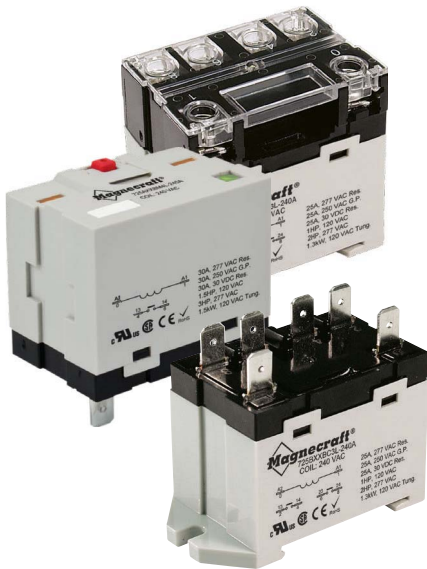
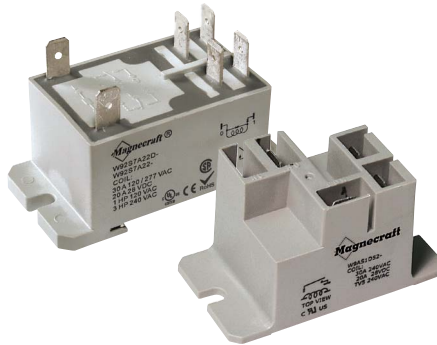


# Magnecraft™ Power Relays

Catalog  
2011







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Designed with heavy duty contacts coupled with a specialized magnetic armature and coil to provide the necessary power handling, Magnecraft Power Relays easily handle current loads of 20 to 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
- Flux tight versions 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 & panel mount	Quick Connect & Screw	SPST NO; DPST NO	25 to 30	1.5 hp (SPST)/1.0 hp (DPST) at 120 Vac 50/60 Hz; 3.0 hp (SPST)/2.0 hp (DPST) at 277 Vac 50/60 Hz	9
 389F Series Relays	389F	Ice cube plug in & flange mount	Quick Connect	SPST; SPDT; DPDT; 3PDT	20 to 30	1 hp at 120 199 Vac 50/60 Hz; 1.5 hp at 200 600 Vac 50/60 Hz FLA/LRA: 17/60 A at 300 Vac 50/60 Hz (Form X) 22/98 A at 120 Vac 50/60 Hz (Form A or X)	14
 300 Series Relays	300	Ice cube, DIN & flange mount	Quick Connect	SPST NO; DPST NO	10 to 30	1 hp at 120 Vac 50/60 Hz; 2 hp at 208 600 Vac 50/60 Hz	20
 92 Series Relays	92	DIN & panel mount	Quick Connect	SPST NO; DPST NO	10 to 30	1 hp at 120 Vac 50/60 Hz; 3 hp at 240 Vac 50/60 Hz FLA/LRA: 22/96 A at 240 Vac (NO contacts, AC coil) 25.3/110 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 FLA/LRA: 22/98 A at 120 Vac 50/60 Hz (NO contact) 30/80 A at 240 Vac 50/60 Hz (NO contact) 12/30 A at 240 Vac 50/60 Hz (NC contact)	26

## Description

# Magnecraft™ Power Relays

199

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



199 Series Relay

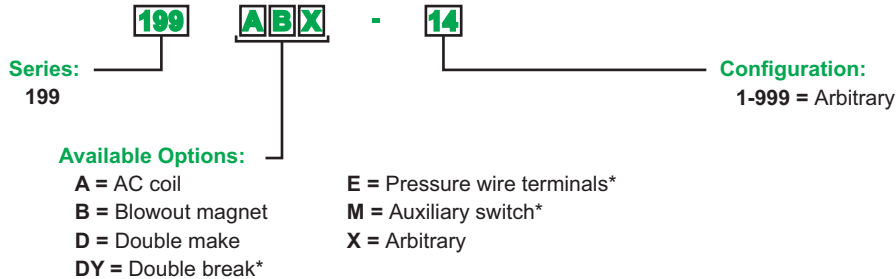
## Description

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
		48 Vdc	1200	Blowout Magnet	199DBX 6
	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	
110/125 Vdc	6000	Blowout Magnet	199BX 14		
			199X 14		

## Part Number Explanation



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

# Magnecraft™ 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 <sup>1</sup> , 199BX <sup>1</sup>	199ADX, 199DX, 199DYX, 199DBX <sup>1</sup>
<b>Contact Characteristics</b>		
Contact Configuration	SPST, SPDT, DPST, DPDT	SPST DM, SPST DB
Contact Material	AgSnO	
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	
<b>Coil Characteristics</b>		
Coil Voltage Range <sup>2</sup>	6 600 Vac 50/60 Hz; 6 250 Vdc <sup>2</sup>	
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)	
<b>General Characteristics</b>		
Electrical Life At Rated Load (Resistive)	Please 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	Between poles: 2200 V
	Between open contacts: 1600 V	Between open contacts: N/A
Storage Temperature Range	55 +100 °C ( 67 +212 °F)	
Operating Temperature Range	55 +55 °C ( 67 +131 °F)	
Maximum Wire Capacity	10 AWG (5.3 mm <sup>2</sup> )	
Terminal Tightening Torque	11 15 in lb (1.2 1.7 N•m)	
Weight	227 312 g (8 11 oz)	
Agency Approvals	UL (E43641), CSA (168986), CE (per IEC 60947 1), RoHS	

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

<sup>1</sup> For ratings with blowout magnet, please refer to Table 1 below.

<sup>2</sup> For available standard coil voltages, please 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).

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

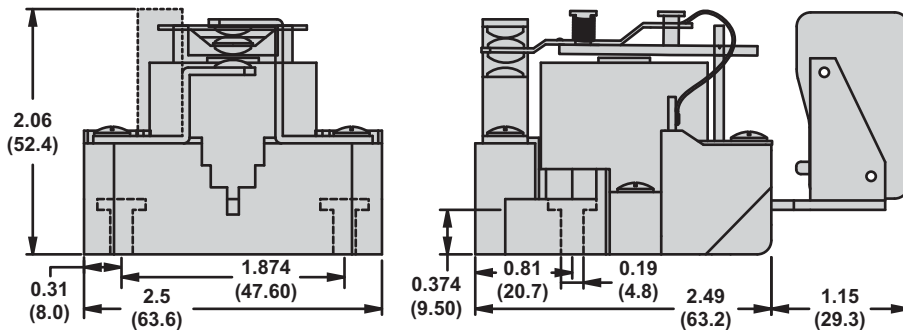
Contact Ratings	Load Voltage	Frequency	Load Type	Estimated Electrical Endurance	See Note(s)
<b>AC Load</b>					
40 A	300 V	50/60 Hz	Resistive	50,000 cycles	1, 3
2 hp	120 600 V		Motor	50,000 cycles	2, 3
15 A	120 V		Tungsten	20,000 cycles	3, 4
A600			Pilot Duty	100,000 cycles	3
<b>DC Load</b>					
40 A	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:

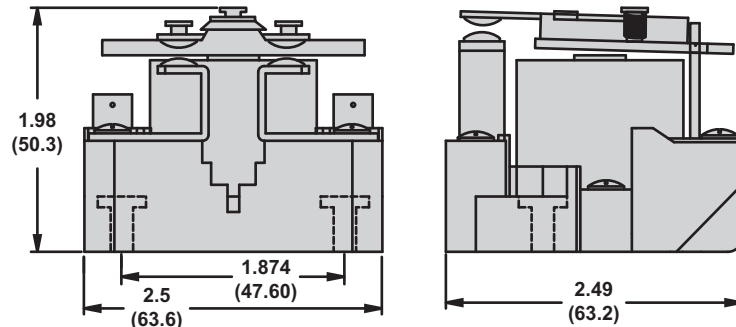
1. Resistive AC load ratings are based on a power factor of 0.85 to 1.0.
2. Motor horsepower ratings are based on a power factor of 0.4 to 0.5, and an initial inrush current not in excess of six times the full load current.
3. All ratings are based on applying the rated nominal power to the relay coil in such a manner 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 w/optional Auxiliary Switch)



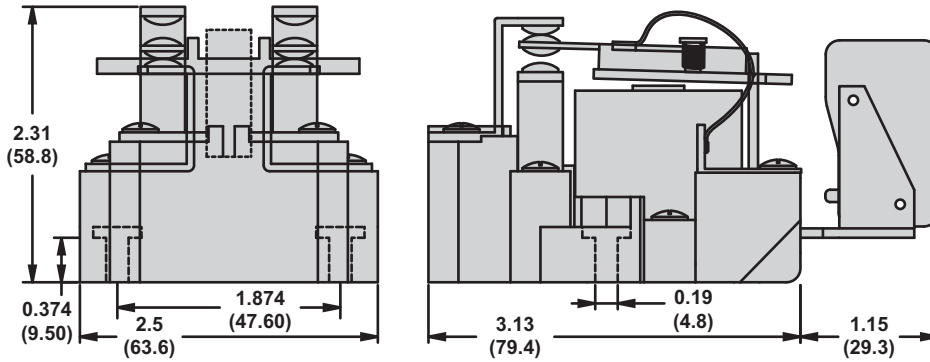
SPST-NO-DM



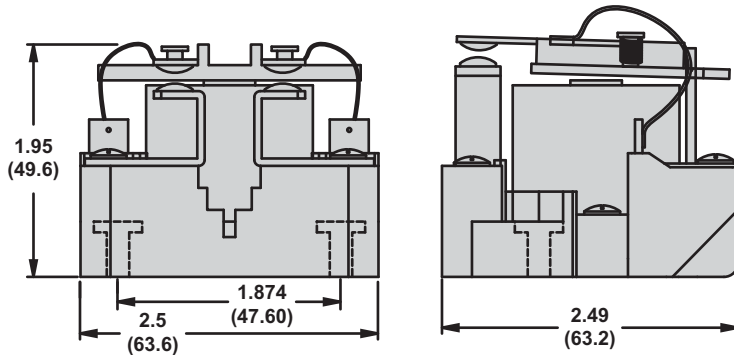
\* 50 A versions and additional options available. Call Customer Service for more information (847 441 2540).

Dimensions — inches (millimeters)

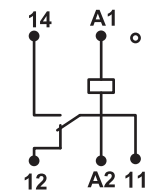
DPDT – Long Base (shown w/optional Auxiliary Switch)



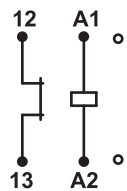
DPST-NO



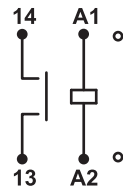
Wiring Diagrams



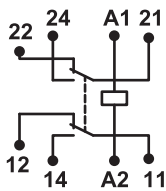
SPDT



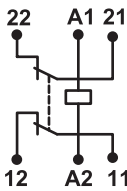
SPST-NC-DB



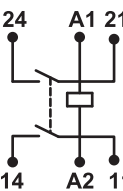
SPST-NO-DM



DPDT



DPST-NC



DPST-NO

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

# Magnecraft™ Power Relays

199

Metal Enclosure, 50-1289-1



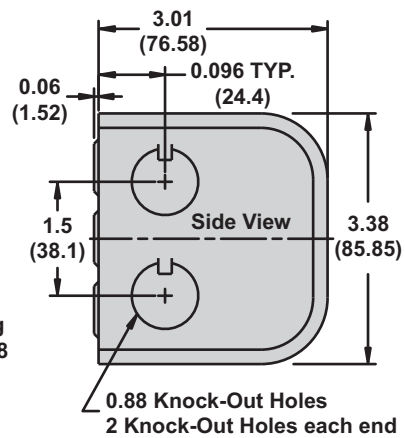
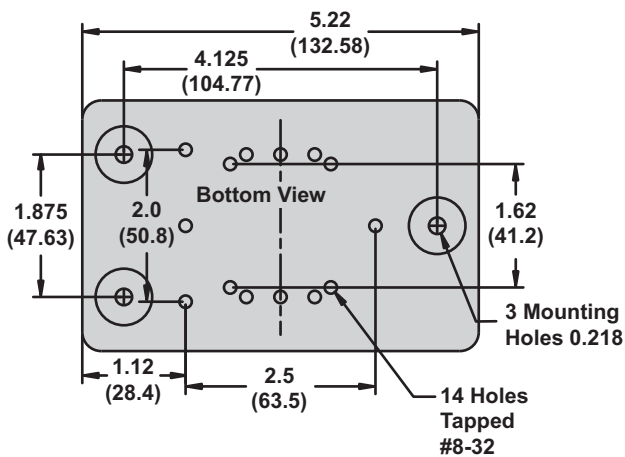
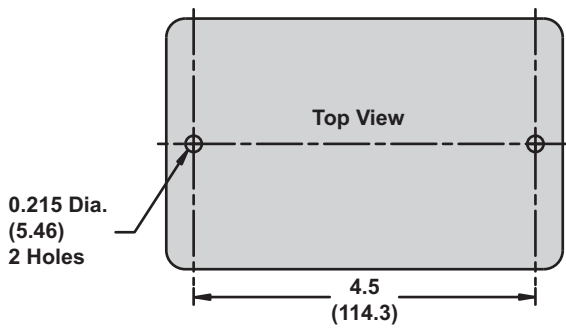
50 1289 1  
Shown with 199 Relay

## 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)





# Description

# Magnecraft™ Power Relays

725

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



Plug In Socket Mount  
Full feature cover



Panel/DIN Mount  
with blade terminals



Panel/DIN Mount  
with screw terminals

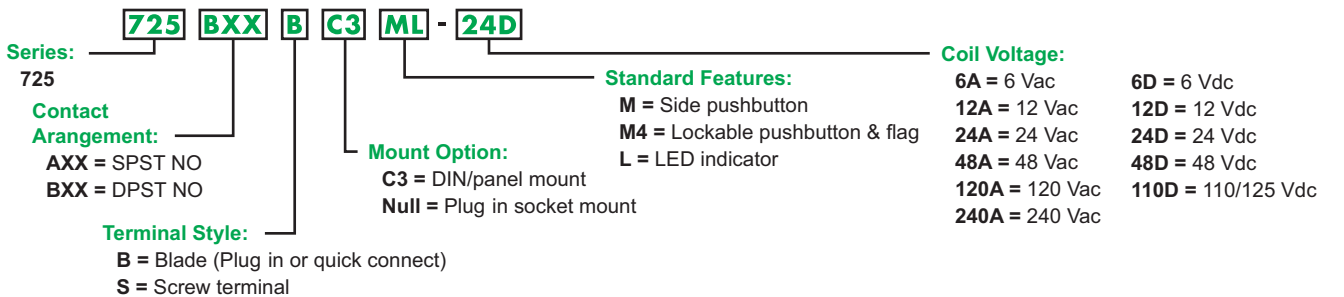
## Description

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 & panel	Blade terminals	725BXXBC3ML 24A
					Screw terminals	725BXXSC3ML 24A
		120 Vac	5200	DIN & panel	Blade terminals	725BXXBC3ML 120A
					Screw terminals	725BXXSC3ML 120A
		240 Vac	21000	DIN & panel	Blade terminals	725BXXBC3ML 240A
					Screw terminals	725BXXSC3ML 240A
		12 Vdc	75	DIN & panel	Blade terminals	725BXXBC3ML 12D
					Screw terminals	725BXXSC3ML 12D
		24 Vdc	300	DIN & panel	Blade terminals	725BXXBC3ML 24D
					Screw terminals	725BXXSC3ML 24D
30 A	SPST NO	24 Vac	300	DIN & panel	Blade terminals	725AXXBC3ML 24D
					Screw terminals	725AXXSC3ML 24D
		120 Vac	5200	DIN & panel	Blade terminals	725AXXBC3ML 120A
					Screw terminals	725AXXSC3ML 120A
		240 Vac	21000	DIN & panel	Blade terminals	725AXXBC3ML 240A
					Screw terminals	725AXXSC3ML 240A
		12 Vdc	75	DIN & panel	Blade terminals	725AXXBC3ML 12D
					Screw terminals	725AXXSC3ML 12D
		24 Vdc	275	DIN & panel	Blade terminals	725AXXBC3ML 24A
					Screw terminals	725AXXSC3ML 24A

## Part Number Explanation



### Specifications (UL 508)

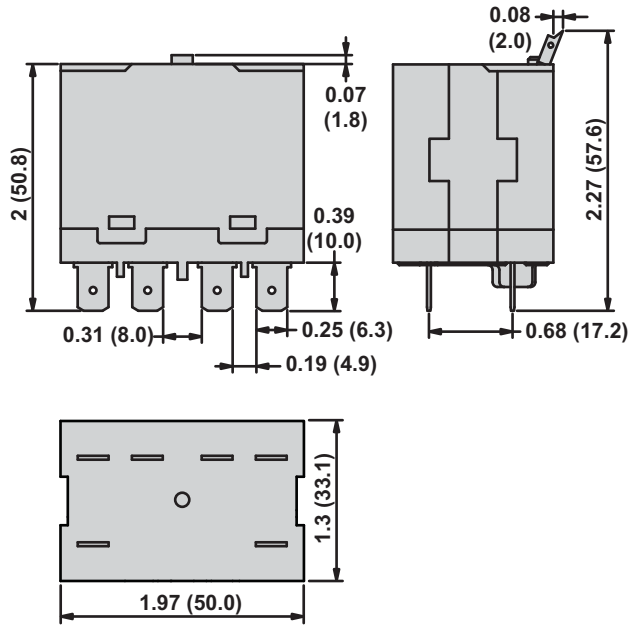
Part Number	725AXX	725BXX
<b>Contact Characteristics</b>		
Contact Configuration	SPST NO	DPST NO
Contact Material	Silver Alloy	
Thermal (Carrying) Current	30 A	25 A
Maximum Switching Voltage	300 V	
Current Ratings at Voltage	Resistive: 30 A at 277 Vac 50/60 Hz; 30 A at 30 Vdc Motor: 1.5 hp at 120 Vac 50/60 Hz; 3.0 hp at 277 Vac 50/60 Hz Tungsten: 1.5 kW at 120 Vac 50/60 Hz	Resistive: 25 A at 277 Vac 50/60 Hz; 25 A at 30 Vdc Motor: 1.0 hp at 120 Vac 50/60 Hz; 2.0 hp at 277 Vac 50/60 Hz Tungsten: 1.3 kW at 120 Vac 50/60 Hz
Minimum Switching Requirement	100 mA at 5 Vdc (0.5 W)	
<b>Coil Characteristics</b>		
Coil Voltage Range <sup>1</sup>	6 240 Vac 50/60 Hz (All AC coils are rectified); 6 110/125 Vdc <sup>1</sup>	
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)	
<b>General Characteristics</b>		
Electrical Life at Rated Load	100,000 operations	
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 megaohms at 500 Vdc (minimum)	
Operating Temperature Range	20 +55 °C ( 4 +131 °F)	
Storage Temperature Range	50 +100 °C ( 58 +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 <sup>2</sup> ); Coil: 12 AWG (3.3 mm <sup>2</sup> )	
Cover Protection Category	IP20 (screw terminals only)	
Weight (Average)	120 g (4.2 oz)	
Product Certifications	UL (E43641), CSA (168986), CE (per IEC 60947 1), RoHS	

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

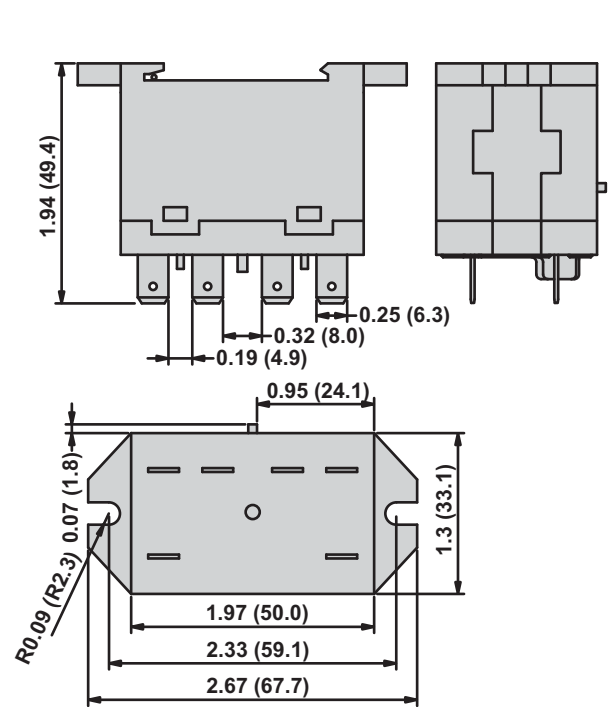
<sup>1</sup> For available standard coil voltages, please refer to the standard part number table on page 9.

Dimensions — inches (millimeters)

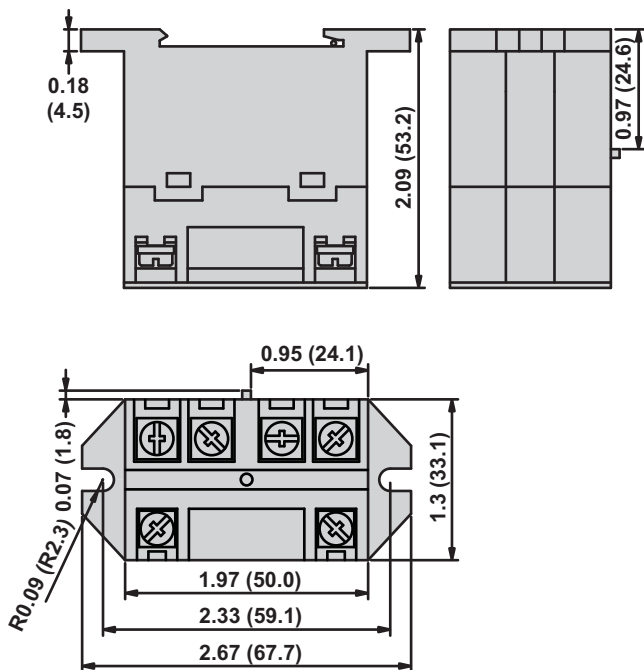
Plug-in Socket Mount (Blade Terminals)



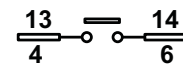
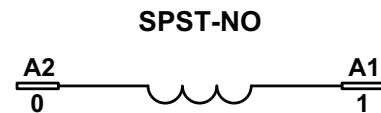
C3 – DIN/Panel Mount (Blade Terminals)



C3 – DIN/Panel Mount (Screw Terminals)



Wiring Diagrams



# Magnecraft™ 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

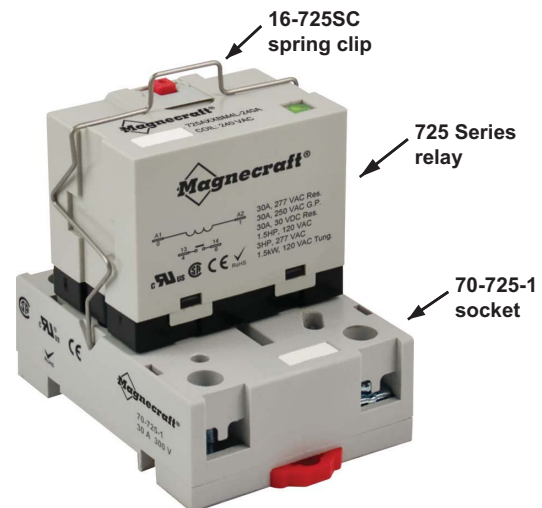
## Socket Accessories

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 to 250 Vdc	70 725 1	10	70 ASMD 250
	RC Circuit	6 to 24 Vac/Vdc	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 +55 °C ( 40 +131 °F); Storage: 40 +105 °C ( 40 +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
Maximum Wire Size	Solid Cu (1): 20 AWG; 6.0 mm <sup>2</sup> (2): 10/20 AWG; 6.0/0.5 mm <sup>2</sup> Stranded Cu (1 & 2): 10/20 AWG; 6.0/0.5 mm <sup>2</sup>
Flammability Rating	94V 0
Weight	2.4 oz (67 g)
Product Certifications	UL (E70550), CSA (40787), CE (per IEC 61810), RoHS



Relay Mounting Example:

# Dimensions, Wiring Diagram

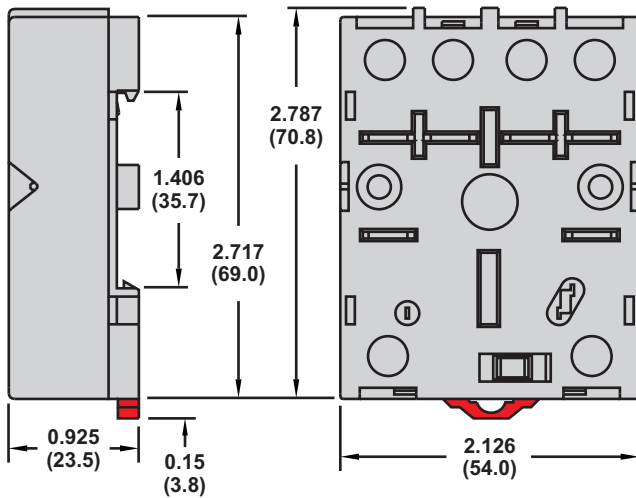
## Magnecraft™ Power Relays

725

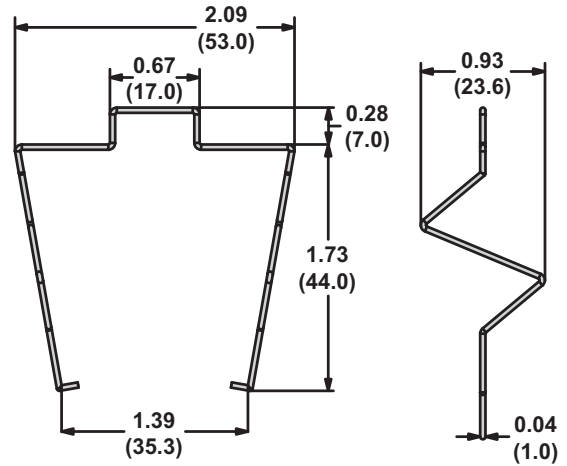
Socket, 70-725-1; Panel Mount Adapter, 16-725C1  
Spring Clip, 16-725SC; Socket Modules, 70-ASM

### Dimensions — inches (millimeters)

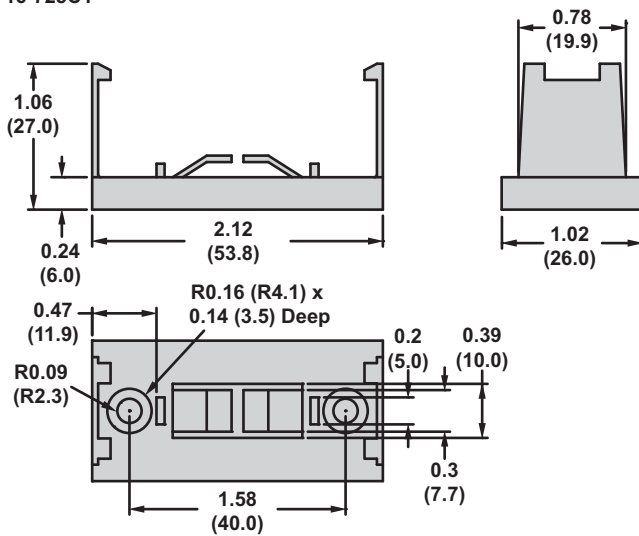
70-725-1



16-725SC

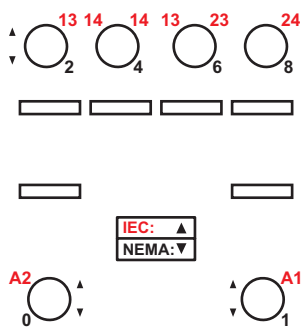


16-725C1



### Wiring Diagram

70-725-1



## Description

# Magnecraft™ Power Relays

389F

SPST, 30 A; DPDT, 20 to 25 A;

SPDT, 25 to 30 A; 3PDT, 20 A



## Description

The 389F series power relays offer a broad range of contact ratings along with a variety of panel, DIN and socket mount 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	24 Vac	46	Plug in (socket)	389FXCXC 24A
		120 Vac	1200	Plug in (socket)	389FXCXC 120A
				Side flange	389FXCXC1 120A
		240 Vac	4600	Side flange	389FXCXC1 240A
		12 Vdc	100	Side flange	389FXCXC1 12D
		24 Vdc	400	Plug in (socket)	389FXCXC 24D
25 A	DPDT	24 Vac	72	Plug in (socket)	389FBXC 24A
				Side flange	389FBXC1 24A
		120 Vac	1700	Plug in (socket)	389FBXC 120A
				Side flange	389FBXC1 120A
		240 Vac	7200	Side flange	389FBXC1 240A
	12 Vdc	100	Side flange	389FBXC1 12D	
	SPDT	24 Vdc	400	Plug in (socket)	389FBXC 24D
				Side flange	389FBXC1 24D
		120 Vac	1700	Side flange	389FXAXC1 120A
		12 Vdc	100	Side flange	389FXAXC1 12D
24 Vdc		400	Side flange	389FXAXC1 24D	
30 A	SPDT DM DB	120 Vac	1100	Side flange	389FXHXC1 120A
		12 Vdc	100	Side flange	389FXHXC1 12D
		24 Vdc	400	Side flange	389FXHXC1 24D
	SPST NO DM	120 Vac	1100	Side flange	389FHXXC1 120A
		12 Vdc	100	Side flange	389FHXXC1 12D
		24 Vdc	400	Side flange	389FHXXC1 24D

## Part Number Explanation

Series: **389F**    Contact Arrangement: **XBX**    Cover Style: **C**    Coil Voltage: **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    **12D** = 12 Vdc  
**24A** = 24 Vac    **24D** = 24 Vdc  
**48A** = 48 Vac    **48D** = 48 Vdc  
**120A** = 120 Vac    **110D** = 110/125 Vdc  
**240A** = 240 Vac

Specifications (UL 508)

Part Number	389FXAX, XBX	389FCX	389FXHX, HXX
<b>Contact Characteristics</b>			
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
Current Ratings at Voltage	Resistive: 25 A at 300 Vac 50/60 Hz; 13 A at 28 Vdc Motor: 1.5 hp at 208 240 Vac 50/60 Hz; 1 hp at 120 & 480 600 Vac 50/60 Hz Pilot Duty: B600 FLA/LRA: 22/98 A at 120 Vac Ballast: 20 A, 277 Vac 50/60 Hz	Resistive: 20 A at 150 Vac 50/60 Hz; 13 A at 28 Vdc Motor: 0.5 hp at 208 240 Vac 50/60 Hz; 0.5 hp at 120 Vac 50/60 Hz Pilot Duty: B300 FLA/LRA: 22/98 A at 120 Vac Ballast: 20 A, 150 Vac 50/60 Hz	Resistive: 30 A at 300 Vac 50/60 Hz; 30 A at 28 Vdc Motor: 1.5 hp at 200 600 Vac 50/60 Hz; 1 hp at 120 200 Vac 50/60 Hz Pilot Duty: A600 FLA/LRA: 22/98 A at 120 Vac 17/60 A at 300 Vac Ballast: 25 A, 277 Vac 50/60 Hz
Minimum Switching Requirement	100 mA at 5 Vdc (0.5 W)		
<b>Coil Characteristics</b>			
Coil Voltage Range <sup>1</sup>	12 240 Vac 50/60 Hz; 12 110 Vdc <sup>1</sup>		
Operating Range (% of Nominal)	85% 110% (AC); 80% 110% (DC)		
Average Consumption	2 3.5 VA (AC); 1.5 W (DC)		
Drop Out Voltage Threshold	10% minimum (AC/DC)		
<b>General Characteristics</b>			
Electrical Life at Rated Load	50,000 operations		
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 +55 °C ( 22 +131 °F)		
Storage Temperature Range	30 +100 °C ( 22 +212 °F)		
Weight (Average)	95 g (3.3 oz)		
Product Certifications	UL (E43641), CE (per IEC 60947), CSA (168986)		

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

<sup>1</sup> For available standard coil voltages, please refer to the standard part number table on page 14.

# Magnecraft™ Power Relays

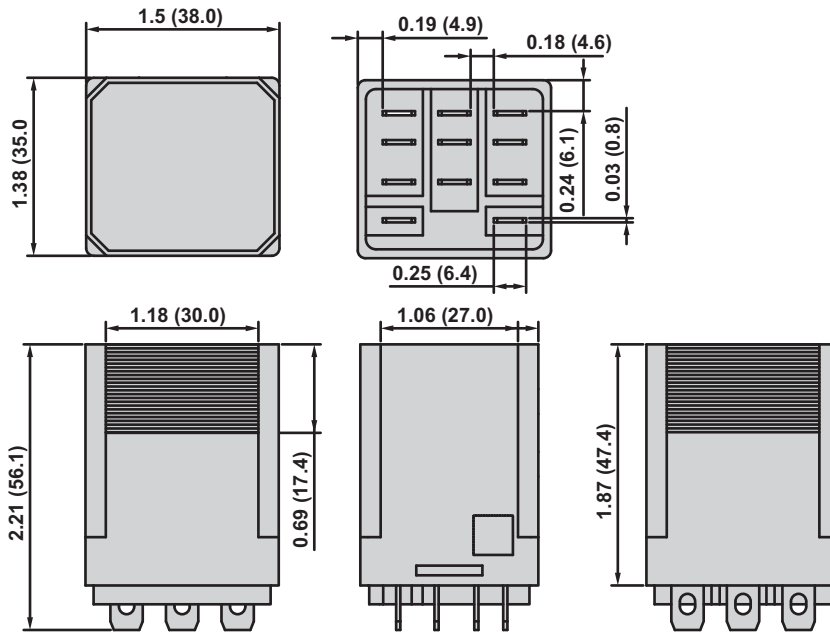
389F

SPST, 30 A; DPDT, 20 to 25 A;

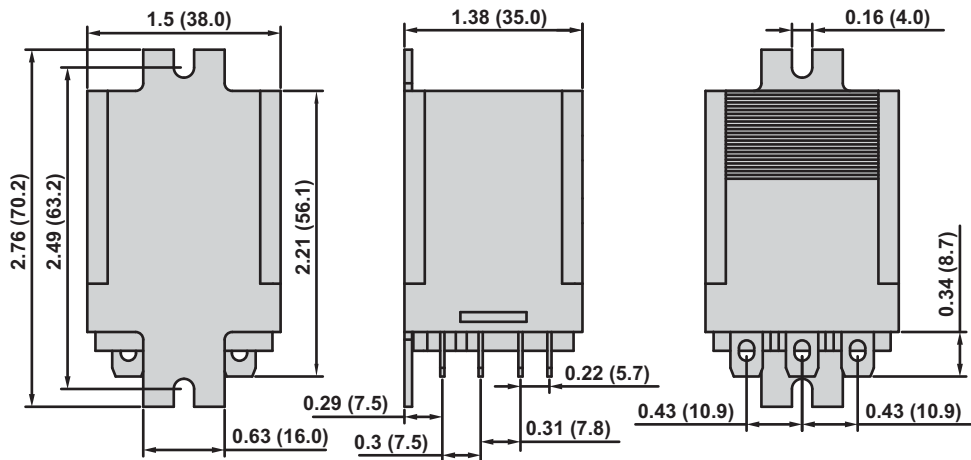
SPDT, 25 to 30 A; 3PDT, 20 A

## Dimensions — inches (millimeters)

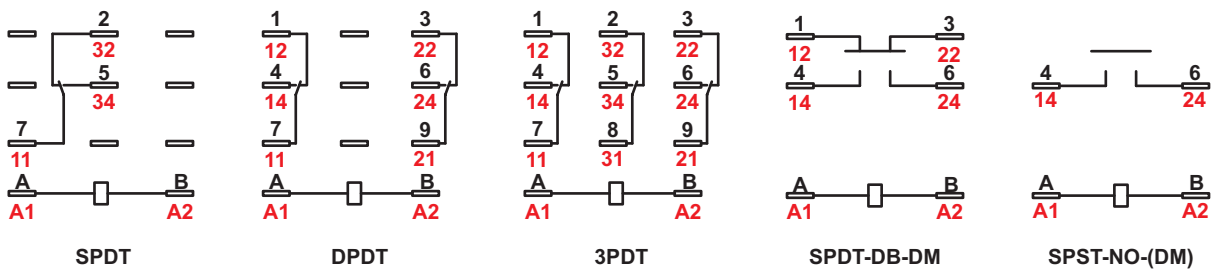
Plug-in Cover Style



Side Flange Cover Style



## Wiring Diagrams



NEMA  
IEC



# Magnecraft™ Power Relays

389F

Socket, 70-788EL11-1



## Description

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



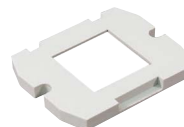
70 788EL11 1



70 ASM



16 750/788FT 1



16 788C1



16 DCLIP 1 & 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

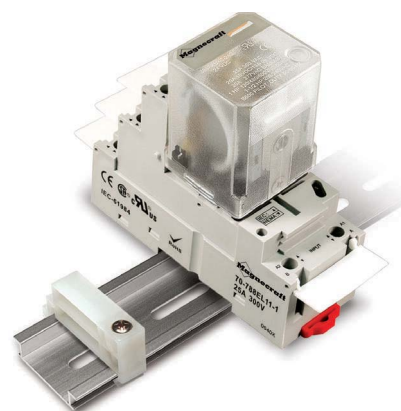
## Socket Accessories

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	6 24 Vac/Vdc	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)

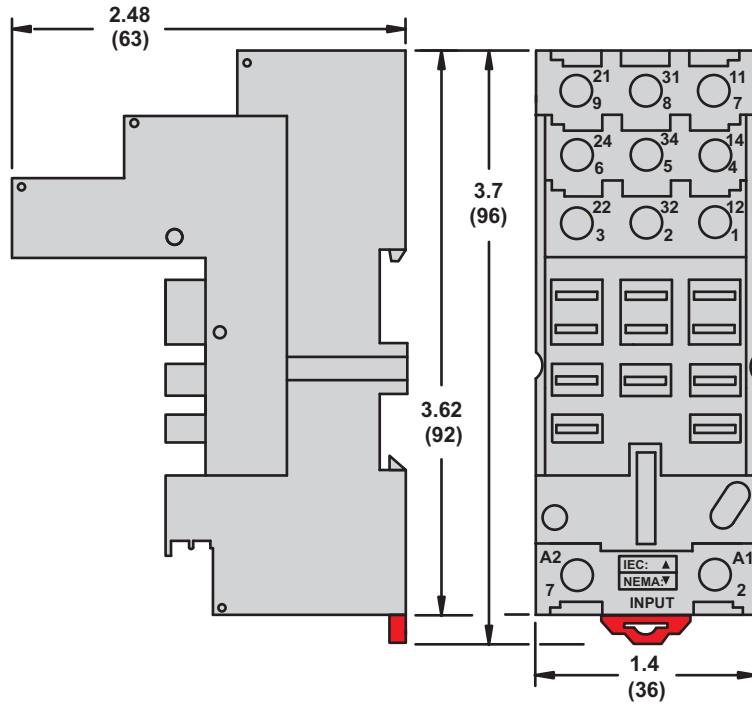
Part Number	70-788EL11-1
Number of Terminals	11
Nominal Voltage Rating	300 V
Nominal Current Rating	25 A
Dielectric Strength	Between adjacent output terminals: 3000 V(rms); Output to input terminals: 3000 V(rms); Terminals to rail/chassis: 3000 V(rms)
Temperature Range	Operation: 40 +80 °C ( 40 +176 °F); Storage: 40 +105 °C ( 40 +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
Maximum Wire Size	Solid Cu (2): 10/12 AWG; 6.0/4.0 mm <sup>2</sup> ; Stranded Cu (2): 10/12 AWG; 6.0/4.0 mm <sup>2</sup>
Flammability Rating	94V 0
Weight	3.39 oz (96 g)
Product Certifications	UL (E70550), CSA (40787), CE (per IEC 61984), RoHS



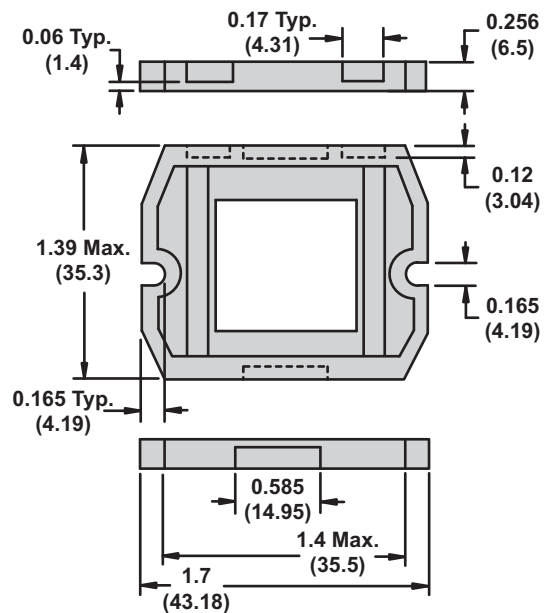
Relay Mounting Example

Dimensions — inches (millimeters)

70-788EL11-1

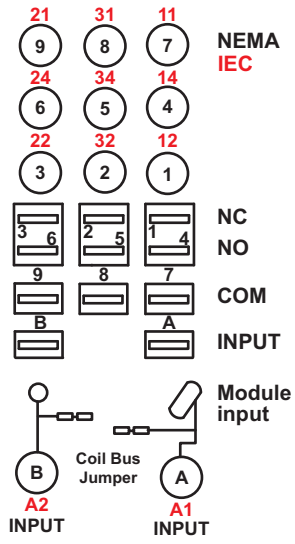


16-788C1 Panel Mount Adapter for 70-788EL11 socket



Wiring Diagram

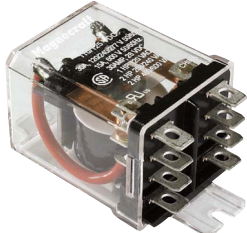
70-788EL11-1



## Description

# Magnecraft™ Power Relays

300  
DPDT, 30 A



Side Flange Cover



Top DIN Mount Cover

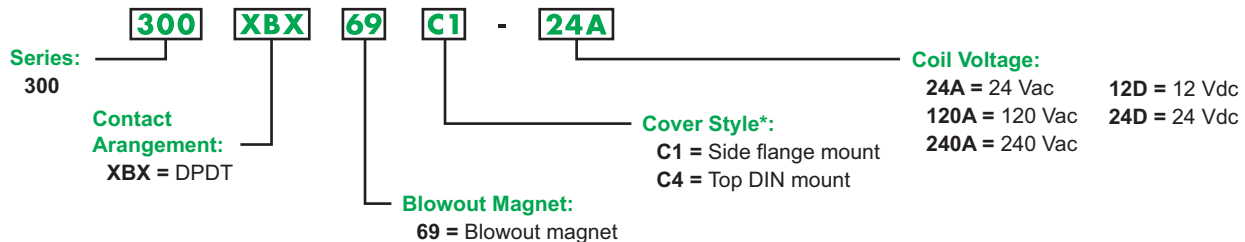
## Description

The 300 series power relays offer 2 mm (0.08 in) contact gaps and 8 mm (0.3 in) creepage and clearance which meets international requirements. Options include a variety of covers, mounting solutions, and a blowout magnet for high voltage DC 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
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	24 Vac	54	Side flange mount	300XBXC1 24A
		120 Vac	1270	Side flange mount	300XBXC1 120A
				Top DIN mount	300XBXC4 120A
		240 Vac	5400	Side flange mount	300XBXC1 240A
		12 Vdc	75	Side flange mount	300XBXC1 12D
				Side flange mount	300XBXC1 24D
		24 Vdc	300	Top DIN mount	300XBXC4 24D
				Top DIN mount (with magnetic blowout)	300XB69C4 24D

## Part Number Explanation



\*Additional cover styles available. Contact Customer Service at 847 441 2540.

Specifications (UL 508)

<b>Part Number</b>	<b>300XB<sup>1</sup></b>
<b>Contact Characteristics</b>	
Contact Configuration	DPDT
Contact Material	Silver Alloy
Thermal (Carrying) Current	30 A
Maximum Switching Voltage	600 V
Current Ratings at Voltage <sup>1</sup>	Resistive: 30 A at 300 Vac 50/60 Hz; 30 A at 28 Vdc; 15 A at 600 Vac 50/60 Hz Motor: 1 hp at 120 Vac 50/60 Hz; 2 hp at 208 600 Vac 50/60 Hz; Pilot Duty: 5.5 A at 120 Vac 50/60 Hz; 1.2 A at 600 Vac 50/60 Hz
Minimum Switching Requirement	500 mA at 12 Vac/Vdc
<b>Coil Characteristics</b>	
Coil Voltage Range <sup>2</sup>	24 240 Vac 50/60 Hz; 12 110 Vdc <sup>2</sup>
Operating Range (% of Nominal)	85% 110% (AC); 80% 110% (DC)
Average Consumption	3.4 VA (AC); 1.5 W (DC)
Drop out voltage threshold	30% (AC); 10% (DC)
<b>General Characteristics</b>	
Electrical Life at Rated Load	30,000 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: 2500 Vac; Between poles: 4000 Vac; Between contacts: 2500 Vac;
Operating Temperature Range	40 +55 °C ( 40 +131 °F)
Storage Temperature Range	40 +85 °C ( 40 +185 °F)
Weight (Average)	85 g (3 oz)
Product Certifications	UL (E43641), CSA (168986)

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

<sup>1</sup> For ratings with blowout magnet, please refer to Table 1 below.

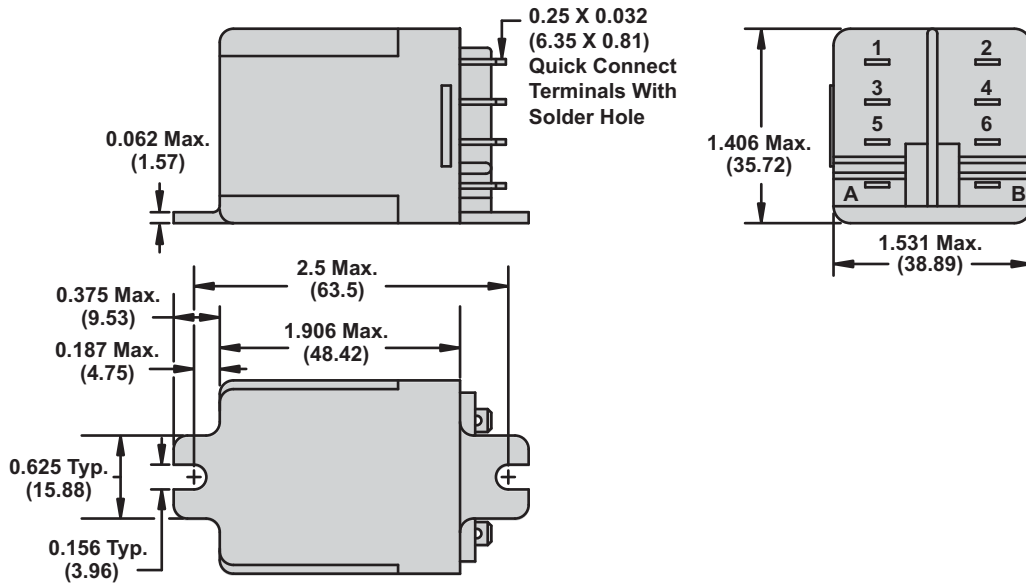
<sup>2</sup> For available standard coil voltages, please refer to the standard part number table on page 20.

Table 1: Additional DC Ratings with Blowout Magnet

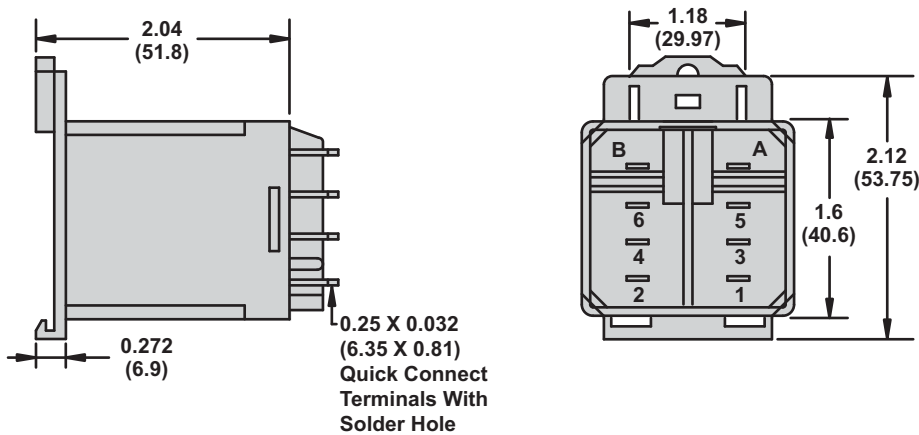
Load Voltage	Contact Rating
150 Vdc	3 A

Dimensions — inches (millimeters)

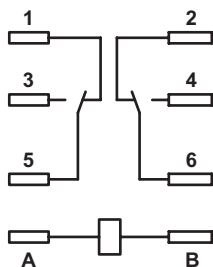
Side Flange Mount Cover



TOP DIN MOUNT COVER



Wiring Diagram



DPDT

## Description

# Magnecraft™ Power Relays

92

DPST-NO, 30 A;

DPDT, 30 A (NO) / 3 A (NC)



92S7A22D

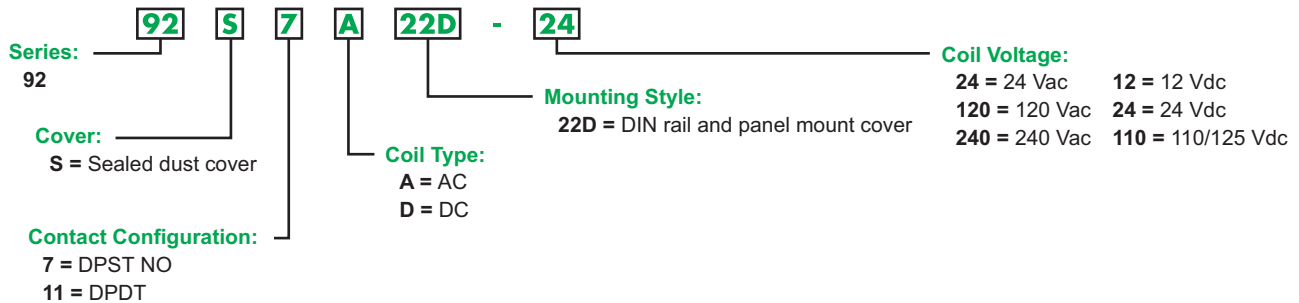
## Description

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 UL873, UL508, & UL1950 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 high 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	Suitable for washing to remove flux residues

Rated Contact Current	Contact Configuration	Coil Voltage	Coil Resistance (Ω)	Standard Part Number
30 A	DPST NO	24 Vac	250	92S7A22D 24A
		120 Vac	1600	92S7A22D 120A
		240 Vac	6500	92S7A22D 240A
		12 Vdc	86	92S7D22D 12D
		24 Vdc	350	92S7D22D 24D
		110 Vdc	7255	92S7D22D 110D
30 A (NO) / 3 A (NC)	DPDT	24 Vac	250	92S11A22D 24A
		120 Vac	1600	92S11A22D 120A
		240 Vac	6500	92S11A22D 240A
		12 Vdc	86	92S11D22D 12D
		24 Vdc	350	92S11D22D 24D

## Part Number Explanation



# Magnecraft™ Power Relays

92

DPST-NO, 30 A;

DPDT, 30 A (NO) / 3 A (NC)

## Specifications (UL 508)

Part Number	92S7	92S11
<b>Contact Characteristics</b>		
Contact Configuration	DPST-NO	DPDT
Contact Material	Silver Alloy	
Thermal (Carrying) Current	30 A	30 A (NO); 3 A (NC)
Maximum Switching Voltage	300 V	
Current Ratings at Voltage	Resistive: 30 A at 277 Vac 50/60 Hz; 20 A at 28 Vdc; Motor: 1 hp at 120 Vac 50/60 Hz, 3 hp at 240 Vac 50/60 Hz; FLA/LRA: 22/96 A at 240 Vac (NO contacts, AC coil); 25.3/110 A at 240 Vac (NO contacts, DC coil); Tungsten: TV-10 at 120 Vac; Pilot Duty: 720 VA	Resistive: 30 A at 277 Vac 50/60 Hz (NO), 3 A at 277 Vac 50/60 Hz (NC), 20 A at 28 Vdc (NO), 3 A at 28 Vdc (NC); Motor: 1 hp at 120 Vac 50/60 Hz (NO), 3 hp at 240 Vac 50/60 Hz (NO); FLA/LRA: 22/96 A at 240 Vac (NO contacts, AC coil); 25.3/110 A at 240 Vac (NO contacts, DC coil); Tungsten: TV-10 at 120 Vac; Pilot Duty: 720 VA (NO)
Minimum Switching Requirement	500 mA at 12 Vac/Vdc	500 mA at 12 Vac/Vdc (NO); 100 mA at 6 Vac/Vdc (NC)
<b>Coil Characteristics</b>		
Coil Voltage Range <sup>1</sup>	24–240 Vac <sup>2</sup> 50/60 Hz; 12–110 Vdc	
Operating Range (% of Nominal)	80%–120% (AC); 75%–120% (DC)	
Average Consumption	4 VA (AC); 1.7 W (DC)	
Drop-out Voltage Threshold	10% minimum (AC/DC)	
<b>General Characteristics</b>		
Electrical Life at Rated Load	100,000 operations	
Mechanical Life at No Load (Unpowered)	5,000,000 operations	
Operate Time at Nominal Coil Voltage	15 ms	
Dielectric Strength	Between coil and contact: 4000 Vac Between poles: 2000 Vac Between contacts: 1500 Vac	
Operating Temperature Range	-40 – +55 °C ( -40 – +131 °F)	
Storage Temperature Range	-40 – +85 °C ( -40 – +185 °F)	
Vibration Resistance	3 g-n, 10–55 Hz	
Shock Resistance	10 g-n	
Weight (Average)	86 g (3.03 oz)	
Product Certifications	UL (E43641), CSA (168986), CE (per IEC 60947), RoHS	

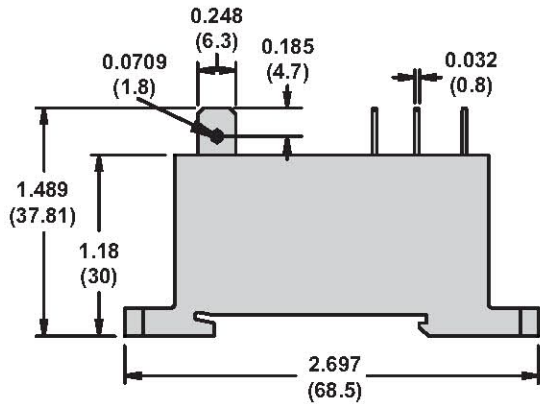
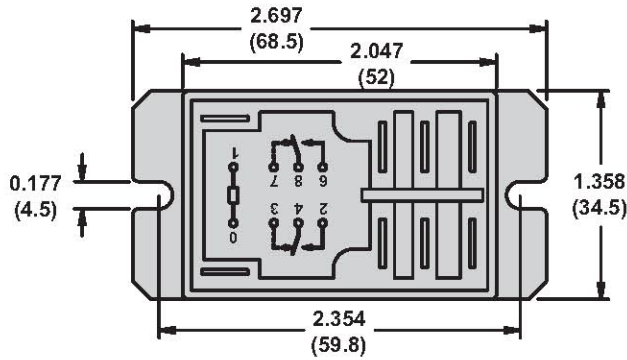
Note: Actual product performance may vary depending on application and environmental conditions.

<sup>1</sup> For available standard coil voltages, please refer to the standard part number table on page 23.

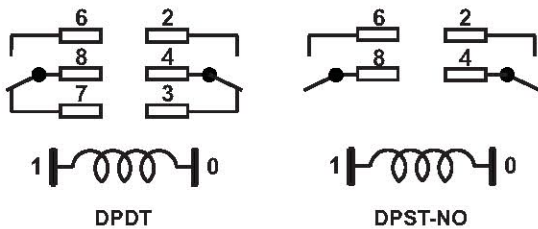
<sup>2</sup> All AC coils are rectified.



Dimensions — inches (millimeters)



Wiring Diagrams



Note: Only necessary terminals are present on single throw styles.

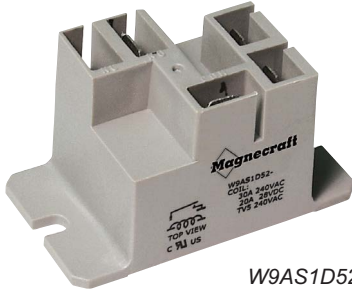
## Description

# Magnecraft™ Power Relays

9A

SPST-NO, 30 A;

SPDT, 30 A (NO) / 15 A (NC)



W9AS1D52

## Description

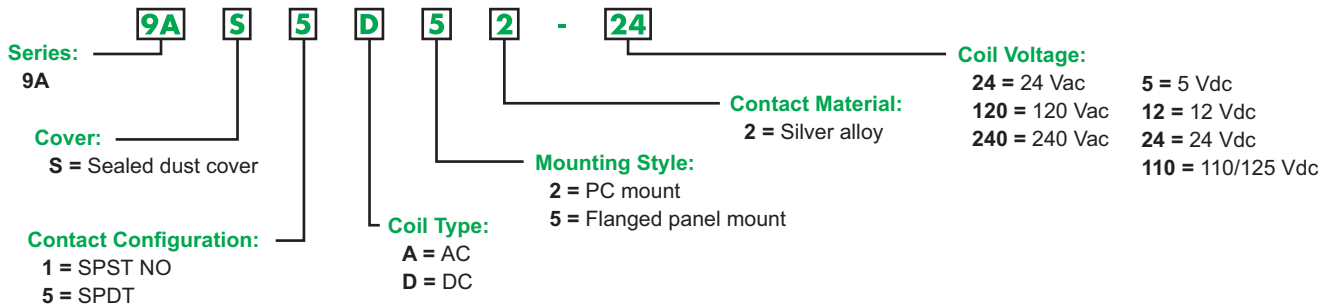
The 9A series power relays offer robust performance in applications such as HVAC, motor controls, and alarm systems.

Feature	Benefit
Standard Class F insulation	Allows for maximum coil temperature of 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	24 Vac	576	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	576	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 mount versions available, please call (847) 441 2540 for more information.

## Part Number Explanation



### Specifications (UL 508)

Part Number	9AS1	9AS5
<b>Contact Characteristics</b>		
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; Motor: 1 hp at 125 Vac 50/60 Hz, 2 hp at 240 Vac 50/60 Hz  FLA/LRA: 22/98 A (NO) at 120 Vac 50/60 Hz 30/80 A (NO) at 240 Vac 50/60 Hz  Ballast: 10 A at 277 Vac Pilot Duty: 470 VA	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)  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)  FLA/LRA: 22/98 A (NO) at 120 Vac 50/60 Hz 30/80 A (NO) at 240 Vac 50/60 Hz 12/30 A (NC) at 240 Vac 50/60 Hz  Ballast: 10 A at 277 Vac (NO); 3 A at 277 Vac (NC) Pilot Duty: 470 VA (NO), 275 VA (NC)
Minimum Switching Requirement	100 mA at 12 Vac, 5 Vdc	
<b>Coil Characteristics</b>		
Coil Voltage Range <sup>1</sup>	24 240 Vac 50/60 Hz; 5 24 Vdc <sup>1</sup>	
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)	
<b>General Characteristics</b>		
Electrical Life at Rated Load	100,000 operations	
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 +55 °C ( 40 +131 °F)	
Storage Temperature Range	40 +85 °C ( 40 +185 °F)	
Vibration Resistance	3 g n, 10 55 Hz	
Shock Resistance	10 g n	
Weight (Average)	33 g (1.16 oz)	
Product Certifications	UL (E43641)	

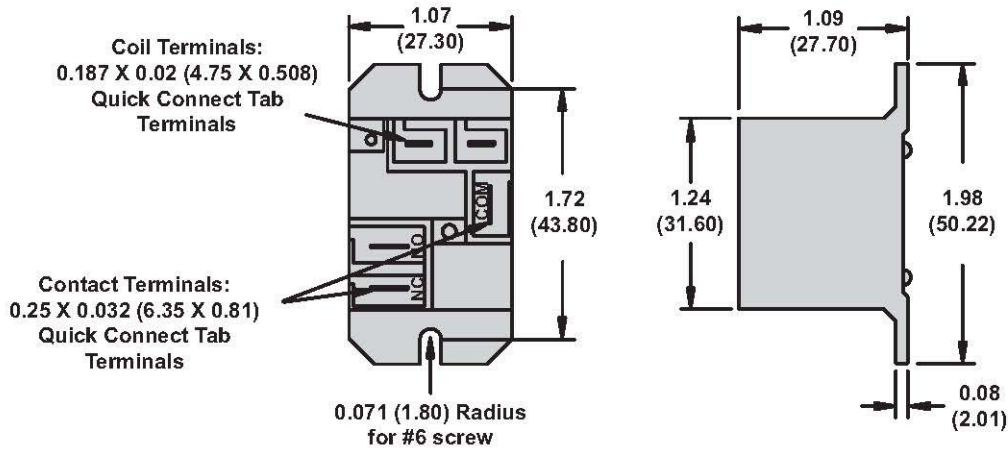
Note: Actual product performance may vary depending on application and environmental conditions.

<sup>1</sup> For available standard coil voltages, please refer to the standard part number table on page 26.

# Magnecraft™ Power Relays

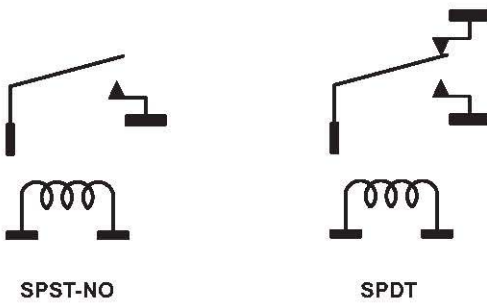
9A  
SPST-NO, 30 A;  
SPDT, 30 A (NO) / 15 A (NC)

## Dimensions — inches (millimeters)



## Wiring Diagrams

All diagrams are shown from top view



# Magnecraft™ Power Relays

9A

DIN Rail Adapter, 16-9ADIN-1



## Description

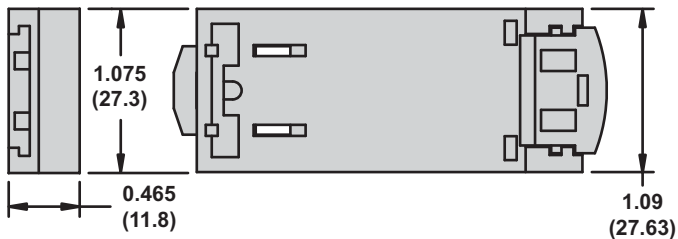
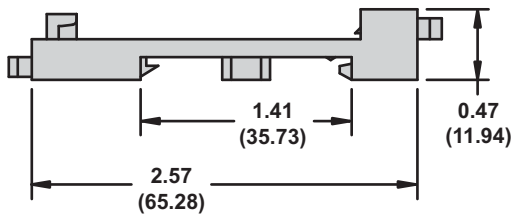
The 16 9ADIN 1 DIN rail adapter provides the mounting flexibility needed to mount the 9A Power Relay in a panel board or control box.



16 9ADIN 1  
Shown with 9A relay

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

# Magnecraft™ 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 &  
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.

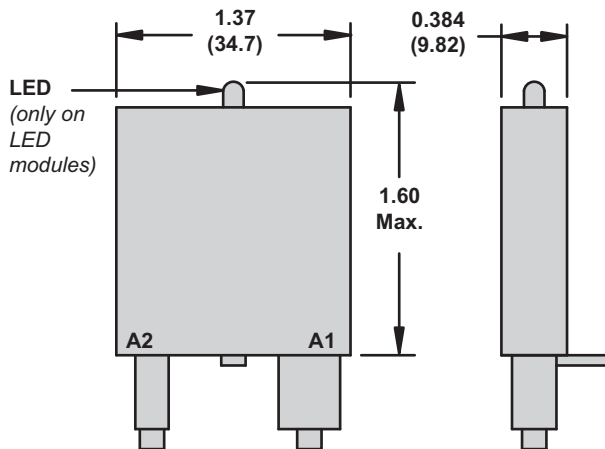
ID Tags/Labels provide quick identification of circuits.

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.	120/240 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.	6 24 Vac/Vdc	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

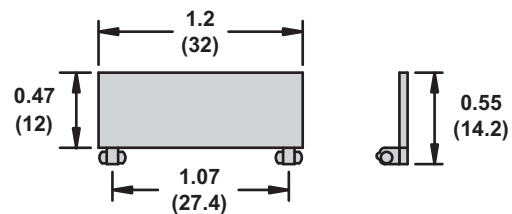
\*Use of LED and RC modules may increase coil power draw up to 10%.

## Dimensions — inches (millimeters)

### 70-ASM Socket Modules

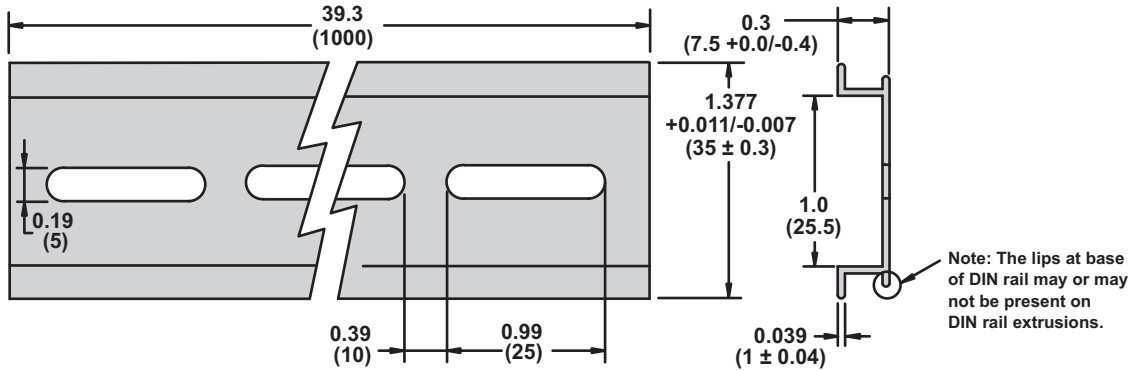


### 16-750/788FT-1 ID Tag/Label

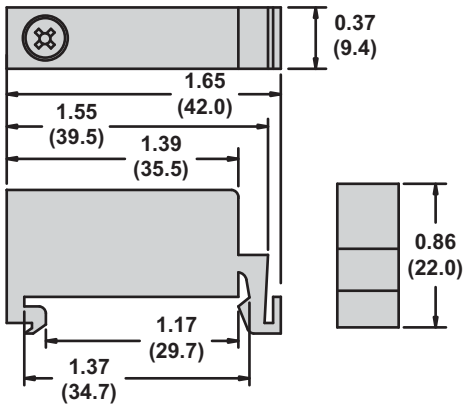


### Dimensions — inches (millimeters)

16-700DIN Metal DIN Rail

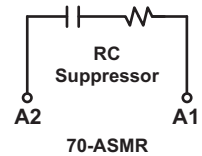
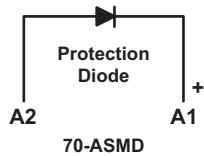
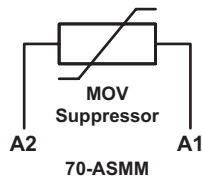
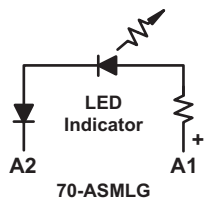


16-DCLIP-1 DIN Rail Clip



### Wiring Diagrams

70-ASM Socket Modules



## 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 upon the configuration) with a fixed contact. When the current to the coil is switched off, a spring returns the armature to its original position.

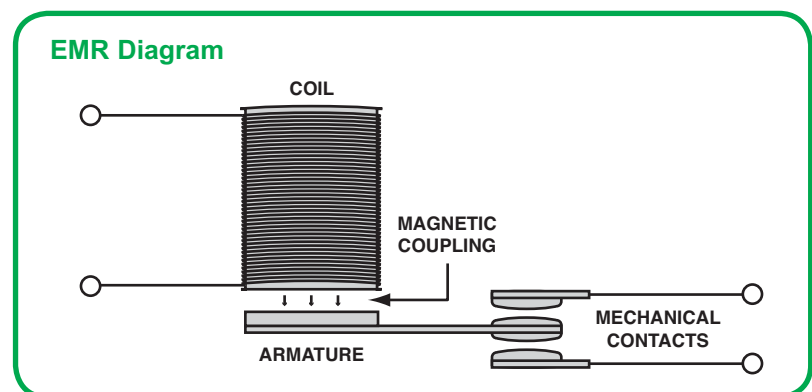
## Types of Relay Contacts

- 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.





## Advantages

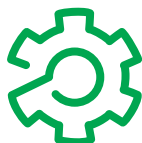
Relays are used where it is necessary to control a circuit by a low power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal. The advantages of power relays include:

- 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, Magnecraft Power Relays easily handle current loads of 20 to 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

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## The Magnecraft Range of Power Relays

Depending on the application, the Magnecraft 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 & Accessories	_____

Use the catalog specifications or online parametric search to determine a recommended part number ([www.serelays.com](http://www.serelays.com)).

The Magnecraft website ([www.serelays.com](http://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.

## 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

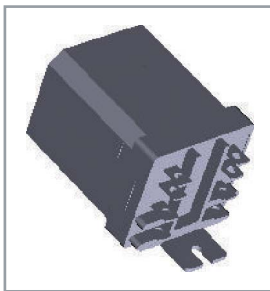
Search our comprehensive database to identify products by manufacturer and part number, and link directly to part specifications.

### ■ 3D CAD Library

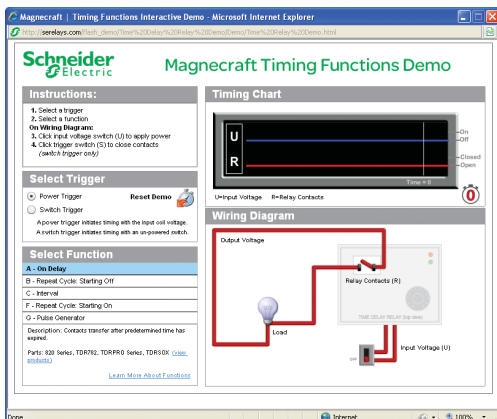
View, email, download, or insert a file directly into your open CAD software pane. There are 18 different file formats to choose from.

### ■ Order Free Samples

Magnecraft 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 Magnecraft time delay relays.

### ■ Distributor Inventory Search

Search authorized distributors' current Magnecraft inventory and buy online. (Buy online not available for all distributors).

**Schneider Electric USA, Inc.**

[www.serelays.com](http://www.serelays.com)

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11/2011