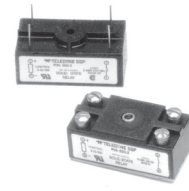
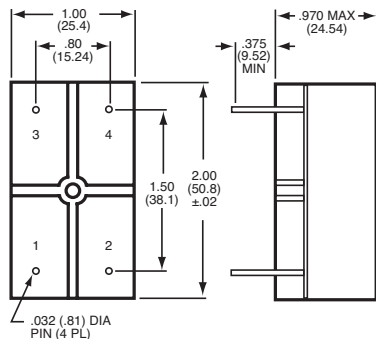


| Part Number | Description                   |
|-------------|-------------------------------|
| 601-1*      | 5A, 280Vac solid-state relay  |
| 601-2*      | 10A, 280Vac solid-state relay |

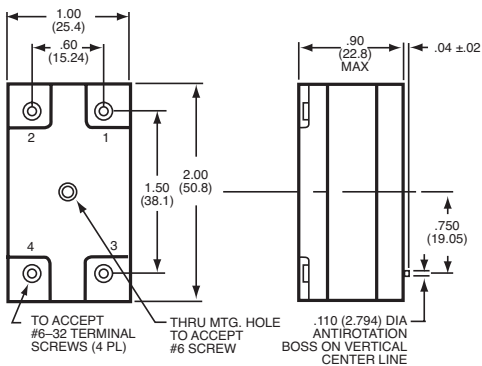
\*Add H suffix for higher over voltage  
See Note 3



**MECHANICAL SPECIFICATION**



PC BOARD VERSION (5A)  
601-1, -1H



SCREW TERMINAL VERSION (10A)  
601-2, -2H

WEIGHT: 3.0 oz. (85g)  
UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE:  
X.XX ±.01 INCHES  
X.XXX ±.005 INCHES

Figure 1 – 601-1 and 601-2 relays;  
dimensions in inches (mm)

**WIRING DIAGRAM**

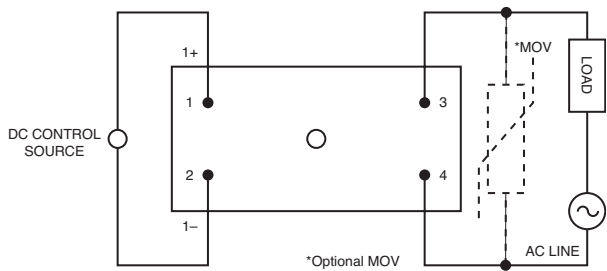


Figure 2

**FEATURES**

- **Optical Isolation:** Isolates control elements from load transients
- **Floating Output:** Eliminates ground loops and signal-level ground noise.
- **Zero Voltage Turn-On:** Reduces switching transient noise
- **Low Off-State Leakage Current:** High off-state impedance.
- **High Dielectric Strength:** For safety and protection of signal-level circuits.

**DESCRIPTION**

This series of AC SSRs has been designed to incorporate custom integrated circuits to replace conventional discrete circuitry. The result is a relay with low component count, high performance, reliability, and low cost. Optical coupling between control and load provides a minimum of 1500 Vrms input/output isolation. The output circuitry includes built-in snubber protection to guarantee high immunity from false triggering and reliable switching of low power factor loads. These relays are available in three terminal styles for optimum mounting flexibility. Pin terminals mount directly on a printed circuit board, screw terminals or quick disconnect terminals are for chassis or heat sink mounting.

**INPUT (CONTROL) SPECIFICATIONS**

|                       | Min | Max  | Units |
|-----------------------|-----|------|-------|
| Control Voltage Range | 3.0 | 32.0 | Vdc   |
| Input Current         |     | 14   | mA    |
| Must Turn-On Voltage  | 3.0 |      | Vdc   |
| Must Turn-Off Voltage |     | 1.0  | Vdc   |
| Reverse Voltage       |     | -32  | Vdc   |

**OUTPUT (LOAD) SPECIFICATIONS**

|   | Min | Max  | Units      |
|---|-----|------|------------|
| Load Voltage Rating                                       |     | 250  | Vrms       |
| Output Current Rating                                     |     |      |            |
| 601-1   | 0.1 | 5.0  | Arms       |
| 601-2   | 0.1 | 10.0 | Arms       |
| Frequency Range   | 47  | 70.0 | Hz         |
| Over Voltage Range  |     |      |            |
| 601-1, -2   | 500 |      | Vpeak      |
| 601-1H, -2H   | 600 |      | Vpeak      |
| On-State Voltage Drop<br>(@ Rated Current)                |     | 4.0  | Vrms       |
| Surge Current Rating (16 ms)<br>(See Figure 6 and Note 4) |     | 1000 | %          |
| Turn-On Time  |     | 0.5  | Cycle      |
| Turn-Off Time   |     | 1.0  | Cycle      |
| Off-State Leakage @ 250 Vrms                              |     | 9.0  | mArms      |
| Off-State dv/dt (See Note 1)                              | 200 |      | V/ $\mu$ s |
| Capacitance (Input to Output)                             |     | 15.0 | pF         |

**ENVIRONMENTAL SPECIFICATIONS**

|                                | Min    | Max  | Units          |
|--------------------------------|--------|------|----------------|
| Operating Temperature          | -40    | +80  | $^{\circ}$ C   |
| Storage Temperature            | -40    | +80  | $^{\circ}$ C   |
| Junction Temperature ( $T_J$ ) |        | 125  | $^{\circ}$ C   |
| Dielectric Strength            | 1500   |      | Vac            |
| Isolation                      | $10^9$ |      | Ohms           |
| Thermal Resistance             |        |      |                |
| ( $\theta_{JA}$ ) 601-1        |        | 19.0 | $^{\circ}$ C/W |
| ( $\theta_{JS}$ ) 601-2        |        | 4.8  | $^{\circ}$ C/W |

**NOTES**

- Output transient (dv/dt) protection is provided in all models and they are designed to switch resistive or inductive loads to 0.2 power factor. The dv/dt rating is based on a source impedance of 50 ohms.
- For any mounting conditions: 5-amp relays,  $\theta_{JA} = 19^{\circ}$ C/W. For 10-amp relays,  $\theta_{JS} = 4.8^{\circ}$ C/W.
- Basic part number provides screw terminals or PC board pins (Figure 1). For single 1/4-inch quick disconnect terminals, add suffix 'Q' to 10-amp part numbers, or "QQ" suffix for double 1/4-inch quick disconnects. (Examples: 601-2Q, 601-2QQ).
- Triac may lose blocking capability during and after surge until  $T(J)$  falls below maximum.
- Relays mounted with silicone grease on heat sink such as Astrodyne, Inc., Type 2518-0500-A00B (for  $1.0^{\circ}$ C/W).

**CHARACTERISTICS CURVES**

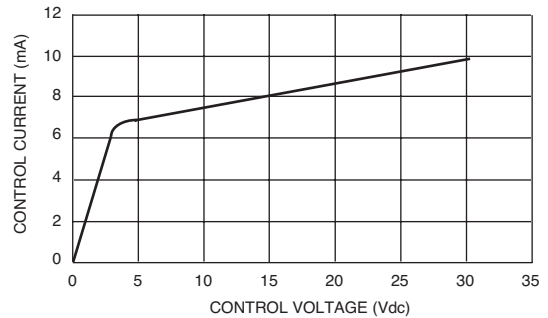


Figure 3 – Typical input current vs. control voltage

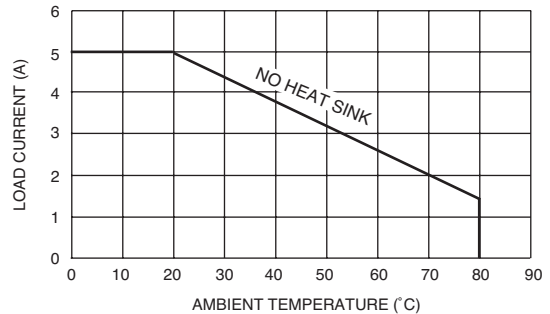


Figure 4 – Maximum load current vs. ambient temperature 601-1

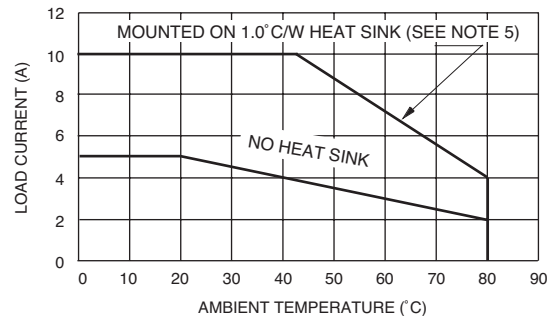


Figure 5 – Maximum load current vs. ambient temperature 601-2

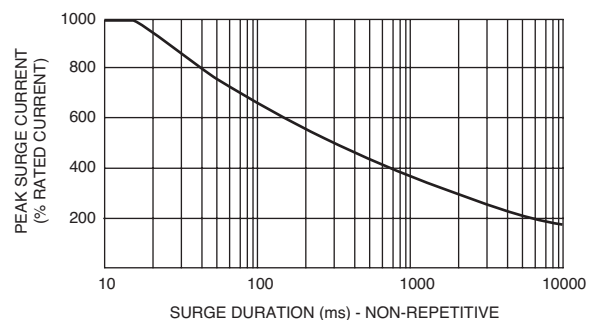


Figure 6 – Maximum surge as function of load voltage