Compact size and well known for its proven reliability, the A-Series utilizes the hydraulic magnetic principle which provides precise operation and performance even when exposed to extremely hot and/or cold application environments. When aesthetics demand a clean contemporary and functional design, the visi-rocker two-color actuator can be specified. A rockerguard and push-to-reset bezel help prevent inadvertent actuation. A specially constructed version is now available for applications requiring CE markings. The A-series is used in many telecommunications and marine applications.

1-6 poles (handle), 1-3 poles (rocker). 0.02 - 50 amps, up to 277 VAC or 80 VDC, with a choice of time delays, terminals and actuator colors.

Agency Certifications

UL Recognized

UL Standard 1077	Component Recognition Program as Protectors, Supplementary (Guide QVNU2, File E75596)
UL Standard 508	Switches, Industrial Control (Guide NRNT2, File E148683)
UL Standard 1500	Protectors, Supplementary for Marine Electrical & Fuel Systems (Guide PEQZ2, File E75596) Ignition Protection

UL Listed

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

CSA Certified

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

VDE Certified

EN60934, VDE 0642 under File No. 10537

Electrical

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

A-SERIES TABLE A: COMPONENT SUPPLEMENTARY PROTECTOR

CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING		INTERRUPTING CAPACITY(AMPS)	
						UL / CSA	
	MAX RATING	FREQUENCY	PHASE	FULL LOAD AMPS	GENERAL PURPOSE AMPS	WITH BACKUP FUSE	WITHOUT BACKUP FUSE
SERIES	65	DC	---	31 - 50	---	---	3000
	80	DC	---	0.02 - 30	---	---	3000
	80	DC	---	---	31 - 50	---	1500
	125/250	50 / 60	1 [3]	0.02 - 30	---	---	3000
	125/250	50 / 60	1 [3]	31 - 50	---	---	2000
	250	50 / 60	1	31 - 50	---	2000 [1]	---
	250	50 / 60	1	---	31 - 50	2000 [1]	---
	250	50 / 60	3	0.02 - 20	---	5000 [1]	---
	250	50 / 60	3	21 - 30	---	2000 [1] 5000 [2]	---
	277	50 / 60	1	0.02 - 30	---	5000 [1]	---
DUAL COIL	80	DC	---	0.02 - 30	---	---	3000
	250	50 / 60	1 & 3	0.02 - 20	---	5000 [1]	---
	250	50 / 60	1 & 3	21 - 30	---	2000 [1] 5000 [2]	---
	277	50 / 60	1	0.02 - 30	---	5000 [1]	---
SHUNT	80	DC	---	0.02 - 30	---	---	3000
	250	50 / 60	1 & 3	0.02 - 20	---	5000 [1]	---
	250	50 / 60	1 & 3	21 - 30	---	2000 [1] 5000 [2]	---
	277	50 / 60	1	0.02 - 30	---	5000 [1]	---
RELAY	80	DC	---	0.02 - 30	---	---	3000
	250	50 / 60	1 & 3	0.02 - 20	---	5000 [1]	---
	250	50 / 60	1 & 3	21 - 30	---	2000 [1] 5000 [2]	---
	277	50 / 60	1	0.02 - 30	---	5000 [1]	---
SWITCH ONLY	65	DC	---	0.02 - 50	---		
	80	DC	---	0.02 - 30	---		
	250	50 / 60	1	31 - 50	---		
	250	50 / 60	1	---	31 - 50		
	250	50 / 60	3	0.02 - 50	---		
	277	50 / 60	1	0.02 - 30	31 - 50		

Notes for Table A:

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 80 A 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

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

A-SERIES TABLE B: COMPONENT SUPPLEMENTARY PROTECTOR

CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING		INTERRUPTING CAPACITY (AMPS)						
						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 FUSE	(Inc) WITH BACKUP FUSE	(Icn) WITHOUT BACKUP FUSE	VDE CONSTRUCTION NOTES
SERIES	80	DC	---	0.10 - 30	---	---	3000	3000	1500	3000	1500	Handle Version 1 Pole Only
	80	DC	---	31 - 50	31 - 50	---	1500	3000	1500	3000	1500	Handle Version 1 Pole Only
	80	DC	---	0.10 - 30	---	---	3000	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	80	DC	---	31 - 32	31 - 32	---	1500	3000	1500	3000	1500	Rocker Version 2 Pole Only
	80	DC	---	31 - 50	31 - 50	---	1500	3000	1500	3000	1500	Rocker Version 1 Pole Only
	250	50/60	1 & 3	0.10 - 20	---	5000 [2]	3000	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1 & 3	21 - 30	---	2000 [2] 5000 [3]	---	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1	0.10 - 30	---	---	2000	3000	1500	5000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1	31 - 50	---	---	2000	---	---	5000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1	31 - 32	---	2000 [2]	---	3000	1500	5000	1500	Rocker Version 2 Poles Only
DUAL COIL	80	DC	---	0.10 - 30	---	---	3000	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1 & 3	0.10 - 20	---	5000 [2]	---	3000	1500	3000	1500	
	250	50/60	1 & 3	21 - 30	---	2000 [2] 5000 [3]	---	3000	1500	3000	1500	
	250	50/60	1	31 - 50	31 - 50	---	2000	---	---	5000	1500	Rocker Version 1 - 3 Poles
SHUNT	80	DC	---	0.10 - 30	---	---	3000	3000	1500	3000	1500	Handle Version 1 Pole Only
	80	DC	---	0.10 - 30	---	---	3000	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1 & 3	0.10 - 20	---	5000 [2]	---	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1 & 3	21 - 30	---	2000 [2] 5000 [3]	---	3000	1500	3000	1500	Rocker Version 1 - 3 Poles
	250	50/60	1	31 - 50	31 - 50	---	2000	---	---	5000	1500	Rocler Version 1 - 3 Poles

Notes for Table B:
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 2, 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 (Guide PEQZ2, File E75596). Ignition Protected per UL 1500. UL Classified Small Craft Electrical Devices, Marine in accordance with ISO 8846 (Guide UZMK, File MQ1515) as Marine Supplementary Protectors.

A-SERIES TABLE C: UL1500 (MARINE IGNITION PROTECTED)

CIRCUIT CONFIGURATION	VOLTAGE			CURRENT RATING	INTERRUPTING CAPACITY (AMPS)
	MAX RATING	FREQ.	PHASE	FULL LOAD AMPS	WITHOUT BACKUP FUSE
SERIES	14 [1]	DC	---	0.02 - 50	5000
	65	DC	---	0.02 - 50	3000
	125 / 250	50 / 60	1 [2]	0.02 - 50	1500
	250	50 / 60	1	0.02 - 30	1000

Notes for Table C:
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 (Guide DITT, File E189195), under UL489A.

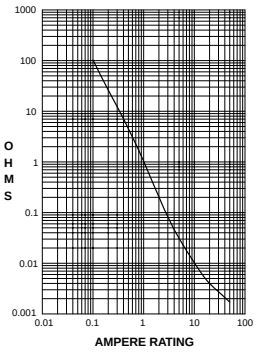
A-SERIES TABLE D: UL489A (COMMUNICATIONS EQUIPMENT)

CIRCUIT CONFIGURATION	VOLTAGE		CURRENT RATING	INTERRUPTING CAPACITY (AMPS)
	MAX RATING	FREQUENCY	UL GENERAL PURPOSE AMPS	WITHOUT BACKUP FUSE
SERIES	80	DC	.10 - 50	5000

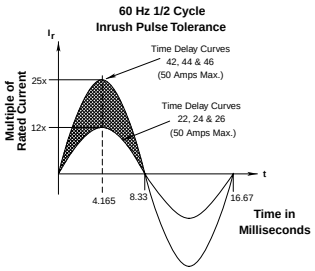
Electrical

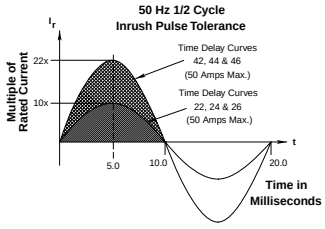
Maximum Voltage	277VAC 50/60 Hz, 80VDC
Current Ratings	Standard current coils: 0.100, 0.250, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, 50.0. Other ratings available - consult ordering scheme.
Standard Voltage Coils	DC-6V, 12V; AC-120V, Other ratings available, consult ordering scheme.
Auxiliary Switch Rating	SPDT; 10.1 A - 250VAC, 1.0 A-65VDC/0.5 A - 80 VDC, 0.1A - 125VAC (with gold contacts).
Insulation Resistance	Minimum: 100 Megohms at 500 VDC
Dielectric Strength	UL, CSA - 1500V 60 Hz for one minute between all electrically isolated terminals. A-Series rocker circuit breakers comply with the 8mm spacing & 3750V dielectric requirements from hazardous voltage to operator accessible surfaces per EN 60950 and VDE 0805.
Resistance, Impedance	Values from Line to Load Terminal - based on Series Trip Circuit Breaker.

RESISTANCE, IMPEDANCE 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%





Mechanical

Endurance	10,000 ON-OFF operations @ 6 per minute; with rated Current & Voltage.
Trip Free	All A-Series Circuit Breakers will trip on overload, even when the actuator is forcibly held in the ON position.
Trip Indication	The operating actuator moves positively to the OFF position when an overload causes the circuit breaker to trip. When mid-trip handle is specified, the handle moves to the mid position on electrical trip of the circuit breaker. When mid-trip handle with alarm switch is specified, the handle moves to the mid position & the alarm switch actuates when the circuit breaker is electrically tripped.

Physical

Number of Poles	1 - 6 Poles (handle) and 1-3 poles (rocker) at 30 Amps or less. 1 and 2 poles at 31 Amps thru 50 Amps.
Internal Circuit Configurations	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; ten 24-hour cycles @ + 25°C to +65°C, 80-98% RH.56 days @ +85°C, 85% 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

A	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

A

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

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

4 CIRCUIT

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

5 AUXILIARY/ALARM SWITCH[5]

0	w/o Aux Switch	**5**	S.P.S.T., 0.093 Q.C. Term.(Gold Contacts)
1	S.P.D.T., 0.093 Q.C. Term.	**6**	S.P.S.T., 0.139 Solder Lug
2	S.P.D.T., 0.110 Q.C. Term.	**7**	S.P.S.T., 0.110 Q.C. Term.(Gold Contacts)
3	S.P.D.T., 0.139 Solder Lug	**8**	S.P.S.T., 0.187 Q.C. Term.
4	S.P.D.T., 0.110 Q.C. Term. (Gold Contacts)	**9**	S.P.D.T., 0.187 Q.C. Term.

6 FREQUENCY & DELAY

03	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 Short0	**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

7 CURRENT RATING (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 (NOMINAL 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.)	**E**[11]	Screw M4 (Bus Type)
2	Screw 8-32 w/upturned lugs	**F**	Screw M5 w/upturned lugs and 30° bend
3[11]	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[11]	Screw 10-32 (Bus Type)	**L**[12]	0.250 Q.C./ Solder Lug
6	Screw 8-32 w/upturned lugs and 30° bend	**M**[11]	M6 Threaded Stud
7	Screw 8-32 (Bus Type) and 30° bend	**Q**	Push-In Stud
8	Screw 10-32 w/upturned lugs and 30° bend	**R**	Screw M4 w/upturned lugs and 30° bend
9	Screw 10-32 (Bus Type) and 30° bend	**T**[11]	Screw M4 (Bus Type) and 30° bend
B	Screw M5 w/upturned lugs	**P**[13]	Printed Circuit Board Terminals
C	Screw M4 w/upturned lugs	**S**[13]	Push-On 0.110 Tab (Q.C.)

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
Black (short handle)[14]	**T**	**U**	**9**	White

10 MOUNTING/BARRIERS

	MOUNTING STYLE	BARRIERS
	Threaded Inserts, 2 per pole	
1	6-32 x 0.195 inches	no
A	6-32 X 0.195 inches	yes
2	ISO M3 x 5mm	no
B	ISO M3 x 5mm	yes
	Front panel Snap-In, 0.75" wide bezel	
5	without Handleguard	no
6	without Handleguard	yes
	Front panel Snap-In, 0.96" wide bezel	
7	without Handleguard on 1-pole units; .105 " bezel overhang/ side on multipole units	no
8	without Handleguard on 1-pole units; .105 " bezel overhang/side on multipole units	yes

11 AGENCY APPROVAL

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

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 & Switch Only circuits: ≤ 30A - supplied with standard half shells. 35-50A - supplied with extended boat (B-Style) half shells. On multi-pole breakers, one auxilary 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 Certified to 50 amps.

8 VDE Certification available with single pole breakers with DC Delay only. UL Recognition and CSA Certification 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, M and Q..

10 Terminal Code 1: VDE Certification up to 25 amps and UL Recognition and CSA Certification 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 Terminal Code L: VDE Cert. available up to 12 amps. UL Rec. & CSA Cert. 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 Certification, 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 Certification with Circuit Codes A, B and C.

14 Single pole only.

A-Series Handle UL489A – Ordering Scheme

A	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
A

2 ACTUATOR[1]
A	Handle, one per pole
S	Mid-Trip Handle, one per pole
T	Mid-Trip Handle, one per pole & Alarm Switch

3 POLES[2]
1 One **2** Two **3** Three **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., 0.139 Solder Lug		

6 FREQUENCY & DELAY
11	DC Ultra Short	**52**[3]	DC, Short,Hi-Inrush
12	DC Short	**54**[3]	DC, Medium, Hi-Inrush
14	DC Medium	**56**[3]	DC, Long, Hi-Inrush
16	DC Long		

7 CURRENT RATING (AMPERES)
210	0.100	**415**	1.500	**710**	10.500
215	0.150	**517**	1.750	**611**	11.000
220	0.200	**420**	2.000	**711**	11.500
225	0.250	**522**	2.250	**612**	12.000
230	0.300	**527**	2.750	**712**	12.500
235	0.350	**430**	3.000	**613**	13.000
240	0.400	**435**	3.500	**614**	14.000
245	0.450	**440**	4.000	**615**	15.000
250	0.500	**445**	4.500	**616**	16.000
255	0.550	**450**	5.000	**617**	17.000
260	0.600	**455**	5.500	**618**	18.000
265	0.650	**460**	6.000	**620**	20.000
270	0.700	**465**	6.500	**622**	22.000
275	0.750	**470**	7.000	**624**	24.000
280	0.800	**475**	7.500	**625**	25.000
285	0.850	**480**	8.000	**630**	30.000
290	0.900	**485**	8.500	**635**[4]	35.000
295	0.950	**490**	9.000	**640**[4]	40.000
410	1.000	**495**	9.500	**645**[4]	45.000
512	1.250	**610**	10.000	**650**[4]	50.000

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

9 ACTUATOR COLOR
	LEGEND 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
Black (short handle)[9]	**T**	**9**	White

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	yes
2	ISO M3 x 5mm	no
B	ISO M3 x 5mm	yes
	Front panel Snap-In, 0.75" wide bezel	
5	without Handleguard	no
6	without Handleguard	yes
	Front panel Snap-In, 0.96" wide bezel	
7	without Handleguard on 1-pole units; .105 " bezel overhang/ side on multipole units	no
8	without Handleguard on 1-pole units; .105 " bezel overhang/ side on multipole units	yes

11 MAXIMUM APPLICATION RATING
M	80 DC

12 AGENCY APPROVAL
T	UL489A LISTED
K	UL489A LISTED, VDE 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 Certified to 30 amps. UL489A Listed to 50 amps.
4. VDE Certification available with single pole breakers only. UL489A Listing available with one and two pole breakers.
5. Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9 G, H, M and Q.
6. Terminal Code 1 (Push-On) available up to 25 amps with VDE Certification and 30 amps with UL489A Listing, but is not recommended over 20 amps.
7. Terminal Codes 3, 5 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.
8. 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.
9. Single pole only.

A	A	3	-	B	0	-	14	-	450	-	1	A	1	-	P
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
A

2 ACTUATOR[1]
A	Handle, one per pole
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)	**D**[3]	Shunt Trip (Current)
B	Series Trip (Current)	**E**[3]	Shunt Trip (Voltage)
C	Series Trip (Voltage)	**H**[3,4]	Dual Coil with Shunt Trip Voltage Coil

5 AUXILIARY/ALARM SWITCH[5]
0	w/o Aux Switch	**4**	S.P.D.T., 0.110 Q.C. Term. (Gold Contacts)
2	S.P.D.T., 0.110 Q.C. Term.		
3	S.P.D.T., 0.139 Solder Lug		

6 FREQUENCY & DELAY
03	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 Short0	**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

7 CURRENT RATING (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**[8]	35.000
270	0.700	**440**	4.000	**711**	11.500	**640**[8]	40.000
275	0.750	**445**	4.500	**612**	12.000	**645**[8]	45.000
280	0.800	**450**	5.000	**712**	12.500	**650**[8]	50.000

OR VOLTAGE COIL (NOMINAL 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.)	**B**	Screw M5 w/upturned lugs
2	Screw 8-32 w/upturned lugs	**C**	Screw M4 w/upturned lugs
3[11]	Screw 8-32 (Bus Type)	**E**[11]	Screw M4 (Bus Type)
4	Screw 10-32 w/upturned lugs	**F**	Screw M5 w/upturned lugs and 30° bend
5[11]	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	**M**[11]	M6 Threaded Stud
8	Screw 10-32 w/upturned lugs and 30° bend	**Q**	Push-In Stud
9	Screw 10-32 (Bus Type) and 30° bend	**R**	Screw M4 w/upturned lugs and 30° bend
		T[11]	Screw M4 (Bus Type) and 30° bend

9 ACTUATOR COLOR & LEGEND
Actuator Color	I-O	Dual	Legend Color
White	**A**	**1**	Black
Black	**C**	**2**	White
Red	**F**	**3**	White
Green	**H**	**4**	White
Blue	**K**	**5**	White
Yellow	**M**	**6**	Black
Gray	**P**	**7**	Black
Orange	**R**	**8**	Black

10 MOUNTING/BARRIERS
	MOUNTING STYLE	BARRIERS
	Threaded Inserts, 2 per pole	
1	6-32 x 0.195 inches	no
A	6-32 X 0.195 inches	yes
2	ISO M3 x 5mm	no
B	ISO M3 x 5mm	yes
	Front panel Snap-In, 0.75" wide bezel	
5	without Handleguard	no
6	without Handleguard	yes
	Front panel Snap-In, 0.96" wide bezel	
7	without Handleguard on 1-pole units; .105 " bezel overhang/ side on multipole units	no
8	without Handleguard on 1-pole units; .105 " bezel overhang/side on multipole units	yes

11 AGENCY APPROVAL
P	TUV Certified, UL Recognized & CSA Certified
Q	UL Rec. STD 1077, UL Rec. 1500 (ignition protected), & CSA 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. Available with circuit codes B, C, D, E, and H.
   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 when tied to a protected pole (Circuit Code B, C, D or H.), For .01 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. On multi-pole breakers, one auxilary 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, 20 & 30.
7. Available with Circuit Codes B & D only and up to 30 amps.
8. Available up to two poles with AC or DC delays.
9. Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9, G and H.
10. Terminal Code 1: TUV Certification up to 30 amps, but not recommended over 20 amps.
11. Terminal Codes 3, 5 , 7, 9, E, G and H (Bus Type) are supplied with Lock Washers. These breakers are ONLY TUV Certified when the washers are used. Terminal Code M (M6 Threaded Stud) with TUV is supplied with lock and flat washers.

A-Series Rocker UL Recognized – Ordering Scheme

A	F	1	-	B	0	-	24	-	630	-	2	3	1	-	D
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
A

2 ACTUATOR [1]

Two Color Visi-Rocker

C	Indicate ON, vertical legend
D	Indicate ON, horizontal legend
E	Indicate ON, no legend
F	Indicate OFF, vertical legend
G	Indicate OFF, horizontal legend
H	Indicate OFF, no legend

Push-To-Reset, Visi-Rocker

N	Indicate OFF, vertical legend
O	Indicate OFF, horizontal legend
P	Indicate OFF, no legend

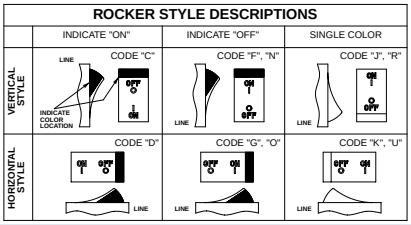
Single color

J	Vertical legend
K	Horizontal legend
L	No legend

Push-To-Reset , Single color

R	Vertical legend
U	Horizontal legend

ROCKER STYLE DESCRIPTIONS



3 POLES [2]

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

4 CIRCUIT

A [3]	Switch Only (No Coil)
B	Series Trip (Current)
C	Series Trip (Voltage)
D [4]	Shunt Trip (Current)
E [4]	Shunt Trip (Voltage)
F [4]	Relay Trip (Current)
G [4]	Relay Trip (Voltage)
H [4, 5]	Dual Coil with Shunt Trip Voltage Coil
K [4, 5]	Dual Coil with Relay Trip Voltage Coil

5 AUXILIARY/ALARM SWITCH [6, 7]

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., 0.139 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., 0.139 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	DC 50/60Hz, Switch Only
10 [8]	DC Instantaneous
11	DC Ultra Short
12	DC Short
14	DC Medium
16	DC Long
20 [8]	50/60Hz Instantaneous
21	50/60Hz Ultra Short
22	50/60Hz Short
24	50/60Hz Medium
26	50/60Hz Long
30	DC, 50/60Hz Instantaneous
31	DC, 50/60Hz Ultra Short
32	DC, 50/60Hz Short
34	DC, 50/60Hz Medium
42 [9]	50/60Hz Short, Hi-Inrush
44 [9]	50/60Hz Medium, Hi-Inrush
46 [9]	50/60Hz Long, Hi-Inrush
52 [9]	DC, Short,Hi-Inrush
54 [9]	DC,Medium, Hi-Inrush
56	DC, Long, Hi-Inrush

7 CURRENT RATING (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** [10]	35.000
210	0.100	**512**	1.250	**495**	9.500	**640** [10]	40.000
215	0.150	**415**	1.500	**610**	10.000	**645** [10]	45.000
220	0.200	**517**	1.750	**710**	10.500	**650** [10]	50.000

***OR* VOLTAGE COIL (NOMINAL RATED VOLTAGE)**

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 [11]

1 [12]	Push-On 0.250 Tab (Q.C.)
2	Screw 8-32 w/upturned lugs
3 [13]	Screw 8-32 (Bus Type)
4	Screw 10-32 w/upturned lugs
5 [13]	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 [13]	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)
L [14]	0.250 Q.C./ Solder Lug
M [13]	M6 Threaded Studs
P [15]	Printed Circuit Board Terminals
Q	Push-In Stud
R	Screw M4 w/upturned lugs and 30° bend
S [16]	Push-On 0.110 Tab (Q.C.)
T	Screw M4 (Bus Type) and 30° bend

9 ACTUATOR COLOR & LEGEND

Actuator or Visi-Color [17]	*Marking:* I-O	ON-OFF	Dual/None	*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 [18]

		BARRIERS
	STANDARD ROCKER BEZEL,*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 (multi-pole units only)	yes
	ROCKERGUARD & PUSH-TO-RESET BEZEL,*Threaded Insert, 2 per pole*	
3	6-32 x 0.195 inches	no
C	6-32 x 0.195 inches (multi-pole units only)	yes
4	ISO M3 x 5mm	no
D	ISO M3 x 5mm (multi-pole units only)	yes
	FRONT PANEL SNAP-IN BRACKET, *0.744" wide bezel*	
8	without Rockerguard (multi-pole units only)	no
H	with Rockerguard (multi-pole units only)	yes
	FRONT PANEL SNAP-IN BRACKET, *0.96" wide bezel*	
9	without Rockerguard (single pole units only)	no
J	with Rockerguard (single pole units only)	yes

11 AGENCY APPROVAL

C	UL Recognized & CSA Certified
D	VDE Certified, UL Recognized & CSA Certified
E	TUV Certified, UL Recognized & CSA Certified
I	UL Rec. STD 1077, UL Rec. 1500 (ignition protected), & CSA 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. Switch Only circuits, rated up to 50 amps & 6 poles, are 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.
4. Available with terminal Codes 1, 2 and 3. Current Rating limited to 30 amps maximum.
5. Consult factory for 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.
6. Auxiliary Switch breakers with Series Trip & Switch Only circuits: ≤ 30A, are supplied with standard half shells. 30-50A are supplied with extended boat (B-Style) half shells.
7. On multi-pole breakers, one aux. switch is supplied, mounted in the extreme right pole, per figure A, & is supplied with boat (B-style) half shells.
8. Separate pole type voltage coils not rated for continuous duty. Available only with delay codes 10 and 20.
9. Available with Circuit Codes B & D only. VDE Certified to 30 amps. UL Recognized and CSA Certified to 50 amps.
10. Series Trip current ratings: VDE Certification available with single pole breakers with DC Delay only. UL Recognition & CSA Certification available in one and two pole breakers.
11. Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9, G, H, M and Q.
12. Terminal Code 1: VDE Certification up to 25 amps and UL Recognition and CSA Certification up to 30 amps, but not recommended over 20 amps.
13. Terminal Codes 3, 5 E & H (Bus Type) with VDE, are supplied with Lock Washers; 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.
14. VDE Cert. available up to 12 amps. UL Rec. & CSA Cert. available up to 30 amps.
15. 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 Certification, 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 Certification with Circuit Codes A, B and C.
16. Terminal Code S used on voltage coil circuit constructions only.
17. Color shown is visi and legend with remainder of rocker black.
18. Legend on Push-to-reset bezel/shroud is white when single color rocker is ordered. Dual = ON-OFF/I-O legend with actuator codes C - G, and J, K, N, O, R, & U. None = no legend with actuator codes H, L, P, V. Rockerguard available with actuator codes C - L. Push-to-reset available with actuator codes N, O, P, R, U, V.

A	F	1	-	B	0	-	14	-	450	-	1	3	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

A

2 ACTUATOR [1]

Two Color Visi-Rocker

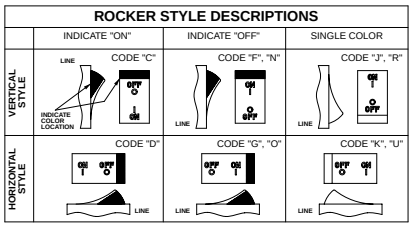
C Indicate ON, vertical legend
D Indicate ON, horizontal legend
F Indicate OFF, vertical legend
G Indicate OFF, horizontal legend

Single color

J Vertical legend
K Horizontal legend

Push-To-Reset , Single color

R Vertical legend
U Horizontal legend



3 POLES[2]

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

4 CIRCUIT

B Series Trip (Current)

5 AUXILIARY/ALARM SWITCH

0	w/o Aux Switch	**7**	S.P.S.T., 0.110 Q.C. Term.(Gold Contacts)
1[3]	S.P.D.T., 0.093 Q.C. Term.	**8**	S.P.S.T., 0.187 Q.C. Term.
2[3]	S.P.D.T., 0.110 Q.C. Term.	**9**	S.P.D.T., 0.187 Q.C. Term.
3[3]	S.P.D.T., 0.139 Solder Lug		

6 FREQUENCY & DELAY

11	DC Ultra Short	**52**[4]	DC, Short,Hi-Inrush
12	DC Short	**54**[4]	DC, Medium, Hi-Inrush
14	DC Medium	**56**[4]	DC, Long, Hi-Inrush
16	DC Long		

7 CURRENT RATING (AMPERES)

210	0.100	**415**	1.500	**710**	10.500
215	0.150	**517**	1.750	**611**	11.000
220	0.200	**420**	2.000	**711**	11.500
225	0.250	**522**	2.250	**612**	12.000
230	0.300	**527**	2.750	**712**	12.500
235	0.350	**430**	3.000	**613**	13.000
240	0.400	**435**	3.500	**614**	14.000
245	0.450	**440**	4.000	**615**	15.000
250	0.500	**445**	4.500	**616**	16.000
255	0.550	**450**	5.000	**617**	17.000
260	0.600	**455**	5.500	**618**	18.000
265	0.650	**460**	6.000	**620**	20.000
270	0.700	**465**	6.500	**622**	22.000
275	0.750	**470**	7.000	**624**	24.000
280	0.800	**475**	7.500	**625**	25.000
285	0.850	**480**	8.000	**630**	30.000
290	0.900	**485**	8.500	**635**[5]	35.000
295	0.950	**490**	9.000	**640**[5]	40.000
410	1.000	**495**	9.500	**645**[5]	45.000
512	1.250	**610**	10.000	**650**[5]	50.000

8 TERMINAL[6]

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

9 ACTUATOR COLOR & LEGEND

Actuator or Visi-Color	***Marking:***		***Marking Color:***	
Color:	**ON-OFF**	**Single Color Dual/None**	**Rocker/Handle**	**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

	STANDARD ROCKER BEZEL	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 (multi-pole units only)	yes
	ROCKERGUARD & PUSH-TO-RESET BEZEL	
	Threaded Insert, 2 per pole	
3	6-32 x 0.195 inches	no
C	6-32 x 0.195 inches (multi-pole units only)	yes
4	ISO M3 x 5mm	no
D	ISO M3 x 5mm (multi-pole units only)	yes
	FRONT PANEL SNAP-IN BRACKET, *0.744" [18.90mm] wide bezel*	
8	without Rockerguard (multi-pole units only)	no
H	with Rockerguard (multi-pole units only)	yes
	FRONT PANEL SNAP-IN BRACKET, *0.96" [24.48mm] wide bezel*	
9	without Rockerguard (single pole units only)	no
J	with Rockerguard (single pole units only)	yes

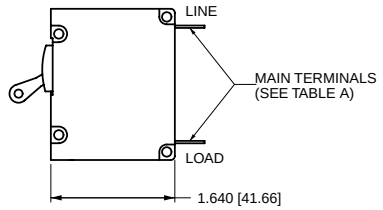
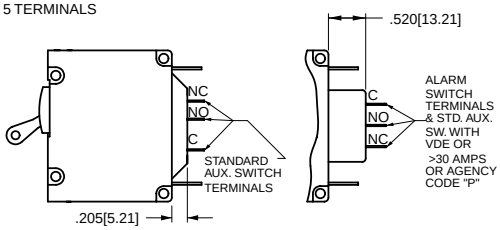
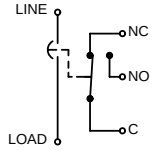
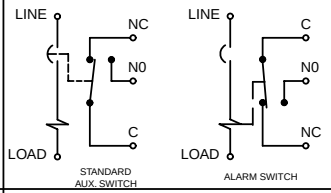
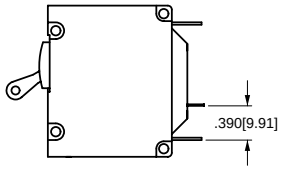
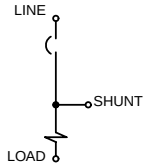
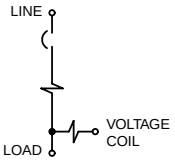
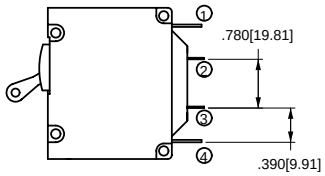
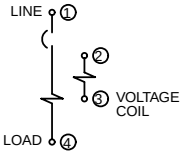
11 MAXIMUM APPLICATION RATING

M 80 DC

12 AGENCY APPROVAL

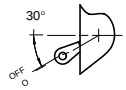
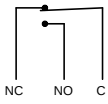
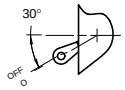
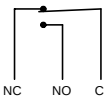
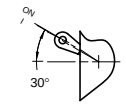
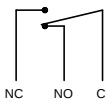
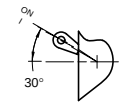
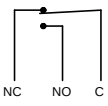
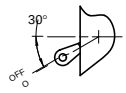
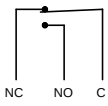
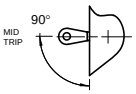
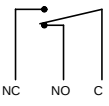
T UL489A LISTED
K UL489A LISTED, VDE CERTIFIED

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 Auxiliary Switch breakers with Series Trip & Switch Only circuits: ≤ 30A, are supplied with standard half shells. 30-50A are supplied with extended boat (B-Style) half shells.
4 VDE Certified to 30 amps. UL489A Listed to 50 amps.
5 VDE Certification available with single pole breakers only. UL489A Listing available with one and two pole breakers.
6 Screw Terminals are recommended on ratings greater than 20 amps. Ratings over 30 amps are only available with Terminal Codes 5, 9, G, H, M and Q.
7 Terminal Code 1 (Push-On) available up to 25 amps with VDE Certification and 30 amps with UL489A Listing, but is not recommended over 20 amps.
8 Terminal Codes 3, 5 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.
9 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.

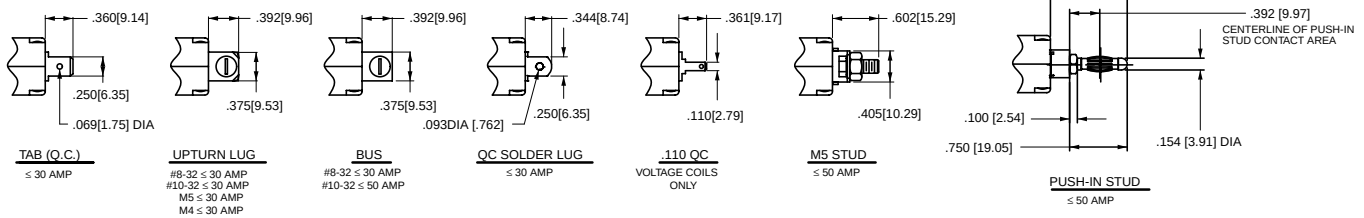
CIRCUIT BREAKER PROFILE	CIRCUIT SCHEMATIC ANSI SWITCH ONLY (NO COIL)	CIRCUIT CODE	AUX SWITCH CODE	CIRCUIT SCHEMATIC ANSI SERIES TRIP	CIRCUIT CODE	AUX SWITCH CODE
2 TERMINALS 		A	0		BC	0
5 TERMINALS 	SWITCH ONLY (NO COIL) WITH AUXILIARY SWITCH 	A	1 2 3 4	SERIES TRIP WITH (3) AUXILIARY/ALARM SWITCH 	BC	1 2 3 4
3 TERMINALS 	SHUNT TRIP 	DE	0	DUAL COIL; SERIES TRIP CURRENT COIL, SHUNT TRIP VOLTAGE COIL 	H	0
4 TERMINALS 	RELAY TRIP 	FG	0	DUAL COIL; SERIES TRIP CURRENT COIL, RELAY TRIP VOLTAGE COIL 	K	0

Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.015 [.38] unless otherwise specified.
3 Alarm Switch available with .110 x .020 Q.C. & Solder Lug Terminals Only.

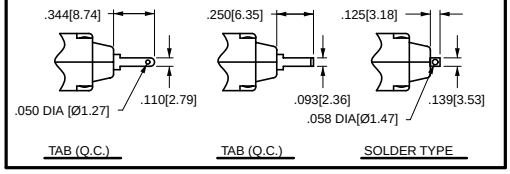
HANDLE POSITION VS. AUX /ALARM SWITCH MODE

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

TERMINAL DIMENSIONAL DETAIL & RATING



AUXILIARY/ALARM SWITCH TERMINAL DETAIL



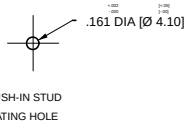


TABLE A
TIGHTENING TORQUE SPECIFICATIONS

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-LB [1.7-2.3 NM]

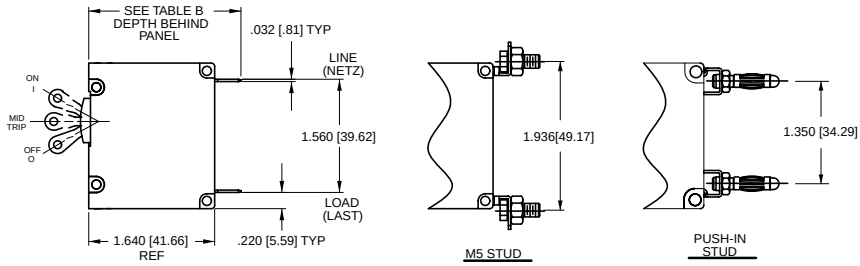


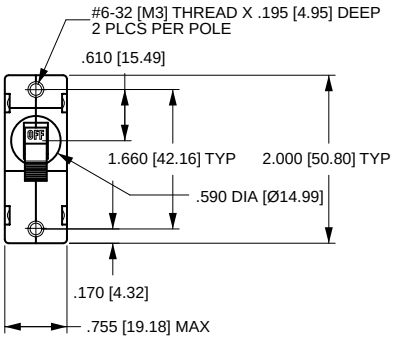
TABLE B

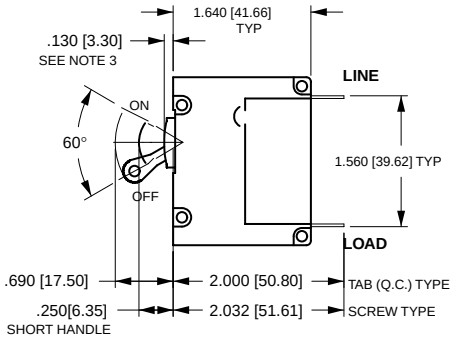
TERMINAL DESCRIPTION		DEPTH BEHIND PANEL
MAIN	TAB (Q.C.)	2.000 [50.80]
	SCREW TYPE	2.032 [51.60]
SHUNT, RELAY & DUAL COIL	TAB (Q.C.)	2.207 [56.10]
	SCREW #8-32 W/UPTURNED LUGS	2.364 [60.05]
AUX. SWITCH*	.093 TAB (Q.C.)	2.095 [53.20]
	.110 TAB (Q.C.)	2.189 [55.60]
	SOLDER TYPE	1.970 [50.00]

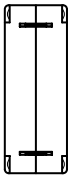
* AVAILABLE ON SERIES TRIP AND SWITCH ONLY CIRCUITS. WHEN CALLED FOR ON MULTI-POLE UNITS, ONLY ONE AUX. SWITCH IS NORMALLY SUPPLIED, AS SHOWN IN MULTI-POLE IDENTIFICATION SCHEME. SEE PAGE

Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.015 [.38] unless otherwise specified.

1-POLE (AA1)

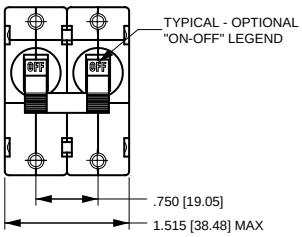




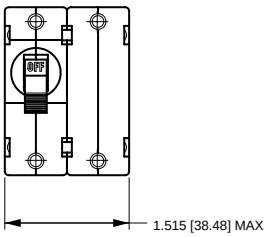


TAB (Q.C.) TYPE TERMINALS IN SERIES TRIP CIRCUIT CONFIGURATION SHOWN. FOR OTHER CONFIGURATIONS, SEE CIRCUIT AND TERMINAL DIAGRAMS.

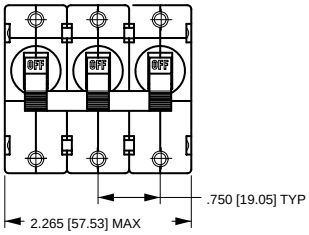
2-POLE (AA2)



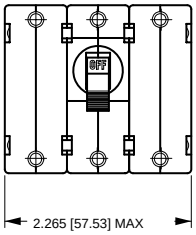
2-POLE (AB2)



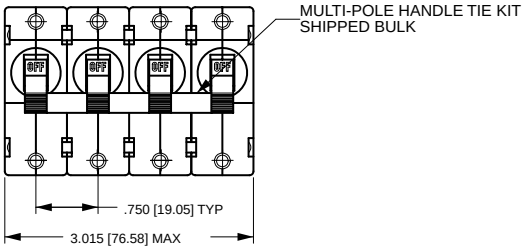
3-POLE (AA3)



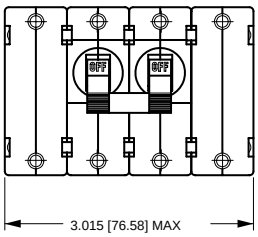
3-POLE (AB3)

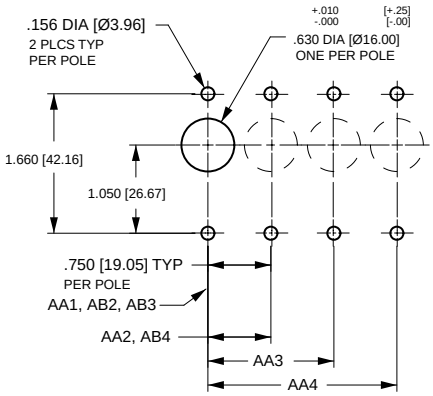


4-POLE (AA4)



4-POLE (AB4)

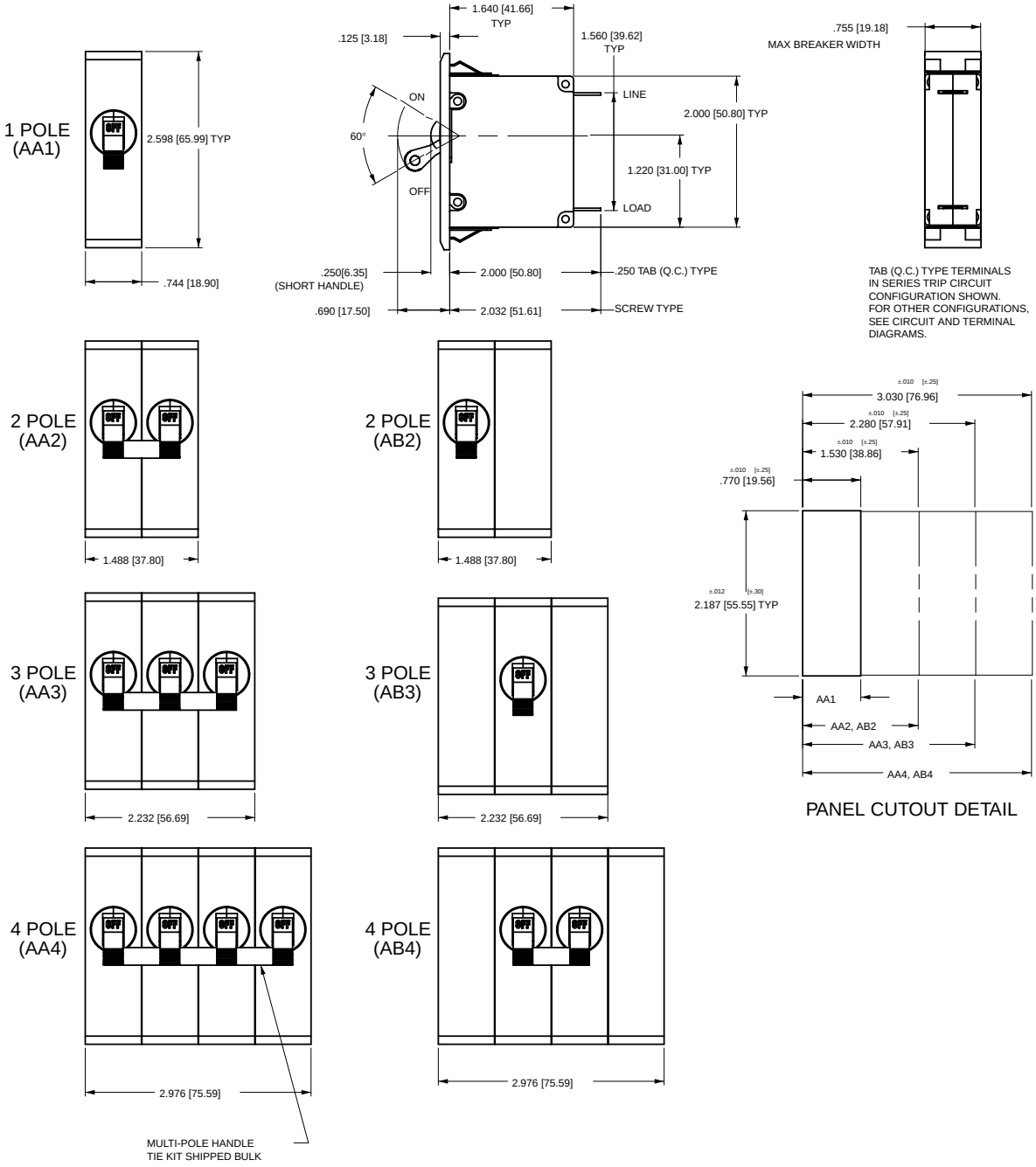




PANEL CUTOUT DETAIL

TOLERANCES ±.005 [±.12]
UNLESS OTHERWISE SPECIFIED

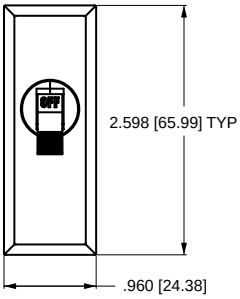
Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.010 [.25] unless otherwise specified.
3 For agency code P = .150 [3.81].

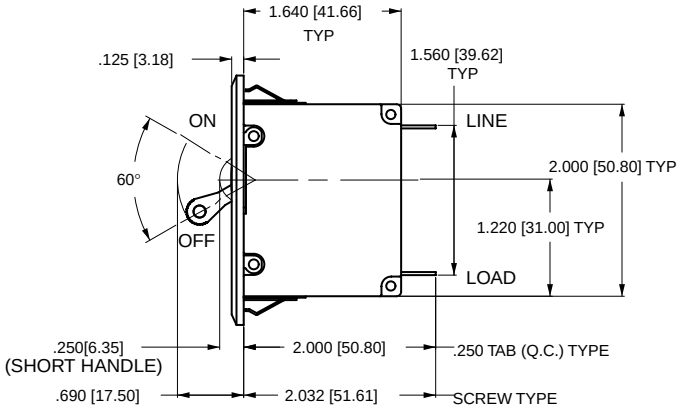


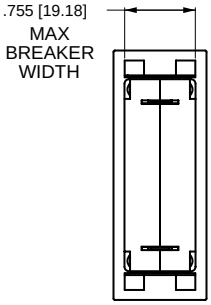
PANEL CUTOUT DETAIL

Notes:
1 All dimensions are in inches [millimeters].
2 Recommended panel thickness: .040 [1.02] to .100 [2.54].
3 Tolerance ±.015 [.38] unless otherwise specified.

1 POLE
(AA1)

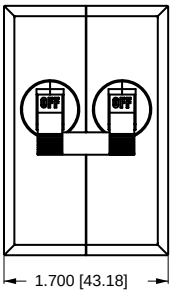




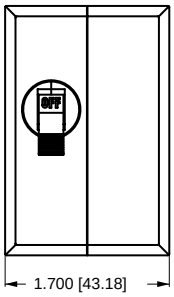


TAB (Q.C.) TYPE TERMINALS IN SERIES TRIP CIRCUIT CONFIGURATION SHOWN. FOR OTHER CONFIGURATIONS, SEE CIRCUIT AND TERMINAL DIAGRAMS.

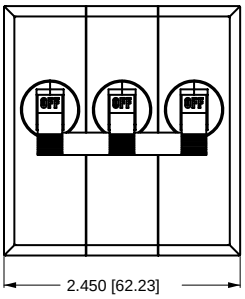
2 POLE
(AA2)



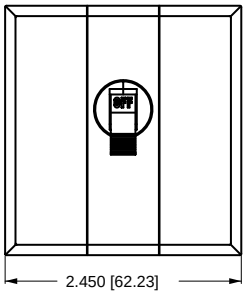
2 POLE
(AB2)



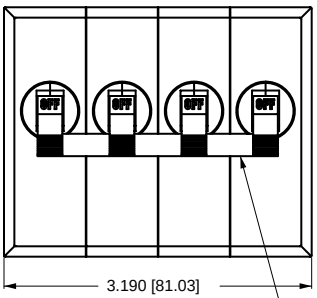
3 POLE
(AA3)



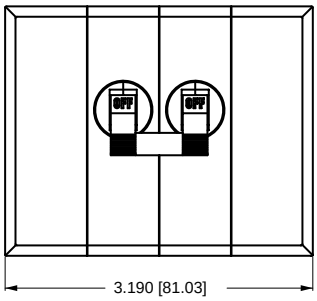
3 POLE
(AB3)

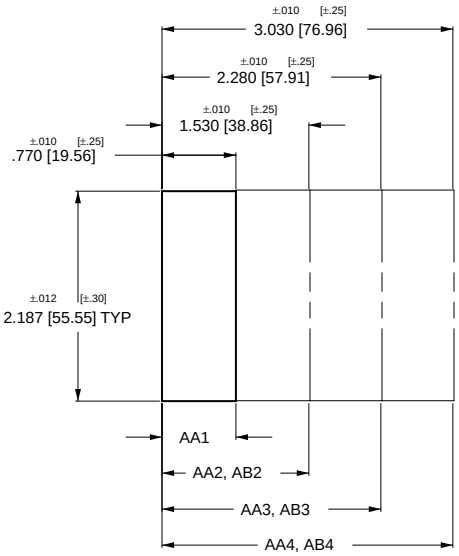


4 POLE
(AA4)



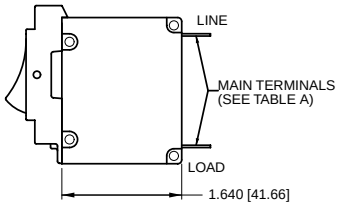
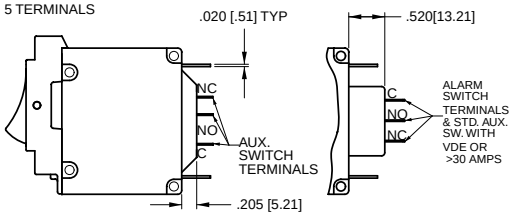
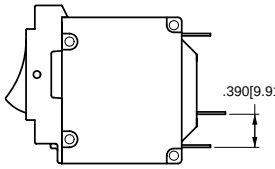
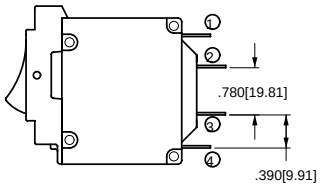
4 POLE
(AB4)

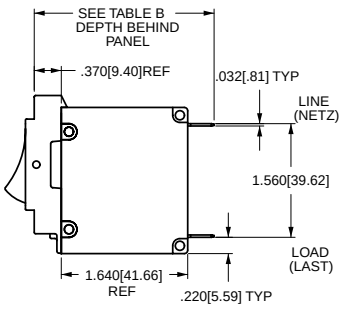


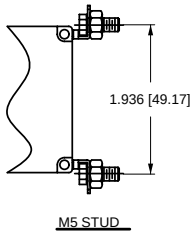


PANEL CUTOUT DETAIL

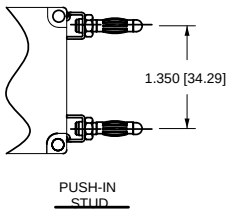
Notes:
1 All dimensions are in inches [millimeters].
2 Recommended panel thickness: .040 [1.02] to .100 [2.54].
3 Tolerance ±.015 [.38] unless otherwise specified.

CIRCUIT BREAKER PROFILE	CIRCUIT SCHEMATIC ANSI / IEC	CIRCUIT CODE	AUX. SWITCH CODE	CIRCUIT SCHEMATIC ANSI / IEC	CIRCUIT CODE	AUX. SWITCH CODE
2 TERMINALS 	SWITCH ONLY (NO COIL) LINE / LINE (NETZ) LOAD / LOAD (LAST)	A	0	SERIES TRIP LINE / LINE (NETZ) (3) LOAD / LOAD (LAST)	BC	0
5 TERMINALS 	SWITCH ONLY (NO COIL) (4) WITH AUXILIARY SWITCH LINE / LINE (NETZ) C / NO / NC LOAD / LOAD (LAST)	A	1 2 3 4	SERIES TRIP WITH (4) AUXILIARY SWITCH LINE / LINE (NETZ) (3) C / NO / NC LOAD / LOAD (LAST)	BC	1 2 3 4
3 TERMINALS 	SHUNT TRIP LINE / LINE (NETZ) (3) SHUNT / SHUNT (NEBENSCHLUSS) LOAD / LOAD (LAST)	DE	0	DUAL COIL; SERIES TRIP CURRENT COIL, SHUNT TRIP VOLTAGE COIL LINE / LINE (NETZ) VOLTAGE COIL LOAD / LOAD (LAST) / VOLTAGE COIL	H	0
4 TERMINALS 	RELAY TRIP LINE / RELAY (RELAIS) / LINE (NETZ) (3) LOAD / RELAY / RELAY (RELAIS) / LOAD (LAST)	FG	0	DUAL COIL; SERIES TRIP CURRENT COIL, RELAY TRIP VOLTAGE COIL LINE / LINE (NETZ) / VOLTAGE COIL VOLTAGE COIL LOAD / LOAD (LAST) / VOLTAGE COIL	K	0

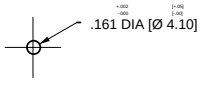




M5 STUD



PUSH-IN STUD



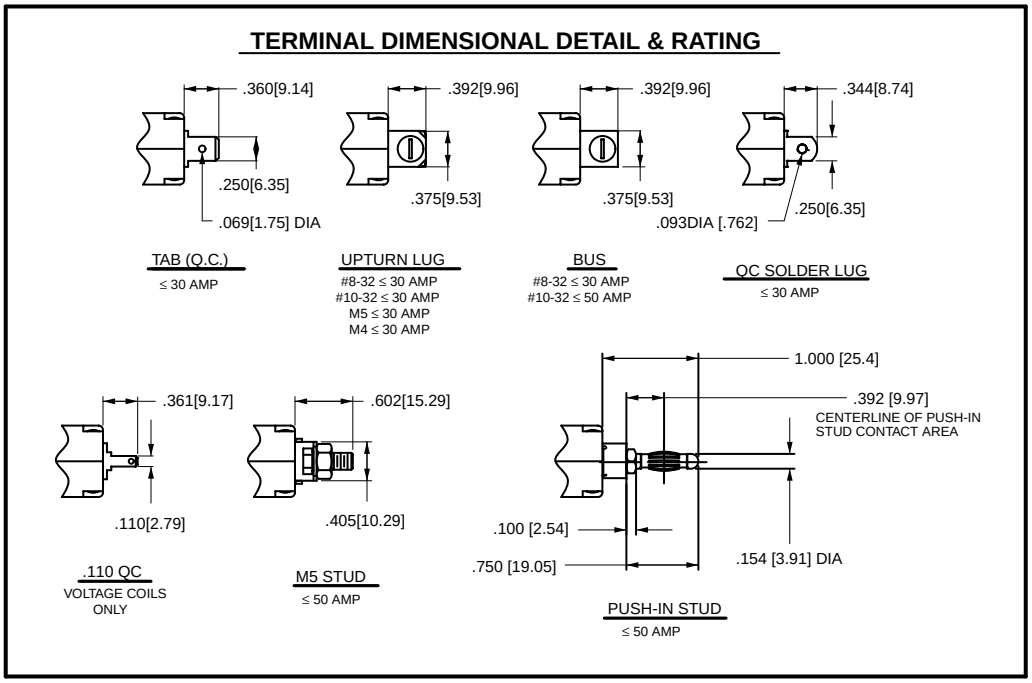
PUSH-IN STUD MATING HOLE

TABLE B		
TERMINAL DESCRIPTION		DEPTH BEHIND PANEL
MAIN	TAB (Q.C.)	2.370 [60.20]
	SCREW TYPE	2.402 [61.01]
SHUNT, RELAY & DUAL COIL	TAB (Q.C.)	2.577 [65.46]
	SCREW #8-32 W/UPTURNED LUGS	2.734 [69.44]
AUX. SWITCH*	.093 TAB (Q.C.)	2.465 [62.61]
	.110 TAB (Q.C.)	2.559 [65.00]
	SOLDER TYPE	2.340 [59.44]

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

Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.015 [.38] unless otherwise specified.
3 Schematic shown represents current trip circuit.
4. Circuits shown for >30 amps / VDE.

TERMINAL DIMENSIONAL DETAIL & RATING



AUXILIARY/ALARM SWITCH TERMINAL DETAIL*

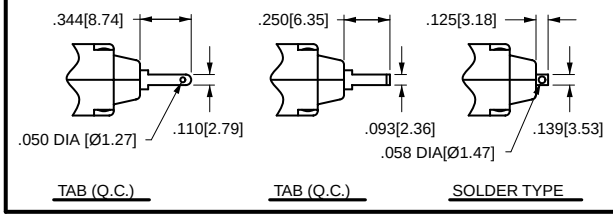
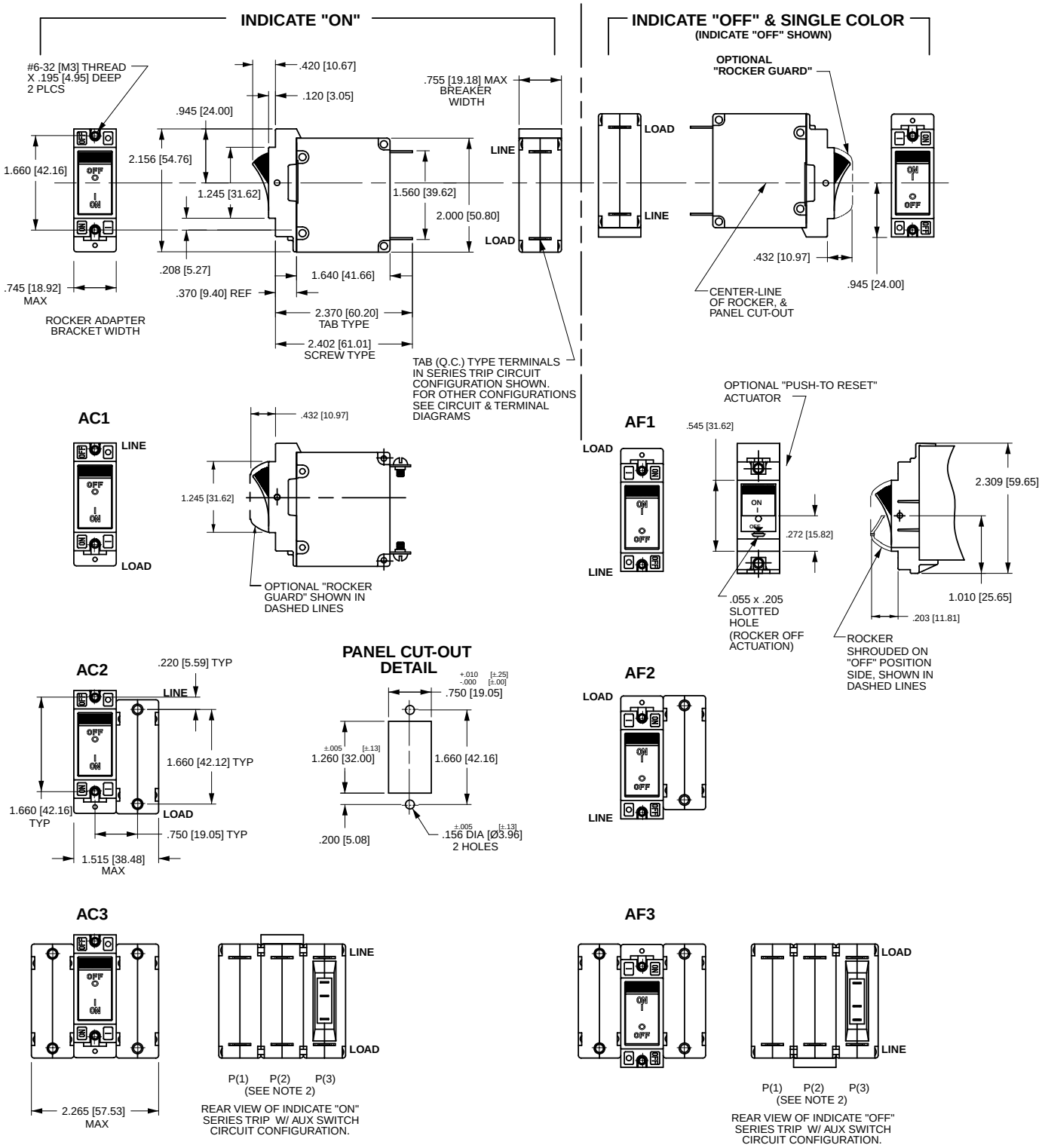


TABLE A
TIGHTENING TORQUE SPECIFICATIONS

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]

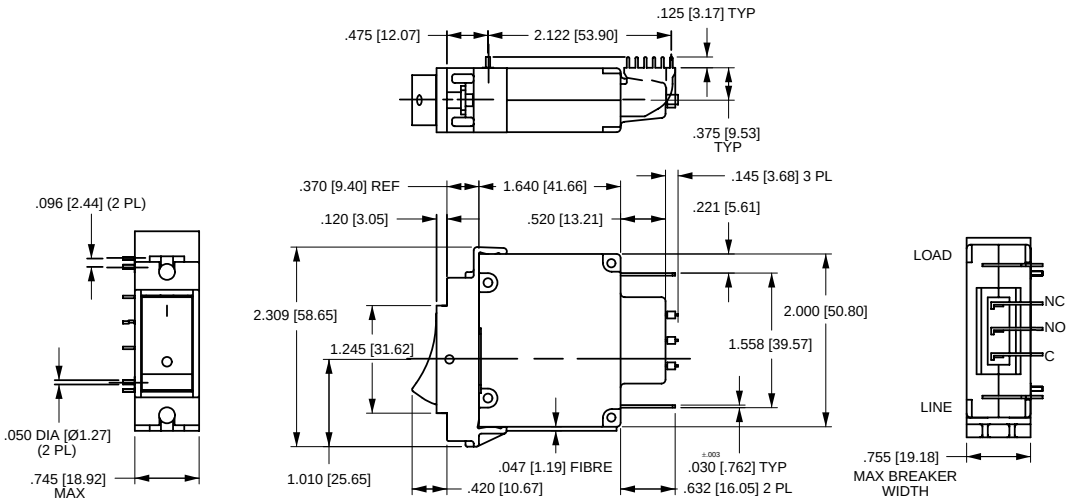
Notes:
1 All dimensions are in inches [millimeters].
2 Tolerance ±.015 [.38] unless otherwise specified.



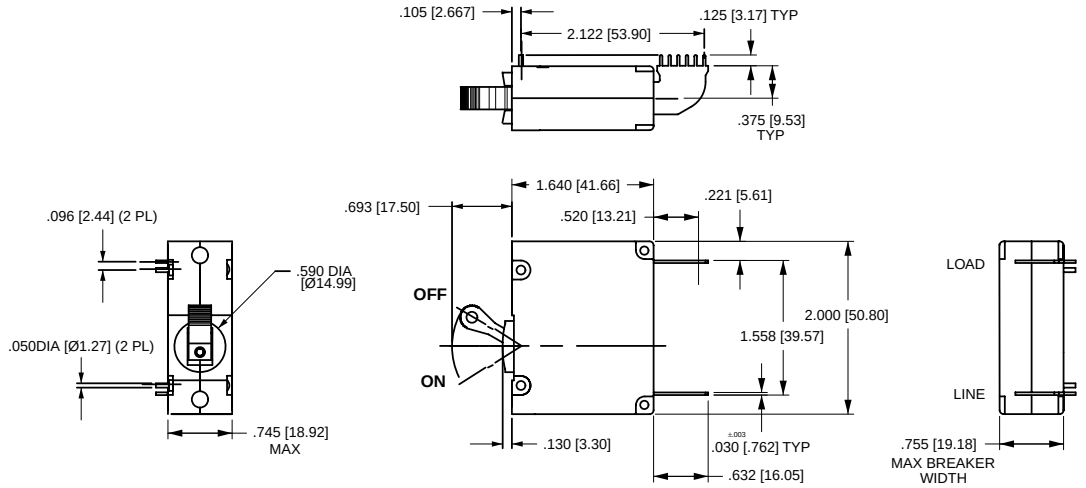
Notes:

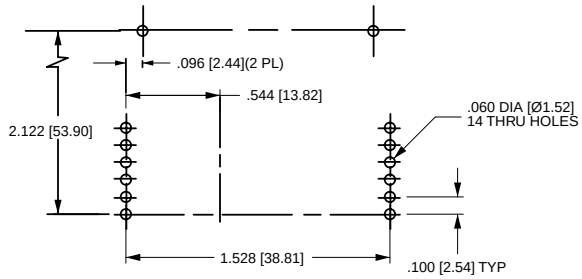
1 Dimensions apply to all variations shown. Notice that circuit breaker line & load terminal orientation on indicate OFF is opposite of indicate ON.
2 For pole orientation with horizontal legend, rotate front view clockwise 90°.
3 All dimensions are in inches [millimeters].
4 Tolerance ±.010 [.25] unless otherwise specified.

A-SERIES ROCKER

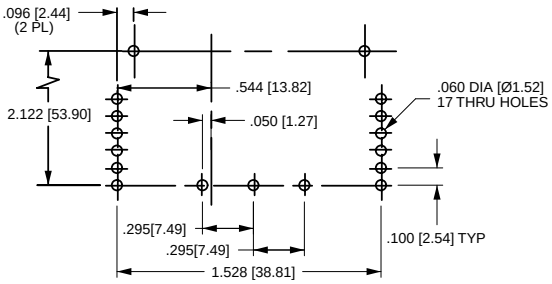


A-SERIES HANDLE





P.C. FOOT PRINT



P.C. FOOT PRINT WITH AUX. SWITCH

Notes:
1 Drawing illustrates A-Series with VDE certification.
2 All dimensions are in inches [millimeters].
3 Tolerance ±.010 [.25] unless otherwise specified.