

UL489 or UL1077?

What are your Circuit Protection Requirements?

An understanding of circuit types and circuit protection products is critical to ensure their proper application.
See NEC Sections 100, 430 and 409 for definitions.

The proper sizing of an overcurrent protection device is the responsibility of the customer and should be determined using the application standards of the NEC (National Electric Code), CEC (Canadian Electrical Code) or other applicable standards. Per fine print note of 2008 NEC Section 100 "A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Therefore, the rules for overcurrent protection are specific for particular situations."

UL489

Branch Protection



UL1077

Supplementary Protection



What You Need to Know and Look For In Specifications

Certifications – Standards – Acceptance

UL489

Branch Protection

- UL489 Listed or Recognized
- CSA C22.2 No. 5
- International ratings available depending on breaker type

UL1077

Supplementary Protection

- UL Recognized under UL1077
- CSA 22.2 No. 285
- IEC 60947-2 or IEC 898

Function

- | | |
|--|---|
| <ul style="list-style-type: none"> • Opens automatically on Overload and Short Circuit when properly applied within its ratings • Protects wire and cable against Overload and Short Circuit | <ul style="list-style-type: none"> • Opens automatically on Overload and Short Circuit • Provides additional equipment protection where branch circuit protection is already provided or not required • Not suitable for the protection of branch circuit conductors |
|--|---|

Applications

- | | |
|--|---|
| <ul style="list-style-type: none"> • Branch circuit protection in control panels, panelboards, switchboards and motor control centers • Motor overload and motor short circuit protection (UL489 Recognized motor circuit protectors) for control panels and motor control centers | <ul style="list-style-type: none"> • Used within appliances or other electrical equipment such as control circuits, control power transformers, relays, PLC I/O points and lighting circuits • Ideal replacement for fuses that are applied as supplementary protection |
|--|---|

Features

- | | |
|--|--|
| <ul style="list-style-type: none"> • Bolted down or DIN-rail mounted • External handle mechanisms available • Field mounted accessories • Stand alone branch circuit protection • Various levels of protection (curve type) • High voltage and interruption levels (up to 100 kAIC @ 480V) | <ul style="list-style-type: none"> • DIN-Rail mounted • Field mounted accessories • Current limiting • Various levels of protection (curve type) • 10 kAIC @ 240 VAC • 6 kAIC @ 277 VAC and 5 kAIC @ 480 VAC • 10 kAIC @ 65 VDC |
|--|--|

kAIC = thousands of Amps interrupt capacity

Summary

A Supplementary Protector can't Be used for Branch Circuit Protection.
Understanding the difference between Branch Circuit Protection and Supplementary Protection helps to ensure their proper use.

Edison Fuses – Dual Element Time-Delay Class J


JDL5
JDL40
JDL150

EDISON JDL Class J fuses are among the most popular current limiting time-delay fuses available. Their small physical size and high performance characteristics make Class J fuses ideal for any space-limited application.

Specifications

Voltage Rating: JDL - 600 VAC

Ampere Rating: 1 - 600 Amps

Interrupting Rating: 200,000 RMS Symmetrical Amps

Self-Certified Interrupting Rating: 300,000 RMS Symmetrical Amps

Self-Certified DC Ratings:
Voltage Rating: JDL (1-600) 300 VDC
Interrupting Rating: JDL 20,000 Amperes DC

Current Limiting:
Class J Fuse

Agency Approvals

- UL Listed, Class Class J, Guide JDDZ, File E162363
- CSA Certified HRCI-J per C22.2, No. 248.8

JDL Features

- Space saving dimensions compared to Class R
- Dual-Element construction provides superior time-delay to pass harmless motor or transformer surges
- High performance with fatigue-free cycling capabilities
- Extremely current limiting

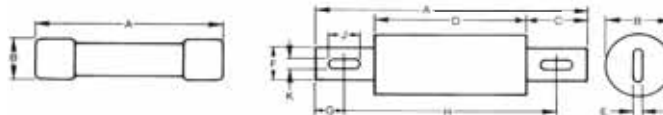
Applications

- Recommended for Type 2 (no damage) protection of IEC style motor starters and contactors.
- Use to protect lower interrupting rated circuit breakers.
- All general purpose circuits with inductive (high inrush) loads, including motor and motor branch circuits, and transformer circuits. Also suitable for lighting loads.

CROSS REFERENCE

VOLTS	EDISON	BUSSMANN	FERRAZ GOULD	LITTELFUSE
600	JDL	LPJ	AJT	JTD

JDL Dimensions inches (mm)



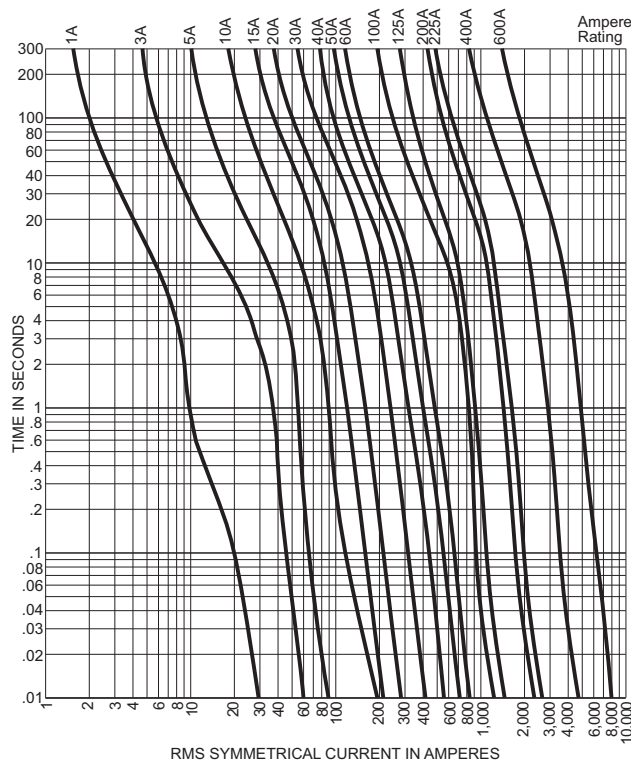
JDL Series Dual-element Time-delay Fuses					
Part Number	AMP Rating	Rated Voltage AC Max	Pcs/Pkg	Package Weight	Price
JDL1	1	600V	10	1.00 lb.	<-->
JDL2	2				<-->
JDL3	3				<-->
JDL4	4				<-->
JDL5	5				<-->
JDL6	6				<-->
JDL8	8				<-->
JDL10	10				<-->
JDL12	12				<-->
JDL15	15				<-->
JDL17-5	17.5			<-->	
JDL20	20			<-->	
JDL25	25			<-->	
JDL30	30			<-->	
JDL35	35			<-->	
JDL40	40			2.00 lb	<-->
JDL45	45				<-->
JDL50	50				<-->
JDL60	60				<-->
JDL70	70				<-->
JDL80	80				<-->
JDL90	90				<-->
JDL100	100				<-->
JDL110	110				<-->
JDL125	125				<-->
JDL150	150			4.25 lb	<-->
JDL175	175				<-->
JDL200	200				<-->
JDL225	225				<-->
JDL250	250				1.70 lb
JDL300	300	<-->			
JDL350	350	<-->			
JDL400	400	<-->			
JDL450	450	<-->			
JDL500	500	<-->			
JDL600	600	<-->			
JDL150	150	2.80 lb	<-->		
JDL175	175		<-->		
JDL200	200		<-->		
JDL225	225		<-->		
JDL250	250		<-->		
JDL300	300		<-->		
JDL350	350		<-->		
JDL400	400		<-->		
JDL450	450		<-->		
JDL500	500		<-->		
JDL600	600	<-->			

Ampere Rating	Overall Length	Max. Dia.	Blade Length	Barrel Length	Blade Thickness	Blade Width	Mounting Hole Spacing			
Range	A	B	C	D	E	F	G	H	J	K
1-30	2.25in (57.15mm)	.81in (20.6mm)	-	-	-	-	-	-	-	-
35-60	2.38in (60.5mm)	1.06in (26.92)	-	-	-	-	-	-	-	-
70-100	4.63in (117.5mm)	1.13in (28.6mm)	1in (25.4mm)	2.63in (66.7mm)	0.13in (3.2mm)	0.75in (19.1mm)	0.5in (12.7mm)	3.63in (92.1mm)	0.38in (9.5mm)	0.28in (7.1mm)
110-200	5.75in (146.1mm)	1.63in (41.3mm)	1.38in (34.9mm)	3in (76.2mm)	.19in (4.8mm)	1.13in (28.6mm)	0.69in (17.5mm)	4.38in (111.1mm)	0.38in (9.5mm)	0.28in (7.1mm)
225-400	7.13in (181mm)	2.13in (54mm)	1.88in (200mm)	3.38 (85.8mm)	0.25 (6.35mm)	1.63in (41.3mm)	0.94in (23.8mm)	5.25in (133.4mm)	0.56in (14.3mm)	0.41in (10.3mm)
450-600	8in (203.2mm)	2.5in (63.5mm)	2.13in (54mm)	3.75in (95.3mm)	0.38in (9.5mm)	2in (50.8mm)	1in (25.4mm)	6in (152.4mm)	0.75in (19.1mm)	0.53in (13.5mm)

Edison Fuses – Dual Element Time-Delay Class J

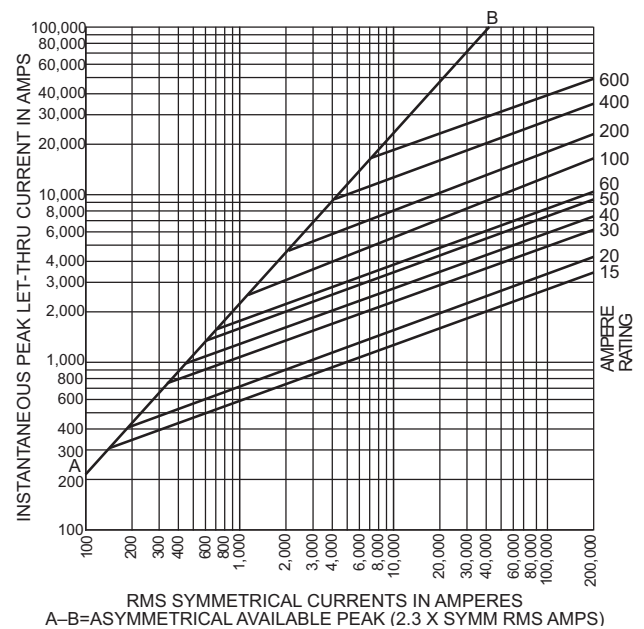
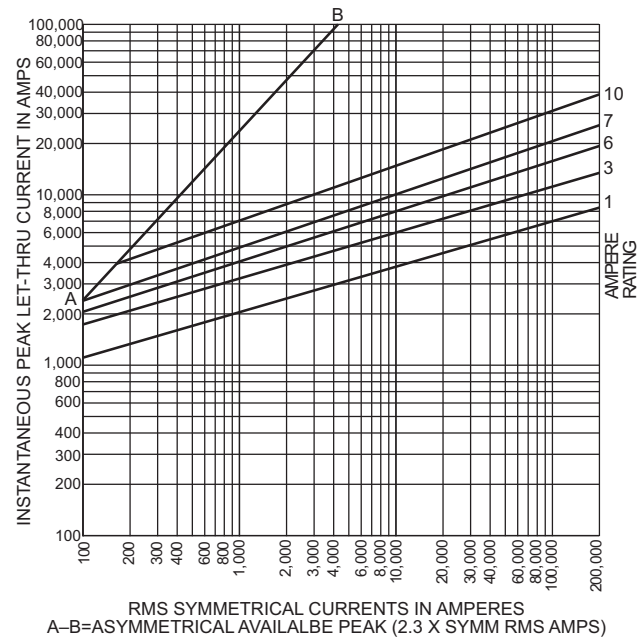
AVERAGE TIME/CURRENT CURVE

Cat. No. JDL (Amp) 600V



PEAK LET-THROUGH CURRENT CURVES

Cat. No. JDL (Amp) 600V



Current-Limiting Effects

*Prosp. S.C.C.	Let-Thru Current (Apparent RMS Symmetrical) JDL (600V) Fuse Ratings						
	15A	30A	60A	100A	200A	400A	600A
1,000	270	470	750	—	—	—	—±
3,000	370	670	1,130	1,640	2,360	—	—
5,000	450	800	1,420	1,910	2,760	4,400	—
10,000	550	1,000	1,730	2,450	3,520	5,540	8,000
15,000	625	1,220	1,890	2,850	4,000	6,420	9,000
20,000	700	1,330	2,120	3,090	4,400	7,000	10,000
25,000	750	1,440	2,250	3,400	5,000	7,500	11,100
30,000	800	1,530	2,370	3,650	5,140	8,000	11,800
35,000	820	1,600	2,580	3,780	5,430	8,330	12,500
40,000	900	1,640	2,670	4,000	5,640	9,000	13,270
50,000	925	1,760	2,790	4,470	6,000	9,380	13,820
60,000	1,000	1,850	3,000	4,670	6,420	10,000	15,000
80,000	1,160	2,000	3,220	5,000	7,400	11,270	16,000
100,000	1,220	2,150	3,520	5,360	7,950	12,180	17,270
150,000	1,400	2,460	4,000	6,170	9,000	14,360	19,270
200,000	1,560	2,640	4,450	7,000	10,000	15,820	20,600

*RMS Symmetrical Amperes Short-Circuit Current.

NOTEData derived from Current Limiting Curves.

Edison Fuses – Selection Guide

Line Overview

The Edison family of fuses, fuse blocks and fuse holders is divided into two classes:

1. Current Limiting: Class CC, Class J, Class RK, Class T
2. General Purpose: Class M Midget and Small Dimension

The fuse selection guide below is a general summary of the specifications included for each fuse type. This selection guide does not include the many variables that can exist for specific situations such as local codes, unusual temperature, or other operating conditions. When selecting fuses, be sure to comply with any applicable PUBLIC SAFETY standards that apply to Overcurrent Protection Devices (OPD).

Edison Fuses Selection Guide and General Specifications											
Description	Current Limiting										
	Class J		Class RK5		Class RK1		Class T		Class CC		
Fuse Type	Fast-Acting	Time-Delay	Time-Delay				Extremely Fast-Acting	Fast-Acting	Time-Delay		
Part Number	JHL	JDL	ECNR	ECSR	LENRK	LESRK	TJN	TJS	HCLR	HCTR	EDCC
Voltage Rating	600 VAC 450 VDC	600 VAC 300 VDC*	250 VAC 125 VDC* (1–200A) 250 VDC* (201–600A)	600 VAC 300 VDC*	250 VAC 125 VDC* (10–60A) 250 VDC* (70–600A)	600 VAC 300 VDC*	300 VAC 160 VDC (15–600A)	600 VAC	600 VAC 300 VDC (15–20A)	600 VAC	600 VAC 300 VDC (0.5–2.25A) (20–30A)
Amp Rating	1 to 600		1 to 600	3 to 600	10 to 600	5 to 600	1 to 600		0.5 to 30	0.25 to 30	0.5 to 30
Interrupting Rating	200,000 RMS Symmetrical Amps										
Current Limiting	Class J		Class RK5		Class RK1		Class T		Class CC		
Agency Approvals	UL Listed Class J Guide JDDZ File E162363 CSA Certified HRCI-J per C22.2, No. 248.8 File 700489 RoHS compliant	UL Listed Class J Guide JDDZ File E162363 CSA Certified HRCI-J per C22.2, No. 248.8 File 700489	UL Listed, Class RK, Guide JDDZ, File E162363 CSA Certified HRCI-R per C22.2, No. 248.12, File 700489 (LENRK CSA File 053787)				UL Listed, Class T, Guide JDDZ, File E162363 CSA Certified HRCI-T per C22.2, No. 248.12, File 53787, Class 1422-02 & 1422-82		UL Listed to 248.4, Class CC, Guide JDDZ, File E162363, CSA certified HRCI-MISC per C22.2 No. 248.4, File 700489		
Dimensions	See product specification pages.								ferrule (in): 13/32, length (in): 1-1/2		
* Self-certified DC ratings											

Edison Fuses Selection Guide and General Specifications												
Description	General Purpose – Midget				General Purpose – Small Dimension Electronic							
	Fast-Acting		Time-Delay		Fast-Acting Ceramic	Fast-Acting Glass		Medium Time-Delay Glass	Time-Delay Ceramic	Time-Delay Glass	Fast-Acting Glass	Time-Delay Glass
Part Number	MCL	MOL	MEQ	MEN	ABC	AGC	GMA	GMC	MDA	MDL	S500	S506
Voltage Rating	600 VAC	250 VAC	500 VAC	250 VAC	250 VAC (0.5 to 20A) 125VAC: (25 to 30A) 125VDC	250VAC: (0.1 to 10A) 32VAC: (15 to 30A)	250VAC (0.063 - 3A) 125VAC (4 - 15A)	250VAC (0.5 - 3A) 125VAC (4 - 10A)	250VAC 125VDC (20A)	250VAC: (0.0625 to 8A) 32VAC: (10 to 20A)	250VAC	250VAC
Amp Rating	0.5 to 50	0.5 to 30	0.25 to 30	0.5 to 30	0.5 to 30	0.10 to 30	0.063 to 15	0.5 to 10	0.5 to 20	0.0625 to 20	0.032 to 10	0.25 to 6.3
Interrupting Rating	100,000 RMS Amps	10,000 RMS Amps			See specifications table on product pages							
Current Limiting	N/A				N/A							
Agency Approvals	UL Listed to 248.14, File E162443 CSA Cert. C22.2 Part 59.2, LR 700489				UL Listed standard 248-14 UL Listed Guide and File nos. (ABC 0.25-20 A): (AGC 1/100-10 A) JDYX and E19180 UL Recognition Guide and File nos. (ABC 20-30A):(AGC 11-30) JDYX2 and E19180 CSA Certification Record No: 053787 C 000 and Class No: 1422 01 and 1422 30	Designed to UL/CSA 248-14 UL Listed, Guide JDYX, File E19180 63mA-6A UL Recognition, Guide JDYX2, File E19180, 7A-15A CSA Certified, File 053787_C_000, 63mA-6A Class 1422-01		UL Listed standard 248-14 UL Listed Card: MDA 2/10-20A , MDL 1/16-8A (Guide JDYX, File E19180 UL Recognized Card: MDA 25-30A MDL 9-30A (Guide JDYX2, File E19180) CSA Certification Card: MDA 2/10-15A (Class No. 1422-01)		UL Recognized Guide JDYX2, File E19180 Semko Approval VDE Approval BSI Approval IMQ Approval RoHS compliant		
Dimensions	ferrule (in): 13/32 length (in): 1-1/2				1/4" x 1-1/4", (6.3mm x 32mm)		0.197" x 0.788" (5mm x 20mm)		1/4" x 1-1/4", (6.3mm x 32mm)		0.197" x 0.788" (5mm x 20mm)	

Edison Fuses – Fuse Blocks for Class J Fuses



J60060-1C



J60030-2P



J60030-3P

Description

For use with Edison JDL class J fuses

Terminal type

- C = Box lug type
- CR = Box lug type, with retaining clip
- P = Pressure plate. Clip reinforcing springs are standard on fuseblocks rated 100A and above.

Specifications

Construction: Thermoplastic,
UL Flammability; 94V-0

Voltage Ratings: 600 Volts AC

Ampere Ratings: 0.50 - 600 Amps

Short-circuit current Rating: 200,000 RMS
Symmetrical Amps

Agency Approvals

- UL Listed, UL 512, Guide IZLT, File E14853
- CSA, certified, C22.2 No. 39, Class 6225-01, File 47235

Class J Fuse Blocks							
Part Number	Amps	Poles	Maximum Wire Size	Fig #	Pcs/Pkg	Wt. (lbs.)	Price
J60030-1P	0.5 to 30	1	#10-14 Cu	1	1	0.44	<-->
J60030-2P		2		2		0.35	<-->
J60030-3P		3		3		0.45	<-->
J60060-1C	31 to 60	1	#2-14 Cu-Al	1		0.44	<-->
J60060-2C		2		2		0.35	<-->
J60060-3C		3		3		0.55	<-->
J60100-1CR	61 to 100	1	1/0-8 Cu-Al	4		0.98	<-->
J60100-3CR		3		5		1.55	<-->
J60200-1CR	101 to 200	1	250MCM-6 Cu-Al	6		1.70	<-->
J60200-3CR		3		9		6.70	<-->
J60400-1CR	201 to 400	1	500MCM-4 Cu-Al	7		3.10	<-->
J60400-3CR		3		10	14.0	<-->	
J60600-1CR	401 to 600	1	(2) 500MCM-4/0 Cu-Al	8	5.40	<-->	
J60600-3CR*		3		11	8.0	<-->	

* Not UL, Please use (3) J60600-1CR to assemble a 3 pole UL Fuseblock

Class J Fuseholder Dimensions

0.5 Amp to 60 Amp

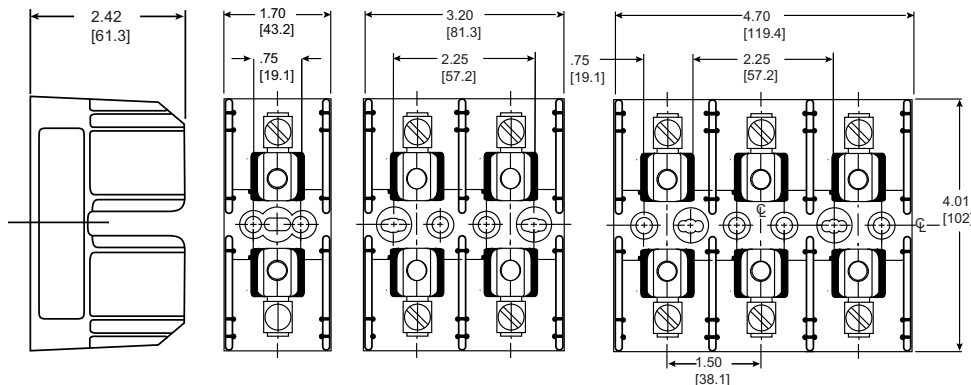


Figure 1

Figure 2

Figure 3

Note: All dimensions shown in inches [mm]

Edison Fuses – Fuse Blocks for Class J Fuses

61 Amp to 100 Amp

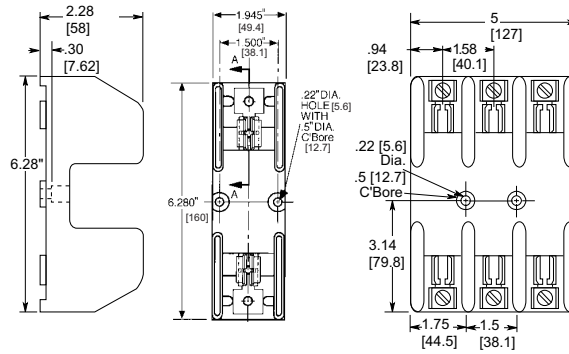


Figure 4

Figure 5

101 Amp to 200 Amp

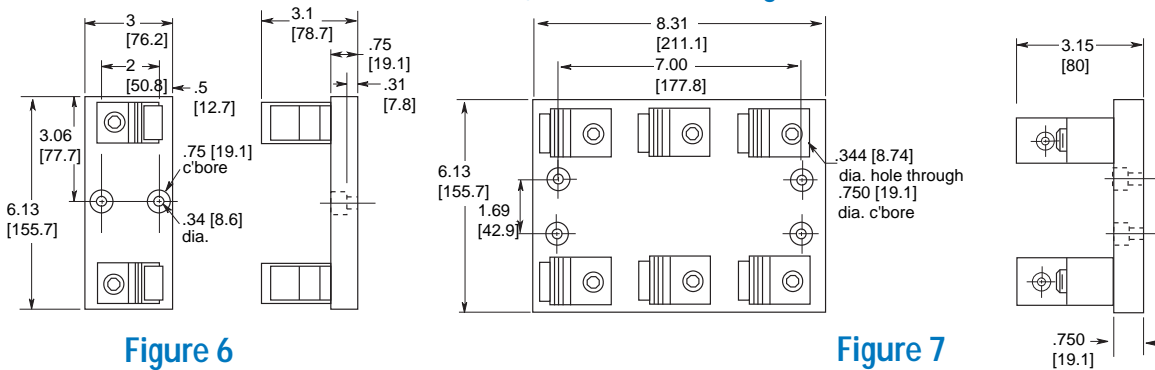


Figure 6

Figure 7

201 Amp to 400 Amp

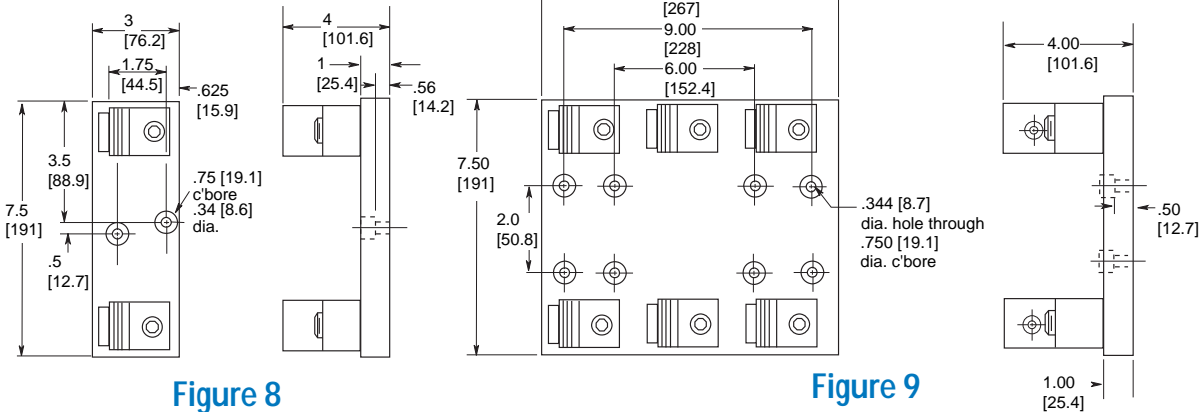


Figure 8

Figure 9

401 Amp to 600 Amp

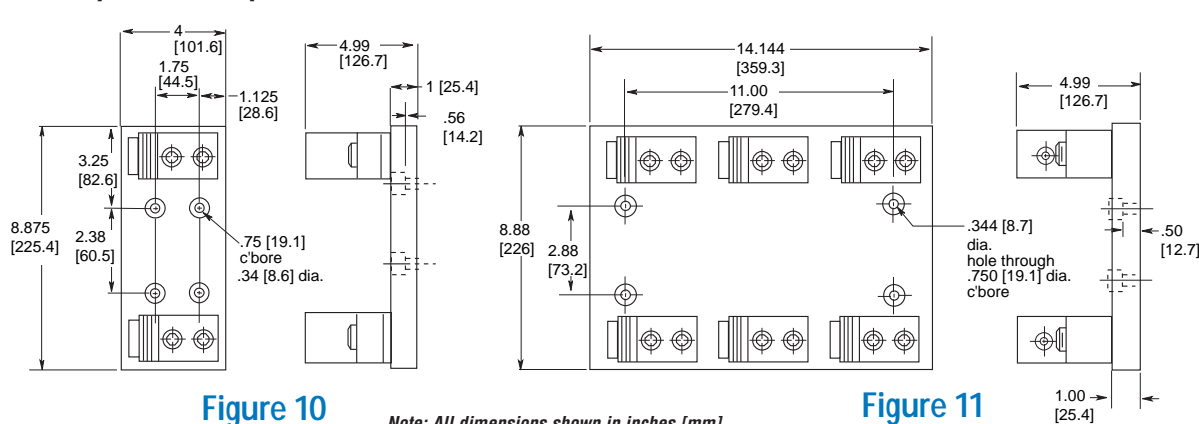


Figure 10

Figure 11

Note: All dimensions shown in inches [mm]

Edison Fuses – Modular Fuse Holders for Class J Fuses



CH30J1



CH30J2I



CH30J3

Description

- Choice of LED indicator or non-indicating fuse holder
- Comes in standard 1-, 2- and 3-Pole ganged assemblies where all fuses are extracted simultaneously
- Meets requirements of IEC 60529 for IP-20 finger safe rating
- 35 mm DIN rail and chassis (6-32 UNC Pan Head recommended) mounting features
- Fuseholder wire ports dual wire rated from 18 to 3 AWG

Specifications

Construction: Thermoplastic, with tin-plated copper clip
UL Flammability: 94V-0

Voltage Ratings: 600 Volts AC

Ampere Ratings: 1 - 60 Amps

Interrupting Rating: 200,000 RMS Symmetrical Amps

Minimum Indicating Voltage (neon lamp): 90 Volts

Nominal Operating Current (neon lamp): 34 mA (460 VAC)

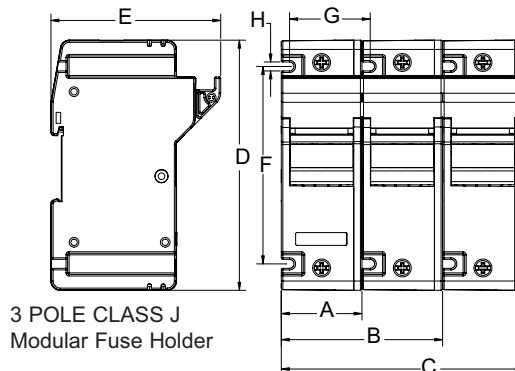
Agency Approvals

- Listed UL 512, Guide IZLT, File E14853
- CSA Certified per C22.2 Nos. 39 Class 6225-01, File LR47235
- CE compliance for the European Union Low Voltage Directive

CH Series Modular Fuse Holders for Class J Fuses							
Amp Rating	Part Number	Type	Poles	Maximum Wire Size	Pcs/Pkg	Weight (lbs.)	Price
30A	CH30J1	Easy ID window	1	18 -1 AWG Single 18 -3 AWG Dual 75°C	6	2.8	<--->
	CH30J2	Easy ID window	2		3		<--->
	CH30J3	Easy ID window	3		2		<--->
	CH30J1I	Neon indicator	1		6		<--->
	CH30J2I	Neon indicator	2		3		<--->
	CH30J3I	Neon indicator	3		2		<--->
60A	CH60J1	Easy ID window	1	18 -1 AWG Single 18 -3 AWG Dual 75°C	6	3.4	<--->
	CH60J2	Easy ID window	2		3		<--->
	CH60J3	Easy ID window	3		2		<--->
	CH60J1I	Neon indicator	1		6		<--->
	CH60J2I	Neon indicator	2		3		<--->
	CH60J3I	Neon indicator	3		2		<--->

Dimensions

Dimension	CH30J in (mm)	CH60J in (mm)
A	1.28 (32.5)	1.58 (40.0)
B	2.56 (65.0)	3.16 (80.0)
C	3.84 (97.5)	4.72 (120.0)
D	4.59 (116.6)	4.88 (124.0)
E	2.83 (71.8)	3.31 (84.1)
F	3.56 (90.4)	3.85 (97.9)
G	1.28 (32.5)	1.58 (40.0)
H	0.18 (4.44)	0.18 (4.44)



Edison Fuses – Accessories


FP2

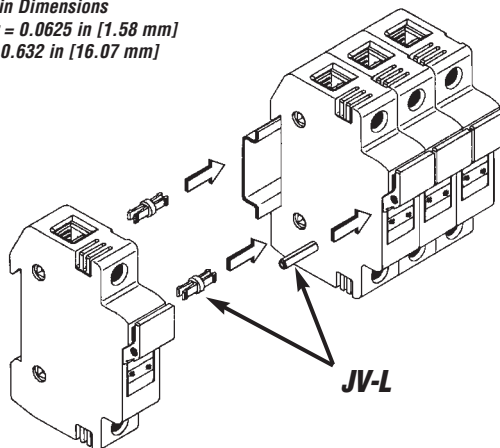
JV-L

Accessories			
Part Number	Description	Pcs/Pkg	Price
FP-2	Fuse puller for fuse dia. 13/32" - 13/16". Fuse type: 0-60A, 250V; 0-30A, 600V	1	<--->
JV-L* (Not Field Installable)	Multi-pole connection kit to connect new design multiple Class CC and Midget Class fuse holders together. Kit consists of 6 connectors and 3 handle pins to connect up to 4 fuse holders.		<--->

Note: Will not work with retired design fuse holders shipped before November 1, 2009.

***Roll pin punch or installation tool is required to install handle pins (Tool not sold by Automationdirect.com).**

Handle Pin Dimensions
 Diameter = 0.0625 in [1.58 mm]
 Length = 0.632 in [16.07 mm]



Edison Cross Reference Guide

CROSS REFERENCE GUIDE By manufacturers type reference or series number. Ampere ratings must be added for ordering purposes.								
FUSE TYPE		VOLT	EDISON	BRUSH/ DORMAN	BUSSMANN	MERSEN / GOULD	GEC/CEFCO	LITTELFUSE
UL CLASS CURRENT LIMITING FUSES (CSA CLASS)								
CC (HRCI-CC)	Time-Delay	600	EDCC	–	LP-CC	ATDR	–	CCMR
	Time-Delay	600	HCTR	–	FNQ-R	ATQR	–	KLDR
	Fast-Acting	600	HCLR	HCLR	KTK-R	ATMR	CTK-R	KLKR
RK1	Time-Delay Dual Element	250	LENRK	–	LPN-RK-SP	A2DR	–	LLNRK
		600	LESRK	–	LPS-RK-SP	A6DR	–	LLSRK
RK5	Time-Delay Dual Element	250	ECNR	–	FRN-R	TR	–	FLNR
		600	ECSR	–	FRS-R	TRS	–	FLSR
J	Time-Delay Dual Element	600	JDL	–	LPJ	AJT	–	JTD
	High-Speed AC Drive	600	JHL	–	DFJ	HSJ	–	–
T	Extremely Fast-Acting	300	TJN	–	JJN	A3T	–	JLLN
		600	TJS	–	JJS	A6T	–	JLLS
UL CLASS GENERAL PURPOSE FUSES								
Midget	Fast-Acting	600	MCL	MCL	KTK	ATM	CTK	KLK
		250	MOL	MOL	BAF/BAN	OTM	–	BLF
	Time-Delay	500	MEQ	MEQ	FNQ	ATQ	–	FLQ
		250	MEN	MEN	FNM	TRM	–	FLM
1/4"x1/4" Ceramic	Fast-Acting	250/125	ABC	ABC	ABC	GAB	–	314
		1/4"x1/4"Glass	250/32	AGC	AGC	AGC	GGC	–
1/4"x1/4" Ceramic	Time-Delay	250	MDA	MDA	MDA	–	–	326
		1/4"x1/4"Glass	250/32	MDL	MDL	MDL	GDL	–
5x20 mm Glass	Fast-Acting	250/125	GMA	GMA	GMA	GGM	–	235
	Medium Time-Delay	250/125	GMC	GMC	GMC	GSC	–	–
5x20 mm Glass	Fast-Acting	250	S500	BDB	GDB	GSB	–	217
	Time-Delay	250	S506	BDC	GDC	GDG	–	218
Fuse Puller								
Fuse Puller FP-2		–	old - 38072 new - FP-2	–	FP-2	–	–	–