



Product Type
Hydraulic/Magnetic Circuit Breaker

Product Series
A-Series

Description
[A-Series PDF eLibrary](#) ↓

The A-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 available with handle actuators for 1- 6 poles. When front panel operation and aesthetics demand a clean, contemporary design, two color Visi-Rocker which can indicate either the ON mode or the TRIPPED/OFF mode, and solid color rocker actuators are available. Rocker actuators are available in 1-3 pole construction. The new Rockerguard™ bezel and push-to-reset bezel help prevent inadvertent actuation. A-Series circuit breakers are offered from in 0.02 to 50 amps, up to 277VAC or 80VDC. They are available with a choice of time delays, terminals, actuator styles, with a wide range of standard colors, & imprinting.

Series PDF eLibrary	<ul style="list-style-type: none"> • A-Series Cir. Breaker PDF (3.5 MB) • Cir. Breaker Time Delays for A,B,C,D & PD-Series PDF (2.3 MB) • Cir. Breaker Accessories PDF (49.5 KB)
Certifications	UL recognized, CSA, TUV, VDE - 0642, UL-1500, UL489A listed (Telecom)
Number of Poles	1-6 poles
Available Delays	Instant, Ultra-Short, Short, Medium, Long (motor loads), AC,DC, AC/DC: High Inrush - Short, Medium, Long
Maximum Current and Voltage Ratings	0.02-30A @ 277VAC, 80VDC 31.0-50A @ 125/250VAC, 80VDC 0.1 - 50A @ 80VDC (UL489A)
Maximum Interrupting Capacity	3,000A @ 65VDC (UL only) 3,500A @ 65VDC w/fuse back up 3,000A @ 125/250VAC (UL only) 5,000A @ 277VAC w/fuse back up 5,000A @ 80VDC (UL489A)
Auxiliary Switch Ratings	10.1A @ 250VAC 0.1A @ 125VAC (gold contacts) 5A @ 30VDC 0.5A @ 80VDC 1.0A @ 65VDC
Available Circuits	Series, Shunt, Relay, Switch Only, Series w/Remote Shutdown, Relay and Shunt Trip Dual Coil
Actuator Style	Solid Color Curved Rocker (1 per unit) Two Color Visi-Rocker (1 per unit) Handle (1 per pole or 1 per unit) Mid Trip Handle (1 per pole or 1 per unit)

Terminal Options	.250 QC Tabs 8-32 Screw w/ Upturned Lugs 8-32 Screw (Bus Type) 10-32 Screw w/ Upturned Lugs 10-32 Screw (Bus Type) M4 & M5 Screw (Bus Type) M4 & M5 Screw w/ Upturned Lugs Push in Stud Terminals
Mounting Method	Front Panel Snap-in Front Panel (handle actuator)
Value Added	Custom actuator colors PC Terminals available Non-standard amp ratings Panel hole plug available and more



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. In addition, these breakers meet CSA Standard 22.2 No. 100 for the Generator & Welder markets.

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 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 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

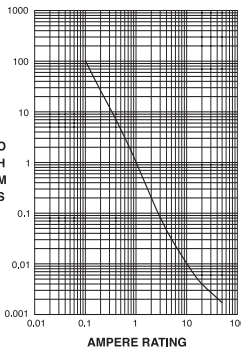


EN60934, VDE 0642 under File No. 10537

Electrical

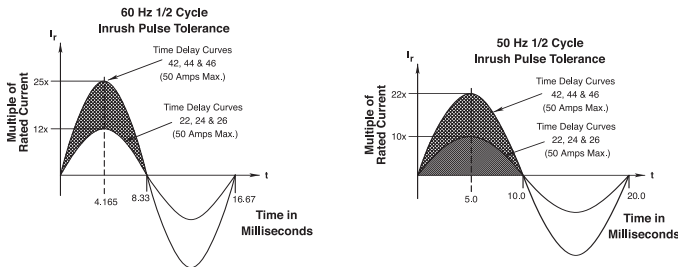
Maximum Voltage 277VAC 50/60 Hz, 80VDC
 Current Ratings Standard current coils: 0.100, 0.250, 0.500, 0.750, 1.00, 2.50, 5.00, 7.50, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, 50.0. Other ratings available - consult ordering scheme.
 Standard Voltage Coils DC-6V, 12V; AC-120V, Other ratings available,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

Pulse Tolerance Curves



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.

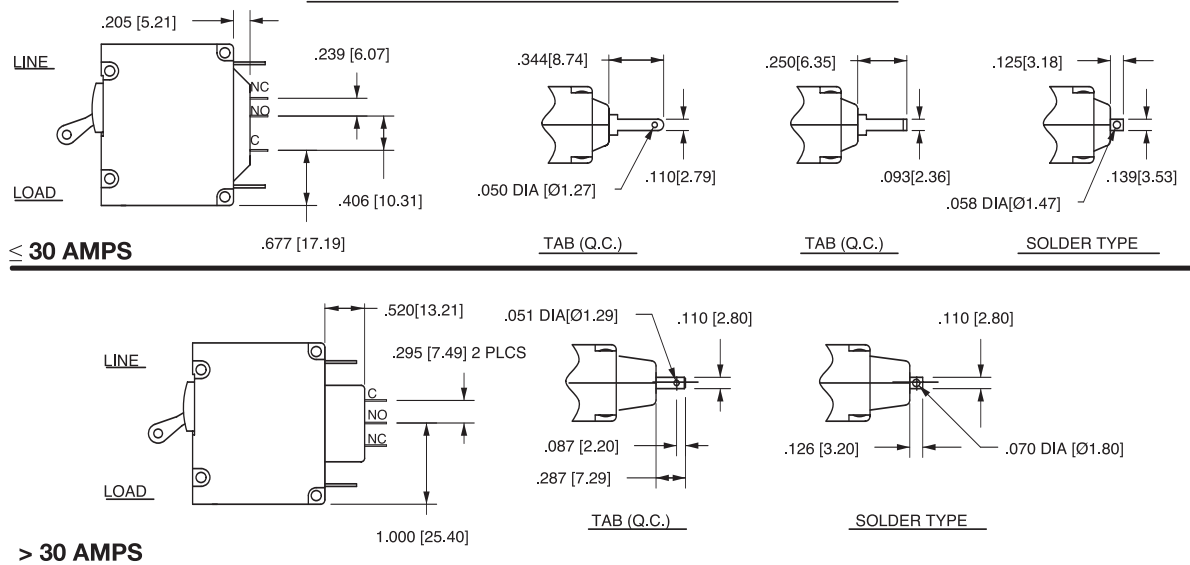
Environmental

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

CIRCUIT BREAKER PROFILE	CIRCUIT SCHEMATIC		CIRCUIT SCHEMATIC			
	ANSI	CIRCUIT CODE	ANSI	CIRCUIT CODE		
2 TERMINALS 	SWITCH ONLY (NO COIL) 	A	0	SERIES TRIP 	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

AUXILIARY/ALARM SWITCH TERMINAL DETAIL



- Notes:
- All dimensions are in inches [millimeters].
 - Tolerance $\pm .020$ [.51] unless otherwise specified.
 - 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		MID TRIP C/B	
	HANDLE POSITION	AUX. SWITCH MODE	HANDLE POSITION	ALARM SWITCH MODE	HANDLE POSITION	AUX. SWITCH MODE (w/o ALARM SWITCH)
OFF						
ON						
ELECTRICAL TRIP						

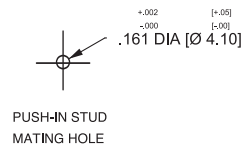
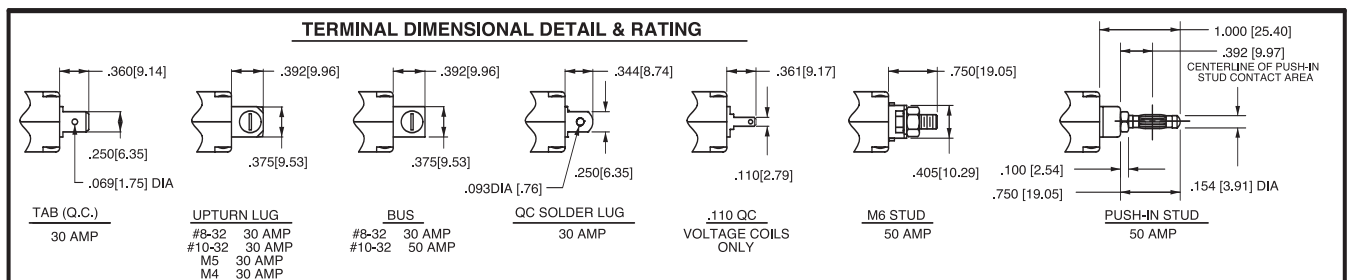


TABLE A TIGHTENING TORQUE SPECIFICATIONS

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]

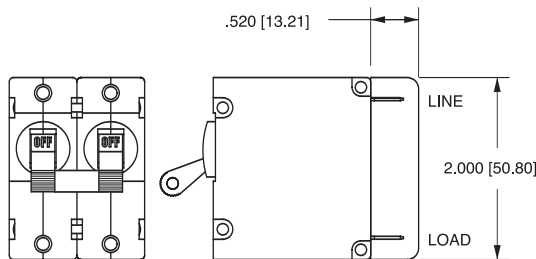
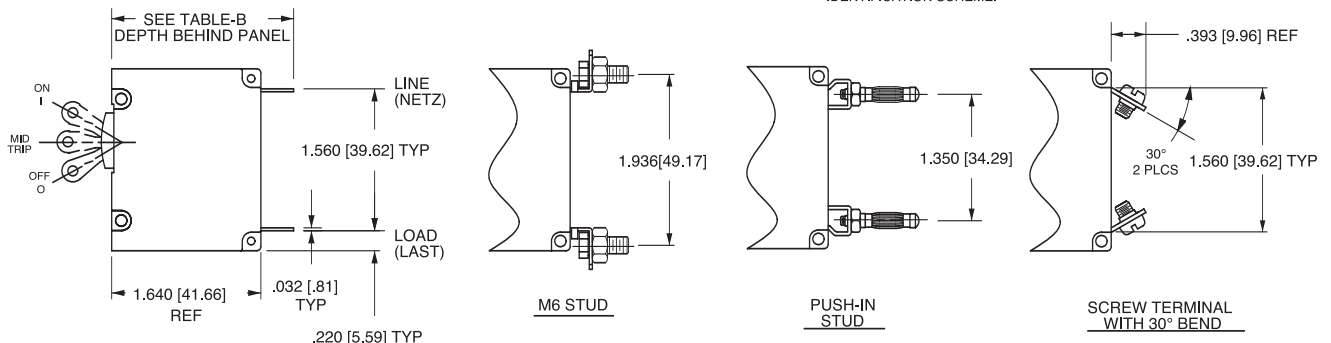


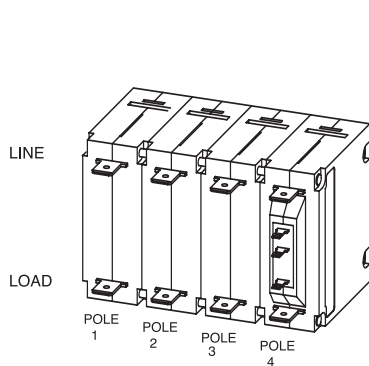
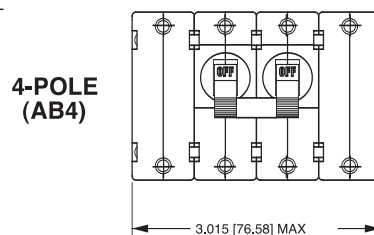
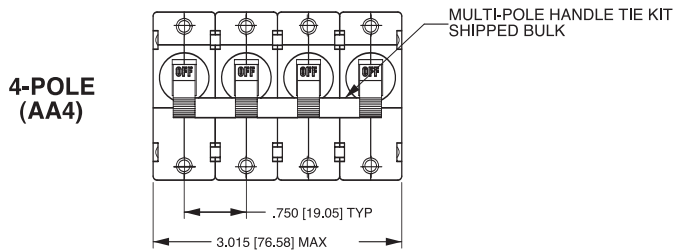
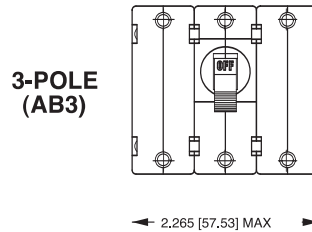
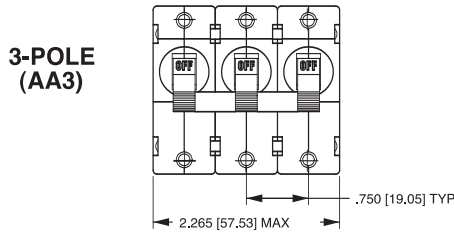
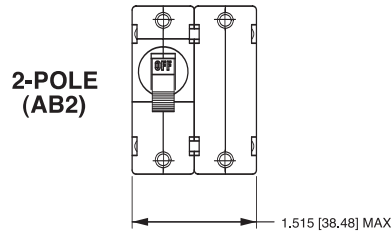
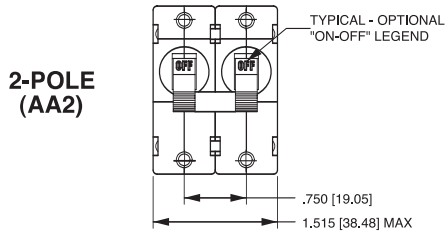
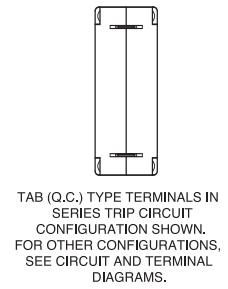
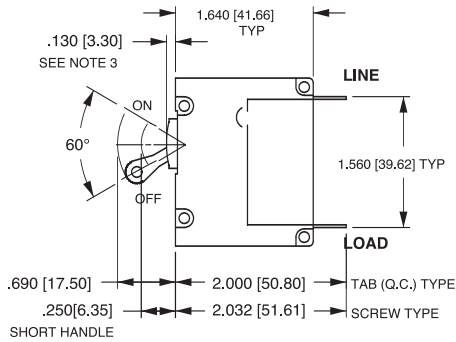
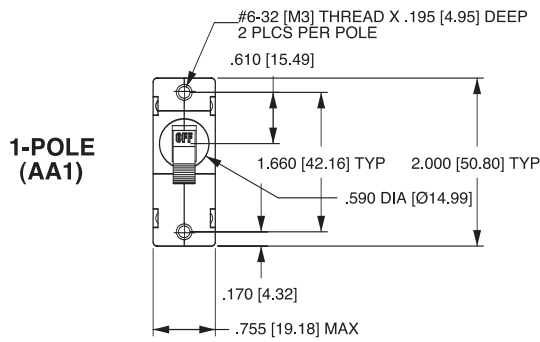
TABLE B

TERMINAL DESCRIPTION		DEPTH BEHIND PANEL
MAIN	TAB (Q.C.)	2.000 [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]

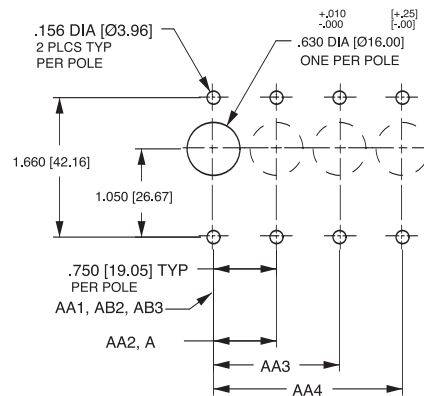
* AVAILABLE ON SERIES TRIP AND SWITCH ONLY CIRCUITS. WHEN CALLED FOR ON MULTI-POLE UNITS, ONLY ONE AUX. SWITCH IS NORMALLY SUPPLIED, AS SHOWN IN MULTI-POLE IDENTIFICATION SCHEME.



- Notes:
- All dimensions are in inches [millimeters].
 - Tolerance ±.020 [.51] unless otherwise specified.
 - Alarm Switch available with .110 x .020 QC & solder lug terminals only.



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



PANEL CUTOUT DETAIL
TOLERANCES ±.005 [±.12] UNLESS OTHERWISE SPECIFIED

- Notes:
- 1 All dimensions are in inches [millimeters].
 - 2 Tolerance ± 0.20 [.51] unless otherwise specified.
 - 3 For agency code P = .150 [3.81].