

AD Series Class 8 Solid State Relays



AD-SSR810-AC-28Z

Overview

The Class 8 solid state relays offer energy efficient current switching in a slim housing ideal for space-saving applications.

Switching types include Zero Cross for resistive AC loads where the output energizes/de-energizes when control voltage nears zero, and Random for AC loads where the output switches instantaneously with the actual voltage.

All Class 8 solid state relays use an SCR, which is suited for AC load applications, as the switching device.

Features

- Internal heat sink
- Finger-safe terminals
- DIN and panel mounting
- Optically coupled circuit

Class 8 Solid State Relays									
Part Number	Price	Drawing Links	Configuration	Input Voltage	Load Voltage	Switching Device	Contact Rating		
<i>AD-SSR810-AC-28Z</i>		PDF	SPST-N.O.	90 to 280 VAC	24 to 280 VAC	SCR	10A		
<i>AD-SSR810-AC-28R</i>		PDF							
<i>AD-SSR810-DC-28Z</i>		PDF		3 to 32 VDC					
<i>AD-SSR810-DC-28R</i>		PDF							
<i>AD-SSR810-DC-28RN</i>		PDF	SPST-N.C.	3 to 32 VDC					
<i>AD-SSR810-AC-48Z</i>		PDF	SPST-N.O.	90 to 280 VAC	48 to 480 VAC				
<i>AD-SSR810-AC-48R</i>		PDF							
<i>AD-SSR810-DC-48Z</i>		PDF		3 to 32 VDC					
<i>AD-SSR810-DC-48R</i>		PDF							
<i>AD-SSR810-AC-60Z</i>		PDF		90 to 280 VAC	48 to 600 VAC				
<i>AD-SSR810-AC-60R</i>		PDF							
<i>AD-SSR810-DC-60Z</i>		PDF		3 to 32 VDC					
<i>AD-SSR810-DC-60R</i>		PDF							

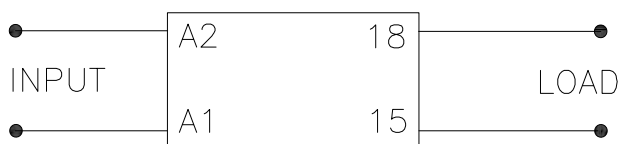
AD Series Class 8 Solid State Relays

Specifications													
Part Number	AD-SSR810-AC-28Z	AD-SSR810-AC-28R	AD-SSR810-DC-28Z	AD-SSR810-DC-28R	AD-SSR810-DC-28RN	AD-SSR810-AC-48Z	AD-SSR810-AC-48R	AD-SSR810-DC-48Z	AD-SSR810-DC-48R	AD-SSR810-AC-60Z	AD-SSR810-AC-60R	AD-SSR810-DC-60Z	AD-SSR810-DC-60R
Input Characteristics													
Control Voltage Range	90 to 280 VAC		3 to 32 VDC			90 to 280 VAC		3 to 32 VDC		90 to 280 VAC		3 to 32 VDC	
Typical Input Current	12 mA		16 mA		12 mA	12 mA		16 mA		12 mA		16 mA	
Must Release Voltage	10 VAC		1 VDC			10 VAC		1 VDC		10 VAC		1 VDC	
Reverse Polarity Protection	–		Yes			–		Yes		–		Yes	
Switching Type	Zero Cross	Random	Zero Cross	Random	Random	Zero Cross	Random	Zero Cross	Random	Zero Cross	Random	Zero Cross	Random
Input Indicator	Green LED status lamp												
Output Characteristics													
Load Voltage Range	24 to 280 VAC					48 to 480 VAC				48 to 600 VAC			
Rated Load Current	10A												
Maximum Off-State Voltage dv/dt	500 V/μs				200 V/μs	350 V/μs				200 V/μs			
Minimum Load Current	50 mA												
Non-Repetitive Surge Current (1 Cycle)	500A												
Maximum Off State Leakage current (RMS)	10 mA												
Typical On-State Voltage Drop (RMS)	1.25 VAC												
Maximum I2T for Fusing (A2Sec)	1250					850				600			
RMS Overload Current/Sec	24A												
Contact Configuration	SPST N.O.				SPST N.C.	SPST N.O.							
Maximum Turn-On Time	8.3 ms												
Maximum Turn-Off Time	8.3 ms												
General Characteristics													
Dielectric Strength (Terminal to Chassis)	2500 VAC												
Thermal Resistance (Junction to Case)	0.66°C/W (33.19°F/W)												
Internal Heat Sink	4°C/W (39.2°F/W)												
Operating Temperature Range	-30 to +80°C [-22 to +176°F]												
Storage Temperature Range	-40 to +100°C [-40 to +212°F]												
Weight - g (oz)	127 [4.1]												
Terminal Torque	7.1 lb-in [0.8 N·m] max												
Terminal Wire Capacity	14 AWG [2.5 mm²] max												
Environmental Protection	IP20												
Agency Approvals	UL file # E222847, CE, CSA, RoHS												

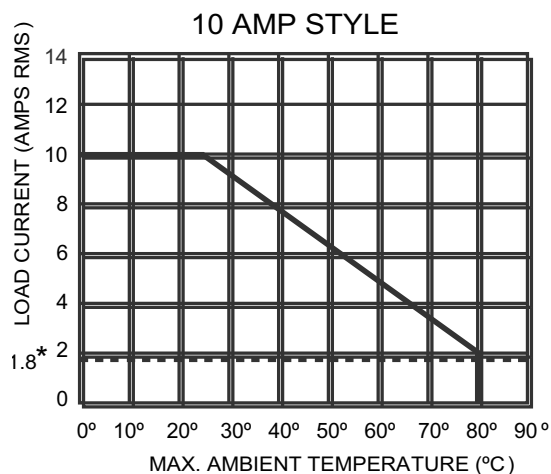
AD Series Class 8 Solid State Relays

Wiring Diagram and Derating Chart

Wiring Diagram



Derating Chart



* Indicates current cut-off.

Note: A minimum spacing of 17.5mm (0.7 in) between adjacent AD Series Class 8 relays is required in order to achieve the maximum ratings. A 0mm spacing will result in a 50% reduction in the derating.

AD Series Class 8 Solid State Relays for Hazardous Locations

Overview

The Class 8 Hazardous Location series is similar to the Class 8 series with the added feature of being approved for hazardous locations (Class 1, Div. 2, Groups A, B, C, D).

Switching types include DC switching for DC loads and Zero Cross for resistive AC loads where the output energizes/de-energizes when the control voltage nears zero.

Switching devices include MOSFET for DC loads and SCR for AC loads.

Features

- For use in hazardous locations (Class I, Div 2, Groups A, B, C, D)
- Internal Heat Sink
- Finger-safe terminals
- DIN and panel mounting
- Optically coupled circuit



AD-HSSR808-DC-15

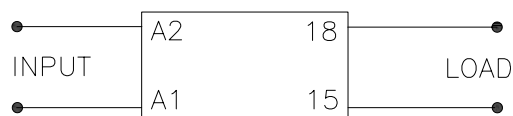
Class 8 Hermetically-sealed Solid State Relays							
Part Number	Price	Drawing Links	Switching Device	Input Voltage	Load Voltage	Configuration	Contact Rating
AD-HSSR815-DC-05		PDF	MOSFET	3.5 to 32 VDC	3 to 50 VDC	SPST N.O.	15A
AD-HSSR808-DC-15		PDF			3 to 150 VDC		8A
AD-HSSR810-AC-28		PDF	SCR	90 to 280 VAC	24 to 280 VAC		10A
AD-HSSR810-DC-28		PDF		3 to 32 VDC			
AD-HSSR810-AC-48		PDF		90 to 280 VAC	48 to 480 VAC		
AD-HSSR810-DC-48		PDF		3 to 32 VDC			
AD-HSSR810-AC-60		PDF		90 to 280 VAC	48 to 600 VAC		
AD-HSSR810-DC-60		PDF		3 to 32 VDC			

AD Series Class 8 Solid State Relays for Hazardous Locations

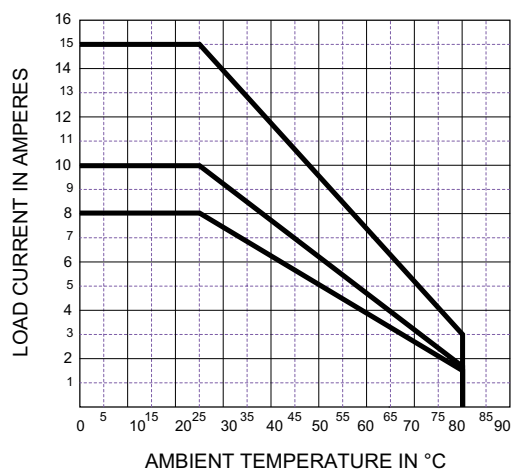
Specifications								
Part Number	AD-HSSR815-DC-05	AD-HSSR808-DC-15	AD-HSSR810-AC-28	AD-HSSR810-DC-28	AD-HSSR810-AC-48	AD-HSSR810-DC-48	AD-HSSR810-AC-60	AD-HSSR810-DC-60
Input Characteristics								
Control Voltage Range	3.5 to 32 VDC		90 to 280 VAC	3 to 32 VDC	90 to 280 VAC	3 to 32 VDC	90 to 280 VAC	3 to 32 VDC
Typical Input Current	12 mA		12 mA	16 mA	12 mA	16 mA	12 mA	16 mA
Must Release Voltage	1 VDC		10 VAC	1 VDC	10 VAC	1 VDC	10 VAC	1 VDC
Reverse Polarity Protection	Yes		—	Yes	—	Yes	—	Yes
Nominal Input Impedance	Current Limiter		16 to 25 kΩ	Current Limiter	16 to 25 kΩ	Current Limiter	16 to 25 kΩ	Current Limiter
Switching Type	DC		Zero Cross					
Input Indicator	Green LED status lamp							
Output Characteristics								
Load Voltage Range	3 to 50 VDC	3 to 150 VDC	24 to 280 VAC		48 to 480 VAC		48 to 600 VAC	
Rated Load Current	15A	8A	10A					
Maximum Off-State Voltage dv/dt	—	—	500 V/μs		350 V/μs		500 V/μs	
Minimum Load Current	20 mA		50 mA					
Non-Repetitive Surge Current (1 Cycle)	50A	35A	500A					
Maximum Off State Leakage current (RMS)	0.25 mA		10 mA					
Typical On-State Voltage Drop (RMS)	N/A		1.25 VAC					
Maximum I2T for Fusing (A2Sec)	—	—	1250		850		600	
RMS Overload Current/Sec	24A	17A	24A					
Maximum Turn-On Time	5 ms		8.3 ms					
Maximum Turn-Off Time	5 ms		8.3 ms					
General Characteristics								
Dielectric Strength Terminals to Chassis	2500 V rms							
Thermal Resistance Junction to Case	1.4°C/W (34.52°F/W)	0.5°C/W (32.9°F/W)	0.66°C/W (33.19°F/W)					
Internal Heat Sink	4.0°C/W (39.2°F/W)							
Operating Temperature Range	-30 to +80°C [-22 to +176°F] (derating applies)							
Storage Temperature Range	-40 to +100°C [-40 to +212°F]							
Weight - g (oz)	127.1 [4.1]							
Terminal Torque	7.1 in·lb [0.8 N·m] max							
Terminal Wire Capacity	14 AWG [2.5 mm²] max							
Environmental Protections	IP20 (Class I, Div. 2 Groups A, B, C, D)							
Agency Approvals and Standards	UL file # E344125, CE, RoHS							

AD Series Class 8 Solid State Relays for Hazardous Locations Wiring Diagram and Derating Chart

Wiring Diagram



Derating Chart



Note: A minimum spacing of 17.5mm (0.7 in) between adjacent AD Series Class 8 relays is required in order to achieve the maximum ratings. A 0mm spacing will result in a 50% reduction in the derating.