



TELEDYNE SOLID STATE

SOLID STATE AC RELAY

OPTICALLY ISOLATED
10 THRU 40 A rms
(AC INPUT CONTROL)

FEATURES

- 10, 15, 25, and 40 A ratings
- 90-250 Vrms voltage range
- High dv/dt rating (200V/μs typical)
- Recessed dual-purpose terminals (screws and quick disconnects)
- Functional package design
- Zero Voltage Turn-On; Zero Current Turn-Off
- UL Recognized, File #E55197
- CSA Certified, File #31043
(611-11 thru 611-16) and (611-12H, -14H, and -16H)

DESCRIPTION

This popular AC SSR Series features a functional as well as attractive package design, with dual-purpose screw and quick disconnect terminals recessed to provide high barriers and resulting long creepage paths for safety. Available in four output current ratings — 10, 15, 25, and 40 A — and output voltage ratings up to 250 Vrms continuous and 600V transient. These versions of the 611 Series are driven by AC, with an input voltage range of 90-250 Vrms.

PART NUMBERING

INPUT CONTROL VOLTAGE RANGE	OUTPUT VOLTAGE RATING		OUTPUT (LOAD) CURRENT RATING & PART NUMBERS			
	Continuous (RMS)	Transient (PEAK)	10 A	15 A	25 A	40 A
90-250 Vac	140	200	611-17	611-13	611-11	611-15
	250	400	611-18	611-14	611-12	611-16
	250	600	611-18H	611-14H	611-12H	611-16H

ELECTRICAL SPECIFICATIONS (25°C UNLESS OTHERWISE SPECIFIED)

INPUT (CONTROL) SPECIFICATIONS		MIN.	TYP.	MAX.	UNITS
Control Voltage (-40°C to +80°C)		90		250	Vac
Frequency Range		47		70	Hz
Input Current at Max. Control Voltage (-40°C ≤ Ta ≤ 80°C)				18	mA rms
Turn On Voltage		90			Vac
Turn Off Voltage				4	Vac
Isolation (Input to Output, Input to Case, Output to Case)		10 ⁹			OHMS
Capacitance (Input to Output)			8	10	pF
Dielectric Strength (Input to Output, Input to Case, Output to Case)		1500			Vrms 60 Hz
OUTPUT (LOAD) SPECIFICATIONS		MIN.	TYP.	MAX.	UNITS
Output Current Rating (See Figure 2 or 4 for Temperature Derating)		0.25		10. 15 25. 40	Arms
Load Voltage Rating (See Part Numbering)				140. 250	Vrms
Frequency Range		47		70	Hz
Surge Current Rating (16 ms) (See Figure 3)				1000	% OF RATING
Over-Voltage Rating	611-11, -13, -15, -17	200			V PEAK
	611-12, -14, -16, -18	400			
	611-12H, -14H, -16H, -18H	600			
On-State Voltage Drop at Rated Current			0.8	1.5	Vrms
Turn-On Time (60 Hz)				10	ms
Turn-Off Time (60 Hz)			16	40	ms
Off-State Leakage (-40°C ≤ Ta ≤ 80°C)		@ 140 V		8	mA rms
		@ 250 V		13	
Zero Voltage Turn-On Point			±12	±25	V (PEAK)
Off-State dv/dt (See Note 1)		100	200		V/μs
Triac Power		10A, 15A, 25A		1.21	WATTS/A
Dissipation Factor (D)		40A		1.25	
Triac Junction Temp. (T _J Max.)		10, 15, 25A		100	°C
		40A		110	
Thermal Resistance Junction to HS (θ _{JS}) (Includes θ _{CS})		10A		3.1	
		15A		1.8	°C/W
		25A, 40A		1.3	

PATENT #3,648,075

CHARACTERISTIC CURVES

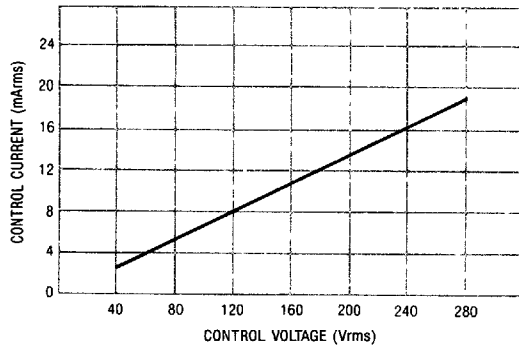


FIGURE 1 - TYPICAL INPUT CURRENT VS. CONTROL VOLTAGE

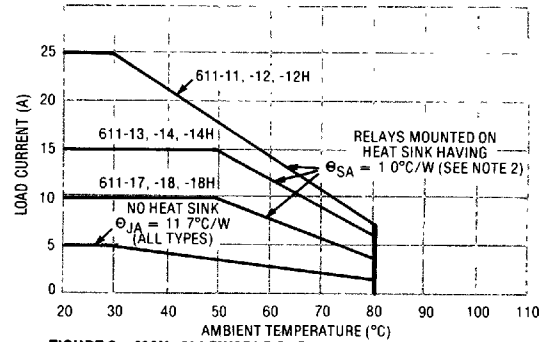


FIGURE 2 - MAX. ALLOWABLE CURRENT VS. AMBIENT TEMPERATURE

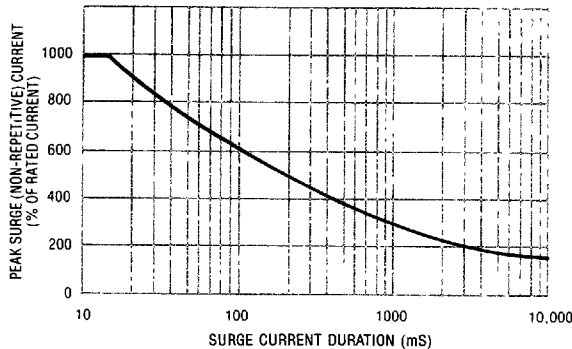


FIGURE 3 - PEAK SURGE CURRENT VS. SURGE CURRENT DURATION (SEE NOTE 3)

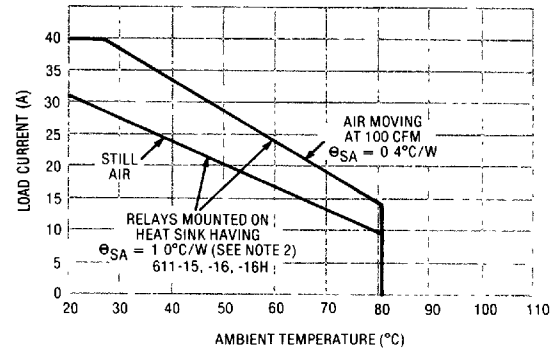
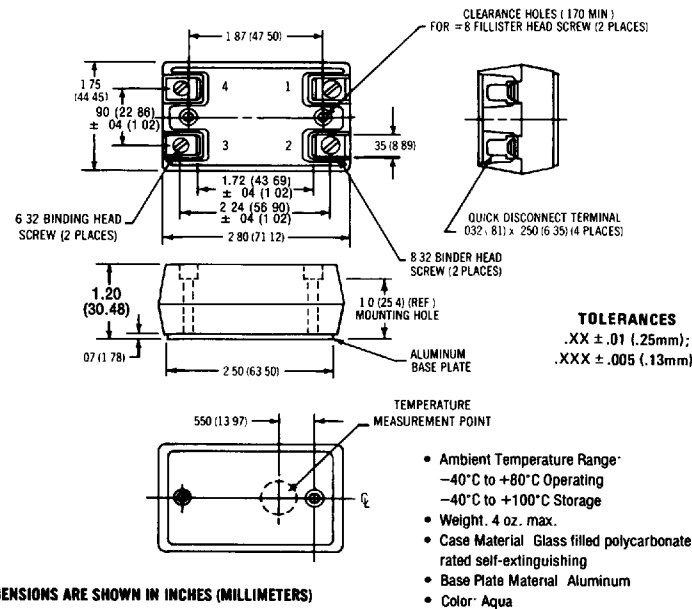


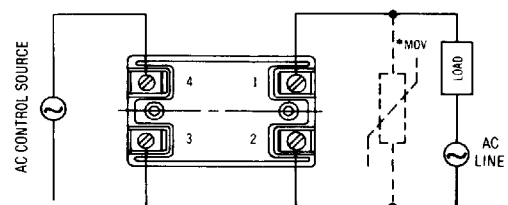
FIGURE 4 - MAX. ALLOWABLE CURRENT VS. AMBIENT TEMPERATURE

MECHANICAL SPECIFICATIONS



DIMENSIONS ARE SHOWN IN INCHES (MILLIMETERS)

WIRING DIAGRAM

*OPTIONAL TRANSIENT VOLTAGE PROTECTION
(See Note 4)

USE THE TABLE BELOW FOR SELECTION OF PROPER METAL OXIDE VARISTOR (MOV)

MAXIMUM CONTINUOUS LINE VOLTAGE RATING	TRANSIENT (PEAK) RATING OF RELAY	TELEDYNE MOV P/N
140 Vac	400	970-1
250 Vac	600	970-2

(See 970 Series Data for further information on MOVs).

NOTES:

- Output (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.
- Relays mounted with silicone grease on a 1°C/W heat sink.
- Triac may lose blocking capability during and after surge until T_J falls below maximum.
- With proper MOV installed, relay is protected against voltage transients such as those defined in IEEE STD 472-1974.

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