MEDIUM VOLTAGE FUSES

2,400-38,000 Vac • Current-Limiting

Description

Littelfuse® offers a selection of E- and R-rated medium voltage fuses for the protection of transformers, potential transformers, feeders, and motor circuits. Single, double, and triple barrel designs are available to cover a wide range of current, voltage, and interrupting ratings. Conventional ferrule type, clip lock, and bolt-in mounting configurations are available for virtually any application. Hermetically sealed fuses for use in hazardous environments are also offered.

Contact the factory or your local Littelfuse representative for additional fuse ratings or custom mounting configurations.

24-Hour Emergency Service - Call 800-227-0029

Applications

- Power Transformer Protection
- Potential Transformer Protection
- Motor Controller Back-up Protection
- Fused Switches
- Feeder Circuits

Current-limiting E- and R-rated fuses are equipped with a mechanical indicator or striker pin that protrudes through the fuse cap upon operation of the fuse. This provides visual identification of a blown fuse and can be used as a trigger for external devices.

Note: Extension distance ½" minimum; extension force 2 lb. minimum.

General Information

The terms "Medium Voltage" and "High Voltage" have been used interchangeably by many people to describe fuses operating above 600 volts. Technically speaking, medium voltage fuses are those intended for the voltage range from 2,400 to 38,000 Vac. High voltage fuses are for circuits carrying voltages greater than 38,000 Vac.

E-rated fuses are considered to be general purpose fuses and can be used to protect against low and high values of fault current. R-rated fuses are designed for back-up protection. They must be used in series with other devices such as motor overload relays in order to achieve both overload and short-circuit protection.

Medium voltage fuses are not intended to provide overload protection in the same sense as fuses rated 600 volts or less. Medium voltage fuse current ratings do not have the same meanings as the ampere ratings of low voltage fuses.

All medium voltage fuses are limited in their ability to interrupt low value overcurrents, especially those between 100% and 200% of the fuse's continuous current rating. They are designed to carry their rated current without exceeding the temperature rise permitted by NEMA and ANSI standards.

Bolt-in Mount Fuses

R-RATED MEDIUM VOLTAGE FUSES

Description

R-rated fuses provide required short-circuit protection for medium voltage motors, motor controllers and associated circuitry. These components have limited ability to absorb the energy of large short-circuit currents. Medium voltage motor controllers contain overload relays which provide both overload protection and locked rotor protection to the motor. The controllers are also intended to interrupt low value short-circuits within the capability of the motor controller. This protects the medium voltage fuse from sustained overcurrents which are less than their minimum interrupting rating.

NEMA Standards for R-rated medium voltage power fuses require they operate within 15-35 seconds when subjected to an rms current 100 times the R rating. For example, a fuse with a 2R rating will open within 15 to 35 seconds on an applied current of 2 x 100 = 200 amperes.

Ordering Number

130-4R-1C-5.5

- Max Voltage (KV)
- Style:
  - C (Cartridge)
  - B (Bolt Mount)
  - IB (Inverted Bolt Mount)
  - BI (Bolt-In Mount)
- No. of Barrels
- Rating (size)
- Continuous Current

Dimensions

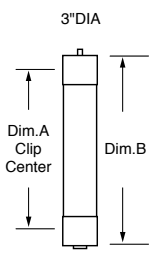


Figure 1

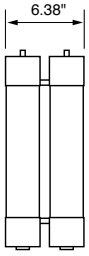


Figure 2

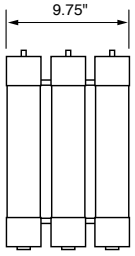
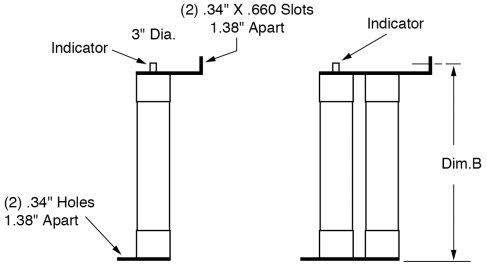


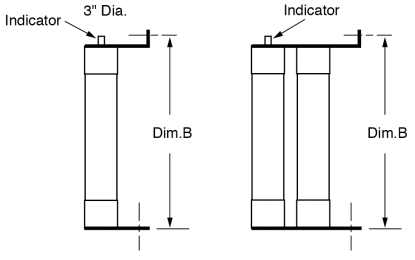
Figure 3

Cartridge "C"



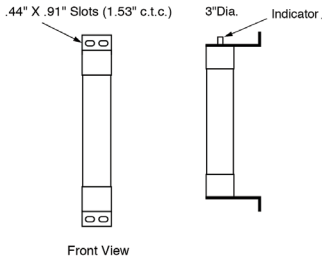
Bolt Mount "B"

Sample Part #: 130-4R-1B-5.5



Inverted-Bolt "IB"

Sample Part #: 130-4R-1IB-5.5



Bolt-In Mount "BI"

Sample Part #: 130-4R-1BI-5.5

Characteristics

Voltage Ratings	2,750 V – 8,250 V
Current Range	2R – 36R

Options

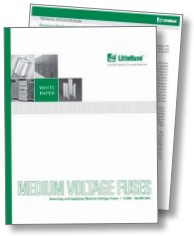
- Hermetically sealed for use in hazardous locations (add "S" suffix to part number)
- Bolt-in mounting configurations

Hookeye Feature*

For hookeye attachment; add "W" suffix to part number

*See web for Bolt Mount, Inverted Bolt Mount, and Bolt-In dimensions

Medium Voltage Fuse Protection



POWR-GARD® medium voltage fuses provide short-circuit protection for motors and transformers rated 2,400 to 38,000 volts AC. Visit **littelfuse.com/MediumVoltage** to download the white paper featuring protection tables, sizing recommendations, and applications.

E-RATED MEDIUM VOLTAGE FUSES

Description

E-rated fuses have time current characteristics designed to provide current-limiting protection for power transformers, potential transformers, power centers, feeder centers, and unit sub stations. When properly applied, they can protect against high and low fault currents.

NEMA Standards for E-rated medium voltage fuses require that fuses rated 100E or less open within 300 seconds (5 minutes) when subjected to an RMS value of 200-240% of the fuse continuous current rating; and fuses with an E rating larger than 100E must open within 600 seconds (10 minutes) when subjected to an RMS current of 220-240% of the fuse's continuous current rating. These values establish one point on the time-current curve.

Application Note

Since these fuses are used for the protection of general purpose circuits which may contain transformers, motors, and other equipment producing in-rush and/or overload currents, fuses should generally be rated at 140% of the normal full load current, and circuits should be analyzed to ensure that system load currents will not exceed the current rating of the fuse.

Characteristics

Voltage Ratings 2,750 V – 38,000 V
Current Range 10E – 600E

Options

- Hermetically sealed for use in hazardous locations (add "S" suffix to part number)
- Clip-lock (CL) available.

Dimensions

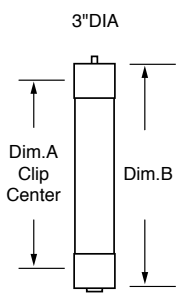


Figure 4

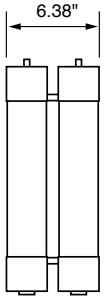


Figure 5

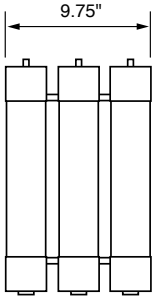


Figure 6

E-RATED	ORDERING/CATALOG NUMBER	SIZE	DIM. A (INCHES)	DIM. B (INCHES)	MAX INTERRUPTING RATING RMS (ASYM)*	FIGURE NUMBER
2.75 MAX. KV	10E1C2.75	10E	7"	10.875"	80,000	4
	15E1C2.75	15E	7"	10.875"	80,000	4
	20E1C2.75	20E	7"	10.875"	80,000	4
	25E1C2.75	25E	7"	10.875"	80,000	4
	30E1C2.75	30E	7"	10.875"	80,000	4
	40E1C2.75	40E	7"	10.875"	80,000	4
	50E1C2.75	50E	7"	10.875"	80,000	4
	65E1C2.75	65E	7"	10.875"	80,000	4
	80E1C2.75	80E	7"	10.875"	80,000	4
	100E-1C2.75	100E	7"	10.875"	80,000	4
	125E1C2.75	125E	7"	10.875"	80,000	4
	150E1C2.75	150E	7"	10.875"	80,000	4
	200E1C2.75	200E	7"	10.875"	80,000	4
	125E2C2.75	125E	7"	10.875"	80,000	5
	150E2C2.75	150E	7"	10.875"	80,000	5
	200E2C2.75	200E	7"	10.875"	80,000	5
	250E2C2.75	250E	7"	10.875"	80,000	5
	300E2C2.75	300E	7"	10.875"	80,000	5
	350E2C2.75	350E	7"	10.875"	80,000	5
	400E2C2.75	400E	7"	10.875"	80,000	5
	450E2C2.75	450E	7"	10.875"	80,000	5

* RMS Asymmetrical amperes = RMS Symmetrical amperes x 1.6