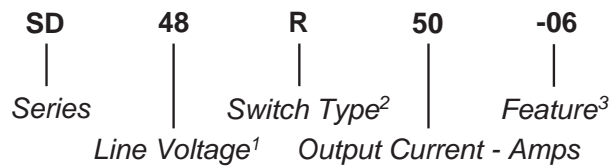


| Part Number | Description |
|-------------|-------------|
| SD24R50-06 | 12-280 Vac |
| SD24R50 | 12-280 Vac |
| SD24D50-06 | 12-280 Vac |
| SD48D40-06 | 24-500 Vac |
| SD48D50A | 24-600 Vac |
| SD48D50A2 | 24-600 Vac |

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 |
|-----------------------------------|-----|------|-------|
| 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 |
| Must Turn-Off Voltage | | | |
| All relays | | 1 | Vdc |
| Input Resistance (Typical) | | | |
| SD24R50-06 | | 1000 | Ohms |
| SD48D40-06 | | 1000 | Ohms |
| SD48D50A | | 1400 | Ohms |
| SD48D50A2 | | 1800 | Ohms |
| Reverse Voltage Protection | | | |
| All relays | | 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

- Motor control
- Heating control
- Uninterruptible power supplies
- Light dimmers
- Industrial and process control
- On/Off controls of AC equipment

APPROVALS

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

BLOCK DIAGRAM

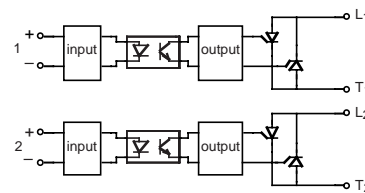


Figure 1a — All SD relays except SD48D40-06

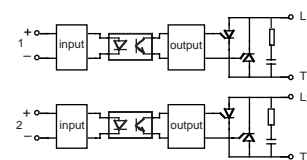


Figure 1b — SD48D40-06

MECHANICAL SPECIFICATION

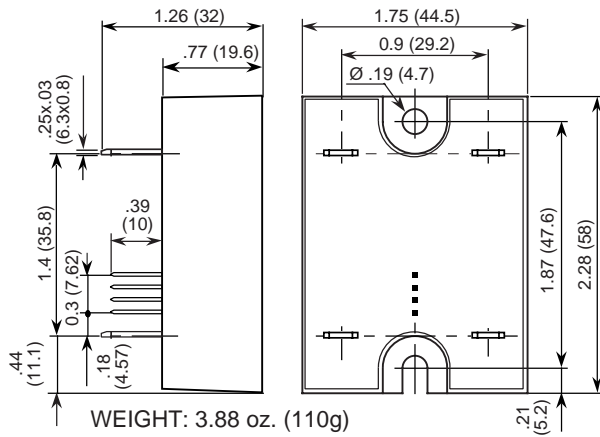


Figure 2a — SD24R50-06 and SD24D50-06; dimensions in inches (mm)

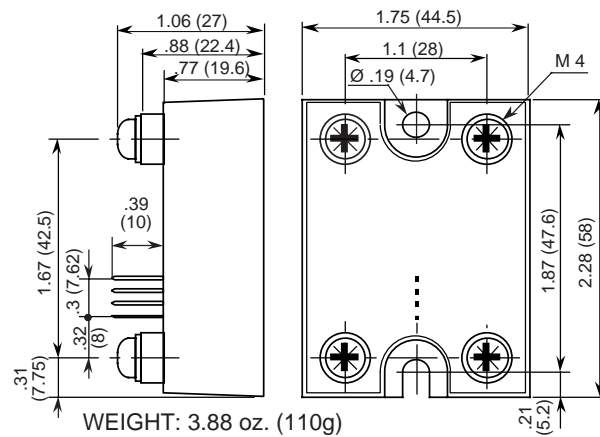


Figure 2b — SD24R50; dimensions in inches (mm)

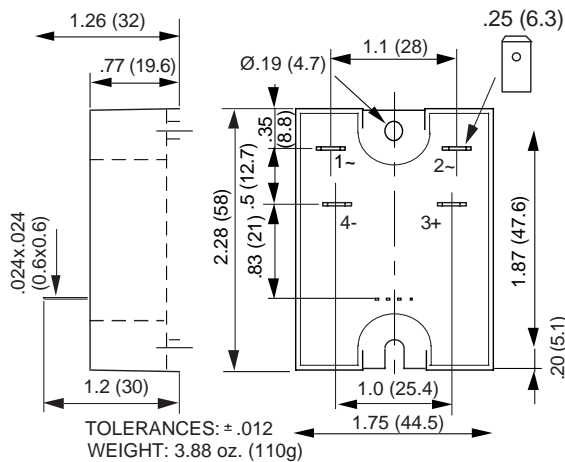


Figure 2c — SD48D40-06; dimensions in inches (mm)

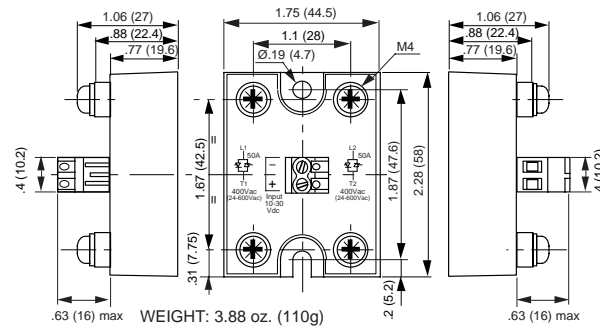


Figure 2d — SD48D50A; dimensions in inches (mm)

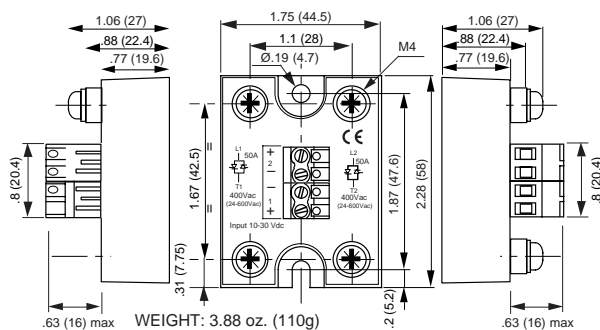


Figure 2e — SD48D50A2; dimensions in inches (mm)

TYPICAL APPLICATION

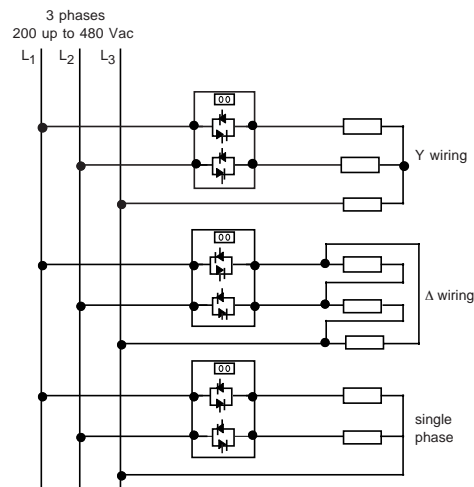


Figure 3 — SD48D50A

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)

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

Maximum Surge Current Rating (Non-Repetitive)

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

On-State Voltage Drop

| | | | | |
|---------------------------|--|--|-----|---|
| All relays output current | | | 1.6 | V |
|---------------------------|--|--|-----|---|

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 |
|------------|--|--|-----|----|

Off-State dv/dt

| | | | | |
|------------|--|--|-----|------|
| All relays | | | 500 | V/μs |
|------------|--|--|-----|------|

Maximum di/dt (Non-Repetitive)

| | | | | |
|------------|--|--|----|------|
| All relays | | | 50 | A/μs |
|------------|--|--|----|------|

Operating Frequency Range

| | | | | |
|------------|--|----|-----|----|
| All relays | | 10 | 440 | Hz |
|------------|--|----|-----|----|

OUTPUT (LOAD) SPECIFICATION (Continued)

| | Input Type | Min | Max | Units |
|----------------------------------|------------|-----|------|------------------|
| I^2t for Match Fusing (<8.3ms) | | | | |
| SD48D40-06 | | | 612 | A ² S |
| All other relays | | | 1500 | A ² S |

CONTROL CHARACTERISTICS

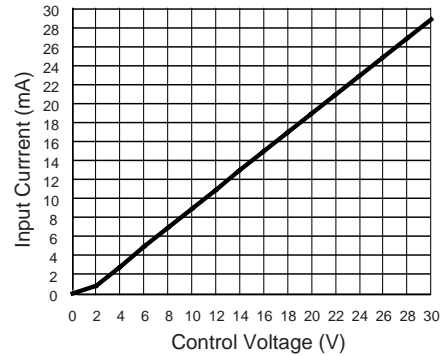


Figure 4a — SD24 and SD48D40-06 relays

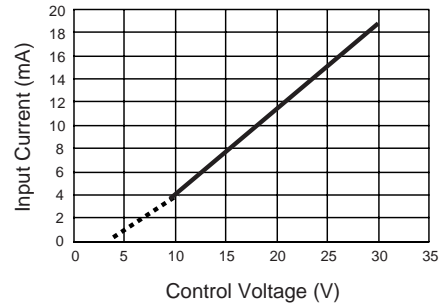


Figure 4b — SD48D50A relay

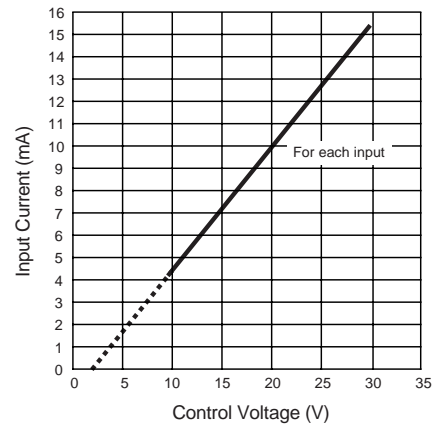


Figure 4c — SD48D50A2 relay

ENVIRONMENTAL SPECIFICATION

| | Min | Max | Units |
|----------------------------------|------|-----|-------|
| Operating Temperature | -40 | 100 | °C |
| Storage Temperature | -40 | 100 | °C |
| Input-Output Isolation | | | |
| SD48D40-06 | 4000 | | Vrms |
| All other relays | 3300 | | Vrms |
| Output-Case Isolation | | | |
| SD48D40-06 | 2500 | | Vrms |
| All other relays | 3300 | | Vrms |
| Output to Output | | | |
| SD48D50XX | 3300 | | Vrms |
| All other relays | 2500 | | Vrms |
| Junction-Case Thermal Resistance | | | |
| SD48D40-06 | | 1.1 | °C/W |
| All other relays | | 0.5 | °C/W |

THERMAL CHARACTERISTICS

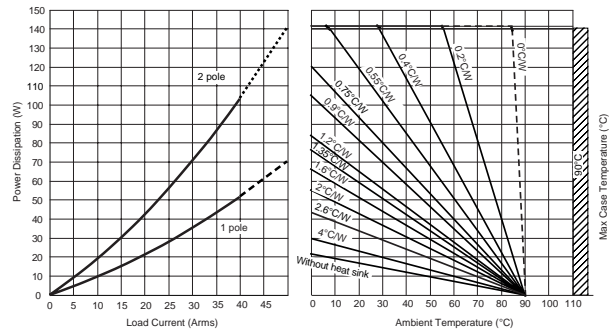


Figure 6a — SD24 relays output current

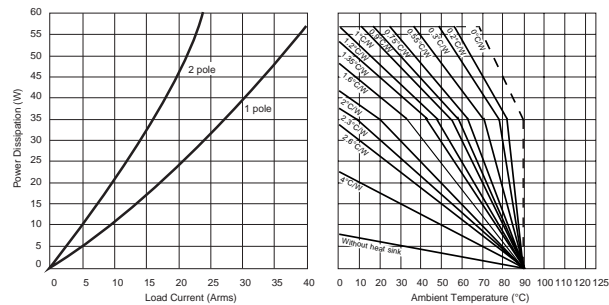


Figure 6b — SD48D40-06 output current

SURGE CURRENT

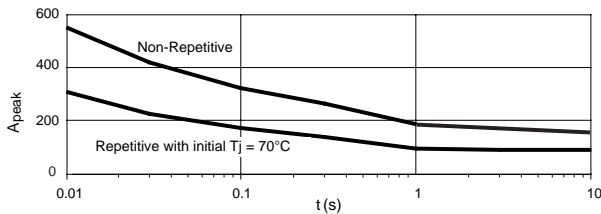


Figure 5a — SD24 50A output current

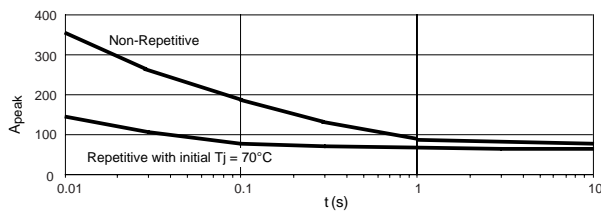


Figure 5b — SD48 40A output current

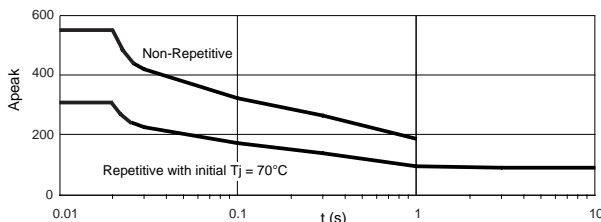


Figure 5c — SD48 50A output current

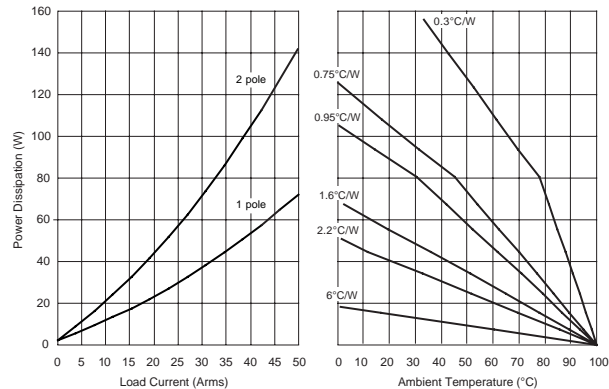


Figure 6c — SD48D50A and SD48D50A2 output current

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.