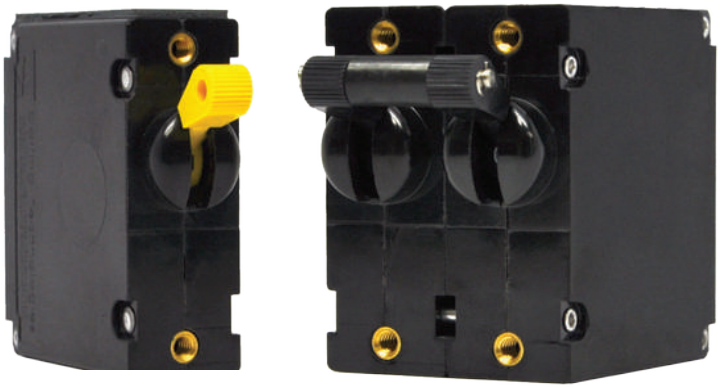
B-Series
Circuit Breaker

The B-Series hydraulic/magnetic circuit breakers are compact and temperature stable designed for precision operation in OEM markets requiring general purpose as well as full load amp applications. These circuit breakers are designed specifically for world market applications requiring extra insulation and tongue & groove half-shell constructions. Actuators available include handle for 1- 6 poles, rocker for 1-3 poles, and Visi-Rocker for 1-3 poles construction. They are also offered with ratings from 0.02 to 50 amps and up to 277VAC or 80VDC, with choices of time delays, terminals, wide range of standard colors, imprinting.



1 POLE 2 POLE

Additional Features:

- UL489 approvals available
- Extra insulation and tongue & groove half-shell constructions

Applications:

- Power Supplies
- Medical Equipment
- Generator & Welder Markets
- Office Equipment
- Control Panels
- Marine
- Military

Agency Certifications:

- UL Recognized – *UL Standard 508, 1077, 1500*
- UL Listed – *UL Standard 489, 489A*
- CSA Accepted
- TUV Certified
- VDE Certified

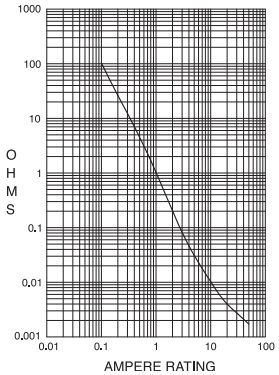
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Innovative Designs. Powerful Solutions.

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Electrical

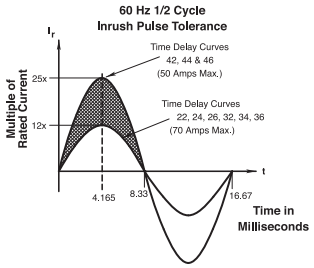
Maximum Voltage	277VAC 50/60 Hz, 80VDC
Current Ratings	Standard current coils: 0.100, 0.250, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0 and 50.0 amps. Other ratings available, see ordering scheme.
Standard Voltage Coils	DC - 6V, 12V; AC - 120V, other ratings available, 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.

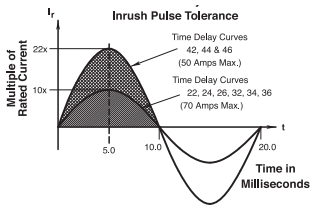
RESISTANCE PER POLE VALUES
from Line to Load Terminals
(Values Based on Series Trip Circuit Breaker)



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

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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
						UL/CSA				
	MAX. RATING	FREQUENCY	PHASE	FULL LOAD AMPS	GENERAL PURPOSE AMPS	WITH BACKUP FUSE	WITHOUT BACKUP FUSE	UL	CSA	
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[4]	1 - 50	---	---	1000	TC1, OL1,U2	TC3, OL1,U3	
	125 / 250	50 / 60	1[3]	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[4]	1 - 50	---	---	1000	TC1, OL1,U2	TC3, OL1,U3	
			3	0.02 - 30	---	5000[2]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
				31 - 50	---	2000[1]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
	277	50 / 60	1	0.02 - 30	---	5000[1]	---	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[3]	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[4]	1 - 50	---	---	1000	TC1, OL1,U2	TC3, OL1,U3	
			3	0.02 - 30	---	5000[2]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
				31 - 50	---	2000[1]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
	277	50 / 60	1	0.02 - 30	---	5000[1]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
SHUNT	80	DC	---	0.02 - 30	---	---	7500	TC1,2, OL1,U1	TC1,2, OL1,U1	
	125 / 250	50 / 60	1[3]	0.02 - 30	---	---	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	1	0.02 - 30	---	---	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
			3	0.02 - 30	---	5000[2]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
	277	50 / 60	1	0.02 - 30	---	5000[1]	---	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[3]	0.02 - 30	---	---	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
	250	50 / 60	1	0.02 - 30	---	---	3000	TC1,2, OL1,U1	TC1,2, OL1,U1	
			3	0.02 - 30	---	5000[2]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
	277	50 / 60	1	0.02 - 30	---	5000[1]	---	TC1,2, OL1,C1	TC1,2, OL1,C1	
SWITCH ONLY	65	DC	---	0.02 - 50	---	---	---	---	---	
	80	DC	---	0.02 - 30	---	---	---	---	---	
	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.

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
						UL/CSA		VDE		TUV				
	MAX. RATING	FREQUENCY	PHASE	FULL LOAD AMPS	GENERAL PURPOSE AMPS [1]	WITH BACKUP FUSE	WITHOUT BACKUP FUSE	(Inc) WITH BACKUP FUSE	(Icn) WITHOUT BACKUP	(Inc) WITH BACKUP FUSE	(Icn) WITHOUT BACKUP	UL	CSA	
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	
	250	50 / 60	1	0.10 - 30	—	—	3000	3000	1500	5000	1500	TC1,2, OL1,U1	TC1,2, OL1,U1	
				31 - 50	31 - 50	—	3000	—	—	5000	1500	TC1,2, OL0,U1	TC1,2, OL0,U1	
				31 - 32	—	—	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
			3	0.10 - 30	—	5000 [3]	---	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1	
	415	50 / 60	3	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	
	250	50 / 60	1	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	
			3	0.10 - 30	—	5000 [3]	---	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1	
				31 - 50	—	2000 [2]	---	—	—	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	
	250	50 / 60	1	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	
			3	0.10 - 30	—	5000 [3]	---	3000	1500	3000	1500	TC1,2, OL1,C1	TC1,2, OL1,C1	
				31 - 50	—	2000 [2]	---	—	—	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	FULL LOAD AMPS	WITHOUT BACKUP FUSE	UL	CSA
SERIES	14 [1]	DC	—	0.02 - 50	5000	TC1,2,OL1,U1	TC1,2,OL1,U1
	32 [1]	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 [2]	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 [1]	5000

Notes:
1 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)

UL Standard 508 — Switches, Industrial Control (Guide CCN/NRNT2, File E148683)

UL Standard 1500 — Protectors, Supplementary for Marine Electrical & Fuel Systems (Guide PEQZ2, File E75596) Ignition Protection

UL Listed

UL Standard 489 — Circuit Breakers, Molded Case, (Guide DIVQ, File E129899)

UL Standard 489A — Communications Equipment (Guide CCN/DITT, File E189195)

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

TUV Certified — EN60934, under License No. R72040875

VDE Certified — EN60934, VDE 0642 under File No. 10537

B	A	3	–	B	0	–	10	–	450	–	1	B	1	–	C
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 Agency Approval

1 SERIES
B

2 ACTUATOR
A	Handle, one per pole
B	Handle, one per multipole unit
S	Mid-Trip Handle, one per pole
T	Mid-Trip Handle, one per pole & Alarm Switch

3 POLES
1	One	**3**	Three	**5**	Five
2	Two	**4**	Four	**6**	Six

4 CIRCUIT
A[2]	Switch Only (No Coil)
B	Series Trip (Current)
C	Series Trip (Voltage)
D[3]	Shunt Trip (Current)
E[3]	Shunt Trip (Voltage)
F[3]	Relay Trip (Current)
G[3]	Relay Trip (Voltage)
H[3,4]	Dual Coil with Shunt Trip Voltage Coil
H[3,4]	Dual Coil with Shunt Trip Voltage Coil (side terminal)
K[3,4]	Dual Coil with Relay Trip Voltage Coil

5 AUXILIARY/ALARM SWITCH[5]
0	w/o Aux Switch
1	S.P.D.T., 0.093 Q.C. Term.
2	S.P.D.T., 0.110 Q.C. Term.
3	S.P.D.T., 0.110 Solder Lug
4	S.P.D.T., 0.110 Q.C. Term. (Gold Contacts)
5	S.P.S.T., 0.093 Q.C. Term. (Gold Contacts)
6	S.P.S.T., 0.110 Solder Lug
7	S.P.S.T., 0.110 Q.C. Term. (Gold Contacts)
8	S.P.S.T., 0.187 Q.C. Term.
9	S.P.D.T., 0.187 Q.C. Term.

6 FREQUENCY & DELAY
03[2]	DC 50/60Hz, Switch Only	**30**	DC, 50/60Hz Instantaneous
10[6]	DC Instantaneous	**31**	DC, 50/60Hz Ultra Short
11	DC Ultra Short	**32**	DC, 50/60Hz Short
12	DC Short	**34**	DC, 50/60Hz Medium
14	DC Medium	**36**	DC, 50/60Hz Long
16	DC Long	**42**[7]	50/60Hz Short, Hi-Inrush
20[6]	50/60Hz Instantaneous	**44**[7]	50/60Hz Medium, Hi-Inrush
21	50/60Hz Ultra Short	**46**[7]	50/60Hz Long, Hi-Inrush
22	50/60Hz Short	**52**[7]	DC, Short,Hi-Inrush
24	50/60Hz Medium	**54**[7]	DC, Medium, Hi-Inrush
26	50/60Hz Long	**56**[7]	DC, Long, Hi-Inrush

Notes:
1. Actuator Code:
   A: Handle tie pin spacer(s) and retainers provided unassembled with multi-pole units.
   B: Handle location as viewed from front of breaker:
   2 pole - left pole; 3 pole - center pole; 4 pole - two handles at center poles; 5 pole - three handles at center poles; 6 pole - four handles at center poles
   S: Handle moves to mid-position only upon electrical trip of the breaker. Available with circuit codes B, C, D, E, F, G, H and K.
   T: Handle moves to mid-position and alarm switch activates only upon electrical trip of the breaker. Available with circuit codes B & C.
2. Switch Only circuits, rated up to 50 amps and 6 poles, and only available with VDE Certification when tied to a protected pole (Circuit Code B, C, D or H.), For .02 to 30 amps, select Current Code 630. For 35 - 50 amps, select Current Code 650.
3. Available with Terminal Codes 1, 2 and 3. Current Rating limited to 30 amps maximum.
4. Consult factory for available Dual Coil options, as special catalog number is required. With Shunt construction, Dual Coils will trip instantaneously on line voltage. Dual coils require 30VA minimum power to trip and are rated for intermittent duty only.
5. Auxiliary Switch breakers with Series Trip and Switch Only circuits. On multi-pole breakers, one aux. switch is supplied, mounted in the extreme right pole.
6. Separate pole type voltage coils not rated for continuous duty. Available only with delay codes 10 and 20.
7. Available with Circuit Codes B & D only. VDE Certified to 30 amps. UL Recognized and CSA Accepted to 50 amps.
8. VDE Certification available with single pole breakers with DC Delay only. UL Recognition and CSA Accepted available in one and two pole breakers.
9. Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9, G, H, J, K, M and Q.
10. VDE Certification up to 25 amps and UL Recognition and CSA Acceptance up to 30 amps, but not recommended over 20 amps.
11. Terminal Codes 3, 5 E and H (Bus Type) with VDE, are supplied with Lock Washers, and Terminal Code M (M6 Threaded Stud) with VDE is supplied with Lock and Flat Washers. These breakers are only VDE Certified when the washers are used.
12. VDE Cert. available up to 12 amps. UL Rec. & CSA Acceptance available up to 30 amps.
13. Single pole breakers with Terminal Code P (Printed Circuit Board) are available up to 30 amps with VDE Certification and 50 amps with UL Recognition and CSA Acceptance, with Circuit Codes A, B and C. Two pole breakers with Terminal Code P (Printed Circuit Board) are available up to 40 amps with UL Recognition and CSA Acceptance with Circuit Codes A, B and C.
14. Available with Actuator Codes A, S and T.
15. Available with voltage coils only.
16. Terminal Code Q not available with VDE approvals.

7 CURRENT RATING (AMPERES)
CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
020	0.020	**225**	0.250	**420**	2.000	**611**	11.000
025	0.025	**230**	0.300	**522**	2.250	**711**	11.500
030	0.030	**235**	0.350	**527**	2.750	**612**	12.000
035	0.035	**240**	0.400	**430**	3.000	**712**	12.500
040	0.040	**245**	0.450	**435**	3.500	**613**	13.000
045	0.045	**250**	0.500	**440**	4.000	**614**	14.000
050	0.050	**255**	0.550	**445**	4.500	**615**	15.000
055	0.055	**260**	0.600	**450**	5.000	**616**	16.000
060	0.060	**265**	0.650	**455**	5.500	**617**	17.000
065	0.065	**270**	0.700	**460**	6.000	**618**	18.000
070	0.070	**275**	0.750	**465**	6.500	**620**	20.000
075	0.075	**280**	0.800	**470**	7.000	**622**	22.000
080	0.080	**285**	0.850	**475**	7.500	**624**	24.000
085	0.085	**290**	0.900	**480**	8.000	**625**	25.000
090	0.090	**295**	0.950	**485**	8.500	**630**	30.000
095	0.095	**410**	1.000	**490**	9.000	**635**[8]	35.000
210	0.100	**512**	1.250	**495**	9.500	**640**[8]	40.000
215	0.150	**415**	1.500	**610**	10.000	**645**[8]	45.000
220	0.200	**517**	1.750	**710**	10.500	**650**[8]	50.000

OR VOLTAGE COIL (NORMAL RATED VOLTAGE)[6]
A06	6 DC	**A32**	32 DC	**J12**	12 AC	**J65**	65 AC
A12	12 DC	**A48**	48 DC	**J18**	18 AC	**K20**	120 AC
A18	18 DC	**A65**	65 DC	**J24**	24 AC	**L40**	240 AC
A24	24 DC	**J06**	6 AC	**J48**	48 AC		

8 TERMINAL[9]
1[10]	Push-On 0.250 Tab (Q.C.)
2	Screw 8-32 w/upturned lugs
3[11]	Screw 8-32 (Bus Type)
4	Screw 10-32 w/upturned lugs
5[11]	Screw 10-32 (Bus Type)
6	Screw 8-32 w/upturned lugs and 30° bend
7	Screw 8-32 (Bus Type) and 30° bend
8	Screw 10-32 w/upturned lugs and 30° bend
9	Screw 10-32 (Bus Type) and 30° bend
B	Screw M5 w/upturned lugs
C	Screw M4 w/upturned lugs
E[11]	Screw M4 (Bus Type)
F	Screw M5 w/upturned lugs and 30° bend
G	Screw M5 (Bus Type) and 30° bend
H	Screw M5 (Bus Type)
J	Screw M5 Back Connect
K	Screw 10-32 Back Connect
L[12]	0.250 Q.C./ Solder Lug
M[11]	M6 Threaded Stud
N	Screw M4 Back Connect
P[13]	Printed Circuit Board Terminals
Q[16]	Push-In Stud
R	Screw M4 w/upturned lugs and 30° bend
S[15]	Push-On 0.110 Tab (Q.C.)
T	Screw M4 (Bus Type) and 30° bend
Y	Screw 8-32 Back Connect

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 MOUNTING/BARRIERS
	MOUNTING STYLE	BARRIERS
	Threaded Insert, 2 per pole	
1	6-32 x 0.195 inches	no
A	6-32 x 0.195 inches *(multi-pole units only)*	yes
2	ISO M3 x 5mm	no
B	ISO M3 x 5mm	yes
	Rectangular Adapter Plate with mounting centers of 2.062 inches [52.37mm] and Threaded insert, 2 per pole	
3[14]	6-32 x 0.225 inches	no
C[14]	6-32 X 0.225 inches *(multi-pole units only)*	yes
4[14]	ISO M3 x 6.5mm	no
D[14]	ISO M3 x 6.5mm	yes
	Front panel Snap-In, 0.75" [19.05mm] wide bezel	
5	without Handleguard	no
6	without Handleguard (multipole only)	yes
	Front panel Snap-In, 0.96" wide bezel	
7	without Handleguard, 1-pole 0.96" wide; multipole units have .105" bezel overhang on all sides	no
8	without Handleguard, 1-pole 0.96" wide; (multipole only) .105" bezel overhang on all sides	yes

11 AGENCY APPROVAL
C	UL Recognized & CSA Accepted
D	VDE Certified, UL Recognized & CSA Accepted
E	TUV Certified, UL Recognized & CSA Accepted
I	UL Rec. STD 1077, UL Rec. 1500 (ignition protected), & CSA Accepted

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B	A	1	–	B	0	–	14	–	450	–	1	B	1	–	M	T
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]
A	Handle, one per pole
B	Handle, one per multipole unit
S	Mid-Trip Handle, one per pole
T	Mid-Trip Handle, one per pole & Alarm Switch

3 POLES[2]
1	One	**3**	Three
2	Two	**4**	Four

4 CIRCUIT
B	Series Trip (Current)

5 AUXILIARY/ALARM SWITCH[2]
0	w/o 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[4]
11	DC Ultra Short	**52**	DC, Short,Hi-Inrush
12	DC Short	**54**	DC, Medium, Hi-Inrush
14	DC Medium	**56**	DC, Long, Hi-Inrush
16	DC Long		

7 CURRENT RATING (AMPERES)
CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
210	0.100	**285**	0.850	**455**	5.500	**613**	13.000
215	0.150	**290**	0.900	**460**	6.000	**614**	14.000
220	0.200	**295**	0.950	**465**	6.500	**615**	15.000
225	0.250	**410**	1.000	**470**	7.000	**616**	16.000
230	0.300	**512**	1.250	**475**	7.500	**617**	17.000
235	0.350	**415**	1.500	**480**	8.000	**618**	18.000
240	0.400	**517**	1.750	**485**	8.500	**620**	20.000
245	0.450	**420**	2.000	**490**	9.000	**622**	22.000
250	0.500	**522**	2.250	**495**	9.500	**624**	24.000
255	0.550	**527**	2.750	**610**	10.000	**625**	25.000
260	0.600	**430**	3.000	**710**	10.500	**630**	30.000
265	0.650	**435**	3.500	**611**	11.000	**635**[3]	35.000
270	0.700	**440**	4.000	**711**	11.500	**640**[3]	40.000
275	0.750	**445**	4.500	**612**	12.000	**645**[3]	45.000
280	0.800	**450**	5.000	**712**	12.500	**650**[3]	50.000

8 TERMINAL[4]
1[5]	Push-On 0.250 Tab (Q.C.)	**B**	Screw M5 w/upturned lugs
2	Screw 8-32 w/upturned lugs	**F**	Screw M5 w/upturned lugs and 30° bend
3[6]	Screw 8-32 (Bus Type)	**G**	Screw M5 (Bus Type) and 30° bend
4	Screw 10-32 w/upturned lugs	**H**	Screw M5 (Bus Type)
5[6]	Screw 10-32 (Bus Type)	**J**	Screw M5 Back Connect
6	Screw 8-32 w/upturned lugs and 30° bend	**K**	Screw 10-32 Back Connect
7	Screw 8-32 (Bus Type) and 30° bend	**M**[6]	M6 Threaded Stud
8	Screw 10-32 w/upturned lugs and 30° bend	**N**	Screw M4 Back Connect
9	Screw 10-32 (Bus Type) and 30° bend	**P**[7]	Printed Circuit Board Terminals
		Q[8]	Push-In Stud
		Y	Screw 8-32 Back Connect

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 MOUNTING/BARRIERS
	MOUNTING STYLE	BARRIERS
	Threaded Insert, 2 per pole	
1	6-32 x 0.195 inches	no
A	6-32 x 0.195 inches *(multi-pole units only)*	yes
2	ISO M3 x 5mm	no
B	ISO M3 x 5mm	yes
	Rectangular Adapter Plate with mounting centers of 2.062 inches [52.37mm] and Threaded insert, 2 per pole	
3	6-32 x 0.225 inches	no
C	6-32 X 0.225 inches *(multi-pole units only)*	yes
4	ISO M3 x 6.5mm	no
D	ISO M3 x 6.5mm	yes
	Front panel Snap-In, 0.75" [19.05mm] wide bezel	
5	without Handleguard	no
6	without Handleguard (multipole only)	yes
	Front panel Snap-In, 0.96" wide bezel	
7	without Handleguard, 1-pole 0.96" wide; multipole units have .105" bezel overhang on all sides	no
8	without Handleguard, 1-pole 0.96" wide; (multipole only) .105" bezel overhang on all sides	yes

11 MAXIMUM APPLICATION RATING
M	80 DC

12 AGENCY APPROVAL
T	UL489A LISTED
K	UL489A LISTED, VDE CERTIFIED
J	UL489A LISTED, TUV CERTIFIED

Notes:
1. Actuator Code:
   A: Handle tie pin spacer(s) and retainers provided unassembled with multi-pole units.
   S: Handle moves to mid-position only upon electrical trip of the breaker.
   T: Handle moves to mid-position and alarm switch activates only upon electrical trip of the breaker.
2. On multi-pole breakers, one auxiliary switch is supplied, mounted in the extreme right pole.
3. VDE Certification available with single pole breakers only. UL489A Listing available with one and two pole breakers.
4. Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9, G, H, J, K, M and Q.
5. Terminal Code 1 (Push-On) available up to 25 amps with TUV or VDE Certification and 30 amps with UL489A Listing, but is not recommended over 20 amps.
6. Terminal Codes 3, 5 and H (Bus Type) with TUV or VDE, are supplied with Lock Washers, and Terminal Code M (M6 Threaded Stud) with TUV or VDE is supplied with Lock and Flat Washers. These breakers are only TUV or VDE Certified when the washers are used.
7. Single pole breakers with Terminal Code P (Printed Circuit Board) are available up to 30 amps with VDE Certification and 50 amps with UL489A Listing.
8. Terminal Code Q not available with VDE approvals.

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B	A	1	–	B	0	–	24	–	450	–	1	B	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[1]
A	Handle, one per pole
B	Handle, one per multipole unit
S	Mid-Trip Handle, one per pole
T	Mid-Trip Handle, one per pole & Alarm Switch

3 POLES[2]
1	One	**2**	Two	**3**[3]	Three

4 CIRCUIT
B	Series Trip (Current)

5 AUXILIARY/ALARM SWITCH[4]
0	w/o Aux Switch	**3**	S.P.D.T., 0.110 Solder Lug
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.

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

7 CURRENT RATING (AMPERES)
CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
210	0.100	**280**	0.800	**445**	4.500	**711**	11.500
215	0.150	**285**	0.850	**450**	5.000	**612**	12.000
220	0.200	**290**	0.900	**455**	5.500	**712**	12.500
225	0.250	**295**	0.950	**460**	6.000	**613**	13.000
230	0.300	**410**	1.000	**465**	6.500	**614**	14.000
235	0.350	**512**	1.250	**470**	7.000	**615**	15.000
240	0.400	**415**	1.500	**475**	7.500	**616**	16.000
245	0.450	**517**	1.750	**480**	8.000	**617**	17.000
250	0.500	**420**	2.000	**485**	8.500	**618**	18.000
255	0.550	**522**	2.250	**490**	9.000	**620**	20.000
260	0.600	**527**	2.750	**495**	9.500	**622**	22.000
265	0.650	**430**	3.000	**610**	10.000	**624**	24.000
270	0.700	**435**	3.500	**710**	10.500	**625**	25.000
275	0.750	**440**	4.000	**611**	11.000	**630**	30.000

8 TERMINAL[5]
1	Push-On 0.250 Tab (Q.C.)	**B**	Screw M5 w/upturned lugs
2	Screw 8-32 w/upturned lugs	**C**	Screw M4 w/upturned lugs
3	Screw 8-32 (Bus Type)	**E**	Screw M4 (Bus Type)
4	Screw 10-32 w/upturned lugs	**F**	Screw M5 w/upturned lugs and 30° bend
5	Screw 10-32 (Bus Type)	**G**	Screw M5 (Bus Type) and 30° bend
6	Screw 8-32 w/upturned lugs and 30° bend	**H**	Screw M5 (Bus Type)
7	Screw 8-32 (Bus Type) and 30° bend	**J**	Screw M5 Back Connect
8	Screw 10-32 w/upturned lugs and 30° bend	**K**	Screw 10-32 Back Connect
9	Screw 10-32 (Bus Type) and 30° bend	**M**	M6 Threaded Stud
A	Load Terminal: #8 Screw/QC Combination. (Special Cat.#)	**N**	Screw M4 Back Connect
		Q	Push-In Stud
		Y	Screw 8-32 Back Connect

9 ACTUATOR COLOR & LEGEND[6]
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 MOUNTING/BARRIERS
	MOUNTING STYLE	BARRIERS
	Threaded Insert, 2 per pole	
A	6-32 x 0.195 inches *(multi-pole units only)*	yes
B	ISO M3 x 5mm	yes
	Rectangular Adapter Plate with mounting centers of 2.062 inches [52.37mm] and Threaded insert, 2 per pole[7]	
C	6-32 X 0.225 inches *(multi-pole units only)*	yes
D	ISO M3 x 6.5mm	yes
	Front panel Snap-In, 0.75" [19.05mm] wide bezel	
6	without Handleguard (multipole only)	yes
	Front panel Snap-In, 0.96" wide bezel	
8	without Handleguard, 1-pole 0.96" wide; (multipole only) .105" bezel overhang on all sides	yes

11 MAXIMUM APPLICATION RATING
C[8]	120/240VAC
K	120VAC

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

Notes:
1. Actuator Code:
   A: Handle tie pin spacer(s) and retainers provided un-assembled with multi-pole units.
   B: Handle location as viewed from front of breaker:
   2 pole - left pole 3 pole - center pole
   S: Handle moves to mid-position only upon electrical trip of the breaker. Available with circuit codes B, C, D, E, F, G, H and K.
   T: Handle moves to mid-position and alarm switch activates only upon electrical trip of the breaker. Available with circuit codes B & C.
2. All poles must be same polarity.
3. 3 pole units available only when 1 of 3 poles is neutral.
4. Auxiliary/Alarm Switch circuit must be same polarity as the main circuit. On multi-pole breakers, one aux. switch is supplied, mounted in the extreme right pole.
5. Screw Terminals are recommended on ratings greater than 20 amps.
6. Standard actuator colors are black and white.
7. Adapter plate with mounting centers of 2.082 inches. Available with Actuator Codes A, S and T.
8. Voltage Rating available with 2 and 3-pole breakers only.
9. Barriers supplied on multi-pole units only.

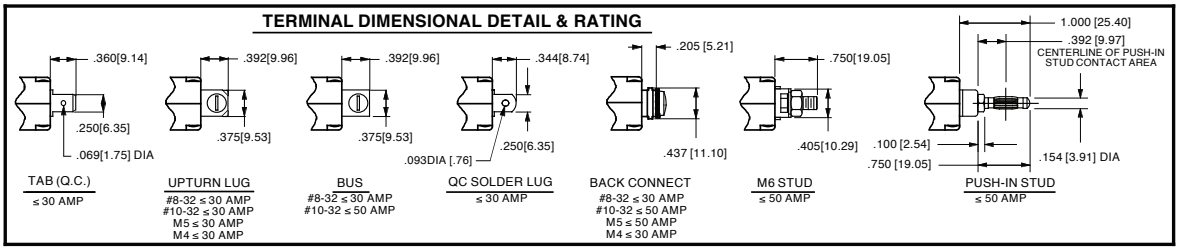
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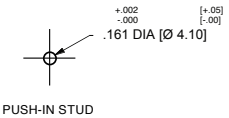
	CIRCUIT SCHEMATIC		CIRCUIT CODE	AUX SWITCH CODE	CIRCUIT SCHEMATIC		CIRCUIT CODE	AUX SWITCH CODE
	ANSI	IEC			ANSI	IEC		
	SWITCH ONLY (NO COIL)				SERIES TRIP			
SERIES TRIP (2 TERM'S.) — MAIN TERM'S. (SEE TABLE A) — 1.730 [43.94]	LINE / LOAD	LINE (NETZ) / LOAD (LAST)	A	O	LINE / LOAD	LINE (NETZ) (3) / I > / LOAD (LAST)	B C	O
SERIES TRIP W AUX SWITCH (5 TERM'S.) — .520 [13.21] — C, NO, NC — AUX. SWITCH TERM'S.	SWITCH ONLY (NO COIL) WITH AUXILIARY SWITCH LINE / C / NO / NC / LOAD	LINE (NETZ) / C / NO / NC / LOAD (LAST)	A	2 3 4	SERIES TRIP WITH AUXILIARY / ALARM SWITCH LINE / STD. AUX. SWITCH / C / NO / NC / ALARM SWITCH / LOAD	LINE (NETZ) (3) / STD. AUX. SWITCH / C / NO / NC / I > / ALARM SWITCH / LOAD (LAST)	B C	2 3 4
SHUNT TRIP (3 TERM'S.) — .390 [9.91]	SHUNT TRIP LINE / SHUNT / LOAD	LINE (NETZ) (3) / SHUNT (NEBENSCHLUSS) / I > / LOAD (LAST)	D E	0	DUAL COIL; SERIES TRIP CURRENT COIL, SHUNT TRIP VOLTAGE COIL LINE / VOLTAGE COIL / LOAD	LINE (NETZ) / I > / U > / LOAD (LAST) / VOLTAGE COIL	H	0
RELAY TRIP (4 TERM'S.) — .780 [19.81] — .390 [9.91]	RELAY TRIP LINE ① / ② LOAD / RELAY ③ ④ RELAY	RELAY (RELAIS) ③ / I > / ④ RELAY (RELAIS) — LINE (NETZ) (3) ① / ② LOAD (LAST)	F G	0	DUAL COIL; SERIES TRIP CURRENT COIL, RELAY TRIP VOLTAGE COIL LINE ① / ② / VOLTAGE COIL ③ / ④ LOAD	LINE (NETZ) ① / I > / ④ LOAD (LAST) — VOLTAGE COIL ② / U > / ③ VOLTAGE COIL	K	0

HANDLE POSITION VS. AUX/ALARM SWITCH MODE

	STANDARD C/B			MID TRIP C/B		MID TRIP C/B	
CIRCUIT BREAKER MODE	HANDLE POSITION	AUX. SWITCH MODE		HANDLE POSITION	ALARM SWITCH MODE	HANDLE POSITION	AUX. SWITCH MODE (w/o ALARM SWITCH)
OFF	30° / OFF	NC NO C		30° / OFF	NC NO C	30° / OFF	NC NO C
ON	ON / 30°	NC NO C		ON / 30°	NC NO C	ON / 30°	NC NO C
ELECTRICAL TRIP	30° / OFF	NC NO C		MID TRIP 90°	NC NO C	MID TRIP 90°	NC NO C

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.





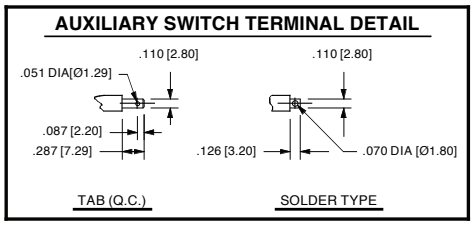


TABLE A
TIGHTENING TORQUE SPECIFICATIONS

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]

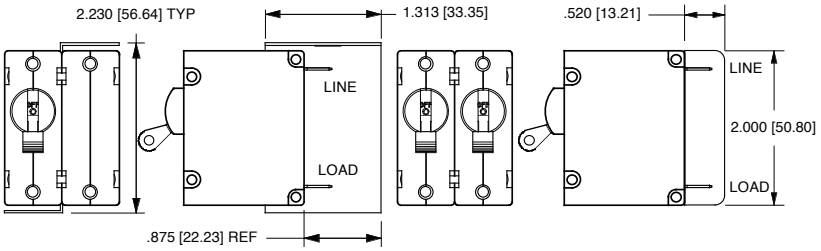
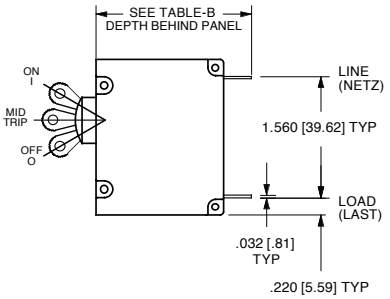
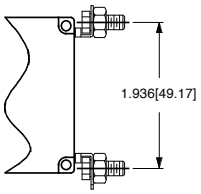


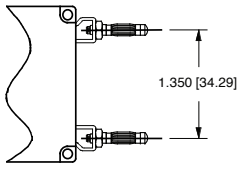
TABLE B

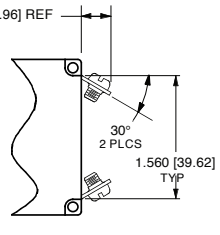
TERMINAL DESCRIPTION		DEPTH BEHIND PANEL
MAIN	TAB (Q.C.)	2.090 [53.09]
	SCREW TYPE	2.122 [53.90]
SHUNT, RELAY & DUAL COIL	TAB (Q.C.)	2.612 [66.35]
	SCREW #8-32 W/UPTURNED LUGS	2.644 [67.16]
AUX. SWITCH*	TAB (Q.C.) .110 x .020	2.537 [64.44]
	SOLDER TYPE	2.348 [59.64]

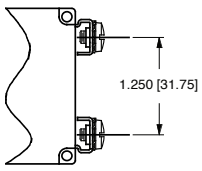
* AVAILABLE ON SERIES TRIP AND SWITCH ONLY CIRCUITS. WHEN CALLED FOR ON MULTI-POLE UNITS, ONLY ONE AUX. SWITCH IS NORMALLY SUPPLIED, AS SHOWN IN MULTI-POLE IDENTIFICATION SCHEME.

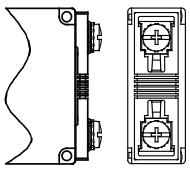






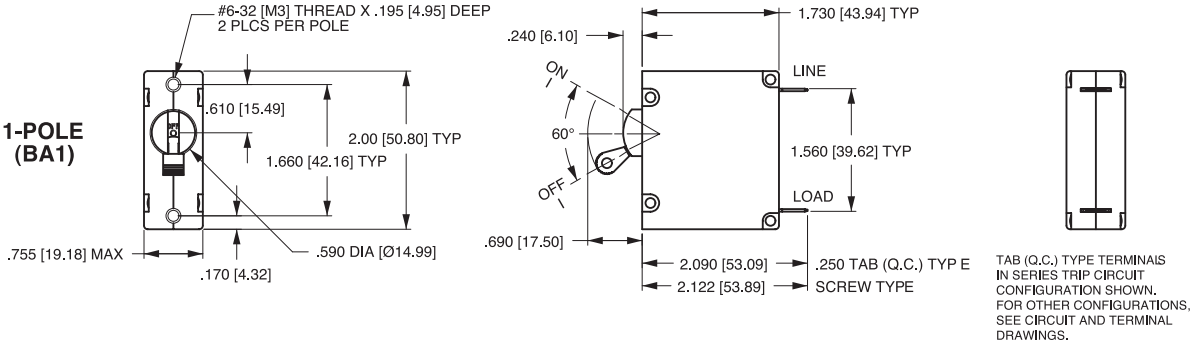




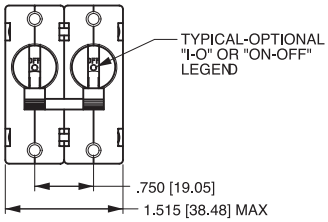


Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.020 [.51] unless otherwise specified.

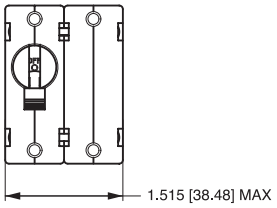
1-POLE (BA1)



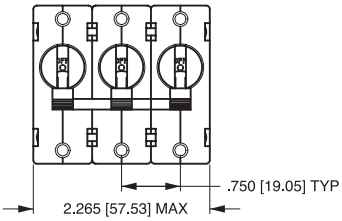
2-POLE (BA2)



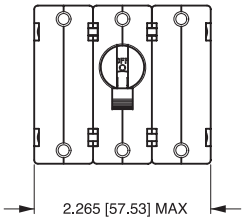
2-POLE (BB2)



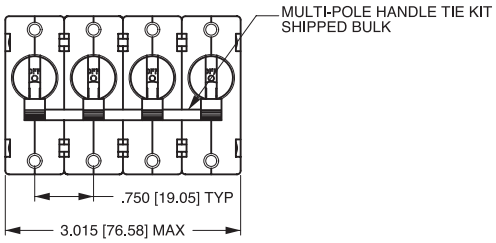
3-POLE (BA3)



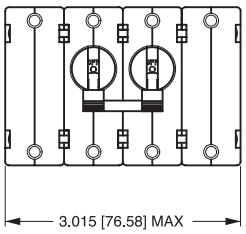
3-POLE (BB3)

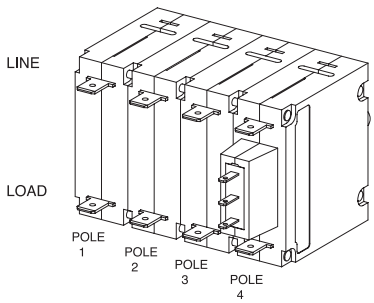


4-POLE (BA4)

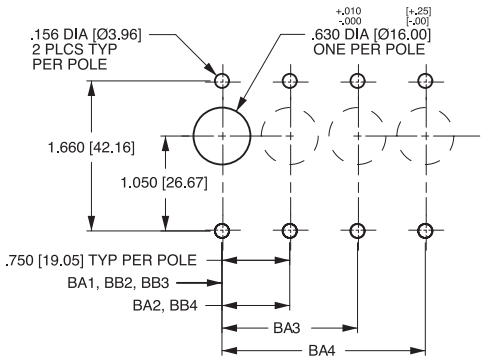


4-POLE (BB4)



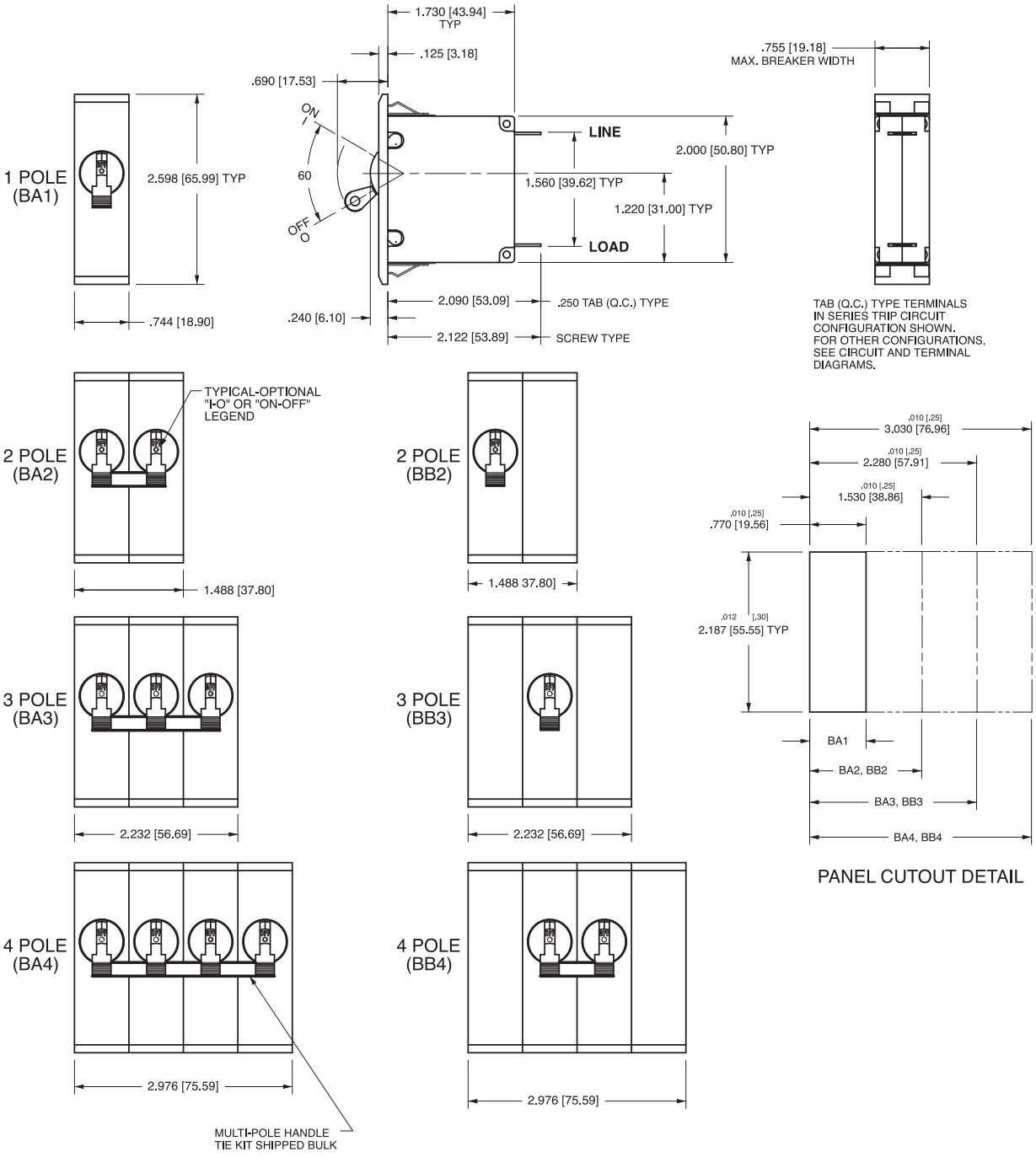


MULTI-POLE IDENTIFICATION SCHEME
AS VIEWED FROM TERMINAL END OF BREAKER.

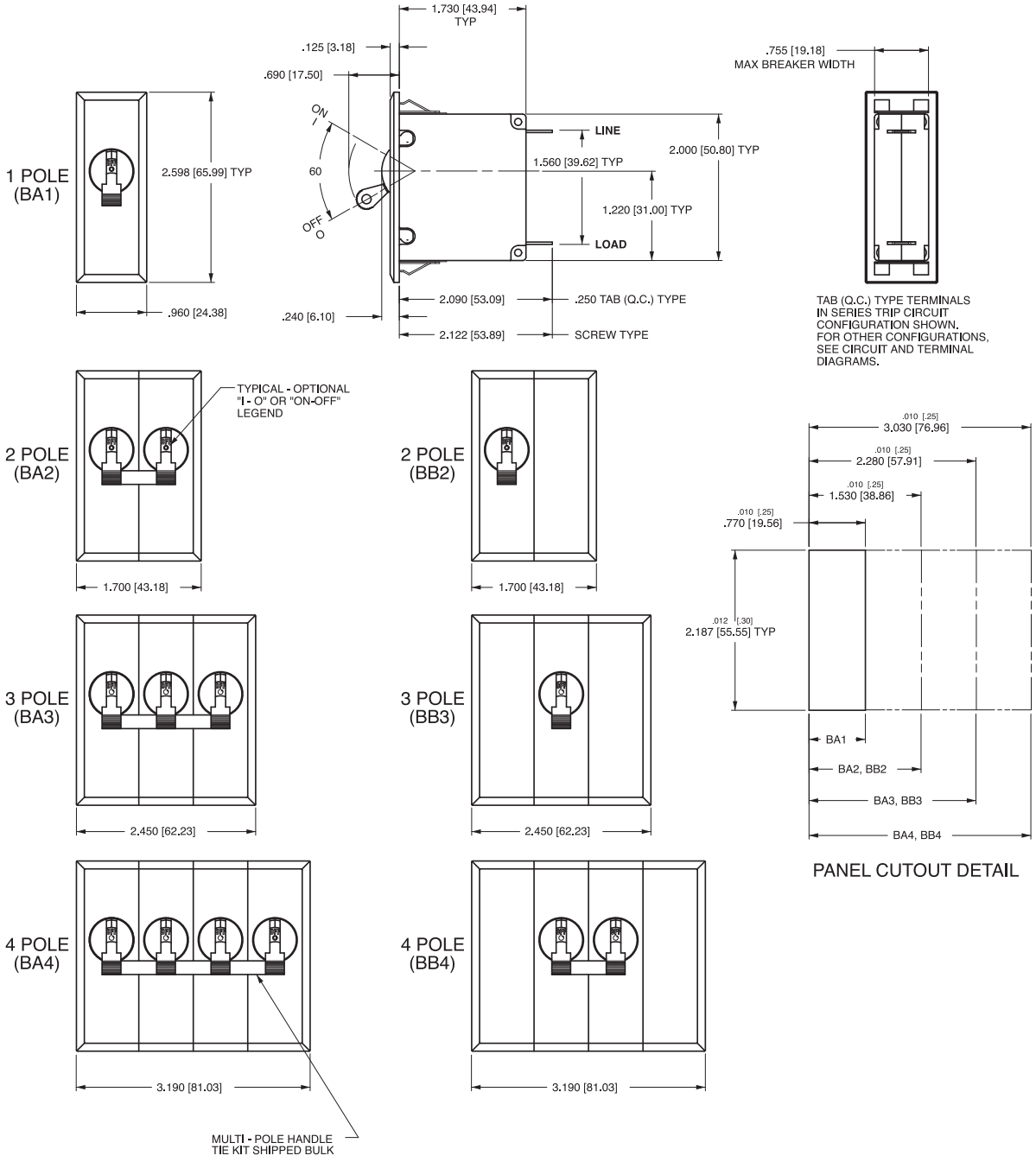


PANEL CUTOUT DETAIL
TOLERANCES ±.005 [±.12]

Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ± 0.20 [.51] unless otherwise specified.



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.



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.

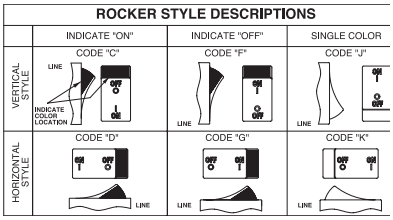
B	F	1	–	B	0	–	24	–	630	–	2	3	A	–	K	G
1 Series	2 Actuator	3 Poles		4 Circuit	5 Aux/Alarm Switch		6 Frequency & Delay		7 Current Rating		8 Terminal	9 Actuator Color	10 Mounting/ Barriers		11 Max. Appl. Rating	12 Agency Approval

1 SERIES
B

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

Single color
- **J** Vertical legend
- **K** Horizontal legend

ROCKER STYLE DESCRIPTIONS



3 POLES[1,2]
1	One	**2**	Two	**3**[3]	Three

4 CIRCUIT
B Series Trip (Current)

5 AUXILIARY/ALARM SWITCH[4]
0	w/o Aux Switch	**7**	S.P.S.T., 0.110 Q.C. Term. (Gold Contacts)
1	S.P.D.T., 0.093 Q.C. Term.		
2	S.P.D.T., 0.110 Q.C. Term.	**8**	S.P.S.T., 0.187 Q.C. Term.
3	S.P.D.T., 0.110 Solder Lug	**9**	S.P.D.T., 0.187 Q.C. Term.

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

7 CURRENT RATING (AMPERES)
CODE	AMPERES	CODE	AMPERES	CODE	AMPERES	CODE	AMPERES
210	0.100	**285**	0.850	**455**	5.500	**613**	13.000
215	0.150	**290**	0.900	**460**	6.000	**614**	14.000
220	0.200	**295**	0.950	**465**	6.500	**615**	15.000
225	0.250	**410**	1.000	**470**	7.000	**616**	16.000
230	0.300	**512**	1.250	**475**	7.500	**617**	17.000
235	0.350	**415**	1.500	**480**	8.000	**618**	18.000
240	0.400	**517**	1.750	**485**	8.500	**620**	20.000
245	0.450	**420**	2.000	**490**	9.000	**622**	22.000
250	0.500	**522**	2.250	**495**	9.500	**624**	24.000
255	0.550	**527**	2.750	**610**	10.000	**625**	25.000
260	0.600	**430**	3.000	**710**	10.500	**630**	30.000
265	0.650	**435**	3.500	**611**	11.000		
270	0.700	**440**	4.000	**711**	11.500		
275	0.750	**445**	4.500	**612**	12.000		
280	0.800	**450**	5.000	**712**	12.500		

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

9 ACTUATOR COLOR & LEGEND
Actuator or Visi-Color[7]	Marking: I-O	Marking: ON-OFF	Marking: Dual[7]	Marking Color: Single Color	Marking Color: Visi-Rocker
White	**A**	**B**	**1**	Black	White
Black	**C**	**D**	**2**	White	n/a
Red	**F**	**G**	**3**	White	Red
Green	**H**	**J**	**4**	White	Green
Blue	**K**	**L**	**5**	White	Blue
Yellow	**M**	**N**	**6**	Black	Yellow
Gray	**P**	**Q**	**7**	Black	Gray
Orange	**R**	**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 Aux. switch and/or mixed poles, and have one rocker per breaker.
2. All poles must be same polarity.
3. 3 pole units available only when1 of 3 poles is neutral.
4. On multi-pole breakers, one aux. 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.

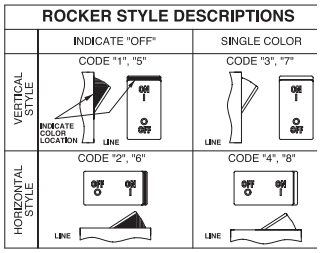
60 Johnson Avenue • Plainville, CT 06062 • Phone: (860) 793–9281 • Fax: (860) 793–9231
Email: sales@carlingtech.com • www.carlingtech.com

B	1	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[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

ROCKER STYLE DESCRIPTIONS



3 POLES[2,3]
1 One **2** Two **3**[4] Three

4 CIRCUIT
B Series Trip (Current)

5 AUXILIARY/ALARM SWITCH[4]
0	w/o Aux Switch	**7**	S.P.S.T., 0.110 Q.C. Term. (Gold Contacts)
1	S.P.D.T., 0.093 Q.C. Term.		
2	S.P.D.T., 0.110 Q.C. Term.	**8**	S.P.S.T., 0.187 Q.C. Term.
3	S.P.D.T., 0.110 Solder Lug	**9**	S.P.D.T., 0.187 Q.C. Term.

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

7 CURRENT RATING (AMPERES)
CODE	*AMPERES*						
210	0.100	**285**	0.850	**455**	5.500	**613**	13.000
215	0.150	**290**	0.900	**460**	6.000	**614**	14.000
220	0.200	**295**	0.950	**465**	6.500	**615**	15.000
225	0.250	**410**	1.000	**470**	7.000	**616**	16.000
230	0.300	**512**	1.250	**475**	7.500	**617**	17.000
235	0.350	**415**	1.500	**480**	8.000	**618**	18.000
240	0.400	**517**	1.750	**485**	8.500	**620**	20.000
245	0.450	**420**	2.000	**490**	9.000	**622**	22.000
250	0.500	**522**	2.250	**495**	9.500	**624**	24.000
255	0.550	**527**	2.750	**610**	10.000	**625**	25.000
260	0.600	**430**	3.000	**710**	10.500	**630**	30.000
265	0.650	**435**	3.500	**611**	11.000		
270	0.700	**440**	4.000	**711**	11.500		
275	0.750	**445**	4.500	**612**	12.000		
280	0.800	**450**	5.000	**712**	12.500		

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

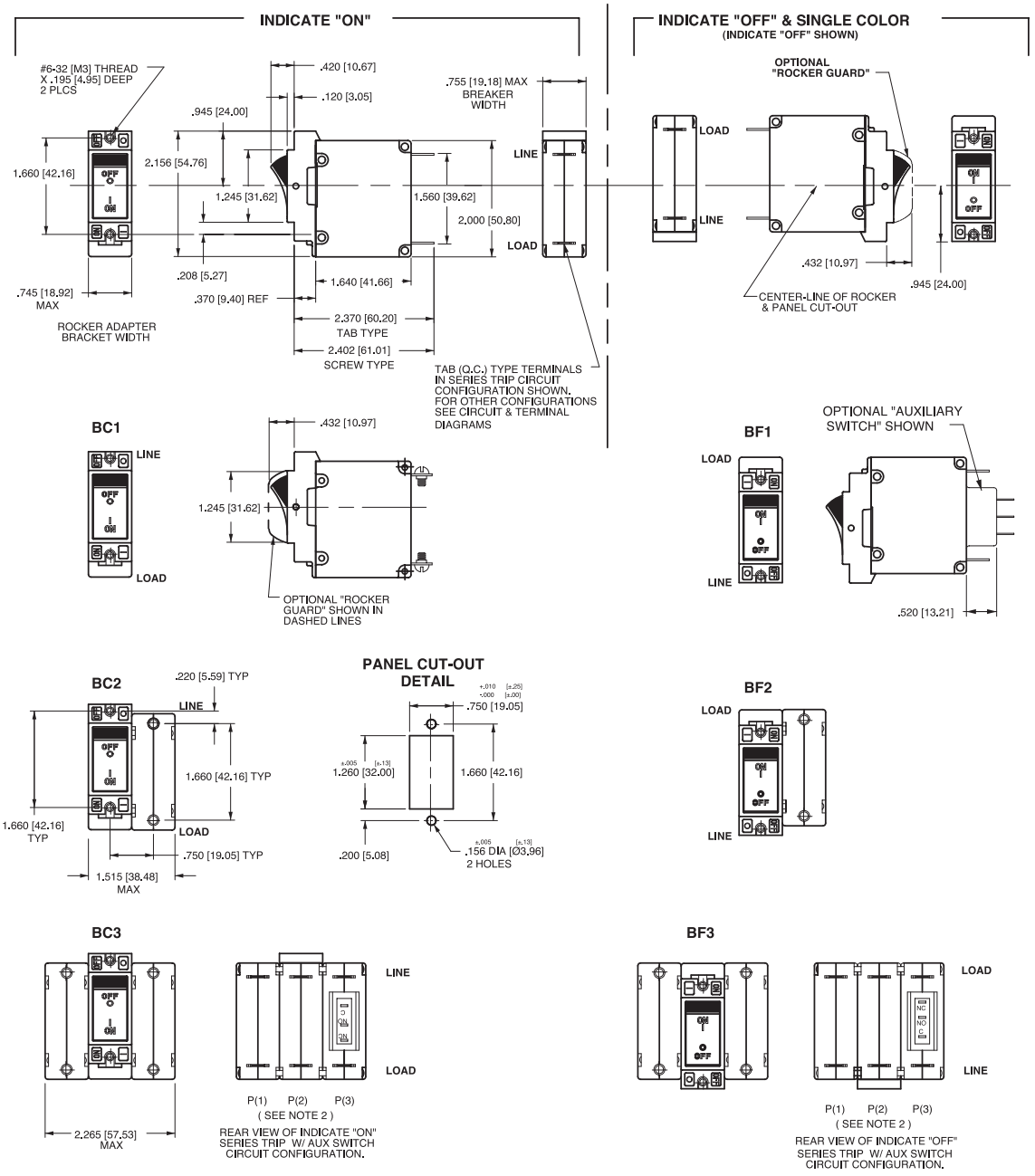
9 ACTUATOR COLOR & LEGEND
Actuator or Visi-Color[8]	**Marking: I-O**	**ON-OFF**	**Dual**[8]	**Marking Color Single Color**	**Visi-Rocker**
White	**A**	**B**	**1**	Black	White
Black	**C**	**D**	**2**	White	n/a
Red	**F**	**G**	**3**	White	Red
Green	**H**	**J**	**4**	White	Green
Blue	**K**	**L**	**5**	White	Blue
Yellow	**M**	**N**	**6**	Black	Yellow
Gray	**P**	**Q**	**7**	Black	Gray
Orange	**R**	**S**	**8**	Black	Orange

10 MOUNTING/BARRIERS[9]
	STANDARD ROCKER BEZEL,Threaded Insert, 2 per pole FLAT ROCKER ACTUATOR	BARRIERS[12]
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] 120/240VAC
K 120VAC

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 Aux. switch and/or mixed poles, and have one rocker per breaker.
3 All poles must be same polarity.
4 3 pole units available only when1 of 3 poles is neutral.
5 On multi-pole breakers, one aux. 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.



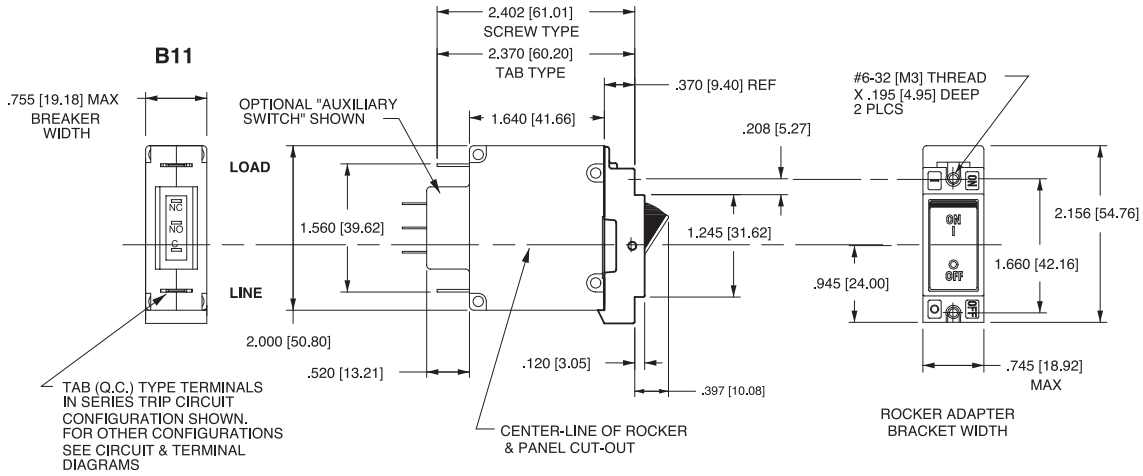
Notes:

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.

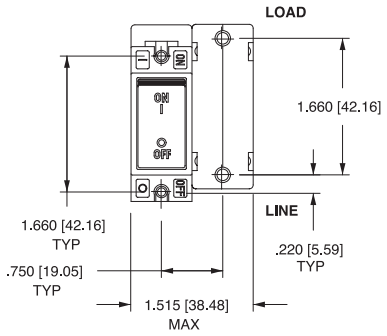
INDICATE "OFF" & SINGLE COLOR

(INDICATE "OFF" SHOWN)

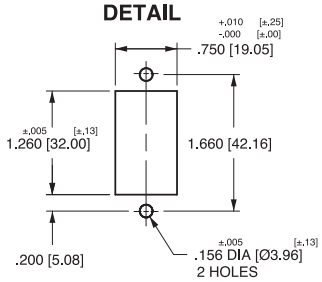
B11

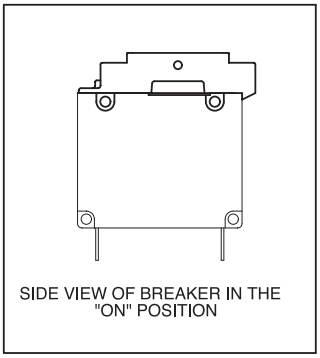


B12

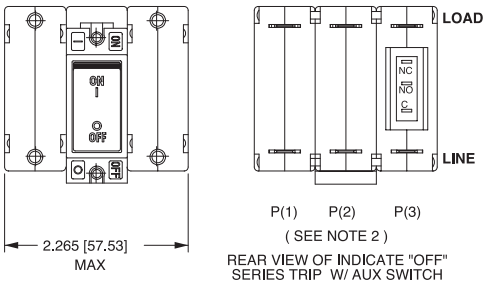


PANEL CUT-OUT DETAIL



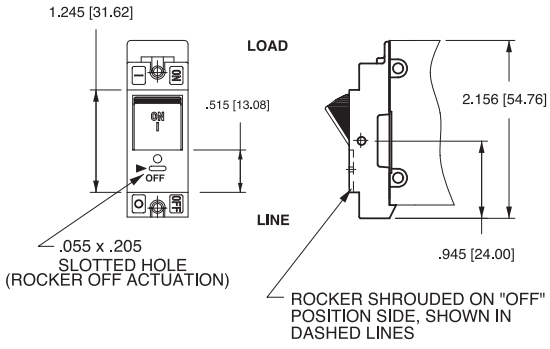


B13



PUSH-TO-RESET ACTUATOR

B51



ACTUATOR SIDE VIEW

(SURFACE CONTOURS)

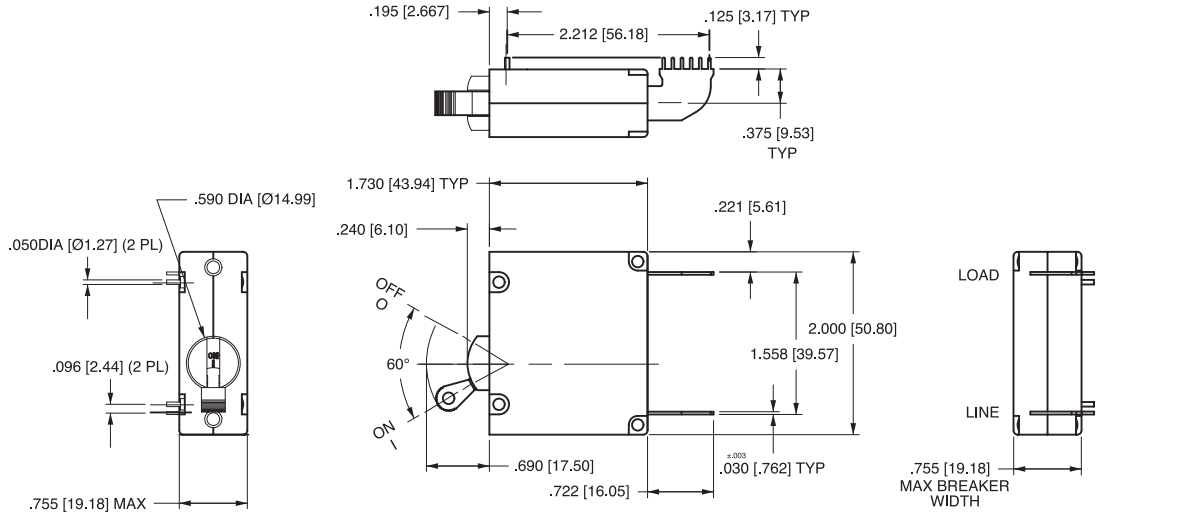


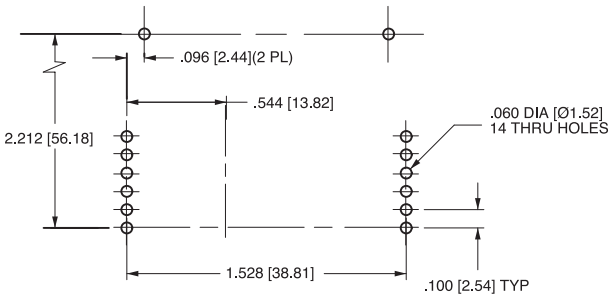
FLAT ROCKER

RECESSED OFF SIDE
ROCKER

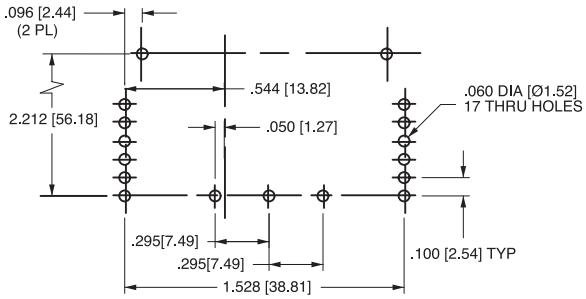
Notes:

1 All dimensions are in inches [millimeters].
2 For pole orientation with horizontal legend, rotate front view clockwise 90°.
3 Tolerance ±.020 [.51] unless otherwise specified.





P.C. FOOT PRINT



P.C. FOOT PRINT WITH AUX. SWITCH

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.

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