Selection Guide

Allen-Bradley

Control Circuit and Load Protection

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Rockwell Automation

Circuit Protection Portfolio

1489-M Circuit Breakers
Approved for branch circuit protection in the United States and Canada, and certified as Miniature Circuit Breakers for IEC applications.

1492-SP Supplementary Protectors
Overcurrent protection for equipment where branch circuit protection is already provided, or is not required. Also Miniature Circuit Breakers as defined by IEC Standards.

1492-D Circuit Breakers
Overcurrent and short circuit protection for higher voltage DC circuits. Also Miniature Circuit Breakers as defined by IEC Standards.

188-J 10 kA Regional Circuit Breakers
Protective devices applied at the equipment level. Regional certifications only. Available for purchase in China and Europe.

188-K 6 kA Regional Circuit Breakers
Protective devices applied at the equipment level. Regional certifications only. Available for purchase in China and Europe.

Rockwell Automation offers a wide range of Allen-Bradley circuit protection products designed for a variety of applications.

Miniature Circuit Breakers, Supplementary Protectors, and Residual Current Devices

Product	Certifications						Poles						Trip											
	cULus	cURus	CSA	CE	VDE	CCC	1	1+N	2	3	3+N	4	B	C	D	0.2	0.5	0.8	1	1.2	1.5	1.6	2	2.5
1489-M	●		●	●	●	●	●		●	●				●	●		●		●			●	●	
1492-SP		✪	●	●	●	●	●	♣	●	●	♣		●	●	●		●		●				●	
1492-D		✪	●	●	●		●		●					●			●		●			●	●	
188-J,-K				●	●	●	●	●	●	●	●	●	●	●	●		●		●				●	
1492-RCD		●		●	●	●			●			●												
1492-MC	●		●				●		●	●														
1492-GH,-GS		●	●	●	●		●		●	●						●	●	●	●	●	●		●	●

✪ UL Recognized only.
♣ 1+N and 3+N devices are not cURus or CSA certified.

Electronic Circuit Protectors

Product	Certifications				Circuits		Output Current Rating [A]							
	cULus	CE	C1D2	NEC C2	4	2x2	1	2	3	4	6	10	3/6	6/12
1692	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1492-RCD Residual Current Devices
By detecting small leakage currents and disconnecting all ungrounded connectors quickly, RCDs can prevent injury to exposed personnel and damage to equipment.

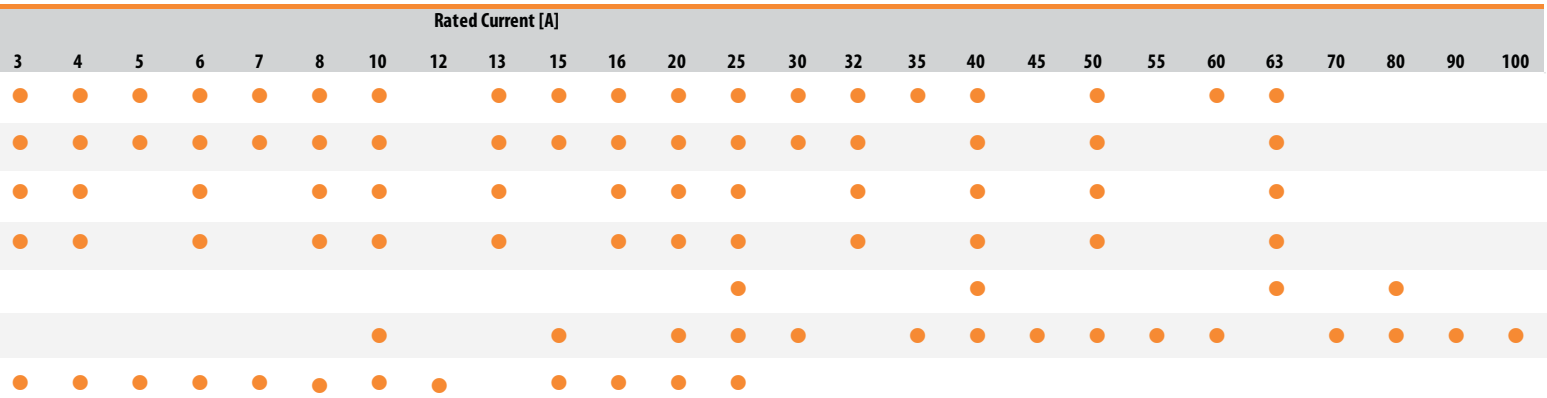
1692 Electronic Circuit Protectors
Protection for secondary circuits of 24V DC switched mode power supplies. These modules monitor both supply voltage and load currents, and can be monitored and controlled locally and remotely.

1492-MC Circuit Breakers and Ground Fault Protectors
Thermal magnetic circuit protection and sensing thresholds for personnel and equipment protection.

1492-GH, -GS High-density Supplementary Protectors
Thermal magnetic circuit breakers with a high density design useful when DIN Rail space is a premium.

1492-FB Fuse Holders
Designed for use in many OEM applications. Provides safe and convenient installation of Midget, Class CC, and Class J fuses.

- Test equipment
- Automotive systems
- Controller I/O points
- Power supplies
- Relay and contractor coils
- Medical equipment
- Control instrumentation
- Computers
- Solenoids
- Transformers

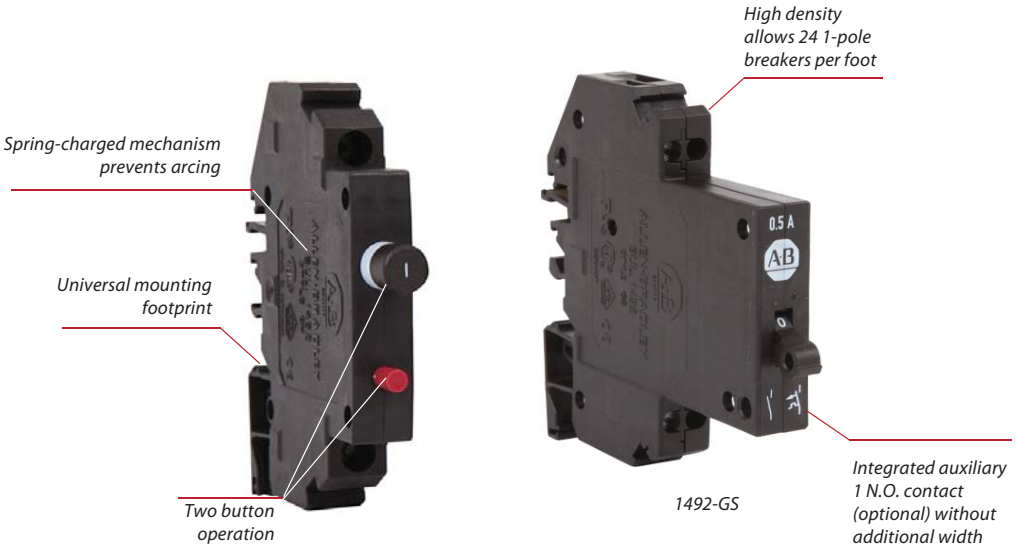


Typical North America Current Ratings: 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 10, 15, 20, 25, 30, 40, 50, 60, 63 A.
Typical IEC Current Ratings: 0.5, 1, 1.6, 2, 3, 4, 6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63 A.

Fuse Holders

Product	Certifications			Poles			Indication			Fuse Types			
	cULus	CSA	CE	1	2	3	none	L	D1	M30	C30	J30	J60
1492-FB	●	●	●	●	●	●	●	●	●	●	●	●	●

1492-GH/-GS —Supplementary Protectors



1492-GH

1492-GS

Bulletin 1492-GH/GS high density miniature circuit breakers are thermal magnetic type supplementary protectors. These products are a high-density design often used when panel space (width) is a premium. Up to 24 one-pole breakers can be mounted per foot.

1492-GS/GH Supplementary Protectors		
Rated Voltage	-GH	250V AC 50/60 Hz
	-GS	480Y/277V AC 50/60 Hz
Current Ratings	-GH	0.2...15 A
	-GS	0.2...25 A
Poles	-GH	1
	-GS	1, 2, 3
Standards Compliance		UL 1077
		CSA C22.2 No.235
		EN 60934
Certifications		UL Recognized, File No. E65138
		CSA Certified, File No. 72348
		CE Marked
		VDE Certified
		RoHS Compliant

Features

- Low current ratings and numerous rated currents for precise circuit requirements
- Can be ordered with auxiliary contacts that do not add any additional space
- AC and DC voltage ratings in one convenient device
- A positively trip-free mechanism (breaker operation cannot be defeated by holding the handle in the ON position)
- Superior shock and vibration resistance capabilities; to help prevent nuisance tripping

1492-GH Supplementary Protectors

Bulletin 1492-GS breakers are 1-pole devices. They use a push-to-set mechanism for circuit actuation and come with a manual trip button for manually opening the circuit.

1492-GS Supplementary Protectors

Bulletin 1492-GS breakers are available in 1-, 2-, and 3-pole devices. They use a toggle style handle mechanism for circuit actuation. These breakers may also be ordered with an internally mounted N.O. auxiliary contact that requires no additional mounting space.

Catalog Number Explanation

Note: Examples given in this section are for reference purposes. This basic explanation should not be used for product selection; some combinations may not produce a valid catalog number.

1492 - GH (*a*) 002 (*b*)

a

Poles	
Code	**Description**
GH	1-Pole

b

Rated Current (*I*n)	
Code	**Current [A]**
002	0.2
005	0.5
008	0.8
010	1
012	1.2
015	1.5
020	2
025	2.5
030	3
040	4
050	5
070	7
100	10
150	15

1492 - GS1G (*a*) 002 (*b*) - H1 (*c*)

a

Poles	
Code	**Description**
GS1G	1-Pole
GS2G	2-Pole
GS3G	3-Pole

b

Rated Current (*I*n)	
Code	**Current [A]**
002	0.2
005	0.5
008	0.8
010	1
012	1.2
015	1.5
020	2
025	2.5
030	3
040	4
050	5
060	6
070	7
080	8
100	10
120	12
150	15
160	16
200	20
250	25

c

Auxiliary Contact	
Code	**Description**
	Can be left blank
H1	With 1 N.O. integrated auxiliary contact (only 1 may be added per device)

Product Selection

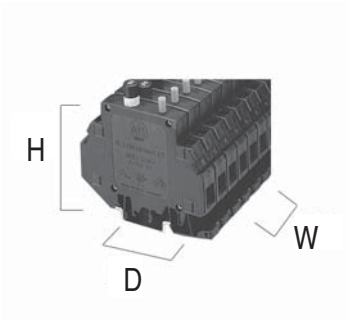
	1492-GH	1492-GS		
	1-Pole	1-Pole	2-Pole	3-Pole
Amperage [A]	Cat. No.	Cat. No.	Cat. No.	Cat. No.
0.2	1492-GH002	1492-GS1G002	1492-GS2G002	1492-GS3G002
0.5	1492-GH005	1492-GS1G005	1492-GS2G005	1492-GS3G005
0.8	1492-GH008	1492-GS1G008	1492-GS2G008	1492-GS3G008
1	1492-GH010	1492-GS1G010	1492-GS2G010	1492-GS3G010
1.2	1492-GH012	—	—	—
1.5	1492-GH015	1492-GS1G015	1492-GS2G015	1492-GS3G015
2	1492-GH020	1492-GS1G020	1492-GS2G020	1492-GS3G020
2.5	1492-GH025	1492-GS1G025	1492-GS2G025	1492-GS3G025
3	1492-GH030	1492-GS1G030	1492-GS2G030	1492-GS3G030
4	1492-GH040	1492-GS1G040	1492-GS2G040	1492-GS3G040
5	1492-GH050	1492-GS1G050	1492-GS2G050	1492-GS3G050
6	—	1492-GS1G060	1492-GS2G060	1492-GS3G060
7	1492-GH070	1492-GS1G070	1492-GS2G070	1492-GS3G070
8	—	1492-GS1G080	1492-GS2G080	1492-GS3G080
10	1492-GH100	1492-GS1G100	1492-GS2G100	1492-GS3G100
12	—	1492-GS1G120	1492-GS2G120	1492-GS3G120
15	1492-GH150	1492-GS1G150	1492-GS2G150	1492-GS3G150
16	—	1492-GS1G160	1492-GS2G160	1492-GS3G160
20	—	1492-GS1G200	1492-GS2G200	1492-GS3G200
25	—	1492-GS1G250	1492-GS2G250	1492-GS3G250
Integrated Auxiliary Contact	—	Add suffix — H1 for integrated N.O. auxiliary (only one may be added per device)		

Specifications

	1492-GH	1492-GS		
	1-Pole	1-Pole	2-Pole	3-Pole
UL/CSA	200 A (Not to exceed 100 x rated A)	0.2…16 A	5 kA C1 (2 kA C1 for 65V DC — 1-pole)	
		18…25 A	2 kA C1	
IEC/EN 60934 (CBE)	—	0.2…5 A	400 A	
		6…25 A	800 A	
Maximum voltage ratings	250V AC 50/60 Hz 65V DC	480Y/277V AC 50/60 Hz 65V DC		
Temperature range	-40...+149 °F (-40...+65 °C) non-condensing			
Operating life	6000 operations @ rated current			
Housing material	Glass-filled Polyamide 6.6			
Shock	25 G, 11 ms duration			
Vibration	5 G (10...500 Hz)			
Dielectric strength	1500V AC	1600V AC		
Insulation resistance	100 M Ω @ 500V DC			
Terminal type	Tubular screw with self-lifting box lug			
Wire size	#22...10 AWG			
Recommended wire strip length	0.44 in. (11.2 mm)	Main terminal — 0.51 in. (13 mm) aux terminal — 0.41 in. (10.4 mm)		
Terminal torque	1.3...1.4 N•m (10...12 lb•in)	0.656 N•m (5 lb•in)		
N.O. auxiliary contact rating	—	1.0 A AC or DC (resistive load)		

Approximate Dimensions

Note: Dimensions are shown in inches (mm). Dimensions are not intended for manufacturing purposes.



	1492-GH	1492-GS		
	1-Pole	1-Pole	2-Pole	3-Pole
Height	3.15 in. (80 mm)	3.15 in. (80 mm)		
Depth	2.89 in. (73.4 mm)	3.48 in. (88.5 mm)		
Width	0.49 in. (12.4 mm)	0.49 in. (12.5 mm)	0.98 in. (25 mm)	1.47 in. (37.5 mm)

Application Information

UL 1077, CSA C22.2 #235

In North America, miniature circuit breakers are recognized as supplementary protectors and are intended for use as overcurrent protection within an appliance or other electrical equipment where branch circuit protection is already provided or not required. Internationally, these products are rated to IEC standards as circuit breakers for equipment (CBE).

Selection Information

High-density supplementary protector/miniature circuit breaker applications include, but are not limited to, the protection of test equipment, control instrumentation, solenoids, and power supplies. The wide range of current values and the use of a thermal magnetic trip system allows for a variety of applications where a very accurate and compact breaker is required.

To select a miniature circuit breaker, use the following procedure:

1. Determine the inrush correction factor from the following table.

Inrush Ratio Correction Table

Inrush Ratio	1:1 to 1:4	1:5	1:6	1:7	1:8
Factor	1.3	1.4	1.5	1.6	1.7

Note: For resistive loads use an inrush correction factor of 1.0.

2. Determine the temperature correction factor from the following table.

Ambient Temperature Correction Table

Ambient Temperature	70 °F (21.1 °C)	100 °F (37.8 °C)	120 °F (48.9 °C)	140 °F (60 °C)	160 °F (71.1 °C)	180 °F (82.2 °C)	200 °F (93.3 °C)
Factor	1.0	1.1	1.2	1.3	1.4	1.5	1.6

3. Determine the sealed current of the load being protected.

4. Multiply the sealed current by the two correction factors and select the closest higher ampere rating.

Example — For a solenoid with sealed current of 0.5 A, an inrush ratio of 1:8, and an ambient temperature of +110 °F, (0.5 x 1.7 x 1.15 = 0.9775), select the 1.0 A miniature circuit breaker. Tripping time of the miniature circuit breaker is determined from the table below. Divide the miniature circuit breaker value by the temperature correction factor from the Ambient Temperature Correction Table to determine the actual rated current referenced in the table below.

Tripping Times in Seconds at 70 °F (21.1 °C)

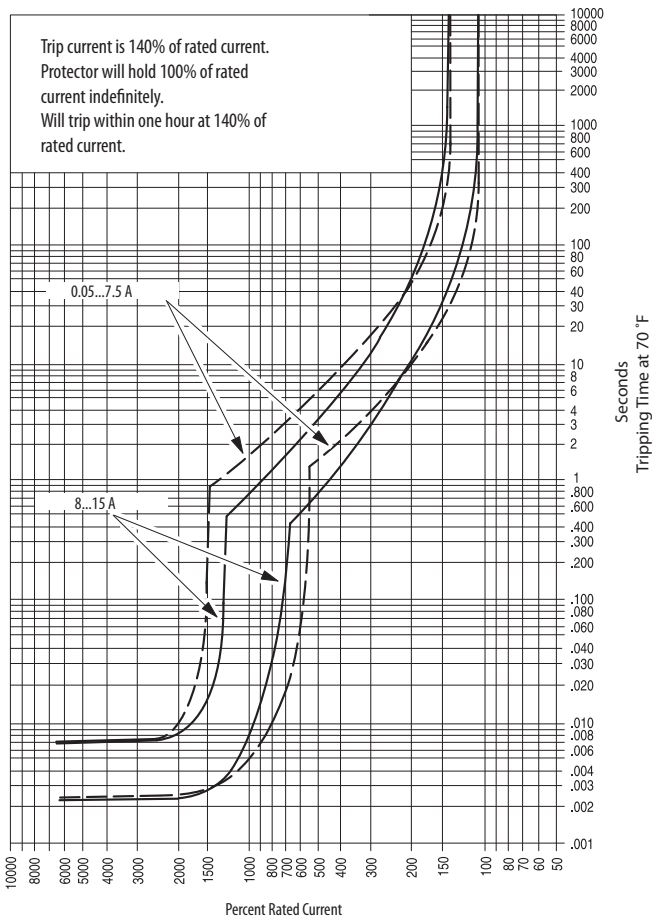
Percent Rated Current	100%	200%	300%	400%	500%	600%	1000%	2000% Greater
Tripping Times (Seconds)	No Trip	10…40	3…18	1.5…9	0.8…6	0.003 …4	0.009 …2	Max. 0.02

Note: When several breakers are rail mounted adjacent to each other, the no-trip current will be 80% of rated current at 70 °F (21.1 °C).

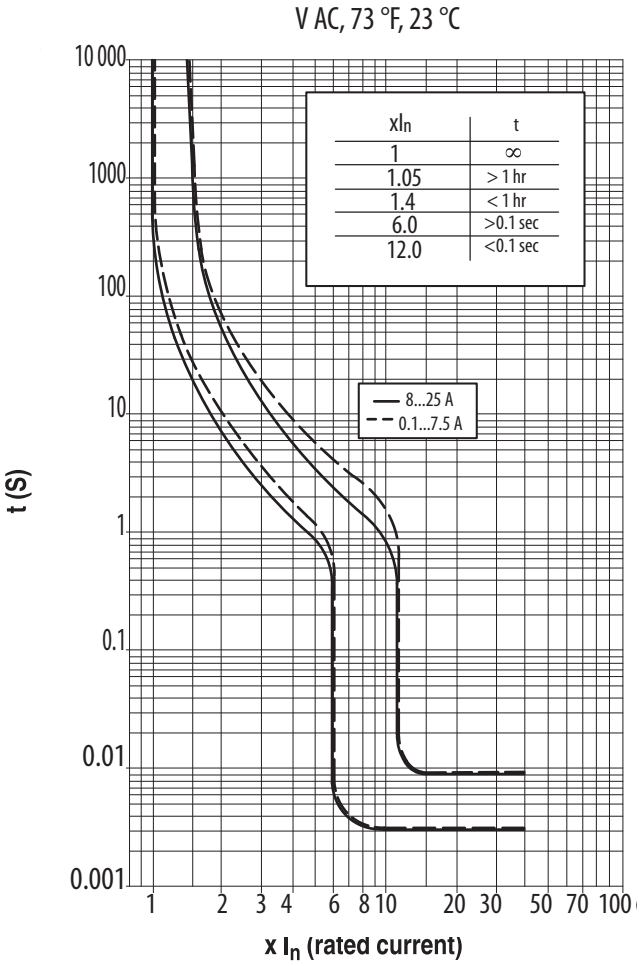
Using selection tables, select Bulletin 1492-GH/GS that allows full load current nearest without exceeding application current. Also, check that inrush current is less than trip range of 6…10 ***I***n.

Tripping Characteristics

Time Current Curve –1492-GH



Time Current Curve –1492-GS



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