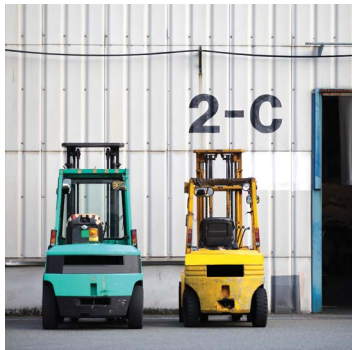


Section Overview

Whether you are protecting solar equipment or finding a replacement fuse for an aging HVAC unit, Littelfuse carries the breadth of fuses to meet your needs. Our “special purpose” fuse section includes application-specific products to meet all of your application needs.



SPECIAL PURPOSE FUSES

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Solar Circuit Protection

Littelfuse engineering is constantly developing new products to meet the needs of the photovoltaic industry. For the latest information on the growing solar product portfolio, visit: **Littelfuse.com/solar**

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# SPXV SERIES IN-LINE SOLAR FUSE

1500 V dc • 1–60 A

REACH



5

Solar Fuses

## Description

The Littelfuse SPXV solar string fuse has been specifically designed for the protection of photovoltaic (PV) systems.

It is available in multiple ampere ratings to match various requirements in a range of applications.

## Features/Benefits

- Offers higher ampere protection in less space for increased design flexibility
- Full range, fast-acting fuse helps eliminate common low-overload faults
- Up to 50,000 A interrupting rating

## Applications

- Inverters
- Combiner boxes

## Recommended Accessories

### 1–32 Amperes

**Fuse Holder:** LFPXV0001

**Fuse Clips:** 125004/125005

### 35–60 Amperes

**Fuse Holder:** LFXV15060-BC

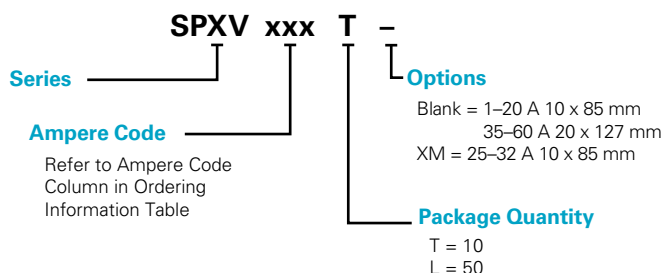
## Web Resources

Download technical resources at: [Littelfuse.com/spxv](http://Littelfuse.com/spxv)

## Specifications

|                             |  |
|-----------------------------|--|
| <b>Voltage Rating</b>       | 1500 V dc  |
| <b>Ampere Rating</b>        | 1, 2, 2.25, 2.5, 3, 3.5, 4, 4.5, 5, 6, 8, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 55, 60 A |
| <b>Interrupting Rating</b>  | SPXV 1 A–20 A: 30 kA (50 kA Self-Certified)<br>SPXV 35 A–60 A: 50 kA<br>SPXV-M 25 A–32 A: 50 kA    |
| <b>Time Constant</b>        | ≤ 1ms  |
| <b>Material</b>             | Body: melamine<br>Caps: copper alloy (nickel plated)   |
| <b>Approvals</b>            | UL 248-19 Listed (File: E339112)   |
| <b>Applicable Standards</b> | UL 248-1, 248-19<br>IEC 60269-6  |
| <b>Environmental</b>        | RoHS Compliant<br>REACH  |
| <b>Country of Origin</b>    | Mexico   |

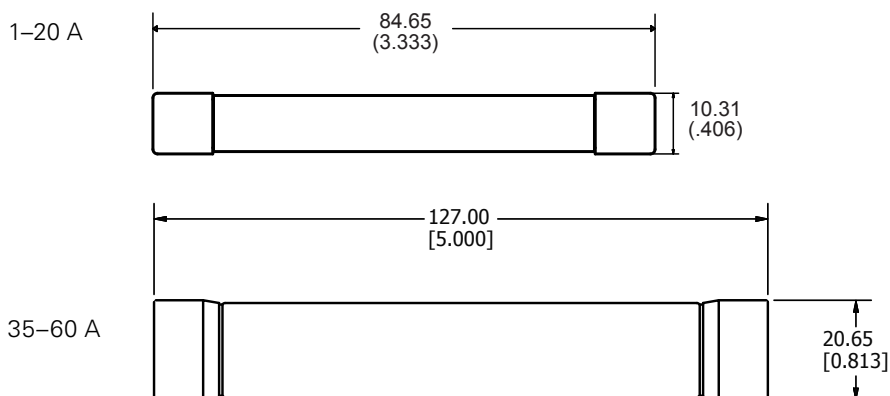
## Part Numbering System



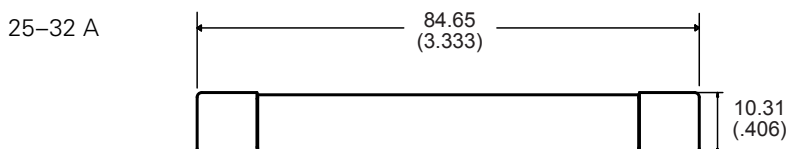
| SERIES | AMPERAGE | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|------------------|----------------|-----------------|
| SPXV   | 6        | 10               | SPXV006        | SPXV006.T       |
| SPXV   | 20       | 50               | SPXV020        | SPXV020.L       |
| SPXV   | 32       | 10               | SPXV032-M      | SPXV032.TXM     |
| SPXV   | 60       | 10               | SPXV060        | SPXV060.T       |

# SPXV SERIES IN-LINE SOLAR FUSE

## SPXV Dimensions mm (in)



## SPXV-M Dimensions mm (in)



# SPXI SERIES IN-LINE SOLAR FUSES

1500 V dc • 1–60 A



## Description

The Littelfuse SPXI solar fuse is specifically designed for the protection of photovoltaic (PV) systems. It integrates into an in-line assembly within a wire harness and can be electrically insulated by either overmolding or using heat-shrink.

Littelfuse offers multiple ampere ratings to match specific requirements in a variety of applications.

## Features/Benefits

- Offers higher ampere protection in less space for increased design flexibility
- One-piece cap design, without joints, offers easier wire crimping and more streamlined molding
- No fuse holder required helps save space, time, and money
- 50,000 A interrupting rating

## Applications

- Photovoltaic high-capacity homerun, trunk harness, and wire harness

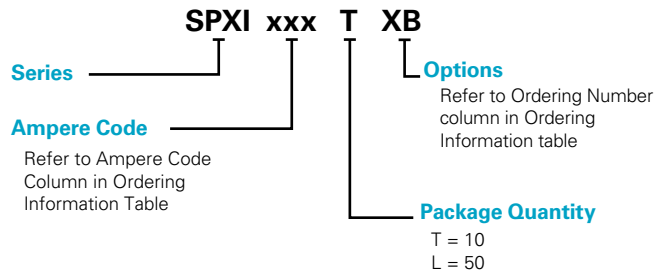
## Recommended Crimping Tool

10-12 AWG: T&B Sta-Kon ERG4002  
8 AWG: T&B Sta-Kon ERG4  
6 AWG: Burndy MRC840AL

## Specifications

|                             |  |
|-----------------------------|--|
| <b>Voltage Rating</b>       | 1500 V dc  |
| <b>Ampere Rating</b>        | 1, 2, 2.25, 2.5, 3.5, 4, 4.5, 5, 6, 8, 10, 12, 15, 16, 20, 25, 30, 32, 35, 40, 45, 50, 55, 60 A                    |
| <b>Interrupting Ratings</b> | SPXI 1-30 A and SPXI-B 1-20 A: 30 kA<br>SPXI 35-50 A and SPXI-B 35-60 A: 50 kA<br>SPXI-M and SPXI-BM 25-32A: 50 kA |
| <b>Time Constant</b>        | ≤ 1ms  |
| <b>Material</b>             | Body: melamine<br>Caps: copper alloy (nickel plated)   |
| <b>Approvals</b>            | UL Recognized (File: E339112)  |
| <b>Applicable Standards</b> | UL 248-1, 248-19<br>IEC 60269-6 (electrically only)  |
| <b>Environmental</b>        | RoHS Compliant<br>REACH  |
| <b>Country of Origin</b>    | Mexico   |
| <b>US Patent</b>            | 9,564,281  |

## Part Numbering System

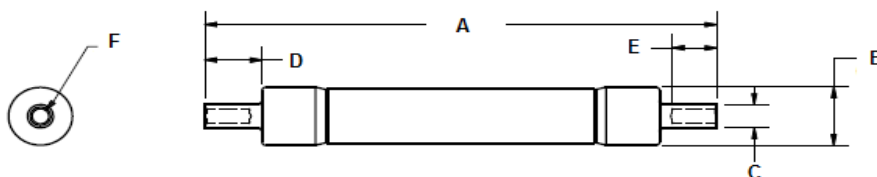


## Web Resources

Download additional technical information and view the complete solar portfolio: [Littelfuse.com/spxi](http://Littelfuse.com/spxi)

# SPXI SERIES IN-LINE SOLAR FUSES

## Dimensions



| SERIES  | AMPS   | DIMENSIONS IN MM (INCHES) |               |             |               |               |              | WIRE RANGE                          |
|---------|--------|---------------------------|---------------|-------------|---------------|---------------|--------------|-------------------------------------|
|         |        | A                         | B             | C           | D             | E             | F            |                                     |
| SPXI    | 2.5–4  | 81.41 (3.205)             | 10.31 (0.406) | 5.59 (0.22) | 12.26 (0.483) | 9.53 (0.375)  | 3.56 (0.14)  | 10-12 AWG<br>(6-4 mm <sup>2</sup> ) |
|         | 4.5–20 | 110.06 (4.333)            | 10.31 (0.406) | 5.59 (0.22) | 12.26 (0.483) | 9.53 (0.375)  | 3.56 (0.014) | 10-12 AWG<br>(6-4 mm <sup>2</sup> ) |
|         | 25–30  | 110.06 (4.333)            | 13.72 (0.54)  | 5.59 (0.22) | 12.26 (0.483) | 9.53 (0.375)  | 3.56 (0.014) | 10-12 AWG<br>(6-4 mm <sup>2</sup> ) |
|         | 35–50  | 158.04 (6.222)            | 20.65 (0.813) | 6.7 (0.264) | 14.25 (0.561) | 10.25 (0.404) | 4.7 (0.185)  | 8 AWG<br>(10mm <sup>2</sup> )       |
| SPXI-B  | 2.5–4  | 85.4 (3.362)              | 10.31 (0.406) | 6.7 (0.264) | 14.25 (0.561) | 10.25 (0.404) | 4.7 (0.185)  | 8 AWG<br>(10mm <sup>2</sup> )       |
|         | 4.5–20 | 114.05 (4.49)             | 10.31 (0.406) | 6.7 (0.264) | 14.25 (0.561) | 10.25 (0.404) | 4.7 (0.185)  | 8 AWG<br>(10mm <sup>2</sup> )       |
|         | 35–60  | 163.58 (6.44)             | 20.65 (0.813) | 8.5 (0.335) | 17.02 (0.67)  | 13.72 (0.54)  | 5.5 (0.217)  | 6 AWG                               |
| SPXI-M  | 25–32  | 110.06 (4.333)            | 10.31 (0.406) | 5.59 (0.22) | 12.26 (0.483) | 9.53 (0.375)  | 3.56 (0.014) | 10-12 AWG<br>(6-4 mm <sup>2</sup> ) |
| SPXI-BM | 25–32  | 114.05 (4.49)             | 10.31 (0.406) | 6.7 (0.264) | 14.25 (0.561) | 10.25 (0.404) | 4.7 (0.185)  | 8 AWG<br>(10mm <sup>2</sup> )       |

# SPNH SERIES SOLAR FUSE

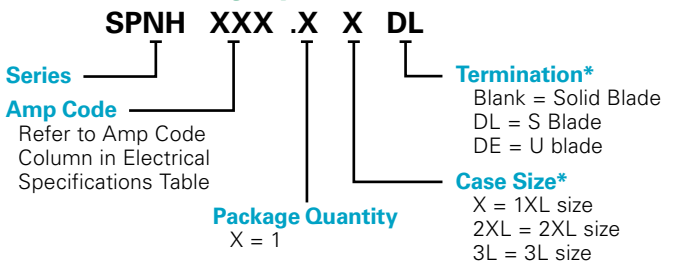
1500 Vdc • 50-400 A • NH Style



## Specifications

|                            |   |
|----------------------------|---|
| <b>Voltage Rating</b>      | 1500 Vdc  |
| <b>Amperage Rating</b>     | 50, 63, 80, 100, 125, 160, 200, 250, 315, 350, 400                                    |
| <b>Interrupting Rating</b> | 15kA<br>30kA self-certified   |
| <b>Time Constant</b>       | ≤ 2ms   |
| <b>Material</b>            | Body: Ceramic<br>End Bells: Copper Alloy  |
| <b>Approvals</b>           | UL 248-19 Listed (File: E339112, Vol. 4) (50-200A)<br>250-400A pending<br>IEC 60269-6 |
| <b>Environmental</b>       | RoHS Compliant  |

## Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|----------------|-----------------|
| SPNH   | 50  | 1                | SPNH050        | SPNH050.X       |
| SPNH   | 200 | 1                | SPNH200        | SPNH200.X       |

\*Solid blade option for 1XL case size does not require a case or termination designator for the part number.

## Description

The SPNH series has been designed to meet the emerging circuit protection needs for 1500 volt photovoltaic systems. These fuses provide full range protection for all potential overcurrent conditions that exist in PV applications. Suitable for PV inverter protection and array combiner applications.

## Features/Benefits

- Meets UL and IEC photovoltaic standards
- Compact NH XL Sizes
- Low Watt Loss Design
- 1500Vdc rating for emerging market needs
- Designed to protect against a full range of overcurrents

## Applications

- Inverters
- Re-combiner boxes
- Array/Re-combiner application
- PV Inverter DC input protection

## Web Resources

Download technical documents: [Littelfuse.com/spnh](http://Littelfuse.com/spnh)

## Recommended Accessories

### 1XL Case Size

**Fuse Holder:** LFNH152001CST

**Fuse Terminal Covers:** LFNH15200FBC

### 2XL Case Size

**Fuse Holder:** LFNH154001CST

**Fuse Terminal Covers:** LFNH15400FBC

### 3L Case Size

**Fuse Holder:** LFNH156301CST

**Fuse Terminal Covers:** LFNH15630FBC



Look for this logo to indicate products that are used in solar applications. Visit our website [Littelfuse.com/solar](http://Littelfuse.com/solar) for the latest updates on approvals, certifications, and new products.

# SPFI SERIES IN-LINE SOLAR FUSE

1000 Vdc • 2-30 A




## Description

The Littelfuse SPFI solar fuse is designed to integrate into an in-line assembly within a wire harness. The fuse provides photovoltaic (PV) protection that meets UL 2579 for photovoltaic applications. The SPFI can be electrically insulated by either overmolding or using approved heat-shrink.

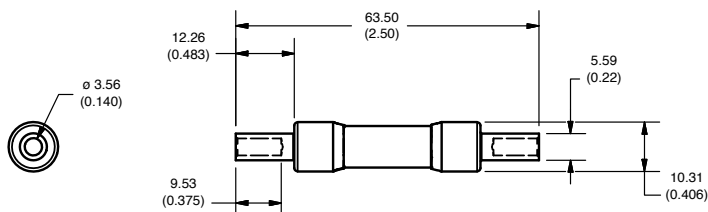
## Features/Benefits

- UL 2579 Recognized
- Meets IEC 60269-6 electrical performance requirements
- 20,000 A Interrupting Rating
- No fuse holder required

## Applications

- Photovoltaic wire harness

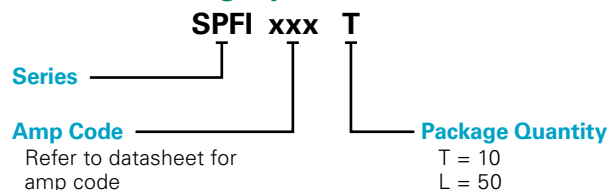
## Dimensions mm (in)



## Specifications

|                            |  |
|----------------------------|--|
| <b>Voltage Rating</b>      | 1000 Vdc   |
| <b>Amperage Rating</b>     | 2, 2.5, 3, 3.5, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30 A |
| <b>Interrupting Rating</b> | 20 kA  |
| <b>Time Constant</b>       | $\leq 1$ ms  |
| <b>Material</b>            | Body: Melamine<br>Caps: Copper Alloy (Nickel Plated) |
| <b>Approvals</b>           | UL 2579 Recognized (File: E339112)                   |
| <b>Environmental</b>       | RoHS Compliant<br>REACH                              |
| <b>Country of Origin</b>   | Mexico   |
| <b>US Patent</b>           | 9,564,281  |

## Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|----------------|-----------------|
| SPFI   | 2   | 10               | SPFI002        | SPFI002.T       |
| SPFI   | 3.5 | 10               | SPFI03.5       | SPFI03.5T       |
| SPFI   | 20  | 50               | SPFI020        | SPFI020.L       |

## Web Resources

Downloadable CAD drawings and other technical information: [Littelfuse.com/spfi](http://Littelfuse.com/spfi)

## Recommended Crimping Tool

T&B Sta-Kon ERG4002

# SPF SERIES SOLAR FUSES

1000 Vdc • 1-30 A



## Description

The SPF Solar Protection Fuse series has been specifically designed for the protection of photovoltaic (PV) systems. This family of Midget style fuses (10 x 38 mm) can safely protect PV modules and conductors from reverse-overcurrent conditions.

As PV systems have grown in size, so have the corresponding voltage requirements. This increase in system voltage has typically been intended to minimize power loss associated with long conductor runs. Standard circuit protection devices are not designed to completely protect photovoltaic panels. However, the SPF series is UL Listed to safely interrupt faulted circuits up to this demanding voltage level.

Littelfuse offers 14 ampere ratings to match specific requirements in a variety of applications.

## Features/Benefits

- Meets UL and IEC photovoltaic standards
- UL 248-19 Listed 1000 Vdc maximum
- 1-30 A ratings available
- 20,000 A Interrupting Rating - 1A - 20A
- 50,000 A Interrupting Rating - 25A - 30A
- Both PCB mount and dead-front holder options available

## Applications

- Inverters
- Combiner boxes
- Battery charge controllers

## Recommended Fuse Holders

LPHV 1000 Vdc POWR-Safe Series

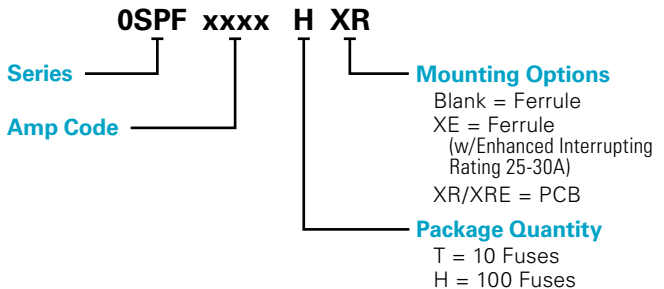
## Web Resources

Download technical documents: [Littelfuse.com/spf](http://Littelfuse.com/spf)

## Specifications

|                                 |  |
|---------------------------------|--|
| <b>Voltage Rating</b>           | 1000 VDC   |
| <b>Amperage Rating</b>          | 1, 2, 3, 3.5, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30   |
| <b>Max. Interrupting Rating</b> | 20 kA - 1A - 20A<br>50 kA - 25A - 30A  |
| <b>Time Constant</b>            | ≤ 2ms  |
| <b>Material</b>                 | Body: Melamine<br>Caps: Copper Alloy   |
| <b>Approvals</b>                | UL 248-19 Listed (File: E339112)<br>IEC 60269-6 (1-30 A)<br>CSA Certified (File: 029862_0_000) |
| <b>Environmental</b>            | RoHS Compliant   |
| <b>Country of Origin</b>        | Mexico   |

## Part Numbering System

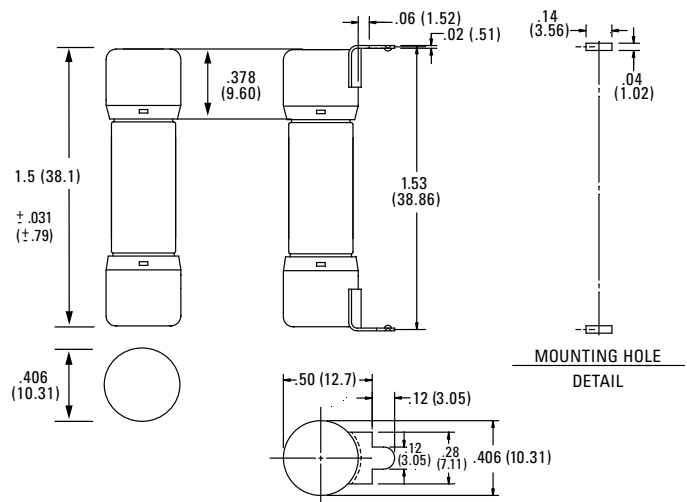


| SERIES | AMP | PACKAGE QUANTITY | MOUNTING METHOD | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|-----------------|----------------|-----------------|
| SPF    | 2   | 10               | FERRULE         | SPF002         | 0SPF002.T       |
| SPF    | 3.5 | 10               | FERRULE         | SPF03.5        | 0SPF03.5T       |
| SPF    | 30  | 100              | PCB TABS        | SPF030R        | 0SPF030.HXR     |

## Dimensions Inches (mm)

### Ferrule Version

### PCB Version



Look for this logo to indicate products that are used in solar applications. Visit our website [Littelfuse.com/solar](http://Littelfuse.com/solar) for the latest updates on approvals, certifications, and new products.



# SPFJ SERIES SOLAR FUSES

1000 Vdc • 70-450 A



## Description

The SPFJ series is the smallest 1000 Vdc 70-450 A photovoltaic fuse available in the market. The SPFJ series is manufactured in Class J case sizes that allows for both fuse holder and busbar mounting configuration. The SPFJ meets both UL and IEC requirements.

## Features/Benefits

- Meets UL and IEC photovoltaic standards
- Small footprint reduces panel size
- Flexibility of fuse holder or busbar mounting
- Higher amperage solar fuses in standard sizes
- UL Listed branch and feeder circuit rated
- Class J case sizes for the 125-450 A ratings

## Applications

- Inverters
- Re-combiner boxes

## Recommended Fuse Holder

LFJ1000 Solar Series

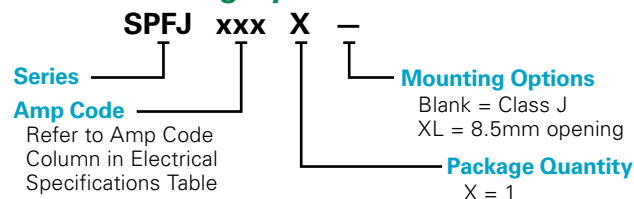
## Web Resources

Download technical documents: [Littelfuse.com/spfj](http://Littelfuse.com/spfj)

## Specifications

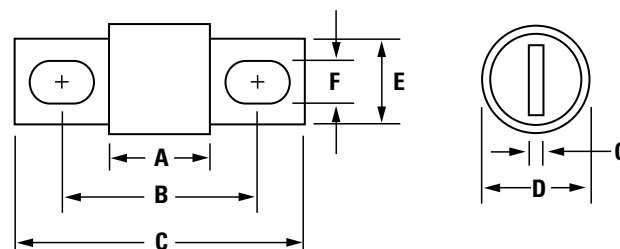
|                            |   |
|----------------------------|---|
| <b>Voltage Rating</b>      | 1000 Vdc<br>600 Vac (125-450 A)   |
| <b>Amperage Rating</b>     | 70, 80, 90, 100, 125, 160, 200,<br>250, 300, 350, 400, 450  |
| <b>Interrupting Rating</b> | AC: 200 kAIC (125-450 A)<br>DC: 70-200 A: 20 kAIC<br>250-400 A: 10 kAIC<br>450 A: 20 kAIC   |
| <b>Time Constant</b>       | ≤ 1ms   |
| <b>Material</b>            | Body: Melamine<br>End Bells: Copper Alloy   |
| <b>Approvals</b>           | UL 248-19 Listed (File: E339112)<br>UL 248-8, Class J (125-450 A)<br>cULus (125-450 A)<br>IEC 60269-6 (125-450 A)<br>RoHS Compliant |
| <b>Environmental</b>       | Mexico  |

## Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | MOUNTING METHOD | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|-----------------|----------------|-----------------|
| SPFJ   | 70  | 1                | CLASS J         | SPFJ070        | SPFJ070.X       |
| SPFJ   | 200 | 1                | LARGE           | SPFJ200        | SPFJ200.XXL     |

## Dimensions Inches (mm)



| AMPERAGE | DIMENSIONS IN INCHES (MM) |              |               |            |              |             |            |
|----------|---------------------------|--------------|---------------|------------|--------------|-------------|------------|
|          | A                         | B            | C             | D          | E            | F           | G          |
| 70-100   | 3.02 (76.5)               | 4.38 (111.3) | 5.75 (146.1)  | 1.5 (38.1) | 1.125 (28.3) | .335 (8.5)  | .189 (4.8) |
| 125-200  | 3.02 (76.5)               | 4.38 (111.3) | 5.75 (146.1)  | 1.5 (38.1) | 1.125 (28.3) | .281 (7.1)* | .189 (4.8) |
| 250-400  | 3.37 (85.7)               | 5.25 (133.4) | 7.125 (181.0) | 2.0 (50.8) | 1.63 (41.3)  | .406 (10.3) | .252 (6.4) |
| 450      | 3.75 (95.3)               | 5.98 (152.0) | 8.0 (203.2)   | 2.5 (63.5) | 2.0 (50.8)   | .531 (13.5) | .374 (9.5) |

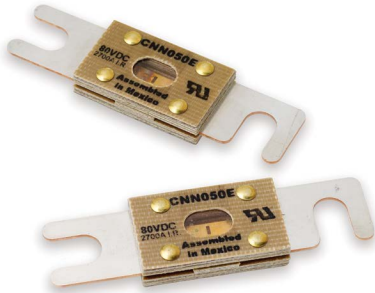
\* SPFJ L option = 8.5 mm (UL 248-19 approval only)



Look for this logo to indicate products that are used in solar applications. Visit our website [Littelfuse.com/solar](http://Littelfuse.com/solar) for the latest updates on approvals, certifications, and new products.

# **FORK-LIFT STUD-MOUNTED FUSES**

32/48/80 Vdc • Fast-Acting and Very Fast-Acting • 35-800 A



## **CNN\_E, CNN & CNL Limiter Fuses**

### **Description**

CNN\_E fuses are rated for applications up to 80 Vdc. As fork lift trucks voltages increase, circuit protection needs to be rated higher than the standard CNN products to handle the increased voltage. The CNN\_E is considered very fast-acting for quicker reaction time.

### **Specifications**

#### **Voltage Ratings**

CNN\_E: 80 Vdc / 125 Vac  
CNN: 48 Vdc / 125 Vac  
CNL: 32 Vdc / 32 Vac

#### **Ampere Ratings**

10 – 800 A\*

#### **Max. Interrupting Rating**

2,500 A

#### **Approval**

UL Recognized (File: E71611)

#### **Environmental**

RoHS Compliant, Lead (Pb) Free

#### **Country of Origin**

Mexico (CNN\_E only)

\*See ordering information table for available amperages by series

### **Ordering Information**

| AMPERE RATINGS CNN_E & CNN |     |     |     |     |     |
|----------------------------|-----|-----|-----|-----|-----|
| 10 <sup>1</sup>            | 60  | 125 | 225 | 325 | 600 |
| 35                         | 80  | 150 | 250 | 350 | 700 |
| 40                         | 90  | 175 | 275 | 400 | 800 |
| 50                         | 100 | 200 | 300 | 500 | —   |

<sup>1</sup>CNN Series only

| AMPERE RATINGS CNL (32 Vdc) |     |     |     |     |
|-----------------------------|-----|-----|-----|-----|
| 35                          | 80  | 150 | 250 | 350 |
| 40                          | 100 | 175 | 275 | 400 |
| 50                          | 125 | 200 | 300 | 500 |
| 60                          | 130 | 225 | 325 | —   |

| SERIES | TYPE             | VOLT DC | AMP | CATALOG NUMBER | ORDERING NUMBER |
|--------|------------------|---------|-----|----------------|-----------------|
| CNN_E  | VERY-FAST-ACTING | 80      | 200 | CNN200E        | 0CNN200E.V      |
| CNN    | VERY FAST-ACTING | 48      | 125 | CNN125         | 0CNN125.V       |
| CNL    | FAST-ACTING      | 32      | 50  | CNL050         | 0CNL050.V       |

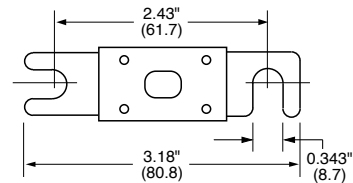
### **Recommended Fuse Holders**

LFFB0003Z ..... 123

### **Web Resources**

[Littelfuse.com/ForkLift](http://Littelfuse.com/ForkLift)

### **Dimensions**



### **Applications**

Lift trucks, scissor lifts, pallet movers, and other low voltage battery operated equipment used to move hazardous materials.

### **Features/Benefits**

- Evaluated for use in UL 583 hazardous applications
- Easily upgrade Type E and ES equipment to Type EE
- Does not require an external enclosure

### **Specifications**

|                            |                              |
|----------------------------|------------------------------|
| <b>Voltage Ratings</b>     | 48 Vac/dc                    |
| <b>Interrupting Rating</b> | 2,500 A                      |
| <b>Ampere Rating</b>       | 35 – 800 A                   |
| <b>Approval</b>            | UL Recognized (File: E71611) |
| <b>Torque</b>              | 90 in-lb                     |
| <b>Fuse Holder</b>         | LFFB003                      |
| <b>Environmental</b>       | RoHS Compliant               |
| <b>Country of Origin</b>   | Mexico                       |

| AMPERE RATINGS |     |     |      |
|----------------|-----|-----|------|
| 35             | 100 | 250 | 500  |
| 50             | 125 | 300 | 750* |
| 60             | 150 | 400 | 800* |
| 90             | 200 | 425 | —    |

\*Contact factory for availability



## **HAZGARD™ Forklift Fuses**

### **Description**

HAZGARD fuses are designed to provide overcurrent protection for low voltage equipment used in hazardous operations. It is UL 248 recognized and has been evaluated for the use in UL 583 type EE and ES applications. Unique design does not require an additional enclosure as is needed with a standard forklift fuse, saving assembly time and costs.

### **Ordering Information**

| SERIES | AMPERAGE | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|----------------|-----------------|
| 581    | 200      | 581200         | 0581200.X       |

# PLUG FUSES AND BOLT-DOWN FUSES

125 Vac • 2-30 A



## Edison-base plug fuses

### Description

Littelfuse plug fuses provide overcurrent protection to general purpose circuits and small motor loads. Edison-base plug fuses (TOO and TLO series) feature metal threads similar to incandescent lamp bases.

Type S plug fuses (SOO and SLO series) utilize a nonmetallic threaded base and must be used with Type S adapters (SAO series).

The National Electrical Code® permits Edison base plug fuses to be used for replacement purposes only. Type S fuses and adapters prevent shunting open fuses and over-fusing.

## Specifications

|                            |                       |
|----------------------------|-----------------------|
| <b>Voltage Rating</b>      | 125 Vac               |
| <b>Interrupting Rating</b> | 10 kA rms symmetrical |
| <b>Approvals</b>           | UL Listed 248-11      |

TOO fuses are dual-element time-delay Edison-base fuses designed for motor and motor branch circuit protection; also suitable for all general purpose circuits.

**TOO Fuses** Sample Part # OT00020.Z

| AMPERE RATINGS |       |    |    |
|----------------|-------|----|----|
| 2              | 6 1/4 | 12 | 25 |
| 4              | 8     | 15 | 30 |
| 5              | 10    | 20 | —  |

TLO fuses are medium time-delay Edison-base fuses designed for general purpose branch circuit protection.

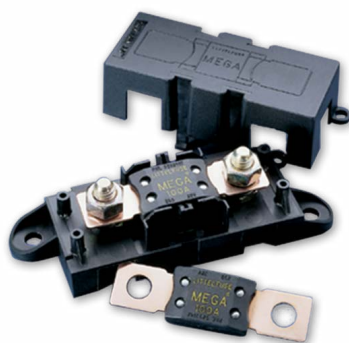
**TLO Fuses** Sample Part # OTL0020.Z

| AMPERE RATINGS |    |    |    |
|----------------|----|----|----|
| 15             | 20 | 25 | 30 |

## Web Resources

Fine more information: [Littelfuse.com/plug](http://Littelfuse.com/plug)

32 Vac/dc • 100-300 A



## MEGA® SLO-BLO® bolt-on fuse

### Description

The MEGA Fuse is designed for the protection of high current applications. Designed and patented by Littelfuse, it is ideal for battery and alternator protection and other heavy gauge cable applications.

## Specifications

|                            |                 |
|----------------------------|-----------------|
| <b>Voltage Rating</b>      | 32 Vac/dc       |
| <b>Interrupting Rating</b> | 2000 A @ 32 Vdc |

## Ordering Information

| CATALOG NUMBER | ORDERING NUMBER | AMPERAGE RATING | VOLTAGE RATING | COLOR CODE |
|----------------|-----------------|-----------------|----------------|------------|
| MEG100         | 0MEG100.X       | 100             | 32             | Yellow     |
| MEG125         | 0MEG125.X       | 125             | 32             | Green      |
| MEG150         | 0MEG150.X       | 150             | 32             | Blue       |
| MEG175         | 0MEG175.X       | 175             | 32             | White      |
| MEG200         | 0MEG200.X       | 200             | 32             | Blue       |
| MEG225         | 0MEG225.X       | 225             | 32             | Brown      |
| MEG250         | 0MEG250.X       | 250             | 32             | Pink       |
| MEG300         | 0MEG300.X       | 300             | 32             | Grey       |

## Recommended Fuse Holders

Part Number - 298900, see website: [Littelfuse.com/mega](http://Littelfuse.com/mega)

## Web Resources

Find more information: [Littelfuse.com/mega](http://Littelfuse.com/mega)

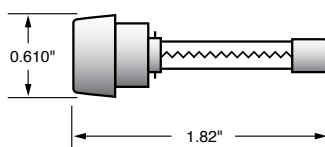
## LGR / LMF IN-LINE FUSES & LHR FUSE HOLDER



### LGR Fuses

Fast-Acting • 300 Vac

Used as in-line protection for fluorescent fixtures, this fast-acting fuse is ideal for increasing the safety and reliability of lighting fixtures.



### Specifications

|                            |  |
|----------------------------|--|
| <b>Voltage Rating</b>      | 300 Vac  |
| <b>Interrupting Rating</b> | 10 kA  |
| <b>Approvals</b>           | Standard 248-14<br>UL Listed (File: E10480)<br>CSA Certified (File: LR29862) |

### Ordering Information

| AMPERE RATINGS |        |   |   |    |    |
|----------------|--------|---|---|----|----|
| 1/2            | 1 5/10 | 3 | 6 | 9  | 15 |
| 1              | 2      | 4 | 7 | 10 | —  |
| 1 1/2          | 2 1/2  | 5 | 8 | 12 | —  |

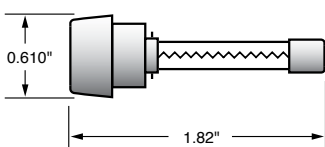
  

| SERIES | AMPERAGE | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|----------------|-----------------|
| LGR    | 5        | LGR005         | OLGR005.V       |

### LMF Fuses

Time-Delay • 300 Vac

Perfect for use in lighting systems, this 300 Vac time-delay fuse is designed to handle ballast transformer in-rush currents.



### Specifications

|                            |  |
|----------------------------|--|
| <b>Voltage Rating</b>      | 300 Vac  |
| <b>Interrupting Rating</b> | 10 kA  |
| <b>Approvals</b>           | Standard 248-14<br>UL Listed (File: E10480)<br>CSA Certified (File: LR29862) |

### Ordering Information

| AMPERE RATINGS |       |        |        |       |    |
|----------------|-------|--------|--------|-------|----|
| 3/10           | 5/10  | 1 5/10 | 2 5/10 | 4     | 7  |
| 1/2            | 1     | 2      | 3      | 5     | 8  |
| 5/10           | 1 1/4 | 2 1/2  | 3 2/10 | 6 1/4 | 10 |

| SERIES | AMPERAGE | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|----------------|-----------------|
| LMF    | 5        | LMF005         | OLMF005.V       |

### LHR Fuse Holder

Used as in-line protection for fluorescent fixtures, the Littelfuse LGR and LMF series fuses and LHR holder offer increased safety and reliability to lighting systems.

By individually fusing fixtures, electrical problems are isolated from the rest of the circuit. The added benefits of this is the ability to quickly identify the problem fixture and reduce the repair time.



Fuse holders are rated up to 10 amperes at 300 volts and are equipped with 7" 18 AWG leads. Order part number LHR000 for two leads, and part number LHR001 for one lead; with the other terminal used for insertion of 18 AWG ballast lead.

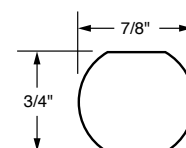
### Specifications

|                            |  |
|----------------------------|--|
| <b>Voltage Rating</b>      | 300 Vac                                      |
| <b>Ampere Rating</b>       | LHR000 10 A<br>LHR001 10 A                   |
| <b>Approvals</b>           | UL Recognized<br>CSA Certified (File: 73160) |
| <b>Flammability Rating</b> | UL94 V-0                                     |
| <b>Example part number</b> | LHR001                                       |
| <b>Ordering number</b>     | OLHR001T                                     |

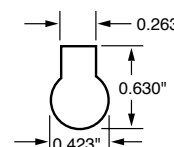
### Mounting Information

LHR001/LHR000 will fit keyhole punch or 0.875" knock-out hole. Anti-rotation feature is provided when used with keyhole punch.

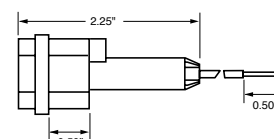
A "U-shaped" clip is available for panel mounting (packaged 10 clips per bag): Order part number LHROCA.



**Knock-out Hole**







**Keyhole Punch**



# LFCL • CABLE LIMITERS

## 250/600 VAC



| TYPE | TERMINATION   | VOLTAGE RATING | COPPER CABLE SIZE | ORDERING NUMBER |
|------|---|----------------|-------------------|-----------------|
| 1    | <br>CABLE TO CABLE               | 600 VAC        | 4 AWG             | LFCL0004ZC1     |
|      |   | 600 VAC        | 3 AWG             | LFCL0003ZC1     |
|      |   | 600 VAC        | 2 AWG             | LFCL0002ZC1     |
|      |   | 600 VAC        | 1 AWG             | LFCL0001ZC1     |
|      |   | 600 VAC        | 1/0 AWG           | LFCL01/0ZC1     |
|      |   | 600 VAC        | 2/0 AWG           | LFCL02/0ZC1     |
|      |   | 600 VAC        | 3/0 AWG           | LFCL03/0ZC1     |
|      |   | 600 VAC        | 4/0 AWG           | LFCL04/0ZC1     |
|      |   | 600 VAC        | 250 kcmil         | LFCL0250ZC1     |
|      |   | 600 VAC        | 350 kcmil         | LFCL0350ZC1     |
|      |   | 600 VAC        | 500 kcmil         | LFCL0500ZC1     |
|      |   | 600 VAC        | 600 kcmil         | LFCL0600ZC1     |
| 3    | <br>CABLE TO OFFSET BUS        | 600 VAC        | 12 AWG            | LFCL0012ZC3     |
|      |   | 600 VAC        | 10 AWG            | LFCL0010ZC3     |
|      |   | 600 VAC        | 6 AWG             | LFCL0006ZC3     |
|      |   | 600 VAC        | 4 AWG             | LFCL0004ZC3     |
|      |   | 600 VAC        | 2 AWG             | LFCL0002ZC3     |
|      |   | 600 VAC        | 1 AWG             | LFCL0001ZC3     |
|      |   | 600 VAC        | 1/0 AWG           | LFCL01/0ZC3     |
|      |   | 600 VAC        | 2/0 AWG           | LFCL02/0ZC3     |
|      |   | 600 VAC        | 3/0 AWG           | LFCL03/0ZC3     |
|      |   | 600 VAC        | 4/0 AWG           | LFCL04/0ZC3     |
|      |   | 600 VAC        | 250 kcmil         | LFCL0250ZC3     |
|      |   | 600 VAC        | 350 kcmil         | LFCL0350ZC3     |
| 5    | <br>STRAIGHT BUS TO OFFSET BUS | 250 VAC        | 2/0 & 3/0 AWG     | LFCL-UHA*       |
|      |   | 250 VAC        | 3/0 AWG           | LFCL-UHJ-M*     |
|      |   | 250 VAC        | 350 kcmil         | LFCL-UHJ-T*     |
|      |   | 250 VAC        | 600 kcmil         | LFCL-UHJ-W*     |
|      |   | 600 VAC        | 4/0 AWG           | LFCL04/0ZC5*    |
|      |   | 600 VAC        | 250 kcmil         | LFCL0250ZC5*    |
|      |   | 600 VAC        | 350 kcmil         | LFCL0350ZC5*    |
|      |   | 600 VAC        | 500 kcmil         | LFCL0500ZC5*    |
| 6    | <br>MOLE TO CABLE              | 600 VAC        | 750 kcmil         | LFCL0750ZC5*    |
|      |   | 600 VAC        | 4/0 AWG           | LFCL04/0ZC6     |
|      |   | 600 VAC        | 250 kcmil         | LFCL0250ZC6     |
|      |   | 600 VAC        | 500 kcmil         | LFCL0500ZC6     |

\*Suitable for use with aluminum cables / conductors. For sizing contact Tech-Line at 800-TEC-FUSE.

## Description

Cable limiters are fusible devices that provide very fast short-circuit protection, primarily to faulted cables, but also to other conductors such as busway. Cable limiters do not have an ampere rating, and cannot be used to provide overload protection. They are instead selected by cable size; for example, a 500 kcmil cable requires a 500 kcmil cable limiter. Their main use is to isolate faulted cables in circuits containing three or more parallel conductors per phase. They may be installed on the line side of the main service to provide short-circuit protection to the service conductors. This is especially important when service conductors are tapped from large low voltage networks or from large low impedance transformers.

Cable limiters have terminals which permit them to be installed in a variety of equipment. The most common configuration is the offset blade on one end and the crimp terminal on the other end. This permits the limiter to replace a cable terminal (lug).

## Applications

- Service Entrance Conductors
- Between Transformer or network bus and bus-way terminal boxes as secondary ties.
- Feeders with three or more conductors per phase to share heavier load in large commercial and industrial installations
- Multiple Single conductor services, tapped from single (utility) transformer in multi-family residential and small commercial installations.

## Features

- Current-limiting characteristics provide protection to conductor insulation and reduce damage when faults occur.
- Properly applied cable limiters may permit the use of equipment with reduced withstand ratings
- Wide variety of terminations and cable ratings permit use in almost every situation.

## Specifications

**Voltage Ratings**  
**Interrupting Rating**  
**Cable Size Range**  
**Approvals**  
**Recommended Installation Tool**

250 VAC, 600 VAC  
 100 kA (250 VAC), 200 kA (600 VAC)  
 12 AWG – 1000Kcmil Copper  
 Contact Tech-Line at 800-TEC-FUSE

**Make:** Thomas & Betts  
**Crimp Tool:** TBM14\_, TBM15\_

## Web Resources

For additional information, see website:

**Littelfuse.com/lfcl**



# CYLINDRICAL FUSES

500 Volts • 0.5-100 A



## Description

Littelfuse fast acting (gL-gG) fuses are used for the protection of cables against short-circuits. Time-lag (aM) fuses are used for protection of motors.

## Specifications

### Standards

10x38 mm: IEC 60269  
14x51 mm / 22x58mm: IEC 269-2-1

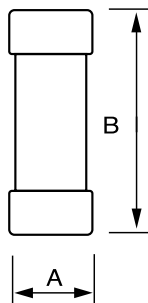
## Ordering Information

| BASE PART NUMBER | SIZE (mm) | CURRENT RANGE   | VOLTAGE (AC) | INTERRUPTING RATING |
|------------------|-----------|-----------------|--------------|---------------------|
| CY10X38          | 10 x 38   | 0.5-16 A        | 500 V        | 120 kA              |
|                  |           | 20-25 A (aM)    | 400 V        | 120 kA              |
|                  |           | 20-25 A (gL-gG) | 500 V        | 120 kA              |
|                  |           | 32 A            | 400 V        | 120 kA              |
| CY14X51          | 14 x 51   | 2-25 A          | 690 V        | 80 kA               |
|                  |           | 32-40 A         | 500 V        | 120 kA              |
|                  |           | 50 A            | 400 V        | 120 kA              |
| CY22X58          | 22 x 58   | 16-63 A         | 690 V        | 80 kA               |
|                  |           | 80-100 A        | 500 V        | 120 kA              |

| AMPERAGE | gL-gG ORDERING NUMBERS |            |             | aM ORDERING NUMBERS |            |             |
|----------|------------------------|------------|-------------|---------------------|------------|-------------|
|          | 10 X 38                | 14 X 51    | 22 X 58     | 10 X 38             | 14 X 51    | 22 X 58     |
| 0.5      | CY10X38G05             | —          | —           | CY10X38M05          | —          | —           |
| 1        | CY10X38G1              | —          | —           | CY10X38M1           | —          | —           |
| 2        | CY10X38G2              | CY14X51G2  | —           | CY10X38M2           | CY14X51M2  | —           |
| 4        | CY10X38G4              | CY14X51G4  | —           | CY10X38M4           | CY14X51M4  | —           |
| 6        | CY10X38G6              | CY14X51G6  | —           | CY10X38M6           | CY14X51M6  | —           |
| 8        | CY10X38G8              | CY14X51G8  | —           | CY10X38M8           | CY14X51M8  | —           |
| 10       | CY10X38G10             | CY14X51G10 | —           | CY10X38M10          | CY14X51M10 | —           |
| 12       | CY10X38G12             | CY14X51G12 | —           | CY10X38M12          | CY14X51M12 | —           |
| 16       | CY10X38G16             | CY14X51G16 | CY22X58G16  | CY10X38M16          | CY14X51M16 | CY22X58M16  |
| 20       | CY10X38G20             | CY14X51G20 | CY22X58G20  | CY10X38M20          | CY14X51M20 | CY22X58M20  |
| 25       | CY10X38G25             | CY14X51G25 | CY22X58G25  | CY10X38M25          | CY14X51M25 | CY22X58M25  |
| 32       | CY10X38G32             | CY14X51G32 | CY22X58G32  | CY10X38M32          | CY14X51M32 | CY22X58M32  |
| 40       | —                      | CY14X51G40 | CY22X58G40  | —                   | CY14X51M40 | CY22X58M40  |
| 50       | —                      | CY14X51G50 | CY22X58G50  | —                   | CY14X51M50 | CY22X58M50  |
| 63       | —                      | —          | CY22X58G63  | —                   | —          | CY22X58M63  |
| 80       | —                      | —          | CY22X58G80  | —                   | —          | CY22X58M80  |
| 100      | —                      | —          | CY22X58G100 | —                   | —          | CY22X58M100 |

## Dimensions

| FUSE SIZE | DIMENSIONS mm |    |
|-----------|---------------|----|
|           | A             | B  |
| 10 X 38   | 10            | 38 |
| 14 X 51   | 14            | 51 |
| 22 X 58   | 22            | 58 |



## Web Resources

For additional product information

Fuses: [Littelfuse.com/cy](http://Littelfuse.com/cy)

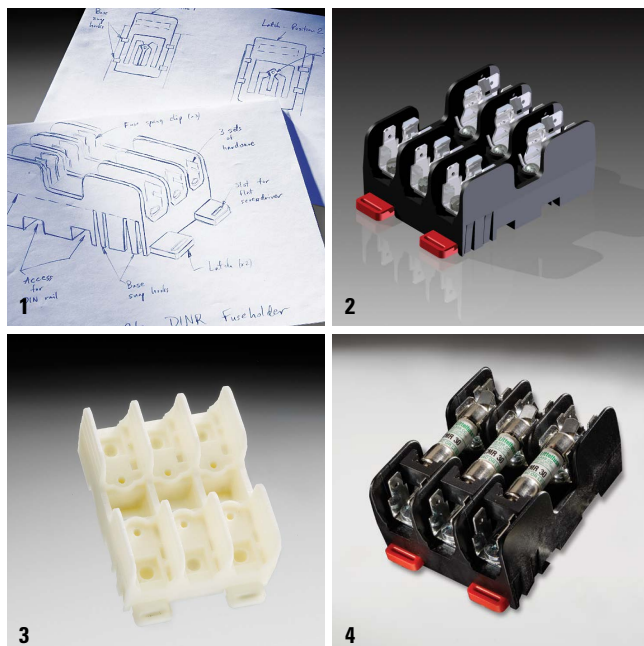
Fuse Holders: [Littelfuse.com/lfspm](http://Littelfuse.com/lfspm)  
[Littelfuse.com/cyh](http://Littelfuse.com/cyh)

## Fuse Holders

| AMP RATING | POLES | SIZE    | CATALOG / ORDERING # | TERMINAL TYPE  | DIN RAIL MOUNT |
|------------|-------|---------|----------------------|----------------|----------------|
| 32 A       | 1     | 10 X 38 | LFPSM0001Z           | Pressure Plate | •              |
| 32 A       | 2     | 10 X 38 | LFPSM0002Z           | Pressure Plate | •              |
| 32 A       | 3     | 10 X 38 | LFPSM0003Z           | Pressure Plate | •              |
| 32 A       | 4     | 10 X 38 | LFPSM0004Z           | Pressure Plate | •              |
| 32 A       | 1     | 10 X 38 | LFPSM0001ZXID*       | Pressure Plate | •              |
| 32 A       | 2     | 10 X 38 | LFPSM0002ZXID*       | Pressure Plate | •              |
| 32 A       | 3     | 10 X 38 | LFPSM0003ZXID*       | Pressure Plate | •              |
| 32 A       | 4     | 10 X 38 | LFPSM0004ZXID*       | Pressure Plate | •              |
| 50 A       | 1     | 14 X 51 | CYH14511             | Pressure Plate | •              |
| 50 A       | 2     | 14 X 51 | CYH14512             | Pressure Plate | •              |
| 50 A       | 3     | 14 X 51 | CYH14513             | Pressure Plate | •              |
| 100 A      | 1     | 22 X 58 | CYH22581             | Pressure Plate | •              |
| 100 A      | 2     | 22 X 58 | CYH22582             | Pressure Plate | •              |
| 100 A      | 3     | 22 X 58 | CYH22583             | Pressure Plate | •              |

\* Indicating

## OEM CUSTOM PRODUCTS



To speak with a sales associate regarding your application needs, call 800-TEC-FUSE (800-382-3873) or email [techline@Littelfuse.com](mailto:techline@Littelfuse.com).

### Examples



#### Two-Pole Combination Block

Save space and money by combining multiple components in one unit. Littelfuse collaborated with the customer to develop a cost effective UL listed component that combined a 600 Volt 100A two-pole Class T fuse block with a two-openings-per-pole splicer block.

### Description

We understand that existing solutions don't always solve your current problems. Building on 90 years of circuit protection experience, the Littelfuse engineering team collaborates with customers to develop customized solutions for applications such as solar panels, HVAC systems, lift trucks, lighting fixtures, industrial restaurant equipment and power converters.

### Process

The custom product design process begins with a situation analysis from our experienced engineers followed by our 4-step collaborative product development process.

1. Initial concept sketch created
2. CAD drawings to formalize the product description
3. 3D solid prototype to verify design
4. Final production parts that meet your design needs and specifications

### Additional Customized Products

HAZGARD Fork Lift Fuse .....64

### Web Resources

To learn more and contact our OEM team, visit:  
[Littelfuse.com/industrialoem](http://Littelfuse.com/industrialoem)



#### Custom-Leaded Fuse

Save space and reduce cost by eliminating the fuse block component. Littelfuse designed a series of custom through-hole PC-board mountable KLKD Midget fuses for a consumer application where reduced cost was more important than replaceability.