

AC SOLID STATE RELAY

Series 602

TELEDYNE RELAYS

10 A, 250 VAC
OPTICALLY ISOLATED

Part*	DESC Drawing	Relay Description
Number	Number	
602-1W		10 A, 250 VAC AC Solid State Relay
602-1Y	86031-001	10 A, 250 VAC AC Solid State Relay

* The Y suffix denotes parameters tested to MIL-PRF-28750 test methods.
The W suffix denotes parameters tested to Teledyne specifications.



ELECTRICAL SPECIFICATIONS

(-55°C TO +95°C UNLESS OTHERWISE SPECIFIED)

INPUT (CONTROL) CHARACTERISTICS

	Min	Typ	Max	Units
Input Current (See Figure 1)				
$V_{IN} = 5$ Vdc	13	15	mA dc	
$V_{IN} = 32$ Vdc	13	16	mA dc	
Turn-Off Voltage (Guaranteed Off)				
Turn-On Voltage (Guaranteed On)	3.8			Vdc
Reverse Voltage Protection			-32	Vdc
Input Voltage Range	3.8	32		Vdc

OUTPUT (LOAD) SPECIFICATIONS

	Min	Typ	Max	Units
Output Current Rating (See Figure 3)				
Output voltage Rating	0.15		10	Amps
Frequency Range	25	250	Vac	
Output Voltage Drop @ 10 Amp (See Figure 2)	45	440	Hz	
Off-State Leakage Current (250 Vac, 400 Hz)	8.0		mA	
Turn-On Time		1/2	Cycle	
Turn-Off Time		1	Cycle	
Transient Voltage ($T \leq 5s$)		±460	V pk	
Overload Current (See Note 5)		35	Amps	
Zero Voltage Turn-On Point		±15	Vpk	
dv/dt @ 25°C (See Note 4)	200		V/μs	
Load Power Factor	0.2			
Insulation Resistance @ 500 Vdc	10 ⁹		Ohm	
Input to Output Capacitance		10	pF	

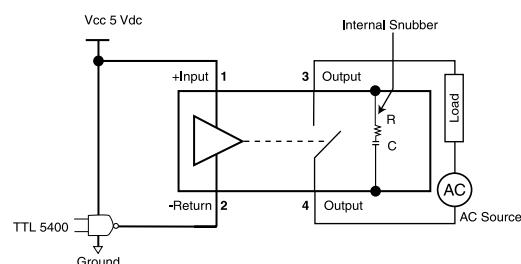
FEATURES

- Available to DESC drawing 86031-001
- Optical isolation
- Low minimum output current
- Extremely low EMI
- Zero voltage turn-on
- Zero current turn-off
- Logic compatible input
- Available to Y screening levels of MIL-PRF-28750

DESCRIPTION

The 602-1 is an AC output solid state relay designed for power switching. The relay incorporates a hermetically sealed, optically coupled solid state relay as a driver. This driver provides zero voltage turn-on as well as a logic compatible control circuit. The relay output is rated for 10A at 250Vac and switches the load with a hermetically sealed triac. A built-in snubber circuit provides reliable switching of both resistive and reactive loads with power factors as low as 0.2. The internal components are potted with a thermally conductive epoxy, which provides an environmental seal for severe environmental conditions encountered in military and aerospace applications. The 602-1 is available in W and Y screening levels. The 602-1Y is available to DESC drawing 86031-001.

WIRING DIAGRAM



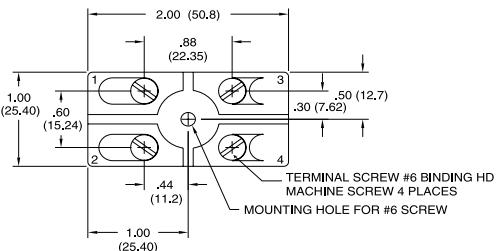
OUTPUT (LOAD) SPECIFICATIONS

	Min	Typ	Max	Units
Dielectric Withstanding Voltage	1500			Vac
Junction Temperature (T_j Max) @ Rated Current	110			°C
Thermal Resistance Junction to Ambient (θ_{JA})	11.5			°C/W
Thermal Resistance Junction to Case (θ_{JC})	2			°C/W

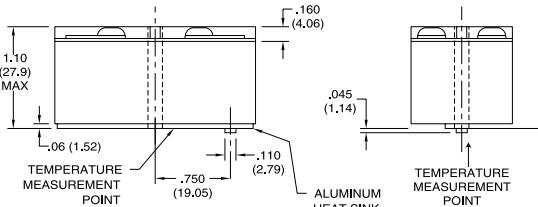
ENVIRONMENTAL SPECIFICATIONS

	Min	Typ	Max	Units
Ambient Temperature				
Operating	-55		+95	°C
Storage	-55		+110	°C
Shock for 6 ms			100	g
Vibration, 78 to 2000 Hz			30	g
(0.1 Double Amplitude 10 to 78 Hz)				
Acceleration			100	g

MECHANICAL SPECIFICATIONS



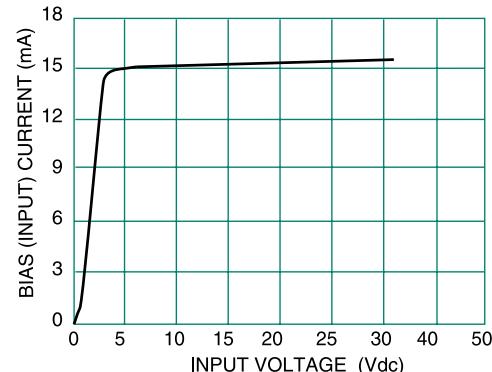
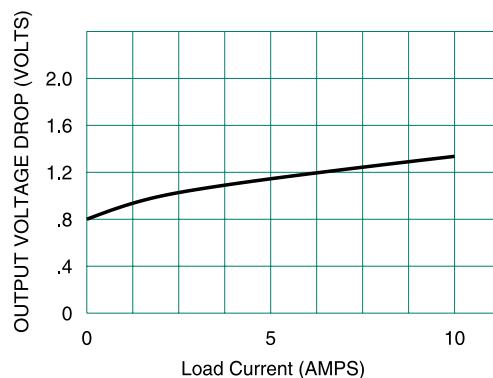
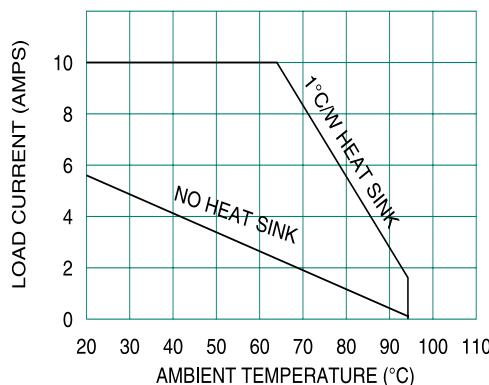
- **Case Material:** Self extinguishing plastic
- **Epoxy Filled**
- **Case Color:** Black
- **Base Plate Material:** Aluminum
- Circuit diagram shown on part is terminal view.



DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)

NOTES:

1. UNLESS OTHERWISE SPECIFIED, TOLERANCES: .XXX = $\pm .005$ (0.13mm); .XX = $\pm .01$ (0.25mm).
2. Weight: max. 3 oz.
3. BUILT IN SNUBBER ($R = 100$ W $C = 0.01$ mF).
4. Output may lose blocking capabilities during and after surge until T_j falls below maximum.
5. 100mS pulse @ 1 Hz repetitive rate at 25°C, maximum 10 cycles.

INPUT CURRENT VS INPUT VOLTAGE
FIGURE 1LOAD CURRENT VS TYPICAL OUTPUT
VOLTAGE DROP
FIGURE 2THERMAL DERATING CURVES
FIGURE 3