

FEATURES/BENEFITS

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. UL recognized. UL File Number: E128555.

- 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



Part Number Description

SD24R50-06	12-280 Vac
SD24R50	12-280 Vac
SD24D40-06	12-280 Vac
SD24D50-06	12-280 Vac
SD48D40-06	24-500 Vac
SD48D50A	24-600 Vac
SD48D50A2	24-600 Vac

INPUT (CONTROL) SPECIFICATION

	Min	Max	Units
Control Range			
SD24	4	30	Vdc
SD48D40-06	5	30	Vdc
SD48D50XX	10	30	Vdc

Input Current Range

All relays (See Fig. 3)	3	mA
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Part Number Explanation

SD	48	R	50	-06
Series	Line Voltage ¹	Switch Type ²	Output Current - Amps	Feature ³

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

BLOCK DIAGRAM

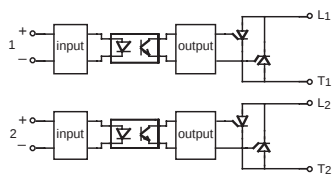


Figure 1a — All SD relays except SD48D40-06

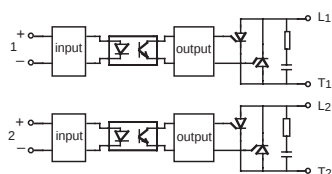


Figure 1b — SD48D40-06

Must Turn-Off Voltage

All relays	1	Vdc
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Input Resistance (Typical)

SD24	1000	Ohms
SD48D40-06	1000	Ohms
SD48D50A	1400	Ohms
SD48D50A2	1800	Ohms

Reverse Voltage Protection

All relays	30	V
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MECHANICAL SPECIFICATION

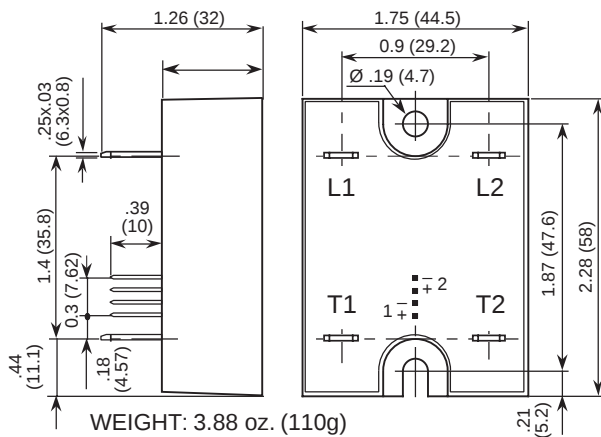


Figure 2a — SD24R50-06 and SD24D50-06; dimensions in inches (mm)

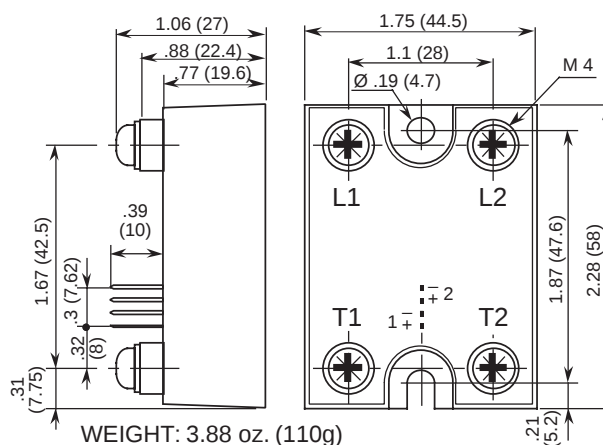


Figure 2b — SD24R50; dimensions in inches (mm)

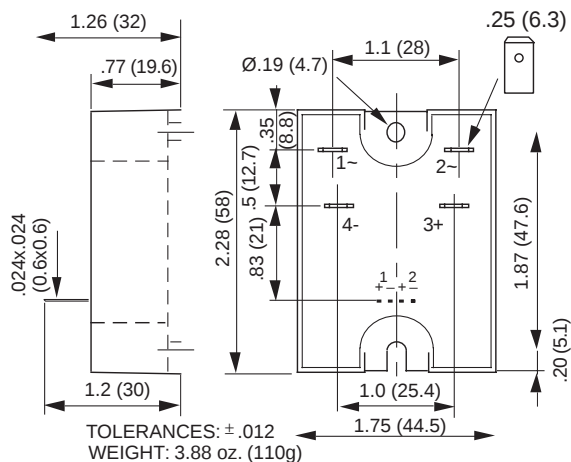


Figure 2c — SD48D40-06 and SD24D40-06; dimensions in inches (mm)

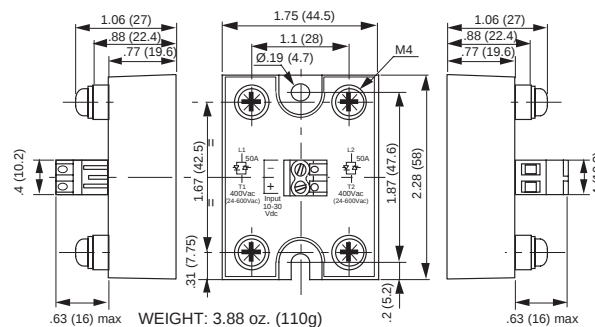


Figure 2d — SD48D50A; dimensions in inches (mm)

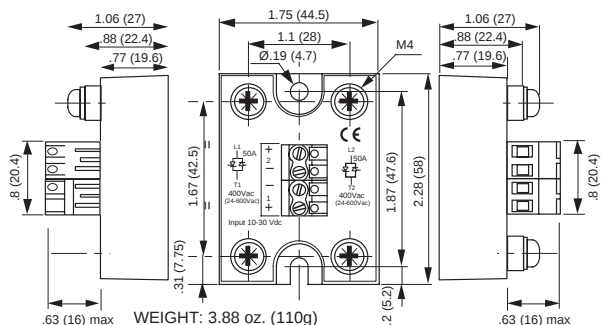


Figure 2e — SD48D50A2; dimensions in inches (mm)

TYPICAL APPLICATION

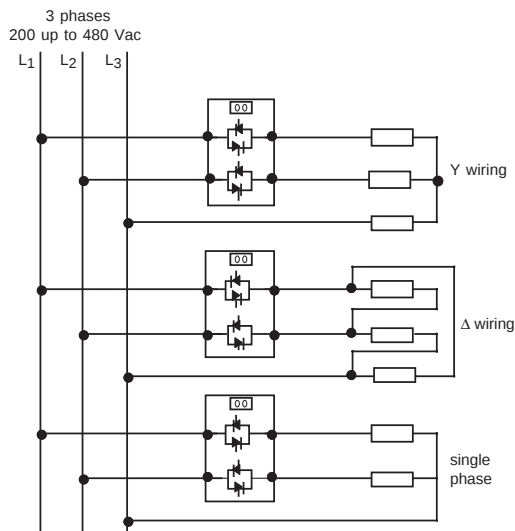


Figure 3 — SD48D50A

OUTPUT (LOAD) SPECIFICATION

	Input Type	Min	Max	Units
Operating Range				
SD24	R/D	12	280	Vrms
SD48D40-06		24	510	Vrms
SD48D50XX		24	600	Vrms

Peak Voltage

SD24		600	Vpeak
SD48		1200	Vpeak

Load Current Range (Resistive)

SD24D40-06	.005	40	Arms
SD48D40-06	.005	40	Arms
All other relays	.005	50	Arms

Maximum Surge Current Rating (Non-Repetitive)

SD24D40-06	350	A
SD48D40-06	350	A
All other relays	550	A

On-State Voltage Drop

All relays output current	1.6	V
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Zero-Cross Window

SD	R	NA
SD	D/A	±12 Vac

Off-State Leakage Current (60Hz)

SD48D40-06	2.5	mA
All other relays	1	mA

Turn-On Time (60 Hz)

SD24	R	0.1	ms
All other relays		8.3	ms

Turn-Off Time (60 Hz)

All relays	8.3	ms
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Off-State dv/dt

All relays	500	V/μs
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OUTPUT (LOAD) SPECIFICATION (Continued)

Input Type	Min	Max	Units
Maximum di/dt (Non-Repetitive)			
All relays		50	A/μs

Operating Frequency Range

All relays	10	440	Hz
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I²t for Match Fusing (<8.3ms)

SD24D40-06	612	A ² S
SD48D40-06	612	A ² S
All other relays	1500	A ² S

CONTROL CHARACTERISTICS

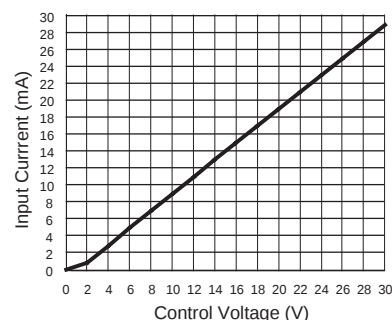


Figure 4a — SD24 and SD48D40-06 relays

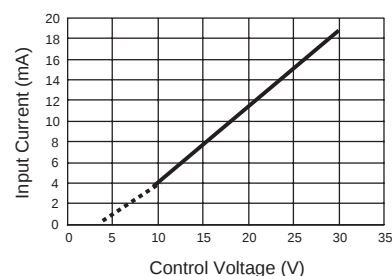


Figure 4b — SD48D50A relay

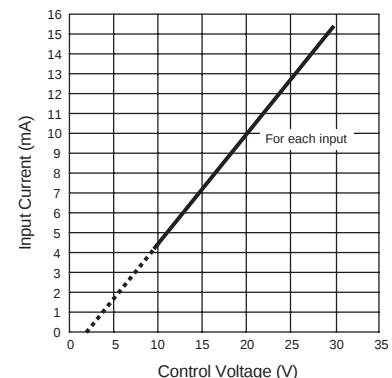


Figure 4c — SD48D50A2 relay

ENVIRONMENTAL SPECIFICATION

	Min	Max	Units
Operating Temperature	-40	100	°C
Storage Temperature	-40	100	°C

Input-Output Isolation

SD24D40-06	4000	Vrms
SD48D40-06	4000	Vrms
All other relays	3300	Vrms

Output-Case Isolation

SD24D40-06	2500	Vrms
SD48D40-06	2500	Vrms
All other relays	3300	Vrms

Output to Output

SD48D50XX	3300	Vrms
All other relays	2500	Vrms

Junction-Case Thermal Resistance

SD24D40-06	1.1	°C/W
SD48D40-06	1.1	°C/W
All other relays	0.5	°C/W

SURGE CURRENT

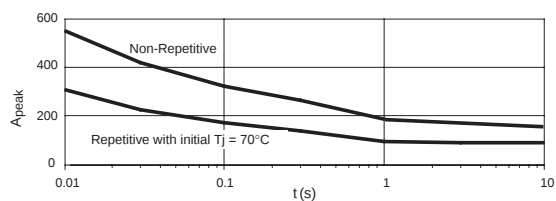


Figure 5a — SD24 50A output current

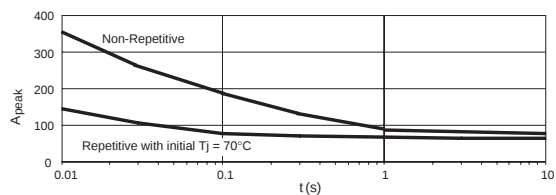


Figure 5b — SD48 40A and SD24 40A output current

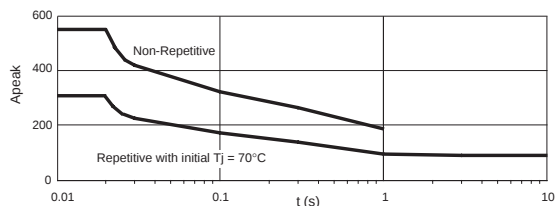


Figure 5c — SD48 50A output current

THERMAL CHARACTERISTICS

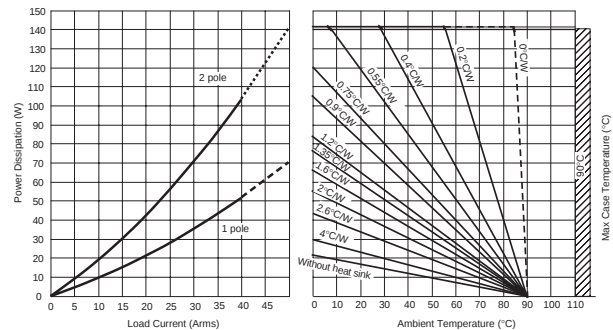


Figure 6a — SD24 50A relays output current

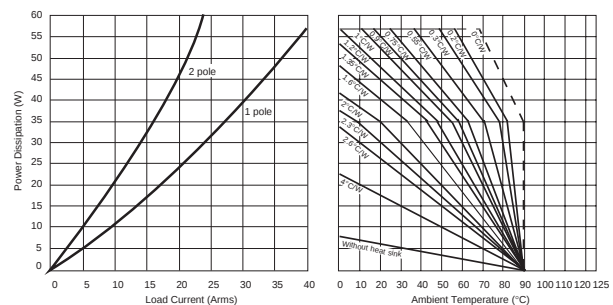


Figure 6b — SD48D40-06 and SD24D24-06 output current

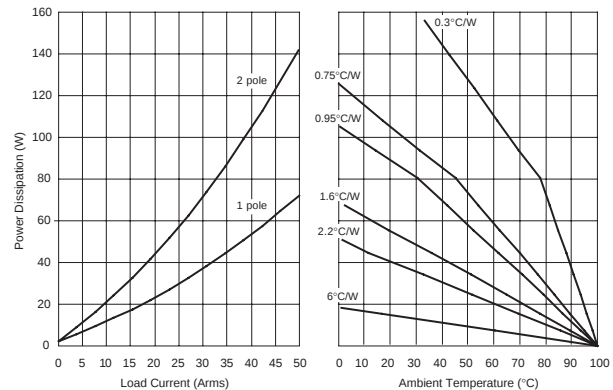


Figure 6c — SD48D50A and SD48D50A2 output current

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.