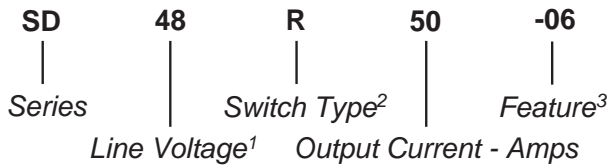


Part Number	Description
SD24R50	12-280 Vac
SD24D40-06	12-280 Vac
SD24D50-06	12-280 Vac
SD48D40-06	12-280 Vac
SD48D50A	24-600 Vac
SD48D50A2	24-600 Vac



For RoHS compliant contact factory

**Part Number Explanation**



**NOTES**

- 1) Line Voltage (nominal): 24 = 240 Vac; 48 = 480 Vac
- 2) Switch Type: R = Random turn-on; D = Zero-cross turn-on;
- 3) Features: -06 = Faston terminals  
 A = Common control adapter  
 A2 = Individual control adapter

**INPUT (CONTROL) SPECIFICATION**

	Min	Max	Units
<b>Control Range</b>			
SD24	4	30	Vdc
SD48	5	30	Vdc
SD48D50XX	10	30	Vdc
<b>Input Current Range</b>			
	3		mA
<b>Must Turn-Off Voltage</b>			
	1		Vdc
<b>Input Resistance (Typical)</b>			
SD24		1000	Ohms
SD48		1000	Ohms
SD48D50A		1400	Ohms
SD48D50A2		1800	Ohms
<b>Reverse Voltage Protection</b>			
		30	V

**FEATURES/BENEFITS**

- Designed for all types of loads
- Dual output (two relays in one package)
- Faston terminals
- Connector for common or individual control
- Tight zero-cross window for low EMI
- High immunity to surges

**DESCRIPTION**

The Series SD dual-phase relays are designed for all types of loads. The design incorporates two relays in a single package. The relays utilize optical isolation to protect the control from load transients. High-current models are excellent for motor and phase angle control. The 50A 600 Vac models are available with common control connector or individual control connector. Applications include motor control, heating control, uninterruptible power supplies, light dimmers, industrial and process control, and on/off controls of AC equipment.

**APPROVALS**

All models are UL recognized.  
UL File Number: E128555.

**BLOCK DIAGRAM**

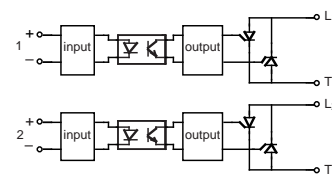


Figure 1a — All SD relays

**MECHANICAL SPECIFICATION**

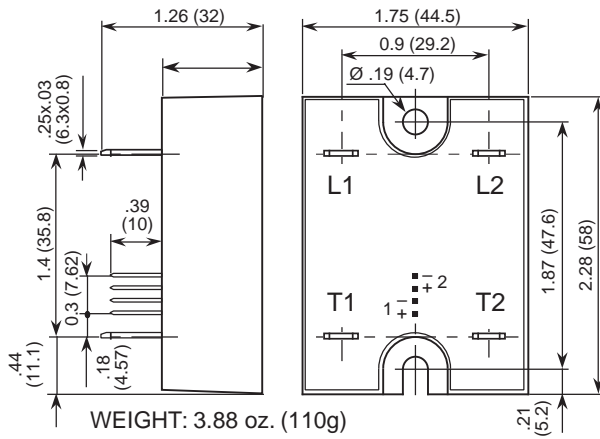


Figure 2a — SD24D50-06; dimensions in inches (mm)

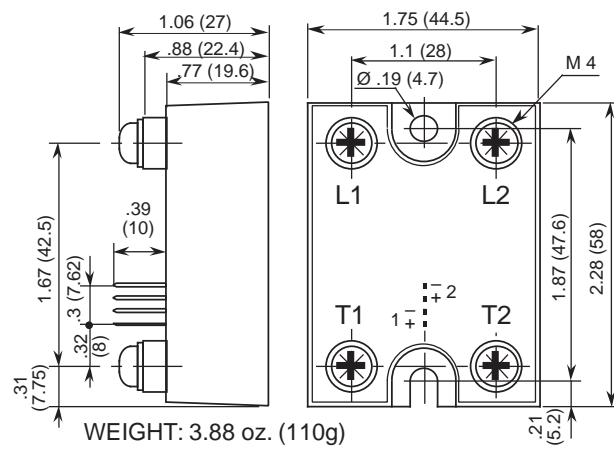


Figure 2b — SD24R50; dimensions in inches (mm)

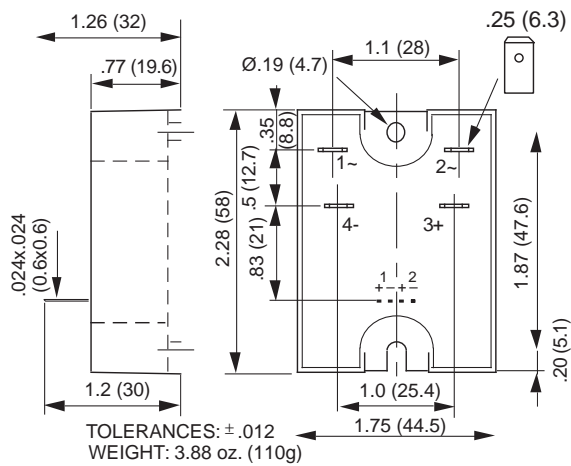


Figure 2c — SD24D40-06; dimensions in inches (mm)

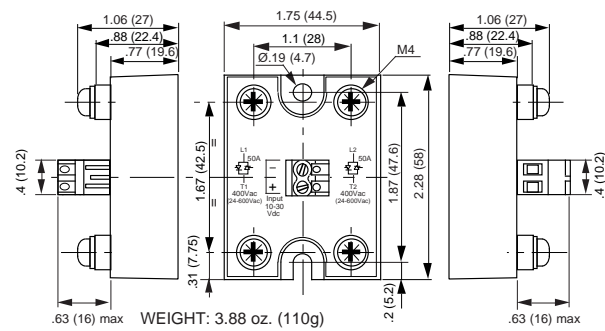


Figure 2d — SD48D50A; dimensions in inches (mm)

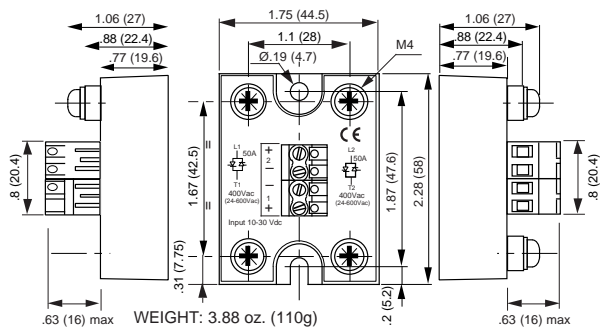


Figure 2e — SD48D50A2; dimensions in inches (mm)

**TYPICAL APPLICATION**

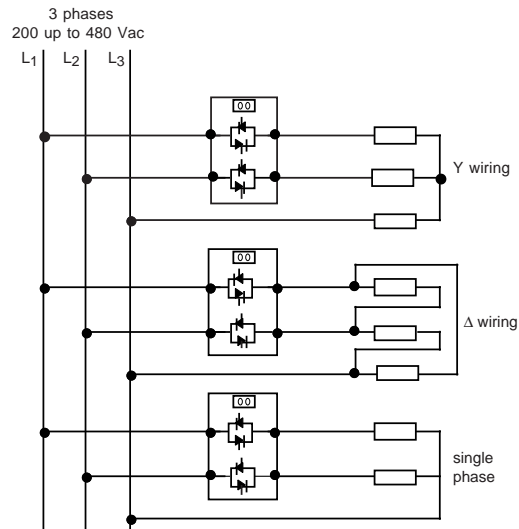


Figure 3 — SD48D50A

**OUTPUT (LOAD) SPECIFICATION**

Input Type	Min	Max	Units
<b>Operating Range</b>			
SD24 R/D	12	280	Vrms
SD48	24	510	Vrms
SD48D50XX	24	600	Vrms
<b>Peak Voltage</b>			
SD24		600	Vpeak
SD48		1200	Vpeak
<b>Load Current Range (Resistive)</b>			
SD24D40-06	.005	40	Arms
All other relays	.005	50	Arms
<b>Maximum Surge Current Rating (Non-Repetitive)</b>			
SD24D40-06		350	A
All other relays		550	A
<b>On-State Voltage Drop</b>			
		1.6	V
<b>Zero-Cross Window</b>			
SD	R	NA	
SD	D/A	±12	Vac
<b>Off-State Leakage Current (60Hz)</b>			
		2.5	mA
<b>Turn-On Time (60 Hz)</b>			
SD24 R		0.1	ms
All other relays		8.3	ms
<b>Turn-Off Time (60 Hz)</b>			
		8.3	ms
<b>Off-State dv/dt</b>			
		500	V/μs
<b>Maximum di/dt (Non-Repetitive)</b>			
		50	A/μs
<b>Operating Frequency Range</b>			
	10	440	Hz
<b>I²t for Match Fusing (&lt;8.3ms)</b>			
SD24D40-06		612	A²S
All other relays		1500	A²S

**CONTROL CHARACTERISTICS**

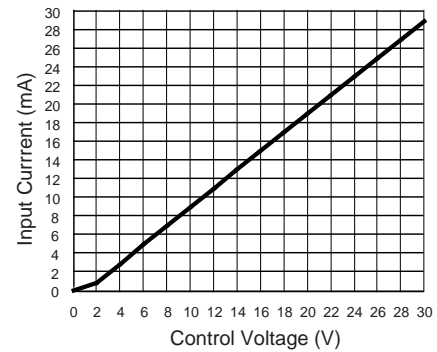


Figure 4a — SD24

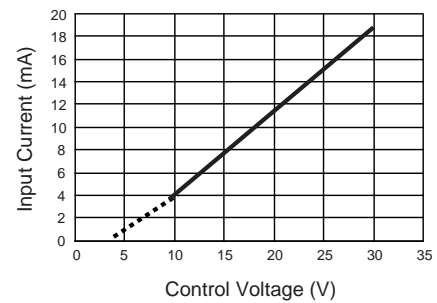


Figure 4b — SD48D50A relay

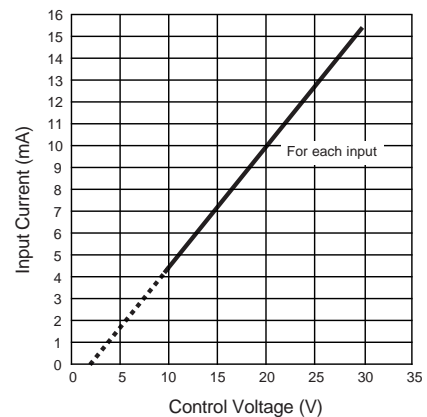


Figure 4c — SD48D50A2 relay

### ENVIRONMENTAL SPECIFICATION

	Min	Max	Units
Operating Temperature	-40	100	°C
Storage Temperature	-40	100	°C
<b>Input-Output Isolation</b>			
SD24D40-06	4000		Vrms
All other relays	3300		Vrms
<b>Output-Case Isolation</b>			
SD24D40-06	2500		Vrms
All other relays	3300		Vrms
<b>Output to Output</b>			
SD48D50XX	3300		Vrms
All other relays	2500		Vrms
<b>Junction-Case Thermal Resistance</b>			
SD24D40-06		1.1	°C/W
All other relays		0.5	°C/W

### THERMAL CHARACTERISTICS

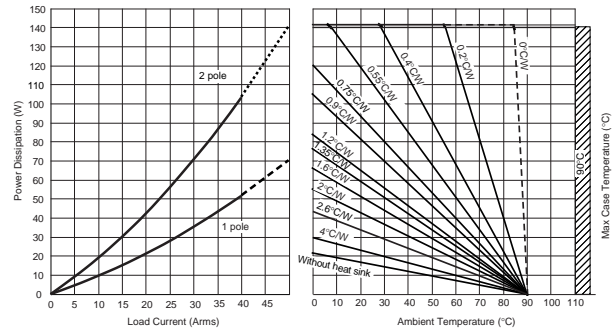


Figure 6a — SD24 50A relays output current

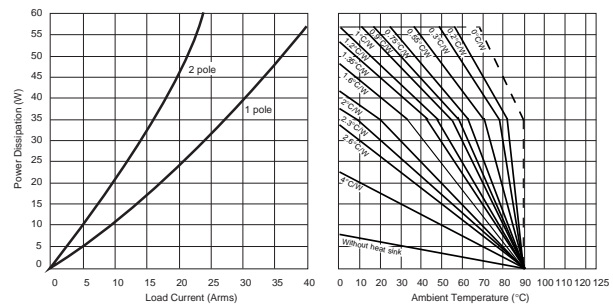


Figure 6b — SD24D40-06 and SD48D40-06 output current

### SURGE CURRENT

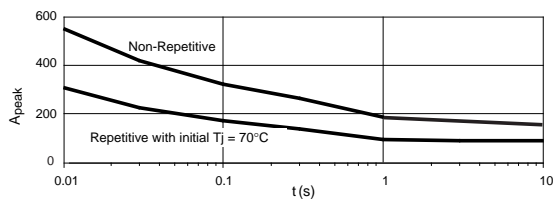


Figure 5a — SD24 50A output current

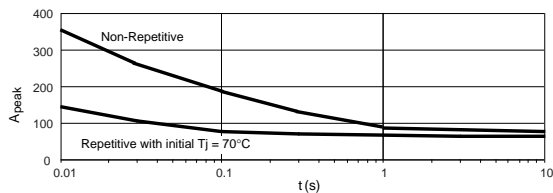


Figure 5b — SD48 40A and SD24 40A output current

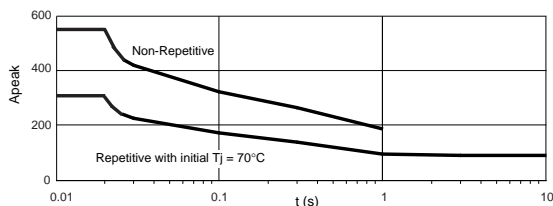


Figure 5c — SD48 50A output current

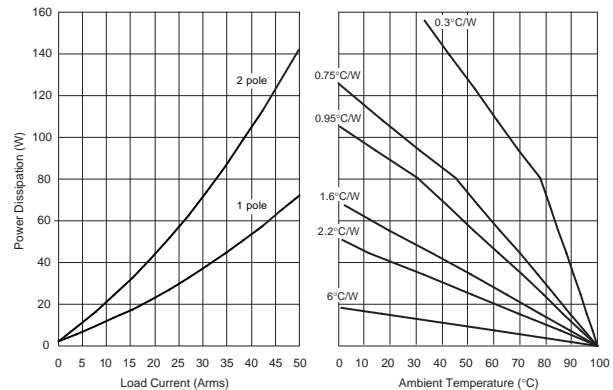


Figure 6c — SD48D50A and SD48D50A2 output current

#### NOTES:

1. Electrical specifications at 25°C unless otherwise specified.
2. For 800Hz applications, contact factory.
3. For additional/custom applications, contact factory.

#### OPTIONAL ADD-ONS

Please order add-ons separately:

- -12 — Thermal pad installed.
- -14 — Plastic touch-proof cover.

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## Teledyne Relays:

[SD24D40-06](#) [SD24D50-06](#) [SD24R50](#) [SD24R50-06](#) [SD48D40](#) [SD48D40-06](#) [SD48D50A](#) [SD48D50A-12](#)  
[SD48D50A2](#)