



General information

Eaton offers a full line of Bussmann series 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 (I^2t)

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 Bussmann series ferrule fuses (except 690 V) have been tested at their rated voltage. The 690 V 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 our application engineers to discuss your requirement.

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 and blocks

Typical applications

- DC common bus
- DC drives
- Power converters/rectifiers
- Reduced voltage starters

Ferrule fuse contents

Fuses

| Catalog symbol | Size (mm) | Volts | Amp range | Page |
|----------------|-----------|------------------------|-----------|------|
| FWA-_A10F | 10x38 | 150 AC/DC | 5-30 | 32 |
| FWA-_A21F | 21x51 | 150 AC/DC | 35-60 | 32 |
| FWX-_A14F | 14x51 | 250 AC/DC | 1-50 | 33 |
| FWH-_A6F/FR | 6x32 | 500 AC | 0.25-30 | 34 |
| FWH-_A14F | 14x51 | 500 AC/DC | 1-30 | 35 |
| FWC-_A10F | 10x38 | 600/700 AC, 600/700 DC | 1-32 | 36 |
| FWP-_A14F/Fl | 14x51 | 690/700 AC, 600-700 DC | 1-50 | 37 |
| FWP-_A22F/Fl | 22x58 | 700 AC/DC | 20-100 | 38 |
| FWK-_A20F | 20x127 | 750 DC | 5-30 | 39 |
| FWK-_A25F | 25x146 | 750 DC | 35-60 | 39 |
| FWJ-_A14F | 14x67 | 1000 AC, 800 DC | 20-30 | 40 |
| FWL-_A20F/Fl | 20x127 | 1200 AC, 1000 DC | 20-30 | 41 |
| FWS-_A20F/Fl | 20x127 | 1400/2000 AC, 1000 DC | 2-15 | 42 |

Accessories

| Description | Fuse size | Page |
|---|-----------|------|
| DIN-Rail/panel mount modular fuse block | 22x58 | 43 |
| | 10x38 | 44 |
| Modular DIN-Rail fuse holders | 14x51 | 45 |
| | 22x58 | 46 |

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 (22x58 mm) | | 20-100 | X | — |
| 700 (14x51 mm) | | 1-50 | X | X |
| | 750 | 5-60 | X | X |
| | 1000 | 20-30 | X | X (800 Vdc) |
| | 1250 | 20-30 | X | X (1000 Vdc) |
| | 1500 | 8-15 | X | X (1000 Vdc) |
| | 2000 | 2-6 | X | X (1000 Vdc) |

Ferrule fuses

FWS

1400 - 2000 Vac/1000 Vdc (IEC), 20x127 mm, 2 to 15 A

Description

Ferrule style high speed fuses for the protection of DC common bus, DC drives, power converters/rectifiers and reduced rated voltage starters. Available with indicator.

Specifications

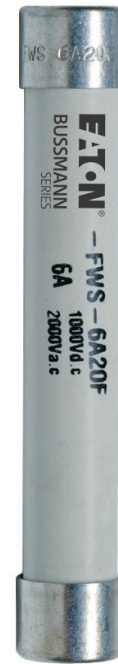
Ratings

- Volts:
 - 2000 Vac/1000 Vdc (IEC, 2-8 A)
 - 1400 Vac/1000 Vdc (IEC, 10-15 A)
- Amps: 2-15 A
- Interrupting rating:
 - 50 kA RMS Sym.
 - 50 kA at 1000 Vdc (2-10 A only)

Operating class: gG

Agency information

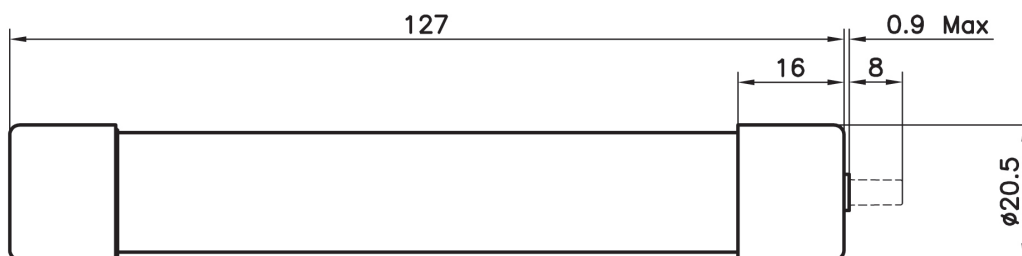
- IEC 60077
- CE



| Fuse type | Fuse size | Rated voltage | Rated current I ² t (A ² s) | | | Watts loss (W)* | Catalog no. |
|-------------------|--------------------------|-------------------------|---|------------|----------------------|-----------------|-------------|
| | | | (amps) | Pre-arcing | Clearing at 1000 Vac | | |
| Without indicator | 20x127 mm (13/16"x5") | 2000 Vac/1000 Vdc (IEC) | 2 | 0.8 | 2.4 | 4.4 | FWS-2A20F |
| | | | 6 | 27.0 | 81.0 | 6.7 | FWS-6A20F |
| | | | 8 | 64.0 | 192.0 | 7.6 | FWS-8A20F |
| | | 1400 Vac/1000 Vdc (IEC) | 10 | 118.0 | 277.0 | 3.0 | FWS-10A20F |
| | | | 12 | 170.0 | 380.0 | 3.4 | FWS-12A20F |
| | | | 15 | 209.0 | 500.0 | 5.0 | FWS-15A20F |
| With indicator | 20x127 mm (13/16"x5") | 2000 Vac/1000 Vdc (IEC) | 2 | 0.8 | 2.4 | 4.4 | FWS-2A20FI |
| | | | 6 | 27.0 | 81.0 | 6.7 | FWS-6A20FI |
| | | | 8 | 64.0 | 192.0 | 7.6 | FWS-8A20FI |
| | | 1400 Vac/1000 Vdc (IEC) | 10 | 118.0 | 277.0 | 3.0 | FWS-10A20FI |
| | | | 12 | 170.0 | 380.0 | 3.4 | FWS-12A20FI |
| | | | 15 | 209.0 | 500.0 | 5.0 | FWS-15A20FI |

* Watts loss at rated current.

Dimensions — mm



For details on electrical characteristics, contact Application Engineering and ask for data sheets: 720040, 5785109