

# Description

# Magnecraft™ Solid State Relays

861H

SPST-NO, 8 A to 15 A



Class 1, Division 2 certification for use in hazardous locations. (Temperature code: T5)



Patented Technology

861H Relay

## Description

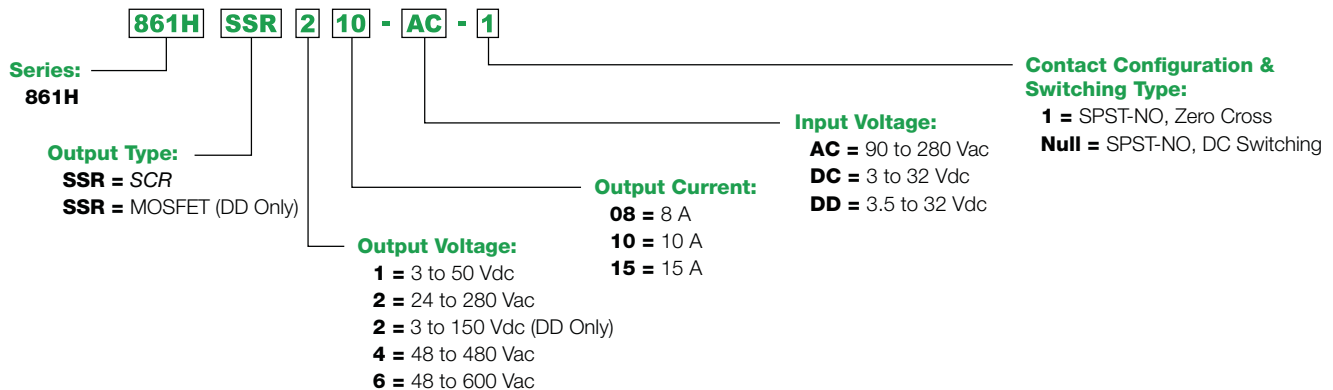
The 861H is a patented solid state relay, in a slim 17.5 mm design, approved for use in hazardous locations.

Feature	Benefit
Class 1, Division 2 certification (1)	UL-approved relay for use in hazardous locations
Solid state circuitry	Involves no moving parts, which extends product life, increases reliability, and enables silent operation
Optically coupled circuit	Provides isolation between input and output circuits
Internal snubber	Helps protect the relay's internal circuit from high voltage transients
Internal heat sink	Provides factory-tested thermal management
Fingersafe™ terminals	Helps prevent an operator from touching live circuits
DIN and panel mounting	Mounts directly onto DIN rail or panel and provides flexibility to accommodate last minute design changes

(1) See page 30 for more information on Class 1, Division 2.

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	3–50 Vdc	SPST-NO	15	861HSSR115-DD
			3–150 Vdc	SPST-NO	8	861HSSR208-DD
Zero cross	SCR (2)	3–32 Vdc	24–280 Vac	SPST-NO	10	861HSSR210-DC-1
			48–480 Vac	SPST-NO	10	861HSSR410-DC-1
			48–600 Vac	SPST-NO	10	861HSSR610-DC-1
		90–280 Vac	24–280 Vac	SPST-NO	10	861HSSR210-AC-1
			48–480 Vac	SPST-NO	10	861HSSR410-AC-1
			48–600 Vac	SPST-NO	10	861HSSR610-AC-1

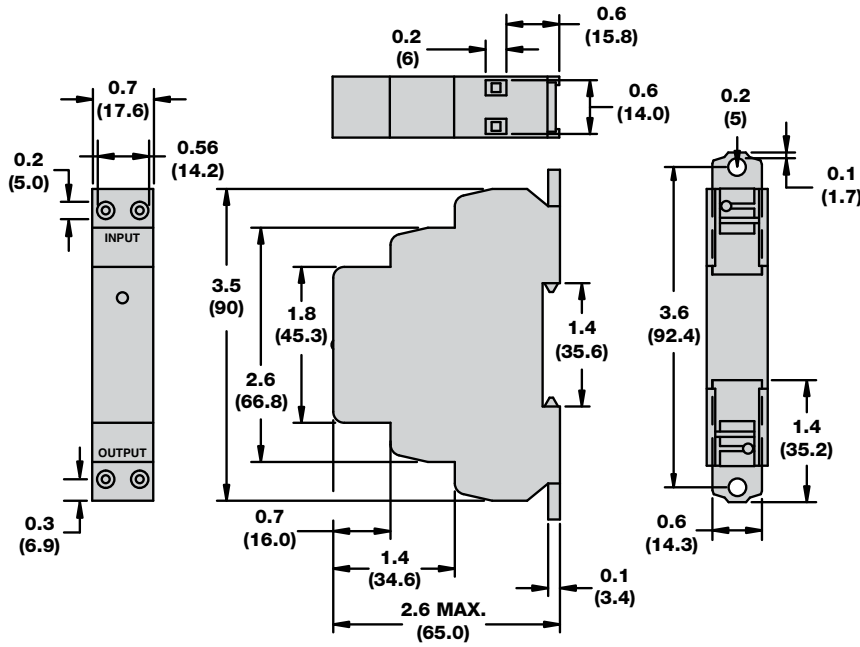
## Part Number Explanation



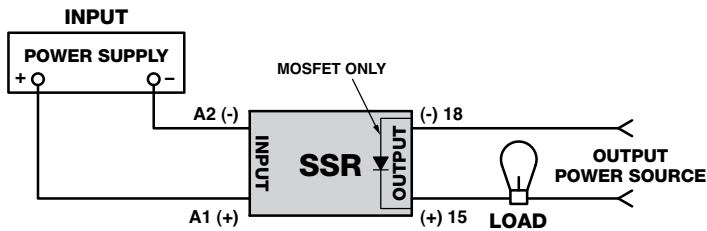
Specifications (UL 508)

Part Number	861SSR***-DD	861SSR***-DC-•	861SSR***-AC-•
<b>Input Characteristics</b>			
Input Voltage Range	3.5–32 Vdc	3–32 Vdc	90–280 Vac
Must Release Voltage	1 Vdc		10 Vac
Nominal Input Impedance	Current regulator		16–25 kΩ
Typical Input Current at 5 Vdc	12 mA	16 mA; 12 mA (861SSR210-DC-4)	12 mA
Reverse Polarity Protection	Yes	Yes	N/A
<b>Output Characteristics</b>			
Switching Device	MOSFET	SCR (2)	
Switching Type	DC switching	Zero cross; Random	
Contact Configuration	SPST-NO	SPST-NO; SPST-NC	
Output Voltage Range	3–150 Vdc	24–480 Vac	
Maximum Rate of Rise Off State Voltage (dv/dt)	8 A: 3–150 V; 15 A: 3–50 V	500 V/us; 350 V/us (861SSR410); 200 V/us (861SSR210-DC-4)	
Output Current Range	8–15 A	10 A (rms)	
Minimum Load Current–Maintain On	20 mA	50 mA	
Non-Repetitive Surge Current (8.3 ms)	8 A: 35 A; 15 A: 50 A	500 A (rms)	
Maximum Overload Current (1 s)	8 A: 17 A; 15 A: 24 A;	24 A (rms)	
Maximum Off State Leakage Current	0.25 mA	10 mA (rms)	
Typical On State Voltage Drop	N/A	1.25 Vac (rms)	
Maximum On State Voltage Drop	0.5 Vdc	1.6 Vac (rms)	
Maximum On State Resistance	40 mΩ	N/A	
Maximum Turn-On Time	5 ms	8.3 ms	
Maximum Turn-Off Time	5 ms	8.3 ms	
Maximum I <sup>2</sup> T for Fusing	N/A	1250 A <sup>2</sup> sec (861SSR210); 850 A <sup>2</sup> sec (861SSR410)	
<b>General Characteristics</b>			
Electrical Life	N/A for solid state relays		
Thermal Resistance (Junction–Case)	8 A: 0.5 °C/W; 15 A: 1.4 °C/W	0.66 °C/W	
Internal Heat Sink	4.0 °C/W		
Dielectric Strength (Input–Output)	2500 V (rms)	4000 V (rms)	
Dielectric Strength (Terminals–Chassis)	2500 V (rms)		
Operating Temperature Range	-30 °C–+ 80 °C (derating applies)		
Storage Temperature Range	-40 °C–+100 °C		
Weight	127.1 g (4.1 oz)		
Input Indication	Green LED		
Terminal Wire Capacity (Input and Output)	14 AWG (2.5 mm <sup>2</sup> ) maximum		
Terminal Screw Torque	7.1 lb-in (0.8 N·m) maximum		
Safety Cover	IP20		
Agency Approvals	Class 1, Division 2 (for hazardous locations); UL Recognized (E317746); RoHS		

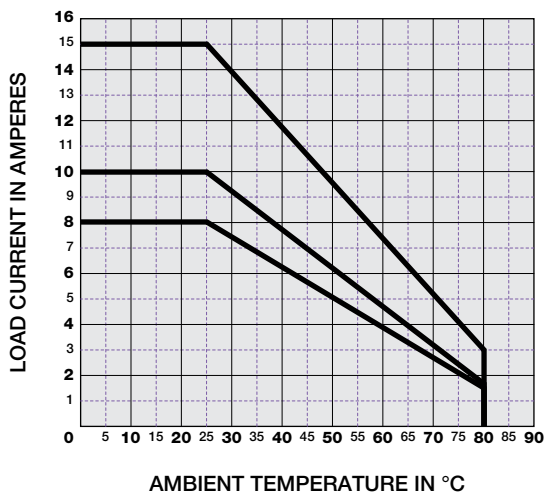
## Dimensions: Inches (Millimeters)



## Wiring Diagram



## De-Rating Curves



**Note:** A minimum spacing of 17.5 mm (0.7 in) between adjacent 861 relays is required in order to achieve the maximum ratings.