

AD Series Solid State Relays



AD-SSR210-DC shown

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



AD-70S2-04B shown

Operation

Solid state relays (SSR) are similar to electromechanical 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, signals the control circuit to turn on the output of the solid state switch at the next zero voltage crossover.

Solid State Relay 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 crossing
- IC compatibility
- Immunity to humidity, salt spray and dirt
- UL # E222847

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

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 1	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 2	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 78 Series Relays Socket Dimensions.



Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

Appendix

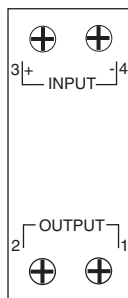
Product Index

Part # Index

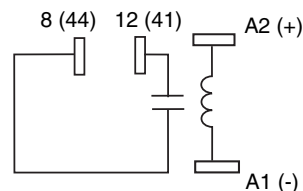
Solid State Relay Specifications

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 I ² T for Fusing (A ² Sec)	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 ⁹ 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.			
Agency Approvals	UL Recognized, CE, CSA						

AD-SSRxxx-xx wiring diagram



AD-70S2-xx wiring diagram



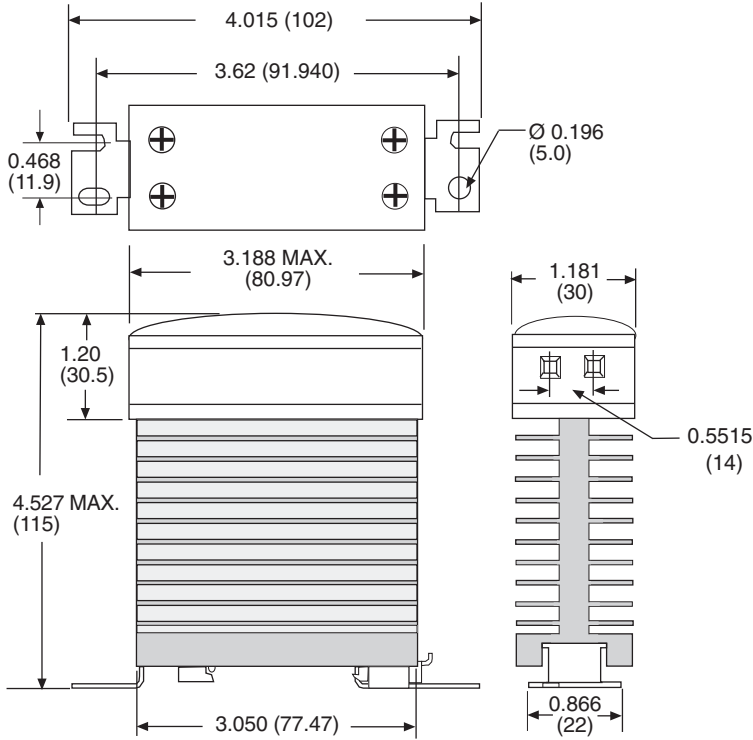
SSR Series Dimensions & Derating Charts

Dimensions

inches [mm]

Figure 1

AD-SSR Series



Note: Recommended spacing between multiple SSRs is 0.75 inch.

AD-SSR Series derating charts

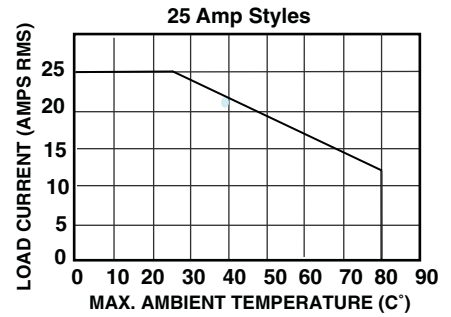
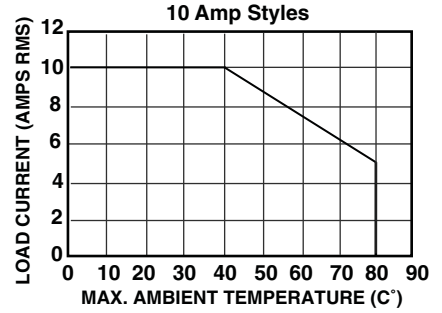
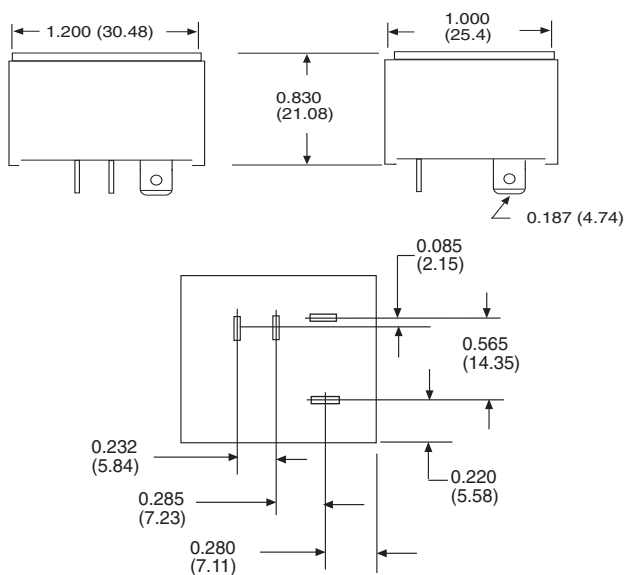
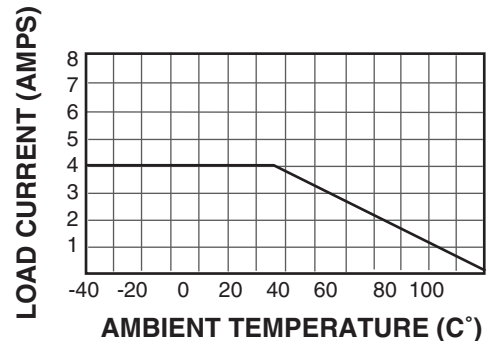


Figure 2

AD-70S2 Series



AD-70S2 Series derating charts





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- Encoders
- Current Sensors
- Pressure Sensors
- Temperature Sensors
- Pushbuttons/ Lights
- Process
- Relays/ Timers
- Comm.
- Terminal Blocks & Wiring
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- Circuit Protection
- Enclosures
- Tools
- Pneumatics
- Appendix
- Product Index
- Part # Index

78 Series Relay Socket Dimensions

Dimensions

inches [mm]

Figure 5: 781-1C-SKT

DIN-rail mounting, SPDT, for use with 781 series relays

Note: See Table on next page for maximum screw torques and wire sizes

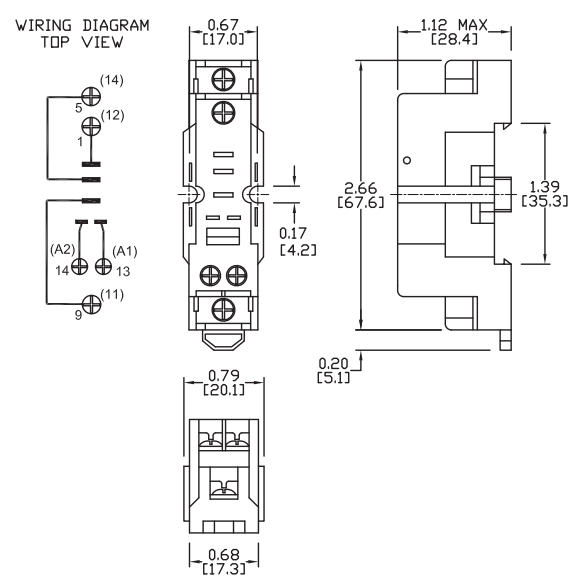


Figure 6: 782-2C-SKT

DIN-rail mounting, DPDT, for use with 782 series and AD-70S2 relays

Note: See Table on next page for maximum screw torques and wire sizes

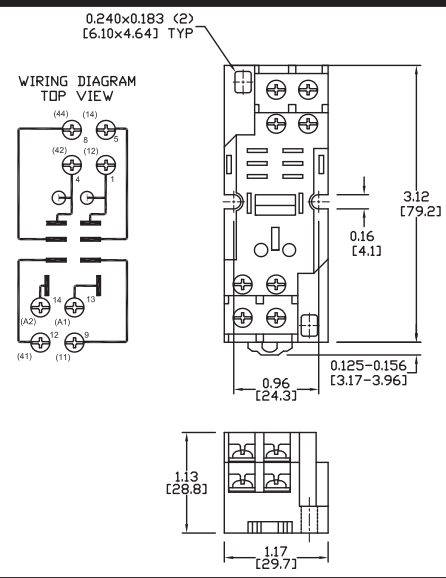
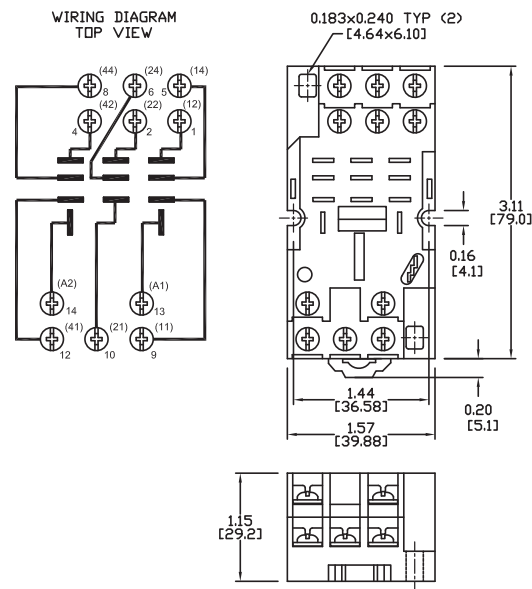


Figure 7: 783-3C-SKT

DIN-rail mounting, 3PDT, for use with 783 series relays.

Note: See Table on next page for maximum screw torques and wire sizes



Note: Order sockets separately; holding clips are included with sockets.