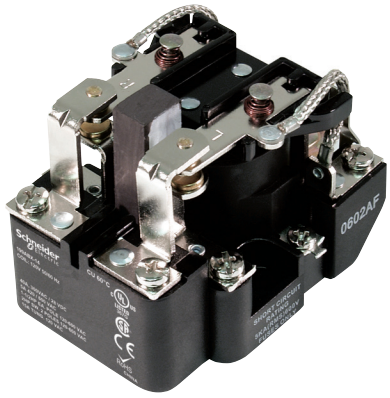
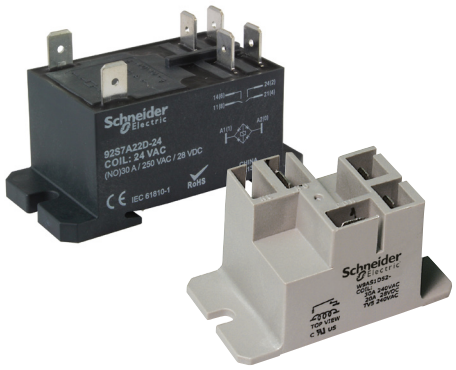
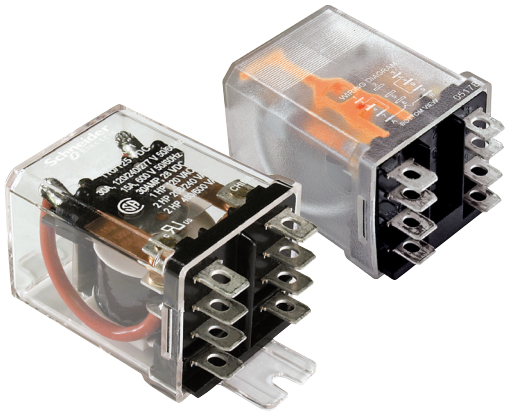
Legacy Power Relays

Catalog 2017







Schneider Electric™

Contents

Legacy Power Relays

Legacy Power Relays

Designed with heavy-duty contacts coupled with a specialized magnetic armature and coil to provide the necessary power handling, legacy power relays easily handle current loads of 20–50 A and can also switch currents as low as 100 mA. With multiple features as well as panel and DIN mounting options, these relays offer the performance and flexibility needed to improve design, expedite installation, and simplify testing of your application.

Key Features

- Rated up to 50 A
- Socket compatible models available
- Blowout magnet options for high DC voltage switching
- Feature-rich covers, mounting options, and accessories to suit a multitude of applications

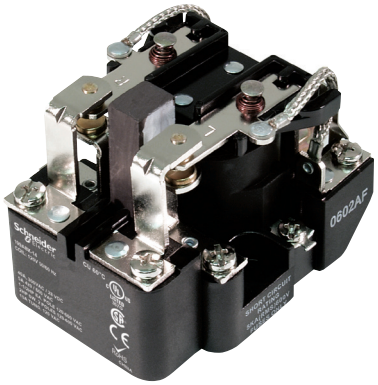
	Series	Style	Terminals	Contact Configuration	Contact Current Range (A)	Motor Load Ratings	Page
 *199 Series Relays*	**199**	Open style	Screw	SPST, SPDT, DPST, DPDT	40 to 50	2 hp at 120 to 600 Vac 50/60 Hz	4
 *725 Series Relays*	**725**	Plug-in, DIN and panel mount	Quick Connect and Screw	SPST-NO, DPST-NO	25 to 30	SPST: 1.5 hp at 120 Vac 50/60 Hz; 3.0 hp at 277 Vac 50/60 Hz DPST: 1.0 hp at 120 Vac 50/60 Hz; 2.0 hp at 277 Vac 50/60 Hz	9
 *389F Series Relays*	**389F**	Ice cube plug-in and flange mount	Quick Connect	SPST, SPDT, DPDT, 3PDT	20 to 30	SPST/SPDT/DPDT: 1 hp at 120–200 Vac 50/60 Hz; 1.5 hp at 200–600 Vac 50/60 Hz; LRA/FLA: 98 A / 22 A at 120 Vac 50/60 Hz; 3PDT: 0.5 hp at 120–200 Vac 50/60 Hz;	14
 *300 Series Relays*	**300**	Flange mount	Quick Connect	DPST-NO	30	1 hp at 120 Vac 50/60 Hz; 2 hp at 208–600 Vac 50/60 Hz	20
 *92 Series Relays*	**92**	DIN and panel mount	Quick Connect	SPST-NO, DPST-NO	30	1 hp at 120 Vac 50/60 Hz; 3 hp at 240 Vac 50/60 Hz LRA/FLA: 96/22 A at 240 Vac (NO contacts, AC coil) 110/25 A at 240 Vac (NO contacts, DC coil)	23
 *9A Series Relays*	**9A**	Panel mount	Quick Connect	SPST-NO	3 to 30	1 hp at 125 Vac 50/60 Hz; 2 hp at 240 Vac 50/60 Hz LRA/FLA: 98/22 A at 120 Vac 50/60 Hz (NO contact) 80/30 A at 240 Vac 50/60 Hz (NO contact) 30/12 A at 240 Vac 50/60 Hz (NC contact)	26

Description

Legacy Power Relays

199

SPST-NO-DM, 40 A; SPDT, 40 A;
DPST-NO, 40 A; DPDT, 40 A*



199 Series Relay

Description

The 199 series open type, heavy duty power relays offer high-capacity switching with high dielectric strength.

Feature	Benefit
High-power contacts	Increased contact ratings (up to 50 A, 2 hp) and electrical endurance; suitable for high-power switching applications
Riveted construction	Helps to increase the mechanical life of the relay
Blowout magnet option	Helps to increase DC voltage switching up to 500 V
RoHS compliant	Environmentally friendly; complies with the European Restriction of Hazardous Substances directive

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Special Features	Standard Part Number
40 A*	SPST-NO-DM	120 Vac	290		199ADX-4
		12 Vdc	70		199DX-2
		24 Vdc	290	Blowout Magnet	199DBX-3
					199DX-3
		48 Vdc	1200	Blowout Magnet	199DBX-16
	SPDT	120 Vac	290		199AX-4
		12 Vdc	70		199X-2
		24 Vdc	290		199X-3
	DPST-NO	120 Vac	290		199AX-9
		240 Vac	1200		199AX-10
		12 Vdc	70		199X-7
		24 Vdc	290		199X-8
	DPDT	24 Vac	12		199AX-13
		120 Vac	290	Blowout Magnet	199ABX-14
					199AX-14
		240 Vac	1200		199AX-15
		12 Vdc	70	Blowout Magnet	199BX-12
					199X-12
		24 Vdc	290	Blowout Magnet	199BX-13
					199X-13
		110 Vdc	6000	Blowout Magnet	199BX-14
					199X-14

Part Number Explanation

199 **A B X** - 14

Series:
199

Available Options:
A = AC coil
B = Blowout magnet
D = Double make
DY = Double break*
E = Pressure wire terminals*
M = Auxiliary switch*
X = Arbitrary

Configuration:
1-999 = Arbitrary

** 50 A versions and additional options available. Call Customer Service for more information (847-441-2540).*

Legacy Power Relays

199

SPST-NO-DM, 40 A*; SPDT, 40 A;
DPST-NO, 40 A; DPDT, 40 A*

Specifications (UL 508)

Part Numbers	199AX, 199X, 199ABX[1], 199BX[1]	199ADX, 199DX, 199DYX, 199DBX[1]
Contact Characteristics		
Contact Configuration	SPST, SPDT, DPST, DPDT	SPST-DM, SPST-DB
Contact Material	Silver alloy	
Thermal (Carrying) Current	40 A	
Maximum Switching Voltage	600 V(rms)	
Rated Switching Current at Voltage	Resistive: 40 A at 300 Vac 50/60 Hz; 5 A at 480 Vac 50/60 Hz; 5 A at 600 Vac 50/60 Hz; 40 A at 28 Vdc	Resistive: 40 A at 300 Vac 50/60 Hz; 12 A at 480 Vac 50/60 Hz; 10 A at 600 Vac 50/60 Hz; 40 A at 28 Vdc
	Motor: 2 hp at 120–600 Vac 50/60 Hz	
	Tungsten: 15 A at 120 Vac 50/60 Hz	
	Pilot Duty: A600	
Minimum Switching Requirement	1 A at 5 Vac/Vdc	
Coil Characteristics		
Coil Voltage Range[2]	6–600 Vac 50/60 Hz; 6–250 Vdc[2]	
Operating Range (% of Nominal)	85%–110% (AC); 80%–110% (DC)	
Average Consumption (Maximum)	10 VA (AC); 4 W (DC)	
Drop-Out Voltage Threshold	10% (AC/DC)	
General Characteristics		
Electrical Life at Rated Load (Resistive)	Refer to Table 3 on page 6	
Maximum Operating Time (Response Time)	30 ms	
Dielectric Strength	Between coil and contact: 2200 V	Between coil and contact: 2200 V
	Between poles: 2200 V	N/A
	Between open contacts: 1500 V	Between open contacts: N/A
Storage Temperature Range	−55 to +100 °C (−67 to +212 °F)	
Operating Temperature Range	−55 to +55 °C (−67 to +131 °F)	
Maximum Wire Capacity	10 AWG (5.3 mm²)	
Terminal Tightening Torque	11–15 in-lb (1.2–1.7 N•m)	
Weight	227–312 g (8–11 oz)	
Agency Certifications	UL Listed (E43641), CSA (168986), CE (per IEC 60947-1), RoHS	

Note: Actual product performance may vary depending on application and environmental conditions.
[1] For ratings with blowout magnet, refer to Table 1 below.
[2] For available standard coil voltages, refer to the standard part number table on page 4.

Table 1: Additional DC Ratings with Blowout Magnet

Load Voltage	Contact Rating
110 Vdc	20 A
220 Vdc	8 A
325 Vdc	4 A
500 Vdc	2 A

Table 2: Auxiliary Switch Ratings (Non-Standard Option)

Load Type	Contact Rating
Resistive Load 120/250 Vac (50/60 Hz)	10 A
Motor Load 125/250 Vac (50/60 Hz)	0.25 hp
Tungsten Load 125 Vac (50/60 Hz)	3 A

** 50 A versions and additional options available. Call Customer Service for more information (847-441-2540).*

Legacy Power Relays

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SPST-NO-DM, 40 A*; SPDT, 40 A;
DPST-NO, 40 A; DPDT, 40 A*

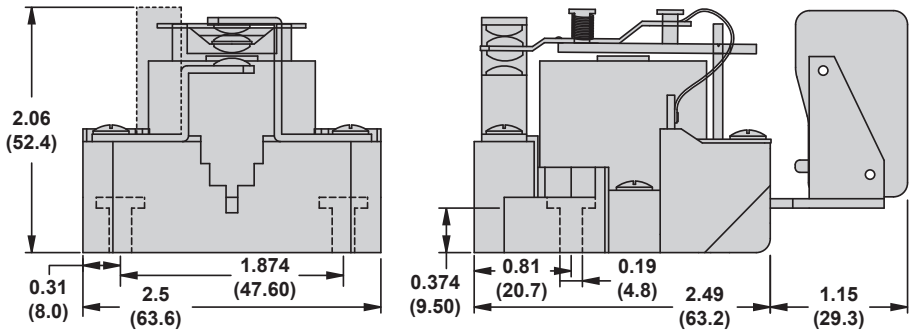
Table 3: Contact Ratings and Electrical Endurance (per IEC 60947-1, 60947-4-1)

Contact Ratings	Load Voltage	Frequency	Load Type	Estimated Electrical Endurance	See Note(s)
AC Load					
40 A	300 V	50/60 Hz	Resistive	50,000 cycles	1, 3
2 hp	120–600 V		Motor	50,000 cycles	2, 3
15 A	120 V		Tungsten	20,000 cycles	3, 4
A600	---	---	Pilot Duty	100,000 cycles	3
DC Load					
40 A	28 V	DC	Resistive	100,000 cycles	3
20 A	110 V				
8 A	220 V				
4 A	325 V				
2 A	500 V				

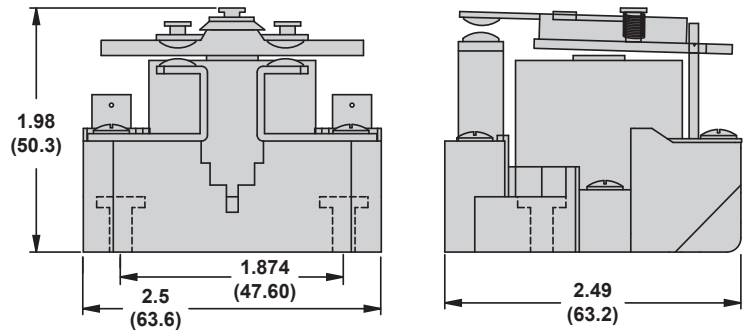
Notes:
1. Resistive AC load ratings are based on a power factor of 0.85–1.0.
2. Motor horsepower ratings are based on a power factor of 0.4–0.5, and an initial inrush current not exceeding six times the full-load current.
3. All ratings are based on applying the rated nominal power to the relay coil so as to provide a "clean" make and break that does not result in any contact chatter or multiple actuation of the contacts.
4. The tungsten rating is based on cold-filament inrush current not exceeding 15 times the rated steady-state lamp current.

Dimensions — inches (millimeters)

SPDT—Short Base (shown with optional Auxiliary Switch)



SPST-NO-DM



** 50 A versions and additional options available. Call Customer Service for more information (847-441-2540).*

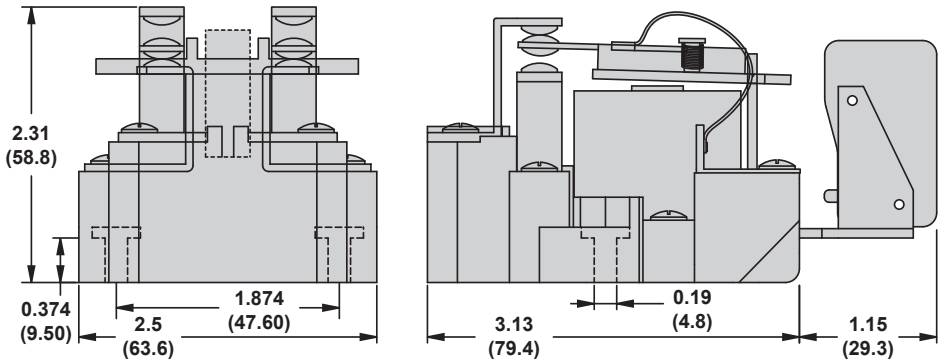
Legacy Power Relays

199

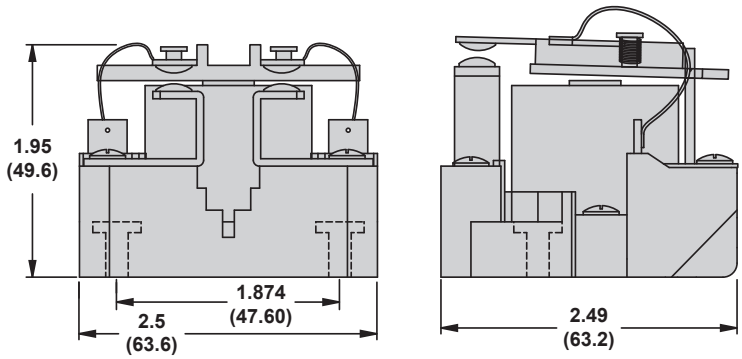
SPST-NO-DM, 40 A*; SPDT, 40 A;
DPST-NO, 40 A; DPDT, 40 A*

Dimensions — inches (millimeters)

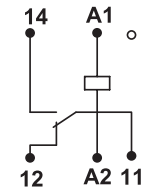
DPDT—Long Base (shown with optional Auxiliary Switch)



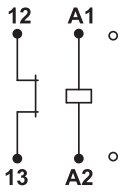
DPST-NO



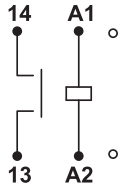
Wiring Diagrams



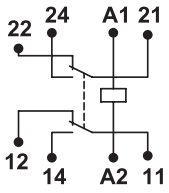
SPDT



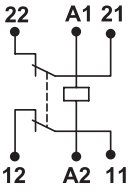
SPST-NC-DB



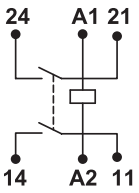
SPST-NO-DM



DPDT



DPST-NC



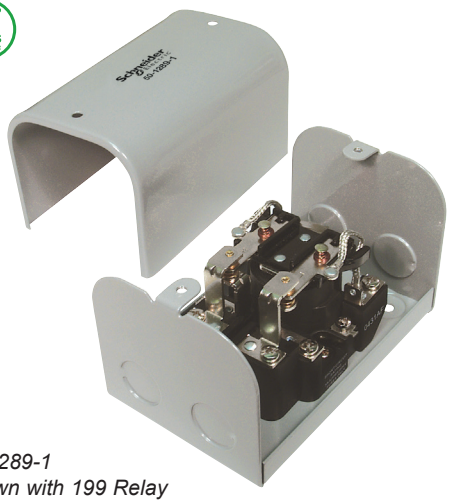
DPST-NO

** 50 A versions and additional options available. Call Customer Service for more information (847-441-2540).*

Legacy Power Relays

199

Metal Enclosure, 50-1289-1



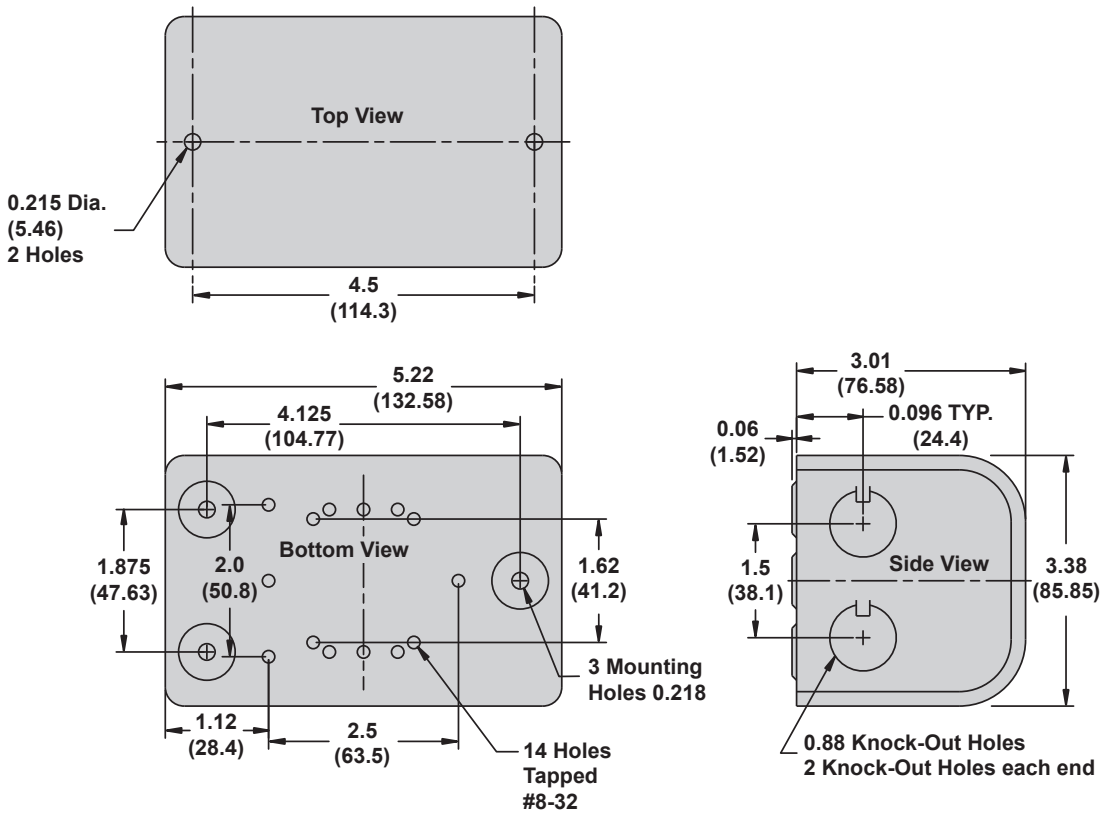
50-1289-1
Shown with 199 Relay

Description

The 50-1289-1 metal enclosure provides cover and protection as well as alternate wiring and mounting options.

Description	Function	Weight	For Use with Relays	Packaging Minimum	Standard Part Number
Metal Enclosure	Covers and protects relays	Approx. 1 lb (16 oz)	199 Series Relays	1	50-1289-1

Dimensions — inches (millimeters)



Legacy Power Relays

725

SPST-NO, 30 A; DPST-NO, 25 A

Plug-In Socket Mount with full-feature cover

Panel/DIN Mount with blade terminals

Panel/DIN Mount with screw terminals

Description

The 725 series power relays offer high-capacity switching with high dielectric voltage resistance capabilities.

Feature	Benefit
High ratings (up to 30 A, 3 hp)	Meets demands for high power applications
4,000 V dielectric strength (coil to contacts)	Helps withstand severe voltage surges and spikes which provides protection for surrounding circuits
Multiple mounting options	Helps to increase functionality and ease of use
Full-feature cover (Plug-in socket mount)	Offers push-to-test button, lock-down door, LED, flag indicators, and ID tag to simplify and expedite installation and testing
Fingersafe cover (on relays with screw terminals)	Helps prevent the operator from touching live circuits (IP20 degree of protection)

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Mounting Style	Terminal Style	Standard Part Number
25 A	DPST-NO	24 Vac	275	DIN and panel	Blade terminals	725BXXBC3ML-24A
					Screw terminals	725BXXSC3ML-24A
		120 Vac	5200	DIN and panel	Blade terminals	725BXXBC3ML-120A
					Screw terminals	725BXXSC3ML-120A
				Plug-in (socket)	Blade terminals	725BXXBM4L-120A
		240 Vac	21000	DIN and panel	Blade terminals	725BXXBC3ML-240A
					Screw terminals	725BXXSC3ML-240A
		12 Vdc	75	DIN and panel	Blade terminals	725BXXBC3ML-12D
					Screw terminals	725BXXSC3ML-12D
		24 Vdc	300	DIN and panel	Blade terminals	725BXXBC3ML-24D
					Screw terminals	725BXXSC3ML-24D
				Plug-in (socket)	Blade terminals	725BXXBM4L-24D
30 A	SPST-NO	24 Vac	275	DIN and panel	Blade terminals	725AXXBC3ML-24A
					Screw terminals	725AXXSC3ML-24A
				Plug-in (socket)	Blade terminals	725AXXBM4L-24A
		120 Vac	5200	DIN and panel	Blade terminals	725AXXBC3ML-120A
					Screw terminals	725AXXSC3ML-120A
				Plug-in (socket)	Blade terminals	725AXXBM4L-120A
		240 Vac	21000	DIN and panel	Blade terminals	725AXXBC3ML-240A
					Screw terminals	725AXXSC3ML-240A
		12 Vdc	75	DIN and panel	Blade terminals	725AXXBC3ML-12D
					Screw terminals	725AXXSC3ML-12D
		24 Vdc	300	DIN and panel	Blade terminals	725AXXBC3ML-24D

Part Number Explanation

725 BXX B C3 ML - 24D

Series:
725

Contact Arangement:
AXX = SPST-NO
BXX = DPST-NO

Terminal Style:
B = Blade (Plug-in or quick connect)
S = Screw terminal

Mount Option:
C3 = DIN/panel mount
Null = Plug-in socket mount

Standard Features:
M = Side pushbutton
M4 = Lockable push button and flag
L = LED indicator

Coil Voltage:
6A = 6 Vac
12A = 12 Vac
24A = 24 Vac
48A = 48 Vac
120A = 120 Vac
240A = 240 Vac
6D = 6 Vdc
12D = 12 Vdc
24D = 24 Vdc
48D = 48 Vdc
110D = 110 Vdc

Legacy Power Relays
725
SPST-NO, 30 A; DPST-NO, 25 A

Specifications (UL 508)

Part Number	725AXX	725BXX
Contact Characteristics		
Contact Configuration	SPST-NO	DPST-NO
Contact Material	Silver alloy	
Thermal (Carrying) Current	30 A	25 A
Maximum Switching Voltage	300 V	
Current Ratings at Voltage	Resistive: 30 A at 277 Vac 50/60 Hz, 6,000 cycles 30 A at 30 Vdc, 100,000 cycles Motor: 1.5 hp at 120 Vac 50/60 Hz; 3.0 hp at 277 Vac 50/60 Hz, 6,000 cycles Tungsten: 1.5 kW at 120 Vac 50/60 Hz, 6,000 cycles	Resistive: 25 A at 277 Vac 50/60 Hz; 25 A at 30 Vdc, 6,000 cycles Motor: 1.0 hp at 120 Vac 50/60 Hz; 2.0 hp at 277 Vac 50/60 Hz, 6,000 cycles Tungsten: 1.3 kW at 120 Vac 50/60 Hz, 6,000 cycles
Minimum Switching Requirement	100 mA at 5 Vdc (0.5 W)	
Coil Characteristics		
Coil Voltage Range[1]	6–240 Vac 50/60 Hz (All AC coils are rectified); 6–110 Vdc[1]	
Operating Range (% of Nominal)	75%–110% (AC/DC)	
Average Consumption	2.5 VA (AC); 1.9 W (DC)	
Insulation System Per UL 508	Class B (130 °C)	
General Characteristics		
Electrical Life at Rated Load	See “Current Ratings at Voltage”	
Mechanical Life at No Load (Unpowered)	5,000,000 operations	
Operate Time at Nominal Coil Voltage	30 ms (max)	
Release Time at Nominal Coil Voltage	30 ms (max)	
Dielectric Strength	Coil–contacts: 4,000 V (rms) Across open contacts: 2,000 V (rms) Pole–pole: 2,000 V (rms) (DPST-NO version only) Insulation resistance: 1,000 MΩ at 500 Vdc (minimum)	
Operating Temperature Range	-20 to +55 °C (-4 to +131 °F)	
Storage Temperature Range	-55 to +100 °C (-67 to +212 °F)	
Quick Connect Terminals	0.25 x 0.031 in (6.35 x 0.80 mm)	
Screw Terminals	Coil: M3.5 combination head; Contacts: M4 combination head	
Screw Terminal Torque	Coil and load: 1.2 N•m (10.6 lb in) nominal; 2.3 N•m (20.3 lb in) maximum	
Screw Terminal Maximum Wire Gauge	Load: 10 AWG (5.26 mm²); Coil: 12 AWG (3.3 mm²)	
Cover Protection Category	IP20 (screw terminals only)	
Weight (Average)	120 g (4.2 oz)	
Agency Certifications	UL Listed (E43641), CSA (168986), CE (per IEC 60947-1), RoHS	

Note: Actual product performance may vary depending on application and environmental conditions.
[1] For available standard coil voltages, refer to the standard part number table on page 9.

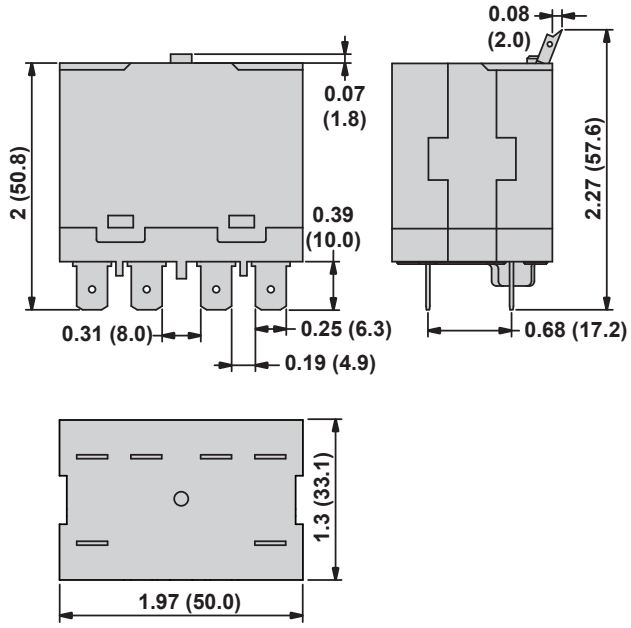
Legacy Power Relays

725

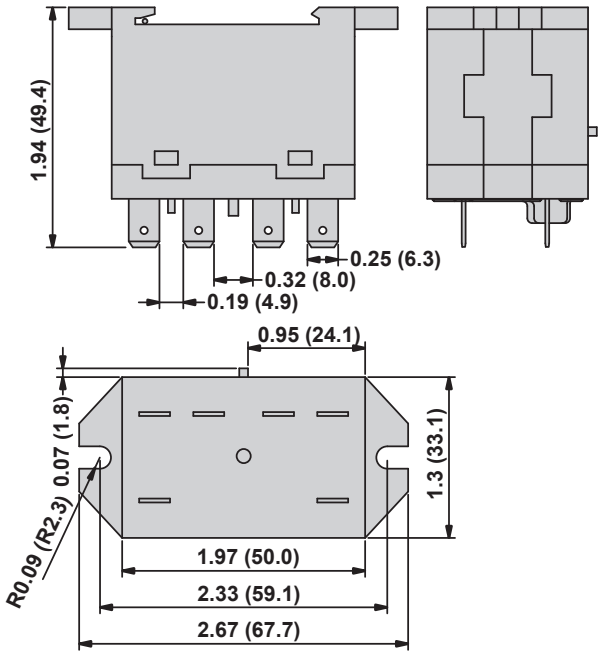
SPST-NO, 30 A; DPST-NO, 25 A

Dimensions — inches (millimeters)

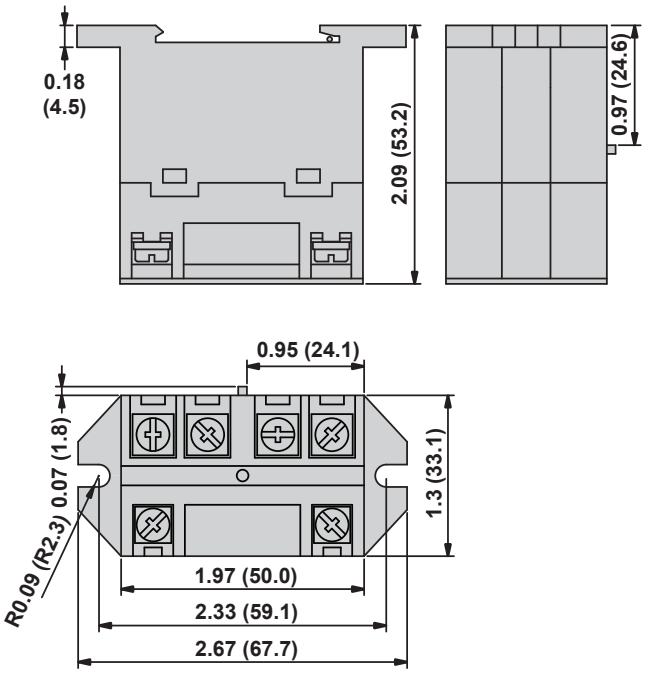
Plug-in Socket Mount (Blade Terminals)



C3 – DIN/Panel Mount (Blade Terminals)

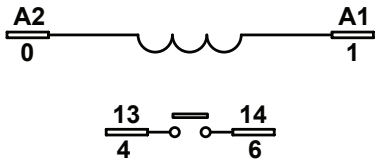


C3 – DIN/Panel Mount (Screw Terminals)

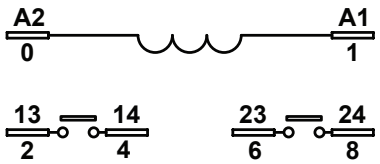


Wiring Diagrams

SPST-NO



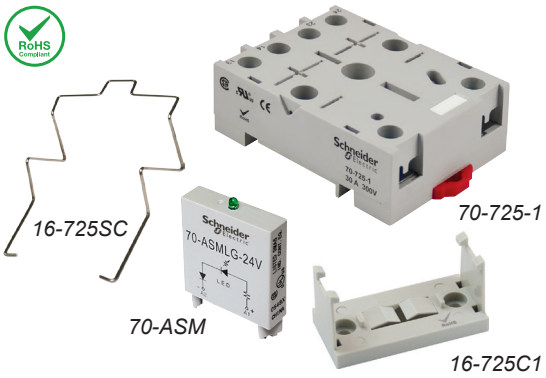
DPST-NO



Legacy Power Relays

725

Socket, 70-725-1; Panel Mount Adapter, 16-725C1
Spring Clip, 16-725SC; Socket Modules, 70-ASM



Description

The 725 accessories create a complete system solution for all your application needs.

The 70-725-1 socket offers an alternate installation option for plug-in models. The 16-725SC retention clip holds the relay securely in place while allowing quick and efficient installation and maintenance.

Relay Accessories

Description	Function	For Use with Relays	Packaging Minimum	Standard Part Number
Socket	Offers an alternate installation option	725 Relays with plug-in socket mount cover	10	70-725-1
Panel Mount Adapter	Provides additional panel mount option	725 Relays with plug-in socket mount cover	10	16-725C1

Socket Accessories

Description	Function	Coil Voltage	For Use with Sockets	Packaging Minimum	Standard Part Number
Socket Module*	LED indicator	120/240 Vac/Vdc	70-725-1	10	70-ASMLG-110/240
	MOV suppressor	24 Vac/Vdc	70-725-1	10	70-ASMM-24
		120 Vac/Vdc	70-725-1	10	70-ASMM-120
		240 Vac/Vdc	70-725-1	10	70-ASMM-240
	Protection diode	6–250 Vdc	70-725-1	10	70-ASMD-250
	RC circuit	240 Vac	70-725-1	10	70-ASMR-240
Spring Clip	Relay retention in high vibration conditions	N/A	70-725-1	10	16-725SC

** Use of LED or RC socket module may increase coil power draw by up to 10%. See page 30 for more information.*

Socket Specifications (UL 508)

Part Number	70-725-1
Number of Terminals	6
Nominal Voltage Rating	300 V
Nominal Current Rating	30 A
Dielectric Strength	Between adjacent output terminals: 1600 V(rms); Output to input terminals: 1600 V(rms); Terminals to rail/chassis: 1600 V(rms)
Temperature Range	Operation: −40 to +55 ºC (−40 to +131 °F); Storage: −40 to +105 ºC (−40 to +221 °F)
Protection Category (Fingersafe™)	IP20
Internal Metal Tracks	Copper alloy, tin plated
Screw Terminals	Steel, zinc-plated combination head
Maximum Screw Torque	10.6 lb-in (1.2 N•m)
Mounting Style	35 mm DIN rail
Wire Connection Method	Screw terminals
Wire Size	Solid Cu: one 10 AWG (6.0 mm²) two 10–20 AWG (0.5–6 mm²) Stranded Cu: one or two 10–20 AWG (0.5–6.0 mm²)
Flammability Rating	94 V-0
Weight	2.4 oz (67 g)
Agency Certifications	UL Listed (E43641), CSA (168986), CE (per IEC 61810), RoHS

Relay Mounting Example

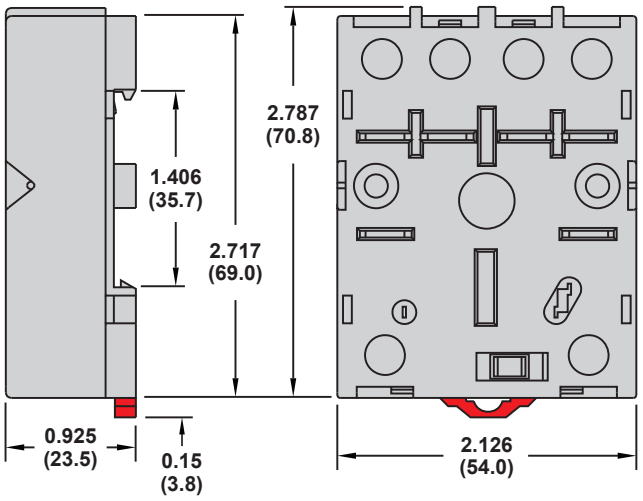
Legacy Power Relays

725

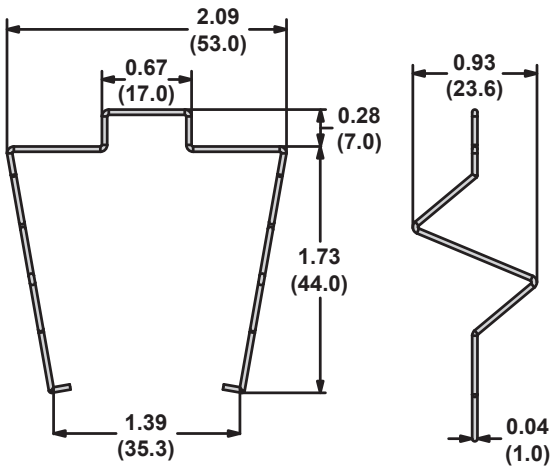
Socket, 70-725-1; Panel Mount Adapter, 16-725C1
Spring Clip, 16-725SC; Socket Modules, 70-ASM

Dimensions — inches (millimeters)

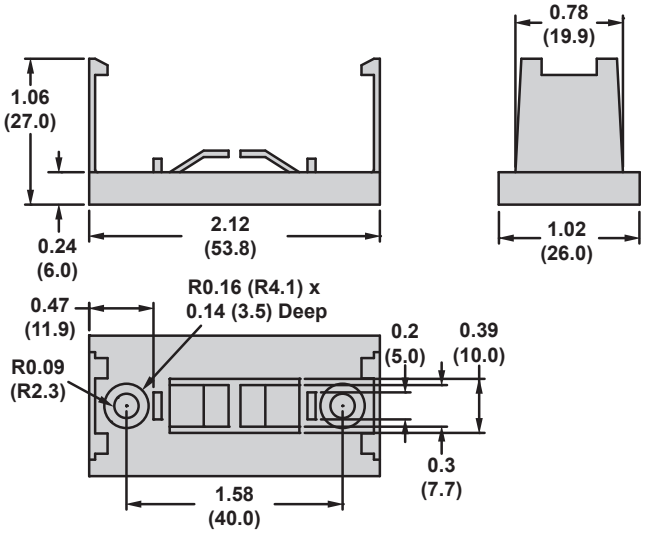
70-725-1



16-725SC

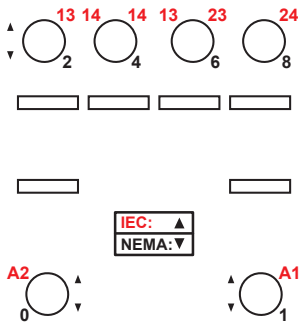


16-725C1



Wiring Diagram

70-725-1



Legacy Power Relays

389F

SPST, 30 A; DPDT, 20–25 A;
SPDT, 25–30 A; 3PDT, 20 A

Plug-In (Socket) Cover

Side Flange Cover

Description

The 389F series power relays offer a broad range of contact ratings along with a variety of mounting options and accessories, making it the ideal solution for a variety of application requirements.

Feature	Benefit
High-power contacts	High contact ratings (up to 30 A, 1.5 hp) and long electrical endurance; suitable for high-power switching applications
Ballast load ratings	Ideal for lighting controls
Multiple contact configurations	Meets a wide variety of applications
Socket mountable (plug-in cover only)	Helps increase design and installation flexibility; allows the use of modules and other accessories
RoHS compliant	Environmentally friendly; complies with the European Restriction of Hazardous Substances directive

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Cover Style	Standard Part Number
20 A	3PDT	12 Vac	17.7	Side flange	389FXCXC1-12A
		24 Vac	72	Side flange	389FXCXC1-24A
				Plug-in (socket)	389FXCXC-24A
		120 Vac	1700	Plug-in (socket)	389FXCXC-120A
				Side flange	389FXCXC1-120A
		240 Vac	7200	Plug-in (socket)	389FXCXC-240A
				Side flange	389FXCXC1-240A
		12 Vdc	100	Plug-in (socket)	389FXCXC-12D
				Side flange	389FXCXC1-12D
		24 Vdc	400	Plug-in (socket)	389FXCXC-24D
				Side flange	389FXCXC1-24D
25 A	DPDT	24 Vac	72	Plug-in (socket)	389FXBXC-24A
				Side flange	389FXBXC1-24A
		120 Vac	1700	Plug-in (socket)	389FXBXC-120A
				Side flange	389FXBXC1-120A
		240 Vac	7200	Plug-in (socket)	389FXBXC-240A
				Side flange	389FXBXC1-240A
		12 Vdc	100	Plug-in (socket)	389FXBXC-12D
				Side flange	389FXBXC1-12D
		24 Vdc	400	Plug-in (socket)	389FXBXC-24D
				Side flange	389FXBXC1-24D
	SPDT	24 Vac	72	Side flange	389FXAXC1-24A
		120 Vac	1700	Side flange	389FXAXC1-120A
		240 Vac	7200	Side flange	389FXAXC1-240A
		12 Vdc	100	Side flange	389FXAXC1-12D
		24 Vdc	400	Side flange	389FXAXC1-24D
30 A	SPDT-DM-DB	24 Vac	72	Side flange	389FXHXC1-24A
		120 Vac	1700	Side flange	389FXHXC1-120A
		240 Vac	7200	Side flange	389FXHXC1-240A
		12 Vdc	100	Side flange	389FXHXC1-12D
		24 Vdc	400	Side flange	389FXHXC1-24D
	SPST-NO-DM	24 Vac	72	Side flange	389FHXXC1-24A
		120 Vac	1700	Side flange	389FHXXC1-120A
		240 Vac	7200	Side flange	389FHXXC1-240A
		12 Vdc	100	Side flange	389FHXXC1-12D
		24 Vdc	400	Side flange	389FHXXC1-24D

Legacy Power Relays

389F

SPST, 30 A; DPDT, 20–25 A;
SPDT, 25–30 A; 3PDT, 20 A

Specifications

Part Number	389FXAX, XBX	389FXCX	389FXHX, HXX
Contact Characteristics			
Contact Configuration	SPDT; DPDT	3PDT	SPST-NO-DM; SPDT-DM-DB
Contact Material	Silver alloy		
Thermal (Carrying) Current	25 A	20 A	30 A
Maximum Switching Voltage	600 V	300 V	600 V
Rated Switching Current at Voltage (Conforming to IEC AC-1 and DC-1)	NO and NC: 25 A at 250 Vac NO and NC: 15 A at 28 Vdc	NO and NC: 20 A at 250 Vac NO and NC: 15 A at 28 Vdc	NO and NC: 30 A at 250 Vac NO and NC: 30 A at 28 Vdc
Current Ratings at Voltage (Conforming to UL)	Resistive: 25 A at 300 Vac 50/60 Hz; 5 A at 600 Vac 50/60 Hz; 13 A at 28 Vdc, 100,000 cycles Motor: 1.5 hp at 200–240 Vac 50/60 Hz; 1 hp at 120–200 and 480–600 Vac[3] 50/60 Hz, 6,000 cycles Pilot Duty: B600, 6,000 cycles FLA/LRA: 22/98 A at 120 Vac, 6,000 cycles Ballast: 20 A, 277 Vac 50/60 Hz, 6,000 cycles	Resistive: 20 A at 150 Vac 50/60 Hz, 15 A at 250 Vac, 50/60 Hz 13 A at 28 Vdc, 50,000 cycles Motor: 0.5 hp at 120–240 Vac 50/60 Hz; 6,000 cycles Pilot Duty: B300, 6,000 cycles Ballast: 20 A, 150 Vac 50/60 Hz; 6.67 A at 277 Vac, 6,000 cycles	Resistive: 30 A at 300 Vac 50/60 Hz 10 A at 600 Vac 50/60 Hz 30 A at 28 Vdc, 100,000 cycles Motor: 1.5 hp at 200–600 Vac 50/60 Hz; 1 hp at 120–200 Vac 50/60 Hz, 6,000 cycles Pilot Duty: A600, 6,000 cycles FLA/LRA: 22/98 A at 120 Vac, 6,000 cycles; 17/60 A at 300 Vac, 6,000 cycles[3] Ballast: 25 A, 277 Vac 50/60 Hz, 6,000 cycles
Minimum Switching Requirement	100 mA at 5 Vdc		
Coil Characteristics			
Coil Voltage Range[1]	12–240 Vac 50/60 Hz; 12–24 Vdc[1]		
Operating Range (% of Nominal)	85%–110% (AC); 80%–110% (DC)		
Average Consumption	2 VA (AC); 1.5 W (DC)		
Drop-out Voltage Threshold	10% minimum (AC/DC)		
General Characteristics			
Electrical Life at Rated Load[2]	100,000 operations for IEC AC-1, 50,000 operations for IEC DC-1		
Mechanical Life at No Load (Unpowered)	5,000,000 operations		
Operate Time at Nominal Coil Voltage	20 ms (maximum)		
Dielectric Strength	Between coil and contact: 2200 Vac; between poles: 2200 Vac; between contacts: 1600 Vac		
Operating Temperature Range	-30 to +55 °C (-22 to +131 °F)		
Storage Temperature Range	-30 to +85 °C (-22 to +185 °F)		
Weight (Average)	84 g (3.0 oz)		
Agency Certifications	UL Listed (E164862), CSA (225619), CE (per IEC 60947-1), RoHS		

Note: Actual product performance may vary depending on application and environmental conditions.
[1] For available standard coil voltages, refer to the standard part number table on page 14.
[2] The NO and NC contacts were tested independently. [3] Break all lines for 1 hp at 600 Vac, 50/60 Hz.
[3] For SPST-NO-DM version only.

Part Number Explanation

389F **XBX** **C** - **24A**

Series:
389F

Contact Arrangement:
XAX = SPDT
XBX = DPDT
XCX = 3PDT
XHX = SPDT-DM-DB
HXX = SPST-NO-DM

Cover Style:
C = Plug-in socket mount
C1 = Side flange mount

Coil Voltage:
12A = 12 Vac
24A = 24 Vac
120A = 120 Vac
240A = 240 Vac
12D = 12 Vdc
24D = 24 Vdc

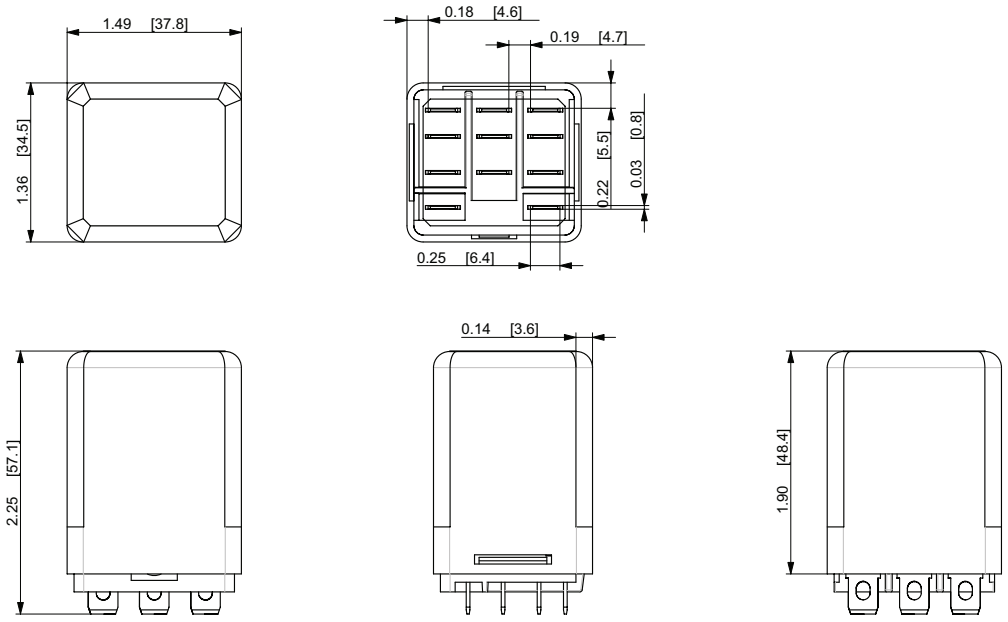
Legacy Power Relays

389F

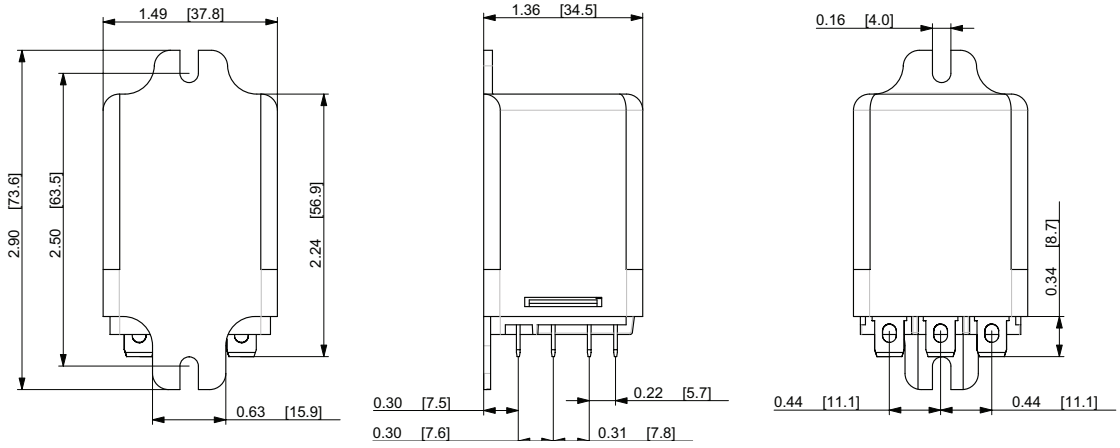
SPST, 30 A; DPDT, 20–25 A;
SPDT, 25–30 A; 3PDT, 20 A

Dimensions — inches (millimeters)

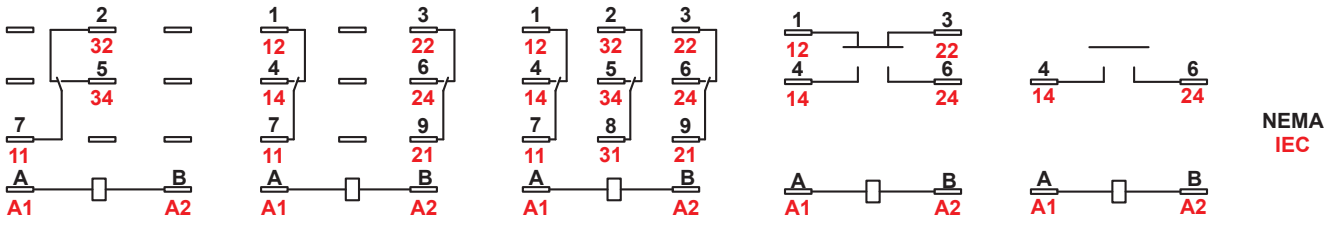
Plug-in Cover Style



Side Flange Cover Style



Wiring Diagrams



SPDT DPDT 3PDT SPDT-DB-DM SPST-NO-(DM)

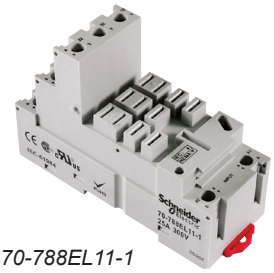
Legacy Power Relays

389F

Socket, 70-788EL11-1

Description

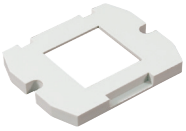
The 389F accessories create a complete system solution for all your application needs.



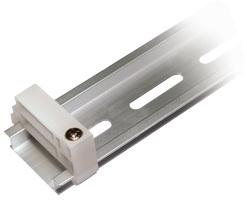
70-788EL11-1

70-ASM

16-750/788FT-1



16-788C1



16-DCLIP-1 and 16-700DIN

Relay Accessories

Description	Function	For Use with Relays	Packaging Minimum	Standard Part Number
Socket	Offers an alternate installation option	389F relays with plug-in (socket) cover	10	70-788EL11-1

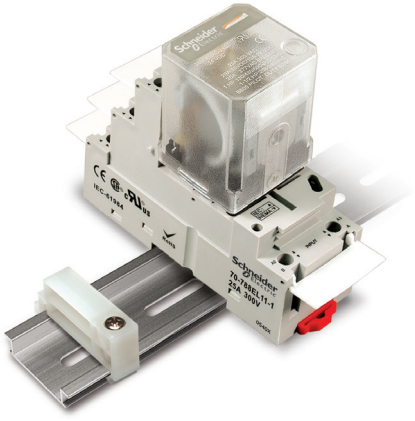
Socket Accessories

Description	Function	Coil Voltage	For Use with Sockets	Packaging Minimum	Standard Part Number
Socket Module*	LED indicator	120/240 Vac/Vdc	70-788EL11-1	10	70-ASMLG-110/240
	MOV suppressor	24 Vac/Vdc	70-788EL11-1	10	70-ASMM-24
		120 Vac/Vdc	70-788EL11-1	10	70-ASMM-120
		240 Vac/Vdc	70-788EL11-1	10	70-ASMM-240
	Protection diode	6–250 Vdc	70-788EL11-1	10	70-ASMD-250
	RC circuit	240 Vac	70-788EL11-1	10	70-ASMR-240
ID Tag/Label*	Identification of circuits in multi-relay applications	N/A	70-788EL11-1	10	16-750/788FT-1
Panel Mount Adapter	Mounting socket to a panel	N/A	70-788EL11-1	10	16-788C1
Metal DIN Rail*	Quick installation and removal of sockets	N/A	70-788EL11-1	20	16-700DIN
DIN Rail Clip*	Holds sockets firmly in place on DIN rail	N/A	70-788EL11-1	10	16-DCLIP-1

** Use of LED or RC socket module may increase coil power draw by up to 10%. See page 30 for more information.*

Socket Specifications (UL 508)

Part Number	70-788EL11-1
Number of Terminals	11
Nominal Voltage Rating	300 V
Nominal Current Rating	25 A
Dielectric Strength	Between adjacent output terminals: 3000 V(rms); Output to input terminals: 3000 V(rms); Terminals to rail/chassis: 3000 V(rms)
Temperature Range	Operation: −40 to +80 °C (−40 to +176 °F); Storage: −40 to +105 °C (−40 to +221 °F)
Protection Category (Fingersafe™)	IP20
Internal Metal Tracks	Copper alloy, Tin plated
Screw Terminals	Steel, Zinc plated combination head
Maximum Screw Torque	9.0 lb-in (1.0 N•m)
Mounting Style	35 mm DIN rail; mounts to panel with 16-788C1 adapter
Wire Connection Method	Elevator terminals
Wire Size	Solid Cu: two 10–12 AWG (4.0–6.0 mm²) Stranded Cu: two 10–12 AWG (4.0–6.0 mm²)
Flammability Rating	94V-0
Weight	3.39 oz (96 g)
Agency Certifications	UL Listed (E70550), CSA (40787), CE (per IEC 61984), RoHS



Relay Mounting Example

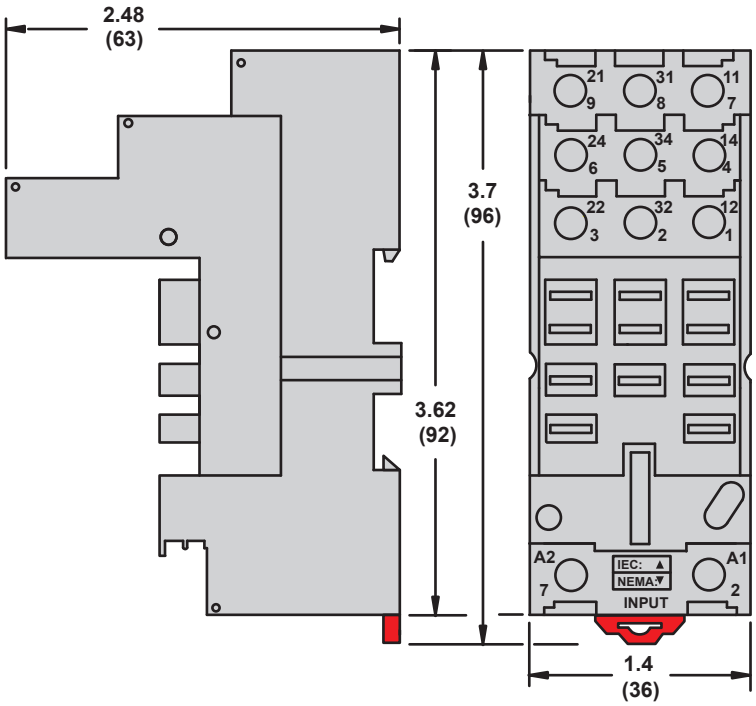
Legacy Power Relays

389F

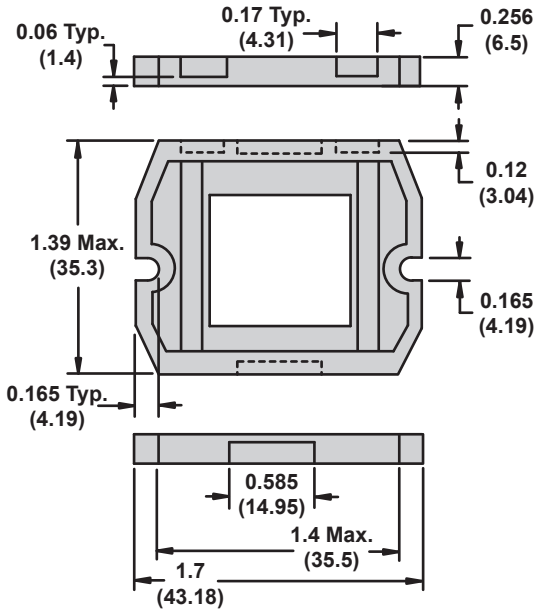
Socket, 70-788EL11-1

Dimensions — inches (millimeters)

70-788EL11-1



16-788C1 Panel Mount Adapter for 70-788EL11 socket

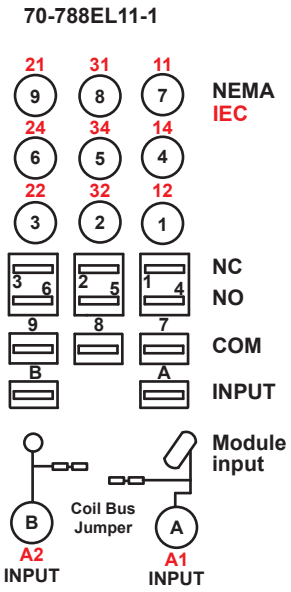


Legacy Power Relays

389F

Socket, 70-788EL11-1

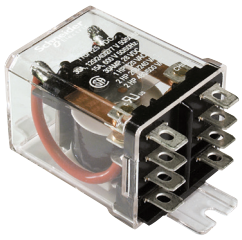
Wiring Diagram



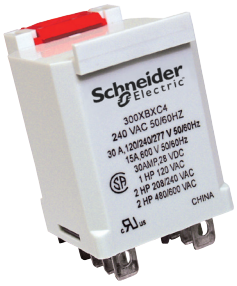
Legacy Power Relays

300

DPDT, 30 A



Side Flange Cover



Top DIN Mount Cover

Description

The 300 series power relays offer high-amperage DPDT performance in a standard flange-mounting device. Combined with the optional blowout magnet feature, the 300 series is designed for high-voltage DC or AC switching.

Feature	Benefit
High-power contacts	High contact ratings (up to 30 A, 2 hp) and long electrical endurance; suitable for high-power switching applications
Improved dielectric strength	4000 V(rms) between mutually isolated conductive elements and frame
Increased spacing between stationary contact terminals	Enables fully booted Quick Connect terminals
2 mm contact gap and 8 mm creepage and clearance	Meets international requirements
Blowout magnet option	Ideal for DC voltage switching

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Cover Style	Standard Part Number
30 A	DPDT	12 Vac	13.5	Side flange mount	300XBXC1-12A
		24 Vac	54	Side flange mount	300XBXC1-24A
		120 Vac	1270	Side flange mount	300XBXC1-120A
		240 Vac	5400	Side flange mount	300XBXC1-240A
		12 Vdc	57	Side flange mount	300XBXC1-12D
		24 Vdc	300	Side flange mount	300XBXC1-24D
				Side flange mount (with magnetic blowout)	300XBX69C1-24D

Part Number Explanation

300 **XBX** **69** **C1** - **24A**

Series:
300

Contact Arangement:
XBX = DPDT

Blowout Magnet:
69 = Blowout magnet

Cover Style:
C1 = Side flange mount

Coil Voltage:
12A = 12 Vac
24A = 24 Vac
120A = 120 Vac
240A = 240 Vac
12D = 12 Vdc
24D = 24 Vdc

Legacy Power Relays
300
DPDT, 30 A

Specifications (UL 508)

Part Number	300XBX[1]
Contact Characteristics	
Contact Configuration	DPDT
Contact Material	Silver alloy
Thermal (Carrying) Current	30 A
Maximum Switching Voltage	600 V
Current Ratings at Voltage[1]	Resistive: 30 A at 300 Vac 50/60 Hz, 30 A at 28 Vdc, NO 100,000 cycles, NC 6,000 cycles; 15 A at 600 Vac 50/60 Hz, 100,000 cycles Motor: 1 hp at 120 Vac 50/60 Hz, 6,000 cycles; 2 hp at 208–600 Vac 50/60 Hz[2], 6,000 cycles Pilot Duty: 5.5 A at 120 Vac 50/60 Hz, 6,000 cycles; 1.2 A at 600 Vac 50/60 Hz, 6,000 cycles
Minimum Switching Requirement	500 mA at 5 Vdc
Coil Characteristics	
Coil Voltage Range[3]	12–240 Vac 50/60 Hz; 12–24 Vdc
Operating Range (% of Nominal)	85%–110% (AC); 80%–110% (DC)
Average Consumption	3.4 VA (AC at 60 Hz); 2.3 W (DC)
Drop-out Voltage Threshold	15% (AC); 10% (DC)
General Characteristics	
Electrical Life at Rated Load	6,000 operations
Mechanical Life at No Load (Unpowered)	5,000,000 operations
Operate Time at Nominal Coil Voltage	20 ms
Dielectric Strength	Between coil and contact: 4000 Vac; Between poles: 2500 Vac; Between contacts: 2500 Vac
Operating Temperature Range	−40 to +55 °C (−40 to +131 °F)
Storage Temperature Range	−40 to +85 °C (−40 to +185 °F)
Weight (Average)	without blowout magnet: 85 g (3.0 oz) with blowout magnet: 95 g (3.4 oz)
Agency Certifications	UL (E164862), CSA (225619), RoHS

Note: Actual product performance may vary depending on application and environmental conditions.
[1] For additional ratings with blowout magnet, refer to Table 3 below.
[2] Break all lines for 2 hp / 480–600 Vac, 50/60 Hz.
[3] For available standard coil voltages, refer to the standard part number table on page 20.

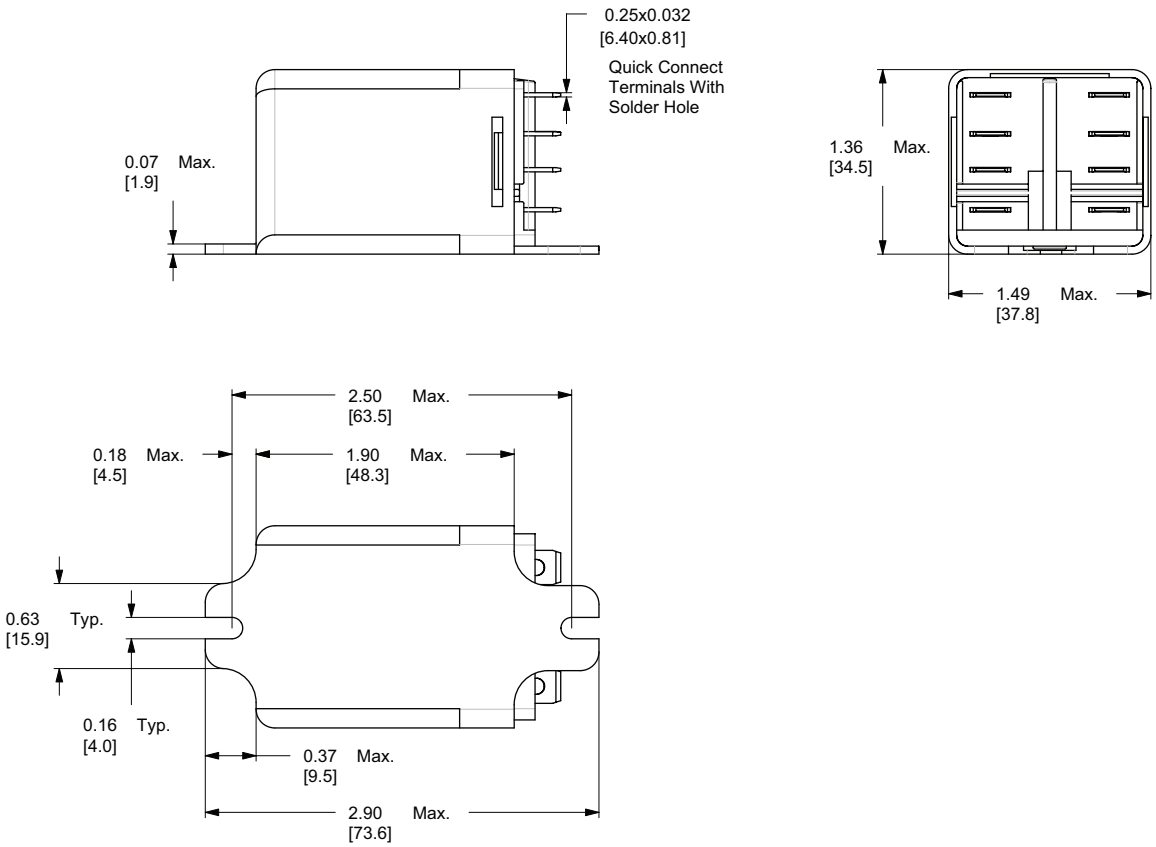
Table 3: Additional DC Ratings with Blowout Magnet

Load Voltage	Contact Rating
150 Vdc	5 A

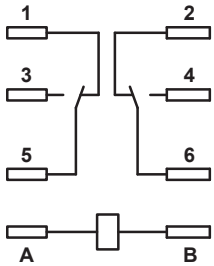
Legacy Power Relays
300
DPDT, 30 A

Dimensions — inches (millimeters)

Side Flange Mount Cover



Wiring Diagram



DPDT

Legacy Power Relays

92

DPST-NO, 30 A;
DPDT, 30 A (NO) / 3 A (NC)

92S7A22D-24

Description

The 92 series power relays offer a small package size and features Class F insulation for a maximum coil temperature of 155 °C (311 °F). These power relays meet UL508 spacing and are directly DIN or panel mountable.

Feature	Benefit
Standard Class F insulation	Allows for maximum coil temperature of 155 ˚C (311 °F) which is ideal for elevated temperature applications
DIN and panel mount cover	Mounts directly onto DIN rail or panel and provides flexibility to accommodate last minute design changes
Sealed construction, vented	To resist dust and debris in harsh environments

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Standard Part Number
30 A	DPST-NO	24 Vac	170[1]	92S7A22D-24
		120 Vac	4250[1]	92S7A22D-120
		240 Vac	16500[1]	92S7A22D-240
		12 Vdc	86	92S7D22D-12
		24 Vdc	350	92S7D22D-24
30 A (NO) / 3 A (NC)	DPDT	24 Vac	170[1]	92S11A22D-24
		120 Vac	4250[1]	92S11A22D-120
		240 Vac	16500[1]	92S11A22D-240
		12 Vdc	86	92S11D22D-12
		24 Vdc	350	92S11D22D-24

[1] *All AC coils are rectified.*

Part Number Explanation

92 **S** **7** **A** **22D** - **24**

Series:
92

Cover:
S = Dust cover

Contact Configuration:
7 = DPST-NO
11 = DPDT

Coil Type:
A = AC
D = DC

Mounting Style:
22D = DIN rail and panel mount cover

Coil Voltage:
12 = 12 V
24 = 24 V
120 = 120 V
240 = 240 V

Note: Available coil voltages include 12 Vdc, 24 Vac, 24 Vdc, 120 Vac, and 240 Vac.

Legacy Power Relays

92

DPST-NO, 30 A;
DPDT, 30 A (NO) / 3 A (NC)

Specifications

Part Number	92S7	92S11
Contact Characteristics		
Contact Configuration	DPST-NO	DPDT
Contact Material	Silver alloy	
Thermal (Carrying) Current	30 A	30 A (NO); 3 A (NC)
Maximum Switching Voltage (Conforming to IEC)	250 Vac / 28 Vdc	
Maximum Switching Voltage (Conforming to UL)	300 Vac / 28 Vdc	
Current Ratings at Voltage (Conforming to IEC)	(NO) 30 A at 250 Vac; 25 A at 28 Vdc, 100,000 cycles	(NO) 30 A at 250 Vac; 25 A at 28 Vdc, 100,000 cycles (NC) 3 A at 250 Vac; 3 A at 28 Vdc, 100,000 cycles
Current Ratings at Voltage (Conforming to UL)	(NO) General Use: 30 A at 277 Vac, 100,000 cycles Resistive: 20 A at 28 Vdc, 100,000 cycles Motor: 1.0 hp at 120 Vac; 3.0 hp at 240 Vac, 100,000 cycles LRA/FLA : 96 A / 22 A @ 240 Vac (AC coil), 30,000 cycles; 110 A / 25.3 A @ 240 Vac (DC coil), 30,000 cycles Pilot Duty: 720 VA / A300, 6,000 cycles Short Circuit: 5000 A(rms) @ 240 Vac Tungsten: 10 A at 120 Vac 50/60 Hz, 25,000 cycles; 6 A at 250 Vac 50/60 Hz, 25,000 cycles	(NO) General Use: 30 A at 277 Vac, 100,000 cycles Resistive: 20 A at 28 Vdc, 100,000 cycles Motor: 1.0 hp at 120 Vac; 3.0 hp at 240 Vac, 100,000 cycles LRA/FLA : 96 A / 22 A @ 240 Vac (AC coil), 30,000 cycles; 110 A / 25.3 A @ 240 Vac (DC coil), 30,000 cycles Pilot Duty: 720 VA / A300, 6,000 cycles Short Circuit: 5000 A(rms) @ 240 Vac Tungsten: 10 A at 120 Vac 50/60 Hz, 25,000 cycles; 6 A at 250 Vac 50/60 Hz, 25,000 cycles (NC) Resistive: 3 A at 277 Vac 6,000 cycles; 3 A at 28 Vdc 100,000 cycles
Switching Capacity	Maximum: 7500 VA / 840 W (when mounted with 13 mm gap between 2 relays); 6250 VA / 700 W (when mounted side by side without a gap) Minimum: 170 mW	
Minimum Switching Requirements	10 mA at 17 V	
Coil Characteristics		
Coil Voltage Range[1]	12–240 Vac[2] 50/60 Hz; 12–24 Vdc	
Operating Range (% of Nominal)	80%–110%	
Average Consumption	4 VA −20% / +10% (AC); 1.7 W −20% / +10% (DC)	
Drop-out Voltage Threshold	15% minimum (AC); 10% minimum (DC)	
General Characteristics		
Electrical Life at Rated Load	Resistive load: 100,000 cycles, unless otherwise specified under “Current Ratings at Voltage” Inductive load: See load curves on page 25.	
Mechanical Life at No Load (Unpowered)	5,000,000 operations	
Operating Time (Response Time) at Nominal Coil Voltage	25 ms maximum	
Rated Impulse Withstand	4000 V (1.2 μs / 50 μs)	
Dielectric Strength	Between coil and contact: 4000 Vac Between poles: 2000 Vac Between contacts: 1500 Vac	
Operating Temperature Range	−40 to +55 °C (−40 to +131 °F)	
Storage Temperature Range	−40 to +85 °C (−40 to +185 °F)	
Vibration Resistance	± 1 mm (10–35 Hz) and 3 g-n (35–150 Hz)	
Shock Resistance	10 g-n (in operation) / 30 g-n (not in operation)	
Weight (Average)	0.082 kg (0.181 oz)	
Conformity to Standards	IEC/EN 61810-1, UL 508, CSA C22-2 n°14	
Agency Certifications	UL Listed (E164862), CSA (225619), CE (per IEC 60947-1), RoHS	

Note: Actual product performance may vary depending on application and environmental conditions.
[1] For available standard coil voltages, refer to the standard part number table on page 23.
[2] All AC coils are rectified.

Legacy Power Relays

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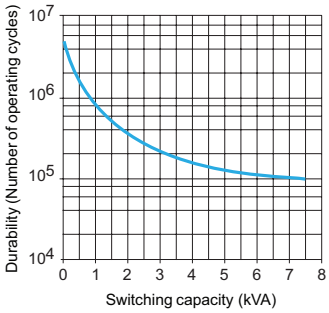
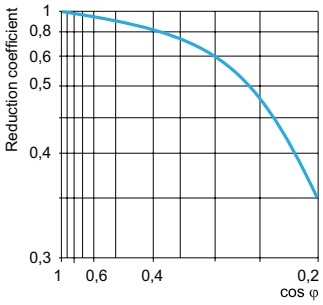
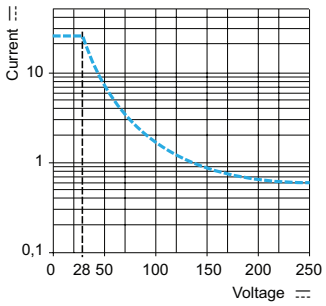
DPST-NO, 30 A;
DPDT, 30 A (NO) / 3 A (NC)

Specifications *(continued)*

Electrical durability of contacts, IEC ratings		
Resistive load	**AC reduction coefficient for inductive load (depending on power factor cos ϕ)** **Durability (inductive load) = durability (resistive load) x reduction coefficient.**	**Maximum switching capacity on DC resistive load**



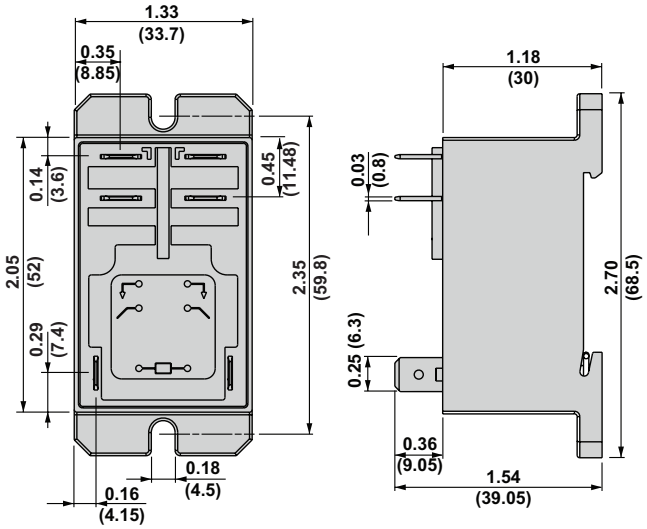




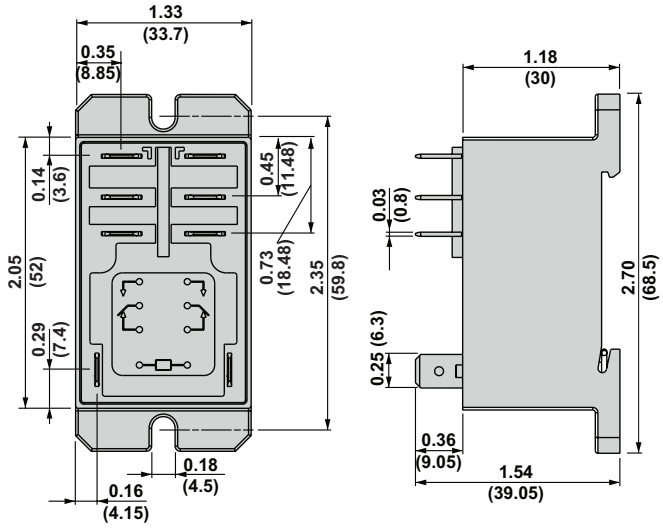
Note: These curves are for reference only and are typical values only. Actual performance depends on the actual load, environment, duty cycle, and other conditions specific to the application.

Dimensions — inches (millimeters)

DPST-NO (2 NO):

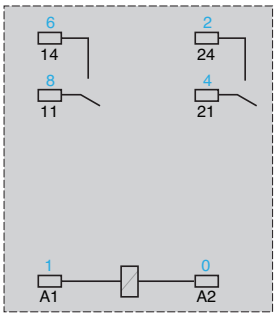


DPDT (2 CO):

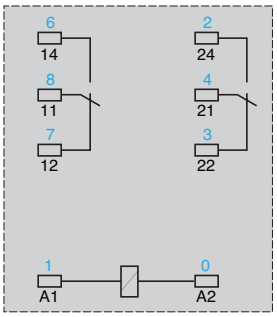


Wiring Diagrams

DPST-NO (2 NO):



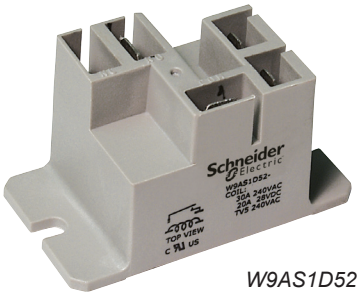
DPDT (2 CO):



Legacy Power Relays

9A

SPST-NO, 30 A;
SPDT, 30 A (NO) / 15 A (NC)



W9AS1D52

Description

The 9A series power relays offer robust performance in applications such as HVAC, motor controls, and alarm systems.

Feature	Benefit
Standard Class F insulation	Allows for maximum coil temperature of 40 ˚C (284 °F) which is ideal for high temperature applications
FLA/LRA and hp ratings	Capable of handling motor loads
Ballast load ratings	Suitable for lighting control applications
Small package size	Ideal for small spaces
Standard Quick Connect terminals	Simplifies and expedites installation

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Standard Part Number
30 A	SPST-NO	24 Vac	500	9AS1A52-24
		120 Vac	3000	9AS1A52-120
		5 Vdc	25	9AS1D52-5
		12 Vdc	144	9AS1D52-12
		24 Vdc	576	9AS1D52-24
30 A (NO); 15 A (NC)	SPDT	24 Vac	500	9AS5A52-24
		120 Vac	3000	9AS5A52-120
		240 Vac	12100	9AS5A52-240
		5 Vdc	25	9AS5D52-5
		12 Vdc	144	9AS5D52-12
		24 Vdc	576	9AS5D52-24

Note: PC mounting versions available. Call (847) 441-2540 for more information.

Part Number Explanation

9A S 5 D 5 2 - 24

Series:
9A

Cover:
S = Sealed dust cover

Contact Configuration:
1 = SPST-NO
5 = SPDT

Coil Type:
A = AC
D = DC

Mounting Style:
2 = PC mount
5 = Flanged panel mount

Contact Material:
2 = Silver alloy

Coil Voltage:
24 = 24 Vac
120 = 120 Vac
240 = 240 Vac
5 = 5 Vdc
12 = 12 Vdc
24 = 24 Vdc
110 = 110 Vdc

Legacy Power Relays

9A
SPST-NO, 30 A;
SPDT, 30 A (NO) / 15 A (NC)

Specifications (UL 508)

Part Number	9AS1	9AS5
Contact Characteristics		
Contact Configuration	SPST-NO	SPDT
Contact Material	Silver alloy	
Thermal (Carrying) Current	30 A	30 A (NO); 15 A (NC)
Maximum Switching Voltage	300 V	
Current Ratings at Voltage	Resistive: 30 A at 240 Vac 50/60 Hz; 30 A at 28 Vdc, 100,000 cycles Motor: 1 hp at 125 Vac 50/60 Hz; 2 hp at 240 Vac 50/60 Hz, 1,000 cycles FLA/LRA: 22/98 A (NO) at 120 Vac 50/60 Hz, 30,000 cycles; 30/80 A (NO) at 240 Vac 50/60 Hz, 30,000 cycles Ballast: 10 A at 277 Vac, 6,000 cycles Pilot Duty: 470 VA, 6,000 cycles	Resistive: 30 A at 240 Vac 50/60 Hz (NO); 15 A at 240 Vac 50/60 Hz (NC); 30 A at 28 Vdc (NO); 10 A at 28 Vdc (NC), 100,000 cycles Motor: 1 hp at 125 Vac 50/60 Hz (NO); 1/4 hp at 125 Vac 50/60 Hz (NC); 2 hp at 240 Vac 50/60 Hz (NO); 1/2 hp at 240 Vac 50/60 Hz (NC), 1,000 cycles FLA/LRA: 22/98 A (NO) at 120 Vac 50/60 Hz, 30,000 cycles; 30/80 A (NO) at 240 Vac 50/60 Hz, 30,000 cycles; 12/30 A (NC) at 240 Vac 50/60 Hz, 30,000 cycles Ballast: 10 A at 277 Vac (NO); 3 A at 277 Vac (NC), 6,000 cycles Pilot Duty: 470 VA (NO), 275 VA (NC), 6,000 cycles
Minimum Switching Requirement	100 mA at 12 Vac, 5 Vdc	
Coil Characteristics		
Coil Voltage Range[1]	24–240 Vac 50/60 Hz; 5–24 Vdc[1]	
Operating Range (% of Nominal)	80%–120% (AC); 75%–120% (DC)	
Average Consumption	2.8 VA (AC); 1 W (DC)	
Drop-out Voltage Threshold	10% (AC/DC)	
General Characteristics		
Electrical Life at Rated Load	100,000 cycles, unless otherwise specified under “Current Ratings at Voltage”	
Mechanical Life at No Load (Unpowered)	10,000,000 operations	
Operate Time at Nominal Coil Voltage	15 ms	
Dielectric Strength	Between coil and contact: 2500 Vac; Between contacts: 1500 Vac	
Operating Temperature Range	−40 to +55 °C (−40 to +131 °F)	
Storage Temperature Range	−40 to +85 °C (−40 to +185 °F)	
Vibration Resistance	3 g-n, 10–55 Hz	
Shock Resistance	10 g-n	
Weight (Average)	33 g (1.16 oz)	
Agency Certifications	UL Listed (E43641)	

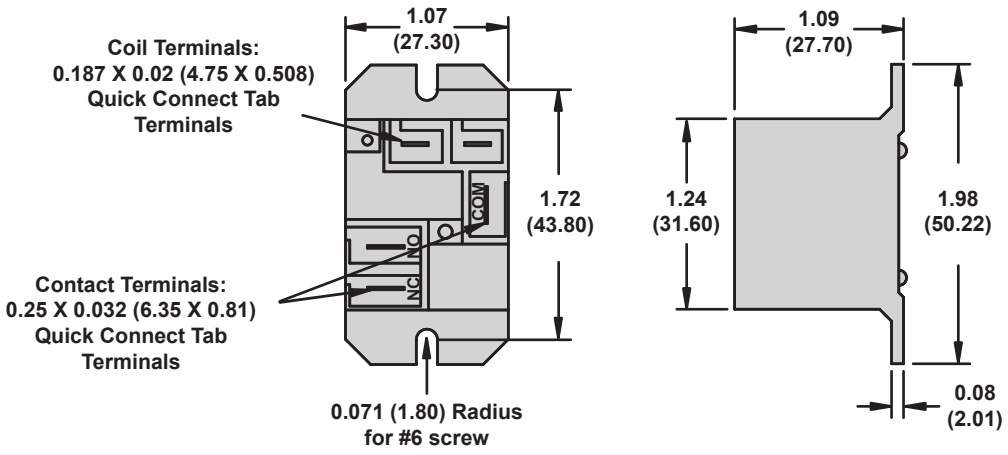
Note: Actual product performance may vary depending on application and environmental conditions.
[1] For available standard coil voltages, refer to the standard part number table on page 26.

Legacy Power Relays

9A

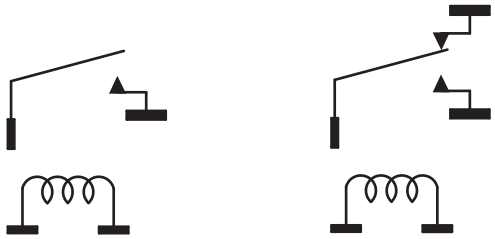
SPST-NO, 30 A;
SPDT, 30 A (NO) / 15 A (NC)

Dimensions — inches (millimeters)



Wiring Diagrams

All diagrams are shown from top view

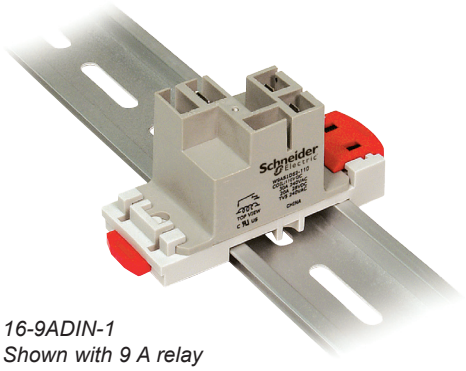


SPST-NO SPDT

Legacy Power Relays

9A

DIN Rail Adapter, 16-9ADIN-1



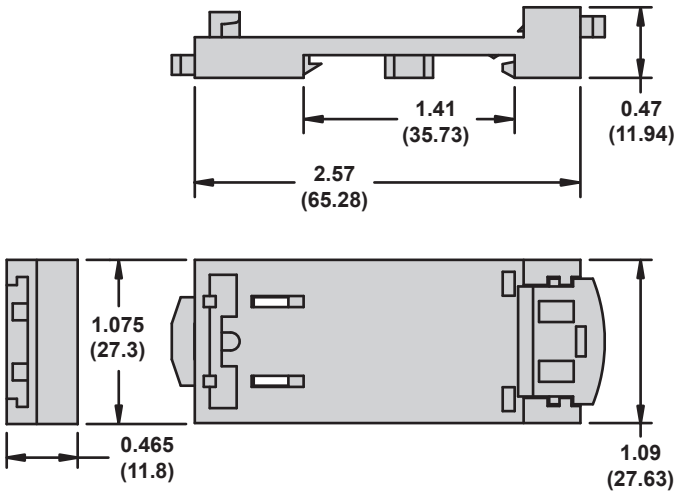
16-9ADIN-1
Shown with 9 A relay

Description

The 16-9ADIN-1 DIN rail adapter provides the mounting flexibility needed to mount the 9 A power relay in a panel board or control box.

Description	Function	For Use with Relays	Packaging Minimum	Standard Part Number
DIN Rail Adapter	Enables the 9A relay to be mounted directly to a DIN rail	9A series relays	10	16-9ADIN-1

Dimensions — inches (millimeters)



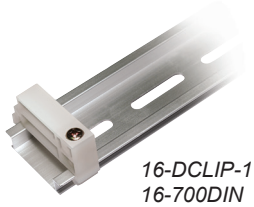
Legacy Power Relays

Socket Accessories

Socket Modules, 70-ASM; Metal DIN Rail, 16-700DIN; DIN Rail Clip, 16-DCLIP; ID Tags/Labels, 16-750/788FT-1

70-ASM

16-750/788FT-1



16-DCLIP-1 and 16-700DIN

Description

Socket modules connect the circuit in parallel with the relay and coil when plugged into a socket. No additional wiring or tool is required. The modules fit within the maximum dimensions of both the relay and socket.

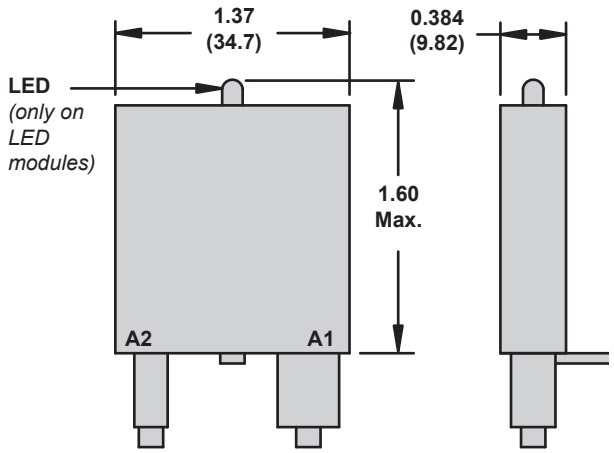
ID Tags/Labels provide quick identification of circuits.

Description	Function	Coil Voltage	Packaging Minimum	Standard Part Number
Socket Module*	LED Indicator: Verifies that power is being supplied to the coil. Ideal for both AC and DC applications. Polarity sensitive for DC applications.	110/240 Vac/Vdc	10	70-ASMLG-110/240
	MOV Suppressor: Protects by shunting potentially damaging electrical spikes away from the relay coil. Ideal for AC and DC Applications.	24 Vac/Vdc	10	70-ASMM-24
		120 Vac/Vdc	10	70-ASMM-120
		240 Vac/Vdc	10	70-ASMM-240
	Protection Diode: Protects external drive circuitry from inductive voltages generated when removing coil voltage. DC applications only. Polarity sensitive.	6–250 Vdc	10	70-ASMD-250
	RC Circuit: Snubs back EMF of relay coil.	240 Vac	10	70-ASMR-240
ID Tag/Label	Identification of circuits in multi-relay applications	N/A	10	16-750/788FT-1
Metal DIN Rail	Quick installation and removal of sockets	N/A	20	16-700DIN
DIN Rail Clip	Helps to holds sockets firmly in place on the DIN rail	N/A	10	16-DCLIP-1

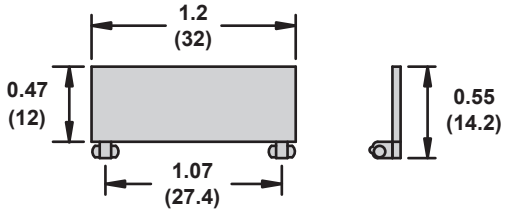
**Use of LED and RC modules may increase coil power draw up to 10%.*

Dimensions — inches (millimeters)

70-ASM Socket Modules

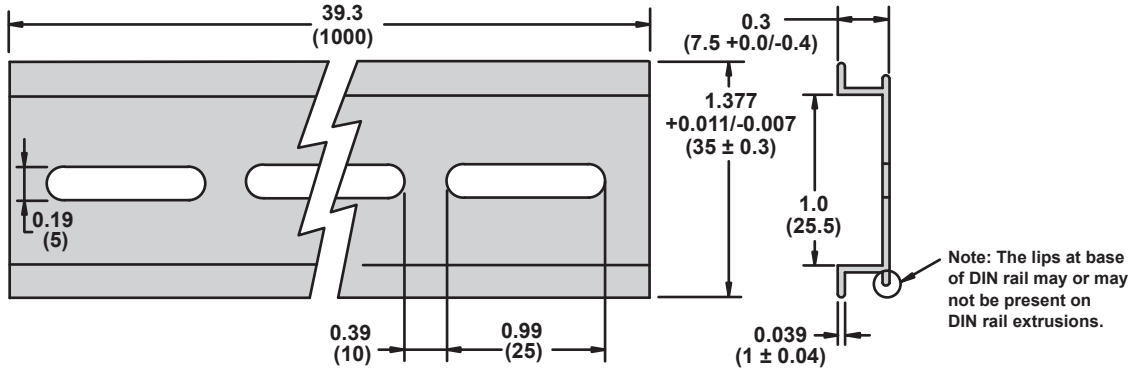


16-750/788FT-1 ID Tag/Label

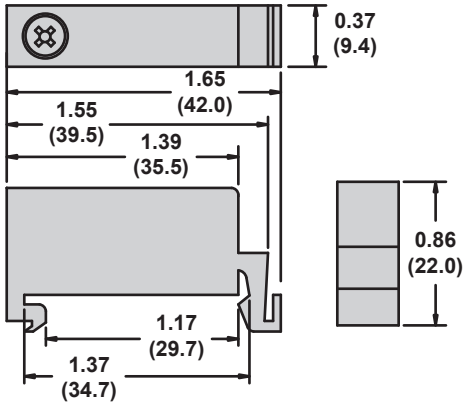


Dimensions — inches (millimeters)

16-700DIN Metal DIN Rail

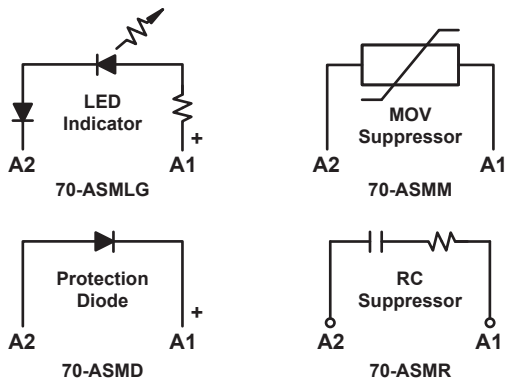


16-DCLIP-1 DIN Rail Clip



Wiring Diagrams

70-ASM Socket Modules



Legacy Power Relays

Definition

An electromechanical relay (EMR) is an electrically operated switch which enables current to flow through it on one circuit and can switch a current on and off on a second circuit. Power relays can handle higher power loads, and are typically rated at 20 A and above.

Principle of Operation

A simple electromechanical relay consists of a coil of wire surrounding an iron core, a yoke, a movable armature, and one or more sets of contacts. The armature is hinged to the yoke and mechanically linked to one or more sets of moving contacts. When an electric current is passed through the coil it generates a magnetic field that attracts the armature, and the consequent movement of the movable contact(s) either makes or breaks (depending on the configuration) with a fixed contact. When the current to the coil is switched off, a spring returns the armature to its original position.

Types of Relay Contacts

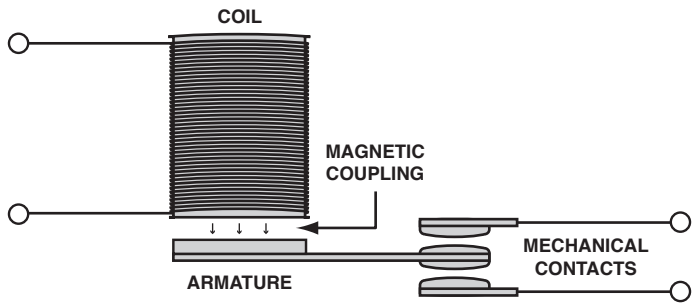
- Normally open (NO) contacts connect the circuit when the relay is activated; the circuit is disconnected when the relay is inactive. It is also called a Form A contact or “make” contact.
- Normally closed (NC) contacts disconnect the circuit when the relay is activated; the circuit is connected when the relay is inactive. It is also called a Form B contact or “break” contact.
- Change-over (C/O), or double-throw (DT), contacts control two circuits: one normally open contact and one normally closed contact with a common terminal. It is also called a Form C contact or “transfer” contact (“break before make”).

Contact Configurations

- SPST – Single Pole Single Throw is used for normally open (SPST-NO) and normally closed contacts (SPST-NC).
- SPDT – Single Pole Double Throw is sometimes referred to as single change-over or 1 C/O.
- DPST – Double Pole Single Throw has two pairs of terminals making it equivalent to two SPST switches or relays actuated by a single coil. The contacts may be normally open (DPST-NO) or normally closed (DPST-NC).
- DPDT – Double Pole Double Throw is sometimes referred to as two change-over or 2 C/O.

The “S” (Single Pole) or “D” (Double Pole) may be replaced with a number, indicating multiple poles. For example 4PDT indicates a four pole double throw relay.

EMR Diagram



Legacy Power Relays

Advantages

Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal. The advantages of power relays include:

- Can withstand current surges and voltage spikes
- Higher dielectric strength provides better line to load separation
- Broad contact current range available, from 100 mA to 50 A
- Multiple poles available to control separate voltages and circuits simultaneously
- Various contact configurations also available, including normally open (NO or Form A), normally closed (NC or Form B), double throw (DT or Form C), double make (DM), and double break (DB)
- Wide ambient temperature range
- No leakage current or ON-state voltage drop

Applications

Designed with heavy-duty contacts coupled with a specialized magnetic armature and coil to provide the necessary power and contact force, legacy Power Relays easily handle current loads of 20–50 A. With multiple features as well as panel and DIN mounting options, these relays offer the performance and flexibility needed to improve design, expedite installation, and simplify testing of your application.

Typical Examples of Power Relay Applications

Automation Panels
Process controls, motor controls, standby lighting

Food & Beverage
Commercial/industrial cooking equipment, filtration systems, bottling, chillers, convection ovens

Packaging Machinery
Conveyor motors, food processors, product/shrink wrap, solenoid controls

Lighting Control
Traffic signal systems, motorway information systems, theatrical lighting, ballast lighting

Power Supplies
Universal power supplies, battery backup systems

Material Handling
Motor control, conveyor controls

HVAC & Refrigeration
Anti-condensation equipment, compressor controls, blower controls, motorized duct/vent controls

Appliances
Air conditioners, water heaters, portable heaters, spa controls, water pumps

Legacy Power Relays

A Complete Range of Power Relays

Depending on the application, the legacy line of power relays offers a number of advantages, including high contact ratings (up to 50 A), feature-rich covers, mounting options and accessories to suit a multitude of applications.

Selecting a Power Relay

The list below is an example of the specifications to look for when selecting a power relay.

Contract rating(s): _____

Contact configuration: _____

Mounting style: _____

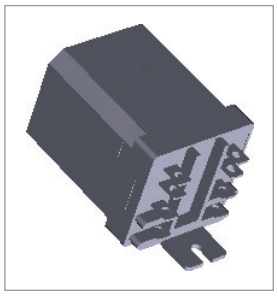
Coil voltage _____

Features and Accessories _____

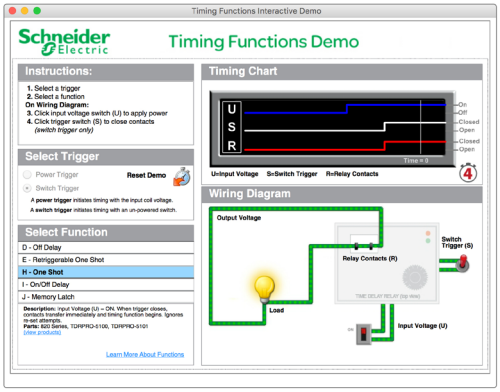
Use the catalog specifications or online parametric search to determine a recommended part number **(www.serelays.com)**.

Legacy Power Relays

The Schneider Electric Relays website **(www.serelays.com)** is designed to enable users to easily find the proper relay to fit design requirements and to help simplify and shorten workflow.



3D Models



Time Delay Relay Demo

Easily find the proper relay to fit design requirements

Online Catalog

Find the right product by choosing specifications, compare products side-by-side, and view technical specifications, 2D and 3D drawings, and associated accessories.

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Simplify and shorten workflow

Interactive Tools

View interactive demonstrations, such as our Time Delay Relay Interactive Demo (left) which visually demonstrates the ten different timing functions offered on legacy time delay relays.

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