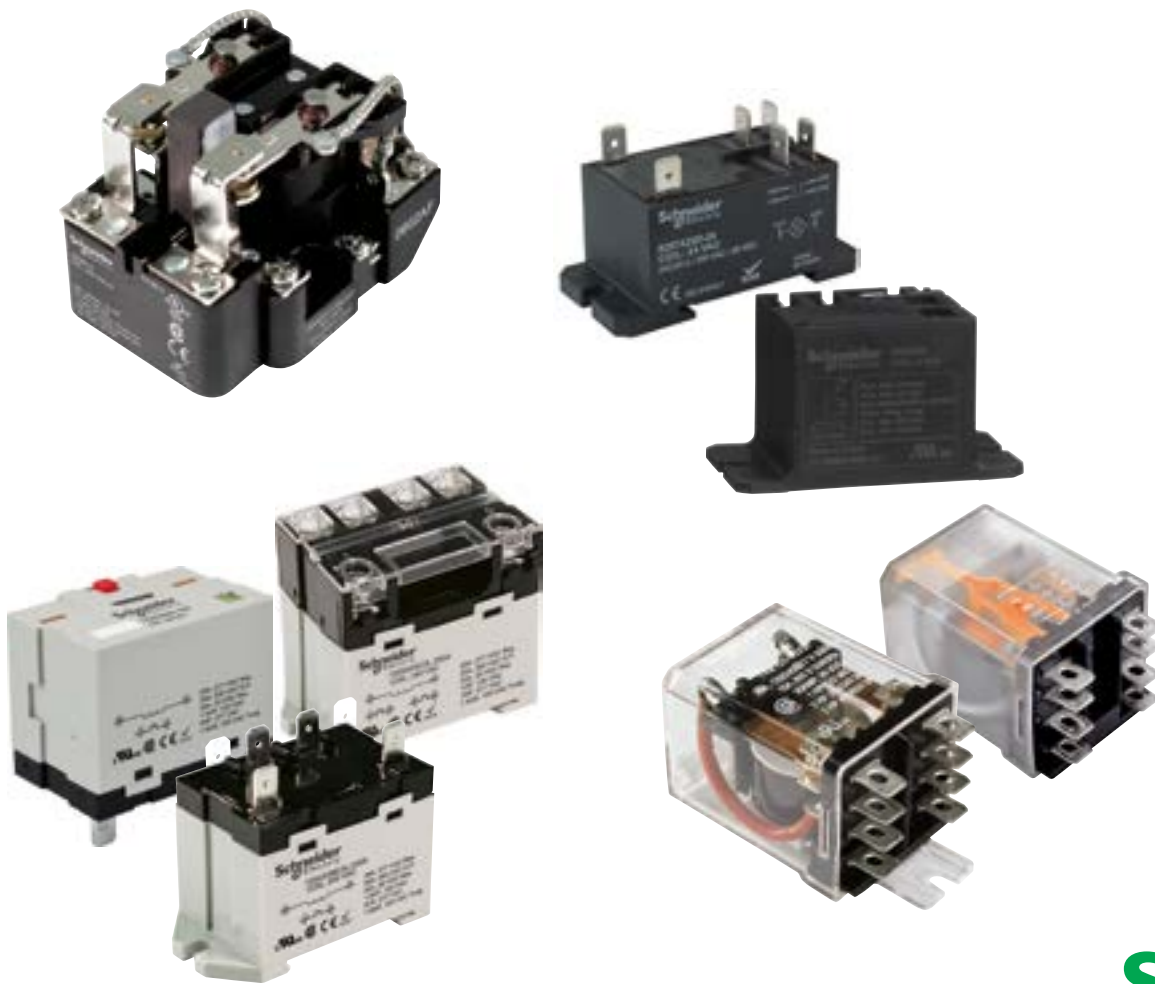


SE Power Relays

Catalog
2021





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Designed with heavy-duty contacts coupled with a specialized magnetic armature and coil to provide the necessary power handling, SE 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 SPDT | 30 | 1 hp at 125 Vac 50/60 Hz (NO contact); 2 hp at 250 Vac 50/60 Hz (NO contact) 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

SE Power Relays

199

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



199 Series Relay

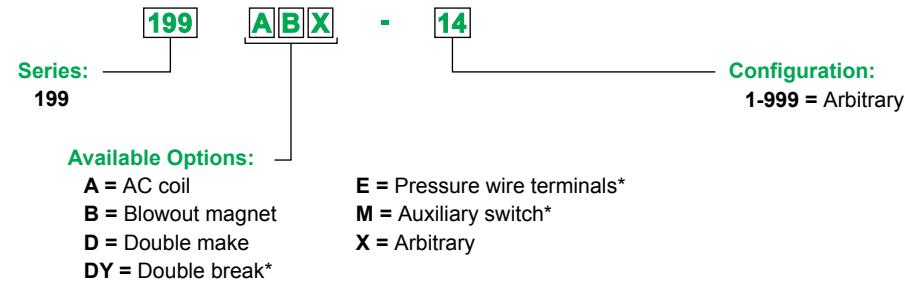
Description

The 199 series open type, heavy duty SE 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 |
| | | 48 Vdc | 1200 | Blowout Magnet | 199DX-3 |
| | SPDT | 120 Vac | 290 | | 199DBX-16 |
| | | 12 Vdc | 70 | | 199AX-4 |
| | | 24 Vdc | 290 | | 199X-2 |
| | | | | | 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 |
| | | 240 Vac | 1200 | | 199AX-14 |
| | | | | | 199AX-15 |
| | | 12 Vdc | 70 | Blowout Magnet | 199BX-12 |
| | | | | | 199X-12 |
| | | 24 Vdc | 290 | Blowout Magnet | 199BX-13 |
| | | | | | 199X-13 |
| | | | 199BX-14 | | |
| | | | 199X-14 | | |

Part Number Explanation



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

Specifications

SE 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 mm ²) | |
| 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: Additional DC Ratings with Blowout Magnet" 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).

SE Power Relays

199

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)

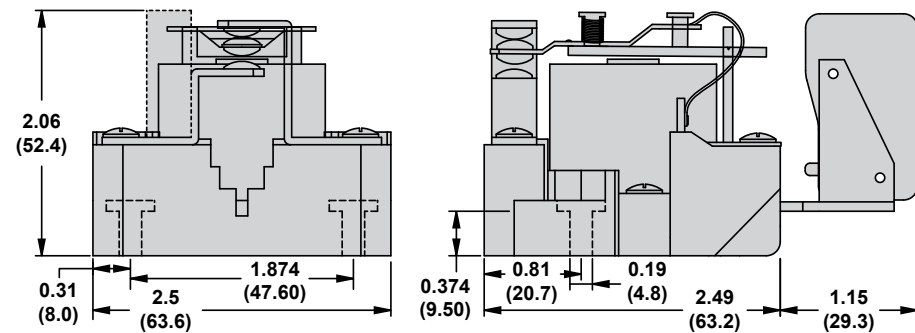
| Contact Ratings | Load Voltage | Frequency | Load Type | Estimated Electrical Endurance | See Note(s) |
|-----------------|--------------|-----------|------------|--------------------------------|-------------|
| AC Load | | | | | |
| 40 A | 300 V | 50/60 Hz | Resistive | 50,000 cycles | 1, 3 |
| 2 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:

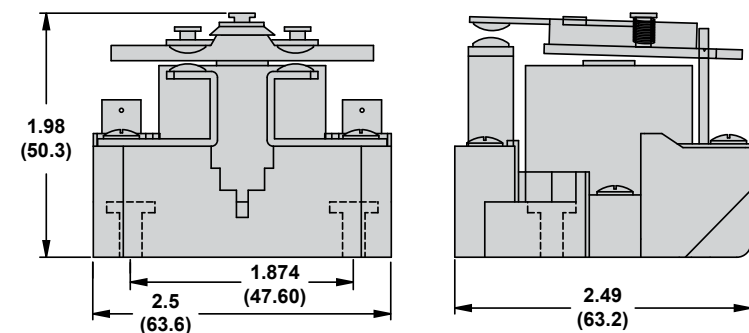
1. Resistive AC load ratings are based on a power factor of 0.85–1.0.
2. Motor horsepower ratings are based on a power factor of 0.4–0.5, and an initial inrush current not exceeding six times the full-load current.
3. All ratings are based on applying the rated nominal power to the relay coil so as to 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



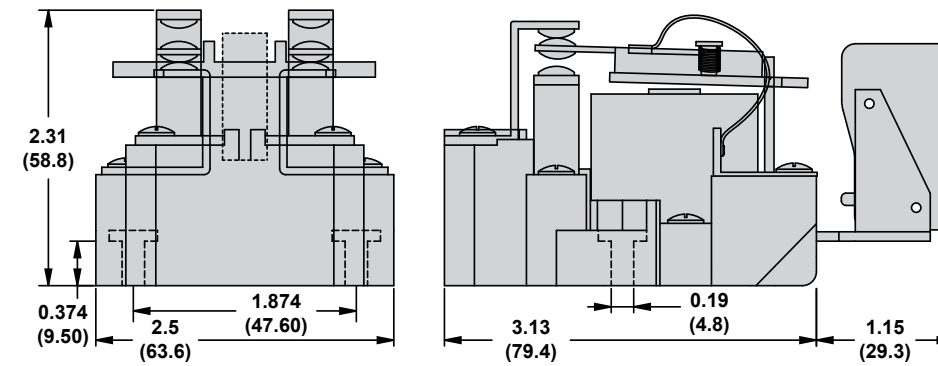
SE Power Relays

199

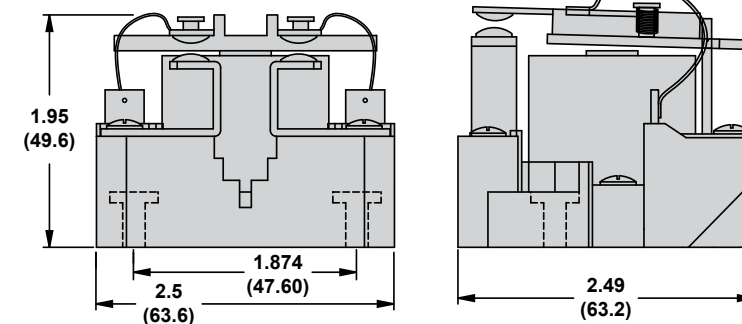
SPST-NO-DM, 40 A*; SPDT, 40 A;
DPST-NO, 40 A; DPDT, 40 A*

Dimensions — inches (millimeters)

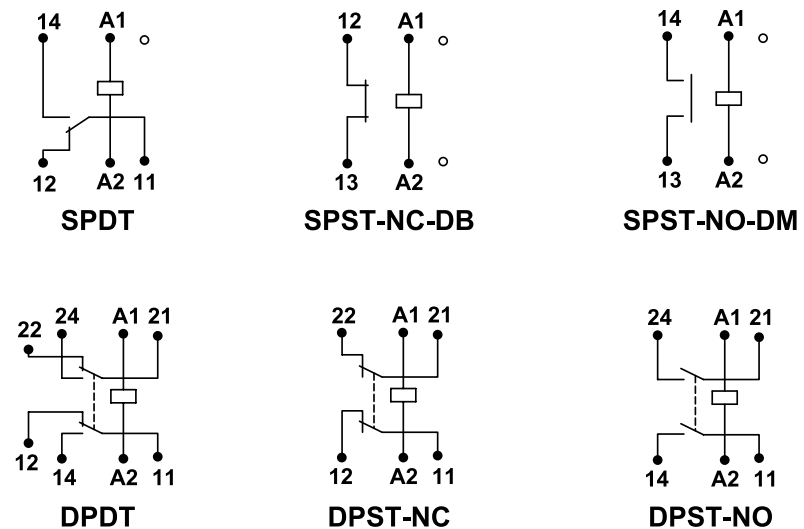
DPDT—Long Base (shown with optional auxiliary switch)



DPST-NO



Wiring Diagrams



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

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

SE Power Relays

199
Metal Enclosure, 50-1289-1



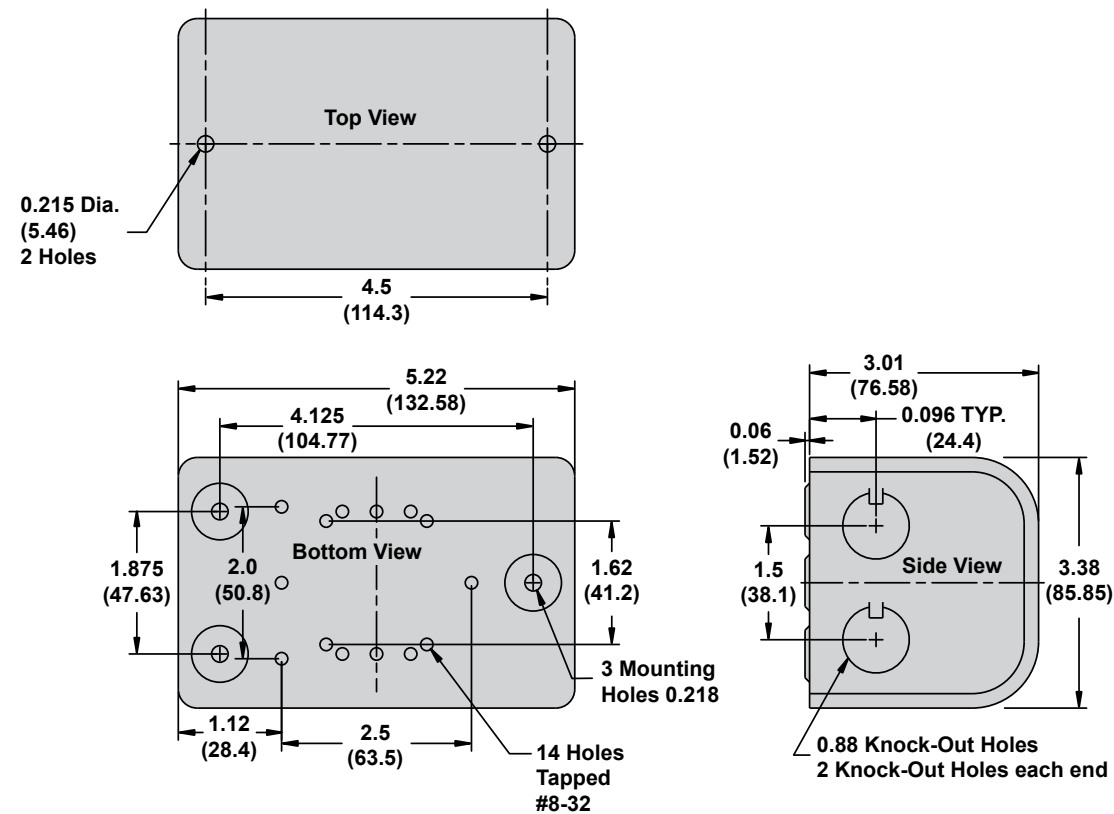
50-1289-1
Shown with 199 Relay

Description

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

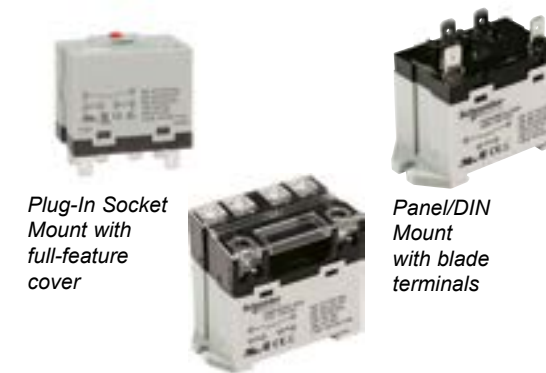
| Description | Function | Weight | For Use with Relays | Packaging Minimum | Standard Part Number |
|-----------------|----------------------------|----------------------|---------------------|-------------------|----------------------|
| Metal Enclosure | Covers and protects relays | Approx. 1 lb (16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

Dimensions — inches (millimeters)



SE 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

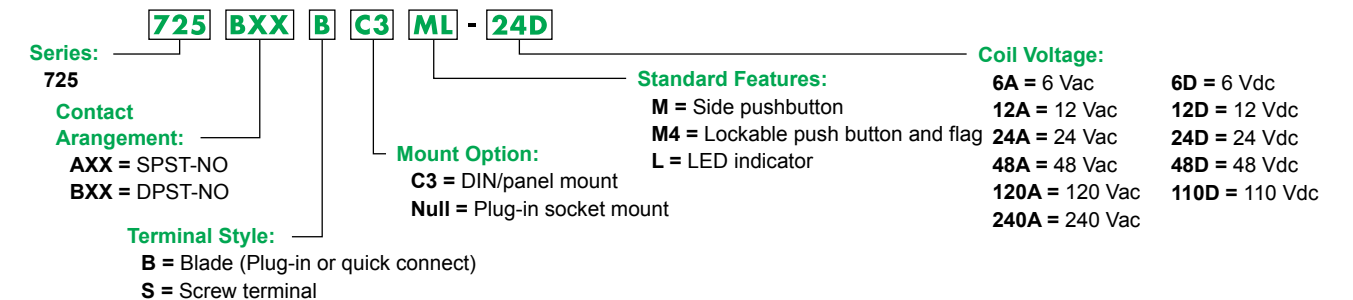
Description

The 725 series SE 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 |
| | | 240 Vac | 21000 | DIN and panel | Blade terminals | 725BXXBM4L-120A |
| | | | | | 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 |
| | | 120 Vac | 5200 | DIN and panel | Blade terminals | 725AXXBC3ML-120A |
| | | | | | Screw terminals | 725AXXSC3ML-120A |
| | | 240 Vac | 21000 | DIN and panel | Blade terminals | 725AXXBM4L-120A |
| | | | | | 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



SE 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 mm ²); Coil: 12 AWG (3.3 mm ²) | |
| 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.

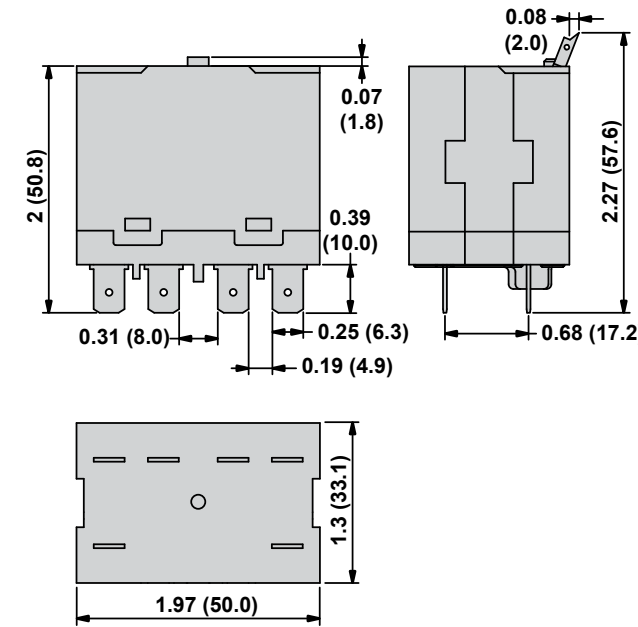
SE Power Relays

725

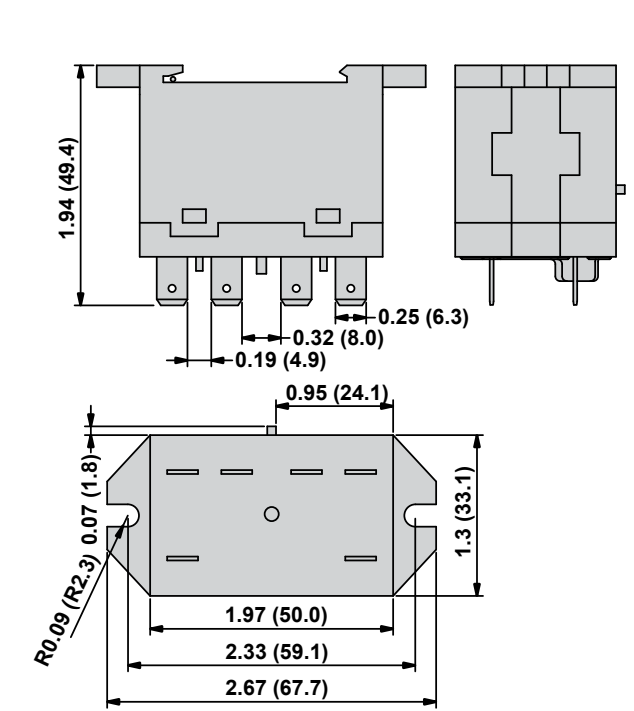
SPST-NO, 30 A; DPST-NO, 25 A

Dimensions — inches (millimeters)

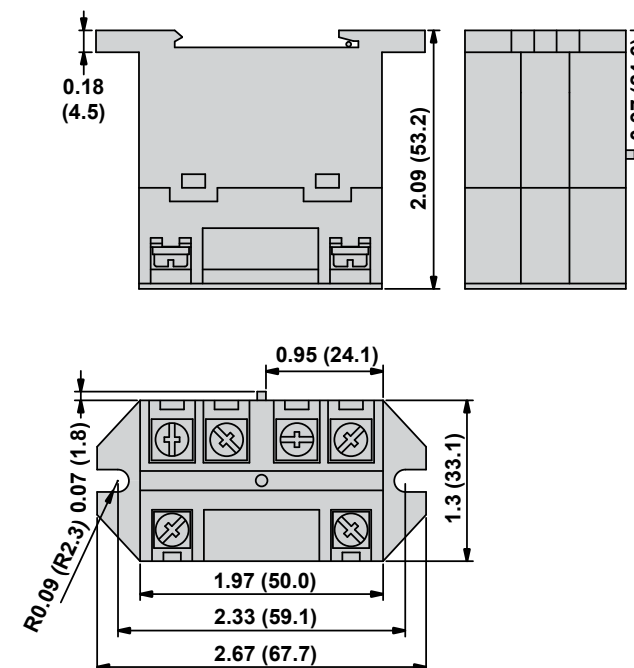
Plug-in Socket Mount (Blade Terminals)



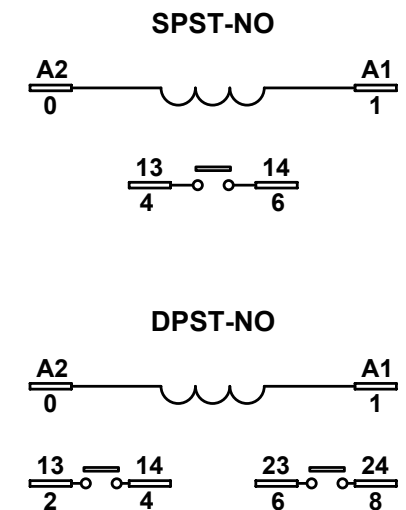
C3 – DIN/Panel Mount (Blade Terminals)



C3 – DIN/Panel Mount (Screw Terminals)



Wiring Diagrams



SE 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 °C (-40 to +131 °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 | 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 mm ²) two 10–20 AWG (0.5–6 mm ²) Stranded Cu: one or two 10–20 AWG (0.5–6.0 mm ²) |
| 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

Dimensions, Wiring Diagram

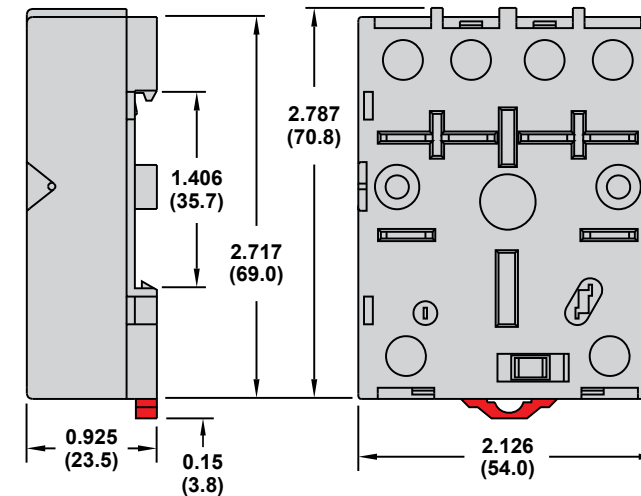
SE Power Relays

725

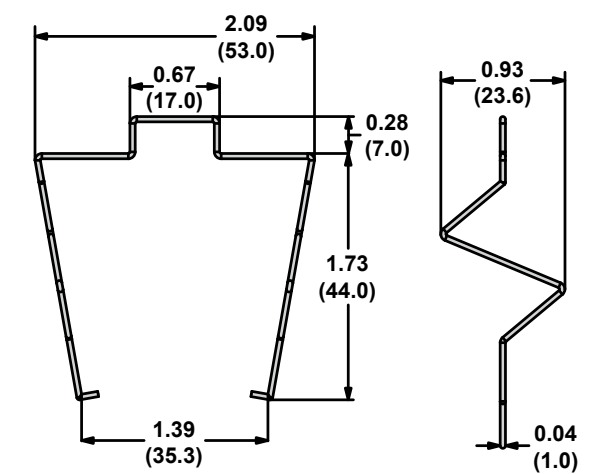
Socket, 70-725-1; Panel Mount Adapter, 16-725C1
Spring Clip, 16-725SC; Socket Modules, 70-ASM

Dimensions — inches (millimeters)

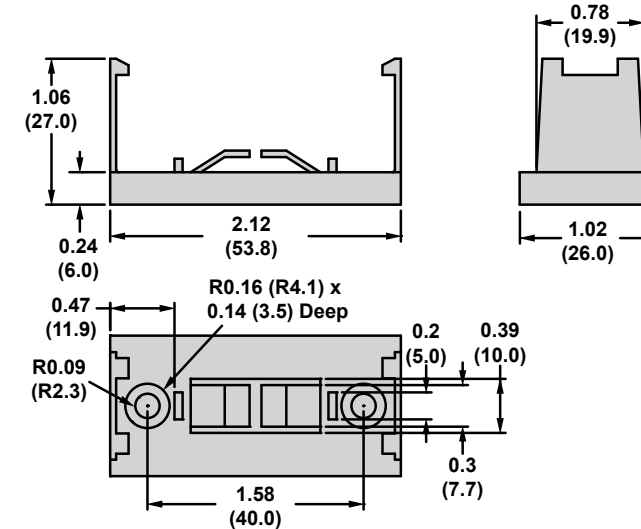
70-725-1



16-725SC

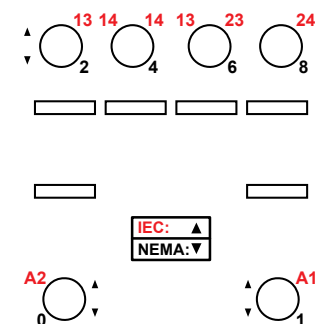


16-725C1



Wiring Diagram

70-725-1



Description

SE Power Relays

389F

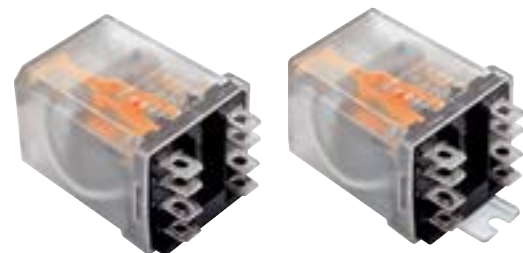
SPST, 30 A; DPDT, 20–25 A;
SPDT, 25–30 A; 3PDT, 20 A



Description

The 389F series SE 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 |



Plug-In (Socket) Cover

Side Flange Cover

| 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 |
| | | 120 Vac | Plug-in (socket) | 389FXCXC-24A | |
| | | | Plug-in (socket) | 389FXCXC-120A | |
| | | 240 Vac | Side flange | 389FXCXC1-120A | |
| | | | Plug-in (socket) | 389FXCXC-240A | |
| | | 12 Vdc | Side flange | 389FXCXC1-240A | |
| | | | Plug-in (socket) | 389FXCXC-12D | |
| | | 24 Vdc | Side flange | 389FXCXC1-12D | |
| | | | Plug-in (socket) | 389FXCXC-24D | |
| 25 A | DPDT | 24 Vac | 72 | Plug-in (socket) | 389FXBXC-24A |
| | | 120 Vac | Side flange | 389FXBXC1-24A | |
| | | | Plug-in (socket) | 389FXBXC-120A | |
| | | 240 Vac | Side flange | 389FXBXC1-120A | |
| | | | Plug-in (socket) | 389FXBXC-240A | |
| | | 12 Vdc | Side flange | 389FXBXC1-240A | |
| | Plug-in (socket) | | 389FXBXC-12D | | |
| | 24 Vdc | Side flange | 389FXBXC1-12D | | |
| | | Plug-in (socket) | 389FXBXC-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 |
| 24 Vac | | Side flange | 389FXAXC1-24A | | |
| | | Plug-in (socket) | 389FXAXC-12D | | |
| 24 Vdc | | Side flange | 389FXAXC1-12D | | |
| | Plug-in (socket) | 389FXAXC-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 |

Specifications

SE 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 | | |

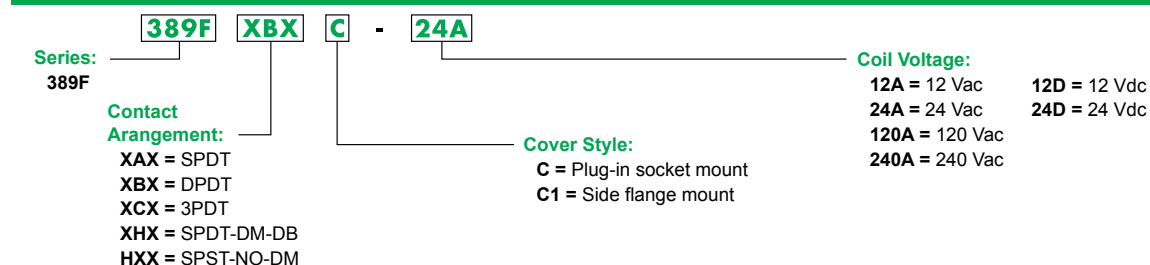
Note: Actual product performance may vary depending on application and environmental conditions.

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



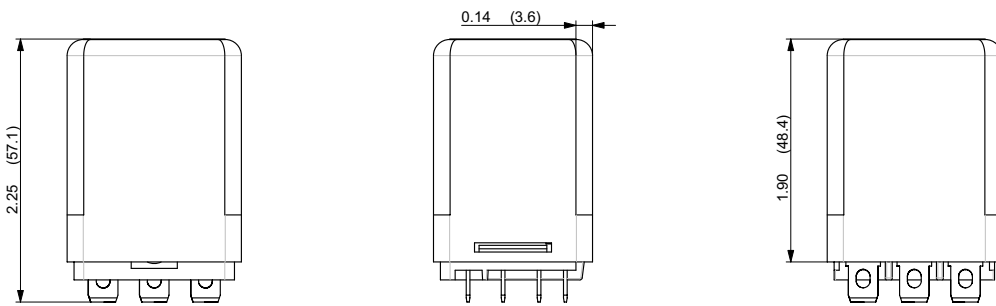
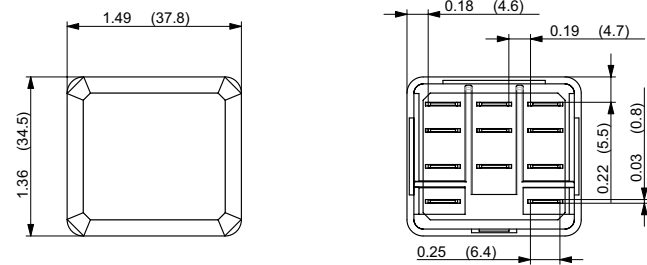
Dimensions, Wiring Diagrams

SE Power Relays

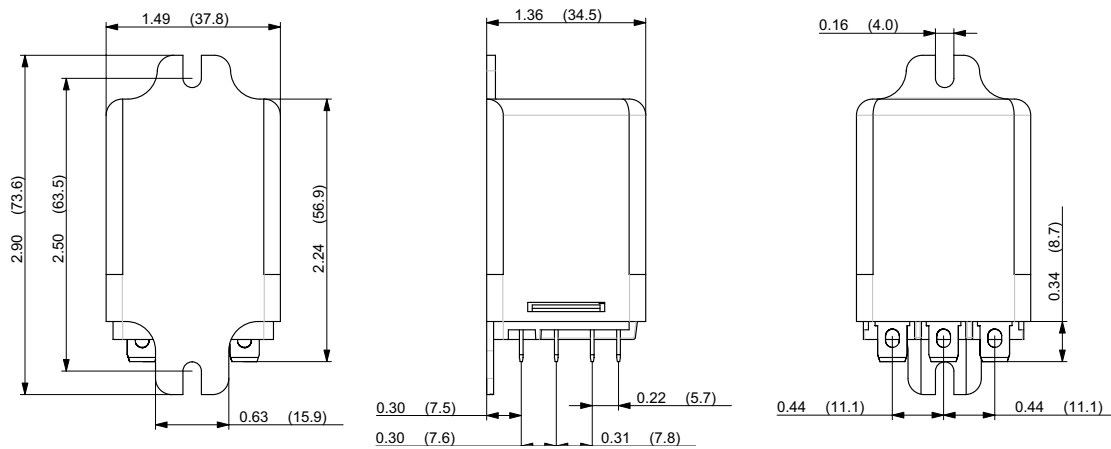
389F
SPST, 30 A; DPDT, 20–25 A;
SPDT, 25–30 A; 3PDT, 20 A

Dimensions — inches (millimeters)

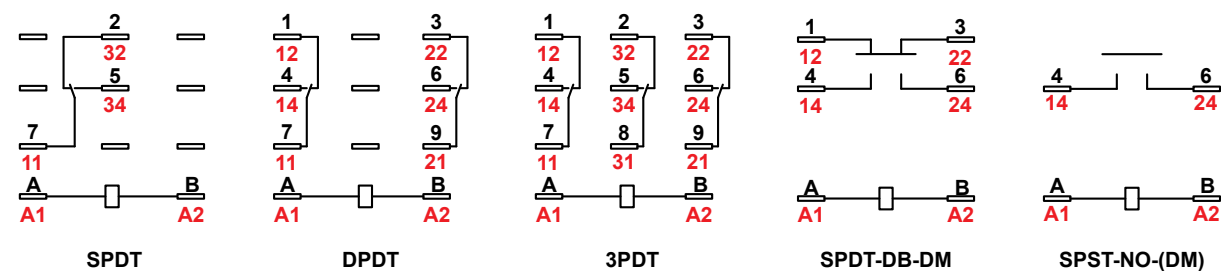
Plug-in Cover Style



Side Flange Cover Style



Wiring Diagrams



NEMA
IEC

Accessories

SE Power Relays

389F
Socket, 70-788EL11-1



Description

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



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 mm ²) Stranded Cu: two 10–12 AWG (4.0–6.0 mm ²) |
| Flammability Rating | 94V-0 |
| Weight | 3.39 oz (96 g) |
| Agency Certifications | UL Listed (E70550), CSA (40787), CE (per IEC 61984), RoHS |

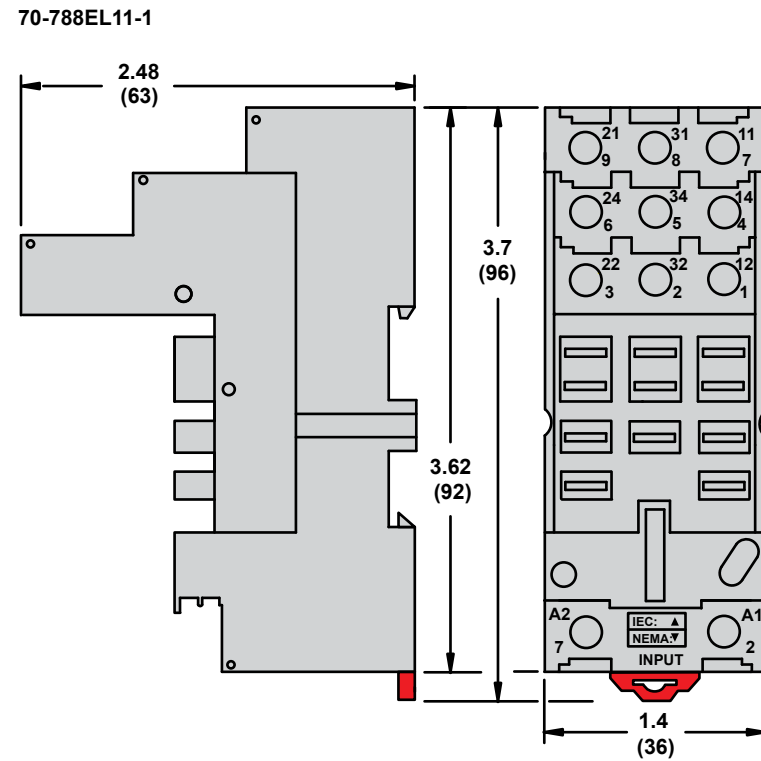


Relay Mounting Example

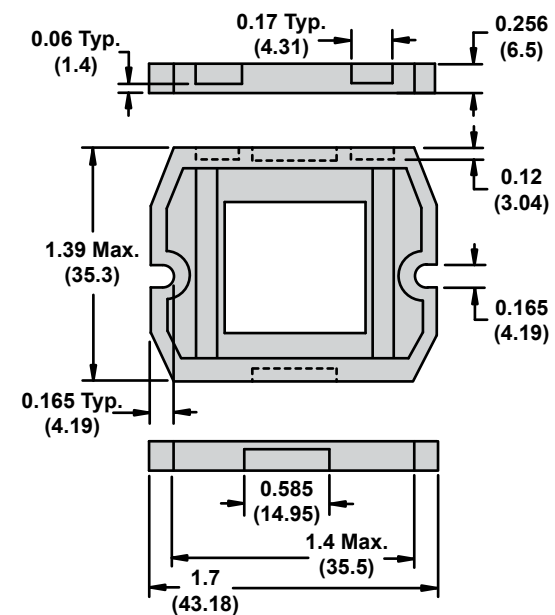
SE Power Relays

389F
Socket, 70-788EL11-1

Dimensions — inches (millimeters)



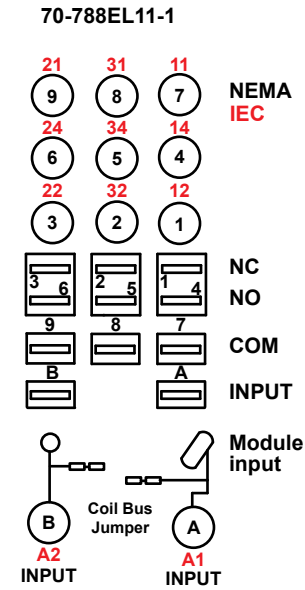
16-788C1 Panel Mount Adapter for 70-788EL11 socket



SE Power Relays

389F
Socket, 70-788EL11-1

Wiring Diagram



Description

SE Power Relays

300
DPDT, 30 A



Side Flange Cover



Top DIN Mount Cover

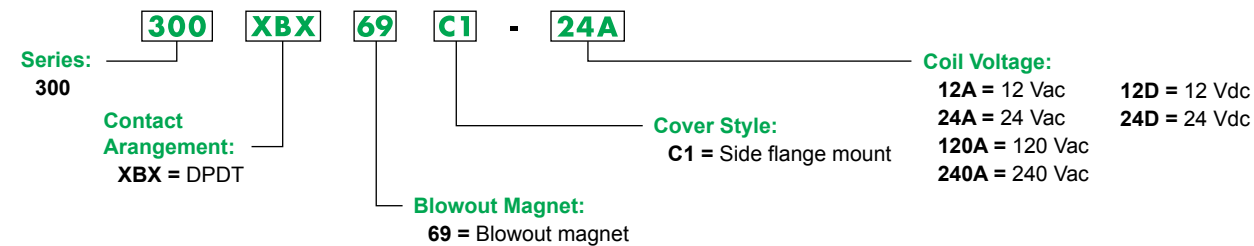
Description

The 300 series SE 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 | Side flange mount | 300XBXC1-24D | |
| | | | Side flange mount (with magnetic blowout) | 300XB69C1-24D | |

Part Number Explanation



Specifications

SE 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: Additional DC Ratings with Blowout Magnet" 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

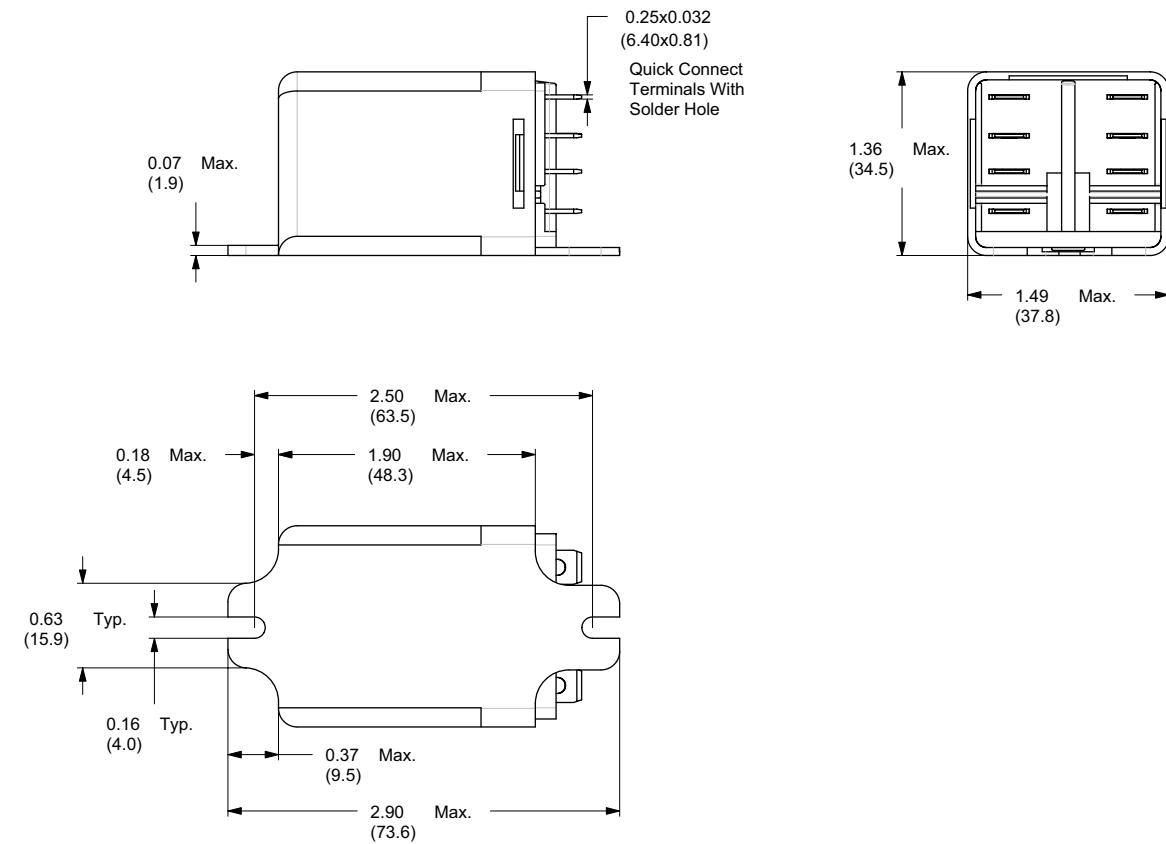
| Load Voltage | Contact Rating |
|--------------|----------------|
| 150 Vdc | 5 A |

SE Power Relays

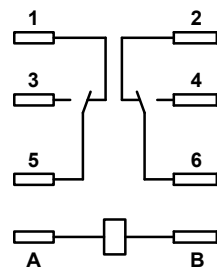
300
DPDT, 30 A

Dimensions — inches (millimeters)

Side Flange Mount Cover



Wiring Diagram



DPDT

Description

SE Power Relays

92
DPST-NO, 30 A;
DPDT, 30 A (NO) / 3 A (NC)



Description

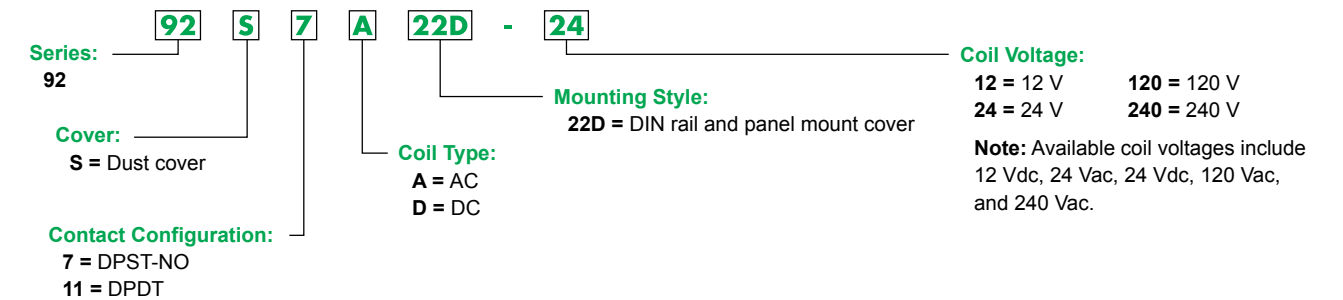
The 92 series SE power relays offer a small package size and features Class F insulation for a maximum coil temperature of 155 °C (311 °F). These power relays meet UL508 spacing and are directly DIN or panel mountable.

| 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



SE 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 | |

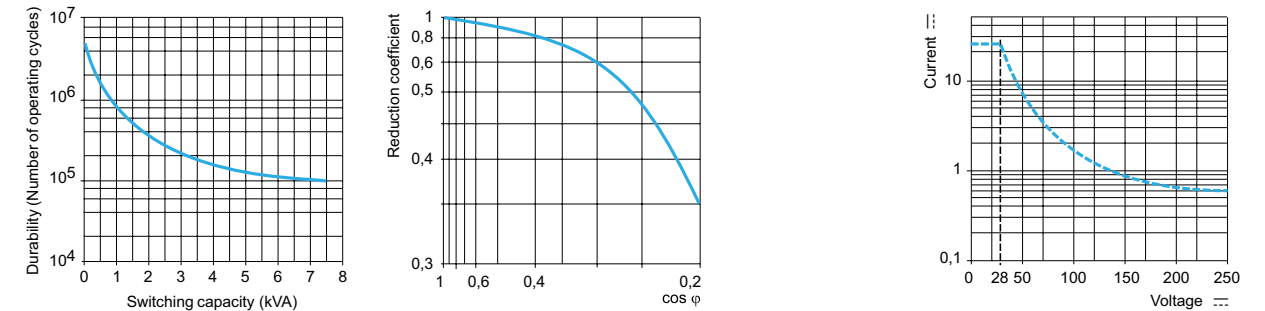
Note: Actual product performance may vary depending on application and environmental conditions.
¹ For available standard coil voltages, refer to the standard part number table on page 23.
² All AC coils are rectified.

SE Power Relays

92
 DPST-NO, 30 A;
 DPDT, 30 A (NO) / 3 A (NC)

Specifications (continued)

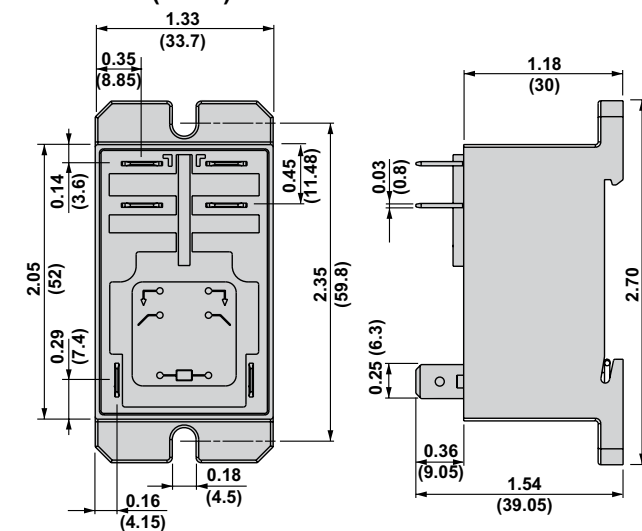
| Electrical durability of contacts, IEC ratings | | |
|--|---|---|
| Resistive load | AC reduction coefficient for inductive load (depending on power factor cos φ) Durability (inductive load) = durability (resistive load) x reduction coefficient. | Maximum switching capacity on DC resistive load |



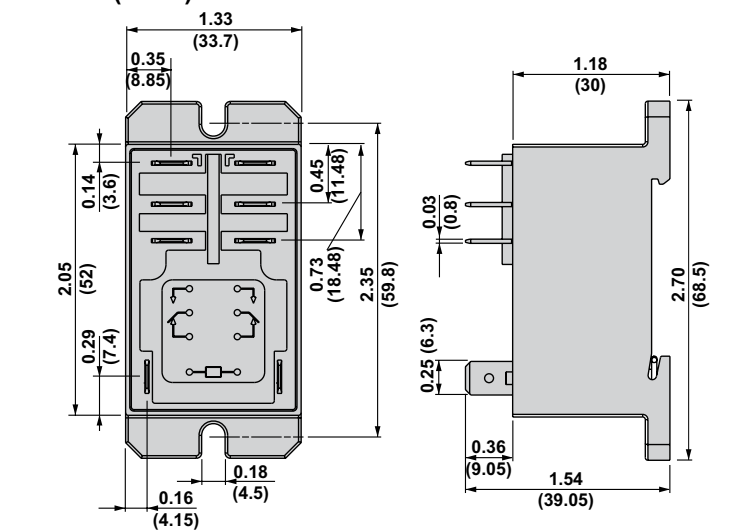
Note: These curves are for reference only and are typical values only. Actual performance depends on the actual load, environment, duty cycle, and other conditions specific to the application.

Dimensions — inches (millimeters)

DPST-NO (2 NO):

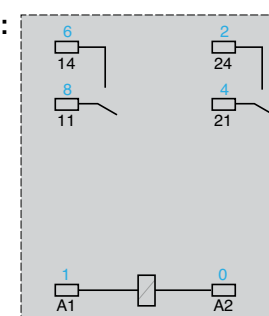


DPDT (2 CO):

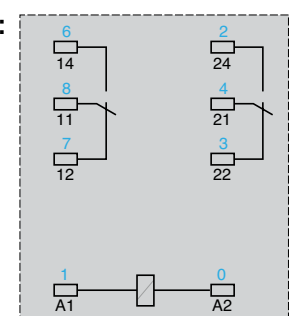


Wiring Diagrams

DPST-NO (2 NO):



DPDT (2 CO):



Description

SE Power Relays

9A
SPST-NO, 30 A;
SPDT, 30 A (NO) / 20 A (NC)



Description

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

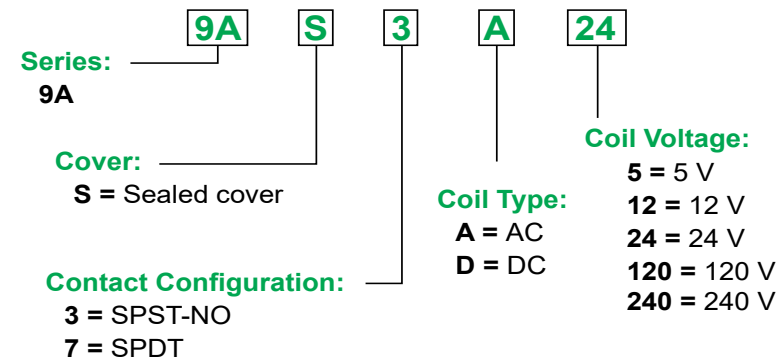


9AS7D5

| Feature | Benefit |
|----------------------------------|---|
| Standard Class F insulation | Allows for maximum coil temperature of 155 °C (311 °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 | 12 Vac | 25 | 9AS3A12 |
| | | 24 Vac | 100 | 9AS3A24 |
| | | 120 Vac | 2500 | 9AS3A120 |
| | | 240 Vac | 13490 | 9AS3A240 |
| | | 5 Vdc | 27 | 9AS3D5 |
| | | 12 Vdc | 155 | 9AS3D12 |
| 30 A (NO); 20 A (NC) | SPDT | 24 Vdc | 660 | 9AS3D24 |
| | | 24 Vac | 100 | 9AS7A24 |
| | | 120 Vac | 2500 | 9AS7A120 |
| | | 240 Vac | 13490 | 9AS7A240 |
| | | 5 Vdc | 27 | 9AS7D5 |
| | | 12 Vdc | 155 | 9AS7D12 |
| | | 24 Vdc | 660 | 9AS7D24 |

Part Number Explanation



Specifications

SE Power Relays

9A
SPST-NO, 30 A;
SPDT, 30 A (NO) / 20 A (NC)

Specifications (UL60947-4-1)

| Part Number | 9AS3 | 9AS7 |
|--------------------------------|---|---|
| Contact Characteristics | | |
| Contact Configuration | SPST-NO | SPDT |
| Contact Material | Silver alloy | |
| Thermal (Carrying) Current | 30 A | 30 A (NO); 20 A (NC) |
| Maximum Switching Voltage | 277 Vac / 28 Vdc | |
| Current Ratings at Voltage | <p>General purpose: AC1, 30 A, 240 Vac, 100,000 cycles, 40 °C (104 °F)</p> <p>Resistive: 30 A, 28 Vdc Resistive 50,000 cycles, 40 °C (104 °F); 24 A, 240 Vac Resistive 100,000 cycles, 60 °C (140 °F)</p> <p>Motor: 1 hp 125 Vac, 1,000 cycles, 40 °C (104 °F); 2 hp 250 Vac, 1,000 cycles, 40 °C (104 °F)</p> <p>LRA/FLA: AC-8a, 98/22 A 120 Vac, 30,000 cycles, 40 °C (104 °F)</p> <p>Ballast: AC-5a, 10 A, 277 Vac, 6,000 cycles, 40 °C (104 °F)</p> <p>Pilot Duty: 470 VA, 240 Vac 6,000 cycles, 40 °C (104 °F)</p> | <p>General purpose: NO: AC1, 30 A, 240 Vac, 100,000 cycles, 40 °C (104 °F); NC: AC1, 20 A, 240 Vac, 100,000 cycles, 40 °C (104 °F);</p> <p>Resistive: NO: 30 A, 28 Vdc Resistive, 50,000 cycles, 40 °C (104 °F); NC: 10 A, 28 Vdc Resistive, 100,000 cycles, 40 °C (104 °F)</p> <p>Motor: NO: 1 hp 125 Vac, 1,000 cycles, 40 °C (104 °F); NO: 2 hp 250 Vac, 1,000 cycles, 40 °C (104 °F); NC: ¼ hp 125 Vac, 1,000 cycles, 40 °C (104 °F); NC: ½ hp 250 Vac, 1,000 cycles, 40 °C (104 °F)</p> <p>LRA/FLA: NO: AC-8a, LRA/FLA 98/22 A, 120 Vac, 30,000 cycles, 40 °C (104 °F); NO: AC-8a, LRA/FLA 80/30 A, 240 Vac, 30,000 cycles, 40 °C (104 °F); NC: AC-8a, LRA/FLA 30/12 A, 240 Vac, 30,000 cycles, 40 °C (104 °F); NC: AC-8a, LRA/FLA 33/10 A, 277 Vac, 30,000 cycles, 40 °C (104 °F)</p> <p>Ballast: NO: AC-5a, Ballast 10A, 277 Vac, 6,000 cycles, 40 °C (104 °F); NC: AC-5a, Ballast 3A, 277 Vac, 6,000 cycles, 40 °C (104 °F)</p> <p>Pilot Duty: NO: Pilot duty 470 VA, 240 Vac, 6,000 cycles, 40 °C (104 °F); NC: Pilot duty 275 VA, 240 Vac, 6,000 cycles, 40 °C (104 °F)</p> |
| Minimum Switching Requirement | 1A at 12 Vac, 5 Vdc | |

| Part Number | 9AS3 | 9AS7 |
|---------------------------------|--|------|
| Coil Characteristics | | |
| Coil Voltage Range ¹ | 12–240 Vac, 50/60 Hz; 5–24 Vdc ¹ | |
| Operating Range (% of Nominal) | 85%–110% (AC); 80%–110% (DC) | |
| Average Consumption | 2.6 VA (AC); 0.9 W (DC) | |
| Insulation System | Class F (155 °C / 311 °F) | |
| Drop-out Voltage Threshold | 10% (DC) , 20% (AC) | |

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.

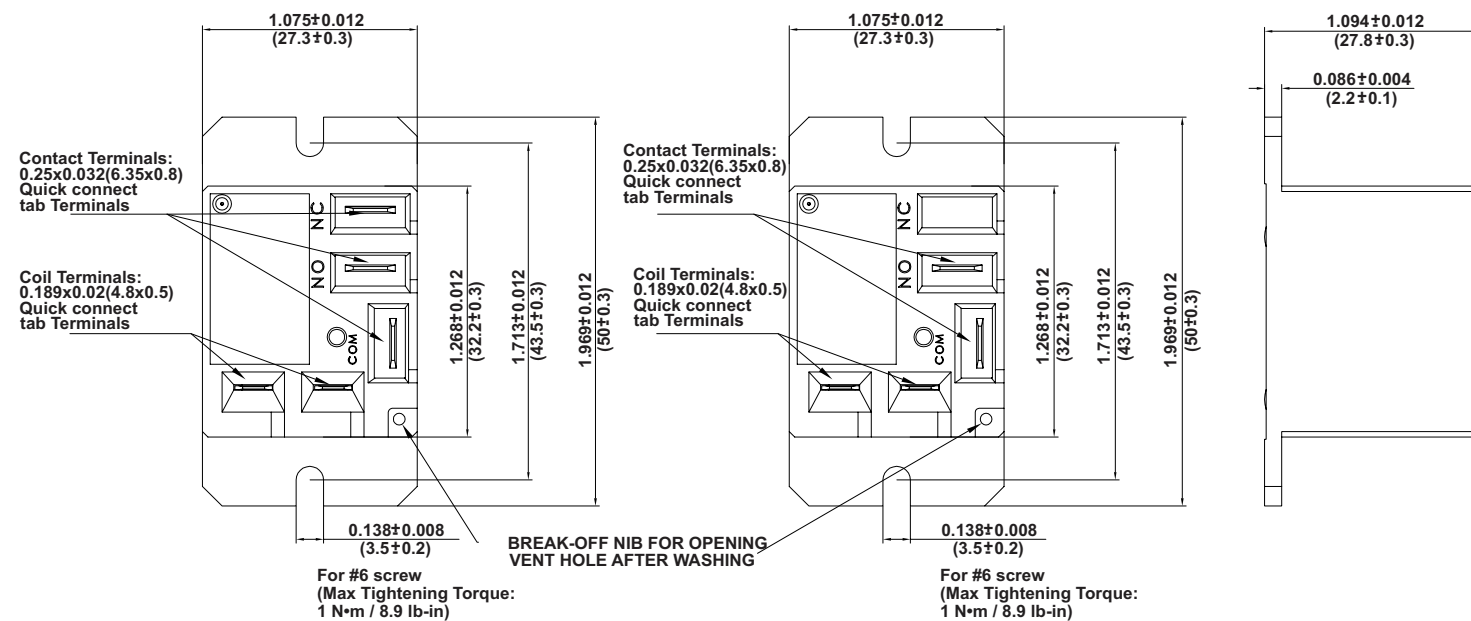
SE Power Relays

9A
SPST-NO, 30 A;
SPDT, 30 A (NO) / 20 A (NC)

| Part Number | 9AS3 | 9AS7 |
|--|---|------|
| 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 | 20 ms | |
| Dielectric Strength | Between coil and contact: 2500 Vac; Between contacts: 1500 Vac | |
| Operating Temperature Range | -40 to 40 °C (40 to +104 °F) | |
| Storage Temperature Range | -40 to +85 °C (-40 to +185 °F) | |
| Vibration Resistance | +/- 0.75 mm 10-55 Hz | |
| Shock Resistance | 10 g-n | |
| Weight (Average) | 32 g (1.13 oz) | |
| Agency Certifications | UL | |

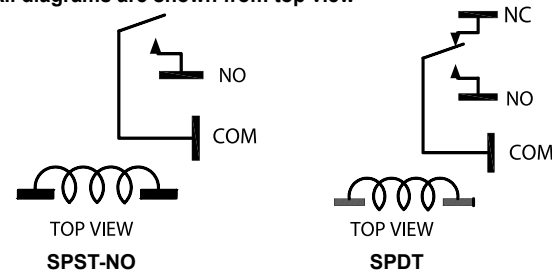
Note: Actual product performance may vary depending on application and environmental conditions.

SPDT/SPST-NO dimensions — inches (millimeters)



Wiring Diagrams

All diagrams are shown from top view



SE Power Relays

9A
DIN Rail Adapter, 16-9ADIN-1



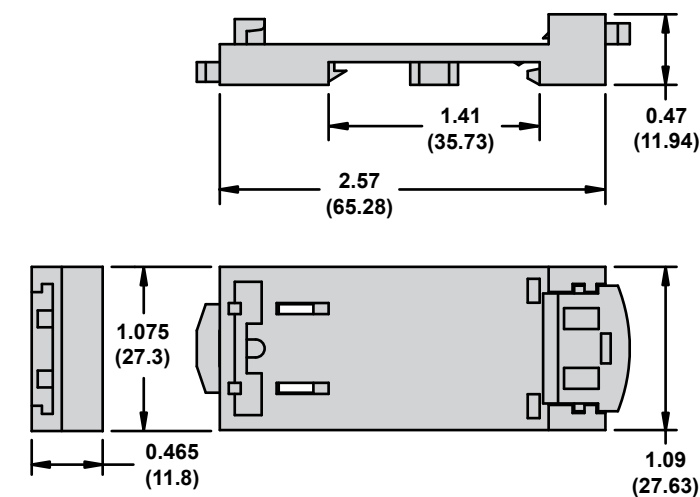
16-9ADIN-1

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)



Description, Dimensions

SE 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



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.

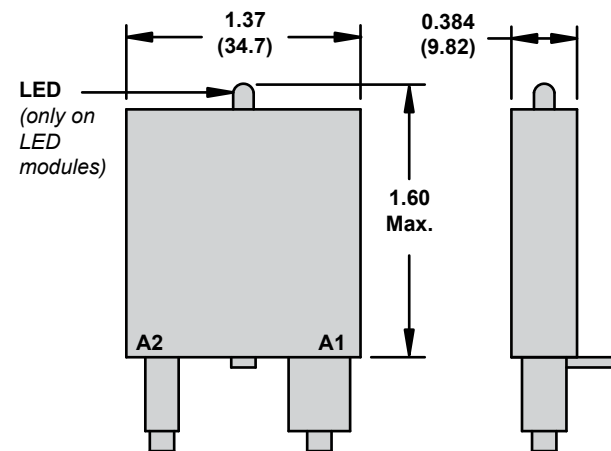
ID Tags/Labels provide quick identification of circuits.

| 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 120 Vac/Vdc 240 Vac/Vdc | 10 10 10 | 70-ASMM-24 70-ASMM-120 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 hold sockets firmly in place on the DIN rail | N/A | 10 | 16-DCLIP-1 |

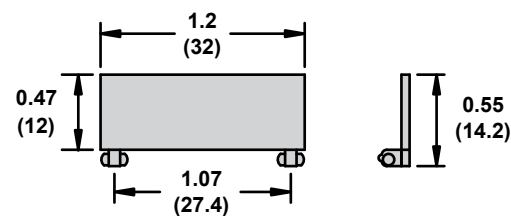
*Use of LED and RC modules may increase coil power draw up to 10%.

Dimensions — inches (millimeters)

70-ASM Socket Modules



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



Dimensions (continued), Wiring Diagrams

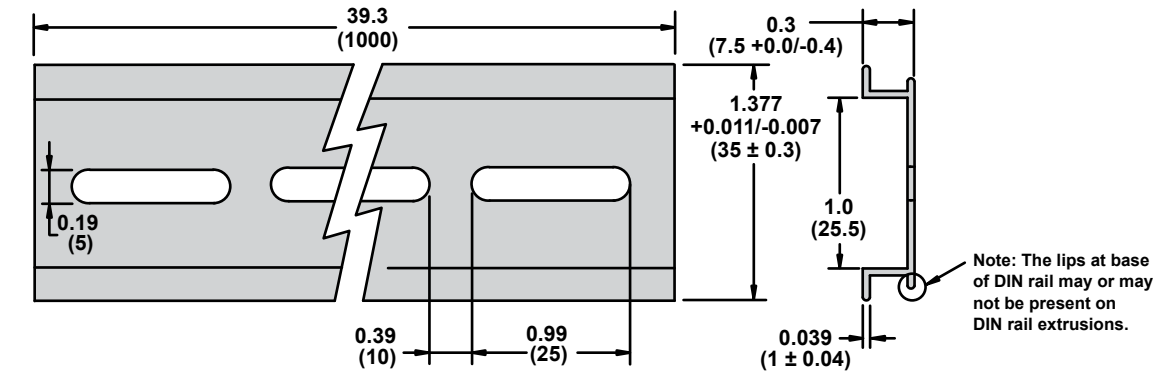
SE Power Relays

Socket Accessories

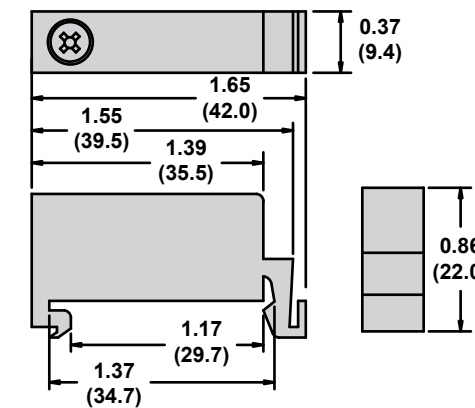
Socket Modules, 70-ASM; Metal DIN Rail, 16-700DIN;
DIN Rail Clip, 16-DCLIP; ID Tags/Labels, 16-750/788FT-1

Dimensions — inches (millimeters)

16-700DIN Metal DIN Rail

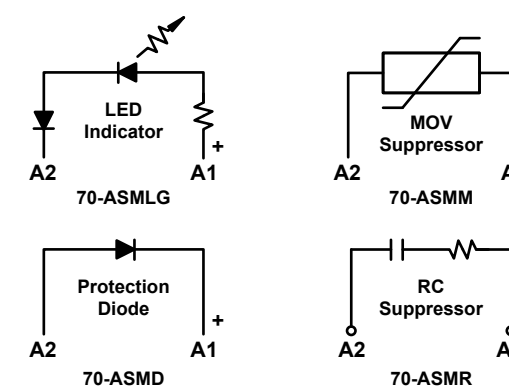


16-DCLIP-1 DIN Rail Clip



Wiring Diagrams

70-ASM Socket Modules



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. SE 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

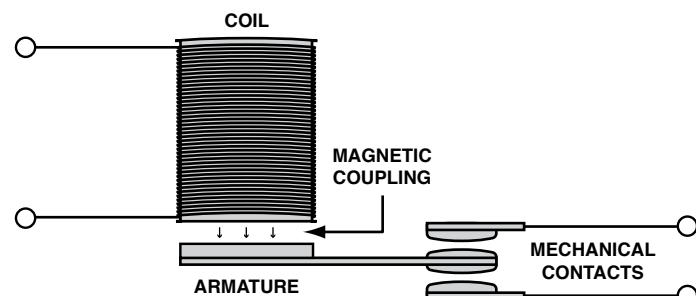
- Normally open (NO) contacts connect the circuit when the relay is activated; the circuit is disconnected when the relay is inactive. It is also called a Form A contact or “make” contact.
- Normally closed (NC) contacts disconnect the circuit when the relay is activated; the circuit is connected when 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



Advantages






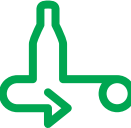


Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal. The advantages of power relays include:

- 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, SE 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

| | |
|--|---|
|  <p>Automation Panels Process controls, motor controls, standby lighting</p> |  <p>Food & Beverage Commercial/industrial cooking equipment, filtration systems, bottling, chillers, convection ovens</p> |
|  <p>Packaging Machinery Conveyor motors, food processors, product/shrink wrap, solenoid controls</p> |  <p>Lighting Control Traffic signal systems, motorway information systems, theatrical lighting, ballast lighting</p> |
|  <p>Power Supplies Universal power supplies, battery backup systems</p> |  <p>Material Handling Motor control, conveyor controls</p> |
|  <p>HVAC & Refrigeration Anti-condensation equipment, compressor controls, blower controls, motorized duct/vent controls</p> |  <p>Appliances Air conditioners, water heaters, portable heaters, spa controls, water pumps</p> |

A Complete Range of SE Power Relays

Depending on the application, the 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.se.com).

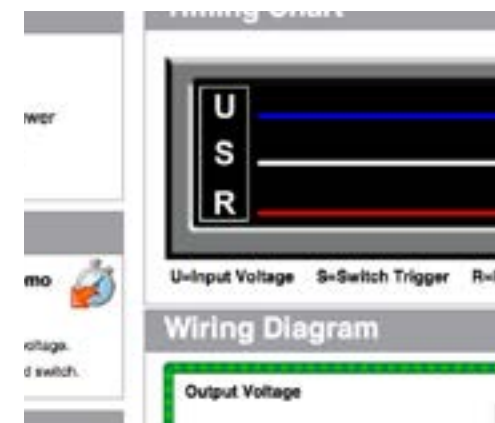
The Schneider Electric website (www.se.com) is designed to enable users to easily find the proper relay to fit design requirements and to help simplify and shorten workflow.

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.
- **Cross Reference Search**
Search our comprehensive database to identify products by manufacturer and part number, and link directly to part specifications.
- **3D CAD Library**
View, email, download, or insert a file directly into your open CAD software pane. Choose from 18 different file formats.
- **Order Free Samples**
Schneider Electric offers free samples as a courtesy to individuals and companies evaluating our products for their designs and applications. Sample orders are subject to approval.



3D Models



Time Delay Relay Demo

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 SE time delay relays.
- **Distributor Inventory Search**
Search authorized distributors' current Schneider Electric inventory and buy online. (Buy online not available for all distributors).

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