

Small Dimension Time-Delay MDL Fuses

EATON BUSSMANN
SERIES


Features

- Compact dimensions 1/4" x 1-1/4", (6.3mm x 32mm)
- Glass tube construction with nickel-plated brass end caps
- Time-delay
- RoHS Compliant

Applications

- Supplemental protection for electronic applications

MDL Specifications

Voltage Rating: MDL - See table below

Ampere Rating: 0.0625–20 Amps

Interrupting Rating: See table below

Environmental Data

- Shock: 0.0625A MIL-STD-202, Method 213, Test Condition I;
- 1A thru 20A: MIL-STD-202, Method 207, (HI shock)
- Vibration: 0.0625A: MIL-STD-202, Method 201; 0.25A thru 20A: MIL-STD-202, Method 204, Test condition C (except 5g, 500 HZ)

Agency Approvals

- UL Listed product meets standard 248-14
- UL Listed Card: MDL 0.0625-8A (Guide JDYX, File E19180)
- UL Recognized Card: MDL 9-20A (Guide JDYX2, File E19180)
- CSA Certification File 053787: MDA 0.25-15A (Class No. 1422-01)
- RoHS

MDL Small Dimension Time-Delay Fuses

Part Number	AMP Rating	Rated Voltage	AC Interrupting Rating*			Melting I2t**	Voltage Drop mv***	Pcs/Pkg	Package Weight (lb.)	Price
		AC Max	250V	125V	32V					
MDL-0625	0.0625	250V	35A	10000A	—	0.0046	2.79	5	0.1	\$35.00
MDL-25	0.25					0.447	0.965			\$21.50
MDL-5	0.5					1.656	1.27			\$18.00
MDL1	1					11.498	0.995			\$19.50
MDL1-5	1.5					22.7	0.721			\$15.00
MDL2	2		100A			62.3	0.644			\$15.00
MDL2-5	2.5					63.1	0.410			\$17.00
MDL3	3					67.5	0.345			\$15.00
MDL4	4					19.3	0.187			\$15.00
MDL5	5					32.0	0.160			\$15.00
MDL6	6		200A			37.4	0.155			\$15.00
MDL6-25	6.25					38.7	0.152			\$17.00
MDL7	7					42.7	0.140			\$17.00
MDL8	8					47.8	0.119			\$15.00
MDL10	10	32V		—	—	1000A	64.4	0.114	\$19.50	
MDL15	15		354.0				0.130	\$22.50		
MDL20	20		2914.0				0.530	\$20.00		

*Note: Interrupting ratings were measured at 70% - 80% power factor on AC, and at a time constant described in UL 198L.

** Typical Melting I2t (A2Sec) - measured at listed interrupting rating and rated voltage (at 70% to 80% power factor on AC)

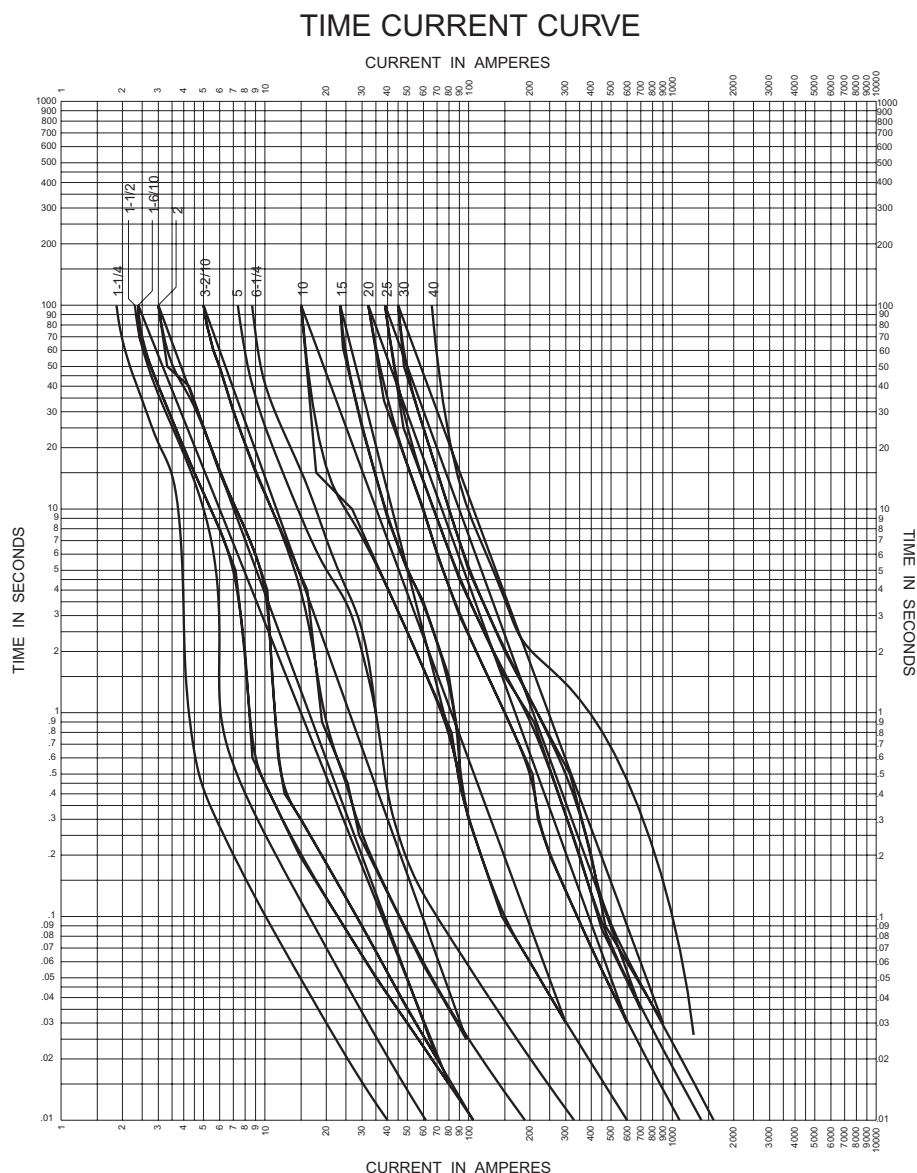
*** Typical Voltage Drop - measured at 25°C ± 3°C ambient temperature at rated current.

For mounting and wiring MDL fuses, see our DN-F6 Series fuse blocks in the Terminal Blocks and Wiring Solutions section.

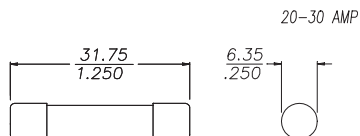
CROSS REFERENCE

OLD EDISON	BUSSMANN	MERSEN GOULD	LITTELFUSE
BDL	MDL	GDL	313

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Dimensions (mm/inches)



MDL Electrical Characteristics

Rated Current	% of Amp Rating	Opening Time
0.0625 to 20Amps	100	None
	135	60 minutes maximum
	200	120 seconds maximum
0.0625 to 3Amps	200	5 seconds minimum
4 to 8 Amps	200	12 seconds minimum

Selection Guide

EATON BUSSMANN
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Edison

Line Overview

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

1. Current Limiting: Class CC, Class J, Class L, 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).

Fuse Selection Guide and General Specifications												
Description	Current Limiting											
	Class J		Class RK5		Class RK1		Class T		Class L	Class CC		
Fuse Type	Fast-Acting	Time-Delay	Time-Delay				Extremely Fast-Acting		Fast-Acting	Fast-Acting	Time-Delay	
Part Number	JHL	JDL	ECNR	ECSR	LENRK	LESRK	TJN	TJS	LCU	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	600V	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		601 to 1200	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 L	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, Std. 248-10 CSA Certified, HRC-L C22.2 No. 248.10, Class 1422- 02, File 53787	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

Fuse Selection Guide and General Specifications												
Description	General Purpose – Midget				General Purpose – Small Dimension Electronic							
Fuse Type	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 30A) 125 VDC: (0.5 to 30A)	250 VAC: (0.1 to 10A) 32VAC: (15 to 30A)	250 VAC (0.063 - 3A) 125 VAC (4 - 15A)	250 VAC (0.5 - 3A) 125 VAC (4 - 10A)	250 VAC 125 VDC (20A)	250 VAC: (0.0625 to 8A) 32VAC: (10 to 20A)	250 VAC	250 VAC
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 0.25-20A): (AGC 1/100–10A) JDYX and E19180 UL Recognition Guide and File nos. (ABC 20–30A):(AGC 11-30) JDYX2 and E19180 CSA Certification Record No: 053787 C 000And 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	
					RoHS							
Dimensions	ferrule (in): 13/32 length (in): 1-1/2				1/4" x 1-1/4", (6.3 x 32mm)		0.197" x 0.788" (5 x 20mm)		1/4" x 1-1/4", (6.3 x 32mm)		0.197" x 0.788" (5 x 20mm)	



Fuse Terminal Blocks

Fuse terminal blocks are available for 1 1/4 x 1/4in and 5 x 20mm-5 x 25mm fuses and they are 35mm DIN rail mountable. These blocks are available with or without a blown fuse LED. Fuse terminal blocks with blown fuse LED are polarity sensitive. The hinge side is positive.



DN-F6 Series:
EURO S 10H/35



DN-F6L Series:
EURO S 10H/35



DN-F10 Series:
EURO S 4LH/35



DN-F10L Series:
EURO S 4LH/35

Ordering Information

	Part Number	Qty	Price	Part Number	Qty	Price	Part Number	Qty	Price	Part Number	Qty	Price
Gray Terminal Block	DN-F6	25	\$168.00	—			DN-F10	50	\$269.00	—		
	DN-F6MN	7	\$49.00				DN-F10MN	10	\$58.00			
12–24 VAC/DC*	—			DN-F6L24	10	\$105.00	—			DN-F10L24	10	\$103.00
110 VAC/DC*				DN-F6L110	10	\$105.00				DN-F10L110	10	\$103.00
220 VAC/DC*				DN-F6L220	10	\$105.00				DN-F10L220	10	\$103.00

Technical Specifications

Stripping Length	12mm [0.47in]			10mm [0.39in]		
Tightening Torque	0.8 N·m [10 lb·in]			0.6 N·m [5.3 lb·in]		
Density	100/m [30 pcs/ft]			100/m [30 pcs/ft]		
UL Approval**	600V	30A	20–6 AWG	250V per EN60947-7-3	6.3A per EN60947-7-3	24–10 AWG
VDE Approval	750V	8A	—	250V per EN60947-7-3	6.3A per EN60947-7-3	4 mm²
Fuse Size (not supplied)	1 1/4in x 1/4in			5 x 20mm–5 x 25mm		
Indicator Type	Non-indicating		LED blown fuse indicator	Non-indicating		LED blown fuse indicator
Operating Temperature	Ambient air temperature: -20 to +85 °C [-4 to +185 °F] / Relative humidity: 50% max at 40 °C [104 °F]; 90% max at 20 °C [68 °F]					
SCCR Rating	10 kA per Table SB4.1, 2009, UL 508A, Maximum short circuit current rating for unmarked components					
CE Conformity	CE (EN 60947-1 / 60947-7-3)					
Agency File #	UL E179129 / LR84816					

Accessories

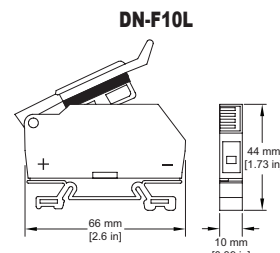
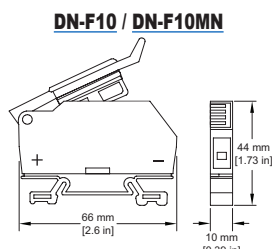
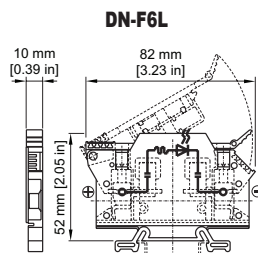
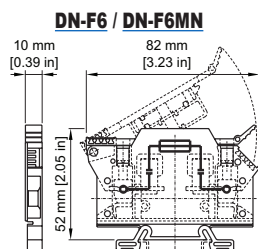
End Covers		Included			Included			Included			Included		
35mm DIN Rail	7.5mm high	DN-R35S1	10	\$42.50	DN-R35S1	10	\$42.50	DN-R35S1	10	\$42.50	DN-R35S1	10	\$42.50
		DN-R35S1-2	2	\$9.25	DN-R35S1-2	2	\$9.25	DN-R35S1-2	2	\$9.25	DN-R35S1-2	2	\$9.25
	15mm high	DN-R35HS1	10	\$71.00	DN-R35HS1	10	\$71.00	DN-R35HS1	10	\$71.00	DN-R35HS1	10	\$71.00
		DN-R35HS1-2	2	\$15.50	DN-R35HS1-2	2	\$15.50	DN-R35HS1-2	2	\$15.50	DN-R35HS1-2	2	\$15.50
End Brackets		DN-EB35	50	\$79.00	DN-EB35	50	\$79.00	DN-EB35	50	\$79.00	DN-EB35	50	\$79.00
		DN-EB35MN	20	\$36.50	DN-EB35MN	20	\$36.50	DN-EB35MN	20	\$36.50	DN-EB35MN	20	\$36.50
		DN-EB35-A	50	\$56.00	DN-EB35-A	50	\$56.00	DN-EB35-A	50	\$56.00	DN-EB35-A	50	\$56.00
		DN-EB35-A-10	10	\$13.50	DN-EB35-A-10	10	\$13.50	DN-EB35-A-10	10	\$13.50	DN-EB35-A-10	10	\$13.50
		DN-QEB35	50	\$50.00	DN-QEB35	50	\$50.00	DN-QEB35	50	\$50.00	DN-QEB35	50	\$50.00
		DN-QEB35-10	10	\$13.00	DN-QEB35-10	10	\$13.00	DN-QEB35-10	10	\$13.00	DN-QEB35-10	10	\$13.00
Angled Support Bracket		DN-ASB1	50	\$86.00	DN-ASB1	50	\$86.00	DN-ASB1	50	\$86.00	DN-ASB1	50	\$86.00
Marking Tags		DN-L*** or DN-LT****	500/100	various	DN-L*** or DN-LT****	500/100	various	DN-L*** or DN-LT**** or DN-MTA***	500/100	various	DN-L*** or DN-LT**** or DN-MTA***	500/100	various

*Working voltage **For copper wire only ***On lever arm ****On terminal body

Note: DN-F6 series fuse holders will accommodate the following AutomationDirect fuses: ABC, AGC, MDA and MDL Series.

DN-F10 series fuse holders will accommodate the following AutomationDirect fuses: GMA, GMC, S500, and S506 Series.

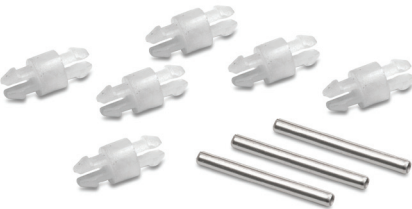
For more information on accessories, see the DINnectors Accessories later in this section.



Accessories



FP-2

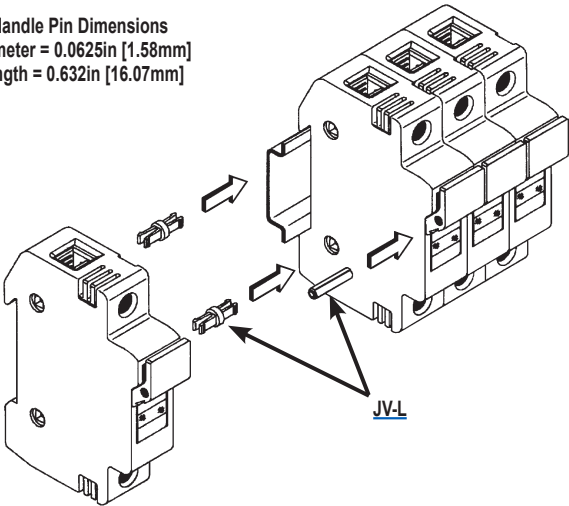


JV-L

Accessories			
Part Number	Description	Pcs/Pkg	Price
<u>FP-2</u>	Fuse puller for fuse dia. 13/32" - 13/16". Fuse type: 0-60A, 250V; 0-30A, 600V	1	\$48.00
<u>JV-L</u> * (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.		\$18.50

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 = 0.0625in [1.58mm]
Length = 0.632in [16.07mm]



JV-L

Cross-Reference Guide

EATON BUSSMANN
SERIES

Edison

CROSS-REFERENCE GUIDE by manufacturers type reference or series number

Ampere ratings must be added for ordering purposes

FUSE TYPE		Voltage	EDISON	BRUSH/ DORMAN	BUSSMANN	MERSEN / GOULD	GEC/CEFCO	LITTELFUSE
Current Limiting Branch Circuit Fuses								
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
L	Fast-Acting	600	LCU	LCU	KTU	A4BY	CL, CLU	LDC
Supplemental 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	–	312
1/4"x1/4" Ceramic	Time-Delay	250	MDA	MDA	MDA	–	–	326
1/4"x1/4"Glass		250/32	MDL	MDL	MDL	GDL	–	313
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	–	–	–