 50 |

| Fuse Type | Cat. Number -SKN/246 Type K Indicator | Electrical Characteristics | | |
|-----------|--|----------------------------|-----------------------|---------------|
| | | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watt Loss (W) |
| 1*SKN/246 | 170E3937 | 2000 | 20 | 13 |
| | 170E3938 | | 25 | 16 |
| | 170E3939 | | 32 | 20 |
| | 170E3940 | | 40 | 25 |
| | 170E3941 | | 50 | 32 |
| | 170E3942 | | 63 | 40 |
| | 170E3943 | | 80 | 51 |
| | 170E3944 | | 100 | 64 |
| | 170E3945 | | 125 | 80 |

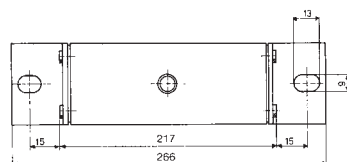
2000Vdc / 10 - 125A

Dimensions (mm):



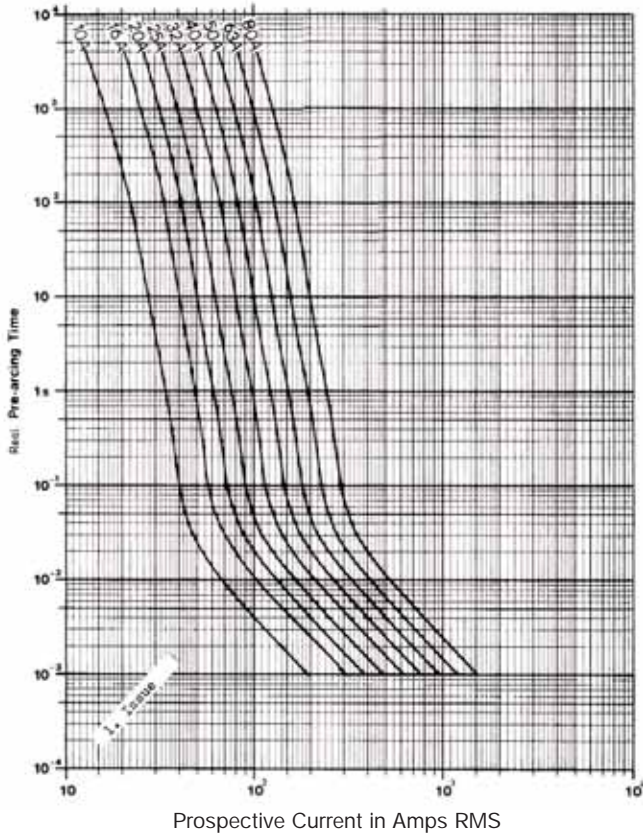
Data Sheet: 170K4538
Microswitch: 170H0239, 170H3030 (gold)

Data Sheet: 170K4900
Microswitch: 170H0239, 170H3030 (gold)

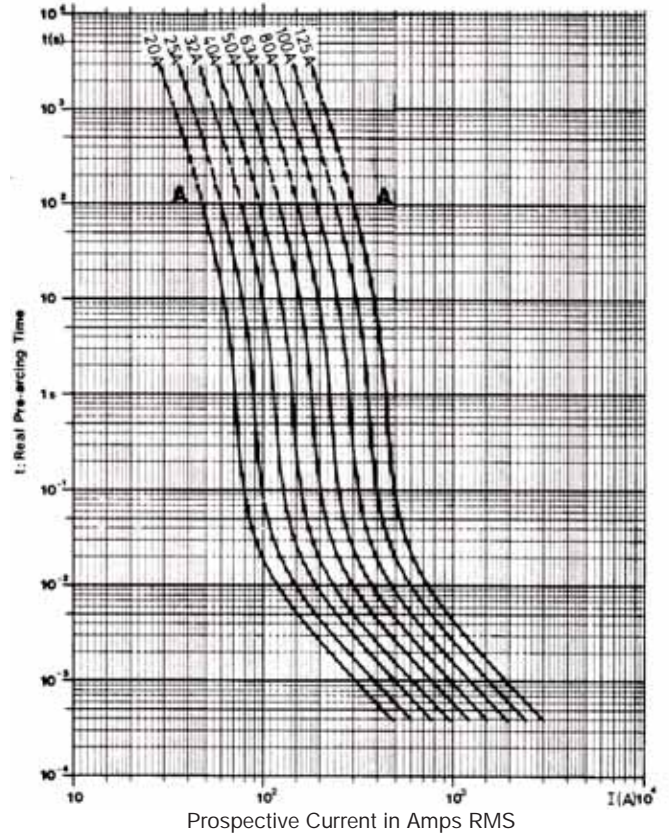


Square Body DC fuses — 2000Vdc: 10-125A

Square Body DC Fuses — 10-80A: 2000V
Time-Current Curve

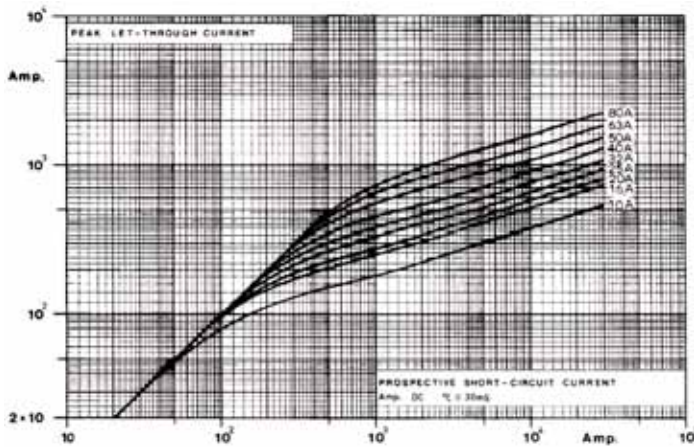


Square Body DC Fuses — 20-125A: 2000V
Time-Current Curve

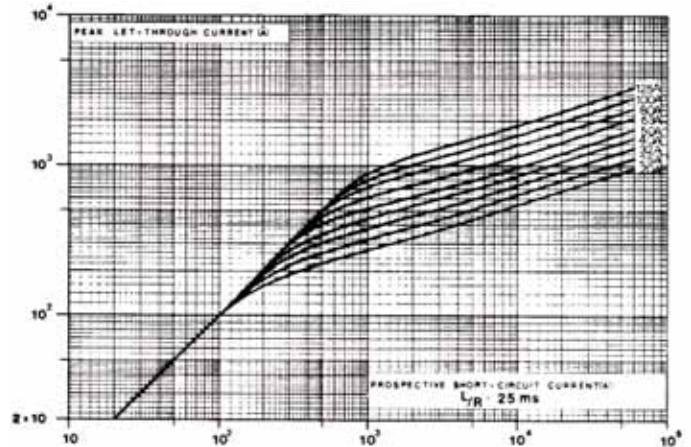


High Speed Fuses

Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body DC Fuses — 4000Vdc: 20-450A

4000Vdc 20-450A

Specifications

Description: High speed fuses for the protection of DC circuits in equipment.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 4000Vdc

Amps: — 20-450A

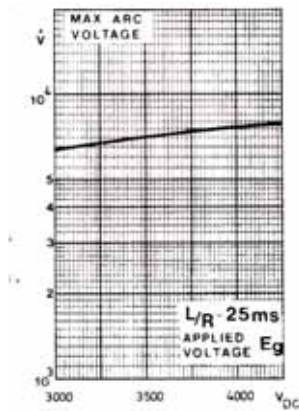
IR: — 60kA L/R: 25 ms.

Agency Information: Consult Cooper Bussmann.

Electrical Characteristics

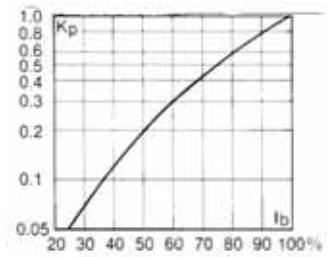
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage E_g .



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss
- Superior cycling capability

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Catalog Numbers

| Fuse Type | Cat. Numbers | | Electrical Characteristics | |
|-------------|---------------------------|---------------------|----------------------------|----------------|
| | -SKN/394 Type K Indicator | Rated Voltage (Vdc) | Rated Current RMS-Amp | Watts Loss (W) |
| 1*SKN/394 | 170E3914 | 4000 | 20 | 23 |
| | 170E3915 | | 25 | 28 |
| | 170E3916 | | 32 | 34 |
| | 170E3917 | | 40 | 45 |
| | 170E3918 | | 50 | 57 |
| | 170E3919 | | 63 | 72 |
| | 170E3984 | | 80 | 91 |
| | 170E3922 | | 125 | 143 |
| 2 SKN/394 | 170E8882 | 4000 | 160 | 182 |
| | 170E8883 | | 200 | 228 |
| | 170E8884 | | 250 | 285 |
| 2//2SKN/394 | 170E8885 | 4000 | 315 | 360 |
| | 170E8886 | | 350 | 400 |
| | 170E8887 | | 400 | 455 |
| | 170E8888 | | 450 | 515 |

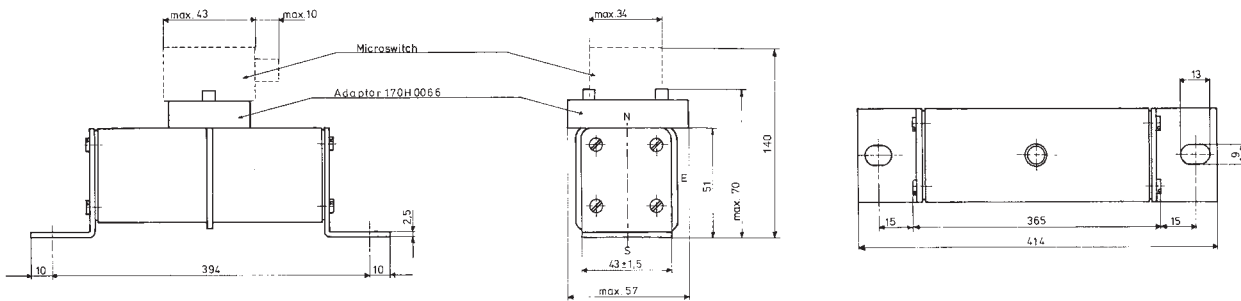
DC Fuses — 4000Vdc: 20-450A

DC Fuses

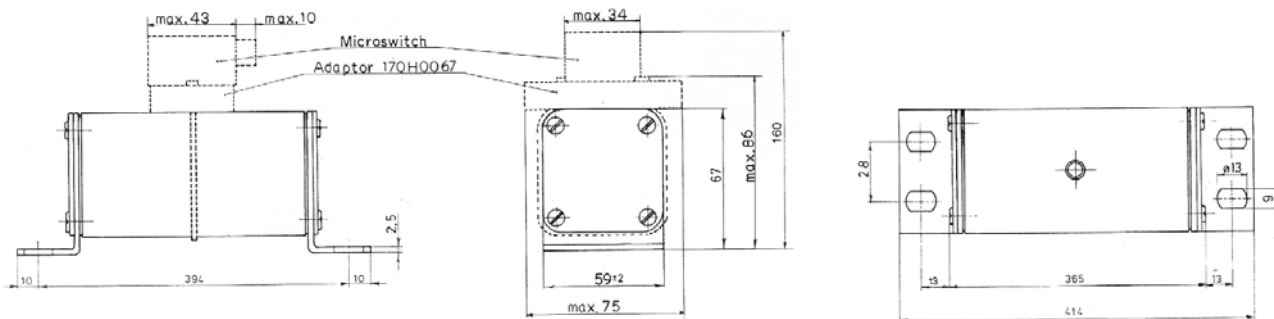
4000Vdc / 20 - 450A

Dimensions (mm):

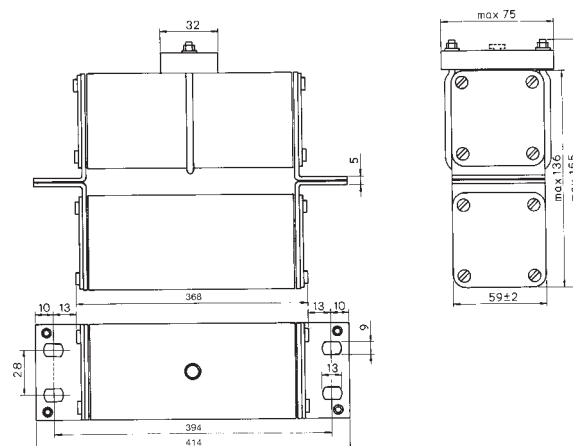
Type 1*SKN/394



Type 2SKN/394



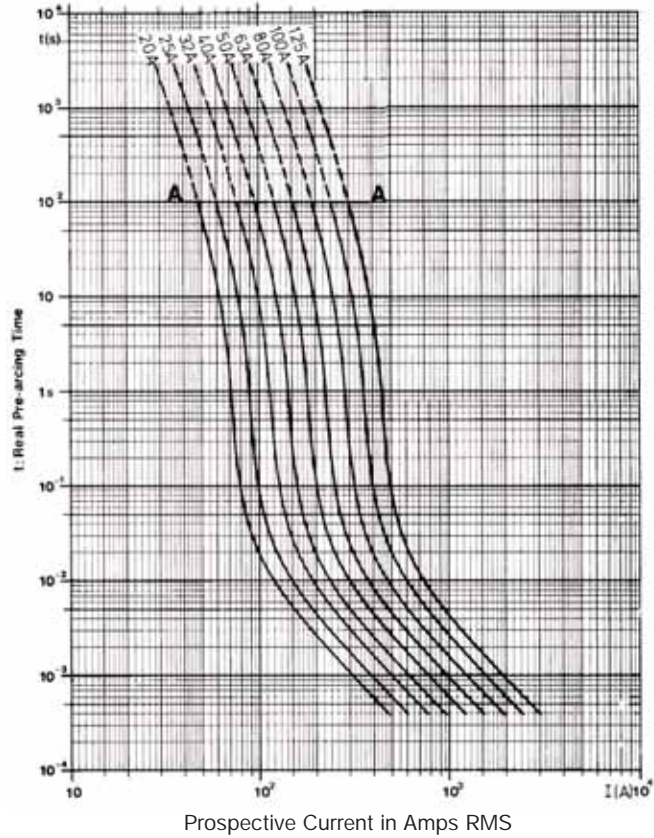
Type 2//SKN/394



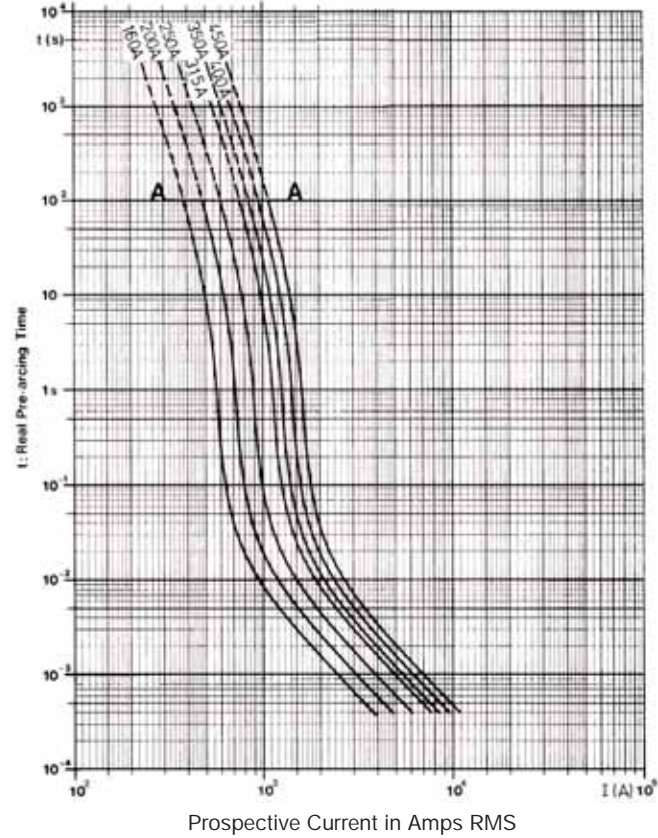
High Speed Fuses

Square Body DC Fuses — 4000Vdc: 20-450A

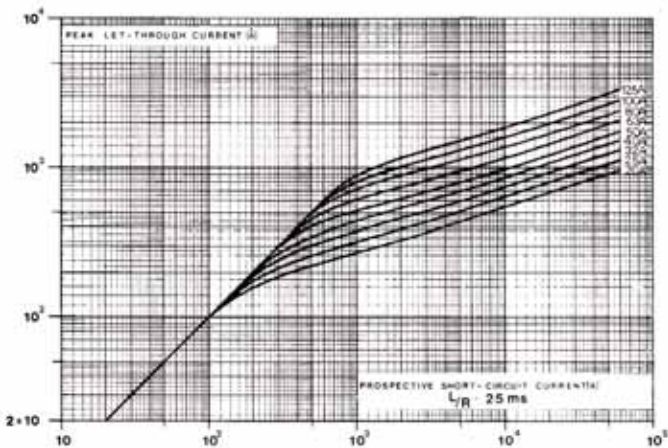
Square Body DC Fuses — 20-125A: 2000V
Time-Current Curve



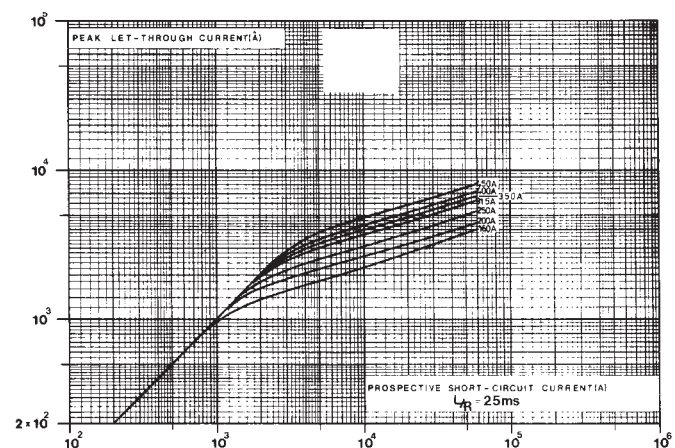
Square Body DC Fuses — 160-450A: 4000V
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: Available upon request

Data Sheet: Available upon request

Square Body Fuse Accessories

Indicator Systems

Typower ZILOX fuses are available with three different indicator systems.

1. Visual Indicator

The indicator situated in one cover plate is clearly visible as soon as the fuse has operated. The minimum voltage for operating the indicator is 20V.

2. Type T Indicator

The indicator is situated on one cover plate with a cover plate tag to accommodate an auxiliary switch. The minimum voltage for operating the indicator is 20V. A special low voltage indicator (1.5V) is available on request.

3. Type K Indicator

This indicator is situated on the fuse body. It is covered by an adapter for snap-on mounting of an auxiliary switch. The operating voltage of the indicator is 1.5V. As a matter of safety, the factory mounted adapter must not be removed from the fuse.



High Speed Fuses

Microswitch

The Typower ZILOX fuses with either type T indicator or type K indicator can be equipped with a microswitch for remote electrical indication of fuse operations. All micro-switches have one normally open and one normally closed contact. Ratings are 2A, 250Vac.

| Microswitch | 6.3 x 0.8mm Lugs | 2.8 x 0.5mm Lugs | Indicator Type |
|-------------|------------------|------------------|----------------|
| 170H0235 | X | | T |
| 170H0236 | X | | T |
| 170H0237 | | X | T |
| 170H0238 | | X | T |
| 170H0069 | X | | K |

| Size | DIN 43 653 | Type K | DIN 43 620 | Type K | French Style | Type K | Flush End | Type K | US Style |
|------|------------|----------|------------|--------|--------------|----------|-----------|----------|----------|
| | Type T | | Type T | | Type T | | Type T | | Type K |
| 000 | 170H0236 | | 170H0236 | | | | | | |
| | 170H0238 | | 170H0238 | | | | | | |
| 00 | 170H0235 | | | | | | 170H0235 | | |
| | 170H0237 | | | | | | 170H0237 | | |
| 1* | 170H0235 | 170H0069 | 170H0235 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0237 | | 170H0238 | | | | |
| 1 | 170H0235 | 170H0069 | | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | | | 170H0238 | | | | |
| 2 | 170H0235 | 170H0069 | 170H0235 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0237 | | 170H0238 | | | | |
| 3 | 170H0235 | 170H0069 | 170H0236 | | 170H0236 | 170H0069 | | 170H0069 | 170H0069 |
| | 170H0237 | | 170H0238 | | 170H0238 | | | | |
| 4 | | | | | | | | 170H0069 | |
| 23 | | | | | | | | 170H0069 | |
| 24 | | | | | | | | 170H0069 | |

Square Body Fuse Accessories

Fuse Bases (Blocks)

DIN 43 653 Fuse Bases

For the Typower ZILOX fuses according to DIN 43 653, the following fuse bases are available:

| Catalog Number | Max Volts | Amp Rating | Center Distance |
|----------------|-----------|------------|-----------------|
| 170H3003 | 1000 | 630 | 80mm |
| 170H3004 | 1000 | 1250 | 80mm |
| 170H3005 | 1400 | 630 | 110mm |
| 170H3006 | 1400 | 1250 | 110mm |

The fuse bases rated 1250A can also be used for the fuses with higher rated current if the maximum load current is derated according to the table below:

| Fuse Amp Rating | Max Amp Load In Fuse Base |
|-----------------|---------------------------|
| 1400 | 1325 |
| 1500 | 1400 |
| 1600 | 1500 |
| 1800 | 1650 |
| 2000 | 1800 |

| Fixed Center Base Style | Max Volts | Max. Fuse Amp Rating | Fuse Size |
|-------------------------|-----------|----------------------|-----------|
| 170H1007 | 1000 | 400 | 00, 000 |
| 170H1013 | 660 | 200 | 0000,000 |

UL Recognized to UL 512.

Universal Fuse Bases

For the Typower ZILOX fuses according to DIN 43 653, French style and North American style, the following fuse bases are available:

| Modular Base Style | Max Volts | Max. Fuse Amp Rating | Data Sheet |
|--------------------|-----------|----------------------|------------|
| 1BS101 | 600 | 100 | 1206 |
| 1BS102 | 600 | 400 | 1207 |
| 1BS103 | 600 | 400 | 1208 |
| 1BS104 | 600 | 600 | 1209 |
| BH-0xxx | 700 | 200 | 1200 |
| BH-1xxx | 2500 | 400 | 1201 |
| BH-2xxx | 5000 | 400 | 1202 |
| BH-3xxx | 1250 | 700 | 1203 |

Modular fuse bases are UL Recognized to UL 512 and meet the spacing requirements of UL 347. Contact your Cooper Bussmann sales representative for more complete ordering information.

DIN 43 620 Fuse Bases

| Size | Part Number |
|--------|-------------|
| 000-00 | SB00-D |
| 1*, 1 | SB1-D |
| 2,3 | SB2-D |



British BS 88 Fuses



High Speed Fuses

Introduction

British BS 88 Contents

| Fuse Volts | Amp Range | Page |
|------------|-----------|---------|
| 240 | 6-900 | 188-190 |
| 690 | 6-710 | 191-194 |

Accessories

| | |
|-------------------------------|-----|
| Indicator System & Fuse Bases | 195 |
|-------------------------------|-----|

British BS 88 Fuse Ranges

| Amps | Vac | Vdc |
|-------|-----|-----|
| 6-900 | 240 | 150 |
| 6-710 | 690 | 500 |

General Information

Designed and tested to:

- BS 88: Part 4
- IEC 269: Part 4
- UL Recognized

Cooper Bussmann offers the industry's widest range of British style semiconductor fuses and accessories.

Cooper Bussmann British style products use innovative arc quenching techniques and high grade materials to provide:

- Minimal energy let-through (I^2t)
- Excellent DC performance
- Good surge withstand profile

British style fuses are typically found in equipment manufactured in the United Kingdom or British Commonwealth countries. However, North American manufacturers have begun to specify British style fuses — particularly in UPS applications at 240V or less — to take advantage of their size, performance and cost benefits.

Voltage Rating

All Cooper Bussmann British style fuses are tested to IEC 269: Part 4. This standard requires a test voltage which is 5% higher than the rated voltage. In North America, fuses are required to clear only their rated voltage.

Accessories

Trip-indicator fuses are available for use in parallel with the main fuse. Indicator fuses can be attached to the associated fuselink, or mounted separately in panel-mounted fuseclips. In addition, a push-on adapter and microswitch attachment are available, to provide remote indication. Fuse blocks are also available for most applications.

British BS 88 — 240V: 6-900A

LCT, LET, LMT, LMMT

Specifications

Description: BS 88 style stud-mount fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 240Vac/150Vdc

Amps: — 6-900A

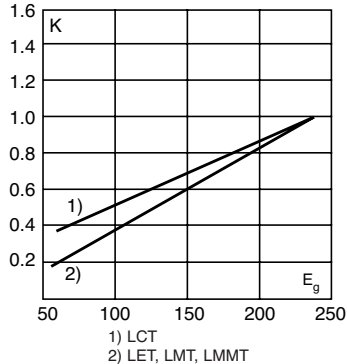
IR: — 200kA RMS Sym.

Agency Information: CE, Designed and tested to: BS 88 Part 4, IEC 269 Part 4, UL Recognized. All fuses above have been tested at 318Vac. Consult Cooper Bussmann for specific UL Recognition status.

Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



Dimensions (mm)

Fig. 1: LCT

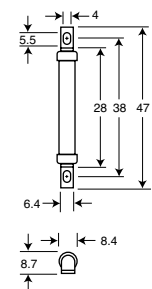


Fig. 2: LET

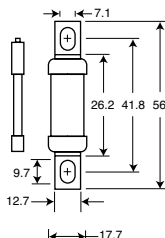


Fig. 3: LMT

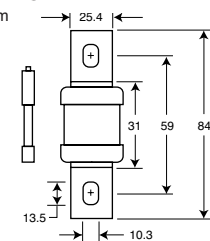
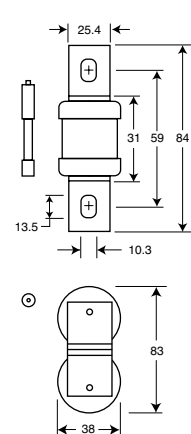


Fig. 4: LMMT

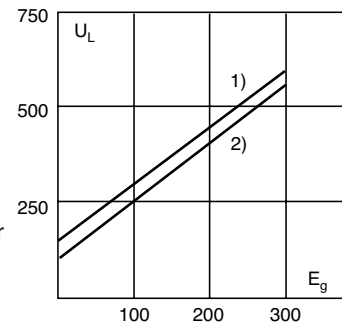


Indicator (Optional)



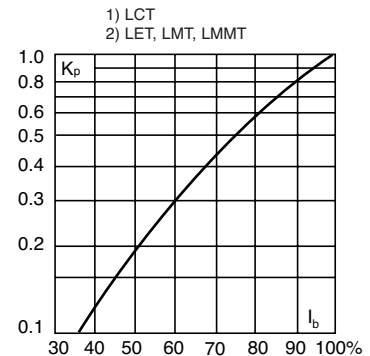
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

Electrical Characteristics

| Catalog Numbers | Type | Rated Current RMS-Amps | I^2t (A ² Sec) | | | Watts Loss | |
|-----------------|------|------------------------|-----------------------------|------------------|------------------|------------|------|
| | | | Pre-arc | Clearing at 120V | Clearing at 240V | | |
| 6LCT | LCT | 6 | 2 | 6 | 9 | 1.0 | |
| 10LCT | | 3.8 | 12 | 22 | 2.5 | | |
| 12LCT | | 7 | 22 | 32 | 2.5 | | |
| 16LCT | | 20 | 50 | 100 | 2.5 | | |
| 20LCT | | 25 | 80 | 160 | 4.0 | | |
| 25LET | | LET | 25 | 18 | 120 | 250 | 4.0 |
| 32LET | 32 | | 32 | 200 | 450 | 5.0 | |
| 35LET | 35 | | 50 | 320 | 600 | 5.0 | |
| 50LET | 50 | | 100 | 500 | 1400 | 7.0 | |
| 63LET | 63 | | 180 | 1100 | 2200 | 9.0 | |
| 80LET | 80 | | 300 | 1900 | 3800 | 10.0 | |
| 100LET | 100 | | 600 | 3800 | 7500 | 10.0 | |
| 125LET | 125 | | 600 | 3800 | 7500 | 16.0 | |
| 160LET | 160 | | 1100 | 7000 | 16000 | 20.0 | |
| 180LETa | 180 | | 1600 | 12000 | 29000 | 21.0 | |
| 160LMT | LMT | | 160 | 1100 | 7000 | 16000 | 17.0 |
| 200LMT | | | 200 | 1500 | 10000 | 20000 | 28.0 |
| 250LMT | | 250 | 3200 | 20000 | 40000 | 28.0 | |
| 315LMT | | 315 | 6000 | 35000 | 75000 | 35.0 | |
| 355LMT | | 355 | 8000 | 50000 | 100000 | 35.0 | |
| 400LMT | | 400 | 14000 | 70000 | 160000 | 40.0 | |
| 450LMT | 450 | 18000 | 100000 | 220000 | 42.0 | | |
| 400LMMT | LMMT | 400 | 6000 | 35000 | 80000 | 60.0 | |
| 500LMMT | | 500 | 14000 | 80000 | 170000 | 64.0 | |
| 630LMMT | | 630 | 24000 | 150000 | 300000 | 75.0 | |
| 710LMMT | | 710 | 32000 | 200000 | 460000 | 77.0 | |
| 800LMMT | | 800 | 52000 | 300000 | 600000 | 82.0 | |
| 900LMMT | | 900 | 75000 | 400000 | 800000 | 97.0 | |

• Watts loss provided at rated current.

• Note: 7LET, 10LET, 12LET and 16LET are available for replacement purposes on existing equipment.

• See accessories on page 195.

Features and Benefits

- Excellent cycling capability
- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)

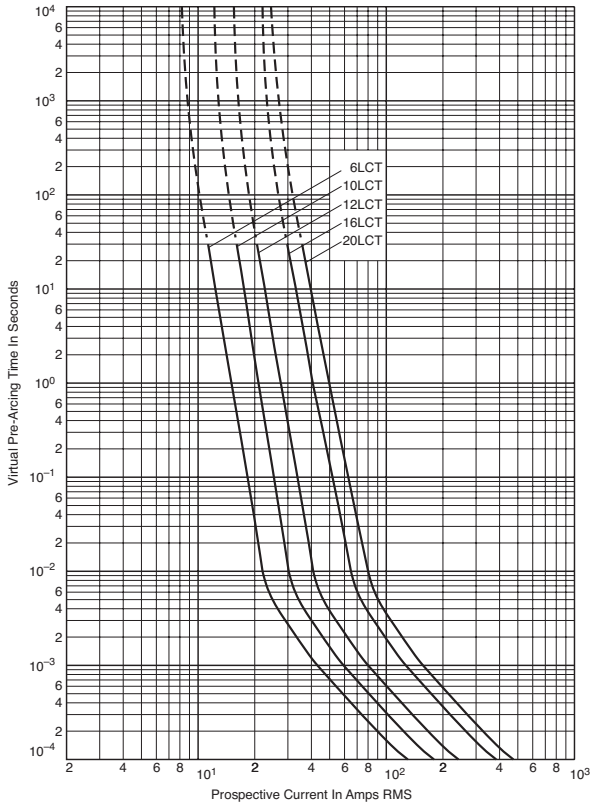
Typical Applications

- DC common bus
- AC and DC drives
- Power converters/rectifiers
- Reduced voltage starters

British BS 88 — 240V: 6-900A

LCT 6-20A: 240V

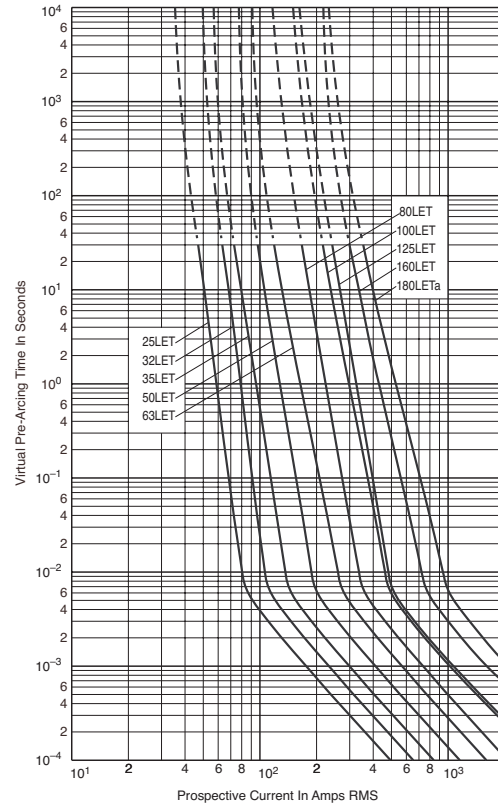
Time-Current Curve



Data Sheet: 35785296

LET 25-180A: 240V

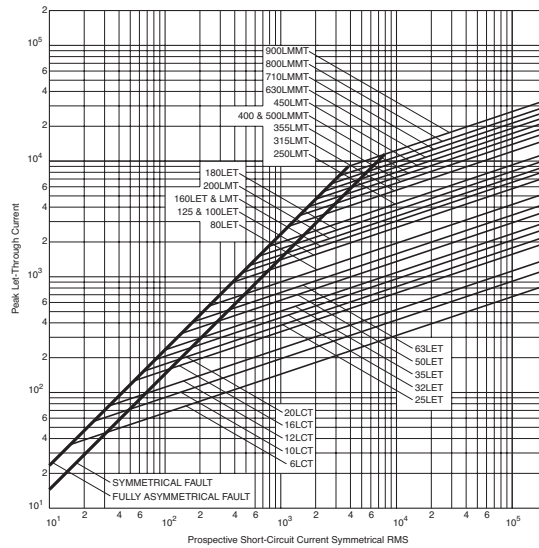
Time-Current Curve



Data Sheet: 35785293

High Speed Fuses

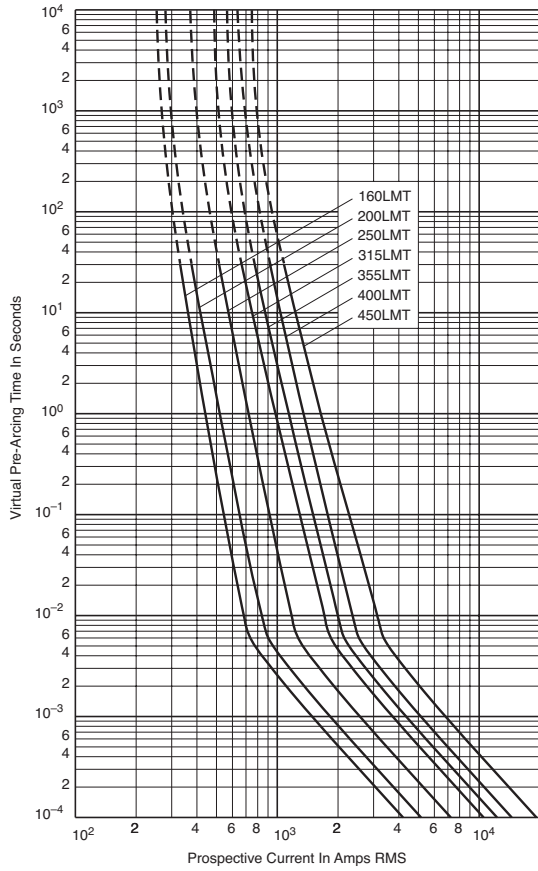
Peak Let-Through Curve



British BS 88 — 240V: 6-900A

LMT 160-450A: 240V

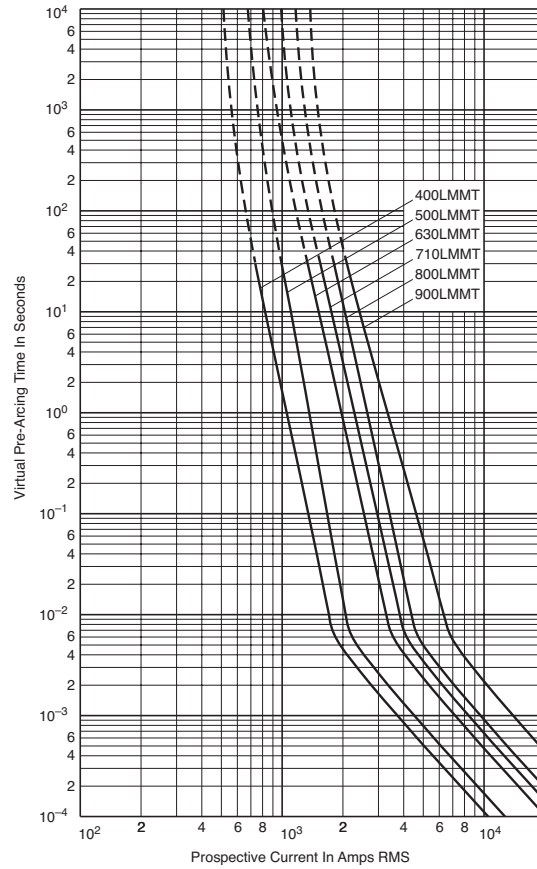
Time-Current Curve



Data Sheet: 35785294

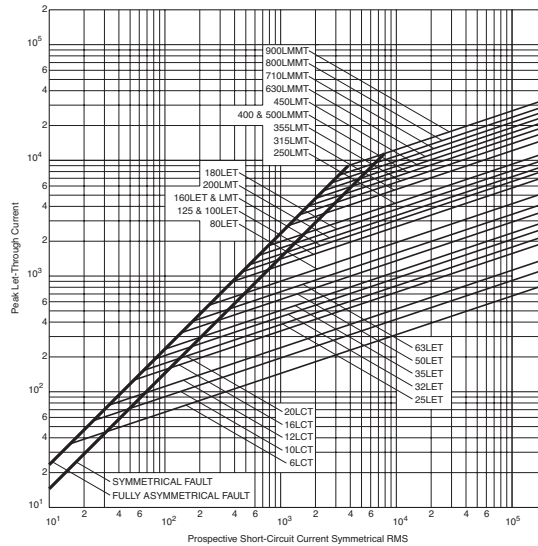
LMMT 400-900A: 240V

Time-Current Curve



Data Sheet: 35785295

Peak Let-Through Curve



British BS 88 — 690V: 6-710A

CT, ET, FE, EET, FEE, FM, FMM, MT, MMT

Specifications

Description: BS 88 style stud-mount fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 690Vac/500Vdc

Amps: — 6-710A

IR: — 200kA RMS Sym.

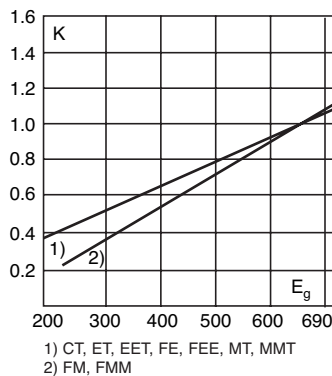
Agency Information: CE, Designed and tested to: BS 88 Part 4, IEC 269 Part 4, UL Recognized. MT and MMT — 350Vdc (IEC) rating. Consult Cooper Bussmann for UL Recognition status.



Electrical Characteristics

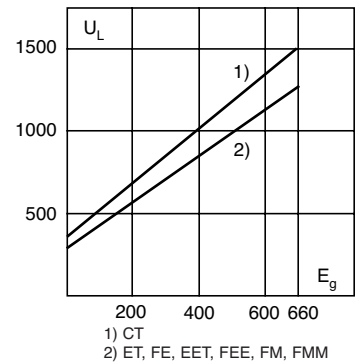
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



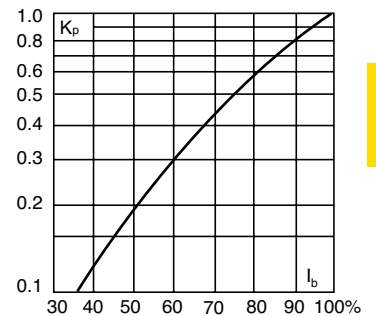
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Features and Benefits

- Excellent cycling capability
- Excellent DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions (mm)

Fig. 1: CT

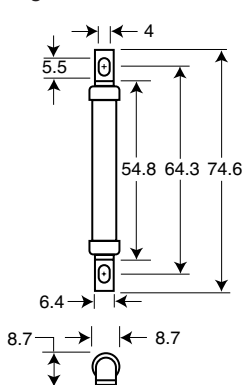


Fig. 2: ET, FE

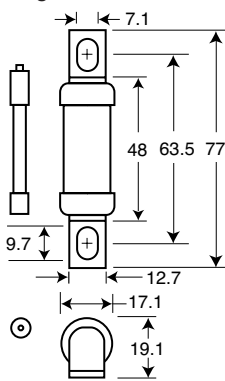


Fig. 3: EET, FEE

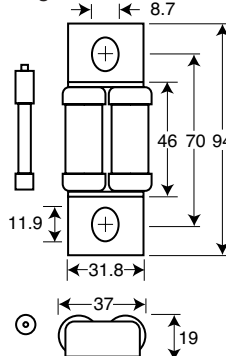


Fig. 4: FM, MT

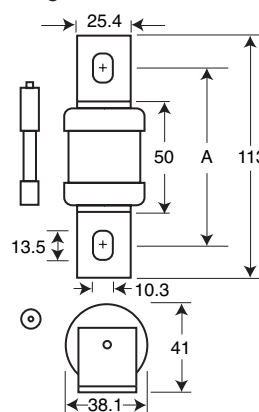
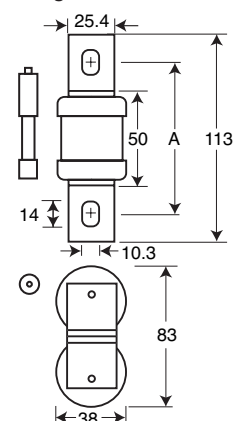


Fig. 5: FMM, MMT



Figs. 4 & 5 "A" Dimensions

| Type | "A" |
|------|---------|
| FM | 80-85mm |
| FMM | 80-85mm |
| MT | 85mm |
| MMT | 85mm |

1mm = 0.0394" / 1" = 25.4mm

British BS 88 — 690V: 6-710A

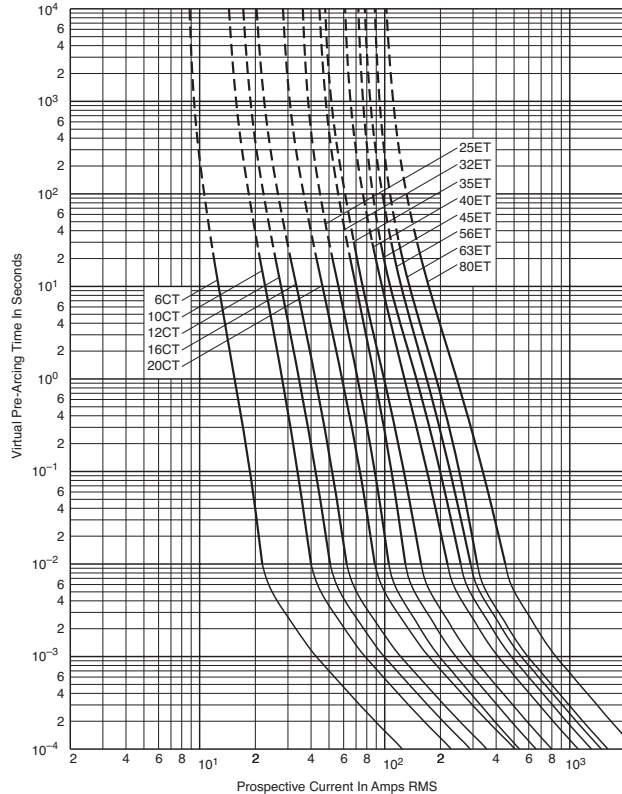
Catalog Numbers

| Catalog Numbers | Type | Electrical Characteristics | | | | |
|-----------------|------|----------------------------|-------------|------------------|------------------|------------|
| | | Rated Current RMS-Amps | Pt (A² Sec) | | | Watts Loss |
| | | | Pre-arc | Clearing at 415V | Clearing at 660V | |
| 6CT | CT | 6 | 1.8 | 8.5 | 12 | 2 |
| 10CT | | 10 | 7 | 30 | 48 | 3 |
| 12CT | | 12 | 10 | 40 | 65 | 3 |
| 16CT | | 16 | 16 | 66 | 110 | 7 |
| 20CT | | 20 | 32 | 150 | 220 | 7 |
| 25ET | ET | 25 | 25 | 150 | 250 | 7 |
| 32ET | | 32 | 32 | 190 | 350 | 11 |
| 35ET | | 35 | 52 | 310 | 500 | 11 |
| 40ET | | 40 | 103 | 600 | 900 | 9 |
| 45ET | | 45 | 103 | 680 | 1100 | 11 |
| 56ET | | 56 | 135 | 950 | 1500 | 14 |
| 63ET | | 63 | 171 | 1200 | 2000 | 16 |
| 80ET | | 80 | 360 | 2500 | 4000 | 18 |
| 35FE | FE | 35 | 33 | 130 | 200 | 9 |
| 40FE | | 40 | 52 | 180 | 300 | 9 |
| 45FE | | 45 | 76 | 270 | 450 | 11 |
| 50FE | | 50 | 103 | 380 | 600 | 11 |
| 63FE | | 63 | 135 | 480 | 750 | 12 |
| 71FE | | 71 | 210 | 600 | 950 | 17 |
| 80FE | | 80 | 250 | 900 | 1500 | 20 |
| 90FE | | 90 | 360 | 1300 | 2100 | 20 |
| 100FE | 100 | 470 | 1800 | 2800 | 23 | |
| 90EET | EET | 90 | 490 | 3000 | 4500 | 19 |
| 110EET | | 110 | 600 | 4000 | 6500 | 27 |
| 140EET | | 140 | 1050 | 7000 | 12000 | 35 |
| 160EET | | 160 | 1500 | 10000 | 17000 | 39 |
| 100FEE | FEE | 100 | 400 | 1600 | 2400 | 24 |
| 120FEE | | 120 | 540 | 1900 | 3100 | 32 |
| 140FEE | | 140 | 850 | 2500 | 3800 | 36 |
| 160FEE | | 160 | 1000 | 3700 | 5700 | 46 |
| 180FEE | | 180 | 1400 | 5300 | 8400 | 46 |
| 200FEE | | 200 | 1900 | 7100 | 11400 | 52 |
| 180FM | FM | 180 | 1400 | 7500 | 13500 | 40 |
| 200FM | | 200 | 2600 | 10500 | 18500 | 40 |
| 225FM | | 225 | 3700 | 14500 | 26500 | 44 |
| 250FM | | 250 | 5200 | 20500 | 37500 | 48 |
| 280FM | | 280 | 7000 | 30500 | 55000 | 48 |
| 315FM | | 315 | 10000 | 40000 | 77000 | 55 |
| 350FM | | 350 | 15000 | 60000 | 105000 | 55 |
| 400FMM | FMM | 400 | 10000 | 40000 | 72500 | 85 |
| 450FMM | | 450 | 15000 | 60000 | 105000 | 90 |
| 500FMM | | 500 | 20000 | 82000 | 150000 | 100 |
| 550FMM | | 550 | 30000 | 120000 | 215000 | 100 |
| 630FMM | | 630 | 45000 | 180000 | 310000 | 100 |
| 700FMM | | 700 | 60000 | 245000 | 420000 | 120 |
| 160MT | | MT | 160 | 2400 | 15000 | 25000 |
| 180MT | 180 | | 3800 | 25000 | 38000 | 26 |
| 200MT | 200 | | 6000 | 40000 | 58000 | 27 |
| 250MT | 250 | | 11500 | 80000 | 110000 | 32 |
| 280MT | 280 | | 16500 | 100000 | 150000 | 35 |
| 315MT | 315 | | 19000 | 125000 | 180000 | 42 |
| 355MT | 355 | | 22000 | 160000 | 200000 | 51 |
| 180MMT | MMT | 180 | 1650 | 12000 | 18000 | 42 |
| 200MMT | | 200 | 2200 | 16000 | 23000 | 42 |
| 225MMT | | 225 | 3700 | 26000 | 40000 | 42 |
| 280MMT | | 280 | 6600 | 47000 | 70000 | 47 |
| 315MMT | | 315 | 8600 | 62000 | 91000 | 51 |
| 355MMT | | 355 | 13500 | 97000 | 140000 | 54 |
| 400MMT | | 400 | 21000 | 150000 | 220000 | 60 |
| 450MMT | | 450 | 30000 | 220000 | 320000 | 57 |
| 500MMT | | 500 | 42000 | 300000 | 450000 | 64 |
| 560MMT | | 560 | 60000 | 430000 | 640000 | 64 |
| 630MMT | | 630 | 68500 | 500000 | 720000 | 86 |
| 710MMT | | 710 | 78000 | 600000 | 850000 | 105 |

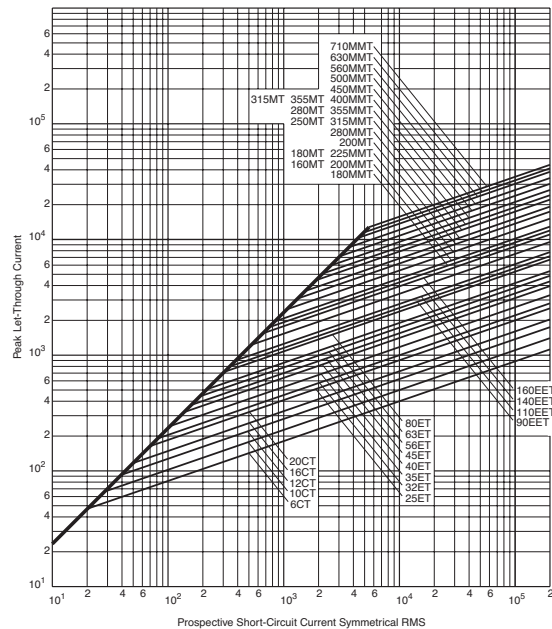
• Watts loss provided at rated current.
 • Note: FC, 8ET, 12ET, 15ET, 20ET, 65EET and 75EET are available for replacement purposes on existing equipment.
 • See accessories on page 195.

CT 6-20, ET 25-80A: 690V

Time-Current Curve



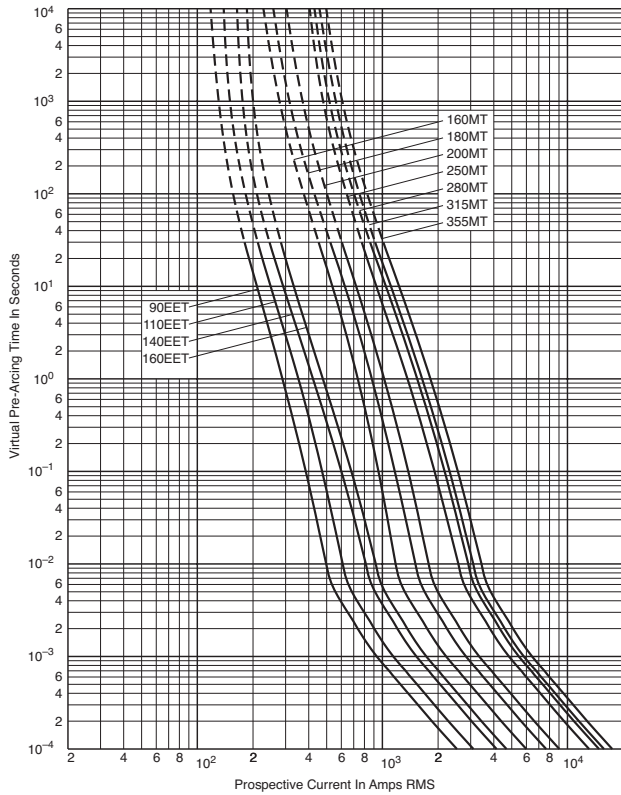
Peak Let-Through Curve



British BS 88 — 690V: 6-710A

EET 90-160A, MT 160-355A: 690V

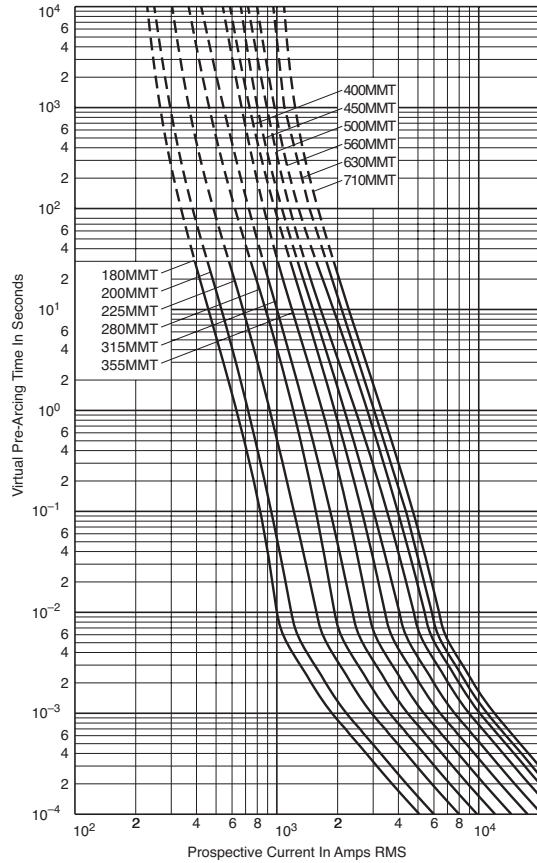
Time-Current Curve



Data Sheet: 35785313

MMT 180-710A: 690V

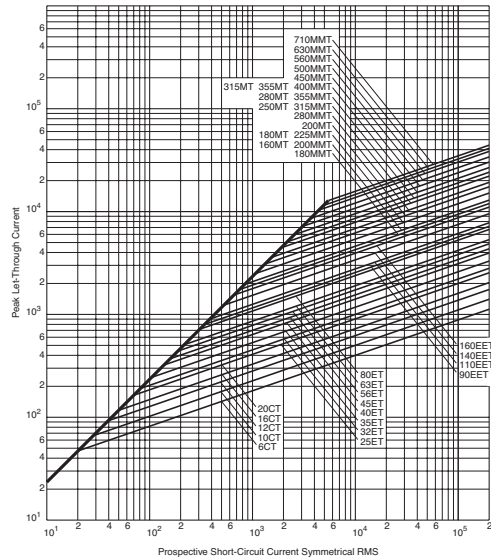
Time-Current Curve



Data Sheet: 35785311

High Speed Fuses

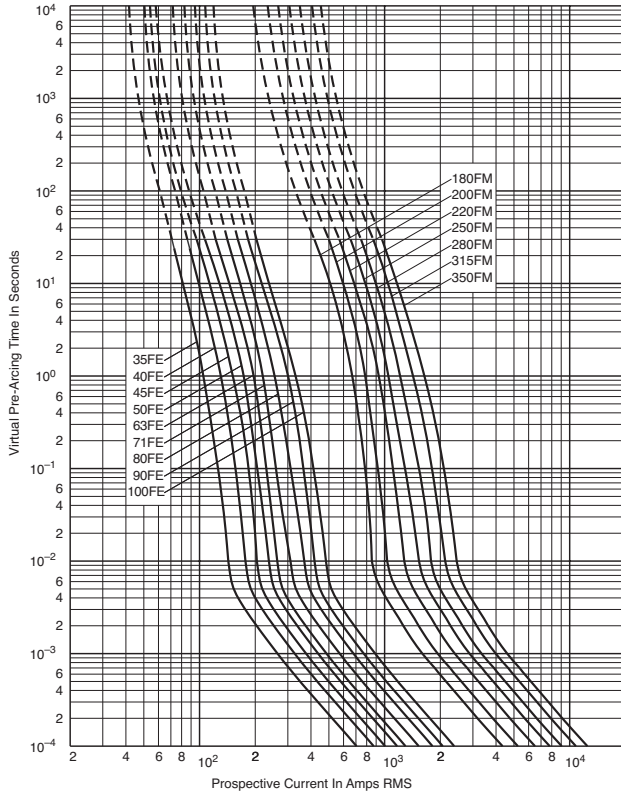
Peak Let-Through Curve



British BS 88 — 690V: 6-710A

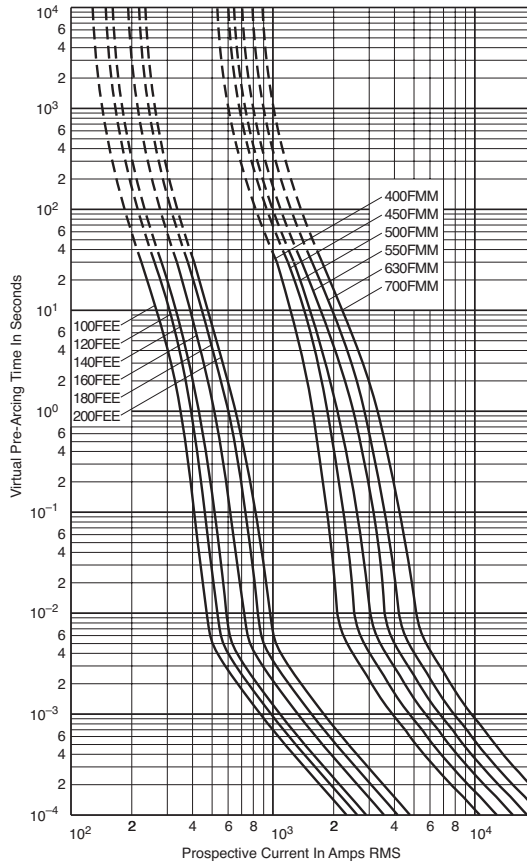
FE 35-100A & FM 180-350A: 690V

Time-Current Curve

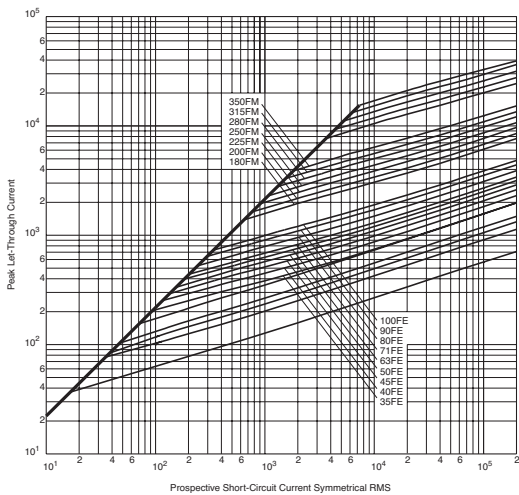


FEE 100-200A & FMM 400-700A: 690V

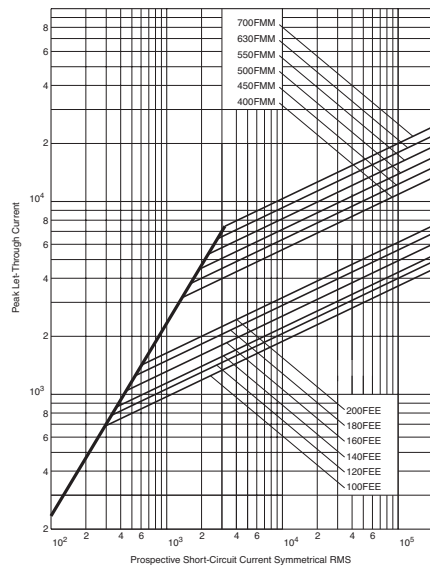
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: 35785314

Data Sheet: 35785292

British BS 88 Fuse Accessories

Indicator System

Trip-Indicators

Trip-indicators are available for use in parallel with the main fuse. They can either be attached to the associated fuse or mounted separately in panel mounted fuse clips, reference CL1. A push-on adapter and microswitch attachment is available for use with the trip indicator to give the facility of remote indication, reference MAI.

Fuse ratings of 20A and below cannot usually accommodate a trip-indicator.

When a trip-indicator is to be attached to the main fuse an accessory pack comprising a pair of mounting clips and an appropriate trip indicator would be required. The clips are snapped onto the fuse end caps and the indicator is pressed into clips as shown.

Electrical Specifications

| Type | TI500 | TI700 |
|--|---------|---------|
| Maximum RMS Voltage | 500 | 700 |
| Maximum Peak Voltage | 700 | 1000 |
| Maximum DC Voltage | 130 | 350 |
| Cold Resistance (ohms) | 0.3 | 0.45 |
| Maximum permissible steady-state current | 1.5A | 1.5A |
| Interrupting Capacity (RMS Symm.) | 100,000 | 100,000 |
| Pre-Arcing I ² t | 23 | 23 |

Fuse Indicator Kits

| Kit. Ref. | Details | RMS Volts | For use with Fuse Ref. |
|-----------|----------------|-----------|------------------------|
| EC-250 | Fuse Mount | 250 | LET |
| MC250 | Indicator Kits | 250 | LMT & LMMT |
| EC-600 | (Includes one | 660 | FE, FEE & ET |
| MC600 | indicator | 660 | FM & FMM |
| MC700 | and two clips) | 700 | MT & MMT |

Microswitch Adapter – MAI

We offer a microswitch, complete with adapter for securing the indicator. The microswitch is provided with double pole, single throw contacts, having both a normally open and a normally closed position. A special material has been employed in the construction of the adapter to provide reliable operation in the range of temperatures associated with standard operating conditions and during fuse operation.

Microswitch and Adapter Type MAI

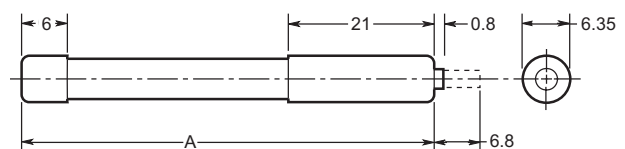
| | |
|--------------------------------------|---------|
| Current Rating: | |
| AC 50/60Hz resistive load @ 250V RMS | 4A |
| AC 50/60Hz resistive load @ 127V RMS | 6A |
| DC, resistive load @ 110Vdc | 0.7A DC |
| DC, resistive load @ 30Vdc | 2A DC |
| Maximum Working Voltage: | |
| Contact-to-contact (RMS) | 1000V |
| Contact-to-contact (RMS) | 1500V |
| Maximum DC Volts: | 110V DC |

CL1 Panel Mount Clips

CL1 Panel mount fuse clips are available for mounting a trip-indicator when mounting directly on the fuse is impractical. Order part number CL1.

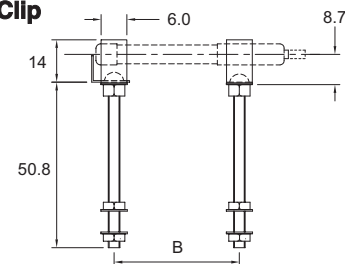


Trip-Indicator Dimensions - mm

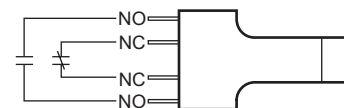


| Ref. | Dim. "A" (mm) | RMS Volts |
|--------|---------------|-----------|
| TI250 | 37.6 | 250 |
| TI500 | 47.5 | 500 |
| TI600 | 55.7 | 600 |
| TI700 | 61.8 | 700 |
| TI1100 | 98.4 | 1100 |
| TI1500 | 120.6 | 1500 |
| TI2000 | 147.5 | 2000 |
| TI2500 | 198.3 | 2500 |

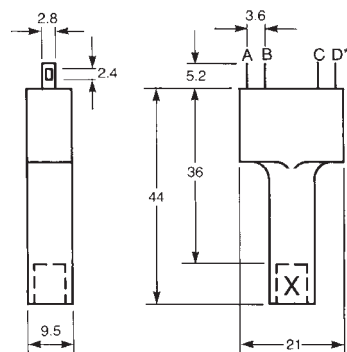
CL1 Panel Mount Clip Dimensions - mm



Terminal Arrangement



Dimensions in mm



**A=D=N/O contacts
B=C=N/C contacts

Ferrule fuses



Table of Contents

| Basic Catalog Number | Volts | Amp Range | Page |
|----------------------|----------------|-----------|---------|
| FWA | 150 | 5-60 | 197-198 |
| FWX | 250 | 1-50 | 199-200 |
| FWH | 500 | 0.25-30 | 201-204 |
| FWC | 600 | 6-32 | 205-206 |
| FWP | 690V/700 | 1-100 | 207-210 |
| FWK | 750 | 5-60 | 211-212 |
| FWJ | 1000 | 20-30 | 213-214 |
| FWL/FWS | 1250/1500/2000 | 2-30 | 215 |

Accessories

| | |
|--------------|-----|
| Fuse Holders | 216 |
|--------------|-----|

Ferrule Fuse Ranges

| Volts | Amps | AC | DC |
|-----------------|---------|----|-------------|
| 150 | 5-60 | X | X |
| 250 | 1-50 | X | X |
| 500 | 0.25-30 | X | X |
| 600 | 6-32 | X | X |
| 700 (22 x 58mm) | 20-100 | X | — |
| 700 (14 x 51mm) | 1-50 | X | X |
| 750 | 5-60 | X | X |
| 1000 | 20-30 | X | X (800Vdc) |
| 1250 | 20-30 | X | X (1000Vdc) |
| 1500 | 8-15 | X | X (1000Vdc) |
| 2000 | 2-6 | X | X (1000Vdc) |

General Information

Cooper Bussmann offers a full line of ferrule style (cylindrical clip-mounted) fuses, designed and tested to meet standards and requirements in various locations around the world.

Their unique design and construction provide:

- Superior cycling capability
- Low energy let-through (I²t)

Ferrule fuses provide an excellent solution for small UPS, small ac drives and other low power applications where space is at a premium.

Voltage Rating

All Cooper Bussmann ferrule fuses — except 690V — have been tested at their rated voltage. The 690V ferrule fuse has been tested to the IEC 60269 standard, which requires clearing at the rated voltage +5%.

Accessories

Ferrule fuses may be mounted in fuseclips, fuse holders, fuse blocks or fused switches. A variety of products are available. Please consult Cooper Bussmann Application Engineering to discuss your requirement.

Ferrule — FWA 150V: 5-60A

FWA 5-30A (10 x 38mm)
35-60A (21 X 51mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 150Vac/dc

Amps: — 5-60A

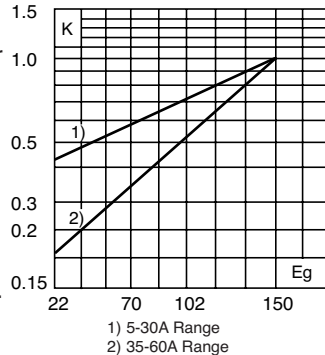
IR: — 100kA Sym.

Agency Information: CE, UL Recognition

Electrical Characteristics

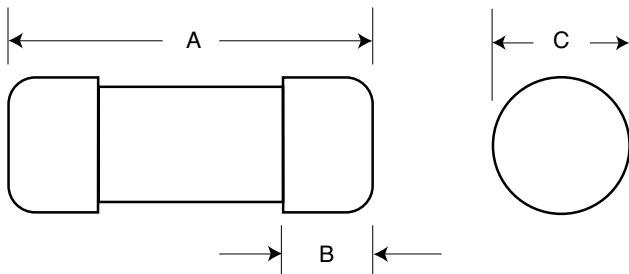
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



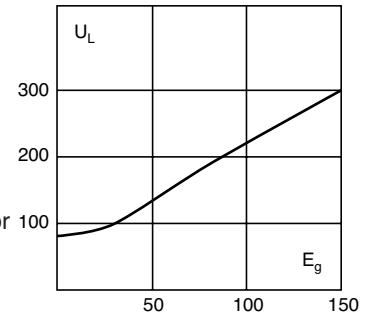
Dimensions - in (mm)

| Amp Range | Dimensions | | |
|-----------|------------|--------------|--------------|
| | A | B | C |
| 5-30 | 1.5 (38.1) | 0.375 (9.5) | 0.406 (10.3) |
| 35-60 | 2.0 (50.8) | 0.625 (15.9) | 0.811 (20.6) |



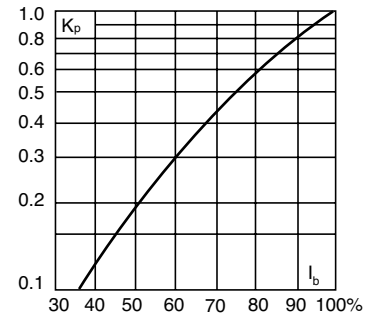
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|---|----------------------------|-----------------------------|------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 150V | |
| FWA-5A10F | 10 x 38mm (³ / ₁₆ " x 1 1/2") | 5 | 1.6 | 8 | 1 |
| FWA-10A10F | | 10 | 3.6 | 16 | 2.7 |
| FWA-15A10F | | 15 | 14 | 55 | 3.3 |
| FWA-20A10F | | 20 | 33 | 130 | 3.8 |
| FWA-25A10F | | 25 | 58 | 220 | 4.9 |
| FWA-30A10F | 30 | 100 | 400 | 4.9 | |
| FWA-35A21F | 21 x 51mm (¹³ / ₁₆ " x 2") | 35 | 75 | 800 | 4.5 |
| FWA-40A21F | | 40 | 100 | 1000 | 5.1 |
| FWA-45A21F | | 45 | 130 | 1300 | 6 |
| FWA-50A21F | | 50 | 170 | 1600 | 7.3 |
| FWA-60A21F | | 60 | 250 | 2400 | 8.0 |

• Watts loss provided at rated current.
• See accessories on page 216.

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

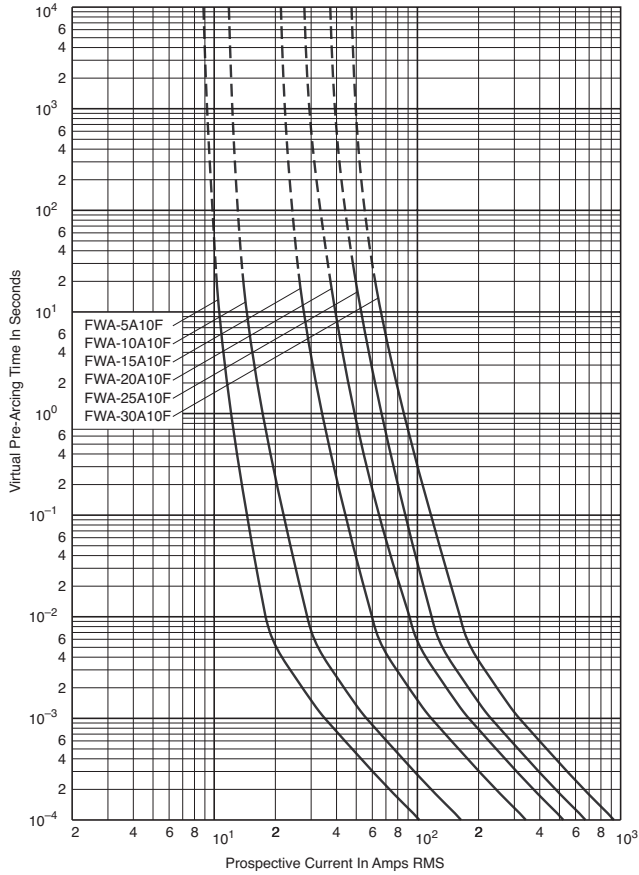
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Ferrule — FWA 150V: 5-60A

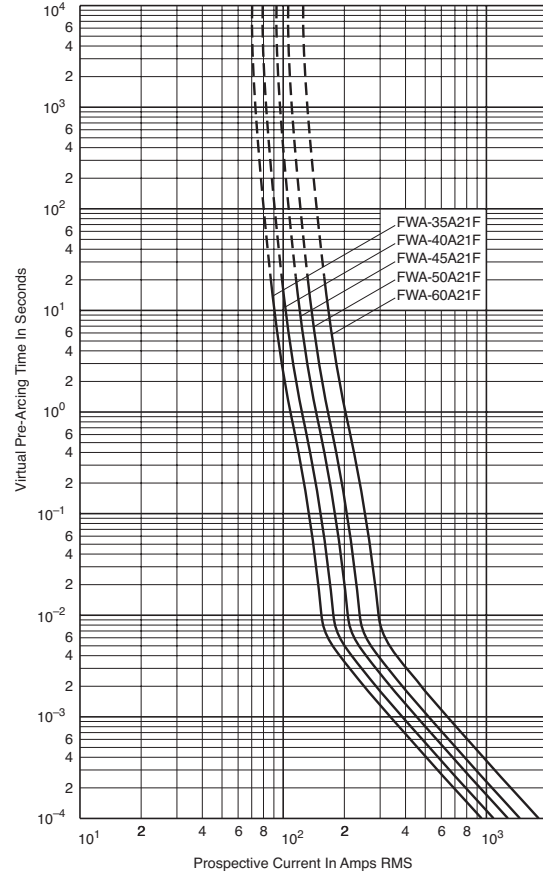
FWA 5-30A: 150V (10 x 38mm)

Time-Current Curve

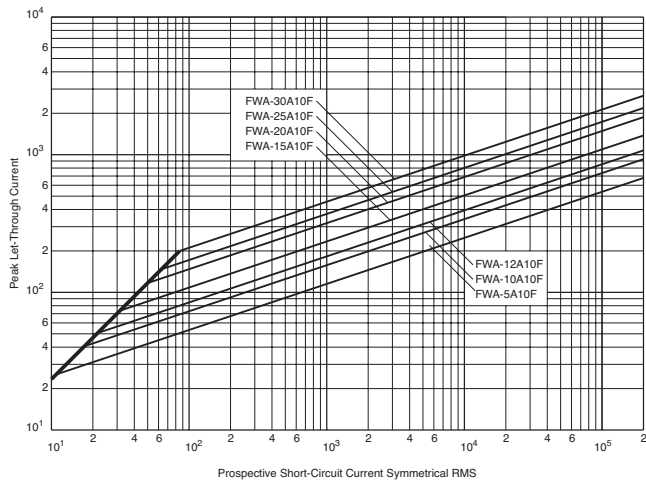


FWA 35-60A: 150V (21 x 51mm)

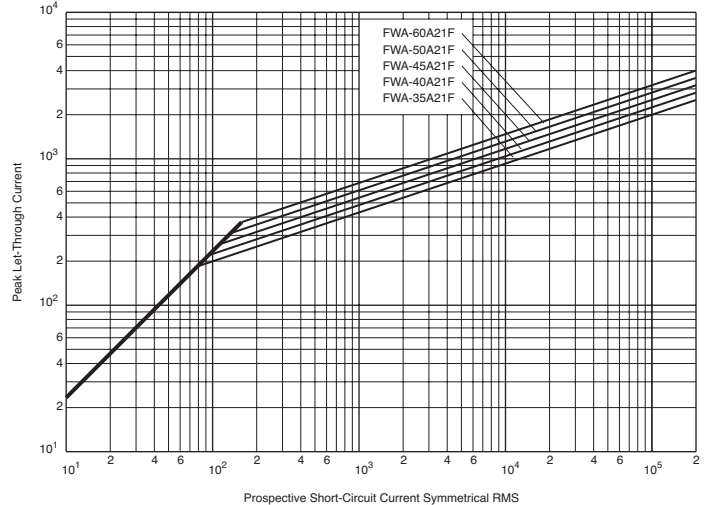
Time-Current Curve



Peak Let-Through Curve



Peak Let-Through Curve



Data Sheet: 35785317

Data Sheet: 35785305

Ferrule — FWX 250V (UL): 1-50A

FWX (14 x 51mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 250Vac/dc

Amps: — 1-50A

IR: — 200kA RMS Sym.

— 50kA @ 250Vdc

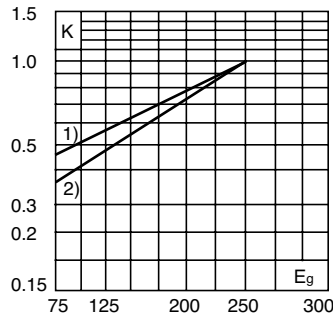
Agency Information: CE, UL Recognition 1-50A & CSA
Component Acceptance: 5-30A

Electrical

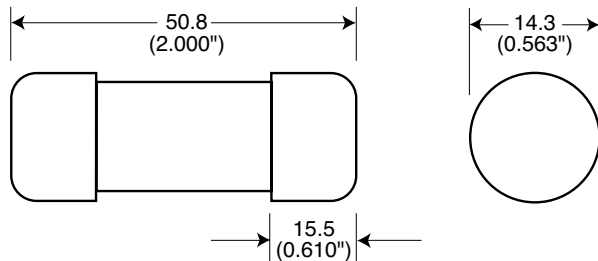
Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

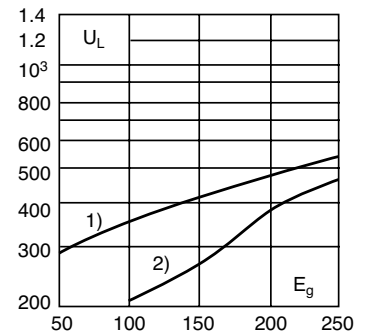


Dimensions - mm (inches)



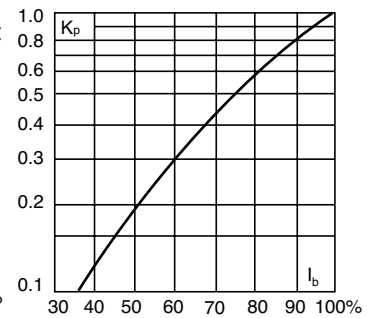
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Number | Size | Electrical Characteristics | | | |
|----------------|---------------------------------------|----------------------------|-----------------------------|------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 250V | |
| FWX-1A14F | 14 x 51mm ($\frac{9}{16}$ " x 2") | 1 | — | — | — |
| FWX-2A14F | | 2 | — | — | — |
| FWX-3A14F | | 3 | — | — | — |
| FWX-4A14F | | 4 | — | — | — |
| FWX-5A14F | | 5 | 1.6 | 13 | 1.3 |
| FWX-10A14F | | 10 | 3.6 | 24 | 3.4 |
| FWX-15A14F | | 15 | 14 | 83 | 3.8 |
| FWX-20A14F | | 20 | 33 | 200 | 4.6 |
| FWX-25A14F | | 25 | 58 | 300 | 5.3 |
| FWX-30A14F | | 30 | 100 | 500 | 5.9 |
| FWX-50A14F | 50 | 200 | 1800 | 5.7 | |

• Watts loss provided at rated current.
• (250Vdc/Interrupting rating 50kA) UL Recognition & CSA Component Acceptance on 5 through 30A only. Consult Cooper Bussmann for additional ratings.
• See accessories on page 216.

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

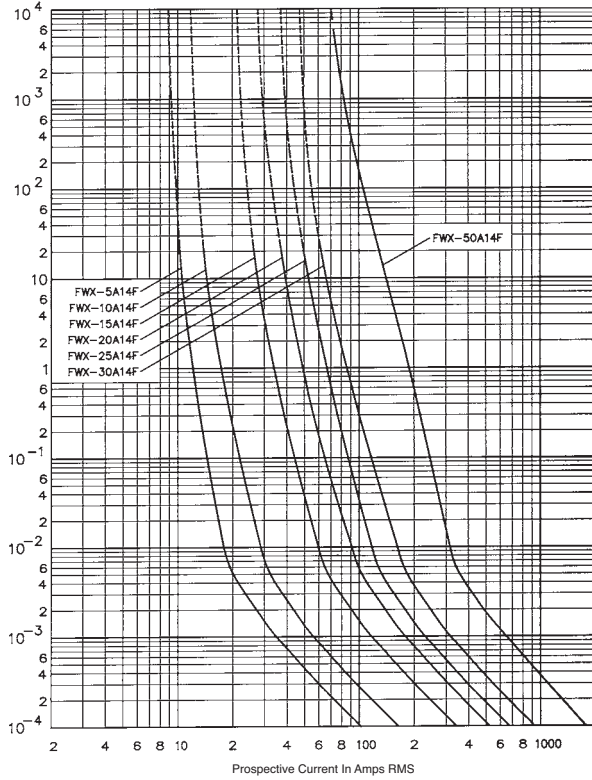
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

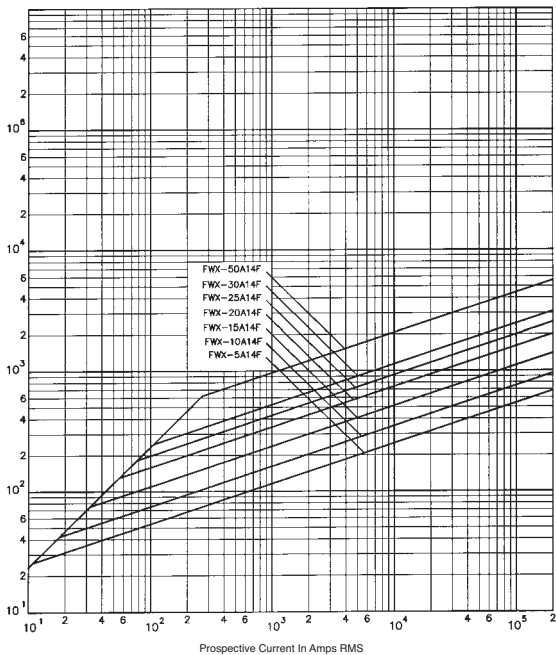
Ferrule — FWX 250V (UL): 1-50A

FWX 1-30A: 250V (14 x 51mm)

Time-Current Curve



Peak Let-Through Curve



Ferrule — FWH 500V: 0.25-30A

FWH (6 x 32mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustrations.

Ratings:

Volts: — 500Vac

Amps: — 0.25-30A

IR: — 50kA at $\geq 20\%$ pf (0.25-20A)

— 20kA at $\geq 20\%$ pf (25-30A)

Agency Information: CE, UL Recognition 0.25-30A, CSA

Component Acceptance: 0.25-7A

Opening Times

| Amp Ratings | 150% | 200% | 300% |
|-------------|----------|----------|---------------|
| 0.25-7 | > 30 min | < 30 min | ≤ 10 sec |
| 10-30 | < 30 min | < 30 min | ≤ 10 sec |



Catalog Numbers

| Catalog Numbers | Size | Rated Current RMS-Amps | Electrical Characteristics | | | Watts Loss |
|-----------------|---------------------------------------|------------------------|-----------------------------|------|------------------|------------|
| | | | I^2t (A ² Sec) | | Clearing at 500V | |
| | | | Pre-arc | | | |
| FWH-.250A6F | | 0.25* | 0.01 | 0.05 | 0.05 | 2.7 |
| FWH-.500A6F | | 0.5* | 0.05 | 0.25 | 0.25 | 1.2 |
| FWH-001A6F | | 1* | 0.4 | 2 | 2 | 1.7 |
| FWH-002A6F | | 2* | 1.3 | 3.5 | 3.5 | 3.2 |
| FWH-3.15A6F | | 3.15* | 3.1 | 7.7 | 7.7 | 2.9 |
| FWH-005A6F | | 5* | 15 | 40 | 40 | 2.1 |
| FWH-6.30A6F | 6 x 32mm | 6.3* | 36 | 90 | 90 | 2.3 |
| FWH-007A6F | ($\frac{1}{4}$ " x $1\frac{1}{4}$ ") | 7* | 50 | 125 | 125 | 2.5 |
| FWH-010A6F | | 10** | 9.9 | 139 | 139 | 2.86 |
| FWH-12.5A6F | | 12.5** | 20 | 60 | 60 | 3.53 |
| FWH-015A6F | | 15** | 44 | 146 | 146 | 3.08 |
| FWH-016A6F | | 16** | 48 | 177 | 177 | 4.48 |
| FWH-020A6F | | 20** | 75 | 259 | 259 | 4.26 |
| FWH-025A6F | | 25** | 126 | 345 | 345 | — |
| FWH-030A6F | | 30** | 145 | 430 | 430 | — |

*300% minimum opening current at rated voltage.

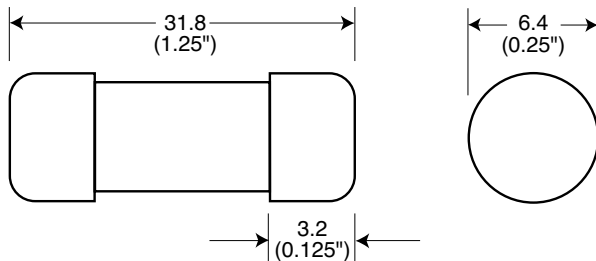
**200% minimum opening current at rated voltage.

• Consult Cooper Bussmann for DC ratings.

• See accessories on page 216.

High Speed Fuses

Dimensions - mm (inches)



Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

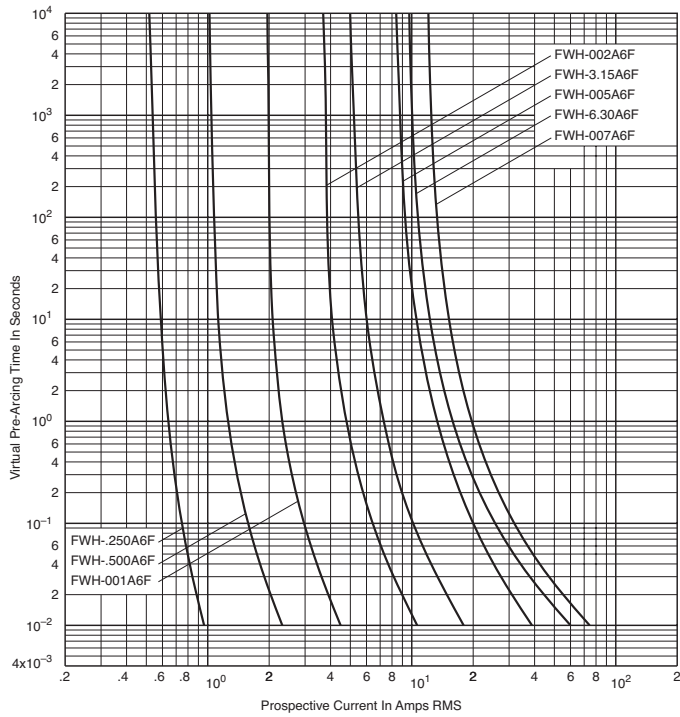
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Ferrule — FWH 500V: 0.25-30A

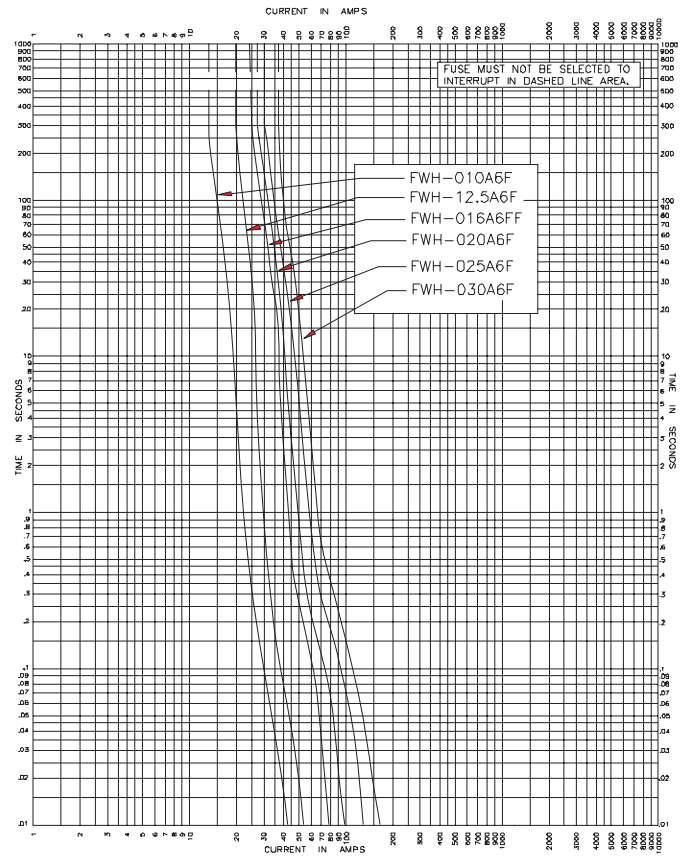
FWH 0.25-7A: 500V (6 x 32mm)

Time-Current Curve



FWH 10-30A: 500V (6 x 32mm)

Time-Current Curve



Ferrule — FWH 500V: 1-30A

FWH (14 x 51mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 500Vac/dc

Amps: — 1-30A

IR: — 200kA RMS Sym.

— 50kA @500Vdc

Agency Information: CE, UL Recognition 1- 30A & CSA

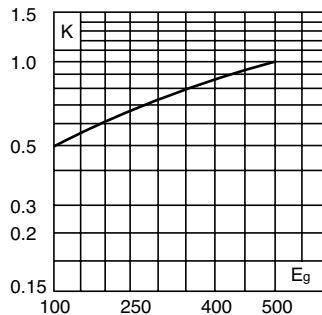
Component Acceptance: 5 - 30A.



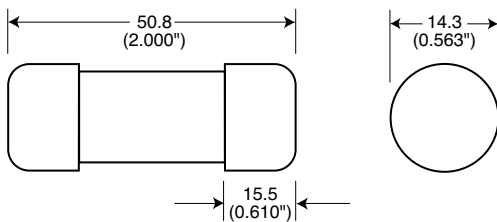
Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

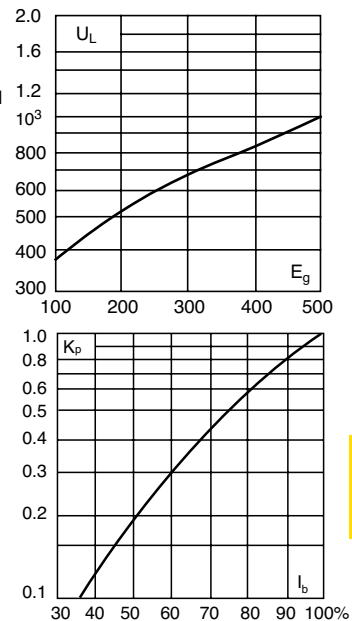


Dimensions - mm (inches)



Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.

Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|-------------------------------------|----------------------------|-----------------------------|------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 500V | |
| FWH-1A14F | 14 x 51mm (% ¹⁶ x 2") | 1 | — | — | — |
| FWH-2A14F | | 2 | — | — | — |
| FWH-3A14F | | 3 | — | — | 2.3 |
| FWH-4A14F | | 4 | — | — | — |
| FWH-5A14F | | 5 | 1.6 | 6.4 | 1.5 |
| FWH-6A14F | | 6 | 1.6 | 6.4 | 1.5 |
| FWH-10A14F | | 10 | 3.6 | 13 | 4 |
| FWH-12A14F | | 12 | — | — | — |
| FWH-15A14F | | 15 | 10 | 40 | 5.5 |
| FWH-20A14F | | 20 | 26 | 96 | 6 |
| FWH-25A14F | | 25 | 49 | 191 | 7 |
| FWH-30A14F | | 30 | 58 | 232 | 9 |

• Watts loss provided at rated current.
• See accessories on page 216.

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

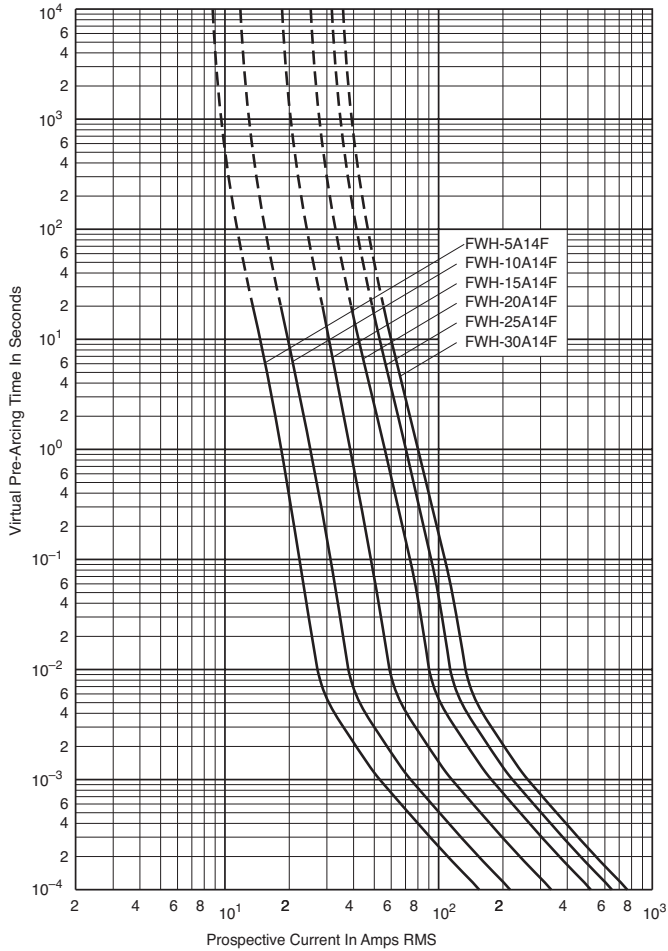
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

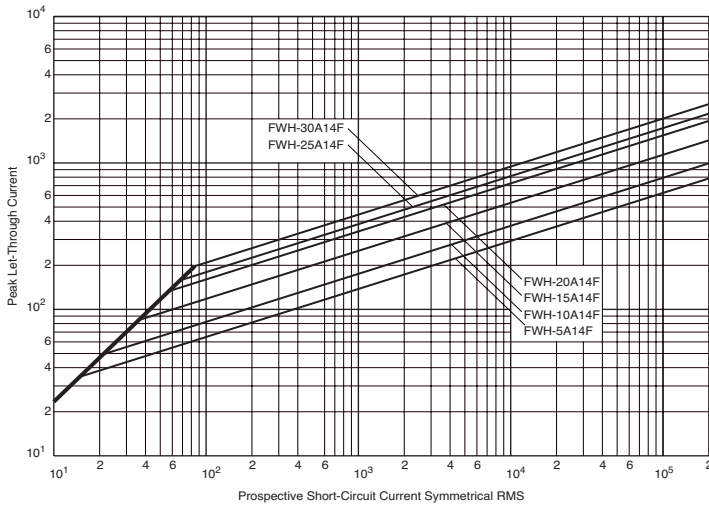
Ferrule — FWH 500V: 1-30A

FWH 1-30A: 500V (14 x 51mm)

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 35785298

Ferrule — FWC 600V: 6-32A

FWC (10 x 38mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 600Vac/dc

Amps: — 6-32A

IR: — 200kA RMS Sym.

— 50kA @ 700Vdc (6-25A)

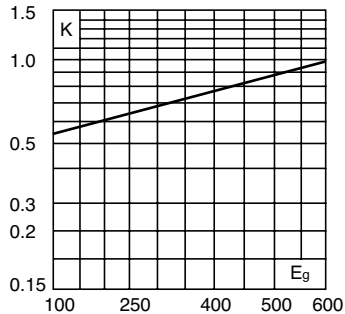
Agency Information: CE, UL Recognition: 6-32A.

UL Recognition: 6-25A

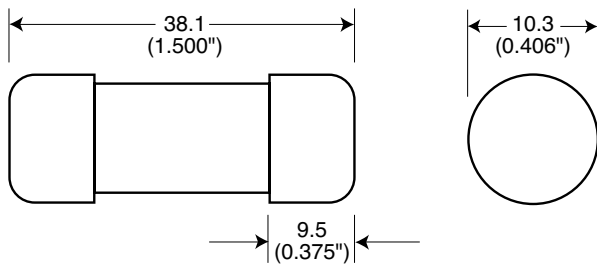
Electrical Characteristics

Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

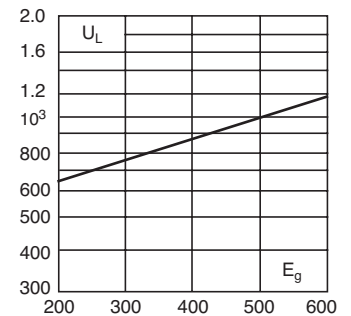


Dimensions - mm (inches)



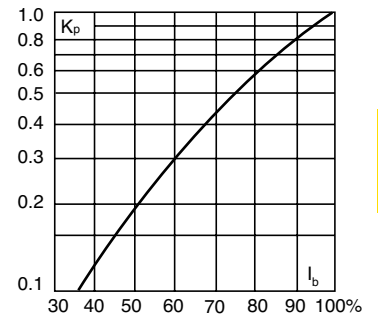
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|---|----------------------------|-----------------------------|------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 600V | |
| FWC-6A10F | 10 x 38mm (^{13/32} " x 1 1/2") | 6 | 4 | 30 | 1.5 |
| FWC-8A10F | | 8 | 6 | 50 | 2.0 |
| FWC-10A10F | | 10 | 9 | 70 | 2.5 |
| FWC-12A10F | | 12 | 15 | 120 | 3.0 |
| FWC-16A10F | | 16 | 25 | 150 | 3.5 |
| FWC-20A10F | | 20 | 34 | 260 | 4.8 |
| FWC-25A10F | | 25 | 60 | 390 | 6.0 |
| FWC-30A10F | | 30 | 95 | 600 | 7.5 |
| FWC-32A10F | 32 | 95 | 600 | 7.5 | |

• Watts loss provided at rated current.
• See accessories on page 216.

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

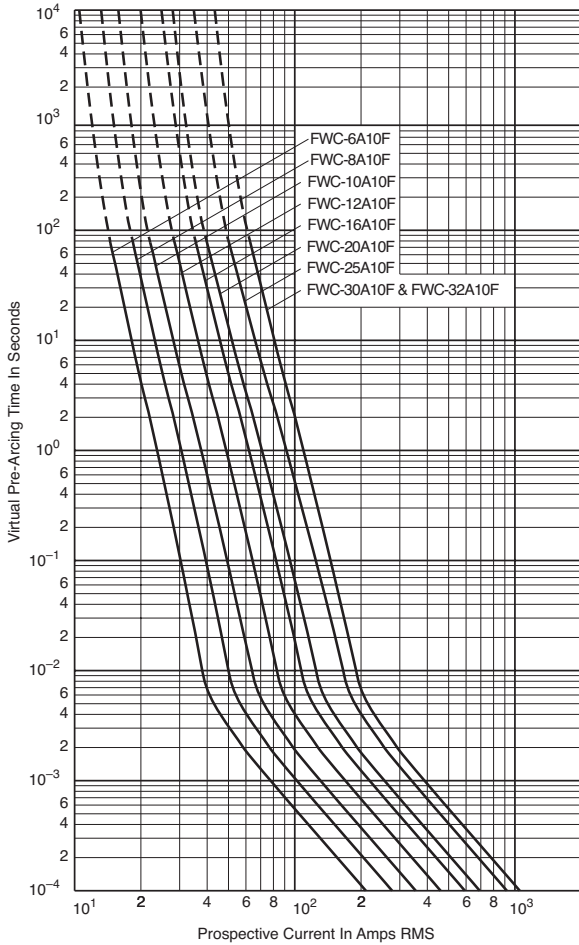
Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

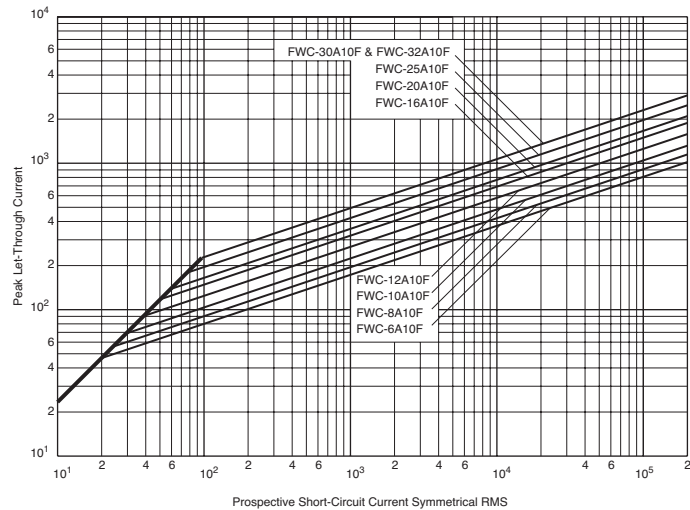
Ferrule — FWC 600V: 6-32A

FWC 6-32A: 600V (10 x 38mm)

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 35785306

Ferrule — FWP 690V/700V (IEC/UL): 1-50A, Striker Optional

FWP (14 x 51mm)

Specifications

Description: Ferrule style high speed fuses with and without indicating striker.

Dimensions: See dimensions illustrations.

Ratings:

- Volts: — 690Vac (IEC)
- 700Vac (UL)
- 800Vdc (5-50A)

Amps: — 1-50A

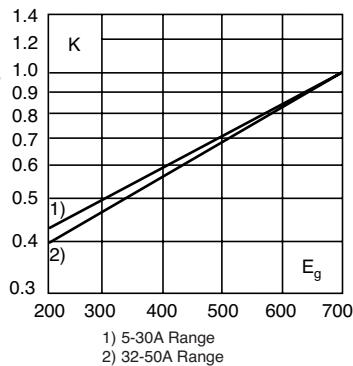
- IR: — 200kA RMS Sym.
- 50kA @800Vdc

Agency Information: CE, UL Recognition, CSA Component Acceptance for versions without indicator only.

Electrical Characteristics

Total Clearing I²t

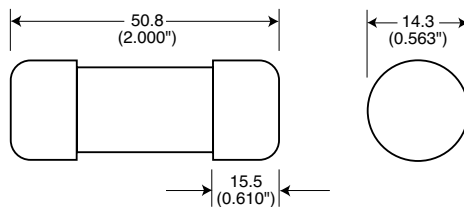
The total clearing I²t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I²t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g, (rms).



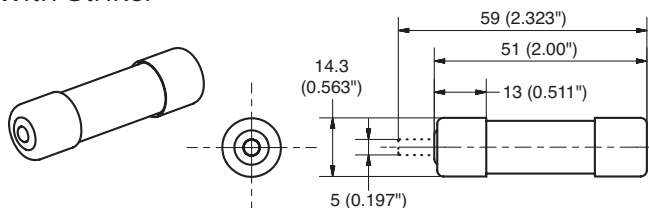
1) 5-30A Range
2) 32-50A Range

Dimensions - mm (inches)

Without Striker



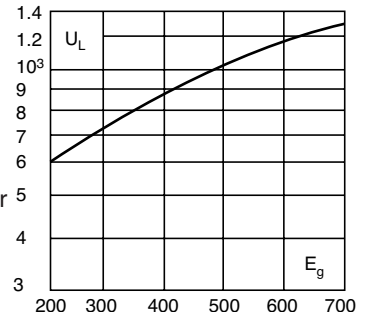
With Striker



FWP with striker option.

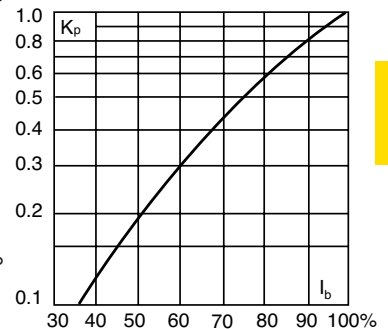
Arc Voltage

This curve gives the peak arc voltage, U_L, which may appear across the fuse during its operation as a function of the applied working voltage, E_g, (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p, is given as a function of the RMS load current, I_b, in % of the rated current.



Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|--|----------------------------|-----------------------|---|------------|
| | | Current RMS-Amps | Rated Minimum Melting | I ² t (A ² Sec) Clearing At Rated Voltage | Watts Loss |
| Without Striker | 14 x 51mm (¹¹ / ₁₆ " x 2") | 1 | — | — | — |
| FWP-1A14Fa | | 2 | — | — | — |
| FWP-2A14Fa | | 2.5 | — | — | — |
| FWP-2.5A14Fa | | 3 | — | — | — |
| FWP-3A14Fa | | 4 | — | — | — |
| FWP-4A14Fa | | 5 | 1.6 | 11.0 | 1.5 |
| FWP-5A14Fa | | 10 | 3.6 | 38.5 | 4 |
| FWP-10A14Fa | | 15 | 8.6 | 70 | 5.5 |
| FWP-15A14Fa | | 20 | 26.0 | 230 | 6 |
| FWP-20A14Fa | | 25 | 46.5 | 375 | 7 |
| FWP-25A14Fa | | 30 | 58 | 485 | 9 |
| FWP-30A14Fa | | 32 | 68 | 600 | 7.6 |
| FWP-32A14Fa | 40 | 84 | 750 | 8 | |
| FWP-40A14Fa | 50 | 200 | 1800 | 9 | |
| With Striker | 14 x 51mm (¹¹ / ₁₆ " x 2") | 10 | 3.6 | 38.5 | 4 |
| FWP-10A14FI | | 15 | 8.6 | 70 | 5.5 |
| FWP-15A14FI | | 20 | 26.0 | 230 | 6 |
| FWP-20A14FI | | 25 | 46.5 | 375 | 7 |
| FWP-25A14FI | | 30 | 58 | 485 | 9 |
| FWP-30A14FI | | 32 | 68 | 600 | 7.6 |
| FWP-32A14FI | | 40 | 84 | 750 | 8 |
| FWP-40A14FI | 50 | 200 | 1800 | 9 | |

• Watts loss provided at rated current.
• See accessories on page 216.

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

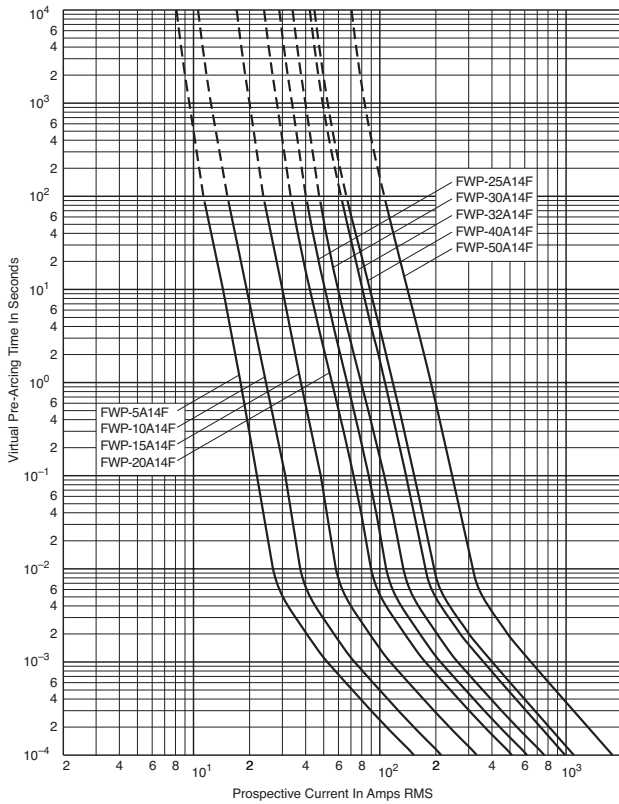
Data Sheet: 720025

Ferrule — FWP 690V/700V (IEC/UL): 1-50A, Striker Optional

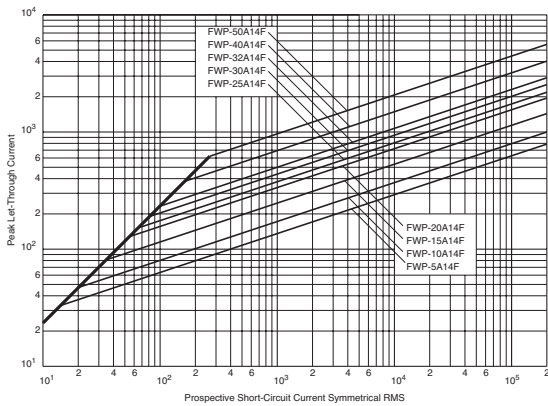
Without Striker

FWP 5-50A: 660V/700V (14x 51mm)

Time-Current Curve



Peak Let-Through Curve



Data Sheet: 35785307

Ferrule — FWP 690V/700V (IEC/UL): 20-100A, Striker Optional

FWP (22 x 58mm)

Specifications

Description: Ferrule style high speed fuses with and without indicating striker.

Dimensions: See dimensions illustration.

Ratings:

- Volts: — 690Vac (IEC)
- 700Vac (UL)

Amps: — 20-100A

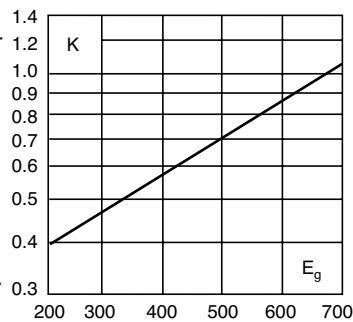
- IR: — 200kA RMS Sym.
- 50kA @ 500Vdc

Agency Information: CE, UL Recognition

Electrical Characteristics

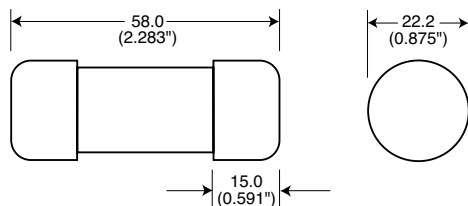
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).

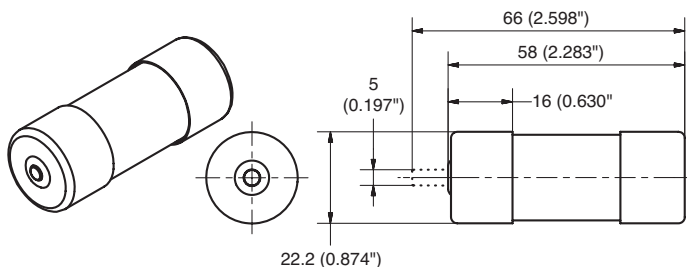


Dimensions - mm (inches)

Without Striker



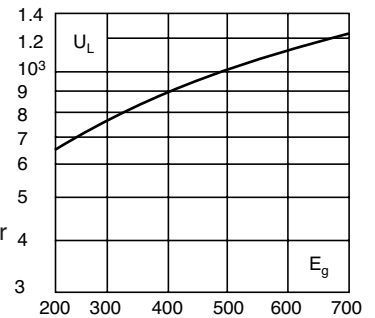
With Striker



FWP with striker option.

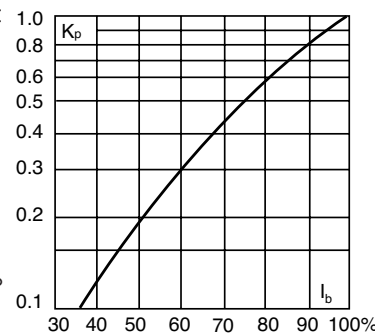
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|------------------------|---|----------------------------|-----------------------------|---------------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Minimum Melting | Clearing At Rated Voltage | |
| Without Striker | | | | | |
| FWP-20A22Fa | 22 x 58mm ($\frac{7}{8}$ " x 2 $\frac{1}{2}$ " ¹) | 20 | 19.0 | 260 | 5 |
| FWP-25A22Fa | | 25 | 34.0 | 410 | 6 |
| FWP-32A22Fa | | 32 | 53.5 | 605 | 8 |
| FWP-40A22Fa | | 40 | 68 | 750 | 9 |
| FWP-50A22Fa | | 50 | 135 | 1600 | 9.5 |
| FWP-63A22Fa | | 63 | 280 | 3080 | 11 |
| FWP-80A22Fa | | 80 | 600 | 6600 | 13.5 |
| FWP-100A22Fa | 100* | 1100 | 12500 | 16 | |
| With Striker | | | | | |
| FWP-20A22FI | 22 x 58mm ($\frac{7}{8}$ " x 2 $\frac{1}{2}$ " ¹) | 20 | 19.0 | 260 | 5 |
| FWP-25A22FI | | 25 | 34.0 | 410 | 6 |
| FWP-32A22FI | | 32 | 53.5 | 605 | 8 |
| FWP-40A22FI | | 40 | 68 | 750 | 9 |
| FWP-50A22FI | | 50 | 135 | 1600 | 9.5 |
| FWP-63A22FI | | 63 | 280 | 3080 | 11 |
| FWP-80A22FI | | 80 | 600 | 6600 | 13.5 |
| FWP-100A22FI | 100* | 1100 | 12500 | 16 | |

¹IEC/UL Voltage rating 690/700

Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

Typical Applications

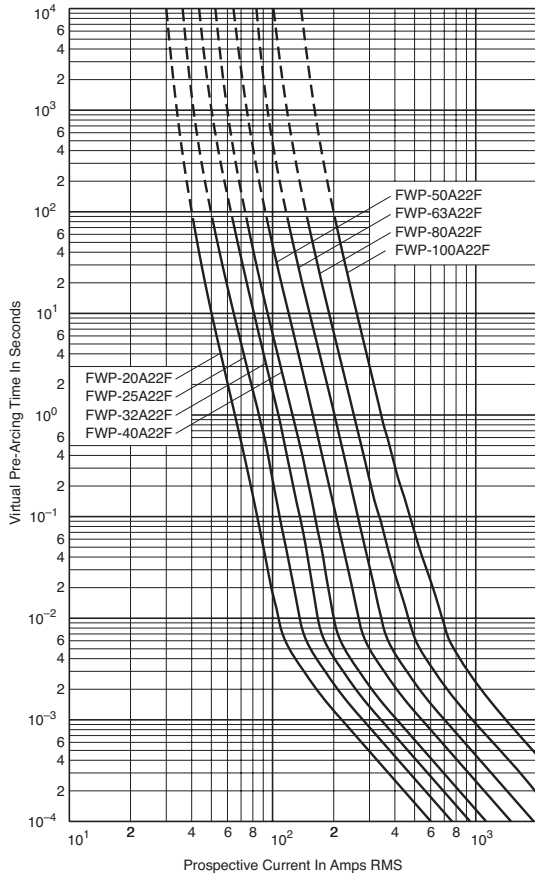
- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Ferrule — FWP 690V/700V (IEC/UL): 20-100A, Striker Optional

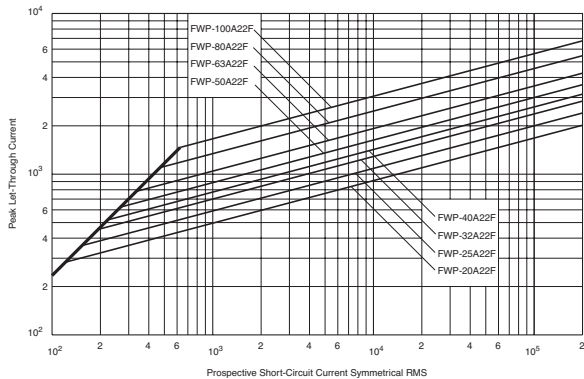
Without Striker

FWP 20-100A: 660V/700V (22 x 58mm)

Time-Current Curve



Peak Let-Through Curve



Ferrule — FWK 750V: 5-60A

FWK 5-30A (20 x 127mm)
35-60A (25 x 146mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 750Vac

— 750Vdc (Time constant = 10-15mS)

Amps: — 5-60A

IR: — 45kA RMS Sym.

Agency Information: CE



Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | |
|-----------------|---|----------------------------|-----------------------------|--------------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | |
| | | | Pre-arc | Clearing at 750Vdc |
| FWK-5A20F | 20 x 127mm ($\frac{13}{16}$ " x 5") | 5 | 8.5 | 16 |
| FWK-8A20F | | 8 | 50 | 100 |
| FWK-10A20F | | 10 | 95 | 200 |
| FWK-15A20F | | 15 | 100 | 240 |
| FWK-20A20F | | 20 | 125 | 315 |
| FWK-30A20F | | 30 | 800 | 2600 |
| FWK-35A25F | 25 x 146mm (1" x 5 $\frac{7}{16}$ ") | 35 | 1300 | 4300 |
| FWK-40A25F | | 40 | 1600 | 5300 |
| FWK-50A25F | | 50 | 3100 | 12000 |
| FWK-60A25F | | 60 | 5900 | 24000 |

Recommended fuseholders for 20x127, CH127-1, -2, -3

Recommended fuseclips for 20x127, 1A1837

Recommended fuseclips for 25x146, A3354705

Dimensions - mm (inches)

Fig. 1: 5-30A

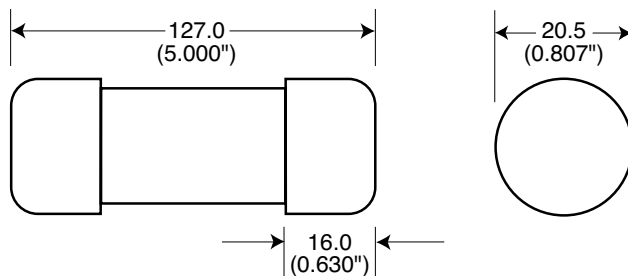
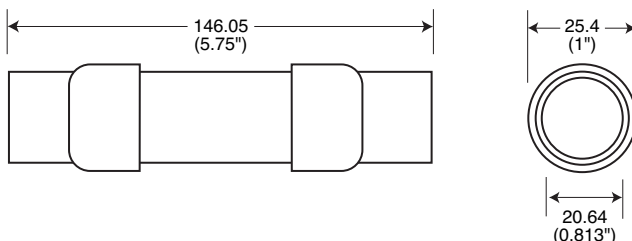


Fig. 2: 35-60A

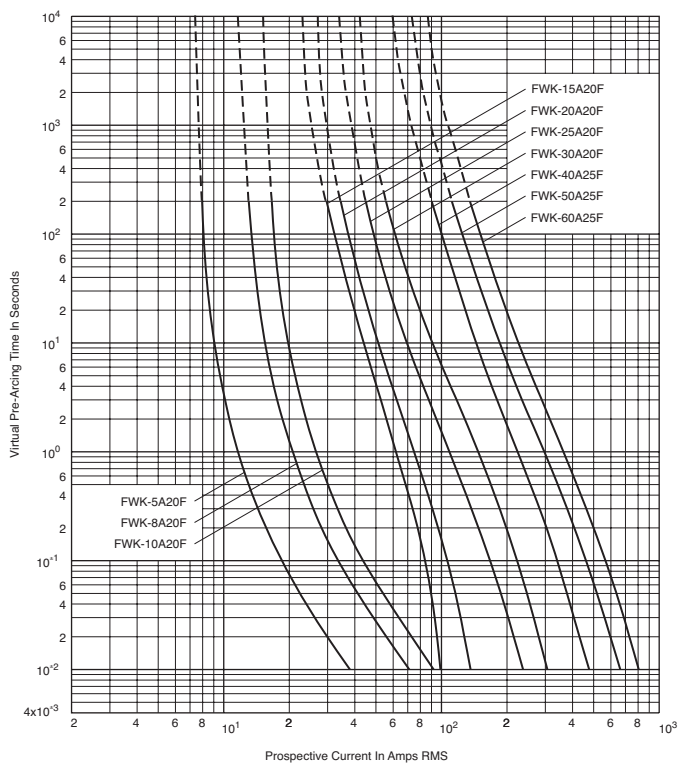


Data Sheet: 720039

Ferrule — FWK 750V: 5-60A

FWK 750V: 5-30A (20 x 127mm)
 35-60A (25 x 146mm)

Time-Current Curve



Ferrule — FWJ 1000V: 20-30A

FWJ (14 x 67mm)

Specifications

Description: Ferrule style high speed fuses.

Dimensions: See dimensions illustration.

Ratings:

Volts: — 1000Vac/800Vdc

Amps: — 20-30A

IR: — 25kA RMS Sym.

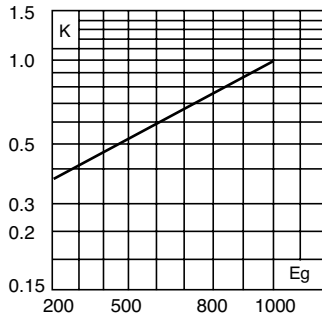
— 20kA @ 800Vdc

Agency Information: CE, UL Recognized

Electrical Characteristics

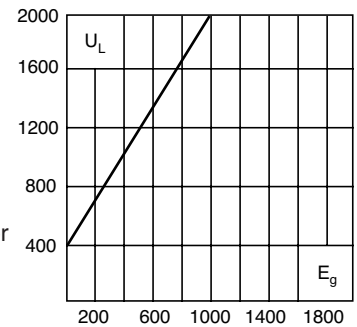
Total Clearing I^2t

The total clearing I^2t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I^2t is found by multiplying by correction factor, K, given as a function of applied working voltage, E_g , (rms).



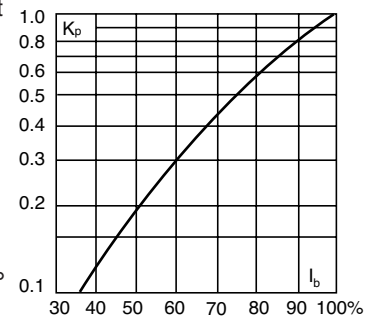
Arc Voltage

This curve gives the peak arc voltage, U_L , which may appear across the fuse during its operation as a function of the applied working voltage, E_g , (rms) at a power factor of 15%.



Power Losses

Watts loss at rated current is given in the electrical characteristics. The curve allows the calculation of the power losses at load currents lower than the rated current. The correction factor, K_p , is given as a function of the RMS load current, I_b , in % of the rated current.



Catalog Numbers

| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|--|----------------------------|-----------------------------|-------------------|------------|
| | | Rated Current RMS-Amps | I^2t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 1000V | |
| FWJ-20A14F | 14 x 67mm | 20 | 25 | 220 | 9 |
| FWJ-25A14F | ($\frac{1}{2}$ " x 2 $\frac{1}{2}$ ") | 25 | 33 | 350 | 11 |
| FWJ-30A14F | | 30 | 52 | 450 | 14 |

• Watts loss provided at rated current.
• See accessories on page 216.

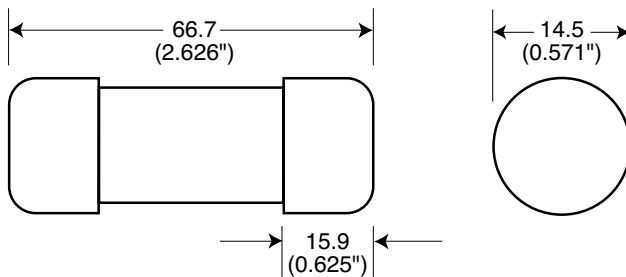
Features and Benefits

- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I^2t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Dimensions - mm (inches)



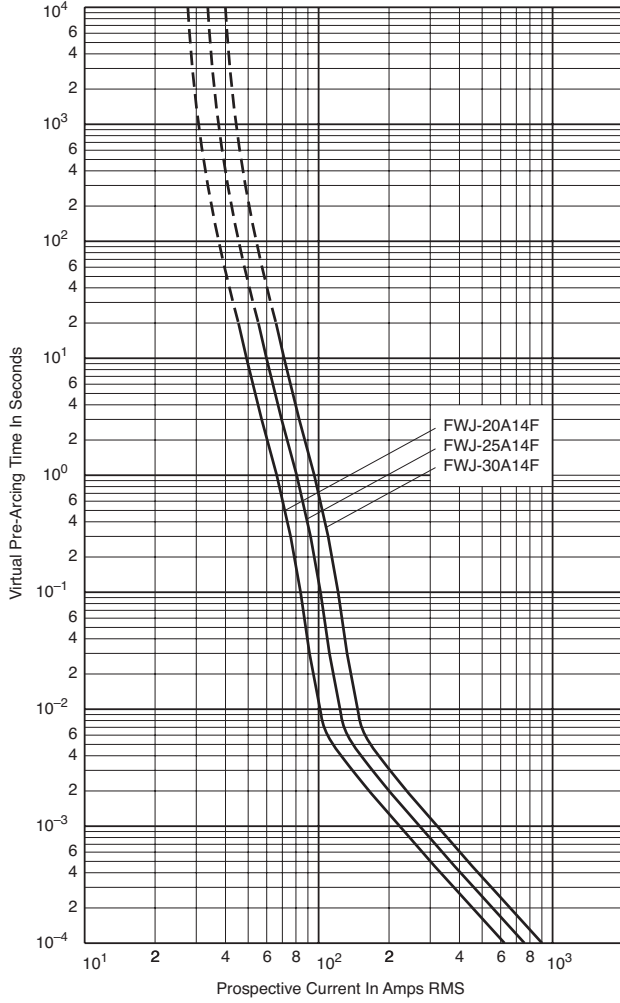
Fuseclips:

- Catalog Number: 5591 (see data sheet 2132)

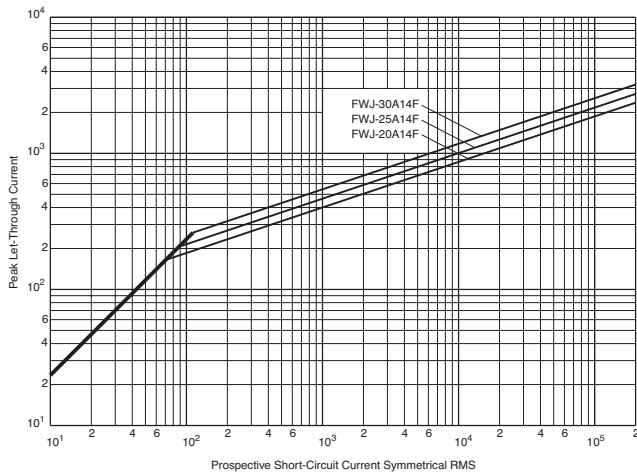
Ferrule — FWJ 1000V: 20-30A

FWJ 20-30A: 1000V (14 x 67mm)

Time-Current Curve



Peak Let-Through Curve



Ferrule — FWS/FWL 1000Vdc: 2-30A

FWS 2-15A (20 x 127mm)
 FWL 20-30A (20 x 127mm)

Specifications

Description: Ferrule style full range fuses.

Dimensions: See dimensions illustrations.

Ratings:

- Volts: — 1200Vac (FWL 20-30A)
- 1400Vac (FWS 8-15A)
- 2100Vac (FWS 2-6A)
- 1000Vdc (FWL/FWS 2-30)

Amps: — 2-30A

- IR: — 45kA RMS Sym.
- 30kA @ 1000Vdc

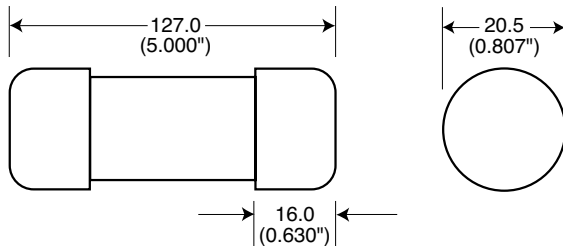
Agency Information: CE, IEC 60077

Catalog Numbers

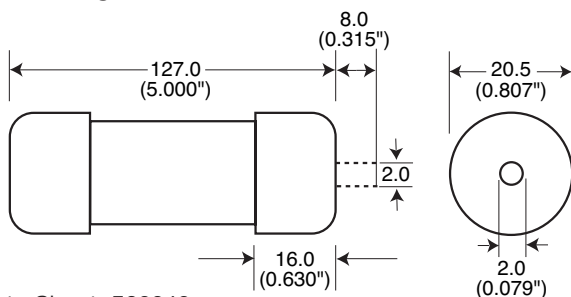
| Catalog Numbers | Size | Electrical Characteristics | | | |
|-----------------|---|----------------------------|---------------------------------------|---------------------|------------|
| | | Rated Current RMS-Amps | I ² t (A ² Sec) | | Watts Loss |
| | | | Pre-arc | Clearing at 1000Vdc | |
| FWS-2A20F | 20 x 127mm (1 ³ / ₁₆ " x 5") | 2 | 0.8 | 2.4 | 4.4 |
| FWS-6A20F | | 6 | 27 | 81 | 6.7 |
| FWS-8A20F | | 8 | 64 | 192 | 7.6 |
| FWS-10A20F | | 10 | 118 | 277 | 3.0 |
| FWS-12A20F | | 12 | 170 | 380 | 3.4 |
| FWS-15A20F | | 15 | 209 | 500 | 5.0 |
| FWL-20A20F | 20 x 127mm (1 ³ / ₁₆ " x 5") | 20 | 675 | 1550 | 5.9 |
| FWL-25A20F | | 25 | 1200 | 2760 | 6.5 |
| FWL-30A20F | | 30 | 1850 | 4300 | 7.5 |

- ADD "I" to catalog number for indicating version.
- Enclosed finger-safe fuse holder — CH127
- Open style fuse block — 4530-OP
- See accessories on page 216.
- Watts loss provided at rated current.

Dimensions - mm (inches)



Indicating Version - Dimensions - mm (inches)



Data Sheet: 720040



Features and Benefits

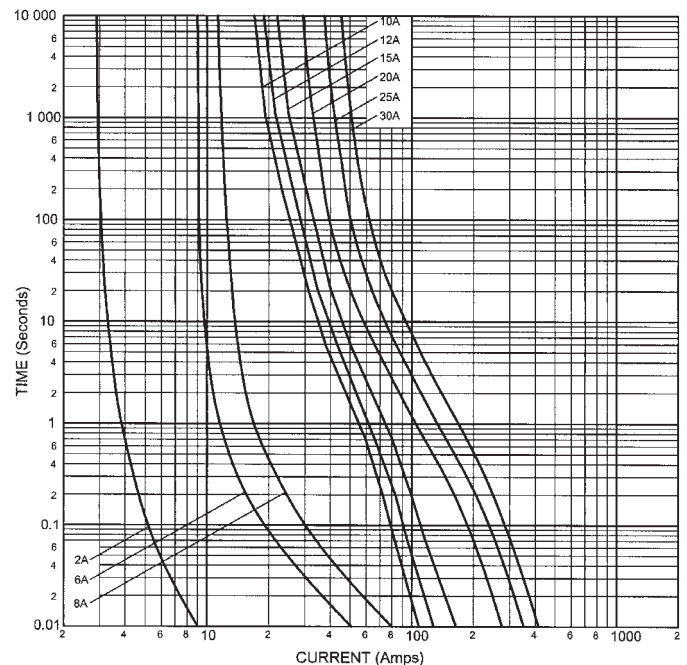
- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through (I²t)
- Low watts loss in a compact size
- Used with finger-safe holders/blocks

Typical Applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters
- Traction aux circuits
- Capacitor protection

FWL/FWS 2-30A: 1000Vdc 2-30A (20 x 127mm)

Time-Current Curve



High Speed Fuses

Ferrule Fuse Accessories

Fuse Holders

Specifications

Catalog Symbol: CH Series

Description: DIN rail mount fuse holders

Agency Information: cULus/cURus/CE

North American 10 x 38
Class CC: Listed UL 4248,
Guide IZLT, File E14853,
Certified CSA Std. C22.2 No. 39, Class 6225 01, File 47235

North American 10 x 38 Midget: Recognized UL 4248,
Guide IZLT2, File E14853, Certified CSA Std. C22.2 No. 39,
Class 6225 01, File 47235

European: 10 x 38 IEC 269-2-1, 14 x 51 IEC 269-2-1,
22 x 58 IEC 269-2-1

Features and Benefits

- Finger-safe design - No exposed contacts
- DIN rail mount (35mm) - Fits standard mounting rails
- Optional open fuse indication lights tells fuse status at a glance
- Handle/fusepuller easily installs and removes fuses
- Available in single and multi-pole configurations
- Wire ready lugs and spade terminal connections save installation time
- CE marking
- Available up to 1000Vdc
- PLC device available for remote monitoring

Typical Applications

- Switchboard panel, control consoles, small motors, transformers, and similar applications

Recommended Cooper Bussmann Fuse Types
Class CC North American Class CC Fuses - LP-CC, FNQ-R, KTK-R

10 x 38 North American Midget Fuses - FNQ, KTK, AGU, BAF, BAN, FNM, FWA, FWC, PV & DCM

14 x 51 Fuses - FWX, FWH, FWP & NON

22 x 58 Fuses - FWP

See pages 257 and 258 for CH Series fuse holder information.



Fuse Blocks

Specifications

Catalog Symbol: J70100, J70032

Description: Fuse blocks for 22 x 58mm & 14 x 51mm fuses.

Ratings:

Volts: — 700Vac

Amps: — 32-100A

Withstand: — 200kA RMS Sym.

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853

Flammability Rating: UL 94V0

Catalog Numbers

| Catalog Numbers | Fuse Size | Amps | Poles | Max Wire Size | Terminations |
|-----------------|-----------|------|-------|---------------|------------------------------|
| J70032-2CR | 14x51 | 32 | 2 | #2 | Box Lug w/ Retaining Clip |
| J70032-3CR | | 32 | 3 | #2 | |
| J70100-1CR | 22x58 | 100 | 1 | #2 | |
| J70100-2CR | | 100 | 2 | #2 | |
| J70100-3CR | | 100 | 3 | #2 | |



IEC and British Standard Fuses

Section Contents

| | Page |
|--|----------|
| Application Data | 217-218 |
| CSA Type P and Type D fuses (CDS, CDN & PON) | .219 |
| Tron® HRC Form II Class C fuses (CGL Form II Class C) | .220 |
| HRCI Industrial ceramic body fuses (CIF21 HRCI-CA & CIF06 HRCI-CB) | .221 |
| HRCI-J Fast-acting fuses (CJ HRCI-J) | .222 |
| HRCI-Miscellaneous Type K fuses (CIH, CIK & CIL HRCI-MISC) | .223 |
| HRC Form II current-limiting fuses | .224 |
| BS 88 British Standard low voltage fuses (SSD, NSD, ESD & STD, NITD, AAO, BAO, OSD, CEO, DEO BS 88 Part 1) | .225 |
| BS 88 British Standard low voltage fuses (AC, AD, BC, BD, CD, DD, ED, EFS & EF, FF, FG, GF, GG, GH BS 88) | .226 |
| DIN Style Type D (D16, D27, D33, D125 Type D) | .227 |
| Neozed low voltage fuses (NZ01, NZ02 Type D0) | .227 |
| NH HRC Fuses | .228-231 |
| Class gG/gL IEC Industrial ferrule fuses (C08G, C08M, C10G, C10M, C14G, C14M, C22G, C22M) | .232 |
| Class aM IEC Industrial ferrule fuses (C08M, C10M, C14M, C22M) | .233 |
| Class aM & gG/gL IEC Industrial ferrule fuses with striker (C14G_S, C22G_S, C14M_S, C22M_S) | .234 |
| HRC fuse holders | |
| CAMaster | .235 |
| SAFEloc | .235 |

RED indicates NEW information



Application Data

The standard range of fuses for low voltage industrial and general purpose applications meet the requirements of BS 88 and IEC 60269. By using advanced fuse technology, current ratings up to 400A have compact dimensions, but retain standard dimensional and performance requirements. These designs are for 315/240V systems. The standard range of fuses are available from 2-1250A in the following tag forms: Offset Blade - Offset Bolted - Center Bolted.

Supplementary ranges cover applications up to 660Vac and 500Vdc including those with nonstandard tag fixings.

Cooper Bussmann fuses are manufactured under quality systems independently assessed to BS 5750 (ISO 9002) and appropriate ratings carry the ASTA 20 endorsement.

Selecting fuses is relatively simple and effective. The following notes cover the majority of applications. For further information contact our Application Engineers at 636-527-1270.

Circuit Loading

The current rating of the fuse should not be less than the full load current of the circuit. The circuit should be so designed that small overloads of long duration will not be of frequent occurrence.

Cable Ratings & Protection

There is an increasing move away from 70°C PVC insulation to materials that are more environmentally friendly, for example 90°C XLPE. The ratings of fusegear, switches, accessories, etc. are generally based upon the equipment being connected to conductors intended to be operated at a temperature not exceeding 70°C in normal service.

In view of the above, it is recommended that the practice of designs based upon conductor temperatures of 70°C be regarded as the norm. The equipment manufacturer should be consulted to ascertain the reduction of nominal current rating of the equipment if conductor temperatures exceeding 70°C are used. In addition, an overriding factor is often voltage drop.

Fuses with gG characteristics protect associated cables against both overload and short-circuit current, provided that the current rating of the fuse 1N is equal or less than the current carrying capacity of the cable 1z.

In motor circuits, the motor starter will provide the overload protection and the fuses will provide the short-circuit protection. The maximum fuse size that can be used depends upon the type of cable used and is determined using the appropriate K factor. The following table gives the maximum sizes of fuses that are recommended for two popular cables with copper conductors, 70°C PVC (K = 115) and 90°C thermosetting (K = 143).

Application Data for BS Low Voltage Fuses

| Cable Size (mm ²) | Max. Fuse Rating (amps) | |
|-------------------------------|-------------------------|---------|
| | K = 115 | K = 143 |
| 1 | 16 | 16 |
| 1.5 | 20 | 25* |
| 2.5 | 32* | 32* |
| 4 | 50* | 50* |
| 6 | 63* | 63* |
| 10 | 100* | 125* |
| 16 | 125* | 160* |
| 25 | 200* | 250* |
| 35 | 315* | 355* |
| 50 | 400* | 500 |
| 70 | 560 | 630 |
| 95 | 710 | 800 |
| 120 | 800 | 1000 |

* Extended Motor Circuit dual ratings can be used.

Protection Against Electrical Shock

For a TN System, a disconnecting time not exceeding 5s is permitted for a distribution circuit. The maximum values of earth fault loop impedance (Zs) of 240V for Cooper Bussmann gG fuses to BS 88: Parts 2 and 6 are:

| Rating (A) | Zs (Ohms) | Rating (A) | Zs (Ohms) | Rating (A) | Zs (Ohms) |
|------------|-----------|------------|-----------|------------|-----------|
| 6 | 14 | 50 | 1.1 | 250 | 0.16 |
| 10 | 7.7 | 63 | 0.86 | 315 | 0.13 |
| 16 | 4.3 | 80 | 0.60 | 400 | 0.096 |
| 20 | 3.0 | 100 | 0.44 | 500 | 0.073 |
| 25 | 2.4 | 125 | 0.35 | 630 | 0.054 |
| 32 | 1.9 | 160 | 0.27 | 800 | 0.044 |
| 40 | 1.4 | 200 | 0.20 | | |

Ambient Temperature

The derating, in terms of current, of 0.5% per °C above an ambient of 35°C is recommended.

Interrupting Rating

The standardized interrupting rating values are 80kA for voltages of 415Vac and above, and 40kA for DC applications. The 240Vac designs have an interrupting rating of 50kA.

Coordination Ratio

All fuses to BS 88 Parts 2 and 6 will give a coordination ratio of 2:1; and for most practical situations a ratio of 1.6:1 (two steps in the R10 series). Example: an upstream fuse rated at 160A will coordinate with a downstream fuse rated at 100A.

Current and Energy Limitation

The range of fuses have pre-arcing I²t values towards the bottom limits of BS 88 Parts 2 and 6. This ensures excellent current and energy limitation. They also have lower power losses at rated current. This assists in the appropriate interchangeability with other makes of fuses.

Transformers

When fuses are used on the primary side of transformers, the normal fuse current rating should be at least twice the nominal transformer primary current.

Fluorescent Lighting

The normal fuse current rating should be at least twice the normal full load current of the maximum number of lights to be simultaneously switched.

Capacitor Circuits

For power factor correction in capacitor circuits, the fuse should be chosen with a current rating greater than 1.5 times the rated capacitor current. This takes into account the high inrush current, circuit harmonics and capacitor tolerances.

Motor Circuits

In motor circuits, the fuse has to withstand the motor's starting current and often requires a higher rating than the motor's full load current. Coordination recommendations are made by the manufacturers of motor starters in accordance with IEC 60947-4-1. To get Type 2 coordination with fuses, tests are performed with the latest gG or gM fuses to BS 88 or IEC 60269 that have pre-arcing I²t values towards the bottom of specified limits. This means that Cooper Bussmann fuses are suitable to provide Type 2 coordination.

Extended dual ratings of motor circuit protection fuses with gM characteristics are available in most popular fuse sizes to extend the use of associated equipment with appropriate economies. In the majority of applications, gG fuses are used. It is not essential to use gM fuses for motor circuit protection, they simply extend the utilization of standard equipment.

Below is a table of recommended fuses at 415V. In most applications, the run-up time is less than 5 seconds and duty is infrequent - no more than twice per hour. The next larger rating should be used for more demanding applications.

| Rating Motor | | Direct On-line | | Asst. Start Standard (gG) |
|--------------|-------|----------------|--------------------|---------------------------|
| | | Standard (gG) | Motor Circuit (gM) | |
| kW | A | A | A | A |
| 0.25 | 0.8 | 4 | - | 2 |
| 0.37 | 1.1 | 4 | - | 2 |
| 0.55 | 1.5 | 6 | - | 4 |
| 0.75 | 2.0 | 6 | - | 4 |
| 1.1 | 3.0 | 10 | - | 6 |
| 1.5 | 3.6 | 16 | - | 0 1 |
| 2.2 | 5.0 | 16 | - | 0 1 |
| 3.0 | 6.5 | 20 | - | 6 1 |
| 4.0 | 8.4 | 20 | - | 6 1 |
| 5.5 | 11.0 | 25 | 20M25 | 2 20 |
| 7.5 | 15.0 | 40 | 32M40 | 25 |
| 11.0 | 20.0 | 50 | 32M50 | 32 |
| 15.0 | 27.0 | 63 | 32M63 | 40 |
| 18.5 | 33.0 | 80 | 63M80 | 50 |
| 22.0 | 38.0 | 80 | 63M80 | 50 |
| 30.0 | 54.0 | 100 | 63M100 | 80 |
| 37.0 | 66.0 | 125 | 100M125 | 80 |
| 45.0 | 79.0 | 160 | 100M160 | 100 |
| 55.0 | 98.0 | 160 | 100M160 | 100 |
| 75.0 | 135.0 | 250 | 200M250 | 160 |
| 90.0 | 155.0 | 250 | 200M250 | 160 |
| 110.0 | 185.0 | 315 | 200M315 | 200 |
| 132.0 | 220.0 | 355 | 315M400 | 250 |
| 150.0 | 250.0 | 355 | 315M400 | 315 |
| 185.0 | 310.0 | 450 | 400M500 | 355 |
| 200.0 | 335.0 | 500 | 4 00M500 | 400 |
| 225.0 | 375.0 | 560 | - | 400 |
| 250.0 | 415.0 | 560 | - | 450 |
| 280.0 | 460.0 | 630 | - | 500 |
| 335.0 | 562.0 | 710 | - | 630 |
| 355.0 | 596.0 | 800 | - | 710 |

CSA Type P and Type D Fuses

CDS, CDN & PON Type P & D

Specifications

Description: CSA time-delay Type D & P fuses.

Dimensions: See Catalog Numbers table and Dimensions illustration.

Ratings:

Volts: — 250Vac (CDN & PON)
— 600Vac (CDS)

Amps: — 10-600A

IR: — 10kA minimum

Agency Information: CE, CSA Certified to C22.2 No. 59.1.

Features and Benefits

- Economical fuse in a variety of ratings for applications not requiring time-delay.

Typical Applications

- Lighting, heating and other circuits not subject to temporary surges and where available short-circuit current are relatively low.

Basic Catalog Numbers

Time-Delay CSA Type "D" Fuses

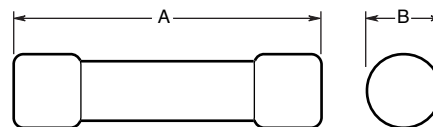
| Catalog Numbers | Volts | Amp Ratings |
|-----------------|--------|--|
| CDN | 250Vac | Below 10A use FRN-R 10, 12, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 |
| | | 110, 125, 150, 175, 200, 225, 250, 300, 350, 400, 450, 500, 600 |
| | | Below 10A use FRS-R 10, 12, 15, 20, 25, 30, 35, 40, 45, 50, 60 |
| | | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250, 300, 350, 400, 450, 500, 600 |
| | | 225, 250, 300, 350, 400, 450, 500, 600 |
| CDS | 600Vac | 70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250, 300, 350, 400, 450, 500, 600 |

One-Time CSA Type "P" Fuses

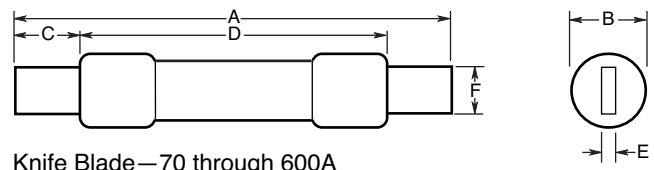
| Catalog Number | Volts | Amp Ratings |
|----------------|--------|------------------------------------|
| PON | 250Vac | 15, 20, 25, 30, 35, 40, 45, 50, 60 |



Dimensions



Ferrule Design—1 through 60A



Knife Blade—70 through 600A

IEC & British Fuses

Catalog Numbers

| Basic Catalog Number and Volts | Dimensions in (mm) | | | | | | |
|--------------------------------|--------------------|---------------|----------------|--------------------|---------------------|-------------------|---------------|
| | Amp Ratings | A Overall | B Max Diameter | C Min Blade Length | D Min Barrel Length | E Blade Thickness | F Blade Width |
| CDN/PON 250Vac | 1-30 | 2.0 (50.8) | 0.56 (14.3) | — | — | — | — |
| | 35-60 | 3.0 (76.2) | 0.81 (20.6) | — | — | — | — |
| | 70-100 | 5.88 (149.4) | — | 1.0 (25.4) | — | 0.13 (3.2) | 0.75 (19.1) |
| | 110-200 | 7.3 (185.4) | — | 1.38 (34.9) | 4.13 (104.8) | 0.19 (4.8) | 1.13 (28.6) |
| | 225-400 | 8.63 (219.2) | — | 1.88 (47.6) | 4.63 (117.5) | 0.25 (6.4) | 1.63 (41.3) |
| CDS 600Vac | 450-600 | 10.38 (263.7) | — | 2.25 (57.2) | 5.19 (131.8) | 0.25 (6.4) | 2 (50.8) |
| | 1-30 | 5.0 (127.0) | 0.81 (20.6) | — | — | — | — |
| | 35-60 | 5.5 (139.7) | 1.06 (27.0) | — | — | — | — |
| | 70-100 | 7.88 (200.2) | — | 1.0 (25.4) | — | 0.13 (3.2) | 0.75 (19.1) |
| | 110-200 | 9.63 (244.6) | — | 1.38 (34.9) | 6.13 (115.6) | 0.19 (4.8) | 1.13 (28.6) |
| | 225-400 | 11.63 (295.4) | — | 1.88 (47.6) | 7.13 (118.1) | 0.25 (6.4) | 1.63 (41.3) |
| | 450-600 | 13.38 (339.9) | — | 2.25 (57.2) | 8.19 (208.0) | 0.25 (6.4) | 2 (50.8) |

To Order

To order, specify Basic Catalog Number and amp rating. Example: CDN-30

Data Sheet: 4126

Tron® HRC Form II Class C Fuses

CGL Form II Class C

Specifications

Description: Current-limiting HRCII-C fuses designed to withstand inrush currents on typical motor start-ups while offering high current limitation in the short-circuit region.
 Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac/250Vdc (1-30A)

Amps: — 1-600A

IR: — 200kA (40,000A DC)

Agency Information: CE, CSA Certified, C22.2 No. 106.

Features and Benefits

- Close sizing to loads allows using smaller and less costly switches
- Provides a higher degree of short-circuit protection
- Helps protect motors against burnout from overloads

Typical Applications

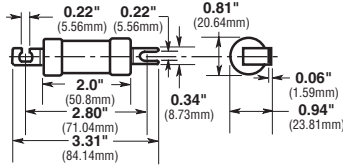
- For use in circuits subject to surge currents such as those caused by motors, transformers and other inductive loads

Catalog Numbers (-Amps)

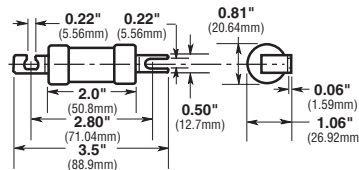
| | | |
|--------|---------|---------|
| CGL-1 | CGL-40 | CGL-175 |
| CGL-2 | CGL-45 | CGL-200 |
| CGL-3 | CGL-50 | CGL-225 |
| CGL-4 | CGL-60 | CGL-250 |
| CGL-6 | CGL-70 | CGL-300 |
| CGL-10 | CGL-80 | CGL-350 |
| CGL-15 | CGL-90 | CGL-400 |
| CGL-20 | CGL-100 | CGL-450 |
| CGL-25 | CGL-110 | CGL-500 |
| CGL-30 | CGL-125 | CGL-600 |
| CGL-35 | CGL-150 | |



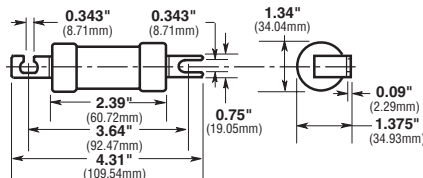
Dimensions



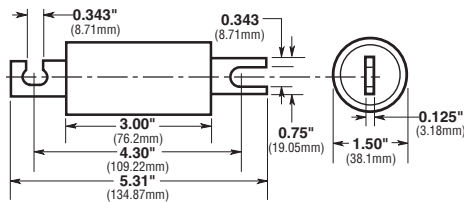
CGL 1-30



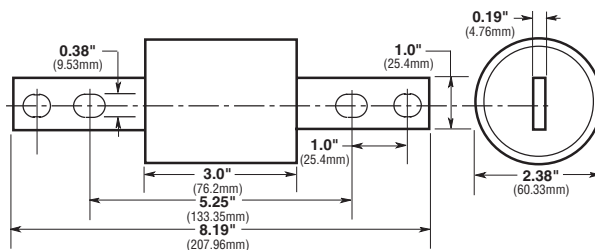
CGL 35-60



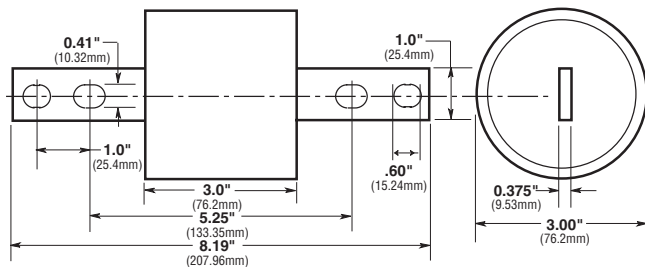
CGL 70-100



CGL 110-200



CGL 225-400



CGL 450-600

HRCI Industrial Ceramic Body Fuses

CIF21 HRCI-CA

Specifications

Description: The HRCI-CA fuse provides both overload and short-circuit protection to HRCI requirements. Offset blades for bolt-on mounting. CIF21 fuse fits the Cooper Bussmann CAMaster fuse holder (see data sheet 4132).

Dimensions: See Dimensions illustration.

Construction: Ceramic body.

Ratings:

Volts: — 600Vac/250Vdc

Amps: — 1-30A

IR: — 200kA RMS Sym.

Agency Information: CE, CSA C22.2, No. 106-M92.

Mounting: Bolt-on.

Catalog Numbers

| Catalog Numbers | Amp Ratings |
|-----------------|-------------|
| 1CIF21 | 1 |
| 3CIF21 | 3 |
| 6CIF21 | 6 |
| 10CIF21 | 10 |
| 15CIF21 | 15 |
| 20CIF21 | 20 |
| 25CIF21 | 25 |
| 30CIF21 | 30 |

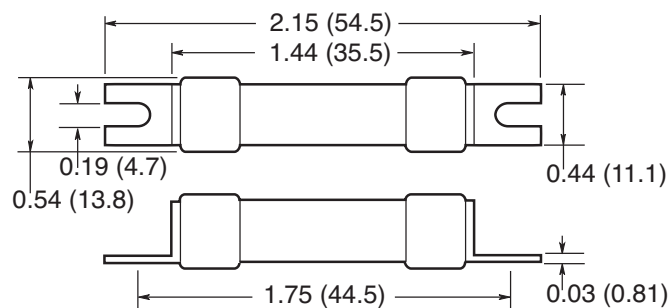
Features and Benefits

- Close sizing to loads allows using smaller and less costly switches
- Provides a higher degree of short-circuit protection
- Helps protect motors against burnout from overloads

Typical Applications

- For use in circuits subject to surge currents such as those caused by motors, transformers and other inductive loads

Dimensions - in (mm)



Data Sheet: 4127

CIF06 HRCI-CB

Specifications

Description: A miniature industrial fuse that provides both short-circuit and overload protection and the CIF06 fits the 30A SAFEloc fuse holder.

Dimensions: See Dimensions illustration.

Construction: Ground ceramic body with plated end caps.

Ratings:

Volts: — 600Vac/250Vdc

Amps: — 1-30A

IR: — 200kA RMS Sym.

Agency Information: CE, CSA C22.2 No. 106-M92 (3-30A only).

Mounting: Clip-in offset blades.

Catalog Number

| Catalog Numbers | Amp Ratings |
|-----------------|-------------|
| 1CIF06 | 1 |
| 3CIF06 | 3 |
| 6CIF06 | 6 |
| 10CIF06 | 10 |
| 15CIF06 | 15 |
| 20CIF06 | 20 |
| 25CIF06 | 25 |
| 30CIF06 | 30 |

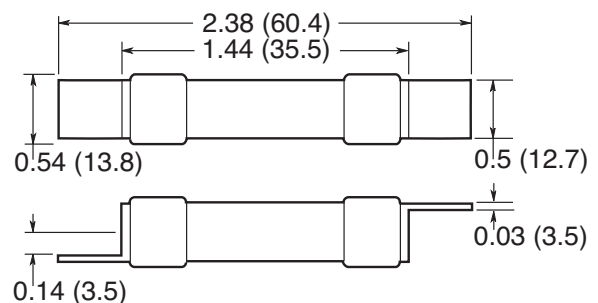
Features and Benefits

- Close sizing to loads allows using smaller and less costly switches
- Provides a higher degree of short-circuit protection
- Helps protect motors against burnout from overloads

Typical Applications

- For use in circuits subject to surge currents such as those caused by motors, transformers and other inductive loads

Dimensions - in (mm)



Data Sheet: 4128

HRCI-J Fast-acting Fuses

CJ HRCI-J

Specifications

Description: HRCI-J fast-acting fuses are industrial duty fuses with the excellent current-limiting characteristics of fast-acting HRCI-J fuses to limit damage to equipment and installations by the thermal and magnetic energy associated with a large short-circuit fault current. Overload characteristics limit cable damage due to low overload currents.

Dimensions: See Catalog Numbers table and Dimensions illustrations.

Construction: Ceramic body fuse.

Ratings:

Volts: — 600Vac (or less), 250Vdc

Amps: — 1-600A

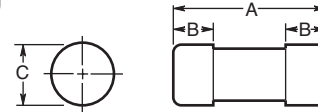
IR: — 200kA

Agency Information: CSA C22.2 No. 106 M92; Designed to BS 88:2, IEC 60269-2.

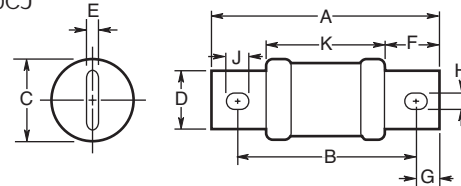


Dimensions

1CJ to 60CJ



70CJ to 600CJ



Catalog Numbers

| Catalog Numbers | Amp Ratings | Dimensions in (mm) | | | | | | | | | |
|-----------------|-------------|--------------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-----------|
| | | A | B | C | D | E | F | G | H | J | K |
| 1CJ | 1 | | | | | | | | | | |
| 3CJ | 3 | | | | | | | | | | |
| 6CJ | 6 | | | | | | | | | | |
| 10CJ | 10 | | | | | | | | | | |
| 15CJ | 15 | 2.25 (57) | 0.5 (12.7) | 0.81 (20.6) | — | — | — | — | — | — | — |
| 20CJ | 20 | | | | | | | | | | |
| 25CJ | 25 | | | | | | | | | | |
| 30CJ | 30 | | | | | | | | | | |
| 35CJ | 35 | | | | | | | | | | |
| 40CJ | 40 | | | | | | | | | | |
| 45CJ | 45 | 2.38 (60) | 0.63 (16) | 1.06 (27) | — | — | — | — | — | — | — |
| 50CJ | 50 | | | | | | | | | | |
| 60CJ | 60 | | | | | | | | | | |
| 70CJ | 70 | | | | | | | | | | |
| 80CJ | 80 | 4.63 (117) | 3.63 (92) | 1.13 (28) | 0.75 (19) | 0.13 (3.2) | 1 (25.4) | 0.5 (12.7) | 0.28 (7.1) | 0.38 (9.5) | 2.63 (67) |
| 90CJ | 90 | | | | | | | | | | |
| 100CJ | 100 | | | | | | | | | | |
| 110CJ | 110 | | | | | | | | | | |
| 125CJ | 125 | | | | | | | | | | |
| 150CJ | 150 | 5.75 (146) | 4.38 (111) | 1.63 (41) | 1.13 (28.6) | 0.19 (4.8) | 1.38 (35) | 0.69 (17.5) | 0.28 (7.1) | 0.38 (9.5) | 3 (76) |
| 175CJ | 175 | | | | | | | | | | |
| 200CJ | 200 | | | | | | | | | | |
| 225CJ | 225 | | | | | | | | | | |
| 250CJ | 250 | | | | | | | | | | |
| 300CJ | 300 | 7.13 (181) | 5.25 (133) | 2.13 (54) | 1.63 (41) | 0.25 (6.3) | 1.88 (47.6) | 0.94 (24) | 0.41 (10.3) | 0.53 (13.5) | 3.38 (86) |
| 350CJ | 350 | | | | | | | | | | |
| 400CJ | 400 | | | | | | | | | | |
| 450CJ | 450 | | | | | | | | | | |
| 500CJ | 500 | 8 (203) | 6 (152) | 2.63 (66) | 2 (51) | 0.38 (9.5) | 2.13 (54) | 1 (25.4) | 0.53 (13.5) | 0.69 (17.5) | 3.75 (96) |
| 600CJ | 600 | | | | | | | | | | |

Data Sheet: 4129

HRCI - Miscellaneous Type K Fuses

CIH, CIK & CIL HRCI-MISC

Specifications

Description: HRCI fuses provide both overload and short-circuit protection, featuring offset blades for bolt down mounting.

Dimensions: See Catalog Numbers table and Dimensions illustration.

Construction: Ceramic body.

Ratings:

Volts: — 600V

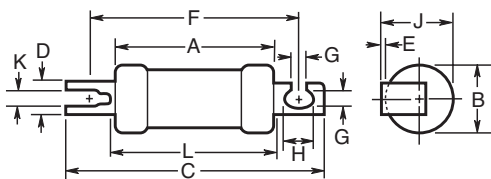
Amps: — 1-100A

IR: — 200kA@600V

Agency Information: CE, CSA C22.2 No. 106 M92.



Dimensions



(The CIL14 has a rejection hole, not a slot as shown above.)

Catalog Numbers

| Catalog Numbers | Amp Ratings | Dimensions: in (mm) | | | | | | | | | | |
|-----------------|-------------|---------------------|-----------|------------|------------|------------|-----------|------------|-------------|------------|------------|-----------|
| | | A Max | B Max | C Max | D Nom | E Nom | F Nom | G Nom | H Nom | J Max | K Nom | L Max |
| 1CIH07 | 1 | 2.25 (57) | 0.94 (24) | 3.38 (86) | 0.38 (9.2) | 0.04 (1.0) | 2.88 (73) | 0.21 (5.2) | 0.31 (8) | 1 (25.4) | 0.10 (2.6) | 2.38 (60) |
| 3CIH07 | 3 | | | | | | | | | | | |
| 6CIH07 | 6 | | | | | | | | | | | |
| 10CIH07 | 10 | | | | | | | | | | | |
| 15CIH07 | 15 | | | | | | | | | | | |
| 20CIH07 | 20 | | | | | | | | | | | |
| 25CIH07 | 25 | 2.28 (58) | 1.06 (27) | 3.56 (91) | 0.5 (12.7) | 0.05 (1.2) | 2.88 (73) | 0.21 (5.2) | 0.41 (10.5) | 1.09 (28) | 0.13 (3.2) | 2.38 (61) |
| 30CIH07 | 30 | | | | | | | | | | | |
| 35CIK07 | 35 | | | | | | | | | | | |
| 40CIK07 | 40 | | | | | | | | | | | |
| 50CIK07 | 50 | | | | | | | | | | | |
| 60CIK07 | 60 | | | | | | | | | | | |
| 80CIL14 | 80 | 2.75 (70) | 1.44 (37) | 4.38 (111) | 0.75 (19) | 0.09 (2.5) | 3.69 (94) | 0.34 (8.7) | 0.41 (10.5) | 1.5 (38.5) | — | 2.91 (74) |
| 90CIL14 | 90 | | | | | | | | | | | |
| 100CIL14 | 100 | | | | | | | | | | | |

Recommended Fuse Holders

| Fuse | Fuse Holder |
|--------|-------------|
| 1-30A | CM30CF |
| 35-60A | CM60CF |

Data Sheet: 4130

HRC Form II Current-limiting Fuses

HRC Form II

Specifications

Description: HRC Form II current-limiting fuses.

Dimensions: See Catalog Numbers table and Dimensions illustrations.

Construction: Ceramic body.

Ratings:

Volts: — 600Vac (or less)
— 250Vdc

Amps: — 2-600A

IR: — 200kA RMS Sym.

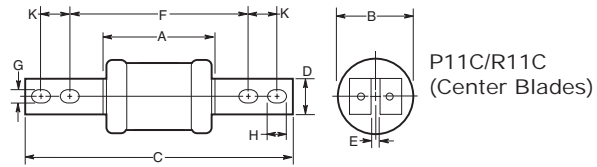
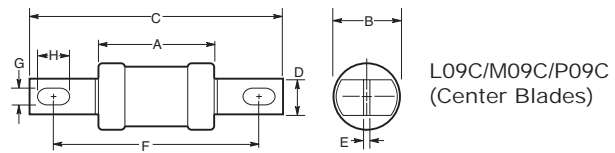
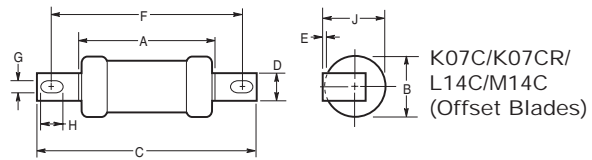
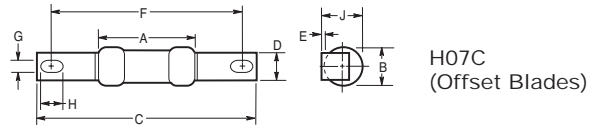
Agency Information: CE, CSA C22.2 No.106M1992;
BS 88:2, IEC 60269:2.

Typical Applications

- Used to protect motor control circuits, together with contactors and overload protection relays to provide Type 2 coordination - per IEC 60947-4.



Dimensions



Catalog Numbers

| Catalog Numbers | Amp Ratings | Dimensions in (mm) | | | | | | | | | | CSA Category | | |
|-----------------|-------------|--------------------|-------------|------------|-------------|------------|------------|------------|------------|------------|-----------|--------------|---|---------|
| | | A | B | C | D | E | F | G | H | J | K | | | |
| 2H07C | 2 | 1.38 (35) | 0.56 (14) | 3.38 (85) | 0.38 (9) | 0.06 (1.2) | 2.88 (73) | 0.22 (5.6) | 0.31 (8) | 0.56 (14) | — | HRCII-C | | |
| 4H07C | 4 | | | | | | | | | | | | | |
| 6H07C | 6 | | | | | | | | | | | | | |
| 10H07C | 10 | | | | | | | | | | | | | |
| 15H07C | 15 | | | | | | | | | | | | | |
| 20H07C | 20 | | | | | | | | | | | | | |
| 25H07C | 25 | 2.19 (56) | 0.88 (22) | 3.44 (87) | 0.5 (13) | 3.69 (94) | 0.34 (8.7) | 0.44 (11) | — | — | HRCII-C | | | |
| 30H07C | 30 | | | | | | | | | | | | | |
| 40K07C | 40 | | | | | | | | | | | | | |
| 50K07C | 50 | 2.38 (60) | 0.88 (21.4) | 4.38 (111) | 0.56 (14.3) | 0.13 (3.2) | 4.38 (111) | 0.34 (8.7) | 1 (25.4) | — | — | HRCII-C | | |
| 60K07C | 60 | | | | | | | | | | | | | |
| 80K07CR | 80 | 3.06 (178) | 2.31 (59) | 5.38 (136) | 0.75 (19) | 0.13 (3.2) | 4.38 (111) | 0.34 (8.7) | 0.56 (14) | — | — | HRCII-C | | |
| 100K07CR | 100 | | | | | | | | | | | | | |
| 80L14C | 80 | | | | | | | | | | | | | |
| 100L14C | 100 | | | | | | | | | | | | | |
| 125M14C | 125 | | | | | | | | | | | | | |
| 150M14C | 150 | | | | | | | | | | | | | |
| 200M14C | 200 | | | 0.19 (4.8) | 0.75 (19) | 5.38 (136) | 0.75 (19) | 0.13 (3.2) | 4.38 (111) | 0.34 (8.7) | 0.56 (14) | — | — | HRCII-C |
| 250P09C | 250 | | | | | | | | | | | | | |
| 300P09C | 300 | | | | | | | | | | | | | |
| 350P09C | 350 | | | | | | | | | | | | | |
| 400P09C | 400 | | | | | | | | | | | | | |
| 250P11C | 250 | | | | | | | | | | | | | |
| 300P11C | 300 | | | | | | | | | | | | | |
| 350P11C | 350 | | | | | | | | | | | | | |
| 400P11C | 400 | | | | | | | | | | | | | |
| 450R11C | 450 | | | | | | | | | | | | | |
| 500R11C | 500 | 3.19 (81) | 2.88 (73) | 8.25 (210) | 0.75 (19) | 0.13 (3.2) | 4.38 (111) | 0.34 (8.7) | 0.56 (14) | — | 1 (25) | HRCII-C | | |
| 600R11C | 600 | | | | | | | | | | | | | |

BS 88 British Standard Low Voltage Fuses

SSD, NSD, ESD BS 88 Part 1

Specifications

Description: The NSD and ESD are low voltage fuses complying with general purpose gG characteristics.

Construction: Ceramic body.

Ratings:

Volts: — 240-550Vac (See Catalog Numbers table)

Amps: — 2-63A (See Catalog Numbers table)
— 20M25-63M100A Motor Starter ratings
(See Catalog Numbers table)

IR: — 33kA (SSD)
— 80kA (NSD, ESD)

Agency Information: CE, Meets the requirements of BS 88 Part 1 and IEC 60269-1.

Mounting: Offset blades.

Basic Catalog Numbers

| Basic Catalog Numbers | Amp Ratings | Max AC Voltage Ratings | BS 88 Ref. |
|-----------------------|---|------------------------|------------|
| SSD | 2, 4, 6, 10, 16, 20, 25, 32 | 240 | E1 |
| NSD | 2, 4, 6, 10, 16, 20, 25, 32, | 550 | F1 |
| | 20M25*, 20M32*, 20M36*, 32M36*, 32M40*, | 415 | F1 |
| | 32M50*, 32M63* | 415 | F1 |
| ESD | 2, 4, 6, 10, 16, 25, 32 | 550 | F2 |
| | 40, 50, 63, 63M80, 63M100* | 415 | F2 |

**M* indicates motor starter ratings.

To Order

To order, specify Basic Catalog Number and amp rating. Example: SSD-20

Recommended Fuse Holders

| Basic Fuse Catalog Numbers | Holder Catalog Numbers |
|----------------------------|------------------------|
| NSD | 32NNSF |
| ESD | 63ENSF |



STD, NITD, AAO, BAO, OSD, CEO, DEO BS 88 Part 1

Specifications

Description: The STD to DEO types are low voltage fuses complying with general purpose gG characteristics.

Construction: Ceramic body.

Ratings:

Volts: — 240-550Vac (See Catalog Numbers table)

Amps: — 2-200A (See Catalog Numbers table)
— 20M25-200M315A Motor Starter ratings
(See Catalog Numbers table)

IR: — 33kA (STD)
— 80kA (NITD, AAO, BAO, CEO, DEO)

Agency Information: CE, Meets the requirements of BS 88 Part 1 and IEC 60269-1.

Mounting: Offset bolted blades.



Typical Applications

- The STD type are used in 240V street lighting cut-outs.
- NITD to DEO types used for industrial and general purpose applications

Basic Catalog Numbers

| Basic Catalog Numbers | Amp Ratings | Max AC Voltage Ratings | BS 88 Ref. |
|-----------------------|---|------------------------|------------|
| STD | 2, 4, 6, 10, 16, 20, 25, 32 | 240 | — |
| NITD | 2, 4, 6, 10, 16, 20, 25, 32 | 550 | — |
| | 20M25*, 20M32*, 32M40*, 32M50*, 32M63* | 415 | — |
| AAO | 2, 4, 6, 10, 16, 20, 25, 32, 32M40*, 32M50*, 32M63* | 550 | — |
| BAO | 40, 50, 63, 63M80*, 63M100* | 550 | A3 |
| CEO | 32, 40, 50, 63, 80, 100 | 550 | A4 |
| | 100M125*, 100M160*, 100M200* | 415 | A4 |
| DEO | 125, 160, 200, 200M250*, 200M315* | 415 | — |
| OSD | 80, 100 | 550 | — |
| | 100M125*, 100M160* | 415 | — |

**M* indicates motor starter ratings.

To Order

To order, specify Basic Catalog Number and amp rating. Example: BAO-16

Recommended Fuse Blocks & Holders

| Basic Fuse Catalog Numbers | Block/Holder Catalog Numbers |
|----------------------------|------------------------------|
| NITD | CM32FC |
| AAO | CM32F |
| BAO | CM63F |
| OSD | CM100F |
| CEO | BH-0111 |

Data Sheets 4123 (STD), 4106 (NITD), 4109 (AAO), 4112 (BAO), 4107 (OSD), 4115 (CEO) and 4117 (DEO)

Data Sheets 4105 (SSD), 4100 (NSD) and 4101 (ESD)

BS 88 British Standard Low Voltage Fuses

AC, AD, BC, BD, CD, DD, ED, EFS BS 88

Specifications

Description: Low voltage fuses that comply with general purpose gG characteristics and available up to 400A with two hole mount and up to 1250A with four hole mount.

Construction: Ceramic body.

Ratings:

Volts: — 415/550Vac, 250Vdc (See Catalog Numbers table)

Amps: — 2-400A (See Catalog Numbers table)
— 63M80-400M500A Motor Starter ratings (See Catalog Numbers table)

IR: — See Catalog Numbers table

Agency Information: CE, Meets the requirements of BS 88 Parts 1 and 2 and IEC 60269-1.

Mounting: Center bolted blades, two-hole mount.



Basic Catalog Numbers

| Basic Catalog Numbers | Amp Ratings | Interrupting Ratings | | Max Voltage Ratings | | BS 88 Ref. |
|-----------------------|---|----------------------|------|---------------------|-----|------------|
| | | AC | DC | AC | DC | |
| AC | 2, 4, 6, 10, 16, 20, 25, 32 | 80kA | 40kA | 550 | 250 | — |
| AD | 2, 4, 6, 10, 16, 20, 25, 32 | 80kA | 40kA | 550 | 250 | — |
| BC | 40, 50, 63 63M80*, 63M100* | 80kA | 40kA | 550 | 250 | — |
| BD | 40, 50, 63 | 80kA | — | 550 | — | — |
| CD | 80, 100, 100M125*, 100M160*, 100M200*, 100M200* | 80kA | — | 415 | — | B1 |
| DD | 125, 160, 200, 200M250*, 200M315* | 80kA | — | 415 | — | B2 |
| ED | 250, 315, 355, 400, 315M400*, 400M500* | 80kA | — | 415 | — | B3 |
| EFS | 125, 160, 200, 250, 315 | 80kA | — | 415 | — | — |

*"M" indicates motor starter ratings.

To Order

To order, specify Basic Catalog Number and amp rating. Example: BC-40

Recommended Fuse Blocks & Holder

| Basic Fuse Catalog Numbers | Block/Holder Catalog Numbers |
|----------------------------|------------------------------|
| AC | BH-0111 Modular fuse block |
| AD | 200DF Fuse holder |
| BC | BH-0111 Modular fuse block |
| BD | 200DF Fuse holder |
| CD | 200DF Fuse holder |
| DD | 200DF Fuse holder |
| ED | BH-1131 Modular fuse block |

Data Sheets 4110 (AC), 4111 (AD), 4113 (BC), 4114 (BD), 4116 (CD), 4118 (DD), 4119 (ED) and 4121 (EFS)

EF, FF, FG, GF, GG, GH BS 88

Specifications

Description: Low voltage fuses complying with general purpose gG characteristics and available up to 400A with two hole mount and up to 1250A with four hole mount.

Construction: Ceramic body.

Ratings:

Volts: — 415/550Vac, 250/400Vdc (See Catalog Numbers table for details)

Amps: — 355-1250

IR: — See Catalog Numbers table

Agency Information: CE, Meets the requirements of BS 88 Parts 1 and 2 and IEC269-1.

Mounting: Center bolted blades, four-hole mount.



Basic Catalog Numbers

| Basic Catalog Numbers | Amp Ratings | Interrupting Ratings | | Max Voltage Ratings | | BS 88 Ref. |
|-----------------------|------------------------|----------------------|------|---------------------|-----|------------|
| | | AC | DC | AC | DC | |
| EF | 355, 400 400M500* | 80kA | — | 415 | — | C1 |
| FF | 450, 500, 560, 630 | 80kA | 40kA | 550 | 400 | C2 |
| FG | 450, 500, 560, 630 | 80kA | 40kA | 550 | 400 | — |
| GF | 710, 800 | 80kA | 40kA | 550 | 250 | C3 |
| GG | 710, 800 1000, 1250 | 80kA | 40kA | 550 | 250 | — |
| GH | 710, 800, 1000, 1250 | 80kA | — | 550 | — | — |

*"M" indicates motor starter ratings. *"M" indicates motor starter ratings.

To Order

To order, specify Basic Catalog Number and amp rating. Example: FG-450

Data Sheets 4120 (EF), 4102 (FF), 4122 (FG), 4103 (GF), 4104 (GG) and 4108 (GH)

DIN Style Type D and Neozed Low Voltage Fuses

D16, D27, D33, D125 Type D

Specifications

Description: DIN style Type D low voltage fuses.

Dimensions: See Catalog Numbers table and Dimensions illustrations.

Construction: Ceramic body.

Ratings:

Volts: — 500Vac

Amps: — 2-100A

IR: — 100kA

Agency Information: CE, "D" type fuses complying with DIN 49360 Part 2 and DIN 49515, operating class gL.

Catalog Numbers

| Catalog Numbers | Amp Ratings | Dimension "D" (mm) | Color Code | Figure Number | |
|-----------------|-------------|--------------------|------------|---------------|---|
| 2D16 | 2 | 6 | Pink | 1 | |
| 4D16 | 4 | 6 | Brown | | |
| 6D16 | 6 | 6 | Green | | |
| 10D16 | 10 | 8 | Red | | |
| 16D16 | 16 | 10 | Grey | | |
| 20D16 | 20 | 12 | Blue | | |
| 25D16 | 25 | 14 | Yellow | | |
| 2D27 | 2 | 6 | Pink | | 2 |
| 4D27 | 4 | 6 | Brown | | |
| 6D27 | 6 | 6 | Green | | |
| 10D27 | 10 | 8 | Red | | |
| 16D27 | 16 | 10 | Grey | | |
| 20D27 | 20 | 12 | Blue | | |
| 25D27 | 25 | 14 | Yellow | 3 | |
| 35D33 | 35 | 16 | Black | | |
| 50D33 | 50 | 18 | White | | |
| 63D33 | 63 | 20 | Copper | | |
| 80D125 | 80 | 5 | Silver | 4 | |
| 100D125 | 100 | 7 | Red | | |

Additional Fuselinks: Quick acting fuselinks in body sized D16, D27, D33 and D125 rated 2-100A. Reference number suffixed Q, i.e. 10D27Q. Voltage rating 500V. Gauge rings and keys can also be supplied.

Dimensions (mm)

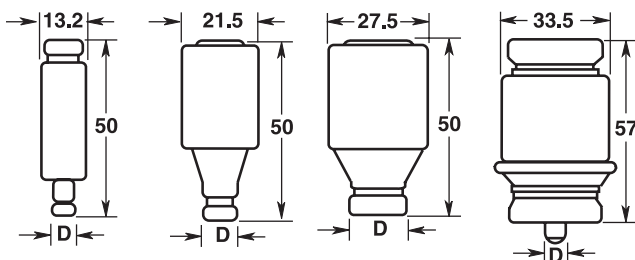


Figure 1

Figure 2

Figure 3

Figure 4

Data Sheet: 4124

NZ01, NZ02 Type D0

Specifications

Description: Low voltage Neozed fuses suitable for use on 250Vdc systems.

Dimensions: See Catalog Numbers table and Dimensions illustration.

Construction: Ceramic body.

Ratings:

Volts: — 400Vac

Amps: — 2-63A

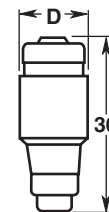
IR: — 100kA

Agency Information: CE

Catalog Numbers

| Catalog Numbers | Amp Ratings | Dimension "D" (mm) | Color Code |
|-----------------|-------------|--------------------|------------|
| 2NZ01 | 2 | 11 | Pink |
| 4NZ01 | 4 | 11 | Brown |
| 6NZ01 | 6 | 11 | Green |
| 10NZ01 | 10 | 11 | Red |
| 16NZ01 | 16 | 11 | Grey |
| 20NZ02 | 20 | 15 | Blue |
| 25NZ02 | 25 | 15 | Yellow |
| 35NZ02 | 35 | 15 | Black |
| 50NZ02 | 50 | 15 | White |
| 63NZ02 | 63 | 15 | Copper |

Dimensions (mm)



Data Sheet: 4124

NH HRC Fuses

__NHG__B

Specifications

Class: gG/gL

Description: DIN square bodied, dual indication industrial fuses.

Construction: Steatite insulator, corrosion-proof (aluminum) metal parts with full-contact, silver-plated copper blades.

Sizes: DIN 000 to 4.

Selectivity Ratio: 1:1.6 up to 500Vac.



Ratings:

Volts: — 500Vac/250Vdc

— 690Vac/250Vdc

Amps: — 2-1250A

IR: — 120kA

Frequency: — 50Hz

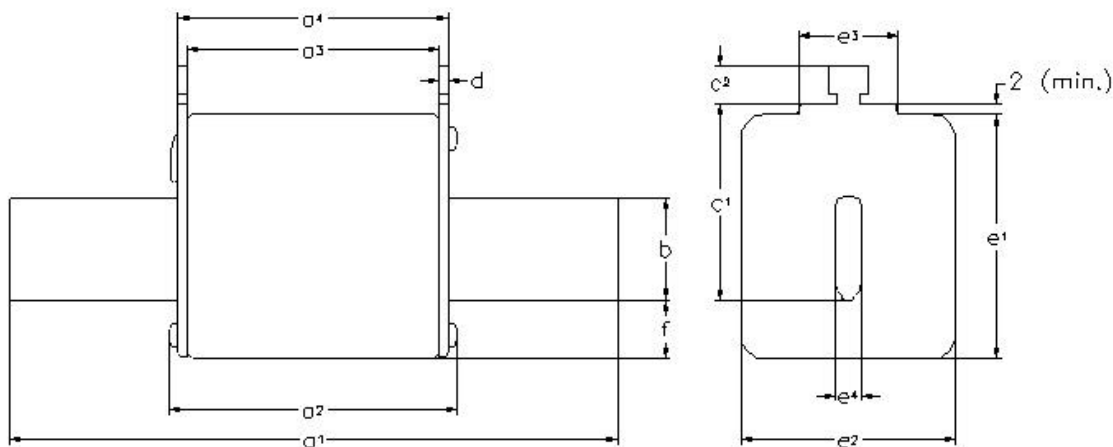
Operating Frequency: — 45-62Hz

Agency Information: IEC 60269, VDE0636, DIN 43620 Part 1 to 4, VDE Mark and CE.

| Fuse Blocks | Size |
|-------------|--------------|
| SB00-D | 000-00 |
| SB1-D | 1*, 1 |
| SB2-D | 02, 2, 03, 3 |

Dimensions (mm)

| Fuse Size | a ¹ | a ² (max) | a ³ | a ⁴ | b (nom) | c ¹ (± 8) | c ² (nom) | D (nom) | e ¹ (max) | e ² (max) | e ³ (max) | e ⁴ (nom) | f (max) |
|-----------|----------------|----------------------|----------------|----------------|---------|----------------------|----------------------|-----------|----------------------|----------------------|----------------------|----------------------|---------|
| 000 | 78.5 ± 1.5 | 54 | 45 ± 1.5 | 49 ± 1.5 | 15 | 35 | 10 | 2 ± 0.5 | 41 | 21 | 16 | 6 | 8 |
| 00 | 78.5 ± 1.5 | 54 | 45 ± 1.5 | 49 ± 1.5 | 15 | 35 | 11 | 7.0 ± 0.5 | 48 | 30 | 25 | 6 | 15 |
| 0 | 125 ± 2.5 | 68 | 62 +3/-1.5 | 68 +1.5/-3 | 15 | 35 | 11 | 2.5 ± 0.5 | 48 | 30 | 25 | 6 | 15 |
| 01 | 135 ± 2.5 | 75 | 62 ± 2.5 | 68 ± 2.5 | 15 | 40 | 11 | 2.5 ± 0.5 | 48 | 30 | 25 | 6 | 15 |
| 1 | 135 ± 2.5 | 75 | 62 ± 2.5 | 68 ± 2.5 | 20 | 40 | 11 | 2.5 ± 0.5 | 53 | 52 | 25 | 6 | 15 |
| 02 | 150 ± 2.5 | 75 | 62 ± 2.5 | 68 ± 2.5 | 20 | 48 | 11 | 2.5 ± 0.5 | 53 | 52 | 25 | 6 | 15 |
| 2 | 150 ± 2.5 | 75 | 62 ± 2.5 | 68 ± 2.5 | 25 | 48 | 11 | 2.5 ± 0.5 | 61 | 60 | 25 | 6 | 15 |
| 03 | 150 ± 3 | 75 | 62 ± 2.5 | 68 ± 2.5 | 25 | 60 | 11 | 2.5 ± 0.5 | 61 | 60 | 25 | 6 | 15 |
| 3 | 150 ± 3 | 75 | 62 ± 2.5 | 68 ± 2.5 | 32 | 60 | 11 | 3.0 ± 0.5 | 75 | 70 | 25 | 6 | 18 |
| 4 | 200 | 84 | 80 | 90 | 50 | 85 | 11 | 3 | 120 | 87 | — | 8 | 30 |









NH HRC Fuses

| 500Vac / 250Vdc | Size | Rated Current (Amps) | gG/gL Dual Indicator Voltage Conducting Metal Gripping Lugs | Carton Quantity |
|-----------------|------------------|----------------------|---|-----------------|
| | | 2 | 2NHG00B | 3 |
| | | 4 | 4NHG00B | 3 |
| | | 6 | 6NHG00B | 3 |
| | | 10 | 10NHG00B | 3 |
| | | 16 | 16NHG00B | 3 |
| | | 20 | 20NHG00B | 3 |
| | | 25 | 25NHG00B | 3 |
| | 000 | 32 | 32NHG00B | 3 |
| | | 35 | 35NHG00B | 3 |
| | | 40 | 40NHG00B | 3 |
| | | 50 | 50NHG00B | 3 |
| | | 63 | 63NHG00B | 3 |
| | | 80 | 80NHG00B | 3 |
| | | 100 | 100NHG00B | 3 |
| | 00 | 125 | 125NHG00B | 3 |
| | | 160 | 160NHG00B | 3 |
| | | 10 | 10NHGOB | 3 |
| | | 16 | 16NHGOB | 3 |
| | | 20 | 20NHGOB | 3 |
| | | 25 | 25NHGOB | 3 |
| | | 32 | 32NHGOB | 3 |
| | 0 | 35 | 35NHGOB | 3 |
| | | 40 | 40NHGOB | 3 |
| | | 50 | 50NHGOB | 3 |
| | | 63 | 63NHGOB | 3 |
| | | 80 | 80NHGOB | 3 |
| | | 100 | 100NHGOB | 3 |
| | | 125 | 125NHGOB | 3 |
| | | 160 | 160NHGOB | 3 |
| | | 10 | 10NHG01B | 3 |
| | | 16 | 16NHG01B | 3 |
| | | 20 | 20NHG01B | 3 |
| | | 25 | 25NHG01B | 3 |
| | | 32 | 32NHG01B | 3 |
| | 01 | 35 | 35NHG01B | 3 |
| | | 40 | 40NHG01B | 3 |
| | | 50 | 50NHG01B | 3 |
| | | 63 | 63NHG01B | 3 |
| | | 80 | 80NHG01B | 3 |
| | | 100 | 100NHG01B | 3 |
| | | 125 | 125NHG01B | 3 |
| | | 160 | 160NHG01B | 3 |
| | 1 | 200 | 200NHG1B | 3 |
| | | 224 | 224NHG1B | 3 |
| | | 250 | 250NHG1B | 3 |
| | | 35 | 35NHG02B | 3 |
| | | 40 | 40NHG02B | 3 |
| | | 50 | 50NHG02B | 3 |
| | | 63 | 63NHG02B | 3 |
| | 02 | 80 | 80NHG02B | 3 |
| | | 100 | 100NHG02B | 3 |
| | | 125 | 125NHG02B | 3 |
| | | 160 | 160NHG02B | 3 |
| | | 200 | 200NHG02B | 3 |
| | | 224 | 224NHG02B | 3 |
| | | 250 | 250NHG02B | 3 |
| | 2 | 315 | 315NHG2B | 3 |
| | | 355 | 355NHG2B | 3 |
| | | 400 | 400NHG2B | 3 |
| | | 250 | 250NHG03B | 3 |
| | | 315 | 315NHG03B | 3 |
| | 03 | 355 | 355NHG03B | 3 |
| | | 400 | 400NHG03B | 3 |
| | 3 | 500 | 500NHG3B | 3 |
| | | 630 | 630NHG3B | 3 |
| | | 500 | 500NHG4G | 1 |
| | 4 | 630 | 630NHG4G | 1 |
| | Single Indicator | 800 | 800NHG4G | 1 |
| | Slotted End | 1000 | 1000NHG4G | 1 |
| | Tags | 1250 | 1250NHG4G | 1 |



IEC & British Fuses

NH HRC Fuses

| 690Vac / 250Vdc | Size | Rated Current (Amps) | gG/gL Dual Indicator | | | |
|---|--------------|---|--|-----------------|--------------|---|
| | | | Voltage Conducting Metal Gripping Lugs | Carton Quantity | | |
|  | 000 | 2 | 2NHG000B-690 | 3 | | |
| | | 4 | 4NHG000B-690 | 3 | | |
| | | 6 | 6NHG000B-690 | 3 | | |
| | | 10 | 10NHG000B-690 | 3 | | |
| | | 16 | 16NHG000B-690 | 3 | | |
| | | 20 | 20NHG000B-690 | 3 | | |
| | | 25 | 25NHG000B-690 | 3 | | |
| | | 32 | 32NHG000B-690 | 3 | | |
| | | 35 | 35NHG000B-690 | 3 | | |
| | | 40 | 40NHG000B-690 | 3 | | |
|  | 00 | 50 | 50NHG00B-690 | 3 | | |
| | | 63 | 63NHG00B-690 | 3 | | |
| | | 80 | 80NHG00B-690 | 3 | | |
| | | 100 | 100NHG00B-690 | 3 | | |
| | |  | 0 | 6 | 6NHG0B-690 | 3 |
| | | | | 10 | 10NHG0B-690 | 3 |
| | | | | 16 | 16NHG0B-690 | 3 |
| | | | | 20 | 20NHG0B-690 | 3 |
| | | | | 25 | 25NHG0B-690 | 3 |
| | | | | 32 | 32NHG0B-690 | 3 |
| 35 | 35NHG0B-690 | | | 3 | | |
| 40 | 40NHG0B-690 | | | 3 | | |
| 50 | 50NHG0B-690 | | | 3 | | |
| 63 | 63NHG0B-690 | | | 3 | | |
|  | 1 | 80 | 80NHG0B-690 | 3 | | |
| | | 100 | 100NHG0B-690 | 3 | | |
| | | 50 | 50NHG1B-690 | 3 | | |
| | | 63 | 63NHG1B-690 | 3 | | |
| | | 80 | 80NHG1B-690 | 3 | | |
| | | 100 | 100NHG1B-690 | 3 | | |
| | | 125 | 125NHG1B-690 | 3 | | |
| | | 160 | 160NHG1B-690 | 3 | | |
| | | 200 | 200NHG1B-690 | 3 | | |
| | |  | 2 | 63 | 63NHG2B-690 | 3 |
| 80 | 80NHG2B-690 | | | 3 | | |
| 100 | 100NHG2B-690 | | | 3 | | |
| 125 | 125NHG2B-690 | | | 3 | | |
| 160 | 160NHG2B-690 | | | 3 | | |
| 200 | 200NHG2B-690 | | | 3 | | |
| 224 | 224NHG2B-690 | | | 3 | | |
| 250 | 250NHG2B-690 | | | 3 | | |
| 315 | 315NHG2B-690 | | | 3 | | |
|  | 3 | | | 250 | 250NHG3B-690 | 3 |
| | | 315 | 315NHG3B-690 | 3 | | |
| | | 355 | 355NHG3B-690 | 3 | | |
| | | 400 | 400NHG3B-690 | 3 | | |
| | | 425 | 425NHG3B-690 | 3 | | |
| | | 500 | 500NHG3B-690 | 3 | | |

NH Fuse Bases

SB*-D, SB*-S

Up to 690V / 160 - 1250A

Sizes 00, 0, 1, 2, 3, 4



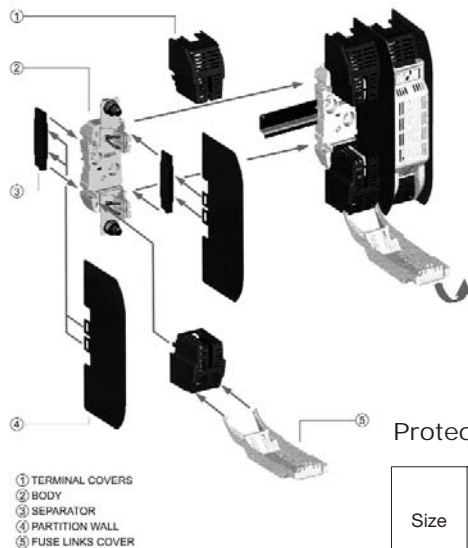
Description: NH fuse bases with thermoplastic bodies. DIN rail and screw mounting (size 4 screw fix). Range of protection accessories for live parts in order to obtain IP20 protection standard.

Ratings:

- Voltage: up to 690Vac
- Amps: 2 to 1250A

Applications: Protection of industrial circuits and electrical apparatus

Standards and Approvals: IEC 60269, DIN 43620



Part Numbers

| Size | Poles | Current (Amps) | Part Numbers | Carton Quantity | Compatible Fuse Size |
|------|--------|----------------|-------------------------------|-----------------|----------------------|
| | | | DIN Screw | | |
| 00 | 1 3 | 160A | SB00-D | 3 | 000 & 00 |
| | | | TB00-D TB00-D-IP20 | | |
| 0 | 1 3 | 160A | SB0-D | 3 | 0 |
| | | | TB0-D | | |
| 1 | 1 3 | 250A | SB1-D | 3 | 01 & 1 |
| | | | TB1-D | | |
| 2 | 1 3 | 400A | SB2-D | 3 | 02 & 2 |
| | | | TB2-D | | |
| 3 | 1 3 | 630A | SB3-D | 3 | 03 & 3 |
| | | | TB3-D | | |
| 4 | 1 | 1250A | SB4-S (Screw Connection only) | 3 | 4 |

Neutral

| Size | Current (Amps) | Part Ref | Carton Quantity |
|------|----------------|----------|-----------------|
| NH00 | 160 | SL00 | 3 |
| NH0 | 160 | SL0 | |
| NH1 | 250 | SL1 | |
| NH2 | 400 | SL2 | |
| NH3 | 630 | SL3 | |
| NH4 | 1000 | SL4 | |



Fuse extraction handle

| Size | Part Ref | Carton Quantity |
|-------|----------|-----------------|
| C00-3 | FEH | 1 |



Protection accessories

| Size | Current (Amps) | Separation Partition ④ | | Fuse Casing ⑤ | | Terminal Cover ① | | Separator ③ | |
|-------|----------------|------------------------|-----------------|---------------|-----------------|------------------|-----------------|-------------|-----------------|
| | | Part Ref | Carton Quantity | Part Ref | Carton Quantity | Part Ref | Carton Quantity | Part Ref | Carton Quantity |
| NH00* | 160A | SP00* | 2 | FC00* | 3 | CS00* | 6 | BC00* | 2 |
| NH0 | 160A | SP0 | 2 | FC0 | 3 | CS0 | 6 | BC0 | 2 |
| NH1 | 250A | SP1-2 | 2 | FC1-2 | 3 | CS1 | 6 | BC1-2 | 2 |
| NH2 | 400A | SP1-2 | 2 | FC1-2 | 3 | CS2 | 6 | BC1-2 | 2 |
| NH3 | 630A | SP3 | 2 | FC3 | 3 | CS3 | 6 | BC3 | 2 |

* For single pole only

IP Protection Kits

| Part Reference | Description |
|----------------|---|
| TB00-D-IP20 | Complete triple pole fuse base IP20 rated |
| FPK0-3P | IP20 kit for TB0-D fuse base |
| FPK1-3P | IP20 kit for TB1-D fuse base |
| FPK2-3P | IP20 kit for TB2-D fuse base |
| FPK3-3P | IP20 kit for TB3-D fuse base |

Microswitch

| Part Ref | Carton Quantity |
|----------|-----------------|
| BVL-50 | 1 |



Microswitch suitable for the following NH Fuse links:

- 400 Volts gG/gL
- 500 Volts gG/gL and aM
- 690 Volts gG/gL and aM

Class gG/gL IEC 60269 Industrial Ferrule Fuses

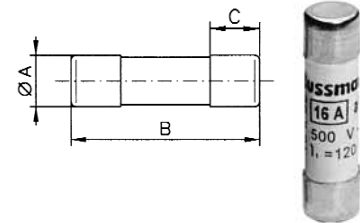
8 x 31mm: 400Vac, 0.5 - 25A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | |
|----------------|------------|---------------|-----------------|------|-----|
| | | | A | B | C |
| C08G0-5 | 0.5 | 400Vac | 8.5 | 31.5 | 6.3 |
| C08G1 | 1 | | | | |
| C08G2 | 2 | | | | |
| C08G4 | 4 | | | | |
| C08G6 | 6 | | | | |
| C08G8 | 8 | | | | |
| C08G10 | 10 | | | | |
| C08G12 | 12 | | | | |
| C08G16 | 16 | | | | |
| C08G20 | 20 | | | | |
| C08G25 | 25 | | | | |



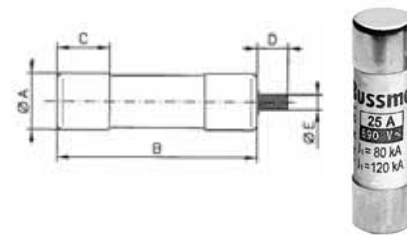
10 x 38mm: 500Vac, 0.5 - 32A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | | | | | |
|----------------|------------|---------------|-----------------|----|----|--------|--|--|--|
| | | | A | B | C | | | | |
| C10G0-5 | 0.5 | 500Vac | 10.3 | 38 | 10 | | | | |
| C10G1 | 1 | | | | | | | | |
| C10G2 | 2 | | | | | | | | |
| C10G4 | 4 | | | | | | | | |
| C10G6 | 6 | | | | | | | | |
| C10G8 | 8 | | | | | | | | |
| C10G10 | 10 | | | | | | | | |
| C10G12 | 12 | | | | | | | | |
| C10G16 | 16 | | | | | | | | |
| C10G20 | 20 | | | | | | | | |
| C10G25 | 25 | | | | | | | | |
| C10G32 | 32 | | | | | | | | |
| | | | | | | 600Vac | | | |



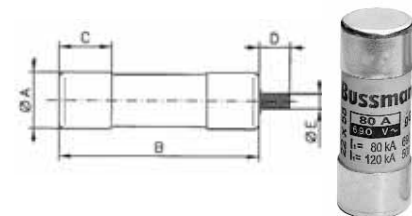
14 x 51mm: 400Vac - 500Vac - 690Vac, 1 - 50A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | | | |
|----------------|------------|---------------|-----------------|----|----|---|---|
| | | | A | B | C | D | E |
| C14G1 | 1 | 690Vac | 14.3 | 51 | 13 | 8 | 4 |
| C14G2 | 2 | | | | | | |
| C14G4 | 4 | | | | | | |
| C14G6 | 6 | | | | | | |
| C14G8 | 8 | | | | | | |
| C14G10 | 10 | | | | | | |
| C14G12 | 12 | | | | | | |
| C14G16 | 16 | | | | | | |
| C14G20 | 20 | | | | | | |
| C14G25 | 25 | | | | | | |
| C14G32 | 32 | | | | | | |
| C14G40 | 40 | | | | | | |
| C14G50 | 50 | | | | | | |
| | | | | | | | |
| | | 400Vac | | | | | |



22 x 58mm: 400Vac - 500Vac - 690Vac, 2 - 125A

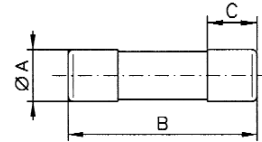
| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | | | |
|----------------|------------|---------------|-----------------|----|----|---|---|
| | | | A | B | C | D | E |
| C22G2 | 2 | 690Vac | 22.2 | 58 | 16 | 8 | 4 |
| C22G4 | 4 | | | | | | |
| C22G6 | 6 | | | | | | |
| C22G8 | 8 | | | | | | |
| C22G10 | 10 | | | | | | |
| C22G12 | 12 | | | | | | |
| C22G16 | 16 | | | | | | |
| C22G20 | 20 | | | | | | |
| C22G25 | 25 | | | | | | |
| C22G32 | 32 | | | | | | |
| C22G40 | 40 | | | | | | |
| C22G50 | 50 | | | | | | |
| C22G63 | 63 | | | | | | |
| C22G80 | 80 | | | | | | |
| C22G100 | 100 | | | | | | |
| C22G125 | 125 | | | | | | |
| | | 500Vac | | | | | |
| | | 400Vac | | | | | |



Class aM IEC Industrial Ferrule Fuses - Class aM IEC 60269

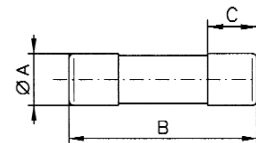
8 x 31mm: 400Vac, 1 - 8A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | |
|----------------|------------|---------------|-----------------|------|-----|
| | | | A | B | C |
| C08M1 | 1 | 400Vac | 8.5 | 31.5 | 6.3 |
| C08M2 | 2 | | | | |
| C08M4 | 4 | | | | |
| C08M6 | 6 | | | | |
| C08M8 | 8 | | | | |



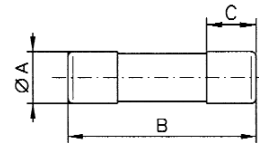
10 x 38mm: 400Vac - 550Vac, 0.16 - 25A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | |
|----------------|------------|---------------|-----------------|------|------|
| | | | A | B | C |
| C10M0-16 | 0.16 | 550Vac | 10.3 | 38.0 | 10.0 |
| C10M0-25 | 0.25 | | | | |
| C10M0-5 | 0.5 | | | | |
| C10M1 | 1 | | | | |
| C10M2 | 2 | | | | |
| C10M4 | 4 | | | | |
| C10M6 | 6 | | | | |
| C10M8 | 8 | | | | |
| C10M10 | 10 | | | | |
| C10M12 | 12 | | | | |
| C10M16 | 16 | | | | |
| C10M20 | 20 | | | | |
| C10M25 | 25 | | | | |
| | | | | | |



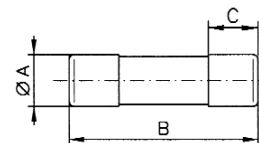
14 x 51mm: 690Vac - 500Vac, 0.25 - 50A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | |
|----------------|------------|---------------|-----------------|----|----|
| | | | A | B | C |
| C14M0-25 | 0.25 | 690Vac | 14.3 | 51 | 13 |
| C14M1 | 1 | | | | |
| C14M2 | 2 | | | | |
| C14M4 | 4 | | | | |
| C14M6 | 6 | | | | |
| C14M8 | 8 | | | | |
| C14M10 | 10 | | | | |
| C14M12 | 12 | | | | |
| C14M16 | 16 | | | | |
| C14M20 | 20 | | | | |
| C14M25 | 25 | | | | |
| C14M32 | 32 | | | | |
| C14M40 | 40 | | | | |
| C14M50 | 50 | | | | |
| | | 400Vac | | | |



22 x 58mm: 400Vac - 500Vac - 690Vac, 2 - 125A

| Catalog Number | Rated Amps | Rated Voltage | Dimensions (mm) | | |
|----------------|------------|---------------|-----------------|----|----|
| | | | A | B | C |
| C22M2 | 2 | 690Vac | 22.2 | 58 | 16 |
| C22M4 | 4 | | | | |
| C22M6 | 6 | | | | |
| C22M8 | 8 | | | | |
| C22M10 | 10 | | | | |
| C22M12 | 12 | | | | |
| C22M16 | 16 | | | | |
| C22M20 | 20 | | | | |
| C22M25 | 25 | | | | |
| C22M32 | 32 | | | | |
| C22M40 | 40 | | | | |
| C22M50 | 50 | | | | |
| C22M63 | 63 | | | | |
| C22M80 | 80 | | | | |
| C22M100 | 100 | | | | |
| C22M125 | 125 | | | | |
| | | 500Vac | | | |
| | | 400Vac | | | |



Neutral Links

| Catalog Number | Product Class |
|----------------|---------------|
| C8NL | QR |
| C10NL | |
| C14NL | |
| C22NL | |

IEC & British Fuses

Class aM & gG/gL IEC Industrial Ferrule Fuses with Striker

14 X 51



Class gG/gL with Striker

| Catalog Number With Striker | Amp Rating | Watts Loss (W) | Voltage (AC) | Interrupting Rating (kA) |
|-----------------------------|------------|----------------|--------------|--------------------------|
| C14G2S | 2 | 0.24 | 500 | 120 |
| C14G4S | 4 | 0.45 | | |
| C14G6S | 6 | 0.42 | | |
| C14G8S | 8 | 0.70 | | |
| C14G10S | 10 | 0.53 | | |
| C14G12S | 12 | 0.88 | | |
| C14G16S | 16 | 1.16 | | |
| C14G20S | 20 | 1.23 | | |
| C14G25S | 25 | 1.46 | | |
| C14G32S | 32 | 2.04 | | |
| C14G40S | 40 | 3.34 | | |
| C14G50S | 50 | 3.04 | | |

22 X 58



| Catalog Number With Striker | Amp Rating | Watts Loss (W) | Voltage (AC) | Interrupting Rating (kA) |
|-----------------------------|------------|----------------|--------------|--------------------------|
| C22G4S | 4 | 0.48 | 690 | 80 |
| C22G6S | 6 | 0.47 | | |
| C22G8S | 8 | 0.73 | | |
| C22G10S | 10 | 0.74 | | |
| C22G12S | 12 | 0.83 | | |
| C22G16S | 16 | 1.21 | | |
| C22G20S | 20 | 1.29 | | |
| C22G25S | 25 | 1.53 | | |
| C22G32S | 32 | 2.13 | | |
| C22G40S | 40 | 3.40 | | |
| C22G50S | 50 | 3.48 | | |
| C22G63S | 63 | 4.46 | | |
| C22G80S | 80 | 5.86 | 500 | 120 |
| C22G100S | 100 | 6.61 | | |
| C22G125S | 125 | 8.42 | | |
| | | | 400 | |

14 X 51



Class aM with Striker

| Catalog Number With Striker | Amp Rating | Watts Loss (W) | Voltage (AC) | Interrupting Rating (kA) |
|-----------------------------|------------|----------------|--------------|--------------------------|
| C14M1S | 1 | 0.14 | 500 | 120 |
| C14M2S | 2 | 0.24 | | |
| C14M4S | 4 | 0.45 | | |
| C14M6S | 6 | 0.42 | | |
| C14M8S | 8 | 0.70 | | |
| C14M10S | 10 | 0.53 | | |
| C14M12S | 12 | 0.88 | | |
| C14M16S | 16 | 1.16 | | |
| C14M20S | 20 | 1.23 | | |
| C14M25S | 25 | 1.46 | | |
| C14M32S | 32 | 2.04 | | |
| C14M40S | 40 | 3.34 | | |
| C14M50S | 50 | 3.04 | 400 | |

22 X 58



| Catalog Number With Striker | Amp Rating | Watts Loss (W) | Voltage (AC) | Interrupting Rating (kA) |
|-----------------------------|------------|----------------|--------------|--------------------------|
| C22M2S | 2 | 0.29 | 690 | 80 |
| C22M4S | 4 | 0.48 | | |
| C22M6S | 6 | 0.47 | | |
| C22M8S | 8 | 0.73 | | |
| C22M10S | 10 | 0.74 | | |
| C22M12S | 12 | 0.83 | | |
| C22M16S | 16 | 1.21 | | |
| C22M20S | 20 | 1.29 | | |
| C22M25S | 25 | 1.53 | | |
| C22M32S | 32 | 2.13 | | |
| C22M40S | 40 | 3.40 | | |
| C22M50S | 50 | 3.48 | 500 | 120 |
| C22M63S | 63 | 4.46 | | |
| C22M80S | 80 | 5.86 | | |
| C22M100S | 100 | 6.61 | 400 | |
| C22M125S | 125 | 8.42 | | |

HRC Fuse Holders

CAMaster

Specifications
Catalog Symbol:
See table below.

Description: The CAMaster HRC fuse holder features a unique cam-action for easy fuse removal while allowing significantly improved contact pressure between fuse carrier and base contact that enhances electrical performance. A range of lockable safety carriers for the fuse holder (catalog reference: LSC), are available.

Ratings:

Volts: — 690V

Amps: — 30-100A (See Catalog Number table for details)

Agency Information: CE, CSA C22.2 No. 39; IEC 269 AND BS 88.

Mounting: 35mm DIN-rail or single screw mounting.

Catalog Numbers

| Catalog Numbers | Amp Ratings | Details For: | Fuse Accepted |
|-----------------|-------------|----------------------|---------------|
| CM20CF | 30 | HRCI-CA Applications | _CIF21 |
| CM30CF | 30 | | _H07C |
| CM60CF | 60 | HRCII Applications | _K07C |
| CM100CF | 100 | | _K07CR |

Accessory Catalog Numbers for CAMaster Units

| Catalog Numbers | Amp Ratings | Details | Fuse Holder Accepted |
|-----------------|-------------|----------------------------|----------------------|
| 20BS | 30 | Back Stud | CM20CF |
| 32BS | 30 | | CM30CF |
| 60/100BS | 60/100 | | CM60/100CF |
| GLP | All | Ganging Link Kit | 3-Pole |
| NI | All | 660V Neon Indicator | — |
| 20LSC | 30 | Security Carrier with Clip | CM20CF |
| 30LSC | 30 | | CM30CF |
| 60/100LSC | 60/100A | | CM60/100CF |



SAFEloc

Specifications
Catalog
Symbol:
See table below.

Description: The SAFEloc HRC fuse holders (for use with HRCI-CB fuses) provides a positive, stress-free fuse fitting and locks it in position to ensure safe insertion and withdrawal from the base. Base contacts are fully shrouded to help protect against electric shock. Shrouds utilize simple slide/snap action allowing access to the contact terminal screws.

Ratings:

Volts: — 600V

Amps: — 30-60A (See Catalog Number table for details)

Agency Information: CE, Designed to accommodate the compact range of offset blade fuse to CSA C22.2 No. 106, HRCI-CB.

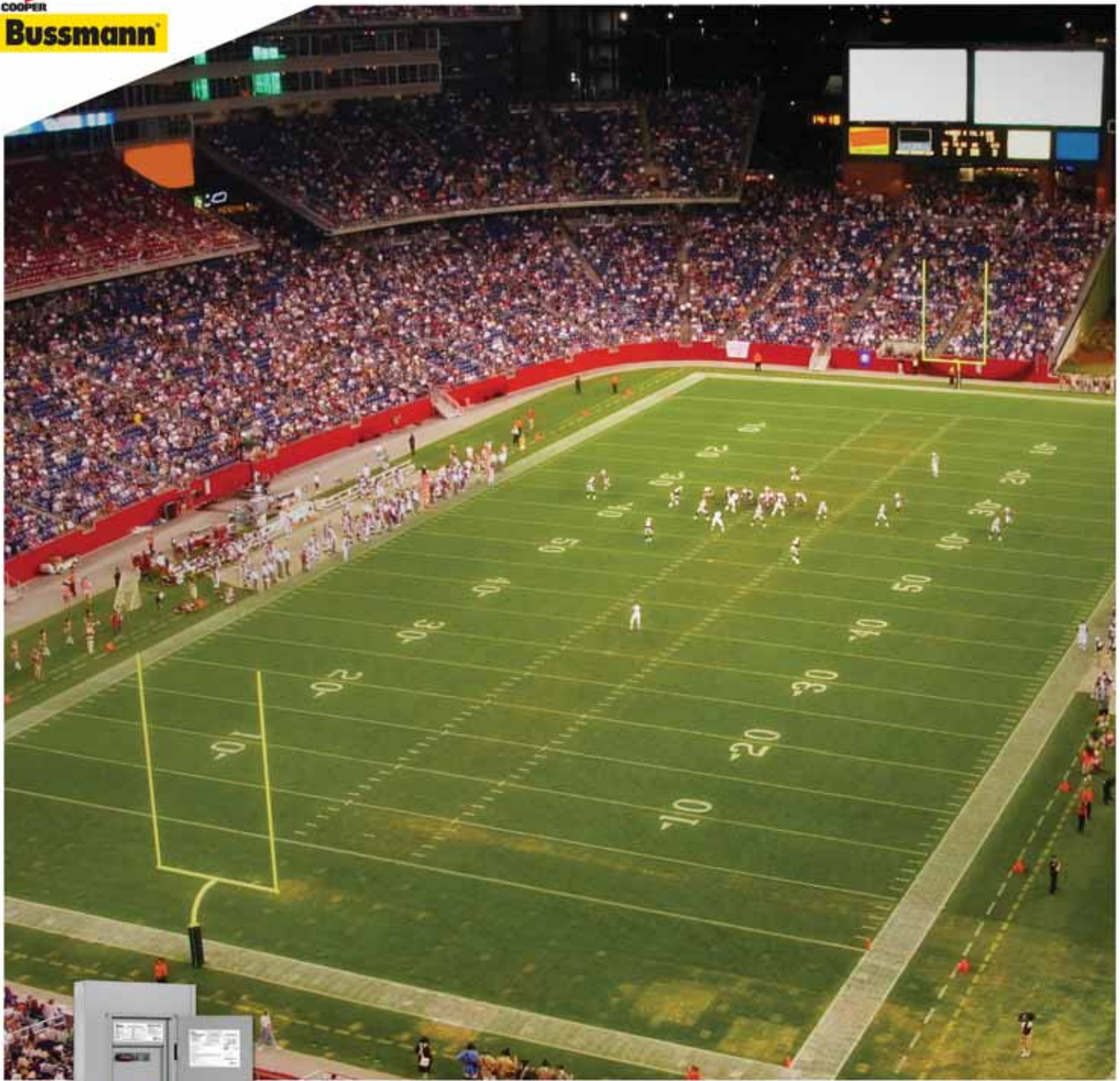
Mounting: 35mm DIN rail or single screw mounting.

Catalog Numbers*

| Catalog Numbers | Amp Ratings | Connection | Fuse Accepted |
|-----------------|-------------|------------|---------------|
| C30F | 30 | Front | _CIF06 |
| C30BS | | Back | |
| C30FBS | | Front-Back | |
| C60F | 60 | Front | EK-Amp |
| C60BS | | Back | |
| C60FBS | | Front-Back | |

*For use with HRCI-CB Fuses.





Quik-Spec™ Coordination Panelboard

The New Standard in Panelboards Simplifies
Selective Coordination with More Flexible
Configurations and Features

Quik-Spec™ Electrical Gear

Section Contents

| | Page |
|--|---------|
| Quik-Spec Coordination Panel Boards | 238-239 |
| Quik-Spec Power Module Switches and Panels | 240-241 |
| Quik-Spec DC Safety Switches | 242 |
| Quik-Spec Solar Combiner Boxes | 243-244 |
| Quik-Spec AC Safety Switches | 245-246 |
| A/C Disconnects - Fused and Non-Fused | 247 |

RED indicates NEW information



Quik-Spec™
Electrical
Gear

Quik-Spec™ Coordination Panelboard

The Quik-Spec Coordination Panelboard Makes Selective Coordination Easy...up to 400A Mains and 100A Branches!*

Easy-to-Spec

- The Quik-Spec Quik-Quote™ online configurator makes specifying, pricing and ordering simple, fast and virtually error free. Just log in, select the ratings, features and options you want, and instantly get back pricing for any Coordination Panelboard possible. Contact your Cooper Bussmann representative for access.

Saves Time

- Enclosure ships within one week of order so installation can start fast. Interior with fuses ships later for jobsite installation. Spare fuses included with chassis shipment so replacements are always on hand.
- Specify Quik-Ship when you order and your product will ship within 10 business days. Available on all NEMA 1 enclosure configurations - just make sure your Cooper Bussmann representative knows you want Quik-Ship.

Flexible Configurations – Up to 600Vac/400 Amp/200kA SCCR, or 125Vdc/400 Amp/100kA SCCR**

- 30, 60, 100, 200, 225 and 400A main ratings
- 125Vdc rating ideal for utility and petro-chem control circuits or UPS circuits
- 1 to 100 amp fuse ratings to closely match loads
- Available in fused or non-fused main disconnect switch, or MLO (Main Lug Only) configurations with a choice of 18, 30 and 42 branch positions, up to 100A, in NEMA 1 or 3R enclosures to easily meet branch or service panel installations needs
- Feed through lugs or fused loadside disconnect available

Same Size Footprint as Traditional, Circuit Breaker Panelboards

- 20" W x 5" D x various heights (depending on configuration)

Addresses NEC® Selective Coordination Requirements

- This cULus Listed panelboard makes it easy to provide systems that comply with NEC® Selective Coordination Requirements*** for Emergency, Legally Required Standby, Healthcare Essential Electrical and Critical Operation Power Systems (COPS) per 700.27, 701.18, 517.26 and 708.54.
- Full fuse-system selective coordination is easy from source to branch. Just follow published fuse selective coordination ratios – no need for plotting time-current curves or expensive studies.



Increases Safety

- Utilizes the finger-safe Low-Peak® CUBEFuse® in a size-rejecting Compact Circuit Protector (CCPB) base. Fuse interlock prevents removing fuse while energized. Fuse ampacity rejection feature coincides with standard fuse size and copper conductor ampacities to help prevent overfusing.
- UL 98 branch circuit disconnect-rated CUBEFuse® Compact Circuit Protector Base with fuse ampacity-rejection feature breaks at 15A, 20A, 30A, 40A, 50A, 60A, 70A, 90A and 100A
- Local open fuse indication on branch circuit device and optional indicating CUBEFuse
- Lockout/Tagout provision eases OSHA compliance
- Lock-On provision helps meet requirements for emergency circuits
- High fuse interrupting rating and up to 200kA assembly SCCR ratings easily exceed most available fault current levels to help assure compliance with NEC® 110.9 and 110.10. Current-limitation of a fused solution also reduces arc-flash hazards and minimizes damage to equipment and circuits.

Quik-Ship - 10 Business Day Shipment

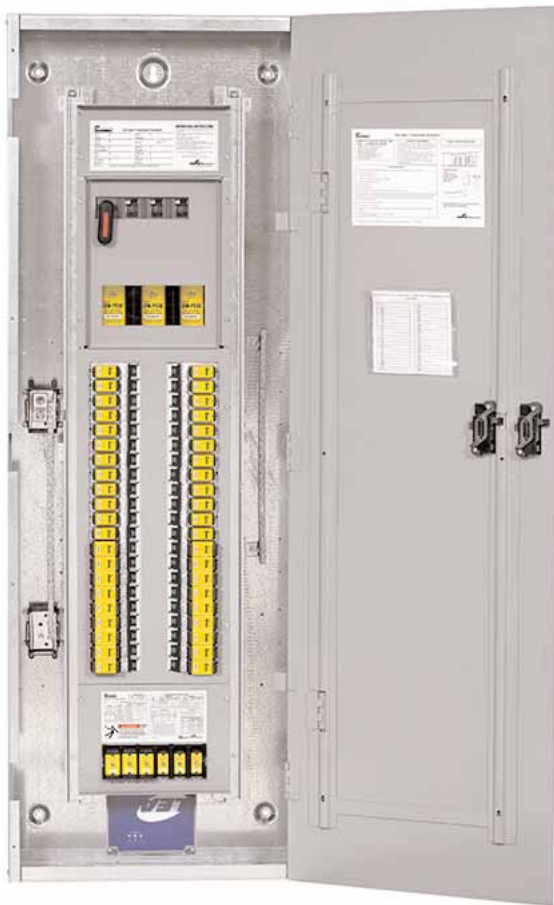
- All configurations of the standard enclosure Quik-Spec Coordination Panelboard are available for shipment within 10 business days of order. Consult factory for details.

*70A, 90A and 100A branch disconnects available for a bus rating 225A or higher.

**125Vdc rating applicable to 40 amp or less CCPBs on MLO panels only.

***When used in a fully fused distribution system.

Quik-Spec™ Coordination Panelboard



Coordination Panelboard Specifications

- Mains:**
 - MLO (Main Lug Only)
 - Fused Disconnect Switch
 - Non-fused Disconnect Switch

- Assembly SCCR:** • 200kA, 100kA or 50kA AC, 100kA or 20kA@125Vdc*

- Voltage Rating:** • Applicable on any 600Vac or less, or 125Vdc** or less systems

- Bus Ampacity:** • 400A, 225A, 200A, 100A, 60A or 30A
- Branch Circuits:** • Circuits; Up to 18, 30 and 42*
 - Amps; Up to 100A
 - Type; 1-, 2- and 3-Pole

- Panel:**
 - Feed; Top & Bottom***
 - Mounting; Surface or Flush****
 - Door/Trim; Regular or Door-in-Door****
 - NEMA Ratings; 1 & 3R. Other ratings available. Consult factory.

- Through-Lugs & Loadside Disconnect:**
 - Feed-Through - single and double
 - Fused loadside disconnect, ≥100A- <200A (400A panels only)

- Neutrals:** • 200A and 400A Unbonded and Bonded

- Ground:** • Non-Isolated or Isolated

- Enclosure Size:** • Standard size panelboard (20" W x 5" D x various heights)*

- Spare Fuses:** • Six-fuse spare fuse compartment
- Options:** • Surge Protection Device (TVSS) for high and low energy transients.

* Depending on configuration
 ** 125Vdc rating applicable to 40 amp or less CCPBs on MLO panels only.
 *** Top feed not available on NEMA 3R enclosure
 **** Flush mount and Door-in-Door not available with NEMA 3R enclosure

Quik-Spec™
Electrical
Gear

Quik-Spec™ Power Module — All-in-one Elevator Disconnect

PS & PMP

Cooper Bussmann® Quik-Spec Power Module

Specifications

Description: Fusible power switch or panel with shunt trip and fire safety interface to allow for single point tie in with fire alarm system.

Ratings:

- Volts: — 600Vac, 3Ø
- Amps: — 30-400A (PS)
 - 30-200A (PMP feeder switches)
 - 400-800A (PMP main switches*)

Assembly

SCCR: — 200,000A rms

*Contact Cooper Bussmann for applications greater than 800A.

Agency Information: Complies with NFPA 70 (NEC®; National Electrical Code®),

- Elevator Shutdown — ANSI/ASME A17.1, 2.8.3.3.2
 - NEC® 620.51(B) (Elevator Shutdown)
 - NEC® 240.12 (Orderly Shutdown)
- Shunt Trip Voltage Monitoring — NFPA 72, 6.16.4.4
- Selective Coordination — NEC® 620.62
- Auxiliary Contact (Hydraulic Elevator) — NEC® 620.91(C)

— Power Module Switch (PS); UL Listed (UL 98) Enclosed and Dead front switch Guide 96NK3917, File E182262, NEMA 1, UL 50 Listed enclosure**, cUL per Canadian Standards C22.2, No. 0-M91-CAN/CSA C22.2, No. 4-M89 Enclosed switch.

**NEMA 12, 3R, and 4 enclosures also available

— Power Module Panel (PMP); UL 98 Enclosed and Deadfront Switches.

Features and Benefits:

- Internally powered, relay activated shunt trip system
- Mechanically interlocked auxiliary contact
- Self-contained adherence to elevator consensus standards, NFPA 70 (NEC®). NFPA 72, ANSI/ASME 17.1
- Shunt trip capability
- Selective coordination
- Fire safety signal interface
- Shunt trip voltage monitoring
- Component protection via Cooper Bussmann® Low-Peak® Class J fuses
- UL 98 Listed for 200kA short-circuit current rating
- Lockable in the open position with three-lock capability
- Optional key-test switch and optional pilot light for easy inspection
- No annual calibration or testing of overcurrent protection required
- Padlockable for service-work safety and open-door “override” for troubleshooting

Typical Applications:

- Elevator Disconnects
- Computer Room Shunt Trip Disconnect
- Fire Safety Interface Relay

Accessories:

- For added safety, use the Cooper Bussmann® SAMI™ fuse covers to improve maintenance personnel protection (OSHA 1910.333, paragraph C)

Ordering:

The Cooper Bussmann Quik-Spec™ Power Module Switch and Panel are factory configured to the specific application. Contact your Cooper Bussmann representative to place your order. Have all relevant electrical and circuit information on hand.

PS*

The Quik-Spec™ Power Module Switch (PS) for single elevator applications.



PMP*

Power Module™ Panel (PMP) for multiple elevator applications.



*Fused main disconnect requires Class J fuses, not supplied with switch.

Quik-Spec™ Power Module — All-in-one Elevator Disconnect

Hydraulic Elevators

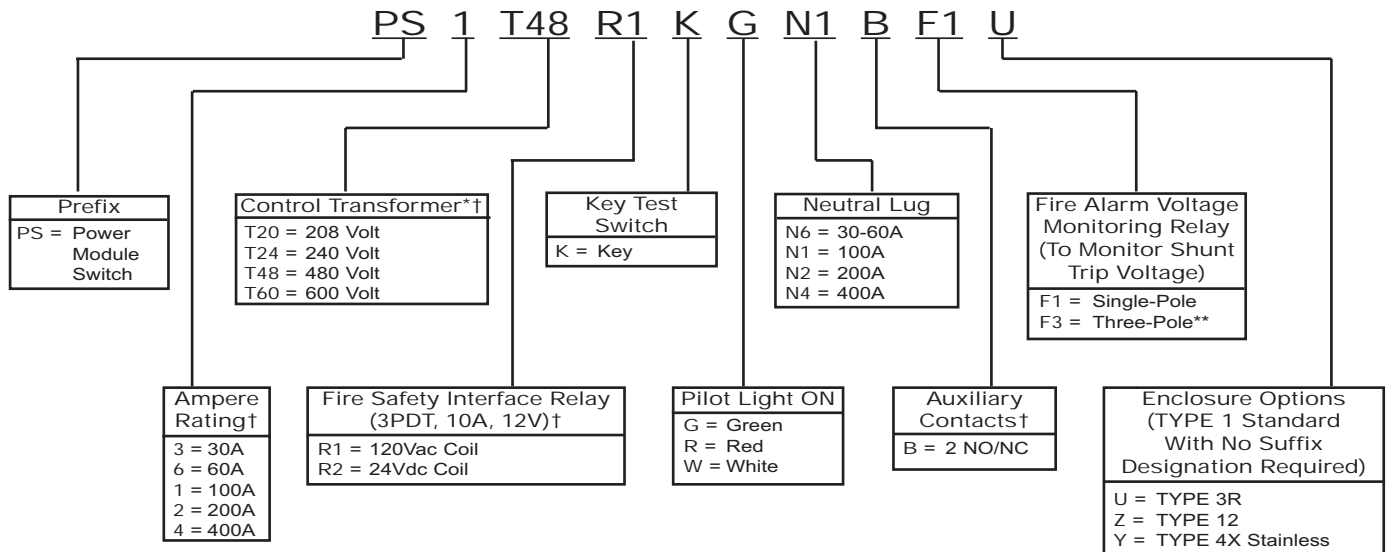
Hydraulic elevators need battery backup to help prevent stranding passengers. To keep the elevator from moving when it's been manually shut down for maintenance, the NEC® requires battery backup be connected to the elevator disconnecting means through an auxiliary contact.

However, an unintended consequence can be passengers getting stranded because of devices that open automatically (circuit breakers and disconnects utilizing a

molded case switch with a trailing fuse block) will operate with a fault on their loadside. That operation also disables the battery backup and strands passengers. That's why the Power Module has a non-automatic fusible shunt trip switch. If the Power Module has a fault on its loadside, the fuses open and the battery stays enabled. Thus the Power Module ensures that battery power is enabled when the passengers need it to exit - and disabled to allow safe maintenance of the elevator and hoistway.

| Scenario | Battery Lowering Required | Reason | Offered By Power Module™ | Offered By Other Elevator Disconnects |
|---------------------------------|---------------------------|--|--------------------------|---------------------------------------|
| Power failure | Yes | Need to lower elevator to allow passengers to exit. | Yes | Yes |
| Fire in shaft or machine room | No | Recall is initiated by smoke detector and lowers elevator to a safe floor. Battery not needed. | Yes | Yes |
| Disconnect manually opened | No | Worker to perform maintenance. Elevator must remain stationary to prevent injury. | Yes | Yes |
| Fault on loadside of disconnect | Yes | Need to lower elevator to allow passengers to exit. | Yes | No |

Quik-Spec™ Power Module Switch Catalog Numbering System



*100Va with Primary and Secondary fusing (120V Secondary)

**Only for use with R1 option

†Required Equipment

Quik-Ship Program: Switch - 3 Days, Panel - 10 Days!

Ship-direct service within three business days for Power Module Switches (PS_) and 10 business days for Power Module Panels (PMP_).

* Three day PS_ shipment requires ordering from catalog numbers shown.

** 10 Day PMP_ shipment covers NEMA 1 enclosures with the ampacities shown and all requirements for relay type (AC or DC), accessory options and number of switches. To order PMP_, contact your Cooper Bussmann representative with all relevant electrical and circuit information, we do the rest.

| Power Module Switch* | | | Power Module Panel** | |
|----------------------|------|-------|----------------------|------|
| Cat Numbers | Amps | Volts | Cat. Numbers | Amps |
| PS6T48R1KGBF3-X | 60A | 480V | PMP-400-X | 400A |
| PS1T48R1KGBF3-X | 100A | 480V | PMP-600-X | 600A |
| PS1T20R1KGBF3-X | 100A | 208V | PMP-800-X | 800A |
| PS2T48R1KGBF3-X | 200A | 480V | | |
| PS2T20R1KGBF3-X | 200A | 208V | | |

Quik-Spec™ DC Safety Switch

Isolating DC Circuits Has Never Been Easier *or* Safer

- Flexibility of Application
- Enhanced Finger-Safe Design
- Meets UL and NEC® Requirements
- Flange Handle Operation
- Current-Limiting Fuses Reduce Arc Flash Hazard

NEC 690.17 Compliant Label

Warns that the switch terminals may be energized in the open position

High Visibility Padlockable Handle

Easy to operate with gloves and up to three padlocks to protect maintenance personnel

Visible Switch Contacts

Positive visual identification of switch state

Door Interlock

Prevents opening door while energized, but can be manually overridden for testing or inspection.

Clear Polycarbonate Deadfront

Covers energized parts to provide added protection against electrical hazards. Lineside stays in place during fuse servicing.

Fused Version For Added Protection

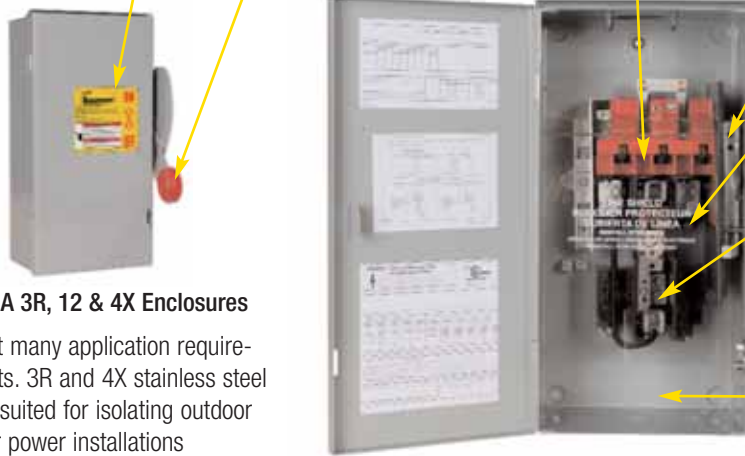
Fuse clips located on switch center pole to ensure both clips are de-energized in OFF position. Meets NEC® Article 690.16 that requires isolating the fuse from all potential supply sources. Cooper Bussmann recommends using the Limitron® fast-acting, current limiting PVS-R Class RK5 fuse (order separately.)

Conduit Knockouts

For easy conductor installation

NEMA 3R, 12 & 4X Enclosures

Meet many application requirements. 3R and 4X stainless steel well suited for isolating outdoor solar power installations



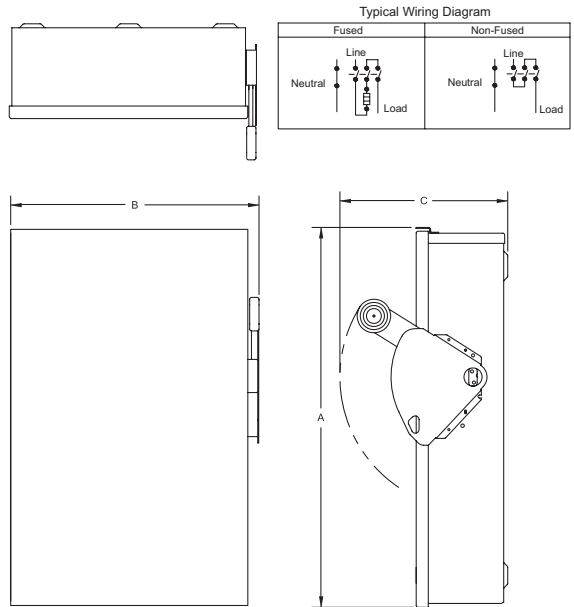
Type 3R Dimensions

| Amps | A | B | C | Main Lug Capacity | Neutral Lug Capacity | I _{sc} |
|------|-------|-------|-------|-------------------------|------------------------|-----------------|
| 30 | 16.35 | 8.87 | 9.89 | #2 AWG - #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 19.2 |
| 60 | 16.35 | 8.87 | 9.89 | #2 AWG - #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 38.4 |
| 100 | 22.15 | 11.84 | 9.89 | 1/0 AWG- #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 64.0 |
| 200 | 28.27 | 16.66 | 11.26 | 250kcmil - #6 AWG Al/Cu | #2 AWG - #14 AWG Al/Cu | 128.0 |

Type 12 & 4X Dimensions

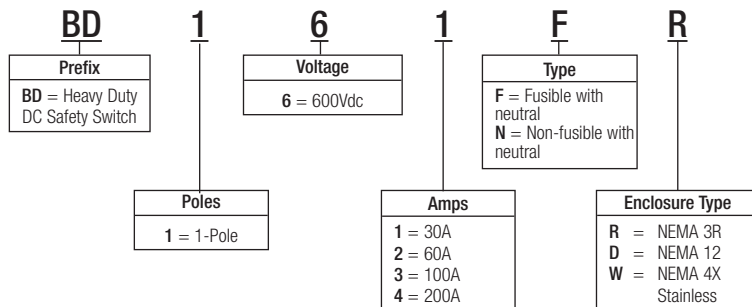
| Amps | A | B | C | Main Lug Capacity | Neutral Lug Capacity | I _{sc} |
|---------------------|-------|-------|-------|-------------------------|------------------------|-----------------|
| 30 & 60 Non-fusible | 14.14 | 8.76 | 10.22 | #2 AWG - #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 19.2 |
| 30 & 60 Fusible | 19.08 | 8.76 | 10.22 | #2 AWG - #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 19.2 |
| 100 | 24.95 | 11.79 | 10.22 | 1/0 AWG- #14 AWG Al/Cu | #4 AWG - #14 AWG Al/Cu | 64.0 |
| 200 | 35.38 | 16.95 | 11.63 | 250kcmil - #6 AWG Al/Cu | #2 AWG - #14 AWG Al/Cu | 128.0 |

Dimensions - in



DC Safety Switch Catalog Numbering System

Use this build-a-code to specify the exact Quik-Spec DC Safety Switch you need.



Quik-Spec™ Solar Combiner Boxes



BCBS Series Standard Box



BCBC Series Compact Box



BCBD Series Integrated Disconnect Box

BCBS Series Standard Combiner Boxes and BCBD Series with Integrated Disconnect

- 4 to 24 Input circuits
- ETL Listed to UL1741 Standard
- DCM** or KLM*** 600Vdc midget fuses for overcurrent protection
- Finger-safe Cooper Bussmann modular fuse holders****
- Finger-safe power distribution blocks*****
- Continuous duty rated at 600Vdc
- Configured for both positive and negative grounded arrays
- Single or dual 90°C output terminals
- Steel or fiberglass NEMA 3, 3R, 4 or 4X rated enclosures with seamless door gaskets
- Negative Input Terminal Blocks
- All products are assembled in the USA

With Integrated Disconnect Only

- 28, 55, 75, 150 and 245A Integrated disconnects

BCBC Series Compact Combiner Boxes

- 2 to 6 Input circuits
- Continuous duty rated at 600Vdc
- DCM** or KLM*** 600Vdc midget fuses for overcurrent protection
- Finger-safe Cooper Bussmann modular fuse holders****
- ETL Listed to UL1741 Standard
- NEMA 4X Polycarbonate enclosure
- Ground blocks included
- External mounting feet included

BCBC Series Compact Combiner Box Specifications*

| Number of Input Circuits | 2 to 4 | 5 to 6 |
|-----------------------------------|------------------|------------------|
| Input Conductor Range | 6-14AWG | 6-14AWG |
| Number of Output Conductors | 1 | 1 |
| Output Conductor Range | 6-14AWG | 6-14AWG |
| Max Fuse Size | 30A | 30A |
| Max Rated Current (DC Continuous) | 76A | 76A |
| NEMA Enclosure Ratings | 4X | 4X |
| Enclosure Dimensions (in), Weight | 6.5x6.5x4, 4 lbs | 6.5x9.5x4, 4 lbs |

BCBS Series Standard Combiner Box*

| Number of Input Circuits | 4 to 12 | 16 | 20 to 24 |
|--|-----------------|-----------------|-----------------|
| Input Conductor Range | 4-16AWG | 4-16AWG | 4-16AWG |
| Number of Output Conductors | 1 | 1 or 2 | 1 or 2 |
| Output Conductor Range | 350kcmil-6AWG | 350kcmil-6AWG | 350kcmil-6AWG |
| Max Fuse Rating | 30A | 30A | 30A |
| Max Rated Current (DC Continuous) | 310A | 400A | 400A |
| Max Voltage | 600Vdc | 600Vdc | 600Vdc |
| NEMA Enclosure Ratings | 3, 3R, 4, 4X | 3, 3R, 4, 4X | 3, 3R, 4, 4X |
| Steel Enclosure Dimensions (in), Weight | 16x12x6, 30 lbs | 16x16x6, 36 lbs | 20x20x6, 46 lbs |
| Fiberglass Enclosure Dimensions (in), Weight | 16x14x7, 18 lbs | 22x18x9, 22 lbs | N/A/NA |

* Refer to next page for part number configuration.
 ** See Data Sheet 2038 for details.
 *** See Data Sheet 2020 for details.
 **** See Data Sheet 2053 for details.
 ***** See Data Sheet 1049 for details.

BCBD Series Combiner Box with Integrated Disconnect*

| Disconnect Rating (Amps) | 28A | 55A | 75A | 150A | 245A |
|--|-----------------|-----------------|-----------------|---------------------------------------|------------------|
| Number of Input Circuits | 4 | 4 | 4 to 12 | 4 to 24 | 4 to 24 |
| Input Conductor Range | 4-14AWG | 4-14AWG | 4-14AWG | 4-14AWG | 4-14AWG |
| Number of Output Conductors | 1 | 1 | 1 | 1 | 1 |
| Output Conductor Range | 2/0-14AWG | 2/0-14AWG | 350kcmil-6AWG | 350kcmil-6AWG | 350kcmil to 6AWG |
| Max Fuse Size | 30A | 30A | 30A | 30A | 30A |
| Max Rated Current (DC Continuous) | 28A | 55A | 75A | 150A | 245A |
| Max Voltage | 600Vdc | 600Vdc | 600Vdc | 600Vdc | 600Vdc |
| NEMA Enclosure Ratings | 4, 4X | 4, 4X | 3, 3R, 4, 4X | 3, 3R, 4, 4X | 3, 3R, 4, 4X |
| Steel Enclosure Dimensions (in), Weight | 12x10x6, 15 lbs | 12x10x6, 15 lbs | 20x20x6, 42 lbs | 20x20x6, 50 lbs, or 20x24x6, 50 lbs | 24x24x6, 55 lbs |
| Fiberglass Enclosure Dimensions (in), Weight | 14x12x7, 12 lbs | 14x12x7, 12 lbs | 22x18x8, 28 lbs | 24x20x10, 35 lbs, or 24x24x10, 35 lbs | 24x24x10, 40 lbs |

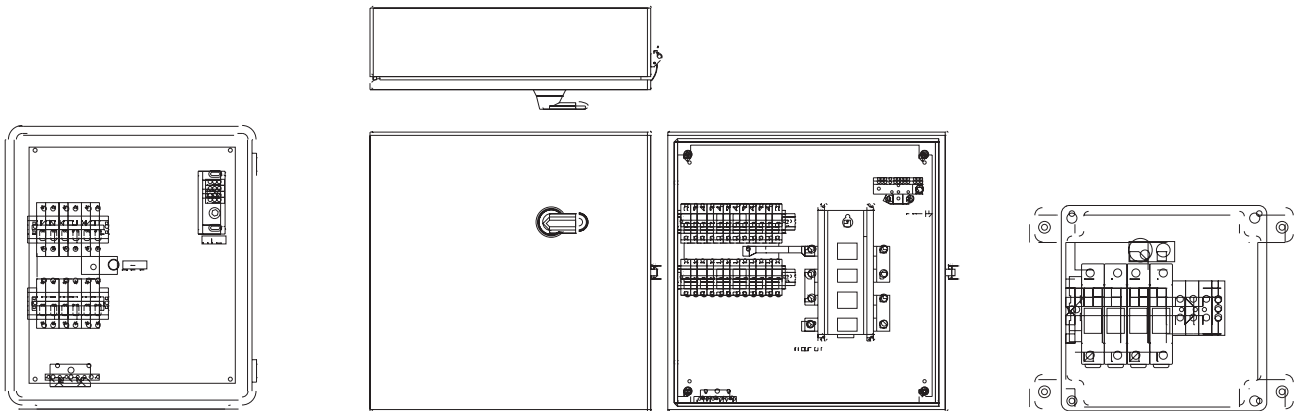
Quik-Spec™ Solar Combiner Boxes

Cooper Bussmann Solar Combiner Box Catalog Numbering System

Example: **BCBD28-24-30R = B C B D 2 8 - 2 4 - 3 0 R**

| | | | | | | | |
|--|--|----------------------------------|----|-----|-----|----|----|
| Series Prefix | BCBS – Combiner Box | | | | | | |
| | BCBD – Combiner Box with Integrated Disconnect | | | | | | |
| | BCBC – Compact Combiner Box | | | | | | |
| Disconnect Ampacity | For ordering BCBD Series only - otherwise, leave blank | | | | | | |
| | 28 | 55 | 75 | 150 | 245 | | |
| Number of Poles Available (by Series) | | | | | | | |
| BCBS & BCBD Series: | 04 | 08 | 12 | 16 | 20 | 24 | |
| BCBC Series: | | 02 | 03 | 04 | 05 | 06 | |
| Fuse Size (amps)* | | | | | | | |
| | 00 – No Fuses Included | | | | | | |
| | 01 | 03 | 05 | 08 | 10 | 15 | 25 |
| | 02 | 04 | 06 | 09 | 12 | 20 | 30 |
| * When fuses are specified, DCM or KLM 600Vdc fuses are included | | | | | | | |
| Enclosure | | | | | | | |
| | R – NEMA 3/3R | 4 – NEMA 4 (Powder Coated Steel) | | | | | |
| | F – NEMA 4X (Fiberglass) | P – NEMA 4X (Polycarbonate)** | | | | | |
| **BCBC Only available with NEMA 4X (P) option | | | | | | | |

Typical Combiner Box Layouts



Standard BCBS Series

4 to 24 Circuits - BCBS-12-00F Pictured

Integral Disconnect on BCBD Series

4 to 24 Circuits - BCBD245-24-00R Pictured

Compact BCBC Series

2 to 6 Circuits - BCBC-4-00P Pictured

Quik-Spec™ Safety Switch

Cooper Bussmann® Quik-Spec™ Safety Switch



Specifications

Description: The new Cooper Bussmann® Quik-Spec™ Safety Switch equipped with finger-safe Low-Peak® CUBEFuse® provides superior safety and reliability for industrial customers.

Utilizing the Cooper Bussmann Class CF Low-Peak CUBEFuse, the Quik-Spec Safety Switch provides Class J fuse performance characteristics that can help mitigate incident energy and arc-flash hazard, and offers excellent component protection.

The Cooper Bussmann CUBEFuse requires no tools to install or replace.

Agency Information:

- UL 98 standard for enclosed deadfront switches.
- UL 50 standard for enclosures for electrical equipment.
- NEMA KS 1.
- UL Listed, File E5239.
- cUL Listed to C22.2 No.4-M89.

Standard Features:

- Extended line terminal shield and finger-safe 30, 60, or 100A Cooper Bussmann CUBEFuse
- 200kA short-circuit current rating
- Visible double break quick-make, quick-break rotary blade mechanism
- Triple padlocking capability
- Mechanically interlocked door
- 600Vac/250Vdc maximum

Optional Features:

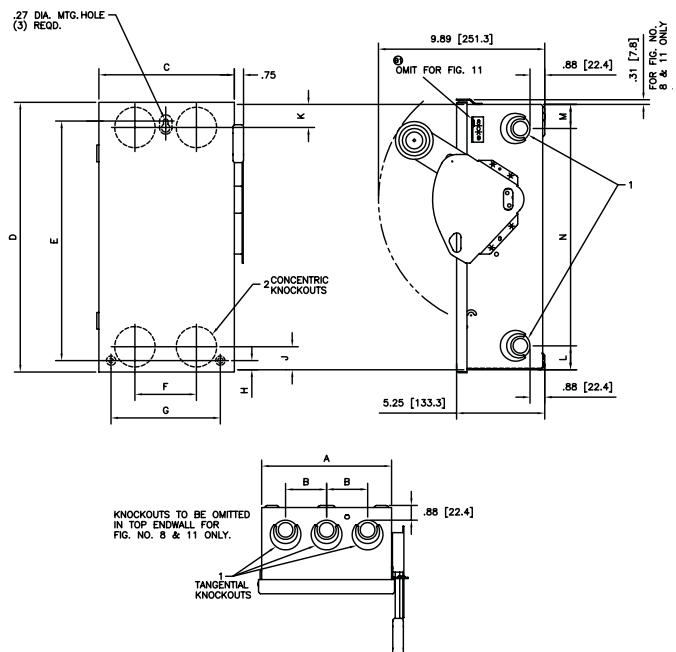
- Viewing window for visible blades and open fuse indication
- NEMA 1, 3R, 12, 4X (stainless)
- Suitable for use as service equipment (with neutral kit)

Features and Benefits:

- Enhanced Finger-Safe Design
The Cooper Bussmann Class CF CUBEFuse isolates live electrical parts from accidental contact to increase safety. Large line-side shield is standard in all models virtually eliminating accidental contact with live parts.
- Current-Limiting Fuses Reduce Arc-Flash Hazard
with Class J fuse performance characteristics, the Quik-Spec Safety Switch offers industry best arc-flash protection versus traditional models.
- Meets UL and NEC® Requirements
The Quik-Spec Safety Switch is rated 200kA which makes it easier to comply with NEC® 110.9 and 110.10 requirements and is listed to UL 98 and UL 50 standards.
- Flange Operated Handle
Always in contact with the switch mechanism, the flange operated switch is preferred in most industries.
- Easy Interface with Viewing Window Option
Window provides visual verification that switch contacts have operated, plus the ability to view fuse indication without opening the switch door.
- No Tools Required for Fuse Removal
Reduce downtime and potential arc-flash hazard.
- Flexibility of Application
The 600V heavy-duty safety switch is available up to 100A with NEMA 1, 3R, 12 and 4X enclosures.

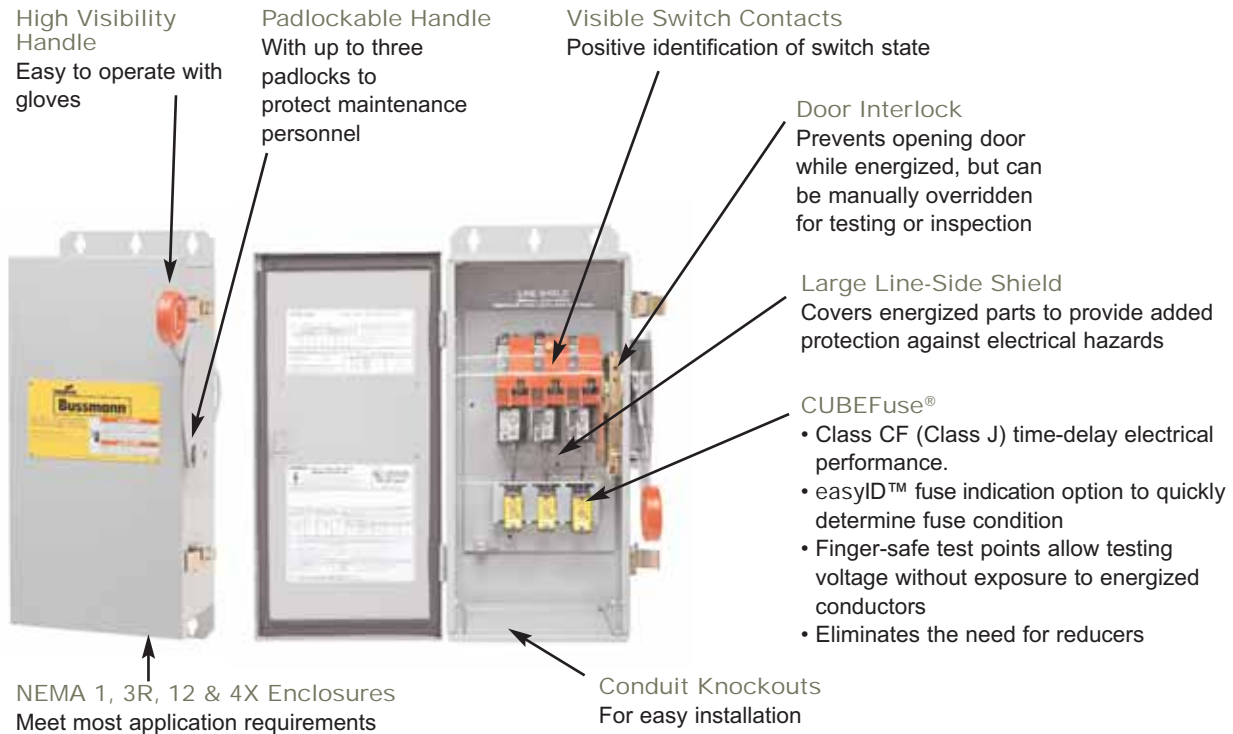
Dimensions - inches (mm)*

NEMA 1 & 3R

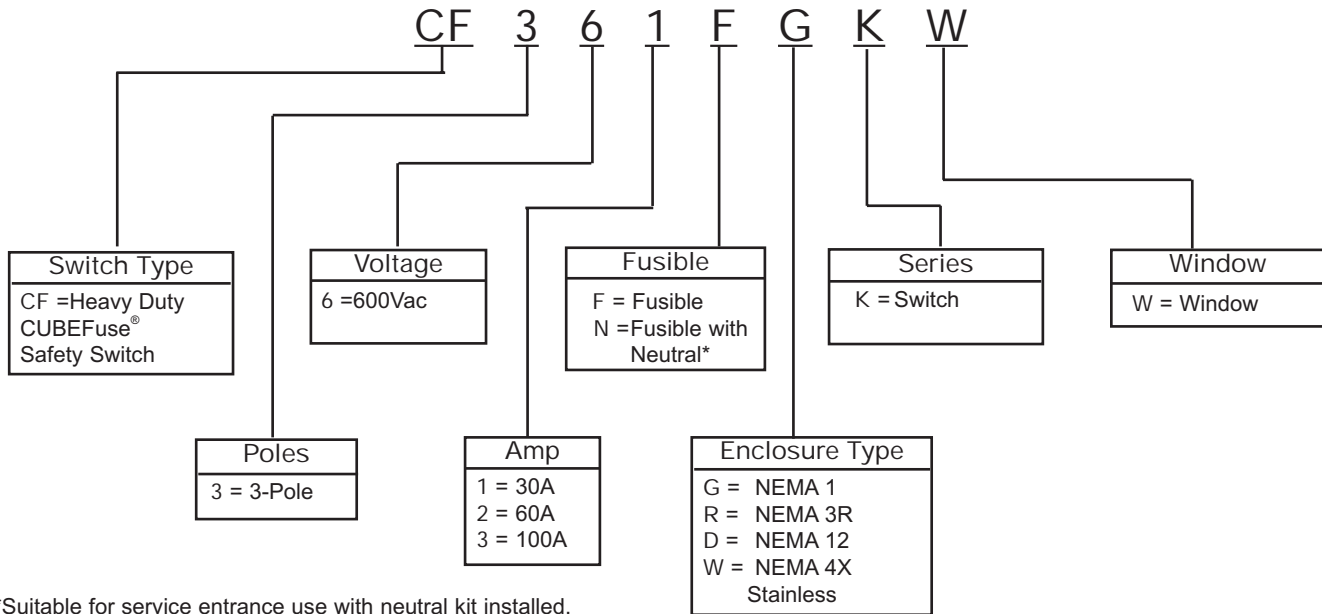


*See Data Sheet 1156 for 4X and 12 dimension information

Quik-Spec™ Safety Switch



Quik-Spec™ Safety Switch Catalog Numbering System



Maximum Horsepower Ratings

| System | Amp Rating | Fuse Class (Performance) | Single-Phase | | Three-Phase | | Direct Current 250Vdc |
|--------|------------|-----------------------------|--------------|--------|-------------|--------|--------------------------|
| | | | 480Vac | 600Vac | 480Vac | 600Vac | |
| 3-Pole | 30 | Class CF CUBEFuse (Class J) | 7½ | 10 | 10 | 15 | 5 |
| | 60 | Class CF CUBEFuse (Class J) | 20 | 25 | 30 | 30 | 10 |
| | 100 | Class CF CUBEFuse (Class J) | 30 | 40 | 50 | 50 | 15 |

A/C Disconnects — Fused and Non-fused

Series B22__

Specifications

Description: Fused and non-fused rainproof pullout air conditioner units.

Dimensions: See Catalog Numbers table.

Construction: NEMA 3R metal housing with weather resistant coating.

Wire Range: 14-3 AWG, Al/Cu

Ratings:

Phase: — Single, 2-wire

Volts: — 240Vac

Amps: — 30-60A

Agency Information: UL Listed to UL 1429, cUL Certified, UL Guide WGEW

Features and Benefits

- A/C disconnects meet NEC® Code Requirements under articles 440.14. GFCI units meet NEC® Code Requirements under articles 210.63, 210.8, and 406.8(B)(1).
- NEMA 3R rainproof enclosures withstand outdoor environment.
- Padlockable with two-position pullout handle to lock safety shield when in the ON position. (Not available on GF or NA units.) For added safety, pullout handle can be stored in the compartment in the off position.

Typical Applications

- Residential, light industrial/commercial A/C and heat pump service.
- Spas/whirlpools, swimming pools, pump houses.
- Suitable for service entrance equipment applications with field installable ground bar, kit number DPF6.



Metallic Fused Disconnect

Metallic Non-Fused Disconnect

Metallic Non-Fused Disconnect with Weather Resistant-Tamper Resistant GFCI Receptacle.



Catalog Numbers

Fused

| Catalog Numbers | Description | Disconnect Rating | Max Hp Rating | | Wire Range 60 or 75°C Cu/Al | Enclosure Type | Fuse Class | Approx. Dimensions (in) | | |
|------------------|---------------------------------|-------------------|---------------|------|--------------------------------|----------------|------------|-------------------------|-------|-------|
| | | | 120V | 240V | | | | Height | Width | Depth |
| B221-30F | 30A, Pullout | 30A | 1.5 | 3 | #14-3 | NEMA 3R | H or R | 8 ¾ | 5 ¾ | 2 ¾ |
| B221-30FGF | 30A, Pullout w/ GFCI | 30A | 1.5 | 3 | #14-3 | NEMA 3R | H or R | 13 | 7 ½ | 4 ¾ |
| B221-30FGFWRTR | 30A, Pullout w/ WRTR-Rated GFCI | 30A | 1.5 | 3 | #14-3 | NEMA 3R | H or R | 13 | 7 ½ | 4 ¾ |
| B222-60F | 60A, Pullout | 60A | 3 | 10 | #14-3 | NEMA 3R | H or R | 8 ¾ | 5 ¾ | 2 ¾ |
| B222-60FGF | 60A, Pullout w/ GFCI | 60A | 3 | 10 | #14-3 | NEMA 3R | H or R | 13 | 7 ½ | 4 ¾ |
| B222-60FGFWRTR | 60A, Pullout w/ WRTR-Rated GFCI | 60A | 3 | 10 | #14-3 | NEMA 3R | H or R | 13 | 7 ½ | 4 ¾ |
| Non-Fused | | | | | | | | | | |
| B222-60NF | 60A, Pullout | 60A | 3 | 10 | #14-3 | NEMA 3R | * | 8 ¾ | 5 ¾ | 2 ¾ |
| B222-60NFGF | 60A, Pullout w/ GFCI | 60A | 3 | 10 | #14-3 | NEMA 3R | * | 11 ¾ | 6 ½ | 4 ½ |
| B222-60NFGFWRTR | 60A, Pullout w/ WRTR-Rated GFCI | 60A | 3 | 10 | #14-3 | NEMA 3R | * | 11 ¾ | 6 ½ | 4 ½ |
| B222-60NFNA | 60A, Switch | 60A | * | 10 | #14-3 | NEMA 3R | * | 8 ¾ | 5 ¾ | 3 ¾ |

30 and 60A pullout replacement handle: 96-3258-4.

*Upstream overcurrent protective device (OPCD) not to exceed 60A.



Fuse Holders and Blocks

New Finger-Safe Designs Make Fuse Applications Safer and More Flexible – Now Up to 1000Vdc

Fuse Holders and Blocks



| Section Contents | Page |
|---|----------------|
| OPM-1038 3-pole fuse holders with disconnect switch | 250 |
| OPM-1038 3-pole fuse holders | 251 |
| OPMNGA- 3-pole Class CC and 1 1/2" X 1 1/2" fuse overcurrent protection modules | 252-253 |
| CH Series Class J modular fuse holders | 254 |
| JT(N)60030 & JT(N)600600 Safety J™ Class J fuse holders | 255-256 |
| CH Series Global Modular fuse holders | 257-258 |
| SAMI™ fuse covers | 259 |
| H250 & R250 Series 250V Class H (K) and R fuse blocks | 260-262 |
| H600 & R600 600V Class H (K) and R fuse blocks | 263-265 |
| J600 Series Class J fuse blocks | 266-267 |
| JP Series Class J fuse blocks | 268 |
| JA60030 add-a-pole Class J fuse blocks | 268 |
| T300 300V Class T fuse blocks | 269-270 |
| T600 600V Class T fuse blocks | 271-272 |
| BCA Series Class CC add-a-pole modular fuse blocks | 273 |
| BMA Series 1 1/2" X 1 1/2" fuse add-a-pole modular fuse blocks | 273 |
| BC Series Class CC fuse blocks | 274 |
| BM Series Type M 1 1/2" X 1 1/2" fuse blocks | 274 |
| BG & G Series Class G fuse blocks | 274 |
| BH Series high speed fuse modular fuse blocks | 275 |
| Class H & J modular fuse blocks | 275 |
| Plug fuse box cover units | 276 |
| HFB & HEB-10 in-line fuse holders for 1/4" X 1 1/4" fuses | 277, 279 |
| HHB & HRK universal in-line fuse holders for 1/4" dia. fuses | 277 |
| HR & HM Series in-line fuse holders for 1/4" dia. fuses | 278 |
| HFA Series waterproof in-line fuse holders for 1/4" X 1 1/4" fuses | 278 |
| HHT Series in-line fuse holders for 5 X 15 to 20mm fuses | 278 |
| Tron® in-line fuse holders | 279-280 |
| Panel mounted fuse holders for 5 X 20mm fuses | 281 |
| Panel mounted fuse holders for 1/4" X 1 1/4" fuses | 282 |
| Panel mounted fuse holders for 5 X 20mm and 1/4" X 1 1/4" fuses | 283-284 |
| Panel mounted fuse holders for indicating type fuses | 285 |
| Panel mounted fuse holders for 1 1/2" X 1 1/8" to 1 1/2" fuses | 286 |
| Panel mounted fuse holders for 1 1/2" X 1 1/2" fuses | 287 |
| Fuse blocks for 1/4" X 1 1/4" fuses | 288 |
| Fuse blocks for 1/4" X 1" fuses | 289 |
| Fuse blocks for 1 1/2" X 1 1/2" fuses | 290 |
| Rail mount fuse holders | 291 |

Fuse Holders & Blocks

RED indicates NEW information

Optima® Fuse Holder Module and Disconnect Switch

OPM-1038 With Disconnect Switch



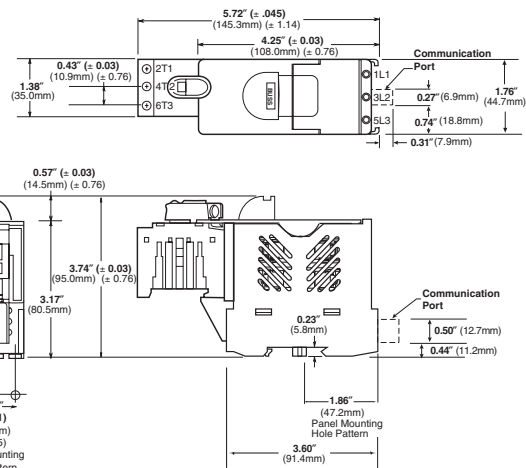
Features/Benefits

- Padlockable with finger-safe terminals for safety. Qualified as IP20 per IEC 60529.
- Cam-action handle for easy module removal, offered with Class CC rejection clips or European 10 x 38mm clips to meet global needs
- Wire ready with 35mm DIN rail or screw panel mounting (#8 screw, 1 1/4" long) saves installation time
- Fuse indication lights with option for remote fuse status available. See Data Sheet for additional wiring details.

Typical Applications

- Industrial Control
- Process Control Systems
- Automated Warehouse Systems
- Individual Control Circuits

Dimensions



Catalog Number Build-A-Code

| Series | Fuse Type | Communication |
|-----------------|--|---------------------------|
| O P M - 1 0 3 8 | Blank = 10 x 38mm or 1/2" x 1-1/2" R = Class CC | C = Communication Feature |

Specifications

Description: 3-pole load break modular fuse holder and disconnect switch for 1/2" x 1 1/2" (10 x 38mm) fuses.

Dimensions: See Dimensions illustration.

Poles: 3

Agency Information: CE, UL (see table), CSA Certified, C22.2 No. 39, Class 6225-01, File 47235, IEC (see table).

Flammability Rating: UL 94V0.

Horsepower Rating of Switch

| 3-Phase | Volts | 240 | 480 | 600 |
|---------|-------|-----|-----|-----|
| | HP | 5 | 10 | 15 |

Recommended Fuse Types

| Class CC | Midget (Non-Rejection) | European |
|----------|------------------------|----------|
| LP-CC | KTK | C10M |
| KTK-R | FNM | C10G |
| FNQ-R | FNQ | |

Physical Characteristics

- Small size matches 45mm IEC starter width
- Accepts #8-18 AWG stranded, #10-18 AWG solid wire
- 3-pole
- Handle and shaft required for through the door operation

Catalog Numbers

| Catalog Numbers | Electrical Rating | SCCR** Rating | Clips | Remote Open Fuse Indication | UL Information Std. | File | Guide | IEC | CE |
|-----------------|---------------------------------------|---------------|---|-----------------------------|----------------------|---------|-------|-------------|-----|
| OPM-1038SW | 30A, 600Vac UL/CSA 32A, 660Vac IEC | * | Non-rejection, 10x38mm or 1/2" x 1 1/2" | No | Recognized UL 508 | E161278 | NLRV2 | IEC 60947-3 | Yes |
| OPM-1038RSW | 30A, 600Vac UL/CSA | 100kA | Rejection, Class CC | No | Listed UL 508 | E161278 | NLRV | | Yes |
| OPM-1038SWC | 30A, 600Vac UL/CSA 32A, 660Vac IEC | * | Non-rejection, 10x38mm or 1/2" x 1 1/2" | Yes | Recognized UL 508 | E161278 | NLRV2 | IEC 60947-3 | No |
| OPM-1038RSWC | 30A, 600Vac UL/CSA | 100kA | Rejection, Class CC | Yes | Listed UL 508 | E161278 | NLRV | | No |

*Rating varies depending on fuse used in module; 100kA maximum

**Short-Circuit Current Rating

Data Sheet: 1103

Optima® Fuse Holder Module

OPM-1038



Features/Benefits

- Padlockable with finger-safe terminals for safety. Qualified as IP20 per IEC 529.
- Cam-action handle for easy module removal.
- Offered with Class CC rejection clips or European 10 x 38mm clips to meet global needs
- Wire ready with 35mm DIN rail or screw panel mounting (#8 screw, 1 1/4" long) saves installation time
- Fuse indication lights with option for remote fuse status indication. See Data Sheet for additional wiring details.

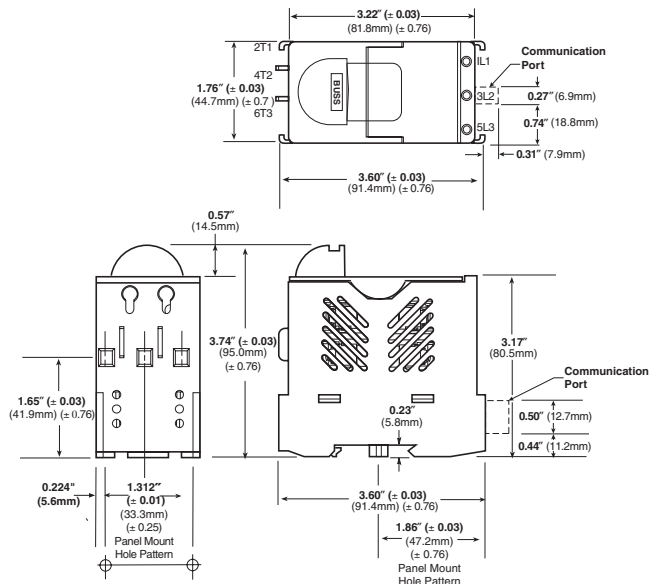
Catalog Number Build-A-Code

| Series | Fuse Type | Communication |
|---|--|--|
| <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; padding: 2px 5px;">O</div> <div style="border: 1px solid black; padding: 2px 5px;">P</div> <div style="border: 1px solid black; padding: 2px 5px;">M</div> <div style="border: 1px solid black; padding: 2px 5px;">-</div> <div style="border: 1px solid black; padding: 2px 5px;">1</div> <div style="border: 1px solid black; padding: 2px 5px;">0</div> <div style="border: 1px solid black; padding: 2px 5px;">3</div> <div style="border: 1px solid black; padding: 2px 5px;">8</div> </div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> Blank = 10 x 38mm or 1 3/32" x 1 1/2" </div> | <div style="border: 1px solid black; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;"> C = Communication Feature </div> |
| | R = Class CC | |

Typical Applications

- Industrial Control
- Process Control Systems
- Automated Warehouse Systems
- Individual Control Circuits

Dimensions



Specifications

Description: 3-pole modular fuse holder for 1 3/32" x 1 1/2" (10 x 38mm) fuses.

Dimensions: See Dimensions illustration.

Poles: 3

Agency Information: CE, UL (see table), CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235, IEC (see table).

Flammability Rating: UL 94V0.

Recommended Fuse Types

| Class CC | Midget (Non-Rejection) | European |
|----------|------------------------|----------|
| LP-CC | KTK | C10M |
| KTK-R | FNM | C10G |
| FNQ-R | FNQ | |

Physical Characteristics

- Small size matches 45mm IEC starter width
- Accepts #8-18 AWG stranded, #10-18 AWG solid wire
- 3-pole

Catalog Numbers

| Catalog Numbers | Electrical Rating | SCCR** Rating | Clips | Remote Open Fuse Indication | UL Information Std. | File | Guide | IEC | CE |
|-----------------|---|---------------|--|-----------------------------|---------------------|--------|-------|---------------|-----|
| OPM-1038 | 30A, 600Vac/dc UL/CSA (Max 3 Watts per fuse) 32A, 660V IEC | * | Non-rejection, 10 x 38mm or 1 3/32" x 1 1/2" | No | Recognized UL 4248 | E14853 | IZLT2 | IEC 60269-2-1 | Yes |
| OPM-1038R | 30A, 600Vac/dc UL/CSA | 200kA | Rejection, Class CC | No | Listed UL 4248 | E14853 | IZLT | | Yes |
| OPM-1038C | 30A, 600Vac/dc UL/CSA (Max 3 Watts per fuse) 32A, 660V IEC | * | Non-rejection, 10 x 38mm or 1 3/32" x 1 1/2" | Yes | Recognized UL 4248 | E14853 | IZLT2 | IEC 60269-2-1 | No |
| OPM-1038RC | 30A, 600Vac/dc UL/CSA | 200kA | Rejection, Class CC | Yes | Listed UL 4248 | E14853 | IZLT | | No |

*Rating varies depending on fuse used in module; 200kA maximum.

**Short-Circuit Current Rating

Data Sheet: 1102

Optima® Three-pole Overcurrent Protection Module

OPM-NG-



Specifications

Description:

OPM-NG-SC3: 3-pole Class CC fuse holder for use with Class CC fuses (Cooper Bussmann Types LP-CC, FNQ-R, KTK-R).

OPM-NG-SM3: 3-pole fuse holder for use with 1/2" x 1 1/2" and 10.3 x 38mm fuses (Cooper Bussmann Types: 1/2" x 1 1/2"; KTK, FNQ, KLM, 10 x 38mm; FWA, FWC, C10G_ _, C10M_ _).

Ratings:

- Volts: – OPM-NG-SC3: 600Vac (or less)
- OPM-NG-SM3: 600Vac (or less) UL and CSA 30A
- OPM-NG-SM3: 690Vac (or less) IEC 32A

Amps: – OPM-NG-SC3: 0-30A

– OPM-NG-SM3: 0-30A

SCCR: – OPM-NG-SC3: 200kA

– OPM-NG-SM3: Same as fuse IR, 200kA maximum

Agency Information: CE, UL; OPM-NG-SC3 UL Listed, UL 4248, File E14853, Guide IZLT. OPM-NG-SM3, UL Recognized, UL 4248, File E14853, Guide IZLT2. CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235. IEC 60947-3 Utilization Category AC20B.

Handling & Storage Temperature: -10° to 65°C.

Features/Benefits

- 45mm width matches IEC starters
- 35mm DIN rail or panel mounting feature. Maximum screw size #8 (M4)
- Pressure plate terminations with dual-wire rated terminals (see Wire Table) and optional auxiliary contacts
- Integrated collapsible handle and fuse carrier cannot be removed from holder base
- Padlockable and IP20 finger-safe to IEC60529

Typical Applications

- Mass Produced Control Systems
- Process Control Systems
- Automated Warehouse Systems
- Individual Control Circuits

Fuse Holder Wire Range:

- 75°Cu Only
- #18-12 Single/Dual, torque 15lb-in
- #10-8 Single/Dual, torque 20lb-in
- Dual wire with same gauge and type

| | | 75° Cu Only | | C |
|----------|--|-------------|--------------------|--|
| | | AWG | [mm ²] | (N·m)/lb-in |
| Solid | | #18-8 x 1 | 1-6 x 1 | 18-12 Single/Dual 15lb-in (1.7 N·m) |
| | | #18-8 x 2 | 1-6 x 2 | |
| Stranded | | #18-8 x 1 | 1-6 x 1 | 10-8 Single/Dual |
| | | #18-8 x 2 | 1-6 x 2 | |
| Ferrules | | | 1-4 x 1 | 20lb-in (2.5 N·m) |
| | | | 1-4 x 2 | |

Input Power Terminal Wire Range:

| | | |
|---------------------------|-------------|--|
| Wiring | Solid | (1) #14 to #2 (1.5 to 25mm ²) or conductor |
| | Conductor | (2) #14 to #6 (1.5 to 10mm ²) conductors |
| | Stranded | (1) #14 to #2 (1.5 to 25mm ²) conductor or |
| | Conductor | (2) #12 to #6 (2.5 to 10mm ²) conductors |
| Tightening Torque: | Connector | 20lb-in (2.2 N·m) |
| | Screw Clamp | 15lb-in (1.7 N·m) |

Materials:

- Housing: Thermoplastic - ULV2
- Clip: Tin-plated copper alloy
- Contact lubricant: Fluoroether grease
- Saddle screw: Plated steel
- DIN rail springs: Stainless steel

Optional Accessories:

Comb Bar (Max current rating = 63A)

| | |
|------------|-------------------------------------|
| OPMNGSA245 | 2 circuit, 45mm between same phases |
| OPMNGSA254 | 2 circuit, 54mm between same phases |
| OPMNGSA272 | 2 circuit, 72mm between same phases |
| OPMNGSA345 | 3 circuit, 45mm between same phases |
| OPMNGSA354 | 3 circuit, 54mm between same phases |
| OPMNGSA445 | 4 circuit, 45mm between same phases |
| OPMNGSA454 | 4 circuit, 54mm between same phases |
| OPMNGSA472 | 4 circuit, 72mm between same phases |
| OPMNGSA554 | 5 circuit, 54mm between same phases |

Input Terminal Block (Max current rating = 63A)

| | |
|------------|---|
| OPMNGSA005 | Input/Feed Through Power Terminal, Supports feed through to another system, DIN rail mount only |
| OPMNGSA009 | Input Power Terminal |

Cover

| | |
|------------|---|
| OPMNGSA010 | Protective Cover for unused terminals on comb bar |
|------------|---|

Auxiliary Contacts

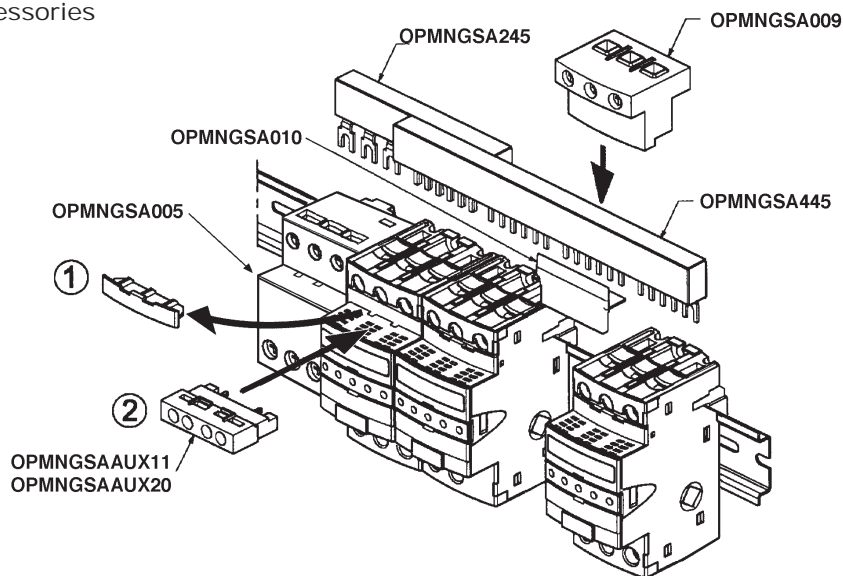
| | |
|--------------|-------|
| OPMNGSAAUX11 | NO/NC |
| OPMNGSAAUX20 | NO/NO |

Marking Tabs

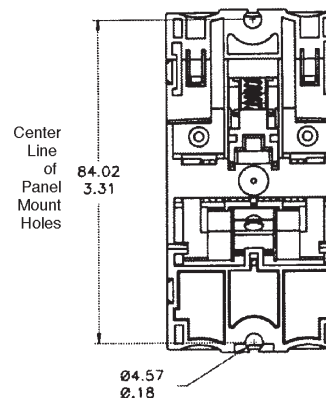
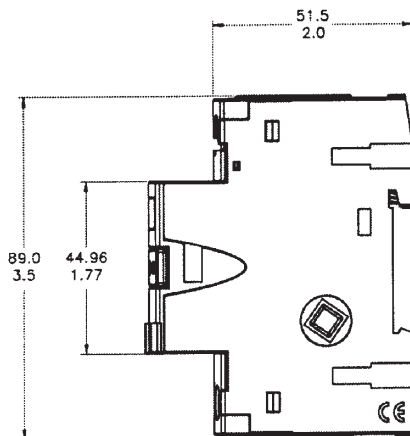
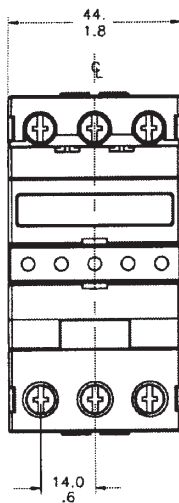
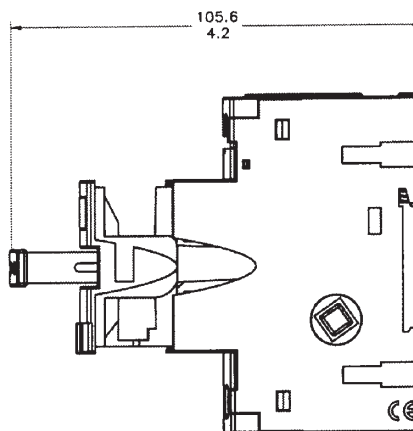
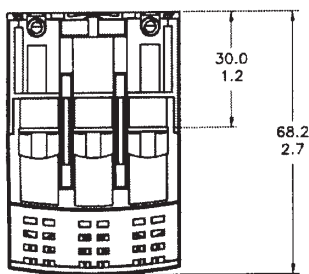
| | |
|------------|--|
| OPMNGSA101 | Marking Tab - Mounts to front of carrier, quantity 100 |
|------------|--|

Optima® Three-pole Overcurrent Protection Module

Optional Accessories



Dimensions Millimeters (± 0.38), Inches ($\pm .015$)



Fuse Holders & Blocks

Class J Modular Fuse Holders

CH _ _ J _

Specifications

Description: IP20 finger-safe, 1- to 3-pole Class J fuse holder with DIN rail or panel mounting.

Ratings:

Volts: — 600Vac/dc (or less)

Amps: — 30A (30A version)
— 60A (60A version)

Withstand Rating SCCR: — 200kA

Wire Range: Cu solid and stranded conductors with single (1-18AWG) and dual (3-18AWG) wire ratings. See Catalog Numbers table for details.

Torque Rating: 10-18AWG 24 lb-in.
1-8AWG 35 lb-in.

Poles: 1-, 2- or 3-Pole.

Storage & Operating Temperature Range*:
-20°C to 75°C.

Agency Information: CE, UL 4248/CSA 22.2 No. 4248.

Flammability Rating: UL 94V0.

Catalog Numbers

See Catalog Numbers table below.

Features and Benefits

- Choice of local fuse indication; *easyID*™ viewing window (for seeing indicator on LPJ-SPI indicating fuse) or neon lamp.
- Versatile 1-, 2- and 3-pole versions for 0-30A and 35-60A fuses with dual wire rated connections simplify wiring.
- Improved electrical safety with IP20 finger-safe construction with lock-out/tag-out feature. 3-phase fuse extraction assures all phases are opened for service work.
- Flexible panel/35mm DIN rail mounting options

*For fuse selection on applications above or below 25°C, consult derating charts in Cooper Bussmann publication "Selecting Protective Devices" (SPD).



30 Amp Version

60 Amp Version

Dimensions (mm):

| Fuse Size | Poles | W | D | H |
|-----------|-------|-----|----|-----|
| 0-30A | 1 | 32 | 70 | 115 |
| | 2 | 64 | 70 | 115 |
| | 3 | 96 | 70 | 115 |
| 35-60A | 1 | 40 | 83 | 125 |
| | 2 | 80 | 83 | 125 |
| | 3 | 120 | 83 | 125 |

Catalog Numbers

| Catalog Numbers | Amp Rating | Volts (AC/DC) | # of Poles | IP20 Finger-Safe | Mounting | Padlockable | Local Indication | AWG Single Wire Range |
|-----------------|------------|---------------|------------|------------------|-----------------|-------------|------------------|-----------------------|
| CH30J1 | 30 | 600 | 1 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH30J1I | 30 | 600 | 1 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp*** | 1-18 |
| CH30J2 | 30 | 600 | 2 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH30J2I | 30 | 600 | 2 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp*** | 1-18 |
| CH30J3 | 30 | 600 | 3 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH30J3I | 30 | 600 | 3 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp** | 1-18 |
| CH60J1 | 60 | 600 | 1 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH60J1I | 60 | 600 | 1 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp*** | 1-18 |
| CH60J2 | 60 | 600 | 2 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH60J2I | 60 | 600 | 2 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp*** | 1-18 |
| CH60J3 | 60 | 600 | 3 | Yes | 35mm DIN/ Panel | Yes | <i>easyID</i> ** | 1-18 |
| CH60J3I | 60 | 600 | 3 | Yes | 35mm DIN/ Panel | Yes | Neon Lamp*** | 1-18 |

** *easyID*™ viewing window, requires use of Cooper Bussmann LPJ-SPI permanent indication fuses.

*** Indication non-fuse dependent, minimum voltage 90Vac/115Vdc.

Data Sheet: 2144

Class J (Finger-safe) Fuse Holders

Safety J™ — JT(N)60030 & JT(N)60060

Specifications

Description: Indicating and non-indicating finger-safe, DIN rail mount fuse holders for use with Class J fuses - (Cooper Bussmann® LPJ, JKS).

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac

Amps: — 0-60A (JT(N)60060)

— 0-30A (JT(N)60030)

SCCR: — 200,000A RMS Sym.

— 300,000A self certified using Cooper Bussmann LPJ_SP fuses

Agency Information: CE, Listed to UL 4248: Guide IZLT, File 14853, CSA Certified: Class 6225-01, File 47235. IP20 per IEC 60529.

Flammability Rating: UL 94V0.

Indication: Min voltage: 90Vac, 115Vdc; neon lamp “ON” when fuse opens, voltage source and current path are present.

Terminations: 30A dual port torque 20lb-in, 60A single port torque 45lb-in, terminal construction, tin-plated copper alloy.

Wire Size: JT(N)60030 - rated for 75°C, AWG#18-#8; Cu only, JT(N)60060 - rated for 75°C, AWG#14-#4; Cu only.

(Note: For JT(N)60030 use both stranded or solid, in a variety of dual wire combinations of same wire size and type.)

Features and Benefits

- Short-Circuit Current Rating of 300,000A with Cooper Bussmann LPJ___SP fuses.
- Rapid, flexible 35 mm DIN rail mounting.
- One piece interlocking design for assembling multiple pole blocks reduces inventory costs.
- Removable fuse carrier allows fuse replacement away from base while maintaining finger-safe rating.

Typical Applications

- Industrial Controls
- Process Controls
- Small HP VFDs

Catalog Numbers

| Catalog Numbers | Amps | Indication |
|-----------------|------|-------------------|
| JT60030 | 30 | Non-indicating |
| JT60060 | 60 | Non-indicating |
| JTN60030 | 30 | Indicating (Neon) |
| JTN60060 | 60 | Indicating (Neon) |



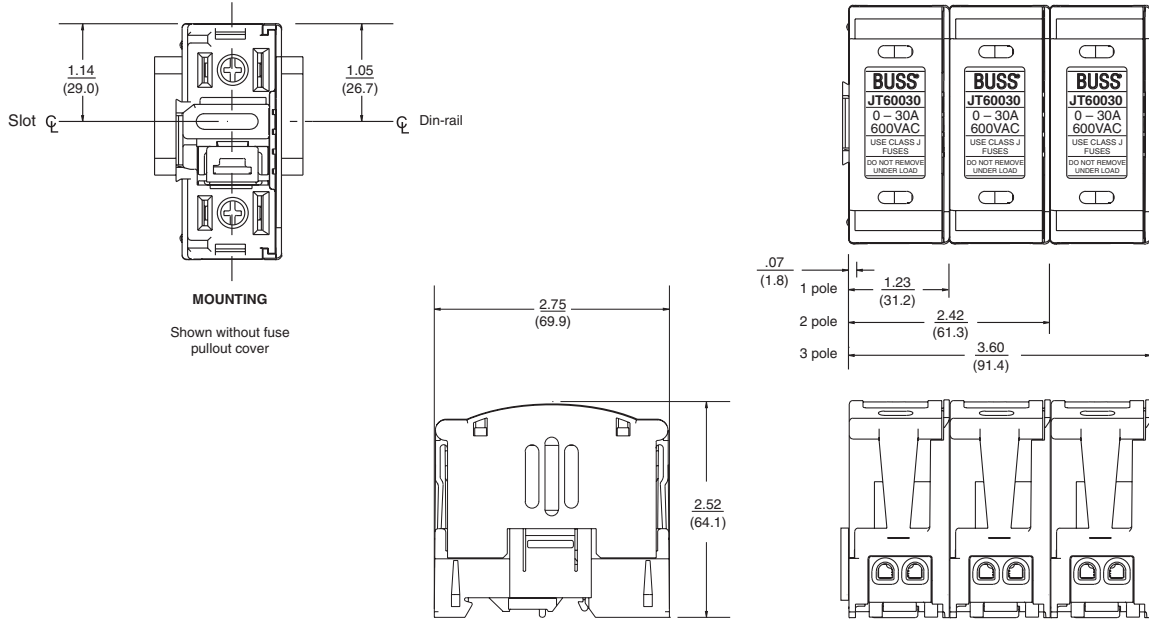
30 Amp Version



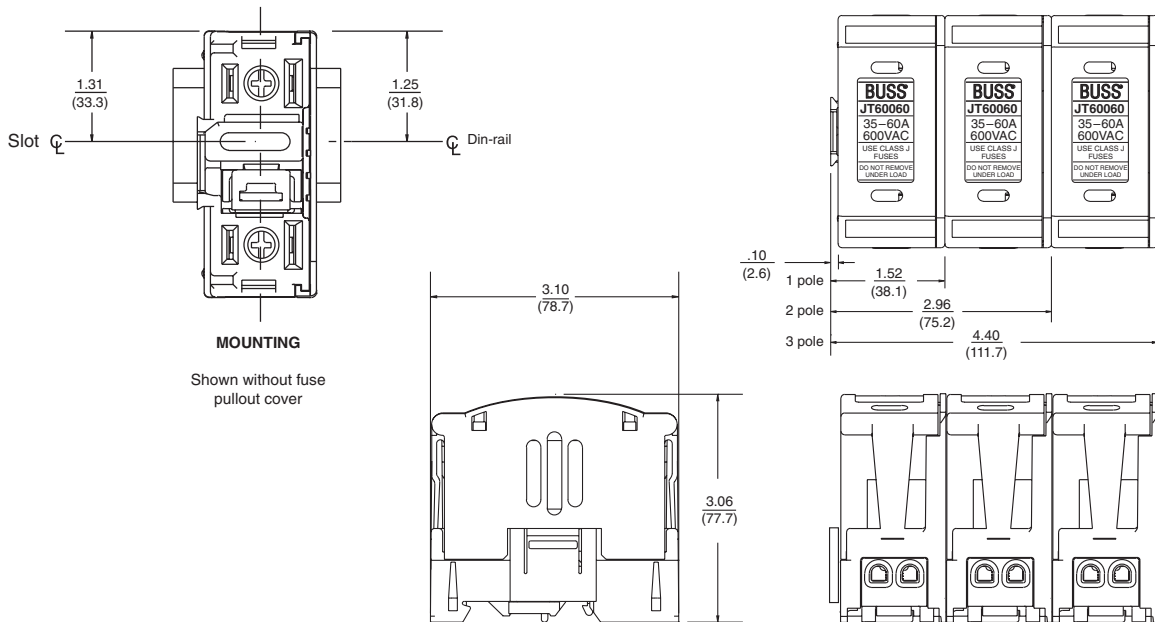
60 Amp Version

Class J (Finger-safe) Fuse Holders

Dimensions for JT60030 & JTN60030 — in (mm)



Dimensions for JT60060 & JTN60060 — in (mm)



JT(N)600 Series fuse blocks can be dovetailed together within the same current rating to provide multiple pole block configurations.

NOTE: JT(N)60030 cannot be dovetailed to JT(N)60060.

Global Modular Fuse Holders

CH Series - 8x32, 10x38, 14x51, 22x58, Class CC

Specifications

Description: The 'CH' line of modular fuse holders accommodates many fuses from around the world, including North American Class-CC, Midget, Class gR, aR HSF, and IEC Industrial Ferrule (Class gG and aM) in four physical sizes: 8x32, 10x38, 14x51 and 22x58mm.

Agency Information: Manufactured in accordance with IEC 60269 and IEC 60947-3. Agency Compliance as indicated in the Catalog Numbers table.

Features/Benefits

- Optional open fuse indication (minimum 90Vac, 115Vdc for indicator lights)
- 14x51 & 22x58mm configurations available with optional micro-switches for remote open fuse indication, pre-breaking, and fuse presence
- Multi-phase connections available for ganging poles
- Low voltage indicating device available for CC and midget (48V)



Modular Fuse Holder Selection Table (10 x 38 and CC)

Part Numbers

| Series Size | Catalog Numbers | | Max Voltage & Current | UL | IEC | Phase Configuration | No. of 17.5mm Modules* | Box Qty. | Terminal Rating | SCCR Rating | Cooper Bussmann Fuses |
|-----------------------|-----------------|---------------|---|-----|-----|---------------------|------------------------|----------|------------------|---|---|
| | W/O Indication | W/Indication | | | | | | | | | |
| CHCC Class CC | CHCC1D | CHCC1DI** | UL | †† | | 1-pole | 1 | 12 | 75° Cu Wire Only | 200kA | LP-CC, FNQ-R, KTK-R |
| | CHCC2D | CHCC2DI** | 600Vac/dc | †† | | 2-pole | 2 | 6 | | | |
| | CHCC3D | CHCC3DI** | 30A | †† | | 3-pole | 3 | 4 | | | |
| | — | CHCC1DI-48*** | UL 48Vdc, 30A | †† | | 1-pole | 1 | 12 | | | |
| CHPV | CHPV1 | CHPV1I** | 1000Vdc 30A | ††† | . | 1-pole | 1 | 12 | 75° Cu Wire Only | 33kA | PV Series |
| CHM 10X38 & Midget | CHM1D | CHM1DI** | UL | † | . | 1-pole | 1 | 12 | 75° Cu Wire Only | Rating varies depending on fuse used in holder. | FNQ, KLM, FNM, KTK, BAF, FWA, DCM, C10 Series, AGU, FWC |
| | CHM1DNX | - | 600Vac/dc, 30A | | . | 1 Neutral Pole | 1 | 12 | | | |
| | CHM1DN | CHM1DNI** | | | . | 1-pole + Neutral | 2 | 6 | | | |
| | CHM2D | CHM2DI** | | † | . | 2-pole | 2 | 6 | | | |
| | CHM3D | CHM3DI** | IEC 690Vac, 32A (3 Watt) | † | . | 3-pole | 3 | 4 | | | |
| | CHM3DN | CHM3DNI** | | | . | 3-pole + Neutral | 4 | 3 | | | |
| | CHM4D | CHM4DI** | | | . | 4-pole | 4 | 3 | | | |
| | — | CHM1DI-48*** | UL 48Vdc, 30A IEC 48Vdc, 32A (3 Watt) | † | . | 1-pole | 1 | 12 | | | |

† UL Recognized (cURus)

†† UL Listed (cULus)

††† Self Certified

*Holder width as compared to standard 17.5mm module, i.e., 1 = 17.5mm 2 = 35mm.

**90V minimum required for illumination

***12V minimum required for illumination

MFH Wire Range and Torque - CH Series: CHCC, CHM & CHPV

| Wire Range | Conductor Type 75°C Cu Wire Only | Conductors | Torque |
|--|-------------------------------------|------------|-----------------------|
| 18-12 AWG (0.8 - 4mm ²) | Solid/Stranded | Single | 20 lb-in 2.3 N·m |
| 10 AWG (5.0mm ²) | Solid | Single | 25 lb-in (2.8 N·m) |
| 10-8 AWG (5.0 - 8.0mm ²) | Stranded | | |
| 18-14 AWG (0.8 - 2.0mm ²) | Solid | Dual | |
| 18-10 AWG (0.8 - 5.0mm ²) | Stranded | | |

Global Modular Fuse Holders

Modular Fuseholder Selection Table (8x32, 14x51, and 22x58)

Part Numbers

| Series/ Size | Catalog Numbers | | Max Voltage & Current | IEC | UL | Phase Configuration | No. of 17.5mm Modules* | Box Qty. | Wire Range | Maximum Torque |
|-----------------|-----------------|--|--|--------|----|--------------------------------|------------------------------|-------------|----------------------------------|---------------------|
| | W/O Indication | W/Indication | | | | | | | | |
| CH08 8x32 | CH081D | CH081DI | IEC 400Vac 25A | • | | 1-pole | 1 | 12 | 1-16mm ² (18-6 AWG) | 2.5 N•m (22in-lb) |
| | CH081DNX | - | | • | | 1 Neutral Pole | 1 | 12 | | |
| | CH081DNS | CH081DNSI | | • | | 1-pole + Neutral | 1 | 12 | | |
| | CH081DN | CH081DNI | | • | | 1-pole + Neutral | 2 | 6 | 1-16mm ² (18-6 AWG) | 2.0 N•m (17.5in-lb) |
| | CH082D | CH082DI | | • | | 2-pole | 2 | 6 | | |
| | CH083D | CH083DI | | • | | 3-pole | 3 | 4 | | |
| | CH083DNS | CH083DNSI | | • | | 3-pole + Neutral | 3 | 4 | | |
| | CH083DN | CH083DNI | | • | | 3-pole + Neutral | 4 | 3 | | |
| | CH084D | CH084DI | | • | | 4-pole | 4 | 3 | | |
| CH14 14x51 | CH141D | CH141DICH1 | UL/cURus 600Vac/dc, 40A (5 Watt) IEC 690Vac, 50A | • | † | 1-pole | 1.5 | 6 | 2.5-16mm ² (14-6 AWG) | 3.0 N•m (26in-lb) |
| | CH141DMS | -14X51 | | • | | 1-pole + Microswitch | 1.5 | 6 | | |
| | CH141DNX | - | | • | | 1 Neutral Pole | 1.5 | 6 | | |
| | CH141DN | CH141DNI | | • | | 1-pole + Neutral | 3 | 3 | | |
| | CH142D | CH142DI | | • | † | 2-pole | 3 | 3 | | |
| | CH143D | CH143DI | | • | † | 3-pole | 4.5 | 2 | | |
| | CH143DMS | - | | • | | 3-pole + Microswitch | 4.5 | 2 | | |
| | CH143DN | CH143DNI | | • | | 3-pole + Neutral | 6 | 1 | | |
| | CH143DNMS | - | | • | | 3-pole + Neutral + Microswitch | 6 | 1 | | |
| CH144D | CH144DI | • | | 4-pole | 6 | 1 | | | | |
| CH22 22x58 | CH221B | Not Available with local neon indication (remote microswitch only) | UL/cURus 600Vac/dc, 100A (9.5 Watt) IEC 690Vac, 125A | • | † | 1-pole | 2 | 6 | 2.5-50mm ² (14-1 AWG) | 4.0 N•m (35in-lb) |
| | CH221BMS | | | • | | 1-pole + Microswitch | 2 | 6 | | |
| | CH221BNX | | | • | | 1 Neutral Pole | 2 | 6 | | |
| | CH221BN | | | • | | 1-pole + Neutral | 4 | 3 | | |
| | CH222B | | | • | † | 2-pole | 4 | 3 | | |
| | CH223B | | | • | † | 3-pole | 6 | 2 | | |
| | CH223BMS | | | • | | 3-pole + Microswitch | 6 | 2 | | |
| | CH223BN | | | • | † | 3-pole + Neutral | 8 | 1 | | |
| | CH223BNMS | | | • | | 3-pole + Neutral + Microswitch | 8 | 1 | | |
| CH224B | • | | 4-pole | 8 | 1 | | | | | |

† UL Recognized (cURus)

†† UL Listed (cULus)

*Holder width as compared to standard, i.e., 1 = 17.5mm module 2 = 35mm.

**90V minimum required for illumination

Accessories for CH Series

| Catalog Numbers | Accessory | For Use with Fuse Holders | No. of Poles | Carton Qty. |
|-------------------------|---------------------------------|---|---------------------|-------------|
| AL-D | Multi-Phase Connection Links | CH08 and CH14 Series | - | 12 |
| JV-L | Multi-Phase Connection Kit*** | CHM and CHCC Series | - | - |
| CH810-HP CH14-HP | Multi-Phase Handle Pins | CH08 Series CH14 Series | - | 10 |
| C08NL C14NL C22NL | Neutral Links | CH08 Series CH14 Series CH22 Series | - | 10 |
| CH14MS-1D CH14MS-3D | | CH141 Series CH143 Series | 1 3 | 5 2 |
| CH-PLC**** | | PLC Module | CHM and CHCC Series | 1 |
| CH22LS | 22x58 Lock Support | CH22 Series | - | 5 |
| CH22IP20 | 22x58 IP20 Protection Accessory | CH22 Series | - | 12 |

***Kit contains 3-Spring pins and 6-connection links

****OL Listed (cULus)

Multi-Phase Connection Links



Multi-Phase Handle Pins



Neutral Links



Operated-Fuse Micro-Switches



Programmable Logic Controller (PLC)



SAMI™ Fuse Covers

SAMI™ Series



Specifications

Description: Indicating and non-indicating fuse covers for Class J, RK1, RK5, H, K5, CC, G (0-30A) and midget-type fuses. Indicating feature requires a minimum of 90Vac or 115Vdc to illuminate lamp. One cover required for each pole. WARNING: To avoid electrical shock, turn power off before installing, removing or servicing.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — Non-Indicating - 0-600Vac/dc
 — Indicating - 90 to 600Vac
 -115 to 600Vdc

Amps: — 0-100A

Agency Information: CE, UL Listed; SAMI-11 through SAMI-61, SAMI-81 and SAMI-91, SAMI-1N through SAMI-6N, SAMI-8N and SAMI-9N, UL Recognized; SAMI-71 and SAMI-7N, CSA Certified, File LR47235-93C.

Catalog Numbers

| Catalog Numbers* | Description | Dimensions (Inches) | | |
|------------------|--|---------------------|------|------|
| | | A | B | C |
| SAMI-1_ | 600V, J (0-30A) and 600V, T (35-60A)** 250V, RK, K5, H (35-60A) | 5.02 | 1.03 | 1.94 |
| SAMI-2_ | 600V, RK, K5, H (0-30A) | 7.03 | 1.30 | 2.07 |
| SAMI-3_ | 600V, J (65-100A) | 7.03 | 1.30 | 2.33 |
| SAMI-4_ | 250V, RK, K5, H (65-100A) | 8.20 | 1.30 | 2.18 |
| SAMI-5_ | 600V, RK, K5, H (35-60A) | 8.20 | 1.30 | 2.18 |
| SAMI-6_ | 600V, J (35-60A) | 4.98 | 1.17 | 2.14 |
| SAMI-7_ | 600V, Midget, Class CC, G (0-30A) | 3.82 | 0.75 | 1.72 |
| SAMI-8†_ | 600V, RK††, K5, H (65-100A) | 10.38 | 1.50 | 2.33 |
| SAMI-9_ | 250V, RK, K5, H (0-30A) and 600V, T (0-30A) | 3.82 | 0.75 | 1.72 |

*For indicating cover, add suffix "I", for non-indicating cover, add suffix "N".

Example: SAMI-7I = Indicating, SAMI-7N = Non-indicating.

**Available in non-indicating only.

†SAMI-8A adapter available for small Fusetron® body design. SAMI-8I and SAMI-8N come standard with adapter (SAMI-8A).

††Not for use with KTS-R fuses.

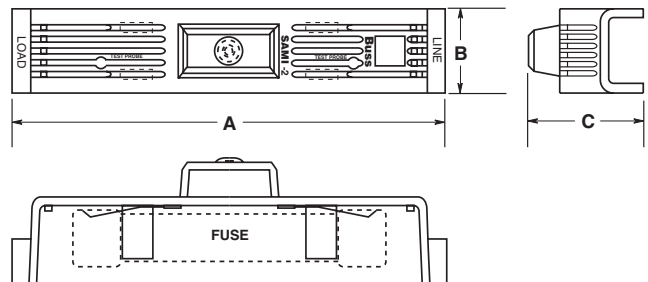
Features and Benefits

- Insulated cover allows field conversion of fuses mounted in open fuse blocks to dead front configuration.
- Optional open fuse indicating light aids in system troubleshooting.
- Units are re-usable.
- Allows visual marking of line and load side of fuses.

Typical Applications

- Class H, R and J fuse blocks up to 100A
- Class T fuse blocks up to 60A
- Class CC, G and Midget, 30A fuse blocks

Dimensions



Class H(K) and R Fuse Blocks – 250V

H250 & R250 Series

Specifications

Descriptions:

H250 Series: 1-, 2- and 3-pole fuse blocks for use with Class H fuses.

R250 Series: 1-, 2- and 3-pole fuse blocks for use with Class R fuses (Cooper Bussmann LPN-RK and FRN-R, DLN-R and KTN-R fuses).



Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 250Vac/dc (H250 & R250 Series)

Amps: — 1/10-600A

SCCR: — H250 Series; 10kA RMS Sym.

— R250 Series; 200kA RMS Sym.

Agency Information: CE, UL Listed UL 4248, Guide IZLT, File E14853; CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94V0.

Features and Benefits

- H250 fuse blocks provide one, two and three pole housing for Class H, K and R fuses at 250Vac.
- H250 fuse blocks are listed with a Short-Circuit Current Rating of 10kA RMS Sym.
- R250 fuse blocks provide one, two and three pole housing for Class R fuses at 250Vac.
- R250 fuse blocks are listed with a Short-Circuit Current Rating of 200kA RMS Sym.

Typical Applications

- 250Vac/dc or less Control Systems
- 250Vac/dc or less Industrial Control
- 250Vac/dc or less Industrial Control Circuits

Recommended DIN rail adapters for the 1/10-30A series
• see page 413.

Class H Fuseblocks (250V) Catalog Data (for NON and REN Fuses)

| Amps | Poles | Terminal Type (Suffix No.) | | | | | | | | | | Figure Number | Wire Range |
|------------|-------|----------------------------|---|-----------------------------|----------------|--|------------|-----------------------------|-------------|---------------------|----|---|------------|
| | | Screw | | | | | Box Lug w/ | | | | | | |
| | | Catalog Number | — | Clip with Reinforced Spring | Pressure Plate | Pressure Plate & Clip with Reinforced Spring | — | Clip with Reinforced Spring | Copper Only | 0.25" Quick Connect | | | |
| 1/10 to 30 | 1 | H25030-1 | S | SR | P | PR | C | CR | — | Q | 1 | C, CR #2-14 Cu, #2-12 Al P, PR #10-18 Cu Only Q N/A S, SR #10-18 Cu Only | |
| | 2 | H25030-2 | S | SR | P | PR | C | CR | — | — | 2 | | |
| | 3 | H25030-3 | S | SR | P | PR | C | CR | — | — | 3 | | |
| 31 to 60 | 1 | H25060-1 | — | — | — | — | C | CR | CO | — | 4 | C, CR #2-14 Cu, #2-8 Al CO #2-14 Cu Only | |
| | 2 | H25060-2 | — | — | — | — | C | CR | CO | — | 5 | | |
| | 3 | H25060-3 | — | — | — | — | C | CR | CO | — | 6 | | |
| 61 to 100 | 1 | H25100-1 | — | SR | — | — | — | CR | — | — | 7 | CR #1/0-8 Cu/Al SR #8W/ Ring Terminal | |
| | 2 | H25100-2 | — | SR | — | — | — | CR | — | — | 8 | | |
| | 3 | H25100-3 | — | SR | — | — | — | CR | — | — | 9 | | |
| 101 to 200 | 1 | H25200-1 | — | — | — | — | — | CR | — | — | 10 | CR 250kcmil-6 Cu/Al | |
| | 3 | H25200-3 | — | — | — | — | — | CR | — | — | 11 | | |
| 201 to 400 | 1 | H25400-1 | — | — | — | — | — | CR† | — | — | 12 | CR 500kcmil-4 Cu/Al | |
| | 3 | H25400-3 | — | — | — | — | — | CR† | — | — | 13 | | |
| 401 to 600 | 1 | H25600-1 | — | — | — | — | — | CR | — | — | 14 | CR (2) 500kcmil-4/0 Cu/Al | |
| | 3 | H25600-3 | — | — | — | — | — | CR† | — | — | 15 | | |

*UL Recognized, No CSA Certification.

†No UL, No CSA Certification.

Class H(K) and R Fuse Blocks – 250V

Class R Fuseblocks (250V) Catalog Data (for LPN-RK, FRN-R, DLN-R and KTN-R Fuses)

| Amps | Poles | Catalog Number | Terminal Type (Suffix No.) | | | | | Fig. No. | Wire Range |
|------------|-------|----------------|----------------------------|-------------|------------|--------------|---------------------|----------|--|
| | | | Screw w/ | | Box Lug w/ | | 0.25" Quick-Connect | | |
| | | | — | Pres. Plate | — | Clip Cu Only | | | |
| 1/10 to 30 | 1 | R25030-1 | SR | PR | CR | COR | QR* | 1 | COR #6-14 Cu Only |
| | 2 | R25030-2 | SR | PR | CR | COR | — | 2 | CR #2-14 Cu, #2-12 Al |
| | 3 | R25030-3 | SR | PR | CR | COR | — | 3 | PR #10-18 Cu Only QR N/A SR #10-18 Cu Only |
| 31 to 60 | 1 | R25060-1 | — | — | CR | — | — | 4 | CR #2-14 Cu, #2-8 Al |
| | 2 | R25060-2 | — | — | CR | — | — | 5 | |
| | 3 | R25060-3 | — | — | CR | — | — | 6 | |
| 61 to 100 | 1 | R25100-1 | — | — | CR | — | — | 7 | CR 1/0-8 Cu/Al |
| | 2 | R25100-2 | — | — | CR | — | — | 8 | |
| | 3 | R25100-3 | — | — | CR | — | — | 9 | |
| 101 to 200 | 1 | R25200-1 | — | — | CR | — | — | 10 | CR 250kcmil-6 Cu/Al |
| | 2 | R25200-2 | — | — | CR | — | — | 11 | |
| | 3 | R25200-3 | — | — | CR | — | — | 11 | |
| 201 to 400 | 1 | R25400-1 | — | — | CR† | — | — | 12 | CR 500kcmil-4/0 Cu/Al |
| | 3 | R25400-3 | — | — | CR† | — | — | 13 | |
| 401 to 600 | 1 | R25600-1 | — | — | CR | — | — | 14 | CR 500kcmil-4/0 Cu/Al |
| | 3 | R25600-3 | — | — | CR† | — | — | 15 | |

*UL Recognized, No CSA Certification.

†No UL, No CSA Certification.

‡UL Recognized, CSA Certification

Dimensions – in 250V 1/10 to 30A

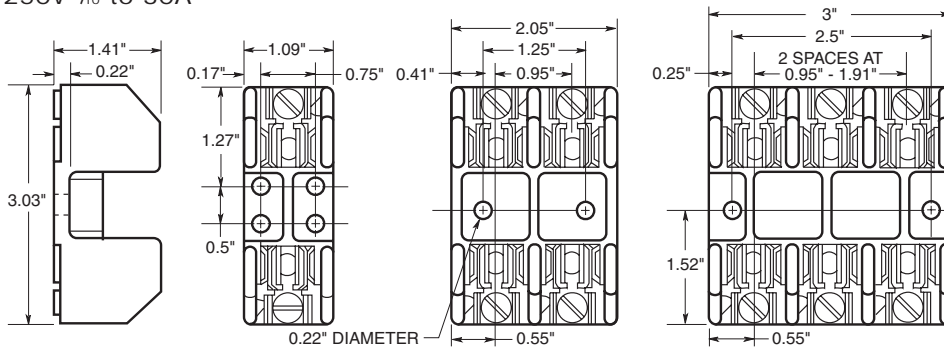


FIGURE 1.

FIGURE 2.

FIGURE 3.

250V, 31A to 60A

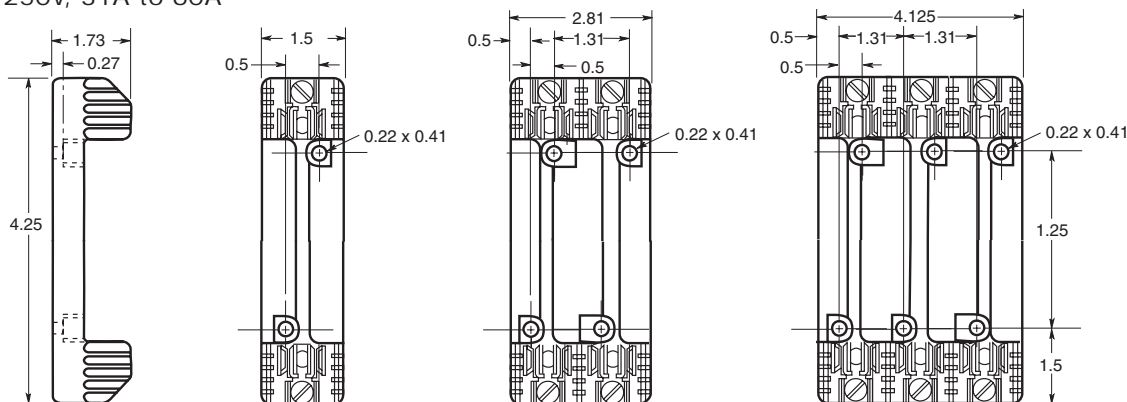


FIGURE 4.

FIGURE 5.

FIGURE 6.

Data Sheet: H250 Series, 1112; R250 Series, 1110

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa

Class H(K) and R Fuse Blocks – 250V

250V, 61A to 100A

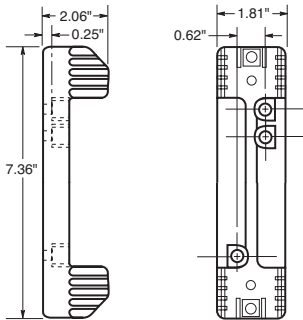


FIGURE 7.

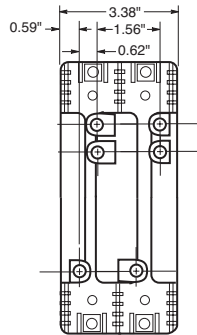


FIGURE 8.

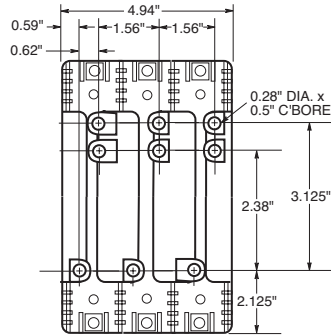


FIGURE 9.

250V, 101A to 200A

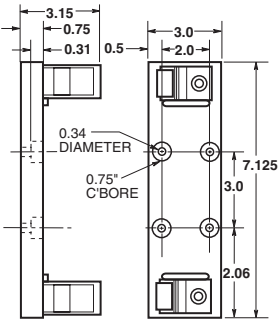


FIGURE 10.

250V, 101A to 200A

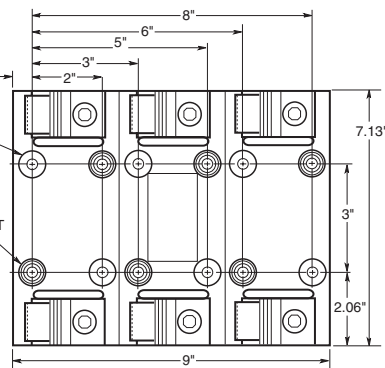
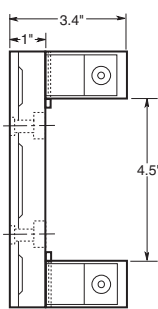


FIGURE 11.

250V, 201A to 400A

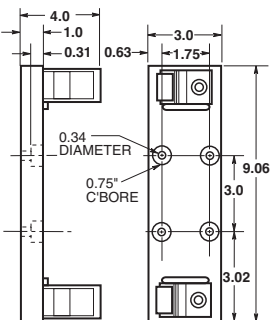


FIGURE 12.

250V, 201A to 400A

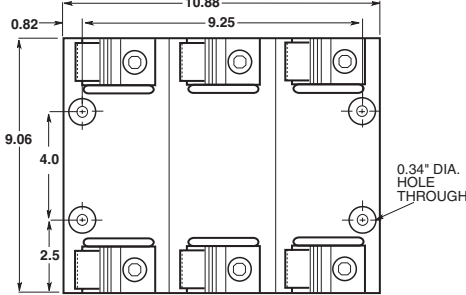
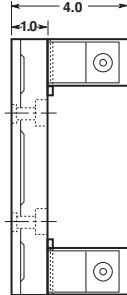


FIGURE 13.

250V, 401A to 600A

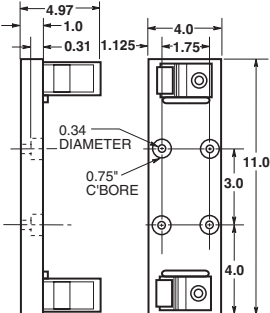


FIGURE 14.

250V, 401A to 600A

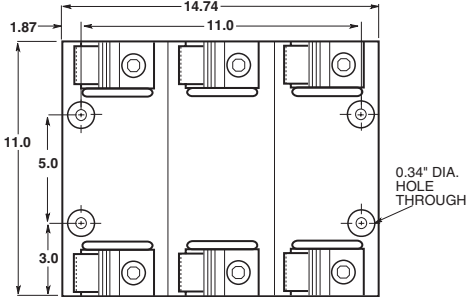
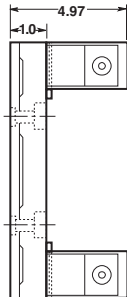


FIGURE 15.

Class H(K) and R Fuse Blocks – 600V

H600 & R600 Series

Specifications

Descriptions:

H600 Series: fuse blocks for use with 1-, 2- and 3-pole Class H fuses.

R600 Series: fuse blocks for use with 1-, 2- and 3-pole Class R fuses (Cooper Bussmann LPS-RK, FRS-R, DLS-R and KTS-R fuses).

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac/dc (H600 & R600 Series)

Amps: — 1/0-600A

SCCR: — H600 Series; 10kA RMS Sym.

— R600 Series; 200kA RMS Sym.

Agency Information: CE, UL Listed UL 4248, Guide IZLT, File E14853; CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94V0.



H60030-3C



H60030-2PR

Features and Benefits

- H600 fuse blocks provide one-, two- and three-pole housing for Class H, K and R fuses at 600Vac.
- H600 fuse blocks are listed with a Short-Circuit Current Rating of 10kA RMS Sym.
- R600 fuse blocks provide one, two and three pole housing for Class R fuses at 600Vac.
- R600 fuse blocks are listed with a Short-Circuit Current Rating of 200kA RMS Sym.

Typical Applications

- 600Vac/dc or less Control Systems
- 600Vac/dc or less Industrial Control
- 600Vac/dc or less Individual Control Circuits

Class H Fuseblocks (600V) Catalog Data (for NOS and RES Fuses)

| Amps | Poles | Terminal Type (Suffix No.) | | | | | | | Figure Number | Wire Range |
|------------------|-------|----------------------------|---|-----------------------------|----------------|--|------------|-----------------------------|---------------|---|
| | | Screw | | | | | Box Lug w/ | | | |
| | | Catalog Number | — | Clip with Reinforced Spring | Pressure Plate | Pressure Plate & Clip with Reinforced Spring | — | Clip with Reinforced Spring | | |
| 1/0 to 30 | 1 | H60030-1 | S | SR | P | PR | C | CR | 1 | C, CR #2-14 Cu, #2-12 Al P, PR, S, SR #10-18 Cu Only |
| | 2 | H60030-2 | S | SR | P | PR | C | CR | 2 | |
| | 3 | H60030-3 | S | SR | P | PR | C | CR | 3 | |
| 31 to 60 | 1 | H60060-1 | — | — | — | — | C | CR | 4 | C, CR #2-14 Cu, #2-8 Al |
| | 2 | H60060-2 | — | — | — | — | C | CR | 5 | |
| | 3 | H60060-3 | — | — | — | — | C | CR | 6 | |
| 61 to 100 | 1 | H60100-1 | — | — | — | — | — | CR | 7 | CR #1/0-8 Cu/Al |
| | 2 | H60100-2 | — | — | — | — | — | CR | 8 | |
| | 3 | H60100-3 | — | — | — | — | — | CR | 9 | |
| 101 to 200 | 1 | H60200-1 | — | — | — | — | — | CR | 10 | CR 250kcmil-6 Cu/Al |
| | 3 | H60200-3 | — | — | — | — | — | CR | 11 | |
| 201 to 400 | 1 | H60400-1 | — | — | — | — | — | CR† | 12 | CR 500kcmil-4 Cu/Al |
| | 3 | H60400-3 | — | — | — | — | — | CR† | 13 | |
| 401 to 600 | 1 | H60600-1 | — | — | — | — | — | CR | 14 | CR (2) 500kcmil-4/0 Cu/Al |
| | 3 | H60600-3 | — | — | — | — | — | CR† | 15 | |

†No UL, No CSA Certification.

‡UL Recognized, CSA Certification

Class H(K) and R Fuse Blocks – 600V

Class R Fuseblocks (600V) Catalog Data (for LPS-RK, FRS-R, DLS-R and KTS-R Fuses)

| Amps | Poles | Catalog Number | Terminal Type (Suffix No.) | | | | Fig. No. | Wire Range |
|------------|-------|----------------|----------------------------|-------------|------------|--------------|----------|---------------------------|
| | | | Screw w/ | | Box Lug w/ | | | |
| | | | — | Pres. Plate | — | Clip Cu Only | | |
| 1/80 to 30 | 1 | R60030-1 | SR | PR | CR | — | 1 | COR #6-14 Cu Only |
| | 2 | R60030-2 | SR | PR | CR | COR | 2 | CR #2-14 Cu, #2-12 Al |
| | 3 | R60030-3 | SR | PR | CR | COR | 3 | PR, SR #10-18 Cu Only |
| 31 to 60 | 1 | R60060-1 | — | — | CR | — | 4 | CR #2-14 Cu, #2-8 Al |
| | 2 | R60060-2 | — | — | CR | — | 5 | |
| | 3 | R60060-3 | — | — | CR | — | 6 | |
| 61 to 100 | 1 | R60100-1 | — | — | CR | — | 7 | CR, 1/0-8 Cu/Al |
| | 2 | R60100-2 | — | — | CR | — | 8 | |
| | 3 | R60100-3 | — | — | CR | — | 9 | |
| 101 to 200 | 1 | R60200-1 | — | — | CR | — | 10 | CR 250kcmil-6 Cu/Al |
| | 3 | R60200-3 | — | — | CR | — | 11 | |
| 201 to 400 | 1 | R60400-1 | — | — | CR† | — | 12 | CR 500kcmil-4 Cu/Al |
| | 3 | R60400-3 | — | — | CR† | — | 13 | |
| 401 to 600 | 1 | R60600-1 | — | — | CR | — | 14 | CR (2) 500kcmil-4/0 Cu/Al |
| | 3 | R60600-3 | — | — | CR† | — | 15 | |

†No UL, No CSA Certification.

‡UL Recognized, CSA Certification

Dimensionals – in

600V, 1/80 to 30A

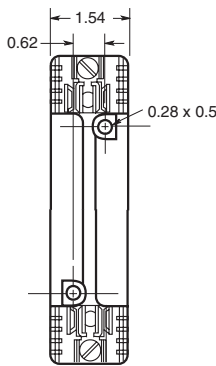
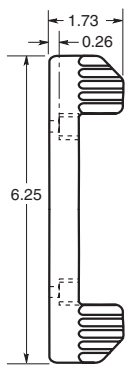


FIGURE 1.

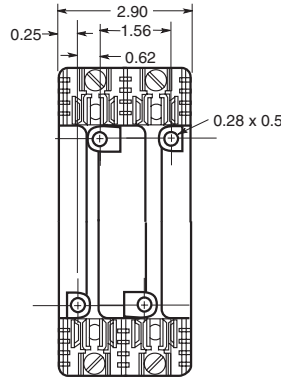


FIGURE 2.

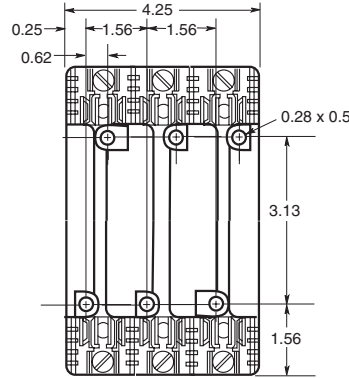


FIGURE 3.

600V, 31 to 60A

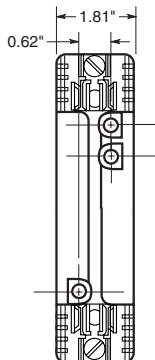
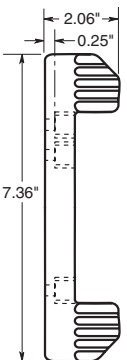


FIGURE 4.

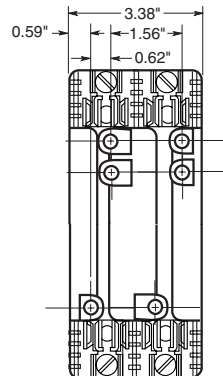


FIGURE 5.

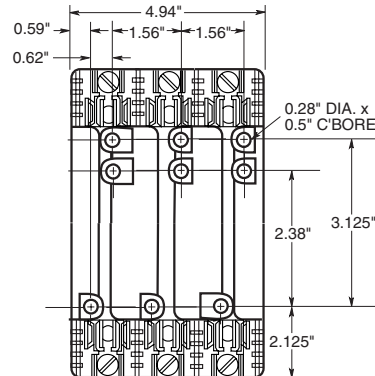


FIGURE 6.

Class H(K) and R Fuse Blocks – 600V

600V, 61 to 100A

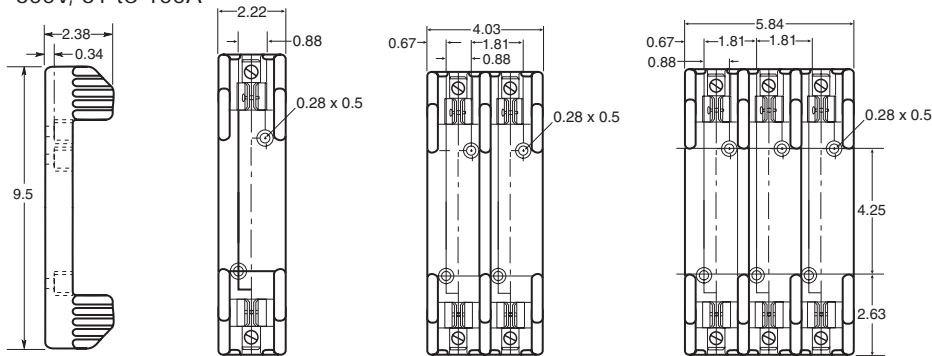


FIGURE 7.

FIGURE 8.

FIGURE 9.

600V, 101 to 200A

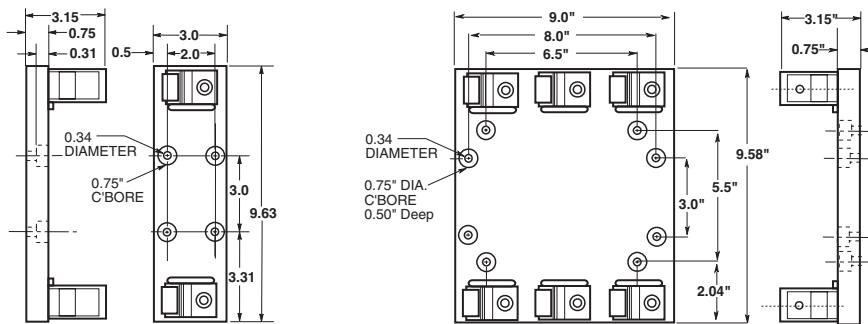


FIGURE 10.

FIGURE 11.

600V, 201 to 400A

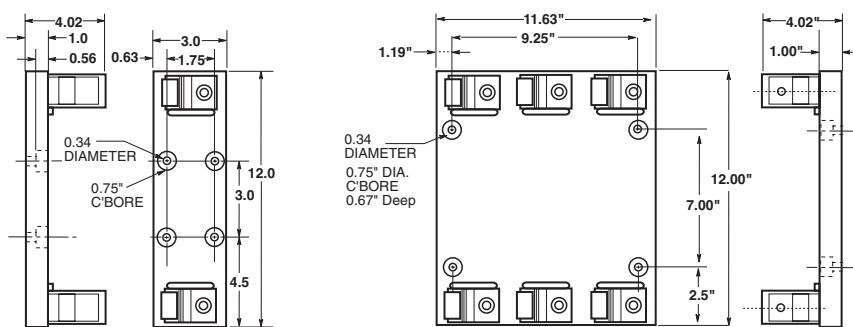


FIGURE 12.

FIGURE 13.

600V, 401 to 600A

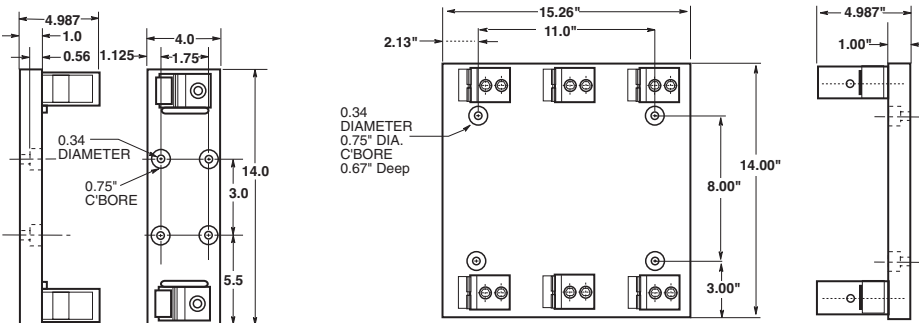


FIGURE 14.

FIGURE 15.

Data Sheet: H600 Series, 1113; R600 Series, 1111

Class J Fuse Blocks

J600 Series

Specifications

Description: 1-, 2- or 3-pole fuse blocks for use with Class J fuses (Cooper Bussmann® LPJ, DFJ and JKS).

Dimensions: See Dimensions illustrations.

Construction: Thermoplastic.

Poles: 1 to 3

Ratings:

Volts: — 600Vac/dc

Amps: — ½-600A

SCCR: — 200kA RMS Sym.

Agency Information: CE, UL Listed, UL 4248, Guide IZLT, File E14853, CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235.

Flammability Rating: UL 94V0.

Mounting: Accepts DIN rail adapter DRA-1.

Catalog Numbers



Features and Benefits

- J600 fuse blocks provide one-, two- and three-pole housing for Class J fuses at 600Vac.
- J600 fuse blocks are listed with a Short-Circuit Current Rating of 200kA RMS Sym.

Typical Applications

- 600Vac/dc or less Control Systems
- 600Vac/dc or less Industrial Control
- 600Vac/dc or less Individual Control Circuits

Catalog Numbers

| Screw† | Pressure Plate† | Box Lug | Box Lug w/ Retaining Clip | Amps | Poles | Fig. No. | Wire Range |
|------------|-----------------|-----------|---------------------------|---------|-------|----------|---|
| J60030-1S* | J60030-1P | J60030-1C | J60030-1CR†† | ½-30 | 1 | 1 | C, CR #2-14 Cu, #2-8 Al |
| J60030-2S* | J60030-2P | J60030-2C | J60030-2CR†† | | 2 | 2 | COR #2-14 Cu Only |
| J60030-3S* | J60030-3P | J60030-3C | J60030-3CR†† | | 3 | 3 | P, PR, S, SR #10-14 Cu Only |
| — | — | J60060-1C | J60060-1CR†† | 31-60 | 1 | 1 | C, CR, #2-14 Cu/Al COR #4-14 Cu Only |
| — | — | J60060-2C | J60060-2CR†† | | 2 | 2 | |
| — | — | J60060-3C | J60060-3CR†† | | 3 | 3 | |
| — | — | — | J60100-1CR | 61-100 | 1 | 4 | COR 1/0-8 Cu Only |
| — | — | — | J60100-3CR†† | | 3 | 5 | CR, CRQ 1/0-8 Cu/Al |
| — | — | — | J60200-1CR | 101-200 | 1 | 6 | CR 250kcmil-6 Cu/Al |
| — | — | — | J60200-3CR | | 3 | 7 | |
| — | — | — | J60400-1CR** | 201-400 | 1 | 8 | CR 500kcmil -4 Cu/Al |
| — | — | — | J60400-3CR** | | 3 | 9 | |
| — | — | — | J60600-1CR | 401-600 | 1 | 10 | CR (2) 500kcmil-4/0 Cu/Al |
| — | — | — | J60600-3CR* | | 3 | 11 | |

†Clip reinforcing springs are standard on fuse blocks rated 100A and above. Available on 30A and 60A blocks by adding the letter "R" to the end of the part number.

††Copper only connections available by changing "CR" suffix to "COR".

*No UL, No CSA Certification

**UL Recognized, CSA Certification

Dimensions - in (±0.015)

½ - 60A

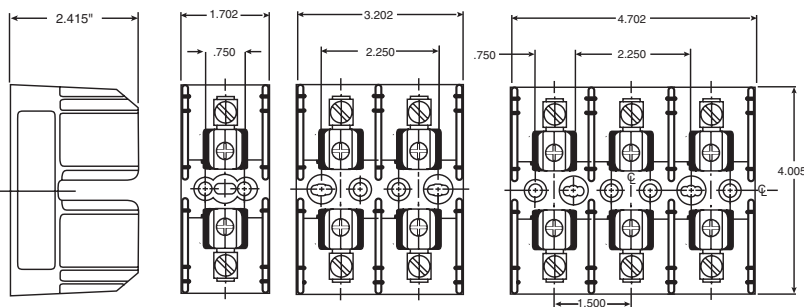


FIGURE 1.

FIGURE 2.

FIGURE 3.

61-100A

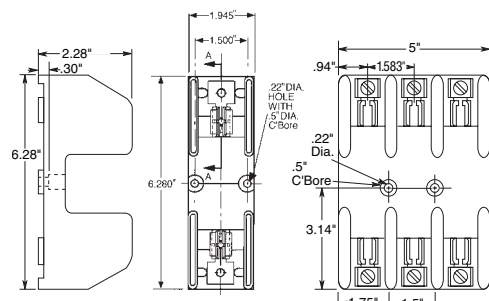


FIGURE 4.

FIGURE 5.

Class J Fuse Blocks

101-200A

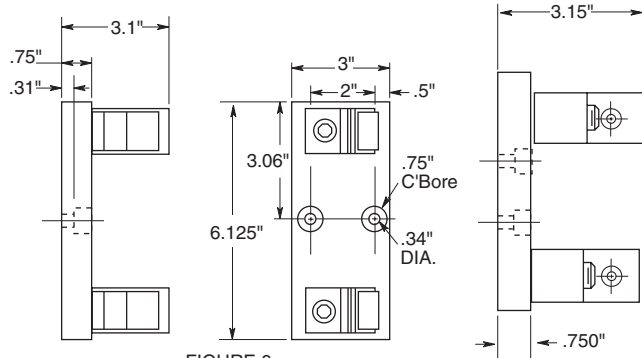


FIGURE 6.

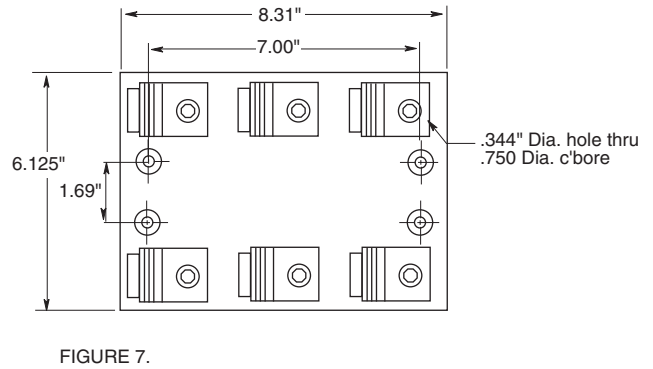


FIGURE 7.

201-400A

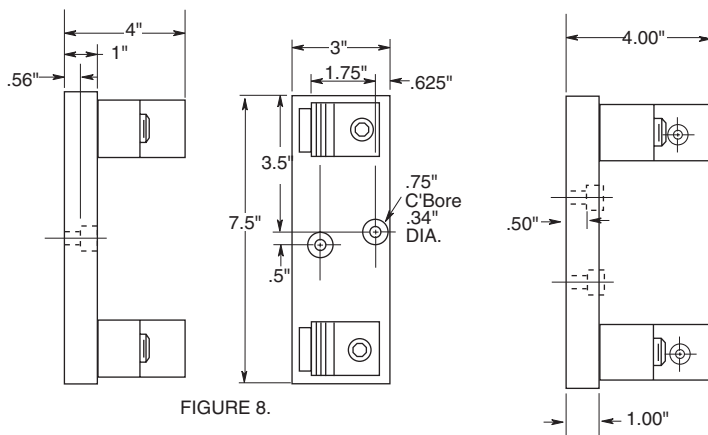


FIGURE 8.

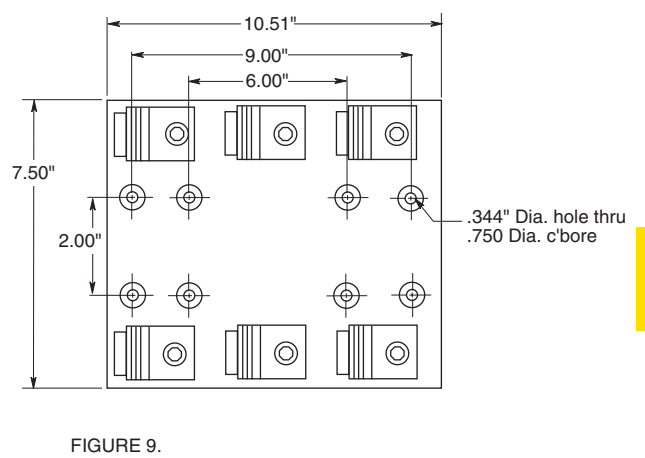


FIGURE 9.

401-600A

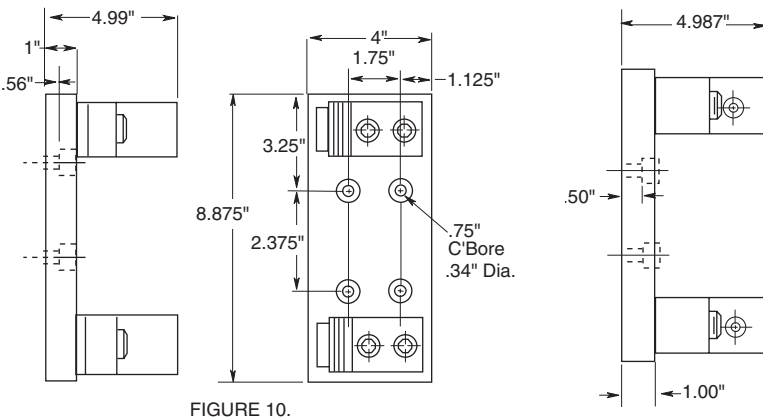


FIGURE 10.

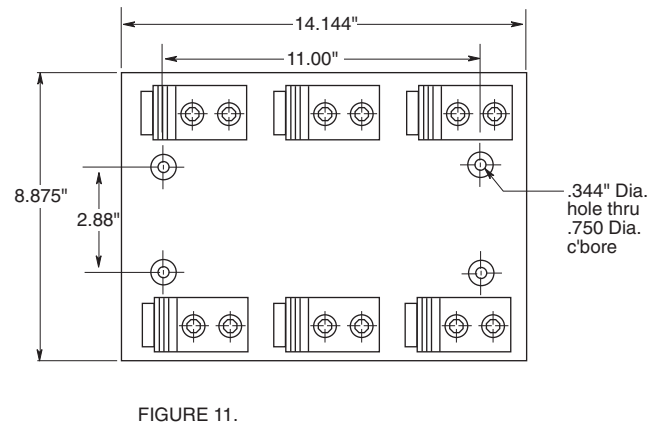


FIGURE 11.

Fuse Holders & Blocks

Class J Fuse Blocks

JP Series

Specifications

Description: Pyramid style 3-pole fuse block for use with Class J fuses (Cooper Bussmann® LPJ, DFJ, JKS).

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac/dc

Amps: — 0-30A

SCCR: — 200kA RMS Sym.

Agency Information: CE, UL Listed, UL 4248, Guide IZLT, File E14853, CSA Certified, C22.2 No. 39, Class 4225-04, File 47235.

Flammability Rating: UL 94V0.

Mounting: Panel or 35mm DIN rail mount.

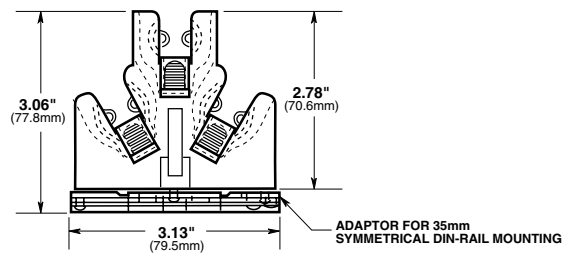
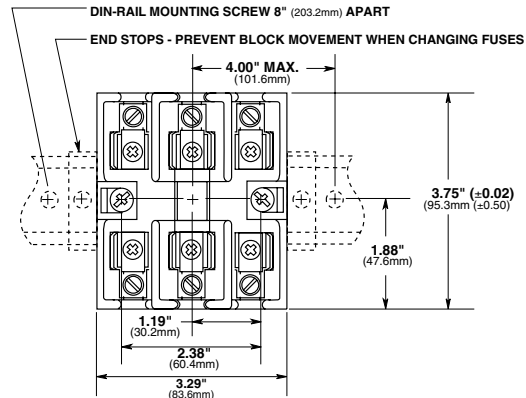
To order DIN rail: Part# NDNA 100 (1 meter) or NDNA 200 (2 meter).

Catalog Numbers

| Catalog Numbers | Panel | Mounting | | Aluminum | Box Copper Only | Wire Range |
|-----------------|-------|------------------------|----------------------------|----------|-----------------|----------------|
| | | With DIN Rail Adapter* | Screws with Pressure Plate | | | |
| JP60030-3PR | X | | X | | | #10-14 Cu Only |
| JP60030-3CR | X | | | X | | #2-14 Cu/Al |
| JP60030-3COR | X | | | | X | #2-14 Cu Only |
| JP60030-3PRA | | X | X | | | #10-14 Cu Only |
| JP60030-3CRA | | X | | X | | #2-14 Cu/Al |
| JP60030-CORA | | X | | | X | #2-14 Cu Only |

*Adapter only for DIN rail - Cat No. JPA-3.

Dimensions - in (mm) ± 0.015" (± 0.40mm)



Data Sheet:1108

JA60030 Add-a-pole

Specifications

Description: Adder fuse block to achieve number of poles desired, for use with Class J fuses (Cooper Bussmann LPJ, DFJ & JKS).

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 600Vac/dc

Amps: — 0-30A

SCCR: — 200kA RMS Sym.

Agency Information: UL Listed, UL 4248, Guide IZLT, File E14853, CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235.

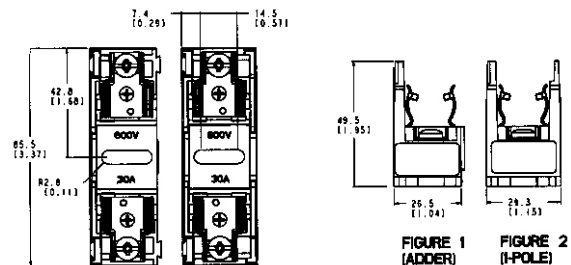
Flammability Rating: UL 94V0.

Mounting: Panel or 35mm DIN rail mount.

Features: Panel and DIN rail mount, adder block, retaining clip



Dimensions - in (mm)



| Amps | Poles | Screw | Screw w/Retaining Clip | Pressure Plate | Pressure Plate w/Retaining Clip | Box Lug | Box Lug w/Retaining Clip | Wire Range (Cu Only) |
|--------|-------|------------|------------------------|----------------|---------------------------------|------------|--------------------------|--|
| ½ - 30 | ADDER | JA60030-AS | JA60030-ASR | JA60030-AP | JA60030-APR | JA60030-AC | JA60030-ACR | S, SR, P, PR 10 - 18 AWG C, CR, 10 - 14 AWG |
| | 1 | JA60030-1S | JA60030-1SR | JA60030-1P | JA60030-1PR | JA60030-1C | JA60030-1CR | |
| | 2 | JA60030-2S | JA60030-2SR | JA60030-2P | JA60030-2PR | JA60030-2C | JA60030-2CR | |
| | 3 | JA60030-3S | JA60030-3SR | JA60030-3P | JA60030-3PR | JA60030-3C | JA60030-3CR | |

Class T Fuse Blocks – 300V

T300

Specifications

Description: T300 (300V) fuse blocks for use with Class T fuses (Cooper Bussmann® JJN).

Dimensions: See Dimensions illustrations.

Poles: 1 to 4

Ratings:

Volts: – 300Vac/dc

Amps: – ½ - 600A

SCCR: – 200kA RMS Sym.

Agency Information: CE, UL Listed UL 4248, Guide IZLT, File E14853, CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94V0.

Features and Benefits

- Provide 1-, 2- and 3-pole housing for 300Vac Class T fuses.
- Short-Circuit Current Rating of 200kA RMS Sym.
- Class T fuse blocks have a small foot print, providing substantial space savings in equipment

Typical Applications

- 300Vac/dc or less Control Systems
- 300Vac/dc or less Individual Control Circuits

Catalog Numbers

| Catalog Numbers | | | | | |
|-----------------|------------|---------|-------|----------|-------------------------------------|
| Screw | Box Lug | Amps | Poles | Fig. No. | Wire Range |
| T30030-2SR | T30030-2CR | ½-30 | 2 | 1 | SR #10-18 Cu CR #6-14 Cu/Al |
| T30030-3SR | T30030-3CR | | 3 | | |
| T30030-4SR | T30030-4CR | | 4 | | |
| T30060-2SR | T30060-2CR | 31-60 | 2 | 1 | CR #2-14 Cu/Al SR #10-18 Cu Only |
| T30060-3SR | T30060-3CR | | 3 | | |
| T30060-4SR | T30060-4CR | | 4 | | |
| — | T30100-1CR | 61-100 | 1 | 2 | 1/0-8 Cu/Al |
| — | T30100-2CR | | 2 | | |
| — | T30100-3CR | | 3 | | |
| — | T30200-1C | 101-200 | 1 | 3 | 250kcmil-6 Cu/Al |
| — | T30200-3C | | 3 | 4 | |
| — | T30400-1C | 201-400 | 1 | 5 | 600kcmil-2/0 Cu/Al |
| — | T30600-1C | 401-600 | 1 | 6 | (2) 600kcmil-4/0 Cu/Al |



T30100-1CR



T30030-2CR

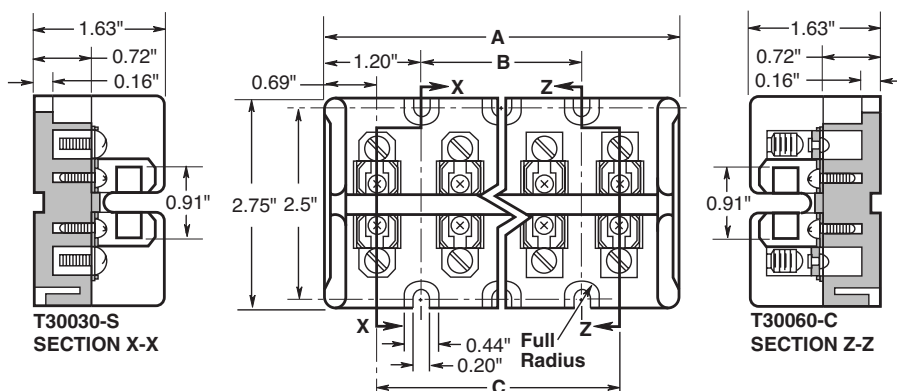


T30600-1C

Class T Fuse blocks (300V) Catalog Numbers

| Catalog Numbers | Dimensions (in) | | |
|-----------------|-----------------|------|------|
| | A | B | C |
| T30030-2 | 2.41 | — | 1.03 |
| T30060-2 | 2.41 | — | 1.03 |
| T30030-3 | 3.44 | 1.03 | 2.06 |
| T30060-3 | 3.44 | 1.03 | 2.06 |
| T30030-4 | 4.47 | 2.06 | 3.09 |
| T30060-4 | 4.47 | 2.06 | 3.09 |

Dimensions - in Figure 1. ½-60A



Data Sheet: 1115

Class T Fuse Blocks – 300V

Figure 2. 61 to 100A

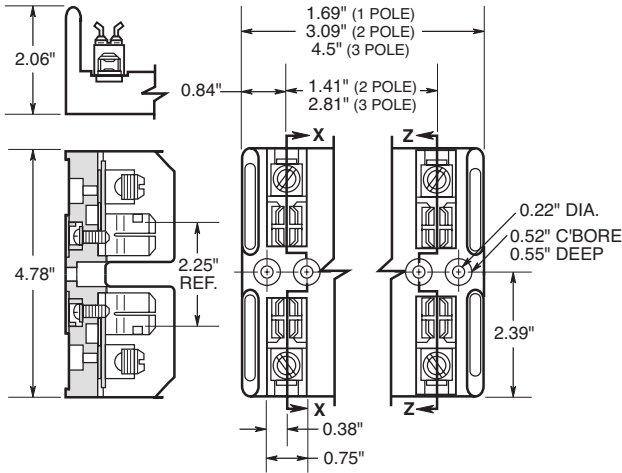


Figure 3. 101 to 200A

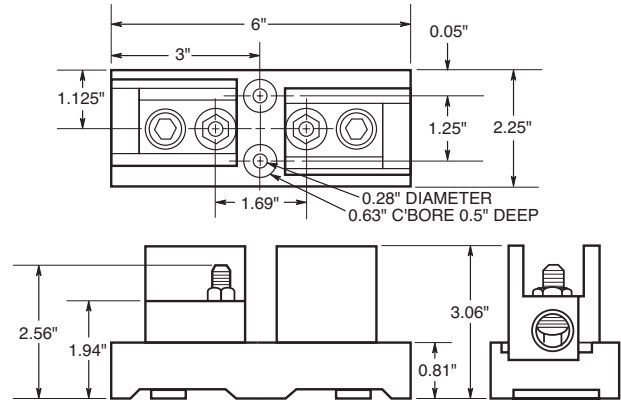


Figure 4. 200A

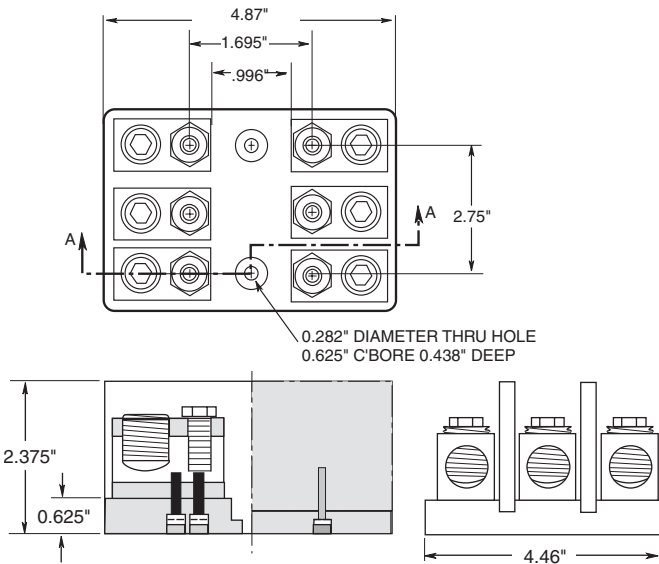


Figure 5. 201 to 400A

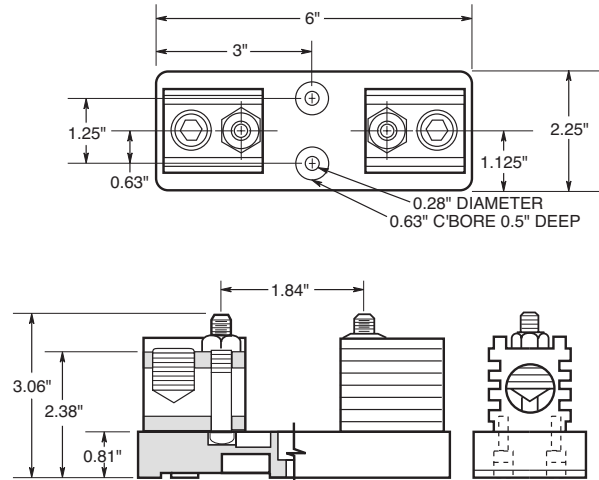
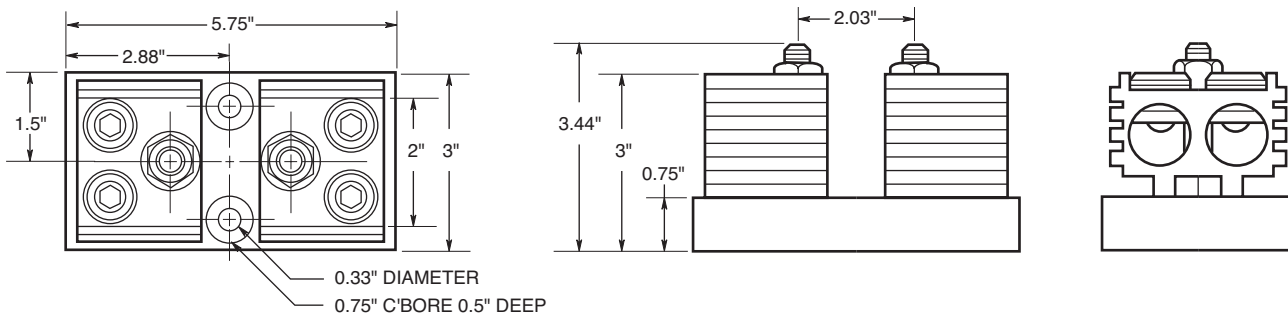


Figure 6. 401 to 600A



Class T Fuse Blocks – 600V

T600

Specifications

Description: T600 (600V) fuse blocks for use with Class T fuses (Cooper Bussmann® JJS).

Dimensions: See Dimensions illustrations.

Poles: 1 to 3

Ratings:

Volts: – 600Vac/dc

Amps: – ½ - 600A

SCCR: – 200kA RMS Sym.

Agency Information: CE, UL Listed UL 4248, Guide IZLT, File E14853, CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94V0.

Features and Benefits

- Provide 1-, 2- and 3-pole housing for 600Vac Class T fuses.
- Short-Circuit Current Rating of 200kA RMS Sym.
- Class T fuse blocks have a small foot print, providing substantial space savings in equipment

Typical Applications

- 600Vac/dc or less Control Systems
- 600Vac/dc or less Individual Control Circuits



T60600-1C



T30030-2CR

Catalog Numbers

| Catalog Numbers | | | | | |
|-----------------|------------|---------|------------|-----|-------------------------------------|
| Screw | Box Lug | Amps | Fig. Poles | No. | Wire Range |
| T60030-1SR | T60030-1CR | ½-30 | 1 | 1 | SR #10-18 Cu CR #2-14 Cu/Al |
| T60030-2SR | T60030-2CR | | 2 | | |
| T60030-3SR | T60030-3CR | | 3 | | |
| T60060-1SR | T60060-1CR | 31-60 | 1 | 2 | CR #2-14 Cu/Al SR #10-18 Cu Only |
| T60060-2SR | T60060-2CR | | 2 | | |
| T60060-3SR | T60060-3CR | | 3 | | |
| — | T60100-1C | 61-100 | 1 | 3 | 2/0-14 Cu/Al |
| — | T60100-2C | | 2 | | |
| — | T60100-3C | | 3 | | |
| — | T60200-1C | 101-200 | 1 | 4 | 250kcmil-6 Cu/Al |
| — | 1B0089* | | 3 | | |
| — | T60400-1C | 201-400 | 1 | 5 | 600kcmil-2/0 Cu/Al |
| — | T60600-1C | 401-600 | 1 | 6 | (2) 600kcmil-4/0 Cu/Al |

* UL Listed, Guide IZLT, File E14853, CSA Certified Class 6225-01, File 21455M18

Dimensions - in

Figure 1. ½ to 30A

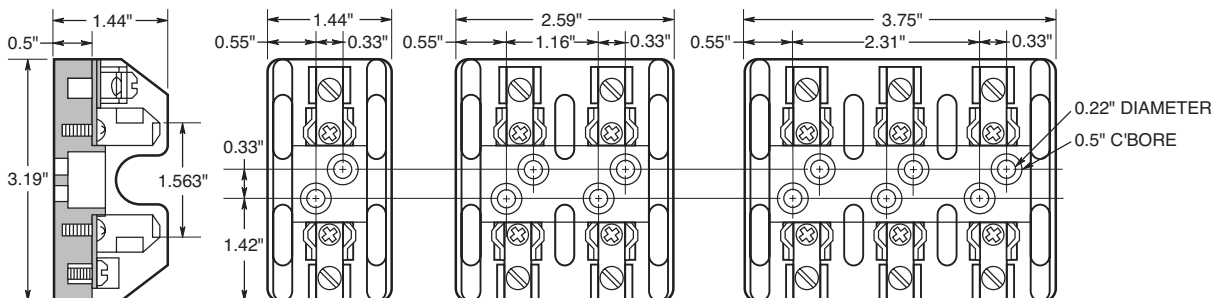
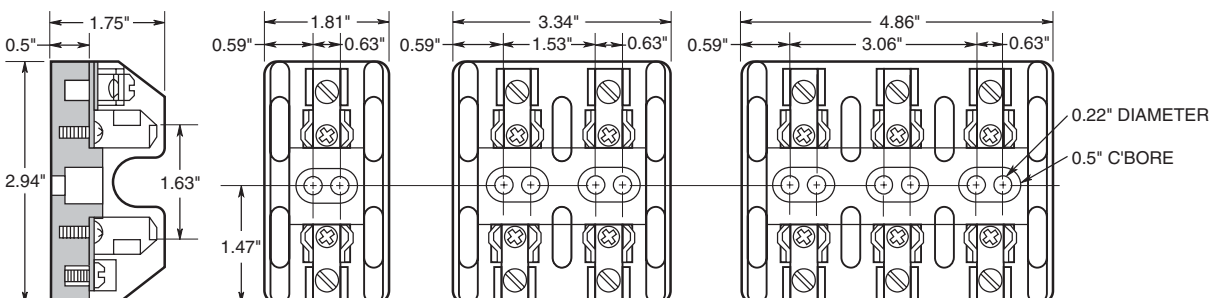


Figure 2. 31 to 60A



Data Sheet: 1116

Class T Fuse Blocks – 600V

Figure 3. 61 to 100A

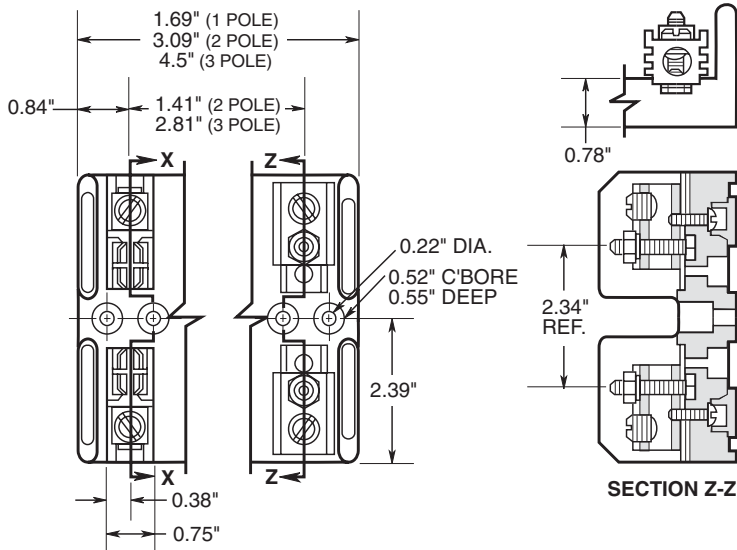


Figure 4. 101 to 200A

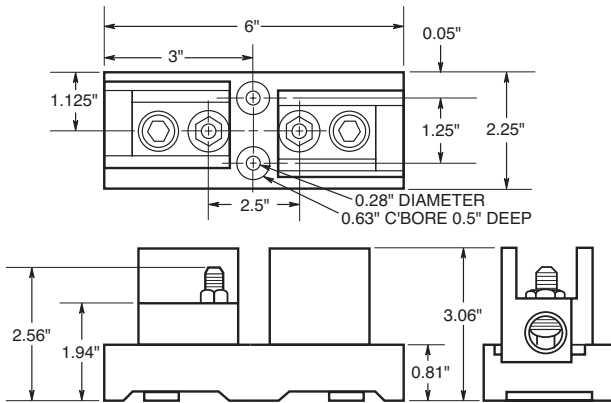


Figure 5. 201 to 400A

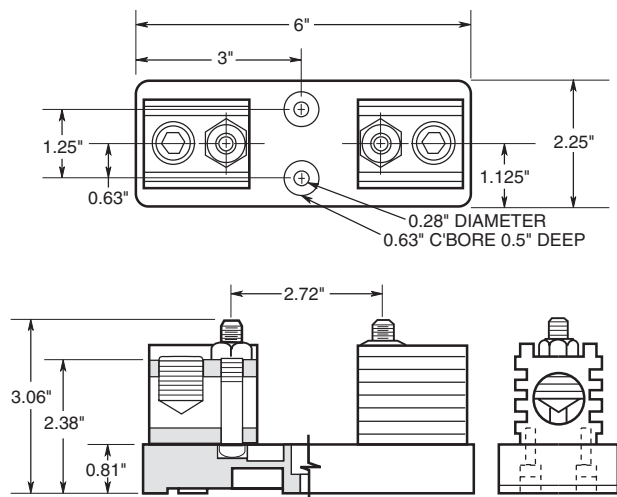
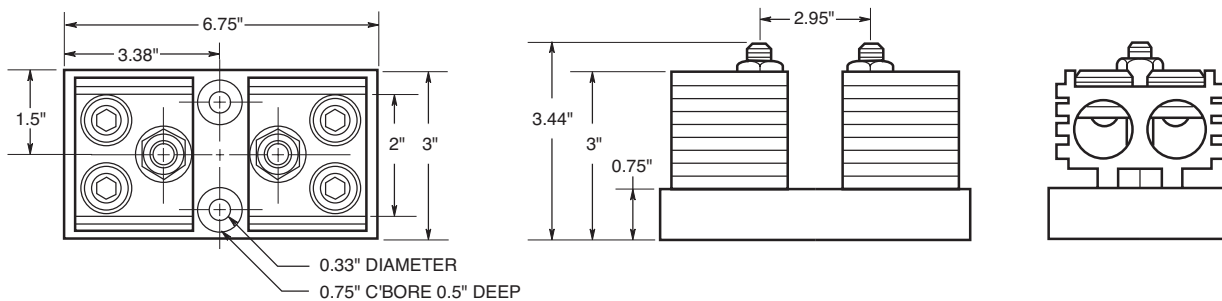


Figure 6. 401 to 600A



Add-a-pole Fuse Blocks

BCA Series - Class CC fuses
 BMA Series - 1 1/2" X 1 1/2" fuses

Specifications

Description: 1-, 2 and 3-pole fuse blocks for use with Class CC fuses (BCA Series use Cooper Bussmann® LP-CC, KTK-R, and FNQ-R), or with standard 1 1/2" x 1 1/2" fuses (BMA Series use Cooper Bussmann® KTK, FNQ, FNM, BAF, PV and AGU) Both Series use an "adder block" to form multi-pole segmented blocks to achieve the desired number of poles.

Dimensions: See Dimensions illustration.

Poles: 1 to 3.

Wire Range: #10-#18 Cu only.

Terminals: Screw/quick connect* or pressure plate/quick connect*.

Ratings:

Volts: — 600Vac/dc

Amps: — 1/0-30A

SCCR: — BCA Series:
 200kA RMS Sym.
 BMA Series:
 10kA RMS Sym.

Agency Information:

BCA Series: CE, UL Listed, UL 4248, Guide IZLT, File E14853.

CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235.

BMA Series: CE, UL Recognized, UL 4248, Guide IZLT2, File E14853. CSA Certified, C22.2 No. 4248, Class 6225-01, File 47235.

Flammability Rating: UL 94V0

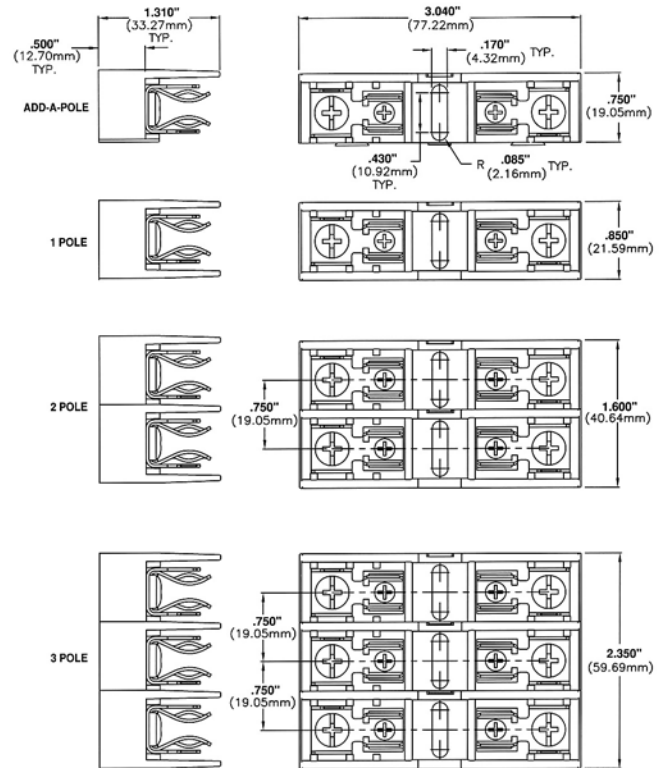
*Quick connect rated for 20A maximum.

Catalog Numbers

BCA Series

| Catalog Numbers | Poles | Terminal Type |
|-----------------|-------------|---------------------------------|
| BCA603ASQ | Adder Block | Screw w/ quick connect |
| BCA6031SQ | 1 | Screw w/ quick connect |
| BCA6032SQ | 2 | Screw w/ quick connect |
| BCA6033SQ | 3 | Screw w/ quick connect |
| BCA603APQ | Adder Block | Pressure plate w/ quick connect |
| BCA6031PQ | 1 | Pressure plate w/ quick connect |
| BCA6032PQ | 2 | Pressure plate w/ quick connect |
| BCA6033PQ | 3 | Pressure plate w/ quick connect |

Dimensions in ± 0.015" (mm 0.38mm)



Fuse Holders & Blocks

BMA Series

| Catalog Numbers | Poles | Terminal Type |
|-----------------|-------------|---------------------------------|
| BMA603ASQ | Adder Block | Screw w/ quick connect |
| BMA6031SQ | 1 | Screw w/ quick connect |
| BMA6032SQ | 2 | Screw w/ quick connect |
| BMA6033SQ | 3 | Screw w/ quick connect |
| BMA603APQ | Adder Block | Pressure plate w/ quick connect |
| BMA6031PQ | 1 | Pressure plate w/ quick connect |
| BMA6032PQ | 2 | Pressure plate w/ quick connect |
| BMA6033PQ | 3 | Pressure plate w/ quick connect |

Data Sheets: BCA Series 1154, BMA Series 1155

Class CC, Type M and Class G Fuse Blocks

BC Series



Specifications

Description: Class CC fuse blocks for use with Class CC fuses (Cooper Bussmann LP-CC, KTK-R, and FNQ-R).
 Dimensions: See Data Sheet 1105

Poles: 1 to 3

Ratings:

Volts: — 600V

Amps: — 1/0-30A

SCCR:— 200kA RMS Sym.

Agency Information: CE, UL Listed (Guide IZLT, File E14853), CSA (Class 6225-01, File 47235)

Flammability Rating: UL 94V0

DIN Rail Adapters: See page 413 for DRA-1 & DRA-2

Catalog Numbers

| Screw | Terminal Type | | | | Poles |
|---------|---------------------------|----------------|----------------------------------|---------|-------|
| | Screw with Quick Connect* | Pressure Plate | Pressure Plate w/ Quick Connect* | Box Lug | |
| BC6031S | BC6031SQ | BC6031P | BC6031PQ | BC6031B | 1 |
| BC6032S | BC6032SQ | BC6032P | BC6032PQ | BC6032B | 2 |
| BC6033S | BC6033SQ | BC6033P | BC6033PQ | BC6033B | 3 |

Data Sheet: 1105

BCCM Series

Description: 3-pole fuse block for use with (2) Class CC fuses and (1) 1 1/2" x 1 1/2" fuse

Catalog Numbers

| Catalog Numbers | Terminal Type |
|-----------------|---------------------------------|
| BCCM6033SQ | Screw with Quick-Connect* |
| BCCM6033PQ | Pressure Plate w/Quick-Connect* |

*Quick-connect terminal rated for 20A max.

Recommended Cover Puller

- PF1-WH (White)
- PF1-BK (Black)

BM Series Type M



Specifications

Description: Supplementary fuse blocks for use with any 1 1/2" x 1 1/2" fuses (Cooper Bussmann® KTK, FNQ, FNM, BAF, PV, and AGU).

Dimensions: See Data Sheet 1104

Poles: 1 to 3

DIN Rail Adapters: See page 413 for DRA-1 & DRA-2

Ratings:

Volts: — 600Vac/dc

Amps: — 1/0-30A

SCCR:— 10kA RMS Sym.

Agency Information: CE, UL Recognized (Guide IZLT2, File E14853), CSA (Class 6225-01, File 47235).

Flammability Rating: UL 94V0.

Catalog Numbers

| Screw with Quick Connect* | Terminal Type | | | Poles |
|---------------------------|----------------------------------|---------|--|-------|
| | Pressure Plate w/ Quick Connect* | Box Lug | | |
| BM6031SQ | BM6031PQ | BM6031B | | 1 |
| BM6032SQ | BM6032PQ | BM6032B | | 2 |
| BM6033SQ | BM6033PQ | BM6033B | | 3 |

Recommended Cover Puller

- PF1-WH (White)
- PF1-BK (Black)

Data Sheet: 1104

BG & G Series



Specifications

Description: Class G fuse blocks for use with Class G fuses (Cooper Bussmann SC).
 Dimensions: See Data Sheet 1106

Poles: 1 to 3

Ratings:

Volts: — 600Vac/dc (0-20A)

— 480Vac/dc (25-60A)

Amps: — 1-60A (See Catalog Numbers table)

SCCR: — 100kA RMS Sym.

Agency Information: CE, UL Listed 35-60A (Guide IZLT, File E14853), UL Recognized 1-30A, (Guide IZLT2, File E14853), CSA (Class 6225-01, File 47235).

DIN Rail Adapters: See page 413 for DRA-1 & DRA-2.

Catalog Numbers

| Screw with Quick Connect* | Terminal Type | | | | Amps | Poles |
|---------------------------|----------------------------------|-----------|--------------------------|-------|------|-------|
| | Pressure Plate w/ Quick Connect* | Box Lug | Box Lug w/retaining clip | | | |
| BG3011SQ | BG3011PQ | BG3011B | — | 1-15 | 1 | |
| BG3012SQ | BG3012PQ | BG3012B | — | | 2 | |
| BG3013SQ | BG3013PQ | BG3013B | — | | 3 | |
| BG3021SQ | BG3021PQ | BG3021B | — | 20 | 1 | |
| BG3022SQ | BG3022PQ | BG3022B | — | | 2 | |
| BG3023SQ | BG3023PQ | BG3023B | — | | 3 | |
| BG3031S | BG3031P | BG3031B | — | 25-30 | 1 | |
| BG3032S | BG3032P | BG3032B | — | | 2 | |
| BG3033S | BG3033P | BG3033B | — | | 3 | |
| — | — | — | G30060-1CR | 35-60 | 1 | |
| — | — | — | G30060-2CR | | 2 | |
| — | — | G30060-3C | G30060-3CR | | 3 | |

Recommended Cover Puller

- PF1-WH (White)
- PF1-BK (Black)

Data Sheet: 1106

Modular Fuse Blocks

BH Series



Specifications

Description: For use with Cooper Bussmann® high speed fuses.

Ratings:

SCCR: — 200kA RMS Sym. or fuse IR, whichever is lower.

Agency Information: CE, UL Recognized, Guide EZLT2, File No. E14853 up to 700V, CSA Certified, Class 6225-01, File No. 47235 up to 700V.

BH Series Features and Benefits

- BH fuse blocks provide a wide range of mounting configurations for Cooper Bussmann high speed fuses.
- BH fuse blocks have a Short-Circuit Current Rating of any installed fuse up to 200kA RMS Sym.

Typical Applications

- Solid State Control Circuits
- VFDs
- UPS Systems

Catalog Numbers

| | | | |
|---------|---------|---------|---------|
| BH-0001 | BH-0122 | BH-2001 | BH-3004 |
| BH-0002 | BH-1001 | BH-2002 | BH-3033 |
| BH-0003 | BH-1002 | BH-2003 | BH-3144 |
| BH-0111 | BH-1003 | BH-2031 | BH-3145 |
| BH-0112 | BH-1131 | BH-2032 | |
| BH-0113 | BH-1132 | BH-2033 | |
| BH-0121 | BH-1133 | BH-3003 | |

Refer to the data sheet numbers below for the catalog code description information.

Data Sheet: (BH-0) 1200; (BH-1) 1201; (BH-2) 1202; (BH-3) 1203

Modular Type Fuse blocks for Class H & J Fuses



Specifications

Description: 3-Pole only, modular type fuse blocks for Class H & J fuses with standard reinforced retaining clips.

Ratings:

Volts: — 250V (0-60A See Catalog Numbers table)

— 600V (35-60A See Catalog Numbers table)

Amps: — 0-60A @ 250Vac/dc (See Catalog Numbers table)

— 35-60A@600V (See Catalog Numbers table)

SCCR: — Class J 200kA, Class H 10kA

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853, CSA Certified, Class 6225-01, File 47235.

Class H & J Features and Benefits

- H & J modular fuse blocks provide three pole 30 and 60 amp ratings for specific client requirements for separate line and load fuse clip configurations.

Typical Applications

- Up to 60A, space confined, control circuits

| Catalog Numbers | | | | | |
|-----------------|----------------|------------|-------|------|----------|
| Screw | Pressure Plate | Fuse Class | Volts | Amps | Fig. No. |
| 11241-3SR* | 11241-3PR* | H | 250 | 60 | 1 |
| 11242-3SR | 11242-3PR | | | | 2 |
| 11241-3SR | 11241-3PR | | 600 | 35 | 1 |
| 11242-3SR** | 11242-3PR** | | | | 2 |
| 11239-3SR | 11239-3PR | J | 600 | 60 | 1 |
| 11240-3SR** | 11240-3PR** | | | | 2 |
| 11241-3SR | 11241-3PR | | 600 | 35 | 1 |
| 11239-3SR* | 11239-3PR* | | | | 60 |

Note: Order two blocks per fuse (matched or mixed.)

*11239 and 11241 have wire terminals and mounting holes located under fuse. (Figure 1)

**11240 and 11242 have wire terminals and mounting holes located at end of fuse. (Figure 2)



Figure 1



Figure 2

Box Cover Units for Plug Fuses

SOU, SRU, SSN, SSU, SOW, SRW, SSW, SOX, SRX, SSX, SOY, SRY, SSY, SSY-RL, SSY-L, STY, SCY, SOY-B & SKA

Specifications

Description: Box covers for standard electrical boxes that provide fused outlet, fused switch or circuit fuse protection.

Ratings:

Volts: — 125V/250V (See Catalog Numbers table)

Amps: — 0-15A (See Catalog Numbers table)

Agency Information: CE, See Catalog Numbers table.

Features/Benefits

- Cooper Bussmann® Box Cover Units provide a low-cost method of controlling and protecting small motors when used with Cooper Bussmann® Type T, Fusetron® , dual-element fuses.
- Provide low-cost supplementary protection and disconnection of 125V or less, single phase circuits.

Typical Applications

- Fractional Horsepower, 125 Volt Single-Phase Motor Circuits
- General 125 Volt Supplemental Circuits



Catalog Numbers

| Catalog Numbers | Type Box | Fuse holder ³ | | Receptacle Outlet to Load | | Switch Control ¹ | Switch Light ² | Motor Size (Max) | General Data | Agency ⁴ Listing/Certification |
|------------------|---------------|--------------------------|--------|---------------------------|--------|-----------------------------|---------------------------|------------------|---|---|
| | | Single | Double | 125V | 250V | | | | | |
| SOU | 2 1/4" Handy | X | | | | | | 3/4hp | 125V, 15A | UL, CSA |
| SRU | | X | | X | | | | 1/2hp | 125V, 15A | UL |
| SSU | | X | | | | X | | 1/2hp | 125Vac, (do not use on dc), 15A | UL, CSA |
| SOW | 2 1/2" Switch | X | | | | | | 3/4hp | 125V, 15A | UL, CSA |
| SRW | | X | | X | | | | 1/2hp | 125V, 15A | UL |
| SSW | | X | | | | X | | 1/2HP | 125Vac, (do not use on dc), 15A | UL, CSA |
| SOX | 4" Octagon | X | | | | | | 3/4hp | 125V, 15A | UL, CSA |
| SRX | | X | | X | | | | 1/2hp | 125V, 15A | UL |
| SSX | | X | | | | X | | 1/2hp | 125Vac, (do not use on dc), 15A | UL, CSA |
| SOY | 4" Square | X | | | | | | 3/4hp | 125V, 15A | UL, CSA |
| SRY | | X | | X | | | | 1/2hp | 125V, 15A | UL |
| SSY | | X | | | | X | | 1/2hp | 125Vac, (do not use on dc), 15A | UL, CSA |
| SSY-RL | | X | | X | | X | X | 1/2hp | 125Vac, (do not use on dc), 15A | — |
| STY ³ | | | X | | | X | | 1/2hp | 125Vac, (do not use on dc), 15A | UL |
| SCY | | | | X | | | X(2) | 1/2hp (2) | 125Vac, (do not use on dc), can protect two motors, 15A | UL |
| SOY-B | | | | X | | | | 3/4hp | 125V, protects two motors, 15A | UL |
| SKA | 4 1/8" Square | | X | | X(15A) | | | 2hp | 250V, 15A single phase | UL |
| SSN | Single Gang | X | | X | | X | | 1/2hp | Weatherproof model, 15A | UL |

1 Switch turns power to fused load OFF or ON.

2 Switch light indicates power to load (dark when switch OFF or fuse open).

3 Double pole switch opens both sides of circuit. Can be used for two separate motors with common switch or a single motor (3/4Hp, 250Vac max.).

4 UL Guide JAMZ, File IE6491; CSA Class 6225-01, File 47235.

In-line Fuse Holders for 1/4" x 7/8" to 1 1/4" Fuses

HFB & HFB-10



Specifications

Description: Waterproof in-line fuse holder for 1/4" x 1 1/4" fuses.

Dimensions: See Dimensions illustration.

Construction: Thermoplastic rubber body with tin-plated, copper contacts.

Ratings:

Volts: — 32V

Amps: — 30A max

Catalog Numbers

| Catalog Numbers | Description |
|-----------------|-----------------------------------|
| HFB* | Standard Pack (10-in) |
| BK/HFB | Bulk Pack (100-in) |
| BK/1A2294 | HFB Replacement Contact Clip |
| 1A2294-01 | HFB-10** Replacement Contact Clip |

*HFB accepts #12 to #18 wire leads (not provided). See Data Sheet for recommended crimp tools.

**HFB-10 accepts #10 wire leads (not provided). See Data Sheet for recommended crimp tools.

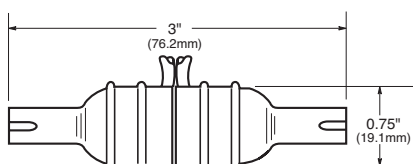
Features/Benefits

- Simple assembly with one-piece thermoplastic (important information molded into body)
- High visibility yellow color for easy identification in dark or hard-to-access locations
- Ideal for shock and vibration environments; withstands many organic solvents; temperature range -40/+150°C

Typical Applications

- Supplemental, Low Voltage, Low Amperage Control Circuits

Dimensions - in (mm)



Data Sheet: 2102

HHB



Specifications

Description: Universal in-line fuse holder for 1/4" x 7/8", 1" and 1 1/4" fuses.

Dimensions: See Dimensions illustration.

Construction: Nylon body with tin-plated, copper contacts.

Ratings:

Volts: — 32V

Amps: — 30A max

Flammability Rating: UL 94V2.

Pull Force: 5lbs minimum to separate fuse holder housing with fuse installed.

Features and Benefits

- HHB Universal in-line fuse holder for 1/4" x 7/8", 1" and 1 1/4" fuses.

Typical Applications

- Supplemental, Low Voltage, Low Amperage Control Circuits

Catalog Numbers

Holder — without leads* - RoHS compliant

| Catalog Numbers | Description |
|-----------------|-----------------------|
| HHB-R | Standard Pack (10-in) |
| BK/HHB-R | Bulk Pack (100-in) |

*Accepts #12 to #16 wire leads (not provided with basic fuse holder). See Data Sheet for recommended crimp tools.

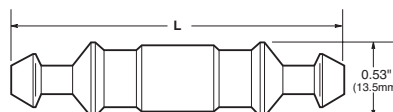
Holder — with pre-attached #14 Insulated lead wires - Not RoHS compliant unless noted

| Catalog Numbers | 19" Length | 8" Length | Wire Color |
|-----------------|---------------|-----------|------------|
| BK/HHB-Y419 | BK/HHB-Y408 | Yellow | |
| BK/HHB-R419 | BK/HHB-R408** | Red | |
| BK/HHB-B419 | BK/HHB-B408 | Black | |

**RoHS compliant.

Dimensions - in (mm)

| Fuse Length | Fuse Holder Length "L" |
|-------------------|------------------------|
| 7/8" (AGW) | 2.100 Max |
| 1" (AGX) | 2.250 Max |
| 1 1/4" (AGC, MDL) | 2.420 Max |



Data Sheet: 2103

HRK



Specifications

Description: Universal in-line fuse holder for 1/4" x 7/8" to 1 1/4" fuses.

Dimensions: See Dimensions illustration.

Construction: 8" (203mm) #14 lead wires.

Ratings:

Volts: — 32V

Amps: — 15A max

Features and Benefits

- HRK Universal in-line fuse holder for 1/4" x 7/8", 1" and 1 1/4" fuses with #14 lead wires.
- RoHS compliant

Typical Applications

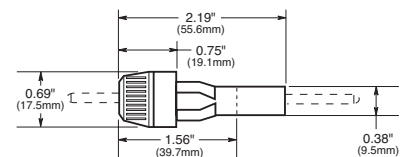
- Supplemental, Low Voltage, Low Amperage Control Circuits

Catalog Number

| Catalog Number | Amp | Rating Volts | Fuse Description |
|----------------|-----|--------------|---|
| HRK-R* | 15 | 32 | 1/4" diameter fuses of different lengths. |

*Three springs furnished with fuse holder to accommodate different length 1/4" fuses.

Dimensions - in (mm)



Data Sheet: 2111

In-line Fuse Holders

HR and HM Series

Specifications

Description: In-line fuse holders for SFE and 1/4" dia. x various length fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 32V

Amps: — 20A

Features and Benefits

- HR and HM Universal in-line fuse holder for SFE and various length 1/4" diameter fuses with #14 lead wires.

Typical Applications

- Supplemental, Low Voltage, Low Amperage Control Circuits

Catalog Numbers

| Catalog Numbers | Includes Fuse | Wire Length & Size |
|-----------------|---------------|--------------------|
| HRJ* | SFE-20 | 19" of #14 |
| HRI | SFE-14 | |
| HRH | SFE-9 | |
| HRE | SFE-7½ | |
| HRG | SFE-6 | |
| HRF | SFE-4 | |
| HMJ** | SFE-20 | 8" of #14 |
| HMI | SFE-14 | |
| HMH | SFE-9 | |
| HME | SFE-7½ | |
| HMG | SFE-6 | |
| HMF | SFE-4 | |

* Also available as in-line fuse holder only with lead wire contacts, HRJ-LESS-Fuse.

** Also available as in-line fuse holder only with lead wire contacts, HMJ-LESS-Fuse.

HHJ-A For 3/8" x 1 1/4" fuse, no wire or fuse included, accepts #18 - #22 wire.

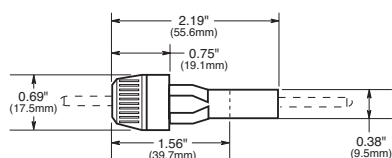
HHJ-B For 1/2" x 1 1/4" fuse, no wire or fuse included, accepts #12 - #16 wire.

HHi-B For 3/4" x 1 1/8" fuse, no wire or fuse included, accepts #12 - #16 wire.

Replacement Contacts

| Catalog Number | Symbol |
|----------------|--------|
| 9838 | HHJ-A |
| 9841 | HHJ-B |

Dimensions - in (mm)



Data Sheet: 2122

HFA Series



Specifications

Description: In-line water-resistant fuse holders for 1/4" x 1 1/4" fuses.

Dimensions: See Dimensions illustration.

Construction: Phenolic body with copper crimp contact leads.

Ratings:

Volts: — 250V

Amps: — 20A

Agency Information: CE, UL Recognized, (Guide IZLT2, File E14853) UL.

Flammability Rating: UL 94HB.

Features and Benefits

- HFA in-line, water-resistant fuse holder for 1/4" x 1 1/4" fuses.

Typical Applications

- Supplemental, Low Voltage, Low Amperage Control Circuits

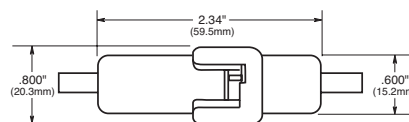
Refer to data sheet for recommend crimp tools

Catalog Numbers

| Catalog Numbers | Terminals |
|-----------------|--------------------|
| HFA | Crimp #12 - #16 |
| HFA-HH* | 1/4" Quick Connect |

*No UL Recognition.

Dimensions - in (mm)



Data Sheet: 2115

HHT Series



Specifications

Description: In-line fuse holders for 5 x 15mm or 5 x 20mm fuses.

Dimensions: See Dimensions illustration.

Construction: Black thermoplastic body with brass contacts, wire: 16 AWG, red.

Ratings:

Volts: — 32V

Amps: — 5A (5 x 15mm)
— 10A (5 x 20mm)

Features and Benefits

- HHT in-line fuse holders for 5 x 15mm and 5 x 20 mm fuses.

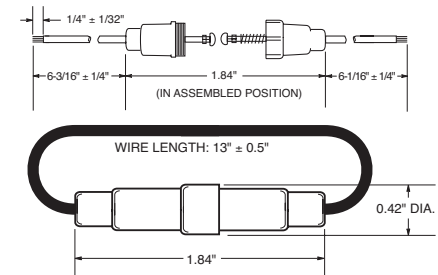
Typical Applications

- Supplemental, Low Voltage, Low Amperage Control Circuits

Catalog Numbers

| Catalog Number | Fuse Size |
|----------------|---------------------|
| HHT | 5 x 15mm & 5 x 20mm |

Dimensions - in



Data Sheet: 2138

Tron™ In-line Fuse Holders

HEG Series



Specifications

Description: Single-pole, non-breakaway, in-line fuse holders for Type SC fuses, 480V (or less).

Ratings:

Volts: — 600V

Amps: — 0-15A

Fuse Size: $\frac{1}{32}$ " x 1.31"

Catalog Number
HEG-AA

Optional Boots:

2A0660 Single Conductor
2A0661 Two Conductor

Data Sheet: 2124

HEH Series



Specifications

Description: Single-pole, non-breakaway, in-line fuse holders for Type SC fuses (Also fuse types BBS & KTQ, nominal size $\frac{1}{32}$ " x 1 $\frac{5}{16}$ ").

Ratings:

Volts: — 600V

Amps: — 0-20A

Agency Information: CSA
- 15A.

Catalog Numbers
HEH-AA, HEH-BB, HEH-AD

Optional Boots:

2A0660 Single Conductor
2A0661 Two Conductor

Data Sheet: 2124

HEC Series



Specifications

Description: Single-pole, non-breakaway, in-line fuse holders for Type SC-25, & SC-30 fuses, size $\frac{1}{32}$ " x 1 $\frac{5}{16}$ ".

Ratings:

Volts: — 480V

Amps: — 0-30A

Catalog Numbers
HEC-AA, HEC-RW-RLB-R

Optional Boots:

2A0660 Single Conductor
2A0661 Two Conductor

Data Sheet: 2124

HEJ Series



Specifications

Description: Single-pole, non-breakaway, in-line fuse holders for Type SC and Type HVW fuses, size $\frac{1}{32}$ " x 2 $\frac{1}{4}$ ".

Ratings:

Volts: — 480V

Amps: — 35-60A Type SC
— $\frac{1}{2}$ -6A Type HVW

Catalog Numbers

HEJ-AA, HEJ-AB, HEJ-AC, HEJ-BB,
HEJ-JJ, HEJ-JK, HEJ-LL, HEJ-LLB,
HEJ-CC, HEJ-DD, HEJ-WW, HEJ-PP,
HEJ-QQ

Optional Boots:

2A0660 Single Conductor
2A0661 Two Conductor

Data Sheet: 2123

HEB Series



Specifications

Description: Single-pole in-line fuse holders for any $\frac{1}{32}$ " x 1 $\frac{1}{2}$ " fuses (typically fuse types: BAF, FNM, FNQ, and KTK $\frac{1}{10}$ - 30A).

Ratings:

Volts: — 600V

Amps: — 0-30A

Catalog Numbers
See Page 280

Data Sheet: 2127

HET Series



Specifications

Description: Single-pole in-line fuse holders for $\frac{1}{32}$ " x 1 $\frac{1}{2}$ " fuses with a permanently solid neutral identified by white plastic coupling nut.

Catalog Numbers
HET-AA, HET-AB, HET-AW, HET-AW-RLC-A, HET-AW-RLC-B, HET-AW-RLC-C, HET-AW-RLC-J, HET-AW-RYC, HET-BB, HET-BW-RLC-B, HET-BW-RYC, HET-JJ, HET-JK, HET-JW, HET-JW-RLC-J, HET-JW-RYC, HET-KK

Data Sheet: 2125

HEY Series



Specifications

Description: Double-pole in-line fuse holders for KTK-R fuses with optional breakaway receptacle, polarized, and accepting Class CC branch circuit fuses (Cooper Bussmann® KTK-R, FNQ-R & LP-CC; 600V or less, 200,000A IR).

Ratings:

Volts: — 600V

Amps: — 0-30A

Catalog Numbers
HEY-AA, HEY-AB, HEY-AC, HEY-AD, HEY-AE, HEY-AL, HEY-AW-DRLC-A, HEY-AW-DRLC-B, HEY-AW-DRYC, HEY-BB, HEY-JJ

Data Sheet: 2126

HEX Series



Specifications

Description: Double-pole in-line fuse holders for $\frac{1}{32}$ " x 1 $\frac{1}{2}$ " fuses (typically fuse types BAF, FNM, FNQ, and KTK $\frac{1}{10}$ - 30A).

Ratings:

Volts: — 600V

Amps: — 0-30A

Catalog Numbers

HEX-AA, HEX-AB, HEX-AC, HEX-AD, HEX-AE, HEX-AW, HEX-AW-DRLC-A, HEX-AW-DRYC, HEX-AW-RLC-A, HEX-AW-RYC, HEX-AY, HEX-BB, HEX-CC, HEX-JJ, HEX-JK, HEX-JW-DRYC, HEX-KK

Data Sheet: 2126

Fuse Holders & Blocks

For HEB Holders Only

Directions: To select complete holder P/N, work from left to right starting with loadside terminal options and then lineside terminal options. Then determine breakaway or non-breakaway style.

| Loadside Terminal | | | | | Lineside Terminal | | | | | Available P/N's | |
|---------------------------------------|------------|---------------------------|------------|---------------|---------------------------------------|------------|---------------------------|------------|---------------|---|---|
| Terminal Type | Wire Size | No. of Wires per Terminal | Solid Wire | Stranded Wire | Terminal Type | Wire Size | No. of Wires per Terminal | Solid Wire | Stranded Wire | Non-Breakaway P/N (Boots not included) | Breakaway P/N (Boots included) |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Crimp | #12 to #8 | 1 | Y | Y | HEB-AA ⁽¹⁾⁽²⁾ ₍₃₎ | HEB-AW-RLC-A ⁽¹⁾⁽²⁾ ₍₃₎ |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #12 | 2 | Y | Y | HEB-AB ⁽²⁾ | HEB-AW-RLC-B |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Crimp | #6 | 1 | Y | Y | HEB-AC ⁽²⁾ | HEB-AW-RLC-C ⁽⁴⁾ |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #10 | 2 | Y | Y | HEB-AD ⁽²⁾ | N/A |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Crimp | #4 | 1 | N | Y | HEB-AE ⁽²⁾ | N/A |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #8 | 2 | Y | Y | HEB-AJ | HEB-AW-RLC-J |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Crimp | #2 | 1 | N | Y | HEB-AK | HEB-AW-RYC |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #6 | 2 | Y | Y | HEB-AL | HEB-AW-RLA |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Crimp | 2/0 | 1 | N | Y | HEB-AY | HEB-AW-RYA |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #3 | 2 | N | Y | HEB-AR | N/A |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Copper Setscrew | #12 to #3 | 1 | Y | Y | HEB-BA ⁽²⁾ | HEB-BW-RLC-A |
| Copper Crimp | #12 | 2 | Y | Y | Copper Setscrew | #12 to #3 | 2 | Y | Y | HEB-BB ⁽²⁾ | HEB-BW-RLC-B |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Aluminum Setscrew | #12 to #2 | 1 | Y | Y | HEB-BC ⁽²⁾ | N/A |
| Copper Crimp | #12 | 2 | Y | Y | Aluminum Setscrew | #12 to #2 | 2 | Y | Y | HEB-BD ⁽²⁾ | N/A |
| Copper Crimp | #12 to #8 | 1 | Y | Y | Aluminum Crimp | #1, #2 | 1 | N | Y | HEB-CC ⁽²⁾ | N/A |
| Copper Crimp | #12 | 2 | Y | Y | Copper Crimp | #12 to #8 | 1 | Y | Y | HEB-DD ⁽²⁾ | N/A |
| Copper Crimp | #6 | 1 | Y | Y | Copper Crimp | #12 | 2 | Y | Y | HEB-ZA | N/A |
| Copper Crimp | #10 | 2 | Y | Y | Copper Crimp | #6 | 1 | Y | Y | HEB-JJ | HEB-JW-RLC-J |
| Copper Crimp | #10 | 2 | Y | Y | Copper Crimp | #10 | 2 | Y | Y | HEB-JK | HEB-JW-RYC |
| Copper Crimp | #6 | 1 | Y | Y | Copper Crimp | #4 | 1 | N | Y | HEB-JL | N/A |
| Copper Crimp | #10 | 2 | Y | Y | Copper Crimp | #8 | 2 | Y | Y | HEB-JY | N/A |
| Copper Crimp | #6 | 1 | Y | Y | Copper Crimp | #2 | 1 | N | Y | HEB-LL | HEB-LW-RLA |
| Copper Crimp | #10 | 2 | Y | Y | Copper Crimp | #6 | 2 | Y | Y | HEB-NN | N/A |
| Copper Crimp | #4 | 1 | N | Y | Copper Crimp | #2 | 1 | N | Y | HEB-PP ⁽²⁾ | N/A |
| Copper Crimp | #8 | 2 | Y | Y | Copper Crimp | #8 | 2 | Y | Y | HEB-QQ ⁽²⁾ | N/A |
| Copper Crimp | #2 | 1 | N | Y | Copper Crimp | #6 | 2 | Y | Y | HEB-RR ⁽²⁾ | N/A |
| Copper Crimp | #6 | 2 | Y | Y | Copper Crimp | #12 to #8 | 1 | Y | Y | HEB-TT ⁽²⁾ | N/A |
| Copper Crimp | #20, #18 | 1 | Y | Y | Copper Crimp | #12 | 2 | Y | Y | HEB-SS | N/A |
| Copper Crimp | #12 to #3 | 1 | Y | Y | Copper Crimp | #12 to #3 | 1 | Y | Y | | |
| Copper Crimp | #12 to #3 | 1 | Y | Y | Copper Crimp | #12 to #3 | 2 | Y | Y | | |
| Copper Crimp | #12 to #3 | 1 | Y | Y | Aluminum Crimp | #12 to #2 | 1 | Y | Y | | |
| Copper Crimp | #12 to #3 | 1 | Y | Y | Aluminum Crimp | #12 to #2 | 2 | Y | Y | | |
| Aluminum Crimp | #12 to #2 | 1 | Y | Y | Aluminum Crimp | #12 to #2 | 1 | Y | Y | | |
| Aluminum Crimp | #8 | 1 | N | Y | Aluminum Crimp | #8 | 1 | N | Y | | |
| Aluminum Crimp | #6 | 1 | Y | N | Aluminum Crimp | #6 | 1 | Y | N | | |
| Aluminum Crimp | #6 | 1 | N | Y | Aluminum Crimp | #6 | 1 | N | Y | | |
| Aluminum Crimp | #4 | 1 | Y | N | Aluminum Crimp | #4 | 1 | Y | N | | |
| Aluminum Crimp | #3, #4 | 1 | N | Y | Aluminum Crimp | #3, #4 | 1 | N | Y | | |
| Aluminum Crimp | #2 | 1 | Y | N | Aluminum Crimp | #2 | 1 | Y | N | | |
| Aluminum Crimp | #1, #2 | 1 | N | Y | Aluminum Crimp | #1, #2 | 1 | N | Y | | |
| Aluminum Crimp | 1/0 | 1 | N | Y | Aluminum Crimp | 1/0 | 1 | N | Y | | |
| Solid Terminal for aluminum connector | #8 to #12 | 1 | Y | N | Solid Terminal for aluminum connector | #8 to #12 | 1 | Y | N | | |
| Solid Terminal for aluminum connector | #10 to #14 | 1 | N | Y | Solid Terminal for aluminum connector | #10 to #14 | 1 | N | Y | | |

(1) UL Recognized, Guide IZLT2, File E14853

(2) CSA Certified, Class 6225-01, File 47235

(3) CE

(4) HEB-AW-RLC-C is for (1) #4 stranded wire only.

Insulating boots for single conductor-2A0660

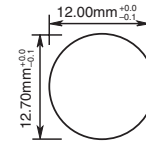
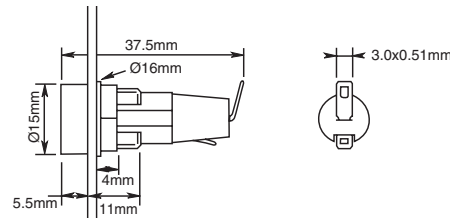
Dual conductor-2A0661

Contact your local Cooper Bussmann representative for other possible terminations not listed.

Panel Mounted Fuse Holders for 5 x 20mm Fuses

HTC-35M

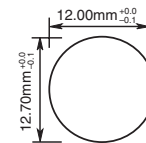
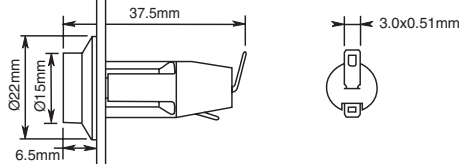
Ratings:
 Volts: — 250Vac
 Amps: — 10A UL, 6.3A VDE
 Fuse Access: Threaded cap



Data Sheet: 2110

HTC-40M

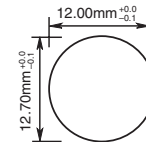
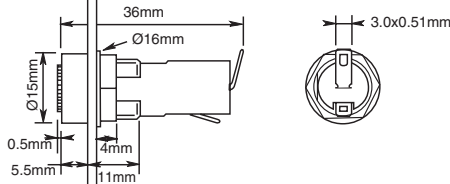
Ratings:
 Volts: — 250Vac
 Amps: — 10A UL, 6.3A VDE
 Fuse Access: Screwdriver slot



Data Sheet: 2110

HTC-55M

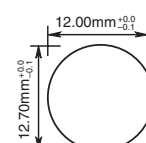
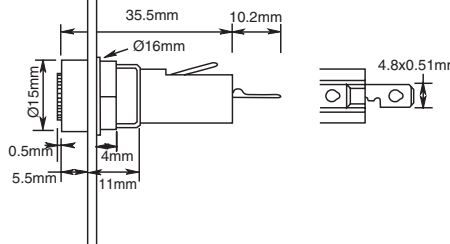
Ratings:
 Volts: — 250Vac
 Amps: — 10A UL, 6.3A VDE
 Fuse Carrier: Bayonet type



Data Sheet: 2110

HTC-70M

Ratings:
 Volts: — 250Vac
 Amps: — 10A UL, 6.3A VDE
 Fuse Carrier: Bayonet type



Data Sheet: 2110

Fuse Holders & Blocks

Specifications

- Terminals: Tin-plated brass.
- Molded Materials: High temperature thermoplastic that meets the flammability ratings of UL 94V0; Glow Wire Test: 960°C per IEC 60695-2-1.
- Solderability: In accordance with IEC 68-2-20.
- Agency Information: cURus, VDE
- Electrical: Contact Resistance: ≤ 10 megohm; Insulation Resistance: ≥ 10MΩ; Dielectric Strength ≥ 2000Vac.
- Shock Safety: PC2 (fuse holders).
- Packaging: Standard Qty 10 (No Prefix), Bulk Qty 100 (Prefix Catalog Number with BK/).

Panel Mounted Fuse Holders for 1/4" x 1 1/4" Fuses

HKP, HKP-L, HKP-W

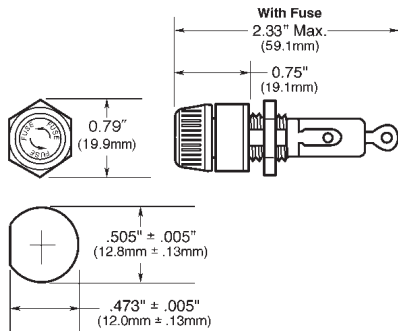


Specifications
 Description: Standard fuse holders.
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 30A

Catalog Numbers

| Catalog Numbers | Fuse Description |
|-----------------|--------------------------------|
| HKP | — |
| HKP-L | HKP w/ 2250V stand-off barrier |
| HKP-W | HKP w/ drip-proof knob |

Dimensions - in (mm)



Data Sheet: 2106

HKP-BBHH, HKP-HH and HKP-LW-HH

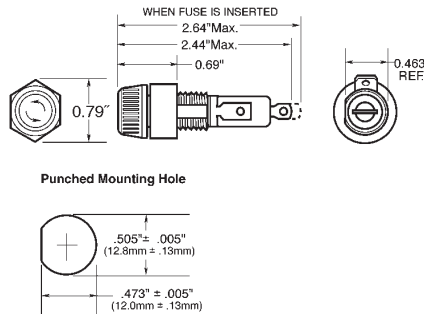


Specifications
 Description: Fuse holders with 1/4" quick-connects.
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 15A

Catalog Numbers

| Catalog Numbers | Fuse Description |
|-----------------|--|
| HKP-BBHH | HKP w/ 1/4" quick-connects, nut and washer assembled. |
| HKP-HH | HKP w/ 1/4" quick-connect. |
| HKP-LW-HH | HKP w/ drip-proof knob, 2250V stand-off barrier and 1/4" quick-connects. |

Dimensions - in (mm)



Data Sheet: 2106

HKP-OO

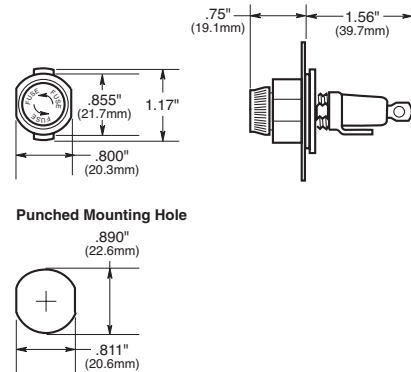


Specifications
 Description: Snap-lock fuse holders.
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 30A

Catalog Numbers

| Catalog Number | Fuse Description |
|----------------|--------------------|
| HKP-OO | HKP with snap-lock |

Dimensions - in (mm)



Data Sheet: 2106

Specifications

Terminals: Bayonet-type knob.
 Vibration resistant.
 For panels up to 5/16" (7.9mm) thick.

Agency Information: CE (HKP, HKP-L, HKP-W, HKP-OO), UL Recognized — Guide IZLT2, File E14853, CSA Certified — Class 6225-01, File 47235

Replacement Parts: Cap: 9435-1/2
 Plastic Nut: BK/1A4287 (100 pieces minimum)
 Metal Nut: BK/1A4806-2 (100 pieces minimum)
 Washer: 9732

Panel Mounted Fuse Holders for 5 x 20mm and 1/4" x 1 1/4" Fuses

HTB Series

Specifications

Description: Fuse holders with knob-type carriers.

Dimensions: See Dimensions illustrations.

Construction: High temperature, flame retardant thermoplastic; UL Component Recognized; UL 94V0; mounting nut, spacer-black polycarbonate. Terminals: tin-plated brass.

Electrical Data: Insulation resistance (per IEC #257) — 10,000 ohms @ 500Vdc; contact resistance (per IEC #257) — 0.005 ohms Max @ 1A; standoff voltage (per IEC #257) — 480V/Mil @ 0.125" thickness.

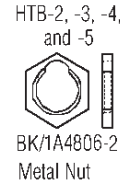
Agency Information: CE, UL Recognized — Guide IZLT2, File E14853, 1/4" dia fuse @ 20A, 5mm dia fuse @ 16A @ 250V, CSA — 16A @ 250V Class 6225-01 File 47235; VDE Certified: 136128, HTB-XXM, SEMKO Certification: Ref. #0146149/01, HTB-XXM.

Mounting: Withstands 15 to 20 Lb-In torque to mounting nut when mounting fuse holder to panel.

Environmental: Maximum operating temperature -55°C to 85°C.



Replacement Parts



Dimensional Data - in (mm)

| Knob Type Carrier | Maximum Panel Thickness | Terminal Options | | | | Carrier Options | |
|---|-------------------------|--------------------------------|-----------|--------------------|-----------|--------------------------------------|---------------------------------|
| | | Solder/ 3/16" Quick-Connect | | 1/4" Quick-Connect | | 1/4" x 1 1/4" ("I" Equals Inches) | 5 x 20mm ("M" Equals Metric) |
| | | In-Line | Rt. Angle | In-Line | Rt. Angle | Knob | Knob |
| Common Dimensions: Length (Knob Type) - 1.69" (42.9mm) Plus In-Line Terminal NOTE: Plus In-Line Terminal | 0.30" | HTB-22I-R | HTB-24I-R | HTB-26I-R | HTB-28I-R | X | |
| | 7.62mm | HTB-22M-R | HTB-24M-R | HTB-26M-R | HTB-28M-R | | X |
| | 0.125" | HTB-42I-R | HTB-44I-R | HTB-46I-R | HTB-48I-R | X | |
| | 3.18mm | HTB-42M-R | HTB-44M-R | HTB-46M-R | HTB-48M-R | | X |
| | 0.30" | HTB-62I-R | HTB-64I-R | HTB-66I-R | HTB-68I-R | X | |
| | 7.62mm | HTB-62M-R | HTB-64M-R | HTB-66M-R | HTB-68M-R | | X |
| | 0.125" | HTB-82I-R | HTB-84I-R | HTB-86I-R | HTB-88I-R | X | |
| | 3.18mm | HTB-82M-R | HTB-84M-R | HTB-86M-R | HTB-88M-R | | X |

Fuse holders and fuse carriers may be ordered separately.

Data Sheet: 2119

Panel Mounted Fuse Holders for 5 x 20mm and 1/4" x 1 1/4" Fuses

HTB Series



Dimensional Data - in (mm)

| Screwdriver Type Carrier | Maximum Panel Thickness | Terminal Options | | | | Carrier Options | |
|--|-------------------------|--------------------------------|-----------|--------------------|-----------|---------------------------------------|----------------------------------|
| | | Solder/ 3/16" Quick-Connect | | 1/4" Quick-Connect | | 1/4" x 1 1/4" (.41" Equals Inches) | 5 x 20mm (.50" Equals Metric) |
| | | In-Line | Rt. Angle | In-Line | Rt. Angle | Screwdriver | Screwdriver |
| Common Dimensions: (Screwdriver Slotted) 1.75" (44.5mm) NOTE: Plus In-Line Terminal | | | | | | | |
| HTB-3 | 0.30" 7.62mm | HTB-32I-R | HTB-34I-R | HTB-36I-R | HTB-38I-R | X | |
| HTB-5 | 0.125" 3.18mm | HTB-52I-R | HTB-54I-R | HTB-56I-R | HTB-58I-R | X | |
| HTB-9 | 0.125" 3.18mm | HTB-92I-R | HTB-94I-R | HTB-96I-R | HTB-98I-R | X | |
| | | HTB-32M-R | HTB-34M-R | HTB-36M-R | HTB-38M-R | | X |
| | | HTB-52M-R | HTB-54M-R | HTB-56M-R | HTB-58M-R | | X |
| | | HTB-92M-R | HTB-94M-R | HTB-96M-R | HTB-98M-R | | X |

Catalog Number Build-A-Code

| | | | | | | |
|---|--|---|---|---|--|---|
| Packing Blank (Std.) – 10 fuse holders in a carton BK – 100 fuse holders in a cardboard shelf package | HTB- Product Symbol | Fuse Carrier I – 1/4" x 1 1/4" M – 5 x 20mm | S P Splash Proof Cap with O-Ring (Optional on Knob Holders Only) | FUSE CARRIER ONLY Packaging (Blank) – Std. BK/ – Bulk | Product Symbol FT – Knob Type (For 20, 40, 60, and 80 Series Only) ST – Screwdriver Slotted (For 30, 50, and 90 Series Only) | Fuse Carrier I – 1/4" x 1 1/4" M – 5 x 20mm |
| Body Configuration and Mounting Knob Holders 2 – Low Profile (Rear Panel Hex-Nut) 4 – High Profile 6 – (Front Panel Hex-Nut) 8 – Low Profile (Snap-In) Screwdriver Slotted Holders 3 – Low Profile 5 – High Profile 9 – Low Profile (Snap-In) | Rear Terminal Configuration 2 – Solder / 3/16" Quick-Connect (In-Line) 4 – Solder / 3/16" Quick-Connect (Right Angle) 6 – 1/4" Quick-Connect (In-Line) 8 – 1/4" Quick-Connect (Right Angle) | -R RoHS Compliant | | | | |

*Profile varies with panel thickness. Holder installs through rear of panel.

Panel Mounted Fuse Holders for Indicating Type Fuses

HLD



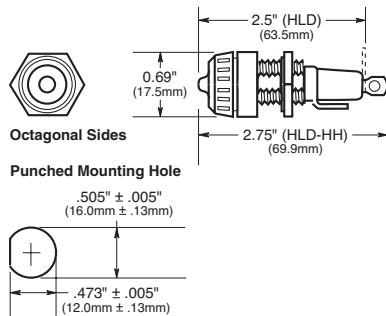
Specifications
 Description: Pin indicating for ¼" x 1¼" fuses.
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 15A
 Agency Information: CE, UL Recognized, File E14853, Guide IZLT2.

Catalog Numbers

| Catalog Numbers* | Terminals |
|------------------|----------------------------|
| HLD | Solder terminals |
| HLD-HH | ¼" quick-connect terminals |

*Use w/GBA, GLD Fuses.

Dimensions - in (mm)



HJL

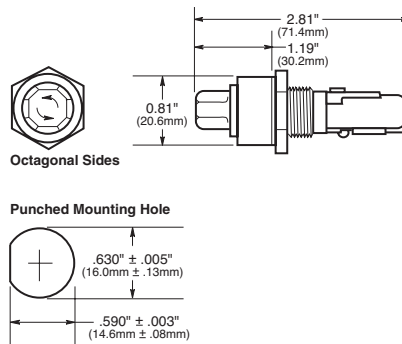


Specifications
 Description: Neon lamp indicating for ¼" x 1" fuses.
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 15A
 Agency Information: None
 Catalog Number

| Catalog Number* | Volts | Lamp Color | Knob Type |
|-----------------|-----------|------------|-----------|
| HJL | 90 to 250 | Clear | Oct |

*Use with AGX or MKB fuses, for panels up to ¼" thick.

Dimensions - in (mm)



HK Series



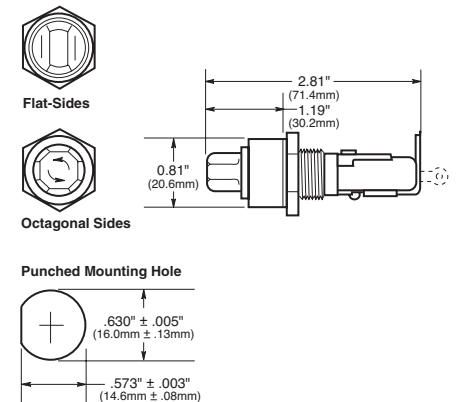
Specifications
 Description: Neon and incandescent lamp indicating for ¼" x 1¼" fuses
 Dimensions: See Dimensions illustration.
 Ratings:
 Volts: — 250V
 Amps: — 15A (HKL, HKL-X)
 — 20A (HKR, HKT, HKU, HKX)
 Agency Information: CE, UL Recognized, (Guide IZLT2, File E14853), CSA Certified (Class 6225-01, File 47235).

Catalog Numbers

| Catalog Numbers | Lamp Volts | Knob Color/Type |
|-----------------|------------|-----------------|
| HKL* | 90-250 | Clear/Oct |
| HKL-X* | 90-250 | Clear/FS |
| HKR** | 22-30 | Amber/Oct |
| HKT** | 13-22 | Amber/Oct |
| HKU** | 4-6 | Red/Oct |
| HKX** | 22-33 | Amber/FS |

* Neon lamp — UL Recognized and CSA Certified.
 ** Incandescent lamp.

Dimensions - in (mm)



Panel Mounted Fuse Holders for 1 3/32" x 1 5/16" to 1 1/2" Fuses

HPF



#10 wire max for solder connection

Specifications

Description: Standard fuse holders with **screw-type knob** for 1 3/32" x 1 5/16" to 1 1/2" Fuses.

Dimensions: See Dimensions illustration.

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853; CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94HB.

Terminals: Combination 1/4" quick-connect/solder terminals.

Catalog Numbers

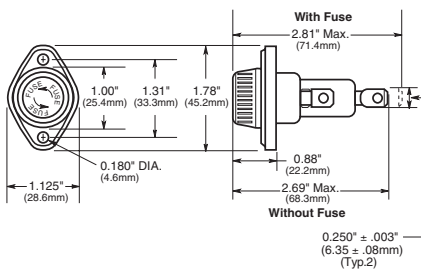
| Catalog Numbers | Amp Ratings | Volts | Fuse Description |
|---------------------|-----------------|------------------|--------------------------------------|
| HPF | 30 ² | 600 | 1 1/2" (38.1mm) |
| HPF-C | 30 ² | 600 ³ | 1 1/2" (38.1mm) clear knob. |
| HPF-L | 5 | 600 | BBS, 1 3/32" x 1 5/16" fuses. |
| HPF-EE | 15 | 600 | SC 0-15, 1 3/32" x 1 5/16" fuses. |
| HPF-JJ | 20 | 600 | SC 20, 1 3/32" x 1 5/16" fuses. |
| HPF-FF ¹ | 30 ² | 480 | SC 25 & 30, 1 3/32" x 1 5/16" fuses. |
| HPF-RR | 30 ² | 600 | KTK-R, LP-CC & FNQ-R Class CC fuses. |
| HPF-WT | 30 ² | 600 | Splash-proof knob. 1 3/32" x 1 5/16" |

¹ No CSA Certification

² 20A max when used with quick-connect terminals.

³ HPF-C ratings for CSA-15A, 250V

Dimensions - in (mm)



HPS



Specifications

Description: Standard fuse holders with **bayonet-type knob** for 1 3/32" x 1 5/16" to 1 1/2" fuses.

Dimensions: See Dimensions illustration.

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853; CSA Certified, Class 6225-01, File 47235.

Flammability Rating: UL 94HB.

Terminals: Combination 1/4" quick-connect/solder terminals.

Catalog Numbers

| Catalog Symbol | Amp Ratings | Volts | Fuse Description |
|-----------------------|-------------------|-------|---|
| HPS | 30 ^{2,3} | 600 | 1 3/32" x 1 1/2" |
| HPS-L | 5 | 600 | BBS, 1 3/32" x 1 5/16" fuses. |
| HPS-EE* | 15 | 600 | SC 0-15, 1 3/32" x 1 5/16" fuses. |
| HPS-JJ* | 20 | 600 | SC 20, 1 3/32" x 1 5/16" fuses. |
| HPS-F-EE ¹ | 15 | 600 | Sleeve on body, leaded for 1 3/32" x 1 5/16" fuses. |
| HPS-FF ¹ | 30 ² | 480 | SC 25 & 30, 1 3/32" x 1 5/16" fuses. |
| HPS-RR ¹ | 30 ² | 600 | KTK-R, LP-CC, FNQ-R Class CC fuses. |

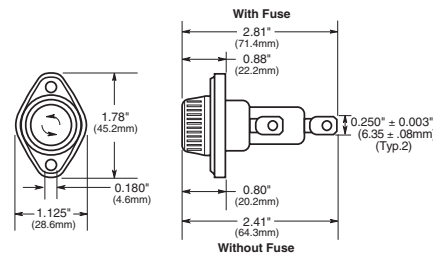
*-EE, -JJ, -FF and -RR versions are UL Recognized for applications requiring branch circuit protection.

¹ No CSA Certification

² 20A max when used with quick-connect terminals.

³ HPS rated at 250V for CSA

Dimensions - in (mm)



HPG



HPD



Specifications

Description: Standard fuse holders with **bayonet-type knob** for 1 3/32" x 1 1/2" fuses.

Dimensions: See Dimensions illustrations.

Agency Information: CE, UL Recognized, (Guide IZLT2, File E14853).

Flammability Rating: UL 94V0 - fuse holder body UL 94HB - Knob.

Catalog Numbers

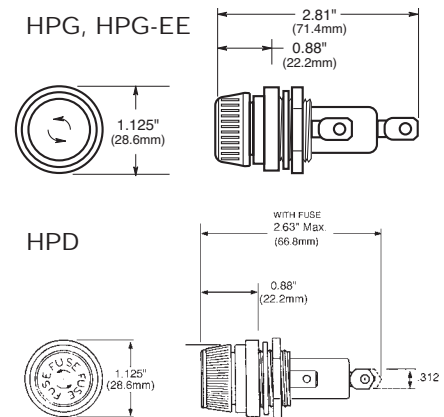
| Catalog Numbers | Amp Ratings | Volts | Fuse Description |
|-----------------|-----------------|-------|-----------------------------------|
| HPG* | 30 ¹ | 600 | 1 3/32" x 1 1/2" fuses |
| HPG-EE* | 15 | 600 | SC 0-15, 1 3/32" x 1 5/16" fuses. |
| HPD** | 30 ¹ | 600 | 1 3/32" x 1 1/2" fuses |

¹ 20A max when used with quick-connect terminals.

*HPG and HPG-EE has combination 1/4" quick-connect/solder terminals on both side (load) and rear (line) terminals.

**HPD has combination 1/4" quick-connect/solder terminal on side (load) terminal only. Rear (line) terminal is 3/8" shorter than HPG. Rear terminal solder only.

Dimensions - in (mm)



Panel Mounted Fuse Holders for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " Fuses

HPM



Specifications

Description: Standard fuse holder with **screw-type knob** for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 600Vac/dc

Amps: — 30A¹

¹ 20A max when used with quick-connect terminals.

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853; CSA Certified, Class 6225-01, File 47235.

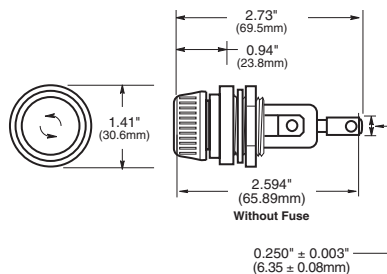
Flammability Rating: UL 94HB.

Catalog Numbers

| Catalog Numbers | Description |
|-----------------|--------------------------------------|
| HPM | $\frac{1}{4}$ " quick-connect/solder |
| HPM-D | Splash-resistant knob ² |

² HPM-D has $\frac{1}{4}$ " quick-connect/solder terminal on rear (load) terminal only. The side (line) terminal is $\frac{1}{4}$ " quick-connect only.

Dimensions



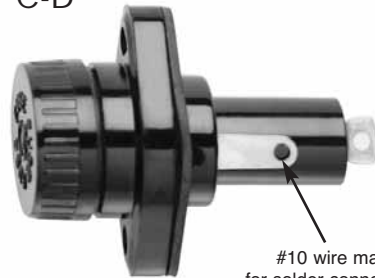
Nut Torque: 30 lb-in.

Replacement Knob:

Catalog Number: BK/9789-Y2
(50 pieces)

Data Sheet: 2112

HPC-D



#10 wire max for solder connection

Specifications

Description: Fuse holder with **screw-type knob** for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " fuses. Supplied with O-ring and panel gasket.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 600Vac/dc

Amps: — 30A¹

¹ 20A max when used with quick-connect terminals.

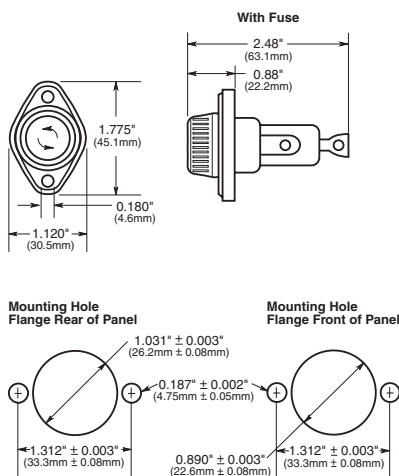
Agency Information: CE, UL Recognized, Guide IZLT2, File E14853.
Flammability Rating: UL 94HB.

Catalog Numbers

| Catalog Number | Description |
|----------------|--|
| HPC-D | Mount in panels up to $\frac{1}{4}$ " thick. |

Replacement knob - BK/9987SA

Dimensions



Data Sheet: 2109

HPS2



Specifications

Description: For fuse size $1\frac{3}{32}$ " x $1\frac{1}{2}$ ", meeting UL 1598 requirement that both poles be removed simultaneously.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 600V@30A

Amps: — 0-30A¹

¹ 20A max when used with quick-connect terminals.

Agency Information: UL 4248 recognized, (Guide IZLT2, File E14853), CSA certified: (Class 6225-01, File 47235).

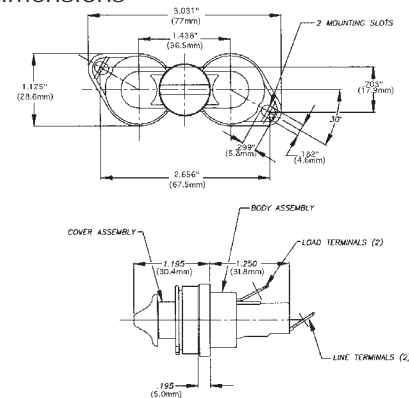
Flammability Rating: UL 94V0.

Terminals: $\frac{1}{4}$ " quick-connect/solder.

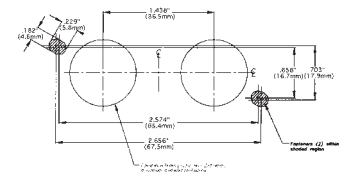
Catalog Numbers

| Catalog Numbers | Description |
|-----------------|-----------------------|
| HPS2 | Standard 10-in carton |
| BK/HPS2 | Bulk 100-in carton |

Dimensions



Panel Mount Hole Dimensions



Data Sheet: 2140

Fuse Blocks for 1/4" x 1 1/4" Fuses

Series 8000



Specifications

Description: Bolt-in and snap-in mounting for 1/4" x 1 1/4" fuses.

Construction: Blocks are molded flame retarded thermoplastic. Clips are spring-bronze.

Ratings:

Volts: — 300V

Amps: — 25A (See Catalog Numbers table)

Agency Information: CE, UL Recognized ; File E14853, Guide IZLT2, CSA Certified Class 6225-01, File 47235.

Anti-Rotation Pin: Single-pole blocks may be ordered without the anti-rotational pin simply by adding an "X" to the number of poles (Example: BK/S-8000-1X).

Carton Quantity: 10; shelf package: 100.

Bulk Carton: Single-pole and 2-pole fuse blocks – 1,000; Multiple-pole fuse blocks – 3- to 8-pole: 200; 9- to 12-pole: 50. When ordering bulk quantities, prefix "BK/" to catalog number: (Example: BK/S-8001-1-SNP).

Catalog Numbers

Bolt-in Mounting

| Basic Catalog Numbers | Series | Terminal | Angle | Agency Maximums | Poles (Suffix) |
|-----------------------|--------|---------------------|-------|-------------------|----------------|
| S-8001- | 8000 | Solder | 0° | UL 25A | 1 - 12 |
| S-8002- | | Solder | 40° | CSA 21A | |
| S-8101- | 8100 | 3/16" Quick Connect | 0° | UL 20A | |
| S-8102- | | 3/16" Quick Connect | 40° | CSA 13A | |
| S-8201- | 8200 | 1/4" Quick Connect | 0° | UL 20A | |
| S-8202- | | 1/4" Quick Connect | 40° | CSA 16A | |
| S-8203- | | Side | — | — | |
| S-8301- | | Screw | — | UL 30A CSA 25A | |

Snap-in Mounting

| Catalog Numbers | Series | Terminal | Angle | Agency Maximums | Poles (Suffix) |
|-----------------|--------|---------------------|-------|-----------------|-------------------------------|
| S-8001-1-SNP | 8000 | Solder | 0° | UL 25A | Available only in single pole |
| S-8002-1-SNP | | Solder | 40° | CSA 21A | |
| S-8101-1-SNP | 8100 | 3/16" Quick Connect | 0° | UL 20A | |
| S-8102-1-SNP | | 3/16" Quick Connect | 40° | CSA 13A | |
| S-8201-1-SNP | 8200 | 1/4" Quick Connect | 0° | UL 20A | |
| S-8203-1-SNP | | 1/4" Quick Connect | Side | CSA 16A | |

Catalog Number Build-A-Code

| Catalog Code |
|---------------------------|
| BK/ S-8 0 00 -00 |
| Prefix for Bulk Packing |
| Series 8000 Product Line |
| Type Terminal |
| "0" - Solder |
| "1" - 3/16" Quick Connect |
| "2" - 1/4" Quick Connect |
| "3" - Screw |
| Terminal Angle |
| "01" - straight (0°) |
| "02" - 40° |
| "03" - side* |
| Number of Poles (1-12) |

Data Sheet: 2101

*Available only in single pole

Single-Pole Fuse Blocks

Specifications

Description: Single-pole fuse block for 1/4" x 1 1/4" (6.4 x 31.8mm) size fuses.

Dimensions: See Dimensions illustrations.

Construction: Bakelite base width 1/2" (12.7mm); spring-bronze, bright tin-lead plate clips.

Ratings:

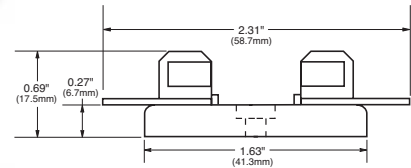
Volts: — 250V

Amps: — 30A



4405 - 0° Solder terminals with integral terminal and clip

Dimensions - in (mm)

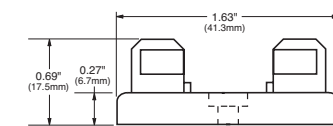


4406 - Side solder terminal



4574 - Spare fuse block

Dimensions - in (mm)

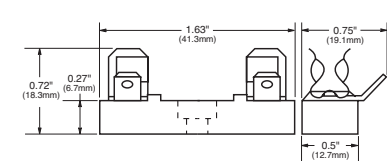


2499 - Side quick-connect

Agency Information: UL Recognized, Guide IZLT2, File E14853

Terminals: 1/4" (6.4mm); 15A, 250V

Dimensions - in (mm)



Note: Mounting screw hole diameter is 0.147" (3.7mm). Counterbore diameter, 0.636" (8.0mm). Max Mounting Screw No. 6.

Fuse Blocks for 1/4" x 1" Fuses

3828 Series



Specifications

Description: Fuse block for 1/4" x 1" (6.4 x 25.4mm) fuses with solder terminals.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 250V

Amps: — 30A

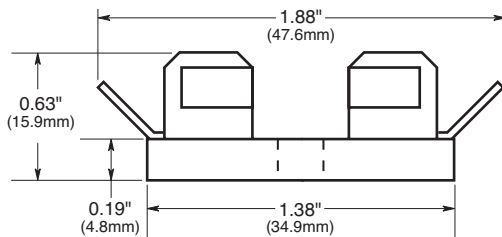
Mounting: Mounting screw hole diameter is 0.147" (3.7mm), diameter. Max mounting screw No. 6.

Catalog Numbers

| Catalog Numbers | Poles | *Base Length - In (mm) |
|-----------------|-------|------------------------|
| 3828-1 | 1 | 1/2 (12.7) |
| 3828-2 | 2 | 1 1/8 (28.6) |
| 3828-3 | 3 | 1 3/4 (44.5) |
| 3828-4 | 4 | 2 3/8 (60.3) |
| 3828-5 | 5 | 3 (76.2) |
| 3828-6 | 6 | 3 5/8 (92.1) |
| 3828-7 | 7 | 4 1/4 (108.0) |
| 3828-8 | 8 | 4 7/8 (123.8) |
| 3828-10 | 10 | 6 1/8 (155.6) |
| 3828-12 | 12 | 7 3/8 (187.3) |

*Small phenolic base, base width 1 3/8" (34.9mm)

Dimensions - in (mm)



4520 and 4393



Specifications

Description: Single-pole fuse block for 1/4" x 1" fuses.

Dimensions: See Dimensions illustrations.

Construction: Bakelite with 1/2" (12.7mm) width base. Spring-bronze, bright tin-lead plated clips.

Ratings:

Volts: — 250V

Amps: — 30A

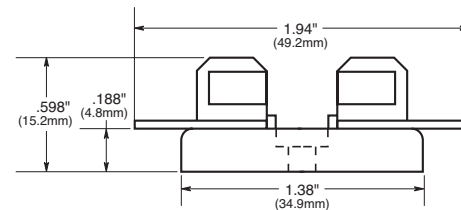
Mounting: Mounting screw hole diameter is 0.147" (3.7mm), counterbore 0.636" (8.0mm) diameter. Max mounting screw No. 6.

Catalog Numbers

| Catalog Numbers | Description |
|-----------------|---|
| 4520 | Integral clip and straight solder terminals |
| 4393 | Spare fuse block |

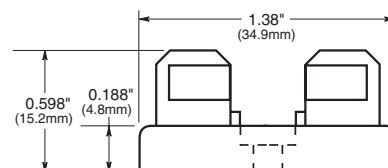
No. 4520 - Integral clip and straight solder terminals

Dimensions - in (mm)



No. 4393 - Spare fuse block

Dimensions - in (mm)



Blocks for $1\frac{3}{32}$ " X $1\frac{1}{2}$ " Fuses

3743



Specifications

Description: Add-on fuse blocks for $1\frac{3}{32}$ " X $1\frac{1}{2}$ " (10.3 X 38.1mm) fuses. Single pole blocks lock into each other and can be added at any time. Each has a single end barrier.

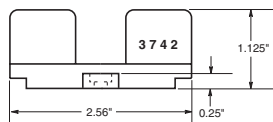
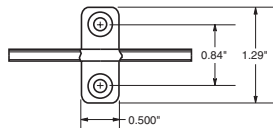
Dimensions: See Dimensions illustration.

Ratings:

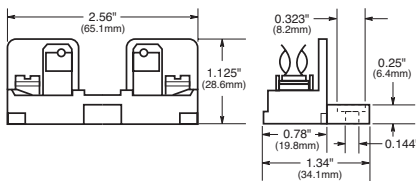
Volts: — 600Vac/dc

Amps: — 30A

Agency Information: CE, UL
Recognized Guide IZLT2, File E14853.



3742—End Barrier Only



3723—Block and end barrier marking strip. Length is $9\frac{3}{8}$ " (23.8cm).

Note: Mounting screw hole is 0.147" (3.7mm) dia. Counterbore, 0.636" (8mm) dia. Max. mounting screw No. 6.

3835 Series



Specifications

Description: Multiple pole fuse blocks for $1\frac{3}{32}$ " X $1\frac{1}{2}$ " (10.3 X 38.1mm) fuses.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 250Vac/dc

Amps: — 30A

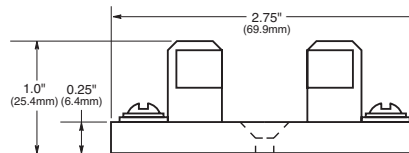
Agency Information: CE

Catalog Numbers

| Catalog Numbers | Poles | Base* Width In (mm) |
|-----------------|-------|--------------------------|
| 3835-1 | 1 | $2\frac{1}{32}$ (21.4) |
| 3835-2 | 2 | $1\frac{1}{8}$ (46.0) |
| 3835-3 | 3 | $2\frac{25}{32}$ (70.6) |
| 3835-4 | 4 | $3\frac{3}{8}$ (95.2) |
| 3835-5 | 5 | $4\frac{23}{32}$ (119.9) |
| 3835-6 | 6 | $5\frac{1}{16}$ (144.5) |
| 3835-7 | 7 | $6\frac{21}{32}$ (169.0) |
| 3835-8 | 8 | $7\frac{5}{8}$ (193.7) |
| 3835-9 | 9 | $8\frac{1}{2}$ (218.8) |
| 3835-10 | 10 | $9\frac{9}{16}$ (242.9) |
| 3835-12 | 12 | $11\frac{1}{8}$ (292.1) |

*Base length: $2\frac{3}{8}$ " (69.9mm)

Dimensions



Note: Mounting screw hole diameter is 0.148" (3.7mm). Countersink, 0.313" (7.9mm). Max. mounting screw No. 6.

4421 and 4515



Specifications

Description: Single pole fuse blocks for $1\frac{3}{32}$ " X $1\frac{1}{2}$ " (10.3 X 38.1mm) fuses.

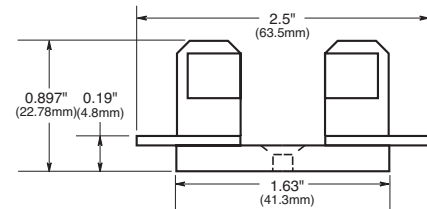
Dimensions: See Dimensions illustration.

Ratings:

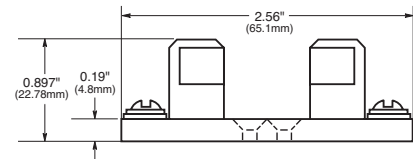
Volts: — 250Vac/dc (or less)

Amps: — 30A

Agency Information: CE



4421—Solder Terminals
Base width $\frac{5}{8}$ " (15.9mm)



4515—Screw Terminals
Base width $\frac{3}{4}$ " (19mm)

Note: Mounting screw hole diameter is 0.147" (3.7mm). Countersink, 0.312" (7.9mm). Max. mounting screw No. 6.

Rail Mount Fuse Blocks and Holders

NDNF1-WH

Specifications

Description: Fuse holding rail mount terminal block.

Circuit Jumper: JF1, 2 circuits

Fuse Size: 1³/₂" X 1¹/₂"* (KTK, FNQ).

Poles: 1

Wire Range: AWG #8-22 Cu.

Ratings:

Volts: — 600V

Amps: — 30A

Mounting Options: 35mm DIN rail, C-rail

Fuse Pullers: • PF1 (standard)
• neon or incandescent bulb

*LPF1 (lighted neon or incandescent bulb).

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: CSA File 15364

Catalog Numbers

Catalog

| Number | Color |
|----------|-------|
| NDNF1-WH | White |

Fuse Pullers (Optional): PF1

Lighted neon or incandescent lamp:

Catalog

| Numbers | Voltage |
|------------|---------|
| LPF1-24 | 24 |
| LPF1-120 | 120 |
| LPF1-120-C | 120 |
| LPF1-220 | 220 |
| LPF1-440 | 440 |



NDNLF1-WH

Specifications

Description: Rail mount fuse holder.

Circuit Jumper: JF1, 2 circuits.

Fuse Size: 1/4" X 1 1/4" (Cooper Bussmann AGC, MDL or equivalent).

Poles: 1

Wire Range: AWG #8-22 Cu.

Ratings:

Volts: — 600V

Amps: — 30A (NDND1 non-fused)

— 15A (NDNFD1, 600V/CSA, fused)

— 15A (NDNLF1*fused, indicating)

*WH24 - 24V White, WH-90Vdc-600Vdc, 115Vac-600Vac White

Agency Information: CE, UL E62622; CSA LR15364.

Mounting Options: 35mm DIN rail, C-rail

Marking Tape: MT12-1-2

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: CSA File 15364

Catalog Numbers

Catalog

| Number | Color | Indicator |
|--------------|-------|-------------------------------|
| NDNFD1-WH | White | NO |
| NDNLF1-WH | White | 90Vdc-600Vdc 115Vac-600Vac |
| NDNLF1-WH 24 | White | 24V |





Power Distribution Blocks
New 1000Vdc Finger-Safe Designs
with High SCCRs Help Improve Safety,
Assembly Ratings and Ease Code
Compliance

Power Distribution & Terminal Blocks

| Section Contents | Page |
|--|------------|
| Selection table for SCCR PDBs & Power terminal blocks | 294 |
| Power distribution blocks | |
| Series PDBFS enclosed, with high SCCR | 295 |
| Series PDB with high SCCR | 296 |
| Power terminal blocks | |
| Series 163 | 297-298 |
| Series 11675 2- to 12-Pole quick-connect | 299 |
| Series 11725 2- to 4-Pole quick-connect | 299 |
| Series 160, 162, 163 & 165 | 299 |
| Series 162, 163 & 165 power stud terminal blocks ... | 300 |
| Series 160, 162, 163 & 165 power splicer blocks | 300 |
| Series 14002 Barrier terminal blocks | 301 |
| Series 14004 Dead front terminal block | 301 |



Selection Table for SCCR Power Distribution Blocks and Power Terminal Blocks

Short-Circuit Current Rated Power Distribution Blocks

Cooper Bussmann offers three distinctly different styles of short-circuit current rated power distribution blocks (PDBs) and power terminal blocks (PTBs) to match different application needs. The differences are whether the power distribution blocks are enclosed or not, and whether they are UL1953 Listed PDBs or UL1059 Recognized PTBs, which have different minimum spacing requirements. The table on this page can assist in the selection of the right series for your application requirements.

Why these are important?

Assembly short-circuit current ratings (SCCRs) are now required in the 2008 NEC® and UL 508A Listed Industrial

Control Panels. Marking the SCCR on Industrial Control Panels (NEC® 409.110), Industrial Machinery Electrical Panels (NEC® 607.3(A)), and HVAC equipment (NEC® 440.4(B)) is now required by the National Electrical Code. PDBs or PTBs not marked with a SCCR, typically are the weakest link and may limit an assembly to no more than 10kA SCCR. The PDBFS and PDB Series have increased spacing required where used in feeder circuits in equipment listed to UL508A (UL1059 PTBs must be evaluated for proper spacings). Also, for building wiring systems, the PDBFS Series and PDB Series power distribution blocks can be used to meet the new 2008 NEC® requirements in section 376.56(B) for PDBs in wireways.

Selection Table

| Description | Catalog Page | UL | Enclosed | High SCCR* | Spacing** 1" Air 2" Surface | Industrial Control Panels UL 508A Branch Circuit | Industrial Control Panels UL 508A Feeder Circuit | HVAC UL 1995 | Wireways NEC® 376.56(B) (Requires UL 1953) |
|--------------|--------------|----------------|----------|------------|-----------------------------------|--|--|-----------------|---|
| Series PDBFS | 295 | UL 1953 Listed | Yes† | Yes | Yes | Yes | Yes | Yes | Yes |
| Series PDB | 296 | UL 1953 Listed | No*** | Yes | Yes | Yes | Yes | Yes | Yes w/optional cover |

† IP20 finger-safe under specific conditions, see datasheet 1149.

*When protected by proper fuse class with maximum ampere rating specified or less.

** See PDB Spacing Requirements for Equipment table below.

***Optional covers are available. Not IP20, but provide a safety benefit.

****No, except: Yes, if single pole units installed with proper spacings.

PDB & PTB Minimum Spacing Requirements for Equipment

| UL Standard | Spacing between live parts of opposite polarity | | Spacing between live parts and grounded parts or enclosure @600V |
|----------------------|---|--------------------|--|
| | Through air @600V | Over surface @600V | |
| 508A Feeder Circuits | 1" | 2" | 1" |
| 508A Branch Circuits | 3/8" | 1/2" | 1/2" |
| 1995 HVAC | 3/8" | 1/2" | 1/2" |

Note: Refer to Specific UL standards for complete spacing details.



Series PDBFS



Series PDB

Series PDBFS of Power Distribution Blocks

Feature/Benefits

- Enclosed, safer installation; IP20 finger-safe under specific conditions
- High short-circuit current ratings up to 200kA: PDBs do not have to be the weak link in achieving high SCCR for an industrial control panel
- Small footprint saves panel space
- Listed to UL 1953 which has minimum spacing requirements at 600V of at least 1" through air and 2" over surface required for feeders in UL 508A Industrial Control Panels
- For 2D CAD drawings visit www.cooperbussmann.com



Electrical

- 600Vac/dc (UL 1953), 690Vac/dc (IEC)
- IP20 finger-safe under specific conditions
- Short-circuit current ratings up to 200kA, see table
- Ampacities up to 760 amps
- Cu wire range 14 AWG to 500 kcmil or 2.5 to 240 mm²

Mechanical

- DIN rail or panel mount; PDBFS330 & PDBFS504 panel mount only
- Captive termination screws; screws do not get misplaced
- Wire ready: captive termination screws shipped backed out to save time on conductor installations
- Sliding DIN rail latch for easy mounting
- Single pole, gang mountable for multiple pole applications with interlocking dovetail accessory (optional)
- Flammability, UL 94V0
- Tin-plated Al connectors suitable for Cu conductors
- Elongated hole for panel mounting; easier mounting with greater flexibility in matching up with drilled panel holes
- Part 2A1279: Interlocking dovetail pin accessory
One pin interlocks two units, two pins to interlock three units
- DIN rail end anchors required to prevent damage to block when torquing

Agency/Standards

- UL Listed 1953, Guide QPQS, File E256146
- CSA Certified, Class 6228-01, File 15364
- IEC 60947-7-1
- IEC 60529, IP20 (finger-safe) under specific wiring conditions

Series PDBFS

| Electrical | | Terminal Copper Conductor Capability | | | Short-Circuit Current Rating Data | | | | | | | | |
|--|------|--|--|---------------|-----------------------------------|----------------------|------------------------|----------|-----------------|-------------------------|------|-----------------------|-------|
| | | Line | Load | Configuration | Conductors | | Max Fuse Class & Amp** | | | | SCCR | | |
| Catalog Number <small>(All Single Pole)</small> | Amps | Wire Range | Wire Range | Line | Load | Line AWG or kcmil | Load AWG or kcmil | J LPJ | T JJS JJN | RK1 LPS-RK LPN-RK | | RK5 FRS-R FRN-R | |
| PDBFS204 | 175A | 2/0 to 8 AWG 70 to 10 mm ² | 2/0 to 8 AWG 70 to 10 mm ² | | | 2/0 to 8 | 2/0 to 8 | 200 | 200 | 100 | 60 | 200kA | |
| PDBFS220 | 175A | 2/0 to 8 AWG 70 to 10 mm ² | 4 to 14 AWG 25 to 2.5 mm ² | | | 2/0 to 8 | 4 to 12 | 200 | 200 | 100 | 60 | 200kA | |
| | | | | | | | 14 | 175 | 175 | 100 | 60 | 100kA | |
| | | | | | | | | 200 | 200 | 100 | 60 | 50kA | |
| PDBFS303 | 310A | 350kcmil to 6 AWG 185 to 16 mm ² | 350kcmil to 6 AWG 185 to 16 mm ² | | | 350 to 6 | 350 to 6 | 400 | 400 | 200 | 100 | 200kA | |
| PDBFS330 | 380A | 500kcmil to 6 AWG 240 to 16 mm ² | 2 to 14 AWG 35 to 2.5 mm ² | | | 500 to 6 | 2 to 6 | 400 | 400 | 200 | 100 | 200kA | |
| | | | | | | | 8 to 14 | 200 | 200 | 100 | 30 | 50kA | |
| | | | | | | | | 175 | 175 | 100 | 30 | 100kA | |
| PDBFS377 | 570A | 300kcmil to 4 AWG 150 to 12 mm ² | 4 to 14 AWG 25 to 2.5 mm ² | | | 300 | 4 to 8 | 600 | 600 | 400 | 200 | 200kA | |
| | | | | | | | 250 to 4 | 4 | 600 | 600 | 400 | 200 | 50kA |
| | | | | | | | | 6 to 14 | 200 | 200 | 100 | 30 | 50kA |
| PDBFS500 | 620A | 350kcmil to 4 AWG 185 to 12 mm ² | 350kcmil to 4 AWG 185 to 12 mm ² | | | 350 | 350 | 600 | 600 | 400 | 200 | 200kA | |
| | | | | | | | 300 to 4 | 300 to 4 | 600 | 800* | 600 | 200 | 100kA |
| | | | | | | | | 500 | 500 | 600 | 800* | 600 | 400 |
| PDBFS504 | 760A | 500kcmil to 6 AWG 240 to 16 mm ² | 500kcmil to 6 AWG 240 to 16 mm ² | | | 500 | 500 | 600 | 800* | 600 | 400 | 200kA | |
| | | | | | | | 400 to 6 | 600 | 800* | 600 | 600 | 100kA | |
| | | | | | | | | 400 to 6 | 400 to 6 | 600 | 600 | 400 | 200 |

Ampacities 75°C per NEC® Table 310.16 and UL 508A Table 28.1

*Class L 800A (KRP-C 800_SP) or less fuses suitable for this particular SCCR case.

** Class G 60A (SC-60) or less or Class CC 30A (LP-CC-30, FNQ-R-30, KTK-R-30) or less are suitable for all SCCRs in this table.

Data Sheet: 1049

Series PDB of Power Distribution Blocks



Electrical

- 600Vac/dc (UL 1953)
- Short-circuit current ratings up to 200kA, see table
- Wire range 14 AWG to 350 kcmil Cu
- Spacing between uninsulated opposite polarities or ground meets UL 1953 which requires at least 1" through air and 2" over surface
- Ratings available with circuit breakers

Mechanical

- Panel mount
- Flammability, UL 94V0
- Tin-plated Al connectors suitable for Cu conductors

Optional covers

Covers are ordered for each individual pole, i.e., three 1-pole covers for 3-pole block, see table A.

Except PDB321 blocks have one cover for 1, 2 or 3 pole versions, see table B.

| Block | Cover |
|----------------|----------|
| PDB2XX-(pole): | CPB162-1 |
| PDB3XX-(pole): | CPDB-1 |

| Block | Cover |
|----------|--------|
| PDB321-1 | CPDB-1 |
| PDB321-2 | CPDB-2 |
| PDB321-3 | CPDB-3 |

Feature/Benefits

- High short-circuit current ratings up to 200kA. These PDBs do not have to be the weak link in achieving high SCCR for an industrial control panel
- Listed to UL 1953 which has minimum spacing requirements at 600V of at least 1" through air and 2" over surface required for feeder in UL 508A Industrial Control Panels
- For 2D CAD drawings visit www.cooperbussmann.com

Agency/Standards

- UL Listed 1953, Guide QPQS, File E256146

Series PDB

| | | Terminal Copper Conductor Capability | | | Short-Circuit Current Rating Data | | | | | | | |
|----------------------------------|------|--------------------------------------|------------------------------|-------------------|-----------------------------------|--------------|-----------------------|---|---|--|---|-------------------------|
| | | Line | Load | Configuration | Conductors | | Max Fuse Class & Amp* | | | | SCCR | |
| Catalog Number | Amps | Wire Range | Wire Range | Openings per Pole | | Line | Load | J | T | RK1 | | RK5 |
| - Pole | | | | Line | Load | AWG or kcmil | AWG or kcmil | LPJ | JJS JJN | LPS-RK LPN-RK | FRS-R FRN-R | |
| PDB204-1 PDB204-3 | 175A | 2/0 - 8 AWG | 2/0 - 8 AWG | ○ | ○ | 2/0 - 8 | 2/0 - 8 | 200 | 200 | 200 | 60 | 200kA |
| PDB220-1 PDB220-3 | 175A | 2/0 - 8 AWG | 4 - 14 AWG | ○ | ○ ○ ○ | 2/0 - 8 | 4 - 12 14 | 200 175 [†] 200 [†] | 200 175 [†] 200 [†] | 200 [†] 100 [†] 100 [†] | 60 [†] 60 [†] 60 [†] | 200kA 100kA 50kA |
| PDB280-1 PDB280-3 | 175A | 2/0 - 8 AWG | 1/4-20 X 3/4 STUD | ○ | ⬡ | 2/0 - 8 | Stud | 200 | 200 | 100 | 60 | 200kA |
| PDB321-1 PDB321-2 PDB321-3 | 175A | 2/0 - 8 AWG | 4 - 14 AWG | ○ | ○ ○ ○ | 2/0 - 8 | 4 - 12 14 | 400 400 [†] 175 [†] | 400 400 [†] 175 [†] | 200 [†] 400 [†] 100 [†] | 100 [†] 100 [†] 60 [†] | 200kA 100kA 100kA |
| PDB323-1 PDB323-3 | 310A | 300kcmil - 4 AWG | 4 - 12 AWG | ○ | ○ ○ ○ | 300 - 4 | 4 - 8 10 - 12 | 400 400 [†] 175 [†] | 400 400 [†] 175 [†] | 200 [†] 400 [†] 100 [†] | 100 [†] 100 [†] 60 [†] | 200kA 100kA 100kA |
| PDB370-1 PDB370-3 | 310A | 350kcmil - 4 AWG | 4 - 14 AWG | ○ | ○ ○ ○ ○ | 350 - 4 | 4 - 8 10 - 14 | 400 400 [†] 175 [†] | 400 400 [†] 175 [†] | 200 [†] 400 [†] 100 [†] | 100 [†] 100 [†] 60 [†] | 200kA 100kA 100kA |
| PDB371-1 PDB371-3 | 310A | 350kcmil - 4 AWG | (6) 2 - 12 AWG (3) 1/0-12 | ○ | ○ ○ ○ ○ ○ ○ | 350 - 4 | 1/0 - 6 8 - 12 | 400 400 [†] 175 [†] | 400 400 [†] 175 [†] | 200 [†] 400 [†] 100 [†] | 100 [†] 100 [†] 60 [†] | 200kA 100kA 100kA |

Ampacities 75°C per NEC® Table 310.16 and UL508A Table 28.1

* Class G 60A (SC-60) or less or Class CC 30A (LP-CC-30, FNQ-R-30_SP, KTK-R-30) or less are suitable for all these SCCR in this table.

† Higher SCCR may be available, check data sheet 1149.

Series 163 Power Terminal Blocks

163 Series

Replaces Cooper Bussmann®
164 Series

Specifications

Description: Power terminal block.

Dimensions: See Dimensions illustrations.

Construction: Tin-plated aluminum connectors.

Poles: 1- to 3-Poles, See Catalog Numbers table on the following page.

Wire Range: See Catalog Numbers table on the following page.

Ratings:

Volts: — 600Vac/dc

Amps: — See catalog Numbers table on the following page.

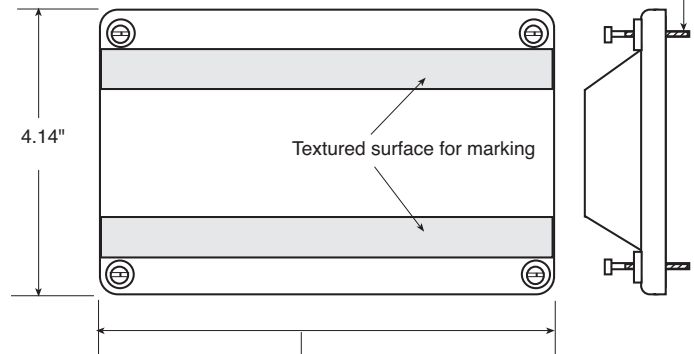
SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, UL Recognized: Guide XCFR2, UL E221592, General Industrial Class per UL1059, CSA Certified: CSA LR15364

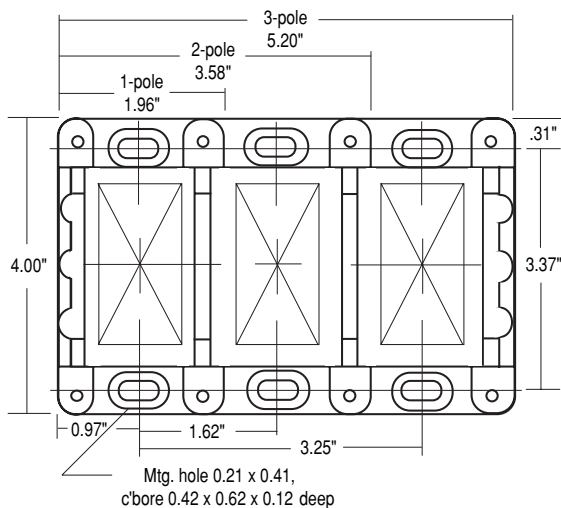
Flammability Rating: UL 94V0



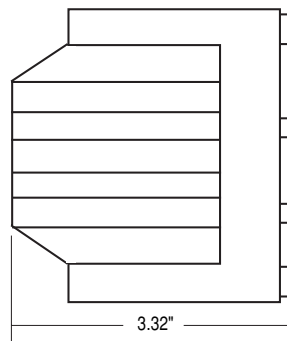
Supplied with (4) #4 thread-cutting screws assembled as shown



Dimensions



| | | |
|--------|---------------|-------|
| CPDB-1 | (single pole) | 2.10" |
| CPDB-2 | (two pole) | 3.72" |
| CPDB-3 | (three pole) | 5.34" |



Power Distribution & Terminal Blocks

(See Following Page for Ratings)

Series 163 Power Terminal Blocks

| Catalog Numbers | | | | |
|-----------------|--------------------------------|--|------------|-----------|
| Basic | | | | |
| Catalog Numbers | Wire Size (Poles) Lineside | (Poles) Loadside | Amps/ Pole | Line/Load |
| 16301* | 250kcmil-6 AWG Cu Only | 250kcmil-6 AWG Cu Only | 255 | |
| 16303 | 350kcmil-6 AWG Cu-Al | 350kcmil-6 AWG Cu-Al | 310 | |
| 16306 | 500kcmil-6 AWG Cu-Al | 500kcmil-6 AWG Cu-Al | 380 | |
| 16321 | 2/0-14 AWG CU, 2/0-8AI | (6)4-14 AWG Cu, 4-8 AWG AI | 175 | |
| 16323 | 350kcmil-6 AWG Cu-Al | (6)4-14 AWG Cu, 4-12 AWG AI | 310 | |
| 16325 | (2)2/0-14 AWG Cu, 2/0-8 AWG AI | (6)4-14 AWG Cu, 4-8 AWG AI | 350 | |
| 16330 | 500kcmil-6 AWG Cu-Al | (6) 2-14 AWG Cu, 2-12 AWG AI | 380 | |
| 16332 | 350kcmil-6 AWG Cu-Al | (3) 2-14 AWG Cu, 2-8 AWG AI (2) 1/0-14 AWG Cu, 1/0-8 AWG AI | 310 | |
| 16335 | 500kcmil-6 AWG Cu-Al | (3) 2-14 AWG Cu, 2-8 AWG AI (2) 1/0-14 AWG Cu, 1/0-8 AWG AI | 380 | |
| 16370 | 350kcmil-6 AWG Cu-Al | (12)4-14 AWG Cu, 4-12 AWG AI | 310 | |
| 16371 | 350kcmil-6 AWG Cu-Al | (6) 2-14 AWG Cu, 2-8 AWG AI (3) 1/0-14 AWG Cu, 1/0-8 AWG AI | 310 | |
| 16372 | 350kcmil-6 AWG Cu-Al | (21) 10-14 AWG Cu, 10 AWG AI | 310 | |
| 16373 | 350kcmil-6 AWG Cu-Al | (14) 10-14 AWG Cu, 10 AWG AI (3) 1/0-14 AWG Cu-Al | 310 | |
| 16375 | 600kcmil-2 AWG Cu-Al | (12)4-14 AWG Cu, 4-12 AWG AI | 420 | |
| 16376 | 600kcmil-2 AWG Cu-Al | (6) 2-14 AWG Cu, 2-8 AWG AI (3) 1/0-14 AWG Cu, 1/0-8 AWG AI | 420 | |
| 16377 | (2)300kcmil-4 AWG Cu-Al | (12)4-14 AWG Cu, 4-12 AWG AI | 570 | |
| 16378 | 500kcmil-6 AWG Cu-Al | Stud Size (2) 1/4-20 x 1 | 380 | |
| 16383 | 500kcmil-6 AWG Cu-Al | Stud Size (1) 3/8-16 x 1 | 380 | |
| 16390 | 3/8-16 x 1 1/8 Stud Size | 3/8-16 x 1 1/8 Stud Size | 250 | |
| 16394 | 1/2-13 x 1 1/16 Stud Size | 1/2-13 x 1 1/16 Stud Size | 400 | |
| 16395 | 3/8-16 x 1 1/16 Stud Size | (2) 1/4-20 x 3/16 Stud Size | 310 | |

*Copper connectors for use with copper wire only.

Ordering Information

163 Series blocks are available in 1-, 2- or 3-poles. To order: Basic Catalog Number + Number of poles.

Examples: 16301-1 = one-pole block
16301-3 = three-pole block

Power Terminal Blocks

Series 11675

Specifications

Description: Screw connection line side, (3) 0.250" quick-connect load side power terminal block.

Poles:

2- to 12-poles.

Wire Range:

8 – 14 AWG Cu.

Ratings:

Volts: — 250Vac/dc

Amps: — Up to 40A

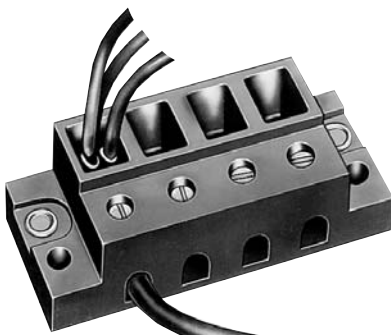
SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E62622; CSA LR15364.

Torque Rating: 9 lb-in max.

Catalog Numbers

| Catalog Numbers | Poles | Catalog Numbers | Poles |
|-----------------|-------|-----------------|-------|
| 11675-2 | 2 | 11675-8 | 8 |
| 11675-3 | 3 | 11675-9 | 9 |
| 11675-4 | 4 | 11675-10 | 10 |
| 11675-5 | 5 | 11675-11 | 11 |
| 11675-6 | 6 | 11675-12 | 12 |
| 11675-7 | 7 | | |



Series 11725

Specifications

Description: Screw connection line side, (4) 0.250" quick-connect load side power terminal block.

Poles: 2-, 3- or 4-poles.

Wire Range: 2 – 14 AWG

Cu/8 AWG Al.

Ratings:

Volts: — 600Vac/dc

Amps: — Up to 70A

SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, UL Guide XCFR2, E62622; CSA LR15364.

Torque Rating: 45 lb-in max.

Catalog Numbers

| Catalog Numbers | Poles |
|-----------------|-------|
| 11725-2 | 2 |
| 11725-3 | 3 |
| 11725-4 | 4 |



Series 160, 162, 163 & 165

Specifications

Description: Power terminal blocks.

Construction: Molded black thermoplastic.

Wire Range: See Catalog

Numbers table.

Poles:

Series 160: 2-, 3- or 4-poles

Series 162, 163 and 165: 1-, 2- or 3-poles

Ratings:

Volts: — 600Vac/dc

Amps: — Up to 1520A

SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E221592

General Industrial Class per UL 1059; CSA Class 6228-01, File 53787.

Flammability Rating: UL 94V0.

Catalog Numbers

| Catalog Numbers | Line Connection | Load Connection | Connector Material & Ampacity | Agency Information |
|-----------------|------------------------|------------------------|-------------------------------|--------------------|
| 16021* | 2/0-#14Cu, 2/0-#8Al | (6)#4-#14Cu, #4-#8Al | 175A | UL/CSA |
| 16023* | 350kcmil-#6Cu/Al | (6)#4-#14Cu, #4-#12Al | 310A | UL/CSA |
| 16220 | 2/0-#14Cu, 2/0-#8Al | (4)#4-#14Cu, #4-#8Al | 175A | UL/CSA |
| 16321 | 2/0-#14Cu, 2/0-#8Al | (6)#4-#14Cu, #4-#8Al | 175A | UL/CSA |
| 16323 | 350kcmil-#6Cu/Al | (6)#4-#14Cu, #4-#12Al | 310A | UL/CSA |
| 16325 | (2)2/0-#14Cu, 2/0-#8Al | (6)#4-#14Cu, #4-#8Al | 350A | UL/CSA |
| 16330 | 500kcmil-#6Cu/Al | (6)#2-#14Cu, #2-#12Al | 380A | UL/CSA |
| 16332 | 350kcmil-#6Cu/Al | (3)#2-#14Cu, #2-#8Al | 310A | UL/CSA |
| | | (2)1/0-#14Cu, 1/0-#8Al | | |
| 16335 | 500kcmil-#6Cu/Al | (3)#2-#14Cu, #2-#8Al | 380A | UL/CSA |
| | | (2)1/0-#14Cu, 1/0-#8Al | | |
| 16370 | 350kcmil-#6Cu/Al | (12)#4-#14Cu, #4-#12Al | 310A | UL/CSA |
| 16371 | 350kcmil-#6Cu/Al | (6)#2-#14Cu, #2-#8Al | 310A | UL/CSA |
| | | (3)1/0-#14Cu, 1/0-#8Al | | |
| 16372 | 350kcmil-#6Cu/Al | (21)#10-#14Cu, #10Al | 310A | UL/CSA |
| 16373 | 350kcmil-#6Cu/Al | (3)1/0-#14Cu/Al | 310A | UL/CSA |
| | | (14)#10-#14Cu, #10Al | | |
| 16375 | 600kcmil-#2Cu/Al | (12)#4-#14Cu, #4-#12Al | 420A | UL/CSA |
| 16376 | 600kcmil-#2Cu/Al | (6)#2-#14Cu, #2-#8Al | 420A | UL/CSA |
| | | (3)1/0-#14Cu, 1/0-#8Al | | |
| 16377 | (2)300kcmil-#4Cu/Al | (12)#4-#14Cu, #4-#12Al | 570A | UL/CSA |
| 16400 | (4)500kcmil-#6Cu/Al | (22)#2-#14Cu/Al | 1520A | UL/CSA |
| 16528 | (2)600kcmil-#2Cu/Al | (4)3/0-#6Cu/Al | 840A | UL/CSA |
| | | (4)#4-#14Cu/Al | | |
| 16530 | (2)500kcmil-#6Cu/Al | (12)#4-#14Cu/Al | 760A | UL/CSA |
| 16541 | (1)500kcmil-#6Cu/Al | (21)#6-#14Cu/Al | 380A | UL/CSA |

*160 Series Bases have mounting holes outside the barriers. Other bases (162 through 165) have mounting holes within barriers. See Data Sheet for dimensional drawings.

How To Order

Catalog Number + # of Poles

Example: 16021 – 3 (complete part number)

Optional Covers:

160 Series: CPB160 - (pole)

162 Series: CPB162 - (pole)

163 Series: CPDB- (pole)

165 Series: CPDB165 (1 for each pole)

Data Sheets: 1117 (Series 160, 162, 165); 1148 (Series 163)

Power Terminal Blocks: Stud & Splicer

Series 162, 163 & 165

Specifications

Description: Power stud terminal blocks.
 Construction: Molded black thermoplastic.
 Poles: 1-, 2- or 3-poles.
 Wire Range: See Catalog Numbers table.
 Ratings:

Volts: — 600Vac/dc
 Amps: — Up to 760A
 SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E221592
 General Industrial Class per UL 1059; CSA Class 6228-01, File 53787.
 Flammability Rating: UL 94V0.



Stud Block Catalog Numbers

| Catalog Numbers | Line Connection (Poles) | Load Connection (Poles) | Material & Ampacity | Connector Agency Information |
|-------------------|-------------------------|-------------------------|---------------------|------------------------------|
| Connector to Stud | | | | |
| 16280 | 2/0-#14Cu-Al | ¼-20 X ¾ Stud | Al-175A | UL — |
| 16281 | 2/0-#14Cu-Al | ¼-20 Tapped hole | Al-175A | UL — |
| 16378 | 500kcmil-#6Cu-Al | (2)¼-20 x 1 Stud | Al-380A | UL CSA |
| 16383 | 500kcmil-#6Cu-Al | (1)¼-16 x 1 Stud | Al-380A | UL CSA |
| 16582 | (2)500kcmil-#6Cu-Al | (2)¼-16 x 1½ Stud | Al-760A | UL CSA |
| Stud to Stud | | | | |
| 16290 | ¼-20 x ¾ Stud | ¼-20 x ¾ Stud | Cu-175A | UL — |
| 16390 | ¼-16 x 1½ Stud | ¼-16 x 1½ Stud | Cu-250A | UL CSA |
| 16394 | ¼-13 x 1½ Stud | ¼-13 x 1½ Stud | Cu-400A | UL CSA |
| 16395 | ¼-16 x 1½ Stud | (2)¼-20 x ¾ Stud | Cu-310A | UL CSA |
| 16591 | ¼-16 x 1½ Stud | (2)¼-16 x 1½ Stud | Cu-400A | UL CSA |
| 16593 | ¼-13 X 1 Stud | ¼-13 X 1 Stud | Cu-600A | UL CSA |

Nuts are not supplied with blocks

How To Order

Catalog Number + # of Poles

Example: 16000 – 3 (complete part number)

Optional Covers:

160 Series: CPB160 - (pole)
 162 Series: CPB162 - (pole)
 163 Series: CPDB - (pole)
 165 Series: CPDB165 (1 for each pole) - new style
 CPB165 - (pole) - old style

For Short-circuit current rated stud power distribution blocks, go to the Series PDB and Series 162 & 163 with high SCCR.

Series 160, 162, 163 & 165

Specifications

Description: Power splicer terminal blocks.
 Construction: Molded black thermoplastic.
 Wire Range: See Catalog Numbers table.
 Poles: Series 160: 2-, 3- or 4-poles

Series 162, 163 and 165: 1-, 2- or 3-poles

Ratings:

Volts: — 600Vac/dc
 Amps: — Up to 620A
 SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E221592
 General Industrial Class per UL 1059; CSA Class 6228-01, File 53787.

Flammability Rating: UL 94V0.



Catalog Numbers

| Catalog Numbers | Line Connection | Load Connection | Material & Ampacity | Agency Information |
|-----------------|---------------------|---------------------|---------------------|--------------------|
| 16000* | 2/0-#8Cu/Al | 2/0-#8Cu/Al | Al-175A | UL |
| 16003* | 250kcmil-#6Cu Only | 250kcmil-#6Cu Only | Cu-255A | UL |
| 16005* | 350kcmil-#6Cu/Al | 350kcmil-#6Cu/Al | Al-310A | UL |
| 16200 | #2-#14Cu, #2-#8Al | #2-#14Cu, #2-#8Al | Al-115A | UL |
| 16201 | 1/0-#14Cu Only | 1/0-#14Cu Only | Cu-150A | UL |
| 16204 | 2/0-#8Cu/Al | 2/0-#8Cu/Al | Al-175A | UL |
| 16301 | 250kcmil-#6Cu Only | 250kcmil-#6Cu Only | Cu-255A | UL/CSA |
| 16303 | 350kcmil-#6Cu/Al | 350kcmil-#6Cu/Al | Al-310A | UL/CSA |
| 16306 | 500kcmil-#6Cu/Al | 500kcmil-#6Cu/Al | Al-380A | UL/CSA |
| 16500 | (2)350kcmil-#4Cu/Al | (2)350kcmil-#4Cu/Al | Al-620A | UL/CSA |
| 16504 | (2)500kcmil-#6Cu/Al | (2)500kcmil-#6Cu/Al | Al-760A | UL/CSA |

*160 Series Bases have mounting holes outside the barriers. Other bases (162 through 165) have mounting holes within barriers. See Data Sheet for dimensional drawings.

How To Order

Catalog Number + # of Poles

Example: 16000 – 3 (complete part number)

Optional Covers:

160 Series: CPB160 - (pole)
 162 Series: CPB162 - (pole)
 163 Series: CPDB - (pole)

For Short-circuit current rated and/or finger-safe splicer blocks, go to the Series PDBFS, Series PDB or Series 162 & 163 with high SCCR.

Power Terminal Blocks: Barrier & Dead Front

Series 14002

Specifications

Description: Barrier terminal block.

Poles: 2- to 6-poles.

Wire Range: 2 – 14 AWG Cu/8 AWG Al.

Ratings:

Volts: — 600Vac/dc

Amps: — 115A

SCCR:— 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E62622; CSA LR15364.

Torque Ratings*: 2-3, 50 lb-in; 4-6, 45 lb-in; 8, 40 lb-in; 10-14, 35 lb-in.

*Consult factory for torque ratings for CP and Q options.

Marking: Marking strip optional, consult factory.

Options For Load Side Connector

CP: Sems pressure plate, rated 60A, 600V

Q: Quick-Connect, rated 50A, 600V

To order options, enter letter code in front of Catalog Number: i.e., CP14002-2.



Catalog Numbers

| Catalog Numbers | Poles | Catalog Numbers | Poles |
|-----------------|-------|-----------------|-------|
| 14002-2 | 2 | 14002-5 | 5 |
| 14002-3 | 3 | 14002-6 | 6 |
| 14002-4 | 4 | | |

Series 14004

Specifications

Description: Dead front terminal block.

Poles: 2 to 12 poles.

Wire Range: 4 – 14 AWG Cu/8 AWG Al.

Ratings:

Volts: — 600Vac/dc

Amps: — 90A

SCCR: — 10kA per UL 508A table SB4.1

Agency Information: CE, Guide XCFR2, UL E62622; CSA LR15364.

Marking: Marking strip optional, consult factory.



Catalog Numbers

| Catalog Numbers | Poles | Catalog Numbers | Poles |
|-----------------|-------|-----------------|-------|
| 14004-2 | 2 | 14004-8 | 8 |
| 14004-3 | 3 | 14004-9 | 9 |
| 14004-4 | 4 | 14004-10 | 10 |
| 14004-5 | 5 | 14004-11 | 11 |
| 14004-6 | 6 | 14004-12 | 12 |
| 14004-7 | 7 | | |



Connectors

Selection and Specifications
that Simplify Wiring

Connectors

Section Contents

| | Page |
|--|------------|
| Rail mount terminal blocks | |
| NDN Series 35mm DIN rail mount blocks | 304-305 |
| N512-BK 12-Pole block | 306 |
| NFT2-WH 2-Pole block | 306 |
| NFT3-__ 3-pole block | 306 |
| NC3-WH 3-Pole block | 307 |
| NSE3-WH 3-Pole block | 307 |
| NSS3-WH 3-Pole block | 307 |
| Rail mount disconnect terminal blocks | |
| 15188 Series 3- and 4-Pole blocks | 308 |
| 15288 Series 3-Pole block | 308 |
| Sectional terminal blocks | |
| PLU3-__ 3-Pole block | 309 |
| PLU1-WH 1- to 3-Pole block | 309 |
| PSU1-WH 1- to 3-Pole block | 309 |
| KT3-WH 3-Pole block | 310 |
| KT4-WH 4-Pole block | 310 |
| PLK-3__ 3-Pole block | 310 |
| Quick-connect terminal blocks | |
| NTQ23-WH 3-Pole block | 311 |
| BNQ21-WH 1-Pole block | 311 |
| BQQ41-WH 1-Pole block | 311 |
| Double row terminal blocks | |
| Series TB100 2- to 36-Pole blocks | 312-313 |
| Series TB200 & TB200HB 2- to 30-Pole blocks | 314-315 |
| Series TB300 & TB345 2- to 24-Pole blocks | 298-299 |
| Marking options and covers for double row series | 318 |
| Top & bottom marking strips for double row terminal blocks | 319 |
| Series TB400 2- to 12-Pole double row terminal blocks | 320 |
| Series KU 2- to 12-Pole base mount double row terminal blocks | 321 |
| Series TS finger-safe terminal blocks | |
| 2- to 12-Pole standard base | 322 |
| 2- to 12-Pole flat base | 323 |
| 2- to 12-Pole raised base | 324 |



Rail Mount Terminal Blocks

NDN Series

Specifications

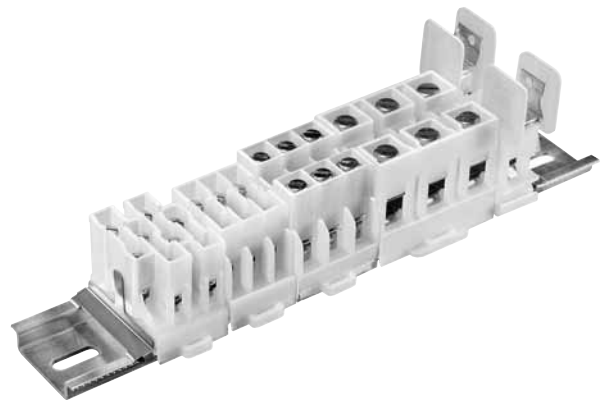
Description: High-density, snap-on 35mm DIN rail compatible rail mount terminal blocks.

Construction: Unique, impact resistant, one-piece thermoplastic moldings. Heat treated stainless steel collars (to secure wires). Tin-plated copper alloy terminals. Zinc-plated steel screws.

Circuits Per Foot: Up to 48 circuits per foot.

Agency Information: CE, UL E62622; CSA LR15364.

Flammability Rating: UL 94V2



NDNV4-__ __ (color)

Specifications

Description: Rail mount terminal block.

Rating: NDNV4 30A, 600V

Center Spacing: 0.25" (6.35mm)

Number of Poles: 4

Circuits Per Foot: 48

Circuit Jumper: JN4, 4 circuits

Wire Range: AWG #10-22 CU

Screw Size: #6-32

Mounting Options: 35mm DIN rail, C-rail

Marking Tape: MTC6

Torque Rating: 18 lb-in

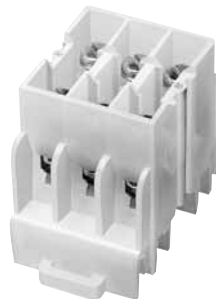
Operating Temperature: 105°C

Agency Information: UL File E62622, CSA File 15364.

Catalog Numbers

Catalog

| Numbers | Colors |
|----------|------------------|
| NDNV4-WH | White (Standard) |
| NDNV4-BK | Black |
| NDNV4-YE | Yellow |



NDN3-__ __ (color)

Specifications

Description: Rail mount terminal block.

Rating: 30A - field wiring; 40A - factory wiring 600V

Center Spacing: 0.300" (7.62mm)

Number of Poles: 3

Circuits Per Foot: 38

Circuit Jumper: JNDN3, 2 circuits

Wire Range: AWG #10-22 CU

Screw Size: #6-32

Mounting Options: 35mm DIN rail, C-rail

Marking Tape: MT12-1-2

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622, CSA File 15364.

Catalog Numbers

Catalog

| Numbers | Colors |
|---------|------------------|
| NDN3-WH | White (Standard) |
| NDN3-BK | Black |
| NDN3-BL | Blue |
| NDN3-RE | Red |
| NDN3-YE | Yellow |



NDN63-__ __ (color)

Specifications

Description: Rail mount terminal block.

Rating: 65A, 600V

Center Spacing: 0.375" (9.52mm)

Number of Poles: 3

Circuits Per Foot: 30

Circuit Jumper: JN3, 2 circuits

Wire Range: AWG #6-18 CU

Screw Size: #10-32

Mounting Options: 35mm DIN rail, C-rail

Marking Tape: MT12-1-2

Torque Rating: 35 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622, CSA File 15364.

Catalog Numbers

Catalog

| Numbers | Colors |
|----------|------------------|
| NDN63-WH | White (Standard) |
| NDN63-BK | Black |
| NDN63-YE | Yellow |

Rail Mount Terminal Blocks

NDN1-WH

Specifications

Description: Rail mount terminal block.

Rating: 90A, 600V

Center Spacing: 0.635" (16.13mm)

Number of Poles: 1

Circuits Per Foot: 18

Wire Range: AWG #2-18 Cu

Screw Size: #1/4-28

Mounting Options: 35mm DIN rail, C-rail

* Dove-tail option is available for mounting side-by-side.

Order part no. NDN1A-WH

Marking Tape: MT12-1-2

Torque Rating: 32 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622, CSA File 47235



Catalog Numbers

Catalog

| Number | Color |
|---------|-------|
| NDN1-WH | White |

NDN111-__ __ (color)

Specifications

Description: Rail mount terminal block.

Rating: 90A, 600V

Center Spacing: 0.635" (16.13mm)

Number of Poles: 3

Circuits Per Foot: 18

Circuit Jumper: JN1, 2 circuits

Wire Range: AWG #2-18 Cu

Screw Size: #1/4-28

Mounting Options: 35mm DIN rail, C-rail, Base Mount

* Dove-tail option is available for mounting side-by-side.

Order part no. NDN111-A

Marking Tape: MT12-1-2

Torque Rating: 32 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622, CSA File 47235

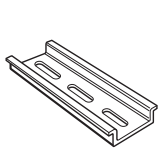


Catalog Numbers

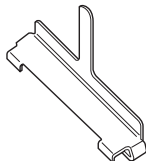
Catalog

| Numbers | Colors |
|------------|------------------|
| NDN111-WH | White (Standard) |
| NDN111-BK | Black |
| NDN111-BL | Blue |
| NDN111-RE | Red |
| NDN111-YE | Yellow |
| NDN111A-WH | White |
| NDN111A-BK | Black (Standard) |
| NDN111A-YE | Yellow |

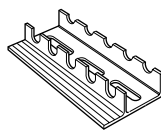
NDN Series Terminal Block Accessories



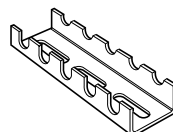
NDNA
35mm DIN Rail
Aluminum
NDNA 100 1 meter
NDNA 200 2 meters



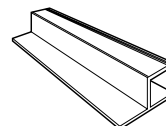
NDNAS
35mm DIN Rail
End Stop



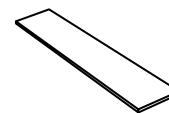
NFTA
C-Rail
Aluminum
Lengths to 72"



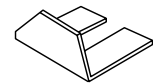
NRA
C-Rail
Low Profile
No Flange
Aluminum
Lengths to 37-1/2"



SOA72
72" Long
Stand-Off Channel
For C-Rail



MARKING
TAPE
See Series
Specifications



JUMPERS
See Series
Specifications

Rail Mount Terminal Blocks

N512-BK

Specifications

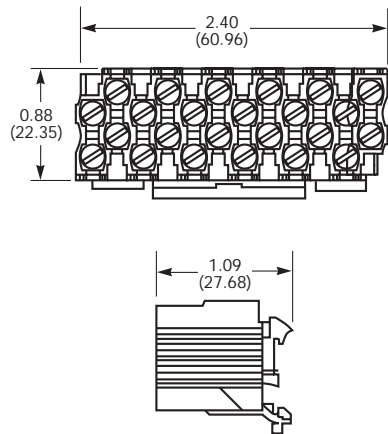
Description: Rail mount terminal block.
 Rating: 5A, 600V; 20A, 300V
 Center Spacing: 0.197" (5.00mm)
 Number of Poles: 12
 Circuits Per Foot: 60
 Circuit Jumper: JN512, 12 circuits
 Wire Range: AWG #12-22 Cu
 Screw Size: #4-48
 Mounting Options: C-rail, 15mm DIN rail
 Marking Tape: AT512
 Torque Rating: 12 lb-in
 Operating Temperature: 105°C
 Agency Information: CSA File 15364.



Catalog Numbers

| Catalog Number | Color |
|----------------|-------|
| N512-BK | Black |

Dimensions - in (mm)



NFT2-__ __ (color)

Specifications

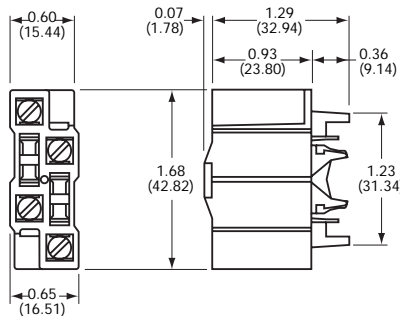
Description: Rail mount terminal block.
 Rating: 40A, 600V; 55A Factory Wired
 Center Spacing: 0.281" (7.13mm)
 Number of Poles: 2
 Circuits Per Foot: 38
 Circuit Jumper: JN2, 2 circuits
 Wire Range: AWG #8-22 Cu
 Screw Size: #8-32
 Mounting Options: C-rail
 Marking Tape: MT12-1-2
 Torque Rating: 18 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 15364.



Catalog Numbers

| Catalog Numbers | Colors |
|-----------------|--------|
| NFT2-WH | White |
| NFT2-BK | Black |
| NFT2-BL | Blue |
| NFT2-RE | Red |

Dimensions - in (mm)



NFT3-__ __ (color)

Specifications

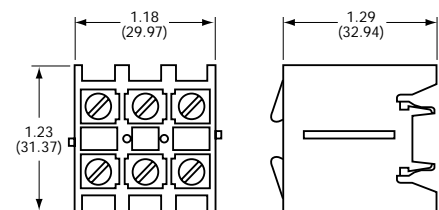
Description: Rail mount terminal block.
 Rating: 40A, 600V; 55A Factory Wired
 Center Spacing: 0.390" (9.91 mm)
 Number of Poles: 3
 Circuits Per Foot: 28
 Circuit Jumper: JN3, 2 circuits
 Wire Range: AWG #8-22 Cu
 Screw Size: #8-32
 Mounting Options: C-rail
 Marking Tape: MT12-1-2
 Torque Rating: 18 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 47235.



Catalog Numbers

| Catalog Numbers | Colors |
|-----------------|------------------|
| NFT3-WH | White (Standard) |
| NFT3-BK | Black |
| NFT3-BL | Blue |
| NFT3-RE | Red |
| NFT3-YE | Yellow |

Dimensions - in (mm)



Rail Mount Terminal Blocks

NC3-__ __ (color)

Specifications

Description: Rail mount terminal block.
 Rating: 175A, 600V
 Center Spacing: 1.06" (26.92mm)
 Number of Poles: 3
 Circuits Per Foot: 11
 Wire Range: 2/0-#14 Cu/Al
 Screw Size: 5/16-24
 Mounting Options: C-rail, Base Mount
 Marking Tape: MT12-1-2
 Torque Rating: 45 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 15364.



Catalog Numbers

| Number | Color |
|--------|-------|
| NC3-WH | White |
| NC3-BK | Black |

NSE3-WH

Specifications

Description: Rail mount terminal block.
 Rating: 115A, 600V
 Center Spacing: 1.06" (26.92mm)
 Number of Poles: 3
 Circuits Per Foot: 11
 Circuit Jumper: JNSE3, 2 circuits
 Wire Range: For use with wire crimped to ring terminal
 Screw Size: #1/4-28
 Mounting Options: C-rail, Base Mount
 Marking Tape: MT12-1-2
 Torque Rating: 32 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 15364.



Catalog Numbers

| Number | Color |
|---------|-------|
| NSE3-WH | White |

NSS3-__ __ (color)

Specifications

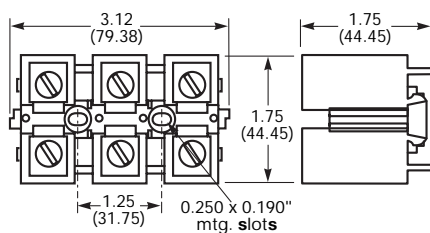
Description: Rail mount terminal block.
 Rating: 30A, 600V
 Center Spacing: 0.385" (9.77mm)
 Number of Poles: 3
 Circuits Per Foot: 28
 Circuit Jumper: JNSS3, 2 circuits
 Wire Range: For use with wire crimped to ring terminal
 Screw Size: #6-32
 Mounting Options: C-rail
 Marking Tape: MT12-1-2
 Torque Rating: 12 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 15364.



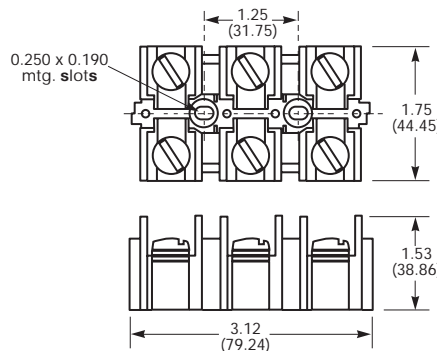
Catalog Numbers

| Number | Color |
|---------|-------|
| NSS3-WH | White |
| NSS3-BK | Black |

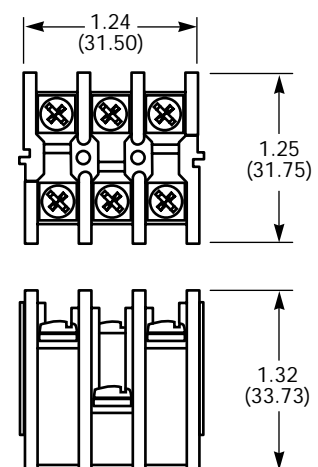
Dimensions - in (mm)



Dimensions - in (mm)



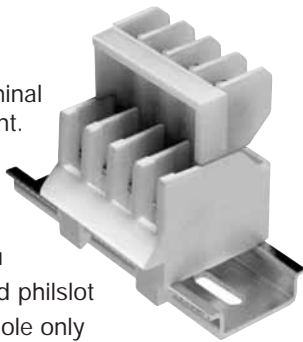
Dimensions - in (mm)



Rail Mount Disconnect Terminal Blocks

15188 Series

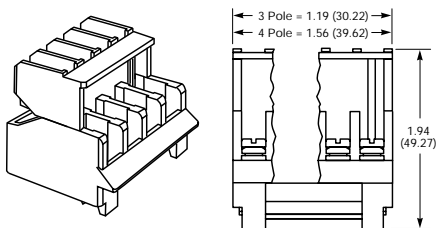
Specifications
 Description: Disconnect terminal blocks for 35mm DIN rail mount.
 Rating: 30A, 600V*
 Center Spacing: 0.375" (9.52mm)
 Wire Range: #12-16 AGW Cu
 Screw Size: #6-32 zinc-plated philslot
 Number of Poles: 3- and 4-pole only
 Mounting: 35mm DIN Rail
 Optional End Stop NDNAS
 Jumpers: 2- through 4-pole available
 Materials: Molded Base: UL rated 94V-2 thermoplastic. Tin plated copper alloy contacts.
 Torque Rating: 12 lb-in
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 47235.
 * 30A rating achieved with #10AWG wire crimped to ring terminal; 25A without.



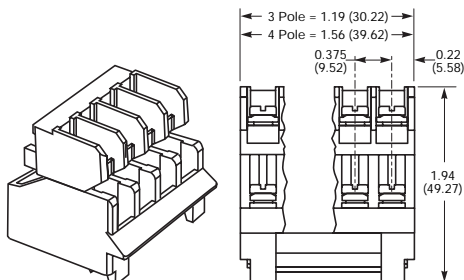
Catalog Number Build-A-Code

| Series | Poles | Wiring | Options |
|--------|----------------------------|--------------------------------|--------------------------|
| 15188 | - <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 3 to 4 | Blank = In-line R = Reverse | S = Locking Snap |

Dimensions - in (mm) In-Line Wiring Direction



Reverse Wiring Direction



15288 Series

Specifications
 Description: Disconnect terminal blocks for 35mm DIN rail mount.
 Rating: 65A, 600V*
 Center Spacing: 0.54" (13.7mm)
 Wire Range: #6-16 AWG
 Screw Size: #8-32 zinc-plated philslot
 Number of Poles: 3-pole only
 Mounting: 35mm DIN Rail
 Optional Accessories: Optional End Stop NDNAS (order optional accessories separately)
 Materials: Molded Base: UL rated 94V2 thermoplastic. Tin-plated copper alloy contacts.
 Torque Rating: 20 lb-in (30 lb-in for 8AWG bare wire)
 Operating Temperature: 105°C (221°F)
 Agency Information: UL File E62622
 *CSA rating achieved with #6 AWG wire crimped to ring terminal 50A without.

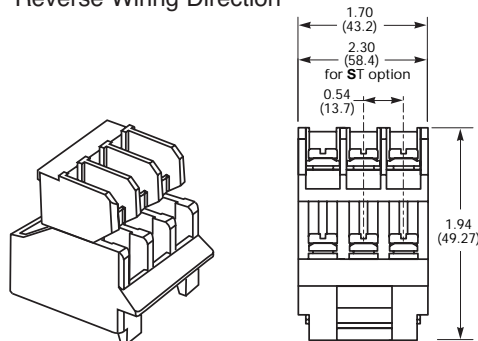


Catalog Number Build-A-Code

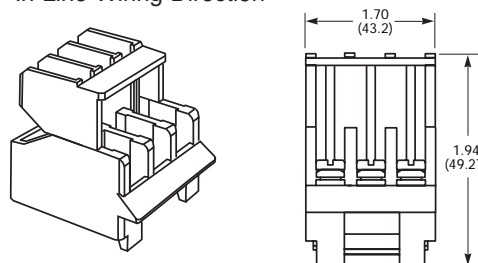
| Series | Poles | Wiring | Options** |
|--------|----------------------------|--------------------------------|---|
| 15288 | - <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | 3 | Blank = In-line R = Reverse | S = Snap ST = Screw Together SS = Solid DIN Rail Snap |

**Options can be combined, e.g. STSS

Dimensions - in (mm) Reverse Wiring Direction



In-Line Wiring Direction



Sectional Terminal Blocks

PLU3-__(color)

Specifications

Description: Depluggable rail mount sectional terminal block.

Rating: 40A, 600V

Center Spacing: 0.390" (9.91mm)

Number of Poles: 3

Circuits Per Foot: 28

Circuit Jumper: JN3, 2 circuits

Wire Range: AWG #8-22 Cu

Screw Size: #8-32

Mounting Options: C-rail, Stackable

Marking Tape: MT12-1-2

Torque Rating: 18 lb-in

Operating Temperature: 105°C

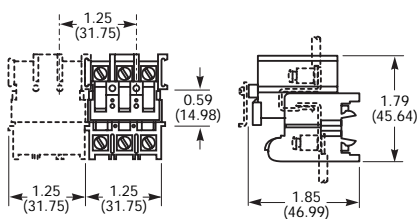
Agency Information: UL File E62622, CSA File 15364.



Catalog Numbers

| Number | Color |
|---------|------------------|
| PLU3-WH | White (Standard) |
| PLU3-BK | Black |
| PLU3-YE | Yellow |

Dimensions - in (mm)



PLU1-WH

Specifications

Description: Depluggable rail mount sectional terminal block.

Rating: 70A, 600V

Center Spacing: 0.625" (15.88mm)

Number of Poles: 1-3

Part Numbers:

- PLU1 (1-pole)
- PLU11 (2-pole)
- PLU111 (3-pole)

Circuits Per Foot: 19

Circuit Jumper: JN1, 2 circuits

Wire Range: AWG #4-18 Cu

Screw Size: #1/4-28

Mounting Options: C-rail, Stackable

Marking Tape: MT12-1-2

Torque Rating: 32 lb-in

Operating Temperature: 105°C

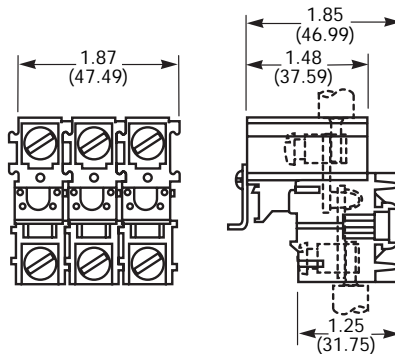
Agency Information: UL File E62622, CSA File 15364.



Catalog Numbers

| Number | Poles | Color |
|-----------|-------|-------|
| PLU1-WH | 1 | White |
| PLU11-WH | 2 | White |
| PLU111-WH | 3 | White |

Dimensions - in (mm)



PSU1-WH

Specifications

Description: Depluggable rail mount sectional terminal block.

Rating: 45A*, 600V

*45A rating achieved with ring terminal crimped to wire.

Center Spacing: 0.625" (15.88 mm)

Number of Poles: 1-3

Part Number:

- PSU1 (1-pole)
- PSU11 (2-pole)
- PSU111 (3-pole)

Circuits Per Foot: 19

Wire Range: For use with crimp on connectors only.

Screw Size: #10-32

Mounting Options: C-rail, Stackable

Marking Tape: MT12-1-2

Torque Rating: 24 lb-in

Operating Temperature: 105°C

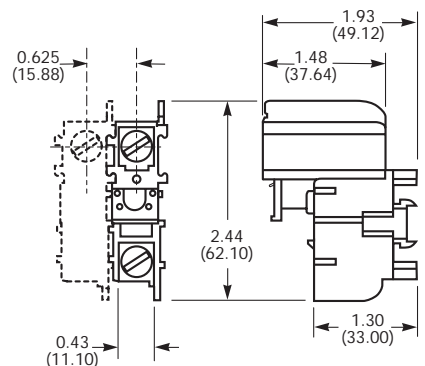
Agency Information: UL File E62622, CSA File 15364



Catalog Numbers

| Number | Poles | Color |
|-----------|-------|-------|
| PSU1-WH | 1 | White |
| PSU11-WH | 2 | White |
| PSU111-WH | 3 | White |

Dimensions - in (mm)



Sectional Terminal Blocks

KT3-__ (color)

Specifications

Description:

Depluggable rail
mount sectional
terminal block.

Rating: 40A, 600V

Center Spacing:
0.390" (9.91mm)

Number of Poles: 3

Circuits Per Foot: 28

Circuit Jumper: JN3, 2 circuits

Wire Range: AWG #8-22 Cu

Screw Size: #8-32

Mounting Options: Base Mount,
Stackable

Marking Tape: MT12-1-2

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622,
CSA File 15364

Catalog Numbers

Catalog

| Number | Color |
|--------|-------|
| KT3-WH | White |
| KT3-BK | Black |
| KT3-RE | Red |



KT4-__ (color)

Specifications

Description:

Depluggable rail
mount sectional
terminal block.

Rating: 30A,
600V

Center

Spacing: 0.25" (6.35mm)

Number of Poles: 4

Part Number:

- KT4-WH-A
- KT4-WH-B

Note: When used in series must order A and B

Circuits Per Foot: 48

Circuit Jumper: JN4, 4 circuits

Wire Range: AWG #10-22 Cu

Screw Size: #6-32

Mounting Options: Base Mount

Mounting screws recommended every
12 circuits

Marking Tape: MTC6

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622,
CSA File 15364

Catalog Numbers

Catalog

| Number | Color |
|--------|-------|
| KT4-WH | White |
| KT4-BK | Black |



PLK3-WH

Specifications

Description:

Depluggable rail
mount sectional
terminal block.

Rating: 40A,
600V

Center

Spacing: 0.39"
(9.91mm)

Number of Poles: 3

Circuits Per Foot: 28

Circuit Jumper: JN3, 2 circuits

Wire Range: AWG #8-22 Cu

Screw Size: #8-32

Mounting Options: Base Mount,
Stackable; End Piece (Part No. KAD)

is required for mounting. Mounting
screws recommended every 15 circuits.

Marking Tape: MT12-1-2

Torque Rating: 18 lb-in

Operating Temperature: 105°C

Agency Information: UL File E62622

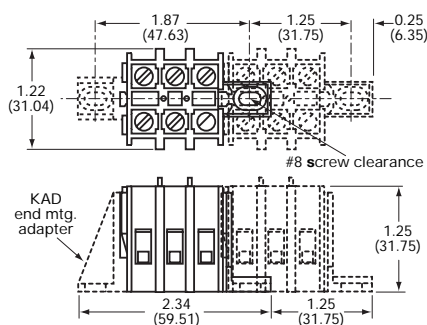
Catalog Numbers

Catalog

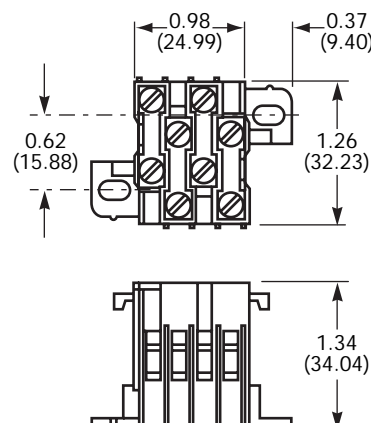
| Number | Color |
|---------|-------|
| PLK3-WH | White |



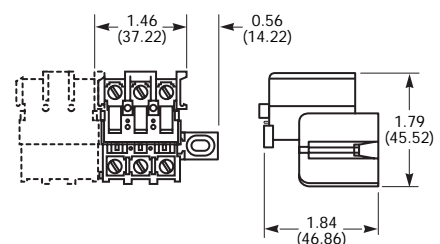
Dimensions - in (mm)



Dimensions - in (mm)



Dimensions - in (mm)



Quick-connect Terminal Blocks

NTQ23-WH

Specifications

Description: Quick-connect terminal block.
 Rating: 40A, 600V
 Center Spacing: 0.390" (9.91mm)
 Number of Poles: 3
 Circuits Per Foot: 28
 Wire Range: AWG #8-22 Cu
 Screw Size: #8-32
 Quick Connects: 0.250" x 0.031"
 Mounting Options: C-rail
 Marking Tape: MT12-1-2
 Torque Rating: 18 lb-in
 Operating Temperature: 105°C.



Catalog Numbers

| Number | Color |
|----------|-------|
| NTQ23-WH | White |

BNQ21-WH

Specifications

Description: Quick-connect terminal block.
 Rating: 40A, 600V
 Center Spacing: 0.437" (11.10mm)
 Number of Poles: 1
 Circuits Per Foot: 24
 Wire Range: AWG #8-22 Cu
 Screw Size: #8-32
 Quick Connects: 0.250" x 0.031"
 Mounting Options: Base Mount
 Stackable; End Piece (Part No. BQE) is required for mounting. Mounting screws recommended every 8 circuits.
 Torque Rating: 18 lb-in
 Operating Temperature: 105°C
 Screw Size: #8-32
 Agency Information: UL File E62622, CSA File 15364



Catalog Numbers

| Number | Color |
|----------|-------|
| BNQ21-WH | White |

BQQ41-WH

Specifications

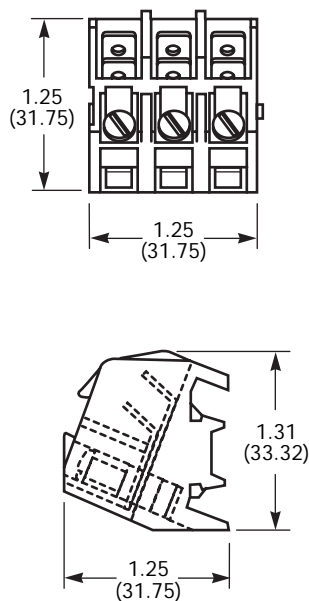
Description: Quick-connect terminal block.
 Rating: 30A, 600V
 Center Spacing: 0.437" (11.10mm)
 Number of Poles: 1
 Circuits Per Foot: 24
 Wire Range: For use with quick-connect terminals only.
 Quick Connects: 0.250" x 0.031"
 Mounting Options: Base Mount, Stackable; End Piece (Part No. BQE) is required for mounting. Mounting screws recommended every 8 circuits.
 Operating Temperature: 105°C
 Agency Information: UL File E62622, CSA File 15364



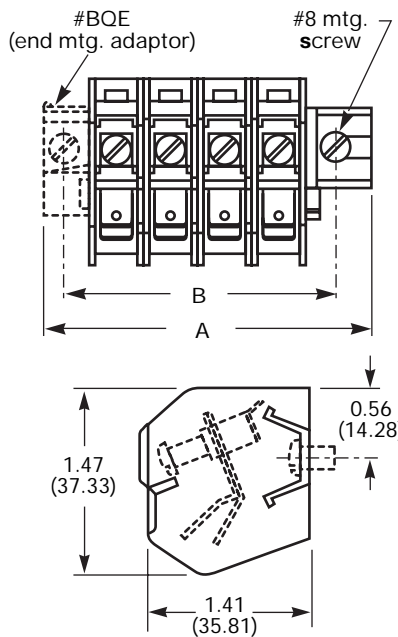
Catalog Numbers

| Number | Color |
|----------|-------|
| BQQ41-WH | White |

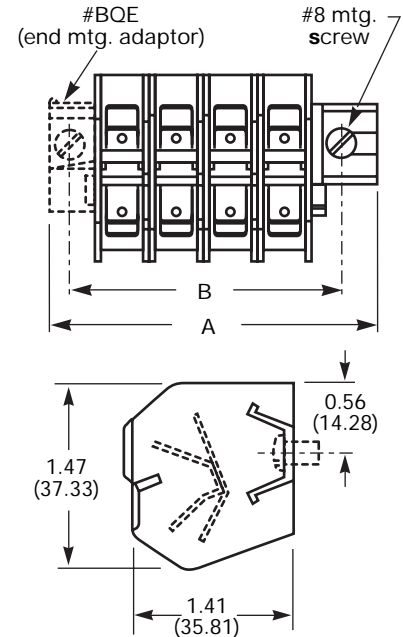
Dimensions - in (mm)



Dimensions - in (mm)



Dimensions - in (mm)



Connectors

Double Row Terminal Blocks

Series TB100

Specifications

Description: Double row terminal blocks.

Rating: 30A, 300V*

Center Spacing: 0.375" or 3/8" (9.52mm)

Wire Range: #14 - 22 AWG Cu

Screw Size: #6-32 phillslot screws

Torque Rating: 9 lb-in.

Distance Between Barriers: 0.30" (7.62mm)

Mounting: #6 screws

Operating Temperature: 130°C (266°F) max., -40°C (-40°F) min.

Materials: Molded base: Black, UL rated 94V0 thermoplastic

Terminal plating: Tin over brass; Screws: Zinc-plated steel

Breakdown Voltage: 3600V

Agency Information: UL File E62622/CSA File 47235; IEC

Compliance; CE Certified

* Max rating shown; some options may be rated lower, consult Cooper Bussmann.



TB100-08



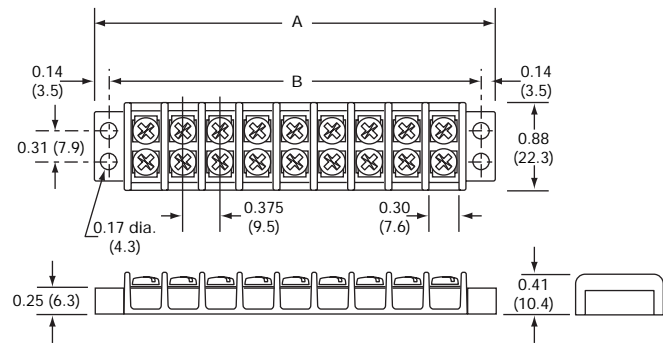
TB100-04SP

Dimensions - in

| Poles | A | B | Poles | A | B | Poles | A | B |
|-------|------|------|-------|-------|------|-------|-------|-------|
| 02 | 1.40 | 1.12 | 14 | 5.90 | 5.62 | 26 | 10.40 | 10.12 |
| 03 | 1.78 | 1.50 | 15 | 6.28 | 6.00 | 27 | 10.78 | 10.50 |
| 04 | 2.16 | 1.88 | 16 | 6.66 | 6.38 | 28 | 11.16 | 10.88 |
| 05 | 2.53 | 2.25 | 17 | 7.03 | 6.75 | 29 | 11.53 | 11.25 |
| 06 | 2.90 | 2.62 | 18 | 7.40 | 7.12 | 30 | 11.90 | 11.62 |
| 07 | 3.28 | 3.00 | 19 | 7.78 | 7.50 | 31 | 12.28 | 12.00 |
| 08 | 3.66 | 3.38 | 20 | 8.16 | 7.88 | 32 | 12.66 | 12.38 |
| 09 | 4.03 | 3.75 | 21 | 8.53 | 8.25 | 33 | 13.03 | 12.75 |
| 10 | 4.40 | 4.12 | 22 | 8.90 | 8.62 | 34 | 13.40 | 13.12 |
| 11 | 4.78 | 4.50 | 23 | 9.28 | 9.00 | 35 | 13.78 | 13.50 |
| 12 | 5.16 | 4.88 | 24 | 9.66 | 9.38 | 36 | 14.16 | 13.88 |
| 13 | 5.53 | 5.25 | 25 | 10.03 | 9.75 | | | |

1" = 25.4mm.

TB100- in (mm)

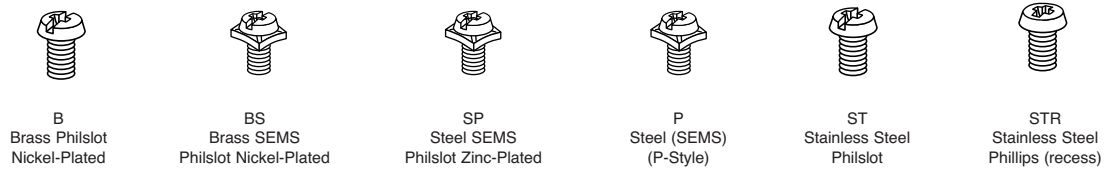


Catalog Number Build-A-Code

| Series | Poles | Screw Options | Marking/Cover | Hardware Options |
|--------|-----------------|--|---|---|
| TB100 | □ □ 02 to 36 | □ □ □ Blank = Steel phillslot, zinc-plated 00 = Screws shipped bulk B = Brass phillslot, nickel-plated BS = Brass Sems phillslot, nickel-plated SP = Steel Sems phillslot, zinc-plated P = Steel Sems (P-style) ST = Stainless steel, phillslot STR = Stainless steel, phillips (recess) | □ □ L1 to L6 Marking Strips (See page 318) Special Markings (See page 318) Covers (See page 318) | □ □ □ □ QC1 to QC20 = Quick connects J101 = Flat slip-on jumper (2 position only) OJ2 = Over barrier jumpers OJ4 = Over barrier jumpers |

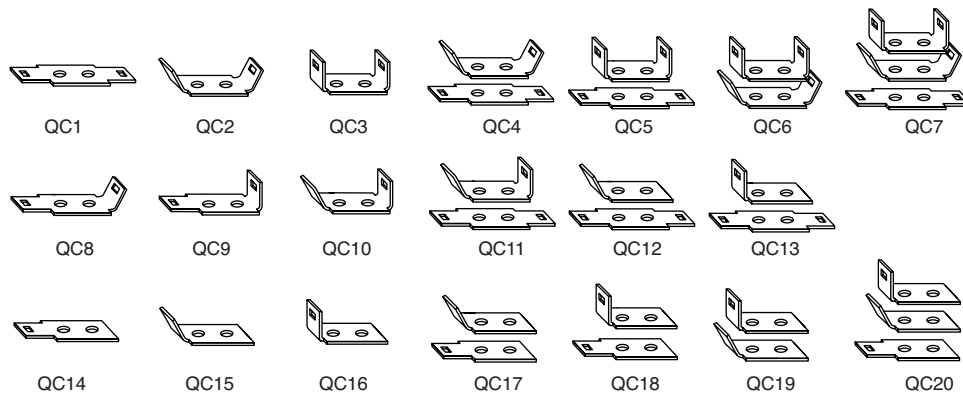
Double Row Terminal Blocks

Screw Options

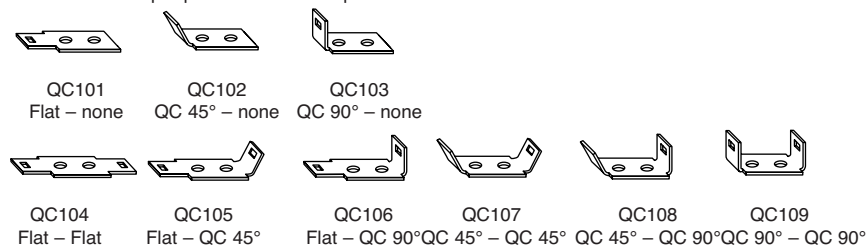


Hardware Options

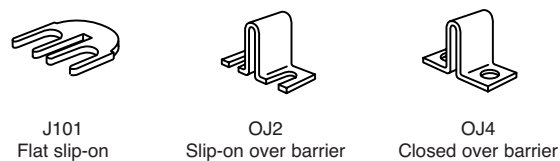
Quick Connects – Assembled: Terminals 0.187" x 0.020". Maximum current rating 13 amps. For other orientations, contact Cooper Bussmann.



Quick Connects – Bulk: minimum order per part number – 100 pieces.



Jumpers – Bulk: minimum order per part number – 100 pieces. Contact Cooper Bussmann for jumper assembly.



Double Row Terminal Blocks

Series TB200 & TB200HB

Specifications

Description: Double row terminal blocks.

Ratings:

Volts: — 300V* (TB200)
— 600V* (TB200HB)

Amps: — 30A*

Center Spacing: 0.437" or 7/16" (11.10mm)

Wire Range: #12 - 22 AWG Cu

Screw Size: #6-32 philslot screws

Torque Rating: 9 lb-in.

Distance Between Barriers: 0.353" (8.97mm)

Mounting: #6 screws

Operating Temperature: 130°C (266°F) max., -40°C (-40°F) min.

Materials: Molded base: Black, UL rated 94V0 thermoplastic

Terminal plating: Tin over brass; Screws: zinc-plated steel

Breakdown Voltage: 4800V

Agency Information: UL File E62622, CSA File 47235 & 15364; IEC Compliance; CE Certified

* Max rating shown; some options may be rated lower - consult factory.

Dimensions - in

| Poles | A | B | Poles | A | B | Poles | A | B |
|-------|------|------|-------|------|------|-------|-------|-------|
| 02 | 1.63 | 1.31 | 12 | 6.00 | 5.68 | 22 | 10.37 | 10.06 |
| 03 | 2.07 | 1.75 | 13 | 6.44 | 6.12 | 23 | 10.81 | 10.50 |
| 04 | 2.51 | 2.18 | 14 | 6.87 | 6.56 | 24 | 11.25 | 10.93 |
| 05 | 2.94 | 2.62 | 15 | 7.31 | 7.00 | 25 | 11.68 | 11.37 |
| 06 | 3.38 | 3.06 | 16 | 7.75 | 7.43 | 26 | 12.12 | 11.81 |
| 07 | 3.82 | 3.50 | 17 | 8.19 | 7.87 | 27 | 12.56 | 12.25 |
| 08 | 4.25 | 3.93 | 18 | 8.62 | 8.31 | 28 | 13.00 | 12.68 |
| 09 | 4.69 | 4.37 | 19 | 9.06 | 8.75 | 29 | 13.44 | 13.12 |
| 10 | 5.13 | 4.81 | 20 | 9.50 | 9.18 | 30 | 13.87 | 13.56 |
| 11 | 5.57 | 5.25 | 21 | 9.94 | 9.62 | | | |

1" = 25.4mm.

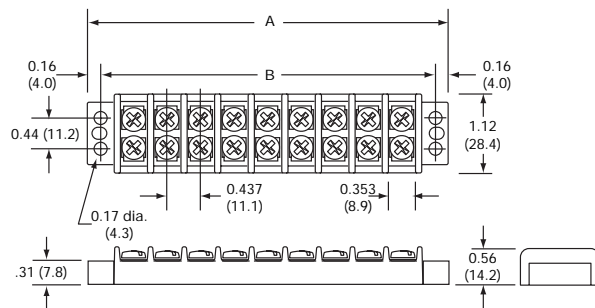


TB200-10SP

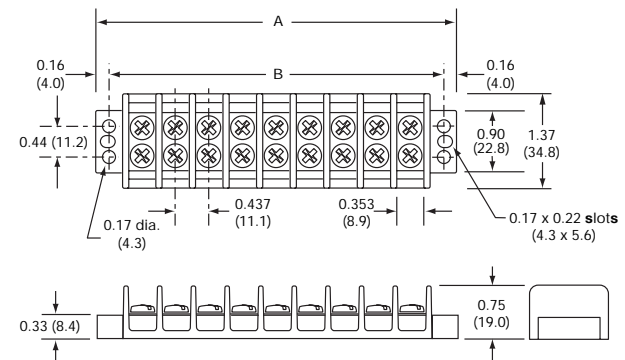


TB200HB-06

TB200 - in (mm)



TB200HB

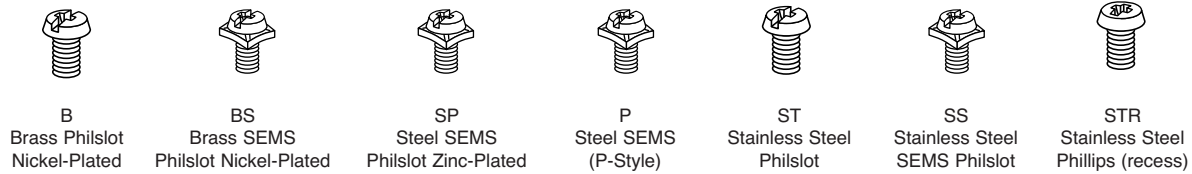


Catalog Number Build-A-Code

| Series | Poles | Screw Options | Marking/Cover | Hardware Options |
|---|---|---|--|--|
| TB <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 200 = Standard 200HB = High barrier | 02 to 30 | Blank = Steel philslot, zinc-plated 00 = Screws shipped bulk B = Brass philslot, nickel-plated BS = Brass Sems philslot, nickel-plated SP = Steel Sems philslot, zinc-plated P = Steel Sems (P-style) ST = Stainless steel, philslot SS = Stainless steel Sems, philslot STR = Stainless steel, phillips (recess) | L1 to L6 Marking Strips (See page 318) Special Markings (See page 318) Covers (See page 318) | QC1 to QC20 = Quick connects J201 = Flat slip-on jumper (2 position only) 0J3 = Over barrier jumpers 0J5 = Over barrier jumpers 0J7 = Over barrier jumpers |

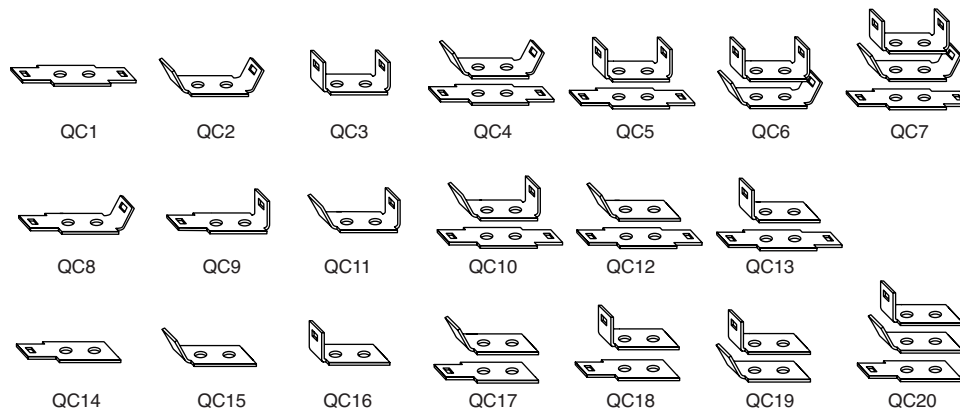
Double Row Terminal Blocks

Screw Options

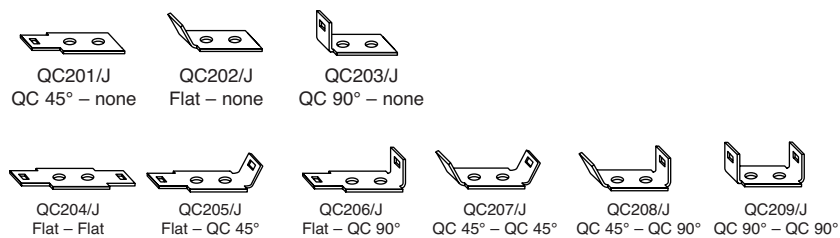


Hardware Options

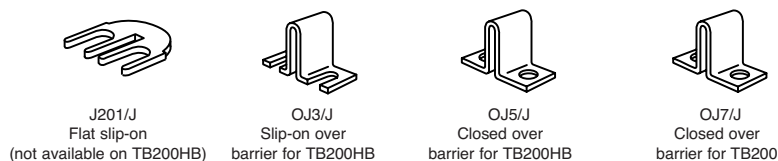
Quick Connects – Assembled: Terminals 0.25" x 0.031". Maximum current rating 20 amps. For other orientations, contact Cooper Bussmann.



Quick Connects – Bulk: minimum order per part no. – 100 pieces.



Jumpers – Bulk: minimum. order per part no. – 100 pieces. Contact Cooper Bussmann for jumper assembly.



Double Row Terminal Blocks

Series TB300 & TB345

Specifications

Description: Double row terminal blocks.

Ratings:

Volts: — 600V*

Amps: — 30A* (TB300)

— 45A (TB345)

Center Spacing: 0.562" or 9/16" (14.28mm)

Wire Range: #8 - 22 AWG Cu

Screw Size: TB300 – #8-32 phillslot screws

TB345 – #10-32 phillslot screws

Torque Rating: #8 screws - 16 lb-in. ;

#10 screws - 20 lb-in.

Distance Between Barriers: 0.41" (10.5mm)

Mounting: TB300 – #8 screws; TB345 – #10 screws

Operating Temperature: 130°C (266°F) max., -40°C (-40°F) min.

Material: Molded base: Black, UL rated 94V0 thermoplastic

Terminal plating: Tin over brass; Screws: zinc-plated steel

Breakdown Voltage: 7500V

Agency Information: UL File E62622, CSA File 47235; IEC Compliance; CE Certified

* Max rating shown; some options may be rated lower - consult Cooper Bussmann.

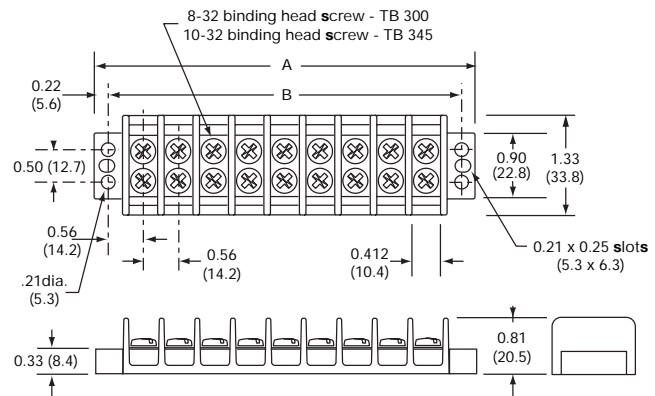
Dimensions - in

| Poles | A | B | Poles | A | B | Poles | A | B |
|-------|------|------|-------|-------|-------|-------|-------|-------|
| 02 | 2.13 | 1.69 | 10 | 6.62 | 6.19 | 18 | 11.12 | 10.68 |
| 03 | 2.69 | 2.25 | 11 | 7.18 | 6.75 | 19 | 11.68 | 11.25 |
| 04 | 3.25 | 2.81 | 12 | 7.75 | 7.31 | 20 | 12.24 | 11.81 |
| 05 | 3.81 | 3.37 | 13 | 8.31 | 7.87 | 21 | 12.80 | 12.37 |
| 06 | 4.37 | 3.94 | 14 | 8.87 | 8.44 | 22 | 13.37 | 12.93 |
| 07 | 4.94 | 4.50 | 15 | 9.43 | 9.00 | 23 | 13.93 | 13.50 |
| 08 | 5.50 | 5.06 | 16 | 9.99 | 9.56 | 24 | 14.49 | 14.06 |
| 09 | 6.06 | 5.62 | 17 | 10.56 | 10.12 | | | |

1" = 25.4mm.



TB300 & TB345 - in (mm)

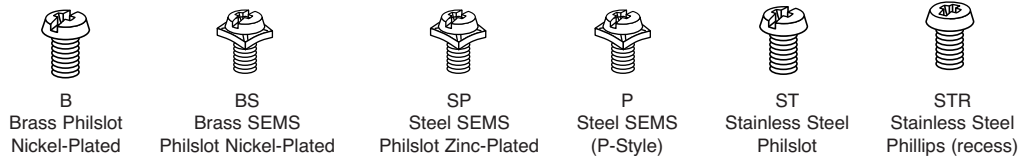


Catalog Number Build-A-Code

| Series | Poles | Screw Options | Marking/Cover | Hardware Options |
|---|---|--|--|--|
| TB <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 300 = 8-32 screw 345 = 10-32 screw | 02 to 24 | Blank = Steel phillslot, zinc-plated 00 = Screws shipped bulk B = Brass phillslot, nickel-plated BS = Brass Sems phillslot, nickel-plated (TB300 only) SP = Steel Sems phillslot, zinc-plated P = Steel Sems (P-style) ST = Stainless steel, phillslot STR = Stainless steel, phillips (recess) | L1 to L6 Marking Strips (pg 318) Special Markings (pg 318) Covers (pg 318) | QC1 to QC20 = Quick connects (TB300 only) J301 = Flat slip-on jumper 0J6 = Over barrier jumper 0J11 = Over barrier jumper |

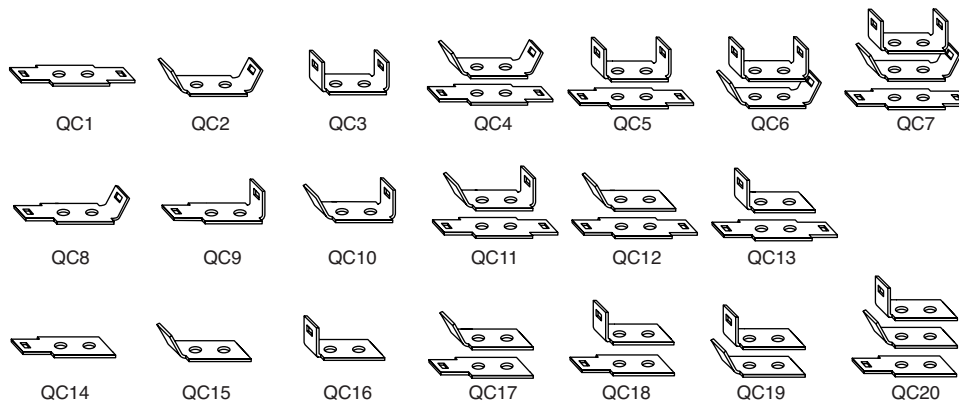
Double Row Terminal Blocks

Screw Options

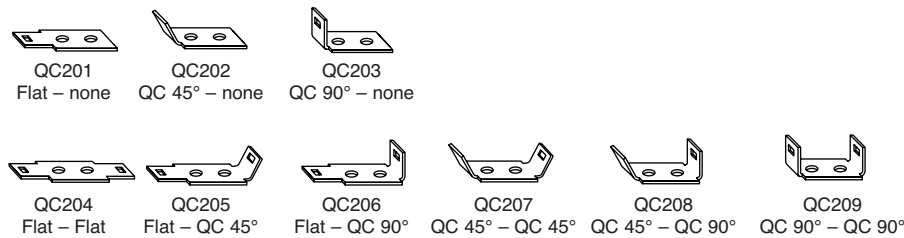


Hardware Options

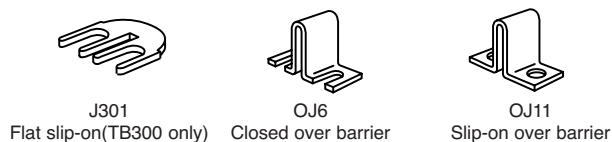
Quick Connects – Assembled: TB300 only. Terminals 0.25" x 0.031". Maximum current rating 20 amps. For other orientations, contact Cooper Bussmann.



Quick Connects – Bulk: (*TB300 only) minimum order per part number. – 100 pieces.



Jumpers – Bulk: minimum order per part number – 100 pieces. Contact Cooper Bussmann for jumper assembly.

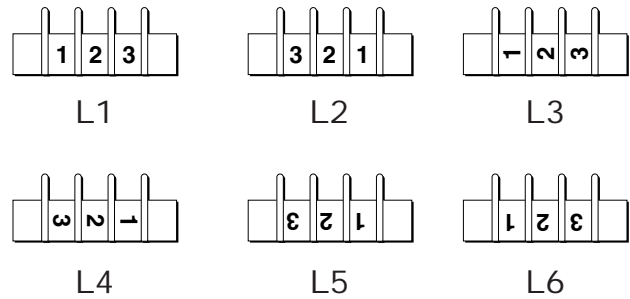


Marking Options and Covers for Double Row Series

Standard Marking

Standard markings are applied directly to the side(s) of a block. Standard color is white. Standard height is 0.125 inches (3.17mm).

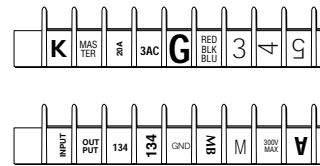
Note: Blocks marked on both sides require a different code for each side. Example Style L1 on one side of the block requires Style L2 on the other side to ensure common terminal marking. To order, add appropriate suffix (L1, L2, L3, L4, L5 and/or L6) to block catalog number in the proper sequence.



Special Marking

Special markings are available at an additional charge for preparation. Production charges for setup, handling and marking are the same as for standard marking. Drawing(s) must be submitted to ensure accuracy of part required. Consult Cooper Bussmann for price and delivery.

Note: Marking is not available on TB400 Series

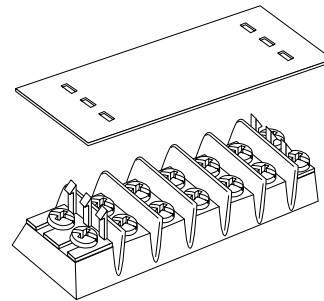


Covers

Covers prevent personnel, screws and foreign items from contacting live terminals. Available in white or clear plastic. Two cover clips supplied with each cover. Cover width is 1.31 inches (33.3mm).

All covers must be ordered separately. Consult Cooper Bussmann for special legends.

Example: 10 position cover, white, TB100 Series, no legends = Catalog Number X12010.



Catalog Number Build-A-Code

| Series | Cover Strip | Poles | High Barrier Option Only | Cover Clips – Bulk |
|--------|---|---|---|--|
| X | □ □ □ 120 - TB100/white 119 - TB100/clear 220 - TB200/TB200HB - white 219 - TB200/TB200HB - clear 320 - TB300 & TB345 - white 319 - TB300 & TB345 - clear | □ □ 02 to 36 (TB100) 02 to 30 (TB200/TB200HB) 02 to 24 (TB300/TB345) | □ □ HB = High Barrier Example: 10 position cover, white, TB100 Series, no legends . . . Part number is X12010. | Part Number DD1-J – TB100 Series DD2-J – TB200 Series DD2HB-J –TB200HB Series DD3-J – TB300 Series |

Note: Covers are not available on TB400 Series.

Top & Bottom Marking Strips for Double Row Terminal Blocks

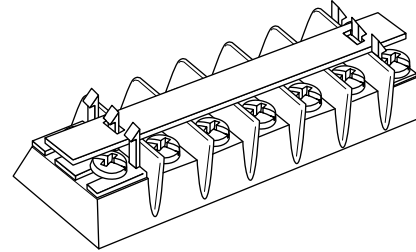
Top Marker Strips

Top mounting marker strips are available in white (opaque) plastic. Two cover clips are supplied with each marker strip.

All top marker strips must be ordered separately. Consult factory for special legends.

Example: 12 position cover, TB200, 0.032" x 0.312", with no legends = Catalog Number X20312.

Example: 12 position cover, TB200HB, 0.06" x 0.50", with no legends = Catalog Number X23312HB.



Catalog Number Build-A-Code

| Series | Top Marker Strip | Poles | High Barrier Option Only |
|--------|--|--|---|
| X | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 133 - TB100 (0.060 thk x 0.500 w) 103 - TB100 (0.032 thk x 0.312 w) 233 - TB200 (0.060 thk x 0.500 w) 233TB - TB200HB (0.060 thk x 0.500 w) 203 - TB200 (0.032 thk x 0.312 w) 203HB - TB200HB (0.032 thk x 0.312 w) 333 - TB300 & TB345 (0.060 thk x 0.500 w) 303 - TB300 & TB345 (0.032 thk x 0.380 w) Note: Marking Strips are not available on TB400 Series | 02 to 36 (TB100) 02 to 30 (TB200/TB200HB) 02 to 24 (TB300/TB345) | HB = High Barrier Example: 12 position cover, TB200HB, 0.060" x 0.500", with no legends... Part No. is X23312HB. |

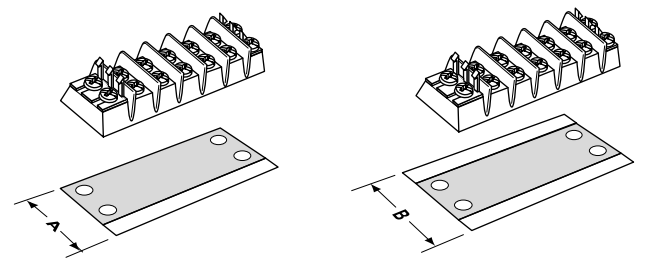
Bottom Marker Strips

Bottom mounting marker strips are made of black PVC, 0.030" thick. Space is available to handle most marking situations. All marker strips must be ordered separately.

To order, specify part number, required legends and (BF) bottom forward, (BR) bottom reverse, (TF) top forward, or (TR) top reverse. Consult factory for specials.

Example: 13 position strip, TB100 with no legends, space for marking one side = Catalog Number X10513.

Position for legends (one side, two sides) can be specified standard. Standard legend height is 0.125". Standard leg-ends are 0-99 and A-Z. Special legends are available on special order. Drawing(s) must be submitted to ensure accuracy of part required.



Space for marking one side

Space for marking two sides

Dimensions (in)

| Dim. | TB100 | TB200 | TB200HB | TB300 | TB345 | TB400 |
|------|-------|-------|---------|-------|-------|-------|
| A | 1.13 | 1.37 | 1.62 | 1.58 | 1.58 | N/A |
| B | 1.38 | 1.62 | 1.81 | 1.81 | 1.81 | N/A |

Catalog Number Build-A-Code

| Series | Bottom Marker Strip | Poles | High Barrier Option Only | Orientation |
|--------|---|--|---|--|
| X | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 105 = TB100/markings one side 101 = TB100/markings both sides 205 = TB200/markings one side 201 = TB200/markings both sides 295 = TB200HB/markings one side 291 = TB200HB/markings both sides 305 = TB300 & TB345/markings one side 301 = TB300 & TB345/markings both sides Note: Marking Strips are not available on TB400 Series. | 02 to 36 (TB100) 02 to 30 (TB200/TB200HB) 02 to 24 (TB300/TB345) | HB = High Barrier | BF = Bottom forward BR = Bottom reverse TF = Top forward TR = Top reverse |

Double Row Terminal Blocks

Series TB400

Specifications

Description: Double row terminal blocks.

Ratings:

Volts: — 600V

Amps: — 75A

Center Spacing: 0.687" or 11/16" (17.45mm)

Wire Range: #6-14 AWG Cu

Screw Size: #10-32 philslot screws

Torque Rating: 20 lb-in.

Distance Between Barriers: 0.56" (14.3mm)

Mounting: #10 screws

Operating Temperature: 130°C (266°F) max., -40°C (-40°F) min.

Material: Molded base: Black, UL rated 94V0 thermoplastic

Terminal plating: Tin over brass; Screws: zinc-plated steel

Breakdown Voltage: 7500V

Agency Information: UL File E62622, CSA File 47235; IEC Compliance; CE Certified

Dimensions - in

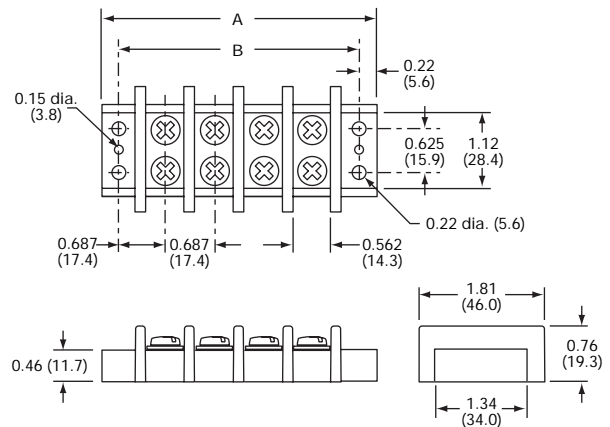
| Poles | A | B | Poles | A | B | Poles | A | B |
|-------|------|------|-------|------|------|-------|------|------|
| 02 | 2.51 | 2.06 | 06 | 5.26 | 4.81 | 10 | 8.01 | 7.56 |
| 03 | 3.20 | 2.75 | 07 | 5.95 | 5.50 | 11 | 8.70 | 8.25 |
| 04 | 3.89 | 3.44 | 08 | 6.64 | 6.19 | 12 | 9.39 | 8.94 |
| 05 | 4.58 | 4.13 | 09 | 7.33 | 6.88 | | | |

1" = 25.4mm.



TB400-05

TB400 - in (mm)



Screw Options



B
Brass Philslot
Nickel-Plated



ST
Stainless Steel
Philslot



STR
Stainless Steel
Phillips (recess)

Hardware Options



OJ14: Closed over barrier

Catalog Number Build-A-Code

| Series | Poles | Screw Options | Marking | Hardware Options |
|--------|----------|--|---------------|-----------------------------|
| TB400 | - | <input type="checkbox"/> <input type="checkbox"/> | | |
| | 02 to 12 | Blank = Steel philslot, zinc-plated 00 = Screws shipped bulk B = Brass philslot, nickel-plated ST = Stainless steel, philslot STR = Stainless steel, phillips (recess) | Not available | OJ14† - Jumper over barrier |

†Contact factory for pole configuration.

Base Mount Double Row Terminal Blocks

Series KU

Specifications

Description: Base mount double row terminal blocks.

Ratings:

Volts: — 600V

Amps: — 60A*

Center Spacing: 0.625" (15.88mm)

Number of Poles: 2- to 12-poles

Wire Range: #6-22 AWG Cu

Screw Size: #10-32

Torque Rating: 20 lb-in.

Distance Between Barriers: 0.437" (11.09mm)

Mounting: Base mount

Material: Molded base: Black, UL rated 94V1 Nuclear Grade Noryl

Terminal plating: Nickel over brass

Operating Temperature: 105°C max.

Agency Information: UL File E62622, CSA File 47235

* 60A rating achieved with #6 copper wire crimped to ring terminal.

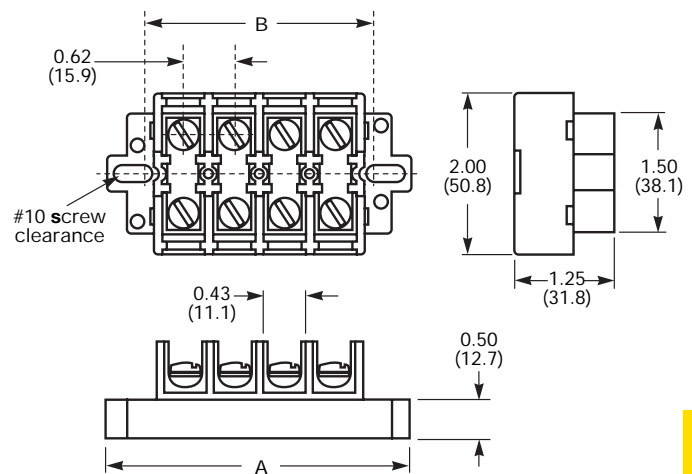


Dimensions - in

| Poles | KU | | KUX Only |
|-------|------|------|----------|
| | A | B | A |
| 02 | 2.50 | 1.62 | 2.00 |
| 03 | 3.12 | 2.25 | 2.62 |
| 04 | 3.75 | 2.87 | 3.25 |
| 05 | 4.37 | 3.50 | 3.87 |
| 06 | 5.00 | 4.12 | 4.50 |
| 07 | 5.62 | 4.75 | 5.12 |
| 08 | 6.25 | 5.37 | 5.75 |
| 09 | 6.87 | 6.00 | 6.37 |
| 10 | 7.50 | 6.62 | 7.00 |
| 11 | 8.12 | 7.25 | 7.62 |
| 12 | 8.75 | 7.87 | 8.25 |

1" = 25.4mm.

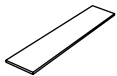
Series KU - in (mm)



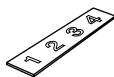
Catalog Number Build-A-Code

| Series | Poles | Screw Options | Covers | Marking Strip |
|---|---|--|---|---|
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| KU = Standard block KUH = Block KUX = Short block KUSC = Standard w/shorting strap & 4 shorting screws KURL = Standard w/removable link KUXSC = Short block w/shorting strap & 4 Shorting screws KUXRL = Short block w/removable link | 02 to 12 | 00 = Screws shipped bulk W = Brass washer head, nickel-plated P = Steel screw w/pressure plate zinc-plated B = Brass washer head, no plating BP = Brass phillslot, nickel-plated | WC = Top cover & 2 end plates | MT = Matte finish NU = Numbered 1 to 12, horizontal NUV = Numbered 1 to 12, vertical PT = Marker strip for cover |

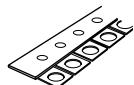
Accessories



MTMU##
Molded Marking Tape
Matte Finish



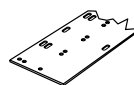
NUM##
Molded Marking Tape



JU12
Jumper
12 Circuits



NUE
End Piece for NUC



NUC##
Cover

Standard Base Terminal Blocks

Series TS — 8.0, 10.0, 12.0,
13.5mm centers

Specifications

Description: 8, 10, 12 and 13.5mm center, standard base terminal blocks.

Construction: Mold to length polyamide type 6/6 housing, nickel-plated brass contacts and stainless steel wire protector.

Ratings:

- Volts: — 600V
- Amps: — 20A (TS08)
- 30A (TS10)
- 35A (TS12)
- 50A (TS14)

Wire Range: See Specifications Table

Housing Material: Polyamide Type 6/6, 94V2 (white)

Contact Material: Nickel-Plated Brass

Wire Protector: Stainless Steel

Screw Size: See Specifications Table

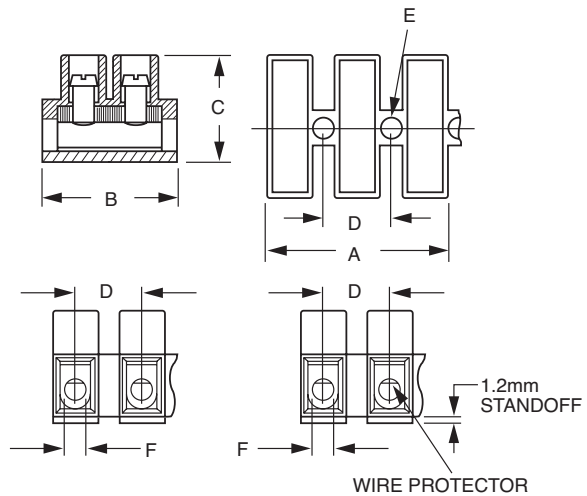
Operating Temperature: 105°C (221°F) max.,
-30°C (-22°F) min.

Torque Rating: See Specifications Table

Agency Information: UL File E62622; CE Certified

A Dimensions - in (mm)

| Poles | TS08 | TS10 | TS12 | TS14 |
|-------|--------------|---------------|---------------|---------------|
| 2 | 0.622 (15.8) | 0.689 (17.5) | 0.815 (20.7) | 0.906 (23.0) |
| 3 | 0.937 (23.8) | 1.083 (27.5) | 1.287 (32.7) | 1.437 (36.5) |
| 4 | 1.252 (31.8) | 1.476 (37.5) | 1.760 (44.7) | 1.969 (50.0) |
| 5 | 1.567 (39.8) | 1.870 (47.5) | 2.232 (56.7) | 2.500 (63.5) |
| 6 | 1.882 (47.8) | 2.264 (57.5) | 2.705 (68.7) | 3.031 (77.0) |
| 7 | 2.232 (55.8) | 2.657 (67.5) | 3.177 (80.7) | 3.563 (90.5) |
| 8 | 2.512 (63.8) | 3.051 (77.5) | 3.650 (92.7) | 4.094 (104.0) |
| 9 | 2.827 (71.8) | 3.445 (87.5) | 4.122 (104.7) | 4.626 (117.5) |
| 10 | 3.142 (79.8) | 3.839 (97.5) | 4.594 (116.7) | 5.157 (131.0) |
| 11 | 3.457 (87.8) | 4.232 (107.5) | 5.067 (128.7) | 5.689 (144.5) |
| 12 | 3.772 (95.8) | 4.626 (117.5) | 5.539 (140.7) | 6.220 (158.0) |



Specifications

| Position | Torque in-lb | Clamping Area (mm ²) | Wire Range AWG (Cu) | Screw | Dimensions - in (mm) | | | | | |
|----------|--------------|----------------------------------|-------------------------|--------|----------------------|-------------|-------------|------------|----------------|--|
| | | | | | B | C | D | E | F | |
| TS0801 | 3.5 | 4.0 | 22-12 Sol./Str. | M2.6x5 | 0.67 (17.0) | 0.57 (14.5) | 0.32 (8.0) | 0.11 (2.9) | 0.11 (2.8±0.1) | |
| TS0802 | 3.5 | 1.5 | 22-12 Sol./Str. | M2.6x5 | 0.67 (17.0) | 0.57 (14.5) | 0.32 (8.0) | 0.11 (2.9) | 0.11 (2.8±0.1) | |
| TS1001 | 4.4 | 6.0 | 22-10 Sol., 14-10 Str. | M3.0x6 | 0.80 (20.2) | 0.67 (17.0) | 0.39 (10.0) | 0.14 (3.6) | 0.13 (3.4±0.1) | |
| TS1002 | 4.4 | 2.5 | 22-12 Sol./Str, 10 Sol. | M3.0x6 | 0.80 (20.2) | 0.67 (17.0) | 0.39 (10.0) | 0.14 (3.6) | 0.13 (3.4±0.1) | |
| TS1201 | 7.0 | 10.0 | 22-10 Sol./Str. | M3.5x7 | 0.94 (23.8) | 0.75 (19.0) | 0.47 (12.0) | 0.14 (3.9) | 0.15 (4.2±0.1) | |
| TS1202 | 7.0 | 6.0 | 22-10 Sol./Str. | M3.5x7 | 0.94 (23.8) | 0.75 (19.0) | 0.47 (12.0) | 0.15 (3.9) | 0.15 (4.2±0.1) | |
| TS1401 | 12.0 | 16.0 | 20-8 Sol./Str. | M4.0x9 | 1.01 (25.6) | 0.99 (25.2) | 0.53 (13.5) | 0.17 (4.4) | 0.19 (5.0±0.1) | |
| TS1402 | 12.0 | 10.0 | 20-8 Sol./Str. | M4.0x9 | 1.01 (25.6) | 0.99 (25.2) | 0.53 (13.5) | 0.17 (4.4) | 0.19 (5.0±0.1) | |

Catalog Number Build-A-Code

| Series | Base | Poles |
|--------|---|---|
| TS | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 08 = 20A 10 = 30A 12 = 35A 14 = 50A | 01 = Standard 02 = Standard w/ wire protector |
| | | <input type="checkbox"/> <input type="checkbox"/> |
| | | 02 to 12 |

Flat Base Terminal Blocks

Series TS — 8.0, 10.0mm centers

Specifications

Description: 8 and 10mm center, flat base terminal blocks.

Construction: Mold to length polyamide type 6/6 housing, nickel-plated brass contact and stainless steel wire protector.

Ratings:

Volts: — 600V

Amps: — 20A (TS08)

— 30A (TS10)

Wire Range: See Specification Table

Housing Material: Polyamide Type 6/6, 94V2 (white)

Contact Material: Nickel-Plated Brass

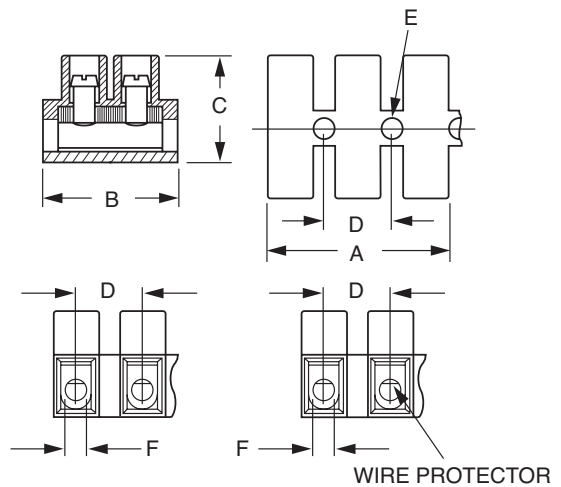
Wire Protector: Stainless Steel

Screw Size: See Specification Table

Operating Temperature: 105°C (221°F) max.,
-30°C (-22°F) min.

Torque Rating: See Specification Table

Agency Information: UL File E62622; CE Certified



A Dimensions - in (mm)

| Poles | TS08 | TS10 |
|-------|--------------|---------------|
| 2 | 0.622 (15.8) | 0.689 (17.5) |
| 3 | 0.937 (23.8) | 1.083 (27.5) |
| 4 | 1.252 (31.8) | 1.476 (37.5) |
| 5 | 1.567 (39.8) | 1.870 (47.5) |
| 6 | 1.882 (47.8) | 2.264 (57.5) |
| 7 | 2.232 (55.8) | 2.657 (67.5) |
| 8 | 2.512 (63.8) | 3.051 (77.5) |
| 9 | 2.827 (71.8) | 3.445 (87.5) |
| 10 | 3.142 (79.8) | 3.839 (97.5) |
| 11 | 3.457 (87.8) | 4.232 (107.5) |
| 12 | 3.772 (95.8) | 4.626 (117.5) |

Specifications

| Position | Torque in-lb | Clamping Area (mm ²) | Wire Range AWG (Cu) | Screw | Dimensions - in (mm) | | | | | |
|----------|-----------------|-------------------------------------|--------------------------|--------|----------------------|-------------|-------------|------------|----------------|--|
| | | | | | B | C | D | E | F | |
| TS0803 | 3.5 | 4.0 | 22-12 Sol./Str. | M2.6x5 | 0.64 (16.3) | 0.53 (13.3) | 0.32 (8.0) | 0.11 (2.9) | 0.11 (2.8±0.1) | |
| TS0804 | 3.5 | 1.5 | 22-12 Sol./Str. | M2.6x5 | 0.64 (16.3) | 0.52 (13.3) | 0.32 (8.0) | 0.11 (2.9) | 0.11 (2.8±0.1) | |
| TS1003 | 4.4 | 6.0 | 22-10 Sol., 14-10 Str. | M3.0x6 | 0.80 (20.2) | 0.62 (15.8) | 0.39 (10.0) | 0.14 (3.6) | 0.13 (3.2±0.1) | |
| TS1004 | 4.4 | 2.5 | 22-12 Sol./Str., 10 Sol. | M3.0x6 | 0.80 (20.2) | 0.62 (15.8) | 0.39 (10.0) | 0.14 (3.6) | 0.13 (3.2±0.1) | |

Catalog Number Build-A-Code

| Series | Base | Poles | |
|--------|---|---|---|
| TS | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 08 = 20A | 03 = Flat | 02 to 12 |
| | 10 = 30A | 04 = Flat w/ wire protector | |

Raised Base Terminal Blocks

Series TS - 8.0, 10.0mm centers

Specifications

Description: 8 and 10mm center, raised base terminal blocks.

Construction: Mold to length polyamide type 6/6 housing, nickel-plated brass contacts and stainless steel wire protector.

Ratings:

- Volts: — 600V
- Amps: — 20A (TS08)
- 30A (TS10)

Wire Range: See Table

Housing Material: Polyamide Type 6/6, 94V2 (white)

Contact Material: Nickel-plated Brass

Wire Protector: Stainless Steel

Screw Size: See Table

Operating Temperature: 105°C (221°F) max.,
-30°C (-22°F) min.

Torque Rating: See Table

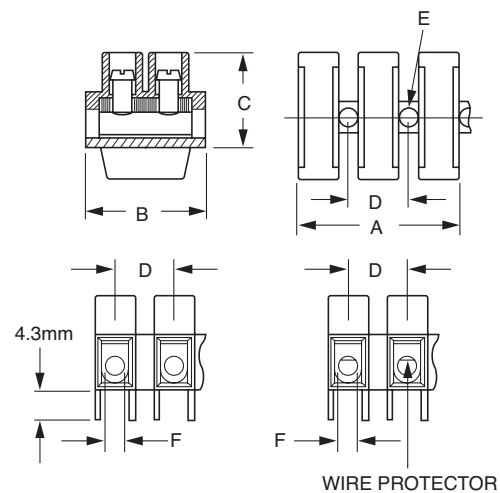
Agency Information: UL File E62622; CE Certified



Note: TS Series standard base pictured above.

A Dimensions

| Poles | TS08 | TS10 |
|-------|--------------|---------------|
| 2 | 0.622 (15.8) | 0.689 (17.5) |
| 3 | 0.937 (23.8) | 1.083 (27.5) |
| 4 | 1.252 (31.8) | 1.476 (37.5) |
| 5 | 1.567 (39.8) | 1.870 (47.5) |
| 6 | 1.882 (47.8) | 2.264 (57.5) |
| 7 | 2.232 (55.8) | 2.657 (67.5) |
| 8 | 2.512 (63.8) | 3.051 (77.5) |
| 9 | 2.827 (71.8) | 3.445 (87.5) |
| 10 | 3.142 (79.8) | 3.839 (97.5) |
| 11 | 3.457 (87.8) | 4.232 (107.5) |
| 12 | 3.772 (95.8) | 4.626 (117.5) |



Specifications

| Position | Torque in-lb | Clamping Area (mm ²) | Wire Range AWG (Cu) | Dimensions - in (mm) | | | | | |
|----------|--------------|----------------------------------|--------------------------|----------------------|--------------|--------------|--------------|-------------|----------------|
| | | | | Screw | B | C | D | E | F |
| TS0805 | 3.5 | 4.0 | 22-12 Sol./Str. | M2.6x5 | 0.64 (16.30) | 0.67 (16.90) | 0.32 (8.00) | 0.11 (2.90) | 0.11 (2.8±0.1) |
| TS0806 | 3.5 | 1.5 | 22-12 Sol./Str. | M2.6x5 | 0.64 (16.30) | 0.67 (16.90) | 0.32 (8.00) | 0.11 (2.90) | 0.11 (2.8±0.1) |
| TS1005 | 4.4 | 6.0 | 22-10 Sol., 14-10 Str. | M3.0x6 | 0.80 (20.20) | 0.79 (20.10) | 0.39 (10.00) | 0.14 (3.60) | 0.13 (3.2±0.1) |
| TS1006 | 4.4 | 2.5 | 22-12 Sol./Str., 10 Sol. | M3.0x6 | 0.80 (20.20) | 0.79 (20.10) | 0.39 (10.00) | 0.14 (3.60) | 0.13 (3.2±0.1) |

Catalog Number Build-A-Code

| Series | Base | Poles |
|----------|-------------------------------|----------|
| TS | | |
| 08 = 20A | 05 = Raised | 02 to 12 |
| 10 = 30A | 06 = Raised w/ wire protector | |

Disconnect Switches

Section Contents

| | Page |
|---|---------|
| Compact Circuit Protector (CCP) fused disconnect switches | 326-329 |
| Fused, dead front disconnect switches | 329 |
| <i>Fusible Disconnect Switch Overview</i> | 330 |
| 30A Base & DIN rail mount fusible disconnect switches | 331-333 |
| 60-100A Base & DIN rail mount fusible disconnect switches | 334-336 |
| 200A Base & DIN rail mount fusible disconnect switches | 337-339 |
| 400-800A Base & DIN rail mount fusible disconnect switches | 340-343 |
| 30-400A Side operated fusible disconnect switches | 344 |
| 30-100A Flange operated fusible disconnect switches | 345 |
| 30-800A Cable operated fusible disconnect switches | 346 |
| UL/cULus & IEC Technical data for fusible disconnect switches | 347-349 |
| <i>Non-fusible Disconnect Switch Overview</i> | 350-351 |
| 16-100A Base & DIN rail mount non-fusible disconnect switches | 352-355 |
| 16-100A Door mounted non-fusible disconnect switches | 356-358 |
| 125A Non-fusible disconnect switches | 359-360 |
| 200A Non-fusible disconnect switches | 361-362 |
| 400A Non-fusible disconnect switches | 363-364 |
| 600-800A Non-fusible disconnect switches | 365-366 |
| 1200-1350A Non-fusible disconnect switches | 367-368 |
| 30-600A Side operated non-fused disconnects | 369 |
| 30-200A Flange operated non-fused disconnects | 370 |
| 30-200A Cable operated non-fused disconnects | 371 |
| UL/cULus & IEC Technical data for non-fusible disconnect switches | 372-377 |
| 30-800A Enclosed fusible disconnect switches | 378-380 |
| 16-3150A Enclosed fusible disconnect switches | 381-383 |
| Technical data for enclosed non-fusible disconnect switches | 384-386 |



Compact Circuit Protector (CCP) Class CC, Midget & 10x38

Up to 30A



Specifications

Description: The revolutionary Cooper Bussmann® CCP is 1/3 the footprint of a circuit breaker. The level of protection provided by the CCP is up to three times the Short-Circuit Current Rating (SCCR) at full voltage than a molded case circuit breaker while providing disconnecting means.

Ratings:

- Box Lug Connection:
 - 18-6AWG single or dual rated, solid or stranded – 75°C or higher - Cu only,
 - 4AWG single – 75°C or higher - Cu only
- Spade Terminal Connection:
 - Max 30A suitable for use with #8-32UNC screw
- Box Lug and Spade Terminal suitable for line, load or accessory connection
- Torque:
 - 18-10AWG 20 lb-in
 - 8-4AWG 35 lb-in
- Lock-out/tag-out:
 - 4mm shank lock or standard pin-out devices
- 35mm DIN Rail Mount
- Local indication minimum operating voltage:
 - 90Vac for AC version
 - 12Vdc for DC version

Agency Information:

- For Class CC fuse version
 - UL 98 Listed, File E302370, Guide WHTY
 - cULus to CSA Standard 22.2 No. 4-04, File 302370, Guide WHTY7
 - CE Compliant
- For UL Midget and 10X38 IEC fuse version
 - UL 508 Listed, File E161278, Guide 8R29
 - cULus Certified 22.2 No. 14-05
 - IEC 60947-3 AC23A
 - IEC 60947-3 DC23A
 - CE Compliant

Features and Benefits:

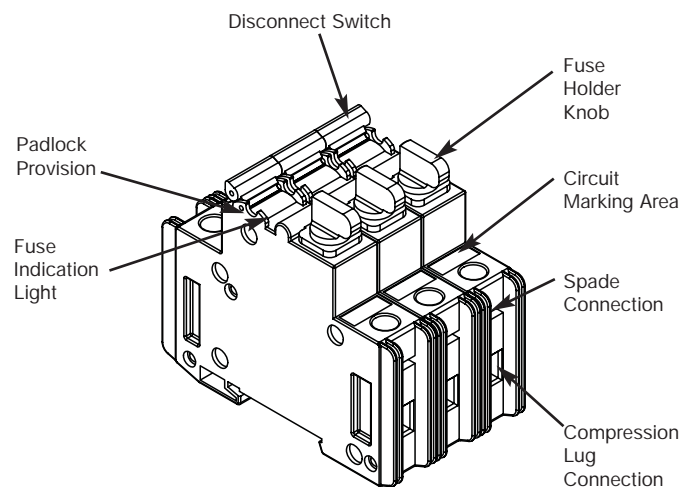
- Extremely compact design at 17.5mm wide per pole
- High Short-Circuit Current Ratings up to 200kA
- Disconnect Rated to provide means for load isolation
- Full Voltage Rated 600Vac or 80Vdc
- UL 98 disconnect rated for protection of branch circuits with Low-Peak® CUBEFuse and Class CC fuses.
- Suitable for Global Installations, the units Complies with UL, CSA, and IEC standards accepting UL Class CC, Class CF Low-Peak CUBEFuse with Class J performance, Midget or IEC aM and gG fuses
- Horsepower rated for protecting motor circuits with CUBEFuse and Class CC units.
- Open Fuse Indication
 - Local fuse indication lights* are standard
 - Optional wired remote open fuse indication can be utilized to signal a PLC and open a contactor to de-energize all phases, if required.
- IP20 finger-safe construction with 10AWG wire or larger
- Built-in switch interlock capability prohibits removing the fuse under load
- Padlockable handle for lock-out/tag-out procedures
- Available in 1-, 2- and 3-pole versions

*Circuit must be closed for indication light to illuminate

Environmental Data:

- RoHS Compliant: Yes
- Storage and Operating Temperature: -20°C to 75°C**
- CE Compliant: Yes

**For fuse performance under or above 25°C, consult fuse performance derating charts in the Cooper Bussmann publication titled Selecting Protective Devices (SPD) reorder #3002.



Data Sheet 1157 and the CCP Application Notes are available at www.cooperbussmann.com/ccp

Class CC & 10x38

Up to 30A

Technical Ratings

| Catalog Number | Poles | Amp Rating | Voltage Rating | Fuse Type | Max. Fuse Ampacity | SCCR | Agency Approvals | Hp Ratings |
|----------------|-------|------------|----------------|------------------------|--------------------|--------|---------------------------------------|------------------------------------|
| CCP-1-30CC | 1 | 30 | 600Vac | Class CC | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 0.5Hp@120V |
| CCP-2-30CC | 2 | 30 | 600Vac | Class CC | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 2.0Hp@240V |
| CCP-3-30CC | 3 | 30 | 600Vac | Class CC | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 3Hp@240V 5Hp@480V 7.5Hp@600V |
| CCP-1-30M | 1 | 30 | 240Vac* UL | UL Midget | 30A | 10kA* | UL 508 Listed cULus 22.2 No. 14-05 | — |
| | | | 400Vac* IEC | 10x38 IEC | 32A aM, 25A gG | 120kA* | IEC 60947-3 AC23A | |
| CCP-2-30M | 2 | 30 | 240Vac* UL | UL Midget | 30A | 10kA* | UL 508 Listed cULus 22.2 No. 14-05 | — |
| | | | 400Vac* IEC | 10x38 IEC | 32A aM, 25A gG | 120kA* | IEC 60947-3 AC23A | |
| CCP-3-30M | 3 | 30 | 240Vac* UL | UL Midget | 30A | 10kA* | UL 508 Listed cULus 22.2 No. 14-05 | — |
| | | | 400Vac* IEC | 10x38 IEC | 32A aM, 25A gG | 120kA* | IEC 60947-3 AC23A | |
| CCP-1-DCC | 1 | 30 | 80Vdc* | Class CC (DC rated) | 30A | 20kA* | UL 98 Listed CSA 22.2 No. 4-04 | — |
| CCP-1-DCM | 1 | 30 | 80Vdc* | UL Midget | 30A | 10kA* | UL 508 Listed cULus 22.2 No. 14-05 | — |
| | | | | 10x38 IEC | 32A aM, 25A gG | | IEC 60947-3 DC23A | |

*Rating may be lower depending on installed fuse. Refer to fuse data sheet.



CCP-AUX



CCP-PLC-IND
(Includes spade terminals)

Accessories

| Catalog Number | Description | Configuration | Signal Output | Minimum Circuit Voltage | Agency Approvals |
|----------------|---|---------------|---------------|-------------------------|--|
| CCP-AUX | Auxiliary Contacts NO+NC for Switch Status | 1 per CCP | 5A/240Vac | — | UL 98 Recognized and cURus 22.2 No. 4-04, IEC 60947-5-1 AC15 |
| CCP-PLC-IND | Wired Remote Fuse Indication for PLC Applications | 1 per CCP | 24Vdc | 100Vac | UL 98 Recognized and cURus 22.2 No. 4-04 |

Data Sheet 1157 and the CCP Application Notes are available at www.cooperbussmann.com/ccp

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa

Compact Circuit Protector (CCP) CUBEFuse®

Up to 100A



Specifications

Description: The revolutionary Cooper Bussmann® CCP is 1/3 the footprint of a circuit breaker. The level of protection provided by the CCP is up to three times the Short-Circuit Current Rating (SCCR) at full voltage than a molded case circuit breaker while providing disconnecting means.

Ratings:

- Box Lug Connection: 18-6 AWG single or dual rated, solid or stranded – 75°C or higher - Cu only, 4 AWG single – 75°C or higher - Cu only.
- Spade Terminal Connection: Max. 30A suitable for use with #8-32 UNC screw.
- Box Lug and Spade Terminal suitable for line, load or accessory connection.
- Torque 0-60A: 18-10 AWG 20 lb-In
8-4 AWG 35 lb-In.
- Torque 100A: 18-10 AWG Single 25 lb-In
8-2 AWG Single 35 lb-In
1 AWG Single 40 lb-In
6 AWG Dual 45 lb-In
- Lockout/tagout: 4mm shank lock or standard pin-out devices.
- 35mm DIN rail mount.
- Local indication minimum operating voltage: 90Vac/115Vdc.

Agency Information:

UL 98 Listed, File E302370, Guide WHTY
cULus to CSA Standard 22.2 No. 4-04, File 302370, Guide WHTY7
CE Compliant

Environmental Data:

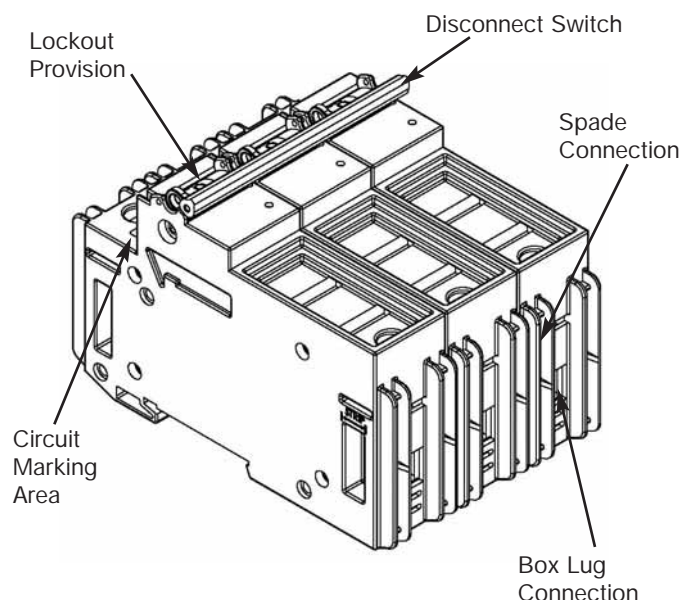
Storage and operating temperature: -20°C to 75°C**

**For fuse performance under or above 25°C, consult fuse performance derating charts in the Cooper Bussmann publication titled Selecting Protective Devices (SPD) reorder #3002.

Features and Benefits:

- Uses finger-safe Class CF Low-Peak® CUBEFuse® with Class J performance
- Extremely compact design at 25.4mm (1 inch) wide per pole
- High Short-Circuit Current Ratings at 200kA
- Disconnect rated to provide means for load isolation
- Full voltage rated at 600Vac
- UL 98 Listed and suitable for branch circuit disconnect and branch circuit protection
- 1-, 2- and 3-pole versions are horsepower rated
- Complies with UL and CSA
- Open Fuse Indication:
 - Local fuse indication lights* are standard
 - Optional wired remote open fuse indication can be utilized to signal a PLC and open a contactor to de-energize all phases, if required
- Additional open fuse indication can be provided by the CUBEFuse®
- IP20 finger-safe construction with 10 AWG wire or larger
- Built-in switch interlock capability prohibits removing the fuse under load
- Padlockable handle for lockout/tagout procedures

*Circuit must be closed for indication light to illuminate



Data Sheet 1157 and the CCP Application Notes are available at www.cooperbussmann.com/ccp

Compact Circuit Protector (CCP) CUBEFuse®

Up to 100A

Technical Ratings

| Catalog Number | Poles | Amp Rating | Voltage Rating | Fuse Type | Max. Fuse Ampacity | SCCR | Agency Approvals | Hp Ratings |
|----------------|-------|------------|-------------------|--------------------|--------------------|-------|-------------------------------------|--------------------------------------|
| CCP-1-30CF | 1 | 30 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 1.5Hp@120V |
| CCP-2-30CF | 2 | 30 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 3.0Hp@240V |
| CCP-3-30CF | 3 | 30 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 30A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 5Hp@240V 15Hp@480V 10Hp@600V |
| CCP-1-60CF | 1 | 60 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 60A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 3.0Hp@120V |
| CCP-2-60CF | 2 | 60 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 60A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 7.5Hp@240V |
| CCP-3-60CF | 3 | 60 | 600Vac/ 125Vdc | Class CF CUBEFuse* | 60A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 7.5Hp@240V 20Hp@480V 10Hp@600V |
| CCP-1-100CF | 1 | 100 | 600Vac | Class CF CUBEFuse* | 100A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 5Hp@120V |
| CCP-2-100CF | 2 | 100 | 600Vac | Class CF CUBEFuse* | 100A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 10Hp@240V |
| CCP-3-100CF | 3 | 100 | 600Vac | Class CF CUBEFuse* | 100A | 200kA | UL 98 Listed cULus 22.2 No. 4-04 | 20Hp@240V 50Hp@480V 50Hp@600V |

*Class J performance.

Fused, Dead Front Disconnect Switches

15149 Series

Specifications

Description: Fused, dead front disconnect switches

Ratings:

Volts: — 600Vac

Amps: — 0-30A

SCCR: — 200kA RMS Sym.

Dielectric SCCR: 2200V

Motor Rating: 5Hp

Poles: 2 to 3

Agency Information: UL Recognized, file E116716 for General Industrial installations. Guide WFXV2. CSA certified, file LR37129-6. Examined under the new proposed standard UL 1429 which imparts a stricter set of test conditions than the former program that combined the applicable portions for UL 512 (Fuse Holders) and UL 98 (Enclosed Switches).



Features and Benefits

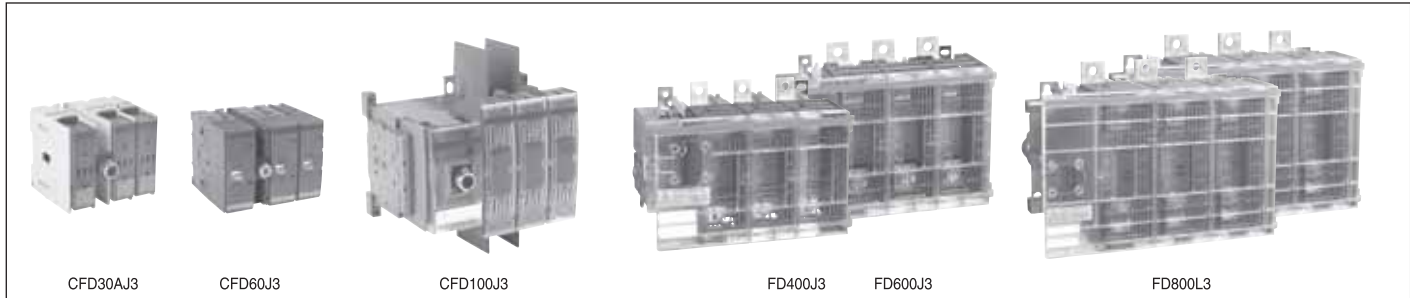
- Fuse holders in the pull-out head eliminate possibility of electric shock while changing fuse.
- Accepts Class J fuses

Ordering Information

To order, specify: 15149 + number of poles.
Example: 15149-2 = 2-pole device.

Overview for Fusible Disconnect Switches

CFD30CC3 – FD800L3



| Catalog number | 3 pole | CFD30ACC3 | CFD30AJ3 | CFD60J3 | CFD100J3 | CFD200J03 | FD400J3 | FD600J3 | FD800L3 |
|--|----------------------------|---------------------------------|---------------------------------|---------------------------------|--|--|--|--|--|
| General purpose amp rating | A | 30 | 30 | 60 | 100 | 200 | 400 | 600 | 800 |
| Approvals[®] | 2 pole 3 pole 4 pole | N/A UL98 & IEC UL98 & IEC | N/A UL98 & IEC UL98 & IEC | N/A UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC |
| Technical ratings (UL, cULus) | | | | | | | | | |
| Max operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Max horsepower rating | | | | | | | | | |
| Three phase | | | | | | | | | |
| 200 – 208V | HP | 5/7.5 | 5/7.5 | 15 | 25 | 50 | 100/125 | 150 | 200 |
| 240V | HP | 7.5 | 7.5 | 15 | 30 | 60 | 125 | 200 | 250 |
| 480V | HP | 15 | 15 | 30 | 60 | 125 | 250 | 400 | 500 |
| 600V | HP | 20 | 20 | 50 | 75 | 150 | 350 | 500 | 600 |
| Single phase | | | | | | | | | |
| 120V | HP | 2 | 2 | — | — | — | — | — | — |
| 240V | HP | 3 | 3 | — | — | — | — | — | — |
| UL fuse class | | CC | J | J | J | J | J,T | J,T | L |
| Technical ratings (IEC) | | | | | | | | | |
| Rated insulation and operational voltage, AC20 and DC20 [®] | | 1000 | 1000 | 750 | 750 | 1000 | 1000 | 1000 | 1000 |
| Rated thermal current, I _n | | | | | | | | | |
| AC 20/DC 20 open | A | 32 | 32 | 63 | 125 | 200 | 400 | 630 | 800 |
| AC 20/DC 20 enclosed | A | 32 | 32 | 63 | 125 | 200 | 400 | 600 | 720 |
| AC 21A | | | | | | | | | |
| 500V | A | 32 | 32 | 63 | 125 | 200 | 400 | 630 | 800 |
| 690V | A | 32 | 32 | 63 | 125 | 200 | 400 | 630 | 800 |
| Rated operational power AC23 | | | | | | | | | |
| 400/415V | kW | 14/15 | 14/15 | 30 | 80/90 | 110 | 210/230 | 315/340 | 350/380 |
| 690V | kW | 25 | 25 | 60 | 132 | 200 | 330 | 540 | 600 |
| Physical characteristics | | | | | | | | | |
| Weight | | | | | | | | | |
| 3 pole switch | lb | 1.54 | 1.54 | 2.86 | 3.30 | 5.9 | 17.2 | 37.48 | 37.48 |
| 4 pole | lb | 1.98 | 1.98 | 3.52 | 3.96 | 7.5 | 19.4 | 46.3 | 46.3 |
| Dimension | | | | | | | | | |
| 3 pole | | | | | | | | | |
| H | in | 3.82 | 3.82 | 3.94 | 5.66 | 6.5 | 7.87 | 11.42 | 11.42 |
| W | in | 4.17 | 4.17 | 5.63 | 7.06 | 7.1 | 11.22 | 14.69 | 14.69 |
| D | in | 4.21 | 4.21 | 5.04 | 5.09 | 5.2 | 8.11 | 9.21 | 9.21 |
| Accessories | | | | | | | | | |
| Double break contacts | | S | S | S | S | S | S | S | S |
| Fuse cover | | S | S | S | • | S | S | S | S |
| Terminal lug kit | | Integral | Integral | Integral | BDTL24 | CDTL200 | BDTL26 | BDTL27 | BDTL27 |
| Terminal shroud | | Not required | Not required | Not required | • | • | • | • | • |
| Auxiliary contact | | • | • | • | • | • | • | • | • |
| Handle UL/NEMA type | | | | | | | | | |
| Type 1, 3R, 12 | | • | • | • | • | • | • | • | • |
| Type 1, 3R, 4, 4X, 12 | | • | • | • | • | • | • | • | • |
| Conversion kit | | • | • | • | • | • | • | • | • |
| 6 pole | | • | • | • | • | • | • | • | • |
| Electrical interlock | | — | — | — | — | • | • | • | • |

S = Standard
• = Available

UL Listed, cULus approved, IEC rated, CE marked

30A Fusible Disconnect Switches Base & DIN Rail Mounted

UL Fuse Class J, CC

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft



CFD30AJ3



BDS_



CDH3S



CFD30AJ3



CBDH3S, 5S



CBDH4S, 6S



BDS_

30 Amp switches, 600V

| UL general purpose amp rating | UL Fuse type 600V | Maximum horsepower rating | | | | | Terminal lugs | | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|---------------|-----------|----------------|
| | | Three phase | | | | | Wire size | Wire type | |
| | | 200V | 208V | 240V | 480V | 600V | | | |
| 3 pole | | | | | | | | | |
| 30 | J | 5 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | CFD30AJ3 |
| 30 [Ⓢ] | CC | 5 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | CFD30ACC3 |
| 4 pole | | | | | | | | | |
| 30 | J | 5 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | CFD30AJ4 |
| 30 [Ⓢ] | CC | 5 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | CFD30ACC4 |

Selector handles — for use with shafts .24 x .24" (6 x 6 mm)

| NEMA type | IEC type | Color | Defeatable | Padlockable | Weight (lbs.) | Catalog number |
|---|----------|------------|------------|-------------|---------------|----------------|
| All marked both O/I & Off/On | | | | | | |
| 1,3R,12 | IP65 | Black | — | Yes | 0.16 | CBDH3S |
| 1,3R,12 | IP65 | Red/Yellow | — | Yes | 0.16 | CBDH4S |
| 1,3R,12 | IP65 | Black | Yes | Yes | 0.16 | CBDH5S |
| 1,3R,12 | IP65 | Red/Yellow | Yes | Yes | 0.16 | CBDH6S |

Shafts — for use with CBDH selector handles .24 x .24" (6 x 6 mm)

| Shaft length (inches/mm) | Mounting depth (inches) | Weight (lbs.) | Catalog number |
|--------------------------|-------------------------|---------------|----------------|
| 3.3/85 | 5.5 – 5.7 | 0.04 | BDS85S |
| 4.1/105 | 5.5 – 6.5 | 0.04 | BDS105S |
| 4.7/120 | 5.5 – 7.1 | 0.05 | BDS120S |
| 5.1/130 | 5.5 – 7.5 | 0.05 | BDS130S |
| 7.1/180 | 6.3 – 9.4 | 0.08 | BDS180S |
| 9.8/250 | 9.1 – 12.2 | 0.10 | BDS250S |
| 13.0/330 | 12.2 – 15.4 | 0.14 | BDS330S |

[Ⓢ] Rejection style fuses only.

Handles & Shafts for 30A Fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft



CFD30AJ3



BDS_



BDH59

Pistol handles — for use with shafts .24 x .24" (6 x 6 mm)

| NEMA type | IEC type | Color | Marking | Length inches/mm | Defeatable | Padlockable | Weight (lbs.) | Catalog number |
|--------------|----------|------------|--------------|------------------|------------|-------------|---------------|----------------|
| 1,3R,12 | IP65 | Black | O/I & Off/On | 1.8/45 | Yes | Yes | 0.28 | BDH56 |
| 1,3R,12 | IP65 | Red/Yellow | O/I & Off/On | 1.8/45 | Yes | Yes | 0.28 | BDH57 |
| 1,3R,12 | IP65 | Black | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | BDH58 |
| 1,3R,12 | IP65 | Red/Yellow | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | BDH59 |
| 1,3R,4,4X,12 | IP65 | Black | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | CDHXB65L6 |
| 1,3R,4,4X,12 | IP65 | Red/Yellow | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | CDHXY65L6 |
| 1,3R,12 | IP65 | Black | Off/On/Test | 2.6/65 | Yes | Yes | 0.29 | BDH58T |
| 1,3R,12 | IP65 | Red/Yellow | Off/On/Test | 2.6/65 | Yes | Yes | 0.29 | BDH59T |



BDH56, BDH58



BDH57, BDH59



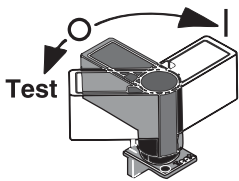
BDS_

Shafts — for use with pistol handles .24 x .24" (6 x 6 mm)

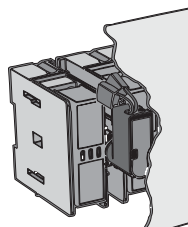
| Shaft length (inches/mm) | Mounting depth (in inches) | Weight (lbs.) | Catalog number |
|--------------------------|----------------------------|---------------|----------------|
| 5.9/150 | 4.9 – 8.9 | 0.07 | BDS150 |
| 6.7/170 | 5.9 – 9.7 | 0.08 | BDS170 |
| 10.4/265 | 9.5 – 13.4 | 0.12 | BDS265 |
| 15.8/400 | 15.0 – 18.7 | 0.18 | BDS400 |
| 19.7/500 | 20.5 – 22.6 | 0.23 | BDS500 |

Direct mount handle — mounts directly to switch, no shaft necessary

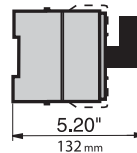
| NEMA type | Color | Marking | Length mm | Padlockable | Weight (lbs.) | Catalog number |
|-----------|-------|----------|-----------|-------------|---------------|----------------|
| 1 | Blk | O/I/Test | 50 | Yes | 0.10 | BDHA79 |



BDHA79



BDHA79 Mounted

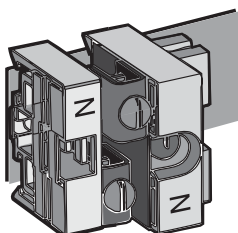


5.20"/132mm
BDHA79 Mounted depth

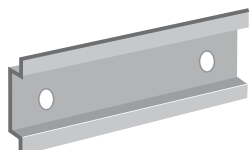
Accessories for 30A Fusible Disconnect Switches



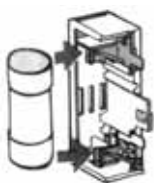
CFD30AJ3 with auxiliaries



CFDZX171



NDNA100



BDZD48



CXBY67121

Auxiliary contacts[®]

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---------------------------------------|---|--------------|-----------------------|------------------|---------------------|
| Form C 1 N.O. & 1 N.C. (2 maximum) | CFD30_ for direct mounting to switch | 0.04 | 6 | 250 | BDAUX157 |
| 1 N.O. 1 N.C. (6 maximum) | CFD30_ CDAUXB mounting base required | 0.03 | NEMA A600,P600 | | CDAUX10 CDAUX01K |

Mounting base

| Description | For use with: | Weight (lbs) | | Catalog number |
|---------------|-------------------|--------------|--|----------------|
| Mounting base | CDAUX10, CDAUX01K | 0.08 | | CDAUXB |

Terminal pole

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|-------------|--------------|-----------------------|------------------|----------------|
| Detachable neutral mounts on side of switch or DIN rail | CFD30_ | 0.45 | 30 | 600 | CFDZX171 |

DIN rail

| Description | For use on: | Weight (lbs.) | Length inches/mm | Catalog number |
|------------------------|-------------|---------------|------------------|----------------|
| 35mm DIN Rail | CFD30_ | .38 | 39.4/1000 | NDNA100 |
| 35mm Aluminum DIN Rail | CFD30_ | .75 | 78.8/2000 | NDNA200 |

Fuse Carriers (Replacement Parts)

| Description | For use on: | | Catalog number |
|---------------------|-------------|--|----------------|
| CC fuse carrier | BDCF30CC_ | | BDZD48 |
| J fuse carrier | BDCF30J_ | | BDZD28 |
| Class CC Solid link | CFD30_ | | NNB-R |

Terminal cover (replacement part)

| Description | For use on: | | Catalog number |
|------------------------------------|-------------|--|----------------|
| Covers terminal below fuse carrier | CFD30_ | | CDBY67121 |

① UL File # E83510

60A – 100A for Fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CFD60J3



BDS210



BDH58

60 – 100 Amp switches, 600V

| UL general purpose amp rating | UL Fuse type 600V | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|----------------|
| | | Three phase | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | |
| 3 pole | | | | | | | 3 pole |
| 60 | J | 15 | 15 | 15 | 30 | 50 | CFD60J3 |
| 100 | J | 25 | 25 | 30 | 60 | 75 | CFD100J3 |
| 4 pole | | | | | | | 4 pole |
| 60 | J | 15 | 15 | 15 | 30 | 50 | CFD60J4 |
| 100 | J | 25 | 25 | 30 | 60 | 75 | CFD100J4 |

Pistol handles — $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| NEMA/UL type | IEC type | Color | Length in/mm | Marking | Defeatable | Padlockable | Weight (lbs.) | Catalog number |
|--------------|----------|---------|--------------|--------------|------------|-------------|---------------|----------------|
| 1,3R,12 | IP65 | Black | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH58 |
| 1,3R,12 | IP65 | Red/Yel | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH59 |
| 1,3R,12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH60 |
| 1,3R,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH61 |
| 1,3R,4,4X,12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXB86 |
| 1,3R,4,4X,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXY86 |

Shafts — $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length (inches/mm) | Mounting depth (inches) | Weight (lbs.) | Catalog number |
|--------------------------|-------------------------|---------------|----------------|
| 5.9/150 | 5.5 – 8.5 | 0.09 | BDS150 |
| 8.3/210 | 8.0 – 11.0 | 0.13 | BDS210 |
| 11.4/290 | 11.0 – 14.0 | 0.18 | BDS290 |
| 14.2/360 | 13.8 – 16.8 | 0.23 | BDS360 |
| 16.9/430 | 16.5 – 19.7 | 0.27 | BDS430 |

Twisted shafts — Rotates handle 45° $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length (inches/mm) | Mounting depth (inches) | Weight (lbs.) | Catalog number |
|--------------------------|-------------------------|---------------|----------------|
| 5.1/130 | 4.8 – 7.8 | 0.08 | BDST4 |
| 8.3/210 | 8.0 – 11.0 | 0.13 | BDST25 |
| 11.4/290 | 11.0 – 14.0 | 0.18 | BDST29 |
| 14.2/360 | 13.8 – 16.8 | 0.23 | BDST30 |

Direct mount handle — mounts directly to switch, no shaft necessary

| NEMA type | Color | Marking | Length mm | Padlockable | Weight (lbs.) | Catalog number |
|-----------|-------|----------|-----------|-------------|---------------|----------------|
| 1 | Black | O/I/Test | 50 | Yes | 0.10 | CDH4 |



Accessories for 60A – 100A Fusible Disconnect Switches



Terminal lug kit

| For use on: | Wire size | Kit weight (lbs) | Wire type | Terminal lugs per kit | Catalog number |
|-------------|-----------|------------------|-----------|-----------------------|----------------|
| CFD60J_ | #14 – 4 | — | Cu | — | Integral |
| CFD100J_ | #14 – 2/0 | 0.43 | Cu/Al | 6 | BDTL24 |

Auxiliary contacts

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|------------------|----------------|--------------|-----------------------|------------------|---------------------|
| 1 N.O. 1 N.C. | CFD60 – CFD100 | 0.07 0.07 | 10 10 | 600 600 | CDAUX10 CDAUX01K |

Replacement fuse clip

| Description | For use on: | Catalog number |
|------------------------|-------------|----------------|
| Removable fuse carrier | CFD60 | CFC60J |

Replacement fuse covers

| Description | For use on: | Catalog number |
|------------------------|-------------|----------------|
| Transparent fuse cover | CFD100 | CFCVR100 |

Terminal shroud

| Description | For use on: | Weight (lbs) | Catalog number |
|--|----------------|--------------|----------------|
| Includes one terminal shroud for line or load side | CFD100, 1-POLE | 0.04 | CFTS100 |

Terminal poles

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|-------------|--------------|-----------------------|------------------|----------------|
| Detachable neutral mounts on side of switch or DIN rail | CFD60 | 0.13 | 63 | 600 | CFZ1 |
| | CFD100 | 0.31 | 125 | 600 | CFZ2 |

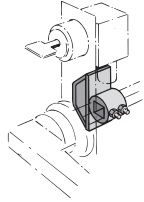
DIN rail

| Description | For use on: | Weight (lbs.) | Length inches/mm | Catalog number |
|------------------------|-------------|---------------|------------------|----------------|
| 35mm Aluminum DIN Rail | CFD60 | .38 | 39.4/1000 | NDNA100 |
| 35mm Aluminum DIN Rail | CFD60 | .75 | 78.8/1000 | NDNA200 |

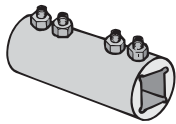
“T” type fuse adapter kit

| Description | For use on: | Catalog number |
|-------------|-------------|----------------|
| 100A, 600V | CFD100 | BDTA1 |

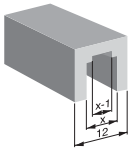
Accessories for 60A – 100A Fusible Disconnect Switches



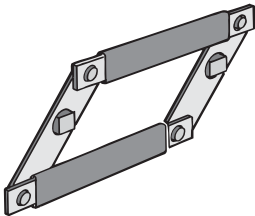
CDETL-ZW16



BDZX167
BDZW95



CDZK19
(X=6MM)



BDZW2

Locking accessories

| Description | For use on: | Weight (lbs) | Catalog number |
|---|----------------|--------------|----------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. Cam attachment for adapting to the interlock system. The interlock is not included. | CFD60 – CFD100 | 0.25 | CDETL-ZW16 |

Shaft extension coupler

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|--------------|-------------------|
| Joins two shafts together for applications where extended length is required | 6mm shafts | 0.26 | BDZX167 BDZW95 |
| | 12mm shafts | 0.26 | |

Shaft adapter

| Description | For use on: | Weight (lbs) | Catalog number |
|---|-------------|--------------|----------------|
| Adapts one end of a 6mm shaft to 12mm. Use with shaft extension coupler | 6mm shafts | 0.20 | CDZK19 |

Conversion mechanisms

- Switches are not included

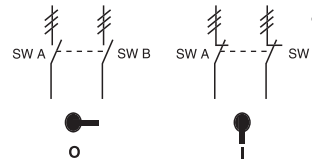
| Description | For use on: | Weight (lbs) | Catalog number |
|----------------------|----------------|--------------|----------------|
| 6 and 8 pole | CFD60 – CFD100 | 1.52 | BDZW2 |
| Mechanical interlock | CFD60 – CFD100 | 0.55 | BDZW10 |

6 or 8 pole — BDZW2

6 (8) pole mechanism allows two switches controlled by one handle, to open or close simultaneously. Shafts included.

Equipment required for a complete installation:

- One conversion mechanism
- Two disconnect switches
- One handle



| | POS. O | POS. I |
|-------|--------|--------|
| SW. A | O | X |
| SW. B | O | X |

X = Closed
O = Open

① = Three poles

200A Fusible Disconnect Switches

UL Fuse Class J

For a complete assembly, please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CFD200J03



BDS210



BDH58



CDTL200



BDH58,60



BDH58,61



BDS_



BDST_

200 Amp Switches, 600V

| UL general purpose amp rating | UL fuse type 600V | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|----------------|
| | | Three phase | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | |
| 3 pole | | | | | | | |
| 200 | J | 50 | 50 | 60 | 125 | 150 | CFD200J03 |
| 4 pole | | | | | | | |
| 200 | J | 50 | 50 | 60 | 125 | 150 | CFD200J04 |

Pistol handles - $\square .24 \times .24''$ ($\square 6 \times 6\text{mm}$)

| UL/NEMA type | IEC type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|---------|------------------|--------------|------------|-------------|--------------|----------------|
| 1,3R,12 | IP65 | Black | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH58 |
| 1,3R,12 | IP65 | Red/Yel | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH59 |
| 1,3R,12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH60 |
| 1,3R,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH61 |
| 1,3R,4,4X,1 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXB86 |
| 1,3R,4,4X,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXY86 |

Shafts - $\square .24 \times .24''$ ($\square 6 \times 6\text{mm}$)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 5.9/150 | 5.5-8.5 | 0.09 | BDS150 |
| 8.3/210 | 8.0-11.0 | 0.13 | BDS210 |
| 11.4/290 | 11.0-14.0 | 0.18 | BDS290 |
| 14.2/360 | 13.8-16.8 | 0.23 | BDS360 |
| 16.9/430 | 16.5-19.7 | 0.27 | BDS430 |

Twisted shafts - rotates handle 45° $\square .24 \times .24''$ ($\square 6 \times 6\text{mm}$)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 5.1/130 | 4.8-7.8 | 0.08 | BDST4 |
| 8.3/210 | 8.0-11.0 | 0.13 | BDST25 |
| 11.4/290 | 11.0-14.0 | 0.18 | BDST29 |
| 14.2/360 | 13.8-16.8 | 0.23 | BDST30 |

Direct mount handle - mounts directly to switch, no shaft necessary

| Nema Type | Color | Marking | Padlockable | (lbs) | Catalog number |
|-----------|---------|---------|-------------|-------|----------------|
| 1 | Black | O/I | Yes | 0.1 | CDHSB20 |
| 1 | Red/Yel | O/I | Yes | 0.3 | CDHSY20 |

Disconnect Switches

Accessories for 200A Fusible Disconnect Switches



CDTL200



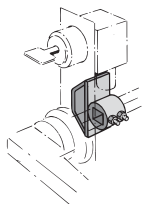
CDAUX10, CDAUX01K



CDSS200S3



CDSS200L3



CDETL-ZW16

Terminal Lug Kits

| For use on: | Wire Size | Wire Type | Description | Terminal lugs per kit | Weight (lbs) | Catalog number |
|-------------|-----------------------------|-----------|------------------|-----------------------|--------------|-----------------------|
| CFD200J03 | #4-300kcmil | | --- | 6 | 0.5 | CDTL200 |
| CFD200J04 | #4-300kcmil (6) 14-6 AWG | Cu/Al | Distribution lug | 3 | 0.25 | CDTL200/3P CDTL206 |

Auxiliary Contacts

| Description | For use on: | Weight (lbs) | Catalog number |
|------------------|----------------------|--------------|---------------------|
| 1 N.O. 1 N.C. | CFD200J03, CFD200J04 | 0.07 0.07 | CDAUX10 CDAUX01K |

Module for auxiliary contacts

| Description | Weight (lbs) | Catalog number |
|---|--------------|----------------|
| Screw mounting to the left side of the switch | 0.1 | CDAUXM28 |

Mounting on the left side of the switch: Max. 8 auxiliary contact blocks with the CDAUXM28
Mounting under the mechanism cover: Max. 4 auxiliary contact blocks

Replacement parts

| Description | For use on: | Catalog number |
|-----------------------------|----------------------------|---------------------|
| Fuse cover Phase barrier | CFD200J03 and CFD200J04 | CFCVR200 CPBR200 |

Terminal

| For use on: | Description | Number of poles | Weight (lbs) | Catalog number |
|-------------------------|-------------|-----------------|--------------|----------------|
| CFD200J03 and CFD200J04 | Long type | 3 | 0.2 | CDSS200L3 |
| | Short type | 3 | 0.13 | CDSS200S3 |
| | Long type | 4 | 0.26 | CDSS200L4 |
| | Short type | 4 | 0.18 | CDSS200S4 |

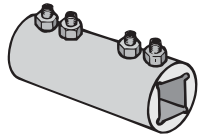
Terminal poles

| Description | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|--|--------------|-----------------------|------------------|----------------|
| Detachable neutral mounts on side of switch or DIN | 0.88 | 200 | 600 | CDD200P |

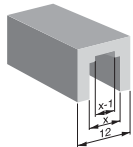
Locking accessories

| Description | Weight (lbs) | Catalog number |
|---|--------------|----------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. Cam attachment for adapting to the interlock system. The interlock is not included. | 0.25 | CDETL-ZW16 |

Accessories for 200A Fusible Disconnect Switches



BDZX167, BDZW95



CDZK19
(X=6mm)



BDZW2

Shaft extension coupler

| Description | For use on: | Weight (lbs) | Catalog number |
|--|---------------------------|--------------|-------------------|
| Joins two shafts together for applications where extended length is required | 6mm shafts 12mm shafts | 0.26 | BDZX167 BDZX95 |

Shaft adapter

| Description | For use on: | Catalog number |
|--|-------------|----------------|
| Adapts one end of a 6mm shaft to 12mm. Use with shaft extension coupler. | 6mm shafts | CDZK19 |

Conversion mechanisms

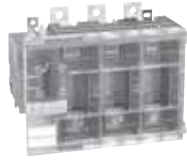
| Description | Weight (lbs) | UL/NEMA type | Catalog number |
|--------------|--------------|--------------|----------------|
| 6 and 8 pole | 1.52 | ----- | BDZW2 |

400A – 800A Fusible Disconnect Switches

UL Fuse Class J, T, L

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



FD400J3



BDS280



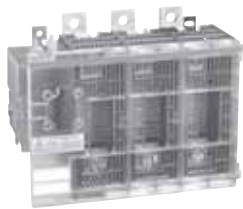
BDH114



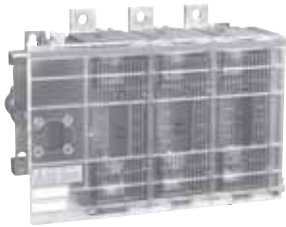
BDTL26

400 – 800 Amp switches, 600V

| UL general purpose amp rating | UL Fuse type 600V | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|----------------|
| | | Three phase | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | |
| 2 pole | | | | | | | 2 pole |
| 400 | J ^⓪ | — | — | — | — | — | FD400J2 |
| 600 | J ^⓪ | — | — | — | — | — | FD600J2 |
| 800 | L | — | — | — | — | — | FD800L2 |
| 3 pole | | | | | | | 3 pole |
| 400 | J ^⓪ | 100 | 125 | 125 | 250 | 350 | FD400J3 |
| 600 | J ^⓪ | 150 | 150 | 200 | 400 | 500 | FD600J3 |
| 800 | L | 200 | 200 | 250 | 500 | 600 | FD800L3 |
| 4 pole | | | | | | | 4 pole |
| 400 | J ^⓪ | 100 | 125 | 125 | 250 | 350 | FD400J4 |
| 600 | J ^⓪ | 150 | 150 | 200 | 400 | 500 | FD600J4 |
| 800 | L | 200 | 200 | 250 | 500 | 600 | FD800L4 |



FD400J3



FD600J3
FD800L3



BDH112



BDH113

Pistol handles — □ .47 x .47" (□ 12 x 12mm)


| NEMA type | IEC type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|---------|------------------|--------------|------------|-------------|--------------|----------------|
| 1,3R,12 | IP65 | Black | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH112 |
| 1,3R,12 | IP65 | Red/Yel | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH113 |
| 1,3R,12 | IP65 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH114 |
| 1,3R,12 | IP65 | Red/Yel | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH115 |
| 1,3R,12 | IP65 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH116 |
| 1,3R,12 | IP65 | Red/Yel | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH117 |
| 1,3R,4,4X,12 | IP65 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXB12 |
| 1,3R,4,4X,12 | IP65 | Red/Yel | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXY12 |
| 1,3R,4,4X,12 | IP65 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXB22 |
| 1,3R,4,4X,12 | IP65 | Red/Yel | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXY22 |
| 1,3R,4,4X,12 | IP65 | Metal | 8.7/220 | Off/On | — | Yes | 1.50 | BDH8 |

^⓪ J type fuse clips are standard. If 600V Type "T" fuse clips are desired, please order a "T" type fuse adapter kit.


Accessories for 400A – 800A Fusible Disconnect Switches



Shafts — □ .47 x .47" (□ 12 x 12mm)

| Shaft length |  Mounting depth ^① in inches | Weight | Catalog |
|-------------------------------------|---|--------|---------|
| For use on FD400J_ | | | |
| 8.7/220 | 7.9 – 12.2 | 0.61 | BDS220 |
| 9.8/250 | 9.1 – 13.4 | 0.70 | BDS250 |
| 11.0/280 | 10.2 – 14.5 | 0.77 | BDS280 |
| 12.8/325 | 12.0 – 16.3 | 0.90 | BDS325 |
| 15.6/395 | 14.8 – 19.1 | 1.10 | BDS395 |
| 18.3/465 | 17.5 – 21.9 | 1.32 | BDS465 |
| 21.1/535 | 20.3 – 24.6 | 1.54 | BDS535 |
| For use on FD600J_ – FD800J_ | | | |
| 9.8/250 | 10.0 – 12.8 | 0.70 | BDS250 |
| 11.0/280 | 11.2 – 14.0 | 0.77 | BDS280 |
| 12.8/325 | 13.0 – 15.8 | 0.90 | BDS325 |
| 15.6/395 | 15.8 – 18.6 | 1.10 | BDS395 |
| 18.3/465 | 18.5 – 21.3 | 1.32 | BDS465 |
| 21.1/535 | 21.1 – 24.1 | 1.54 | BDS535 |

Twisted shafts — Rotates handle 45° □ .47 x .47" (□ 12 x 12mm)

| Shaft length (inches/mm) |  Mounting depth (inches) | Weight (lbs.) | Catalog number |
|-------------------------------------|--|---------------|----------------|
| For use on FD400J_ | | | |
| 11.0/280 | 10.2 – 14.5 | 0.77 | BDS28045 |
| 12.8/325 | 12.0 – 16.3 | 0.90 | BDS32545 |
| 18.3/465 | 17.5 – 21.9 | 1.32 | BDS46545 |
| For use on FD600J_ – FD800J_ | | | |
| 11.0/280 | 11.2 – 14.0 | 0.77 | BDS28045 |
| 12.8/325 | 13.0 – 15.8 | 0.90 | BDS32545 |
| 18.3/465 | 18.5 – 21.3 | 1.32 | BDS46545 |

Terminal lug kit

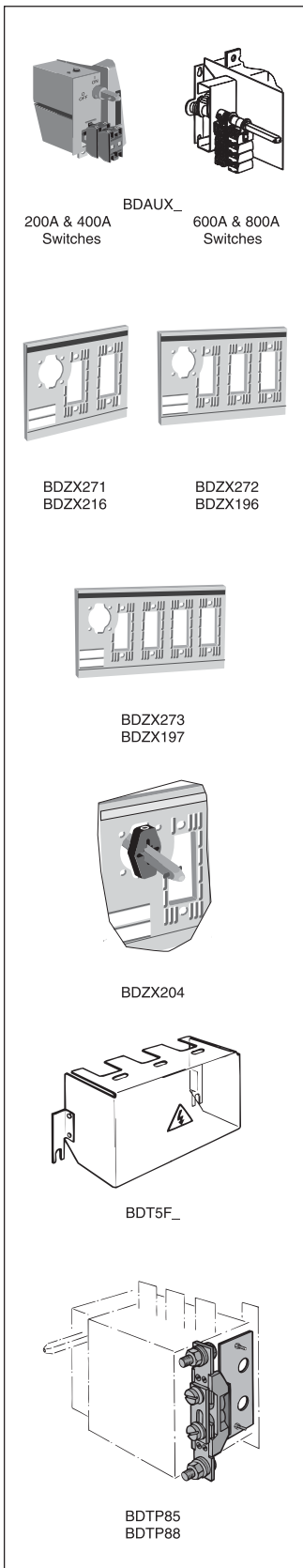
| For use on: | Wire size | Kit weight (lbs) | Wire type | Terminal lugs per kit | Catalog number |
|-------------------|-------------------|------------------|-----------|-----------------------|----------------|
| FD400J_ | #2 – 600 kcmil | 3.50 | Cu/Al | 6 | BDTL26 |
| FD600J_ – FD800L | (12)#14-6 | 1.10 | Cu/Al | 3 | BDTL175/400 |
| FD600J_ & FD800L_ | (2)#2 – 600 kcmil | 4.62 | Cu/Al | 6 | BDTL27 |

“T” type fuse adapter kit

| For use on: | AC thermal amp rating | AC rated voltage | Poles | Catalog number |
|-------------|-----------------------|------------------|-------|----------------|
| FD400J_ | 400 | 600 | 3 | BDTA4 |
| FD600J_ | 600 | 600 | 3 | BDTA6 |

^① Mounting depth is the distance from the outside of the door to the disconnect switch mounting plate. Shaft can be cut to desired length.

Accessories for 400A – 800A Fusible Disconnect Switches



Auxiliary contacts®

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|-----------------|------------------|--------------|-----------------------|------------------|----------------|
| 1 N.O. + 1 N.C. | FD400 – FD800 | 0.20 | 10 | 600 | BDAUX1 |
| 2 N.O. + 2 N.C. | | 0.26 | 10 | 600 | BDAUX2 |
| 4 N.O. + 4 N.C. | | 0.40 | 10 | 600 | BDAUX3 |
| 2 N.O. | | 0.18 | 10 | 600 | BDAUX4 |
| 4 N.O. | | 0.25 | 10 | 600 | BDAUX5 |
| 8 N.O. | | 0.40 | 10 | 600 | BDAUX6 |

Fuse covers (replacement part)

| Description | For use on: | Weight (lbs) | Catalog number |
|-------------|------------------|--------------|----------------|
| 2 pole | FD400 | 0.30 | BDZX271 |
| 3 pole | | 0.40 | BDZX272 |
| 4 pole | | 0.53 | BDZX273 |
| 2 pole | FD600 – FD800 | 0.40 | BDZX216 |
| 3 pole | | 0.50 | BDZX196 |
| 4 pole | | 0.67 | BDZX197 |

Fuse cover interlock

| Description | For use on: | Catalog number |
|---|-----------------|----------------|
| Prevents the fuse cover from being opened when the switch is in the ON position | FD400- FD800 | BDZX204 |

Terminal shroud

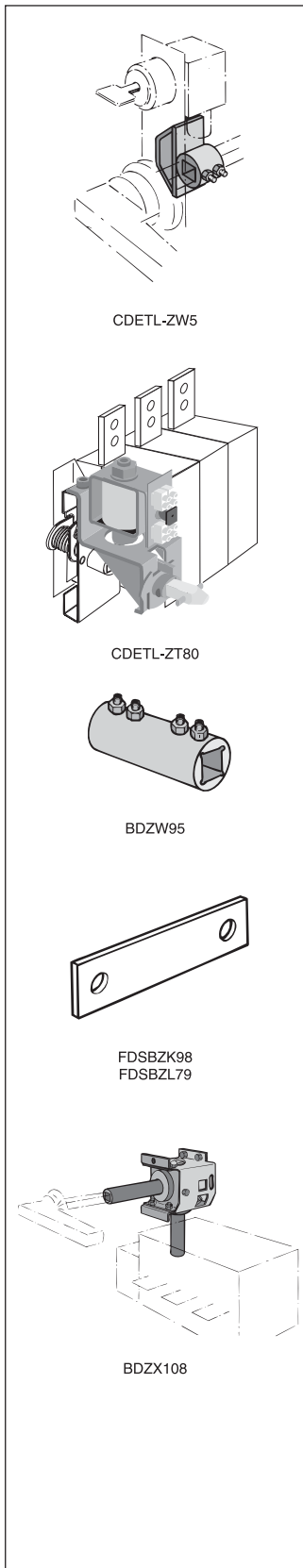
| Description | For use on: | Weight (lbs) | Catalog number |
|--|---------------|--------------|----------------|
| Includes one terminal shroud for line or load side | FD400 | 0.13 | BDTSF4 |
| | FD600 – FD800 | 0.11 | BDTSF6 |

Terminal pole

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|------------------|--------------|-----------------------|------------------|----------------|
| Detachable neutral mounts on side of switch or DIN rail | FD400 | 1.04 | 400 | 600 | BDTP85 |
| | FD600 – FD800 | 1.19 | 800 | 600 | BDTP88 |

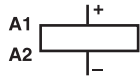
① UL file #E57057

Accessories for 400A – 800A Fusible Disconnect Switches



Locking accessories

| Description | For use on: | Weight (lbs) | Catalog number |
|---|------------------|--------------|------------------------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. For adapting to the interlock system. The interlock is not included. | FD400 – FD800 | 0.29 | CDETL-ZW5 |
| Electrical interlock Closed circuit principle for interlocking the switch movement. When the coil circuit is dead, A-types cannot be operated to ON-position and L-types cannot be operated to ON- or OFF-position. Coil voltages 110VAC, 220VAC, 24VDC, 48VDC, 60 VDC 110VDC, 220VDC, P = 15W | FD600 – FD800 | 2.42 | CDETL-ZT80A☒ CDETL-ZT80L☒ |



H - Coil voltage

Shaft extension coupler

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|--------------|----------------|
| Joins two shafts together for applications where extended length is required | 12mm shafts | 0.26 | BDZW95 |

Shorting bars

| Description | For use on: | AC thermal amp rating | AC rated voltage | Catalog number |
|----------------------------|------------------|-----------------------|------------------|----------------|
| Solid links (1 per kit) | FD400 | 400 | 600 | FDSBZK98 |
| | FD600 – FD800 | 800 | 600 | FDSBZL79 |

90° angle kit

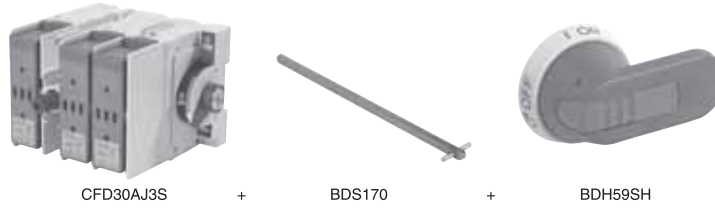
| Description | For use on: | Weight (lbs) | Catalog number |
|--|------------------|--------------|----------------|
| Converts switch mechanism from front operation to side operation | FD400 – FD800 | 4.63 | BDZX108 |

Side Operated Fusible Disconnect Switches for 30A – 400A

UL Fuse Class J, CC, T

For a complete assembly, please select one of each:

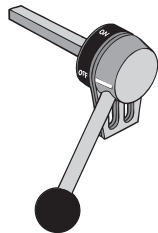
- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CFD60J3S



CFD100J3S



BDZX74



BDS325



BDTL25

Side operated switches — 3 pole

| UL general purpose amp rating | UL fuse type 600V | Maximum horsepower rating | | | | | Weight (lbs) | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|--------------|----------------|
| | | Three phase | | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | | |
| 30 | J | 5 | 7.5 | 7.5 | 15 | 20 | 1.54 | CFD30AJ3S |
| 30 | CC | 5 | 7.5 | 7.5 | 15 | 20 | 1.54 | CFD30ACC3S |
| 60 | J | 15 | 15 | 15 | 30 | 50 | 3.52 | CFD60J3S |
| 100 | J [Ⓧ] | 25 | 25 | 30 | 60 | 75 | 3.97 | CFD100J3S |
| 200 | J [Ⓧ] | 50 | 50 | 60 | 125 | 150 | 15.21 | FD200J3-S |
| 400 | J [Ⓧ] | 100 | 125 | 125 | 250 | 350 | 17.20 | FD400J3-S |

Handles

| NEMA type | IEC type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight | Catalog number |
|---|----------|------------|------------------|-------------|------------|-------------|--------|----------------|
| For use with CFD30J3S & CFD30CC3S | | | | | | | | |
| 1, 3R, 12 | IP65 | Black | 2.6/65 | OFF/ON/TEST | Yes | Yes | 0.29 | BDH58SH |
| 1, 3R, 12 | IP65 | Red/Yellow | 2.6/65 | OFF/ON/TEST | Yes | Yes | 0.29 | BDH59SH |
| For use with CFD60J3S & CFD100J3S | | | | | | | | |
| 1, 3R, 12 | IP65 | Black | 3.1/80 | OFF/ON/TEST | Yes | Yes | 0.30 | BDH110SH |
| 1, 3R, 12 | IP65 | Red/Yellow | 3.1/80 | OFF/ON/TEST | Yes | Yes | 0.30 | BDH111SH |
| For use with FD200J3-S & FD400J3-S | | | | | | | | |
| 1, 3R, 12 | IP65 | Black | 4.9/145 | OFF/ON/TEST | Yes | Yes | 0.39 | BDH114SH |
| 1, 3R, 12 | IP65 | Red/Yellow | 4.9/145 | OFF/ON/TEST | Yes | Yes | 0.39 | BDH115SH |
| 1, 3R, 12 | IP65 | Metal | 4.9/145 | OFF/ON/TEST | — | Yes | 1.50 | BDZX74 |

— = No

Shafts

| For use with: | Length (inches/mm) | Description | Weight (lbs.) | Catalog number |
|------------------------|--------------------|--------------------------|---------------|----------------|
| CFD30AJ3S & CFD30ACC3S | 6.7/170 | 0.24 x 0.24" (6 x 6mm) | 0.08 | BDS170 |
| CFD60J3S & CFD100J3S | 8.3/210 | 0.24 x 0.24" (6 x 6mm) | 0.13 | BDS210 |
| FD200J3-S & FD400J3-S | 12.8/325 | 0.47 x 0.47" (12 x 12mm) | 0.90 | BDS325 |

Terminal lug kit

| For use on: | Wire size | Kit weight (lbs) | Wire type | Lugs per kit | Catalog number |
|----------------------|----------------|------------------|-----------|--------------|----------------|
| CFD30J3S & CFD30CC3S | #14 – 4 | — | Cu | — | Integral |
| CFD60J3S | #14 – 4 | — | Cu | — | Integral |
| CFD100J3S | #14 – 2/0 | 0.43 | Cu/Al | 6 | BDTL24 |
| FD200J3-S | #6 – 300 kcmil | 0.93 | Cu/Al | 6 | BDTL25 |
| FD400J3-S | #2 – 600 kcmil | 3.50 | Cu/Al | 6 | BDTL26 |

[Ⓧ] J type fuse clips are standard. If 600V Type "T" fuse clips are desired, please order the "T" type fuse adapter kit.

Flange Operated Fusible Disconnect Switches for 30A – 100A

UL Fuse Class J, CC, T

For a complete assembly, please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CFD30J3F



BDFHS12



BDFHNHS12



BDFHNHS__



BDFHS__



BDTL24

Flange operated switches — 3 pole

| UL general purpose amp rating | UL fuse type 600V | Maximum horsepower rating | | | | | Weight (lbs) | Catalog number |
|-------------------------------|-------------------|---------------------------|------|------|------|------|--------------|----------------|
| | | Three phase | | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | | |
| 30 | J | 5 | 7.5 | 7.5 | 15 | 20 | 2.20 | CFD30AJ3F |
| 30 | CC | 5 | 7.5 | 7.5 | 15 | 20 | 2.50 | CFD30ACC3F |
| 60 | J | 15 | 15 | 15 | 30 | 50 | 3.52 | CFD60J3F |
| 100 | J | 25 | 25 | 30 | 60 | 75 | 3.97 | CFD100J3F |

Handles

| NEMA type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|-----------|-------|------------------|--------------|------------|-------------|--------------|----------------|
| 1, 3R, 12 | Metal | 6.9/175 | O/I & OFF/ON | Yes | Yes | 3.52 | BDFHNHS12 |
| 4, 4X | Metal | 6.9/175 | O/I & OFF/ON | Yes | Yes | 3.52 | BDFHNHS4 |

Shafts

| Shaft length inches | Mounting depth in inches | Weight (lbs) | Catalog number |
|---------------------|--------------------------|--------------|----------------|
| 12 | | 0.39 | BDFHS12 |
| 17 | | 0.55 | BDFHS17 |
| 22.5 | | 0.73 | BDFHS22 |

Terminal lug kit

| For use on: | Wire size | Kit weight (lbs) | Wire type | Lugs per kit | Catalog number |
|-------------------------|-----------|------------------|-----------|--------------|----------------|
| BDCF30J6_ & BDFLF60J6-F | #14 – #4 | — | Cu | — | Standard |
| BDFLF100J6-F | #14 – #4 | — | Cu | — | Standard |
| | #14 – 2/0 | 0.43 | Cu/Al | 6 | BDTL24 |

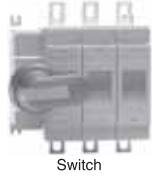
Door hardware — NEMA 12

| Item | Weight (lbs) | Catalog number |
|---|--------------|----------------|
| Safety door latch, 2 point with 6" handle | 1.92 | BDDHK |
| Roller for 3 point latch, add to FH-DHK | 0.39 | BD3RL |

Cable Operated Fusible Disconnect Switches for 30A – 800A

UL Fuse Class CC, J, L & T

For a complete assembly, please select one each of the following:



+



+



+



+



Switch



Handle



BFCL36 - BFCL108
BK7C048 - BK7C084



Lug kit



BDTL175/400

Fusible

| UL general purpose amp rating | UL fuse type 600V | Maximum horsepower rating | | | | | Mechanism Part Number | Switch Part Number |
|-------------------------------|-------------------|---------------------------|------|------|------|-------|-----------------------|--------------------|
| | | Three-phase | | | | | | |
| | | 200-208V | 240V | 480V | 600V | Poles | | |
| 30 | CC | 5/7.5 | 7.5 | 15 | 20 | 3 | BMKCS2 | CFD30ACC3 |
| 30 | J | 5/7.5 | 7.5 | 15 | 20 | 3 | BMKCS2 | CFD30AJ3 |
| 60 | J | 15 | 15 | 30 | 50 | 3 | BMKCS3 | CFD60J3 |
| 100 | J/T | 25 | 30 | 60 | 75 | 3 | BMKCS4 | CFD100AJ3 |
| 200 | J | 50 | 60 | 125 | 150 | 3 | BMKCS4 | CFD200J03 |
| 400 | J/T | 100 | 125 | 250 | 350 | 3 | Incl. | FD400J3-FC |
| 600 | J/T | 150 | 200 | 400 | 500 | 3 | Incl. | FD600J3-FC |
| 800 | L | 200 | 250 | 500 | 600 | 3 | Incl. | FD800J3-FC |

Flange handles - UL 98; File #E101914

| For use with: | Environmental rating | Catalog number |
|----------------|----------------------|----------------|
| CFD30 - CFD200 | NEMA 1, 3R, 12 | BDHFC12 |
| | NEMA 4, 4X | BDHFC4 |
| FD400 - FD-800 | NEMA 1, 3R, 12 | BK7FCH |
| | NEMA 4, 4X | BK7FCH4 |

Flexible cables

| For use with: | Cable length (inches) | Catalog number |
|----------------|-----------------------|----------------|
| CFD30 - CFD200 | 36 | BFCL36 |
| | 48 | BFCL48 |
| | 60 | BFCL60 |
| | 72 | BFCL72 |
| | 84 | BFCL84 |
| | 96 | BFCL96 |
| FD400 - FD800 | 108 | BFCL108 |
| | 48 | BK7C048 |
| | 60 | BK7C060 |
| | 72 | BK7C072 |
| | 84 | BK7C084 |

Terminal lug kits

| For use with: | Wire size | Wire type | Description | Lugs per kit | Catalog number |
|-------------------|------------------|-----------|-------------|--------------|----------------|
| CFD100 - CFD200 | #4-300kcmil | Cu/Al | - | 6 | CDTL200 |
| | #4-300kcmil | Cu/Al | - | 3 | CDTL200/3P |
| | (6)#4-6AWG | Cu/Al | Dist. lug | 3 | CDTL206 |
| FD400J | #2-600kcmil | Cu/Al | | 6 | BDTL26 |
| FD600J - FD800L | (12)#14-6 | Cu/Al | | 3 | BDTL175/400 |
| FD600J - & FD800L | (2)#2 - 600kcmil | Cu/Al | | 6 | BDTL27 |

Door hardware — NEMA 12

| Item | Catalog number |
|--|----------------|
| Safety door latch, 2 point, door less than 40" high | BKDH2R |
| Safety door latch, 3 point, door greater than 40" high | BKDH3R |

UL & cULus Technical Data for Fusible Disconnect Switches

CFD30CC3 – FD800L3

UL & cULus

| Catalog number | 3 pole | CFD30_3 | CFD60J3 | CFD100J3 | CFD200J3 | FD400J3 | FD600J3 | FD800L3 |
|---|----------------------------|---------------------------------|---------------------------------|--|--|--|--|--|
| Approvals ^① | 2 pole 3 pole 4 pole | N/A UL98 & IEC UL98 & IEC | N/A UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC |
| Technical ratings | | -40° to 40°C | | | | | | |
| General purpose amp rating pf = 0.7 – 0.8 | A | 30 | 60 | 100 | 200 | 400 | 600 | 800 |
| Max operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Max horsepower rating/ Max motor FLA current pf = 0.4 – 0.5 | | | | | | | | |
| Three phase | | | | | | | | |
| 200 – 208V | HP/A | 5/16.8 – 7.5/24.2 | 15/46.2 | 25/75.0 | 50/143.0 | 100/273 – 125/344 | 150/396 | 200/528 |
| 240V | HP/A | 7.5/22.0 | 15/42.0 | 30/80.0 | 60/145.0 | 125/312.0 | 200/480.0 | 250/602.0 |
| 480V | HP/A | 15/21.0 | 30/40.0 | 60/77.0 | 125/156.0 | 250/302.0 | 400/477.0 | 500/590.0 |
| 600V | HP/A | 20/22.0 | 50/52.0 | 75/77.0 | 150/144.0 | 350/336.0 | 500/472.0 | 600/ — |
| Single phase | | | | | | | | |
| 120V | HP/A | 2/24.0 | — | — | — | — | — | — |
| 240V | HP/A | 3/17.0 | — | — | — | — | — | — |
| Short circuit rating with fuse | kA | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| UL Fuse size | A | 30 | 60 | 100 | 200 | 400 | 600 | 800 |
| UL Fuse type | | J/CC | J | J/T | J | J/T | J/T | L |
| Endurances | | | | | | | | |
| Min. Electrical endurance, pf = 0.75 – 0.80 | operation cycles | 6000 | 6000 | 6000 | 6000 | 1000 | 1000 | 500 |
| Mechanical endurance | operation | 20,000 | 20,000 | 20,000 | 20,000 | 12,000 | 10,000 | 7000 |
| Physical characteristics | | | | | | | | |
| Weight | 3 pole lb | 1.54 | 2.86 | 3.30 | 5.9 | 17.2 | 37.48 | 37.48 |
| | 4 pole lb | 1.98 | 3.52 | 3.96 | 7.5 | 19.4 | 46.3 | 46.3 |
| Dimension | 3 pole H in | 3.82 | 3.94 | 5.66 | 6.5 | 7.87 | 11.42 | 11.42 |
| | W in | 4.17 | 5.63 | 7.06 | 7.1 | 11.22 | 14.69 | 14.69 |
| | D in | 4.21 | 5.04 | 5.09 | 5.2 | 8.11 | 9.21 | 9.21 |
| Shaft size square □ | in | .24 x .24 | .24 x .24 | .24 x .24 | .24 x .24 | .47 x .47 | .47 x .47 | .47 x .47 |
| | mm | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 12 x 12 | 12 x 12 | 12 x 12 |
| Switch operating torque for rotary 3 pole switches | lb. in. | 26.6 | 35.5 | 70.9 | 195 | 195 | 248 | 248 |
| Terminal lug kits | | | | | | | | |
| Wire range | AWG | Integral #18 – 8 | Integral #14 – 4 | BDTL24 #14 – 2/0 | CDTL200 #4 – 300kcmil | BDTL26 #2 – 600kcmil | BDTL27 (2) #2 – 600 kcmil | BDTL27 (2) #2 – 600 kcmil |
| Torque: | | | | | | | | |
| Wire tightening | lb. in. | 17 | 30 | 120 | 275 | 500 | 375 | 375 |
| Lug mounting | lb. in. | N/A | N/A | 50 | 150 | 480 | 500 | 480 |
| Auxiliary contacts | | | | | | | | |
| NEMA ratings, AC | | — A600 | A600 | A600 | A600 | A600 | A600 | A600 |
| AC rated voltage | VAC | 250 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| AC thermal rated current | A | 6 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| AC maximum volt ampere making | VA | — 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 |
| AC maximum volt ampere breaking | VA | — 720 | 720 | 720 | 720 | 720 | 720 | 720 |
| NEMA ratings, DC | | — P300 | R300 | R300 | R300 | P600 | P600 | P600 |
| DC rated voltage | VDC | — 300 | 300 | 300 | 300 | 600 | 600 | 600 |
| DC thermal rated current | A | — 1 | 1 | 1 | 1 | 5 | 5 | 5 |
| DC maximum make break current | A | — 28 | 28 | 28 | 28 | 138 | 138 | 138 |
| Torque: | | | | | | | | |
| Wire tightening | lb. in. | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Wire range | AWG | #22 – 14/#18 – 14 | #18 – 14 | #22 – 14 | #18 – 14 | #22 – 14 | #22 – 14 | #22 – 14 |

Disconnect Switches

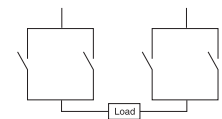
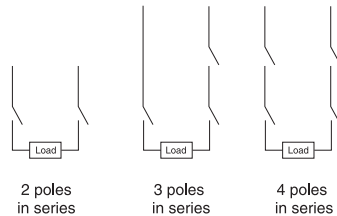
^① The following UL Listed switches are also cULus approved.

IEC Technical Data for Fusible Disconnect Switches

CFD30CC3 – FD800L3

IEC

| Catalog number | 3 pole | CFD30_3 | CFD60J3 | CFD100J3 | CFD200J03 | FD400J3 | FD600J3 | FD800L3 |
|--|--------------------|---------|-----------------|------------------|-----------|----------------|----------------|---------|
| Technical ratings | -40° to 40°C | | | | | | | |
| Rated insulation voltage ^① | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | |
| Pollution degree 3 ^⑧ | | | | | | | | |
| Dielectric strength | 50Hz/60Hz, 1 min | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Rated impulse withstand voltage | kV | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Rated thermal current, I _{th} /max. fuse power dissipation ^② | | | | | | | | |
| AC 20/DC 20 open ^③ | A/W | 32/3.5 | 63/7.5 | 160/12 | 200/17 | 400/45 | 630/60 | 800/65 |
| 40°C enclosed | A/W | 32/3.5 | 63/7.5 | 160/10, 135/12 | 200/17 | 400/34, 360/37 | 600/45, 570/50 | 720/55 |
| Enclosed with solid links | A/W | 32 | 85 | 175 | 280 | 450 | 700 | 900 |
| with minimum cable cross section Cu | mm ² | 6 | 16 | 70 | 95 | 240 | 2 x 185 | 2 x 240 |
| Rated operational voltage AC 20 and DC 20V | | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| AC Rated operational currents | | | | | | | | |
| AC 21A | 500V A | 32 | 63 | 160 | 200 | 400 | 630 | 800 |
| | 690V A | 32 | 63 | 160 | 200 | 400 | 630 | 800 |
| AC 22A | 500V A | 32 | 63 | 160 | 200 | 400 | 630 | 800 |
| | 690V A | 32 | 63 | 160 | 200 | 400 | 630 | 800 |
| AC 23A | 500V A | 32 | 63 | 160 | 200 | 400 | 630 | 720 |
| | 690V A | 32 | 63 ^④ | 160 ^④ | 200 | 400 | 630 | 720 |
| DC Rated operational currents/poles in series | | | | | | | | |
| DC21A | 48V ^⑤ A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 110V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 220V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 440V A | 32/4 | ⑤ | ⑤ | 200/2 | 400/2 | 630/2 | 800/2 |
| | 750V A | — | ⑤ | ⑤ | 180/4 | 400/3 | 630/1 | 800/3 |
| | 1000V A | — | ⑤ | ⑤ | — | 400/4 | 630 | 800/4 |
| DC22A | 48V ^⑤ A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 110V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 220V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 440V A | 32/4 | ⑤ | ⑤ | 200/2 | 400/2 | 630/2 | 800/2 |
| | 750V A | — | ⑤ | ⑤ | 180/4 | 400/3 | 630/3 | 800/3 |
| | 1000V A | — | ⑤ | ⑤ | — | 400/4 | 630/4 | 800/4 |
| DC23A | 48V ^⑥ A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 110V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 220V A | 32/2 | ⑤ | ⑤ | 200/1 | 400/2 | 630/2 | 800/2 |
| | 440V A | 32/4 | ⑤ | ⑤ | 200/2 | 400/2 | 630/2 | 800/2 |
| | 750V A | — | ⑤ | ⑤ | 180/4 | 400/3 | 630/3 | 800/3 |
| | 1000V A | — | ⑤ | ⑤ | — | — | 630/4 | 800/4 |
| Rated operational power AC23A | | | | | | | | |
| | 230V kW | 8 | 18.5 | 45 | 60 | 110 | 180 | 200 |
| | 400V kW | 14 | 30 | 80 | 110 | 210 | 315 | 350 |
| | 415V kW | 15 | 30 | 90 | 110 | 230 | 340 | 380 |
| | 500V kW | 18 | 37 | 110 | 140 | 280 | 400 | 470 |
| | 690V kW | 25 | 60 | 132 | 190 | 330 | 540 | 600 |



2 + 2 Parallel contacts in series

① 1000V, IEC 408.

② Ambient temperature 60°C: derating 20 percent. Mounting on ceiling: derating 10 percent. Mounting on wall, horizontal fuses: derating 8 percent.

③ The ambient air temperature does not exceed +40°C and its average over a period of 24h does not exceed +35°C according to IEC 947.

④ For 30A switches, use 2 parallel contacts in series.

⑤ Available on request.

⑥ IEC 947-3, utilization category B, infrequent operation.

⑧ Pollution degree 3: Conductive pollution occurs, or dry, non-conductive pollution occurs, which becomes conductive due to condensation.

IEC Technical Data for Fusible Disconnect Switches

CFD30CC3 – FD800L3

IEC

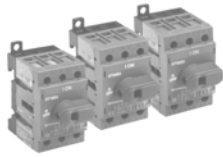
| Catalog number | 3 pole | CFD30_3 | CFD60J3 | CFD100J3 | CFD200J03 | FD400J3 | FD600J3 | FD800L3 |
|---|------------------|--------------------------|------------------|----------------|-----------|----------|--------------|--------------|
| Rated breaking capacity | | | | | | | | |
| in category AC-23A | 500V A | 256 | 504 | 1280 | 1600 | 3200 | 5760 | 5760 |
| | 690V A | 256 | 504 | 1280 | 1600 | 3200 | 5760 | 5760 |
| Rated breaking capacity/poles in series | | | | | | | | |
| in category DC-23 | <220V A | 128/2 | — | — | 1000/2 | 1600/2 | 3200/2 | 3200/2 |
| | 440V A | 128/4 | — | — | 1000/2 | 1600/2 | 3200/2 | 3200/2 |
| | 500 – 750V A | — | — | — | 1000/3 | 1600/3 | 3200/3 | 3200/3 |
| | 1000V A | — | — | — | — | — | 3200/4 | 3200/4 |
| Rated conditional short-circuit current r.m.s. ^③ | | | | | | | | |
| | 80 kA, 415V kA | 9 | 17 | 22 | 35 | 40 | 75 | 75 |
| | 100 kA, 500 V kA | 7.5 | 17 | 22 | 37.5 | 40 | 75 | 75 |
| | 50 kA, 690 V kA | 6 | 13 | 15 | 35 | 35 | 60 | 60 |
| Rated short time withstand current, 1s. | kA | 1 | 2.5 | 5 | 8 | 10 | 16 | 16 |
| Rated capacitor power | | | | | | | | |
| – The capacitor rating of the fusible disconnect switch is limited by the fuse link | | | | | | | | |
| | 400 V kVar | 15 | 30 | — | — | 180 | 250 | 310 |
| | 415V kVar | 15 | 32 | — | — | 200 | 270 | 340 |
| | 690V kVar | 25 | 50 | — | — | 325 | 450 | 550 |
| Power loss/pole | | | | | | | | |
| with rated current, without fuse | W | 2 | 4 | 9 | 8 | 30 | 55 | 77 |
| Mechanical endurance | operations | 20,000 | 20,000 | 20,000 | 20,000 | 16,000 | 10,000 | 10,000 |
| Fuse types, IEC 269-2 | DIN 43620 | — | 000, 00 | 000, 00 | — | 0 – 2 | 3 | 3 |
| | NFC | 10 x 38, 14 x 51 | 14 x 51, 22 x 58 | 22 x 58 | — | 0 – 2 | 3 | — |
| | BS 88 | A1, A2, F1 | A2 – A3 | A2 – A4 | B1 – B2 | B1 – B4 | C1 – C2 | C1 – C3 |
| size/distance of link bolts | | M4/44.5(A1) M5/73(A2) | M5/73 | M5/73 M8/94 | M6/111 | M3/111 | M10/133, 184 | M10/133, 184 |
| Physical characteristics | | | | | | | | |
| Weight | 3 pole | 0.7 | 1.3 | 1.5 | 2.6 | 7.8 | 17.0 | 17.0 |
| | 4 pole | 0.9 | 1.6 | 1.8 | 7.9 | 8.8 | 21.0 | 21.0 |
| Dimension | 3 pole | | | | | | | |
| | H | 97 | 100 | 144 | 198.5 | 226 | 282 | 282 |
| | W mm | 106 | 174 | 179 | 181.5 | 284 | 373 | 373 |
| | D mm | 107 | 123 | 129 | 132 | 198 | 221 | 221 |
| Shaft size | square □ mm | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 12 x 12 | 12 x 12 | 12 x 12 |
| Terminals | | | | | | | | |
| Built-in terminal size | mm ² | 0.5 – 10 | 2.5 – 25 | — | — | — | — | — |
| Terminal bolt size, metric thread | | | | | | | | |
| diameter x length | mm | — | — | M6 x 20 | M8 x 25 | M10 x 40 | M12 x 40 | M12 x 40 |
| Terminal bolt tightening torque | Nm | 2 | 3.5 | 6 – 9 | 15 – 22 | 30 – 44 | 50 – 75 | 50 – 75 |
| Fuse-links bolts tightening torque | Nm | 2 | 3.5 | 3.5 – 5 | 4 | 15 | 40 | 40 |
| Operating torque | Nm | 3 | 4 | 8 | 7 | 22 | 28 | 28 |
| Auxiliary contacts | | | | | | | | |
| Ratings according to IEC 947-5-1 | | ① | ② | ③ | ④ | ⑤ | | |
| Rated voltage, U _i | VAC | 690 | 690 | 690 | 690 | 690 | 690 | 690 |
| Thermal current, I _{th} | A | 10 | 16 | 16 | 16 | 10 | 10 | 10 |
| AC12 / DC12, I _e U _e = | 24V A | — / 6 | — | — | — | — | — | — |
| | 120V A | — / 6 | — | — | — | 8 / — | 8 / — | 8 / — |
| | 125V A | — | — | — | — | — / 1.1 | — / 1.1 | — / 1.1 |
| | 230V A | — | 6 / — | 6 / — | 6 / — | 6 / — | 6 / — | 6 / — |
| | 250V A | 3 / 0.1 | — | — | — | — / 0.55 | — / 0.55 | — / 0.55 |
| | 400V A | — | 4 / — | 4 / — | 4 / — | 4 / — | 4 / — | 4 / — |
| | 415V A | — | — | — | — | 4 / — | 4 / — | 4 / — |
| | 440V A | 2 / — | — | — | — | — / 0.31 | — / 0.31 | — / 0.31 |
| | 480V A | — | — | — | — | 3 / — | 3 / — | 3 / — |
| | 500V A | — | — | — | — | 3 / 0.27 | 3 / 0.27 | 3 / 0.27 |
| | 600V A | — | — | — | — | — / 0.2 | — / 0.2 | — / 0.2 |
| | 690V A | — | 2 / — | 2 / — | 2 / — | 2 / — | 2 / — | 2 / — |

Disconnect Switches

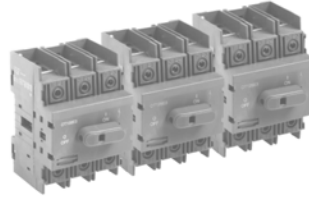
① AC15 / DC12, according to IEC 947-5-1
 ② AC15 / DC13, according to IEC 947-5-1
 ③ AC15, according to IEC 947-5-1
 ④ AC11 / DC11, according to IEC 947-5-1
 ⑤ Values shown are corresponding max. allowed cut-off current, peak-values per single phase fuse tests.

Overview for Non-fusible Disconnect Switches

CDNF16 - CDNF100A3



CDNF16A3, CDNF25A3, CDNF32A3



CDNF30A3, CDNF60A3, CDNF100A3

| Catalog number | 3 pole | CDNF16A3 | CDNF25A3 | CDNF32A3 | CDNF45A3 | CDNF63A3 | CDNF30A3 | CDNF60A3 | CDNF100A3 | |
|--|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|--|
| General purpose amp rating | A | 16 | 25 | 40 | 60 | 80 | 30 | 60 | 100 | |
| Approvals^① | | | | | | | | | | |
| | 2 pole | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| | 3 pole | UL508 | UL508 | UL508 | UL508 | UL508 | UL98 | UL98 | UL98 | |
| | 4 pole | UL508 | UL508 | UL508 | UL508 | UL508 | UL98 | UL98 | UL98 | |
| Technical ratings UL, cULus^② | | | | | | | | | | |
| Max operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | |
| Max horsepower rating | | | | | | | | | | |
| Three phase | | | | | | | | | | |
| 200 – 208V | HP | 3 | 7.5 | 10 | 15 | 20 | 10 | 20 | 25 | |
| 240V | HP | 5 | 7.5 | 10 | 15 | 20 | 10 | 20 | 30 | |
| 480V | HP | 10 | 15 | 20 | 30 | 40 | 20 | 40 | 50 | |
| 600V | HP | 10 | 20 | 25 | 30 | 40 | 30 | 40 | 50 | |
| Single phase | | | | | | | | | | |
| 120V | HP | 1/2 | 3/4 | 1 | 2 | 2 | 2 | 3 | 5 | |
| 240V | HP | 1.5 | 2 | 3 | 5 | 5 | 5 | 7.5 | 15 | |
| Technical ratings IEC^③ | | | | | | | | | | |
| Rated insulation and operational voltage. AC20 and DC20 ^④ | V | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | |
| Rated thermal current, I _n | | | | | | | | | | |
| AC 20/DC 20 open | A | 25 | 32 | 40 | 63 | 80 | 40 | 63 | 115 | |
| AC 20/DC 20 enclosed | A | 25 | 32 | 40 | 63 | 80 | 40 | 63 | 115 | |
| AC 21A 500V | A | 16 | 25 | 32 | 63 | 80 | 40 | 63 | 100 | |
| 690V | A | 16 | 25 | 32 | 63 | 80 | 40 | 63 | 100 | |
| Rated operational power AC23 | | | | | | | | | | |
| 400/415V | kW | 7.5 | 9 | 11 | 22 | 37 | 15 | 18.5 | 37 | |
| 690V | kW | 7.5 | 9 | 11 | 15 | 18.5 | 15 | 15 | 37 | |
| Physical characteristics | | | | | | | | | | |
| Weight ^④ | 3 pole lb | 0.24 | 0.24 | 0.24 | 0.59 | 0.59 | 0.79 | 0.79 | 0.79 | |
| Dimension | 3 pole H in | 2.68 | 2.68 | 2.68 | 3.60 | 3.60 | 3.94 | 3.94 | 3.94 | |
| | W in | 1.38 | 1.38 | 1.38 | 2.07 | 2.07 | 2.76 | 2.76 | 2.76 | |
| | D in | 2.20 | 2.20 | 2.20 | 2.85 | 2.85 | 2.95 | 2.95 | 2.95 | |
| Accessories | | | | | | | | | | |
| Terminal lug kit | | Integral | Integral | Integral | Integral | Integral | Integral | Integral | Integral | |
| Terminal shroud | | • | • | • | • | • | • | • | • | |
| Auxiliary contact | | • | • | • | • | • | • | • | • | |
| Handle UL/NEMA type | | | | | | | | | | |
| Type 1, 3R, 12 | | • | • | • | • | • | • | • | • | |
| Type 1, 3R, 4, 4X, 12 | | • | • | • | • | • | • | • | • | |
| Handle type | | | | | | | | | | |
| Selector | | • | • | • | • | • | — | — | — | |
| Pistol | | • | • | • | • | • | • | • | • | |
| Conversion kits | | | | | | | | | | |
| 6 pole | | • | • | • | • | • | • | • | • | |
| Transfer | | • | • | • | • | • | • | • | • | |
| Bypass | | • | • | • | • | • | • | • | • | |
| Mechanical interlock | | • | • | • | • | • | • | • | • | |
| Electrical interlock | | — | — | — | — | — | — | — | — | |

• = Available
— = Not available

UL Listed, cULus approved, IEC rated, CE marked

① UL Listed switches are also cULus approved.
② For complete technical information please see page 58 & 59.
③ 1000V, IEC 408.
④ Switch only

Overview for Non-fusible Disconnect Switches

CDNF200U03 - BDNF3150



| Catalog number | 3 pole | CDNF200U03 | CDNF400U03 | BDNF600A | BDNF800A | BDNF1200 | BDNF1600 | BDNF2000 | BDNF3150 |
|--|----------------------------|---------------------------------|--|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------|
| General purpose amp rating | A | 200 | 400 | 600 | 800 | 1200 | 1600 | 2000 | 3150 |
| Approvals ^① | 2 pole 3 pole 4 pole | UL98 & IEC UL98 & IEC IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC IEC | UL98 & IEC UL98 & IEC IEC | UL98 & IEC UL98 & IEC IEC | UL98 & IEC UL98 & IEC IEC | IEC IEC IEC |
| Technical ratings | | | | | | | | | |
| UL, cULus^② | | | | | | | | | |
| Max operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Max horsepower rating | | | | | | | | | |
| Three phase | | | | | | | | | |
| 200 – 208V | HP | 60 | 100 | 150 | 200 | — | — | — | — |
| 240V | HP | 75 | 125 | 200 | 250 | — | — | — | — |
| 480V | HP | 150 | 250 | 400 | 500 | — | — | — | — |
| 600V | HP | 200 | 350 | 500 | 600 | — | — | — | — |
| Single phase | | | | | | | | | |
| 120V | HP | — | — | — | — | — | — | — | — |
| 240V | HP | — | — | — | — | — | — | — | — |
| Technical ratings | | | | | | | | | |
| IEC^③ | | | | | | | | | |
| Rated insulation and operational voltage. AC20 and DC20 ^④ | V | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Rated thermal current, I _m | | | | | | | | | |
| AC 20/DC 20 open | A | 250 | 400 | 800 | 1250 | 1600 | 2500 | 2500 | 3150 |
| AC 20/DC 20 enclosed | A | 250 | 400 | 720 | 1250 | 1600 | 2300 | 2300 | 2600 |
| AC 21A | | | | | | | | | |
| 500V | A | 250 | 400 | 800 | 1250 | 1600 | 2500 | 2500 | 3150 |
| 690V | A | 250 | 400 | 800 | 1250 | 1600 | 2500 | 2500 | 3150 |
| Rated operational power AC23 | | | | | | | | | |
| 400/415V | kW | 132 | 220 | 355 | 400 | 400 | 400 | 400 | 400 |
| 690V | kW | 240 | 355 | 355 | — | — | — | — | — |
| Physical characteristics | | | | | | | | | |
| Weight ^⑤ | 3 pole lb | 2.90 | 5.70 | 13.66 | 35.9 | 38.55 | 127.7 | 127.7 | 127.7 |
| Dimension | 3 pole | | | | | | | | |
| H in | | 6.69 | 8.66 | 11.77 | 19.09 | 19.09 | 25.04 | 25.04 | 25.04 |
| W in | | 6.67 | 8.70 | 11.93 | 14.29 | 14.29 | 18.43 | 18.43 | 18.43 |
| D in | | 3.30 | 4.15 | 5.12 | 4.92 | 4.92 | 10.67 | 10.67 | 10.67 |
| Accessories | | | | | | | | | |
| Terminal lug kit | | CDTL200 | CDTL400 | BDTL27 | BDTL30 | BDTL28 | BDTL28 | BDTL28/2 | BDTL28/2 |
| Terminal shroud | | • | • | • | • | • | — | — | — |
| Auxiliary contact | | • | • | • | • | • | • | • | • |
| Handle UL/NEMA type | | | | | | | | | |
| Type 1, 3R, 12 | | • | • | • | • | • | • | • | • |
| Type 1, 3R, 4, 4X, 12 | | • | • | • | • | • | • | • | • |
| Handle type | | | | | | | | | |
| Selector | | — | — | — | — | — | — | — | — |
| Pistol | | • | • | • | • | • | • | • | • |
| Conversion kits | | | | | | | | | |
| 6 pole | | • | • | • | • | • | — | — | — |
| Transfer | | • | • | • | • | • | — | — | — |
| Bypass | | • | • | • | • | • | — | — | — |
| Mechanical interlock | | • | • | • | • | • | • | • | • |
| Electrical interlock | | • | • | • | • | • | • | • | • |

S = Standard feature
• = Available
— = Not available

UL Listed, cULus approved, IEC rated, CE marked

① UL Listed switches are also cULus approved.
② For complete technical information please see page 58 & 59.
③ 1000V, IEC 408.
④ Switch only

16A – 100A for Non-fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft



CDNF63A3



BDS85S



CDBH3S

16 – 100 Amp switches, 600V, 3 pole^①

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | | Terminal lugs | | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|-------------|------|------|---------------|-----------|----------------|
| | | Single phase | | | Three phase | | | Wire size | Wire type | |
| | | 120V | 240V | 200V | 240V | 480V | 600V | | | |
| 16 | 16 | 1/2 | 1.5 | 3 | 5 | 10 | 10 | #18 – 8 | Cu | CDNF16A3 |
| 25 | 25 | 3/4 | 2 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | CDNF25A3 |
| 40 | 40 | 1 | 3 | 10 | 10 | 20 | 25 | #18 – 8 | Cu | CDNF32A3 |
| 60 | 63 | 2 | 5 | 15 | 15 | 30 | 30 | #14 – 4 | Cu | CDNF45A3 |
| 80 | 80 | 2 | 5 | 20 | 20 | 40 | 40 | #14 – 1 | Cu | CDNF63A3 |
| 30 | 40 | 2 | 5 | 10 | 10 | 20 | 30 | #14 – 4 | Cu | CDNF30A3 |
| 60 | 63 | 3 | 7.5 | 20 | 20 | 40 | 40 | #14 – 4 | Cu | CDNF60A3 |
| 100 | 115 | 5 | 15 | 25 | 30 | 50 | 50 | #8 – 1/0 | Cu | CDNF100A3 |



CDNF16A3
CDNF25A3
CDNF32A3



CDNF30A3
CDNF60A3
CDNF100A3



CDBH1S



CDBH15S



CDBH6S



BDS_S

Selector handles — for use with shafts $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| NEMA type | IEC type | Color | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|---|----------|---------|------------|-------------|--------------|----------------------|
| All marked both O/I & Off/On | | | | | | |
| 1 | IP54 | Black | — | — | 0.09 | CBDH1S ^② |
| 1 | IP54 | Red/Yel | — | — | 0.09 | CBDH2S ^② |
| 1 | IP54 | Black | — | Yes | 0.12 | CBDH15S ^② |
| 1 | IP54 | Red/Yel | — | Yes | 0.12 | CBDH16S ^② |
| 1,3R,12 | IP65 | Black | — | Yes | 0.16 | CBDH3S |
| 1,3R,12 | IP65 | Red/Yel | — | Yes | 0.16 | CBDH4S |
| 1,3R,12 | IP65 | Black | Yes | Yes | 0.16 | CBDH5S |
| 1,3R,12 | IP65 | Red/Yel | Yes | Yes | 0.16 | CBDH6S |

Shafts — for use with CDH selector handles $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length inches/mm | Mounting depth ^③ in inches | | | | | | Weight (lbs) | Catalog number |
|------------------------|---------------------------------------|----------------|------------------|----------------|-----------------------------|----------------|--------------|----------------|
| | CDNF16 CDNF25 CDNF32 | | CDNF45 CDNF63 | | CDNF30 CDNF60 CDNF100 | | | |
| | CBDH1S, CBDH2S | CBDH3S, CBDH4S | CBDH1S, CBDH2S | CBDH3S, CBDH4S | CBDH3S, CBDH4S | CBDH3S, CBDH4S | | |
| 3.3/85 | 4.2 – 5.0 | 3.6 – 4.3 | 4.9 – 5.6 | 4.4 – 5.0 | 3.9 – 4.9 | 0.04 | BDS85S | |
| 4.1/105 | 5.0 – 5.8 | 4.4 – 5.1 | 5.7 – 6.4 | 5.1 – 5.8 | 4.7 – 5.7 | 0.04 | BDS105S | |
| 4.7/120 | 5.6 – 6.4 | 5.0 – 5.8 | 6.3 – 7.0 | 5.7 – 6.4 | 5.3 – 6.3 | 0.05 | BDS120S | |
| 5.1/130 | 6.0 – 6.7 | 5.4 – 6.1 | 6.7 – 7.4 | 6.1 – 6.8 | 5.6 – 6.7 | 0.05 | BDS130S | |
| 7.1/180 | 7.1 – 8.7 | 7.4 – 8.1 | 8.6 – 9.4 | 8.1 – 8.7 | 7.6 – 8.6 | 0.08 | BDS180S | |
| 9.8/250 | 10.7 – 11.5 | 10.1 – 10.8 | 11.4 – 12.1 | 10.9 – 11.5 | 10.4 – 11.4 | 0.10 | BDS250S | |
| 13/330 | 13.8 – 14.6 | 13.3 – 14.0 | 14.6 – 15.3 | 14.0 – 14.7 | 13.5 – 14.5 | 0.14 | BDS330S | |

^① A snap on fourth pole may be added

^② Not suitable for use with CDNF30, 60, 100A3.

^③ Mounting depth is the distance from the outside of door to the disconnect switch mounting plate. Shaft can be cut to desired length.

Handles & Shafts for 16A – 100A Non-fusible Disconnect Switches

Base & DIN Rail Mounted



Pistol handles — for use with shafts $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| NEMA type | IEC type | Color | Marking | Length inches/mm | Defeatable | Padlockable | Weight (lbs.) | Catalog number |
|--------------|----------|---------|--------------|------------------|------------|-------------|---------------|----------------|
| 1,3R,12 | IP65 | Black | O/I & Off/On | 1.8/45 | Yes | Yes | 0.28 | BDH56 |
| 1,3R,12 | IP65 | Red/Yel | O/I & Off/On | 1.8/45 | Yes | Yes | 0.28 | BDH57 |
| 1,3R,12 | IP65 | Black | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | BDH58 |
| 1,3R,12 | IP65 | Red/Yel | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | BDH59 |
| 1,3R,12,4,4X | IP66 | Black | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | CDHXB65L6 |
| 1,3R,12,4,4X | IP66 | Red/Yel | O/I & Off/On | 2.6/65 | Yes | Yes | 0.29 | CDHXY65L6 |

Shafts — for use with pistol handles $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length | Mounting depth ^① in inches | | | Weight | Catalog |
|--------------|---------------------------------------|-------------|----------------------|--------|---------|
| | CDNF16A3 CDNF25A3 | CDNF45A3 | CDNF30A3 CDNF60A3 | | |
| 5.9/150 | 6.2 – 6.7 | 6.9 – 7.4 | 6.4 – 7.4 | 0.07 | BDS150 |
| 6.7/170 | 7.0 – 7.5 | 7.7 – 8.1 | 7.2 – 8.1 | 0.08 | BDS170 |
| 10.4/265 | 10.7 – 11.3 | 11.4 – 11.9 | 10.9 – 11.9 | 0.12 | BDS265 |
| 15.8/400 | 16.0 – 16.6 | 16.8 – 17.2 | 16.2 – 17.2 | 0.18 | BDS400 |
| 19.7/500 | 20.0 – 20.5 | 20.7 – 21.1 | 20.1 – 21.1 | 0.23 | BDS500 |

Twisted shafts — Rotates handle 45° $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length (inches/mm) | Mounting depth ^① in inches | | | Weight (lbs.) | Catalog number |
|--------------------------|---------------------------------------|----------------------|-----------------------------------|---------------|----------------|
| | CDNF16A3 CDNF25A3 CDNF32A3 | CDNF45A3 CDNF63A3 | CDNF30A3 CDNF60A3 CDNF100A3 | | |
| 5.9/130 | 6.2 – 6.7 | 6.9 – 7.4 | 6.4 – 7.4 | 0.07 | BDST4 |
| 8.3/210 | 7.0 – 7.5 | 7.7 – 8.1 | 7.2 – 8.1 | 0.08 | BDST25 |
| 11.4/290 | 10.7 – 11.3 | 11.4 – 11.9 | 10.9 – 11.9 | 0.12 | BDST29 |
| 14.2/360 | 16.0 – 16.6 | 16.8 – 17.2 | 16.2 – 17.2 | 0.18 | BDST30 |

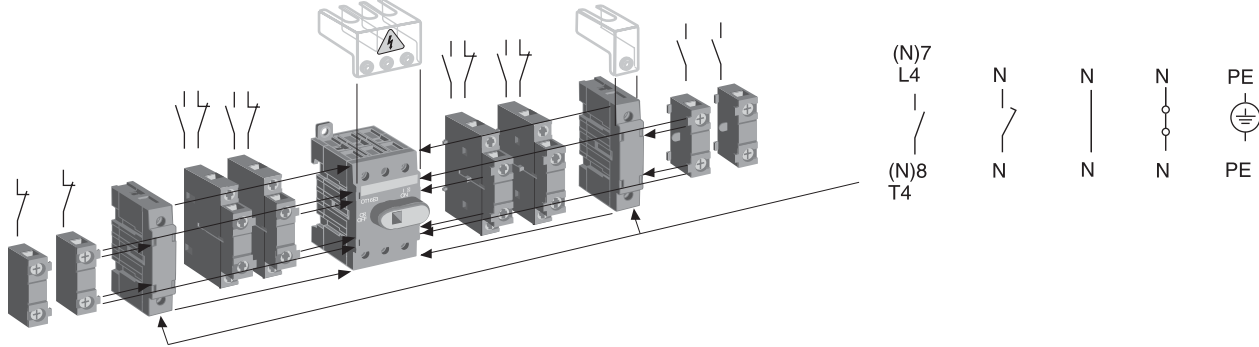
Replacement knob — mounts directly to switch; no shaft necessary

| NEMA | Color | For use | Length | Padlockable | Catalog |
|--------------|-------|---------------------------------------|--------|-------------|----------------------|
| 1 | Black | CDNF16, 25, 32A3 | 1.0 | — | CDRKBS12 |
| 1 | Black | CDNF30, 45, 60, 63, 100A3 | 1.4 | Yes | CDRKBS2 ^③ |
| Metal collar | | CDNF16 – CDNF100A3 | — | — | CDMCS2 |
| Set screw | | CDNF16, 25, 30, 32, 45, 60, 63, 100A3 | — | — | CDSWM5X8A |

① Mounting depth is the distance from the outside of door to the disconnect switch mounting plate. Shaft can be cut to desired length.
 ③ Set screw CDSWM5X8A needed with replacement knobs CDRKBS__.

Accessories for 16A – 100A Non-fusible Disconnect Switches

Base and DIN rail mounted switches



Auxiliary contacts^① — snap-on mounting

| Description | For use on: | Weight (lbs.) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|--------------------|---------------|-----------------------|------------------|----------------|
| 1 N.O. mounts on right hand side of switch only | CDNF16 – CDNF100A3 | 0.07 | 10 | 600 | CDAUX10 |
| 1 N.C. mounts on left hand side of switch only | CDNF16 – CDNF100A3 | 0.07 | 10 | 600 | CDAUX01 |
| 1 N.O. + 1 N.C. mounts on left or right hand side of switch | CDNF16 – CDNF100A3 | 0.07 | 10 | 600 | CDAUX11 |

Max. two contacts on each side of switch

Power poles

- Only one power pole per switch
- Mounts on left or right side of switch

| Description | For use on: | Weight (lbs.) | AC thermal amp rating | AC rated voltage | Catalog number |
|------------------------------------|-------------------|---------------|-----------------------|------------------|----------------|
| Fourth pole ^② | CDNF16 - CDNF32A3 | 0.07 | 40 | 600 | CDS32PP |
| | CDNF30 - 60A3 | 0.13 | 60 | 600 | CDS60PP |
| | CDNF45 - 63A3 | 0.13 | 80 | 600 | CDS63PP |
| | CDNF - 100A3 | 0.31 | 100 | 600 | CDS125PP |
| Late-break/early-make ^② | CDNF16 - CDNF32A3 | 0.07 | 40 | 600 | CDL32PP |
| | CDNF30 - 60A3 | 0.13 | 60 | 600 | CDL60PP |
| | CDNF45 - 63A3 | 0.13 | 80 | 600 | CDL63PP |
| | CDNF - 100A3 | 0.31 | 100 | 600 | CDL125PP |

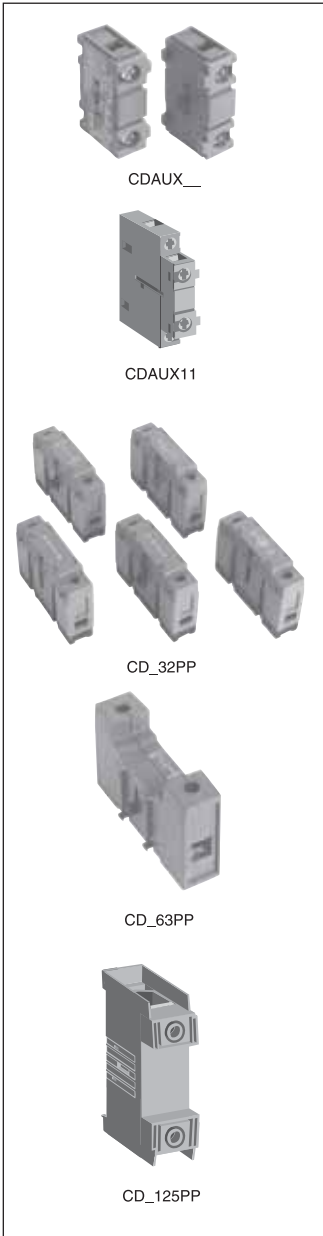
Terminal poles

- Switch accepts one terminal pole per side
- Mounts on left or right side of switch

| Description | For use on: | Weight (lbs.) | AC thermal amp rating | AC rated voltage | Catalog number |
|---------------------------------|---------------|---------------|-----------------------|------------------|----------------|
| Solid neutral ^② | CDNF16 - 32A3 | 0.07 | 40 | 600 | CDN32TP |
| | CDNF45 - 63A3 | 0.13 | 80 | 600 | CDN63TP |
| | CDNF - 100A3 | 0.31 | 100 | 600 | CDN125TP |
| Detachable neutral ^② | CDNF16 - 32A3 | 0.07 | 40 | 600 | CDD32TP |
| | CDNF30 - 60A3 | 0.13 | 60 | 600 | CDD60TP |
| | CDNF45 - 63A3 | 0.13 | 80 | 600 | CDD63TP |
| | CDNF - 100A3 | 0.31 | 100 | 600 | CDD125TP |
| Ground terminal ^② | CDNF16 - 32A3 | 0.07 | 40 | 600 | CDE32TP |
| | CDNF30 - 60A3 | 0.13 | 60 | 600 | CDE60TP |
| | CDNF45 - 63A3 | 0.13 | 80 | 600 | CDE63TP |
| | CDNF - 100A3 | 0.31 | 100 | 600 | CDE125TP |

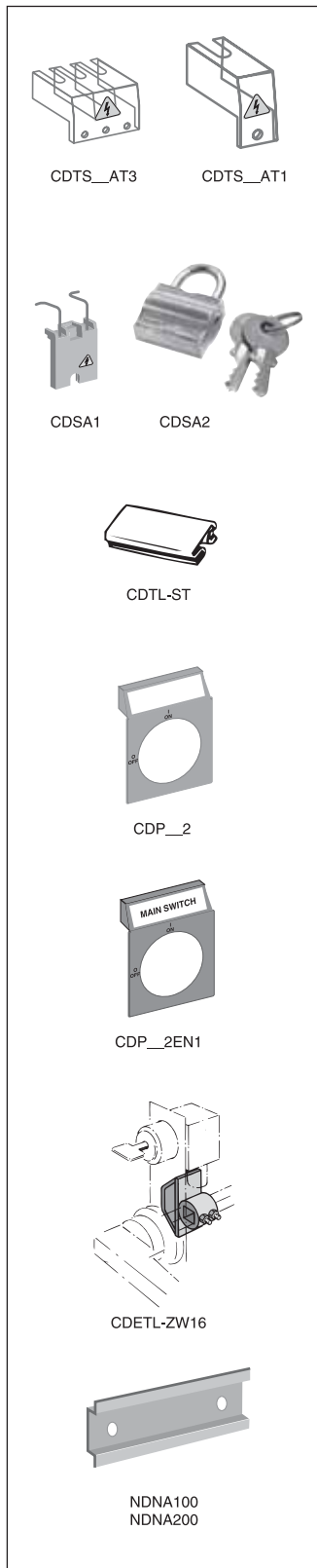
① UL File # E83510

② Switch accepts one power pole or one terminal pole per side. Only one power pole per switch.



Accessories for 16A – 100A Non-fusible Disconnect Switches

Base & DIN Rail Mounted



Terminal shrouds* — snap on mounting for line or load side

| Description | For use on: | Weight (lbs.) | Catalog number |
|--|----------------------|---------------|-------------------------------------|
| 3 pole includes one shroud for line or load side | CDNF16, -25, -32 A3 | 0.02 | CDTS32AT3 CDTS63AT3 CDTS100T3 |
| | CDNF45, -63 A3 | 0.02 | |
| | CDNF30, -60, -100 A3 | 0.02 | |
| 4th pole includes one shroud for line or load side | CD_32PP | 0.02 | CDTS32AT1 CDTS63AT1 CDTS100T1 |
| | CD_63PP | 0.02 | |
| | CD_125PP | 0.02 | |

* All disconnects are IP20 touch safe as standard. Terminal shrouds provide an additional level of protection.

Padlocking adapter

| Description | For use on: | Weight (lbs.) | Catalog number |
|--|---------------------------------|---------------|----------------|
| Adapter for one padlock with a max. 0.137" shackle | CDNF30, -45 A3 | 0.02 | CDSA1 |
| | CDNF60, -63 A3 CDNF - 100 A3 | | |
| Padlock for DS-SA1 | | 0.22 | CDSA2 |
| Adapter and padlock | | 0.24 | CDSA3 |

Labelling accessories

| Description | For use on: | Package quantity | Catalog number |
|-----------------------------------|---|------------------|----------------|
| 1 Pkg. of label carriers | CDNF30, -45 A3 CDNF60, -63 A3 CDNF - 100 A3 | 100 pieces | CDTL-ST |
| 1 Pkg of blank description labels | | 315 pieces | CDT-E |

Legend plates for selector handles

| Description | For use on: | Catalog number | |
|--------------------------------|-------------|-----------------|----------|
| Blank plate | Black | CBDH1S, CBDH15S | CDPB1 |
| | Yellow | CBDH2S, CBDH16S | CDPY1 |
| | Black | CBDH3S, CBDH5S | CDPB2 |
| | Yellow | CBDH4S, CBDH6S | CDPY2 |
| Plate marked with: MAIN SWITCH | Black | CBDH1S, CBDH15S | CDPB1EN1 |
| | Yellow | CBDH2S, CBDH16S | CDPY1EN1 |
| | Black | CBDH3S, CBDH5S | CDPB2EN1 |
| | Yellow | CBDH4S, CBDH6S | CDPY2EN1 |

Locking accessories

| Description | For use on: | Weight (lbs.) | Catalog number |
|--|----------------|---------------|----------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. For adapting to the interlock system. The interlock is not included. | 6 & 8mm shafts | 0.29 | CDETL-ZW16 |

DIN rail

| Description | For use on: | Weight (lbs.) | Length inches/mm | Catalog number |
|------------------------|---------------------|---------------|------------------|----------------|
| 35mm DIN Rail | CDNF16 – CDNF100 A3 | 0.38 | 39.4/1000 | NDNA100 |
| 35mm Aluminum DIN Rail | CDNF16 – CDNF100 A3 | 0.75 | 78.8/1000 | NDNA200 |

Shaft support

| Description | For use on: | Weight (lbs.) | Catalog number |
|---------------|---------------------|---------------|----------------|
| Shaft support | CDNF16 – CDNF100 A3 | 0.30 | CDTL-ZX58 |

16A – 100A Non-fusible Disconnect Switches

Door Mounted

For a complete assembly,
please order one of each:

- 1 switch
- 1 handle



CDNF45A3D



CDH9S



CDNF16A3D
CDNF25A3D
CDNF32A3D



CDBH8S
CDBH12S



CDBH17S
CDBH19S



CDBH9S
CDBH13S



CDBH10S
CDBH14S

16 – 100 Amp switches, 600V, 3 pole^{①②③}

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | | Terminal lugs | | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|-------------|------|------|---------------|-----------|----------------|
| | | Single phase | | | Three phase | | | Wire size | Wire type | |
| | | 120V | 240V | 200V | 240V | 480V | 600V | | | |
| 16 | 16 | 1/2 | 1.5 | 3 | 5 | 10 | 10 | #18 – 8 | Cu | CDNF16A3D |
| 25 | 25 | 3/4 | 2 | 7.5 | 7.5 | 15 | 15 | #18 – 8 | Cu | CDNF25A3D |
| 40 | 40 | 1 | 3 | 10 | 10 | 20 | 25 | #18 – 8 | Cu | CDNF32A3D |
| 60 ^④ | 63 | 2 | 5 | 15 | 15 | 30 | 20 | #14 – 4 | Cu | CDNF45A3D |
| 80 ^④ | 80 | 2 | 5 | 20 | 20 | 40 | 40 | #14 – 1 | Cu | CDNF63A3D |
| 30 ^④ | 40 | 2 | 5 | 10 | 10 | 20 | 30 | #14 – 4 | Cu | CDNF30A3D |
| 60 ^④ | 63 | 3 | 7.5 | 20 | 20 | 40 | 40 | #14 – 4 | Cu | CDNF60A3D |
| 100 ^④ | 115 | 5 | 15 | 25 | 25 | 50 | 40 | #8 – 1/0 | Cu | CDNF100A3D |

Selector handles

| NEMA/UL type | IEC type | Color | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|-------|------------|-------------|--------------|----------------|
|--------------|----------|-------|------------|-------------|--------------|----------------|

All marked both O/I & Off/On

Snap-on mounting — for use on CDNF16, 25, 32A3D

| | | | | | | |
|---------|------|---------|---|-----|------|---------|
| 1 | IP54 | Black | — | — | 0.10 | CBDH7S |
| 1 | IP54 | Red/Yel | — | — | 0.10 | CBDH8S |
| 1 | IP54 | Black | — | Yes | 0.13 | CBDH19S |
| 1 | IP54 | Red/Yel | — | Yes | 0.13 | CBDH20S |
| 1,3R,12 | IP65 | Black | — | Yes | 0.17 | CBDH9S |
| 1,3R,12 | IP65 | Red/Yel | — | Yes | 0.17 | CBDH10S |

Screw mounting — for use on CDNF16, 25, 32, 45 & 63A3D

| | | | | | | |
|---------|------|---------|---|-----|------|---------|
| 1 | IP54 | Black | — | — | 0.11 | CBDH11S |
| 1 | IP54 | Red/Yel | — | — | 0.11 | CBDH12S |
| 1 | IP54 | Black | — | Yes | 0.14 | CBDH17S |
| 1 | IP54 | Red/Yel | — | Yes | 0.14 | CBDH18S |
| 1,3R,12 | IP65 | Black | — | Yes | 0.18 | CBDH13S |
| 1,3R,12 | IP65 | Red/Yel | — | Yes | 0.18 | CBDH14S |

Door mounted switches do not provide door interlock

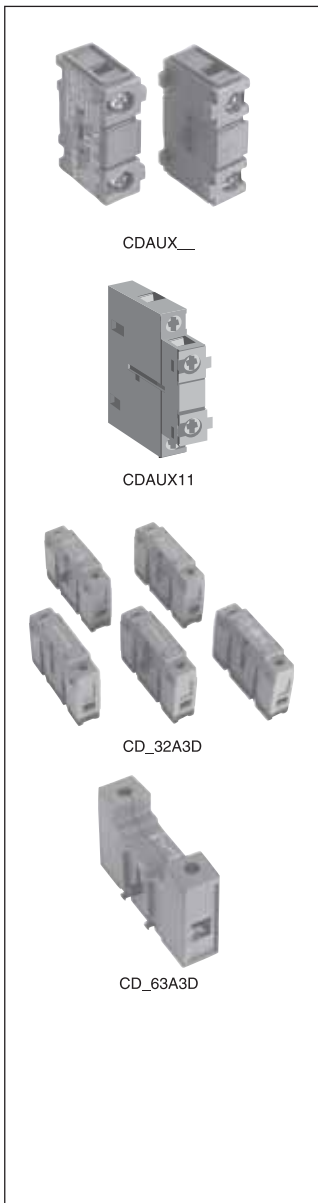
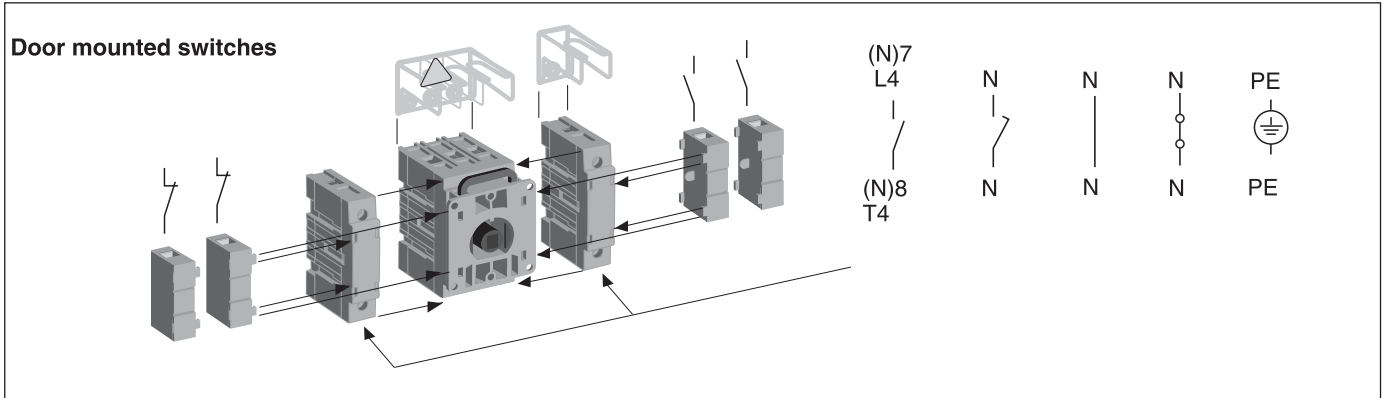
Pistol grip handle adapter

| Description | For use on: | Weight (lbs) | Catalog number |
|---|--------------------------|--------------|----------------|
| Adapter piece for pistol grip handle (Note: derates handle to NEMA 1) | CDNF30, CDNF60, CDNF100S | 0.18 | CDHZSX6 |

- ① A snap on fourth pole may be added
- ② Door mounted switches do not require shafts.
- ③ CDNF16, 25, 32, 45 & 63 door mounted switches will not accept pistol handles.
- ④ CDNF45 & 63 door mounted switches can only use screw mounted handles.

Accessories for 16 – 100A Non-fusible Disconnect Switches

Door Mounted



Auxiliary contacts[®] — snap-on mounting

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|------------------------|--------------|-----------------------|------------------|----------------|
| 1 N.O. mounts on righthand side of switch | CDNF16A3D - CDNF100A3D | 0.07 | 10 | 600 | CDAUX10 |
| 1 N.C. mounts on lefthand side of switch | | 0.07 | 10 | 600 | CDAUX01 |
| 1 N.O. + 1 N.C. mounts on left or right hand side of switch | | 0.07 | 10 | 600 | CDAUX11 |

Max. two contacts on each side of switch

Power poles

- Only one power pole per switch
- Mounts on left or right side of switch

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|------------------------------------|----------------------------|--------------|-----------------------|------------------|----------------|
| Fourth pole [®] | CDNF16A3D, -25A3D, -32A3D | 0.07 | 40 | 600 | CDS32PD |
| | CDNF30A3D, -60A3D | 0.13 | 60 | 600 | CDS60PD |
| | CDNF45A3D, -63A3D | 0.13 | 80 | 600 | CDS63PD |
| | CNDNF100A3D | 0.20 | 100 | 600 | CDS100PD |
| Late-break/early-make [®] | CDNF16A3D, -25A3D, -32A3D | 0.07 | 40 | 600 | CDL32PD |
| | CDNF45A3D, -63A3D | 0.13 | 80 | 600 | CDL63PD |
| | CDNF30A3D, -60A3D, -100A3D | 0.20 | 100 | 600 | CDL100PD |

Terminal poles

- Switch accepts one terminal pole per side
- Mounts on left or right side of switch

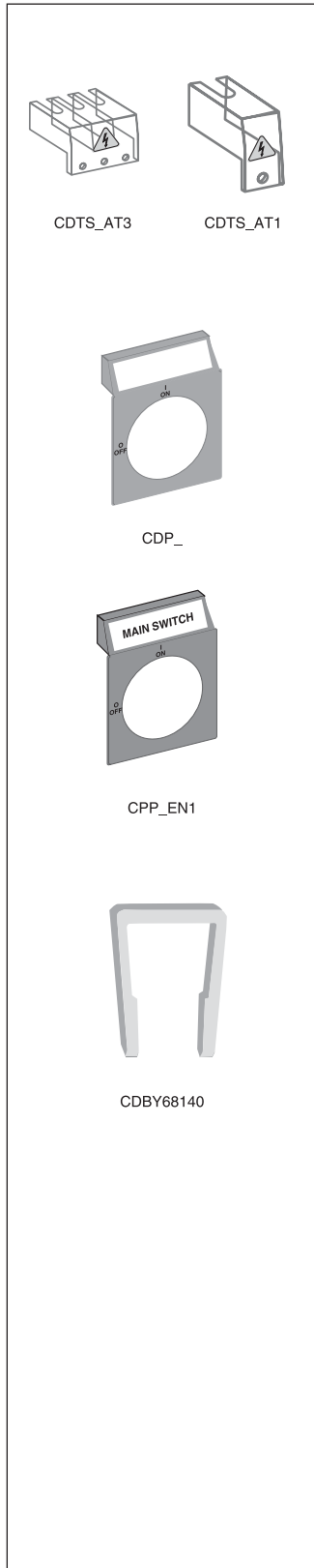
| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|------------------------------|---------------------------|--------------|-----------------------|------------------|----------------|
| Solid neutral [®] | CDNF16A3D, -25A3D, -32A3D | 0.07 | 40 | 600 | CDN32PD |
| | CDNF30A3D, -60A3D | 0.17 | 60 | 600 | CDN60PD |
| | CDNF45A3D, -63A3D | 0.13 | 80 | 600 | CDN63PD |
| | CNDNF100A3D | 0.20 | 100 | 600 | CDN100PD |
| Ground terminal [®] | CDNF16A3D, -25A3D, -32A3D | 0.07 | 40 | 600 | CDE32PD |
| | CDNF30A3D, -60A3D | 0.13 | 60 | 600 | CDE32PD |
| | CDNF45A3D, -63A3D | 0.13 | 80 | 600 | CDE63PD |
| | CNDNF100A3D | 0.20 | 100 | 600 | CDE100PD |

UL File # E83510

Switch accepts one power pole or one terminal pole per side. Only one power pole per switch.

Accessories for 16A – 100A Non-fusible Disconnect Switches

Door Mounted



Terminal shrouds* — snap-on mounting for line or load side

| Description | For use on: | Weight (lbs) | Catalog number |
|--|--------------------|--------------|-------------------------------------|
| 3 pole includes one shroud for line or load side | CDNF16D, 25D, 32D | 0.02 | CDTS32AT3 CDTS63AT3 CDTS100T3 |
| | CDNF45D & 63D | 0.02 | |
| | CDNF30D, 60D, 100D | 0.02 | |
| 4 pole includes one shroud for line or load side | CD_32D | 0.02 | CDTS32AT1 CDTS63AT1 CDTS100T1 |
| | CD_63D | 0.02 | |
| | CD_100D | 0.02 | |

* All disconnects are IP20 touch safe as standard. Terminal shrouds provide an additional level of protection.

Legend plates for selector handles

| Description | For use on: | Catalog number |
|---------------------------------------|-----------------|----------------|
| Blank plate | | |
| Black | CBDH1S, CBDH15S | CDPB1 |
| Yellow | CBDH2S, CBDH16S | CDPY1 |
| Black | CBDH3S, CBDH5S | CDPB2 |
| Yellow | CBDH4S, CBDH6S | CDPY2 |
| Plate marked with: MAIN SWITCH | | |
| Black | CBDH1S, CBDH15S | CDPB1EN1 |
| Yellow | CBDH2S, CBDH16S | CDPY1EN1 |
| Black | CBDH3S, CBDH5S | CDPB2EN1 |
| Yellow | CBDH4S, CBDH6S | CDPY2EN1 |

Locking clip (replacement part)

| Description | For use on: | Catalog number |
|--|--|----------------|
| Door mounted switch handle locking clip | CDNF16DA3D CDNF25DA3D CDNF32DA3D | CDBY68140 |

125A Non-fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft



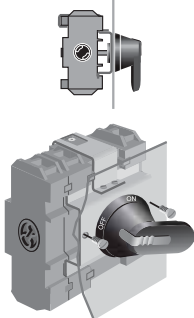
CDNF160



BDS210



BDH60



CDNF160D



BDH60



BDH61



BDS__



BDST__

125 Amp Base & DIN rail mounted switches^①, 600V

| UL 98 general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | Terminal lugs | | Catalog number |
|---|------------------------------|---------------------------|------|------|------|------|---------------|-----------|-------------------|
| | | Three phase | | | | | Wire size | Wire type | |
| | | 200V | 208V | 240V | 480V | 600V | | | |
| 2 pole | | | | | | | | | |
| 100 | 160 | — | — | — | — | — | #8 – 1/0 | Cu | CDNF160-2 |
| 3 pole | | | | | | | | | |
| 100 | 160 | 30 | 30 | 30 | 60 | 75 | #8 – 1/0 | Cu | CDNF160 |

125 Amp Door mounted switch^①, 600V, 3 pole

| UL 98 general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | Terminal lugs | | Catalog number |
|---|------------------------------|---------------------------|------|------|------|------|---------------|-----------|-------------------|
| | | Three phase | | | | | Wire size | Wire type | |
| | | 200V | 208V | 240V | 480V | 600V | | | |
| 100 | 160 | 30 | 30 | 30 | 60 | 75 | #8 – 1/0 | Cu | CDNF160D |

Pistol handles — for use with $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| NEMA type | IEC type | Color | Length in/mm | Marking | Defeat- able | Padlock- able | Weight (lbs) | Catalog number |
|------------------|-------------|---------|-----------------|--------------|-----------------|------------------|-----------------|-------------------|
| 1, 3R, 12 | IP65 | Black | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH58 |
| 1, 3R, 12 | IP65 | Red/Yel | 2.6/65 | O/I & Off/On | Yes | Yes | 0.29 | BDH59 |
| 1, 3R, 12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH60 |
| 1, 3R, 12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH61 |
| 1, 3R, 4, 4X, 12 | IP66 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXB86 |
| 1, 3R, 4, 4X, 12 | IP66 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXY86 |

Shafts — for use with pistol handles $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length inches/mm | | Mounting depth ^② in inches | Weight (lbs) | Catalog number |
|---------------------------|--|--|-----------------|-------------------|
| 5.2/130 | | 4.3 – 6.0 | 0.08 | BDS130 |
| 5.9/150 | | 5.0 – 6.7 | 0.09 | BDS150 |
| 8.3/210 | | 7.4 – 9.1 | 0.13 | BDS210 |
| 11.4/290 | | 10.5 – 12.2 | 0.18 | BDS290 |
| 14.2/360 | | 13.3 – 15.0 | 0.23 | BDS360 |
| 16.9/430 | | 16.0 – 17.8 | 0.27 | BDS430 |

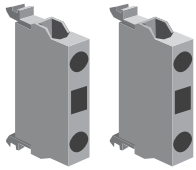
Twisted shafts — Rotates handle 45° $\square .24 \times .24$ " ($\square 6 \times 6$ mm)

| Shaft length inches/mm | | Mounting depth ^② in inches | Weight (lbs) | Catalog number |
|---------------------------|--|--|-----------------|-------------------|
| 5.2/130 | | 4.3 – 6.0 | 0.08 | BDST4 |
| 8.3/210 | | 7.4 – 9.1 | 0.13 | BDST25 |
| 11.4/290 | | 10.5 – 12.2 | 0.18 | BDST29 |
| 14.2/360 | | 13.3 – 15.0 | 0.23 | BDST30 |

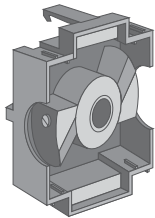
① A snap on fourth pole may be added

② Mounting depth is the distance from the outside of the door to the disconnect switch mounting plate. Shaft can be cut to desired length.

Accessories for 125A Non-fusible Disconnect Switches



CDAUXCA10 CDAUXCA01



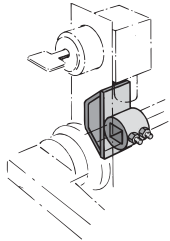
CDAUXB160



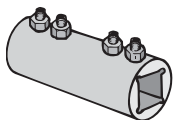
CDAUX16011 CDMB160



CD_160P



CDETL-ZW16



BDZX167
BDZX95

Auxiliary contacts, top mounted

- Accepts four contacts maximum, mounting base always required

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|--|-------------|--------------|-----------------------|------------------|------------------------|
| 1 N.O. 1 N.C. | CDNF160 | 0.07 | 10 | 600 | CDAUXCA10 CDAUXCA01 |
| 1 N.O. gold plated ^① 1 N.C. gold plated ^② | CDNF160 | 0.07 | 10 | 600 | CDEA-10AU CDEA-01AU |
| Mounting base – required for CDAUX_ | CDAUX_ | 0.06 | — | — | CDAUXB160 |

Auxiliary contacts, side mounted

- Accepts four contacts maximum

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|--|-------------|--------------|-----------------------|------------------|----------------|
| 1 N.O. & 1 N.C. | CDNF160 | 0.07 | 10 | 600 | CDAUX16011 |
| Mounting base, required for CDAUX16011 | CDNF160 | 0.06 | — | — | CDMB160 |

Max. two contacts on each side of switch. One mounting base required for each side of switch

Numbering stickers^②

| Description | For use on: | Package qty. | Catalog number |
|--|-------------|--------------|----------------|
| 1 Pkg. of blank labels for OBEA-10, 1 N.O. | CDNF160 | 10 | CDEA-ZX10 |
| 1 Pkg. of blank labels for OBEA-01, 1 N.C. | CDNF160 | 10 | CDEA-ZX01 |

Power pole — for use with base or door mounted switch

- Only one power pole per switch
- Mounts on left or right side of switch

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|-------------|-------------|--------------|-----------------------|------------------|----------------|
| Fourth pole | CDNF160 | 0.66 | 125 | 600 | CDS160P |

Terminal poles — for use with base or door mounted switch

- Switch accepts one terminal pole per side
- Mounts on left or right side of switch

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|-------------|--------------|-----------------------|------------------|----------------|
| Detachable solid neutral mounts on side of switch or DIN rail | CDNF160 | 0.66 | 125 | 600 | CDN160P |
| Ground terminal | CDNF160 | 0.66 | 125 | 600 | CDE160P |

Locking accessories

| Description | For use on: | Weight (lbs) | Catalog number |
|---|-------------------|--------------|----------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. For adapting to the interlock system The interlock is not included. | 5, 6 & 8mm shafts | 0.29 | CDETL-ZW16 |

Handle support bracket

| Description | For use on: | Weight (lbs) | Catalog number |
|---|-------------|--------------|----------------|
| Allows pistol handle to be directly mounted to switch behind the door | CDNF160 | 0.33 | CDZX5 |

Shaft extension couplers

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-----------------------------------|--------------|-------------------|
| Joins two shafts together for applications where extended length is required | for 6mm shafts for 12mm shafts | 0.26 0.26 | BDZX167 BDZX95 |

^① Type _AU for low energy applications. The contacts are gold-plated. AC & DC ratings — Maximum: A600 & P600. Minimum: 12V, 1mA; 5V, 2mA
^② Required if several contact blocks are used in the same installation.

200A Non-fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CDNF200U03



BDS210



BDH60



CDTL200

Non-Fusible 3 pole and 4 pole 200A Switch

200 AMP, 600V

| UL general purpose amp rating | IEC AC21 Amp Rating | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|------|------|----------------|
| | | Three phase | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | |
| 3 pole | | | | | | | |
| 200 | 250 | 60 | 60 | 75 | 250 | 200 | CDNF200U03 |
| 4 pole | | | | | | | |
| 200 | 250 | 60 | 60 | 75 | 250 | 200 | CDNF200U04 |



BDH60, CDHXB86



BDH59, 61

Pistol handles - .24 x .24" (6 x 6mm)

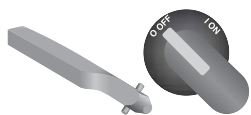
| UL/NEMA type | IEC type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|---------|------------------|--------------|------------|-------------|--------------|----------------|
| 1,3R,12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH60 |
| 1,3R,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | BDH61 |
| 1,3R,4,4X,12 | IP65 | Black | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXB86 |
| 1,3R,4,4X,12 | IP65 | Red/Yel | 3.1/80 | O/I & Off/On | Yes | Yes | 0.30 | CDHXY86 |



BDS_

Shafts - .24 x .24" (6 x 6mm)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 5.2/130 | 4.3-6.5 | 0.08 | BDS130 |
| 5.9/150 | 5.0-7.2 | 0.09 | BDS150 |
| 8.3/210 | 7.4-9.6 | 0.13 | BDS210 |
| 11.4/290 | 10.5-12.7 | 0.18 | BDS290 |
| 14.2/360 | 13.3-15.5 | 0.23 | BDS360 |
| 16.9/430 | 16.0-18.2 | 0.27 | BDS430 |



BDST_1

Twisted shafts - rotates handle 45° .24 x .24" (6 x 6mm)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 5.1/130 | 4.29-6.85 | 0.08 | BDST4 |
| 8.3/210 | 7.44-10.0 | 0.13 | BDST25 |
| 11.4/290 | 10.59-13.15 | 0.18 | BDST29 |

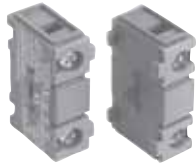
Direct mount handle - TEST-OFF-ON

| Description | Color | (lbs) | Catalog number |
|---|---------|-------|----------------|
| Up to 3 padlocks in OFF-position. Includes shaft and mechanism | Black | 0.22 | CDHTB20 |
| | Red/Yel | 0.22 | CDHTY20 |

Accessories for 200A Non-fusible Disconnect Switches



CDTL200



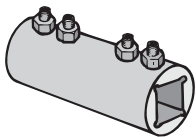
CDAUX10, CDAUX01K



CDS250G1S/3



CDS250G1L/3



BDZX167, BDZW95

Terminal Lug Kits

| For use on: | Wire Size | Wire Type | Description | Terminal lugs per kit | Weight (lbs) | Catalog number |
|-------------|--------------|-----------|------------------|-----------------------|--------------|----------------|
| CDNF200U03 | #4-300kcmil | | --- | 6 | 0.5 | CDTL200 |
| CDNF200U04 | #4-300kcmil | | --- | 3 | 0.25 | CDTL200/3P |
| | (6) 14-6 AWG | Cu/Al | Distribution lug | 3 | 0.25 | CDTL206 |

Auxiliary Contacts

| Description | For use on: | Weight (lbs) | Catalog number |
|-------------|----------------|--------------|----------------|
| 1 N.O. | CDNF200U03 and | 0.07 | CDAUX10 |
| 1 N.C. | CDNF200U04 | 0.07 | CDAUX01K |

Module for auxiliary contacts

| Description | Weight (lbs) | Catalog number |
|---|--------------|----------------|
| Screw mounting to the left side of the switch | 0.1 | CDAUXM28 |

Terminal shrouds

| For use on: | Description | Number of poles | Weight (lbs) | Catalog number |
|------------------------------|-------------|-----------------|--------------|----------------|
| CDNF200U03 and CDNF200U04 | Long type | 3 | 0.2 | CDTS250G1L/3 |
| | Short type | 3 | 0.13 | CDTS250G1S/3 |
| | Long type | 4 | 0.26 | CDTS250G1L/4 |
| | Short type | 4 | 0.18 | CDTS250G1S/4 |

Terminal poles

| Description | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|--------------|-----------------------|------------------|----------------|
| Mounting separately on base, plate protected construction | 0.88 | 200 | 600 | CDD200P |

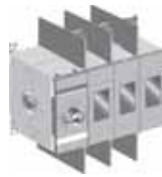
Shaft extension coupler

| Description | For use on: | Weight (lbs) | Catalog number |
|--|---------------------------|--------------|-------------------|
| Joins two shafts together for applications where extended length is required | 6mm shafts 12mm shafts | 0.26 | BDZX167 BDZX95 |

400A Non-fusible Disconnect Switches

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



CDNF400U03



BDS280



BDH114



CDTL400



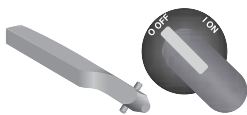
CDNF400U03



BDH112-117



BDS_



BDS_45



CDTL400

Non-Fusible 3 pole and 4 pole 400A Switch 200 AMP, 600V

| UL general purpose amp rating | IEC AC21 Amp Rating | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|------|------|----------------|
| | | Three phase | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | |
| 3-pole | | | | | | | |
| 400 | 630 | 100 | 100 | 125 | 250 | 350 | CDNF400U03 |
| 4-pole | | | | | | | |
| 400 | 630 | 100 | 100 | 125 | 250 | 350 | CDNF400U04 |

Pistol handles - $\square .47 \times .47''$ ($\square 12 \times 12\text{mm}$)

| UL/NEMA type | IEC type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|---------|------------------|--------------|------------|-------------|--------------|----------------|
| 1,3R,12 | IP65 | Black | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH112 |
| 1,3R,12 | IP65 | Red/Yel | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH113 |
| 1,3R,12 | IP65 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH114 |
| 1,3R,12 | IP65 | Red/Yel | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH115 |
| 1,3R,12 | IP65 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH116 |
| 1,3R,12 | IP65 | Red/Yel | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH117 |
| 1,3R,4,4X,12 | IP66 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXB12 |
| 1,3R,4,4X,12 | IP66 | Red/Yel | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXY12 |
| 1,3R,4,4X,12 | IP66 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXB22 |
| 1,3R,4,4X,12 | IP66 | Red/Yel | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXY22 |
| 1,3R,4,4X,12 | IP65 | Metal | 8.7/220 | Off/On | --- | Yes | 1.50 | BDHB |

Shafts - $\square .47 \times .47''$ ($\square 12 \times 12\text{mm}$)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 11.0/280 | 10.2-14.5 | 0.77 | BDS280 |
| 12.8/325 | 12.0-16.3 | 0.90 | BDS325 |
| 15.6/395 | 14.8-19.1 | 1.10 | BDS395 |
| 18.3/465 | 17.5-21.9 | 1.32 | BDS465 |
| 21.1/535 | 20.3-24.6 | 1.54 | BDS535 |

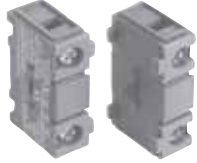
Twisted shafts - rotates handle 45° $\square .47 \times .47''$ ($\square 12 \times 12\text{mm}$)

| Shaft length (inches/mm) | Mounting dept (inches) | Weight (lbs) | Catalog number |
|--------------------------|------------------------|--------------|----------------|
| 11.0/280 | 10.2-14.5 | 0.77 | BDS28045 |
| 12.8/325 | 12.0-16.3 | 0.90 | BDS32545 |
| 18.3/465 | 17.5-21.5 | 1.32 | BDS46545 |

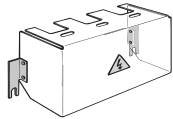
Direct mount handle - TEST-OFF-ON

| Description | Color | (lbs) | Catalog number |
|---|---------|-------|----------------|
| Up to 3 padlocks in OFF-position. Includes shaft and mechanism | Black | 0.44 | CDHTB40 |
| | Red/Yel | 0.44 | CDHTY40 |

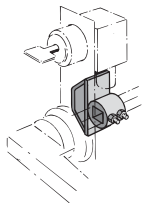
400A Non-fusible Disconnect Switches



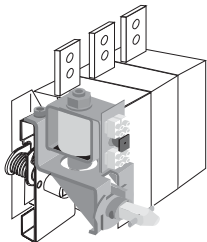
CDAUX10, CDAUX01K



CDTS403



CDETL-ZW5_



BDZW95

Terminal Lug Kits

| For use on: | Wire Size | Wire Type | Description | Terminal lugs per kit | Weight (lbs) | Catalog number |
|-------------|--------------|-----------|------------------|-----------------------|--------------|----------------|
| CDNF400U03 | #2-600kcmil | | --- | 6 | 0.5 | CDTL400 |
| CDNF400U04 | #2-600kcmil | | --- | 3 | 0.5 | CDTL400/3P |
| | (6) 14-6 AWG | Cu/Al | Distribution lug | 3 | 0.5 | CDTL406 |

Auxiliary Contacts

Mounting on the left side of the switch: Max. 8 auxiliary contact blocks with the CDAUXM28

Mounting under the mechanism cover: Max. 4 auxiliary contact blocks

| Description | For use on: | Weight (lbs) | Catalog number |
|-------------|------------------------|--------------|----------------|
| 1 N.O. | CDNF400U03, CDNF400U04 | 0.07 | CDAUX10 |
| 1 N.C. | | 0.07 | CDAUX01K |

Module for auxiliary contacts

| Description | Weight (lbs) | Catalog number |
|---|--------------|----------------|
| Screw mounting to the left side of the switch | 0.1 | CDAUXM28 |

Terminal shrouds

| For use on: | Description | Number of poles | Weight (lbs) | Catalog number |
|-------------|-------------|-----------------|--------------|-----------------|
| CDNF400U03 | 3 pole | | | CDTS403 |
| CDNF400U04 | | | | CONTACT FACTORY |

Locking accessories

| Description | For use on | Weight (lbs) | Catalog number |
|---|-------------|--------------|----------------|
| Cam attachment for Kirk Key, Castell, Lowe & Fletcher and Ronis interlock. Cam attachment for adapting to the interlock system. The interlock is not included. | 12mm shafts | 0.29 | CDETL-ZW5 |

Shaft extension coupler

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|--------------|----------------|
| Joins two shafts together for applications where extended length is required | 12mm shafts | 0.26 | BDZW95 |

Accessories for 600A – 800A Non-fusible Disconnect Switches

For a complete assembly, please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



BDNF600A

+



BDS280

+



BDH116

+



BDTL26



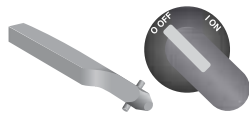
BDNF800A



BDH112-117



BDS280



BDS_45


600 – 800 Amp switches, 600V

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|------|------|----------------|
| | | 200V | 208V | 240V | 480V | 600V | |
| 2 pole | | | | | | | |
| 600 | 800 | — | — | — | — | — | BDNF600A2 |
| 800 | 1250 | — | — | — | — | — | BDNF800A2 |
| 3 pole | | | | | | | |
| 600 | 800 | 150 | 150 | 200 | 400 | 500 | BDNF600A |
| 800 | 1250 | 200 | 200 | 250 | 500 | 600 | BDNF800A |
| 4 pole | | | | | | | |
| 600 | 800 | 150 | 150 | 200 | 400 | 500 | BDNF600A4 |
| — | 1250 | 200 | 200 | 250 | 500 | 600 | BDNF800A4 |


Pistol handles — for use with shafts $\square .47 \times .47"$ ($\square 12 \times 12 \text{ mm}$)

| NEMA type | IEC type | Color | Length in/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|----------|-------|--------------|--------------|------------|-------------|--------------|----------------|
| 1,3R,12 | IP65 | Blk | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH112 |
| 1,3R,12 | IP65 | R/Y | 4.9/125 | O/I & Off/On | Yes | Yes | 0.39 | BDH113 |
| 1,3R,12 | IP65 | Blk | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH114 |
| 1,3R,12 | IP65 | R/Y | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH115 |
| 1,3R,12 | IP65 | Blk | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH116 |
| 1,3R,12 | IP65 | R/Y | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH117 |
| 1,3R,4,4X,12 | IP66 | Blk | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXB12 |
| 1,3R,4,4X,12 | IP66 | R/Y | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXY12 |
| 1,3R,4,4X,12 | IP66 | Blk | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXB22 |
| 1,3R,4,4X,12 | IP66 | R/Y | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXY22 |
| 1,3R,4,4X,12 | IP65 | Metal | 8.7/220 | Off/On | — | Yes | 1.50 | BDH8 |

Shafts — for use with pistol handles $\square .47 \times .47"$ ($\square 12 \times 12 \text{ mm}$)

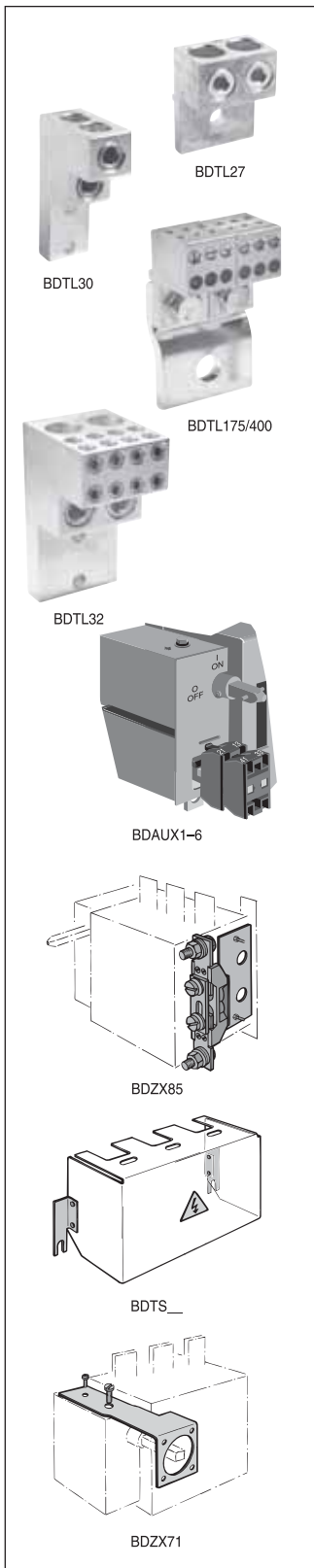
| Shaft length inches/mm |  | Mounting depth ^① in inches | Weight (lbs) | Catalog number |
|------------------------|---|---------------------------------------|--------------|----------------|
| 11.0/280 | | 10.2 – 14.5 | 0.77 | BDS280 |
| 12.8/325 | | 12.0 – 16.3 | 0.90 | BDS325 |
| 15.6/395 | | 14.8 – 19.1 | 1.10 | BDS395 |
| 18.3/465 | | 17.5 – 21.9 | 1.32 | BDS465 |
| 21.1/535 | | 20.3 – 24.6 | 1.54 | BDS535 |

Twisted shafts —rotates handle 45° $\square .47 \times .47"$ ($\square 12 \times 12 \text{ mm}$)

| Shaft length inches/mm |  | Mounting depth ^① in inches | Weight (lbs) | Catalog number |
|------------------------|---|---------------------------------------|--------------|----------------|
| 11.0/280 | | 10.2 – 14.5 | 0.77 | BDS28045 |
| 12.8/325 | | 12.0 – 16.3 | 0.90 | BDS32545 |
| 18.3/465 | | 17.5 – 21.9 | 1.32 | BDS46545 |

① Mounting depth is the distance from the outside of the door to the disconnect switch mounting plate. Shaft can be cut to desired length.

Accessories for 600A – 800A Non-fusible Disconnect Switches



Terminal lug kits

| For use on: | Wire size | Kit weight (lbs.) | Wire type | Terminal lugs per kit | Kit catalog number |
|-----------------------|---------------------------|-------------------|-----------|-----------------------|--------------------|
| BDNF600A | (2) #2 – 600 kcmil | 4.62 | Cu/Al | 6 | BDTL27 |
| BDNF800A | (2) #2 – 600 kcmil | 6.90 | Cu/Al | 6 | BDTL30 |
| BDNF800A ^① | (8) 2/0 + (2)#2 600 kcmil | 6.90 | Cu/Al | 3 | BDTL32 |
| BDNF600A ^① | (12) #14 – 6 | 1.10 | Cu/Al | 6 | BDTL175/400 |

Auxiliary contacts^②

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|-----------------|-----------------------|--------------|-----------------------|------------------|----------------|
| 1 N.O. + 1 N.C. | BDNF600 – BDNF800A | 0.20 | 10 | 600 | BDAUX1 |
| 2 N.O. + 2 N.C. | | 0.26 | 10 | 600 | BDAUX2 |
| 4 N.O. + 4 N.C. | | 0.40 | 10 | 600 | BDAUX3 |
| 2 N.O. | | 0.18 | 10 | 600 | BDAUX4 |
| 4 N.O. | | 0.25 | 10 | 600 | BDAUX5 |
| 8 N.O. | | 0.40 | 10 | 600 | BDAUX6 |

Terminal poles

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|---|-------------|--------------|-----------------------|------------------|----------------|
| Detachable neutral mounts on side of switch or DIN rail | BDNF600A | 1.04 | 400 | 600 | BDZX85 |

Terminal shrouds

| Description | For use on: | Weight (lbs) | Catalog number |
|---|-------------|--------------|----------------|
| Includes one shroud for line or load side | BDNF600A | 0.62 | BDTS4 |
| | BDNF800A | 0.66 | BDTS6A |
| | BDNF800A | 0.88 | BDTS8A |

Handle support bracket

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|--------------|----------------|
| Allows handle to be directly mounted to switch behind the door | BDNF600A | 0.51 | BDZX73 |
| | BDNF800A | 0.88 | BDZX71 |

^① A load side distribution lug eliminates the need to purchase, install and wire a separate distribution block.
^② UL File E57057

1200A – 3150A Non-fusible Disconnect Switches

For a complete assembly
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



BDNF1200



BDS280



BDH117



BDTL28



BDNF1600
BDNF2000
BDNF3150



BDH114



BDH115



BDH8



BDS325

1200 – 3150 Amp switches, 600V

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | Catalog number |
|-------------------------------|---------------------|--|--|
| 2 pole | | The US National Electric Code does not specify HP ratings for switches this large. Please select a switch based on 115% of application FLA. For example: a motor with an FLA of 800A would require a 1200A switch: 800A x 115% = 920A, the closest higher rated switch is 1200A. | BDNF12002 BDNF16002 BDNF20002 BDNF31502 |
| 1200 | 1600 | | |
| 1600 | 2500 | | |
| 2000 | 2500 | | |
| — | 3150 | | BDNF1200 BDNF1600 BDNF2000 BDNF3150 |
| 3 pole | | | |
| 1200 | 1600 | | |
| 1600 | 2500 | | |
| 2000 | 2500 | | BDNF12004 BDNF16004 BDNF20004 BDNF31504 |
| — | 3150 | | |
| 4 pole | | | |
| — | 1600 | | |
| — | 2500 | | |
| — | 2500 | | |
| — | 3150 | | |

Pistol handles — for use with shaft .47 x .47" (12 x 12mm)

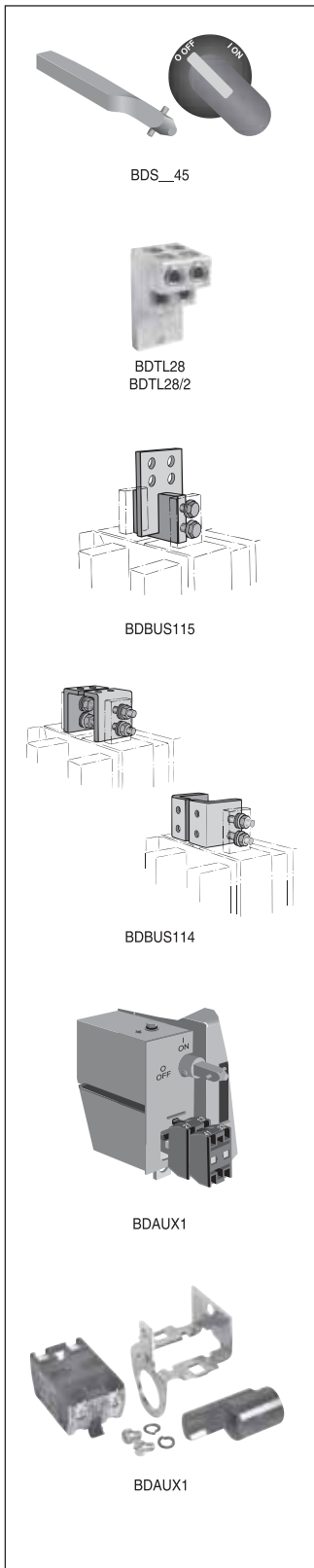
| NEMA type | IEC type | Color | Length mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|-------------------------------------|----------|------------|-----------|--------------|------------|-------------|--------------|----------------|
| For use with BDNF1200 | | | | | | | | |
| 1,3R,12 | IP65 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH114 |
| 1,3R,12 | IP65 | Red/Yellow | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | BDH115 |
| 1,3R,12 | IP65 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH116 |
| 1,3R,12 | IP65 | Red/Yellow | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | BDH117 |
| 1,3R,4,4X,12 | IP66 | Black | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXB12 |
| 1,3R,4,4X,12 | IP66 | Red/Yellow | 5.7/145 | O/I & Off/On | Yes | Yes | 0.39 | CDHXY12 |
| 1,3R,4,4X,12 | IP66 | Black | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXB22 |
| 1,3R,4,4X,12 | IP65 | Red/Yellow | 6.9/175 | O/I & Off/On | Yes | Yes | 0.41 | CDHXY22 |
| For use with BDNF1600 – 3150 | | | | | | | | |
| 1,3R,4,4X,12 | IP65 | Metal | 8.7/220 | Off/On | — | Yes | 1.50 | BDH8 |

Shafts — for use with pistol handles .47 x .47" (12 x 12 mm)

| Shaft length inches/mm | Mounting depth [Ⓢ] in inches | Weight (lbs) | Catalog number |
|-------------------------------------|---------------------------------------|--------------|----------------|
| For use with BDNF1200 | | | |
| 11.0/280 | 11.6 – 15.3 | 0.77 | BDS280 |
| 12.8/325 | 13.7 – 17.1 | 0.90 | BDS325 |
| 15.6/397 | 16.2 – 19.9 | 1.10 | BDS395 |
| 18.3/465 | 18.9 – 22.6 | 1.32 | BDS465 |
| 21.1/536 | 21.7 – 25.4 | 1.54 | BDS535 |
| For use with BDNF1600 – 3150 | | | |
| 12.8/325 | 13.7 – 17.1 | 0.90 | BDS325 |
| 15.6/397 | 16.2 – 19.9 | 1.10 | BDS395 |
| 18.3/465 | 18.9 – 22.6 | 1.32 | BDS465 |
| 21.1/536 | 21.7 – 25.4 | 1.54 | BDS535 |

[Ⓢ] Mounting depth is the distance from the outside of the door to the disconnect switch mounting plate. Shaft can be cut to desired length.

Accessories for 1200A – 3150A Non-fusible Disconnect Switches



Twisted shafts – Rotates handle 45° □ .47 x .47" (□12 x 12 mm)

| Shaft length inches/mm | Mounting depth ^① in inches | Weight (lbs) | Catalog number |
|-------------------------------------|--|-----------------|-------------------|
| For use with BDNF1200 | | | |
| 11.0/280 | 11.6 – 15.3 | 0.77 | BDS28045 |
| 12.8/325 | 13.7 – 17.1 | 0.90 | BDS32545 |
| 18.3/465 | 18.9 – 22.6 | 1.32 | BDS46545 |
| For use with BDNF1600 – 3150 | | | |
| 12.8/325 | 16.2 – 19.9 | 0.90 | BDS32545 |
| 18.3/465 | 18.9 – 22.6 | 1.32 | BDS46545 |

Terminal lug kits

| For use on: | Wire size | Kit weight (lbs.) | Wire type | Terminal lugs per kit | Kit catalog number |
|----------------------------------|---------------------------|----------------------|--------------|--------------------------|-----------------------|
| BDNF1200 & BDNF1600 | (4) #2 – 600kcmil | 10.44 | Cu/Al | 6 | BDTL28 |
| BDNF1200 & BDNF1600 ^② | (8) 2/0 + (2) #2 600kcmil | 10.44 | Cu/Al | 3 | BDTL32 |
| BDNF2000 & BDNF3150 | (8) #2 – 600kcmil | 20.88 | Cu/Al | 12 | BDTL28/2 |

BDTL32 Power distribution lugs eliminate the need to purchase a separate distribution block

Busbar connections

| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|-----------------|-------------------|
| Vertical mounting ^③ Vertical, back or edgewise mounting | BDNF1600 – | 46.2 | BDBUS115 |
| | BDNF3150 | 31.0 | BDBUS114 |

Auxiliary contacts^④

| Description | For use on: | Weight (lbs) | AC thermal amp rating | AC rated voltage | Catalog number |
|-----------------|------------------------|-----------------|--------------------------|---------------------|-------------------|
| 1 N.O. + 1 N.C. | BDNF1200 – BDNF3150 | 0.20 | 10 | 600 | BDAUX1 |
| 2 N.O. + 2 N.C. | | 0.26 | 10 | 600 | BDAUX2 |
| 4 N.O. + 4 N.C. | | 0.40 | 10 | 600 | BDAUX3 |
| 2 N.O. | | 0.18 | 10 | 600 | BDAUX4 |
| 4 N.O. | | 0.25 | 10 | 600 | BDAUX5 |
| 8 N.O. | | 0.40 | 10 | 600 | BDAUX6 |

Terminal shrouds

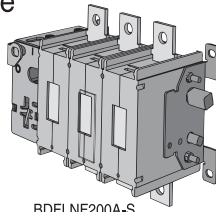
| Description | For use on: | Weight (lbs) | Catalog number |
|--|-------------|-----------------|-------------------|
| Includes one shroud for line or load side | BDNF1200 | 1.20 | BDS12 |

① Mounting depth is the distance from the outside of the door to the disconnect switch mounting plate. Shaft can be cut to desired length.
 ② A load side distribution lug eliminates the need to purchase, install and wire a separate distribution block.
 ③ Provided as standard with BDNF1600, BDNF2000 and BDNF3150.

Side Operated Non-fusible Disconnect Switches 30A – 600A

For a complete assembly, please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



BDFLNF200A-S



BDS240



BDH110SH



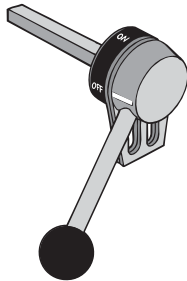
BDTL26



BDFLNF30-S



BDH107SH



BDZX74



CDS67P
BDS240
BDS325



BDTL24



BDTL25



BDTL27

Side operated switches — 3 pole

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | Weight (lbs) | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|------|------|--------------|----------------|
| | | Three phase | | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | | |
| 30 | 32 | 5 | 7.5 | 7.5 | 15 | 20 | 1.90 | BDFLNF30-S |
| 60 | 63 | 15 | 15 | 15 | 30 | 50 | 3.90 | BDFLNF60-S |
| 100 | 125 | 25 | 25 | 30 | 60 | 75 | 4.50 | BDFLNF100-S |
| 175 | 200 | 30 | 30 | 40 | 75 | 100 | 6.61 | BDFLNF175-S |
| 200 | 250 | 60 | 60 | 75 | 150 | 200 | 6.61 | BDFLNF200A-S |
| 400 | 630 | 100 | 100 | 125 | 250 | 350 | 13.66 | BDFLNF400-S |
| 600 | 800 | 150 | 150 | 200 | 400 | 500 | 13.66 | BDFLNF600A-S |

Handles

| UL type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--|------------|------------------|--------------|------------|-------------|--------------|----------------|
| For use with BDFLNF30-S | | | | | | | |
| 1, 12, 3R | Black | 2.65/65 | O/1 & Off/On | Yes | Yes | 0.29 | BDH106SH |
| 1, 12, 3R | Red/Yellow | 2.65/65 | O/1 & Off/On | Yes | Yes | 0.29 | BDH107SH |
| For use with BDFLNF60-S — BDFLNF200A-S | | | | | | | |
| 1, 12, 3R | Black | 3.1/80 | O/1 & Off/On | Yes | Yes | 0.30 | BDH110SH |
| 1, 12, 3R | Red/Yellow | 3.1/80 | O/1 & Off/On | Yes | Yes | 0.30 | BDH111SH |
| For use with BDFLNF400-S — BDFLNF600A-S | | | | | | | |
| 1, 12, 3R | Black | 4.9/145 | O/1 & Off/On | Yes | Yes | 0.39 | BDH114SH |
| 1, 12, 3R | Red/Yellow | 4.9/145 | O/1 & Off/On | Yes | Yes | 0.39 | BDH115SH |
| 1, 12, 3R | metal | 4.9/145 | Off/On | Yes | Yes | 1.50 | BDZX74 |

Shafts

| For use with: | Length inches/mm | Description | Weight (lbs) | Catalog number |
|----------------------|------------------|------------------------|--------------|----------------|
| BDFLNF30-S | 6.7/170 | .20 x .20" (5 x 5mm) | 0.08 | CDS67P |
| BDFLNF60 – 100 | 8.3/210 | .24 x .24" (6 x 6mm) | 0.10 | BDS210 |
| BDFLNF175 – 200 | 9.5/240 | .31 x .31" (8 x 8mm) | 0.26 | BDS240 |
| BDFLNF400-S – 600A-S | 12.8/325 | .47 X .47" (12 X 12mm) | 0.90 | BDS325 |

Terminal lug kits

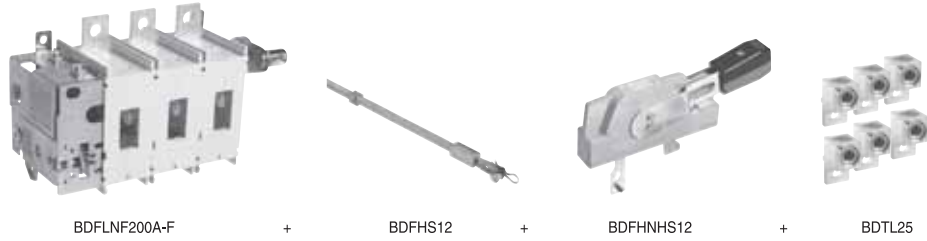
| For use on: | Wire size | Weight (lbs) | Wire type | Lugs per kit | Catalog number |
|--------------|--------------------|--------------|-----------|--------------|----------------|
| BDFLNF30-S | #14 – 4 | — | Cu | — | Integral |
| BDFLNF60-S | #14 – 4 | — | Cu | — | Integral |
| BDFLNF100-S | #14 – 2/0 | 0.43 | Cu/Al | 6 | BDTL24 |
| BDFLNF200A-S | #6 – 300 kcmil | 0.93 | Cu/Al | 6 | BDTL25 |
| BDFLNF400-S | #2 – 600 kcmil | 3.520 | Cu/Al | 6 | BDTL26 |
| BDFLNF600A-S | (2) #2 – 600 kcmil | 4.62 | Cu/Al | 6 | BDTL27 |

Side operated switches available through 800A as IEC rated.

Flange Operated Non-fusible Disconnect Switches 30A – 200A

For a complete assembly,
please select one of each:

- 1 switch
- 1 handle
- 1 shaft
- 1 terminal lug kit



BDFLNF200A-F + BDFHS12 + BDFHNHS12 + BDTL25

Flange operated switches—3 pole

| UL general purpose amp rating | IEC AC21 amp rating | Maximum horsepower rating | | | | | Weight (lbs) | Catalog number |
|-------------------------------|---------------------|---------------------------|------|------|------|------|--------------|----------------|
| | | Three phase | | | | | | |
| | | 200V | 208V | 240V | 480V | 600V | | |
| 30 | 40 | 10 | 10 | 10 | 20 | 30 | 2.80 | BDFLNF30-F |
| 60 | 63 | 20 | 20 | 20 | 40 | 40 | 3.90 | BDFLNF60-F |
| 100 | 115 | 25 | 25 | 25 | 50 | 40 | 4.50 | BDFLNF100-F |
| 200 | 250 | 60 | 60 | 75 | 150 | 200 | 6.61 | BDFLNF200A-F |

Flange handles

| NEMA/UL type | Color | Length inches/mm | Marking | Defeatable | Padlockable | Weight (lbs) | Catalog number |
|--------------|-------|------------------|--------------|------------|-------------|--------------|----------------|
| 1, 3R, 12 | Metal | 6.9/175 | O/I & OFF/ON | Yes | Yes | 3.52 | BDFHNHS12 |
| 4, 4X | Metal | 6.9/175 | O/I & OFF/ON | Yes | Yes | 3.52 | BDFHNHS4 |

Shafts

| Shaft length inches | Weight (lbs) | Catalog number |
|---------------------|--------------|----------------|
| 12 | 0.39 | BDFHS12 |
| 17 | 0.55 | BDFHS17 |
| 22.5 | 0.73 | BDFHS22 |

Terminal lug kits

| For use on: | Wire size | Kit weight (lbs) | Wire type | Terminal lugs per kit | Catalog number |
|---|-----------------------------------|------------------|-----------|-----------------------|--------------------|
| BDFLNF30-F BDFLNF60-F BDFLNF100-F | #14 – #4 #14 – #4 #14 – 2/0 | — | Cu | — | Standard BDTL24 |
| BDFLNF200A-F | #6 – 300 kcmil | 0.93 | Cu/Al | 6 | BDTL25 |

Door hardware – NEMA 12

| Description | Weight (lbs) | Catalog number |
|--|--------------|----------------|
| Safety door latch, 2 point with 6" handle. | 1.92 | BBDHK |
| Roller for 3 point latch, add to BBDHK | .39 | BD3RL |

UL Listed
cULus Approved
IEC Rated
CE Marked

Cable Operated Non-fusible Disconnect Switches 30A – 200A

For a complete assembly, please select one each of the following:



Switch

+



Handle

+



Cable

+



Lug kit (as required)

+



Operating mechanism



CDNF30A3



OHF1C12



BFCL36
BFCL84



Lug kit

Non-fusible

| UL general purpose amp rating | Catalog Number |
|-------------------------------|----------------|
| 30 | CDNF30A3 |
| 60 | CDNF60A3 |
| 100 | CDNF100A3 |
| 125 | CDNF160 |
| 200 | CDNF200U03 |

Flange handles - UL 98; File #E101914

| For use with: | Environmental rating | Catalog number |
|------------------------------------|----------------------|----------------|
| CDNF30 - CDNF100, CDNF160, CDNF200 | NEMA 1, 3R, 12 | BDHFC12 |
| | NEMA 4, 4X | BDHFC4 |

Flexible cables

| For use with: | Cable length (inches) | Catalog number |
|------------------------------------|-----------------------|----------------|
| CDNF30 - CDNF100, CDNF160, CDNF200 | 36 | BFCL36 |
| | 48 | BFCL48 |
| | 60 | BFCL60 |
| | 72 | BFCL72 |
| | 84 | BFCL84 |

Operating mechanisms

| For use with: | Catalog number |
|---------------|----------------|
| CDNF30 - 100 | BMKCS1 |
| CDNF160 | BMKCS3 |
| CDNF200 | BMKCS4 |

Terminal lug kits

| For use with: | Wire size | Wire type | Description | Lugs per kit | Catalog number |
|---------------|-------------|-----------|-------------|--------------|----------------|
| CDNF200U03 | #4-300kcmil | Cu/Al | - | 6 | CDTL200 |
| | #4-300kcmil | Cu/Al | - | 3 | CDTL200/3P |
| | (6)#4-6AWG | Cu/Al | Dist. lug | 3 | CDTL206 |

Door hardware — NEMA 12

| Item | Catalog number |
|--|----------------|
| Safety door latch, 2 point, door less than 40" high | BKDH2R |
| Safety door latch, 3 point, door greater than 40" high | BKDH3R |

UL & cULus Technical Data for Non-fusible Disconnect Switches

CDNF16 – CDFN160

UL & cULus

| Catalog number | 3 pole | CDNF16A3 | CDNF25A3 | CDNF32A3 | CDNF45A3 | CDNF63A3 | CDNF30A3 | CDNF60A3 | CDNF100A3 | CDNF160 | |
|---|--------------------------------------|--|--|--|--|--|---|--|--|--|--|
| Approvals ^① | 2 pole 3 pole 4 pole | N/A UL508 & IEC UL508 & IEC | N/A UL508 & IEC UL508 & IEC | N/A UL508 & IEC UL508 & IEC | N/A UL508 & IEC UL508 & IEC | N/A UL508 & IEC UL508 & IEC | N/A UL98 & IEC UL98 & IEC | N/A UL98 & IEC UL98 & IEC | N/A UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | |
| General purpose amp rating pf = 0.7 – 0.8 | -40° to 40°C A | 16 | 25 | 40 | 60 | 80 | 30 | 60 | 100 | 100 | |
| Max. operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | |
| Max. horsepower rating/motor FLA current, pf = 0.4 – 0.5 | | | | | | | | | | | |
| Three phase | 200V – 208V 240V 480V 600V | HP/A HP/A HP/A HP/A | 3/10.6 5/15.2 10/14.0 10/11.0 | 7.5/24.2 7.5/22.0 15/21.0 20/22.0 | 10/30.8 10/28.0 20/27.0 25/27.0 | 15/46.2 15/42.0 30/40.0 30/32.0 | 20/60.0 20/54.0 40/52.0 40/41.0 | 10/30.8 10/28.0 20/27.0 30/32.0 | 20/60.0 20/54.0 40/52.0 40/41.0 | 25/75.0 30/80.0 50/65.0 50/52.0 | 30/88.0 30/80.0 60/77.0 75/77.0 |
| Single phase | 120V 240V | HP/A HP/A | 0.5/9.8 1.5/10.0 | 0.75/13.8 2/12.0 | 1/16.0 3/17.0 | 2/24.0 5/28.0 | 2/24.0 5/28.0 | 2/24.0 5/28.0 | 3/34.0 7.5/40.0 | 5/56.0 15/68.0 | 7.5/80 20/88.0 |
| Short circuit rating with fuse | | | | | | | | | | | |
| Fuse type | CC J T RK1 RK5 L H | KA KA KA KA KA KA KA | 10 10 10 10 5 — — | — 10 10 10 5 — — | — 10 10 10 5 — — | — 100 100 — — — 5 | — 100 100 — 10 — — 5 | — 50 50 — — — — | — 50 50 — — — — | — 50 50 — — — — | — 100 — — — — — |
| Fuse size | A | 30 60 | 30 60 | 30 60 | 100 150 | 100 150 | 60 — | 60 100 | 60 100 | 200 | |
| Short circuit rating with MCCB | KA | — | — | — | — | — | — | — | — | 25 | |
| Endurances | | | | | | | | | | | |
| Min. Electrical endurance, pf = 0.75 – 0.80 | operation cycles | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| Min. Electrical endurance, pf = 0.40 – 0.50 | operation cycles | 1000 | 1000 | 1000 | 1000 | 1000 | ② | ② | ② | ② | |
| Mechanical endurance | operations | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 16,000 | |
| Physical characteristics | | | | | | | | | | | |
| Weight, switches | 3 pole 4 pole | lb lb | 0.24 0.33 | 0.24 0.33 | 0.24 0.33 | 0.59 0.77 | 0.59 0.77 | 0.79 1.10 | 0.79 1.10 | 0.79 1.10 | 2.42 2.86 |
| Dimension, switches | 3 pole | H in W in D in | 2.68 1.38 2.20 | 2.68 1.38 2.20 | 2.68 1.38 2.20 | 3.60 2.07 2.85 | 3.60 2.07 2.85 | 3.94 2.76 2.95 | 3.94 2.76 2.95 | 3.94 2.76 2.95 | 5.00 4.96 2.93 |
| Shaft size — square □ | | in mm | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 | .24 x .24 6 x 6 |
| Switch operating torque for rotary 3 pole switches | | lb. in. | 8.8 | 8.8 | 8.8 | 10.5 | 10.5 | 17.5 | 17.5 | 17.5 | 52.5 |
| Terminal lug kits | | | Not required | Not required | Not required | Not required | Not required | Not required | Not required | Not required | |
| Wire range | AWG | #18 – 8 | #18 – 8 | #18 – 8 | #14 – 4 | #14 – 1 | #14 – 4 | #14 – 4 | #8 – 1/0 | #8 – 1/0 | |
| Torque: | | | | | | | | | | | |
| Wire tightening | lb. in. | 7 | 7 | 7 | 18 | 18 | 55 | 55 | 55 | 70 | |
| Lug mounting | lb. in. | Integral | Integral | Integral | Integral | Integral | Integral | Integral | Integral | Integral | |
| Auxiliary contacts | | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDEA_ _ _ _ | |
| NEMA ratings, AC | | A600 | A600 | A600 | A600 | A600 | A600 | A600 | A600 | A600 | |
| AC rated voltage | VAC | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | |
| AC thermal rated current | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| AC maximum volt-ampere making | VA | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | |
| AC maximum volt-ampere breaking | VA | 720 | 720 | 720 | 720 | 720 | 720 | 720 | 720 | 720 | |
| NEMA ratings, DC | | R300 | R300 | R300 | R300 | R300 | R300 | R300 | R300 | P600 | |
| DC rated voltage | VDC | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 600 | |
| DC thermal rated current | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 5 | |
| DC maximum make-break | VA | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 138 | |
| Torque: | | | | | | | | | | | |
| Wire tightening | lb. in. | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| Wire range | AWG | #18 – 14 | #18 – 14 | #18 – 14 | #18 – 14 | #18 – 14 | #18 – 14 | #18 – 14 | #18 – 14 | #22 – 14 | |

① UL Listed switches are also cULus Approved.

② UL 98 overload test, 50 operations, pf 0.40 – 0.50 at 2x FLA.

UL & cULus Technical Data for Non-fusible Disconnect Switches

CDNF200U03 – BDNF3150

UL & cULus

| Catalog number | 3 pole | CDNF200U03 | CDNF400U03 | BDNF600A | BDNF800A | BDNF1200 | BDNF1600 | BDNF2000 | BDNF3150 ④ |
|--|--|--|--|--|--|--|--|--|--|
| Approvals ^① | 2 pole UL98 & IEC 3 pole UL98 & IEC 4 pole UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC | UL98 & IEC UL98 & IEC UL98 & IEC |
| General purpose amp rating pf = 0.7 – 0.8 | -40° to 40°C A | 200 | 400 | 600 | 800 | 1200 | 1600 | 2000 | 3150 |
| Max. operating voltage | V | 600 | 600 | 600 | 600 | 600 | 600 | 480 | — |
| Max. horsepower rating/Max. motor FLA current, pf = 0.4 – 0.5 | | | | | | | | | |
| Three phase | 200 – 208V 240V 480V 600V | HP/A HP/A HP/A HP/A | 60/160.0 75/192.0 150/180.0 200/192.0 | 100/273.0 125/312.0 250/302.0 350/336.0 | 150/396.0 200/480.0 400/477.0 500/472.0 | 200/528.0 250/602.0 500/590.0 600/576 | — — — — | — — — — | — — — — |
| Single phase | 120V 240V | HP/A HP/A | — — | — — | — — | — — | — — | — — | — — |
| Short circuit rating with fuse | | | | | | | | | |
| Fuse type CC | kA | — | — | — | — | — | — | — | — |
| Fuse type J | kA | 100 | 100 | — | — | — | — | — | — |
| Fuse type T | kA | — | — | — | — | — | — | — | — |
| Fuse type RK1 | kA | — | — | — | — | — | — | — | — |
| Fuse type RK5 | kA | — | — | — | 100 | — | — | — | — |
| Fuse type L | kA | — | — | — | — | — | 100 | 100 | 100 |
| Fuse type H | kA | — | — | — | — | — | — | — | — |
| Fuse size | A | 350 | 600 | 600 | 1200 | 1200 | 2000 | 2000 | — |
| Short circuit rating with MCCB | kA | 15 | 30 | 50 | 50 | 50 | 65 | 65 | — |
| Endurances | | | | | | | | | |
| Min. Electrical endurance, pf = 0.75 – 0.80 | operation cycles | 6000 | 1000 | 1000 | 500 | 500 | 500 | 500 | 400 |
| Min. Electrical endurance, pf = 0.40 – 0.50 | operation cycles | ② | ② | ② | ② | ② | ② | ② | ② |
| endurance | operations | 20,000 | 20,000 | 10,000 | 10,000 | 10,000 | 6000 | 6000 | 6000 |
| Physical characteristics | | | | | | | | | |
| Weight, switches | 3 pole 4 pole | lb | 2.9 3.5 | 5.7 6.8 | 13.66 16.74 | 35.9 45.15 | 38.55 49.56 | 127.7 149.7 | 127.7 149.7 |
| Dimension, switches | 3 pole | H in W in D in | 6.69 6.67 3.30 | 8.66 8.70 4.15 | 11.77 11.93 5.12 | 19.09 14.29 4.92 | 19.09 14.29 4.92 | 25.04 18.43 10.67 | 25.04 18.43 10.67 |
| Shaft size — square | □ | in mm | .24 x .24 6 x 6 | .47 x .47 12 x 12 | .47 x .47 12 x 12 | .47 x .47 12 x 12 | .47 x .47 12 x 12 | .47 x .47 12 x 12 | .47 x .47 12 x 12 |
| Switch operating torque for rotary 3 pole switches | | lb. in. | 62 | 142 | 184 | 184 | 184 | 438 | 438 |
| Terminal lug kits | | | CDTL200 | CDTL400 | BDDL27 | BDDL30 | BDDL28 | BDDL28 | BDDL28/2 |
| Wire range | AWG | #6-300kcmil ^③ | #2-600kcmil | (2)#2-600kcmil | (2)#2-600kcmil | (4)#2-600kcmil | (4)#2-600kcmil | (8)#2-600kcmil | (8)#2-600kcmil |
| Torque: | | | | | | | | | |
| Wire tightening | lb. in. | 275 | 375 | 375 | 500 | 375 | 375 | 375 | 375 |
| Lug mounting | lb. in. | 150 | 240 | 500 | 230 | 230 | 230 | 230 | 230 |
| Auxiliary contacts | | | CDAUX_ _ | CDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ |
| NEMA ratings, AC | | | A600 | A600 | A600 | A600 | A600 | A600 | A600 |
| AC rated voltage | VAC | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| AC thermal rated current | A | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| AC maximum volt-ampere making | VA | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 | 7200 |
| AC maximum volt-ampere breaking | VA | 720 | 720 | 720 | 720 | 720 | 720 | 720 | 720 |
| NEMA ratings, DC | | | P600 | P600 | P600 | P600 | P600 | P600 | P600 |
| DC rated voltage | VDC | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| DC thermal rated current | A | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| DC maximum make-break | VA | 138 | 138 | 138 | 138 | 138 | 138 | 138 | 138 |
| Torque: | | | | | | | | | |
| Wire tightening | lb. in. | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Wire range | AWG | #22 – #14 | #22 – #14 | #22 – #14 | #22 – #14 | #22 – #14 | #22 – #14 | #22 – #14 | #22 – #14 |

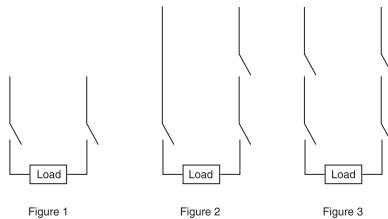
① UL Listed switches are also cULus Approved.
 ② UL98 overload test, 50 operations, pf 0.40 – 0.50 at 2x FLA.
 ③ Multi-tap lug available.
 ④ IEC rated only.

IEC Technical Data for Non-fusible Disconnect Switches

CDNF16 - CDFN160

IEC

| Catalog number | 3 pole | CDNF16 | CDNF25 | CDNF32 | CDNF45 | CDNF63 | CDNF30 | CDNF60 | CDNF100 | CDNF160 | |
|--|---|----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----------------------------------|---|
| Rated insulation and operation voltage, AC20 and DC20 ^① | 40°C V | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | |
| Rated impulse withstand voltage | kV | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 12 | |
| Rated thermal current, I _n | | | | | | | | | | | |
| AC 20/DC 20 | open ^② 40°C enclosed 60°C enclosed | A | 25 | 32 | 40 | 63 | 80 | 40 | 63 | 115 | 200 |
| Rated operational currents | | | | | | | | | | | |
| AC 21A | 500V 690V 1000V ^① | A | 16 | 25 | 32 | 63 | 80 | 40 | 63 | 100 | 160 ^③ |
| AC 22A | 500V 690V 1000V ^① | A | 16 | 25 | 32 | 63 | 80 | 40 | 63 | 100 | 160 ^③ |
| AC 23A | 415V 500V 690V 1000V ^① | A | 16 | 20 | 23 | 45 | 75 | 40 | 63 | 80 | 135 |
| Rated operational currents/poles in series | | | | | | | | | | | |
| DC21A | 48V 110V 220V 440V 750V | A | 16/1 16/2 16/3 16/4 16/8 | 25/1 25/2 25/3 25/6 25/8 | 32/1 32/2 32/3 32/6 32/8 | 45/1 45/2 45/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 40/1 40/2 40/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 100/1 100/2 100/4 ④ ④ | 160/1 160/1 160/2 160/3 160/4 |
| DC22A | 48V 110V 220V 440V 750V | A | 16/1 16/2 16/3 16/6 16/8 | 25/1 25/2 25/3 25/8 25/8 | 32/1 32/2 32/4 ④ ④ | 45/1 45/2 45/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 40/1 40/2 40/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 100/1 100/2 63/4 ④ ④ | 160/1 160/1 160/2 160/3 ④ |
| DC23A | 48V 110V 220V 440V 750V | A | 16/1 16/2 16/4 10/4 16/8 | 25/1 25/2 25/4 ④ ④ | 32/1 32/2 32/4 ④ ④ | 45/1 45/2 45/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 40/1 40/2 40/4 ④ ④ | 63/1 63/2 63/4 ④ ④ | 100/1 100/2 63/4 ④ ④ | 160/1 160/1 160/2 160/3 ④ |
| Rated operational power | | | | | | | | | | | |
| AC23A | 230V 400/415V 500V 690V | kW | 3 7.5 7.5 7.5 | 4 9 9 9 | 5.5 11 11 11 | 11 22 22 15 | 22 37 37 18.5 | 7.5 15 15 15 | 11 18.5 18.5 15 | 22 37 37 37 | 45 75 75 75 |
| Short-circuit current with back-up fuses of size ^④ | kA A | 50 25 | 50 32 | 50 40 | 50 63 | 50 80 | 50 100 | 50 100 | 50 100 | 50 200 | 50 |



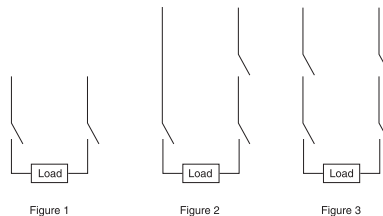
① 1000V, IEC 408.
 ② The ambient air temperature does not exceed +40°C and its average over a period of 24 hours does not exceed +35°C according to IEC 947.
 ③ IEC 947-3, utilization category B, infrequent operation.
 ④ Not available at time of printing, please consult factory.

IEC Technical Data for Non-fusible Disconnect Switches

CDNF200U03 – BDNF3150

IEC

| Catalog number | 3 pole | CDNF200U03 | CDNF400U03 | BDNF600A | BDNF800A | BDNF1200 | BDNF1600 | BDNF2000 | BDNF3150 |
|--|----------------------|------------|------------|----------|----------|----------|-------------------|-------------------|-------------------|
| Rated insulation and operational voltage, AC20 and DC20 ^① | 40°C 1000 V | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | |
| Rated impulse withstand voltage | kV | 12 | 12 | 12 | 8 | 8 | 8 | 8 | 8 |
| Rated thermal current, I _{th} | | | | | | | | | |
| AC 20/DC 20 | open ^② A | 250 | 400 | 800 | 1250 | 1600 | 2500 | 2500 | 3150 |
| | 40°C enclosed A | 250 | 400 | 720 | 1250 | 1600 | 2300 | 2300 | 2600 |
| | 60°C enclosed A | — | — | 720 | 1250 | 1600 | 2300 | 2300 | 2600 |
| Rated operational currents | | | | | | | | | |
| AC 21A | 500V A | 250 | 400 | 800 | 1250 | 1600 | 2500 ^③ | 2500 ^③ | 3150 ^③ |
| | 690V A | 250 | 400 | 800 | 1250 | 1600 | 2500 ^③ | 2500 ^③ | 3150 ^③ |
| | 1000V ^① A | — | — | 630 | — | — | — | — | — |
| AC 22A | 500V A | 250 | 400 | 800 | 1250 | 1600 | 1600 ^③ | 1600 ^③ | 1600 ^③ |
| | 690V A | 250 | 400 | 800 | — | — | — | — | — |
| | 1000V ^① A | — | — | 400 | — | — | — | — | — |
| AC 23A | 415V A | 250 | 400 | 720 | 800 | 800 | 800 ^③ | 800 ^③ | 800 ^③ |
| | 500V A | 250 | 400 | 600 | 800 | 800 | 800 ^③ | 800 ^③ | 800 ^③ |
| | 690V A | 250 | 400 | 350 | — | — | — | — | — |
| | 1000V ^① A | — | — | 200 | — | — | — | — | — |
| Rated operational currents/poles in series | | | | | | | | | |
| DC21A | 48V A | 250/1 | 630/2 | 800/2 | 1250/2 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 110V A | 250/2 | 630/2 | 800/2 | 1250/2 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 220V A | 250/2 | 630/2 | 800/2 | 1250/3 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 440V A | 250/3 | 630/3 | 800/3 | — | 1600/3 | 2500/3 | 2500/3 | 3150/2 |
| | 750V A | 250/4 | — | — | — | — | — | — | — |
| DC22A | 48V A | 250/1 | 630/2 | 800/2 | 1250/2 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 110V A | 250/2 | 630/2 | 800/2 | 1250/2 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 220V A | 250/2 | 630/2 | 800/2 | 1250/2 | 1600/2 | 2500/2 | 2500/2 | 3150/2 |
| | 440V A | 250/3 | 630/3 | 800/3 | — | — | — | — | — |
| | 750V A | 250/4 | — | — | — | — | — | — | — |
| DC23A | 48V A | 250/1 | 630/2 | — | — | — | — | — | — |
| | 110V A | 250/2 | 630/2 | — | — | — | — | — | — |
| | 220V A | 250/2 | 630/2 | — | — | — | — | — | — |
| | 440V A | 250/3 | — | — | — | — | — | — | — |
| | 750V A | 250/4 | — | — | — | — | — | — | — |
| Rated operational power | | | | | | | | | |
| AC23A | 230V kW | 75 | 110 | 200 | 250 | 250 | 250 | 250 | 250 |
| | 400/415V kW | 132/140 | 220/230 | 355 | 400 | 400 | 400 | 400 | 400 |
| | 500V kW | 170 | 280 | 400 | 450 | 450 | 450 | 450 | 450 |
| | 690V kW | 240 | 355 | 355 | — | — | — | — | — |
| Short-circuit current | kA | 100 | 100 | 80 | 50 | 50 | 50 | 50 | 50 |
| with back-up fuses of size ^① | A | 400 | 800 | 800 | 1000 | 1250 | 1250 | 1250 | 1250 |



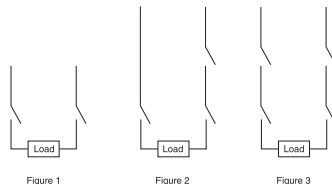
① 1000V, IEC 408.
 ② The ambient air temperature does not exceed +40°C and its average over a period of 24 hours does not exceed +35°C according to IEC 947.
 ③ IEC 947-3, utilization category B, infrequent operation.

IEC Technical Data for Non-fusible Disconnect Switches

CDNF16 – CDNF160

IEC

| Catalog number | 3 pole | CDNF16 | CDNF25 | CDNF32 | CDNF45 | CDNF63 | CDNF30 | CDNF60 | CDNF100 | CDNF160 |
|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------|
| Rated voltage, U ^e | V/V | 415 | 415 | 415 | 415 | 415 | 415 | 415 | 415 | 415/690 |
| Rated conditional short-circuit current | kA | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 80/50 |
| Max. allowed fuse size, type OFAA | A | 16 | 32 | 40 | 63 | 80 | 100 | 100 | 100 | 160/250 |
| Max. allowed cut-off current, peak value | kA | 4 | 4.3 | 4.6 | 8.3 | 11 | 9.2 | 9.2 | 9.2 | 21.0/21.6 |
| Rated short-circuit making capacity, prospective peak value, I ^{cm} | kA | 0.7 | 0.7 | 1.4 | 1.4 | 3.6 | 3.6 | 3.6 | 12 | |
| Rated short time withstand current, RMS I ^{cw} | kA | — | — | — | — | — | — | — | — | 7 |
| | 1.0s | kA | 0.5 | 0.5 | 0.5 | 1 | 1 | 2.5 | 2.5 | 4 |
| AC breaking capacity | | | | | | | | | | |
| pf = 0.35 | | | | | | | | | | |
| 415V | A | 128 | 160 | 184 | 240 | 304 | 320 | 504 | 640 | 1080 |
| 500V | A | 128 | 160 | 184 | 240 | 256 | 320 | 504 | 504 | 1000 |
| 690V | A | 80 | 88 | 96 | 160 | 160 | 320 | 320 | 320 | 640 |
| 1000V ^① | A | — | — | — | — | — | — | — | — | — |
| DC breaking capacity/poles in series | | | | | | | | | | |
| L/R = 15ms, 3 pole in series | | | | | | | | | | |
| 48V | A | 64/1 | 100/1 | 128/1 | 180/1 | 252/1 | 160/1 | 252/1 | 400/1 | 640/1 |
| 110V | A | 64/2 | 100/2 | 128/2 | 180/2 | 180/2 | 160/2 | 252/2 | 400/2 | 640/1 |
| 220V | A | 64/3 | 100/4 | 128/4 | 180/4 | 180/4 | 160/4 | 252/4 | 252/4 | 640/2 |
| 440V | A | ② | ② | ② | ② | ② | ② | ② | — | 640/3 |
| 750V | A | ② | ② | ② | ② | ② | ② | ② | — | — |
| Capacitor ratings | 400/415V | kVar | ② | ② | ② | ② | ② | ② | ② | ② |
| Rated capacitor duty | | kA | ② | ② | ② | ② | ② | ② | ② | ② |
| Physical characteristics | | | | | | | | | | |
| Electrical endurance at rated operational current, pf = 0.65 | operation cycles | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 1000 |
| Mechanical endurance | operations | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 16,000 |
| Weight | 3 pole | kg | 0.11 | 0.11 | 0.11 | 0.27 | 0.27 | 0.36 | 0.36 | 1.1 |
| | 4 pole | kg | 0.15 | 0.15 | 0.15 | 0.35 | 0.35 | 0.5 | 0.5 | 1.3 |
| Dimension 3 pole | H mm | 68 | 68 | 68 | 91.5 | 91.5 | 100 | 100 | 100 | 127 |
| | W mm | 35 | 35 | 35 | 52.5 | 52.5 | 70 | 70 | 70 | 126 |
| | D mm | 56 | 56 | 56 | 72.5 | 72.5 | 75 | 75 | 75 | 74.5 |
| Power loss per pole | W | 0.3 | 0.6 | 1 | 1.4 | 2.8 | 1 | 1.6 | 4 | 6.5 |
| Shaft size — square | mm | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 | 6 x 6 |
| Switch operating torque for rotary 3 pole switches | Nm | 1 | 1 | 1 | 1.2 | 1.2 | 2 | 2 | 2 | 6 |
| Suitable conductor cross section Cu | mm ² | 0.75 – 10 | 0.75 – 10 | 0.75 – 10 | 1.5 – 35 | 1.5 – 35 | 1.5 – 25 | 1.5 – 25 | 1.5 – 25 | 10 – 70 |
| Bolt size | | — | — | — | — | — | — | — | — | — |
| Auxiliary contacts | | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ | CDAUX_ _ |
| Ratings according to IEC 9-47-5-1 | | | | | | | | | | |
| Rated voltage, U _i | VAC | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 |
| Thermal current, I _m | A | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 10 |
| AC12/DC12 I _n , A U _n = | | | | | | | | | | |
| 120V | A | — | — | — | — | — | — | — | — | 8/— |
| 125V | A | — | — | — | — | — | — | — | — | —/1.1 |
| 240V | A | 6 ^③ | 6 ^③ | 6 ^③ | 6 ^③ | 6 ^③ | 6 ^③ | 6 ^③ | 6 ^③ | 6/— |
| 250V | A | — | — | — | — | — | — | — | — | —/0.55 |
| 400V | A | 4 ^③ | 4 ^③ | 4 ^③ | 4 ^③ | 4 ^③ | 4 ^③ | 4 ^③ | 4 ^③ | 4/— |
| 415V | A | — | — | — | — | — | — | — | — | 4/— |
| 440V | A | — | — | — | — | — | — | — | — | —/0.31 |
| 480V | A | — | — | — | — | — | — | — | — | 3/— |
| 500V | A | — | — | — | — | — | — | — | — | 3/0.27 |
| 600V | A | — | — | — | — | — | — | — | — | —/0.2 |
| 690V | A | 2 ^③ | 2 ^③ | 2 ^③ | 2 ^③ | 2 ^③ | 2 ^③ | 2 ^③ | 2 ^③ | 2/— |



① 1000V, IEC 408.
 ② Not available at time of printing, please consult factory.
 ③ AC15, according to IEC947-5-1.

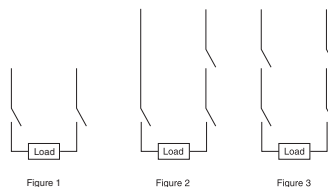
IEC Technical Data for Non-fusible Disconnect Switches

CDNF200U03 – BDNF3150

IEC

| Catalog number | 3 pole | CDNF200U03 | CDNF400U03 | BDNF600A | BDNF800A | BDNF1200 | BDNF1600 | BDNF2000 | BDNF3150 |
|--|------------------|------------|------------|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Rated voltage, U _e | V/V | 500/690 | 500/690 | 500/690 | 690 | 690 | 690 | 690 | 690 |
| Rated conditional short-circuit current | kA | 100/80 | 100/80 | 100/50 | 45 | 45 | 45 | 50 | 50 |
| Max. allowed fuse size, type OFAA | A | 350/355 | 500/500 | 800 ^③ | — | — | — | — | — |
| Max. allowed cut-off current, peak value | kA | 40.5/40.5 | 615/59 | 62 | — | — | — | — | — |
| Rated short-circuit making capacity, prospective peak value, I _{cm} | kA | 30 | 65 | 105 | 105 | 115 | 115 | 115 | — |
| Rated short time withstand current, RMS I _{low} | 0.2s kA | 15 | 28 | 38 | 100 | 100 | 110 | 110 | 110 |
| | 1.0s kA | 8 | 15 | 17 | 50 ^⑤ | 50 ^⑤ | 50 ^⑤ | 50 ^⑤ | 50 ^⑤ |
| AC breaking capacity | | | | | | | | | |
| pf = 0.35 | 415V A | 2000 | 3200 | 5780 | 6400 | 6400 | 6400 | 6400 | 6400 |
| | 500V A | 2000 | 3200 | 4800 | 6400 | 6400 | 6400 | 6400 | 6400 |
| | 690V A | 2000 | 3200 | 2800 | 2500 ^⑥ | 2500 ^⑥ | 4800 ^⑥ | 4800 ^⑦ | 4800 ^⑦ |
| DC breaking capacity/poles in series | | | | | | | | | |
| L/R = 15ms, 3 pole in series | | | | | | | | | |
| 48V | A | 1000/2 | — | — | — | — | — | — | — |
| 110V | A | 1000/2 | — | — | — | — | — | — | — |
| 220V | A | 1000/2 | 1600/2 | 2000/2 | 1900/2 ^④ | 2600/2 ^④ | 2600/2 ^④ | 2600/2 ^④ | 2600/2 ^④ |
| 440V | A | 1000/3 | 1600 | 2000 | — | — | — | — | — |
| 750V | A | 1000/4 | — | — | — | — | — | — | — |
| Capacitor ratings | 400/415V kVar | — | — | 350 | ② | ② | ② | ② | ② |
| Rated capacitor duty | kA | — | — | 500 | ② | ② | ② | ② | ② |
| Physical characteristics | | | | | | | | | |
| Electrical endurance at rated operational current, pf = 0.65 | operation cycles | 1000 | 1000 | 500 | 500 | 500 | 100 ^⑧ | 100 ^⑧ | 100 ^⑧ |
| Mechanical endurance | operations | 20,000 | 16,000 | 10,000 | 10,000 | 10,000 | 6000 | 6000 | 6000 |
| Weight | 3 pole kg | 1.2 | 2.2 | 6.2 | 16.3 | 17.5 | 37 | 37 | 37 |
| | 4 pole kg | 1.6 | 2.6 | 7.6 | 20.5 | 22.5 | 47 | 47 | 47 |
| Dimension | 3 pole H mm | 212 | 216 | 485 | 485 | 636 | 636 | 636 | 636 |
| | W mm | 219 | 260 | 303 | 363 | 363 | 468 | 468 | 468 |
| | D mm | 92.5 | 130 | 130 | 125 | 125 | 271 | 271 | 271 |
| Power loss per one pole | W | 6.5 | 10 | 40 | 40 | 67 | 90 | 90 | 140 |
| Shaft size — square □ | mm | 6 x 6 | 12 x 12 | 12 x 12 | 12 x 12 | 12 x 12 | 12 x 12 | 12 x 12 | 12 x 12 |
| Switch operating torque for rotary 3 pole switches | Nm | 7 | 16 | 21 | 21 | 21 | 50 | 50 | 50 |
| Suitable conductor cross section Cu | mm ² | — | — | — | — | — | — | — | — |
| Bolt size | | 8 x 25 | 10 x 30 | 12 x 40 | 12 x 60 | 12 x 60 | 12 x 60 | 12 x 60 | 12 x 60 |
| Auxiliary contacts | | CDAUX_ _ | CDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ | BDAUX_ _ |
| Ratings according to IEC 947-5-1 | | | | | | | | | |
| Rated voltage, U _i | VAC | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 |
| Thermal rated current, I _m | A | 16 | 16 | 10 | 10 | 10 | 10 | 10 | 10 |
| AC12/DC12 I _e , A U _e = | | | | | | | | | |
| 120V | A | — | — | — | 8/— | 8/— | 8/— | 8/— | 8/— |
| 125V | A | — | — | — | —/1.1 | —/1.1 | —/1.1 | —/1.1 | —/1.1 |
| 240V | A | 6/— | 6/— | 6/— | 6/— | 6/— | 6/— | 6/— | 6/— |
| 250V | A | — | — | —/0.55 | —/0.55 | —/0.55 | —/0.55 | —/0.55 | —/0.55 |
| 400V | A | 4/— | 4/— | 4/— | 4/— | 4/— | 4/— | 4/— | 4/— |
| 415V | A | — | — | 4/— | 4/— | 4/— | 4/— | 4/— | 4/— |
| 440V | A | — | — | —/0.31 | —/0.31 | —/0.31 | —/0.31 | —/0.31 | —/0.31 |
| 480V | A | — | — | 3/— | 3/— | 3/— | 3/— | 3/— | 3/— |
| 500V | A | — | — | 3/0.27 | 3/0.27 | 3/0.27 | 3/0.27 | 3/0.27 | 3/0.27 |
| 600V | A | — | — | —/0.2 | —/0.2 | —/0.2 | —/0.2 | —/0.2 | —/0.2 |
| 690V | A | 2/— | 2/— | 2/— | 2/— | 2/— | 2/— | 2/— | 2/— |

- ② Not available at time of printing, please consult factory.
- ③ Size 4.
- ④ Maximum distance between busbar support and switch terminal 70mm.
- ⑤ pf 0.95.
- ⑥ pf 0.65.
- ⑦ IEC 947-3, utilization category B, infrequent operation.



30A – 800A Enclosed Fusible Disconnect Switches



3 Pole[®], 600V, 30A - 3150A

| UL general purpose amp rating | Fuse type | NEMA / UL Enclosure type | | | | | |
|-------------------------------|----------------|--------------------------|----------------------|---------------------|--------------------------------|------------------------------|----------------------|
| | | 1 Catalog number | 3R Catalog number | 4 Catalog number | 4X Stainless Catalog number | 4X Plastic Catalog number | 12 Catalog number |
| 30 | J | EFJ301-3PB6 | EFJ303-3PB6 | EFJ304-3PB6 | EFJ30X-3PB6 | EFJ30P-3PB6 | EFJ302-3PB6 |
| 30 | CC | EFC301-3PB6 | EFC303-3PB6 | EFC304-3PB6 | EFC30X-3PB6 | EFC30P-3PB6 | EFC302-3PB6 |
| 60 | J | EFC601-3PB6 | EFC303-3PB6 | EFC604-3PB8 | EFC60X-3PB8 | EFJ60P-3PB8 | EFJ602-3PB6 |
| 100 | J | EFJ1001-3PB8 | EFJ1003-3PB8 | EFJ1004-3PB8 | EFJ100X-3PB8 | EFJ100P-3PB8 | EFJ1002-3PB8 |
| 200 | J [®] | EFJ2001-3PB8C | EFJ2003-3PB8C | EFJ2004-3PB8C | EFJ200X-3PB8C | EFJ200P-3PB8C | EFJ2002-3PB8C |
| 400 | J [®] | EFJ4001-3PB4 | EFJ4003-3PB4 | EFJ4004-3PB4 | EFJ400X-3PB4 | EFJ400P-3PB4 | EFJ4002-3PB4 |
| 600 | J [®] | EFJ6001-3PB4 | EFJ6003-3PB4 | EFJ6004-3PB4 | EFJ600X-3PB4 | EFJ600P-3PB4 | EFJ6002-3PB4 |
| 800 | L | EFJ8001-3PB4 | EFJ8003-3PB4 | EFJ8004-3PB4 | EFJ800X-3PB4 | EFJ800P-3PB4 | EFJ8002-3PB4 |

Switch ratings

| UL general purpose amp rating | Maximum horsepower rating | | | | | | | | Wire size for terminal lugs | For wire type | Approval ^① |
|-------------------------------|---------------------------|------|------|-------------|------|------|------|------|-----------------------------|---------------|-----------------------|
| | Single phase | | | Three phase | | | | | | | |
| | 120V | 200V | 240V | 200V | 208V | 240V | 480V | 600V | | | |
| 30 | 2 | 3 | 5 | 5 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | cULus, UL |
| 60 | 3 | 7.5 | 10 | 15 | 15 | 15 | 30 | 50 | #14 – 4 | Cu | cULus, UL |
| 100 | 5 | 10 | 15 | 25 | 25 | 30 | 60 | 75 | #14 – 2/0 | Cu/Al | cULus, UL |
| 200 | — | — | — | 50 | 50 | 60 | 125 | 150 | #4 – 300 kcmil | Cu/Al | cULus, UL |
| 400 | — | — | — | 100 | 125 | 125 | 250 | 350 | #2 – 600 kcmil | Cu/Al | cULus, UL |
| 600 | — | — | — | 150 | 150 | 200 | 400 | 500 | (2) #2 – 600 kcmil | Cu/Al | cULus, UL |
| 800 | — | — | — | 200 | 200 | 250 | 500 | 600 | (2) #2 – 600 kcmil | Cu/Al | cULus, UL |

^① Fusible switches are UL Listed to the UL98 standard.

^② 600V T type fuse clips may be substituted at no charge. Please change the second character of the catalog number from "J" to "T."

30A – 800A Enclosed Fusible Disconnect Switches

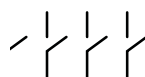
30A – 800A

| UL general purpose amp rating | Type of Switch | NEMA / UL Enclosure type | | | | | |
|-------------------------------|---------------------|--------------------------|----------------|----------------|----------------|----------------|----------------|
| | | 1 | 3R | 4 | 4X Stainless | 4X Plasti | 12 |
| | | Catalog number | Catalog number | Catalog number | Catalog number | Catalog number | Catalog number |
| 30 (J fuses) | 4 Pole ^① | EFJ301-4PB6 | EFJ303-4PB6 | EFJ304-4PB6 | EFJ30X-4PB6 | EFJ30P-4PB6 | EFJ302-4PB6 |
| | 6 Pole | EFJ301-6PB6 | EFJ303-6PB6 | EFJ304-6PB6 | EFJ30X-6PB | EFJ30P-6PB6 | EFJ302-6PB6 |
| 30 (CC fuses) | 4 Pole ^① | EFC301-4PB6 | EFC303-4PB6 | EFC304-4PB6 | EFC30X-4PB6 | EFC30P-4PB6 | EFC302-4PB6 |
| | 6 Pole | EFC301-6PB6 | EFC303-6PB6 | EFC304-6PB6 | EFC30X-6PB6 | EFC30P-6PB6 | EFC302-6PB6 |
| 60 | 4 Pole ^① | EFJ601-4PB6 | EFJ603-4PB6 | EFJ604-4PB6 | EFJ60X-4PB6 | EFJ60P-4PB6 | EFJ602-4PB6 |
| | 6 Pole | EFJ601-6PB4 | EFJ603-6PB4 | EFJ604-6PB4 | EFJ60X-6PB4 | EFJ60P-6PB4 | EFJ602-6PB4 |
| 100 | 2 Pole ^① | EFJ1001-2PB8 | EFJ1003-2PB8 | EFJ1004-2PB8 | EFJ100X-2PB8 | EFJ100P-2PB8 | EFJ1002-2PB8 |
| | 4 Pole ^① | EFJ1001-4PB8 | EFJ1003-4PB8 | EFJ1004-4PB8 | EFJ100X-4PB8 | EFJ100P-4PB8 | EFJ1002-4PB8 |
| | 6 Pole | EFJ1001-6PB4 | EFJ1003-6PB4 | EFJ1004-6PB4 | EFJ100X-6PB4 | EFJ100P-6PB4 | EFJ1002-6PB4 |
| 200 | 4 Pole ^① | EFJ2001-4PB8C | EFJ2003-4PB8C | EFJ2004-4PB8C | EFJ200X-4PB8C | EFJ200P-4PB8C | EFJ2002-4PB8C |
| | 6 Pole | — | — | — | — | — | — |
| 400 | 2 Pole ^① | EFJ4001-2PB4 | EFJ4003-2PB4 | EFJ4004-2PB4 | EFJ400X-2PB4 | EFJ400P-2PB4 | EFJ4002-2PB4 |
| | 4 Pole ^① | EFJ4001-4PB4 | EFJ4003-4PB4 | EFJ4004-4PB4 | EFJ400X-4PB4 | EFJ400P-4PB4 | EFJ4002-4PB4 |
| | 6 Pole | EFJ4001-6P8 | EFJ4003-6P8 | EFJ4004-6P8 | EFJ400X-6P8 | EFJ400P-6P8 | EFJ4002-6P8 |
| 600 | 2 Pole ^① | EFJ6001-2PB4 | EFJ6003-2PB4 | EFJ6004-2PB4 | EFJ600X-2PB4 | EFJ600P-2PB4 | EFJ6002-2PB4 |
| | 4 Pole ^① | EFJ6001-4PB4 | EFJ6003-4PB4 | EFJ6004-4PB4 | EFJ600X-4PB4 | EFJ600P-4PB4 | EFJ6002-4PB4 |
| | 6 Pole | EFJ6001-6P8 | EFJ6003-6P8 | EFJ6004-6P8 | EFJ600X-6P8 | EFJ600P-6P8 | EFJ6002-6P8 |
| 800 | 2 Pole ^① | EFL8001-2PB4 | EFL8003-2PB4 | EFL8004-2PB4 | EFL800X-2PB4 | EFL800P-2PB4 | EFL8002-2PB4 |
| | 4 Pole ^① | EFL8001-4PB4 | EFL8003-4PB4 | EFL8004-4PB4 | EFL800X-4PB4 | EFL800P-4PB4 | EFL8002-4PB4 |
| | 6 Pole | EFL8001-6P8 | EFL8003-6P8 | EFL8004-6P8 | EFL800X-6P8 | EFL800P-6P8 | EFL8002-6P8 |

2 Pole



4 Pole



6 Pole



Handle ratings

| Amperage range | Style type | NEMA | Color | Marking | Defeatable | Padlockable | Catalog number suffix | Catalog number |
|------------------------------------|------------|--------------|---------|--------------|------------|-------------|-----------------------|----------------|
| 30 | Selector | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | BJ | CDH5S |
| | Selector | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | YJ | CDH6S |
| | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | BDH106 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | BDH107 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | CDHXB65 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | CDHXY65 |
| 60 – 100 and 200A 3 & 4 Pole | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | BDH58 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | BDH59 |
| | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B8 | BDH60 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y8 | BDH61 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B8 | CDHXB86 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y8 | CDHXY86 |
| 400A – 800A | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B4 | BDH114 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y4 | BDH115 |
| | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B7 | BDH116 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y7 | BDH117 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B4 | CDHXB12 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y4 | CDHXY12 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B7 | CDHXB22 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y7 | CDHXY22 |
| | Pistol | 1,3R,4,4X,12 | Metal | 0/I & OFF/ON | No | Yes | 8 | BDH8 |

Disconnect Switches

① Fusible switches are UL Listed to the UL98 standard.

② 600V T type fuse clips may be substituted at no charge. Please change the second character of the catalog number from "J" to "T."

16A – 3150A Enclosed Non-fusible Disconnect Switches



3 Pole, 600V, 16A – 100A — Selector handle

| UL general purpose amp rating | NEMA Enclosure type | | | |
|-------------------------------|---------------------|----------------|--|---|
| | 1 | 3R | 4 ^① Selector handles are only NEMA rated 1, 3R, 12 | 4X Stainless ^① Selector handles are only NEMA rated 1, 3R, 12 |
| | Catalog number | Catalog number | Catalog number | Catalog number |
| 16 | ENF161-3PBJ | ENF163-3PBJ | ENF164-3PBJ | ENF16X-3PBJ |
| 25 | ENF251-3PBJ | ENF253-3PBJ | ENF254-3PBJ | ENF25X-3PBJ |
| 40 | ENF321-3PBJ | ENF323-3PBJ | ENF324-3PBJ | ENF32X-3PBJ |
| 60 | ENF451-3PBJ | ENF453-3PBJ | ENF454-3PBJ | ENF45X-3PBJ |
| 80 | ENF631-3PBJ | ENF633-3PBJ | ENF634-3PBJ | ENF63X-3PBJ |

3 Pole, 600V, 16A – 3150A — Pistol handle

| UL general purpose amp rating | NEMA Enclosure type | | | | |
|-------------------------------|---------------------|----------------|----------------|----------------|---------------|
| | 1 | 3R | 4 | 4X Stainless | |
| | Catalog number | Catalog number | Catalog number | Catalog number | |
| UL 508 | 16 | ENF161-3PB6 | ENF163-3PB6 | ENF164-3PB6 | ENF16X-3PB6 |
| | 25 | ENF251-3PB6 | ENF253-3PB6 | ENF254-3PB6 | ENF25X-3PB6 |
| | 40 | ENF321-3PB6 | ENF323-3PB6 | ENF324-3PB6 | ENF32X-3PB6 |
| | 60 | ENF451-3PB6 | ENF453-3PB6 | ENF454-3PB6 | ENF45X-3PB6 |
| | 80 | ENF631-3PB6 | ENF633-3PB6 | ENF634-3PB6 | ENF63X-3PB6 |
| UL 98 | 30 | ENF301-3PB6 | ENF303-3PB6 | ENF304-3PB6 | ENF30X-3PB6 |
| | 60 | ENF601-3PB6 | ENF603-3PB6 | ENF604-3PB6 | ENF60X-3PB6 |
| | 100 | ENF1001-3PB6 | ENF1003-3PB6 | ENF1004-3PB6 | ENF100X-3PB6 |
| | 125 | ENF1251-3PB6 | ENF1253-3PB6 | ENF1254-3PB6 | ENF125X-3PB6 |
| | 200 | ENF2001-3PB8B | ENF2003-3PB8B | ENF2004-3PB8B | ENF200X-3PB8B |
| | 400 | ENF4001-3PB4B | ENF4003-3PB4B | ENF4004-3PB4B | ENF400X-3PB4B |
| | 600 | ENF6001-3PB4 | ENF6003-3PB4 | ENF6004-3PB4 | ENF600X-3PB4 |
| | 800 | ENF8001-3PB4 | ENF8003-3PB4 | ENF8004-3PB4 | ENF800X-3PB4 |
| | 1200 | ENF12001-3PB4 | ENF12003-3PB4 | ENF12004-3PB4 | ENF1200X-3PB4 |
| | 1600 | ENF16001-3P8 | ENF16003-3P8 | ENF16004-3P8 | ENF1600X-3P8 |
| | 2000 | ENF20001-3P8 | ENF20003-3P8 | ENF20004-3P8 | ENF2000X-3P8 |
| 3150 ^② | ENF31501-3P8 | ENF31503-3P8 | ENF31504-3P8 | ENF3150X-3P8 | |

Disconnect Switches

① Enclosures are rated as listed, selector handles are only NEMA rated 1, 3R, 12. The overall NEMA rating of an enclosed switch with a selector handle is 1, 3R, 12.
 ② IEC rated only.

16A – 3150A Enclosed Non-fusible Disconnect Switches



3 Pole, 600V, 16A – 100A — Selector handle

| UL general purpose amp rating | NEMA Enclosure type | | IEC Enclosure type |
|----------------------------------|--|-------------------|---------------------|
| | 4X Plastic^① Selector handles are only NEMA rated 1, 3R, 12 | 12 | IP65 Plastic |
| | Catalog number | Catalog number | Catalog number |
| 16 | ENF16P-3PBJ | ENF162-3PBJ | ENF16E-3PBJ A or B |
| 25 | ENF25P-3PBJ | ENF252-3PBJ | ENF25E-3PBJ |
| 40 | ENF32P-3PBJ | ENF322-3PBJ | ENF32E-3PBJ |
| 60 | ENF45P-3PBJ | ENF452-3PBJ | ENF45E-3PBJ |
| 80 | ENF63P-3PBJ | ENF632-3PBJ | ENF63E-3PBJ |

3 Pole, 600V, 16A – 3150A — Pistol handle

| UL general purpose amp rating | NEMA Enclosure type | | IEC Enclosure type |
|----------------------------------|---------------------|-------------------|---------------------|
| | 4X Plastic | 12 | IP65 Plastic |
| | Catalog number | Catalog number | Catalog number |
| 16 | ENF16P-3PB6 | ENF162-3PB6 | ENF16E-3PB4 |
| 25 | ENF25P-3PB6 | ENF252-3PB6 | ENF25E-3PB4 |
| 40 | ENF32P-3PB6 | ENF322-3PB6 | ENF32E-3PB4 |
| 60 | ENF45P-3PB6 | ENF452-3PB6 | ENF45E-3PB4 |
| 80 | ENF63P-3PB6 | ENF632-3PB6 | ENF63E-3PB4 |
| 30 | ENF30P-3PB6 | ENF302-3PB6 | ENF30E-3PB6 |
| 60 | ENF60P-3PB6 | ENF602-3PB6 | ENF60E-3PB6 |
| 100 | ENF100P-3PB6 | ENF1002-3PB6 | ENF100E-3PB6 |
| 125 | ENF125P-3PB6 | ENF1252-3PB6 | ENF125E-3PB6 |
| 200 | ENF200P-3PB8B | ENF2002-3PB8B | — |
| 400 | ENF400P-3PB4B | ENF4002-3PB4B | — |
| 600 | ENF600P-3PB4 | ENF6002-3PB4 | — |
| 800 | ENF800P-3PB4 | ENF8002-3PB4 | — |
| 1200 | ENF1200P-3PB4 | ENF12002-3PB4 | — |
| 1600 | ENF1600P-3P8 | ENF16002-3P8 | — |
| 2000 | ENF2000P-3P8 | ENF20002-3P8 | — |
| 3150 ^② | ENF3150P-3P8 | ENF31502-3P8 | — |

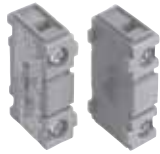
NOTE: All enclosed switches are provided with a black handle; however, most handles can be substituted with a red and yellow handle if desired. Please substitute the handle suffix code (2nd and 3rd from last characters) with the red/yellow handle catalog number suffix from page 3.12. There is no additional price adder for changing to a red/yellow handle of equal ratings and style.

EXAMPLE: A red/yellow selector handle for an NF161-3PBJA can be substituted for the black selector handle by using the "YJ" suffix instead of the "BJ" suffix, new catalog #NF161-3PYJA.

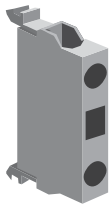
① Enclosures are rated as listed, selector handles are only NEMA rated 1, 3R, 12. The overall NEMA rating of an enclosed switch with a selector handle is 1, 3R, 12.
② IEC rated only.

Accessories for Enclosed Non-fusible Disconnect Switches

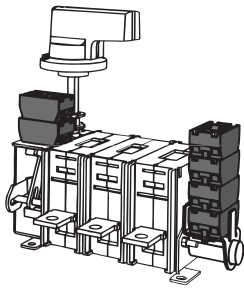
Other Configurations



CDAUX__



CDAUXCA__



BDAUX__



3 Position selector switch



Pilot light

Auxiliary contacts

| For use on: | Contact configuration | Catalog number | Installation suffix |
|-------------|-----------------------|----------------|---------------------|
| 16A – 100A | 1 N.O. | CDAUX10 | add "10" suffix |
| | 1 N.C. | CDAUX01 | add "01" suffix |
| 125A | 1 N.O. | CDAUXCA10 | add "10" suffix |
| | 1 N.C. | CDAUXCA01 | add "01" suffix |
| 200A-400A | 1 N.O. | CDAUX10 | add "10" suffix |
| | 1 N.C. | CDAUX01K | add "01" suffix |
| 600A –800A | 1 N.O. & 1 N.C. | BDAUX1 | add "11" suffix |
| | 2 N.O. & 2 N.C. | BDAUX2 | add "22" suffix |

Accessories

| For use on: | Contact configuration | Installation suffix |
|---------------|----------------------------------|---------------------|
| 16, 25, 40A | Neutral or isolated ground block | N or G |
| 40A – 60A | Neutral or isolated ground block | N or G |
| 80A – 100A | Neutral or isolated ground block | N or G |
| 125A | Neutral or isolated ground block | N or G |
| 200A – 1200A | Neutral block | N |
| 1600A – 3150A | Neutral block | N |
| 16A – 30A | Switched neutral block | S |
| 40A – 60A | Switched neutral block | S |
| 80A – 100A | Switched neutral block | S |
| 125A | Switched neutral block | S |
| 80A – 1200A | Service entrance, 3 wire | U |
| 80A – 1200A | Service entrance, 4 wire | V |
| 16A – 3150A | Start/stop pushbuttons | A |
| | 2 position selector switch | C |
| | 3 position selector switch | D |
| | Pilot light "red/run" | E |
| | Ammeter 1 phase | AM |
| | Voltmeter | VM |

Ground lugs

All enclosed switches are provided with a standard integral ground lug.

| Switch size | Ground lug Wire size |
|---------------|----------------------|
| 16A – 100A | (2) #14 |
| 200A – 400A | #6 – 250 mcm |
| 600A – 1200A | #2 – 600 mcm |
| 2000A – 3150A | (2) #2 – 600 mcm |

Technical Data for Enclosed Non-fusible Disconnect Switches

Switch ratings, 16 – 3150 Amps, 600V

| UL General purpose amp rating | Maximum horsepower rating | | | | | | | Wire size for terminal lugs | For wire type | Approval | |
|--|---------------------------|------|------|-------------|------|------|------|-----------------------------|--------------------|------------------------|------------------------|
| | Single phase | | | Three phase | | | | | | | |
| | 120V | 200V | 240V | 200V – 208V | 240V | 480V | 600V | | | | |
| UL 508 | 16 | 1/2 | 1.5 | 1.5 | 3 | 5 | 10 | 10 | #18 – 8 | Cu | cULus, UL ^① |
| | 25 | 3/4 | 2 | 2 | 7.5 | 7.5 | 15 | 20 | #18 – 8 | Cu | cULus, UL ^① |
| | 40 | 1 | 3 | 3 | 10 | 10 | 20 | 25 | #18 – 8 | Cu | cULus, UL ^① |
| | 60 | 2 | 5 | 5 | 15 | 15 | 30 | 30 | #14 – 1 | Cu | cULus, UL ^① |
| | 80 | 2 | 5 | 5 | 20 | 20 | 40 | 50 | #14 – 1 | Cu | cULus, UL ^① |
| UL 98 | 30 | 2 | 5 | 5 | 10 | 10 | 20 | 30 | #14 – 4 | Cu | cULus, UL ^② |
| | 60 | 3 | 7.5 | 7.5 | 20 | 20 | 40 | 40 | #14 – 4 | Cu | cULus, UL ^② |
| | 100 | 5 | 15 | 15 | 25 | 25 | 50 | 40 | #8 – 1/0 | Cu | cULus, UL ^② |
| | 125 | 7.5 | 20 | 20 | 30 | 30 | 60 | 75 | #8 – 1/0 | Cu | cULus, UL ^② |
| | 200 | — | — | — | 60 | 75 | 150 | 200 | #6 – 300 kcmil | Cu | cULus, UL ^② |
| | 400 | — | — | — | 100 | 125 | 250 | 350 | #2 – 600 kcmil | Cu | cULus, UL ^② |
| | 600 | — | — | — | 150 | 200 | 400 | 500 | (2) #2 – 600 kcmil | Cu | cULus, UL ^② |
| | 800 | — | — | — | 200 | 250 | 500 | 600 | (2) #2 – 600 kcmil | Cu/Al | cULus, UL ^② |
| | 1200 | — | — | — | — | — | — | — | (4) #2 – 600 kcmil | Cu/Al | cULus, UL ^② |
| | 1600 | — | — | — | — | — | — | — | (4) #2 – 600 kcmil | Cu/Al | cULus, UL ^② |
| 2000 | — | — | — | — | — | — | — | (8) #2 – 600 kcmil | Cu/Al | cULus, UL ^② | |
| 3150 ^③ | — | — | — | — | — | — | — | (8) #2 – 600 kcmil | Cu/Al | IEC | |

Handle ratings, 16 – 3150 Amps, 600V

| Amperage range | Style type | NEMA | Color | Marking | Defeatable | Padlockable | Catalog number suffix | Catalog number |
|----------------|------------|--------------|---------|--------------|------------|-------------|-----------------------|----------------|
| 16 – 100 | Selector | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | BJ | CDH5S |
| | Selector | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | YJ | CDH6S |
| | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | BDH106 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | BDH107 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | CDHXB65 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | CDHXY65 |
| 125 | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B6 | BDH120 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y6 | BDH121 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B8 | CDHXB86 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y8 | CDHXY86 |
| 200 | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B8 | BDH60 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y8 | BDH61 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B8 | CDHXB86 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y8 | CDHXY86 |
| 400 – 3150 | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B4 | BDH114 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y4 | BDH115 |
| | Pistol | 1,3R,12 | Black | 0/I & OFF/ON | Yes | Yes | B7 | BDH116 |
| | Pistol | 1,3R,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y7 | BDH117 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B4 | CDHXB12 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y4 | CDHXY12 |
| | Pistol | 1,3R,4,4X,12 | Black | 0/I & OFF/ON | Yes | Yes | B7 | CDHXB22 |
| | Pistol | 1,3R,4,4X,12 | Red/Yel | 0/I & OFF/ON | Yes | Yes | Y7 | CDHXY22 |
| | Pistol | 1,3R,4,4X,12 | Metal | 0/I & OFF/ON | No | Yes | 8 | BDH8 |

① UL Listed (UL508).
 ② UL Listed (UL98).
 ③ IEC rated only.

Approximate Dimensions for Enclosed Non-fusible Disconnect Switches

2, 3 & 4³Pole Non-fusible switches

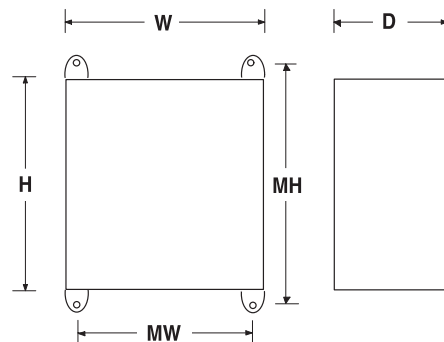
| Frame Size | Enclosure type | H Height | W Width | D Depth | MH Mig Height | MW Mig Width | Weight |
|--------------------------------------|----------------|----------|---------|---------|---------------|--------------|--------|
| CDNF16 CDNF25 CDNF32 | 1 | 7.0 | 5.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| | 3R | 7.0 | 5.0 | 3.0 | 7.75 | 3.0 | 4.0 |
| | 4 | 6.0 | 6.0 | 4.0 | 6.75 | 4.0 | 4.0 |
| | 4X SS | 7.0 | 5.0 | 3.0 | 7.75 | 3.0 | 4.0 |
| | 4X Plastic | 6.0 | 6.0 | 5.9 | 6.75 | 4.0 | 4.0 |
| | 12 | 7.0 | 5.0 | 3.0 | 7.75 | 3.0 | 4.0 |
| CDNF45 CDNF63 CDNF30 CDNF60 | 1 | 8.0 | 6.0 | 4.0 | 7.0 | 5.0 | 6.0 |
| | 3R | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4 | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4X SS | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4X Plastic | 8.0 | 6.0 | 5.9 | 8.75 | 4.0 | 6.0 |
| | 12 | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| CDNF100 | 1 | 10.0 | 8.0 | 5.0 | 7.0 | 7.0 | 9.0 |
| | 3R | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4 | 10.0 | 8.0 | 4.0 | 10.75 | 6.0 | 9.0 |
| | 4X SS | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4X Plastic | 10.0 | 8.0 | 5.9 | 10.75 | 6.0 | 9.0 |
| | 12 | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| CDNF160 | 1 | 14.0 | 12.0 | 8.0 | 11.0 | 9.0 | 20 |
| | 3R | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 20 |
| | 4 | 14.0 | 12.0 | 6.0 | 14.75 | 10.0 | 20 |
| | 4X SS | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 20 |
| | 4X Plastic | 14.0 | 12.0 | 5.9 | 14.75 | 10.0 | 12 |
| | 12 | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 20 |
| CDNF200 | 1 | 20.00 | 16.00 | 6.00 | 21.50 | 14.50 | 50.00 |
| | 3R | 20.00 | 16.00 | 6.00 | 21.50 | 14.50 | 50.00 |
| | 4 | 20.00 | 16.00 | 6.00 | 21.50 | 14.50 | 50.00 |
| | 4X SS | 20.00 | 16.00 | 6.00 | 21.50 | 14.50 | 50.00 |
| | 4X Plastic | 24.00 | 16.00 | 10.00 | 25.50 | 14.50 | 40.00 |
| | 12 | 20.00 | 16.00 | 6.00 | 21.50 | 14.50 | 50.00 |
| CDNF400 BDNF600 | 1 | 36.00 | 24.00 | 8.000 | 37.50 | 22.50 | 120.00 |
| | 3R | 36.00 | 24.00 | 8.000 | 37.50 | 22.50 | 120.00 |
| | 4 | 36.00 | 24.00 | 8.000 | 37.50 | 22.50 | 120.00 |
| | 4X SS | 36.00 | 24.00 | 8.000 | 37.50 | 22.50 | 130.00 |
| | 4X Plastic | 39.31 | 30.60 | 13.80 | 38.00 | 24.00 | 1.00 |
| | 12 | 36.00 | 24.00 | 8.000 | 37.50 | 22.50 | 120.00 |
| BDNF800 BDNF1200 | 1 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 200.00 |
| | 3R | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 200.00 |
| | 4 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 200.00 |
| | 4X SS | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 200.00 |
| | 12 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 200.00 |

6 Pole Non-fusible Enclosed switches

| Frame Size | Enclosure type | H Height | W Width | D Depth | MH Mig Height | MW Mig Width | Weight |
|----------------------------------|----------------|----------|---------|---------|---------------|--------------|--------|
| CDNF16 CDNF15 CDNF32 | 1 | 8.0 | 6.0 | 4.0 | 7.00 | 5.0 | 6.0 |
| | 3R | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4 | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4X SS | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| | 4X Plastic | 6.0 | 6.0 | 5.9 | 8.75 | 4.0 | 6.0 |
| | 12 | 8.0 | 6.0 | 4.0 | 8.75 | 4.0 | 6.0 |
| CDNF45 CDNF63 | 1 | 10.0 | 8.0 | 5.0 | 7.0 | 7.0 | 6.0 |
| | 3R | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 6.0 |
| | 4 | 10.0 | 8.0 | 6.0 | 10.75 | 6.0 | 6.0 |
| | 4X SS | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 6.0 |
| | 4X Plastic | 10.0 | 8.0 | 7.9 | 10.75 | 6.0 | 6.0 |
| | 12 | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 6.0 |
| CDNF30 CDNF60 CDNF100 | 1 | 10.0 | 8.0 | 5.0 | 7.0 | 7.0 | 9.0 |
| | 3R | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4 | 10.0 | 8.0 | 6.0 | 10.75 | 6.0 | 9.0 |
| | 4X SS | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4X Plastic | 10.0 | 8.0 | 7.9 | 10.00 | 0.0 | 9.0 |
| | 12 | 10.0 | 8.0 | 5.0 | 0.0 | 6.0 | 9.0 |
| CDNF160 | 1 | 16.0 | 6.0 | 6.0 | 17.50 | 14.5 | 20 |
| | 3R | 16.0 | 6.0 | 6.0 | 17.50 | 14.5 | 20 |
| | 4 | 16.0 | 6.0 | 6.0 | 17.50 | 14.5 | 20 |
| | 4X SS | 16.0 | 6.0 | 6.0 | 17.50 | 14.5 | 20 |
| | 4X Plastic | 16.0 | 14.0 | 8.0 | 16.75 | 12.0 | 20 |
| | 12 | 16.0 | 6.0 | 6.0 | 17.50 | 14.5 | 20 |
| CDNF200 | 1 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 3R | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4X SS | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4X Plastic | 24.0 | 20.0 | 10.0 | 25.50 | 18.0 | 60 |
| | 12 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| CDNF400 BDNF600 | 1 | 36.00 | 30.00 | 8.0 | 37.50 | 28.50 | 160.00 |
| | 3R | 36.00 | 30.00 | 8.0 | 37.50 | 28.50 | 160.00 |
| | 4 | 36.00 | 30.00 | 8.0 | 37.50 | 28.50 | 160.00 |
| | 4X SS | 36.00 | 30.00 | 8.0 | 37.50 | 28.50 | 160.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 36.00 | 30.00 | 8.0 | 37.50 | 28.50 | 160.00 |
| BDNF800 BDNF1200 | 1 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 3R | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X SS | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| BDNF1600 BDNF2000 BDNF3150 | 1 | 90.00 | 36.00 | 24.00 | 2.000 | 34.50 | 600.00 |
| | 3R | 90.00 | 36.00 | 24.00 | 2.000 | 34.50 | 600.00 |
| | 4 | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X SS | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 90.00 | 36.00 | 24.00 | ⓪ | ⓪ | 600.00 |

Disconnect Switches

⓪ Please consult factory.
 ⓑ Enclosure is free standing.
 ⓒ Some 4-pole switches require larger enclosures. Please consult factory.



Approximate Dimensions for Enclosed Non-fusible Disconnect Switches

Mechanical Interlock for Non-Fusible Enclosed

| Frame Size | Enclosure type | H Height | W Width | D Depth | MH Mtg Height | MW Mtg Width | Weight |
|----------------------------------|----------------|----------|---------|---------|---------------|--------------|--------|
| CDNF16 CDNF15 CDNF32 | 1 | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | 3R | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | 4 | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | 4X SS | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | 4X Plastic | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | 12 | 10.0 | 8.0 | 6.0 | 10.8 | 6.0 | 4.0 |
| | IP65 (A) | 5.9 | 5.1 | 3.4 | 5.35 | 4.57 | 1.2 |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF45 CDNF63 | 1 | 10.00 | 8.00 | 5.00 | 7.00 | 7.00 | 6.0 |
| | 3R | 10.00 | 8.00 | 5.00 | 10.75 | 6.00 | 6.0 |
| | 4 | 10.00 | 8.00 | 6.00 | 10.75 | 6.00 | 6.0 |
| | 4X SS | 10.00 | 8.00 | 5.00 | 10.75 | 6.00 | 6.0 |
| | 4X Plastic | 10.00 | 8.00 | 7.90 | 10.75 | 6.00 | 6.0 |
| | 12 | 10.00 | 8.00 | 5.00 | 10.75 | 6.00 | 6.0 |
| | IP65 (A) | 7.9 | 5.7 | 4.0 | 7.18 | 5.10 | 1.5 |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF30 CDNF60 CDNF100 | 1 | 10.0 | 8.0 | 5.0 | 7.0 | 7.0 | 9.0 |
| | 3R | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4 | 10.0 | 8.0 | 6.0 | 10.75 | 6.0 | 9.0 |
| | 4X SS | 10.0 | 8.0 | 5.0 | 10.75 | 6.0 | 9.0 |
| | 4X Plastic | 10.0 | 8.0 | 7.9 | 00.00 | 0.0 | 9.0 |
| | 12 | 10.0 | 8.0 | 5.0 | 0.0 | 6.0 | 9.0 |
| | IP65 (A) | — | — | — | — | — | — |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF160 | 1 | 14.0 | 12.0 | 8.0 | 10.00 | 9.0 | 20 |
| | 3R | 14.0 | 12.0 | 8.0 | 14.75 | 10.5 | 20 |
| | 4 | 14.0 | 12.0 | 8.0 | 14.75 | 10.5 | 20 |
| | 4X SS | 14.0 | 12.0 | 8.0 | 14.75 | 10.5 | 20 |
| | 4X Plastic | 14.0 | 12.0 | 8.0 | 00.00 | 0.0 | 20 |
| | 12 | 14.0 | 12.0 | 8.0 | 14.75 | 10.5 | 20 |
| CDNF200 | 1 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 3R | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4X SS | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| | 4X Plastic | 24.0 | 20.0 | 10.0 | 25.50 | 18.0 | 60 |
| | 12 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 60 |
| CDNF400 BDNF600 | 1 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 3R | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4X SS | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| BDNF800 BDNF1200 | 1 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 3R | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X SS | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| BDNF1600 BDNF2000 BDNF3150 | 1 | 90.00 | 36.00 | 24.00 | 2.000 | 34.50 | 600.00 |
| | 3R | 90.00 | 36.00 | 24.00 | 2.000 | 34.50 | 600.00 |
| | 4 | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X SS | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 90.00 | 36.00 | 24.00 | ⓪ | ⓪ | 600.00 |

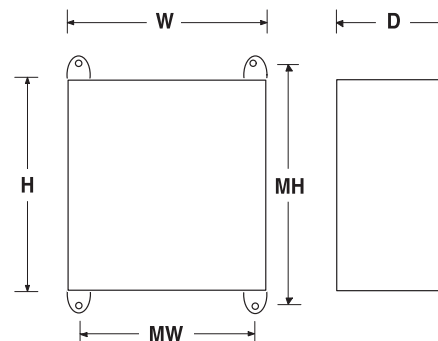
Transfer Switches for Non-Fusible Enclosed

| Frame Size | Enclosure type | H Height | W Width | D Depth | MH Mtg Height | MW Mtg Width | Weight |
|----------------------------------|----------------|----------|---------|---------|---------------|--------------|--------|
| CDNF16 CDNF15 CDNF32 | 1 | 8.0 | 6.0 | 4.0 | 3.0 | 5.0 | 4.0 |
| | 3R | 8.0 | 6.0 | 4.0 | 6.75 | 4.0 | 4.0 |
| | 4 | 8.0 | 6.0 | 4.0 | 6.75 | 4.0 | 4.0 |
| | 4X SS | 8.0 | 6.0 | 4.0 | 7.75 | 4.0 | 4.0 |
| | 4X Plastic | 8.0 | 6.0 | 5.9 | 6.75 | 4.0 | 4.0 |
| | 12 | 8.0 | 6.0 | 4.0 | 6.75 | 4.0 | 4.0 |
| | IP65 (A) | — | — | — | — | — | — |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF45 CDNF63 | 1 | 14.0 | 12.0 | 8.0 | 7.00 | 7.0 | 6.0 |
| | 3R | 14.0 | 12.0 | 8.0 | 10.75 | 6.0 | 6.0 |
| | 4 | 14.0 | 12.0 | 8.0 | 10.75 | 6.0 | 6.0 |
| | 4X SS | 14.0 | 12.0 | 8.0 | 10.75 | 6.0 | 6.0 |
| | 4X Plastic | 14.0 | 12.0 | 8.0 | 10.75 | 6.0 | 6.0 |
| | 12 | 14.0 | 12.0 | 8.0 | 10.75 | 6.0 | 6.0 |
| | IP65 (A) | — | — | — | — | — | — |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF30 CDNF60 CDNF100 | 1 | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 9.0 |
| | 3R | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 9.0 |
| | 4 | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 9.0 |
| | 4X SS | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 9.0 |
| | 4X Plastic | 14.0 | 12.0 | 8.0 | 16.75 | 12.0 | 9.0 |
| | 12 | 14.0 | 12.0 | 8.0 | 14.75 | 10.0 | 9.0 |
| | IP65 (A) | — | — | — | — | — | — |
| | IP65 (B) | — | — | — | — | — | — |
| CDNF160 | 1 | 20.0 | 16.0 | 6.0 | 21.50 | 14.5 | 20 |
| | 3R | 20.0 | 16.0 | 6.0 | 21.50 | 14.5 | 20 |
| | 4 | 20.0 | 16.0 | 6.0 | 21.50 | 14.5 | 20 |
| | 4X SS | 20.0 | 16.0 | 6.0 | 24.50 | 14.5 | 20 |
| | 4X Plastic | — | — | — | — | — | — |
| | 12 | 20.0 | 16.0 | 6.0 | 24.50 | 14.5 | 20 |
| CDNF200 | 1 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 20 |
| | 3R | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 20 |
| | 4 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 20 |
| | 4X SS | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 20 |
| | 4X Plastic | 24.0 | 20.0 | 10.0 | 25.50 | 18.0 | 60 |
| | 12 | 20.0 | 20.0 | 8.0 | 21.50 | 18.5 | 20 |
| CDNF400 BDNF600 | 1 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 3R | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4X SS | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 36.00 | 30.00 | 8.000 | 37.50 | 28.50 | 160.00 |
| BDNF800 BDNF1200 | 1 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 3R | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X SS | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 60.00 | 36.00 | 12.00 | 61.50 | 34.50 | 240.00 |
| BDNF1600 BDNF2000 BDNF3150 | 1 | 90.00 | 36.00 | 24.00 | ⓪ | ⓪ | 600.00 |
| | 3R | 90.00 | 36.00 | 24.00 | ⓪ | ⓪ | 600.00 |
| | 4 | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X SS | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 4X Plastic | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ | ⓪ |
| | 12 | 90.00 | 36.00 | 24.00 | ⓪ | ⓪ | 600.00 |

Bypass Mechanisms for Non-Fusible Enclosed

Please consult factory for part numbers and dimensions.

⓪ Please consult factory, enclosures are sized to suit specific customer needs
 ⓑ Enclosure is free standing.



Telcom Protection Products

Section Contents Page

| | |
|---|------------|
| Telpower® compact fused disconnect switches | 388 |
| Telpower miniature fused disconnect switches | 389 |
| Fused disconnect switches for TPA fuses | |
| TP15914 4-Pole disconnect switch | 390 |
| TP11590-4 4-Pole disconnect switch | 391 |
| TPA & TPA-B Fuses | 391 |
| Fused disconnect switches for TPS fuses | |
| 15800 1-Pole fused disconnect switch | 392 |
| TPS Fuses | 392 |
| Fused disconnect switches | |
| TP158HC panel mount, rear access switch | 393 |
| 15100 1-Pole switch for use with TPL fuses | 394 |
| 15200 1-Pole switch for use with TPL fuses | 394 |
| TPHCS Telpower high-current switch | 395 |
| TPL Telpower 70-600A: 170Vdc fuses | 396 |
| TPN Telpower 1-600A: 170Vdc fuses | 397 |
| 70 Series Indicating fuses | 398 |
| 15087 Fuse holders | 398 |
| HLS, HLT & PCT fuse holders | 399 |
| GMT Fast acting fuses | 399 |
| GMT-A Fast acting fuse | 399 |
| Telpower specialty fuses | |
| 7 Type Fuses | 400 |
| 11 Type Fuse | 400 |
| 24 & WER Type non-indicating, visible link fuses | 400 |
| 74 Type Fast acting fuses | 400 |
| 75 Type Cylindrical fuses with leads | 401 |
| 76 Type Cylindrical fuses with leads | 401 |
| 80 Type visual indicating fuses | 401 |
| 81 Type Fast acting, non-indicating fuses | 401 |
| Filtered terminal blocks | |
| F38 Series 2- to 8-Pole block | 402 |
| Power feed through terminal blocks | |
| Series C7021 2- to 6-Pole block | 403 |
| Series C7024 1- to 12-Pole block | 404 |



Telpower® Compact Fused Disconnect Switches

TPC & TPCDS

Specifications

Descriptions:

— TPC: Telpower® compact current-limiting fuses.

— TPCDS: Telpower compact fused disconnect switch available in two disconnect switch profiles in addition to a variety of terminal styles. Recommended 0.75" center-to-center product spacing.

Dimensions: See Data Sheet 5023.

Ratings:

Volts: — 80Vdc

Amps: — 3-125A (See Catalog Numbers table for details)

IR: — 100kA

Agency Information: CE, UL Recognized (investigated to UL 1801) as a disconnect switch for the interruption of load current by means of withdrawing the fuse pullout. Recognized to US and Canadian requirements under the component recognition program of Underwriters Laboratories Inc. Files E219046 and E56412.

Flammability Ratings: Fuse UL 94V0, 170°C RTI, Housing UL 94V0, 120°C RTI.

Features and Benefits

- Highest interrupting rating (100kA) available and complete system coordination for dc circuit protection for compact footprint providing a superior protection solution for replacement of existing dc telecom circuit breakers
- AmpColor ID™ System makes fuse replacement easy
- Local and remote open fuse indication. Local alarm indication provided by LED on TPC fuse
- Remote alarm terminal available in three positions common to dc circuit protection devices

Typical Applications

- Telecommunications DC power circuit protection
- Replacement of DC telecom circuit breakers
- Applications where venting of arc or molten metals and gases during opening would pose a problem to surrounding devices



Catalog Numbers

TPCDS disconnect switch

| Catalog Numbers | Amp Range |
|-----------------|-----------|
| TPCDS-BBE-1 | 3-125 |
| TPCDS-BBE-2 | 3-125 |
| TPCDS-BBE-3 | 3-125 |
| TPCDS-BBM-1 | 3-125 |
| TPCDS-BBM-2 | 3-125 |
| TPCDS-BBM-3 | 3-125 |
| TPCDS-BSE-1 | 3-125 |
| TPCDS-BSE-2 | 3-125 |
| TPCDS-BSE-3 | 3-125 |
| TPCDS-BSM-1 | 3-125 |
| TPCDS-BSM-2 | 3-125 |
| TPCDS-BSM-3 | 3-125 |
| TPCDS-SSE-1 | 3-125 |
| TPCDS-SSE-2 | 3-125 |
| TPCDS-SSE-3 | 3-125 |
| TPCDS-SSM-1 | 3-125 |
| TPCDS-SSM-2 | 3-125 |
| TPCDS-SSM-3 | 3-125 |
| TPCDS-D-BC1* | 3-125 |
| TPCDS-D-BC2* | 3-125 |
| TPCDS-D-CC1* | 3-125 |
| TPCDS-D-SEC1* | 3-125 |
| TPCDS-D-SEC2* | 3-125 |
| TPCDS-D-SMC1* | 3-125 |
| TPCDS-D-SMC2* | 3-125 |

TPC Current-Limiting Fuse

| Catalog Numbers | Amp Rating |
|-----------------|------------|
| TPC-3 | 3 |
| TPC-4 | 4 |
| TPC-5 | 5 |
| TPC-6 | 6 |
| TPC-7 | 7 |
| TPC-8 | 8 |
| TPC-10 | 10 |
| TPC-12 | 12 |
| TPC-15 | 15 |
| TPC-20 | 20 |
| TPC-25 | 25 |
| TPC-30 | 30 |
| TPC-40 | 40 |
| TPC-50 | 50 |
| TPC-60 | 60 |
| TPC-75 | 75 |
| TPC-90 | 90 |
| TPC-100 | 100 |
| TPC-125 | 125 |

*Not investigated to Canadian Requirements.

Telpower Miniature Fused Disconnect Switches

TPM & TPMS

Specifications Description:

— TPM: Telpower miniature current-limiting fuses.

— TPMS: Telpower miniature fused disconnect switch.



Dimensions: See Data Sheet 5022.

Ratings:

- Volts: — 80Vdc
- Amps: — 3-30A
- IR: — 20kA

Agency Information: CE, UL Recognized (investigated to UL 1801) as a disconnect switch for the interruption of load current by means of withdrawing the fuse pullout.

Recognized by US and Canadian requirements under the component recognition program of Underwriters Laboratories Inc. Files E219046 and E56412.

Flammability Ratings: Fuse UL 94V0, 170°C RTI; Switch UL 94V0, 140°C RTI.

Features and Benefits

- Smallest and most versatile fused disconnect switch available allowing for assembly into 1 U (1.75"/44.5mm) panel. Easy to connect; Load: ¼" quick-connect or bolted connection with 10-32 (M5) captive nut, Line: ¼" quick-connect or screw connection with clearance hole for #10 (M5) bolt.
- AmpColor ID™ System makes fuse replacement easy
- Switch design provides for easy panel mounting by single captive 4-40 (M3) nut and panel notch integral to switch footprint.
- Complete system coordination capability with local and remote open fuse indication. Local alarm indication provided by LED on TPM fuse (maximum alarm circuit current: 20mA)

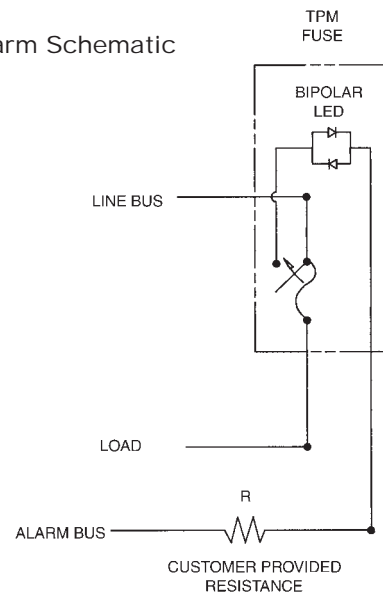
Typical Applications

- Telecommunications DC power circuit protection
- Applications with restricted space, or mounting in 1 U panels

Catalog Numbers

| Catalog Numbers | Description | Amp Rating |
|-----------------|------------------------------|------------|
| TPM-3 | Fuse | 3 |
| TPM-4 | Fuse | 4 |
| TPM-5 | Fuse | 5 |
| TPM-6 | Fuse | 6 |
| TPM-7 | Fuse | 7 |
| TPM-8 | Fuse | 8 |
| TPM-10 | Fuse | 10 |
| TPM-12 | Fuse | 12 |
| TPM-15 | Fuse | 15 |
| TPM-20 | Fuse | 20 |
| TPM-25 | Fuse | 25 |
| TPM-30 | Fuse | 30 |
| TPMDS-E | Disconnect, English hardware | 3-30 |
| TPMDS-M | Disconnect, Metric hardware | 3-30 |

TPM Alarm Schematic



NOTES:

1. The resistance, R, must be provided by the end-user to limit the alarm output current to a maximum of 20mA. The value, R, should be calculated using the system voltage value.
- If remote alarm functionality is not required, the END-USER CIRCUITRY must still be supplied to provide a resistive path to the return for the local alarm to properly function.
2. The fuse is polarized to maintain proper orientation with the switch housing. The line and load terminals are identified on the switch housing.

Fused Disconnect Switches for TPA Fuses

TP15914

Specifications

Description:

Modular 4-pole disconnect switch for TPA Series fuses — 4-poles per module up to four modules ganged together.

Features open fuse indication and fuse presence indication along with fuse orientation rejection feature.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 145Vdc

Amps: — 50A per pole

Agency Information: CE, UL Recognized as a disconnect switch for interruption of load current by means of withdrawing the fuse carrier. UL Recognized as a component for telecommunication power distribution equipment (UL category QPQYZ), UL Recognized fuses for branch circuit protection, CSA component acceptance for the system. UL Recognized, Guide JFHR2, File E56412., CSA Certified, Class 1422-30, File 53787.

Flammability Rating: UL 94V0, 140°C.

Features and Benefits

- Totally enclosed module directly connects to busbar for reduced external wiring—per pole and easy installation with front access load and line connection standard—double lug load connections 8 AWG wire
- LED alarm signaling (LED current 30mA max)
- Remote alarm with alarm test probe point to allow on-site checking of alarm circuitry
- Bi-polar LED provides capability for both -48Vdc and +24Vdc applications

Typical Applications

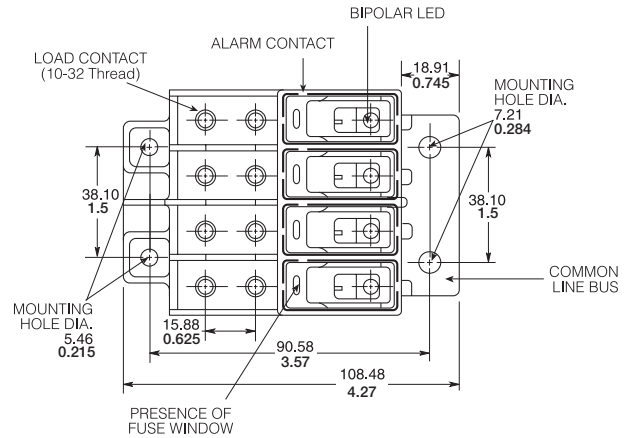
- Telecommunications DC power circuit protection

Catalog Numbers

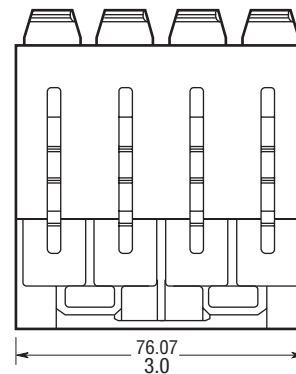
| Catalog Numbers | Hardware |
|-----------------|----------|
| TP15914 | English |
| TP15914-1 | Metric |



Dimensions mm/in



TOP



Accessories

- Spare fuse holders: Catalog Numbers 5TPH and TPSFH-A

Fused Disconnect Switches for TPA Fuses

TP15900-4

Specifications
Description: 4-pole disconnect switch for use with Telpower fuses Type TPA & TPA-B.



Dimensions: See Dimensions illustrations.

Ratings:

- Volts: — 145Vdc (40A)
- 80Vdc (50A)
- Amps: — 40A@145Vdc
- 50A@80Vdc

Agency Information: CE, UL Recognized File E97649 as a disconnect switch for interruption of load current by means of withdrawing the fuse carrier. UL Recognized as a component for telecommunication power distribution equipment (UL category QPQY2). UL Recognized fuses for branch circuit protection. CSA Component Acceptance for the system.

Flammability Rating: UL 94V0, 140°C.

Features and Benefits

- Ease of installation - connection directly to busbar, reduces external wiring per pole. Rear accessibility for line and load terminations
- LED alarm signaling (LED current 30mA max)
- Local and remote open-fuse indication along with fuse orientation rejection feature and fuse presence indication
- Alarm test probe point, to allow on-site checking of alarm circuitry

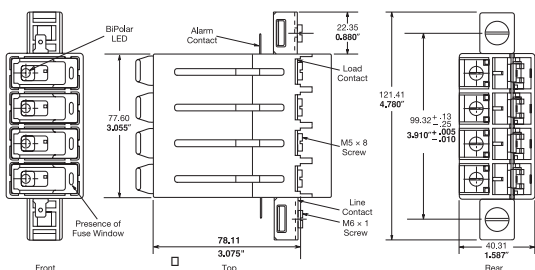
Typical Applications

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | Description |
|-----------------|--|
| TP15900-4 | 4-Pole common disconnect switch |
| TP15900-41 | 4-Pole common disconnect switch w/ Split Alarm, Split Line |

Dimensions - mm (in)



Accessories

- Spare fuse holders: Catalog Numbers 5TPH and TPSFH-AS.

Data Sheet: 5001

TPA & TPA-B

Specifications
Description: DC power distribution indicating fuses.

Dimensions: See Dimensions illustration.

Ratings:

- Volts: — 170Vdc TPA
- 65Vdc TPA-B
- Amps: — 3-50A TPA
- 20-30A TPA-B
- IR: — 100kA TPA
- 20kA TPA-B



Agency Information: CE, UL Recognized, Guide JFHR2, File E56412, CSA Certified, Class 1422-30, File 53787.

Features and Benefits

- Indication pin provides for local and remote indication when used with Cooper Bussmann® TP15900-4 and TP15914 disconnect switches
- Patented “orange ring” fuse orientation features assures correct fuse position
- The UL Recognized ratings and current-limiting capability make this fuse ideal for cable protection on existing DC power distribution systems
- A unique blue label is used on all Telpower fuses to designate their DC capability

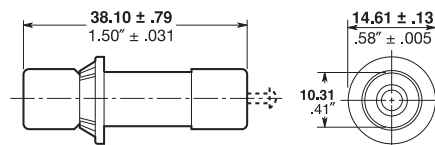
Typical Applications

- Telecommunications DC power circuit protection

Catalog Numbers (Amps)

| Catalog Numbers | Amp Rating | Catalog Numbers | Amp Rating |
|-----------------|------------|-----------------|------------|
| TPA-3 | 3 | TPA-30 | 30 |
| TPA-5 | 5 | TPA-40 | 40 |
| TPA-10 | 10 | TPA-50 | 50 |
| TPA-15 | 15 | TPA-B-20 | 20 |
| TPA-20 | 20 | TPA-B-25 | 25 |
| TPA-25 | 25 | TPA-B-30 | 30 |

Dimensions - mm (in)



Accessories

- Spare fuse holders: 5 position holder; 5TPH; 6 position holder; TPSFH-AS
- Use with fused disconnect switches TP15900-4, TP15914

Data Sheet: 5012

Fused Disconnect Switches for TPS Fuses

15800

Specifications

Description:

Fused disconnect switch for use only with the following fuses; Main: Telpower® TPS 3 to 70 Amp, Alarm: Cooper Bussmann GMT-A only (page 399). Recommend GMT-X Cover (page 399).



Dimensions: See Dimensions illustration.

Ratings:

- Volts: — 60Vdc
- Amps: — 3-70A
- SCCR: — 100kA

Agency Information: CE, UL Recognized, Guide QPQY2, File E97649.

Flammability Rating: UL 94V0, 150°C.

Features and Benefits

- Alarm output with wire wrap terminal or connection to 0.063" thick common alarm bus
- Spare alarm and power fuse compartment
- Mounting hardware included

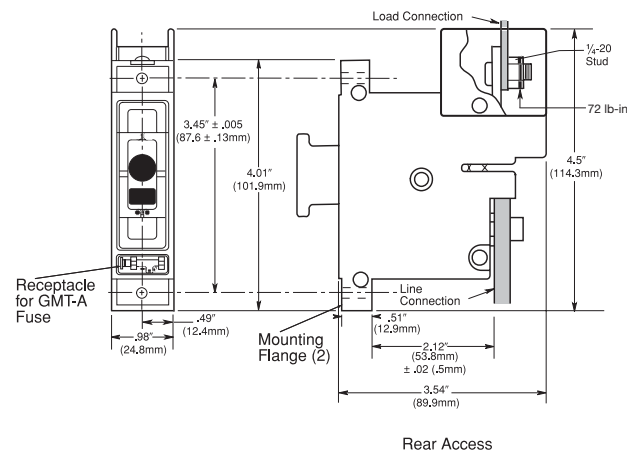
Typical Applications:

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | Access Panel Mounting |
|-----------------|-----------------------|
| 15800-R-200 | Rear |
| 15800-F-200 | Front |

Dimensions - in (mm)



Accessories

- Spare fuse holders: Catalog Numbers TPSFH-AS (TPS fuses) and TPSFH-T (GMT fuses).

TPS

Specifications

Description: DC

power distribution non-indicating fuses specifically designed to meet the unique needs

of DC power distribution systems. For use with Cooper Bussmann® fused disconnect switch 15800.

Dimensions: See Dimensions illustration.

Ratings:

- Volts: — 170Vdc
- Amps: — 1-70A.
- IR: — 100kA

Agency Information: CE, UL Recognized, Guide JFHR2, File E56412.

Features/Benefits

- The UL Recognized ratings and current-limiting capability make this fuse ideal for cable protection on existing DC power distribution systems
- A unique blue label is used on all Telpower fuses to designate their DC capability
- Printed circuit board variations available

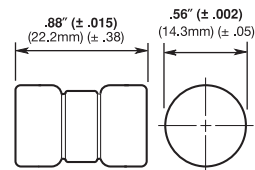
Typical Applications

- Telecommunications DC power circuit protection
- Applications requiring printed circuit board mounting

Catalog Numbers (Amps)

| | | | |
|--------|---------|---------|----------|
| TPS-1 | TPS-6L | TPS-30 | TPS-50V |
| TPS-1L | TPS-10 | TPS-30L | TPS-60 |
| TPS-2 | TPS-10L | TPS-35 | TPS-60L |
| TPS-2L | TPS-15 | TPS-35L | TPS-70 |
| TPS-3 | TPS-15L | TPS-40 | TPS-70L |
| TPS-3L | TPS-20 | TPS-40L | TPS-70LB |
| TPS-5 | TPS-20L | TPS-40V | |
| TPS-5L | TPS-25 | TPS-50 | |
| TPS-6 | TPS-25L | TPS-50L | |

Dimensions - in (mm)



Accessories

- Spare fuse holder: TPSFH-AS, see page 414.

Fused Disconnect Switches

TP158HC

Specifications

Description: Panel mount, rear access high amp version of Cooper Bussmann® 15800 series fused disconnect switch for use only with the following fuses; Main: Telpower TPL-B 70-250 Amps, Alarm: Cooper Bussmann GMT-A.

Dimensions: See Data Sheet 5021.

Ratings:

Volts: — 80Vdc
 Amps: — 70-250A
 SCCR: — 100kA

Agency Information: UL Recognized (investigated to UL 1801) as a disconnect switch for the interruption of load current by means of withdrawing the fuse pullout. Guide QPQY2, File E97649.

Flammability Rating: UL 94V0, 150°C.

Features and Benefits

- Similar profile, mounting method, and backplane configuration as 15800 Series. The TP158HC can be installed into existing 15800 Series panels using the space of two 15800 disconnects
- Innovative new fuse pullout design eliminates need for tools to replace the Telpower type TPL-B fuse
- Alarm output with wire wrap terminal or connection to 0.063 inch (1.6mm) thick common alarm bus
- Hardware included: Load: washer, split lockwasher, and 5/16 - 18 nut (metric-M8 x 1.25)

Typical Applications:

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | Hardware |
|-----------------|----------|
| TP158HC | English |
| TP158HC-M | Metric |

Accessories

- Spare fuse holders: TPSFH-LB (TPL-B fuses) and TPSFH-T (GMT fuses).



Application Notes

- The line connection uses a 1/4-20 bolt (metric – M6X1) that threads into the line terminal. The line terminal is designed with a float of ±0.02" (± 0.50mm) to allow for variation in the distance between the TP158HC mounting flange and the line busbar (see Dimensions). Equipment should be designed to eliminate any relative movement between the TP158HC mounting flange and the line busbar.
- The alarm circuit is not intended for precharging of capacitive circuits. Alarm circuit current 1A maximum.



Easy Fuse Replacement



Fused Disconnect Switches

15100

Specifications
Description: Fused disconnect system for use with Telpower fuses Type TPL.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 60Vdc

Amps: — 70-800A

SCCR: — 100kA

Agency Information: CE, UL Recognized, Guide QPQY2, File E97649.

Features and Benefits

- Single-pole fusible disconnect switch for primary DC power distribution
- Robust housing and terminal construction for demanding applications
- Panel mounting
- Easily connected to line or load bus

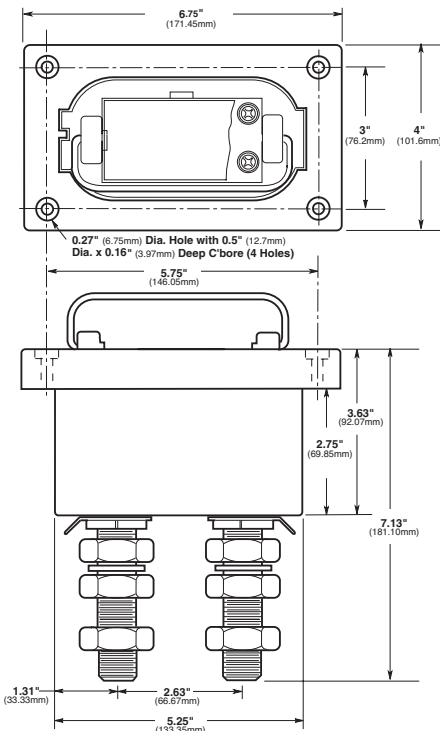
Typical Applications

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | For Use With TPL Series Fuses |
|-----------------|-------------------------------|
| 15100-401 | 70-400A |
| 15100-601 | 300-800A |

Dimensions - in (mm)



Data Sheet: 5003

15200

Specifications
Description: Fused disconnect system for use with Telpower fuses Type TPL.

Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 60Vdc

Amps: — 70-800A

SCCR: — 100kA

Agency Information: CE, UL Recognized, Guide QPQY2, File E97649.

Features and Benefits

- Fusible disconnect transfer switch for primary DC power distribution
- Robust housing and terminal construction for demanding applications
- Panel mounting
- Easily connected to line or load bus

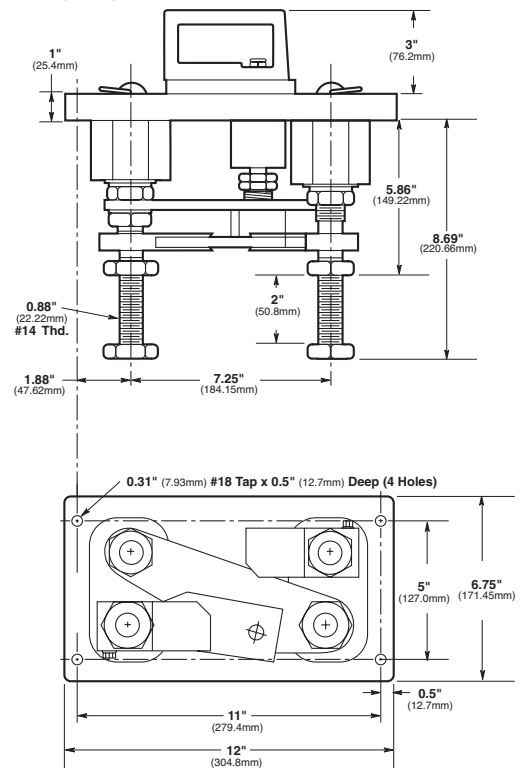
Typical Applications

- Telecommunications DC power circuit protection

Catalog Number

| Catalog Number | For Use With TPL Series Fuses |
|----------------|-------------------------------|
| 15200-602 | 70-800A |

Dimensions - in (mm)



Data Sheet: 5004

Telpower® High-current Switch

TPHCS

Specifications
Description: High current switch for use with Telpower fuses Type TPL-B, TPL-C and TPH.

Available as complete switch or pullout. Base may be purchased separately.

Dimensions: See Dimensions illustrations.

Construction:

Ratings:

Volts: — 80Vdc

Amps: — 70-800A

SCCR: — 100kA

Agency Information: UL Recognized (investigated to UL 1801) as a disconnect switch for the interruption of load current by means of withdrawing the fuse carrier. UL Recognized to meet the requirements for Canadian Standards.

Features and Benefits

- Innovative design eliminates need for tools to replace the Telpower® Type TPL-B, TPL-C or TPH fuse
- Easy to install—captive fasteners allow for direct busbar mounting (bolts not included). Standard ¼" male quick-connect terminal for effortless remote alarm connection.
- Optional new electronic alarm eliminates need for parallel indicating fuses while providing local and remote open-fuse indications (maximum remote alarm current: 20mA); Bipolar alarm: designed for both Central Office and Radio applications, Local LED alarm indication for ease-of-viewing.
- Fuse presence window allows for easy viewing of installed fuse amp rating

Typical Applications

- Telecommunications DC power circuit protection
- Compact design is ideal for today's high power, high-density cabinets



TPHCS800-MAV (shown)

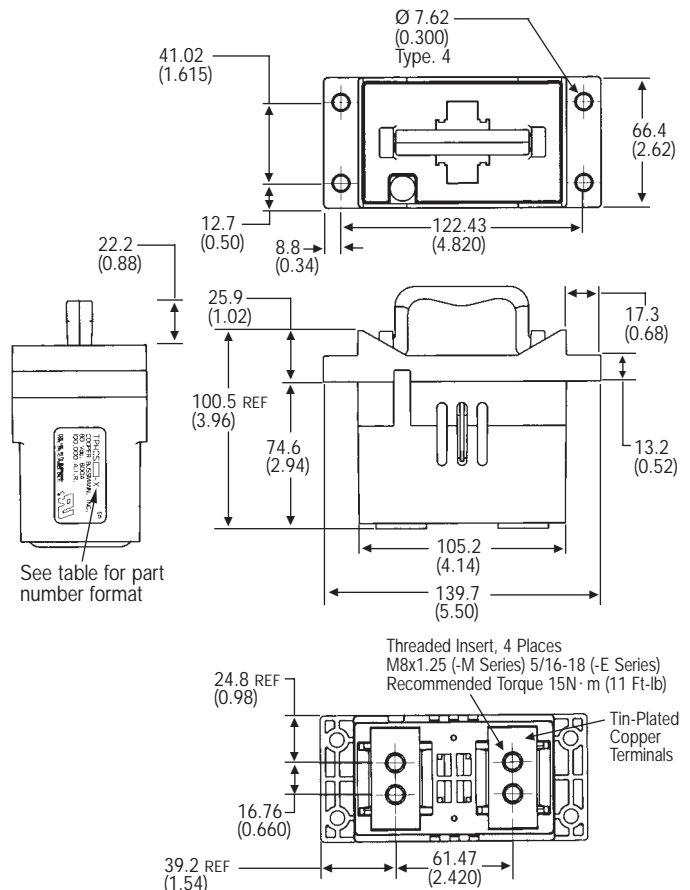
Catalog Numbers – Switches (Pullout and Base)

| Catalog Numbers | Hardware/Option | Fuse Series | Amp Rating |
|-----------------|-----------------|--------------|------------|
| TPHCS250-M | Metric | TPL-B | 70-250 |
| TPHCS250-E | English | TPL-B | 70-250 |
| TPHCS250-ML | Metric, LED | TPL-B | 70-250 |
| TPHCS250-EL | English, LED | TPL-B | 70-250 |
| TPHCS250-MAV | Metric, Alarm | TPL-B | 70-250 |
| TPHCS250-EAV | English, Alarm | TPL-B | 70-250 |
| TPHCS800-M | Metric | TPL-C or TPH | 300-800 |
| TPHCS800-E | English | TPL-C or TPH | 300-800 |
| TPHCS800-ML | Metric, LED | TPL-C or TPH | 300-800 |
| TPHCS800-EL | English, LED | TPL-C or TPH | 300-800 |
| TPHCS800-MAV | Metric, Alarm | TPL-C or TPH | 300-800 |
| TPHCS800-EAV | English, Alarm | TPL-C or TPH | 300-800 |

Catalog Numbers – Components

| Catalog Numbers | Description Rating/Hardware/Option | Fuse Series | Amp Rating |
|-----------------|------------------------------------|--------------|------------|
| TPHCS250-P | Pullout only – 250A | TPL-B | 70-250 |
| TPHCS800-P | Pullout only – 800A | TPL-C or TPH | 300-800 |
| TPHCS-B-M | Base only, Metric | — | 800 Max |
| TPHCS-B-E | Base only, English | — | 800 Max |
| TPHCS-B-ML | Base only, Metric, LED | — | 800 Max |
| TPHCS-B-EL | Base only, English, LED | — | 800 Max |
| TPHCS-B-MAV | Base only, Metric, Alarm | — | 800 Max |
| TPHCS-B-EAV | Base only, English, Alarm | — | 800 Max |

Dimensions mm (in)



NOTES:

1. TPHCS250 and TPHCS800 pullouts and bases are the same with exception to the type of fuse, TPL-B, TPL-C or TPH the pullout will carry.
2. Plastic rated UL 94V0, 140°C RTI.

Telpower® 70-600A: 170Vdc Fuses

TPL

Specifications

Description: DC power distribution fuses for use with Telpower 15100, 15200, TP158HC and TPHCS disconnect systems. For replacement of Cooper Bussmann UBO fuses a TPL-TA adapter kit is necessary.

Dimensions: See Dimensions illustrations.

Ratings:

- Volts: — 170Vdc
- Amps: — 70-800A
- IR: — 100kA

Agency Information: CE, UL Recognized Guide JFHR2, File E56412 Bellcore.

Features and Benefits

- Current-limiting capability designed for DC power distribution systems
- Recognized branch circuit protection
- Complete system coordination capability
- Energy savings with low watts loss, low operating temperatures, and minimum I²t levels

Typical Applications

- Telecommunications power circuit protection

Catalog Numbers

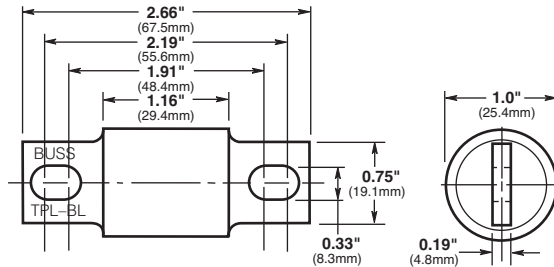
| Catalog Numbers | Amp Rating |
|-----------------|------------|
| TPL-BA | 70 |
| TPL-BB | 80 |
| TPL-BC | 90 |
| TPL-BD | 100 |
| TPL-BE | 125 |
| TPL-BF | 150 |
| TPL-BG | 175 |
| TPL-BH | 200 |
| TPL-BK | 225 |
| TPL-BL | 250 |
| TPL-CN | 300 |
| TPL-CO | 350 |
| TPL-CR | 400 |
| TPL-CU | 450 |
| TPL-CV | 500 |
| TPL-CZ | 600 |
| TPL-CZH | 800 |

Accessories

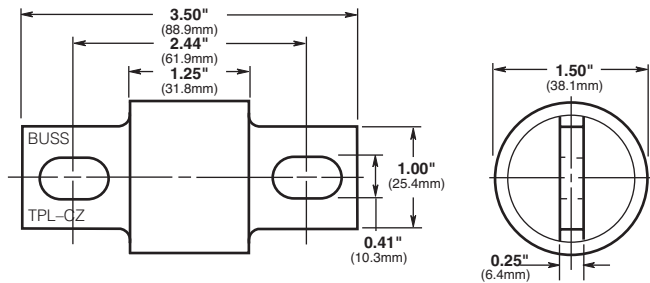
- Spare fuse holders: TPSFH-LB (for TPL-B fuses)
TPSFH-LC (for TPL-C fuses)



Dimensions - in (mm)



TPL-BA, TPL-BD, TPL-BF, TPL-BH, TPL-BK, and TPL-BL



TPL-CN, TPL-CR, TPL-CV and TPL-CZ

Telpower® 1-600A, 170Vdc Fuses

TPN

Specifications

Description: Current-limiting DC power distribution fuses. The TPN fuse series is dimensionally similar to Class R fuses making it easy to use standard Class R fuse blocks.



Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 170Vdc

Amps: — 1-600A

IR: — 100kA

Agency Information: UL Recognized, Guide JFHR2, File E56412.

Features/Benefits

- Current-limiting capability designed for DC power distribution systems
- Recognized branch circuit protection
- Complete system coordination capability
- Energy savings with low watts loss, low operating temperatures, and minimum I²t levels

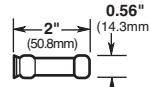
Typical Applications

- Telecommunications power circuit protection

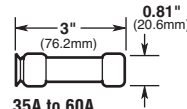
Catalog Numbers (Amps)

| | | |
|--------|---------|---------|
| TPN-1 | TPN-45 | TPN-200 |
| TPN-3 | TPN-50 | TPN-225 |
| TPN-5 | TPN-60 | TPN-250 |
| TPN-6 | TPN-70 | TPN-300 |
| TPN-10 | TPN-80 | TPN-350 |
| TPN-15 | TPN-90 | TPN-400 |
| TPN-20 | TPN-100 | TPN-450 |
| TPN-25 | TPN-110 | TPN-500 |
| TPN-30 | TPN-125 | TPN-600 |
| TPN-35 | TPN-150 | |
| TPN-40 | TPN-175 | |

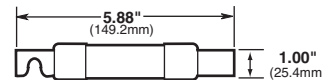
Dimensions - in (mm)



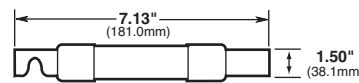
1A to 30A



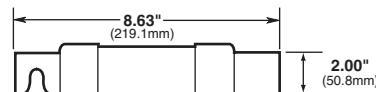
35A to 60A



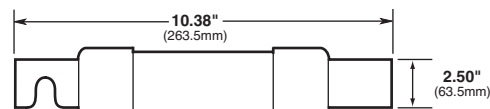
70A to 100A



110A to 200A



225A to 400A



450A to 600A

Accessories

- Spare fuse holders:TPSFH-N30 (for TPN 1-30) TPSFH-N60 (for TPN 35-60)

Recommended Class R Fuse Blocks

| Amps | Poles | Catalog Number |
|---------|-------|----------------|
| 1-30 | 1 | R25030-1CR |
| 1-30 | 2 | R25030-2CR |
| 1-30 | 3 | R25030-3CR |
| 35-60 | 1 | R25060-1CR |
| 35-60 | 2 | R25060-2CR |
| 35-60 | 3 | R25060-3CR |
| 70-100 | 1 | R25100-1CR |
| 70-100 | 2 | R25100-2CR |
| 70-100 | 3 | R25100-3CR |
| 110-200 | 1 | R25200-1CR |
| 110-200 | 3 | R25200-3CR |
| 225-400 | 1 | R25400-1CR |
| 225-400 | 3 | R25400-3CR |
| 450-600 | 1 | R25600-1CR |
| 450-600 | 3 | R25600-3CR |

Indicating Fuses and Holders

70 Series Fuses

Specifications

Description: Indicating type fuse.

Ratings:

Volts: — 125Vac/300Vdc

Amps: — 1/10-10A

IR: — 1kA @ 300Vdc

Agency Information: CE, UL Recognized, Guide JDYX2, File E19180 Bellcore.

Catalog Numbers



| Catalog Numbers | Amp Rating | Color Code | Lucent Comcode Ref. No. | Code/ List No. |
|------------------|------------|------------|-------------------------|----------------|
| 70P-1/10A* | 1/10 | Gray/Wh | 100203413 | KS23751-L10 |
| 70R-1/100A* | 1/100 | Red/Wh | 101384550 | KS23751-L11 |
| 70E-1/100A* | 1/100 | Yellow | 100203363 | KS23751-L5 |
| 70X-2/10A | 2/10 | Black | — | — |
| 70F-1/4A* | 1/4 | Violet | 100203371 | KS23751-L6 |
| 70K-1/4A* | 1/4 | Violet/Wh | 100203405 | KS23751-L9 |
| 70G-1/2A* | 1/2 | Red | 100203389 | KS23751-L7 |
| 70H-3/4A* | 3/4 | Brown | 100203397 | KS23751-L8 |
| 70I-1A | 1 | Pink | — | — |
| 70A-1 1/2A* | 1 1/2 | White | 100203322 | KS23751-L1 |
| 70B-2A* | 2 | Orange | 100203330 | KS23751-L2 |
| 70C-3A* | 3 | Blue | 100203348 | KS23751-L3 |
| 70J-3 1/2A | 3 1/2 | Black/Wh | — | — |
| 70D-5A* | 5 | Grn/Blk | 100203355 | KS23751-L4 |
| 70L-6A | 6 | Grn/Wh | — | — |
| 70M-8A | 8 | Brown/Wh | — | — |
| 70N-10A | 10 | Violet/Yel | — | — |
| GKB-10A | 10 | Violet/Yel | — | — |
| 72A Plastic Case | Dummy | — | 100203421 | — |
| 72B Blister Pack | Dummy | — | 103757977 | — |

*Product designed to comply with Bellcore Technical Reference TR-TSY-000799 Issue 1, December 1988.

15087 Fuse Holder

Specifications

Description: Fuse holder for 70 Series fuses.

Ratings:

Volts: — 300Vdc

Amps: — 12A

Agency Information: CE, UL Recognized, Guide IZLT2, File E14853.

Flammability Rating: UL 94V0.



Features and Benefits

- Panel mount fuse holder for 70 Type fuses supplied with two screws
- Remote alarm capability

Typical Applications

- Telecommunications DC power circuit protection

Catalog Number — 15087

Accessories

Description: Optional color code eyelets used with fuse holder to indicate fuse amp rating.

Eyelet Catalog Numbers

| Catalog Numbers | Amp Indication | Color Code |
|-----------------|----------------|---------------|
| 1A1706-01 | 19/100 | Yellow |
| 1A1706-02 | 2/10 | Black |
| 1A1706-03 | 1/4 | Violet |
| 1A1706-04 | 1/4 | Violet/White |
| 1A1706-05 | 1/2 | Red |
| 1A1706-06 | 3/4 | Brown |
| 1A1706-07 | 1 | Pink |
| 1A1706-08 | 1 1/2 | White |
| 1A1706-09 | 2 | Orange |
| 1A1706-10 | 3 | Blue |
| 1A1706-11 | 5 | Green/Black |
| 1A1706-12 | 6 | Green/White |
| 1A1706-13 | 8 | Brown/White |
| 1A1706-14 | 10 | Violet/Yellow |
| 1A1706-15 | 1/10 | Gray/White |
| 1A1706-16 | 3 1/2 | Black/White |
| 1A1706-17 | 15/100 | Red/White |

Indicating Fuses and Holders

HLS, HLT, PCT

Specifications
Description: Fuse holders for GMT Type indicating fuses.

Poles: 01 to 25.

Ratings:

Volts — 60Vdc/125Vac

Agency Information:
CE, UL Recognized,
Guide IZLT2, File
E14853, 15A (60Vdc).

Flammability Rating:
UL 94V0.

Features and Benefits

- Multiple configurations provide application flexibility
- Compact size saves space

Typical Applications

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | Poles |
|-----------------|------------------|
| PCT | 1 |
| HLS | See Build-A-Code |
| HLT | See Build-A-Code |



GMT

Specifications

Description: Fast-acting fuses for use in HLT, HLS, and PCT fuse holders.

Ratings:

Volts — 60Vdc/125Vac

Amps — $\frac{1}{100}$ -15A

IR — 450A@60Vdc

— 300A@125Vac

Agency Information: CE, UL Recognized, Guide JFHR2, File E56412.

Flammability Rating: UL 94V0.

Features and Benefits

- Local and remote indication capability
- Color coded for easy amp rating identification

Typical Applications

- Telecommunications DC power circuit protection

Catalog Numbers

| Catalog Numbers | Color Code | Catalog Numbers | Color Code |
|-------------------------|--------------|------------------------|--------------|
| GMT- $\frac{1}{100}$ A | Yellow | GMT-3- $\frac{1}{2}$ A | White/Blue |
| GMT- $\frac{1}{4}$ A | Violet | GMT-4A | White/Brown |
| GMT- $\frac{1}{2}$ A | White/Gray | GMT-5A | Green |
| GMT- $\frac{1}{2}$ A | Red | GMT-7- $\frac{1}{2}$ A | Black/White |
| GMT- $\frac{65}{100}$ A | Black | GMT-10A | Red/White |
| GMT- $\frac{3}{4}$ A | Brown | GMT-12A | Yellow/Green |
| GMT-1A | Gray | GMT-15A | Red/Blue |
| GMT-1- $\frac{1}{2}$ A | White | GMT-Dummy | Gray Body |
| GMT-1- $\frac{1}{2}$ A | White/Yellow | GMT-X | Clear Cover |
| GMT-2A | Orange | GMT-Y | Clear Cover |
| GMT-3A | Blue | | |

Some GMT sizes may be sold in bulk pack only.

Accessories

- Spare fuse holder: Catalog Number TPSFH-T

GMT-A

Specifications

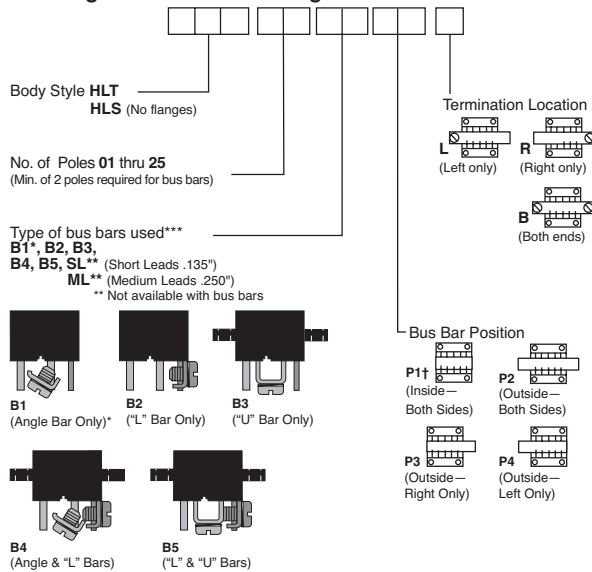
Description: Fast-acting fuse designed specifically for use in the Telpower® series 15800 fused disconnect switch (page 392).

Agency Information: The GMT-A has the same ratings and agency approvals as the standard GMT fuses as shown above.

Catalog Numbers

| Catalog Number | Color Code |
|----------------|------------|
| GMT-A | Yellow |

Multiple Fuseholders with bus bars Ordering Information— Catalog No.



*Angle Bar mounts on common or center terminals only.

**SL Version is not available with bus bars.

†Minimum of 4 Poles Required.

***.38 max. leads if not specified.

Telpower Specialty Fuses

7 Type



Specifications

Description: Fiber tube, threaded ends. Typically used on wall type main distribution frames and central battery substations.

Dimensions: See Catalog Numbers table and Dimensions illustration.

Ratings:

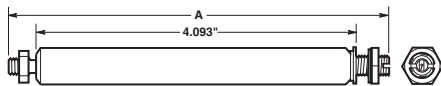
Amps: — 7A

Agency Information: CE

Catalog Numbers

| Catalog Numbers | Amp Rating | Lucent Comcode Ref. No. | Dimension A Length (in) |
|-----------------|------------|-------------------------|-------------------------|
| 7A-7 | 7 | 100863737 | 4.562 |
| 7T-7 | 7 | 100202753 | 4.828 |

Dimensions - in



11 Type



Specifications

Description: Fiber tube, threaded ends, identical to 7 Type except for vent slots in fiber tube.

Dimensions: See Dimensions illustration.

Ratings:

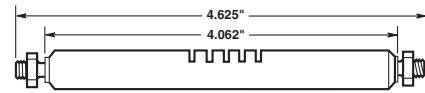
Amps: — 7A

Agency Information: CE

Catalog Number

| Catalog Number | Amp Rating | Lucent Comcode Ref. No. |
|----------------|------------|-------------------------|
| 11C-7 | 7 | 100863745 |

Dimensions - in



24 and WER Type



Specifications

Description: Flat, non-indicating visible link element mounted on 1 inch centers using either No. 6 or No. 10 screws.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 32Vdc (1/4, 1, 3 1/2, 8, 10A)

— 60Vdc (1/2, 3/4, 1 1/2, 2, 3, 4, 5A)

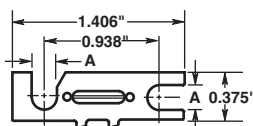
Amps: — 1/4-10A

Agency Information: CE, UL Recognized File E56412.

Catalog Numbers

| Catalog Numbers | Amp Rating | DC Volts | Color Code | Lucent Comcode Ref. No. | A Length Inches |
|-----------------|------------|----------|------------|-------------------------|-----------------|
| WER-1/4 | 1/4 | 32 | — | — | — |
| 24E-1/2* | 1/2 | 60 | Red | 100202894 | 0.20 |
| 24D-3/4* | 3/4 | 60 | Black | 100202886 | 0.15 |
| WER-1 | 1 | 32 | — | — | — |
| 24G-1-1/8* | 1 1/8 | 60 | White | 100202910 | 0.20 |
| 24C-2* | 2 | 60 | Orange | 100202878 | 0.20 |
| 24B-3* | 3 | 60 | Blue | 100202852 | 0.15 |
| WER-3-1/2 | 3 1/2 | 32 | — | — | — |
| 24B-4* | 4 | 60 | Yellow | 100202860 | 0.15 |
| 24F-5* | 5 | 60 | Green | 100202902 | 0.15 |
| WER-8 | 8 | 32 | — | — | — |
| WER-10 | 10 | 32 | — | — | — |
| 64A-Dummy | — | — | — | 100203280 | — |

Dimensions - in



74 Type



Specifications

Description: Fast-acting 0.281" x 1.25" cylindrical fuse designed to comply with Lucent specification KS23753. High current companion to 70 Type Fuse.

Dimensions: See Dimensions illustration.

Ratings:

Volts: — 60Vdc

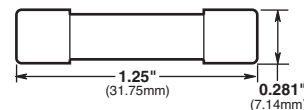
Amps: — 1 1/4-20A

Agency Information: CE, UL Recognized File E19180.

Catalog Numbers

| Catalog Numbers | Amp Rating | Lucent Comcode Ref. No. | Code/List No. |
|-----------------|------------|-------------------------|---------------|
| 74A-1-1/4 | 1 1/4 | 102630290 | KS23753-L1 |
| 74G-2 | 2 | 103064952 | KS23753-L7 |
| 74B-3 | 3 | 102630308 | KS23753-L2 |
| 74H-4 | 4 | 103264669 | KS23753-L8 |
| 74C-5 | 5 | 102630316 | KS23753-L3 |
| 74J-7-1/2 | 7 1/2 | 103228425 | KS23753-L9 |
| 74D-10 | 10 | 102630324 | KS23753-L4 |
| 74E-15 | 15 | 102630332 | KS23753-L5 |
| 74F-20 | 20 | 102630340 | KS23753-L6 |

Dimensions - in (mm)



Telpower Specialty Fuses

75 Type

Specifications
 Description: Cylindrical with leads, designed to provide protection against currents resulting from the application of foreign voltages. Application for data sets and telephones.



Dimensions: See Dimensions illustration.
 Ratings:

Volts: — 135Vac/220Vdc (440Vdc@0.007A)

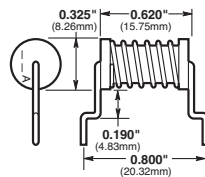
Amps: — 0.007-0.230A

Agency Information: CE

Catalog Numbers

| Catalog Numbers | Amp Rating | Lucent Comcode Ref. No. | Code/ List No. |
|-----------------|------------|-------------------------|----------------|
| 75C | 0.007 | 103260816 | KS23825-L3 |
| 75F | 0.063 | 104172861 | KS23825-L6 |
| 75B | 0.115 | 102732112 | KS23825-L2 |
| 75D | 0.129 | 104013180 | KS23825-L4 |
| 75A | 0.200 | 102660008 | KS23825-L1 |
| 75E | 0.230 | 104015292 | KS23825-L5 |

Dimensions - in (mm)



76 Type

Specifications
 Description: Cylindrical with leads, designed to provide protection against currents resulting from the application of foreign voltages. Application for data sets and telephones.



Dimensions: See Dimensions illustration.

Ratings:

Volts: — 135Vac/440Vdc

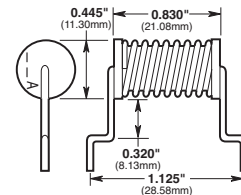
Amps: — 0.012-0.412A

Agency Information: CE

Catalog Numbers

| Catalog Numbers | Amp Rating | Lucent Comcode Ref. No. | Code/ List No. |
|-----------------|------------|-------------------------|----------------|
| 76D | 0.012 | 103798245 | KS23825-L10 |
| 76B | 0.191 | 102965688 | KS23825-L8 |
| 76A | 0.231 | 102810181 | KS23825-L7 |
| 76C | 0.412 | 103656625 | KS23825-L9 |

Dimensions - in (mm)



80 Type

Specifications
 Description: A fuse designed for high reliability applications where high ambient temperatures, low circuit voltages, low power dissipation and low contact resistance are prime considerations. The 80 Type is a visual indicating fuse with remote electrical alarm capability. UL Recognized, Guide JDYX2, File E19180.



Dimensions: See Dimensions illustrations.

Ratings:

Volts: — 160Vdc

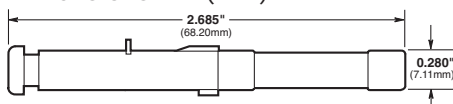
Amps: — ½-5A

Agency Information: CE, UL Recognized File E19180.

Catalog Numbers

| Catalog Numbers | Amp Rating | Color Code | Lucent Comcode Ref. No. | Code/ List No. |
|-----------------|------------|------------|-------------------------|----------------|
| 80G-½ | ½ | Red | 103839916 | KS23824-L6 |
| 80M-1-½ | 1½ | White | 408078657 | KS23824-L8 |
| 80B-2 | 2 | Orange | 103752150 | KS23824-L2 |
| 80C-3 | 3 | Blue | 103752168 | KS23824-L3 |
| 80D-5 | 5 | Green | 103800637 | KS23824-L4 |

Dimensions - in (mm)



81 Type

Specifications
 Description: Cylindrical, fast-acting, non-indicating high current companion to the 80 Type.



Dimensions: See Dimensions illustration.

Ratings:

Volts: — 65Vdc

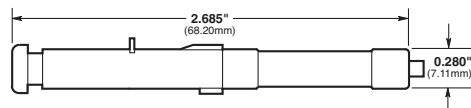
Amps: — 7 ½-12A

Agency Information: CE, UL Recognized, Guide JDYX2, File E19180.

Catalog Numbers

| Catalog Numbers | Amp Rating | Color Code | Lucent Comcode Ref. No. | Code/ List No. |
|-----------------|------------|------------|-------------------------|----------------|
| 81B-7-½ | 7 ½ | Gray | 103828141 | KS23824-L12 |
| 81A-10 | 10 | Yellow | 103752176 | KS23824-L11 |
| 81C-12 | 12 | Lt Blue | 104391842 | KS23824-L13 |

Dimensions - in (mm)



Filtered Terminal Blocks

F38 Series

Specifications
Description: Terminal blocks for filtering line power in telecommunications applications.



Ratings:

Volts: — 240Vac/300Vdc

Amps: — 30A

Center Spacing: 0.437" or 7/16" (11.1mm).

Wire Range: # 10-22 AWG Cu.

Screw Size: # 8-32 (# 6-32 available, consult factory).

Torque Rating: 15 lb-in.

Operating Temperature: -55°C to +105°C.

Capacitance: 1,000 pF to 5,000 pF in either C or Pi Schematic.

Dielectric Withstanding: 1000Vac/1700Vdc.

DC Resistance: 0.01 Ω max.

Agency Information: UL/CSA, CE Certified.

Flammability Rating: UL 94V0.

Insertion Loss for 2,500 pF Pi Schematic

Typical Insertion Loss* (dB) in 50 Ω Circuit

| | |
|----------|-------|
| 30MHz: | 42 dB |
| 50MHz: | 45 dB |
| 100MHz: | 50 dB |
| 300MHz: | 68 dB |
| 1000MHz: | 70 dB |

* For other capacitance insertion loss, consult factory.

Features and Benefits

- Rugged integrated construction of filtering elements around a solid brass pin provides excellent EMI/RFI filtering with high insertion loss for EMI/RFI filtering of AC and DC power and control lines
- 2 to 8 terminals standard (up to 16-poles available) with options for straight lead, male or female quick-connect

Typical Applications

- Cost-effective EMI solution for industrial interconnection filtering

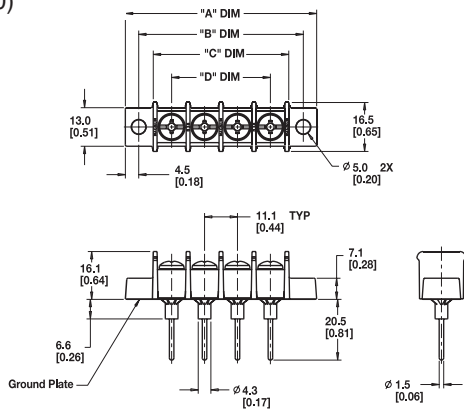
Dimensions - in

| Poles* | Front Mount | | Rear Mount | | |
|--------|-------------|------|------------|------|------|
| | A | A | B | C | D |
| 2 | 1.67 | 1.88 | 1.31 | 0.93 | 0.44 |
| 3 | 2.10 | 2.32 | 1.75 | 1.37 | 0.88 |
| 4 | 2.54 | 2.76 | 2.19 | 1.81 | 1.31 |
| 5 | 2.98 | 3.19 | 2.63 | 2.25 | 1.75 |
| 6 | 3.41 | 3.63 | 3.06 | 2.68 | 2.19 |
| 7 | 3.85 | 4.07 | 3.50 | 3.12 | 2.62 |
| 8 | 4.29 | 4.51 | 3.94 | 3.56 | 3.06 |

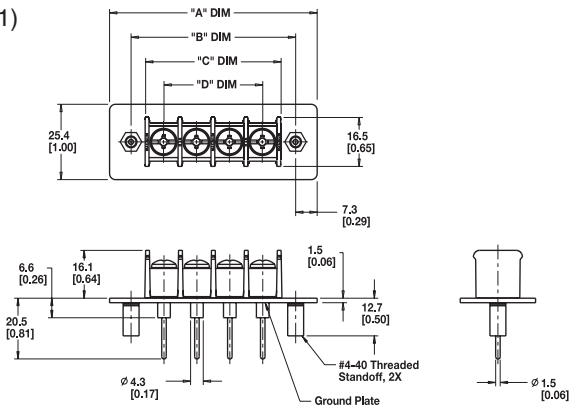
1" = 25.4mm.

* Note: Available up to 16-poles. Consult factory.

Front Panel Mount (Code 0)



Rear Panel Mount (Code 1)



| Series | Terminal Style | Mounting | # of Poles | Screw Options | Filter Options | Capacitance |
|--------|--|---|---|--|---|---|
| F38 | <input type="checkbox"/> 0 = Straight lead <input type="checkbox"/> 1 = 0.187" Quick connect (male) <input type="checkbox"/> 2 = 0.187" Quick connect (female) <input type="checkbox"/> 3 = 0.250" Quick connect (male) <input type="checkbox"/> 4 = 0.250" Quick connect (female) | <input type="checkbox"/> 0 = Front panel mount with mount ends <input type="checkbox"/> 1 = Rear panel mount with #4-40 threaded inserts | <input type="checkbox"/> <input type="checkbox"/> 02 to 08* | <input type="checkbox"/> <input type="checkbox"/> Blank = #8-32, steel, zinc-plated philslot BHMS (standard) <input type="checkbox"/> <input type="checkbox"/> 04 = #8-32, Brass, nickel-plated philslot BHMS <input type="checkbox"/> <input type="checkbox"/> 92 = #8-32, Steel, zinc-plated slotted BHMS <input type="checkbox"/> <input type="checkbox"/> 94 = #8-32, Brass, nickel-plated slotted BHMS | <input type="checkbox"/> C = C Filter <input type="checkbox"/> P = Pi Filter | <input type="checkbox"/> <input type="checkbox"/> 1.0 = 1,000 pF +100%-0% <input type="checkbox"/> <input type="checkbox"/> 2.5 = 2,500 pF +100%-0% <input type="checkbox"/> <input type="checkbox"/> 5.0 = 5,000 pF +100%-0% |

* Note: Standard is 02-08 poles. Available up to 16-poles. Consult Cooper Bussmann for availability. Special electrical/mechanical configurations are available upon request.

Power Feed Through Terminal Blocks

Series C7021

Specifications
 Description: Power feed through terminal block with two rows 1/4-20 studs capable of accommodating the industry standard two-hole compression lugs on both studs in parallel.



Ratings:

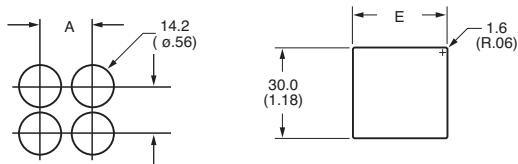
- Volts: — 300V
- Amps: — 115/175A* per pole
- Center Spacing: 0.690" (17.5mm).
- Wire Range: AWG #2/0-8.
- Poles: 2- to 6-poles.
- Bolt Hole Spacing: 0.625" or 5/8" (15.88mm).
- Stud: Standard 1/4-20 stud (tin-plated brass) or optional M6 stud.
- Mounting: #6 thread cutting screws (not included) or optional mounting ears.
- Torque Rating: 36 lb-in.
- Operating Temperature: 130°C.
- Agency Information: UL/CSA; CE Certified.

*175 achieved using both studs in parallel, 115A using a single stud per line.

Typical Applications

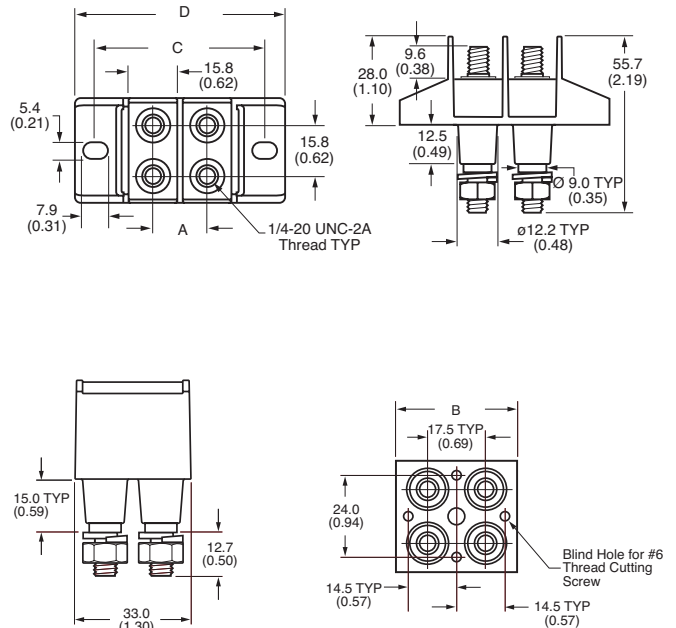
- Applications requiring up to 175A utilizing a 2-hole compression lug on 5/8" centers
- Input/output block for telecommunications power panels
- Use to eliminate busbars

Panel Cutouts



Dimensions - in (mm)

| Catalog Numbers | A | B | C | D | E |
|-----------------|-------------|--------------|--------------|--------------|--------------|
| C7021-01-X | | | | | |
| C7021-02-X | 17.5 (0.69) | - | 54.4 (2.14) | 67.3 (2.65) | 31.8 (1.25) |
| C7021-03-X | 34.9 (1.37) | - | 70.9 (2.83) | 84.8 (3.34) | 49.2 (1.94) |
| C7021-04-X | 52.3 (2.06) | - | 89.3 (3.52) | 102.2 (4.02) | 66.7 (2.63) |
| C7021-05-X | 69.8 (2.75) | - | 106.8 (4.20) | 119.7 (4.71) | 84.2 (3.31) |
| C7021-06-X | 87.2 (3.44) | - | 124.2 (4.89) | 134.1 (5.40) | 101.7 (4.00) |
| C7021-01N-X | | | | | |
| C7021-02N-X | 17.5 (0.69) | 36.1 (1.42) | - | - | 31.8 (1.25) |
| C7021-03N-X | 34.9 (0.69) | 53.5 (2.11) | - | - | 49.2 (1.94) |
| C7021-04N-X | 52.3 (2.06) | 71.0 (2.80) | - | - | 66.7 (2.63) |
| C7021-05N-X | 69.8 (2.75) | 88.4 (3.48) | - | - | 84.2 (3.31) |
| C7021-06N-X | 87.2 (3.44) | 105.9 (4.17) | - | - | 101.7 (4.00) |



| Series | Poles | Mount Ends | Studs | Hardware |
|--------|--|---|-----------------------------------|---|
| C7021 | ☐ ☐ | ☐ | ☐ ☐ | - ☐ |
| | 01 = 1-Pole (2 studs) 02 = 2-Pole (4 studs) 03 = 3-Pole (6 studs) 04 = 4-Pole (8 studs) 05 = 5-Pole (10 studs) 06 = 6-Pole (12 studs) | Blank = Mount ends N = No mount ends | Blank = Standard M6 = M6 Studs | Blank = No hardware 0 = Bulk pack, one set 1 = Bulk pack, two sets 2 = Assembled, bottom 3 = Assembled, top 4 = Assembled, both sets |

Power Feed Through Terminal Blocks

Series C7024

Specifications
Description: A power feed through terminal block with two rows of ¼-28 studs capable of accommodating the industry standard two-hole compression lugs on ¾" centers.



Dimensions: See Dimensions illustration.

Ratings:

Volts: — 600V

Amps: — 115A per pole

Center Spacing: 0.75" (19.1mm).

Wire Range: #2-8 AWG.

Poles: 1 to 12.

Bolt Hole Spacing: 0.75" (19.1mm).

Stud: Standard ¼-28 stud (tin-plated bronze).

Torque Rating: 36 lb-in.

Operating Temperature: 130°C.

Agency Information: UL/C-UL, CSA; CE Certified.

Flammability Rating: UL 94V0.

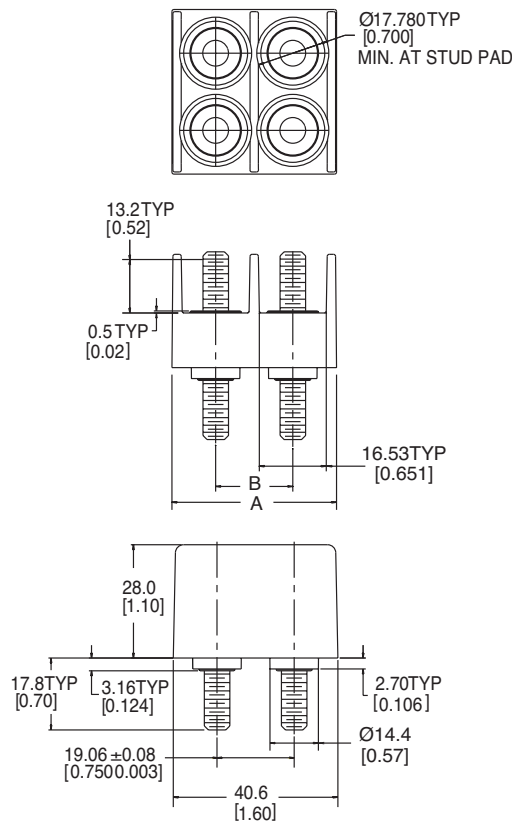
Catalog Numbers

| Catalog Number | Poles | "A" Dimension- mm (in) ±0.4 (±0.02) | "B" Dimension- mm (in) |
|----------------|-------|--|-----------------------------|
| C7024-01 | 01 | 21.6 (0.85) | - |
| C7024-02 | 02 | 40.6 (1.60) | 19.05 ±0.08 (0.750 ±0.003) |
| C7024-03 | 03 | 59.7 (2.35) | 38.10 (1.500) |
| C7024-04 | 04 | 78.7 (3.10) | 57.15 ±0.26 (2.250 ±0.010) |
| C7024-05 | 05 | 97.8 (3.85) | 76.2 (3.00) |
| C7024-06 | 06 | 116.8 (4.60) | 95.25 ±0.26 (3.750 ±0.010) |
| C7024-07 | 07 | 135.9 (5.35) | 114.30 ±0.38 (5.250 ±0.015) |
| C7024-08 | 08 | 154.9 (6.10) | 133.35 ±0.38 (5.25 ±0.015) |
| C7024-09 | 09 | 174.0 (6.85) | 152.40 ±0.38 (6.00 ±0.015) |
| C7024-10 | 10 | 193.0 (7.60) | 171.45 ±0.38 (6.750 ±0.015) |
| C7024-11 | 11 | 212.1 (8.35) | 190.50 ±0.38 (7.500 ±0.015) |
| C7024-12 | 12 | 231.1 (9.10) | 209.55 ±0.38 (8.250 ±0.015) |

Typical Applications

- Applications requiring up to 115A utilizing a 2-hole compression lug on ¾" centers
- Ideal as an input/output block for telecommunications power panels
- Use to eliminate busbars

Dimensions - mm (in)



Series Poles _____
 C7024 -
 01-12

Surge Protection Devices

| Section Contents | Page |
|--|------|
| TVS voltage surge suppressors | 406 |
| TVSS surge protection limiters | 407 |



Voltage Surge Protectors

TVS — Cooper Bussmann® Surge³™



Specifications

Description: DIN rail mount voltage surge protection system for AC or DC voltage using diode or MOV technology.

Dimensions: See Dimensions illustration.

Construction:

Suppressor Module: 20% glass-filled PES (Polyethersulfone) case with 110 copper terminals with electroless tin plating.

DIN Rail Mount Holder: 15% glass-filled PBT (Polybutylene terephthalate) case with electroless tin-plated CDA 7025 interface clips lubricated with fluoroether grease, copper box lugs and stainless steel DIN rail springs.

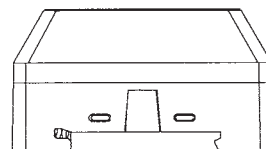
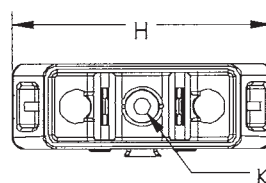
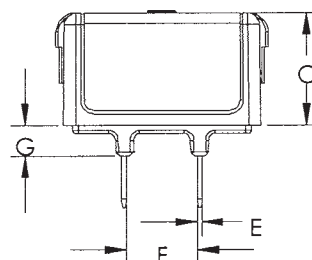
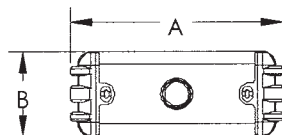
Ratings*:

- Volts: — 12Vdc (2kA surge current)
- 24Vdc (2kA surge current)
- 48Vdc (2kA surge current)
- 120Vac (7kA-18kA surge current)
- 240Vac (7kA-18kA surge current)

* See Catalog Numbers table for all specifications pertaining to specific voltage ratings.

Agency Information: UL Recognized (UL 1449) for AC products, (UL 497B) for DC products, CSA Approved.

Dimensions - in (mm)

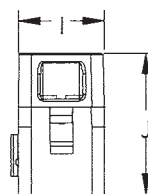


Suppressor Module

- A. 1.88 (47.75)
- B. 0.75 (19.05)
- C. 1.00 (25.40)
- D. 0.31 (7.94)
- E. 0.04 (1.02)
- F. 0.63 (15.88)
- G. 0.27 (6.86)

DIN Rail Mount Holder

- H. 2.30 (58.42)
- I. 0.76 (19.30)
- J. 1.27 (32.18)
- K. 0.15 (3.81)



To see our entire surge protection device portfolio, contact your Cooper Bussmann sales representative, the factory or visit our website.

Catalog Numbers

| Catalog Numbers | Voltage Application | MCOV | Technology | SVR 500A, 8x20µs | Surge Current Rating | Agency Information | Label Color |
|-----------------|---------------------|--------|------------|------------------|----------------------|--------------------|-------------|
| TVS12DCD | 12Vdc | 14Vdc | SASD | 36Vdc | 2kA | UL 497B | Red |
| TVS24DCD | 24Vdc | 28Vdc | SASD | 58Vdc | 2kA | UL 497B | White |
| TVS48DCD | 48Vdc | 57Vdc | SASD | 90Vdc | 2kA | UL 497B | Black |
| TVS120ACD | 120Vac | 140Vac | SASD | 330Vac | 7kA | UL 1449 | Blue |
| TVS120ACM | 120Vac | 140Vac | MOV | 500Vac | 18kA | UL 1449 | Grey |
| TVS240ACD | 240Vac | 280Vac | SASD | 600Vac | 7kA | UL 1449 | Blue |
| TVS240ACM | 240Vac | 280Vac | MOV | 800Vac | 18kA | UL 1449 | Grey |

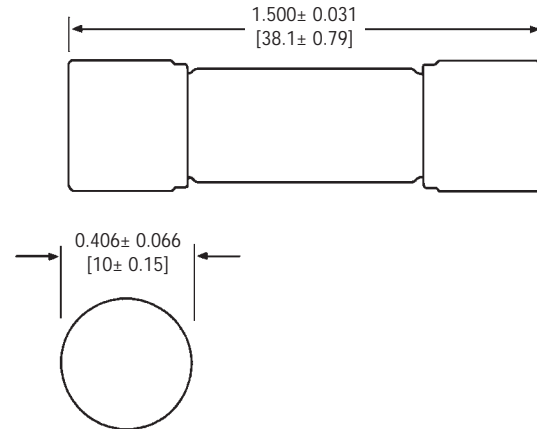
Surge Protection Limiters

TVSS

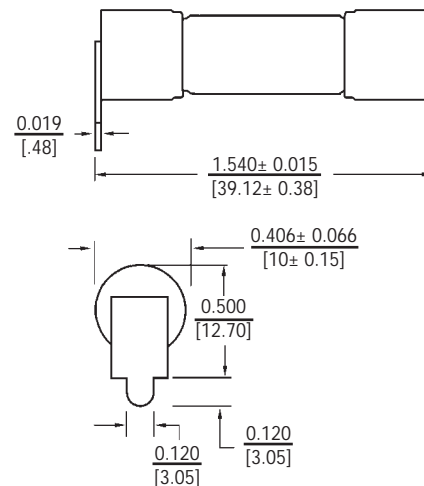


Dimensions

Ferrule Style



Optional Printed Circuit Board Tabs



Specifications

Description: Surge protection limiters designed to protect TVSS systems. Apply in conjunction with TVS voltage surge protector to provide complete surge protection. Able to withstand $8 \times 20 \mu\text{Sec}$ surge pulses without opening. Limiters are identified by a surge rating and not continuous current rating. Available with optional printed circuit board tabs.

Dimensions: See Dimensions illustration.

Construction: Melamine tube with nickel-plated brass end caps.

Ratings*:

Volts: — 600Vac

IR: — 200kA RMS Sym.

* See Catalog Numbers table for all specifications pertaining to specific ratings.

Agency Information: CE, UL Recognized 600Vac, File E56412. Designed to protect TVSS systems per UL 1449 Second Edition requirements.

Features and Benefits

- Optional tabs for mounting on printed circuit board.

Catalog Numbers

| Catalog Numbers | 8x20 μS Surge Rating | Melting I ² t (A ² Sec) | Clearing I ² t (A ² Sec) | I _{peak} @ 100kA 60Hz (A) |
|-----------------|---------------------------------|---|--|------------------------------------|
| TVSS-5 | 5,000A | 559 | 1,650 | 4,283 |
| TVSS-10 | 10,000A | 1,788 | 5,766 | 6,618 |
| TVSS-15 | 15,000A | 3,760 | 9,730 | 7,843 |
| TVSS-20 | 20,000A | 6,020 | 14,000 | 8,594 |

Above catalog numbers are available with printed circuit board tabs. When ordering, use suffix "-01".

Recommended fuse blocks/fuse holders for $1\frac{1}{2}$ " x $1\frac{1}{2}$ " fuses

— See Data Sheets

- Open fuse blocks - 1104, 2104
- Finger-safe fuse holders - 1109, 1102, 1103, 2053
- Panel-mount fuse holders - 2114, 2113, 2108
- In-line fuse holders - 2127, 2126



Fuse Kits & Accessories

Have Products on Hand to Make Electrical Service and Repair Faster and Safer

Reduce Downtime With Quick Access to the Right Replacement Fuse

| Section Contents | Page |
|--|----------------|
| Fuse service kits - supplemental | 410-411 |
| Fuse service kits - branch circuit | 410-411 |
| Fuse service kits - premium branch circuit | 410-411 |
| Large electronic fuse kit - 270 | 412 |
| Small electronic fuse kit - 140 | 412 |
| Electrical and electronic fuse kit | |
| 5 x 20mm fuse kit 220 | 412 |
| Clip clamps & rail adapters (DIN & American) | 413 |
| Spare fuse holders, pullers, testers & cabinets | |
| Telpower® spare fuse holders | 414 |
| 5TPH | 414 |
| Fuse pullers | 414 |
| FT-2 & FT-3 fuse testers | 414 |
| SFC spare fuse cabinet | 414 |
| Fuse reducers & dummy "neutrals" | |
| Class J dimension fuses - LPJ, JKS | 415 |
| Class R dimension fuses FRN-R, LPN-RK, FRS-R & LPS-RK | 415 |
| Class H & K dimension fuses NON, REN, NOS & RES | 415 |
| Dummy fuse "neutrals" | 415 |



Fuse Service Kits

Save Time and Money with These Fuse Service Kits

Selection

These service kits are filled with the most common fuse types and sizes for the most common applications – no need to search for the right fuse, it's in the kit.

Organization

The compact and sturdy carrying case allows organizing and modifying the fuses needed to assure a proper supply is kept on hand.

Accessories

All kits come with a fuse puller for the fuses it contains. As a bonus, all kits on this page include a free wire stripper or lineman's pliers.

Supplemental



Glass Fuse Kit

Catalog Number: GSK-260

Kit Contents

- | | | |
|---------------|------------|-------------|
| (5) GMA-500mA | (5) MDL-6 | (5) AGC-10 |
| (5) GMA-1A | (5) MDL-7 | (5) AGC-15 |
| (5) GMA-2A | (5) MDL-8 | (5) AGC-20 |
| (5) GMA-3A | (5) MDL-10 | (5) GMC-2A |
| (5) GMA-4A | (5) MDL-15 | (5) GMC-5A |
| (5) GMA-5A | (5) MDL-20 | (5) GMC-10A |
| (5) GMA-6A | (5) AGC-¼ | (5) MDA-5 |
| (5) GMA-10A | (5) AGC-½ | (5) MDA-10 |
| (5) GMA-15A | (5) AGC-1 | (5) MDA-12 |
| (5) MDL-¼ | (5) AGC-1½ | (5) MDA-15 |
| (5) MDL-½ | (5) AGC-2 | (5) MDA-20 |
| (5) MDL-1 | (5) AGC-2½ | (5) ABC-5 |
| (5) MDL-1½ | (5) AGC-3 | (5) ABC-10 |
| (5) MDL-2 | (5) AGC-4 | (5) ABC-12 |
| (5) MDL-2½ | (5) AGC-5 | (5) ABC-15 |
| (5) MDL-3 | (5) AGC-6 | (5) ABC-20 |
| (5) MDL-4 | (5) AGC-7 | |
| (5) MDL-5 | (5) AGC-8 | |
- (1) FT-3 Fuse tester/puller
(1) 6-inch Crescent® wire stripper



Midget Fuse Kit

Catalog Number: MSK-45

Kit Contents

- | | |
|------------|-----------------------------|
| (3) FNM-1 | (3) KTK-20 |
| (3) FNM-2 | (3) KTK-30 |
| (3) FNM-5 | (3) FNQ-5 |
| (3) FNM-10 | (3) FNQ-10 |
| (3) FNM-15 | (3) FNQ-15 |
| (3) KTK-5 | (3) FNQ-20 |
| (3) KTK-10 | (3) FNQ-30 |
| (3) KTK-15 | (1) FT-3 Fuse tester/puller |
- (1) 6-inch Crescent® wire stripper

Branch Circuit



Class CC Fuse Kit

Catalog Number: CCSK-45

Kit Contents

- | | |
|--------------|--------------|
| (3) LP-CC-5 | (3) KTK-R-15 |
| (3) LP-CC-10 | (3) KTK-R-20 |
| (3) LP-CC-15 | (3) KTK-R-30 |
| (3) LP-CC-20 | (3) FNQ-R-½ |
| (3) LP-CC-30 | (3) FNQ-R-3 |
| (3) KTK-R-5 | (3) FNQ-R-5 |
| (3) KTK-R-10 | (3) FNQ-R-10 |
- (1) FT-3 Fuse tester/puller
(1) 6-inch Crescent® wire stripper



Fusetron® Class RK5 250/600V Fuse Kit

Catalog Number: RK5SK-39

Kit Contents

- | | |
|---------------|----------------------|
| (3) FRN-R-10 | (3) FRS-R-10 |
| (3) FRN-R-15 | (3) FRS-R-15 |
| (3) FRN-R-20 | (3) FRS-R-20 |
| (3) FRN-R-25 | (3) FRS-R-30 |
| (3) FRN-R-30 | (3) FRS-R-60 |
| (3) FRN-R-60 | (3) FRS-R-100 |
| (3) FRN-R-100 | (1) FP-2 Fuse puller |
- (1) NO.263-R (60 to 30A fuse reducer)
(1) NO.663-R (60 to 30A fuse reducer)
(1) 6-inch Crescent® wire stripper

Premium Branch Circuit



Low-Peak® Class RK1 250/600V Fuse Kit

Catalog Number: RK1SK-39

Kit Contents

- | | |
|-----------------|------------------|
| (3) LPN-RK-10SP | (3) LPS-RK-10SP |
| (3) LPN-RK-15SP | (3) LPS-RK-15SP |
| (3) LPN-RK-20SP | (3) LPS-RK-20SP |
| (3) LPN-RK-25SP | (3) LPS-RK-30SP |
| (3) LPN-RK-30SP | (3) LPS-RK-60SP |
| (3) LPN-RK-60SP | (3) LPS-RK-100SP |
- (3) LPN-RK-100SP
(1) NO.263-R (60 to 30A fuse reducer)
(1) NO.663-R (60 to 30A fuse reducer)
(1) FP-2 Fuse puller
(1) 8½-inch Crescent® lineman's pliers



Low-Peak® Class J Fuse Kit

Catalog Number: JSK-36

Kit Contents

- | | |
|--------------|---------------|
| (3) LPJ-3SP | (3) LPJ-25SP |
| (3) LPJ-5SP | (3) LPJ-30SP |
| (3) LPJ-6SP | (3) LPJ-40SP |
| (3) LPJ-10SP | (3) LPJ-50SP |
| (3) LPJ-15SP | (3) LPJ-60SP |
| (3) LPJ-20SP | (3) LPJ-100SP |
- (1) FP-2 Fuse puller
(1) 8½-inch Crescent® lineman's pliers

Fuse Service Kits

Supplemental/Branch Circuit



Class CC / Midget Fuse Kit

Emergency fuse kit for replacement of $1\frac{3}{32}$ " x $1\frac{1}{2}$ " (Class CC and midget) fuses in a sturdy nylon box. Cross reference makes it easy to install the correct fuse in any Class CC or midget application.

Kit Size: $10\frac{3}{8}$ " W x $6\frac{5}{8}$ " D x $1\frac{3}{4}$ " H

Catalog Number: NO.36

Emergency Kit Contents

- | | |
|--------------------------|--------------|
| (2) FNQ-R- $\frac{1}{2}$ | (2) KTK-R-1 |
| (2) FNQ-R-1 | (2) KTK-R-2 |
| (2) FNQ-R-2 | (2) KTK-R-3 |
| (2) FNQ-R-3 | (2) KTK-R-5 |
| (2) FNQ-R-4 | (2) KTK-R-6 |
| (2) FNQ-R-5 | (2) KTK-R-10 |
| (2) FNQ-10 | (2) KTK-R-15 |
| (2) FNQ-15 | (2) KTK-R-20 |
| (2) FNQ-20 | (2) KTK-R-30 |
| (1) FP-2 Fuse puller | |

Branch Circuit



Fusetron® Class RK5 250V Fuse Kit

Compact kit in a sturdy nylon box rugged enough to withstand field use. Extra spaces and changeable compartments make it easy to customize for your particular need.

Catalog Number: ERK-28

Service Kit Contents

- | | |
|-----------------------------|-----------------------|
| (2) FRN-R-3- $\frac{3}{10}$ | (2) FRN-R-40 |
| (2) FRN-R-6- $\frac{1}{4}$ | (2) FRN-R-50 |
| (2) FRN-R-10 | (3) FRN-R-60 |
| (2) FRN-R-15 | (2) FRN-R-100 |
| (3) FRN-R-20 | (2) NO.263-R Reducers |
| (2) FRN-R-25 | (2) NO.1 Clip Clamps |
| (4) FRN-R-30 | (2) NO.2 Clip Clamps |
| (2) FRN-R-35 | |

Premium Branch Circuit



Low-Peak® Class RK1 250V Fuse Kit

Compact kit in a sturdy nylon box rugged enough to withstand field use. Extra spaces and changeable compartments make it easy to customize for your particular need.

Catalog Number: LPRK-28

Service Kit Contents

- | | |
|---------------------------------|-----------------------|
| (2) LPN-RK-3- $\frac{2}{10}$ SP | (2) LPN-RK-40SP |
| (2) LPN-RK-6- $\frac{1}{4}$ SP | (2) LPN-RK-50SP |
| (2) LPN-RK-10SP | (3) LPN-RK-60SP |
| (2) LPN-RK-15SP | (2) LPN-RK-100SP |
| (3) LPN-RK-20SP | (2) NO.263-R Reducers |
| (2) LPN-RK-25SP | (2) NO.1 Clip Clamps |
| (4) LPN-RK-30SP | (2) NO.2 Clip Clamps |
| (2) LPN-RK-35SP | (1) FP-2 Fuse puller |

Fuse Service Kits

Large Electronic Fuse Kit



Fuse Kit 270

Small dimension fuse assortment with 270 fuses, fuse holders, fuse blocks and fuse clips to fit most electronic equipment.

Ratings:

Volts: — 125V/250V

Catalog Number: NO.270

Assortment Contents

- | | | |
|--------------------------|--------------------------|--------------------------|
| (5) MDL- $\frac{1}{2}$ | (5) AGC- $\frac{1}{2}$ | (5) GMA-1A |
| (5) MDL- $\frac{3}{4}$ | (5) AGC- $\frac{3}{4}$ | (5) GMA-2A |
| (5) MDL-1 | (5) AGC-1 | (5) GMA-3A |
| (5) MDL- $\frac{3}{4}$ | (5) AGC-1- $\frac{1}{2}$ | (5) GMA-4A |
| (5) MDL-1 | (5) AGC-2 | (5) GMA-6A |
| (5) MDL-1- $\frac{1}{2}$ | (5) AGC-2- $\frac{1}{2}$ | (5) GMC-1A |
| (5) MDL-2 | (5) AGC-3 | (5) GMC-2A |
| (5) MDL-3 | (5) AGC-4 | (5) GMC-3A |
| (5) MDL-4 | (5) AGC-5 | (5) GMC-4A |
| (5) MDL-5 | (5) AGC-6 | (5) GMC-6A |
| (5) MDL-6 | (5) AGC-7 | (4) AGC-V- $\frac{1}{2}$ |
| (5) MDA-8 | (5) AGC-8 | (4) AGC-V-1 |
| (5) MDA-10 | (5) ABC-10 | (4) AGC-V-2 |
| (5) MDA-15 | (5) ABC-15 | (4) AGC-V-3 |
| (5) MDA-20 | (5) ABC-20 | (4) MDL-V- $\frac{1}{2}$ |
| (5) MDA-30 | (5) ABC-30 | (4) MDL-V-1 |
| (5) AGC- $\frac{1}{2}$ | (5) GMA-250mA | (4) MDL-V-2 |
| (5) AGC- $\frac{3}{4}$ | (5) GMA-500mA | (4) MDL-V-3 |
- (2) Pr. 4121 Fuse clips
 (2) HHB Inline fuse holder
 (1) HTB-26I panel mount fuse holder
 (1) HTB-28M panel mount fuse holder
 (1) S-8202-2 Two-pole fuse block

Small Electronic Fuse Kit



Fuse Kit 140

Small dimension fuse kit with 140 fuses, fuse holders, fuse blocks and fuse clips to fit most electronic equipment.

Ratings:

Volts: — 125V/250V

Catalog Number: NO.140

Assortment Contents

- | | |
|--------------------------|----------------------------|
| (5) MDL- $\frac{1}{2}$ | (5) AGC-1- $\frac{1}{2}$ |
| (5) MDL-1 | (5) AGC-2 |
| (5) MDL-1- $\frac{1}{2}$ | (5) AGC-3 |
| (5) MDQ-2 | (5) MTH-4 |
| (5) MDQ-3 | (5) MTH-5 |
| (5) MDQ-4 | (5) MTH-6 |
| (5) MDQ-5 | (5) MTH-7 |
| (5) MDQ-6 | (5) MTH-8 |
| (5) MDA-8 | (5) MDA-10 |
| (5) MDA-10 | (5) ABC-15 |
| (5) MDA-15 | (5) ABC-20 |
| (5) MDA-20 | (5) ABC-30 |
| (5) MDA-30 | (2) Pr. #4121 Fuse clips |
| (5) AGC- $\frac{1}{4}$ | (2) HHB Inline fuse holder |
| (5) AGC- $\frac{1}{2}$ | (1) FP-A3 Fuse puller |
| (5) AGC-1 | |

Electrical and Electronic Fuse Kit



5 x 20mm Fuse Kit 220

A complete assortment of 125V and 250V 5 x 20mm fuses for the repair of both electrical and electronic devices.

Ratings:

Volts: — 125V/250V

Catalog Number: NO.220

Assortment Contents

- | | | |
|---------------|---------------|---------------|
| (5) GMA-250mA | (5) GDA-6.3 | (5) GMD-200mA |
| (5) GMA-500mA | (5) GDB-630mA | (5) GMD-500mA |
| (5) GMA-1 | (5) GDB-2 | (5) GMD-1 |
| (5) GMA-1.5 | (5) GDB-3.15 | (5) GMD-1.6 |
| (5) GMA-2 | (5) GDB-4 | (5) GMD-2 |
| (5) GMA-2.5 | (5) GMC-500mA | (5) GMD-3 |
| (5) GMA-3 | (5) GMC-750mA | (5) GDC-250mA |
| (5) GMA-4 | (5) GMC-1 | (5) GDC-500mA |
| (5) GMA-5 | (5) GMC-2 | (5) GDC-1 |
| (5) GMA-10 | (5) GMC-2.5 | (5) GDC-1.6 |
| (5) GDA-630mA | (5) GMC-3 | (5) GDC-2 |
| (5) GDA-1 | (5) GMC-3.15 | (5) GDC-3.15 |
| (5) GDA-2 | (5) GMC-4 | (5) GDC-4 |
| (5) GDA-3.15 | (5) GMC-5 | (5) GDC-5 |
| (5) GDA-5 | (5) GMC-6.3 | |
- (1) HTB-28M panel mount fuse holder
 (1) FP-A3 Fuse puller

Clip Clamps and Rail Adapters (DIN & American)

TRON™ Clip-Clamps

Specifications
Description: Clamps for ferrule and blade-type cartridge fuse clips. Provide tight contacts between fuse holder clips and fuse ferrules/blades.

Construction: Phenolic knob and plated-steel jaws.



Catalog Numbers

| Catalog Numbers | Clamp Size Volts | Amps |
|-----------------|------------------|---------|
| NO.1 | 250 | 0-30 |
| NO.2 | 250 | 35-60 |
| NO.2 | 600 | 0-30 |
| NO.4 | 600 | 35-60 |
| NO.5 | 250/600 | 70-100 |
| NO.6 | 250/600 | 110-200 |
| NO.7 | 250/600 | 225-400 |
| NO.8 | 250/600 | 450-600 |

Adapters for DIN and American Rails

Specifications
Description: Cooper Bussmann® DIN rail adapters permit secure, positive snap-on mounting of Cooper Bussmann 0-30A fuse blocks (one-, two-, or three-pole) onto various size rails to eliminate costly and time consuming drilling, tapping, and screw mounting. Adapters mechanically lock into mounting holes of fuse blocks in seconds to become an integral part of the block. One adapter is required for one- and two-pole Cooper Bussmann blocks. Two adapters are required for three-pole blocks.



With the exception of the 32mm DIN rail, all blocks with adapters can be removed from a rail simply by pulling up its release tab.

Use of rail end-stops on both sides of adapters is recommended.

Construction: Molded from “Lexan™ 241” for high strength and flexibility.

Catalog Numbers (For 0-30A Fuse Blocks)

| Catalog Numbers | Fuse Block Class | Rail Type | Size | Adapter Color |
|-----------------|------------------|-----------|-----------------|---------------|
| DRA-1 | CC | DIN | 15mm (Sym.) | Black |
| | G | | 32mm (Asym.) | |
| | *H (250V) | | 35mm (Sym.) | |
| DRA-2 | *R (250) | American | 1/8" (Sym.) | Gray |
| | M Type | | (also 35mm DIN) | |

Package Quantities: standard—10; bulk—100 (Cat. No. BK/DRA-1 or BK/DRA-2.)

*Mounting on 15mm rails is not recommended.

NOTE—Newer Cooper Bussmann fuse blocks have elongated block-to-adapter mounting

Spare Fuse Holders, Pullers, Testers and Cabinets

Spare Fuse Holders



Specifications
 Description: Spare fuse holders durably constructed using black thermoplastic with common mounting using #6 screws or bolts on 5-inch centers. Dovetailed interlocking between fuse holders simplifies installation and reduces needed hardware. Common footprint allows for any combination of fuse holders to be mounted together. Built-in retaining clips secure fuses.
 Flammability Rating: UL 94V0.

Catalog Numbers

| Catalog Numbers | Capacity | For Use With: |
|-----------------|-------------|----------------------|
| TPSFH-CW | 4-position | TPC and/or TPW fuses |
| TPSFH-M | 4-position | TPM fuses |
| TPSFH-70 | 12-position | Series 70 fuses |
| TPSFH-LC | 1-position | TPL-C series fuses |
| TPSFH-LB | 1-position | TPL-B series fuses |
| TPSFH-N60 | 1-position | TPN (35-60A) fuses |
| TPSFH-N30 | 4-position | TPN (1-30A) fuses |
| TPSFH-AS | 6-position | TPA & TPS fuses |
| TPSFH-T | 10-position | GMT fuses |

5TPH



Specifications
 Description: 5-position spare fuse holder for midsize and Class CC fuses (1/2" diameter) fuses. Constructed of thermoplastic with adhesive tape on back for easy mounting on cabinet doors.
 Size: 2.98" W x 1.03" H x 0.63" D

Catalog Number: 5TPH

Data Sheet: 5014

Fuse Pullers



Specifications
 Description: Fuse pullers in various sizes to safely and easily extract fuses from blocks and holders.

Catalog Numbers

| Catalog Numbers | Application |
|-----------------|-----------------------------|
| FP-2 | 1/2" to 3/8" dia. fuses |
| FP-3 | 1" to 1 3/8" dia. fuses |
| FP-4 | 1 3/8" to 2 1/2" dia. fuses |
| FP-6 | 0-60A T-Tron fuses |
| FP-A3 | Glass Tube & ATC fuses |

Fuse pullers are only to be used when the associated circuit has been de-energized.

FT-2 Fuse Tester



Specifications
 Description: Fuse tester for automotive, glass tube and ferrule fuses up to 1 1/8" length. Probe slides to appropriate fuse length. Batteries are included and replaceable.

WARNING: DO NOT test electrical fuses in the fuse panel.

Catalog Number: FT-2

Replacement Battery: Rayovac 364

SFC Spare Fuse Cabinet



Specifications
 Description: Spare fuse cabinet with five cubic feet of storage space. Constructed of heavy gauge steel with durable baked ASA 61 grey enamel finish. Cabinet door is equipped with locking handle for security. Mounting holes are 16 inches on center with key slots.

Size: 24" W x 30" H x 12" D
 Material: 0.062 sheet steel

Catalog Numbers:

SFC-FUSE-CAB

SFC-SHELF*

*Extra shelf for fuse cabinet.

Data Sheet: 1119

FT-3 Fuse Tester



Specifications
 Description: Fuse tester for automotive, glass tube and ferrule fuses up to 1 1/4" length. Probe slides to appropriate fuse length. Batteries are included and replaceable.

WARNING: DO NOT test electrical fuses in the fuse panel.

Catalog Number: FT-3

Fuse Reducers and Dummy "Neutrals"



Fuse Reducers for Class J Dimension Fuses: LPJ, DFJ, JKS

Catalog Numbers

| Catalog Numbers (Pair) Reducer No. | Fuse Amp Size Range | Equipment/Fuseblock Amp Size |
|---------------------------------------|---------------------|------------------------------|
| J-63 | 1-30 | 60 |
| J-13 | 1-30 | 100 |
| J-16 | 35-60 | 100 |
| J-26 | 35-60 | 200† |
| J-21 | 70-100 | 200† |
| J-41 | 70-100 | 400† |
| J-42 | 110-200 | 400† |
| J-62 | 110-200 | 600† |
| J-64 | 225-400 | 600† |

†Not for Bolt-on Applications.

Fuse Reducers for Class R Dimension Fuses: FRN-R, LPN-RK, FRS-R, LPS-RK, KTN-R, KTS-R

UL Listed File E12853

Catalog Numbers

| Catalog Numbers (Pairs) | | Fuse Amp Size Range | Equipment/Fuseblock Amp Size |
|-------------------------|-------------|---------------------|------------------------------|
| Voltages | | | |
| 250V | 600V | | |
| NO.263-R | NO.663-R | 1-30 | 60 |
| NO.213-R | NO.216-R | 1-30 | 100 |
| NO.216-R | NO.616-R | 35-60 | 100 |
| NO.226-R | NO.626-R | 35-60 | 200 |
| NO.2621-R* | NO.2621-R | 70-100 | 200 |
| NO.2641-R | NO.2641-R | 70-100 | 400 |
| NO.242-R | NO.642-R | 110-200 | 400 |
| NO.2661-R | NO.2661-R | 70-100 | 600 |
| NO.2662-R | NO.2662-R | 110-200 | 600 |
| NO.2664-R** | NO.2664-R** | 225-400 | 600 |

*Reducer NO.2621-R does not apply to LPN-RK-70SP to LPN-RK-100SP Fuses.

**Single reducer only (pair not required).

Fuse Reducers for Class H & K Dimension Fuses: NON, REN, NOS, RES

UL Listed File E12853

Catalog Numbers

| Catalog Numbers. (Pairs) | | Fuse Amp Size Range | Equipment/Fuseblock Amp Size |
|--------------------------|--------------|---------------------|------------------------------|
| 250V Reducer | 600V Reducer | | |
| NO.263 | NO.663 | 1-30 | 60 |
| NO.213 | NO.216 | 1-30 | 100 |
| NO.216 | NO.616 | 35-60 | 100 |
| NO.226 | NO.626 | 35-60 | 200 |
| NO.2621 | NO.2621 | 70-100 | 200 |
| NO.2641 | NO.2641 | 70-100 | 400 |
| NO.2642 | NO.2642 | 110-200 | 400 |

Data Sheet: 1118



Dummy Fuse "Neutrals" (These are not fuses)

Catalog Numbers

| Catalog Numbers | Fuse Equivalent | | |
|-----------------|-----------------|--|---------------------|
| | Voltage | Dimension | Fuse Amp Size Range |
| NNB | — | ¹³ / ₃₂ " x 1 1/2" | — |
| NNB-R | — | Class CC | — |
| NNC | — | 1/4" x 1 1/4" | — |
| NTN-R-30 | 250 | R/H | 1-30 |
| NTN-R-60 | 250 | R/H | 35-60 |
| NTN-R-100 | 250 | R/H | 70-100 |
| NTN-R-200 | 250 | R/H | 110-200 |
| NTN-R-400 | 250 | R/H | 225-400 |
| NTS-R-30 | 600 | R/H | 1-30 |
| NTS-R-60 | 600 | R/H | 35-60 |
| NTS-R-100 | 600 | R/H | 70-100 |
| NTS-R-200 | 600 | R/H | 110-200 |
| NTS-R-400 | 600 | R/H | 225-400 |
| NTS-R-600 | 600 | R/H | 450-600 |



Cooper Bussmann Services
Electrical System Arc Flash Analysis and
Training to Help Make Electrical Safety
No Accident

Cooper Bussmann Services & Application Guide

Downtime Reduction, Workplace Safety & Code Compliance

Services to Increase Your Productivity Through Protection

Section Contents

| | |
|---|-----------------|
| Cooper Bussmann Services | |
| Engineering | .418 |
| Engineering – OSCAR™ 2.0 Compliance Software | .419-420 |
| Training | 421 |
| Testing | 422 |
| Custom Products | 423 |
| Application Guide | |
| Fuse technology | 424-430 |
| Motor circuit branch circuit protection | 431 |
| Glossary | 432-434 |
| Out-of-stock substitution/upgrades | 434 |
| Industrial & commercial fuse applications | 435 |
| Catalog number index | 436-440 |
| Sales support | .441 |



RED indicates NEW information

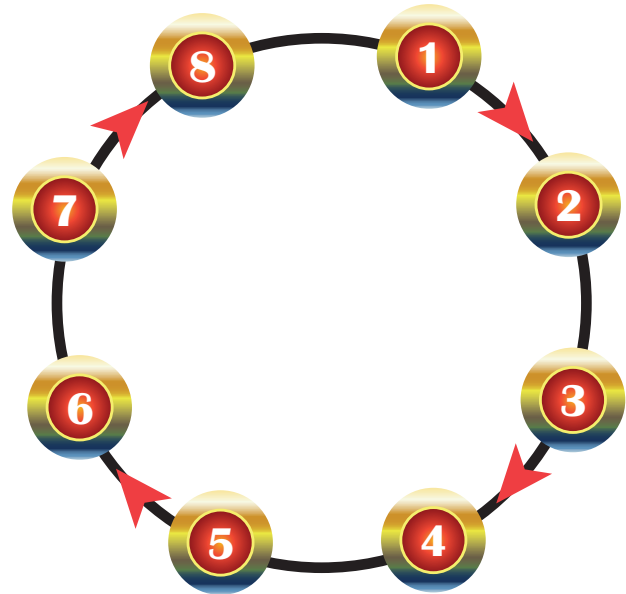
Engineering

Arc-Flash Safety and Productivity

The Cooper Bussmann® Services team has the experience in power system design, analysis and electrical safety to best assess and make recommendations that offer maximum protection and productivity. We go beyond just understanding electrical standards and regulations, actively participating in improving circuit protection and electrical safety.

Our comprehensive service offerings include:

- 1 - Electrical System One-Line Diagram Development
- 2 - Short-Circuit Current Analysis
- 3 - Overcurrent Protective Device Time-Current Curve Characteristic
- 4 - Overcurrent Protective Device Coordination Analysis
- 5 - Arc-Flash Hazard Analysis
- 6 - Arc-Flash Hazard Label Production
- 7 - Electrical Safety Training
- 8 - Annual Maintenance



To Order:

To find out more contact your local Cooper Bussmann representative, or visit us online at

www.cooperbussmann.com/services.

| Engineering Catalog Numbers | | |
|-------------------------------------|--|----------------|
| Description | | Catalog Number |
| One Line Description Development | | CBSV-ES-EN1 |
| Data Collection | | CBSV-ES-EN2 |
| Short-Circuit Study | | CBSV-ES-EN3 |
| Selective Coordination Study | | CBSV-ES-EN4 |
| Arc-Flash Study | | CBSV-ES-EN5 |
| Labeling | | CBSV-ES-EN6 |
| Arc-Flash Training | | CBSV-ES-EN7 |
| Maintenace Plan for Arc-Flash Study | | CBSV-ES-EN8 |

Engineering – OSCAR™ 2.0 Compliance Software

Calculate Assembly SCCR with Ease & Confidence

Enhanced Cooper Bussmann® OSCAR™ Software Speeds Code & Standards Compliance

The new Cooper Bussmann® OSCAR™ Version 2.0 SCCR (Short-Circuit Current Rating) compliance software easily guides you through entering your electrical panel's components and calculates an assembly SCCR. This award winning, online, essential design tool allows you to comply quickly and accurately with 2008 NEC® and UL 508A Supplement SB for assembly SCCR marking requirements:

- Industrial Control Panels [409.110]
- Industrial Machinery Electrical Panels [670.3(A)]
- HVAC Equipment [440.4(B)]

New Project Management Features:

- Simplify your panel design and project organization.
- Save and edit existing panel designs.
- Save multiple panels under a single project.
- Copy existing panels to new projects.

New Intuitive Navigation:

- Display your one-line diagram.
- Select from pre-loaded circuit templates.
- Identify the weakest link component automatically.
- Print reports and one-line diagrams for required SCCR documentation.
- Utilize mouse-over tips to enhance your design.

Design with Confidence:

- Logic updated to current UL requirements.
- Extensive 55,000+ component database.
- Search by partial part number or device rating.
- Custom device option allows for entering specialized component rating information.

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| | |
|--------------------------------|----------------|
| Order Information | |
| Description | Catalog Number |
| OSCAR™ 2.0 Compliance Software | CBSV-SC-EN8 |
| Annual Subscription | |

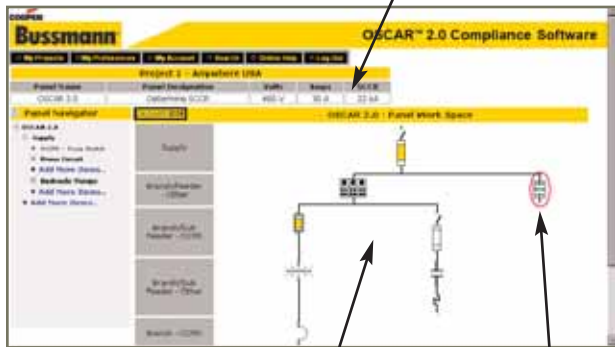


Engineering – OSCAR™ 2.0 Compliance Software

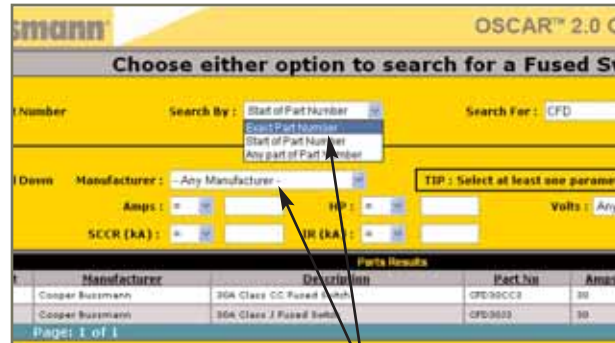
Cooper Bussmann® OSCAR™ 2.0 Software

The Cooper Bussmann OSCAR 2.0 Compliance Software is maintained online to provide you with the most current UL design standards, and to continuously update our product search database with new components and their individual ratings. This software is available 24/7—365 with a one-year subscription.

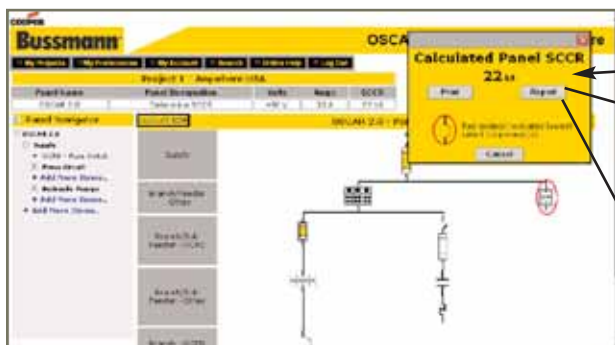
New User Interface



Easily Search the OSCAR Database to Aid in Design & Part Selection



Improved Results & Documentation



Detailed Online Report or Print Option

| OSCAR 2.0 - Determine SCCR | | | | |
|---------------------------------|----------------|--|---------|------------|
| Name | Description | Voltage | Amperes | Final SCCR |
| OSCAR 2.0 | Determine SCCR | 480 V | 30 A | 22 KA |
| Report | | | | |
| Location | Part Number | Device Description | Volts | A |
| Supply - Main Supply | | Fuse | | |
| | LP-CC-30 | CLASS - CC | 600 | |
| Supply - Main Supply | | Fuse Switch | | |
| | CCR-3-30CC | 30A Class CC Compact Circuit Protector (CCP), 3 Pole | 600 | |
| Feeder - Feeder Off Main Supply | | Terminal Block - Power Distribution | | |
| | POB321-3 | POB321-3 - Line: 240 to 8 AWG, Load: 4 to 14 AWG | 600 | |

Additional Features:

- Simplify your panel design and project organization with the My Projects feature.
- Copy existing designs to new projects.
- Display your one-line diagram as each component is added through the new build-a-circuit graphical interface.
- Save and edit existing panel designs.
- Save multiple panels under a single project.
- Select from pre-loaded templates of common circuit types for faster design development.
- Detect combination ratings automatically.
- Utilize mouse-over tips to enhance your design.

Computer System Requirements:

All calculating activity takes place on the Cooper Bussmann server. Your computer only needs to have sufficient band width access to the Internet and the minimum requirements listed below. Performance is optimized by utilizing Internet Explorer and a PC. Apple/Macintosh computers and other web browsers may compromise OSCAR 2.0 performance.

- Computer: Pentium 1 PC or equivalent
- Web Browser: Internet Explorer 5.5 with Java script and cookies enabled
- Internet Connection: ADSL minimum

Training



Knowledge That Minimizes Risk to Maximize Productivity and Protection

Technology evolves, the Code and standards change, and new personnel are joining your operation. How do you manage this changing environment while still focusing on what you do best – running your operation? Expert training from Cooper Bussmann is the solution. We provide the training when and where you need it. Cooper Bussmann can deliver our world-class safety and technical training on-site at your facility or ours.

Training:

To arrange a Cooper Bussmann® training seminar, contact your local Cooper Bussmann representative, or e-mail us at services@cooperbussmann.com.



Publications and e-Training Modules
Cooper Bussmann® Services has developed advanced, value-added technical resources to meet the more demanding needs around Code compliance, and electrical design and safety.

How To Order:
For detailed descriptions on this portfolio visit www.cooperbussmann.com/services.
Hardcopy materials are available through your local Cooper Bussmann distributor.

| Training Catalog Numbers | | |
|---|-------------------|----------------|
| Description | | Catalog Number |
| Designing Commercial & Industrial Power Systems | Per Person | CBSV-ES-ED1 |
| Understanding Short-Circuit Current Rating Basics | 1 Hour | CBTR-SC-1HP |
| Designing Panels with Higher SCCRs | 2 Hour | CBTR-SC-2HP |
| Understanding Electrical Safety Basics | 1 Hour | CBTR-ES-1HP |
| Electrical Hazards and Designing for Safety | 2 Hour | CBTR-ES-2HP |
| NFPA 70E Workplace Guidelines | 8 Hours (0.8 CEU) | CBTR-ES-1DA |
| Safety Basics User Kit | Hard Copy | CBSV-ES-ED3 |
| Safety Basics Trainer Kit | Hard Copy | CBSV-ES-ED4 |
| Safety Basics Video (VHS) | Hard Copy | CBSV-ES-ED5 |
| Safety Basics CD | Hard Copy | CBSV-ES-ED6 |
| Safety Basics Handbook | Hard Copy | CBPUB-ES-ED1H |
| Selecting Protective Devices (SPD) | Hard Copy | CBPUB-ES-ED2H |
| Electrical Plan Review (EPR) and Answer Sheet | Hard Copy | CBPUB-ES-ED3H |
| Interrupting Rating Overcurrent Protection DVD | Hard Copy | CBPUB-ES-ED30H |
| Selective Coordination: Preventing Blackouts DVD | Hard Copy | CBPUB-ES-ED31H |
| Current Limitation Overcurrent Protection DVD | Hard Copy | CBPUB-ES-ED32H |
| Motor Starter Protection: Overcurrent DVD | Hard Copy | CBPUB-ES-ED33H |
| Motor Protection DVD | Hard Copy | CBPUB-ES-ED34H |
| Specification Grade Protection DVD | Hard Copy | CBPUB-ES-ED35H |
| Overcurrent Protection 6 DVD Set | Hard Copy | CBPUB-ES-ED36H |

Testing



Wide Range of Capability

Built to exceed the short circuit capacity of today's high power electrical distribution systems, the Gubany Center performs:

- Ultra-high power testing from 200kA to 300kA at 600Vac, three-phase
- Medium power testing from 5kA to 200kA at 600Vac, single- and three-phase; to 100kA at 1450Vac single-phase; to 100kA at 1000Vdc
- Low power testing up to 5kA at 600Vac, single-phase.

Our technicians conduct tests to many global agency standards including:

- ANCE
- ANSI
- CE
- CSA
- ETL
- IEC, and
- Underwriters Laboratories

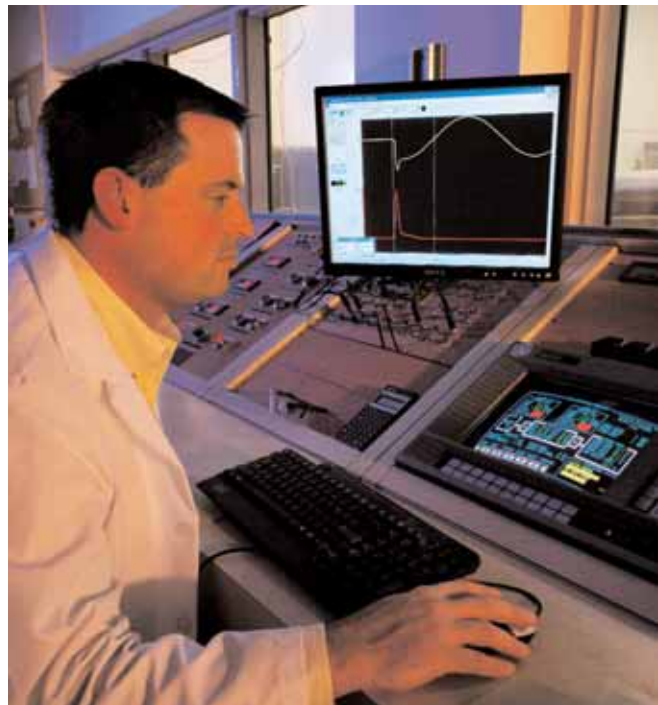
To Order:
To find out more contact your local Cooper Bussmann representative, or visit us online at www.cooperbussmann.com/services.

Performance and Compliance Certification for Components and Assemblies

The Cooper Bussmann® Paul P. Gubany Center for High Power Technology at Cooper Bussmann is the electrical industry's most comprehensive facility for testing and certifying electrical components and assemblies.

OEM customers make the Gubany Center their first choice in testing equipment such as:

- Drives, both AC and DC
- Circuit breakers
- Motor control centers
- Soft starters
- Fuses
- Power distribution panels
- Surge suppressors
- Cables



| Testing Catalog Numbers | | |
|-------------------------|-------------|----------------|
| Description | | Catalog Number |
| High Power Testing | Hourly Rate | CBSV-ES-TEHP |
| Medium Power Testing | Hourly Rate | CBSV-ES-TEMP |
| Low Power Testing | Hourly Rate | CBSV-ES-TELP |

Custom Products

Creating the Right Answers to Unique or Demanding Needs

When you wish to gain a competitive edge or improve your product's performance, have Cooper Bussmann provide a custom product that can:

- Improve functionality and utility
- Fit unique design needs
- Reduce labor and component costs

Our Expertise Is Your Advantage

For over 90 years, Cooper Bussmann has designed and manufactured products that improve electrical safety and performance. Whether it's modifying an existing product or creating a new one, our experience effectively brings together the skills to design, prototype, test, manufacture and secure agency approvals to deliver a single component, sub-assembly or finished product.

Cooper Bussmann can design and manufacture products that integrate:

- Fuses - with the right size and performance characteristics
- Fuse holders and blocks - with the requisite terminations, mounting options and safety features
- Wire connection products - that make wiring simpler, safer and faster
- Molded products - that give the unique shape your product needs
- Power distribution products - that meet prevailing agency and Code requirements

In-House Testing

All electrical performance testing of your custom products can be performed at the Cooper Bussmann® Paul P. Gubany Center for High Power Technology, an ASTA and CSA accredited, and an ANCE Designated facility.

We're able to conduct electrical performance testing that replicates any power system to be encountered in any country, covering:

- Up to 300kA and 600Vac
- Up to 100kA and 1000Vdc

And our technicians conduct tests to many global agency standards including:

- ANCE
- ANSI
- CE
- CSA
- ETL
- IEC, and
- Underwriters Laboratories



To Find Out More:

If you need a custom solution to a product problem, submit a Request for Quotation to your local authorized Cooper Bussmann distributor or sales representative.

Fuse Technology

Circuit Protection

The following is a basic introduction to overcurrent protection and fuse technology. In depth information on the selection and application of overcurrent protective devices is available in the Cooper Bussmann publication “Selecting Protective Devices” (SPD). This publication is available free of charge as a PDF download at www.cooperbussmann.com/spd.

Electrical distribution systems are often quite complicated. They cannot be absolutely fail-safe. Circuits are subject to destructive overcurrents. Harsh environments, general deterioration, accidental damage, damage from natural causes, excessive expansion, and/or overloading of the electrical distribution system are factors which contribute to the occurrence of such overcurrents. Reliable protective devices prevent or minimize costly damage to transformers, conductors, motors, and the other many components and loads that make up the complete distribution system. Reliable circuit protection is essential to avoid the severe monetary losses which can result from power blackouts and prolonged downtime of facilities. It is the need for reliable protection, safety, and freedom from fire hazards that has made the fuse a widely used protective device.

Overcurrents

An overcurrent is either an overload current or a short-circuit current. The overload current is an excessive current relative to normal operating current, but one which is confined to the normal conductive paths provided by the conductors and other components and loads of the distribution system. As the name implies, a short-circuit current is one which flows outside the normal conducting paths.

Overloads

Overloads are most often between one and six times the normal current level. Usually, they are caused by harmless temporary surge currents that occur when motors are started-up or transformers are energized. Such overload currents, or transients, are normal occurrences. Since they are of brief duration, any temperature rise is trivial and has no harmful effect on the circuit components. (It is important that protective devices do not react to them.)

Continuous overloads can result from defective motors (such as worn motor bearings), overloaded equipment, or too many loads on one circuit. Such sustained overloads are destructive and must be cut off by protective devices before they damage the distribution system or system loads. However, since they are of relatively low magnitude compared to short-circuit currents, removal of the overload current within minutes will generally prevent equipment damage. A sustained overload current results in overheating of conductors and other components and will cause deterioration of insulation, which may eventually result in severe damage and short-circuits if not interrupted.

Short-Circuits

Whereas overload currents occur at rather modest levels, the short-circuit or fault current can be many hundred times larger

than the normal operating current. A high level fault may be 50,000A (or larger). If not cut off within a matter of a few thousandths of a second, damage and destruction can become rampant—there can be severe insulation damage, melting of conductors, vaporization of metal, ionization of gases, arcing, and fires. Simultaneously, high level short-circuit currents can develop huge magnetic-field stresses. The magnetic forces between bus bars and other conductors can be many hundreds of pounds per linear foot; even heavy bracing may not be adequate to keep them from being warped or distorted beyond repair.

Fuses

The fuse is a reliable overcurrent protective device. A “fusible” link or links encapsulated in a tube and connected to contact terminals comprise the fundamental elements of the basic fuse. Electrical resistance of the link is so low that it simply acts as a conductor. However, when destructive currents occur, the link very quickly melts and opens the circuit to protect conductors, and other circuit components and loads. Fuse characteristics are stable. Fuses do not require periodic maintenance or testing. Fuses have three unique performance characteristics:

1. *Modern fuses have an extremely “high interrupting rating”—can withstand very high fault currents without rupturing.*
2. *Properly applied, fuses prevent “blackouts.” Only the fuse nearest a fault opens without upstream fuses (feeders or mains) being affected—fuses thus provide “selective coordination.” (These terms are precisely defined in subsequent pages.)*
3. *Fuses provide optimum component protection by keeping fault currents to a low value... They are said to be “current limiting.”*

Voltage Rating

The voltage rating of a fuse must be at least equal to or greater than the circuit voltage. It can be higher but never lower. For instance, a 600V fuse can be used in a 208V circuit.

The voltage rating of a fuse is a function of its capability to open a circuit under an overcurrent condition. Specifically, the voltage rating determines the ability of the fuse to suppress the internal arcing that occurs after a fuse link melts and an arc is produced. If a fuse is used with a voltage rating lower than the circuit voltage, arc suppression will be impaired and, under some fault current conditions, the fuse may not clear the overcurrent safely. Special consideration is necessary for semiconductor fuse and medium voltage fuse applications, where a fuse of a certain voltage rating is used on a lower voltage circuit.

Amp Rating

Every fuse has a specific amp rating. In selecting the amp rating of a fuse, consideration must be given to the type of load and code requirements. The amp rating of a fuse normally should not exceed the current carrying capacity of the circuit. For instance, if a conductor is rated to carry 20A, a 20A fuse is the largest that should be used. However, there are some specific circumstances in which the amp rating is permitted to be greater than the current carrying capacity of the circuit.

Fuse Technology

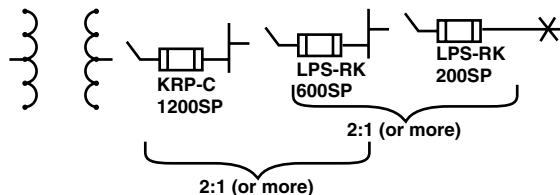
A typical example is the motor circuit; dual-element fuses generally are permitted to be sized up to 175% and non-time-delay fuses up to 300% of the motor full-load amps. As a rule, the amp rating of a fuse and switch combination should be selected at 125% of the continuous load current (this usually corresponds to the circuit capacity, which is also selected at 125% of the load current). There are exceptions, such as when the fuse-switch combination is approved for continuous operation at 100% of its rating.

Interrupting Rating

A protective device must be able to withstand the destructive energy of short-circuit currents. If a fault current exceeds the capability of the protective device, the device may actually rupture, causing additional damage. Thus, it is important when applying a fuse or circuit breaker to use one which can sustain the largest potential short-circuit currents. The rating which defines the capacity of a protective device to maintain its integrity when reacting to fault currents is termed its “interrupting rating”. The interrupting rating of most branch-circuit, molded case, circuit breakers typically used in residential service entrance panels is 10,000A. (Please note that a molded case circuit breaker’s interrupting capacity will typically be lower than its interrupting rating.) Larger, more expensive circuit breakers may have interrupting ratings of 14,000A or higher. In contrast, most modern, current-limiting fuses have an interrupting rating of 200,000 or 300,000A and are commonly used to protect the lower rated circuit breakers. The National Electrical Code, Section 110-9, requires equipment intended to break current at fault levels to have an interrupting rating sufficient for the current that must be interrupted.

Selective Coordination – Prevention of Blackouts

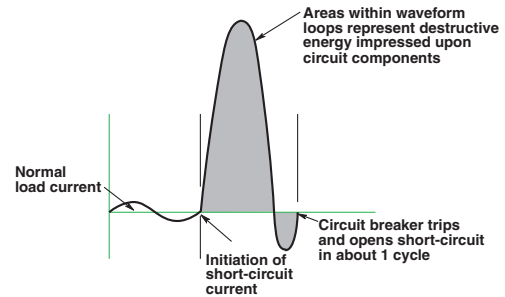
The coordination of protective devices prevents system power outages or blackouts caused by overcurrent conditions. When only the protective device nearest a faulted circuit opens and larger upstream fuses remain closed, the protective devices are “selectively” coordinated (they discriminate). The word “selective” is used to denote total coordination...isolation of a faulted circuit by the opening of only the localized protective device.



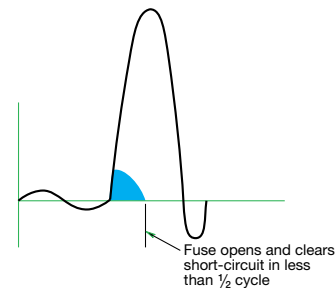
This diagram shows the minimum ratios of amp ratings of Low-Peak Yellow fuses that are required to provide “selective coordination” (discrimination) of upstream and downstream fuses.

Unlike electromechanical inertial devices (circuit breakers), it is a simple matter to selectively coordinate fuses of modern design. By maintaining a minimum ratio of fuse-amp ratings between an upstream and downstream fuse, selective coordination is assured.

Current Limitation – Component Protection



A non-current-limiting protective device, by permitting a short-circuit current to build up to its full value, can let an immense amount of destructive short-circuit heat energy through before opening the circuit.



A current-limiting fuse has such a high speed of response that it cuts off a short-circuit long before it can build up to its full peak value.

If a protective device cuts off a short-circuit current in less than one-quarter cycle, before it reaches its total available (and highly destructive) value, the device is a “current-limiting” device. Most modern fuses are current-limiting. They restrict fault currents to such low values that a high degree of protection is given to circuit components against even very high short-circuit currents. They permit breakers with lower interrupting ratings to be used. They can reduce bracing of bus structures. They minimize the need of other components to have high short-circuit current “withstand” ratings. If not limited, short-circuit currents can reach levels of 30,000 or 40,000A or higher in the first half cycle (.008 seconds, 60Hz) after the start of a short-circuit. The heat that can be produced in circuit components by the immense energy of short-circuit currents can cause severe insulation damage or even explosion. At the same time, huge magnetic forces developed between conductors can crack insulators and distort and destroy bracing structures. Thus, it is important that a protective device limit fault currents before they reach their full potential level.

Fuse Technology

Operating Principles of Cooper Bussmann® Fuses

The principles of operation of the modern, current-limiting fuses are covered in the following paragraphs.

Non-Time-Delay Fuses

The basic component of a fuse is the link. Depending upon the amp rating of the fuse, the single-element fuse may have one or more links. They are electrically connected to the end blades (or ferrules) (see Figure 1) and enclosed in a tube or cartridge surrounded by an arc quenching filler material. Cooper Bussmann® Limitron® and T-Tron® fuses are both single-element fuses.

Under normal operation, when the fuse is operating at or near its amp rating, it simply functions as a conductor. However, as illustrated in Figure 2, if an overload current occurs and persists for more than a short interval of time, the temperature of the link eventually reaches a level which causes a restricted segment of the link to melt. As a result, a gap is formed and an electric arc established. However, as the arc causes the link metal to burn back, the gap becomes progressively larger. Electrical resistance of the arc eventually reaches such a high level that the arc cannot be sustained and is extinguished. The fuse will have then completely cut off all current flow in the circuit. Suppression or quenching of the arc is accelerated by the filler material. (See Figure 3.)

Single-element fuses of present day design have a very high speed of response to overcurrents. They provide excellent short-circuit component protection. However, temporary, harmless overloads or surge currents may cause nuisance openings unless these fuses are oversized. They are best used, therefore, in circuits not subject to heavy transient surge currents and the temporary over-load of circuits with inductive loads such as motors, transformers, solenoids, etc. Because single-element, fast-acting fuses such as Limitron and T-Tron fuses have a high speed of response to short-circuit currents, they are particularly suited for the protection of circuit breakers with low interrupting ratings.

Whereas an overload current normally falls between one and six times normal current, short-circuit currents are quite high. The fuse may be subjected to short-circuit currents of 30,000 or 40kA or higher. Response of current limiting fuses to such currents is extremely fast. The restricted sections of the fuse link will simultaneously melt (within a matter of two or three-thousandths of a second in the event of a high-level fault current).

The high total resistance of the multiple arcs, together with the quenching effects of the filler particles, results in rapid arc suppression and clearing of the circuit. (Refer to Figures 4 & 5) Short-circuit current is cut off in less than a half-cycle, long before the short-circuit current can reach its full value (fuse operating in its current limiting range).



Figure 1. Cutaway view of typical single-element fuse.



Figure 2. Under sustained overload, a section of the link melts and an arc is established.



Figure 3. The "open" single-element fuse after opening a circuit overload.



Figure 4. When subjected to a short-circuit current, several sections of the fuse link melt almost instantly.



Figure 5. The "open" single-element fuse after opening a short circuit.

Fuse Technology

Cooper Bussmann® Dual-Element Fuses

There are many advantages to using these fuses. Unlike single-element fuses, the Cooper Bussmann® dual-element, time-delay fuses can be sized closer to provide both high performance short-circuit protection and reliable overload protection in circuits subject to temporary overloads and surge currents. For ac motor loads, a single-element fuse may need to be sized at 300% of an a.c. motor current in order to hold the starting current. However, dual-element, time delay fuses can be sized much closer to motor loads. For instance, it is generally possible to size Fusetron Dual-Element Fuses, FRS-R and FRN-R and Low-Peak® Dual-Element Fuses, LPS-RK_SP and LPN-RK_SP, at 125% and 130% of motor full load current, respectively. Generally, the Low-Peak Dual-Element Fuses, LPJ_SP, and CUBEFuse®, TCF, can be sized at 150% of motor full load amps. This closer fuse sizing may provide many advantages such as: (1) smaller fuse and block, holder or disconnect amp rating and physical size, (2) lower cost due to lower amp rated devices and possibly smaller required panel space, (3) better short-circuit protection – less short-circuit current let-through energy, and (4) potential reduction in the arc-flash hazard.



Figure 6.

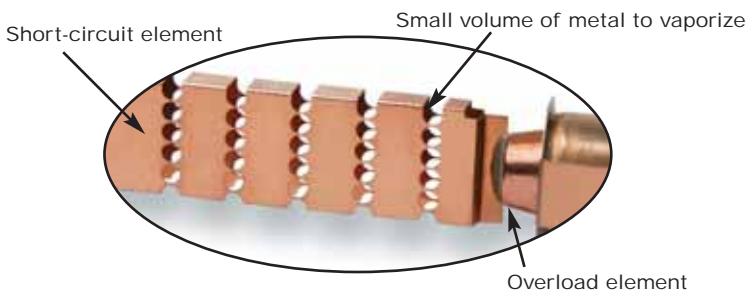


Figure 7.

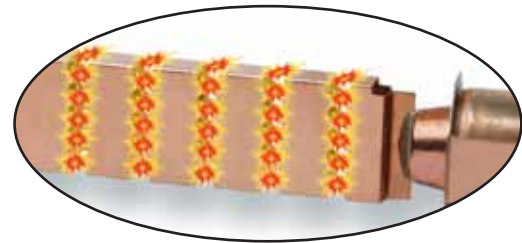


Figure 9.

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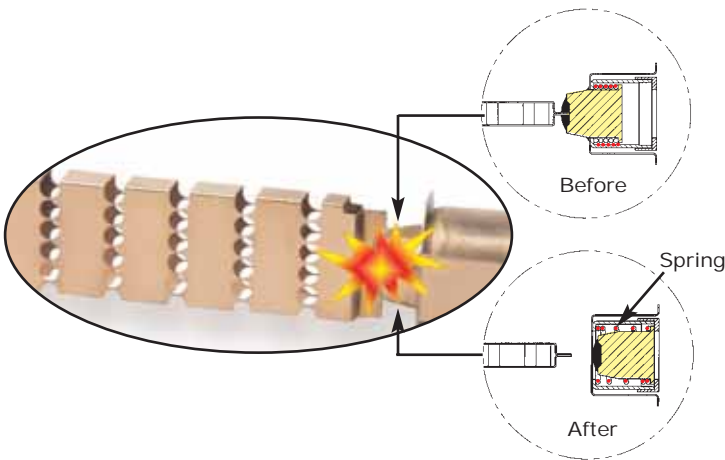


Figure 8.

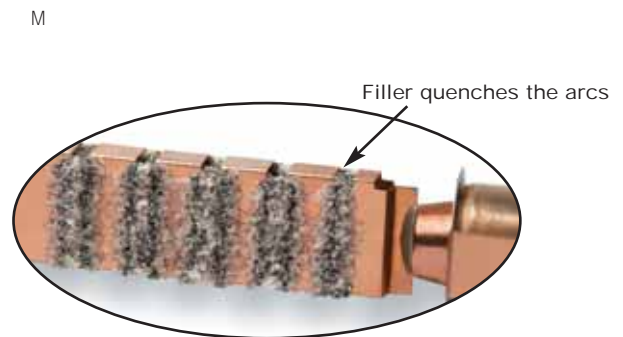


Figure 10.

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When the short-circuit current is in the current-limiting range of a fuse, it is not possible for the full available short-circuit current to flow through the fuse – it's a matter of physics. The small restricted portions of the short-circuit element quickly vaporize and the filler material assists in forcing the current to zero. The fuse is able to "limit" the short-circuit current.

Overcurrent protection must be reliable and sure. Whether it is the first day of the electrical system or thirty or more years later, it is important that overcurrent protective devices perform under overload or short-circuit conditions as intended. Modern current-limiting fuses operate by very simple, reliable principles.

Fuse Technology

Fuse Time-Current Curves

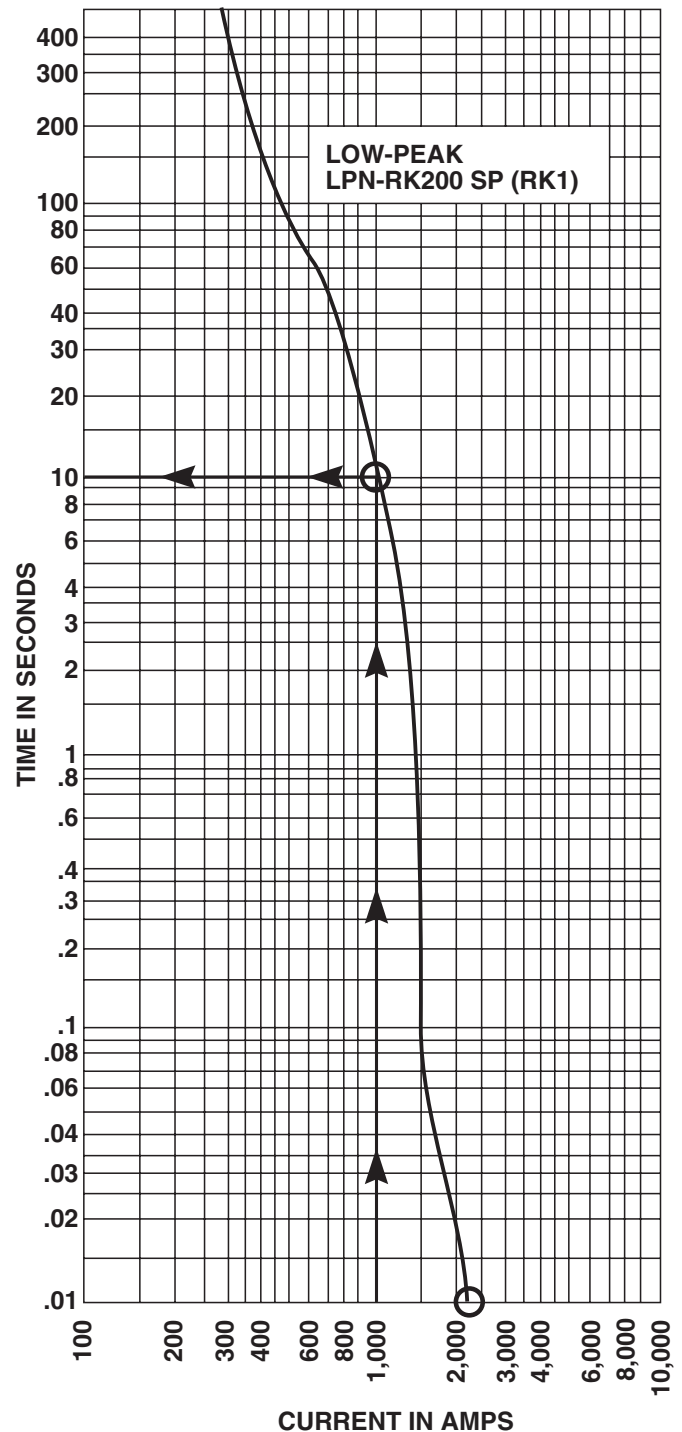
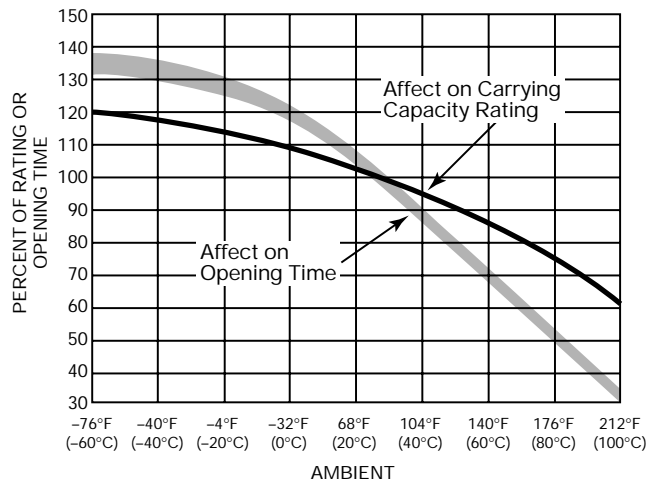
When a low level overcurrent occurs, a long interval of time will be required for a fuse to open (melt) and clear the fault. On the other hand, if the overcurrent is large, the fuse will open very quickly. The opening time is a function of the magnitude of the level of overcurrent. Overcurrent levels and the corresponding intervals of opening times are logarithmically plotted in graph form as shown to the right. Levels of overcurrent are scaled on the horizontal axis; time intervals on the vertical axis. The curve is thus called a “time-current” curve.

This particular plot reflects the characteristics of a 200A, 250V, Low-Peak® dual-element fuse. Note that at the 1,000A overload level, the time interval which is required for the fuse to open is 10 seconds. Yet, at approximately the 2,200A overcurrent level, the opening (melt) time of a fuse is only 0.01 seconds. It is apparent that the time intervals become shorter as the overcurrent levels become larger. This relationship is termed an inverse time-to-current characteristic. Time-current curves are published or are available on most commonly used fuses showing “minimum melt,” “average melt” and/or “total clear” characteristics. Although upstream and downstream fuses are easily coordinated by adhering to simple amp ratios, these time-current curves permit close or critical analysis of coordination.

Better Motor Protection in Elevated Ambients

The derating of dual-element fuses based on increased ambient temperatures closely parallels the derating curve of motors in elevated ambient. This unique feature allows for optimum protection of motors, even in high temperatures.

Affect of ambient temperature on operating characteristics of Fusetron and Low-Peak dual-element fuses.



Fuse Technology

Better Protection Against Motor Single Phasing

When secondary single-phasing occurs, the current in the remaining phases increases to approximately 200% rated full load current. (Theoretically 173%, but change in efficiency and power factor make it about 200%.) When primary single-phasing occurs, unbalanced voltages occur on the motor circuit causing currents to rise to 115%, and 230% of normal running currents in delta-wye systems.

Dual-element fuses sized for motor running overload protection will help to protect motors against the possible damages of single-phasing.

Classes of Fuses

Safety is the industry mandate. However, proper selection, overall functional performance and reliability of a product are factors which are not within the basic scope of listing agency activities. In order to develop its safety test procedures, listing agencies develop basic performance and physical specifications or standards for a product. In the case of fuses, these standards have culminated in the establishment of distinct classes of low-voltage (600V or less) fuses; Classes RK1, RK5, G, L, T, J, H and CC being the more important.

The fact that a particular type of fuse has, for instance, a classification of RK1, does not signify that it has the identical function or performance characteristics as other RK1 fuses. In fact, the Limitron® non-time-delay fuse and the Low-Peak dual-element, time-delay fuse are both classified as RK1. Substantial differences in these two RK1 fuses usually requires considerable difference in sizing. Dimensional specifications of each class of fuse does serve as a uniform standard.

Class R Fuses

Class R ("R" for rejection) fuses are high performance, 1/2 to 600A units, 250V and 600V, having a high degree of current limitation and a short-circuit interrupting rating of up to 300kA (RMS Sym.). Cooper Bussmann® Class R fuses include Class RK1 Low-Peak® and Limitron® fuses, and RK5 Fusetron fuses. They have replaced the K1 Low-Peak and Limitron fuses and K5 Fusetron fuses. These fuses are identical, with the exception of a modification in the mounting configuration called a "rejection feature." This feature permits Class R fuses to be mounted in rejection type fuseclips. "R" type fuseclips prevent older type Class H, ONE-TIME and RENEWABLE fuses from being installed. The use of Class R fuse holders is thus an important safeguard. The application of Class R fuses in such equipment as disconnect switches permits the equipment to have a high interrupting rating. NEC® Articles 110-9 and 230-65 require that protective devices have adequate capacity to interrupt short-circuit currents. Article 240-60(b) requires fuse holders for current-limiting fuses to reject non-current-limiting type fuses.



In the above illustration, a grooved ring in one ferrule provides the rejection feature of the Class R fuse in contrast to the lower interrupting rating, non-rejection type.

Branch-Circuit Listed Fuses

Branch-circuit listed fuses are designed to prevent the installation of fuses that cannot provide a comparable level of protection to equipment.

The characteristics of Branch-circuit fuses are:

1. They must have a minimum interrupting rating of 10kA
2. They must have a minimum voltage rating of 125V.
3. They must be size rejecting such that a fuse of a lower voltage rating cannot be installed in the circuit.
4. They must be size rejecting such that a fuse with a current rating higher than the fuse holder rating cannot be installed.

Fuse Technology

Supplementary Overcurrent Protective Devices for use in Motor Control Circuits

Branch Circuit vs. Supplemental Overcurrent Protective Devices

Branch circuit overcurrent protective devices (OCPD) can be used everywhere OCPD are used, from protection of motors and motor circuits and group motor circuits, to protection of distribution and utilization equipment. Supplemental OCPD can only be used where proper protection is already being provided by a branch circuit device, by exception [i.e., 430.72(A)], or if protection is not required. Supplemental OCPD can often be used to protect motor control circuits but they cannot be used to protect motors or motor circuits. A very common misapplication is the use of a supplementary overcurrent protective device such as a UL 1077 mechanical overcurrent device for motor branch circuit short-circuit and ground fault protection. Supplemental OCPDs are incomplete in testing compared to devices that are evaluated for branch circuit protection. **THIS IS A SERIOUS MISAPPLICATION AND SAFETY CONCERN!!** Caution should be taken to assure that the proper overcurrent protective device is being used for the application at hand. Below is a description of popular supplementary overcurrent protective devices.

Most supplemental overcurrent protective devices have very low interrupting ratings. Just as any other overcurrent protective device, supplemental OCPDs must have an interrupting rating equal to or greater than the available short-circuit current.



Supplemental fuses as listed or recognized to the UL/CSA/ANCE Trinational 248-14 Standard

These are fuses that can have many voltages and interrupting ratings within the same case size. Examples of supplemental fuses are $1\frac{3}{32}$ " X $1\frac{1}{2}$ ", 5 x 20mm, and $\frac{1}{4}$ " x $1\frac{1}{4}$ " fuses. Interrupting ratings range from 35 to 100,000 amps.

Reliability and Maintenance of Overcurrent Protective Devices

Modern fuses have several significant advantages over mechanical overcurrent protective devices - one of those advantages is reliability. Whether the first day of the electrical system or years later, it is important that overcurrent protective devices perform under overload and fault conditions as intended.

Modern current-limiting fuses operate by very simple, reliable principles. Fuses do not have to be maintained. By their inherent design, fuses do not have elements or mechanisms to calibrate, adjust or lubricate. If and when fuses are called upon to open on an overcurrent, installing the same type and ampere rated fuses provides the circuit with new factory-calibrated protection. The original design integrity can be maintained throughout the life of the electrical system. One last point on fuse systems; the terminations, clips and disconnects should be maintained as necessary.

In contrast, circuit breakers are mechanical devices, even those with electronic sensing, and circuit breakers require periodic maintenance, testing, and if necessary reconditioning or replacement. This is required per the circuit breaker manufacturers' instructions, NFPA 70B Recommended Practice for Electrical Equipment Maintenance, and NEMA AB4. If circuit breakers are not properly maintained, the interrupting rating, circuit component protection, coordination, and electrical safety may be compromised. See www.cooperbussmann.com for more information on Reliability and Maintenance.

Motor Circuit Branch Circuit Protection

Motor Circuits – Choice of Overcurrent Protection

Motor circuits have unique characteristics and several functions, such as short-circuit protection, overload protection and automatic/ remote start/stop, that may be required. Sometimes the comment is made that users prefer circuit breakers because they can be reset. Let's examine the choice of either circuit breakers or current-limiting fuses for motor branch circuit protection.

In the case to be examined, fuses and circuit breakers (includes magnetic only circuit breakers which are called MCPs or motor circuit protectors) are sized with the intent to provide only short-circuit and ground fault protection for the motor branch circuit protection per 430.52. Other means, such as overload relays, provide the motor overload protection. Typical thermal magnetic circuit breakers can only be sized for motor branch circuit protection (typically 200% - 250% of motor current) because if they are sized closer, the motor starting current trips the circuit breaker's instantaneous mechanism. Magnetic only circuit breakers (MCPs) are intentionally not provided with overload capability; they only operate on short-circuit currents. There are some fuses such as the FRS-R and LPS-RK fuses that can be sized close enough for motor running overload protection or backup motor running protection. But for the discussion in this section, assume current-limiting fuses are sized only for motor short-circuit and ground fault protection.

It is important to note that in this protection level being discussed, a circuit breaker or fuses should only open if there is a fault on the motor circuit. A separate overload protective device, such as an overload relays, provides motor overload protection per 430.32. Here are some important considerations:

1. OSHA regulation 1910.334(b)(2) Use of Equipment states:

Reclosing circuits after protective device operation. After a circuit is deenergized by a circuit protective device, the circuit may not be manually reenergized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or reenergizing circuits through replaced fuses is prohibited. NOTE: When it can be determined from the design of the circuit and the over-current devices involved that the automatic operation of a device was caused by an overload rather than a fault condition, no examination of the circuit or connected equipment is needed before the circuit is reenergized.

So the speed of reclosing a circuit breaker after a fault is not an advantage. The law requires that if the condition is a fault (that is the only reason the circuit breaker or fuses should open on a motor circuit), then the fault must be corrected prior to replacing fuses or resetting the circuit breaker.

2. The typical level of short-circuit protection for the motor starter provided by circuit breakers and MCPs is referred to as Type 1. This is because most circuit breakers are not current-limiting. So, for a loadside fault, the starter may sustain significant damage such as severe welding of contacts and rupturing of the heater elements. Or the heater/overload relay system may lose calibration. This is an acceptable level of performance per UL 508, which is the product standard for motor starters. Current-limiting fuses can be selected that can provide Type 2 "No Damage" short-circuit protection for motor starters.

Consequently, with circuit breaker protection, after a fault condition,

significant downtime and cost may be incurred in repairing or replacing the starter. With properly selected fuses for Type 2 protection, after the fault is repaired, only new fuses need to be inserted in the circuit; the starter does not have to be repaired or replaced.

3. *Circuit breakers must be periodically tested to verify they mechanical operate and electrically tested to verify they still are properly calibrated within specification. The circuit breaker manufacturers recommend this. Typically circuit breakers should be mechanically operated at least every year and electrically tested every 1 to 5 years, depending on the service conditions. Modern current-limiting fuses do not have to be maintained or electrically tested to verify they still will operate as intended. The terminations of both circuit breakers and fusible devices need to be periodically checked and maintained to prevent thermal damage. Plus fuse clips should be periodically inspected and if necessary maintained.*
4. *After a circuit breaker interrupts a fault, it may not be suitable for further service. UL 489, the product standard for molded case circuit breakers, only requires a circuit breaker to interrupt two short-circuit currents at its interrupting rating. Circuit breakers that are rated 100 amps or less do not have to operate after only one short-circuit operation under "bus bar" short-circuit conditions. If the fault current is high, circuit breaker manufacturers recommend that a circuit breaker should receive a thorough inspection with replacement, if necessary. How does one know a circuit breaker's service history or what level of fault current that a circuit breaker interrupts? With modern current-limiting fuses, if the fuse interrupts a fault, new factory calibrated fuses are installed in the circuit. The original level of superior short-circuit protection can be there for the life of the motor circuit.*
5. *After a fault, the electrician has to walk back to the storeroom to get new fuses; that is if spare fuses are not stored adjacent to the equipment. This does require some additional down time. However, if fuses opened under fault conditions, there is a fault condition that must be remedied. The electrician probably will be going back to the storeroom anyway for parts to repair the fault. If properly selected current-limiting fuses are used in the original circuit, the starter will not sustain any significant damage or loss of overload calibration.*

With circuit breaker protection on motor circuits, after a fault condition, it may be necessary to repair or replace the starter, so a trip to the storeroom may be necessary. And if the starter is not significantly damaged, it may still need to be tested to insure the let-through energy by the circuit breaker has not caused the loss of starter overload calibration. Also, the circuit breaker needs to be evaluated for suitability before placing it back into service. Who is qualified for that evaluation? How much time will that take?

In summary, resetability is not an important feature for motor branch circuit (short-circuit) protection and resetability of the branch circuit protective device is not a benefit for motor circuits. As a matter of fact, resetability of the motor branch circuit overcurrent protective device may encourage an unsafe practice. The function of motor branch circuit protection is fault protection: short-circuit and ground fault protection. Faults do not occur on a regular basis. But when a fault does occur, it is important to have the very best protection. The best motor branch circuit protection can be judged by (1) reliability - its ability to retain its calibration and speed of operation over its lifetime, (2) current-limiting protection - its ability to provide Type 2 "No Damage" protection to the motor starter, and (3) safety - its ability to meet a facility's safety needs. Modern current-limiting fuses are superior to circuit breakers for motor branch circuit protection.

Glossary

Ampere (Amp)

The measurement of intensity of rate of flow of electrons in an electric circuit. An ampere (amp) is the amount of current that will flow through a resistance of one ohm under a pressure of one volt. Ampere is often abbreviated as "A".

Amp Rating

The current-carrying capacity of a fuse. When a fuse is subjected to a current above its amp rating, it will open the circuit after a predetermined period of time.

Amp Squared Seconds, I²t

The measure of heat energy developed within a circuit during the fuse's clearing. It can be expressed as "melting I²t", "arcing I²t" or the sum of them as "Clearing I²t". "I" stands for effective let-through current (RMS), which is squared, and "t" stands for time of opening, in seconds.

Arcing I²t

Value of the I²t during the arcing time under specified conditions.

Arcing Time

The amount of time from the instant the fuse link has melted until the overcurrent is interrupted, or cleared.

Breaking Capacity

(See Interrupting Rating)

Cartridge Fuse

A fuse consisting of a current responsive element inside a fuse tube with terminals on both ends.

Class CC Fuses

600V, 200kA interrupting rating, branch circuit fuses with overall dimensions of 1 $\frac{3}{8}$ " x 1 $\frac{1}{2}$ ". Their design incorporates a rejection feature that allows them to be inserted into rejection fuse holders and fuse blocks that reject all lower voltage, lower interrupting rating 1 $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " fuses. They are available from 1/10A through 30A.

Class G Fuses

480V, 100kA interrupting rating branch circuit fuses that are size rejecting to eliminate overfusing. The fuse diameter is 1 $\frac{3}{32}$ " while the length varies from 1 $\frac{1}{16}$ " to 2 $\frac{1}{4}$ ". These are available in ratings from 1A through 60A.

Class H Fuses

250V and 600V, 10kA interrupting rating branch circuit fuses that may be renewable or non-renewable. These are available in amp ratings of 1A through 600A.

Class J Fuses

These fuses are rated to interrupt a minimum of 200kA AC. They are labeled as "Current-Limiting", are rated for 600Vac, and are not interchangeable with other classes.

Class K Fuses

These are fuses listed as K-1, K-5, or K-9 fuses. Each subclass has designated I²t and I_p maximums. These are dimensionally the same as Class H fuses, and they can have interrupting ratings of 50k, 100k, or 200kA. These fuses are current-limiting. However, they are not marked "current-limiting" on their label since they do not have a rejection feature.

Class L Fuses

These fuses are rated for 601 through 6000A, and are rated to interrupt a minimum of 200kA AC. They are labeled "Current-Limiting" and are rated for 600Vac. They are intended to be bolted into their mountings and are not normally used in clips. Some Class L fuses have designed in time-delay features for all purpose use.

Class R Fuses

These are high performance fuses rated 1/10-600A in 250V and 600V ratings. All are marked "Current Limiting" on their label and all have a minimum of 200kA interrupting rating. They have identical outline dimensions with the Class H fuses but have a rejection feature which prevents the user from mounting a fuse of lesser capabilities (lower interrupting capacity) when used with special Class R Clips. Class R fuses will fit into either rejection or non-rejection clips.

Class T Fuses

An industry class of fuses in 300V and 600V ratings from 1A through 1200A. They are physically very small and can be applied where space is at a premium. They are fast acting fuses with an interrupting rating of 200kA RMS.

Classes of Fuses

The industry has developed basic physical specifications and electrical performance requirements for fuses with voltage ratings of 600V or less. These are known as standards. If a type of fuse meets the requirements of a standard, it can fall into that class. Typical classes are K, RK1, RK5, G, L, H, T, CC, and J.

Clearing Time

The total time between the beginning of the overcurrent and the final opening of the circuit at rated voltage by an overcurrent protective device. Clearing time is the total of the melting time and the arcing time.

Current Limitation

A fuse operation relating to short circuits only. When a fuse operates in its current-limiting range, it will clear a short circuit in less than 1/2 cycle. Also, it will limit the instantaneous peak let-through current to a value substantially less than that obtainable in the same circuit if that fuse were replaced with a solid conductor of equal impedance.

Glossary

Dual Element Fuse

Fuse with a special design that utilizes two individual elements in series inside the fuse tube. One element, the spring actuated trigger assembly, operates on overloads up to 5-6 times the fuse current rating. The other element, the short circuit section, operates on short circuits up to their interrupting rating.

Electrical Load

That part of the electrical system which actually uses the energy or does the work required.

Fast-Acting Fuse

A fuse which opens on overload and short circuits very quickly. This type of fuse is not designed to withstand temporary overload currents associated with some electrical loads.

Fuse

An overcurrent protective device with a fusible link that operates and opens the circuit on an overcurrent condition.

High Speed Fuses

Fuses with no intentional time-delay in the overload range and designed to open as quickly as possible in the short-circuit range. These fuses are often used to protect solid-state devices.

Inductive Load

An electrical load which pulls a large amount of current—an inrush current—when first energized. After a few cycles or seconds the current “settles down” to the full-load running current.

Interrupting Capacity

(See Interrupting Rating)

Interrupting Rating — IR (Breaking Capacity)

The rating which defines a fuse’s ability to *safely* interrupt and clear short circuits. This rating is much greater than the ampere rating of a fuse. The NEC® defines Interrupting Rating as “The highest current at rated voltage that an overcurrent protective device is intended to interrupt under standard test conditions.”

Melting I²t

Value of the I²t during the melting time of the fuse link under specified conditions.

Melting Time

The amount of time required to melt the fuse link during a specified overcurrent. (See Arcing Time and Clearing Time.)

“NEC®” Dimensions

These are dimensions once referenced in the National Electrical Code. They are common to Class H and K fuses and provide interchangeability between manufacturers for fuses and fusible equipment of given ampere and voltage ratings.

Ohm

The unit of measure for electric resistance. An ohm is the amount of resistance that will allow one ampere to flow under a pressure of one volt.

Ohm’s Law

The relationship between voltage, current, and resistance, expressed by the equation $E = IR$, where E is the voltage in volts, I is the current in amps, and R is the resistance in ohms.

One Time Fuses

Generic term used to describe a Class H non-renewable cartridge fuse, with a single element.

Overcurrent

A condition which exists on an electrical circuit when the normal load current is exceeded. Overcurrents take on two separate characteristics—overloads and short circuits.

Overload

Can be classified as an overcurrent which exceeds the normal full load current of a circuit. Also characteristic of this type of overcurrent is that it does not leave the normal current carrying path of the circuit—that is, it flows from the source, through the conductors, through the load, back through the conductors, to the source again.

Peak Let-Through Current, I_p

The instantaneous value of peak current let-through by a current-limiting fuse, when it operates in its current-limiting range.

Renewable Fuse (600V & below)

A fuse in which the element, typically a zinc link, may be replaced after the fuse has opened, and then reused. Renewable fuses are made to Class H standards.

Resistive Load

An electrical load which is characteristic of not having any significant inrush current. When a resistive load is energized, the current rises instantly to its steady-state value, without first rising to a higher value.

RMS Current

The RMS (root-mean-square) value of any periodic current is equal to the value of the direct current which, flowing through a resistance, produces the same heating effect in the resistance as the periodic current does.

SCCR

See Short-Circuit Current Rating

Semiconductor Fuses

Fuses used to protect solid-state devices. See “High Speed Fuses.”

Short-Circuit

Can be classified as an overcurrent which exceeds the normal full load current of a circuit by a factor many times (tens, hundreds or thousands greater). Also characteristic of this type of overcurrent is that it leaves the normal current carrying path of the circuit—it takes a “short cut” around the load and back to the source.

Short-Circuit Current Rating (SCCR)

The maximum short-circuit current an electrical component can sustain without the occurrence of excessive damage when protected with an overcurrent protective device.

Short-Circuit Withstand Rating

Same definition as short-circuit rating.

Glossary

Single-Phasing

That condition which occurs when one-phase of a three-phase system opens, either in a low voltage (secondary) or high voltage (primary) distribution system. Primary or secondary single-phasing can be caused by any number of events. This condition results in unbalanced currents in polyphase motors and unless protective measures are taken, causes overheating and failure.

Threshold Current

The symmetrical RMS available current at the threshold of the current-limiting range, where the fuse becomes current-limiting when tested to the industry standard. This value can be read off of a peak let-through chart where the fuse curve intersects the A-B line. A threshold ratio is the relationship of the threshold current to the fuse's continuous current rating.

Time-Delay Fuse

A fuse with a built-in delay that allows temporary and harmless inrush currents to pass without opening, but is so designed to open on sustained overloads and short circuits.

Total Clearing I²t

Total measure of heat energy developed within a circuit during the fuse's clearing of a fault current. Total Clearing I²t is the sum of the melting I²t and arcing I²t.

Voltage Rating

The maximum open circuit voltage in which a fuse can be used, yet safely interrupt an overcurrent. Exceeding the voltage rating of a fuse impairs its ability to clear an overload or short circuit safely.

Withstand Rating

The maximum current that an unprotected electrical component can sustain for a specified period of time without the occurrence of extensive damage.

Out-of-Stock Substitution/Upgrades

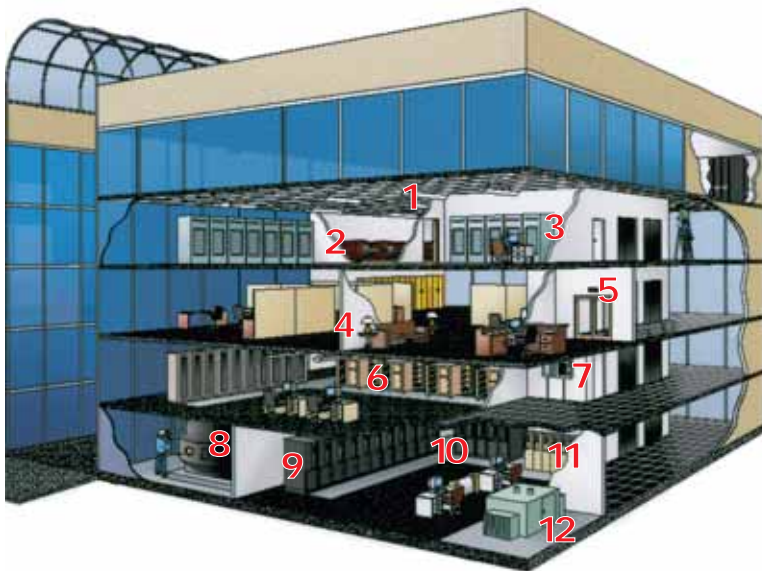
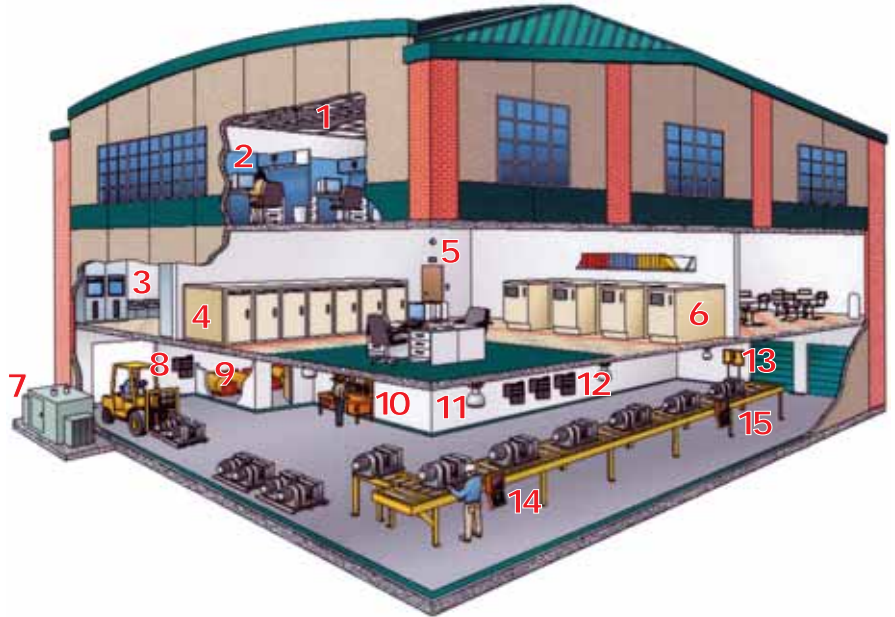
| Cooper Bussmann # | Upgrade # | Description | Data Sheet # |
|-------------------|----------------|--|--------------|
| AGC-(AMP) | ABC-(AMP) | FAST-ACTING, 1/4" X 1 1/4" FUSE | 2001 |
| AGC-V-(AMP) | ABC-V-(AMP) | FAST-ACTING, 1/4" X 1 1/4" FUSE WITH LEADS | 2001 |
| AGU-(AMP) | LP-CC-(AMP) | FAST-ACTING, 1/2" X 1 1/2" FUSE | 2008 |
| BAF-(AMP) | LP-CC-(AMP) | FAST-ACTING, 1/2" X 1 1/2" FUSE | 2011 |
| BAN-(AMP) | LP-CC-(AMP) | FAST-ACTING, 1/2" X 1 1/2" FUSE | 2046 |
| FNM-(AMP) | LP-CC-(AMP) | TIME-DELAY, 1/2" X 1 1/2" FUSE | 2028 |
| FNQ-R-(AMP) | LP-CC-(AMP)* | TIME-DELAY, 500V, 1/2" X 1 1/2" FUSE | 1012 |
| FNR-R-(AMP) | LPN-RK-(AMP)SP | TIME-DELAY, 250V, CLASS RK5 FUSES | 1019/1020 |
| FRS-R-(AMP) | LPS-RK-(AMP)SP | TIME-DELAY, 600V, CLASS RK5 FUSES | 1017/1018 |
| JKS-(AMP) | LPJ-(AMP)SP | FAST-ACTING, 600V, CLASS J FUSE | 1026/1027 |
| KLU-(AMP) | KRP-C-(AMP)SP | TIME-DELAY, CLASS L FUSE | 1013 |
| KTK-(AMP) | KTK-R-(AMP) | FAST-ACTING, 600V, 1/2" X 1 1/4" FUSE | 1011 |
| KTK-R-(AMP) | LP-CC-(AMP) | FAST-ACTING, 600V, CLASS CC FUSE | 1015 |
| KTN-R-(AMP) | LPN-RK-(AMP)SP | FAST-ACTING, 250V, CLASS RK1 FUSE | 1043 |
| KTS-R-(AMP) | LPS-RK-(AMP)SP | FAST-ACTING, 600V, CLASS RK1 FUSE | 1044 |
| KTU-(AMP) | KPR-C-(AMP)SP | FAST-ACTING, 600V, CLASS L FUSE | 1010 |
| MDL-(AMP) | MDA-(AMP) | TIME-DELAY, 1/4" X 1 1/4" FUSE | 2004 |
| MDL-V-(AMP) | MDA-V-(AMP) | TIME-DELAY, 1/4" X 1 1/4" FUSE WITH LEADS | 2004 |
| MTH-(AMP) | ABC-(AMP) | FAST-ACTING, 1/4" X 1 1/4" FUSE | |
| NON-(AMP) | LPN-RK-(AMP)SP | GENERAL PURPOSE, 250V, CLASS H FUSES | 1030 |
| NOS-(AMP) | LPS-RK-(AMP)SP | GENERAL PURPOSE, 600V, CLASS H FUSES | 1030 |
| REN-(AMP) | LPN-RK-(AMP)SP | 250V RENEWABLE FUSELINK | 1028 |
| RES-(AMP) | LPS-RK-(AMP)SP | 600V RENEWABLE FUSELINK | 1028 |
| SL-(AMP) | S-(AMP) | TIME-DELAY, 125V, PLUG FUSE | 1033 |
| TL-(AMP) | T-(AMP) | TIME-DELAY, 125V, PLUG FUSE | 1035 |
| W-(AMP) | TL-(AMP) | TIME-DELAY, 125V, PLUG FUSE | 1035 |

*Not recommended for control transformer circuits.

Industrial Fuse Applications

Industrial Applications

1. Interior Lighting
2. Computer Power
3. Switchboards
4. Motor Control Center
5. Emergency Lighting
6. UPS Backup Power Supplies
7. Transformer/Emergency Generator
8. Forklift Battery Charging Station
9. HVAC Chillers/Blowers
10. Welding Circuits
11. Plant Lighting
12. Distribution Panels
13. Disconnect Switches
14. Programmable Logic Circuits
15. Conveyor System



Commercial Applications

1. Interior Lighting
2. HVAC Blowers
3. Computer Power
4. Branch Circuits
5. Emergency Lighting
6. Load Centers
7. Disconnect/Distribution Panels
8. HVAC/Chillers
9. Switchboards/Motor Control Centers
10. UPS Backup Power Supplies
11. Elevator Control Centers
12. Transformer/Emergency Generator

Catalog Number Index

| Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page |
|----------------|------------------|----------------|----------|----------------|------|----------------|------|----------------|------|
| 1025 | * | 1A2294 | * | 2608 | * | 3794 | * | 5592- | 70 |
| 11 Type | 400 | 1A2650 | * | 2610 | * | 3823 | * | 5623 | * |
| 11239 | 275 | 1A3398- | 68 | 2611 | * | 3828 | 289 | 5672- | 70 |
| 11240 | 275 | 1A3399- | 67 | 2650 | * | 3833 | * | 5674- | 70 |
| 11241 | 275 | 1A3400- | 69 | 2654 | * | 3835 | 290 | 5678 | * |
| 11242 | 275 | 1A3746 | * | 2698 | * | 3839 | * | 5681- | 70 |
| 11675- | 299 | 1A4533- | 68 | 270303 | 91 | 3959 | * | 5682- | 70 |
| 11725- | 299 | 1A4534- | 68 | 2714 | * | 3998 | * | 5950 | * |
| 11960 | * | 1A4544 | * | 2772 | * | 39E | * | 5956- | 70 |
| 13195 | * | 1A4708 | * | 2778 | * | 4070 | * | 5958 | * |
| 13926 | * | 1A4806 | * | 2795 | * | 4121 | * | 5960- | 70 |
| 14002- | 301 | 1A5018- | 67 | 2833 | * | 4164 | 52 | 5961 | * |
| 14004- | 301 | 1A5041 | * | 2834 | * | 4178 | * | 5TPH | 414 |
| 15087 | 398 | 1A5220 | * | 2837 | * | 4180 | * | 60/100BS | 235 |
| 15100 | 394 | 1A5600- | 69 | 2838 | * | 4202 | * | 60/100LSC | 235 |
| 15149 | 329 | 1A5601- | 67 | 2839 | * | 4207 | * | 6125 | * |
| 15188- | 308 | 1A5602- | 67 | 2860 | * | 4261 | * | 6125TD | * |
| 15200 | 394 | 1A5603 | * | 2960 | * | 4287 | * | 6374 | * |
| 15242 | * | 1A5778 | 69 | 2989 | * | 4386 | * | 63A-DUMMY | * |
| 15288- | 308 | 1A5779 | 69 | 2992 | * | 4393 | 289 | 64 ___ | 46 |
| 15506 | * | 1A5780 | 69 | 2A066 | * | 4399 | * | 6415 | * |
| 15515 | * | 1A5940 | * | 2A1279 | 295 | 4402 | * | 6417 | * |
| 15595 | * | 1A6004 | * | 2A8 | * | 4405 | 288 | 6418 | * |
| 15600 | * | 1A6049 | * | 30LSC | 235 | 4406 | 288 | 6419 | * |
| 15602 | * | 1A8654 | * | 323A2433P6 | * | 4407 | * | 6420 | * |
| 15660 | * | 1A9619 | * | 32BS | 235 | 4408 | * | 64200 | * |
| 15800 | 392 | 1B0021 | * | 3356 | * | 4410 | * | 6422 | * |
| 15900 | * | 1B0048 | * | 3373 | * | 4411 | * | 6424 | * |
| 15968 | * | 1B0049 | * | 3375 | * | 4412 | * | 6427 | * |
| 160 ___ | 299, 300 | 1B0089 | 271 | 3411 | * | 4413 | * | 64913 | * |
| 162 ___ | 299, 300 | 1BR021 | * | 3429 | * | 4415 | * | 64926 | * |
| 162 ___ UL | * | 1BR048 | * | 3434 | * | 4421 | 290 | 6525-25-0341 | * |
| 163 ___ | 297-298, 299-300 | 1BS1 ___ | 113, 186 | 3512 | * | 4422 | * | 65372 | * |
| 163 ___ UL | * | 1CIF | * | 3513 | * | 4423 | * | 65398 | * |
| 164 ___ | * | 2004 | * | 3515 | * | 4427 | * | 6725 | * |
| 165 ___ | 299, 300 | 2081 | * | 3519 | * | 4428 | * | 675 | * |
| 1683A75H08 | * | 20BS | 235 | 3520 | * | 4467 | * | 68 ___ | 46 |
| 170E ___ | 173-177, 180-184 | 20LSC | 235 | 3521 | * | 4482 | * | 68100 | * |
| 170F ___ | 178-179 | 21010 | * | 3525 | * | 4483 | * | 7 Type | 400 |
| 170H ___ | 185-186 | 21040 | * | 3528 | * | 4512 | * | 70 Series | 398 |
| 170L | * | 21050 | * | 3531 | * | 4513 | * | 70- | 398 |
| 170M ___ | 117-172 | 21065 | * | 353837 | * | 4514 | * | 71-0192 | * |
| 170N | * | 21100 | * | 3544 | * | 4515 | 290 | 72 | * |
| 170R | * | 21200 | * | 3545 | * | 4520 | 289 | 74 Type | 400 |
| 170T | * | 2127 | * | 3552 | * | 4522 | * | 75 Type | 401 |
| 171A | * | 2177 | * | 3553 | * | 4525 | * | 76 Type | 401 |
| 17415 | * | 2178 | * | 3554 | * | 4528 | * | 80 Type | 401 |
| 175GDMSJD | * | 2201 | * | 3555 | * | 4529 | * | 80910 | * |
| 175GXQNJD | * | 2245 | * | 3556 | * | 4530 | * | 81 Type | 401 |
| 1768A40H | * | 2322 | * | 3562 | * | 4532 | * | 82048 | * |
| 19315 | * | 24 Type | 400 | 3569 | * | 4534 | * | 8414677 | * |
| 19320 | * | 2429 | * | 3571 | * | 4535 | * | 84345 | * |
| 1976 | * | 2430 | * | 3572 | * | 4537 | * | 8456A85H | * |
| 1A0065 | 91 | 2432 | * | 3575 | * | 4561 | * | 847966108 | * |
| 1A0835 | * | 246B9949BG | * | 3576 | * | 4567 | * | 8583A36H | * |
| 1A1119- | 68 | 2487 | * | 3578 | * | 4574 | 288 | 8588A81H | * |
| 1A1120- | 68 | 2494 | * | 3580 | * | 4586 | * | 88914568 | * |
| 1A1310 | * | 2499 | 288 | 3591 | * | 4648 | * | 9078A67G04 | 91 |
| 1A1360 | * | 25499 | * | 3594 | * | 4909 | * | 9435 | * |
| 1A1478 | * | 2601 | * | 3595 | * | 510 | * | 9483 | * |
| 1A1837 | * | 2602 | * | 3604 | * | 51215 | * | 9732 | * |
| 1A1838 | * | 2604 | * | 3723 | 290 | 51235 | * | 9789 | * |
| 1A1853 | * | 2605 | * | 3742 | 290 | 558730 | * | 9834 | * |
| 1A1907- | 68 | 2607 | * | 3743 | 290 | 5591- | 70 | 9835 | * |

* Not listed in this catalog. Call Cooper Bussmann Customer Satisfaction for more information. Call 636-527-3877.

Catalog Number Index

| Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page |
|----------------|--------|------------------|---------------|----------------|---------|----------------|-----------------------|----------------|------------------|
| 9838 | * | B83 | * | C2617 | * | CBTR-ES-1DA | 421 | CIK | 223 |
| 9841 | * | B84 | * | C2791 | * | CBTR-ES-1HP | 421 | CIL | 223 |
| 9843 | * | B93 | * | C2909 | * | CBTR-ES-2HP | 421 | CJ | 222 |
| A3354705 | * | BAF | 47 | C30BS | 235 | CBTR-SC-1HP | 421 | CL1 | 195 |
| A3354710 | 91 | BAN | * | C30F | 235 | CBTR-SC-2HP | 421 | CM_CF | 235 |
| A3354720 | * | BAO | 225 | C30FBS | 235 | CBU | * | CM_F | 225 |
| A3354730 | 91 | BBS | 50 | C4044 | * | CCB | * | CM_FC | 225 |
| A3354745 | 91 | BBU | 89-90 | C4534 | * | CCC | * | CP14002 | * |
| A404302 | * | BBU-EFID | * | C4559 | * | CCE | * | CPB16_ | 296, 299-300 |
| AAO | 225 | BC (fuse blocks) | 274 | C515 | 58 | CCG | * | CPDB- | 296-297, 299-300 |
| ABC | 63 | BC (fuses) | 226 | C517 | 58 | CCP- | 326-329 | CPS-C | * |
| ABCNA | 85 | BCA603 | 273 | C518 | 58 | CCSK-45 | 410 | CT | 191-192 |
| ABC-V | 63 | BCBC | 245-246 | C519 | 58 | CD | 226 | CUG | * |
| ABFNA | 85 | BCBD | 245-246 | C520 | 58 | CD1 | * | _D125 | 227 |
| ABGNA | 85 | BCBS | 245-246 | C5237 | * | CD100 | * | _D16 | 227 |
| ABS | * | BCC | * | C5268- | 113 | CD27 | * | _D27 | 227 |
| ABU | * | BCCM | 274 | C5898 | * | CD33 | * | _D33 | 227 |
| ABWNA | 79, 85 | BCF | * | C60BS | 235 | CDB | * | DCM | 47 |
| AC | 226 | BD (fuses) | 226 | C60F | 235 | CDC | * | DD | 226 |
| ACB | * | BD (switches) | 244 | C60FBS | 235 | CDN (fuses) | 219 | DEO | 225 |
| ACF | * | BDF | * | C6344 | * | CDNF100 | 352-355, 356-358, 371 | DFC | * |
| ACH | * | BDFLNF100 | 369-370 | C7018 | * | CDNF16 | 352-355, 356-358 | DFJ | 97 |
| ACK | * | BDFLNF175 | 369 | C7019 | * | CDNF160 | 359-360, 371 | DIA | * |
| ACL | * | BDFLNF200 | 369-370 | C7020 | * | CDNF200 | 361-362, 371 | DLN-R | 34 |
| ACO | * | BDFLNF30 | 369-370 | C7021- | 403 | CDNF25 | 352-355, 356-358 | DLS-R | 34 |
| AD | 226 | BDFLNF400 | 369 | C7024- | 404 | CDNF30 | 352-355, 356-358, 371 | DRA-1 | 413 |
| ADL | * | BDFLNF60 | 369-370 | CAV | 79, 85 | CDNF32 | 352-355, 356-358 | DRA-2 | 413 |
| ADLSJ | 81 | BDFLNF600 | 369 | CAVH | 79, 85 | CDNF400 | 363-364 | DRLC-A | * |
| ADMNA | 79 | BDNF1200 | 367-368 | CB203107S2105 | * | CDNF45 | 352-355, 356-358 | E-6188 | * |
| ADOSJ | 84 | BDNF1600 | 367-368 | CB3 | * | CDNF60 | 352-355, 356-358, 371 | EBI055- | * |
| AF | * | BDNF2000 | 367-368 | CB5 | * | CDNF63 | 352-355, 356-358 | EC-__ | 195 |
| AFS | * | BDNF3150 | 367-368 | CBB | * | CDS | 219 | ECF | * |
| AFX | * | BDNF600 | 365-366 | CBC | * | CDS6 | * | ECL055- | 76 |
| AGA | 62 | BDNF800 | 365-366 | CBF | * | CDS8 | * | ECL155- | 77 |
| AGA-V | 62 | BFW | * | CBP | * | CDS9 | * | ED | 226 |
| AGC | 63 | BG | 274 | CBPUB-ES-ED1H | 421 | CDSO | 338 | EDA | 40 |
| AGC-V | 63 | BGH | * | CBPUB-ES-ED2H | 421 | CEO | 225 | EDN | 40 |
| AGS | * | BH-_____ | 113, 225, 275 | CBPUB-ES-ED30H | 421 | CFD100 | 334-336, 344-346 | EET | 191-193 |
| AGU | * | BH-xxx | 113, 186 | CBPUB-ES-ED31H | 421 | CFD200 | 337-339, 346 | EF | 226 |
| AGW | 62 | BM | 274 | CBPUB-ES-ED32H | 421 | CFD30 | 331-333, 344-346 | EFC30 | 378-380 |
| AGX | 62 | BMA603 | 273 | CBPUB-ES-ED33H | 421 | CFD60 | 334-336, 344-346 | EFC60 | 378, 380 |
| AGX-V | * | BNQ21-WH | 311 | CBPUB-ES-ED34H | 421 | CFD600 | 346 | EFF | * |
| AGY | * | BP655 | * | CBPUB-ES-ED35H | 421 | CFD800 | 346 | EFH | * |
| AL-D | 258 | BQE | 311 | CBPUB-ES-ED36H | 421 | CFZ | * | EFJ100 | 378-380 |
| ALS | * | BQQ41-WH | 311 | CBPUB-ES-ED3H | 421 | CGL | 220 | EFJ200 | 378-380 |
| ALW | * | BRT | * | CBS | * | CH30J_ | 254 | EFJ30 | 378-380 |
| AMG | * | BRW | * | CBSV-ES-ED1 | 421 | CH30J_I | 254 | EFJ400 | 378-380 |
| AMI | * | C08G | 232 | CBSV-ES-ED3 | 421 | CH60J_ | 254 | EFJ60 | 378-380 |
| AMWNA | 79, 85 | C08M | 233 | CBSV-ES-ED4 | 421 | CH60J_I | 254 | EFJ600 | 378-380 |
| ANL | 52 | C08NL | 258 | CBSV-ES-ED5 | 421 | CH08 | 258 | EFJ800 | 378-380 |
| ANN | 52 | C10G | 232 | CBSV-ES-ED6 | 421 | CH10 | * | EFL800 | 379-380 |
| ASZ350B3 | * | C10M | 233 | CBSV-ES-EN1 | 418 | CH10CL | * | EFS | 226 |
| AT | * | C10NL | * | CBSV-ES-EN2 | 418 | CH10CM | * | EK | * |
| ATC | 55 | C14G | 232 | CBSV-ES-EN3 | 418 | CH14 | 258 | ELN | * |
| ATC_ID | 55 | C14G_S | 234 | CBSV-ES-EN4 | 418 | CH14-HP | 258 | EN6 | * |
| ATC-FHID | 55 | C14M | 233 | CBSV-ES-EN5 | 418 | CH14MS_D | 258 | ENA | * |
| ATF | * | C14M_S | 234 | CBSV-ES-EN6 | 418 | CH22 | 258 | ENF100 | 381-383 |
| ATM | 55 | C14NL | 258 | CBSV-ES-EN7 | 418 | CH810-HP | 258 | ENF1200 | 381-383 |
| ATM_ID | 55 | C19 | * | CBSV-ES-EN8 | 418 | CHCC | 257 | ENF125 | 381-383 |
| ATM-FHID | 55 | C22G | 232 | CBSV-ES-TEHP | 422 | CHM | 257 | ENF16 | 381-383 |
| B221 | 247 | C22G_S | 234 | CBSV-ES-TELP | 422 | CH-PLC | 258 | ENF1600 | 381-383 |
| B222 | 247 | C22M | 233 | CBSV-ES-TEMP | 422 | CHPV | 257 | ENF200 | 381-383 |
| B40 | * | C22M_S | 234 | CBSV-SC-EN8 | 419-420 | CIF | 221 | ENF2000 | 381-383 |
| B48 | * | C22NL | 258 | CBT | * | CIH | 223 | ENF25 | 381-383 |

* Not listed in this catalog. Call Cooper Bussmann Customer Satisfaction for more information. Call 636-527-3877.

Catalog Number Index

| Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page |
|----------------|--------------|----------------|------------------|----------------|---------|----------------|---------|----------------|---------|
| ENF30 | 381-383 | FH2 | * | GG | 226 | HHD | 56 | HTC-45M | 65 |
| ENF3150 | 381-383 | FHL | * | GH | 226 | HHF | 56 | HTC-50M | 65 |
| ENF32 | 381-383 | FHN | * | GKB | * | HHG | 56 | HTC-55M | 281 |
| ENF400 | 381-383 | FL- | * | GKJ | * | HHI | 278 | HTC-60M | 65 |
| ENF45 | 381-383 | FL11H_ | 88 | GLD | 51 | HHJ | 278 | HTC-65M | 65 |
| ENF60 | 381-383 | FL11K_ | 88 | GLH | * | HHL | 56 | HTC-70M | 281 |
| ENF600 | 381-383 | FL11N | * | GLN | * | HHM | 56 | HVA | 87 |
| ENF63 | 381-383 | FL11T_ | 88 | GLP | 235 | HHT | 278 | HVB | 87 |
| ENF800 | 381-383 | FL12K_ | 88 | GLQ | 53 | HHX | 56 | HVJ | 87 |
| ENN | * | FL1A5 | * | GLR | 54 | HIF | * | HVL | 87 |
| EP | * | FL3H | * | GLX | * | HJL | 285 | HVR | 87 |
| ERK-28 | 411 | FL3K_ | 88 | GMA | 61 | HJM | * | HVT | 87 |
| ERS2 | * | FL3T_ | 88 | GMA-V | 61 | HKA | * | HVU | 87 |
| ERS30 | * | FLB | * | GMC | 61 | HKL | 285 | HVV | 87 |
| ESD | 225 | FLD | * | GMC-V | 61 | HKP | 282 | HVX | 87 |
| ET | 191-192 | FLF | * | GMD | 61 | HKQ | * | HWA | * |
| ETF | * | FLM | * | GMD-V | 61 | HKR | 285 | IXL70F | * |
| EVF | * | FLN | * | GMF | 54 | HKT | 285 | J-__ | 415 |
| F01A | * | FLS | * | GMQ | 53 | HKU | 285 | J101/J | * |
| F02A | * | FM | 191-192, 194 | GMT- | 399 | HXX | 285 | J201/J | * |
| F02B | * | FM01A | * | GMT-A | 399 | HLA | * | J301/J | * |
| F03A | * | FM08A | * | GMW | * | HLD | 285 | J60_ | 266-267 |
| F03B | * | FM09A | * | GOB | * | HLQ | 53 | J70032 | 216 |
| F06A | * | FM09B | * | GRF | 54 | HLR | 54 | J70100 | 216 |
| F07A | * | FMM | 191-192, 194 | GSK-260 | 410 | HLS | 399 | JA600 | 268 |
| F09A | * | FMX | * | H07C | 224 | HLT | 399 | JB1 | * |
| F09B | * | FNA | 51 | H25_ | 260-262 | HME | 278 | JB3 | * |
| F10A | * | FNJ | * | H60_ | 263-265 | HMF | 278 | JCA | * |
| F15A | * | FNM | 49 | HAC-R | * | HMG | 278 | JCD- | 78 |
| F15B | * | FNQ | 49 | HAS-R | * | HMH | 278 | JCE- | * |
| F16A | * | FNQ-R | 18 | HBC | * | HMI | 278 | JCG- | 80, 82 |
| F16B | * | FNW | * | HBH-I | 66 | HMJ | 278 | JCH- | 80-81 |
| F19B | * | FP-__ | 414 | HBH-M | 66 | HMK | * | JCI- | 78 |
| F29A | * | FR-1000 | * | HBM | * | HMR | * | JCK- | 80-81 |
| F38 | 402 | FRN-R | 35 | HBO | * | HN-1 | * | JCK-A- | 80-81 |
| F380 | * | FRN-R-_ID | 35 | HBP- | * | HN-3 | * | JCK-B- | 80-81 |
| F60C | * | FRS-R | 36 | HBS- | * | HN-5 | * | JCL- | 80-81 |
| F61C | * | FRS-R-_ID | 36 | HBV-I | 66 | HOB | * | JCL-A- | 80, 82 |
| F62C | * | FSD | * | HBV-M | 66 | HOF | * | JCL-B- | 80, 82 |
| F63C | * | FT-__ | 414 | HBW-I | 66 | HPC-D | 287 | JCM | * |
| F64C | * | FTI | * | HBW-M | 66 | HPD | 286 | JCN | * |
| F65C | * | FTM | * | HC- | * | HPF | 286 | JCP | * |
| F7036- | * | FWA | 98-101, 197-198 | HC1 | * | HPG | 286 | JCQ- | 78 |
| FA02 | * | FWC | 205-206 | HC2 | * | HPL | * | JCR-A | 80, 82 |
| FA2A | * | FWH | 104-105, 201-204 | HC3 | * | HPM | 287 | JCR-B- | 80, 82 |
| FA4H | * | FWJ | 111-112, 213-214 | HC7 | * | HPS | 286 | JCT- | 78 |
| FBI | 66 | FWK | 211-212 | HC8 | * | HPS2 | 287 | JCU- | 74-75 |
| FBM | 66 | FWL | 215 | HCM | * | HRE | 278 | JCW- | 78 |
| FBP | * | FWP | 207-210 | HEB | 279-280 | HRF | 278 | JCX- | 74 |
| FC | * | FWS | 215 | HEC | 279 | HRG | 278 | JCY- | 74 |
| FCB | * | FWX | 102-103, 199-200 | HEF | * | HRH | 278 | JCZ- | 74-75 |
| FCC | * | G30060 | 274 | HEG | 279 | HRI | 278 | JDN | * |
| FCU | * | GBA | 51 | HEH | 279 | HRJ | 278 | JDZ- | 74-75 |
| FD200 | 344 | GBB | 63 | HEJ | 279 | HRK | 277 | JF1 | * |
| FD400 | 340-344 | GBB-V | 63 | HET | 279 | HSK | * | JJN- | 38 |
| FD600 | 340-343, 346 | GBC | * | HEX | 279 | HTB- | 283-284 | JJS- | 39 |
| FD800 | 340-343, 346 | GDA | 59 | HEY | 279 | HTC-10M | * | JKS | 24 |
| FDM | * | GDA-V | 59 | HFA | 278 | HTC-140M | 67 | JN | * |
| FE | 191-192, 194 | GDB | 59 | HFB | 277 | HTC-15M | 67 | JP600 | 268 |
| FE2475- | * | GDB-V | 59 | HGA | * | HTC-200M | 67 | JPA-3 | * |
| FEE | 191-192, 194 | GDC | 60 | HGB | * | HTC-210M | 67 | JSK-36 | 410 |
| FEH | * | GDC-V | 60 | HGC | * | HTC-30M | * | JT | 255-256 |
| FF | 226 | GF | 226 | HHB | 277 | HTC-35M | 281 | JTN | 255-256 |
| FG | 226 | GFA | * | HHC | 56 | HTC-40M | 281 | JU | * |

* Not listed in this catalog. Call Cooper Bussmann Customer Satisfaction for more information. Call 636-527-3877.

Catalog Number Index

| Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page |
|----------------|------|----------------|----------|----------------|---------|----------------|---------|--------------------------|---------|
| JV-L | 258 | KGS-A | * | LPF1- | 291 | NDNAS | 305 | NTN-R- | 415 |
| K07C | 224 | KGT | * | LPJ_SP | 23 | NDND1 | * | NTQ23-WH | 311 |
| KAA | * | KGX | * | LPJ_SPI | 23 | NDNF1-WH | 291 | NTS-R- | 415 |
| KAB | * | KGY | * | LPN-RK_SP | 29-31 | NDNFD1-WH | 291 | NUE | * |
| KAC | 106 | KIG | 46 | LPN-RK_SPI | 29-31 | NDNLFD1-WH | 291 | NXA | * |
| KAD | * | KJA | * | LPRK-28 | 411 | NDNV4- | 304 | NXC | * |
| KAF | * | KJB | * | LPS-RK_SP | 29-31 | NFA | * | __NZ01 | 227 |
| KAJ | * | KLC | * | LPS-RK_SPI | 29-31 | NFT2- | 306 | __NZ02 | 227 |
| KAL | * | KLM | 47 | LPT | * | NFT3- | 306 | OEFMA | 86 |
| KAW | * | KLP | * | LS1D3 | * | NFTA | 305 | OEGMA | 86 |
| KAX | * | KLU | 28 | M09C | 224 | _NHG ___ B | 228-231 | OHFMA | 86 |
| KAZ | 52 | KMH-C | * | M14C | 224 | NI | 235 | OHGMA | 86 |
| KBC | 107 | KOS15 | * | MAI | 195 | NITD | 225 | OIA | * |
| KBD | * | KPF | 46 | MAS | * | NNB | 415 | OJ | * |
| KBJ | * | KQO | 46 | MAX- | 55 | NNB-R | 415 | OLGMA | 86 |
| KBO | * | KQT | 46 | MAX-_ID | 55 | NNC | 415 | OPM-1038 | 250-251 |
| KBR | * | KQV | 46 | MB- | 42 | NO.1 | 413 | OPMNGSA | 252-253 |
| KBT | * | KQW-M | * | MBO | * | NO.100 | * | OPMNGSAAUX | 252-253 |
| KBY | * | KRP-C_SP | 26-27 | MC_ | 195 | NO.140 | 412 | OPM-NG-SC3 | 252-253 |
| KCA | 46 | KRP-CL | 27 | MCRW | * | NO.15 | * | OPM-NG-SM3 | 252-253 |
| KCB | 46 | KS-19392-L36 | * | MDA | 64 | NO.2 | 413 | OSD | 225 |
| KCC | 46 | KT3- | 310 | MDA-V | 64 | NO.201 | * | OSP | * |
| KCD | 46 | KT4- | 310 | MDF | * | NO.204 | * | P- | 41 |
| KCE | 46 | KTE | * | MDL | 64 | NO.205 | * | P09C | 224 |
| KCF | 46 | KTJ | * | MDL-V | 64 | NO.213 | 415 | P11C | 224 |
| KCH | 46 | KTK | 47 | MDM | * | NO.213-R | 415 | PCB | * |
| KCJ | 46 | KTK-R | 19 | MDQ | 64 | NO.216 | 415 | PCC | * |
| KCM | 46 | KTN-R | 32 | MDQ-V | 64 | NO.216-R | 415 | PCD | * |
| KCM-B | 46 | KTN-S | * | MDX | * | NO.220 | 412 | PCF | * |
| KCR | 46 | KTQ | 50 | MFN | * | NO.226 | 415 | PCG | * |
| KCS | 46 | KTS-R | * | MIC | 51 | NO.226-R | 415 | PCH | * |
| KCV | 46 | KTS-S | * | MIJ | * | NO.242-R | 415 | PCI- | * |
| KCY | 46 | KTU | 28 | MIN | 51 | NO.2621 | 415 | PCT | 399 |
| KCZ | 46 | KU | 321 | MIS | 52 | NO.2621-R | 415 | PDB_ | 296 |
| KDA | 46 | KUH | 321 | MKA | * | NO.263 | 415 | PDBFS_ | 295 |
| KDB | 46 | KURL | 321 | MKB | * | NO.263-R | 415 | PF1 | 274 |
| KDC | 46 | KUSC | 321 | MKG | * | NO.2641 | 415 | PF1- | 291 |
| KDD | 46 | KUX | 321 | MMB | * | NO.2641-R | 415 | PLK3-WH | 310 |
| KDE | 46 | KUXRL | 321 | MMT | 191-193 | NO.2642 | 415 | PLU11-WH | 309 |
| KDF | 46 | KUXSC | 321 | MPR | * | NO.2661-R | 415 | PLU111-WH | 309 |
| KDH | 46 | KWN-R | * | MS100 | * | NO.2662-R | 415 | PLU1-WH | 309 |
| KDJ | 46 | KWS-R | 33 | MSK-45 | 410 | NO.2664-R | 415 | PLU3- | 309 |
| KDM | 46 | L09C | 224 | MSL | * | NO.270 | 412 | PMP | 240-241 |
| KDP | 46 | L14C | 224 | MSW710 | * | NO.2880 | * | PON | 219 |
| KDR | 46 | LA | * | MT | 191-193 | NO.36 | 411 | PS | 240-241 |
| KDT | 46 | LA8D324 | * | MT12 | * | NO.4 | 413 | PS1RPLSW | * |
| KDU | 46 | LAA | * | MTC6 | * | NO.5 | 413 | PSU11-WH | 309 |
| KDY | 46 | LAC | * | MTH | * | NO.6 | 413 | PSU111-WH | 309 |
| KEF | * | LAG | * | MTMU | * | NO.616 | 415 | PSU1-WH | 309 |
| KEM | * | LAN | * | MV055- | 73 | NO.616-R | 415 | PV- | 48 |
| KER | * | LAR | * | MV155- | 73 | NO.626 | 415 | PVS-R | 37 |
| KEW | 46 | LCT | 188-189 | N512-BK | 306 | NO.626-R | 415 | QC202/J | * |
| KEX | 46 | LCU | * | NBB | * | NO.642-R | 415 | QC203/J | * |
| KFH-A | 46 | LD1 | * | NBC | * | NO.663 | 415 | Quik-Spec AC Safety | |
| KFM | 46 | LD2 | * | NBE | * | NO.663-R | 415 | Switches Switches | 245-246 |
| KFT | 46 | LEF | * | NC3- | 307 | NO.7 | 413 | Quik-Spec Coordination | |
| KFZ | 46 | LET | 188-189 | ND-1260 | * | NO.8 | 413 | Panelboards | 238-239 |
| KGC | * | LKB | * | NDN111- | 305 | NON | 25 | Quik-Spec DC Safety | |
| KGJ | * | LKC | * | NDN1A-WH | 305 | NOS | 25 | Switches | 242 |
| KGJ-A | * | LKN | * | NDN1-WH | 305 | NPL | * | Quik-Spec Solar Combiner | |
| KGJ-E | * | LKS | * | NDN3- | 304 | NRA | 305 | Boxes | 243-244 |
| KGL | * | LMMT | 188, 190 | NDN63- | 304 | NSD | 225 | R11C | 224 |
| KGO-E | * | LMT | 188, 190 | NDNA100 | 305 | NSE3-WH | 307 | R25_ | 260-262 |
| KGS | * | LP-CC | 17 | NDNA200 | 305 | NSS3- | 307 | R60_ | 263-265 |

* Not listed in this catalog. Call Cooper Bussmann Customer Satisfaction for more information. Call 636-527-3877.

Catalog Number Index

| Catalog Number | Page | Catalog Number | Page | Catalog Number | Page | Catalog Number | Page |
|----------------|------|----------------|---------|----------------|---------|----------------|------|
| REG | * | SOX | 276 | TL- | 40 | WKU | * |
| REN | * | SOY | 276 | TP158HC | 393 | WKV | * |
| RES | * | SPJ | * | TP15900 | * | WLF | * |
| RFI | * | SPP | * | TP15900-4 | 391 | WMB | * |
| RFL | * | SRA-R | * | TP15914 | 390 | WMM | * |
| RK1SK-39 | 410 | SRD | * | TPA | 391 | WMQ | * |
| RK5SK-39 | 410 | SRT-A | * | TPA-B | 391 | WPQ | * |
| RLA | * | SRU | 276 | TPB | * | WQL | * |
| RLC | * | SRU-BC | * | TPC | 388 | WQN | * |
| RYA | * | SRW | 276 | TPCDS | 388 | WQP | * |
| RYC | * | SRX | 276 | TPH | * | WSE | * |
| S- | 41 | SRY | 276 | TPHCS- | 395 | WSH | * |
| S3Holder | * | SSD | 225 | TPJ | * | WSL | * |
| S500 | 59 | SSN | 276 | TPL- | 396 | WSM | * |
| S500-V | 59 | SSU | 276 | TPM | 389 | WSP | * |
| S501 | 59 | SSW | 276 | TPMDS | 389 | WSQ | * |
| S501-V | 59 | SSX | 276 | TPN | 397 | WST | * |
| S504 | * | SSY | 276 | TPS | 392 | WSU | * |
| S505 | 59 | STD | 225 | TPSFH- | 414 | WTJ | * |
| S505-V | 59 | STI | * | TPW | * | WTK | * |
| S506 | 60 | STM | * | TPWDS | * | WTT | * |
| S506-V | 60 | STY | 276 | TRF | * | WTZ | * |
| S-8001 | 288 | SYC | * | TS- | 322-324 | WUC | * |
| S-8002 | 288 | SZQ | * | TVS | 406 | WUD | * |
| S-8101 | 288 | T- | 41 | TVSS- | 407 | WUE | * |
| S-8102 | 288 | T1320-2R | * | TXLEJ | 84 | WUG | * |
| S-8201 | 288 | T30__ | 269-270 | TXMEJ | 84 | WUH | * |
| S-8202 | 288 | T60__ | 271-272 | TXQEJ | 84 | WUI | * |
| S-8203 | 288 | TB100- | 312-313 | UHA | * | WUJ | * |
| S-8301 | 288 | TB200- | 314-315 | UHC | * | WUR | * |
| SA- | 42 | TB200HB- | 314-315 | UHH | * | WUU | * |
| SAMI- | 259 | TB300- | 316-317 | UHS | * | WUV | * |
| SB | 186 | TB345- | 316-317 | UHT | * | WUW | * |
| SC | 22 | TB400- | 320 | UHW | * | WUY | * |
| SCV15 | * | TC | 41 | ULR | * | WVA | * |
| SCV20 | * | TCF | 20-21 | VFNHA | 83 | WVQ | * |
| SCY | 276 | TCF_RN | 20-21 | VKNHA | 83 | WVR | * |
| SDA | * | TCFH_N | 20-21 | W- | 40 | WWD | * |
| SDLSJ | * | TCP | * | WDFHO | 83 | WWE | * |
| SDMSJ | * | TDC | * | WDLSJ | 83-84 | WWF | * |
| SDQ | * | TDC10 | * | WDOH6 | 83 | WWG | * |
| SDQSJ | * | TDC11 | * | WDOSJ | 84 | WWI | * |
| SEW-5B | * | TDC180 | * | WER | 400 | WWK | * |
| SF25H | * | TDC600 | * | WFFHO | 83 | WWL | * |
| SFB1030 | * | TDLEJ | 84 | WFLSJ | 83 | WWU | * |
| SFC-FUSE-CAB | 414 | TDLSJ | 84 | WFMSJ | 83 | WWV | * |
| SFC-SHELF | 414 | IDMEJ | 84 | WFNHO | 83 | WWX | * |
| SFD27 | * | TDP | * | WFOH6 | 83 | WYG | * |
| SFE | * | IDQSJ | 84 | WFOSJ | 84 | WYM | * |
| SFLSJ | * | TFC | * | WGA | * | WZC | * |
| SFMSJ | * | TFF | * | WHA | * | WZJ | * |
| SFQSJ | * | TFL | * | WHN | * | WZK | * |
| SFR | * | TFLSJ | 84 | WIE | * | WZL | * |
| SFR1 | * | TFMEJ | 84 | WJON6 | 83 | WZX | * |
| SKA | 276 | TFQSJ | 84 | WKB | * | XL25X | * |
| SKLSJ | * | TGC | * | WKFHO | 83 | XL50F | * |
| SL- | 40 | TGH | * | WKH | * | XL70F | * |
| SM363 | * | THL | * | WKJ | * | | |
| SNF-7K | * | THLEJ | 84 | WKK | * | | |
| SNF-7M | * | THMEJ | 84 | WKL | * | | |
| SNL-7K | * | TIQ | * | WKLSJ | 84 | | |
| SOA72 | 305 | TJD | * | WKMSJ | 83-84 | | |
| SOU | 276 | TKLEJ | 84 | WKNHO | 83 | | |
| SOW | 276 | TKMEJ | 84 | WKS | * | | |

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Cooper Bussmann® Fuse Cross Reference & Low-Peak® Upgrade


The left column represents Cooper Bussmann and competitors' part numbers. The right column represents the Cooper Bussmann upgrades.

The Cooper Bussmann® fuse upgrade offers superior performance while reducing the number of SKUs that need to be in stock. Low-Peak® fuses feature a high degree of current limitation, which will provide the best component protection and may reduce the arc-flash hazard. Listings are alpha-numerical by fuse class and fuse catalog symbol.

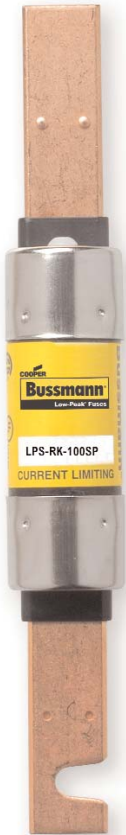
This list is only a consolidated cross reference to some of our most common products. For a much more extensive database please consult the *Product Profiler* competitor cross-reference. Just visit www.cooperbussmann.com and click on the magnifying glass icon in the upper right corner.

| Class CC and Midget | | |
|---|--|-------|
| Existing Fuse | Low-Peak® Upgrade | |
| A6Y (type 2B) |  LP-CC | |
| ABU | | |
| AGU | | |
| ATDR | | |
| ATM | | |
| ATMR | | |
| ATQ | | |
| BAF | | |
| BAN | | |
| BLF | | |
| BLN | | |
| CCMR | | |
| CM | | |
| CMF | | |
| CNM | | |
| CNQ | | |
| CTK | | |
| CTK-R | | |
| FLM | | |
| FLQ | | |
| FNM | | |
| FNQ | | |
| GGU | | |
| HCLR | | |
| KLK | | |
| KLK-R | | |
| KTK | | |
| KTK-R | | |
| MCL | | |
| MEN | | |
| MEQ | | |
| MOF | | |
| MOL | | |
| OTM | | |
| TRM | | |
| 6JX | | LP-CC |
| *FNQ-R suggested on primary of control transformers. | | |
| ATQR | FNQ-R | |
| FNQ-R | | |
| KLDR | | |

| Class J | |
|---------------|---|
| Existing Fuse | Low-Peak® Upgrade |
| A4J |  LPJ_SP |
| AJT | |
| CJ | |
| CJS | |
| GF8B | |
| HRCXXJ | |
| J | |
| JA | |
| JCL | |
| JDL | |
| JFL | |
| JHC | |
| JKS | |
| JLS | |
| JTD | |

| Class L | |
|----------------|---|
| Existing Fuse | Low-Peak® Upgrade |
| A4BQ |  KRP-C_SP |
| A4BT | |
| A4BY | |
| A4BY (type 55) | |
| CLASS L | |
| CLF | |
| CLL | |
| CLU | |
| HRC-L | |
| KLLU | |
| KLPC | |
| KLU | |
| KTU | |
| L | |
| LCL | |
| LCU | |

| 250 Volt Class R | |
|------------------|---|
| Existing Fuse | Low-Peak® Upgrade |
| A2D |  LPN-RK_SP |
| A2D-R | |
| A2K | |
| A2K-R | |
| A2Y (type 1) | |
| AT-DE | |
| CHG | |
| CRN-R (type 3) | |
| CTN-R | |
| DEN | |
| DLN | |
| DLN-R | |
| ECN | |
| ECN-R | |
| ERN | |
| FLN | |
| FLN-R | |
| FRN | |
| FRN-R | |
| FTN-R | |
| GDN | |
| HAC-R | |
| HB | |
| KLN-R | |
| KON | |
| KTN-R | |
| LENRK | |
| LKN | |
| LLN-RK | |
| LON-RK | |
| NCLR | |
| NLN | |
| NON | |
| NRN | |
| OTN | |
| REN | |
| RFN | |
| RHN | |
| RLN | |
| TR | |
| 655 | |
| 660 | |
| 10KOTN | |
| 50KOTN | |

| 600 Volt Class R | |
|------------------|---|
| Existing Fuse | Low-Peak® Upgrade |
| A6D |  LPS-RK_SP |
| A6K-R | |
| A6X (type 1) | |
| ATS-DE | |
| CHR | |
| CTS-R | |
| DES | |
| DES-R | |
| DLS | |
| DLS-R | |
| ECS-R | |
| ERS | |
| FLS | |
| FLS-R | |
| FRS | |
| FRS-R | |
| FTS-R | |
| GDS | |
| HA | |
| KLS-R | |
| KOS | |
| KTS-R | |
| LES | |
| LES-R | |
| LES-RK | |
| LKS | |
| LLS-RK | |
| LOS-RK | |
| NLS | |
| NOS | |
| NRS | |
| OTS | |
| RES | |
| RFS | |
| RHS | |
| RLS | |
| SCLR | |
| TRS | |
| TRS-R | |
| 656 | |
| 10KOTS | |
| 50KOTS | |

The comparative catalog numbers shown were derived from the latest available published information from various manufacturers. Because competitors' products may differ from Cooper Bussmann products, it is recommended that each application be checked for required electrical and mechanical characteristics before substitutions are made. Cooper Bussmann is not responsible for misapplications of our products. Overcurrent protection is application dependent. Consult the latest catalogs and application literature, or contact our Application Engineering Department at (636) 527-1270.

Customer Assistance

Customer Satisfaction Team

Available to answer questions regarding Cooper Bussmann products & services Monday-Friday, 8:00 a.m. – 6:00 p.m. Central Time. Contact:

- Phone: 636-527-3877
- Toll-free fax: 800-544-2570
- E-mail: busscustsat@cooperindustries.com

Emergency and After-Hours Orders

Next flight out or will call shipment for time-critical needs. Customers pay only standard product price, rush freight charges, & modest emergency service fee. Place these orders through the Customer Satisfaction Team during regular business hours. For after-hours, contact:

- After hours 314-995-1342

C³ – the Enhanced, Online Cooper Customer Center

Provides real time product availability, net pricing, order status & shipment tracking across six Cooper divisions: B-Line, Bussmann, Crouse-Hinds, Lighting, Power Systems & Wiring Devices. Call 877-995-5955 for log-in assistance. Available at:

- www.cooperc3.com

Application Engineering

Technical assistance is available to all customers. Staffed by degreed electrical engineers, this application support is available Monday-Friday, 8:00 a.m. – 5:00 p.m. Central Time. Contact:

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Online Resources

Visit www.cooperbussmann.com for the following resources:

- Product search & cross-reference
- Product & technical materials
- Solutions centers for information on topical issues including arc-flash, selective coordination & short-circuit current rating
- Technical tools, like our arc-flash calculator
- Where to purchase Cooper Bussmann product

Services

Cooper Bussmann Services team provides engineering expertise in electrical system reviews, electrical safety training & component testing for Agency compliance. Contact:

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