

**FEATURES/BENEFITS**

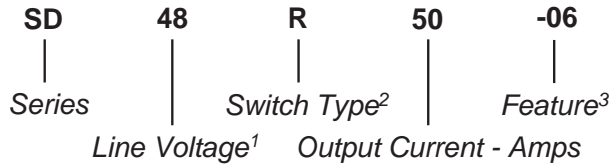
The Series SD dual-phase relays are designed for all types of loads. The design incorporates two relays in a single package. The relays utilize optical isolation to protect the control from load transients. High-current models are excellent for motor and phase angle control. The 50A 600 Vac models are 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: E1285555.

- 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  |
| SD24R40-06  | 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 |
|----------------------|-----|-----|-------|
| <b>Control Range</b> |     |     |       |
| SD24                 | 4   | 30  | Vdc   |
| SD48D40-06           | 5   | 30  | Vdc   |
| SD48D50XX            | 10  | 30  | Vdc   |

**Input Current Range**

|                          |   |  |    |
|--------------------------|---|--|----|
| All relays (See Fig. 4a) | 3 |  | mA |
|--------------------------|---|--|----|

**Must Turn-Off Voltage**

|            |   |  |     |
|------------|---|--|-----|
| All relays | 1 |  | Vdc |
|------------|---|--|-----|

**Input Resistance (Typical)**

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

**Reverse Voltage Protection**

|            |    |   |
|------------|----|---|
| All relays | 30 | V |
|------------|----|---|

**BLOCK DIAGRAM**

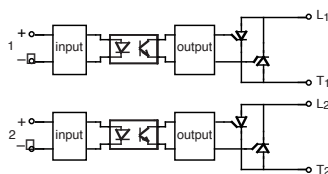


Figure 1a — All SD relays except SD48D40-06

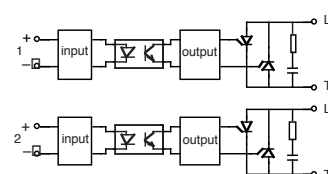


Figure 1b — SD48D40-06

MECHANICAL SPECIFICATION

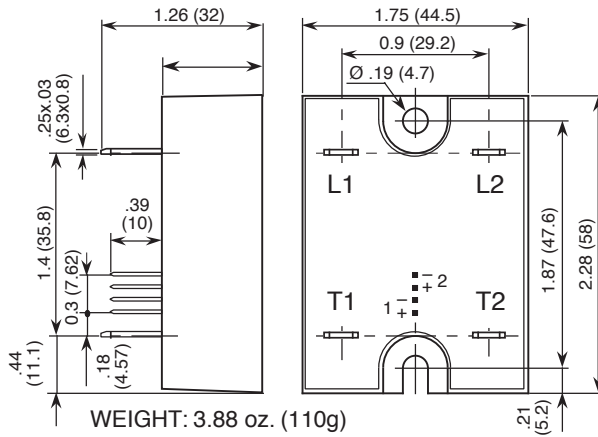


Figure 2a — SD24R50-06, and SD24D50-06; dimensions in inches (mm)

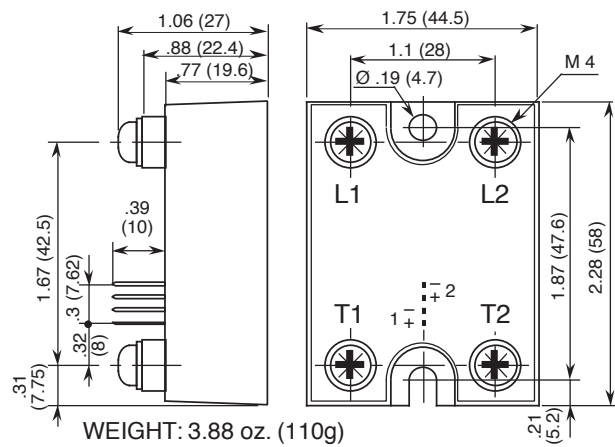


Figure 2b — SD24R50; dimensions in inches (mm)

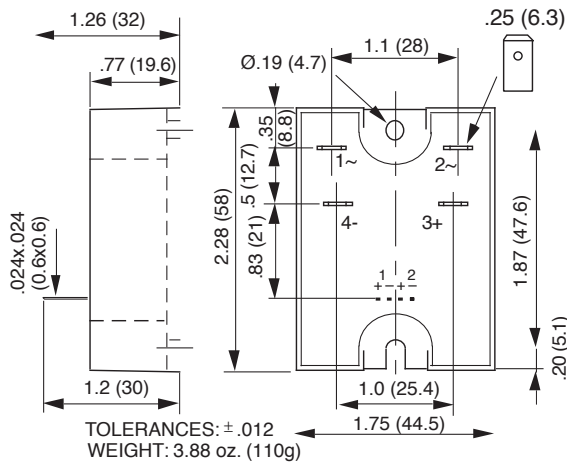


Figure 2c — SD48D40-06, SD24D40-06 and SD24R40-06; dimensions in inches (mm)

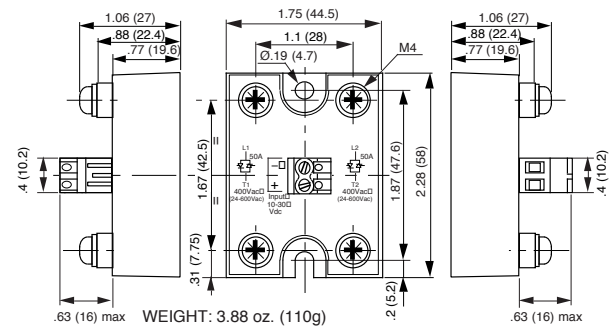


Figure 2d — SD48D50A; dimensions in inches (mm)

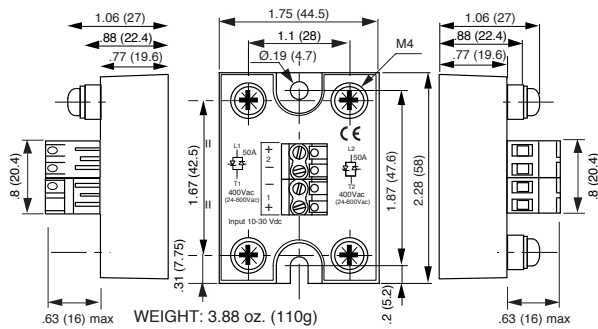


Figure 2e — SD48D50A2; dimensions in inches (mm)

TYPICAL APPLICATION

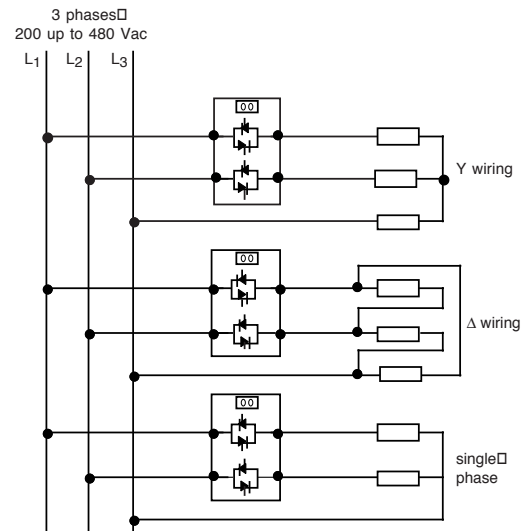


Figure 3 — SD48D50A

| OUTPUT (LOAD) SPECIFICATION                          |     |      |       |       |
|--|-----|------|-------|-------|
| Input Type   | Min | Max  | Units |       |
| <b>Operating Range</b>                               |     |      |       |       |
| SD24   | R/D | 12   | 280   | Vrms  |
| SD48D40-06   |     | 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, SD24R40-06 & SD48D40-06                  |     |      |       |       |
|  |     | .005 | 40    | Arms  |
| All other relays                                     |     | .005 | 50    | Arms  |
| <b>Maximum Surge Current Rating (Non-Repetitive)</b> |     |      |       |       |
| SD24D40-06, SD24R40-06, & SD48D40-06                 |     |      |       |       |
|  |     |      | 350   | A     |
| All other relays                                     |     |      | 550   | A     |
| <b>On-State Voltage Drop</b>                         |     |      |       |       |
| All relays output current                            |     |      | 1.6   | V     |
| <b>Zero-Cross Window</b>                             |     |      |       |       |
| SD   | R   |      | NA    |       |
| SD   | D/A |      | ±12   | Vac   |
| <b>Off-State Leakage Current (60Hz)</b>              |     |      |       |       |
| SD48D40-06   |     |      | 2.5   | mA    |
| All other relays                                     |     |      | 1     | 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>                         |     |      |       |       |
| All relays   |     |      | 8.3   | ms    |
| SD24R40-06   |     |      | 10    | ms    |

| Input Type   | Min | Max | Units                 |
|--|-----|-----|-----------------------|
| <b>Off-State dv/dt</b>                             |     |     |                       |
| All relays   |     | 500 | V/μs                  |
| <b>Maximum di/dt (Non-Repetitive)</b>              |     |     |                       |
| All relays   |     | 50  | A/μs                  |
| <b>Operating Frequency Range</b>                   |     |     |                       |
| All relays   | 10  | 440 | Hz                    |
| <b>I<sup>2</sup>t for Match Fusing (&lt;8.3ms)</b> |     |     |                       |
| SD24D40-06, SD24R40-06 & SD48D40-06                |     |     | 612 A <sup>2</sup> S  |
| All other relays                                   |     |     | 1500 A <sup>2</sup> S |

OUTPUT (LOAD) SPECIFICATION (Continued)

**CONTROL CHARACTERISTICS**

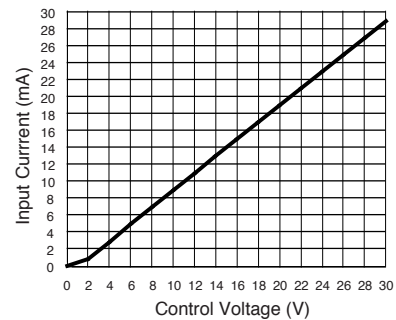


Figure 4a — SD24 and SD48D40-06 relays

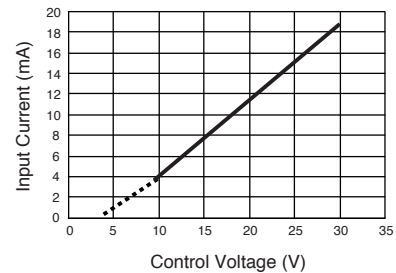


Figure 4b — SD48D50A relay

**ENVIRONMENTAL SPECIFICATION**

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

**Input-Output Isolation**

SD24D40-06, SD24R40-06 & SD48D40-06

|                  |      |      |
|------------------|------|------|
|                  | 4000 | Vrms |
| All other relays | 3300 | Vrms |

**Output-Case Isolation**

SD24D40-06, SD24R40-06 & 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, SD24R40-06 & SD48D40-06

|                  |     |      |
|------------------|-----|------|
|                  | 1.1 | °C/W |
| All other relays | 0.5 | °C/W |

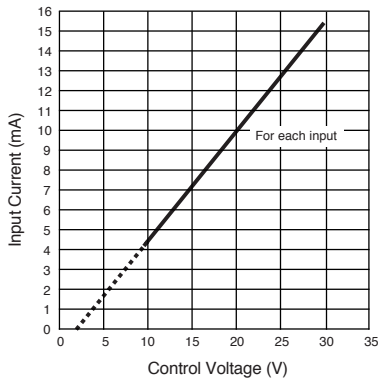


Figure 4c — SD48D50A2 relay

**SURGE CURRENT**

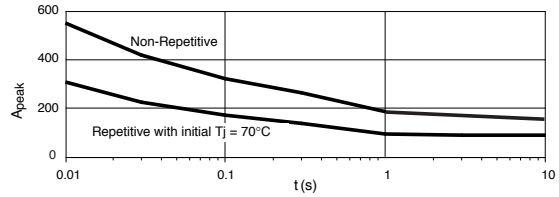


Figure 5a — SD24 50A output current

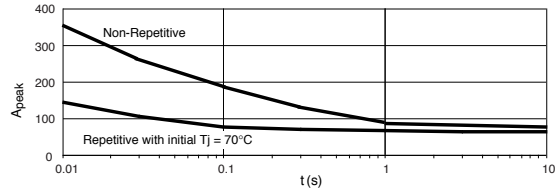


Figure 5b — SD48 40A and SD24 40A output current

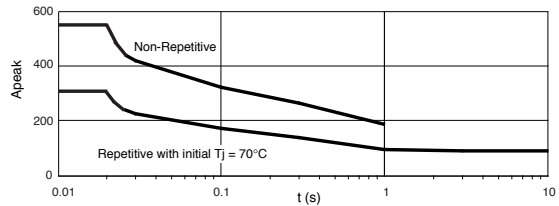


Figure 5c — SD48 50A output current

**NOTES:**

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

**THERMAL CHARACTERISTICS**

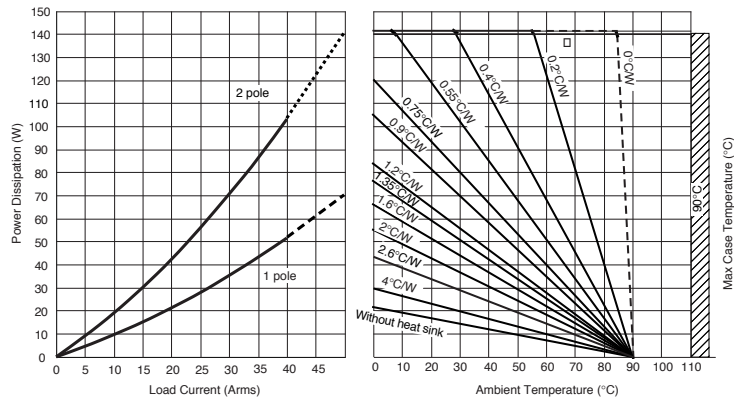


Figure 6a — SD24 50A relays output current

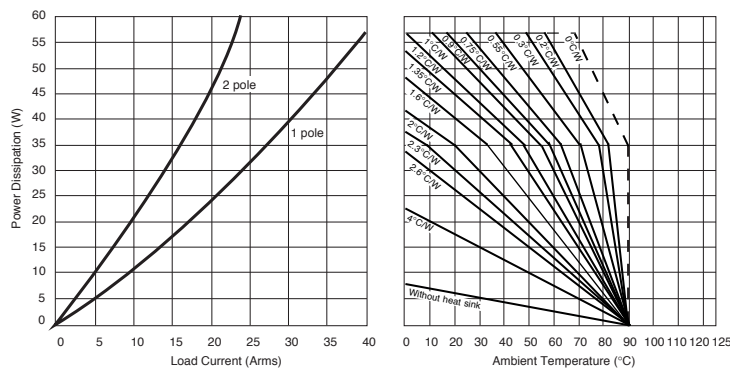


Figure 6b — SD48 40A and SD24 40A output current

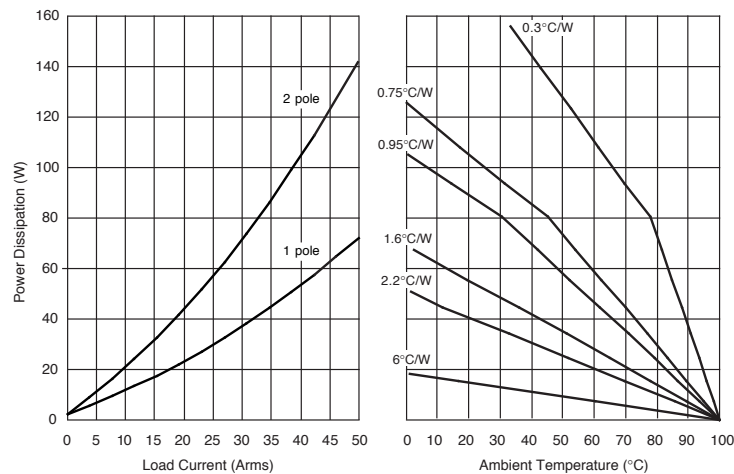


Figure 6c — SD48D50A and SD48D50A2 output current

**OPTIONAL ADD-ONS**

Please order add-ons separately:

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

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- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
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- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

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- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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