

Part Number* MilitaryRelay Description

602-1W		AC Solid State Relay
602-1Y	86031-001	

* The Y suffix denotes parameters tested to MIL-R-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	$V_{IN} = 5 \text{ Vdc}$		13	15	mA dc
(See Figure 1)	$V_{IN} = 32 \text{ Vdc}$		13	16	
Turn-Off Voltage (Guaranteed Off)				1.0	Vdc
Turn-On Voltage (Guaranteed On)		3.8			Vdc
Reverse Voltage Protection				-32	Vdc
Input Voltage Range		3.8		32	Vdc

OUTPUT (LOAD) SPECIFICATIONS

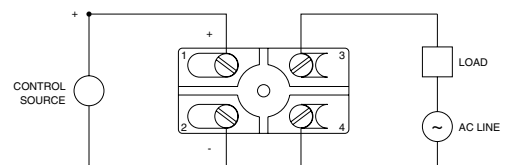
	Min	Typ	Max	Units
Output Current Rating (See Figure 3)			10	Amps
Output voltage Rating	25		250	Vac
Frequency Range	45		440	Hz
Output Voltage Drop @ 10 Ampere, 25°C (See Figure 2)			1.5	Vrms
Off-State Leakage Current (250 Vac, 400 Hz)			8.0	mA
Turn-On Time			½	Cycle
Turn-Off Time			1	Cycle
Transient Voltage			±460	V pk
Overload Current (See Note 3)			35	Amps
Zero Voltage Turn-On Point			±15	V pk
Off-State dv/dt (See Note 1)	200			V/us
Load Power Factor	0.2			
Insulation Resistance @ 500 Vdc	10 ⁹			Ohms
Input to Output Capacitance			15	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-R-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

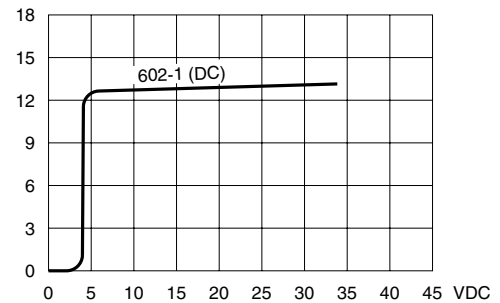
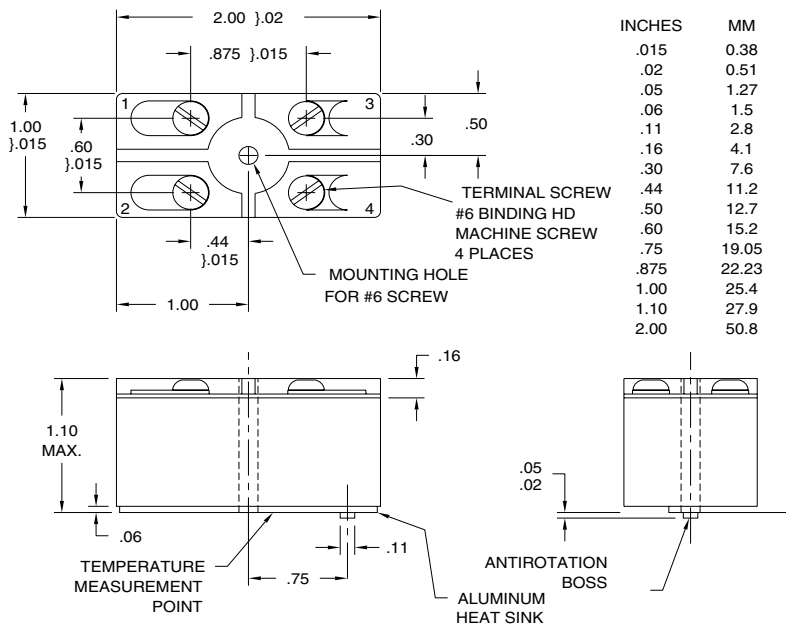
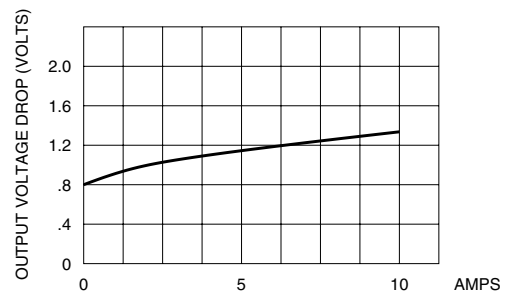
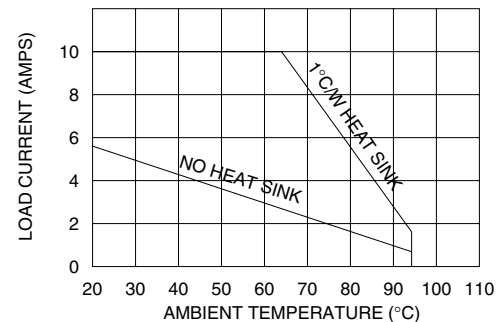
OUTPUT (LOAD) SPECIFICATIONS

	Min	Typ	Max	Units
Dielectric Withstanding Voltage	1500			Vac
Junction Temperature (T_J Max)			150	°C
Thermal Resistance Junction to Ambient (θ_{JA})			15.5	°C/W
Thermal Resistance Junction to Case (θ_{JC})			2.5	°C/W

ENVIRONMENTAL SPECIFICATIONS*

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

MECHANICAL SPECIFICATIONS

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

NOTES:

1. DIMENSIONS ARE IN INCHES.
2. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION ONLY.
3. UNLESS OTHERWISE SPECIFIED, TOLERANCES: .XXX = .005 (0.13MM); .XX = .01 (0.25MM).
4. CIRCUIT DIAGRAM SHOWN ON PART IS TERMINAL VIEW.
5. WEIGHT: 6 OZ. MAX.
6. CASE MATERIAL: ALUMINUM NICKLE PLATED.
7. BUILT IN SNUBBER ($R = 100 \Omega$ $C = 0.01MF$).
8. OUTPUT MAY LOSE BLOCKING CAPABILITIES DURING AND AFTER SURGE UNTIL T_J FALLS BELOW MAXIMUM.