KLLU Class L Fuses

600 VAC ■ Time-Delay ■ 601 – 4000 Amperes

Littelfuse
POWR-GARD™ Products

SPECIFICATIONS

Voltage Ratings: AC: 600 Volts
DC: Contact factory

Interrupting Ratings: 200,000 amperes rms symmetrical

Ampere Range: 601 – 4000 amperes

Approvals: Standard 248-10, Class L
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)

AMPERE RATINGS

601	750	1000	1400	1800	3000
650	800	1200	1500	2000	3500
700	900	1350	1600	2500	4000

Example part number (series & amperage): KLLU 1000

KLLU series UL Listed, time-delay, Class L fuses are **quality** fuses in every sense of the word. They were developed to provide a somewhat lower priced alternate to the POWR-PRO® KLPC series fuses. KLLU series fuses meet or exceed all UL requirements for Class L fuses. For superior protection and performance, specification-grade POWR-PRO® KLPC series fuses are the recommended fuse. Complete information on KLPC fuses may be found in the POWR-PRO® section of this catalog.

APPLICATIONS

Service switches

Switchboard mains and feeders

Bolted pressure contact switches

Motor control center mains

Large motor branch circuits

UL Listed series-rated protection for molded case circuit breaker panelboards and loadcenters. See panelboard manufacturers' literature for recommended fuse rating.

SAFETY

- 200,000 A.I.R. — Provides reliable interruption of all overcurrents up to 200,000 amperes.
- When used for motor branch circuit protection, KLLU fuses may be sized close to the motor full-load current, providing excellent protection to branch circuit conductors, motor control equipment and motors.

LONGER EQUIPMENT LIFE

- Current Limiting — Reduces short circuit damage to systems and equipment.
- Reduced downtime.
- Ten second minimum time delay at 500 percent of rating eliminates needless downtime caused by heavy starting currents of large motors and other inductive loads.
- Selective coordination — KLLU fuses coordinate well with other Class L fuses and with all current-limiting Littelfuse fuses rated 600 amps or less. This means less time spent trying to locate short circuits or overloaded equipment, because only the fuse immediately on the line side of the affected circuit opens.

EASY TO USE

- 200,000 A.I.R. rating minimizes need for short circuit calculations . . . meets present and future system requirements.
- KLLU fuse time-current characteristics closely match typical time-current curves of circuit breakers. Although fuse/circuit breaker systems can seldom be 100% coordinated, KLLU series fuses permit use of a wider range of breaker setting than fast-acting Class L fuses. Excellent protection for a single breaker or a group of breakers.

KLLU Class L Fuses

600 VAC ■ Time-Delay ■ 601 – 4000 Amperes

Littelfuse POWR-GARD™ Products

General Purpose Fuses

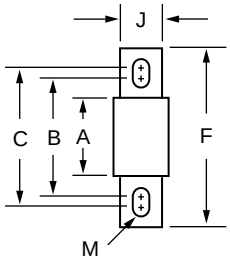


FIG.1

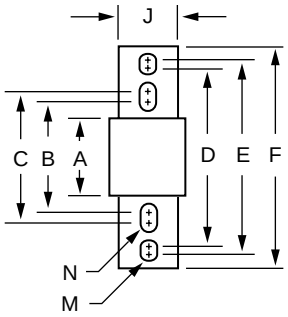


FIG.2

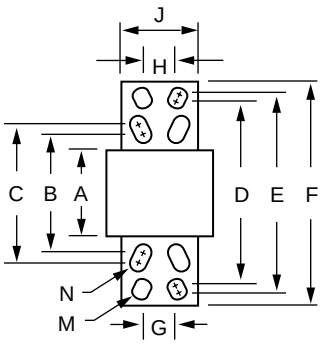


FIG. 3

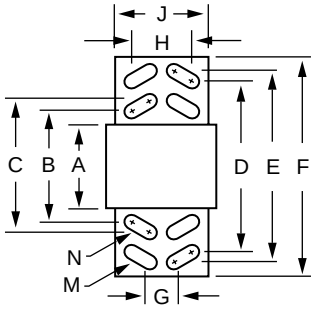
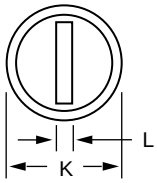


FIG. 4

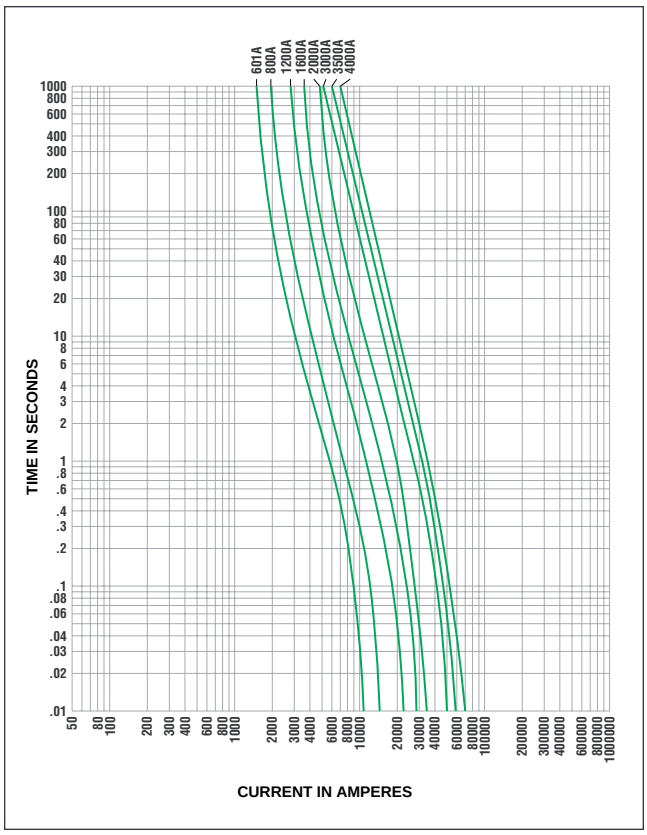


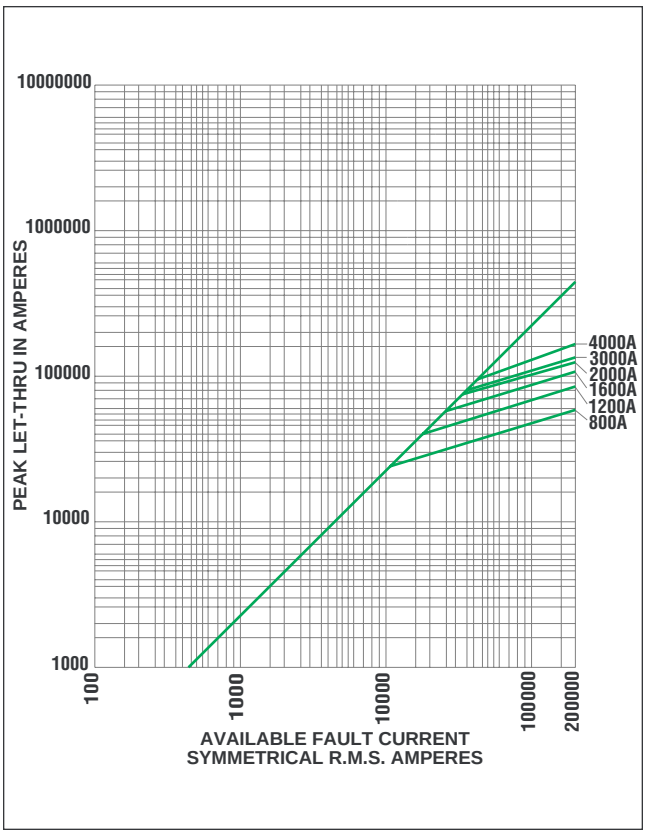
AMPERES	FIG. NO.	DIMENSIONS IN INCHES (mm in parentheses)												
		A	B	C	D	E	F	G	H	J	K	L	M	N
601 – 800	1	3-3/4 (95.3)	5-3/4 (146.1)	6-3/4 (171.5)	—	—	8-5/8 (219.1)	—	—	2 (50.8)	2-1/2 (63.5)	3/8 (9.5)	5/8 x 1-1/8 (15.9) x (28.6)	—
801 – 1200	2	3-3/4 (95.3)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10-3/4 (273.1)	—	—	2 (50.8)	2-1/2 (63.5)	3/8 (9.5)	5/8 x 3/4 (15.9) X (19.1)	5/8 x 1- 1/8 (15.9) X (28.6)
1201 – 1600	2	3-3/4 (95.3)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10-3/4 (273.1)	—	—	2-3/8 (60.3)	3 (76.2)	7/16 (11.1)	5/8 X 3/4 (15.9) X (19.1)	5/8 X 1- 1/8 (15.9) X (28.6)
1601 – 2000	2	3-3/4 (95.3)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10-3/4 (273.1)	—	—	2-3/4 (69.9)	3-1/2 (88.9)	1/2 (12.7)	5/8 x 3/4 (15.9) x (19.1)	5/8 x 1- 1/8 (15.9) x (28.6)
2001 – 2500	3	4 101.6)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10- 3/4 (273.1)	1-5/8 (41.3)	1-3/4 (44.5)	3-1/2 (88.9)	5 (127.0)	3/4 (19.1)	5/8 X 3/4 (15.9) x (19.1)	5/8 X 1- 1/8 (15.9) x (28.6)
2501 – 3000	3	4 (101.6)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10- 3/4 (273.1)	1-5/8 (41.3)	1-3/4 (44.5)	4 (101.6)	5 (127.0)	3/4 (19.1)	5/8 x 3/4 (15.9) x (19.1)	5/8 x 1- 1/8 (15.9) x (28.6)
3001 – 4000	4	4 (101.6)	5-3/4 (146.1)	6-3/4 (171.5)	9-1/4 (235.0)	9-1/2 (241.3)	10- 3/4 (273.1)	1-3/4 (44.5)	3-1/4 (82.6)	4-3/4 (120.7)	5-3/4 (146.1)	3/4 (19.1)	5/8 x 1-3/8 (15.9) x (34.9)	5/8 x 1-3/8 (15.9) x (34.9)

KLLU Class L Fuses

600 VAC ▪ Time-Delay ▪ 601 – 4000 Amperes

Littelfuse POWR-GARD™ Products





General Purpose Fuses

FLNR_ID/FLSR_ID Indicator™ Class RK5 Fuses

250/600 VAC ■ Dual-Element, Time Delay ■ 1/10 – 600 Amperes

Littelfuse POWR-GARD™ Products

Littelfuse FLNR_ID/FLSR_ID Indicator™ fuses provide visual blown fuse indication at a glance. The patented state-of-the-art solid state design provides maximum reliability and superior performance characteristics in a true dual-element design. The use of Indicator™ fuses reduces down-time, nuisance opening, increases safety, and can save thousands of dollars in lost production time.

APPLICATIONS

Service entrance switches
Switchboard main and feeder switches
Motor control center mains and motor branch circuits
Individual fused combination motor controllers
Distribution panelboards
Industrial control panels
Protection of fully-rated panelboards and loadcenters
All general purpose circuits

FEATURES/BENEFITS

- Reduce Down-Time — A glance at the indicating window of a FLNR_ID or FLSR_ID Indicator™ fuse pinpoints open fuses immediately. If the window is dark, the fuse has opened. It's that simple. No fuse testing required. Machine operators can immediately determine that there is an open fuse and request maintenance personnel to bring the proper replacement.
- Reduce Nuisance Opening — FLNR_ID and FLSR_ID Indicator™ fuses have superior time-delay and cycling characteristics which can lengthen fuse life and decrease needless opening.
- Reduce Fuse Inventory — Because FLNR_ID and FLSR_ID Indicator™ fuses have superior performance characteristics they can be used on a variety of applications, thus decreasing fuse inventory.
- Reduce Equipment Damage — FLNR_ID and FLSR_ID Indicator™ fuses have superior overload and short circuit protection which can reduce equipment damage. Indicator™ fuses also provide IEC Type II protection to NEMA motor starters without the high cost of RK1 fuses.
- Reduce Accidents — The FLNR_ID and FLSR_ID Indicator™ fuses improve safety by minimizing exposure to live circuits. Unlike other forms of blown fuse indication, Indicator™ fuses provide built-in blown fuse indication with the power on or off. No second guessing whether a light means a good or bad fuse and no current going across a blown fuse to power a lighted accessory.

SPECIFICATIONS

Voltage Ratings: AC: 250 Volts (FLNR_ID);
600 Volts (FLSR_ID)
DC: 125 Volts (FLNR 1/10 – 30A);
125 Volts (FLNR_ID 35 – 600A);
300 Volts (FLSR_ID)

Interrupting Ratings: AC: 200,000 amperes rms symmetrical
300,000 amperes rms symmetrical (Littelfuse self-certified)
DC: 20,000 amperes

Ampere Range: 1/10 – 600 amperes

Approvals: Standard 248-12, Class RK5
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)
MSHA 300 Volt Listing (FLSR_ID)
QPL: Federal Specification WF-1814

AMPERE RATINGS

1/10**	9/10	1 9/10	4	8	30	80	225
1/8	8/10	2	4 1/2	9	35	90	250
15/100	1	2 1/4	5	10	40	100	300
2/10	1 1/8	2 1/2	5 6/10	12	45	110	350
1/4	1 1/4	2 8/10	6	15	50	125	400
3/10	1 1/10	3	6 1/4	17 1/2	60	150	450
4/10	1 1/2	3 2/10	7	20	70	175	500
1/2	1 6/10	3 1/2	7 1/2	25	75	200	600

**FLNR only

NOTE: For 1/10 – 30 ampere 250 volt fuses, order non-indicating FLNR series fuses.

NOTE: All FLNR_ID fuses rated 35 – 600A are Indicator fuses.

NOTE: All FLSR_ID fuses rated 1 amp and above are Indicator fuses.

Example part number (series & amperage): FLSR100ID

RECOMMENDED FUSE BLOCKS

LR250 series (for FLNR_ID series fuses)
LR600 series (for FLSR_ID series fuses)

Refer to Fuse Block section of this catalog for additional information.

FLNR_ID/FLSR_ID Indicator™ Class RK5 Fuses

250/600 VAC ▪ Dual-Element, Time Delay ▪ 1/10 – 600 Amperes

Littelfuse POWR-GARD™ Products

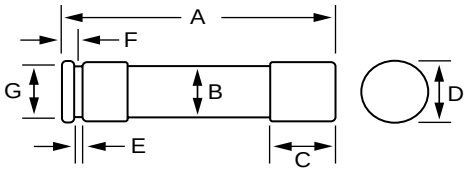
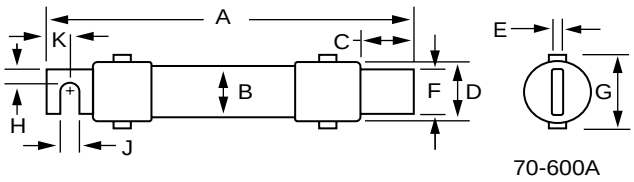


FIG. 1



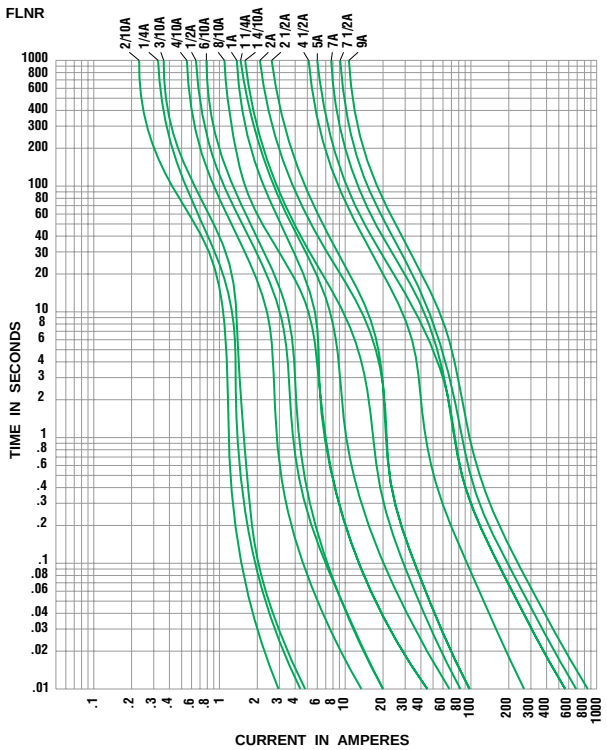
70-600A

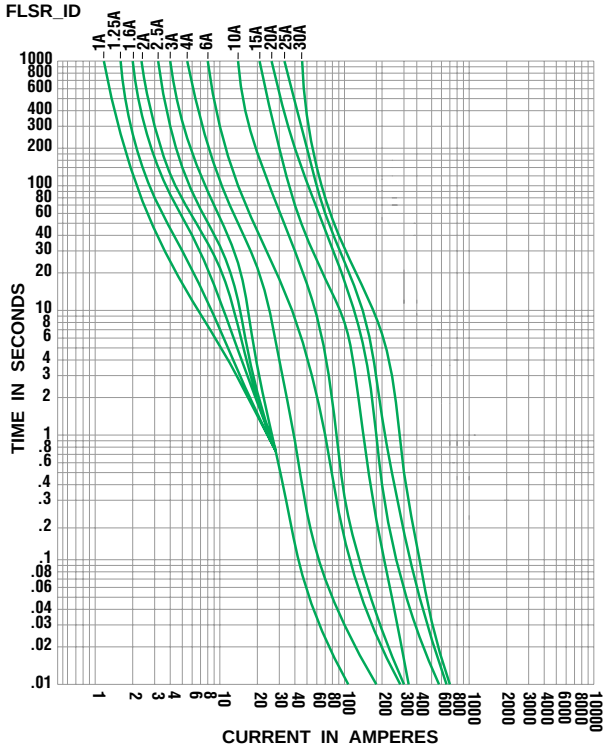
FIG. 2

General Purpose Fuses

AMPERES	REFER TO FIG. NO.	SERIES	DIMENSIONS IN INCHES (mm in parentheses)									
			A	B	C	D	E	F	G	H	J	K
1/10 – 30	1	FLNR_ID	2 (50.8)	1/2 (12.7)	1/2 (12.7)	9/16 (14.3)	5/64 (2.0)	5/32 (4.0)	3/8 (9.5)	—	—	—
		FLSR_ID	5 (127.0)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/16 (4.8)	5/8 (15.9)	—	—	—
35 – 60	1	FLNR_ID	3 (76.2)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/16 (4.8)	5/8 (15.9)	—	—	—
		FLSR_ID	5-1/2 (139.7)	1 (25.4)	5/8 (15.9)	1-1/16 (27.0)	3/32 (2.4)	1/4 (6.4)	7/8 (22.2)	—	—	—
70 – 100	2	FLNR_ID	5-7/8 (149.2)	1 (25.4)	1-1/16 (27.0)	1-1/16 (27.0)	1/8 (3.2)	3/4 (19.1)	1-1/4 (31.8)	1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
		FLSR_ID	7-7/8 (200.0)	1-1/4 (31.8)	1-1/16 (27.0)	1-5/16 (33.3)	1/8 (3.2)	3/4 (19.1)	1-1/2 (38.1)	1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
110 – 200	2	FLNR_ID	7-1/8 (181.0)	1-1/2 (38.1)	1-15/32 (37.3)	1-19/32 (40.5)	3/16 (4.8)	1-1/8 (28.6)	1-27/32 (46.8)	7/16 (11.1)	9/32 (7.1)	11/16 (17.5)
		FLSR_ID	9-5/8 (244.5)	1-3/4 (44.5)	1-15/32 (37.3)	1-27/32 (46.8)	3/16 (4.8)	1-1/8 (28.6)	2-3/32 (53.2)	7/16 (11.1)	9/32 (7.1)	11/16 (17.5)
225 – 400	2	FLNR_ID	8-5/8 (219.1)	2 (50.8)	1-15/16 (49.2)	2-3/32 (53.2)	1/4 (6.4)	1-5/8 (41.3)	2-11/32 (59.5)	5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
		FLSR_ID	11-5/8 (295.3)	2-1/2 (63.5)	2 (50.8)	2-19/32 (65.9)	1/4 (6.4)	1-5/8 (41.3)	2-27/32 (72.2)	5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
450 – 600	2	FLNR_ID	10-3/8 (263.5)	2-1/2 (63.5)	2-3/8 (60.3)	2-19/32 (65.9)	1/4 (6.4)	2 (50.8)	2-27/32 (72.2)	3/4 (19.1)	17/32 (13.5)	1-1/8 (28.6)
		FLSR_ID	13-3/8 (339.7)	3 (76.2)	2-13/32 (61.1)	3-3/32 (78.6)	1/4 (6.4)	2 (50.8)	3-11/32 (84.93)	3/4 (19.1)	17/32 (13.5)	1-1/8 (28.6)

For additional application information request Product Bulletin EL-4



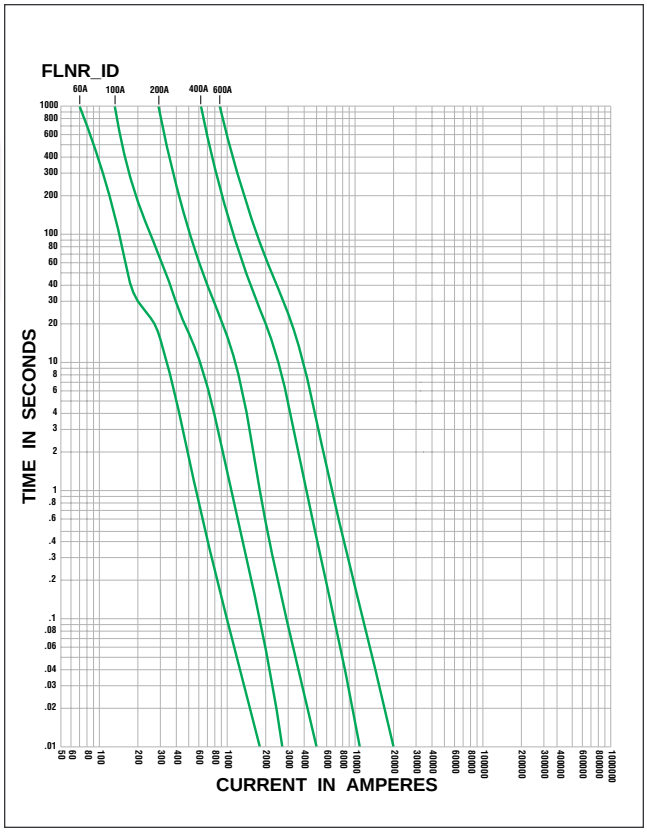


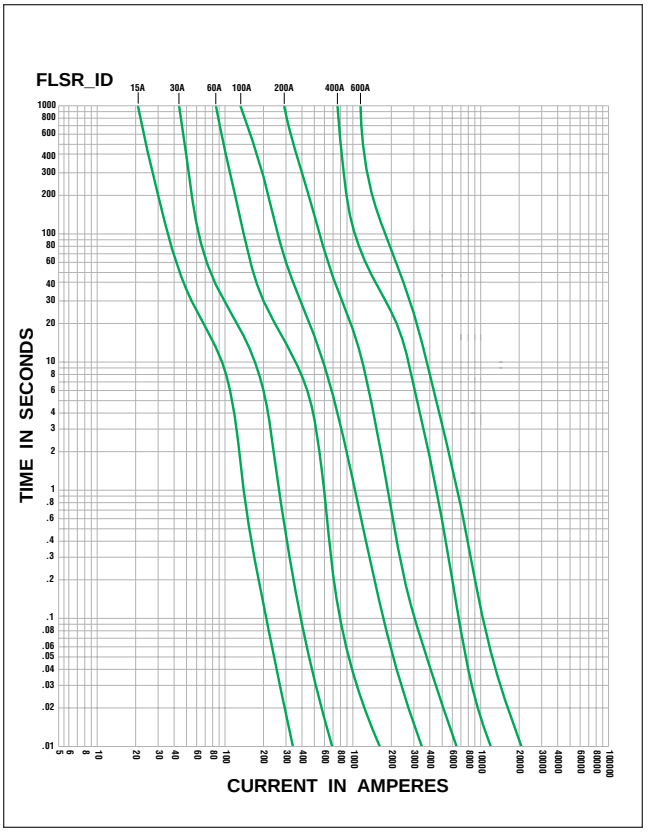
FLNR_ID/FLSR_ID Indicator™ Class RK5 Fuses

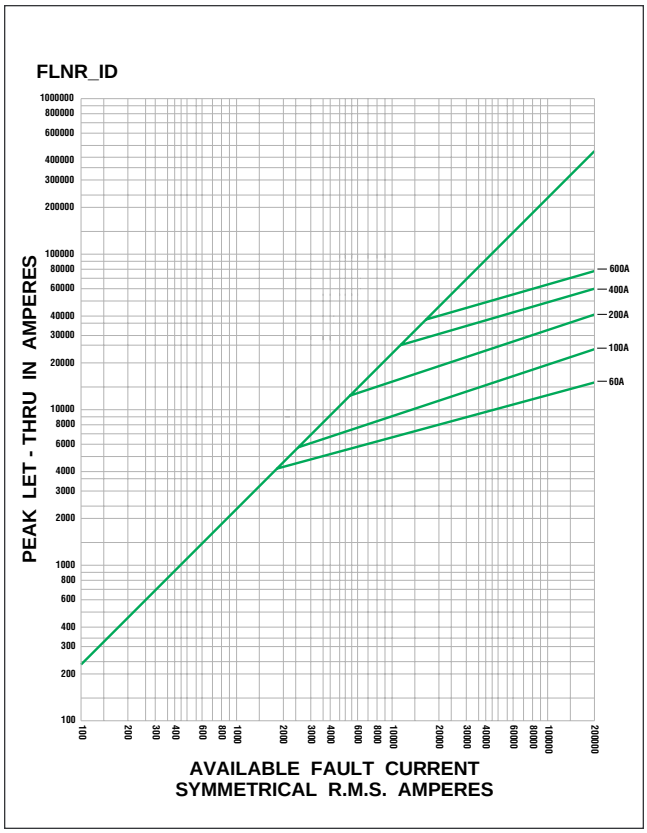
250/600 VAC ■ Dual-Element, Time Delay ■ 1/10 – 600 Amperes

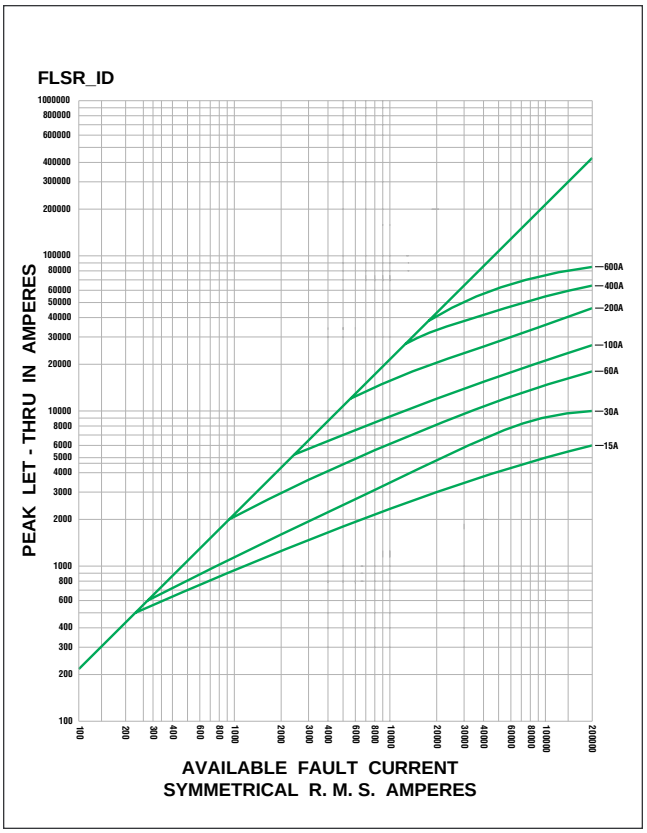
Littelfuse POWR-GARD™ Products

General Purpose Fuses









FLNR/FLSR Class RK5 Fuses

250/600 VAC ■ Dual-Element, Time-Delay ■ 1/10 – 600 Amperes

Littelfuse POWR-GARD™ Products

Littelfuse FLNR/FLSR series fuses have been the superior UL Class RK5 dual-element time-delay fuses, and are the most widely used class of fuses. FLNR/FLSR series fuses provide excellent protection for all types of circuits especially those containing motors. However, users and specifiers should consider the significant benefits offered by Indicator fuses. Complete information on these fuses may be found in this section of this catalog.

APPLICATIONS

Service entrance switches
Switchboard main and feeder switches
Motor control center mains and motor branch circuits
Individual fused combination motor controllers
Distribution panelboards
Industrial control panels
Protection of fully-rated panelboards and loadcenters
All general purpose circuits

SAFETY

- 200,000 A.I.R. — Reliable interruption of all overcurrents up to 200,000 amperes.
- Faster acting short circuit protection than any non-current limiting mechanical protective device.

RELIABILITY

- Accurate and reliable — Automated, precision manufactured and assembled parts ensure accurate, consistent response to overloads and short circuits.

SPECIFICATIONS

Voltage Ratings: AC: 250 Volts (FLNR); 600 Volts (FLSR)
DC: 125 Volts (FLNR)
300 Volts (FLSR)

Interrupting Ratings: AC: 200,000 amperes rms symmetrical
DC: 20,000 amperes

Ampere Range: 1/10 – 600 amperes

Approvals: Standard 248-12, Class RK5
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)
MSHA 300 Volt Listing (FLSR)
QPL: Federal Specification WF-1814

AMPERE RATINGS

1/10	9/10	1 9/10	4	8	30	80	225
1/8	9/10	2	4 1/2	9	35	90	250
15/100	1	2 1/4	5	10	40	100	300
2/10	1 1/8	2 1/2	5 6/10	12	45	110	350
1/4	1 1/4	2 8/10	6	15	50	125	400
3/10 **	1 1/10	3	6 1/4	17 1/2	60	150	450
4/10	1 1/2	3 2/10	7	20	70	175	500
1/2	1 5/10	3 1/2	7 1/2	25	75*	200	600

**FLNR only, *FLSR only

Example part number (series & amperage): FLSR100

RECOMMENDED FUSE BLOCKS

LR250 series (for FLNR series fuses)
LR600 series (for FLSR series fuses)

Refer to Fuse Block section of this catalog for additional information.

LONGER EQUIPMENT LIFE

- Reduced damage to equipment caused by heating and magnetic forces of short circuits.
- Equipment runs cooler with low-resistance dual-element fuses.

FLNR/FLSR Class RK5 Fuses

250/600 VAC ▪ Dual-Element, Time Delay ▪ 1/10 – 600 Amperes

Littelfuse POWR-GARD™ Products

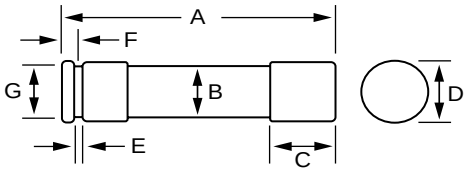
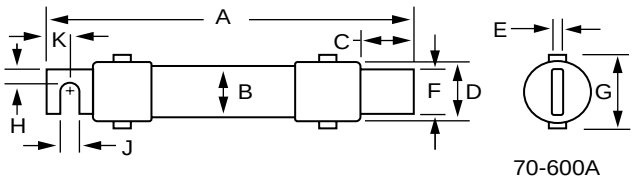


FIG. 1



70-600A

FIG. 2

AMPERES	REFER TO FIG. NO.	SERIES	DIMENSIONS IN INCHES (mm in parentheses)									
			A	B	C	D	E	F	G	H	J	K
1/10 – 30	1	FLNR	2 (50.8)	1/2 (12.7)	1/2 (12.7)	9/16 (14.3)	5/64 (2.0)	5/32 (4.0)	3/8 (9.5)	—	—	—
		FLSR	5 (127.0)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/16 (4.8)	5/8 (15.9)	—	—	—
35 – 60	1	FLNR	3 (76.2)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	3/32 (2.4)	3/16 (4.8)	5/8 (15.9)	—	—	—
		FLSR	5-1/2 (139.7)	1 (25.4)	5/8 (15.9)	1-1/16 (27.0)	3/32 (2.4)	1/4 (6.4)	7/8 (22.2)	—	—	—
70 – 100	2	FLNR	5-7/8 (149.2)	1 (25.4)	1-1/16 (27.0)	1-1/16 (27.0)	1/8 (3.2)	3/4 (19.1)	1-1/4 (31.8)	1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
		FLSR	7-7/8 (200.0)	1-1/4 (31.8)	1-1/16 (27.0)	1-5/16 (33.3)	1/8 (3.2)	3/4 (19.1)	1-1/2 (38.1)	1/4 (6.4)	9/32 (7.1)	1/2 (12.7)
110 – 200	2	FLNR	7-1/8 (181.0)	1-1/2 (38.1)	1-15/32 (37.3)	1-19/32 (40.5)	3/16 (4.8)	1-1/8 (28.6)	1-27/32 (46.8)	7/16 (11.1)	9/32 (7.1)	11/16 (17.5)
		FLSR	9-5/8 (244.5)	1-3/4 (44.5)	1-15/32 (37.3)	1-27/32 (46.8)	3/16 (4.8)	1-1/8 (28.6)	2-3/32 (53.2)	7/16 (11.1)	9/32 (7.1)	11/16 (17.5)
225 – 400	2	FLNR	8-5/8 (219.1)	2 (50.8)	1-15/16 (49.2)	2-3/32 (53.2)	1/4 (6.4)	1-5/8 (41.3)	2-11/32 (59.5)	5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
		FLSR	11-5/8 (295.3)	2-1/2 (63.5)	2 (50.8)	2-19/32 (65.9)	1/4 (6.4)	1-5/8 (41.3)	2-27/32 (72.2)	5/8 (15.9)	13/32 (10.3)	15/16 (23.8)
450 – 600	2	FLNR	10-3/8 (263.5)	2-1/2 (63.5)	2-3/8 (60.3)	2-19/32 (65.9)	1/4 (6.4)	2 (50.8)	2-27/32 (72.2)	3/4 (19.1)	17/32 (13.5)	1-1/8 (28.6)
		FLSR	13-3/8 (339.7)	3 (76.2)	2-13/32 (61.1)	3-3/32 (78.6)	1/4 (6.4)	2 (50.8)	3-11/32 (84.93)	3/4 (19.1)	17/32 (13.5)	1-1/8 (28.6)

KLNR/KLSR Class RK1 Fuses

250/600 VAC ▪ Fast-Acting ▪ 1 – 600 Amperes

Littelfuse POWR-GARD™ Products

SPECIFICATIONS

Voltage Ratings: AC: 250 Volts (KLNR); 600 Volts (KLSR)
DC: 125 Volts (1 – 600A KLNR);
250 Volts (1 – 30A KLSR);
300 Volts (35 – 600A KLSR).

Interrupting Ratings: AC: 200,000 amperes rms symmetrical
DC: 20,000 amperes

Ampere Range: 1 – 600 amperes.

Approvals: AC: Standard 248-12, Class RK1
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)
DC: Littelfuse Self-certified

AMPERE RATINGS

1	10	40	100	250
2	12	45	110	300
3	15	50	125	350
4	20	60	150	400
5	25	70	175	450
6	30	80	200	500
8	35	90	225	600

Example part number (series & amperage): KLNR 200

RECOMMENDED FUSE BLOCKS

LR250 series (for KLNR series fuses)
LR600 series (for KLSR series fuses)

Refer to Fuse Block section of this catalog for additional information.

General Purpose Fuses

KLNR/KLSR series RK1 fuses were the earliest type of current-limiting fuse developed. Their single-element, silver link design enables them to provide fast-acting overload and short-circuit protection. When used to protect inductive loads such as motors, solenoids, and transformers, KLNR/KLSR series fuses must be greatly oversized to prevent opening the fuses on harmless inrush currents. In such applications, KLNR/KLSR series fuses may only provide short-circuit protection.

We recommend using POWR-PRO® LLNRK/LLSRK series RK1, dual-element, time-delay fuses in all new applications requiring the current-limiting ability of UL Class RK1 fuses, or in existing applications where fast-acting RK1 or RK5 fuses have been opening on harmless system surges such as motor starting currents.

APPLICATIONS

Resistance heaters

Lighting circuits

Non-inductive loads

Molded case circuit breaker load centers and panelboards have increased interrupting ratings when “series rated” with Littelfuse KLNR/KLSR Class RK1 fuses. Refer to panelboard manufacturer’s literature for UL Listed combination of fuses and panelboards. Series ratings up to 200,000 amperes are available.

SAFETY

- 200,000 A.I.R. — Reliable interruption of all overcurrents up to 200,000 amperes.
- Extremely current limiting — Stops damaging short-circuit current faster than any mechanical protective device.
- Fast-acting — Provides fast-acting protection to equipment such as variable speed drives, rectifiers and other equipment containing surge-sensitive components.

LONGER EQUIPMENT LIFE

- Current-limiting design reduces damage to equipment caused by heating and magnetic effects of short-circuit currents.

ECONOMICAL

- Extremely current-limiting — often permits use of readily available, less costly equipment.
- Used as input or output fuses for surge-sensitive components, such as variable speed drives and rectifiers, fast-acting KLNR/KLSR fuses may prevent opening of expensive semiconductor fuses protecting individual components.

EASY TO USE

- 200,000 A.I.R. rating minimizes need for short circuit calculations.

DIMENSIONS

- Refer to FLNR for KLNR dimensions and FLSR for KLSR dimensions.

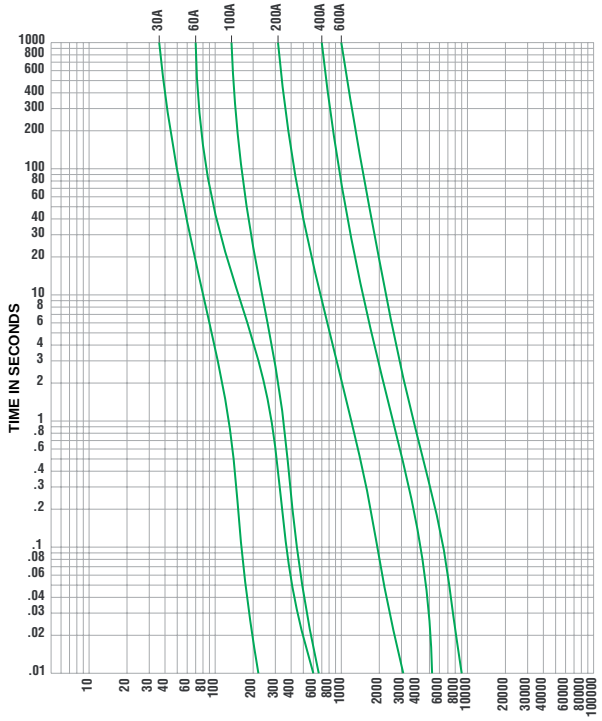
KLNR/KLSR Class RK1 Fuses

250/600 VAC ■ Fast-Acting ■ 1 – 600 Amperes

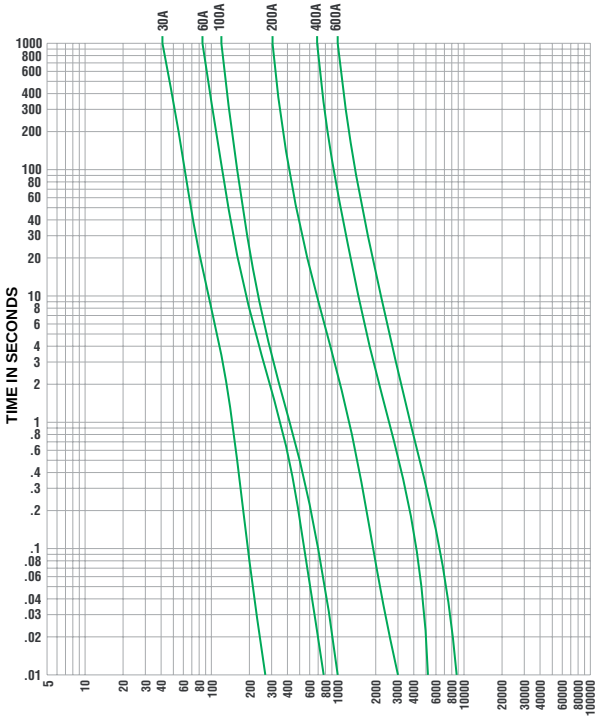
Littelfuse POWR-GARD™ Products

General Purpose Fuses

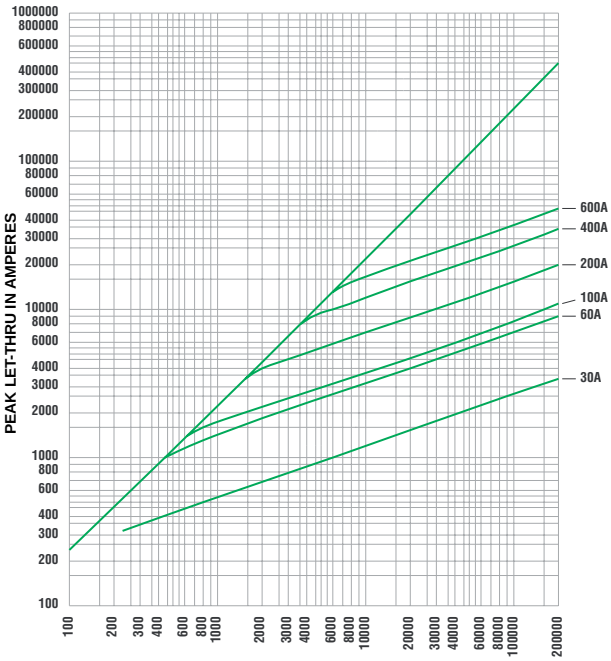
KLNR



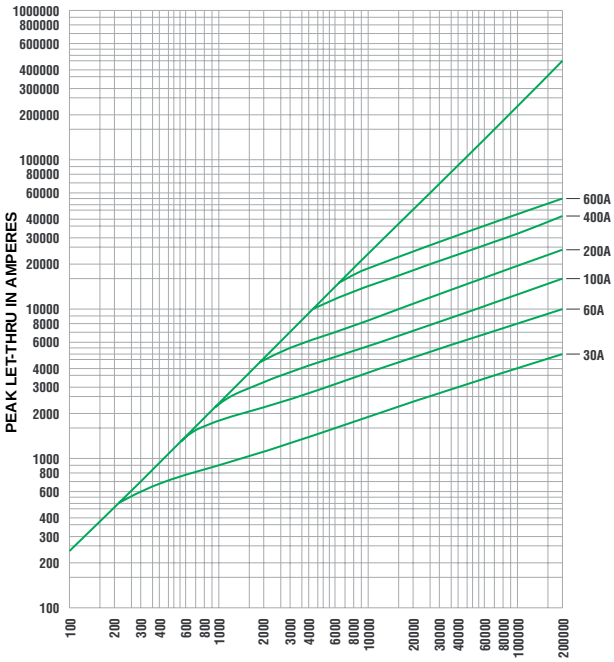
KLSR



KLNR



KLSR



NLN/NLS Class K5 Fuses

250/600 VAC ■ "ONE-TIME" ■ 1 – 600 Amperes

Littelfuse POWR-GARD™ Products

NLN and NLS series fuses provide low cost protection for general purpose feeder and branch circuits when available short circuit currents are less than 50,000 amperes. They replace all Class H fuses which have only a 10,000 ampere interrupting rating. They are suitable for use in many residential and smaller commercial and industrial applications.

NLKP series fuses are Canadian "Code" fuses specifically designed to meet Canadian Electrical Code Type P fuse requirements for residential use. They have a 10,000 ampere interrupting rating.

However, to obtain the added benefits of time-delay, current-limitation, and higher interrupting rating, consider the use of POWR-PRO® IDSR Indicator™ fuses for circuits between 250 and 600 volts. The user gets all the benefits of time-delay RK5 fuses plus the added benefits of an indicating fuse that tells when it has opened. Complete information on these fuses may be found in the POWR-PRO® section of this catalog. For circuits up to 250 volts, see FLNR fuses in this section of the catalog.

APPLICATIONS

General purpose residential and commercial circuits with little or no motor load.

Resistive heating loads.

ECONOMICAL

- For use in applications where lowest initial cost is the major consideration.

SAFETY

- 50,000 A.I.R., Class K5 — Adequate interrupting capacity for residences and many smaller facilities.

SPECIFICATIONS

Voltage Ratings: AC: 250 Volts (NLN, NLKP)
600 Volts (NLS)
DC: 250 Volts (NLN)
400 Volts (NLS 35 – 60A)
500 Volts (NLS 8 – 15A)
(NLS 225 – 600A)
600 Volts (NLS 1 – 7A)
(NLS 20 – 30A)
(NLS 70 – 200A)

Interrupting Ratings:
AC: 50,000 amperes rms symmetrical (NLN/NLS)
10,000 amperes (NLKP)
DC: 20,000 amperes (NLN/NLS 1 – 60A)
50,000 amperes (NLN/NLS 70 – 600A)

Ampere Range: 1– 600 amperes (NLN/NLS)
15 – 60 amperes (NLKP)

Approvals: NLN/NLS: Standard 248-9, Class K5
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)**
****Excludes NLN 15-60A**
NLKP: Standard 248-6, Class H
UL Listed (File No: E81895)
CSA Certified (File No: LR29865)
Meets CSA "Type P" requirements

AMPERE RATINGS

1	7	* 25	* 60	125	300
2	8	* 30	70	150	350
3	10	* 35	80	175	400
4	12	* 40	90	200	450
5	* 15	* 45	100	225	500
6	* 20	* 50	110	250	600

* NLKP series available only in those amperages preceded by an asterisk.

Example part number (series & amperage): NLS 125

RECOMMENDED FUSE BLOCKS

LH250 series (for NLN and NLKP series fuses)
LH600 series (for NLS series fuses)

Refer to Fuse Block section of this catalog for additional information.

NOTE: NLKP series fuses have limited interrupting rating and should be used only where available short circuit current is known to be less than the fuse interrupting rating. Where available fault current is unknown, where it exceeds NLN/NLS interrupting rating, or where it may increase in the future, 200,000 ampere interrupting rating Littelfuse POWR-PRO™ FLNR_ID/FLSR_ID Indicator™ fuses and FLNR/FLSR series fuses provide superior protection for all motor and general purpose circuits containing inductive loads.

NLN/NLS Class K5 Fuses

250/600 VAC ■ "ONE-TIME" ■ 1 – 600 Amperes

Littelfuse POWR-GARD™ Products

General Purpose Fuses

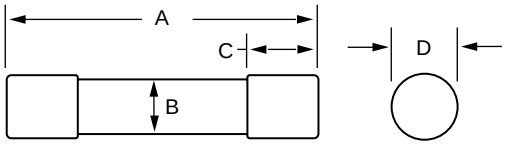


FIG. 1

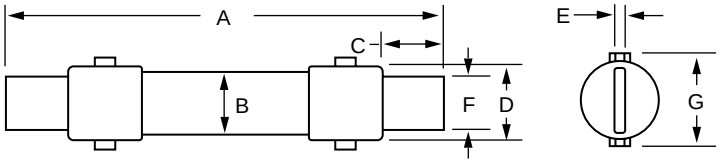
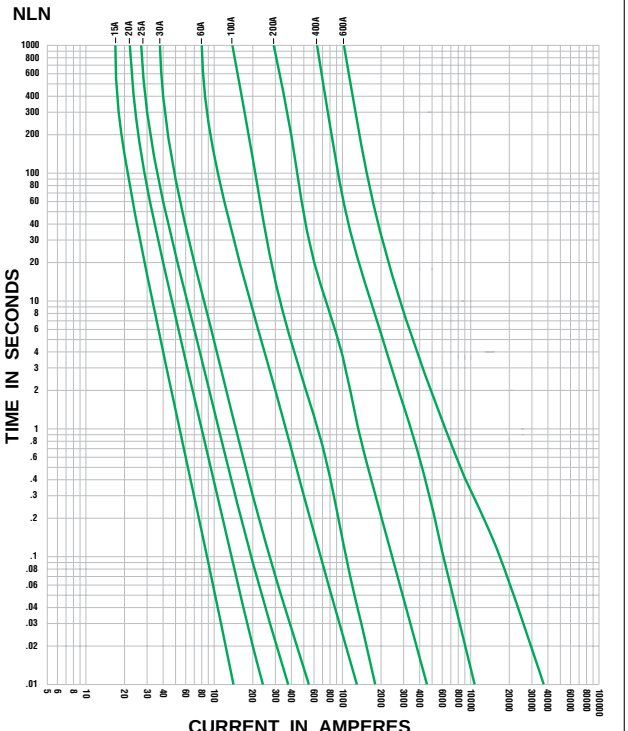
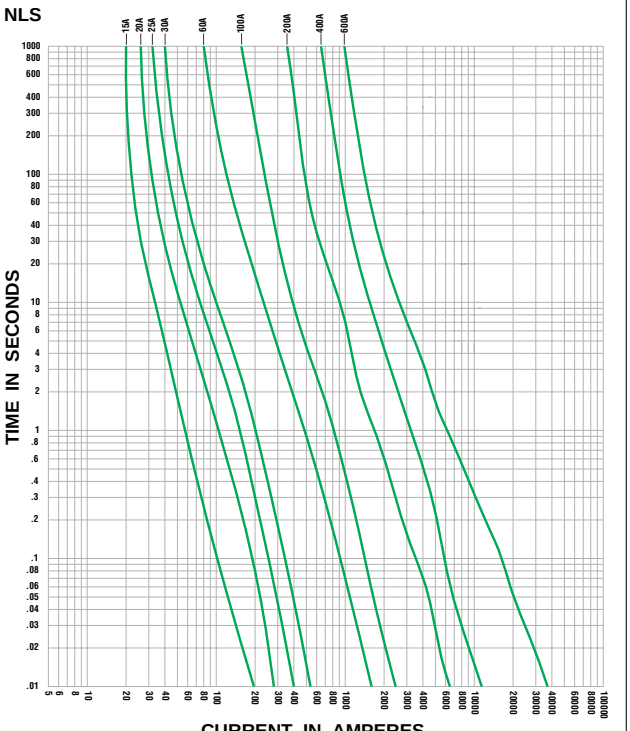


FIG. 2

AMPERES	REFER TO FIG. NO.	SERIES	DIMENSIONS IN INCHES (mm in parentheses)						
			A	B	C	D	E	F	G
1 – 30	1	NLN NLKP	2 (50.8)	1/2 (12.7)	1/2 (12.7)	9/16 (14.3)	—	—	—
		NLS	5 (127.0)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	—	—	—
35 – 60	1	NLN NLKP	3 (76.2)	3/4 (19.1)	5/8 (15.9)	13/16 (20.6)	—	—	—
		NLS	5-1/2 (139.7)	1 (25.4)	5/8 (15.9)	1-1/16 (27.0)	—	—	—
70 – 100	2	NLN	5-7/8 (149.2)	1 (25.4)	1 (25.4)	1-1/16 (27.0)	1/8 (3.2)	3/4 (19.1)	1-5/16 (33.3)
		NLS	7-7/8 (200.0)	1-1/4 (31.8)	1 (25.4)	1-5/16 (33.3)	1/8 (3.2)	3/4 (19.1)	1-9/16 (39.7)
110 – 200	2	NLN	7-1/8 (181.0)	1-1/2 (38.1)	1-3/8 (34.9)	1-9/16 (39.7)	3/16 (4.8)	1-1/8 (28.6)	1-7/8 (47.6)
		NLS	9-5/8 (244.5)	1-3/4 (44.5)	1-3/8 (34.9)	1-27/32 (46.8)	3/16 (4.8)	1-1/8 (28.6)	2-3/32 (53.2)
225 – 400	2	NLN	8-5/8 (219.1)	2 (50.8)	1-7/8 (47.6)	2-3/32 (53.2)	1/4 (6.4)	1-5/8 (41.3)	2-13/32 (61.1)
		NLS	11-5/8 (295.3)	2-1/2 (63.5)	1-7/8 (47.6)	2-19/32 (65.9)	1/4 (6.4)	1-5/8 (41.3)	2-7/8 (73.0)
450 – 600	2	NLN	10-3/8 (263.5)	2-1/2 (63.5)	2-1/4 (57.2)	2-19/32 (65.9)	1/4 (6.4)	2 (50.8)	2-7/8 (73.0)
		NLS	13-3/8 (339.7)	3 (76.2)	2-1/4 (57.2)	3-3/32 (78.6)	1/4 (6.4)	2 (50.8)	3-7/16 (87.3)





RLN/RLS Class H Fuses

250/600 VAC ▪ Renewable ▪ 1 – 600 Amperes

Littelfuse POWR-GARD™ Products

SPECIFICATIONS

Voltage Ratings: AC: 250 Volts (RLN); 600 Volts (RLS)

Interrupting Ratings: AC: 10,000 amperes rms symmetrical

Ampere Range: 1 – 600 amperes

Approvals: Standard 248-6, Class H
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)

FUSE LINKS: To order, specify LKN (250V) or LKS (600V) plus ampere rating shown below.

AMPERE RATINGS

1	6	20	45	90	175	350 *
2	8	25	50	100	200	400 *
3	10	30	60	110	225 *	450 *
4	12 **	35	70	125	250 *	500 *
5	15	40	80	150	300 *	600 *

**These ampere ratings require two links per fuse.*
***RLS Only.*

Example part number (series & amperage): RLN 20

RECOMMENDED FUSE BLOCKS

LH250 series (for RLN series fuses)
LH600 series (for RLS series fuses)

Refer to Fuse Block section of this catalog for additional information.

Littelfuse RLN/RLS series renewable fuses are a quality product that have traditionally been used to provide low cost protection of general purpose feeder and branch circuits where available short-circuit currents do not exceed 10,000 amperes. However, generally increased levels of available fault current and the distinct possibility that renewable fuses may be improperly renewed, rendering them unsafe, have all but eliminated the use of these fuses in new applications. In addition, escalating labor costs and increasing automation, which makes downtime very expensive, have greatly reduced or eliminated the cost savings attributed to renewable fuses.

We recommend the use of POWR-PRO® IDSR series Indicator™ fuses for circuits between 250 and 600 volts and FLNR series for 250 volt and below circuits. Complete information on POWR-PRO® Indicator fuses may be found in the POWR-PRO® section of this catalog. FLNR fuses are in this section of the catalog.

COST CONSIDERATIONS

- When comparing the cost of using renewable fuses with the cost of other fuses, the labor required for replacing links and the cost of additional downtime should be included.

CAUTIONS

- Renewable fuses should only be used where short circuit currents are known to be less than 10,000 amperes, and where correct replacement of open links is assured.
- After disassembly of fuse, examine carefully. Discard any fuses which show evidence of weakened tube or damaged components.
- Remove all link residue from fuse tube.
- Carefully clean all contact surfaces, and remove metal spatter from all surfaces.
- Install the proper rated fuse link and tighten all connections securely.
- Visually examine fuses for correct alignment of blades.

DIMENSIONS

- For dimensions, please refer to NLN series for RLN dimensions and NLS series for RLS dimensions.

JLS CLASS J FUSES

600 VAC ■ Fast-Acting ■ 1 – 600 Amperes

Littelfuse POWR-GARD™ Products

SPECIFICATIONS

Voltage Ratings: 600 Volts AC

Interrupting Ratings: 200,000 amperes rms symmetrical

Ampere Range: 1 – 600 amperes

Approvals: Standard 248-8, Class J
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)
QPL: Federal Specification No: WF-1814

AMPERE RATINGS

1	25	60	125	300
3	30	70	150	350
6	35	80	175	400
10	40	90	200	450
15	45	100	225	500
20	50	110	250	600

Example part number (series & amperage): JLS 110

RECOMMENDED FUSE BLOCKS

LJ600 series

Refer to Fuse Block section of this catalog for additional information.

JLS series fuses provide space-saving, fast-acting overload and short-circuit protection for non-inductive loads. When used for motors or other inductive loads, the ampere rating of JLS series fuses must be increased to prevent nuisance opening on inrush currents. In such applications, JLS fuses may provide only short circuit protection. Consider using Littelfuse POWR-PRO® JTD series time-delay fuses in such circuits.

APPLICATIONS

General purpose circuits with little or no motor load.

Resistive loads, such as resistance electric heat.

Loads requiring fast-acting overload protection, such as equipment containing solid-state devices.

SPACE SAVING

- JLS fuse characteristics are similar to KLNR/KLSR fast-acting Class RK1 fuses, but they are much smaller.

SAFETY

- 200,000 A.I.R. — Reliable interruption of all overcurrents up to 200,000 amperes.
- Extremely current limiting — Stops damaging short-circuit current faster than any mechanical protective device.
- Fast-acting — Provides fast-acting protection to equipment such as variable speed drives, rectifiers and other equipment containing surge-sensitive components.

LONGER EQUIPMENT LIFE

- Current-limiting design reduces damage to equipment caused by heating and magnetic effects of short-circuit currents.

ECONOMICAL

- Extremely current-limiting design often permits use of readily available, less costly equipment.
- Manufacturers of equipment containing dual voltage devices can simplify manufacturing and reduce inventory by standardizing on 600 volt JLS fuses and Class J fuse blocks for all AC voltage ratings.

EASY TO USE

- 200,000 A.I.R. rating minimizes need for short-circuit calculations.

NOTE: Littelfuse JLS fuses are not time-delay fuses. For applications where short-duration surges and spikes may cause nuisance fuse opening, consider the use of Littelfuse POWR-PRO® JTD series time-delay fuses.

JLS CLASS J FUSES

600 VAC ▪ Fast-Acting ▪ 1 — 600 Amperes

Littelfuse POWR-GARD™ Products

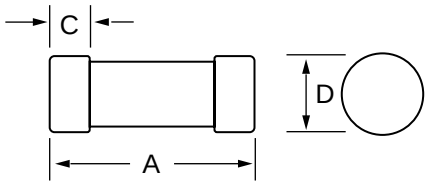


Fig. 1

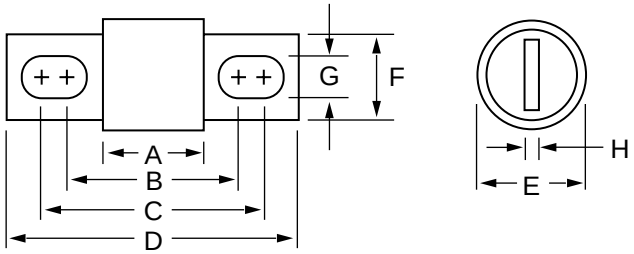
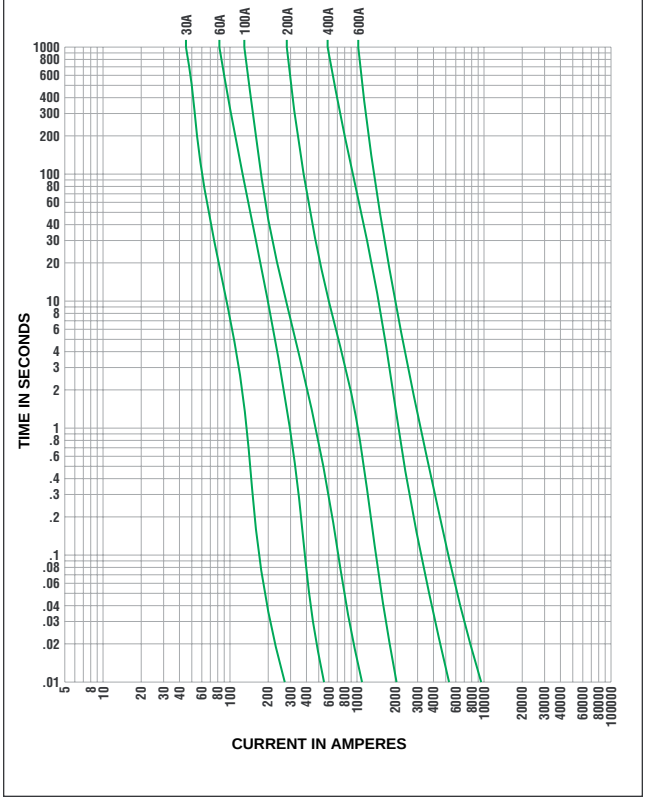
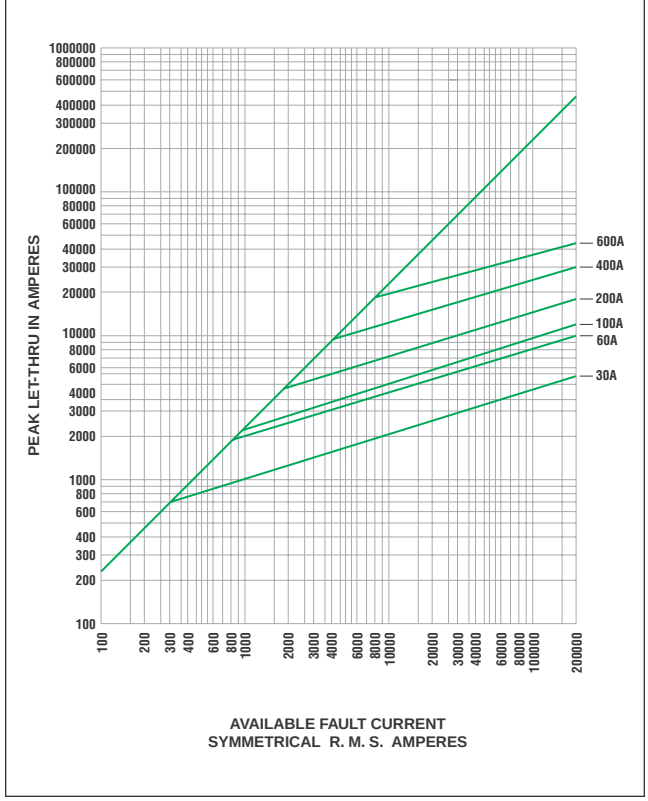


Fig. 2

AMPERES	REFER TO FIG. NO.	DIMENSIONS IN INCHES (mm in parentheses)							
		A	B	C	D	E	F	G	H
1 – 30	1	2-1/4 (57.2)	—	1/2 (12.7)	13/16 (20.6)	—	—	—	—
35 – 60	1	2-3/8 (60.3)	—	5/8 (15.9)	1-1/16 (27.0)	—	—	—	—
70 – 100	2	2-5/8 (66.7)	3-17/32 (89.7)	3-23/32 (94.5)	4-5/8 (117.5)	1 (25.4)	3/4 (19.1)	9/32 (7.1)	1/8 (3.2)
110 – 200	2	3 (76.2)	4-9/32 (108.7)	4-15/32 (113.5)	5-3/4 (146.1)	1-1/2 (38.1)	1-1/8 (28.6)	9/32 (7.1)	3/16 (4.8)
225 – 400	2	3-3/8 (85.7)	5-1/8 (130.2)	5-3/8 (136.5)	7-1/8 (181.0)	2 (50.8)	1-5/8 (41.3)	13/32 (10.3)	1/4 (6.4)
450 – 600	2	3-3/4 (95.3)	5-27/32 (148.4)	6-5/32 (156.4)	8 (203.2)	2-1/2 (63.5)	2 (50.8)	17/32 (13.5)	3/8 (9.5)





JLLN/JLLS POWR-T™ Class T Fuses

300/600 VAC ■ Fast-Acting ■ 1 – 1200 Amperes

Littelfuse POWR-GARD™ Products

SPECIFICATIONS

Voltage Ratings: AC: 300 Volts (JLLN); 600 Volts (JLLS)
DC: 125 Volts (JLLN 110 – 1200A);
300 Volts (JLLS)

Interrupting Ratings: AC: 200,000 amperes rms symmetrical
DC: 20,000 amperes
(JLLN 110 – 1200A)
(JLLS 1 – 1200A)

Ampere Range: 1– 1200 amperes

Approvals: AC: Standard 248-15, Class T
UL Listed (File No: E81895):
JLLN/JLLS (1 – 800A)
UL Recognized (File No: E71611):
JLLS (900 – 1200A)
CSA Certified (File No: LR29862):
JLLN/JLLS (1 – 600A)
DC: UL Listed (File No: E81895):
JLLN (110 – 1200A)
Littelfuse Self-certified: JLLS 300 VDC

AMPERE RATINGS

1	20	45	90	175	350	700
2	25	50	100	200	400	800
3	30	60	110	225	450	1000
6	35	70	125	250	500	1100
10	40	80	150	300	600	1200
15						

Example part number (series & amperage): JLLS 100

RECOMMENDED FUSE BLOCKS

LT300 series (for JLLN series fuses)
LT600 series (for JLLS series fuses)

Refer to Fuse Block section of this catalog for additional information.

Space saving POWR-T™ fuses are the most compact fuses available in ratings above 30 amperes — less than one-third the size of comparable Class R fuses. When rated in accordance with the NEC, POWR-T fuses provide fast-acting overload and short circuit protection for non-inductive circuits and equipment. Used in inductive circuits, the ampere rating of POWR-T fuses must be increased to prevent opening on inrush currents. In such instances, POWR-T fuses may provide only short circuit protection.

For motor and general purpose circuits where space is not critical, we recommend POWR-PRO® JTD_ID Indicator series, LLNRK/LLSRK series, or FLSR_ID Indicator series.

APPLICATIONS

Protection of individual electric services and meters.

Main switches containing Class T fuses may be used to provide compact protection for meter stacks.

Molded case circuit breaker load centers and panelboards have increased interrupting ratings when “series rated” with Littelfuse Class T fuses. Refer to panelboard manufacturers’ literature for UL Listed combination of fuses and panelboards. Series ratings up to 200,000 amperes are available.

SPACE-SAVING

Typical three-pole Class T fuse blocks require less than 50% of the panel area required for Class R fuse blocks. Switch enclosures, fuse pullouts, and other equipment using Class T fuses are often correspondingly more compact.

SAFETY

- 200,000 A.I.R. — Reliable interruption of all overcurrents up to 200,000 amperes.
- Extremely current limiting — Stops damaging short circuit current faster than any mechanical protective device.
- Fast-acting — Provides fast-acting overload protection to equipment such as variable speed drives, rectifiers and other equipment containing surge-sensitive components.

LONGER EQUIPMENT LIFE

- Current limiting design greatly reduces damage to equipment caused by heating and magnetic effects of short circuit currents.

ECONOMICAL

- Extremely current limiting design often permits use of readily available, less costly equipment.
- Used as input or output fuses for surge-sensitive components, such as variable speed drives and rectifiers, fast-acting POWR-T JLLN/JLLS fuses may prevent opening of expensive semiconductor fuses protecting individual components.

NOTE: JLLN Class T 300 volt fuses are UL listed for circuits not exceeding 300 volts to ground. However, since UL does not include testing 300 volt Class T fuses on 277/480 volt three-phase bolted faults, Littelfuse does not recommend using 300 volt Class T fuses where phase-to-phase voltage exceeds 300 volts.

JLLN/JLLS POWR-T™ Class T Fuses

300/600 VAC ■ Fast-Acting ■ 1 – 1200 Amperes

Littelfuse POWR-GARD™ Products

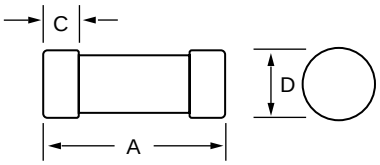


Fig. 1

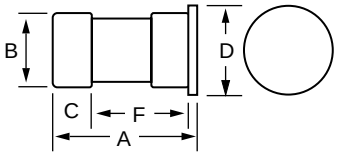


Fig. 2

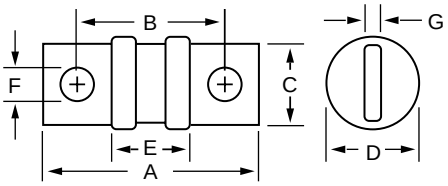


Fig. 3

AMPERES	REFER TO FIG. NO.	SERIES	DIMENSIONS IN INCHES (mm in parentheses)						
			A	B	C	D	E	F	G
1 – 30	1	JLLN	7/8 (22.2)	—	9/32 (7.1)	13/32 (10.3)	—	—	—
		JLLS	1-1/2 (38.1)	—	9/32 (7.1)	9/16 (14.3)	—	—	—
35 – 60	1	JLLN	7/8 (22.2)	—	9/32 (7.1)	9/16 (14.3)	—	—	—
	2	JLLS	1-9/16 (39.7)	13/16 (20.6)	13/32 (10.3)	1 (25.4)	1/16 (1.6)	1-3/32 (27.8)	—
70 – 100	3	JLLN	2-5/32 (54.8)	1-9/16 (39.7)	3/4 (19.1)	13/16 (20.6)	27/32 (21.4)	9/32 (7.1)	1/8 (3.2)
		JLLS	2-61/64 (75.0)	2-23/64 (59.9)	3/4 (19.1)	13/16 (20.6)	1-41/64 (41.7)	9/32 (7.1)	1/8 (3.2)
110 – 200	3	JLLN	2-7/16 (61.9)	1-11/16 (42.9)	7/8 (22.2)	1-1/16 (27.0)	27/32 (21.4)	11/32 (8.7)	3/16 (4.8)
		JLLS	3-1/4 (82.6)	2-1/2 (63.5)	7/8 (22.2)	1-1/16 (27.0)	1-21/32 (42.1)	11/32 (8.7)	3/16 (4.8)
225 – 400	3	JLLN	2-3/4 (69.9)	1-27/32 (46.8)	1 (25.4)	1-5/16 (33.3)	53/64 (21.0)	13/32 (10.3)	1/4 (6.4)
		JLLS	3-5/8 (92.1)	2-23/32 (69.1)	1 (25.4)	1-19/32 (40.5)	1-23/32 (43.7)	13/32 (10.3)	1/4 (6.4)
450 – 600	3	JLLN	3-1/16 (77.8)	2-1/32 (51.6)	1-1/4 (31.8)	1-19/32 (40.5)	7/8 (22.2)	31/64 (12.3)	5/16 (7.9)
		JLLS	3-63/64 (101.2)	2-61/64 (75.0)	1-1/4 (31.8)	2-1/16 (52.4)	1-49/64 (44.8)	31/64 (12.3)	5/16 (7.9)
700 –800	3	JLLN	3-3/8 (85.7)	2-7/32 (64.3)	1-3/4 (44.5)	2-1/16 (52.4)	7/8 (22.2)	35/64 (13.9)	3/8 (9.5)
		JLLS	4-21/64 (109.9)	3-11/64 (80.6)	1-3/4 (44.5)	2-1/2 (63.5)	1-55/64 (47.2)	35/64 (13.9)	3/8 (9.5)
900 – 1200	3	JLLN	4 (101.6)	2-17/32 (64.3)	2 (50.8)	2-1/2 (63.5)	1-1/32 (26.2)	39/64 (15.5)	7/16 (11.1)
		JLLS	5.27 (133.9)	3.80 (96.5)	2 (50.8)	2.63 (66.8)	2.30 (58.4)	.67 (15.5)	.44 (11.2)

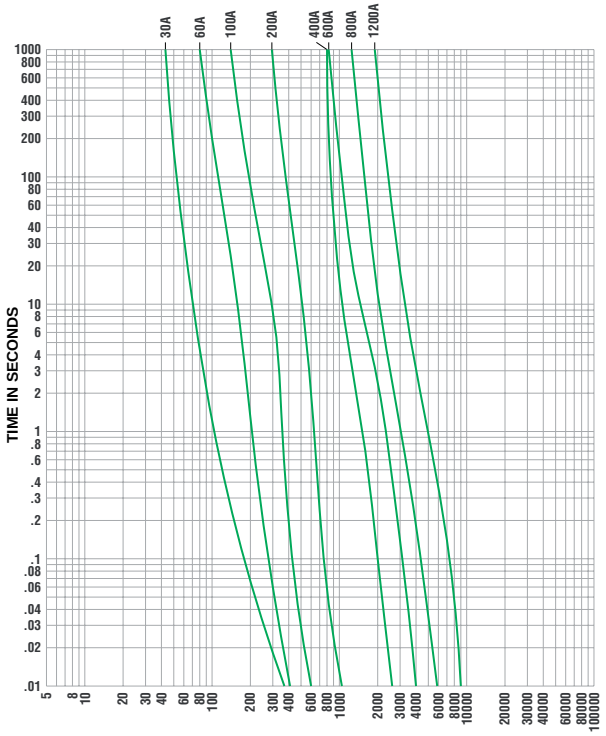
JLLN/JLLS POWR-T™ Class T Fuses

300/600 VAC ■ Fast-Acting ■ 1 – 1200 Amperes

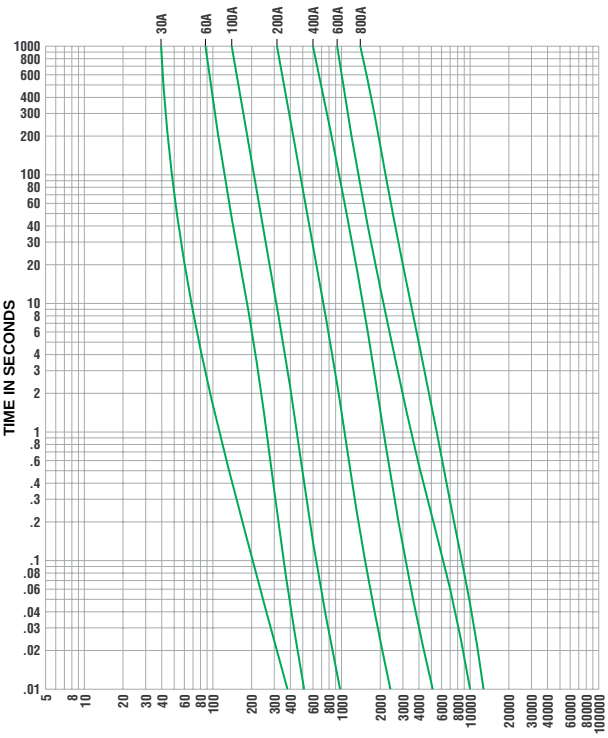
Littelfuse POWR-GARD™ Products

General Purpose Fuses

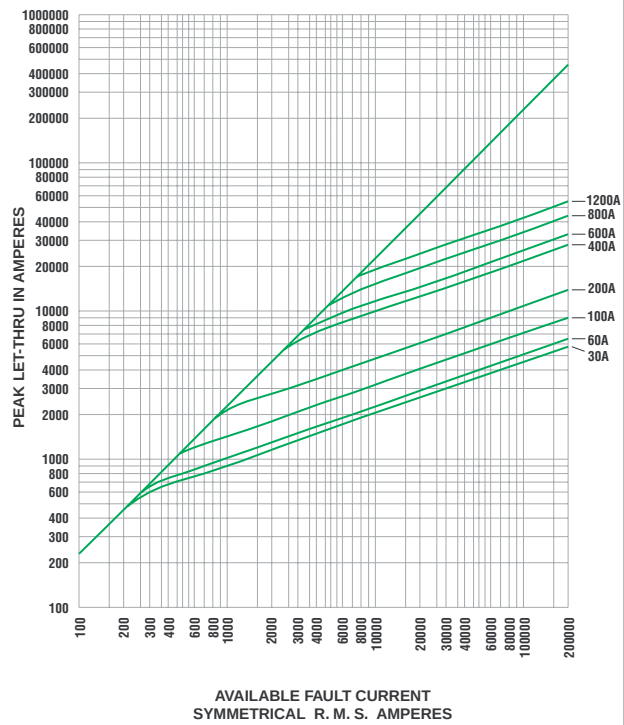
JLLN



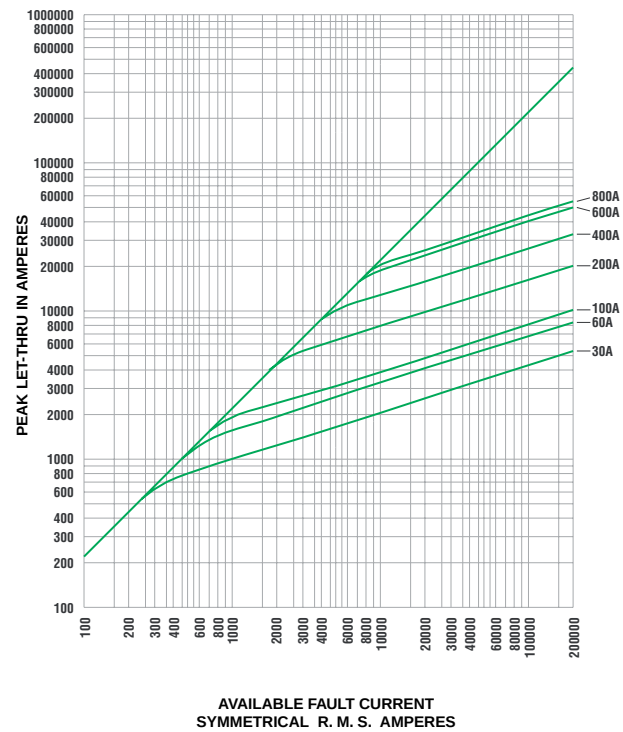
JLLS



JLLN



JLLS



SLC Class G Fuses

480 VAC, 600 VAC ■ Medium Time-Delay ■ 1/2 – 60 Amperes

Littelfuse POWR-GARD™ Products

The unique design of Littelfuse's compact SLC series Class G fuses provide additional time-delay over competitive products which increases system reliability.

Compact Class G fuses were the first fuse series to approach midget fuse dimensions and meet NEC requirements for branch-circuit protection. The unique dimensions of SLC series Class G fuses prevents insertion of lower voltage fuses in Class G fuse holders. The fuse's varying length prevents insertion of higher ampere rated fuses in fuse holders designed for lower ampere ratings.

Class CC fuses are replacing Class G fuses in many new designs. Class CC fuses' superior time delay plus higher voltage and interrupting ratings meet the needs of modern circuits. Littelfuse's introduction of POWR-PRO® CCMR series fuses, with ratings up to 60 Amperes for providing branch circuit protection, are accelerating this trend. Complete information on POWR-PRO® CCMR series fuses may be found in the POWR-PRO® section of this catalog.

SAFETY

- 100,000 A.I.R. — Reliable interruption of all overcurrents up to 100,000 amperes.
- Current limiting design reduces damage to equipment caused by heating and magnetic effects of short circuit currents.
- Medium time-delay allows fuses to be sized closer to actual equipment requirements — no need to greatly oversize to withstand harmless equipment or system surges.

REDUCED DOWNTIME

- Medium time-delay may reduce downtime caused by power surges or equipment demands.

NOTE: For applications where greater time delay is required, or where ratings exceed 60 amperes, consider selecting Littelfuse time-delay RK1, RK5, or Class J fuses.

SPECIFICATIONS

Voltage Ratings: 600Volts AC (1/2 – 20A)
480 Volts AC (25 – 60A)

Interrupting Ratings: 100,000 amperes rms symmetrical

Ampere Range: 1/2 – 60 amperes

Approvals: Standard 248-5, Class G
UL Listed (File No: E81895)
CSA Certified (File No: LR29862)
QPL: Federal Specification No: WF-1814

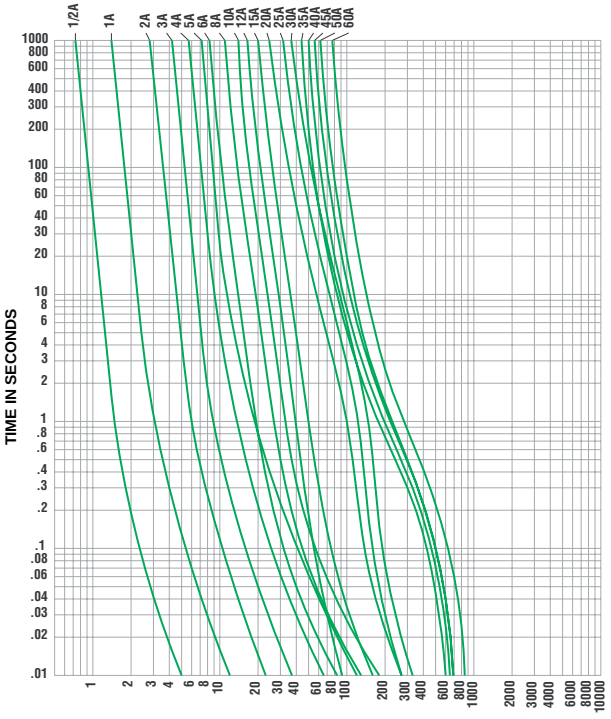
AMPERE RATINGS

½	3	6	15	30	45
1	4	8	20	35	50
2	5	10	25	40	60

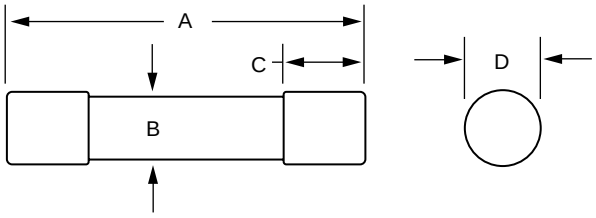
Example part number (series & amperage): SLC 10

RECOMMENDED FUSE BLOCKS

LG300 series
L300G30 (for 25 and 30 amp fuses)
Refer to Fuse Block section of this catalog for additional information.



AMPERES	REFER TO FIG. NO.	DIMENSIONS IN INCHES (mm in parentheses)			
		A	B	C	D
1/2 – 15	1	1-5/16 (33.3)	3/8 (9.5)	9/32 (7.1)	13/32 (10.3)
20	1	1-13/32 (35.7)	3/8 (9.5)	9/32 (7.1)	13/32 (10.3)
25,30	1	1-5/8 (41.3)	3/8 (9.5)	9/32 (7.1)	13/32 (10.3)
35 – 60	1	2-1/4 (57.2)	3/8 (9.5)	1/2 (12.7)	13/32 (10.3)



Class CC Fuses

600 VAC ■ 1/10 – 60 Amperes

Littelfuse POWR-GARD™ Products

Compared to other UL Listed fuses, Class CC fuses are the most current limiting, rating for rating. Because they are physically compact, they provide this superior protection in a fraction of the space required by other fuse classes. For example, when 600V three-pole, 30 ampere Class R fuse blocks are replaced by Littelfuse Class CC fuse blocks, panel mounting space is reduced approximately 70%. This is especially important when a panel contains many fuses to protect multiple circuit components.

APPLICATIONS

Three Types of Class CC Fuses, Specifically Designed to Protect Different Types of Components

1) Motor protection — CCMR series; dual-element, time-delay fuses specifically designed to protect motor circuits up to 40 HP**.

2) Small transformer protection (control power transformers) — KLDR series, time-delay fuses designed to withstand the high magnetizing inrush of transformers.

3) General purpose protection of equipment requiring fast overload protection — KLKR series, fast-acting fuses used for protection of equipment containing solid-state devices or other electronic components requiring fast response on overloads.

SAFETY

- 200,000 A.I.R. — Reliable interruption of all overcurrents up to 200,000 amperes.
- Extremely current limiting — Reduces damage caused by heating and magnetic effects of short-circuit currents . . . stops damaging short-circuit currents faster than any mechanical protective device.

SPACE SAVING

- Class CC fuses are the smallest 600V, 200,000 A.I.R. fuses approved for branch circuit protection.

ECONOMICAL

- Current limiting design often permits use of readily available, less costly equipment.

**Consult the Motor Protection Tables in the Fuseology section for specific motor sizing information

SPECIFICATIONS

Voltage Ratings: AC: 600 Volts
DC: 250 – 500 Volts (CCMR)†
300 Volts (KLDR)
300 Volts (KLKR)

Interrupting Ratings: AC: 200,000 amperes rms symmetrical
DC: 20,000 amperes

Ampere Range: CCMR: 2/10 – 60 amperes
KLDR: 1/10 – 30 amperes
KLKR: 1/10 – 30 amperes

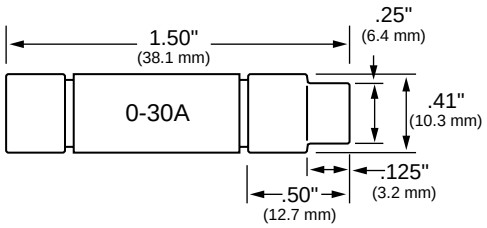
Approvals: AC: Standard 248-4, Class CC
UL Listed 1/10-30 Amps (File No: E81895)
Standard 248, Class CD
UL Listed 35-60 Amps (File No: E71611)
CSA Certified 1/10-60 Amps
(File No: LR29862)
DC: Littelfuse Self-certified

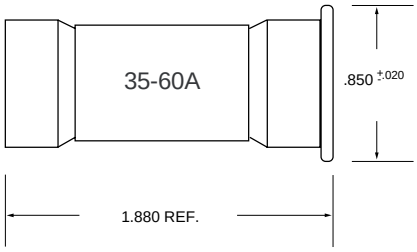
RECOMMENDED FUSE BLOCKS

L60030C series
L60060C series (for CCMR 35–60A)

Refer to Fuse Block section of this catalog for additional information.

†Refer to the POWR-PRO® section for additional information.





Class CC Fuses

600 VAC ■ 1/10 – 60 Amperes

Littelfuse POWR-GARD™ Products

CCMR Series

For space-saving protection of motor circuits up to 40 HP**, we recommend Littelfuse POWR-PRO® CCMR series fuses. These fuses are the only true dual-element time-delay CC fuses specifically engineered for motor branch circuit protection. They provide Type II protection (no damage) to both NEMA-rated and the more sensitive IEC (International Electromechanical Commission) type motor circuit components.

CCMR series fuses are now available in larger sizes — from 35 to 60 amperes! ***No other 600V fuse is available with this current carrying capacity in a package this small.***

**Consult the Motor Protection Tables in the Fuseology section for specific motor sizing information

For more information on CCMR series Class CC fuses, see the CCMR series pages in the POWR-PRO® section of this catalog.

1/10 – 30A: UL Listed Time-Delay Class CC

35 – 60A: UL Listed Class CD

AMPERE RATINGS

2/10	1¼	2½	5	9	30
¼	1 1/10	2 2/10	5 5/10	10	35
3/10	1½	3	6	12	40
½	1 5/10	3 3/10	6¼	15	45
6/10	1 8/10	3½	7	17½	50
8/10	2	4	7½	20	60
1	2¼	4½	8	25	

Example part number (series & amperage): CCMR 30

KLDR Series

KLDR fuses are time-delay fuses specifically designed for the protection of control transformers, solenoids and similar inductive components with high magnetizing currents during the first half-cycle. They closely match most control power transformer characteristics, which permits the fuses to be sized in accordance with the latest revisions of UL 508 (Industrial Control) and UL 845 (Motor Control Centers). When the time delay of KLDR fuses is adequate to carry motor starting current, they provide excellent protection of motor branch circuits containing IEC or NEMA rated motor controllers or contactors.

AMPERE RATINGS

1/10	½	1 1/10	2 2/10	5 5/10	10
1/8	6/10	1½	3	6	12
15/100	¾	1 5/10	3 3/10	6¼	15
3/16	8/10	1 8/10	3½	7	17½
2/10	1	2	4	7½	20
¼	1 1/8	2¼	4½	8	25
3/10	1¼	2½	5	9	30
4/10					

Example part number (series & amperage): KLDR 5 6/10

KLKR Series

KLKR series Class CC fuses are fast-acting fuses intended for general purpose branch circuit protection. Their compact size, fast-acting overload response, and their highly current limiting design make them ideal for use in OEM equipment and control panels. Solid-state devices such as SCRs and other electronic equipment generally require fast-acting protection.

AMPERE RATINGS

1/10	½	2	4	8	15
1/8	¾	2½	5	9	20
3/10	1	3	6	10	25
¼	1½	3½	7	12	30
3/10					

Example part number (series & amperage): KLKR 25

Class CC Fuses

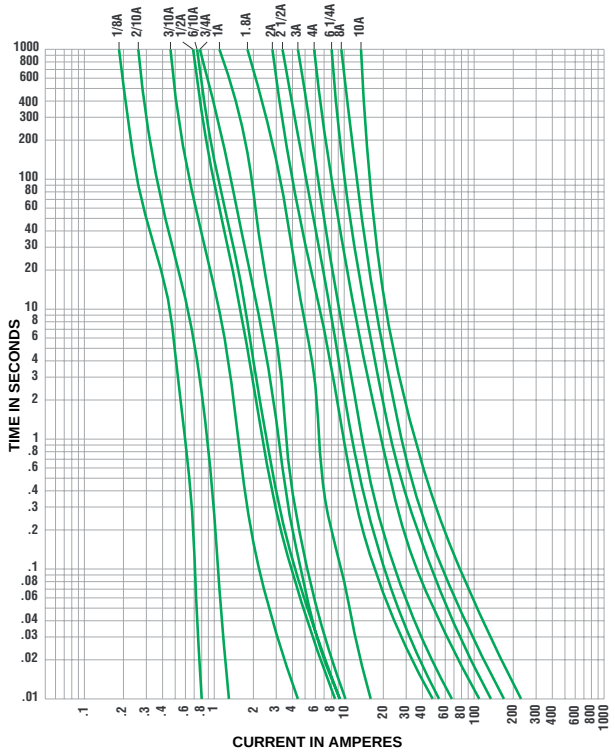
600 VAC ▪ 1/10 – 60 Amperes

Littelfuse POWR-GARD™ Products

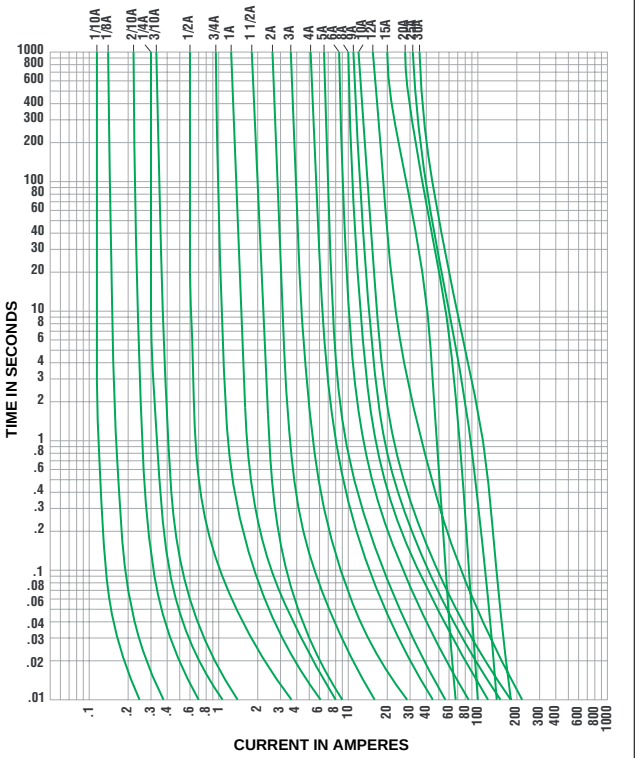
For performance data on Littelfuse CCMR series Class CC fuses, see the CCMR pages in the POWR-PRO® section of this catalog.

General Purpose Fuses

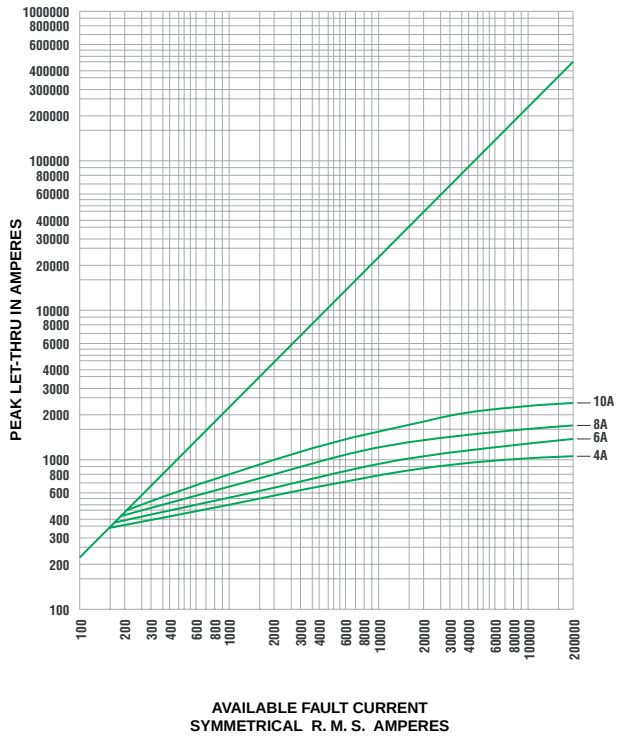
KLDR



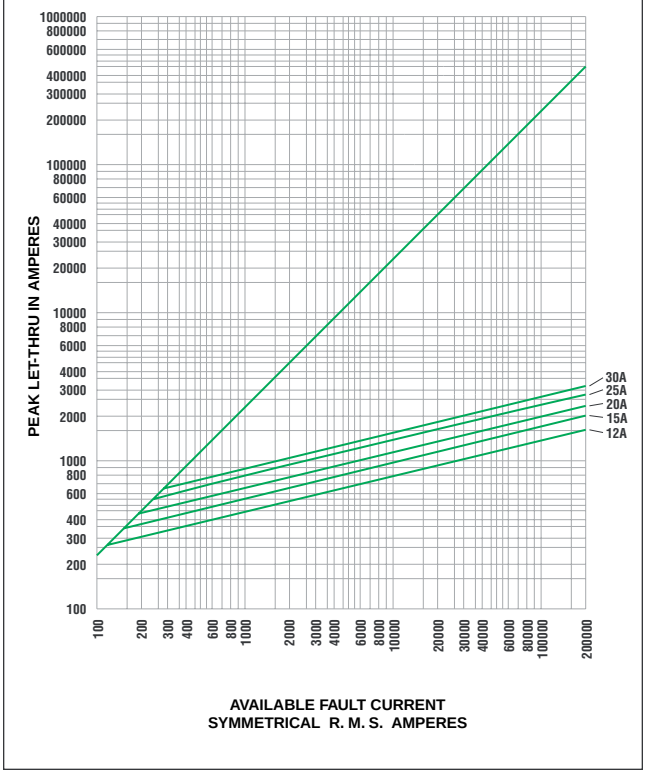
KLKR



KLDR



KLKR



Plug Fuses

125 VAC ■ Fast-Acting or Time-Delay ■ 1/4 – 30 Amperes

Littelfuse
POWR-GARD™ Products

DESCRIPTION

Edison-base plug fuses (WOO, TOO, and TLO series) have threaded metal shells and contacts similar to incandescent lamp bases. Fuseholders for Edison-base fuses have matching metal threads similar to standard light sockets.

Type S fuses (SLO and SOO series) have nonmetallic threaded bases which fit matching nonmetallic threads in Type S fuseholders. Type S fuseholders are size-limiting, and will not accept Type S fuses with ampere ratings greater than the ampere rating marked on the Type S fuseholder. Type S fuses will not fit Edison-base fuseholders, nor can Edison-base fuses be used in Type S fuseholders.

Approvals: Standard 248-11, UL Listed Plug Fuses

Note: Although rated at 125 volts, NEC permits plug fuses to be used in circuits not exceeding 150 volts to ground. See NEC Article 240-E.

APPLICATIONS

The National Electric Code now permits Edison-base fuses to be used only for replacements in existing installations, and then, only when there is no evidence of overfusing or tampering. All new Edison-base fuseholders must have Type S fuse adapters installed before they are placed in service. Designed to prevent installation of wrong size fuses, Type S Adapters (SAO series) screw into Edison-base fuseholders so they may accept Type S fuses. Once installed the adapters cannot be removed.

To prevent shunting of open fuses or overfusing, and to reduce nuisance fuse opening, it is recommended that SAO adapters with properly rated SLO or SOO series fuses be installed in all Edison-base fuseholders.

SAO Type S Fuse Adapters inserted into Edison-base fuseholders permanently convert them to Type S fuseholders. They accept Type S fuses only.

SAO Adapter Rating	Accepts Fuse Ratings:	Other SOO Fuse Ratings Which Fit
SAO 1	3/10 – 1	—
SAO 1-1/4	1 1/8, 1 1/4	3/10 – 1
SAO 1-6/10	1 1/10, 1 5/10	3/10 – 1 1/4
SAO 2	1 8/10, 2	—
SAO 2-1/2	2 1/4, 2 1/2	1 8/10, 2
SAO 3-2/10	2 8/10, 3 2/10	1 8/10 – 2 1/2
SAO 4	3 1/2, 4	—
SAO 5	4 1/2, 5	3 1/2, 4
SAO 6-1/4	3 1/2, 6 1/4	3 1/2 – 5
SAO 15	7, 8, 9, 10, 12, 14, 15	7, 8, 9, 10
SAO 20	20 Only	—
SAO 30	20, 25, 30	—

HOLDERS

See Littelfuse box cover units in the Miscellaneous Products section of this catalog.

EDISON-BASE PLUG FUSES

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. Use for replacement purposes only.

AMPERE RATINGS

1/4	1	2	3 1/2	6 1/4	14
3/10	1 1/8	2 1/4	4	7	15
4/10	1 1/4	2 1/2	4 1/2	8	20
1/2	1 1/10	2 8/10	5	9	25
6/10	1 5/10	3	5 6/10	10	30
8/10	1 8/10	3 2/10	6	12	

WOO Fuses are non-delay Edison-base fuses, best suited for incandescent lighting, resistance heating, and general purpose circuits with no significant motor load. Not recommended for motor circuits. See TOO and SOO fuses. Use for replacement purposes only.

AMPERE RATINGS

1/2	2	5	8	15	25
1	3	6	10	20	30

TLO Fuses are medium time-delay Edison-base fuses designed for general-purpose branch-circuit protection. See TOO and SOO fuses for motor protection. Use for replacement purposes only.

AMPERE RATINGS

15	20	25	30

TYPE S PLUG FUSES

SOO Fuses are dual-element time-delay Type S fuses designed for motor and motor branch-circuit protection; also suitable for all general-purpose circuits.

AMPERE RATINGS

1/4	1	2	3 1/2	6 1/4	14
3/10	1 1/8	2 1/4	4	7	15
4/10	1 1/4	2 1/2	4 1/2	8	20
1/2	1 1/10	2 8/10	5	9	25
6/10	1 5/10	3	5 6/10	10	30
8/10	1 8/10	3 2/10	6	12	

SLO Fuses are medium time-delay Type S fuses for general-purpose branch-circuit protection.

AMPERE RATINGS

15	20	25	30