



Miniature Circuit Breakers, Electronic Protection Modules, and Fuse Holders

Bulletins 188, 1489, 1492, 1694



Allen-Bradley

by ROCKWELL AUTOMATION

Selection Guide

Specifications

General Data			
Poles	1, 2, 3, 4, 1+N, 3+N		
Tripping characteristics	B, C, D		
Rated current (I_n)	0.5...63 A		
Rated frequency (f)	50/60 Hz		
Rated insulation voltage U_i per IEC/EN 60664-1	250V AC (phase to ground) 440V AC (phase to phase)		
Overtoltage category	III		
Pollution degree	2		
Data per IEC/EN 60898-1			
Rated operational voltage (U_o)	1-pole	230/400V AC	
	1-pole + N	230V AC	
	2-, 3-, 4-, 3-pole + N	400V AC	
Highest supply or utilization voltage (U_{max})	AC	1-pole	253/440V AC
		1-pole + N	253V AC
	DC ⁽¹⁾	2-, 3-, 4-, 3-pole + N	440V AC
		1-pole	48V DC
		2-pole	96V DC
Min. operating voltage	12V AC, 12V DC		
Rated short-circuit capacity (I_{cn})	188-J	10 kA	
	188-K	6 kA	
Energy limiting class (B, C up to 40 A)	3		
Rated impulse withstand voltage U_{imp} (1.2/50 μ s)	4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)		
Dielectric test voltage	2 kV (50/60 Hz, 1 min.)		
Reference temperature for tripping characteristics	B, C, D: 30 °C (86 °F)		
Electrical endurance 1 cycle (2s - ON, 13s - OFF, $I_n \leq 32$ A), 1 cycle (2s - ON, 28s - OFF, $I_n > 32$ A)	$I_n < 30$ A: 20,000 ops (AC) $I_n \geq 30$ A: 10,000 ops. (AC); 1,000 ops. (DC)		

(1) IEC DC ratings self-declared.

Power Loss Due to Current

Rated Current [A]	Power Loss Per Pole [W]
0.5	1.4
1	1.4
2	1.8
3	1.5
4	1.8
6	2.0
8	1.5
10	2.1
13	2.3
16	2.5
20	2.5
25	3.2
32	3.7
40	4.8
50	4.5
63	5.2

Mechanical Data	
Housing	Insulation group II, RAL 7035
Indicator window	None
Protection degree per EN 60529	IP20, IP40 in enclosure with cover
Mechanical endurance	20,000 operations
Shock resistance per IEC/EN 60068-2-27	25 g - 2 shocks - 13 ms
Vibration resistance per IEC/EN 60068-2-6	5g - 20 cycles at 5...150...5 Hz with load 0.8 x I_n

Environmental	
Environmental conditions (damp heat) per IEC/EN 60068-2-30	28 cycles with 55 °C (131 °F)/90-96% and 25 °C (-13 °F)/95-100%
Ambient temperature ⁽¹⁾	-25...+55 °C (-13...+131 °F)
Storage temperature	-40...+70 °C (-40...+158 °F)

Installation	
Terminal	Cage terminal
Cross-section of wire - solid, stranded	0.75...25 mm ²
Cross-section of wire - flexible	0.75...16 mm ²
Tightening torque	IEC 2.0 N·m
Screwdriver	No. 2 Pozidriv
Mounting	DIN Rail (EN 60715, 35 mm) with fast clip
Mounting position	Any
Supply	Optional

Approximate Dimensions and Weight	
Pole dimension (H x D x W)	85 x 69 x 17.5 mm
Pole weight	115 g (4.4 oz.)

Combination with Auxiliary Elements	
Auxiliary contact	Yes
Signal contact	Yes
Shunt trip	Yes

(1) See [Table 10](#) for ambient temperature derating information.



The installation of several devices side by side with rated current on all poles requires a correction factor to the rated current (not required if spacers are used).

Zero-stack Derating

No. of Adjacent Devices	Correction Factor
1	1
2,3	0.9
4,5	0.8
≥ 6	0.75