

FEATURES/BENEFITS

- Three-phase solid-state relay for resistive loads with integrated heat sink
- DIN rail or panel mounting
- 50A thyristors size with $I^2t > 1500A^2s^*$
- AC/DC control voltage with input status LED
- Internal protection by integrated snubber MOV
- IP20 touch proof
- Designed in conformity with UL (pending), EN60950 and IEC60947-4-3

*On request for model with I^2t 5000A²s up to 20000A²s


Part Number Description

| | |
|-----------|--|
| DR3P48A50 | 50A, 520 Vac 3-Phase Solid-State Relay |
| DR3P48D50 | 50A, 520 Vac 3-Phase Solid-State Relay |

Part Number Explanation

| | | | |
|-------------|---------------------------|--------------------------|-----------------------|
| DR3P | 48 | D | 50 |
| Series | Line Voltage ¹ | Switch Type ² | Output Current – Amps |

NOTES

- 1) Line Voltage (nominal): 48 = 480 Vac
 2) Switch Type: D = Zero-cross turn-on; A = Zero-cross, AC control

ELECTRICAL SPECIFICATIONS

(+20°C ambient temperature unless otherwise specified)

INPUT (CONTROL) SPECIFICATIONS

| | Min | Max | Units |
|----------------------|-----|-----|-------|
| Control Range | | | |
| DR3P48A50 (DC) | 90 | 240 | Vdc |
| DR3P48A50 (AC) | 90 | 240 | Vac |
| DR3P48D50 (DC) | 8.2 | 30 | Vdc |
| DR3P48D50 (AC) | 10 | 30 | Vac |

Input Current Range

| | | | |
|-----------|-----|----|----|
| DR3P48A50 | 4.5 | 11 | mA |
| DR3P48D50 | 15 | 65 | mA |

Must Turn-Off Voltage

| | | |
|-----------|----|---|
| DR3P48A50 | 15 | V |
| DR3P48D50 | 4 | V |

Input Resistance (Typical)

| | | |
|-----------|-----|----|
| DR3P48A50 | 21 | KΩ |
| DR3P48D50 | 410 | Ω |

Reverse Voltage Protection Polarity free V

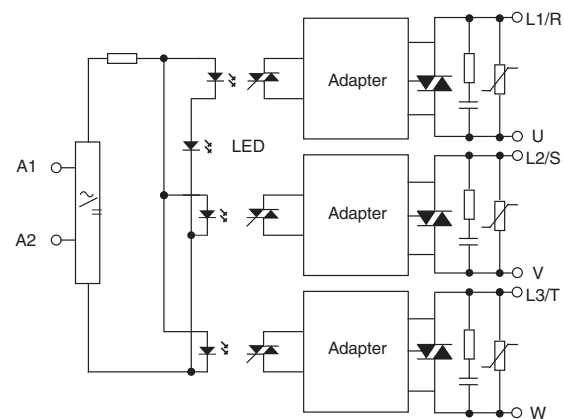
BLOCK DIAGRAM


Figure 1

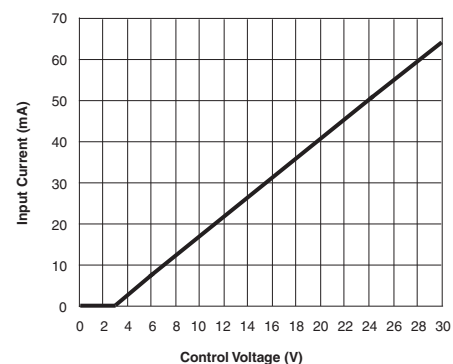
CONTROL CHARACTERISTICS


Figure 2a – DR3P48D50

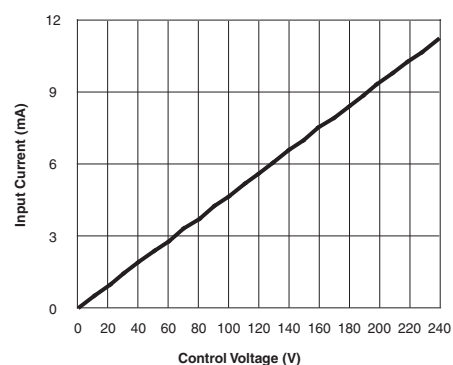


Figure 2b – DR3P48A50

ELECTRICAL SPECIFICATIONS

(+20°C ambient temperature unless otherwise specified)

OUTPUT (LOAD) SPECIFICATIONS

| | Min | Max | Units |
|---|------|------|------------------|
| Operating Range | 24 | 520 | Vrms |
| Peak Voltage | | 1200 | Vpeak |
| Output Current Range | .005 | 22 | A |
| Maximum Surge Current Rating (Non-Repetitive) | | 550 | A |
| On-State Voltage Drop | | 1.4 | V |
| Zero-Cross Window (Typical) | | 35 | V |
| Off-State Leakage Current (60 Hz) | | 1 | mA |
| Turn-On Time (60 Hz) | | 24.9 | ms |
| Turn-Off Time (60 Hz) | | 24.9 | ms |
| Operating Frequency Range | 10 | 400 | Hz |
| Off-state dv/dt | | 500 | V/μs |
| Maximum di/dt (Non-Repetitive) | | 50 | A/μs |
| I ² t for Match Fusing (<8.3 ms) | | 1500 | A ² s |

GENERAL SPECIFICATIONS

(+20°C ambient temperature unless otherwise specified)

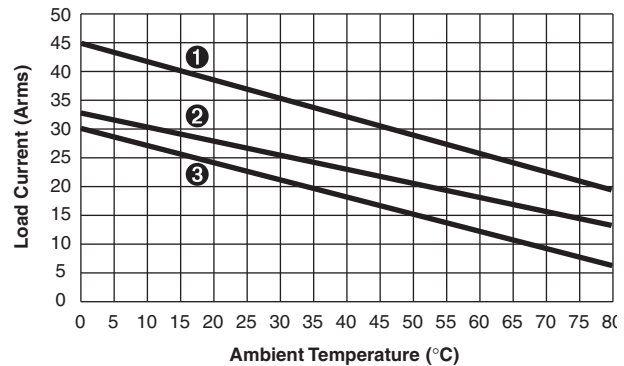
ENVIRONMENTAL SPECIFICATIONS

| | Min | Max | Units |
|------------------------|------|------|-------|
| Operating Temperature | -40 | +80 | °C |
| Storage Temperature | -40 | +100 | °C |
| Input-Output Isolation | 4000 | | Vrms |
| Output-Case Isolation | 3300 | | Vrms |

NOTES

1. For additional/custom options, contact factory.

THERMAL CHARACTERISTICS



- ① With ventilation in the heat sink (>1m/s)
- ② Working in normal conditions with natural convection
- ③ According with IEC60947-4-2 in a closed cabinet without ventilation

Figure 3

SURGE CURRENT

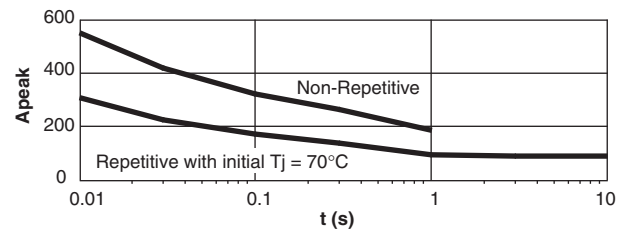


Figure 4

TYPICAL APPLICATION

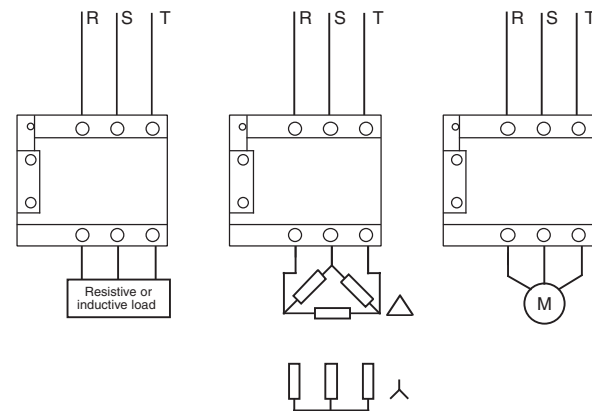
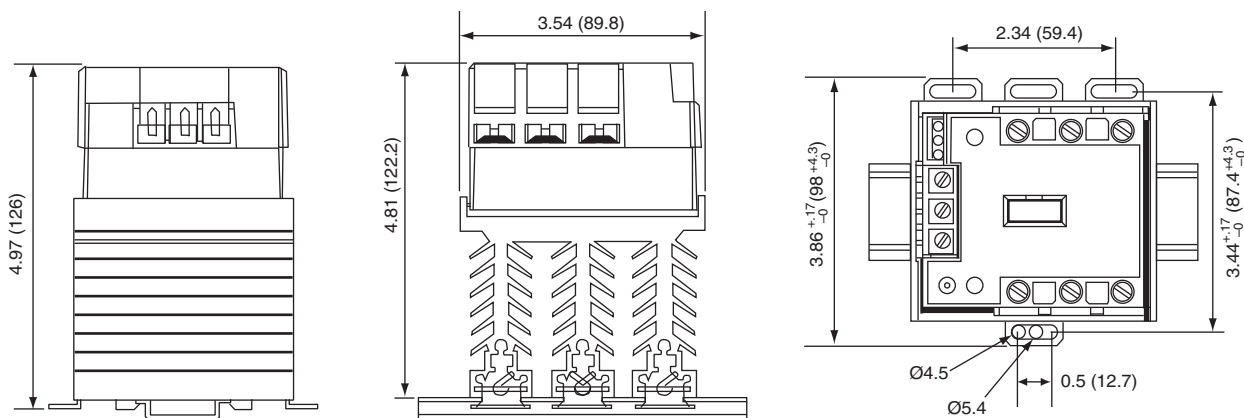


Figure 5


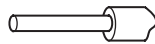

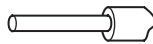

MECHANICAL SPECIFICATION



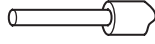
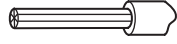
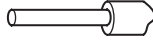
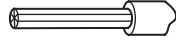

WEIGHT: 35.27 oz. (1000g)

Figure 6

CONTROL WIRING

| Number of Wires | | | | Screwdriver Type | Recommended Torque |
|---|---|---|--|---|--------------------|
| 1 | | 2 | | | |
| Solid (no ferrule) | Fine Stranded (with ferrule) | Solid (no ferrule) | Fine Stranded (with ferrule) |  | N.m |
|  |  |  |  | | |
| AWG18...AWG14 | AWG18...AWG14 | AWG18...AWG14 | AWG18...AWG14 | | |

POWER WIRING

| Number of Wires | | | | Screwdriver Type | Recommended Torque |
|---|---|---|--|---|--------------------|
| 1 | | 2 | | | |
| Solid (no ferrule) | Fine Stranded (with ferrule) | Solid (no ferrule) | Fine Stranded (with ferrule) | | |
|  |  |  |  |  | N.m |
| AWG16...AWG8 | AWG16...AWG10 | AWG16...AWG8 | AWG16...AWG10 | Pozidriv 2 | 1.8 |

DIN RAIL MOUNTING

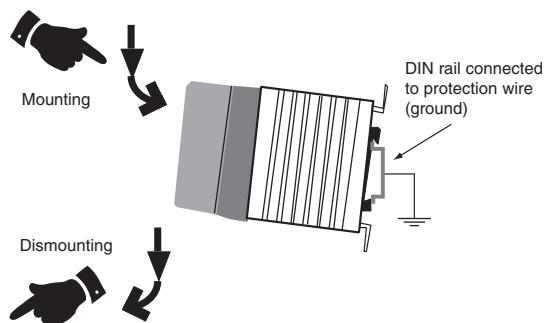


Figure 7

Mouser Electronics

Authorized Distributor

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