

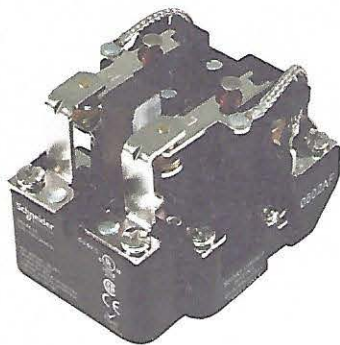
Description

Legacy Power Relays

199

SPST-NO-DM, 40 A; SPDT, 40 A;

DPST-NO, 40 A; DPDT, 40 A*



199 Series Relay

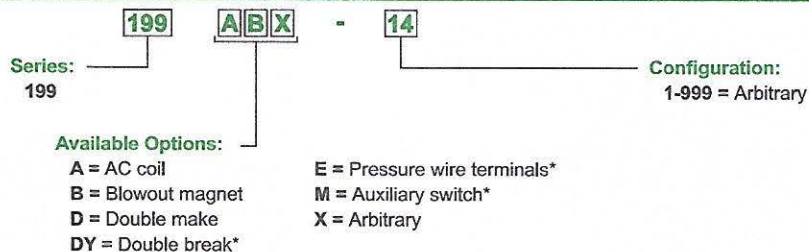
Description

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

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

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

Part Number Explanation



* 50 A versions and additional options available. Call Customer Service for more information

Specifications (UL 508)

Part Numbers	199AX, 199X, 199ABX ¹ , 199BX ¹	199ADX, 199DX, 199DYX, 199DEX 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 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

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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.

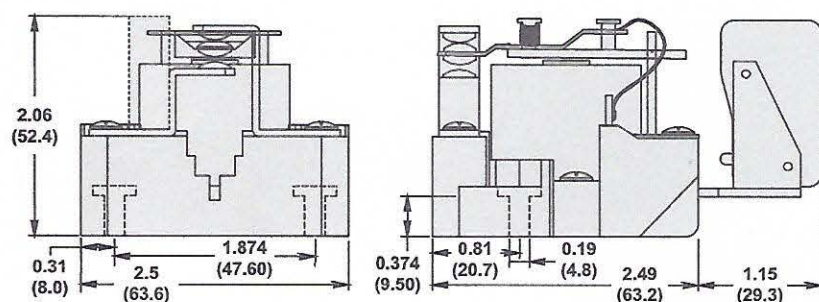
2. Motor horsepower ratings are based on a power factor of 0.4–0.5, and an initial inrush current not exceeding six times the full-load current.

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.

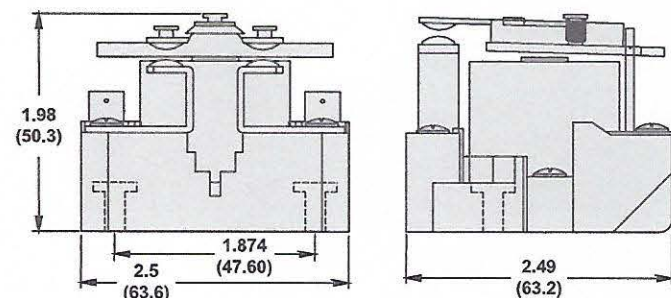
4. The tungsten rating is based on cold-filament inrush current not exceeding 15 times the rated steady-state lamp current.

Dimensions — inches (millimeters)

SPDT—Short Base (shown with optional Auxiliary Switch)



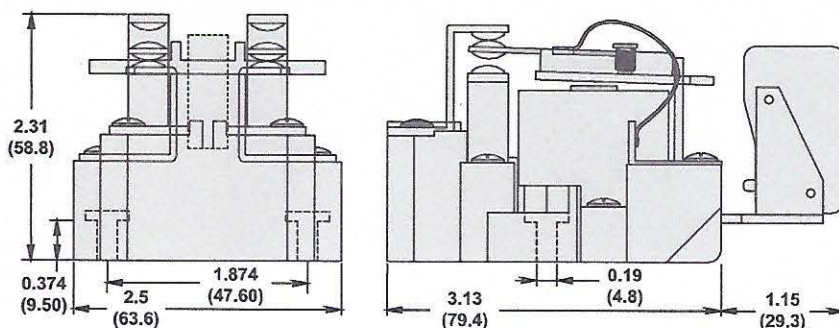
SPST-NO-DM



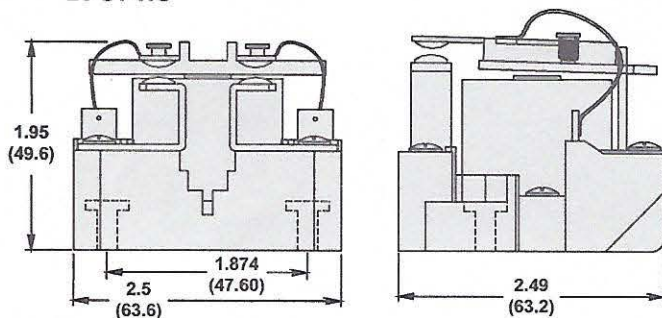
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Dimensions — inches (millimeters)

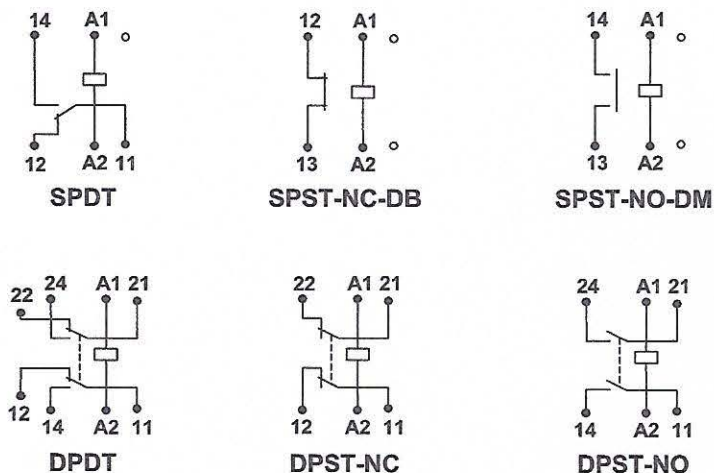
DPDT—Long Base (shown with optional Auxiliary Switch)



DPST-NO



Wiring Diagrams



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