Carling Technologies®
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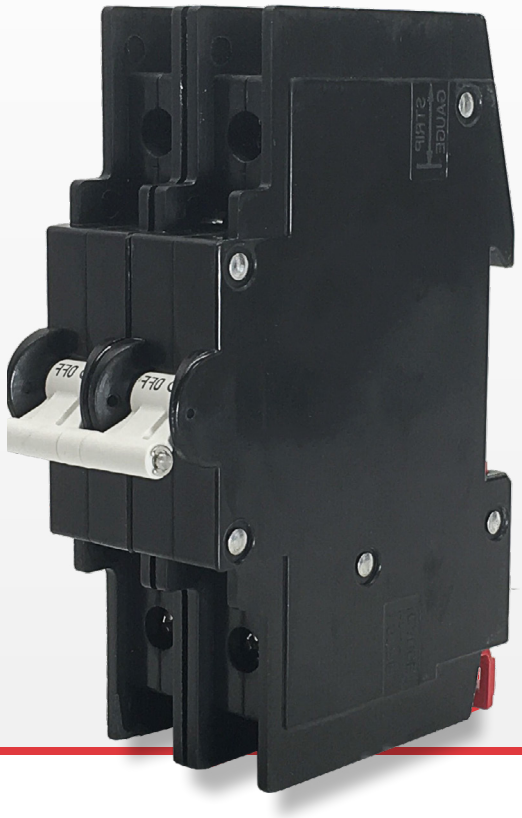
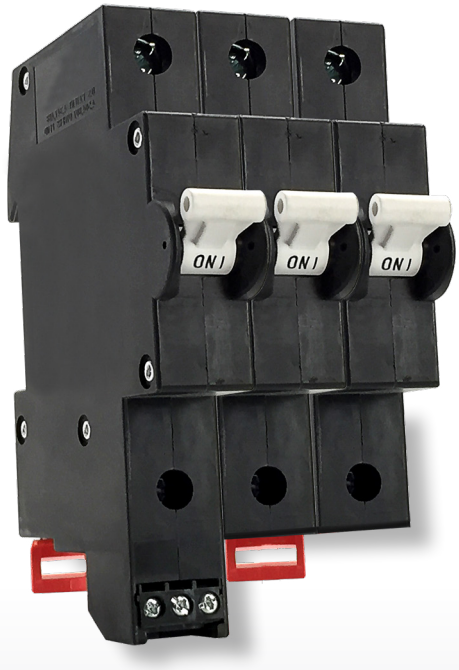
G-Series

Hydraulic-Magnetic Circuit Breaker

PRODUCT WEBPAGE

request sample, configure part





DIN Rail Mounted Circuit Breaker
Optional Integrated Auxiliary Switch

Carling's G-Series hydraulic-magnetic circuit breaker combines maximum protection with ease of use. The breakers are DIN rail mount and offer common trip linkage, a unique terminal bus connection system, finger safe terminals and wiping contacts for added longevity. Optional integrated auxiliary switch for breaker status is also available. The G-Series is rated up to 80 amps, 480VAC/80VDC or 50 amps, 240VAC/125VDC for UL 489 and has a max IC of 5,000 amps.

1-4	.2-80	240	125
Poles	Amps	VAC Max	VDC Max

Typical Applications

- Industrial Automation
- Control Panels
- Lighting
- Renewable Energy
- Telecom

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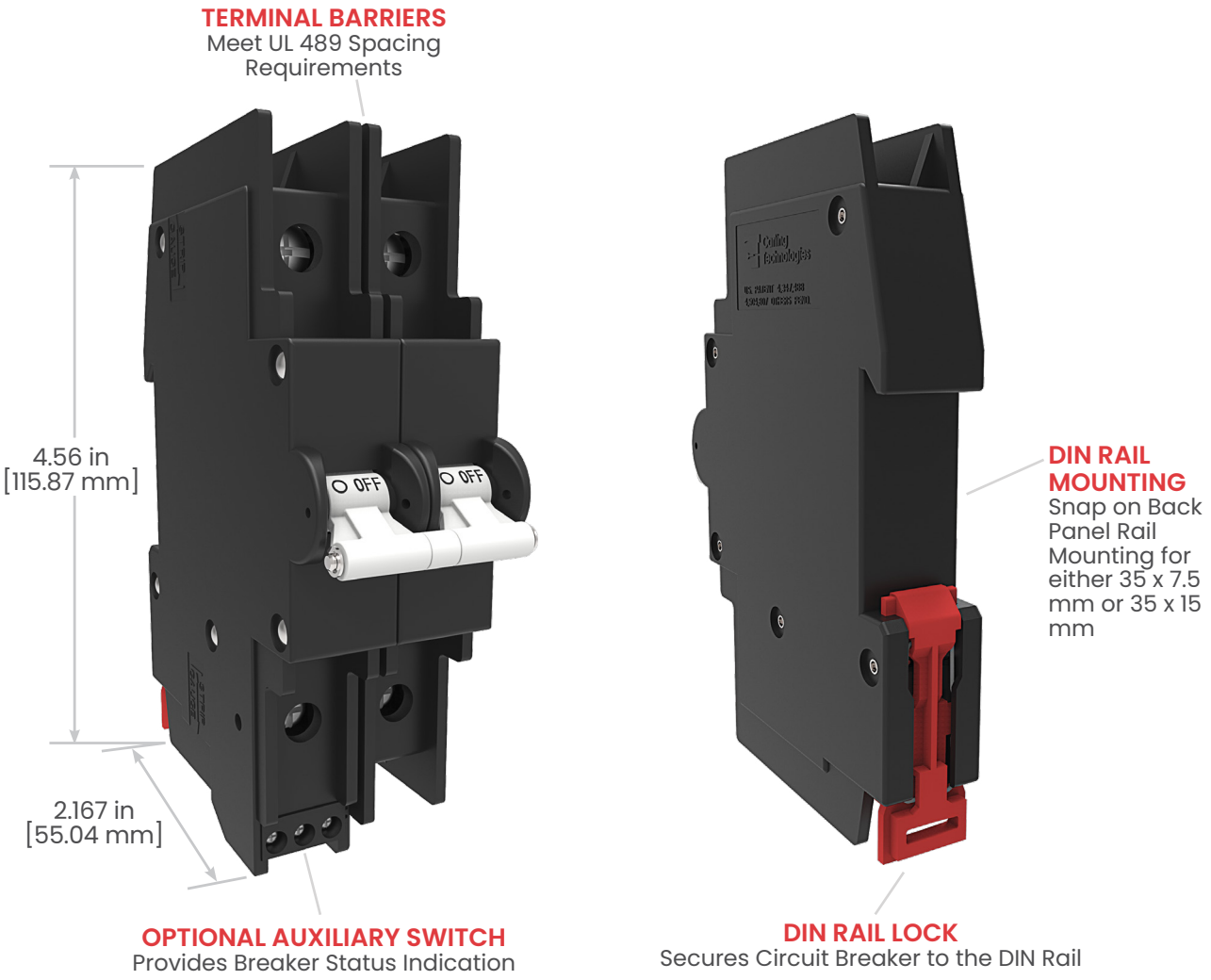
Design Features



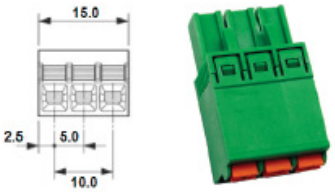
Auxiliary Switch with Internal Connector


Internal connector

Advantages:
- Pre-wiring is possible
- Easy interchangeable
- Time saving solution
- Various connection methods
- Many different plugs

Example Plugs:

Spring clamp terminals



Screw terminals

Screw terminals 45° angle

Dimensions in mm

Wire size solid wire	0.2 - 1.5 mm 2
Wire size stranded wire	0.2 - 2.5 mm 2
Wire size stranded wire with ferrule	0.25 - 1.5 mm 2
Wire stripping length	10 mm

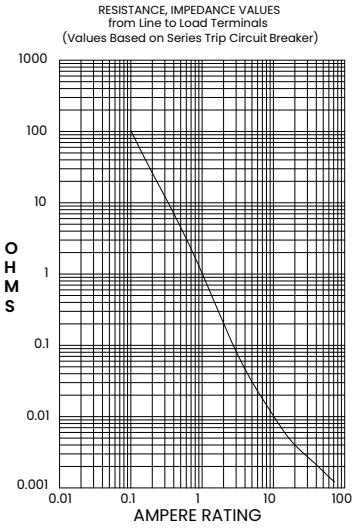
The auxiliary contact with internal connector can be used with Phoenix Combicon plugs. Phoenix item number internal connector: 1753453. The circuit breaker is standard delivered without plugs.

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

Tech Specs

Electrical

Maximum Voltage	AC: 240VAC (single pole), 480VAC (3 poles, additional pole shall be dedicated for neutral break) DC: 80VDC (single pole & multipole)
Current Ratings	0.2 – 80A. Other ratings available, see Ordering Scheme.
Auxiliary Switch Rating	(optional) Integrated, load side. SPST, 3A – 125VAC, 2A – 30VDC. Auxiliary switch senses the on & off position of circuit breaker handle, as well as contact arm position. Switch connections are screw terminals.
Insulation Resistance	Minimum of 100 Megohms at 500 VDC
Dielectric Strength	UL, CSA: 1960 V 50/60 Hz for one minute between all electrically isolated terminals. G-Series circuit breakers comply with the 8mm spacing and 3750V 50/60 Hz dielectric requirements from hazardous voltage to operator accessible surfaces, between adjacent poles and from main circuits to auxiliary circuits per Publications EN 60950 and VDE 0805.
Resistance, Impedance	Values from Line to Load Terminal -based on series trip circuit breaker.



CURRENT (AMPS)	TOLERANCE (%)
0.20 - 5.0	15
5.1 - 20.0	25
20.1 - 80.0	35

Mechanical

Endurance	10,000 ON-OFF operations @ 6 per minute; with rated current & voltage.
Trip Free	All G-Series circuit breakers will trip 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. With mid-trip, the handle moves to the mid position on electrical trip of the circuit breaker. With mid trip handle with alarm switch, handle moves to the mid position and the alarm switch actuates when the circuit breaker is electrically tripped.

Physical

Number of Poles	1 pole ≤ 63A, 2 poles ≤ 63A per pole
Weight	Approx. 172 grams/pole (4.13 oz).
Standard Colors	Housing: Black

Environmental

Designed in accordance with requirements of specification MIL-PRF-55629 & MIL-STD-202 as follows:

Shock	Withstands 100 Gs, 6ms sawtooth while carrying rated current per Method 213, Test Condition "I". Instantaneous and ultrashort curves tested @ 90% of rated current.
Vibration	Withstands 0.060" excursion from 10-55 Hz & 10 Gs 55-500 Hz, @ rated current per Method 204C, Test Cond. A. Instantaneous & ultrashort curves tested @ 90% of rated current.
Moisture Resistance	Method 106D, i.e., ten 24-hour cycles @ +25°C to +65°C, 80-98% RH.
Salt Spray	Method 101, Condition A (90-95% RH @ 5% NaCl Solution, 96 hrs).
Thermal Shock	Method 107D, Condition A (five cycles @ -55°C to +25°C to +85°C to +25°C).
Operating Temperature	-40° C to +85° C

Tech Specs

Tables

Table A: Lists UL Recognized, CSA Accepted and TUV Certified capabilities as a Component Supplementary Protector.

Component Supplementary Protectors									
Circuit Configuration	Voltage				Current Rating	Short Circuit Capacity (Amps)		Application Codes	
	Max Rating	Frequency	Phase	Minimum Poles	Full Load Amps	Without Backup Fuse			
						UL/CSA	TUV	UL	CSA
Series	80	DC	---	1	.2 - 80	5000	3000	TC1, OL1, U1	TC1, OL1, U1
	240	50 / 60	1	1	.2 - 63	3000	1500		
	240			2					
	480		3	3		1500	415V, 1000		

Table B: Lists UL Listed (489) configuration and performance capabilities.

UL489 Listed Branch Circuit Breakers						
Circuit Configuration	Voltage				Current Rating	Interrupting Capacity (Amps RMS)
	Max Rating	Frequency	Phase	Poles	Full Load Amps	
Series	80	DC	---	1	1 - 50	5000
	125	DC	---	2	1 - 50	5000
	120	50 / 60	1	1	1 - 50	5000
	120 / 240	50 / 60	1	1 - 3 [1]	1 - 50	5000
	240	50 / 60	1	1	1 - 25	5000

1 One pole out of the three poles must be a neutral break.

Ordering Scheme

UL 1077 Recognized

Sample Part Number	G	A	1	-	B	0	-	24	-	650	-	1	1	-	D	C
Selection	1	2	3		4	5		6		7		8	9		10	11

1. SERIES

G

2. ACTUATOR

A	Handle, one per pole
S	Mid-Trip Handle, one per pole

3. POLES

1	One	**3**	Three
2	Two	**4**	Four

4. CIRCUIT

A	Switch Only (no coil) [1]	**B**	Series Trip (current)

5. AUXILIARY/ALARM SWITCH [3]

0	without Aux Switch
1	S.P.D.T., Screw Terminal
3	S.P.D.T. Screw Terminal (Gold Contacts)
5	Plug-in Terminal
6	Plug-in Terminal (Gold Contacts)

6. FREQUENCY & DELAY

03	Switch Only	**24**	50/60 Hz Medium
10	DC, Instantaneous	**26**	50/60 Hz Long
11	DC, Ultra Short	**42**	50/60 Hz High-inrush Short [2]
12	DC, Short	**44**	50/60 Hz High-inrush Medium
14	DC, Medium	**46**	50/60 Hz High-inrush Long
16	DC, Long	**52**	DC High-inrush Short
20	50/60 Hz Instantaneous	**54**	DC High-inrush Medium
21	50/60 Ultra Short	**56**	DC High-inrush Long
22	50/60 Hz Short		

7. CURRENT RATING (AMPERES)

CODE	AMPERES						
220	0.200	**415**	1.500	**485**	8.500	**624**	24.000
225	0.250	**517**	1.750	**490**	9.000	**625**	25.000
230	0.300	**420**	2.000	**495**	9.500	**630**	30.000
235	0.350	**522**	2.250	**610**	10.000	**635**	35.000
240	0.400	**425**	2.500	**710**	10.500	**640**	40.000
245	0.450	**527**	2.750	**611**	11.000	**650**	50.000
250	0.500	**430**	3.000	**711**	11.500	**655**	55.000
255	0.550	**435**	3.500	**612**	12.000	**660**	60.000
260	0.600	**440**	4.000	**712**	12.500	**663**	63.000
265	0.650	**445**	4.500	**613**	13.000	**665**	65.000
270	0.700	**450**	5.000	**614**	14.000	**670**	70.000
275	0.750	**455**	5.500	**615**	15.000	**672**	72.000
280	0.800	**460**	6.000	**616**	16.000	**673**	73.000
285	0.850	**465**	6.500	**617**	17.000	**675**	75.000
290	0.900	**470**	7.000	**618**	18.000	**680**	80.000
410	1.000	**475**	7.500	**620**	20.000		
512	1.250	**480**	8.000	**622**	22.000		

8. TERMINAL

1	Screw Terminal

9. ACTUATOR COLOR & LEGEND

Actuator 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. APPLICATION RATING [9]

B	125 VDC [5]
D	240 VAC
H	480 VAC [4]
M	80 VDC

11. AGENCY APPROVAL

A	Without Approvals
C	UL Recognized
E	UL Recognized, TUV Certified

Notes:
1 Switch only circuit only available when tied to a protected pole (Circuit code B)
- for .2 to 30 amps select current code 630
- for 31 to 50 amps select current code 650
- for 51 to 63 amps select current code 663
- Use delay 03 for all switch only poles

2 Hi Inrush Delays limited to 50A max
3 On multi-pole breakers one auxiliary switch is supplied , mounted in the extreme left pole when viewed from front of panel
4 480 VAC rating requires 3 or 4 pole break 3Φ and 2 pole break 1Φ
5 This construction is polarity sensitive when constructed as a single pole unit, 125 VDC is only available without agency approvals

Configure Complete Part Number > | Browse Standard Parts >

COS-8052 Rev: B

Ordering Scheme

UL 489 Listed

Sample Part Number	G	A	1	-	B	0	-	24	-	650	-	1	1	-	D	G
Selection	1	2	3		4	5		6		7		8	9		10	11

1. SERIES

G

2. ACTUATOR

A	Handle, one per pole
S [1]	Mid-Trip Handle, one per pole

3. POLES

1	One	**2**	Two	**3**	Three

4. CIRCUIT

B	Series Trip (current)

5. AUXILIARY/ALARM SWITCH [3]

0	without Aux Switch
1	S.P.D.T., Screw Terminal
3	S.P.D.T. Screw Terminal (Gold Contacts)
5	Plug-in Terminal
6	Plug-in Terminal (Gold Contacts)

6. FREQUENCY & DELAY

11	DC, Ultra Short	**42**	50/60 Hz High-inrush Short [4]
12	DC, Short	**44**	50/60 Hz High-inrush Medium [4]
14	DC, Medium	**46**	50/60 Hz High-inrush Long [4]
16	DC, Long	**52**	DC High-inrush Short [4]
21	50/60 Ultra Short	**54**	DC High-inrush Medium [4]
22	50/60 Hz Short	**56**	DC High-inrush Long [4]
24	50/60 Hz Medium		
26	50/60 Hz Long		

7. CURRENT RATING (AMPERES)

CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
410	1.000	**445**	4.500	**610**	10.000	**618**	18.000
512	1.250	**450**	5.000	**710**	10.500	**620**	20.000
415	1.500	**455**	5.500	**611**	11.000	**622**	22.000
517	1.750	**460**	6.000	**711**	11.500	**624**	24.000
420	2.000	**465**	6.500	**612**	12.000	**625**	25.000
522	2.250	**470**	7.000	**712**	12.500	**630**	30.000
425	2.500	**475**	7.500	**613**	13.000	**635**	35.000
527	2.750	**480**	8.000	**614**	14.000	**640**	40.000
430	3.000	**485**	8.500	**615**	15.000	**650**	50.000
435	3.500	**490**	9.000	**616**	16.000		
440	4.000	**495**	9.500	**617**	17.000		

8. TERMINAL

1	Screw Terminal

9. ACTUATOR COLOR & LEGEND

Actuator Color	ON-OFF	Dual	Legend Color
White	**B**	**1**	Black
Black	**D**	**2**	White
Red	**G**	**3**	White
Green	**J**	**4**	White
Blue	**L**	**5**	White
Yellow	**N**	**6**	Black
Gray	**Q**	**7**	Black
Orange	**S**	**8**	Black

10. APPLICATION RATING [9]

B	125 VDC [5]
C	120/240 VAC [6]
D	240 VAC [7]
K	120 VAC [8]
M	80 VDC [9]

11. AGENCY APPROVAL

A	Without Approvals
G	UL489 Listed

Notes:
1 Mid-trip Handle(s) available at 1 pole unit and 2 pole unit only.
2 Third pole of a 3 pole unit is switch only pole.
3 On multi-pole breakers one auxiliary switch is supplied, mounted in the extreme left pole when viewed from front of panel.
4 Hi Inrush Delays limited to 50A maximum.
5 125VDC for 2 pole unit only.
6 120/240VAC for 2 pole and 3 pole unit only. Limited to 50A maximum, and third pole of a 3-pole unit is switch only pole.
7 240VAC for 1 pole unit only, limited to 25A maximum
8 120VAC for 1 pole unit only, limited to 50A maximum.
9 80VDC for 1 pole unit only

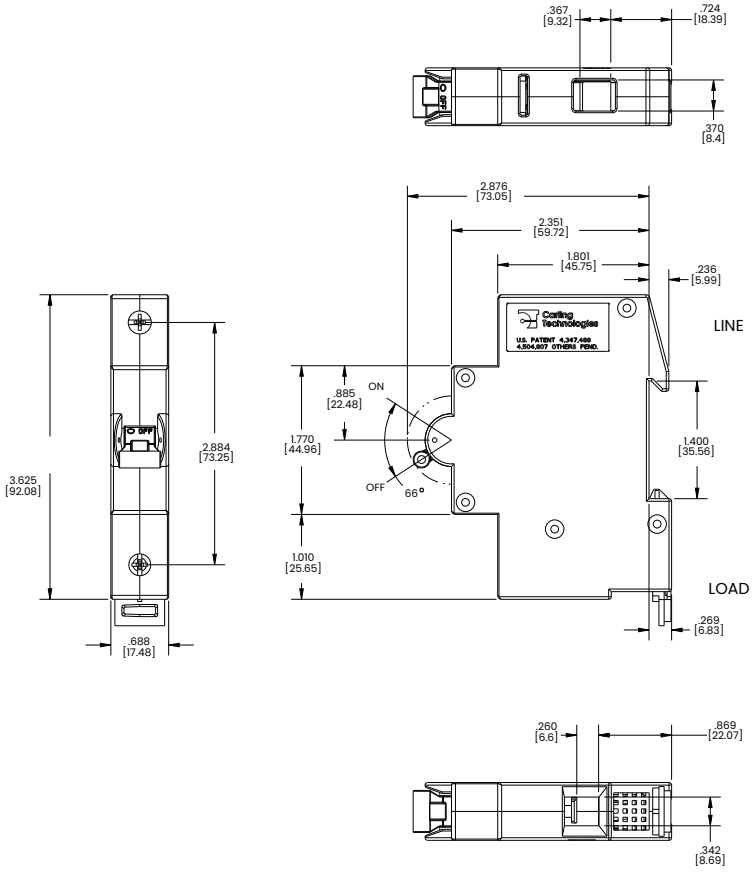
Configure Complete Part Number > Browse Standard Parts >

Dimensional Specs

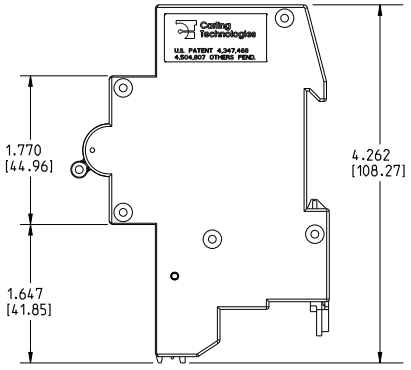
UL 1077 Recognized

inches [millimeters]

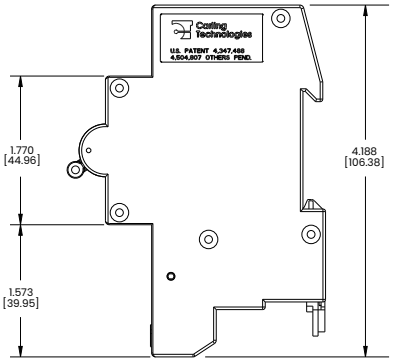
1 POLE WITHOUT AUXILIARY SWITCH



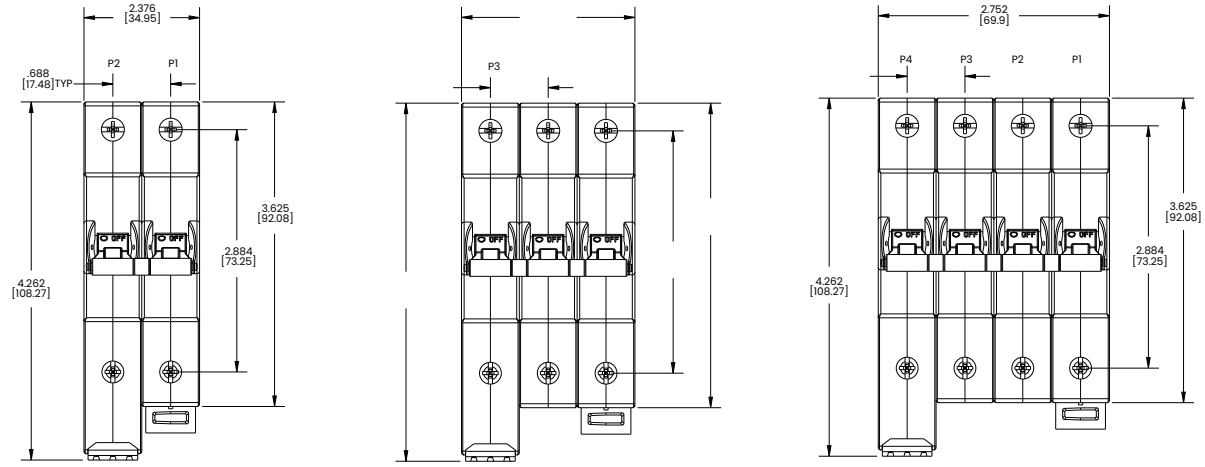
1 POLE WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)



1 POLE WITH AUXILIARY SWITCH (SCREW TERMINAL BLOCK)



MULTIPLE POLES WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)



Notes:

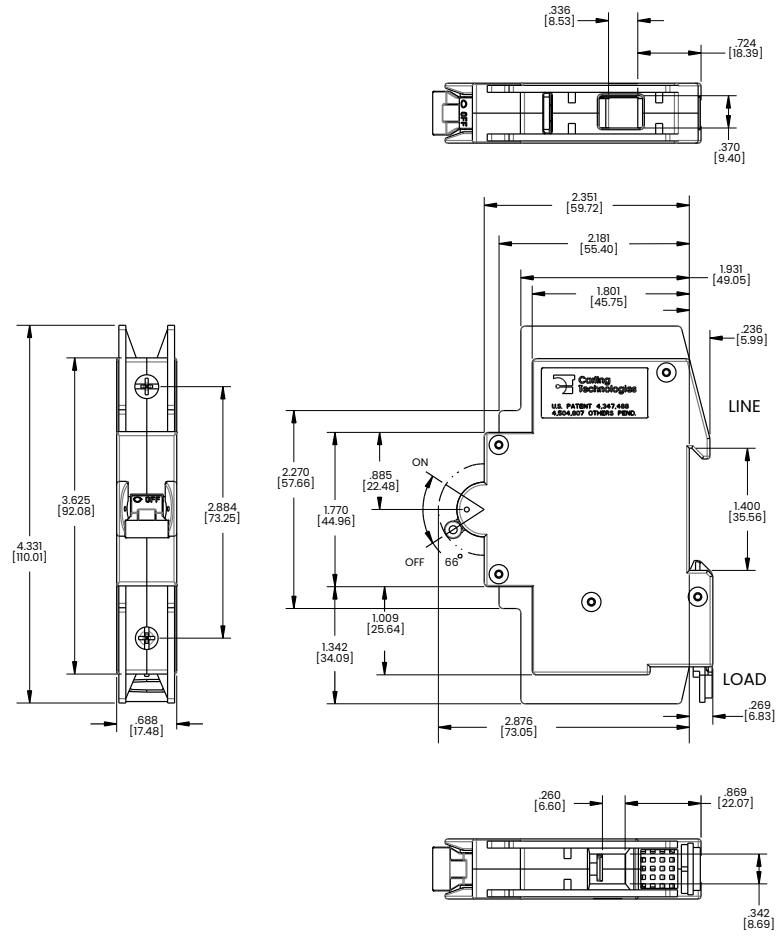
1 Tolerance ±.020 [.51] unless otherwise specified.

Dimensional Specs

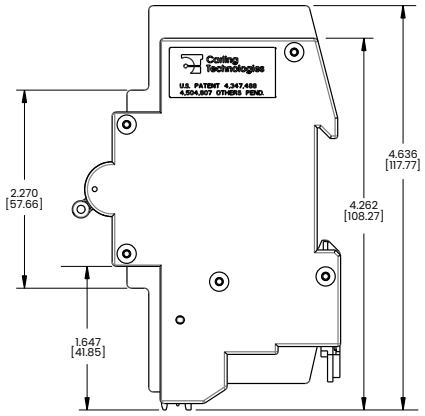
UL 489 Listed

inches [millimeters]

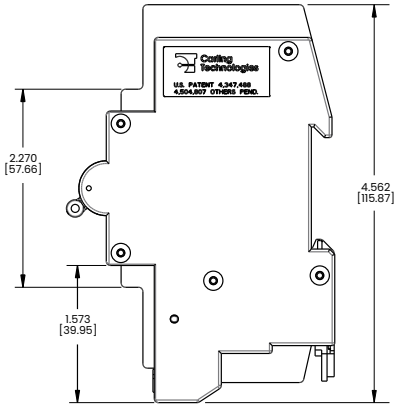
1 POLE WITHOUT AUXILIARY SWITCH



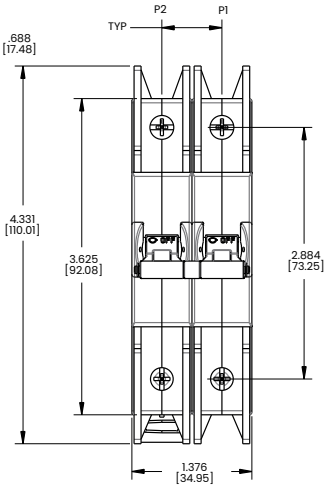
1 POLE WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)

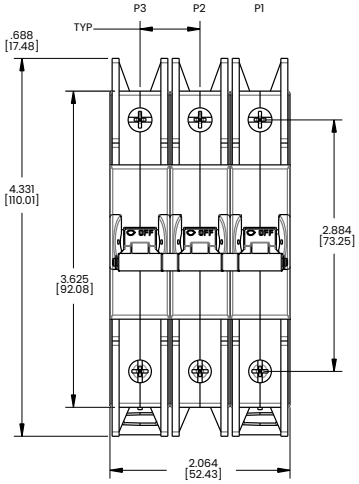


1 POLE WITH AUXILIARY SWITCH (SCREW TERMINAL BLOCK)



MULTIPLE POLES WITH AUXILIARY SWITCH (PLUG-IN TERMINAL BLOCK)





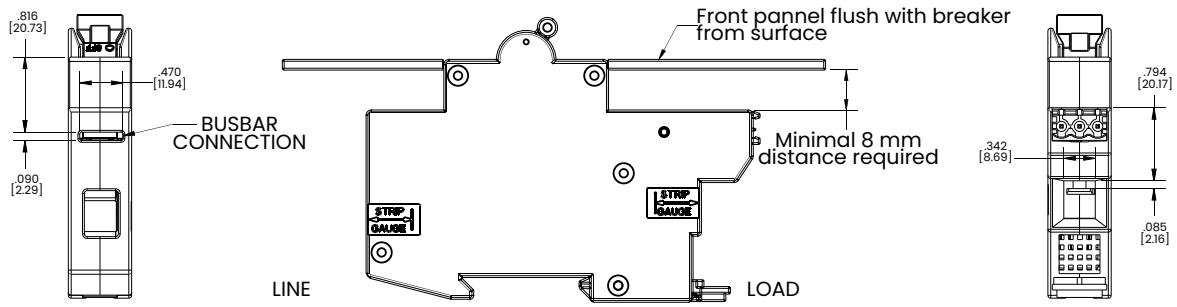
Notes:

1 Tolerance ±.020 [.51] unless otherwise specified.

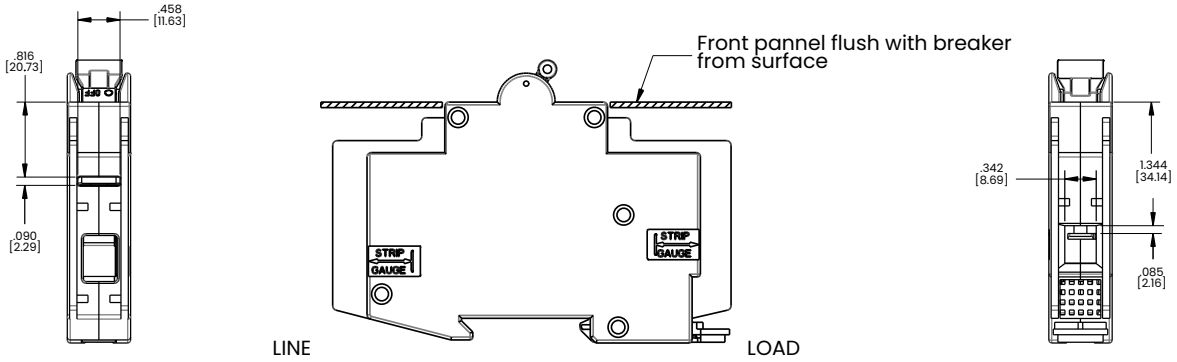
Dimensional Specs

inches [millimeters]

UL RECOGNIZED



UL489



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To view all of Carling's environmental, quality, health & safety certifications please visit **www.carlingtech.com/environmental-certifications**.

Mouser Electronics

Authorized Distributor

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