

# B-Series

## B-Series

### HYDRAULIC-MAGNETIC CIRCUIT BREAKER

Carling Technologies' B-Series hydraulic magnetic circuit breakers are specifically designed for applications requiring extra insulation and tongue and groove half-shell constructions. The B-Series carries global regulatory safety approvals for spacing requirements and are ideal for use as general purpose as well as full load amp applications. Available with various choices of time delays, terminals, actuator styles, with a wide range of standard colors and imprinting.

1-6 poles; ratings from 0.02 to 50 amps, up to 277VAC or 80VDC; UL recognized, CSA, VDE -0642, TUV, UL-1500, UL489A Listed



#### Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

#### Product Highlights:

- Meet CSA Standard 22.2 No. 100 for the Generator & Welder markets
- Extra insulation and tongue & groove half-shell constructions
- UL Recognized - UL Standard 508, 1077, 1500
- UL Listed - UL Standard 489, 489A
- CSA Accepted
- TUV Certified
- VDE Certified

#### Typical Applications:

- Power Supplies
- Medical Equipment
- Generators & Welders
- Office Equipment
- Control Panels
- Marine
- Military



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**Carling Technologies, Inc.**

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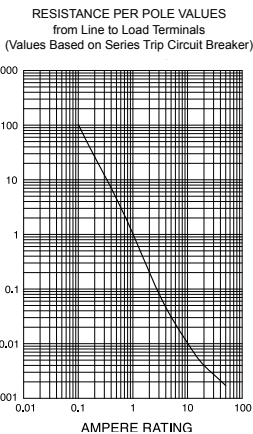
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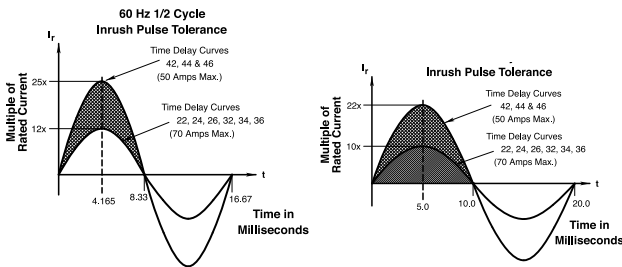
### Electrical

Maximum Voltage 277VAC 50/60 Hz, 80VDC  
 Current Ratings Standard current coils: 0.100, 0.250, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0 and 50.0 amps. Other ratings available, see ordering scheme.  
 Standard Voltage Coils DC - 6V, 12V; AC - 120V, other ratings available, see ordering scheme.  
 Auxiliary Switch Rating SPDT; 10.1 AMPS - 250VAC, 1.0A 65 VDC or 0.5A 80 VDC, 0.1 Amps - 125VAC (with gold contacts). VDE-1.0 Amp - 125VAC.  
 Insulation Resistance Minimum of 100 Megohms at 500 VDC.  
 Dielectric Strength UL, CSA-1500 V 50/60 Hz for one minute between all electrically isolated terminals. B-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 (%)
0.10 - 5.0	15
5.1 - 20.0	25
20.1 - 50.0	35

### Pulse Tolerance Curves



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

### Mechanical

Endurance 10,000 ON-OFF operations @ 6 per minute; with rated Current and Voltage.  
 Trip Free All B-Series Circuit Breakers will trip on overload, even when Handle is forcibly held in the ON position.  
 Trip Indication The operating Handle moves positively to the OFF position when an overload causes the breaker to trip.

### Physical

Number of Poles 1 - 6 poles at 30 Amps or less. 1 and 2 poles at 31 Amps thru 50 Amps.  
 Internal Circuit Config. Series, (with or without auxiliary switch), Shunt and Relay with current or voltage trip coils, Dual Coil, Switch Only (with or without auxiliary switch).  
 Weight Approximately 65 grams/pole. (Approximately 2.32 ounces/pole.)  
 Standard Colors Housing- Black; Actuator - See Ordering Scheme.

### Environmental

Designed and tested 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 ultra-short curves tested @ 90% of rated current.  
 Vibration Withstands 0.060" excursion from 10-55 Hz, and 10 Gs 55-500 Hz, at rated current per Method 204C, Test Condition A. Instantaneous and ultrashort curves tested at 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

## Electrical Tables

**Table A:** Lists UL Recognized & CSA Certified configurations and performance capabilities as a Component Supplementary Protector.

B-SERIES TABLE A: COMPONENT SUPPLEMENTARY PROTECTORS										
CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING		SHORT CIRCUIT CAPACITY (AMPS)		APPLICATION CODES		CONSTRUCTION NOTES
	MAX. RATING	FREQUENCY	PHASE	FULL LOAD AMPS	GENERAL PURPOSE AMPS	UL/CSA		UL	CSA	
						WITH BACKUP FUSE	WITHOUT BACKUP FUSE			
SERIES	65	DC	--	31 - 50	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
	80	DC	--	0.02 - 30	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
				---	31 - 50	--	7500	TC1,2, OL0,U1	TC1,2, OL0,U1	
	125	50 / 60	1	1 - 50	--	--	2000	TC1, OL1,U2	TC1, OL1,U2	
	125	50 / 60	1 <sup>4</sup>	1 - 50	--	--	1000	TC1, OL1,U2	TC3, OL1,U3	
	125 / 250	50 / 60	1 <sup>3</sup>	0.02 - 30	--	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	1	0.02 - 30	--	--	1500	TC1, OL0,U2	TC1, OL0,U2	Single Pole Break
				0.02 - 30	--	--	3000	TC1, OL1,U2	TC1, OL1,U2	Two Pole Break
				---	31 - 50	--	3000	TC1,2, OL0,U1	TC1,2, OL0,U1	
				1 <sup>4</sup>	1 - 50	--	1000	TC1, OL1,U2	TC3, OL1,U3	
3	0.02 - 30	--	5000 <sup>2</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1				
31 - 50	--	2000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1					
277	50 / 60	1	0.02 - 30	--	5000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1		
DUAL COIL	65	DC	--	0.02 - 50	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
	80	DC	--	0.02 - 30	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
				---	31 - 50	--	7500	TC1,2, OL0,U1	TC1,2, OL0,U1	
	125	50 / 60	1	1 - 50	--	--	2000	TC1, OL1,U2	TC1, OL1,U2	
	125 / 250	50 / 60	1 <sup>3</sup>	0.02 - 30	--	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	1	0.02 - 30	--	--	1500	TC1, OL0,U2	TC1, OL0,U2	Single Pole Break
				0.02 - 30	--	--	3000	TC1, OL1,U2	TC1, OL1,U2	Two Pole Break
				---	31 - 50	--	3000	TC1,2, OL0,U1	TC1,2, OL0,U1	
				1 <sup>4</sup>	1 - 50	--	1000	TC1, OL1,U2	TC3, OL1,U3	
	3	0.02 - 30	--	5000 <sup>2</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1			
31 - 50	--	2000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1					
277	50 / 60	1	0.02 - 30	--	5000 <sup>1</sup>	--	TC1,2, OL1,U1	TC1,2, OL1,U1		
SHUNT	80	DC	--	0.02 - 30	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
	125 / 250	50 / 60	1 <sup>3</sup>	0.02 - 30	--	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
				---	31 - 50	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	3	0.02 - 30	--	5000 <sup>2</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1	
				31 - 50	--	2000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1	
277	50 / 60	1	0.02 - 30	--	5000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1		
RELAY	80	DC	--	0.02 - 30	--	--	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
	125 / 250	50 / 60	1 <sup>3</sup>	0.02 - 30	--	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
				---	31 - 50	--	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	3	0.02 - 30	--	5000 <sup>2</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1	
31 - 50				--	2000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1		
277	50 / 60	1	0.02 - 30	--	5000 <sup>1</sup>	--	TC1,2, OL1,C1	TC1,2, OL1,C1		
SWITCH ONLY	65	DC	--	0.02 - 50	--	--	--	--	--	
	80	DC	--	0.02 - 30	--	--	--	--	--	
				---	31 - 50	--	--	--	--	
	250	50 / 60	1	---	31 - 50	--	--	--	--	
3				0.02 - 50	--	--	--	--		
277	50 / 60	1	0.02 - 30	31 - 50	--	--	--	--		

Notes:

- 1 Requires branch circuit backup with a UL LISTED Type K5 or RK5 fuse (15A minimum) at no more than 4 times the rating of the protector.
- 2 Same as note 1, except that backup fuse is limited to 80A maximum.
- 3 2 pole protector required (with one pole per power line) for: 250/125 VAC, 125/250 VAC and 208Y/120 VAC Power Systems. 1 pole protector required for : 125 VAC, 1Ø Power System.
- 4 Satisfies the requirements of clause 11.2.8.2.5 of CSA STD C22.2 No 100 for the use of supplementary protectors with portable generators.

### Electrical Tables

**Table B:** Lists UL Recognized, CSA, VDE & TUV Certified configurations & performance capabilities as a Component Supplementary Protector.

B-SERIES TABLE B: COMPONENT SUPPLEMENTARY PROTECTORS															
CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING		SHORT CIRCUIT CAPACITY (AMPS)						APPLICATION CODES		CONSTRUCTION NOTES	
	MAX. RATING	FREQUENCY	PHASE	FULL LOAD AMPS	GENERAL PURPOSE AMPS <sup>1</sup>	UL/CSA		VDE		TUV		UL	CSA		
						WITH BACKUP FUSE	WITHOUT BACKUP FUSE	(Inc) WITH BACKUP FUSE	(Inc) WITHOUT BACKUP FUSE	(Inc) WITH BACKUP FUSE	(Inc) WITHOUT BACKUP FUSE				
SERIES	80	DC	---	0.10 - 30	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				31 - 50	31 - 50	—	7500	3000	1500	3000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1		
				0.10 - 30	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				31 - 32	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				31 - 50	31 - 50	—	7500	3000	1500	3000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1		
				0.10 - 30	—	—	3000	3000	1500	5000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
	250	50 / 60	1	0.10 - 30	31 - 50	—	3000	—	—	5000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1		
				31 - 50	—	—	3000	6000	1500	5000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				0.10 - 30	—	—	1500	3000	1500	5000	1500	TC1, OL0,U2	TC1, OL0,U2	Single Pole Break	
				0.10 - 30	—	—	3000	3000	1500	5000	1500	TC1, OL1,U2	TC1, OL1,U2	Two Pole Break	
				0.10 - 30	—	5000 <sup>3</sup>	—	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1		
				0.10 - 30	—	—	1000	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1		
DUAL COIL	80	DC	---	0.10 - 30	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				0.10 - 30	—	—	3000	3000	1500	5000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				30 - 50	31 - 50	—	3000	—	—	5000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1		
	250	50 / 60	1	0.10 - 30	—	5000 <sup>3</sup>	—	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1		
				3	0.10 - 30	—	2000 <sup>2</sup>	—	—	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1		
					31 - 50	—	—	—	—	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1		
SHUNT	80	DC	---	0.10 - 30	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				0.10 - 30	—	—	7500	3000	1500	3000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
				0.10 - 30	—	—	3000	3000	1500	5000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1		
	250	50 / 60	1	30 - 50	31 - 50	—	3000	—	—	5000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1		
				3	0.10 - 30	—	5000 <sup>3</sup>	—	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1	
					31 - 50	—	2000 <sup>2</sup>	—	—	—	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1	

Notes:  
 1 General Purpose Ratings for UL/CSA Only.  
 2 Requires branch circuit backup with a UL LISTED Type K5 or RK5 fuse (15A minimum) at no more than 4 times the rating of the protector.  
 3 Same as note 1, except that backup fuse is limited to 80 A maximum.

**Table C:** Lists UL Recognized, CSA Certified configurations and performance capabilities as Protectors, Supplementary for Marine Electrical and Fuel Systems (CCN/Guide PEQZ2, File E75596). Ignition Protected per UL 1500. UL Classified Small Craft Electrical Devices, Marine in accordance with ISO 8846 (CCN/Guide UZMK, File MQ1515) as Marine Supplementary Protectors.

B-SERIES TABLE C: UL1500 (Marine Ignition Protected)							
CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING	SHORT CIRCUIT CAPACITY (AMPS)	APPLICATION CODES	
	MAX. RATING	FREQUENCY	PHASE			UL	CSA
SERIES	14 <sup>1</sup>	DC	—	0.02 - 50	5000	TC1,2,OL1,U1	TC1,2,OL1,U1
	32 <sup>1</sup>	DC	—	0.02 - 50	5000	TC1,2,OL1,U2	TC1,2,OL1,U2
	65	DC	—	0.02 - 50	3000	TC1,2,OL1,U1	TC1,2,OL1,U1
	125 / 250	50 / 60	1 <sup>2</sup>	0.02 - 50	1500	TC1,2,OL1,U1	TC1,2,OL1,U1
	250	50 / 60	1	0.02 - 30	1000	TC1,2,OL1,U1	TC1,2,OL1,U1

Notes:  
 1 Available with special catalog number only (consult factory).  
 2 2 pole protector required (with one pole per power line) for: 250/125 VAC, 125/250 VAC and 208Y/120 VAC Power Systems. 1 pole protector required for : 125 VAC, 1Ø Power System.

**Table D:** Lists UL Listed configurations and performance capabilities as Circuit Breakers for use in Communications Equipment (CCN/ Guide DITT, File E189195), under UL489A

B-SERIES TABLE D: UL489A (COMMUNICATIONS EQUIPMENT)				
CIRCUIT CONFIGURATION	VOLTAGE		CURRENT RATING	INTERRUPTING CAPACITY (AMPS)
	MAX. RATING	FREQUENCY	GENERAL PURPOSE AMPS	WITHOUT BACKUP FUSE
SERIES	80	DC	0.10 - 50	5000
	80	DC	60 - 90 <sup>1</sup>	5000

Notes:  
<sup>1</sup> Parallel Pole Construction

**Table E:** Lists UL Listed (489) configuration and performance capabilities as a Molded Case Circuit Breaker.

B SERIES TABLE E : UL489 LISTED BRANCH CIRCUIT BREAKERS						
CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING	INTERRUPTING CAPACITY (AMPS)	CONSTRUCTION NOTES
	MAX. RATING	FREQUENCY	PHASE	FULL LOAD AMPS	WITHOUT BACKUP FUSE	
SERIES	120	50 / 60	1	0.10 - 30	5,000	1 Pole
	120 / 240	50 / 60	1	0.10 - 30	5,000	2 Poles
	120 / 240	50 / 60	1	0.10 - 30	5,000	2 or 3 Poles (1 Pole of a 3 Pole Unit is for Neutral Break)
SHUNT TRIP DUAL COIL	120	50 / 60	1	0.10 - 30	5,000	1 Pole
	120 / 240	50 / 60	1	0.10 - 30	5,000	2 Poles
	120 / 240	50 / 60	1	0.10 - 30	5,000	2 or 3 Poles (1 Pole of a 3 Pole Unit is for Neutral Break)

### Agency Certifications

**UL Recognized**

UL Standard 1077



Component Recognition Program as Protectors Supplementary (Guide CCN/QVNU2, File E75596)

**CSA Accepted**



Component Supplementary Protector under Class 3215 30, File 047848 0 000 CSA Standard C22.2 No. 235

UL Standard 508



Switches, Industrial Control (Guide CCN/NRNT2, File E148683)

**TUV Certified**



EN60934, under License No. R72103448

UL Standard 1500



Protectors, Supplementary for Marine Electrical & Fuel Systems (Guide PEQZ2, File E75596) Ignition Protection

**VDE Certified**



EN60934, VDE 0642 under File No. 10537

**UL Listed**

UL Standard 489



Circuit Breakers, Molded Case, (Guide DIVQ, File E129899)

UL Standard 489A

Communications Equipment (Guide CCN/DITT, File E189195)



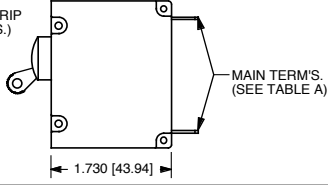
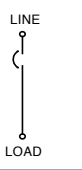
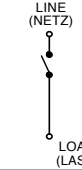

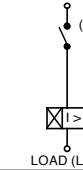
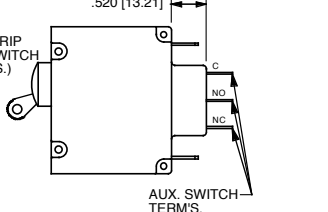
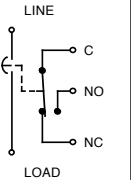
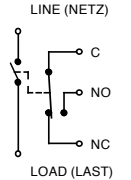
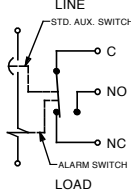
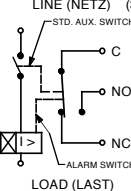
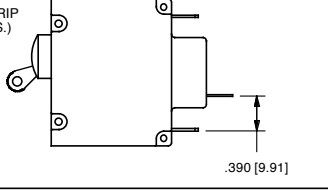
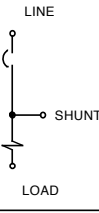
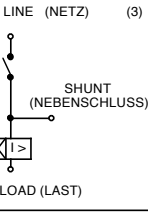
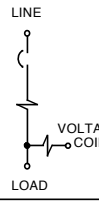
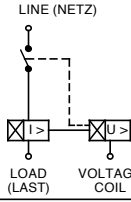
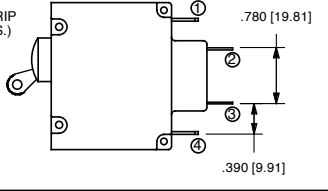
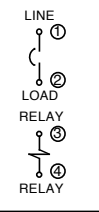
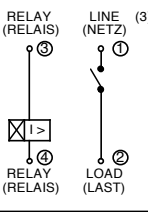
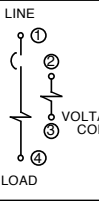
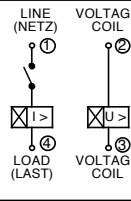


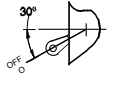
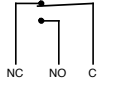
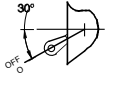
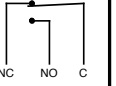
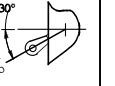

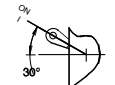
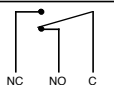
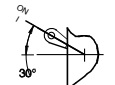
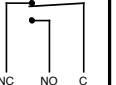


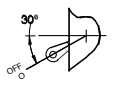
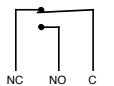
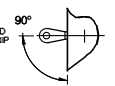
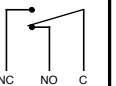
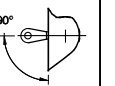







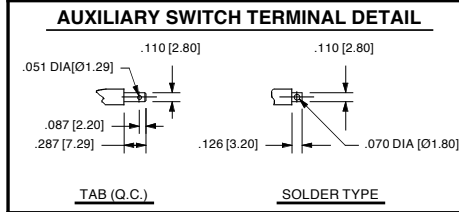
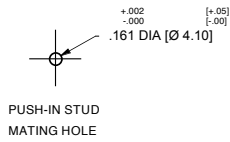
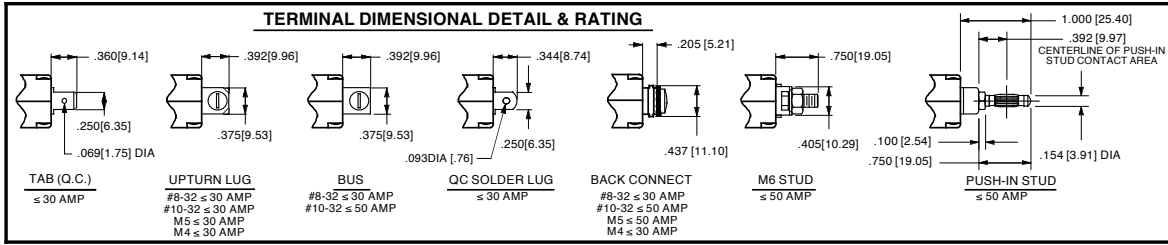
## Circuit & Terminal Diagrams: in. [mm]

	CIRCUIT SCHEMATIC		CIRCUIT CODE	AUX. SWITCH CODE	CIRCUIT SCHEMATIC		CIRCUIT CODE	AUX. SWITCH CODE
	ANSI	IEC			ANSI	IEC		
<b>SERIES TRIP (2 TERM'S.)</b> 	<b>SWITCH ONLY (NO COIL)</b>  		A	O	<b>SERIES TRIP</b>  		B C	O
<b>SERIES TRIP W AUX SWITCH (5 TERM'S.)</b> 	<b>SWITCH ONLY (NO COIL) WITH AUXILIARY SWITCH</b>  		A	2 3 4	<b>SERIES TRIP WITH AUXILIARY / ALARM SWITCH</b>  		B C	2 3 4
<b>SHUNT TRIP (3 TERM'S.)</b> 	<b>SHUNT TRIP</b>  		D E	0	<b>DUAL COIL; SERIES TRIP CURRENT COIL, SHUNT TRIP VOLTAGE COIL</b>  		H	0
<b>RELAY TRIP (4 TERM'S.)</b> 	<b>RELAY TRIP</b>  		F G	0	<b>DUAL COIL; SERIES TRIP CURRENT COIL, RELAY TRIP VOLTAGE COIL</b>  		K	0

CIRCUIT BREAKER MODE	STANDARD C/B		MID TRIP C/B		MID TRIP C/B	
	HANDLE POSITION	AUX. SWITCH MODE	HANDLE POSITION	ALARM SWITCH MODE	HANDLE POSITION	AUX. SWITCH MODE (w/o ALARM SWITCH)
OFF						
ON						
ELECTRICAL TRIP						

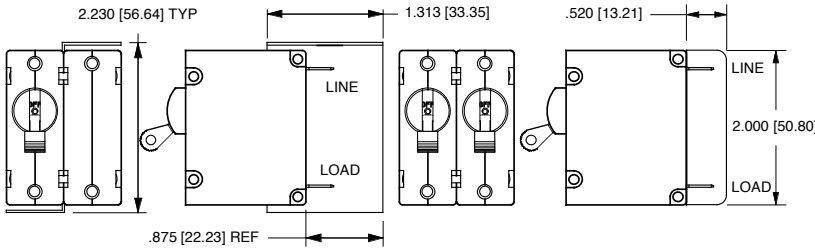
- Notes:  
 1 All dimensions are in inches [millimeters].  
 2 Tolerance ±.020 [.51] unless otherwise specified.  
 3 Alarm Switch available with .110 x .020 Q.C. & Solder Lug Terminals Only.

## Circuit & Terminal Diagrams: in. [mm]



**TABLE A  
TIGHTENING TORQUE SPECIFICATIONS**

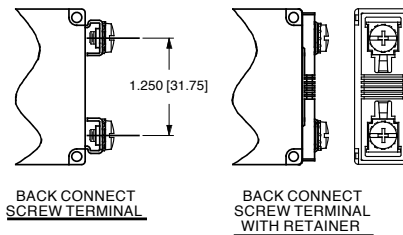
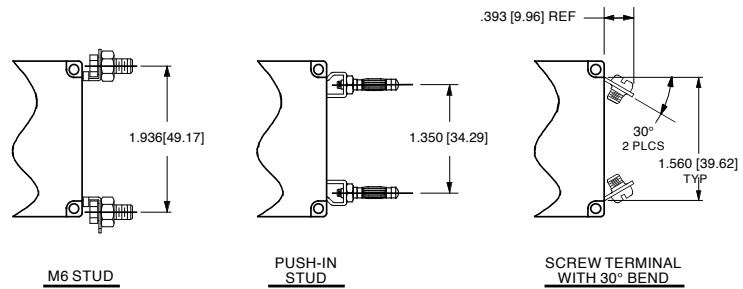
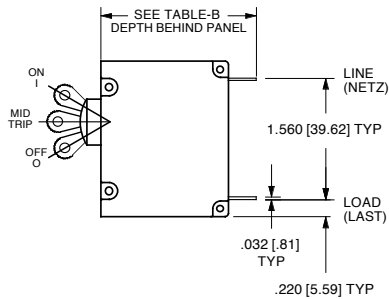
THREAD SIZE	TORQUE
#6-32 & M3 MOUNTING HARDWARE	7-9 IN-LBS [0.8-1.0 NM]
#8-32 & M4 THREAD TERMINAL SCREW	12-15 IN-LBS [1.4-1.7 NM]
#10-32 & M5 THREAD TERMINAL SCREW	15-20 IN-LBS [1.7-2.3 NM]



**TABLE B**

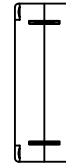
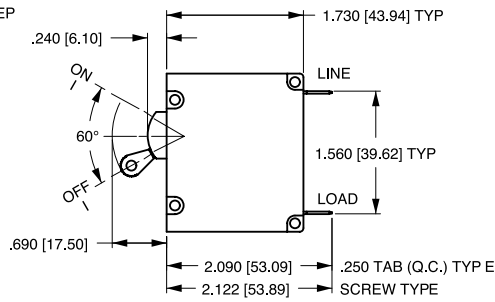
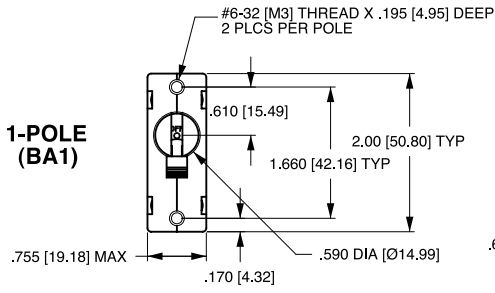
TERMINAL DESCRIPTION	DEPTH BEHIND PANEL
MAIN TAB (Q.C.)	2.090 [53.09]
MAIN SCREW TYPE	2.122 [53.90]
SHUNT, RELAY & DUAL COIL TAB (Q.C.)	2.612 [66.35]
SHUNT, RELAY & DUAL COIL SCREW #8-32 W/UPTURNED LUGS	2.644 [67.16]
AUX. SWITCH* TAB (Q.C.) .110 x .020	2.537 [64.44]
AUX. SWITCH* SOLDER TYPE	2.348 [59.64]

\* AVAILABLE ON SERIES TRIP AND SWITCH ONLY CIRCUITS. WHEN CALLED FOR ON MULTI-POLE UNITS, ONLY ONE AUX. SWITCH IS NORMALLY SUPPLIED, AS SHOWN IN MULTI-POLE IDENTIFICATION SCHEME.

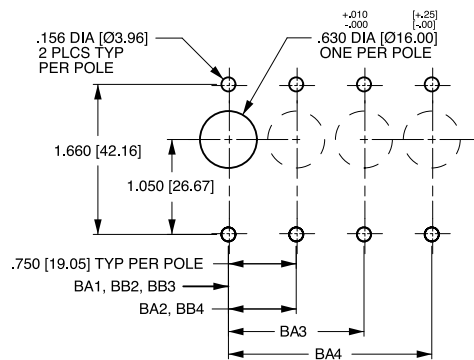
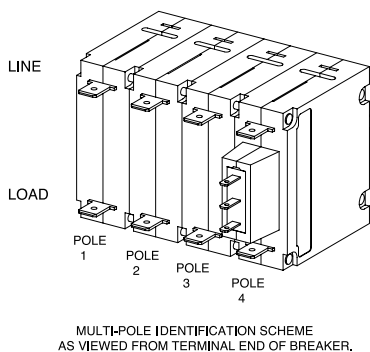
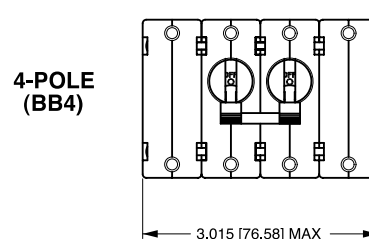
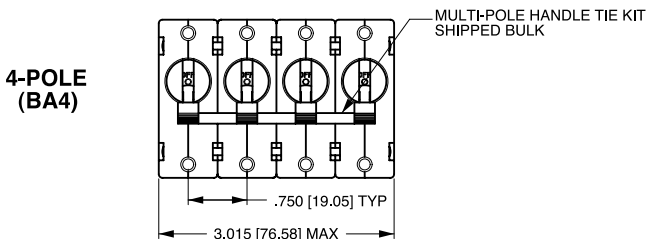
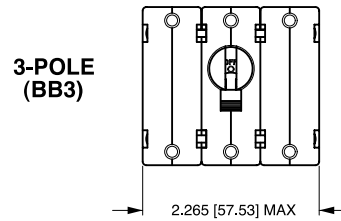
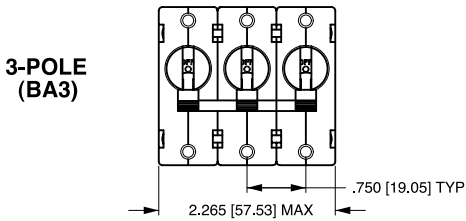
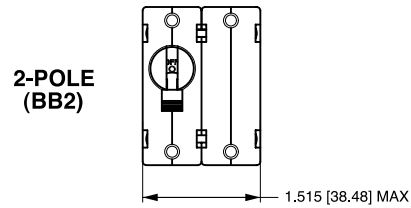
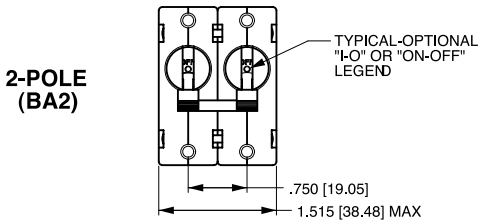


Notes:  
 1 All dimensions are in inches [millimeters].  
 2 Tolerance ±.020 [.51] unless otherwise specified.

## Dimensional Specifications: in. [mm]



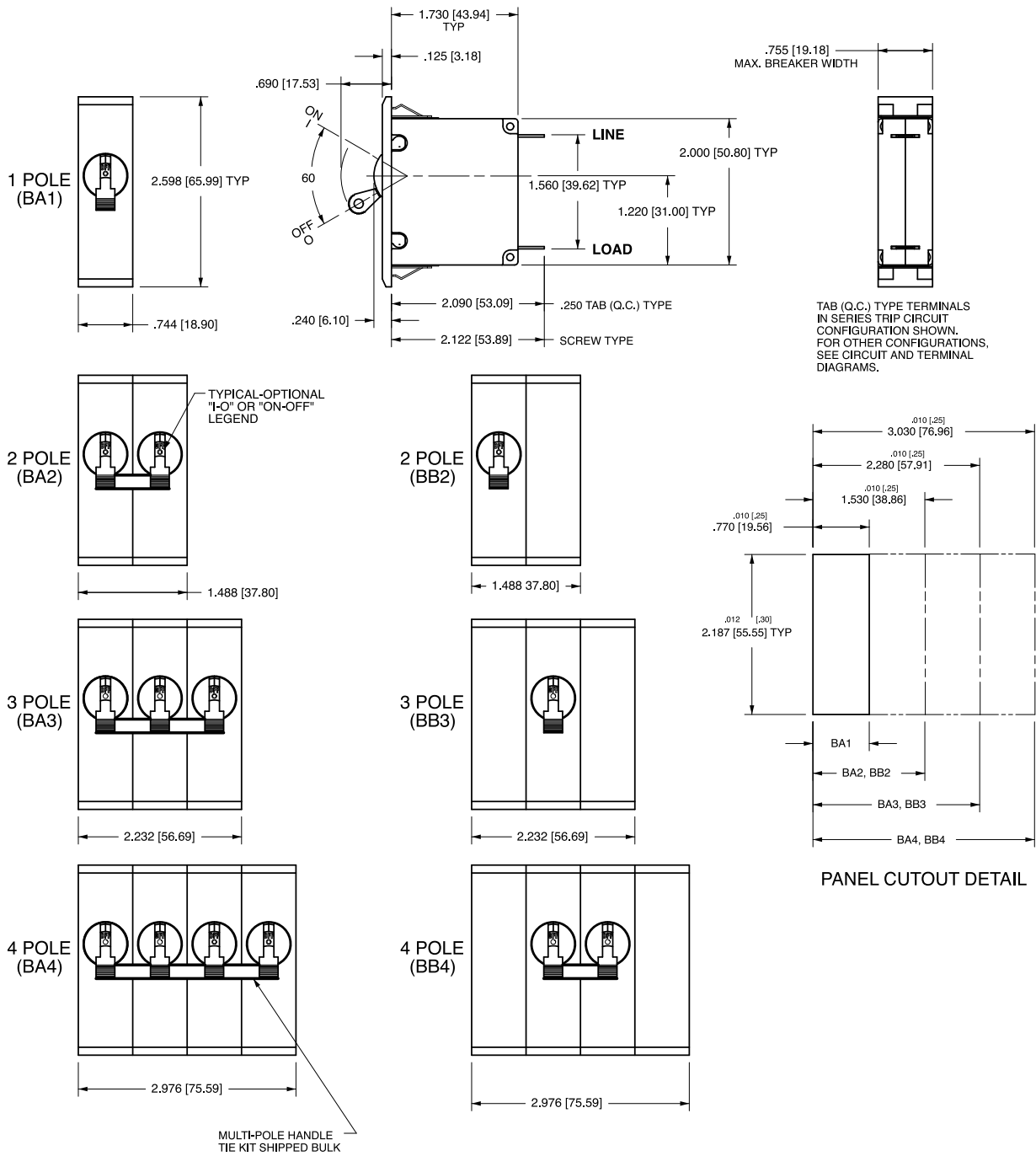
TAB (Q.C.) TYPE TERMINALS IN SERIES TRIP CIRCUIT CONFIGURATION SHOWN. FOR OTHER CONFIGURATIONS, SEE CIRCUIT AND TERMINAL DRAWINGS.



- Notes:  
 1 All dimensions are in inches [millimeters].  
 2 Tolerance  $\pm 0.20$  [.51] unless otherwise specified.

**PANEL CUTOUT DETAIL**  
TOLERANCES  $\pm .005$  [ $\pm .12$ ]

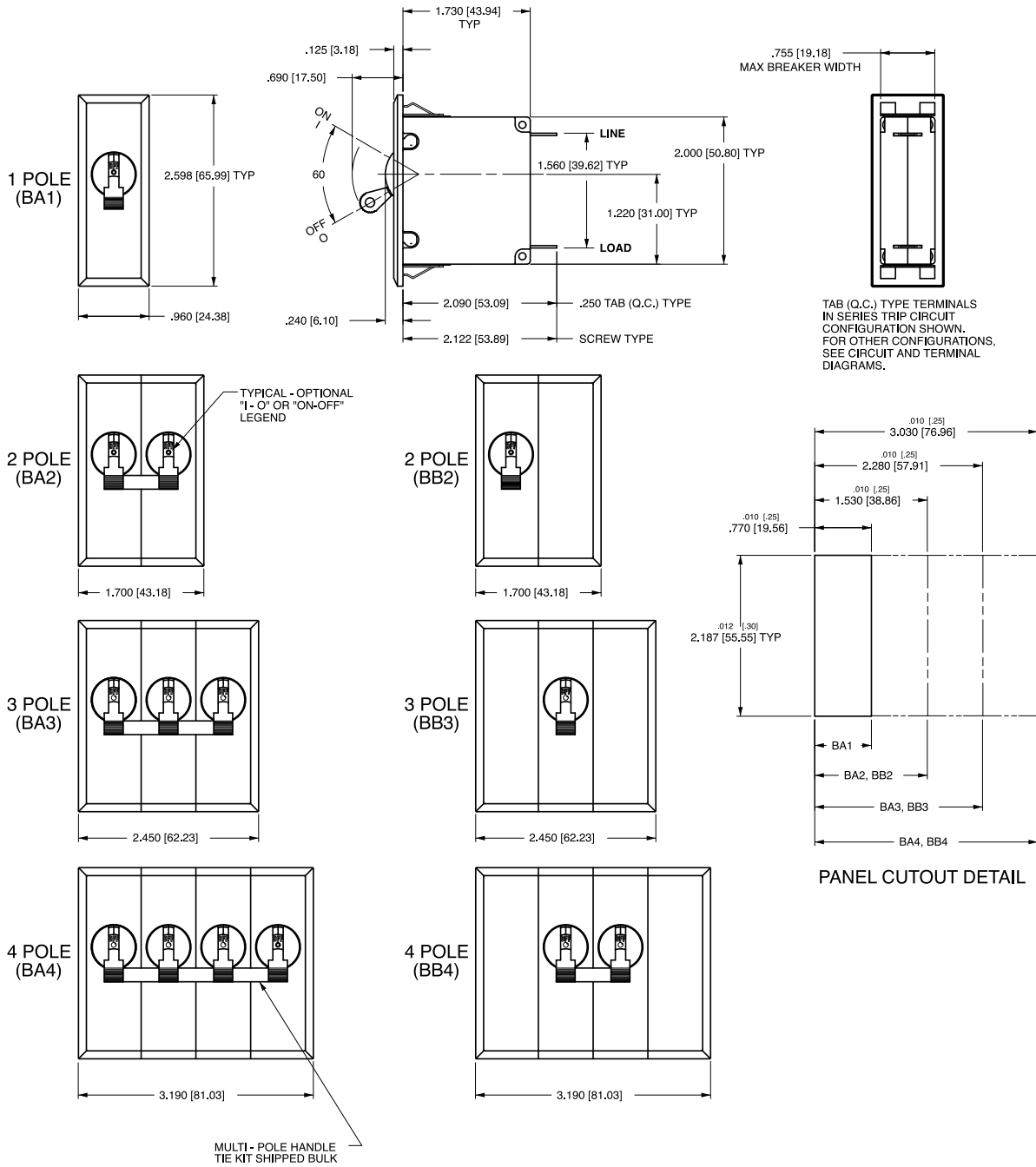
## Dimensional Specifications: in. [mm]



**Notes:**

- 1 All dimensions are in inches [millimeters].
- 2 Recommended panel thickness: .040 [1.02] to .100 [2.54].
- 3 Tolerance  $\pm 0.020$  [.51] unless otherwise specified.

## Dimensional Specifications: in. [mm]



**Notes:**

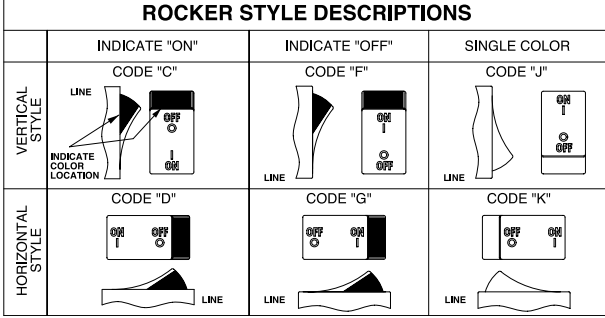
- 1 All dimensions are in inches [millimeters].
- 2 Recommended panel thickness: .040 [1.02] to .100 [2.54].
- 3 Tolerance ±.020 [.51] unless otherwise specified.

**B** **F** **1** - **B** **0** - **24** - **630** - **2** **3** **A** - **K** **G**

1 Series    2 Actuator    3 Poles    4 Circuit    5 Aux/Alarm Switch    6 Frequency & Delay    7 Current Rating    8 Terminal    9 Actuator Color    10 Mounting/Barriers    11 Max. Appl. Rating    12 Agency Approval

**1 SERIES**  
B

**2 ACTUATOR**  
**Two Color Visi-Rocker**  
C Indicate ON, vertical legend    J Vertical legend  
D Indicate ON, horizontal legend    K Horizontal legend  
F Indicate OFF, vertical legend  
G Indicate OFF, horizontal legend



**3 POLES** 1,2  
1 One    2 Two    3<sup>3</sup> Three

**4 CIRCUIT**  
B Series Trip (Current)

**5 AUXILIARY / ALARM SWITCH** 4  
0 without Aux Switch    7 S.P.S.T., 0.110 Q.C. Term. (Gold Contacts)  
1 S.P.D.T., 0.093 Q.C. Term.    8 S.P.S.T., 0.187 Q.C. Term.  
2 S.P.D.T., 0.110 Q.C. Term.    9 S.P.D.T., 0.187 Q.C. Term.  
3 S.P.D.T., 0.110 Solder Lug

**6 FREQUENCY & DELAY**  
21 AC Ultra Short    42 AC, Short, High-inrush  
22 AC Short    44 AC, Medium, High-inrush  
24 AC Medium    46 AC, Long, High-inrush  
26 AC Long

**7 CURRENT RATING (AMPERES)**

CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
020	0.020	220	0.200	415	1.500	495	9.500
025	0.025	225	0.250	517	1.750	610	10.000
030	0.030	230	0.300	420	2.000	710	10.500
035	0.035	235	0.350	522	2.250	611	11.000
040	0.040	240	0.400	527	2.750	711	11.500
045	0.045	245	0.450	430	3.000	612	12.000
050	0.050	250	0.500	435	3.500	712	12.500
055	0.055	255	0.550	440	4.000	613	13.000
060	0.060	260	0.600	445	4.500	614	14.000
065	0.065	265	0.650	450	5.000	615	15.000
070	0.070	270	0.700	455	5.500	616	16.000
075	0.075	275	0.750	460	6.000	617	17.000
080	0.080	280	0.800	465	6.500	618	18.000
085	0.085	285	0.850	470	7.000	620	20.000
090	0.090	290	0.900	475	7.500	622	22.000
095	0.095	295	0.950	480	8.000	624	24.000
210	0.100	410	1.000	485	8.500	625	25.000
215	0.150	512	1.250	490	9.000	630	30.000

**8 TERMINAL** 5  
1<sup>6</sup> Push-On 0.250 Tab (Q.C.)    B Screw M5 with upturned lugs  
2 Screw 8-32 with upturned lugs    C Screw M4 with upturned lugs  
3 Screw 8-32 (Bus Type)    F Screw M5 with upturned lugs & 30° bend  
4 Screw 10-32 with upturned lugs    G Screw M5 (Bus Type) & 30° bend  
5 Screw 10-32 (Bus Type)    H Screw M5 (Bus Type)  
6 Screw 8-32 with upturned lugs & 30° bend    J Screw M5 Back Connect  
7 Screw 8-32 (Bus Type) & 30° bend    K Screw 10-32 Back Connect  
8 Screw 10-32 with upturned lugs & 30° bend    N Screw M4 Back Connect  
9 Screw 10-32 (Bus Type) & 30° bend    Y Screw 8-32 Back Connect

**9 ACTUATOR COLOR & LEGEND**

Actuator or Visi-Color 7	Marking:		Marking Color	
	ON-OFF	Dual 7	Single Color	Visi-Rocker
White	B	1	Black	White
Black	D	2	White	n/a
Red	G	3	White	Red
Green	J	4	White	Green
Blue	L	5	White	Blue
Yellow	N	6	Black	Yellow
Gray	Q	7	Black	Gray
Orange	S	8	Black	Orange

**10 MOUNTING / BARRIERS**  
MOUNTING STYLE    BARRIERS 9  
**Threaded Insert, 2 per pole**  
A 6-32 x 0.195 inches (multi-pole units only)    yes  
B ISO M3 x 5mm    yes  
**ROCKERGUARD BEZEL**  
**Threaded Insert, 2 per pole**  
C 6-32 X 0.225 inches (multi-pole units only)    yes  
D ISO M3 x 6.5mm    yes

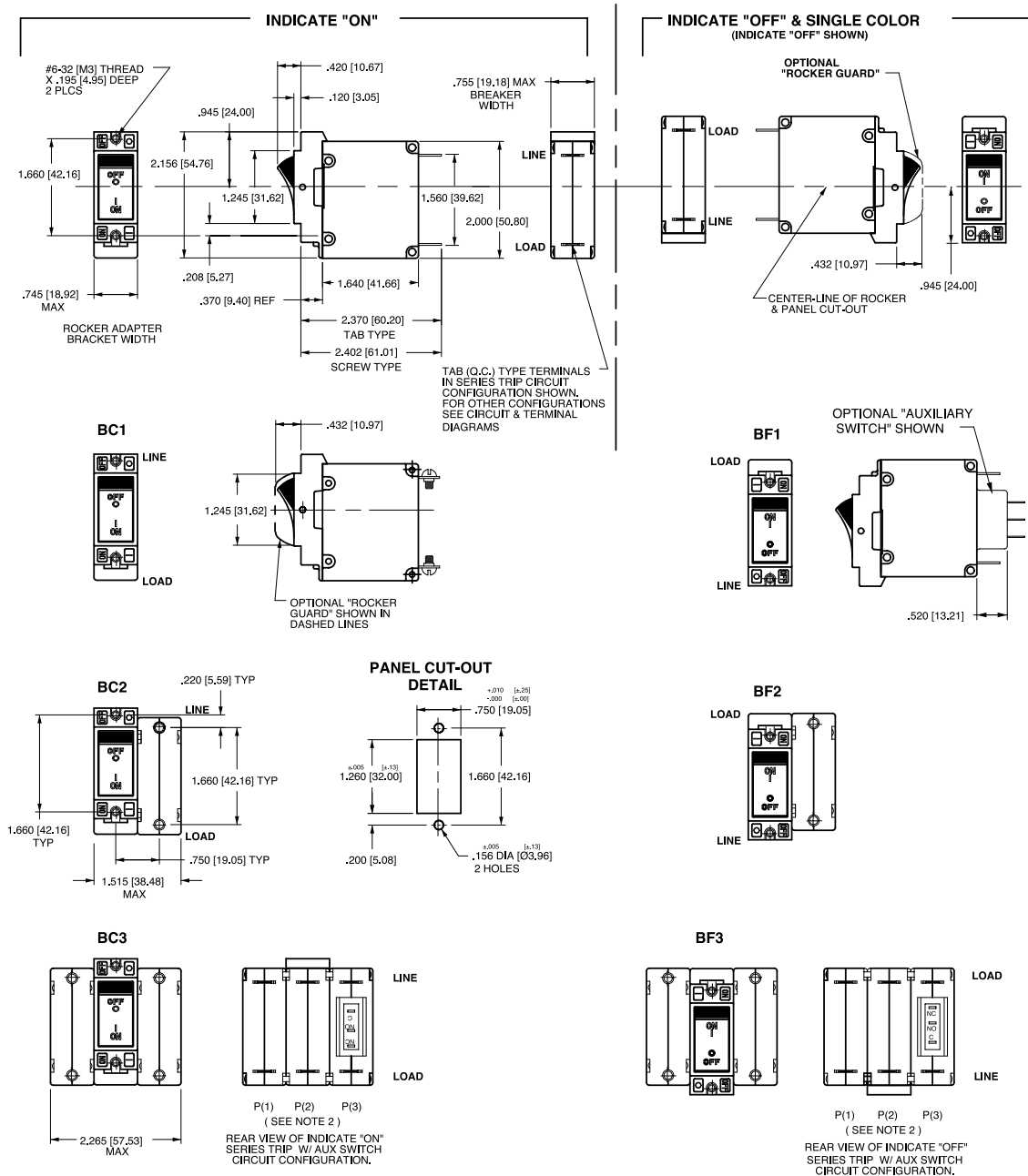
**11 MAXIMUM APPLICATION RATING**  
C 8 120/240 VAC  
K 120 VAC

**12 AGENCY APPROVAL**  
G UL489 Listed  
3 UL489 Listed, TUV Certified

Notes:  
1 Multi-pole breakers have all breakers identical except when specifying Auxiliary switch and/or mixed poles, and have one rocker per breaker.  
2 All poles must be same polarity.  
3 3 pole units available only when 1 of 3 poles is neutral.  
4 On multi-pole breakers, one auxiliary switch is supplied, mounted in the extreme right pole.  
5 Screw Terminals are recommended on ratings greater than 20 amps.  
6 Terminal Code 1 (Push-On) available up to 30 amps, but are not recommended over 20 amps.  
7 Dual Legend = ON-OFF/I-O  
8 Voltage Rating available with 2 and 3-pole breakers only.  
9 Barriers supplied on multi-pole units only.

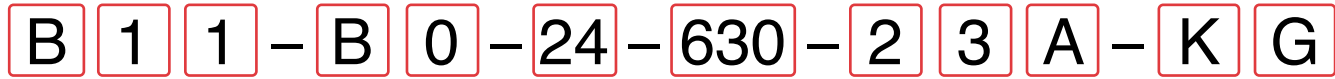


## Dimensional Specifications: in. [mm]



**Notes:**

- 1 Dimensions apply to all variations shown. Notice that circuit breaker line & load terminal orientation on indicate "OFF" is opposite of indicate "ON".
- 2 For pole orientation with horizontal legend, rotate front view clockwise 90°.
- 3 All dimensions are in inches [millimeters].
- 4 Tolerance ±.020 [51] unless otherwise specified.

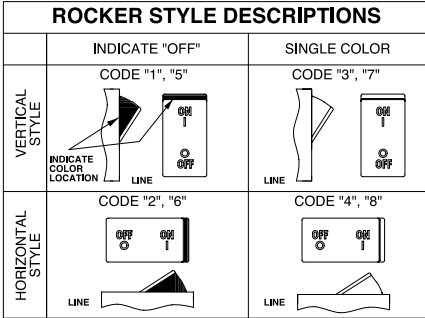


1 Series    2 Actuator    3 Poles    4 Circuit    5 Aux/Alarm Switch    6 Frequency & Delay    7 Current Rating    8 Terminal    9 Actuator Color    10 Mounting/ Barriers    11 Max. Appl. Rating    12 Agency Approval

**1 SERIES**  
**B**

**2 ACTUATOR 1**  
**Two Color Visi-Rocker**  
1 Indicate OFF, vertical legend  
2 Indicate OFF, horizontal legend  
**Single color**  
3 Vertical legend  
4 Horizontal legend

**Push-To-Reset, Visi-Rocker**  
5 Indicate OFF, vertical legend  
6 Indicate OFF, horizontal legend  
**Push-To-Reset , Single color**  
7 Vertical legend  
8 Horizontal legend



**3 POLES 2,3**  
1 One    2 Two    3<sup>4</sup> Three

**4 CIRCUIT**  
**B** Series Trip (Current)

**5 AUXILIARY / ALARM SWITCH 4**  
0 without Aux Switch    7 S.P.S.T., 0.110 Q.C. Term. (Gold Contacts)  
1 S.P.D.T., 0.093 Q.C. Term.    8 S.P.S.T., 0.187 Q.C. Term.  
2 S.P.D.T., 0.110 Q.C. Term.    9 S.P.D.T., 0.187 Q.C. Term.  
3 S.P.D.T., 0.110 Solder Lug

**6 FREQUENCY & DELAY**  
21 AC Ultra Short    42 AC, Short, High-inrush  
22 AC Short    44 AC, Medium, High-inrush  
24 AC Medium    46 AC, Long, High-inrush  
26 AC Long

**7 CURRENT RATING (AMPERES)**

CODE	AMPERES	220	250	300	350	400	450	500	600	700	800	900
020	0.020	225	255	305	355	405	455	505	615	715	815	915
025	0.025	230	260	310	360	410	460	510	620	720	820	920
030	0.030	235	265	315	365	415	465	515	625	725	825	925
035	0.035	240	270	320	370	420	470	520	630	730	830	930
040	0.040	245	275	325	375	425	475	525	635	735	835	935
045	0.045	250	280	330	380	430	480	530	640	740	840	940
050	0.050	255	285	335	385	435	485	535	645	745	845	945
055	0.055	260	290	340	390	440	490	540	650	750	850	950
060	0.060	265	295	345	395	445	495	545	655	755	855	955
065	0.065	270	300	350	400	450	500	550	660	760	860	960
070	0.070	275	305	355	405	455	505	555	665	765	865	965
075	0.075	280	310	360	410	460	510	560	670	770	870	970
080	0.080	285	315	365	415	465	515	565	675	775	875	975
085	0.085	290	320	370	420	470	520	570	680	780	880	980
090	0.090	295	325	375	425	475	525	575	685	785	885	985
095	0.095	300	330	380	430	480	530	580	690	790	890	990
100	0.100	305	335	385	435	485	535	585	695	795	895	995
115	0.115	310	340	390	440	490	540	590	700	800	900	1000

**8 TERMINAL 6**  
1<sup>7</sup> Push-On 0.250 Tab (Q.C.)    **B** Screw M5 with upturned lugs  
2 Screw 8-32 with upturned lugs    **C** Screw M4 with upturned lugs  
3 Screw 8-32 (Bus Type)    **F** Screw M5 with upturned lugs & 30° bend  
4 Screw 10-32 with upturned lugs    **G** Screw M5 (Bus Type) & 30° bend  
5 Screw 10-32 (Bus Type)    **H** Screw M5 (Bus Type)  
6 Screw 8-32 with upturned lugs & 30° bend    **J** Screw M5 Back Connect  
7 Screw 8-32 (Bus Type) & 30° bend    **K** Screw 10-32 Back Connect  
8 Screw 10-32 with upturned lugs & 30° bend    **N** Screw M4 Back Connect  
9 Screw 10-32 (Bus Type) & 30° bend    **Y** Screw 8-32 Back Connect

**9 ACTUATOR COLOR & LEGEND**

Actuator or Visi-Color <sup>8</sup>	Marking:		Marking Color	
	ON-OFF	Dual <sup>8</sup>	Single Color	Visi-Rocker
White	<b>B</b>	<b>1</b>	Black	White
Black	<b>D</b>	<b>2</b>	White	n/a
Red	<b>G</b>	<b>3</b>	White	Red
Green	<b>J</b>	<b>4</b>	White	Green
Blue	<b>L</b>	<b>5</b>	White	Blue
Yellow	<b>N</b>	<b>6</b>	Black	Yellow
Gray	<b>Q</b>	<b>7</b>	Black	Gray
Orange	<b>S</b>	<b>8</b>	Black	Orange

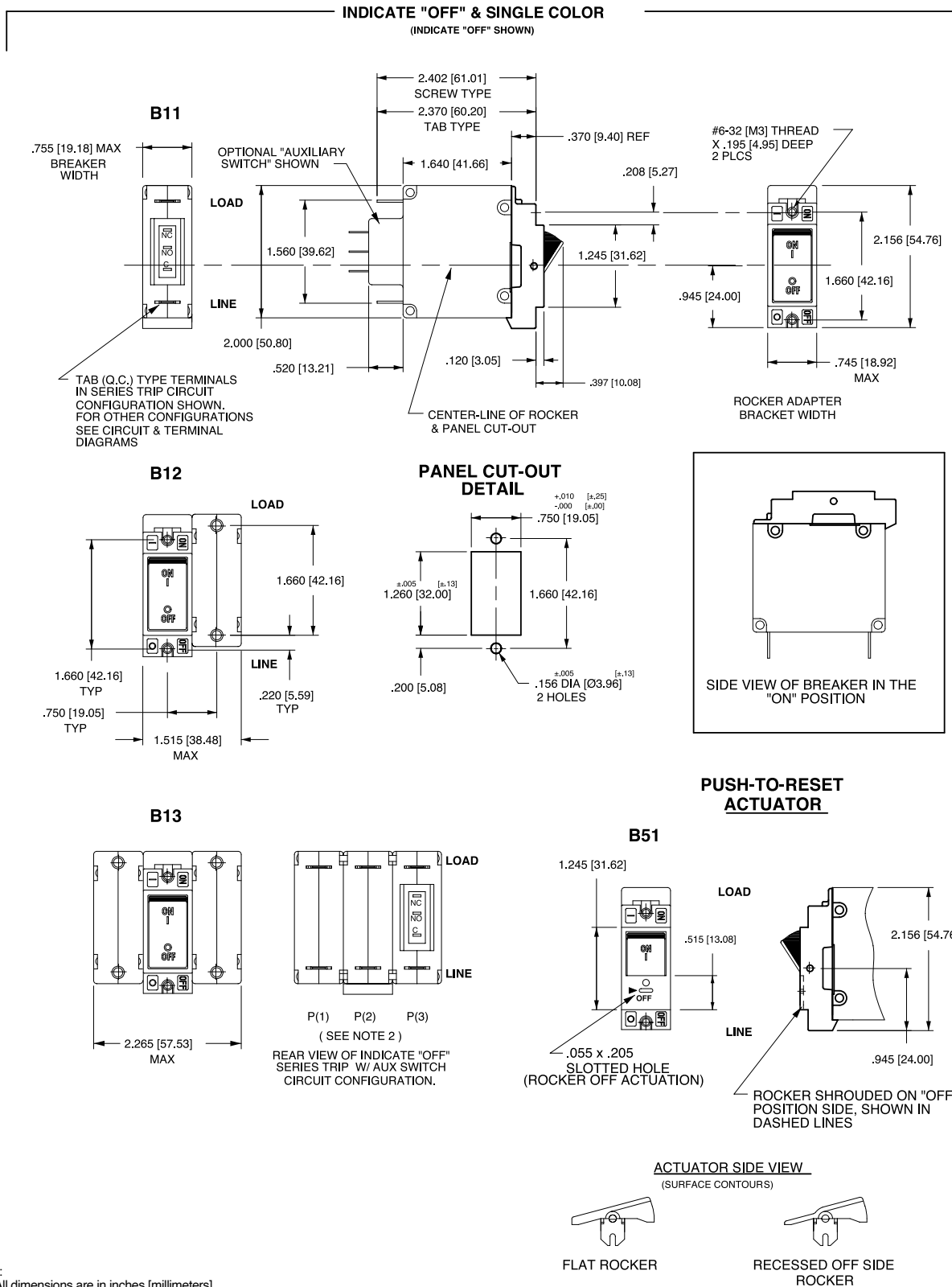
**10 MOUNTING / BARRIERS 9**  
**STANDARD ROCKER BEZEL**    **BARRIERS 12**  
Threaded Insert, 2 per pole  
**FLAT ROCKER ACTUATOR**  
**A** 6-32 x 0.195 inches (multi-pole units only)    yes  
**B** ISO M3 x 5mm    yes  
**RECESSED OFF SIDE ROCKER ACTUATOR 10**  
**E** 6-32 X 0.225 inches (multi-pole units only)    yes  
**F** ISO M3 x 6.5mm    yes  
**PUSH-TO-RESET BEZEL, Threaded Insert, 2 per pole**  
**C** 6-32 x 0.195 inches    yes  
**D** ISO M3 x 5mm    yes

**11 MAXIMUM APPLICATION RATING**  
**C 11** 120/240 VAC  
**K** 120 VAC

**12 AGENCY APPROVAL**  
**G** UL489 Listed  
**3** UL489 Listed, TUV Certified

Notes:  
1 Push-To-Reset actuators have OFF portion of rocker shrouded.  
2 Multi-pole breakers have all breakers identical except when specifying Auxiliary switch and/or mixed poles, and have one rocker per breaker.  
3 All poles must be same polarity.  
4 3 pole units available only when 1 of 3 poles is neutral.  
5 On multi-pole breakers, one auxiliary switch is supplied, mounted in the extreme right pole.  
6 Screw Terminals are recommended on ratings greater than 20 amps.  
7 Terminal Code 1 (Push-On) available up to 30 amps, but are not recommended over 20 amps.  
8 Color shown is visi and legend with remainder of rocker black. Dual = ON-OFF/I-O legend.  
9 Legend on Push-to-reset bezel/shroud is white with single color actuator codes 7 & 8. Legend on Push-To-Reset bezel/shroud matches Visi-Color of rocker with actuator codes 5 & 6.  
10 Recessed "off-side" available with actuator codes 1, 2, 3 & 4. Legends on rocker are available in ink stamping only.  
11 Voltage rating available with 2 & 3-pole breakers only.  
12 Barriers supplied on multi-pole units only.

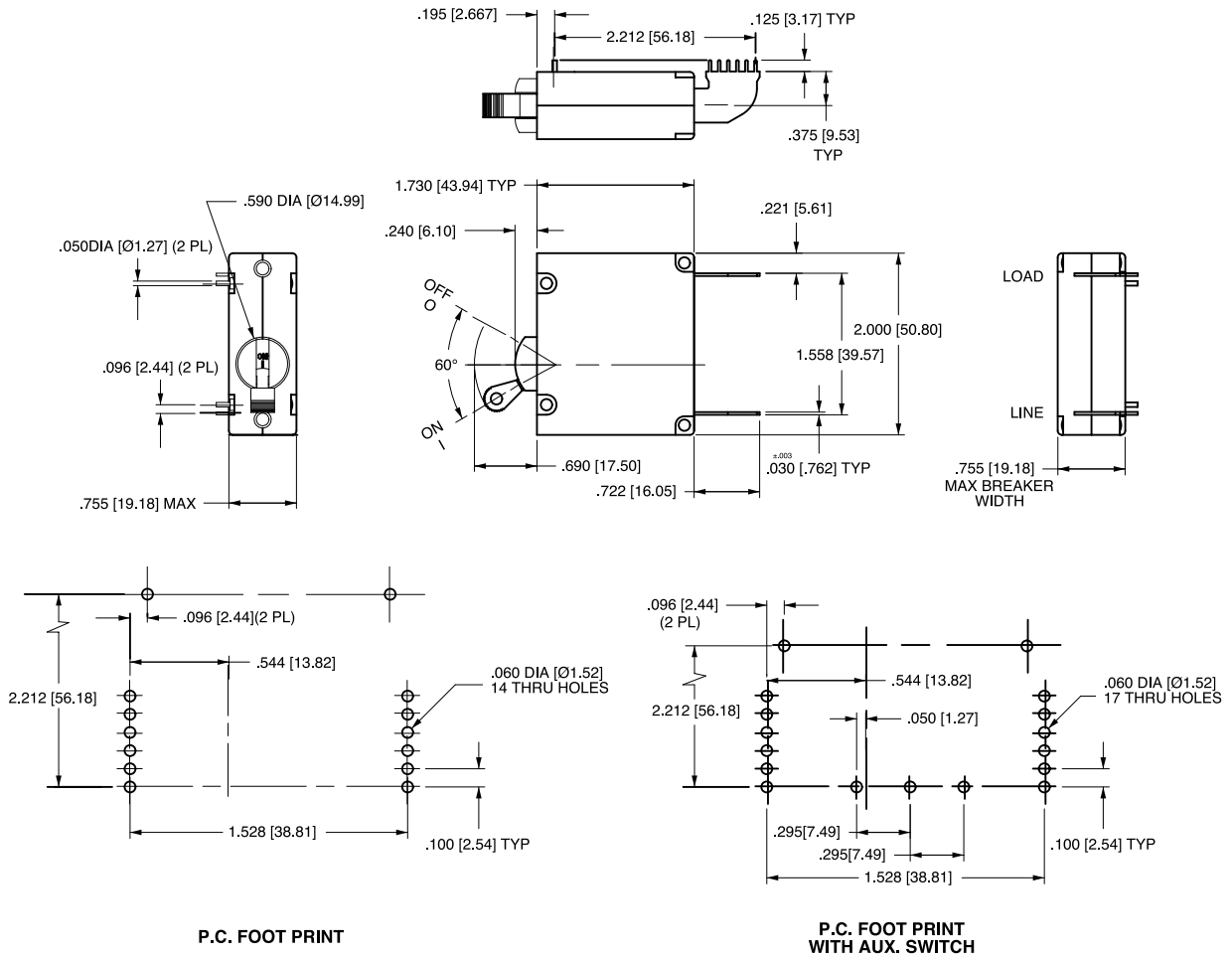
## Dimensional Specifications: in. [mm]



**Notes:**

- 1 All dimensions are in inches [millimeters].
- 2 For pole orientation with horizontal legend, rotate front view clockwise 90°.
- 3 Tolerance ±.010 [.25] unless otherwise specified.

## PC Terminal Diagrams: in. [mm]



- Notes:
- 1 All dimensions are in inches [millimeters].
  - 2 For pole orientation with horizontal legend, rotate front view clockwise 90°.
  - 3 Tolerance  $\pm 0.10$  [2.5] unless otherwise specified.

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