

LOW-PEAK® YELLOW™ FUSES





LP-CC

1/2 - 30A

CATALOG SYMBOL:
LP-CC

TIME-DELAY CURRENT-LIMITING:

300V DC 1/2-2⁹/₁₀A
150V DC 3-15
300V DC 20-30
AMP RATINGS 1/2-30 AMPS
AC VOLT RATING 600 VOLTS (OR LESS)

INTERRUPTING RATING:
200,000A RMS SYM.

AGENCY INFORMATION:

UL LISTED:
CLASS CC PER U.L. 248-4
(Guide #JDDZ, File #E4273)
CSA CERTIFIED - Class CC
(Class #1422-02, File #53787)
DC VOLT RATING 300 VOLT DC (OR LESS)
20,000 AIR, U.L. 248-1 1/2 - 2⁹/₁₀A AND 20-30A

DIMENSIONS:

1³/₃₂" x 1¹/₂" (10.3mm x 38.1mm),
WITH REJECTION FEATURE

DATA SHEET NUMBERS:

LP-CC (1/2-30) Data sheet #1023



APPROPRIATE FUSEHOLDERS:

Modular Fuseholder Data sheet #1151
Fuseblock Data sheet #1105

LP-CC LOW-PEAK® YELLOW™ Fuse

- A superior all-purpose, space saving branch circuit fuse that meets most protection requirements up to 30 amps.
- Very compact; physical size is only 1³/₃₂" x 1¹/₂" (10.3mm x 38.1mm), with rejection tip.
- The unique yellow color makes it easy to tell the correct fuse type is installed.

- Faster response to damaging short-circuit currents and higher interrupting rating than mechanical overcurrent protective devices.

200,000 Ampere Interrupting Rating

- Maximum interrupting rating for available fault current in today's large capacity systems.
- Helps ensure that future growth will not obsolete the system.

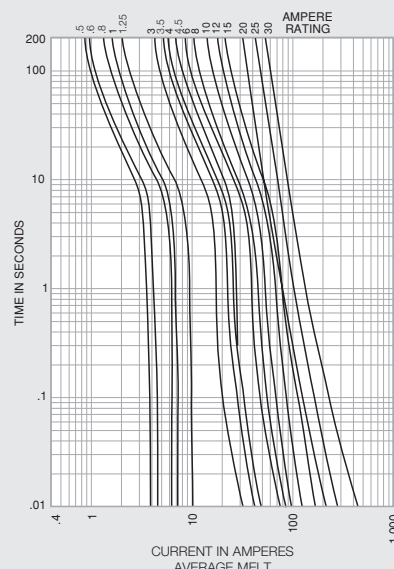
Dual Characteristics

- Time-delay to avoid unwanted fuse openings from surge currents.
- Fast speed of response under short-circuit conditions for a high degree of current-limitation.
- BENEFIT: The LOW-PEAK fuse can be sized close to full load ratings for maximum overload and short-circuit protection.
- BENEFIT: Can be used where either a time-delay or a fast-acting fuse is needed, making selection easier and reducing spare fuse inventories for substantial cost reduction.

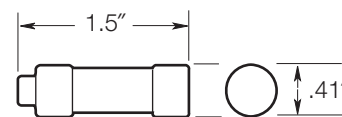
Superior Motor Circuit Protection

- For protection of small horsepower motor circuits.
- Proper sizing can provide Type "2" coordinated protection for NEMA and IEC motor controllers.

Time-Current Curve



Dimensional Data



Ordering Information

Catalog Numbers

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

Carton Quantity and Weight

| Ampere Ratings | Carton Qty. | Weight per Carton | |
|----------------|-------------|-------------------|------|
| | | Lbs. | Kg. |
| 0-30 | 10 | .193 | .088 |

Current-Limiting Effects

| *Prosp. S.C.C. | *Let-Through Current (Apparent RMS Symmetrical) | | | | | |
|----------------|---|---------|-------|-------|-------|-------|
| | 1 1/4A | 2 9/10A | 15A | 20A | 25A | 30A |
| 1,000 | 100 | 135 | 240 | 305 | 380 | 435 |
| 3,000 | 140 | 210 | 350 | 440 | 575 | 580 |
| 5,000 | 165 | 255 | 420 | 570 | 690 | 710 |
| 10,000 | 210 | 340 | 540 | 700 | 870 | 1,000 |
| 20,000 | 260 | 435 | 680 | 870 | 1,090 | 1,305 |
| 30,000 | 290 | 525 | 800 | 1,030 | 1,300 | 1,520 |
| 40,000 | 315 | 610 | 870 | 1,150 | 1,390 | 1,700 |
| 50,000 | 340 | 650 | 915 | 1,215 | 1,520 | 1,820 |
| 60,000 | 350 | 735 | 1,050 | 1,300 | 1,650 | 1,980 |
| 80,000 | 390 | 785 | 1,130 | 1,500 | 1,780 | 2,180 |
| 100,000 | 420 | 830 | 1,210 | 1,600 | 2,000 | 2,400 |
| 200,000 | 525 | 1,100 | 1,600 | 2,000 | 2,520 | 3,050 |

*RMS Symmetrical Amperes Short-Circuit Current Note: Data derived from current-limiting curves
Note: To calculate I₂ (I_{break}) multiply I_{RMS} value x 2.3.

Suggested Fuse Specifications

General

Fuses shall not be installed until equipment is ready to be energized. This measure prevents fuse damage during shipment of the equipment from the manufacturer to the job site, or from water that may contact the fuse before the equipment is installed. Final tests and inspections shall be made prior to energizing the equipment. This shall include a thorough cleaning, tightening, and review of all electrical connections and inspection of all grounding conductors. All fuses shall be furnished and installed by the electrical contractor. All fuses shall be of the same manufacturer. Fuses shall be as follows:

A. Main, Feeder, and Branch Circuit Fuses

1. Circuits 601 through 6000 amperes

Circuits 601 through 6000 amperes shall be protected by current-limiting BUSSMANN LOW-PEAK® YELLOW™ Time-delay fuses KRP-C(amp)SP. Fuses shall employ "O" rings as positive seals between the end bells and the glass melamine fuse barrel. Fuse links shall be pure silver (99.9% pure) in order to limit the short-circuit current let-through values to low levels and comply with NEC® Sections requiring component protection. Fuses shall be time-delay and shall hold 500% of rated current for a minimum of 4 seconds, clear 20 times rated current in .01 seconds or less, with an interrupting rating of 300,000 amperes RMS symmetrical, and be listed by a nationally recognized testing laboratory. Peak let-through currents and I^2t let-through energies shall not exceed the values established for Class L fuses. Larger HP motors shall be protected by these fuses, with ratings as shown on the drawings.

2. Circuits 0 through 600 amperes

Circuits 0 through 600 amperes shall be protected by current-limiting BUSSMANN LOW-PEAK YELLOW Dual-Element Time-Delay fuses LPN-RK(amp)SP/LPS-RK(amp)SP or LPJ(amp)SP. All fuses shall have separate overload and short-circuit elements. Fuses shall incorporate a spring activated thermal overload element that has a 284 degrees Fahrenheit melting point alloy. The fuses shall hold 500% of rated current for a minimum of 10 seconds (30A, 250V Class RK1 case size may be a minimum of 8 seconds at 500% of rated current) with an interrupting rating of 300,000 amperes RMS symmetrical, and be listed by a nationally recognized testing laboratory. Peak let-through currents and I^2t let-through energies shall not exceed the values established for Class RK1 or J fuses.

Motor Circuits – All individual motor circuits with full-load ampere ratings (F.L.A.) of 461 (or 400) amperes or less shall be protected by

BUSSMANN LOW-PEAK YELLOW Dual-Element Time-Delay fuses LPN-RK(amp)SP/LPS-RK(amp)SP or LPJ(amp)SP. The following guidelines apply for motors protected by properly sized overload relays: LPN-RK(amp)SP/LPS-RK(amp)SP fuses shall be installed in ratings of 130% [or 150% for LPJ(amp)SP fuses] of motor full-load current (or next size larger if this does not correspond to a fuse size), except where high ambient temperatures prevail, or where the motor drives a heavy revolving part which cannot be brought up to full speed quickly, such as large fans. Under such conditions the fuse may be 175%* of the motor full-load current, or the next standard size larger if 175%* does not correspond to a standard fuse size. If this will not allow the motor to start due to higher than normal inrush currents or longer than normal acceleration times (5 seconds or greater), fuses may be sized up to 225% (or next size smaller).

Motor Controllers – NEMA and IEC Style motor controllers shall be protected from short-circuits by BUSSMANN LOW-PEAK YELLOW Dual-Element Time-Delay fuses in order to provide testing agency-witnessed Type 2 coordination for the controller. This provides "no damage" protection for the controller, under low and high level fault conditions, as required by IEC Publication 60947-4 and UL 508E.

3. Switchboards, Panelboards, Load Centers

The manufacturer shall supply equipment utilizing fully rated and listed components. This equipment shall be tested, listed and labeled for the available short-circuit current. (Where series-rated fuse/circuit breaker systems are acceptable, the systems shall utilize tested, recognized components. The manufacturer shall supply switchboards, panelboards and load centers which have been tested, listed, and labeled for the available short-circuit current, and those combinations specified on the drawings.)

4. Marking

Fuses shall be "LOW-PEAK YELLOW" in color. "LOW-PEAK YELLOW" NOTICE labels to alert the end user of the engineered level of protection of the electrical equipment shall be field installed by the electrical contractor. They shall be marked with the proper fuse rating, per the specifications, and placed in a conspicuous location on the enclosure. These labels are available upon request from Bussmann.

B. Supplementary – Light Fixture Protective Fuses

1. Fluorescent fixtures shall be protected by BUSSMANN GLR or GMF fuses in HLR holders. These fixtures shall have individual protection on the line side of the ballast. A fuse and holder shall be mounted within, or as part of, the fixture. Size and type of fuse to be recommended by the fixture manufacturer.
2. All other ballast-controlled light fixtures shall be protected by BUSSMANN KTK or FNQ fuses in HEB, HPF, or HPS holders. These fixtures shall have individual protection on the line side of the ballast. Fuse and holder shall be mounted in a location convenient for changing fuses. Holder shall be mounted in a protected location or be an in-line waterproof holder (HEB, HEX, or HEY). Size and type of fuse to be recommended by the fixture manufacturer or as indicated on plans.

C. Spares

Upon completion of the building, the electrical contractor shall provide the owner with spare fuses as shown below:

1. 10% (minimum of 3) of each type and rating of installed fuses shall be supplied as spares.
2. BUSSMANN spare fuse cabinets – Catalog No. SFC – shall be provided to store the above spares. A supply of "LOW-PEAK YELLOW" NOTICE Labels shall be provided along with the spare fuses in the spare fuse cabinet.

D. Substitution Approvals

The electrical contractor's proposal shall be based upon the fuses specified, using the manufacturer's catalog numbers as called for in the specification or on the drawings. Coordination and current limitation requirements for protection of each part of the electrical system have been engineered on the basis of the type, class and manufacturer specified. In the event that the electrical contractor wishes to furnish materials other than those specified, a written request, along with a complete short-circuit and selective coordination study, shall be submitted to the engineer for evaluation at least two weeks prior to bid date. If the engineer's evaluation indicates acceptance, a written addendum will be issued listing the other acceptable manufacturer.

*150% for wound rotor and all DC motors.