

L-Series Circuit Breaker

Carling Technologies is pleased to introduce the new L-Series Circuit Breaker, a compact, high performance breaker ideally suited for the rigors and confined spaces found in today's telecom/ datacom power distribution units and rack systems.

The L-Series provides best in class performance in an innovative low profile, space saving package. The slick design complements the overall spatial objectives now required by telecommunications and data-communications systems designers in their quest to reduce the overall size of equipment, while increasing transmission capacity. Further, a patent pending flush rocker actuator design and optional push-to-reset guard offers additional protection against accidental switching.



Features:

- ♦ Ultra low profile design saves valuable space
- ♦ Optional handle guard actuator
- ♦ UL 489 LISTED Branch Circuit breaker
- ♦ Designed for worldwide datacenter compatibility with up to 240VAC ratings

Applications:

- ♦ Telecom/Datacom Industry
- ♦ Power Distribution Units
- ♦ Data Servers
- ♦ Data Storage



Carling Technologies™

Innovative Designs. Powerful Solutions.

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**Product Bulletin #138
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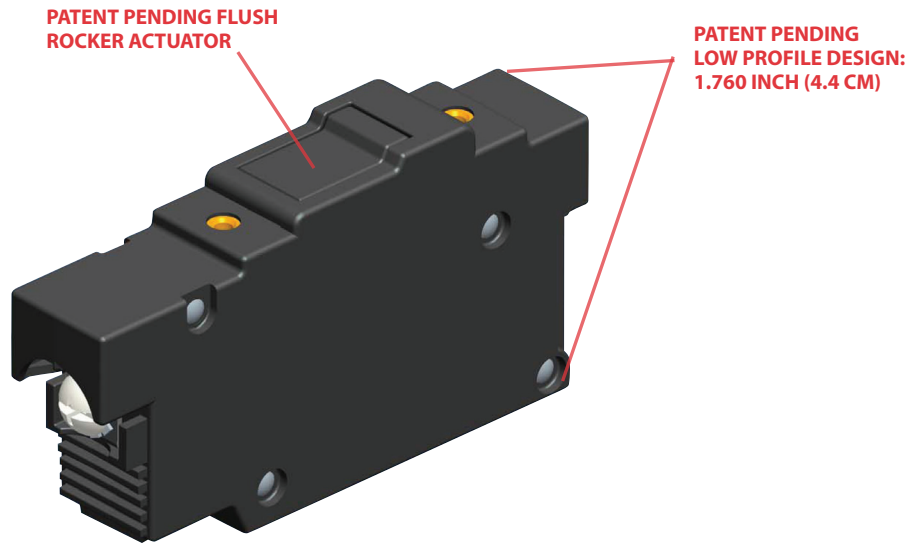
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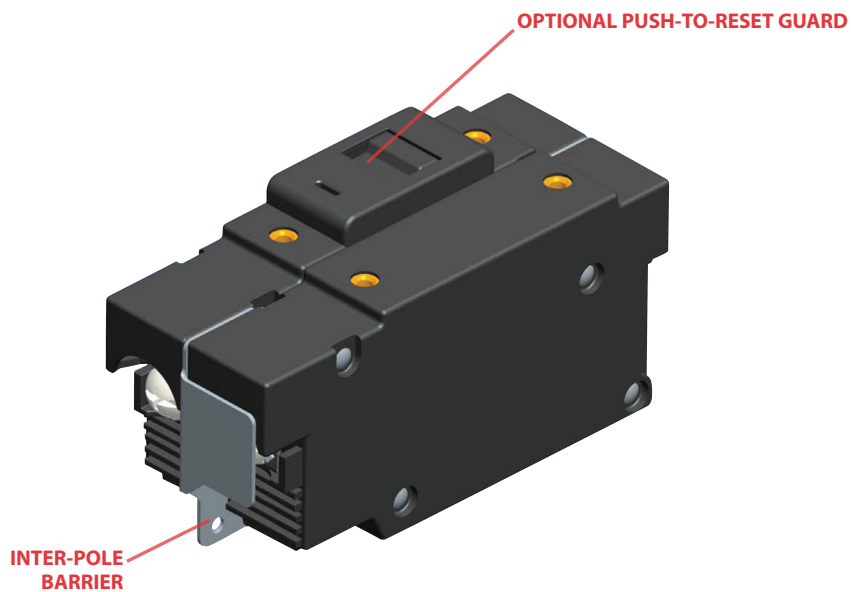
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1-Pole Configuration Low Profile Rocker



2-Pole Configuration with Push-To-Reset Guard



Electrical

Voltage and Current Ratings

Voltage (VAC)	Current (A)	Number of Poles
240	0.1 - 30	1
120/240	0.1 - 30	2
120/240	0.1 - 30	3*

* 3rd pole to be neutral break

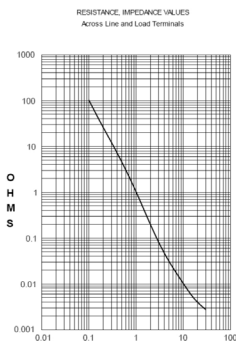
Time Delay

Delay Curve Number	VOLTAGE	DESCRIPTION
21	50/60 Hz	Ultrashort
22	50/60 Hz	Short
24	50/60 Hz	Medium
26	50/60 Hz	Long
42	50/60 Hz	Hi-inrush, Short
44	50/60 Hz	Hi-inrush, Medium
46	50/60 Hz	Hi-inrush, Long

Dielectric Strength

UL, CSA-1960V 50/60 Hz for one minute between all electrically isolated terminals. Comply with the 8mm spacing and 3750V 50/60 Hz dielectric requirements from hazardous voltage to operator accessible surfaces and between main circuits of adjacent poles and from main circuit to auxiliary circuits per Publications EN 60950 and VDE 0805.

Impedance



Insulation Resistance Overload
Interrupt Capacity

Minimum of 100 Megohms@500VDC
50 operations @ 600% of rated current
5000 AMPs

Mechanical

Endurance

10,000 "On-Off" Operations @ 6 per minute; 6000 cycles with rated Current and Voltage; 4000 cycles without electrical load.

Trip Free

Trips on overload even when actuator is forcibly held in the "On" position.

Trip Indication

The operating actuator moves positively to the "Off" position when an overload causes the breaker to trip.

Environmental

Environmental

MIL-PRF-55629 and MIL-STD-202G

Operating Temperature

-40°C to +85 °C

Vibration

Withstands 0.06" excursion from 10-55 Hz and 10Gs 55-500 Hz at rated current per MIL-PRF-55629 and MIL-STD-202G, Method 204D, Test Condition A. Instantaneous and ultra-short curves tested at 90% of rated current.

Shock

Withstands 100 Gs, 6 ms saw tooth while carrying rated current per MIL-PRF-55629 and MIL-STD-202G, Method 213B, Test Condition "I". Instantaneous and ultra short curves tested at 90% of rated current.

Thermal Shock

MIL-PRF-55629 and MIL-STD-202G, Method 107G, Condition A (5-cycles at -55°C to +25°C to +85°C to +25°C).

Moisture Resistance

MIL-PRF-55629 and MIL-STD-202G, Method 106G, i.e., Ten 24-hour cycles at +25°C to +65°C, 80-98% RH.

Salt Spray

Method 101, Condition A (90-95% RH @ 5% NaCl Solution, 96hrs)

Physical

Number of Poles

1-3 poles

Termination

Screw Terminals with the following thread sizes: 10-32, 8-32, M5, M4

Termination Barrier

Standard for 2 & 3 poles constructions.

Mounting

Threaded Insert: #6-32 UNC-2B, or M3X0.5-6H B ISO (2 per Pole)

Actuator

Rocker, with or without guard.

Internal Circuit Config.

Series Trip

Materials

Housing - Glass Filled Polyester
Rocker - Nylon 6/6

Weight

~107 Grams (~3.76 Ounces) per pole.

Standard Color

Housing - Black, Rocker - Black

Regulatory Compliance

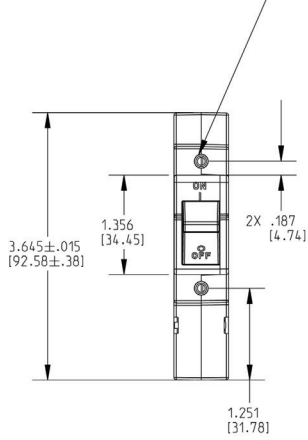
Agency Approvals

UL 489, cUL, TUV (EN60934-2)

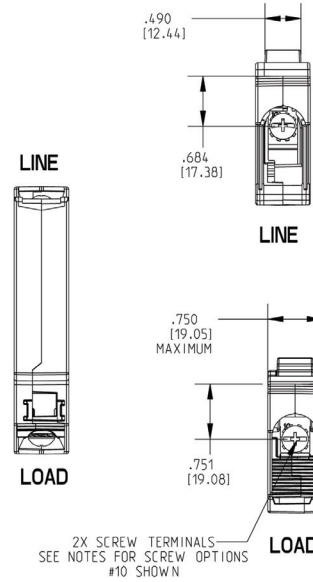
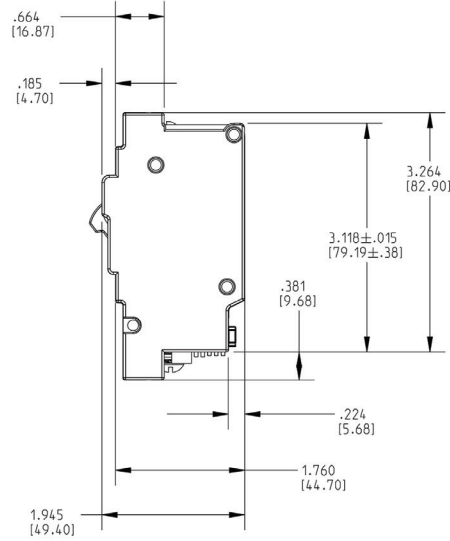
*Manufacturer reserves the right to change product specification without prior notice.

4 | L-Series Circuit Breaker - Dimensional Specifications in.[mm]

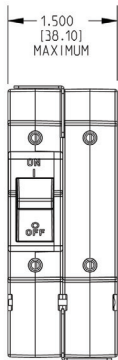
2X INSERT, 6-32 OR M3 X 0.195[4.95] DEEP
SEE MOUNTING SECTION FOR THREAD OPTIONS



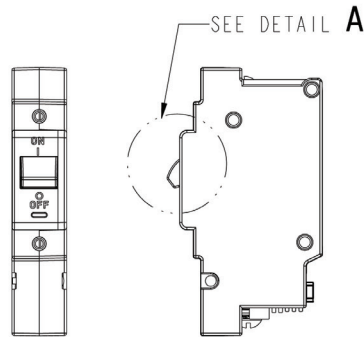
1 POLE



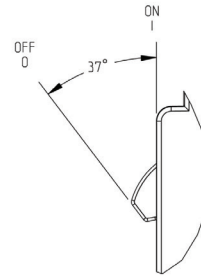
2X SCREW TERMINALS
SEE NOTES FOR SCREW OPTIONS
#10 SHOWN



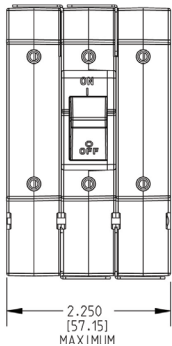
2 POLE



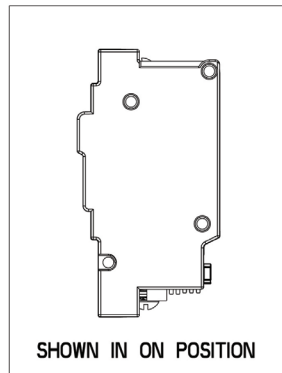
PUSH TO RESET
ACTUATOR



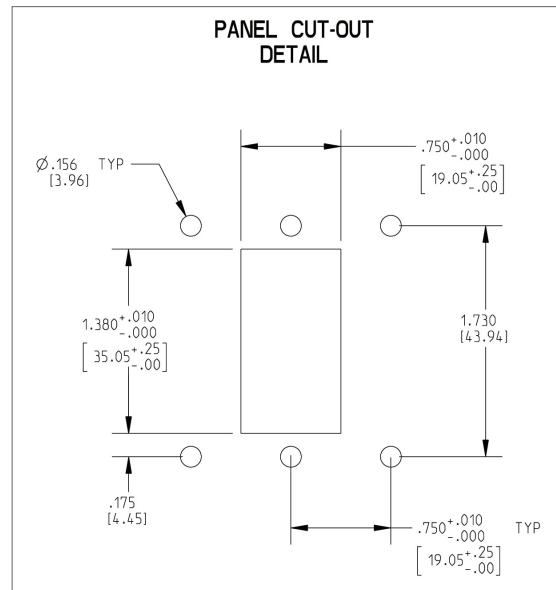
DETAIL A



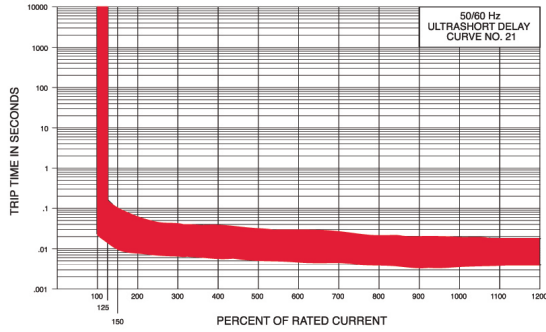
3 POLE



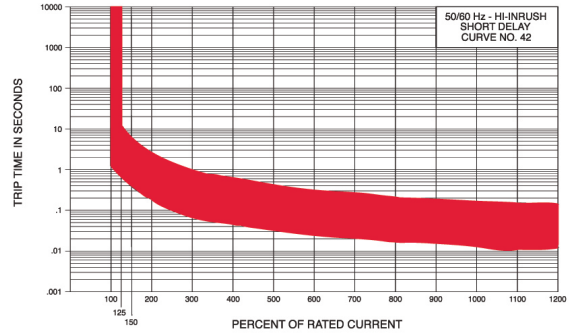
SHOWN IN ON POSITION



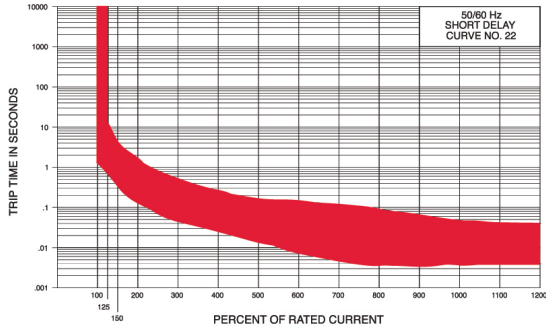
Ultrashort - AC



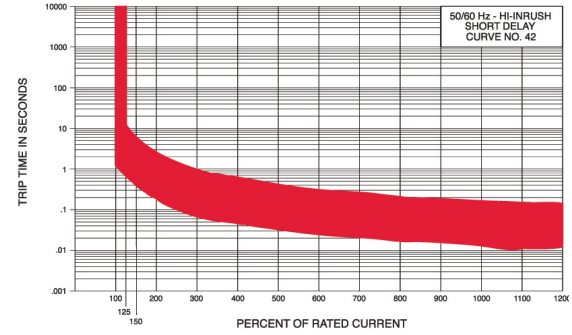
Short - High Inrush AC



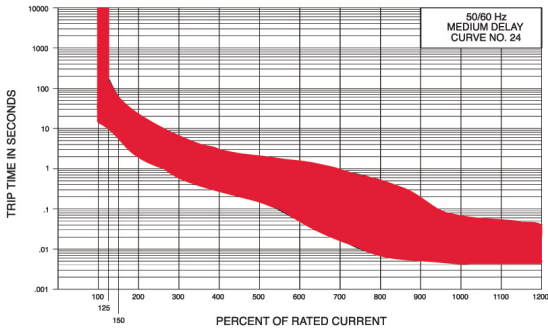
Short - AC



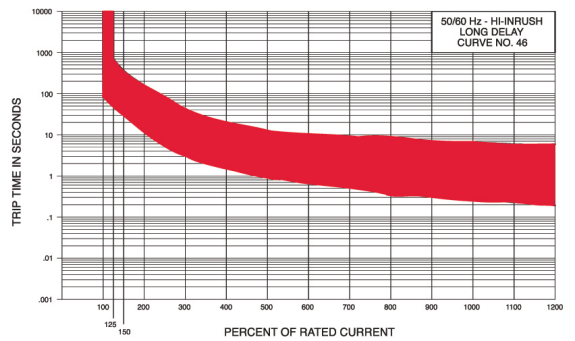
Medium - High Inrush AC



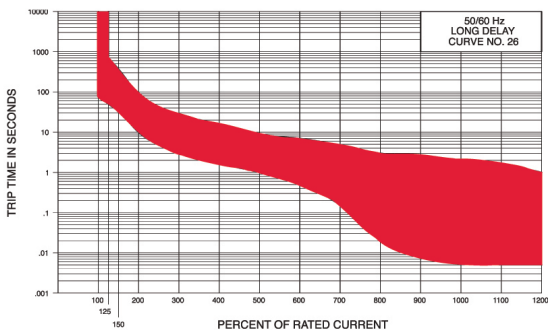
Medium - AC

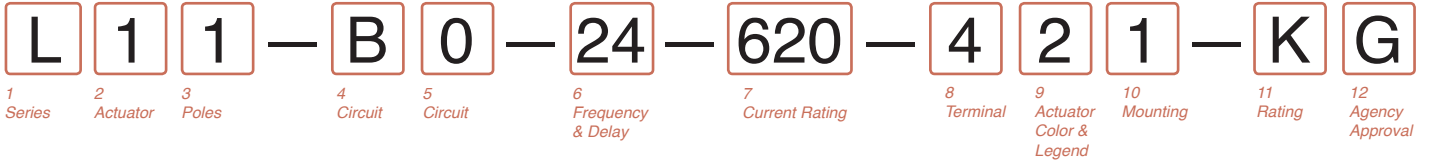


Long - High Inrush AC



Long - AC





1 SERIES
L

2 ACTUATOR
 1 Single Color Low Profile Rocker, Vertical Legend
 2 Single Color Low Profile Rocker, Horizontal Legend
 3 Single Color Push to Reset Low Profile Rocker, Vertical Legend
 4 Single Color Push to Reset Low Profile Rocker, Horizontal Legend

3 POLES
 1 One 2 Two 3 Three

4/5 CIRCUIT
 B0 Series Trip (current)

6 FREQUENCY & DELAY		26	50/60Hz Long
21	50/60Hz Ultra Short	42	50/60Hz Short, Hi-Inrush
22	50/60Hz Short	44	50/60Hz Medium, Hi-Inrush
24	50/60Hz Medium	46	50/60Hz Long, Hi-Inrush

7 CURRENT RATING (AMPERES)			
CODE	AMPERES		
410	1.000	455	5.500
512	1.250	460	6.000
415	1.500	465	6.500
517	1.750	470	7.000
420	2.000	475	7.500
522	2.250	480	8.000
425	2.500	485	8.500
527	2.750	490	9.000
430	3.000	495	9.500
435	3.500	610	10.000
440	4.000	710	10.500
445	4.500	611	11.000
450	5.000	711	11.500
		612	12.000
		712	12.500
		613	13.000
		614	14.000
		615	15.000
		616	16.000
		617	17.000
		618	18.000
		620	20.000
		622	22.000
		624	24.000
		625	25.000
		630	30.000

8 TERMINAL
 2 Screw Terminal, 8-32 (Bus Type) E Screw Terminal, M4 (Bus Type)
 4 Screw Terminal, 10-32 (Bus Type) H Screw Terminal, M5 (Bus Type)

9 ACTUATOR COLOR & LEGEND

Acuator Color	I-O	ON-OFF	Dual	Legend Color
White	A	B	1	Black
Black	C	D	2	White
Red	F	G	3	White
Green	H	J	4	White
Blue	K	L	5	White
Yellow	M	N	6	Black
Gray	P	Q	7	Black
Orange	R	S	8	Black

10 MOUNTING INSERTS
 1 6-32 X .195 Threaded Inserts
 2 ISO M3 X 5 mm Threaded Inserts
 A 6-32 X .195 Threaded Inserts with Terminal Barrier
 B ISO M3 X 5 mm Threaded Inserts with Terminal Barrier

11 MAX. APPLICATION RATING
 C 120/240 VAC (2 or 3 Pole only) D 240 VAC K 120 VAC

12 AGENCY APPROVAL
 A Without approvals
 G UL 489 Listed
 3 UL 489 Listed, TUV Certified

Notes:
 1 3 Pole units available only when one of three poles is neutral
 2 Terminal barriers are required on multi poles breaker

*Not all constructions are available with all approvals. Consult Customer Service

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