

# 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

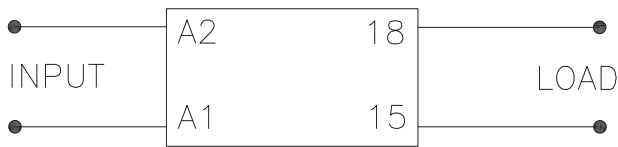
Class 8 Solid State Relays							
Part Number	Price	Drawing Links	Configuration	Input Voltage	Load Voltage	Switching Device	Contact Rating
<a href="#">AD-SSR810-AC-28Z</a>	\$27.50	<a href="#">PDF</a>	SPST-N.O.	90 to 280 VAC	24 to 280 VAC	SCR	10A
<a href="#">AD-SSR810-AC-28R</a>	\$30.00	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-DC-28Z</a>	\$22.00	<a href="#">PDF</a>	SPST-N.C.	3 to 32 VDC	48 to 480 VAC		
<a href="#">AD-SSR810-DC-28R</a>	\$22.00	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-DC-28RN</a>	\$23.50	<a href="#">PDF</a>	SPST-N.O.	90 to 280 VAC	48 to 600 VAC		
<a href="#">AD-SSR810-AC-48Z</a>	\$27.50	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-AC-48R</a>	\$35.00	<a href="#">PDF</a>		90 to 280 VAC			
<a href="#">AD-SSR810-DC-48Z</a>	\$22.50	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-DC-48R</a>	\$24.50	<a href="#">PDF</a>		90 to 280 VAC			
<a href="#">AD-SSR810-AC-60Z</a>	\$35.00	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-AC-60R</a>	\$36.00	<a href="#">PDF</a>		90 to 280 VAC			
<a href="#">AD-SSR810-DC-60Z</a>	\$26.50	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-SSR810-DC-60R</a>	\$26.50	<a href="#">PDF</a>		90 to 280 VAC			

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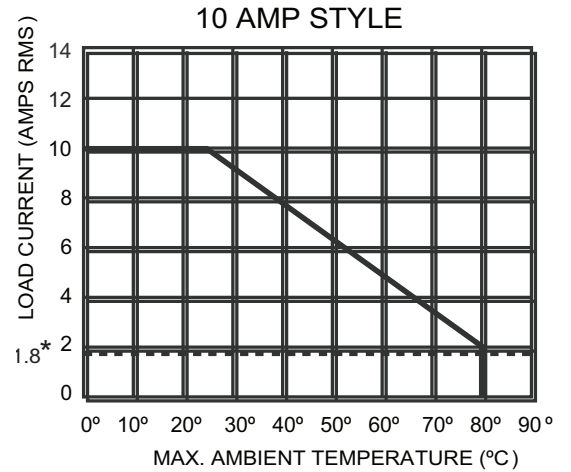
Specifications														
Part Number	AD-SSR810-AC-28Z	AD-SSR810-AC-28R	AD-SSR810-DC-28Z	AD-SSR810-DC-28R	AD-SSR810-DC-28RN	AD-SSR810-AC-48Z	AD-SSR810-AC-48R	AD-SSR810-DC-48Z	AD-SSR810-DC-48R	AD-SSR810-AC-60Z	AD-SSR810-AC-60R	AD-SSR810-DC-60Z	AD-SSR810-DC-60R	
<b>Input Characteristics</b>														
<b>Control Voltage Range</b>	90 to 280 VAC		3 to 32 VDC			90 to 280 VAC		3 to 32 VDC		90 to 280 VAC		3 to 32 VDC		
<b>Typical Input Current</b>	12mA		16mA			12mA		16mA		12mA		16mA		
<b>Must Release Voltage</b>	10VAC		1VDC			10VAC		1VDC		10VAC		1VDC		
<b>Reverse Polarity Protection</b>	-		Yes			-		Yes		-		Yes		
<b>Switching Type</b>	Zero Cross	Random	Zero Cross	Random	Random	Zero Cross	Random	Zero Cross	Random	Zero Cross	Random	Zero Cross	Random	
<b>Input Indicator</b>	Green LED status lamp													
<b>Output Characteristics</b>														
<b>Load Voltage Range</b>	24 to 280 VAC					48 to 480 VAC				48 to 600 VAC				
<b>Rated Load Current</b>	10A													
<b>Maximum Off-State Voltage dv/dt</b>	500V/μs				200V/μs		350V/μs				200V/μs			
<b>Minimum Load Current</b>	50mA													
<b>Non-Repetitive Surge Current (1 Cycle)</b>	500A													
<b>Maximum Off State Leakage current (RMS)</b>	10mA													
<b>Typical On-State Voltage Drop (RMS)</b>	1.25 VAC													
<b>Maximum I<sup>2</sup>T for Fusing (A<sup>2</sup>Sec)</b>	1250					850				600				
<b>RMS Overload Current/Sec</b>	24A													
<b>Contact Configuration</b>	SPST N.O.				SPST N.C.		SPST N.O.							
<b>Maximum Turn-On Time</b>	8.3 ms													
<b>Maximum Turn-Off Time</b>	8.3 ms													
<b>General Characteristics</b>														
<b>Dielectric Strength (Terminal to Chassis)</b>	2500VAC													
<b>Thermal Resistance (Junction to Case)</b>	0.66°C/W (33.19°F/W)													
<b>Internal Heat Sink</b>	4°C/W (39.2°F/W)													
<b>Operating Temperature Range</b>	-30 to 80°C (-22 to 176°F)													
<b>Storage Temperature Range</b>	-40 to 100°C (-40 to 212°F)													
<b>Weight - g (oz)</b>	127 (4.1)													
<b>Terminal Torque</b>	7.1 lb-in (0.8 N·m) max													
<b>Terminal Wire Capacity</b>	14AWG (2.5 mm <sup>2</sup> ) max													
<b>Agency Approvals and Standards</b>	UL file # E222847, CE, CSA, RoHS													
<b>Environmental Protection</b>	IP20													

# 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 17.5 mm (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 de-rating.*

# 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 1, Div 2, Groups A, B, C, D)
- Internal Heat Sink
- Finger-safe terminals
- DIN and panel mounting
- Optically coupled circuit



AD-HSSR808-DC-15

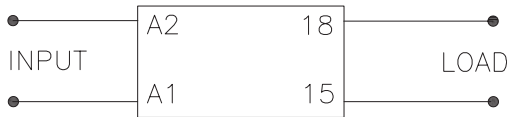
Class 8 Hermetically-sealed Solid State Relays							
Part Number	Price	Drawing Links	Switching Device	Input Voltage	Load Voltage	Configuration	Contact Rating
<a href="#">AD-HSSR815-DC-05</a>	\$61.00	<a href="#">PDF</a>	MOSFET	3.5 to 32 VDC	3 to 50 VDC	SPST N.O.	15A
<a href="#">AD-HSSR808-DC-15</a>	\$60.00	<a href="#">PDF</a>			3 to 150 VDC		8A
<a href="#">AD-HSSR810-AC-28</a>	\$60.00	<a href="#">PDF</a>	SCR	90 to 280 VAC	24 to 280 VAC	10A	
<a href="#">AD-HSSR810-DC-28</a>	\$59.00	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-HSSR810-AC-48</a>	\$61.00	<a href="#">PDF</a>		90 to 280 VAC	48 to 480 VAC		
<a href="#">AD-HSSR810-DC-48</a>	\$60.00	<a href="#">PDF</a>		3 to 32 VDC			
<a href="#">AD-HSSR810-AC-60</a>	\$63.00	<a href="#">PDF</a>		90 to 280 VAC	48 to 600 VAC		
<a href="#">AD-HSSR810-DC-60</a>	\$61.00	<a href="#">PDF</a>		3 to 32 VDC			

# AD Series Class 8 Solid State Relays for Hazardous Locations

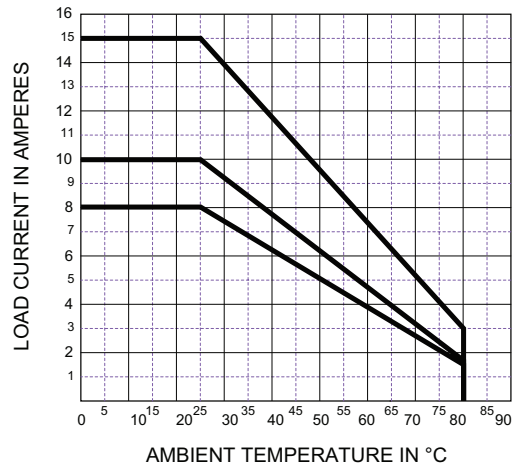
Specifications								
Part Number	AD-HSSR815-DC-05	AD-HSSR808-DC-15	AD-HSSR810-AC-28	AD-HSSR810-DC-28	AD-HSSR810-AC-48	AD-HSSR810-DC-48	AD-HSSR810-AC-60	AD-HSSR810-DC-60
<b>Input Characteristics</b>								
<b>Control Voltage Range</b>	3.5 to 32 VDC		90 to 280 VAC	3 to 32 VDC	90 to 280 VAC	3 to 32 VDC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

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

## Wiring Diagram



## Derating Chart



*Note: A minimum spacing of 17.5 mm (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 de-rating.*