

AD Series Solid State Relays



AD-SSRxxx-xx



AD-70S2-xxx

Features:

Solid state relays have features which electromechanical relays do not, such as:

- Long life
- Shock and vibration resistant
- No generation of RFI, EMI
- No contact bounce
- Arcless switching
- No acoustic noise
- Zero voltage switching
- IC compatibility
- Immunity to humidity, salt spray and dirt

AD-SSR Features:

- AC & DC input
- AC output
- 10 or 25 amp loads
- Photo isolated zero voltage switching
- 4000V rms isolation input to output
- Internal RC (snubber) network
- RFI suppression
- Integral safety cover and heatsink
- DIN-rail mounting or panel-mount

AD-70S2 Features:

- DC input
- AC output
- Up to 4 amp loads
- Optically isolated
- Quick connect terminal, or panel mount when inserted into DIN-rail mountable socket

A solid state relay is a relay with isolated input and output, whose functions are achieved by means of electronic components without the use of moving parts, as found in electromechanical relays.

Operation:

Solid state relays are similar to electro-mechanical relays, in that both use a control circuit and a separate circuit for switching the load. When voltage is applied to the input of the SSR, the relay is energized by a light-emitting diode. The light from the diode is beamed into a light sensitive semiconductor which, in the case of zero voltage crossover relays, conditions

the control circuit to turn on the output of the solid state switch at the next zero voltage crossover. In the case of nonzero voltage crossover relays, the output of the solid state switch is turned on at the precise voltage occurring at the time. Removal of the input power disables the control circuit and the solid state switch is turned off when the load current passes through the zero point of its cycle.

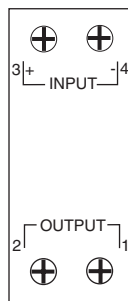
Solid State Relay Selection Guide						
Part Number	Price	Description	Dimensions & Derating Charts	Relay Socket Part Number	Price	Socket Dimensions
AD-SSR210-AC	<-->	Solid state DIN-rail mount relay with 10A contact rating. Coil voltage 90-280VAC. Load voltage is 24-280VAC. Finger-safe design and LED status lamp.	Figure 7	N/A	N/A	N/A
AD-SSR225-AC	<-->	Solid state DIN-rail mount relay with 25A contact rating. Coil voltage 90-280VAC. Load voltage is 24-280VAC. Finger-safe design and LED status lamp.				
AD-SSR210-DC	<-->	Solid state DIN-rail mount relay with 10A contact rating. Coil voltage 3-32VDC. Load voltage is 24-280VAC. Finger-safe design and LED status lamp.				
AD-SSR225-DC	<-->	Solid state DIN-rail mount relay with 25A contact rating. Coil voltage 3-32VDC. Load voltage is 24-280VAC. Finger-safe design and LED status lamp.				
AD-70S2-04B	<-->	Solid state plug-in relay with 4A contact rating. Coil voltage is 3-30VDC. Load voltage is 24-140VAC.	Figure 8	782-2C-SKT (see wiring diagram on next page)	<-->	Figure 6 *
AD-70S2-04C	<-->	Solid state plug-in relay with 4A contact rating. Coil voltage is 3-30VDC. Load voltage is 24-280VAC.				
AD-70S2-04D	<-->	Solid state plug-in relay with 4A contact rating. Coil voltage is 3-30VDC. Load voltage is 8-50VAC.				

*NOTE: See page 23-23

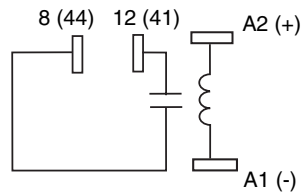
Solid State Relay Specifications

Specifications							
Part Number	AD-SSR210-DC	AD-SSR210-AC	AD-SSR225-DC	AD-SSR225-AC	AD-70S2-04B	AD-70S2-04C	AD-70S2-04D
Input Characteristics							
Control Voltage Range	3-32 VDC	90-280 VAC	3-32 VDC	90-280 VAC	3-30 VDC		
Typical Input Current	16 mA	12 mA	16 mA	12 mA	1-17 mA		
Must Release Voltage	1 VDC	10 VAC	1 VDC	10 VAC	1.0 VDC		
Reverse Polarity Protection	Yes	N/A	Yes	N/A	No		
Maximum Reverse Control Voltage	N/A				5 VDC		
Power Indicator	Red LED Status Lamp				N/A		
Output Characteristics							
Load Voltage Range	24-280VAC			24-140 VAC	24-280 VAC	8-50 VAC	
Rated Load Current	10 A		25 A		4 A	4 A	4 A
Maximum Off-State Voltage dv/dt	200 μ s		500 μ s		3000 V / μ s Typical		
Minimum Load Current	50 mA		120 mA		75 mA		
Non-Repetitive Surge Current (1 Cycle)	83 A		800 A		60 A Peak Max. @ 25°C		
Maximum Off State Leakage current (RMS)	10 mA			6 mA		3 mA	
Typical On-State Voltage Drop (RMS)	1.25 VAC		1.35 VAC		1.6 VAC		
Maximum I²T for Fusing (A²Sec)	83		3700		N/A		
Maximum Peak Blocking Voltage	N/A			400 V	600 V	200 V	
Operating Frequency Range	25 Hz to 70 Hz						
Maximum Turn-On Time	10ms	40ms	10ms	40ms	8.3 ms		
Maximum Turn-Off Time	10ms	80ms	10ms	80ms	8.3 ms		
General Characteristics							
Dielectric Strength (Input-to)Output Isolation	4000 V rms			3000 V rms			
Insulation Resistance	10 ¹⁰ Ω Min.						
Operating Temperature Range	-30°C to +80°C			-40°C to +100°C			
Storage Temperature Range	-40°C to +100°C			-40°C to +125°C			
Weight	12.35 oz. (350 g) approx.			1.4 oz. (40 g) Approx.			

AD-SSRxxx-xx wiring diagram



AD-70S2-xx wiring diagram

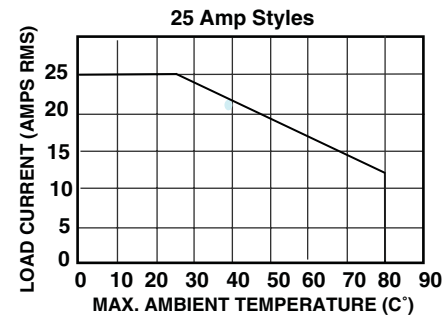
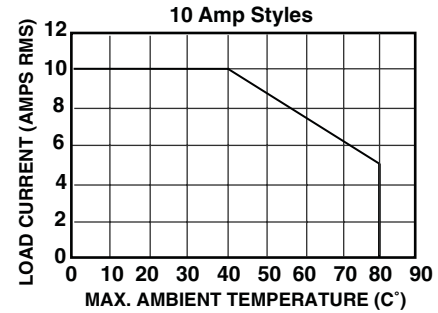
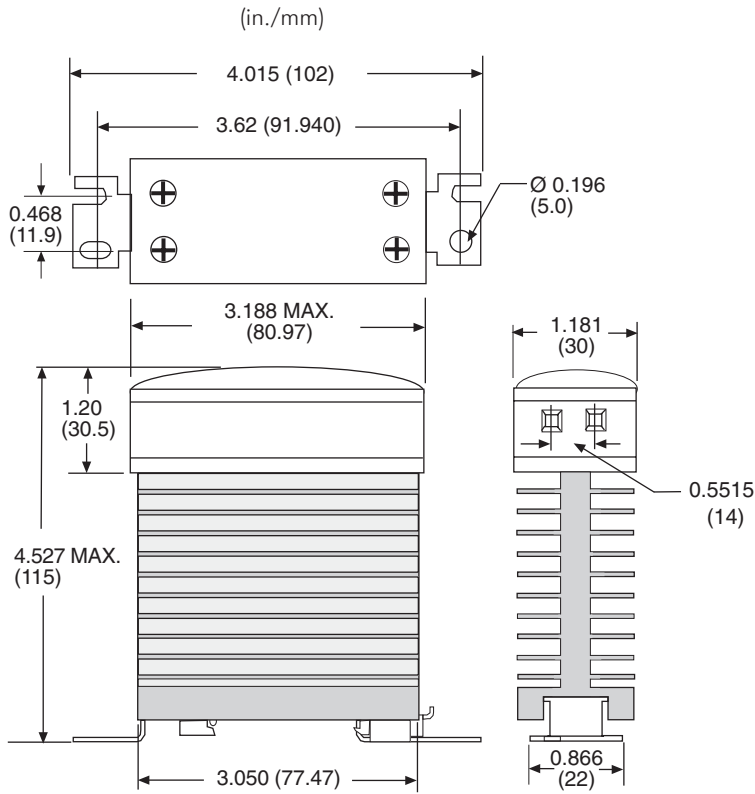


SSR Series Dimensions & Derating Charts

AD-SSR Series Dimensions

Figure 7

AD-SSR Series derating charts



Note: Recommended spacing between multiple SSRs is 0.75 inch.

AD-70S2 Series Dimensions

Figure 8

AD-70S2 Series derating charts

