High Speed Fuses

Ferrule fuses

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<td>FWX</td>
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<td>201-204</td>
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<td>FWC</td>
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<td>750</td>
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Accessories

| Fuse Holders | 216 |

Ferrule Fuse Ranges

<table>
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<th>Volts</th>
<th>Amps</th>
<th>AC</th>
<th>DC</th>
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<tbody>
<tr>
<td>150</td>
<td>5-60</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>250</td>
<td>1-50</td>
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<td>500</td>
<td>0.25-30</td>
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<td>X</td>
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<tr>
<td>600</td>
<td>6-32</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>700 (22 x 58mm)</td>
<td>20-100</td>
<td>X</td>
<td>—</td>
</tr>
<tr>
<td>700 (14 x 51mm)</td>
<td>1-50</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>750</td>
<td>5-60</td>
<td>X</td>
<td>X</td>
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<tr>
<td>1000</td>
<td>20-30</td>
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<td>X (800Vdc)</td>
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<td>1250</td>
<td>20-30</td>
<td>X</td>
<td>X (1000Vdc)</td>
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<td>1500</td>
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<td>X</td>
<td>X (1000Vdc)</td>
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<td>2000</td>
<td>2-6</td>
<td>X</td>
<td>X (1000Vdc)</td>
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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 (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 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)

<table>
<thead>
<tr>
<th>Amp Range</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-30</td>
<td>1.5 (38.1)</td>
<td>0.375 (9.5)</td>
<td>0.408 (10.3)</td>
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<tr>
<td>35-60</td>
<td>2.0 (50.8)</td>
<td>0.625 (15.9)</td>
<td>0.811 (20.6)</td>
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</table>

Features and Benefits
- Excellent cycling capability and DC performance
- Low arc voltage and low energy let-through
- Low watts loss in a compact size
- Used with finger-safe holders/blacks

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

Catalog Numbers

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<th>Catalog Numbers</th>
<th>Electrical Characteristics</th>
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</thead>
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<tr>
<td></td>
<td>Size</td>
</tr>
<tr>
<td>FWA-3A10F</td>
<td>5</td>
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<tr>
<td>FWA-10A10F</td>
<td>10</td>
</tr>
<tr>
<td>FWA-15A10F</td>
<td>15</td>
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<td>FWA-20A10F</td>
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<td>FWA-25A10F</td>
<td>35</td>
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<td>FWA-30A10F</td>
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<td>FWA-35A10F</td>
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<tr>
<td>FWA-35A21F</td>
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<td>FWA-40A21F</td>
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<td>FWA-45A21F</td>
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<td>FWA-50A21F</td>
<td>50</td>
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<tr>
<td>FWA-60A21F</td>
<td>60</td>
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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.

Dimensions - in (mm)

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
High Speed Fuses

Ferrule — FWA 150V: 5-60A

FWA 5-30A: 150V (10 x 38mm)

Time-Current Curve

Peak Let-Through Curve

FWA 35-60A: 150V (21 x 51mm)

Time-Current Curve

Peak Let-Through Curve

Data Sheet: 35785317

Data Sheet: 35785305

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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 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, Eₜ (rms).

**Dimensions - mm (inches)**

- 50.8 (2.000")
- 14.3 (0.563")
- 15.5 (0.610")

**Arc Voltage**

This curve gives the peak arc voltage, Uₗ, which may appear across the fuse during its operation as a function of the applied working voltage, Eₜ (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, Kₚ, is given as a function of the RMS load current, Iₚ, in % of the rated current.

**Catalog Numbers**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Size</th>
<th>Rated Current RMS-Amps</th>
<th>Pre-arc</th>
<th>Clearing at 250V</th>
<th>Watts Loss</th>
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<td>1</td>
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<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>FWX-2A14F</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>FWX-3A14F</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>FWX-4A14F</td>
<td>4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>FWX-5A14F</td>
<td>14 x 51mm</td>
<td>1.6 13</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>FWX-10A14F</td>
<td>10</td>
<td>3.6 24</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>FWX-15A14F</td>
<td>15</td>
<td>14 83</td>
<td>—</td>
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<td>—</td>
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<tr>
<td>FWX-20A14F</td>
<td>20</td>
<td>33 200</td>
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<td>FWX-25A14F</td>
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<td>58 300</td>
<td>—</td>
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<td>100 500</td>
<td>—</td>
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<td>FWX-50A14F</td>
<td>50</td>
<td>200 1800</td>
<td>—</td>
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</table>

- Watts loss provided at rated current.
- (250Vac/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 (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

Data Sheet: 720006

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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

**Specifications**

**Description:** Ferrule style high speed fuses.

**Dimensions:** See dimensions illustrations.

**Ratings:**

- **Volts:** — 500Vac
- **Amps:** — 0.25-30A
  - **IR:** — 50kA at ≥ 20% pf (0.25-20A)
  - — 20kA at ≥ 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

**Dimensions - mm (inches)**

- 31.8 (1.25")
- 6.4 (0.25")
- 3.2 (0.125")

**Catalog Numbers**

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<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Rated Current RMS-Amps</th>
<th>Pre-arc</th>
<th>Clearing at 500V</th>
<th>Watts Loss</th>
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<td>FWH-.250A6F</td>
<td>0.25*</td>
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<td>2</td>
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<tr>
<td>FWH-002A6F</td>
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<td>1.3</td>
<td>3.5</td>
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<td>125</td>
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<td>FWH-010A6F</td>
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<td>20</td>
<td>60</td>
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<td>FWH-015A6F</td>
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<td>146</td>
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<td>259</td>
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<td>145</td>
<td>430</td>
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*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.

**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

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Data Sheet: 720038

For product data sheets, visit [www.cooperbussmann.com/datasheets/ulcsa](http://www.cooperbussmann.com/datasheets/ulcsa)
High Speed Fuses

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

Data Sheet: 35785256
Data Sheet: 50955

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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 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, E₀, (rms).

Dimensions - mm (inches)

Arc Voltage
This curve gives the peak arc voltage, Uₐ, which may appear across the fuse during its operation as a function of the applied working voltage, E₀, (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, K₀, is given as a function of the RMS load current, Iₙ, in % of the rated current.

Catalog Numbers

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<tr>
<th>Catalog Numbers</th>
<th>Electric Characteristics</th>
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<td>FWH-1A14F 1</td>
<td>Pre-arc at 500V</td>
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<tr>
<td>FWH-2A14F 2</td>
<td>15 58 232 9</td>
</tr>
<tr>
<td>FWH-3A14F 3</td>
<td>10 26 96 6</td>
</tr>
<tr>
<td>FWH-4A14F 4</td>
<td>5 10 40 5.5</td>
</tr>
<tr>
<td>FWH-5A14F 5</td>
<td>1.6 6.4 4.5 1.5</td>
</tr>
<tr>
<td>FWH-6A14F (9⁄16” x 2”) 6</td>
<td>1.6 6.4 1.5</td>
</tr>
<tr>
<td>FWH-10A14F 10</td>
<td>3.6 13 4</td>
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<tr>
<td>FWH-12A14F 12</td>
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<tr>
<td>FWH-15A14F 15</td>
<td>10 40 5.5</td>
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<td>FWH-20A14F 20</td>
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<td>FWH-25A14F 25</td>
<td>49 191 7</td>
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<tr>
<td>FWH-30A14F 30</td>
<td>58 232 9</td>
</tr>
</tbody>
</table>

• 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

Typical Applications
• DC common bus
• DC drives
• Power converters/rectifiers
• Reduced voltage starters

Data Sheet: 720008

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa

203
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 @ 700Vdc (6-25A)
- **Agency Information:** CE, UL Recognition: 6-32A.
  UL Recognition: 6-25A

**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 (inches)**
- 38.1 (1.500")
- 10.3 (0.406")
- 9.5 (0.375")

**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**

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWC-6A10F</td>
<td>6</td>
<td>Pre-arc: 4 Watts at 600V</td>
</tr>
<tr>
<td>FWC-8A10F</td>
<td>8</td>
<td>Pre-arc: 6 Watts at 600V</td>
</tr>
<tr>
<td>FWC-10A10F</td>
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<td>Pre-arc: 8 Watts at 600V</td>
</tr>
<tr>
<td>FWC-12A10F</td>
<td>12</td>
<td>Pre-arc: 15 Watts at 600V</td>
</tr>
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<td>FWC-16A10F</td>
<td>16</td>
<td>Pre-arc: 25 Watts at 600V</td>
</tr>
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<td>Pre-arc: 34 Watts at 600V</td>
</tr>
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<td>Pre-arc: 60 Watts at 600V</td>
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<td>Pre-arc: 95 Watts at 600V</td>
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<td>FWC-32A10F</td>
<td>32</td>
<td>Pre-arc: 95 Watts at 600V</td>
</tr>
</tbody>
</table>

* 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

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

For product data sheets, visit [www.cooperbussmann.com/datasheets/ulcsa](http://www.cooperbussmann.com/datasheets/ulcsa)
High Speed Fuses

Ferrule — FWC 600V: 6-32A

FWC 6-32A: 600V (10 x 38mm)

Time-Current Curve

Prospective Current In Amps RMS

Virtual Pre-Arcing Time In Seconds

Peak Let-Through Curve

Prospective Short-Circuit Current Symmetrical RMS

Data Sheet: 35785306

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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, Eg (rms).

Dimensions - mm (inches)

Without Striker

With Striker

Arc Voltage
This curve gives the peak arc voltage, UL, which may appear across the fuse during its operation as a function of the applied working voltage, Eg (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, KP, is given as a function of the RMS load current, Ib, in % of the rated current.

Catalog Numbers

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Current RMS-Amps</th>
<th>Rated Melting</th>
<th>I²t (A-Sec)</th>
<th>Rated Voltage</th>
<th>Watts Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Striker</td>
<td>1</td>
<td>3.6</td>
<td>38.5</td>
<td>4</td>
<td>200</td>
<td>4</td>
</tr>
<tr>
<td>FWP-1A14Fa</td>
<td>2</td>
<td>8.6</td>
<td>70</td>
<td>5</td>
<td>300</td>
<td>7</td>
</tr>
<tr>
<td>FWP-2A14Fa</td>
<td>2.5</td>
<td>26.0</td>
<td>230</td>
<td>6</td>
<td>700</td>
<td>9</td>
</tr>
<tr>
<td>FWP-3A14Fa</td>
<td>3</td>
<td>48.5</td>
<td>375</td>
<td>7</td>
<td>1000</td>
<td>11</td>
</tr>
<tr>
<td>FWP-4A14Fa</td>
<td>4</td>
<td>68</td>
<td>485</td>
<td>8</td>
<td>2000</td>
<td>14</td>
</tr>
<tr>
<td>FWP-5A14Fa</td>
<td>5</td>
<td>84</td>
<td>750</td>
<td>9</td>
<td>3000</td>
<td>17</td>
</tr>
</tbody>
</table>

With Striker

50.8 (2.000")

14.3 (0.563")

15.5 (0.610")

59 (2.323")

51 (2.000")

13 (0.511")

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

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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 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, Ew (rms).

Dimensions - mm (inches)
Without Striker

With Striker

Arc Voltage
This curve gives the peak arc voltage, UL, which may appear across the fuse during its operation as a function of the applied working voltage, Ew (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, Kp, is given as a function of the RMS load current, Ib, in % of the rated current.

Catalog Numbers

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

Data Sheet: 720026

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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

Data Sheet: 35785291

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
High Speed Fuses

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

Catalog Numbers

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWK-5A20F</td>
<td>5</td>
<td>8.5 16</td>
</tr>
<tr>
<td>FWK-8A20F</td>
<td>8</td>
<td>50 100</td>
</tr>
<tr>
<td>FWK-10A20F</td>
<td>10</td>
<td>95 200</td>
</tr>
<tr>
<td>FWK-15A20F</td>
<td>15</td>
<td>100 240</td>
</tr>
<tr>
<td>FWK-20A20F</td>
<td>20</td>
<td>125 315</td>
</tr>
<tr>
<td>FWK-25A20F</td>
<td>25</td>
<td>400 1100</td>
</tr>
<tr>
<td>FWK-30A20F</td>
<td>30</td>
<td>800 2600</td>
</tr>
<tr>
<td>FWK-35A25F</td>
<td>20 x 127mm</td>
<td>35 1300 4300</td>
</tr>
<tr>
<td>FWK-40A25F</td>
<td>25 x 146mm</td>
<td>40 1600 5300</td>
</tr>
<tr>
<td>FWK-50A25F</td>
<td>(1/4” x 5”)</td>
<td>50 3100 12000</td>
</tr>
<tr>
<td>FWK-60A25F</td>
<td>(5/8” x 5½”)</td>
<td>60 5900 24000</td>
</tr>
</tbody>
</table>

Recommended fuseholders for 20x127, CH127-1, -2, -3
Recommended fuseclips for 20x127, 1A1837
Recommended fuseclips for 25x146, A3354705

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)
Fig. 1: 5-30A

Fig. 2: 35-60A

Data Sheet: 720039

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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\(^2\)t
The total clearing I\(^2\)t at rated voltage and at power factor of 15% are given in the electrical characteristics. For other voltages, the clearing I\(^2\)t is found by multiplying by correction factor, K, given as a function of applied working voltage, \(E_g\) (rms).

Dimensions - mm (inches)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>66.7</td>
<td>(2.628&quot;)</td>
</tr>
<tr>
<td>14.5</td>
<td>(0.571&quot;)</td>
</tr>
<tr>
<td>15.9</td>
<td>(0.625&quot;)</td>
</tr>
</tbody>
</table>

Fuseclips:
- Catalog Number: 5591 (see data sheet 2132)

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, Kp, is given as a function of the RMS load current, Ib, in % of the rated current.

Catalog Numbers

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Rated Current AMS</th>
<th>I(^2)t (A(^2) Sec)</th>
<th>Pre-arc</th>
<th>Clearing at 1000V</th>
<th>Watts Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWJ-20A14F</td>
<td>14 x 67mm</td>
<td>20</td>
<td>25</td>
<td>220</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>FWJ-25A14F</td>
<td>((\frac{3}{8}) x 2(\frac{5}{8}))</td>
<td>25</td>
<td>33</td>
<td>350</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>FWJ-30A14F</td>
<td>30</td>
<td>30</td>
<td>33</td>
<td>450</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

* 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\(^2\)t)
- 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

Data Sheet: 720028

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
High Speed Fuses

Ferrule — FWJ 1000V: 20-30A

FWJ 20-30A: 1000V (14 x 67mm)

Time-Current Curve

Peak Let-Through Curve

Data Sheet: 35785315

For product data sheets, visit www.cooperbussmann.com/datasheets/ulcsa
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

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Size</th>
<th>Rated Current RMS-Amps</th>
<th>Pre-arc</th>
<th>Clearing at 1000Vdc</th>
<th>Watts Loss</th>
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</thead>
<tbody>
<tr>
<td>FWS-2A20F</td>
<td>2</td>
<td>0.8</td>
<td>2.4</td>
<td>4.4</td>
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<tr>
<td>FWS-6A20F</td>
<td>6</td>
<td>27</td>
<td>81</td>
<td>6.7</td>
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</tr>
<tr>
<td>FWS-8A20F</td>
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<td>192</td>
<td>7.5</td>
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<tr>
<td>FWS-10A20F</td>
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<td>118</td>
<td>277</td>
<td>3.0</td>
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<tr>
<td>FWS-12A20F</td>
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<td>170</td>
<td>380</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>FWS-15A20F</td>
<td>15</td>
<td>209</td>
<td>500</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>FWL-20A20F</td>
<td>20</td>
<td>675</td>
<td>1550</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>FWL-25A20F</td>
<td>25</td>
<td>1200</td>
<td>2760</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>FWL-30A20F</td>
<td>30</td>
<td>1850</td>
<td>4300</td>
<td>7.5</td>
<td></td>
</tr>
</tbody>
</table>

*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.

Features and Benefits
• Excellent cycling capability and DC performance
• Low arc voltage and low energy let-through (I\(^2\)t)
• 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
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

<table>
<thead>
<tr>
<th>Catalog Numbers</th>
<th>Fuse Size</th>
<th>Amps</th>
<th>Poles</th>
<th>Max Wire Size</th>
<th>Terminations</th>
</tr>
</thead>
<tbody>
<tr>
<td>J70032-2CR</td>
<td>14x51</td>
<td>32</td>
<td>2</td>
<td>#2</td>
<td>Box Lug w/ Retaining Clip</td>
</tr>
<tr>
<td>J70032-3CR</td>
<td>32</td>
<td>3</td>
<td>#2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J70100-1CR</td>
<td>100</td>
<td>1</td>
<td>#2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J70100-2CR</td>
<td>100</td>
<td>2</td>
<td>#2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J70100-3CR</td>
<td>100</td>
<td>3</td>
<td>#2</td>
<td></td>
<td></td>
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</tbody>
</table>

See pages 257 and 258 for CH Series fuse holder information.