

## Description

# Magnecraft® Solid State Relays

6000

SPST-NO, 10 A to 75 A

DPST-NO, 10 A to 25 A



6000 Series Relays

## Description

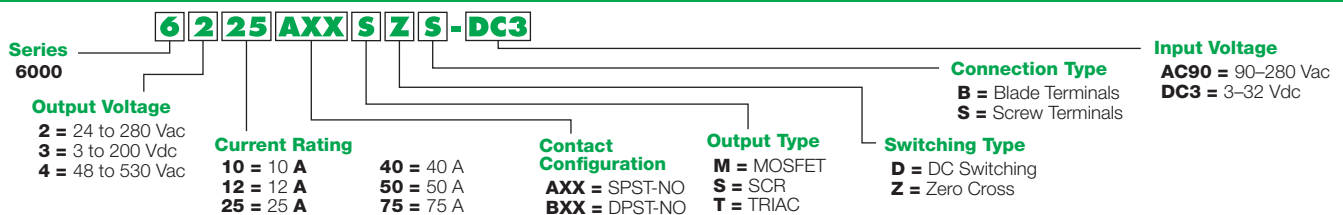
The 6000 Series solid state relays offer an energy-efficient, current switching alternative to standard electromechanical relays. Advantages include longer life cycles, less energy consumption, and reduced maintenance costs.

Feature	Benefit
Solid state circuitry	Involves no moving parts
Optically coupled circuit	Provides isolation between input and output circuits
Internal snubber	Helps protect the relay's internal circuit from high voltage transients
Fingersafe® terminals	Helps prevent an operator from touching live circuits

Switching Type	Switching Device	Input Voltage Range	Output Voltage Range	Contact Configuration	Rated Output Current (A)	Standard Part Number
DC switching	MOSFET	3.5–32 Vdc	3–200 Vdc	SPST-NO	12	6312AXXMDS-DC3
					25	6325AXXMDS-DC3
					40	6340AXXMDS-DC3
Zero cross	SCR	3–32 Vdc	24–280 Vac	SPST-NO	10	6210AXXSZS-DC3
					25	6225AXXSZS-DC3
					40	6240AXXSZS-DC3
			48–480 Vac	SPST-NO	50	6250AXXSZS-DC3
					25	6425AXXSZS-DC3
					50	6450AXXSZS-DC3
	90–280 Vac	SPST-NO	24–280 Vac	SPST-NO	10	6210AXXSZS-AC90
					25	6225AXXSZS-AC90
					40	6240AXXSZS-AC90
			48–480 Vac	SPST-NO	50	6250AXXSZS-AC90
					75	6275AXXSZS-AC90
					10	6410AXXSZS-AC90
Triac	3–32 Vdc	24–280 Vac	DPST-NO	10	6210BXXTZB-DC3*	
				25	6425AXXTZB-DC3*	
				25	6425BXXTZB-DC3*	
		48–480 Vac	SPST-NO	SPST-NO	10	6210BXXTZB-DC3*
					25	6425AXXTZB-DC3*
					25	6425BXXTZB-DC3*

\* Blade terminals.

## Part Number Explanation



# Magnecraft® Solid State Relays

6000

SPST-NO, 10 A to 75 A

DPST-NO, 10 A to 25 A

## Specifications (UL 508)

Part Number	62**AXXSZS-AC90	64**AXXSZS-AC90	62**AXXSZS-DC3	64**AXXSZS-DC3
<b>Input Characteristics</b>				
Control Voltage Range	90–280 Vac (rms)		3–32 Vdc	4–32 Vdc
Maximum Turn-On Voltage	90 Vac (rms)		3 Vdc	4 Vdc
Minimum Turn-Off Voltage	10 Vac (rms)		1 Vdc	
Nominal Input Impedance	60 K $\Omega$		N/A	
Typical Input Current	2 mA at 120 V (rms), 4 mA at 240 V (rms)		10 mA at 12 Vdc	15 mA DC
<b>Output Characteristics</b>				
Switching Device	SCR			
Switching Type	Zero Cross			
Contact Configuration	SPST-NO			
Output Current Range	10–75 A	10–25 A	10–50 A	25–50 A
Output Voltage Range (47–63 Hz)	24–280 Vac (rms)	48–530 Vac (rms)	24–280 Vac (rms)	48–530 Vac (rms)
Transient Over-voltage	600 Vpk	1200 Vpk	600 Vpk	1200 Vpk
Maximum Off-State Leakage Current at Rated Voltage	10 mA (rms)		1 mA (rms)	
Minimum Off-State dv/dt at Maximum Rated Voltage	500 V/us			
Minimum Load Current	40 mA (rms)		150 mA (rms)	
Maximum Surge Current (16.6 ms)	10 A: 120 Apk; 25 A: 250 Apk; 40/50 A: 625 Apk; 75 A: 1000 Apk	10 A: 140 Apk; 25 A: 250 Apk	10 A: 120 Apk; 25 A: 250 Apk; 40/50 A: 625 Apk	25 A: 250 Apk; 50 A: 625 Apk
Maximum On-State Voltage Drop at Rated Current	1.6 V (rms)	1.7 V (rms)	1.6 V (rms)	
Maximum I <sup>2</sup> T for Fusing (8.3 ms)	10 A: 60 A <sup>2</sup> sec; 25 A: 260 A <sup>2</sup> sec; 40/50A: 1620 A <sup>2</sup> sec; 75A: 4150 A <sup>2</sup> sec	10 A: 81 A <sup>2</sup> sec; 25 A: 260 A <sup>2</sup> sec	10 A: 60 A <sup>2</sup> sec; 25 A: 260 A <sup>2</sup> sec; 40/50 A: 1620 A <sup>2</sup> sec	25 A: 260 A <sup>2</sup> sec; 50 A: 1620 A <sup>2</sup> sec
Minimum Power Factor (with Maximum Load)	0.5			
<b>General Characteristics</b>				
Electrical Life	N/A for solid state relays			
Maximum Turn-On Time	10 ms		1/2 Cycle	
Maximum Turn-Off Time	40 ms		1/2 Cycle	
Thermal Resistance (Junction–Case)	10 A: 1.48 °C/W; 25 A: 1.02 °C/W; 40/50A: 0.63 °C/W; 75 A: 0.31 °C/W			
Dielectric Strength, Input/Output/Base (50/60 Hz)	4000 Vac (rms)			
Minimum Insulation Resistance (at 500 Vdc)	1E+9 $\Omega$			
Maximum Capacitance (Input/Output)	8 pF			
Ambient Operating Temperature Range	–40–80 °C (derating applies)			
Ambient Storage Temperature Range	–40–125 °C			
Weight (typical)	86.5 g (3 oz)			
Input Indication	Green LED			
Encapsulation	Thermally conductive epoxy			
Terminals	Screw and saddle clamps furnished, unmounted			
Recommended Terminal Screw Torque Range	6-32 Screws: 10 lb-in; 8-32 & 10-32 Screws: 20 lb-in (Screws dry without grease)			
Safety Cover	Yes			
Wire Clamp Plates	Yes			
Agency Approvals	UL Recognized (E258297); CE (per IEC 60950 and 61000); CSA (168986); RoHS			

Specifications (UL 508)

Part Number	6***XXTZB-DC3	63**AXXMDS-DC3
<b>Input Characteristics</b>		
Control Voltage Range	3–32 Vdc	3.5–32 Vdc
Maximum Turn-On Voltage	3 Vdc	3.5 Vdc
Minimum Turn-Off Voltage	1 Vdc	
Nominal Input Impedance	Active current limiter	1k $\Omega$
Typical Input Current	25 A: 16 mA; 10 A: 2 mA	10 mA
<b>Output Characteristics</b>		
Switching Device	Triac	MOSFET
Switching Type	Zero Cross	DC switching
Contact Configuration	SPST-NO, DPST-NO	SPST-NO
Output Current Range	10A–25A	12A–40A
Output Voltage Range	10 A: 24–280 Vac; 25 A: 48–480 Vac	3–200 Vdc
Transient Over-voltage	600 Vpk	200 Vpk
Maximum Off-State Leakage Current at Rated Voltage	10 mA	< 1 mA
Minimum Off-State dv/dt at Maximum Rated Voltage	250 V/us	N/A
Minimum Load Current–Maintain	80 mA	N/A
Maximum Surge Current (16.6 ms)	250 A	12 A: 27 A; 25 A: 50 A; 40 A: 90 A
Maximum On-State Voltage Drop at Rated Current	1.6 Vac (rms)	2.8 Vdc (at 40 A load)
Maximum I <sup>2</sup> T for Fusing (8.3 ms)	200 A <sup>2</sup> s	N/A
Minimum Power Factor (with Maximum Load)	0.5	0.95
<b>General Characteristics</b>		
Electrical Life	N/A for solid state relays	
Maximum Turn-On Time	1/2 cycle	300 us
Maximum Turn-Off Time	1/2 cycle	1 ms
Thermal Resistance (Junction–Case)	1.2 °C/W	1.06 °C/W
Dielectric Strength, Input/Output/Base (50/60 Hz)	4000 Vac (rms)	2500 Vac (rms)
Minimum Insulation Resistance (at 500 Vdc)	1E+9 $\Omega$	
Maximum Capacitance (Input/Output)	10 pF	
Ambient Operating Temperature Range	-30–80 °C (derating applies)	-40–80 °C (derating applies)
Ambient Storage Temperature Range	-40–100 °C	-40–100 °C
Weight (typical)	100 g (3.52 oz)	110 g (3.88 oz)
Input Indication	Green LED	
Encapsulation	Epoxy	
Terminals	1/4 in (6.35 mm); 3/16 in (4.74 mm)	Input: M3.5; Output: M4 (12 A), M6 (25/40 A)
Recommended Terminal Screw Torque Range	N/A	20 lb-in; 10 lb-in
Safety Cover	Yes (IP20)	
Wire Clamp Plates	N/A	Yes
Agency Approvals	UL Recognized (E258297), CSA (168986), CE (per IEC 60947-4-1), RoHS	