



Features & Benefits:

Plug-In & Power Relays

Sockets

Accessories

Solid State Relays

Time Delay & Sensor Relays

Power Relays

Latching & Sequencing Relays

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Item # 6210AXXSZS-AC90 Class 6 Solid State Relay / SPST-NO, 10 Amp Rating



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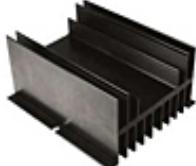
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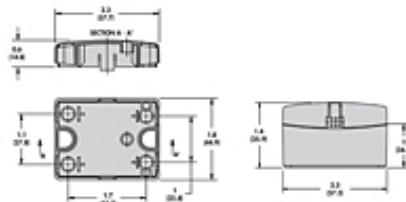
Heat Sink



[SSR-HS-1](#)
Heat Sink



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Specifications

Component Type	Solid State
Mounting Type	Panel Mount
Superceding Part No.	W6210ASX-1
Contact Rating	10 A
Contact Configuration	SPST-NO
Output Voltage Range	24 to 280 VAC
Load Type	AC
Switching Type	Zero Cross

Output Characteristics

Switching Device	SCR (2)
Switching Voltage	24 to 280 VAC
Maximum Rate of Rise Off State Voltage [dv/dt]	200 V/us
Incandescent Lamp Ampere Rating [rms]	8 A
Motor Load Rating [rms]	4.5 A
Min. Load Current to Maintain On	50 mA
Non-Repetitive Surge Current (1 cycle)	83 A
Max. RMS Overload Current (1 second)	24 A
Max. Off State Leakage Current [rms]	8 mA
Peak Blocking Voltage	600 Vpk
Typical On State Voltage Drop [rms]	1.6 VAC
Max. On State Voltage Drop [rms]	1.6 VAC
Maximum I ² T for Fusing (A ²)	72

Input Characteristics

Voltage Range	80 to 140 DC 90 to 280 VAC
Must Release Voltage	10 VAC
Nominal Input Impedance	13000 Ohm
Typical Input Current at 5VDC or 240VAC	20 mA

Performance Characteristics

Electrical Life (UL508), Operations at Rated Current (Resistive)	100000
Mechanical Life, Unpowered	10000000
Operating Time (Response Time) - On	8.3 ms
Operating Time (Response Time) - Off	8.3 ms
Rated Insulation Voltage, Input to Output	2500 VAC
Dielectric Strength, Terminals to Chassis	4000 VAC

Environment

Ambient Air	
Temperature around the Device - Storage	-40 to +100 °C
Ambient Air	
Temperature around the Device - Operation	-40 to +80 °C
Degree of Protection	IP 20

Miscellaneous Characteristics

Thermal Resistance (Junction to Case)	3.5 °C/W
LED Input	Green
Input Terminal	M3.5
Output Terminal	M4

Product Certifications

Agency Approvals	UL CE CSA
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Solid State Relays – Application Data

Definition: A SSR (solid state relay) can perform many tasks that an EMR (electromechanical relay) can perform. The SSR differs in that it has no moving mechanical parts within it. It is essentially an electronic device that relies on the electrical, magnetic and optical properties of semiconductors, and electrical components to achieve its isolation and relay switching function.

Principle of Operation: Solid State Relays 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, conditions the control circuit to turn on the output solid state switch at the next zero voltage crossover. In the case of nonzero voltage crossover relays, the output 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.

Applications: Since its introduction the SSR, as a technology, has gained acceptance in many areas, which had previously been the sole domain of the EMR or the Contactor. The major growth areas have come from Industrial Process Control applications; particularly heat/cool temperature control, motors, lamps, solenoids, valves, and transformers. The list of applications for the SSR is almost limitless.

The following are typical examples of SSR applications: industrial automation, electronic appliances, industrial appliances, packaging machines, tooling machines, manufacturing equipment, food equipment, security systems, industrial lighting, fire and security systems, dispensing machines, production equipment, on-board power control, traffic control, instrumentation systems, vending machines, test systems, office machines, medical equipment, display lighting, elevator control, metrology equipment, and entertainment lighting.

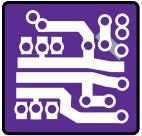
INDUSTRIAL AUTOMATION



ALARM SYSTEMS



ELECTRONIC APPLIANCES



INDUSTRIAL APPLIANCES



MEDICAL EQUIPMENT



PACKING MACHINES



TOOLING MACHINES



Advantages: When used correctly in the intended application, the SSR provides many of the characteristics that are often difficult to find in the EMR; a high degree of reliability, long service life, significantly reduced electromagnetic interference, fast response and high vibration resistance are significant benefits of the SSR. The SSR has no moving parts to wear out or arcing contacts to deteriorate, which are often the primary cause of failure with an EMR.

- Long life (reliability) $> 10^9$ operations
- Zero voltage turn on, low EMI / RFI
- Shock and Vibration resistant
- Random turn-on, proportional control
- No contact bounce
- Arc-less switching
- No acoustical noise
- Microprocessor compatible
- Fast response
- No moving parts

Thermal Considerations: One of the major considerations when using a SSR is properly managing the heat that is generated when switching currents higher than about 5 amps. In this scenario one must mount the base plate of the SSR onto a good heat conductor, typically aluminum; along with utilizing a good thermal transfer medium such as thermal grease or heat transfer pad. Using this technique, the SSR case to heat sink thermal resistance is reduced to a negligible value of $0.1 \text{ }^{\circ}\text{C/W}$.

Advantages of the Class 6 Solid State Relay

The Complete System Solution!



Optional Heat Sink
(SSR-HS-1)
Section 3 p.20



Optional Thermal Pad
(SSR-TP-1)
Section 3 p.21

We at Magnecraft strive to be your one-stop-shop for all of your solid state relay needs. The new line of 6 series solid-state relays give industrial relay users an energy-efficient current switching alternative. Depending on the application, these solid-state relays offer a number of advantages over electromechanical relays, including longer life cycles, less energy consumption and reduced maintenance costs. This is why great care and attention was given when developing the next generation of "Hockey Puck" style SSRs. These new SSRs will be finger-safe, fit a pre-cut heat transfer thermal pad (sold separately) and have the ability to be mounted onto a factory tested pre-drilled and tapped heat sink (sold separately).

Magnecraft's expertise in both SSR design and thermal management enables us to provide customers with a solution to their solid state relay requirements. This solution comes ready-to-use, virtually eliminating in-house assembly and complex heat sink calculations. Furthermore, each SSR, thermal pad (sold separately) and heat sink assembly (sold separately) utilizes the reliability and technology only available in our 6 series solid state relays. These features, coupled with Magnecraft's superior customer service and engineering support team, provide our customers with a level of convenience not easily found in the market today!



Legacy

The Class 6 is also available with **Blade Terminals**.

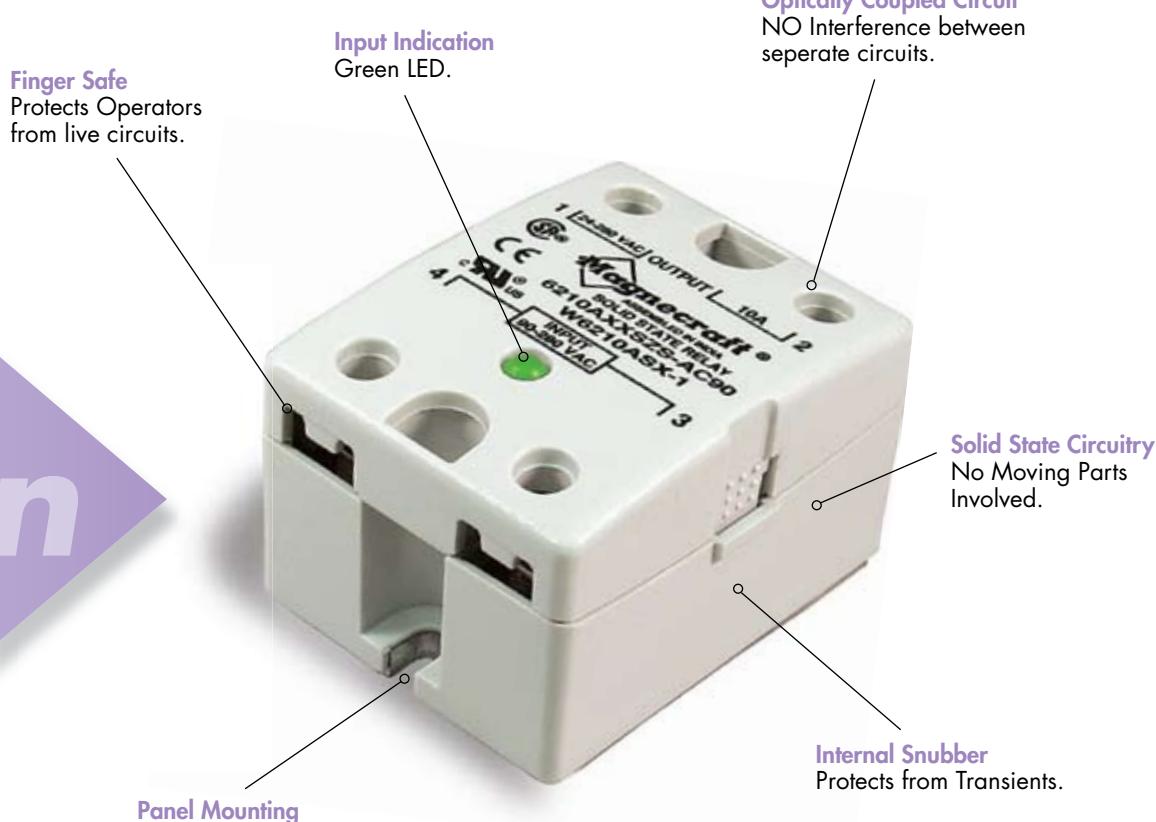


The new finger-safe Class 6* "Hockey Puck" Style Solid State Relay (SSR) expands and enhances the current Magnecraft Solid State Relay product line.

This product features a finger-safe cover and LED Status Indicator. The optically coupled circuitry isolates the input from the output to give pure solid state performance. This product carries with it agency certifications from UL, CSA, and CE.

*Available for products up to 40 Amps (AC Load) and 12 Amps (DC Load).

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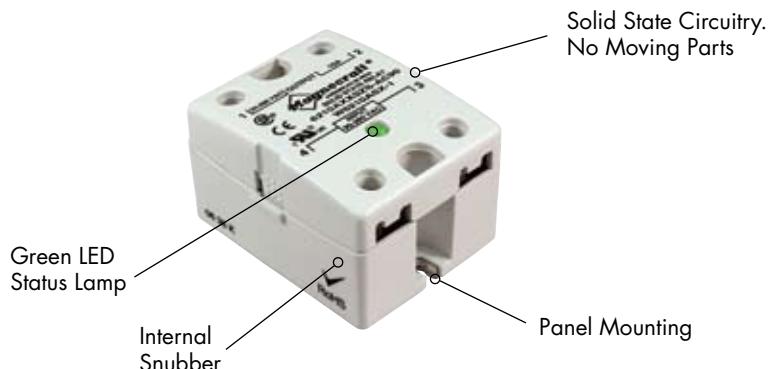


New

Class 6 Solid State Relays/SPST-NO, SPST-NC, DPST-NO, 10-125 Amp Rating



NEW
NEW
NEW
NEW
NEW



General Specifications

(UL 508)

Output Characteristics	New Part #	Superceding Part #	Units	6210AXXSZS-AC90
Number and type of Contacts				6210ASX-1
Switching Device				SPST-NO
Current rating	A			SCR (2)
Switching voltage	V			10
Switching Type				24...280 AC
Maximum Rate of Rise Off State Voltage (dv/dt)	V/us			Zero Cross
Incandescent Lamp Ampere Rating (rms)	A			200
Motor Load Rating (rms)	A			8
Min. Load current to maintain on	mA			4.5
Non-Repetitive Surge Current (1 cycle)	A			50
Max. RMS overload current (1 second)	A			83
Max. Off state leakage current (rms)	mA			24
Peak Blocking Voltage	Vpk			8
Typical On State Voltage Drop (rms)	V			600
Max. On State Voltage Drop (rms)	V			1.6 AC
Maximum $I^2 T$ for Fusing (A ²)				1.6 AC
				72
Input Characteristics				
Voltage Range	V			90...280 AC/80...140 DC
Must Release Voltage	V			10 AC
Nominal Input Impedance	Ω			13K
Typical Input Current @ 5VDC or 240VAC	mA			20
Reverse Polarity Protection				N/A
Performance Characteristics				
Operating Time (response time)	On	ms		8.3
	Off	ms		8.3
Rated Insulation Voltage	Input to Output	V		4000 AC
Dielectric strength	Terminals to Chassis	V		4000 AC
Environment				
Product certifications	Standard version			UR, CSA, CE
Ambient air temperature around the device	Storage	$^{\circ}$ C		-40...+100
Degree of protection	Operation	$^{\circ}$ C		-40...+80
				IP 20
Miscellaneous Characteristics				
Thermal Resistance (Junction to Case)		$^{\circ}$ C/W		3.5
Weight		g (oz)		100 (3.5)
LED	Input			Green
Input Terminals				M3.5
Output Terminals				M4
Mounting Screw Torque		Nm		1.0

Class 6 Solid State Relays/SPST-NO, SPST-NC, DPST-NO, 10-125 Amp Rating continued



NEW
NEW
NEW
NEW
NEW



Screw Terminals
SPST-NO



Blade Terminals
DPST-NO

*Finger-safe safety cover is available for products up to 40 Amps.

SECTION 4

