

# 861H Class 1, Division 2 Certified Solid State Relay

## GENERAL SPECIFICATIONS



CERTIFIED



CLASS 1 DIVISION 2

Class 1, Division 2 certification  
for use in hazardous locations



OUTPUT CHARACTERISTICS	861HSSR***-DD	861HSSR***-AC-1	861HSSR***-DC-1
Switching Device	MOSFET	SCR (2)	SCR (2)
Switching Type	DC switching	Zero cross	Zero cross
Switching Configuration	SPST-NO	SPST-NO	SPST-NO
Load Voltage Range	3 up to 150 VDC	24 up to 600 VAC	24 up to 600 VAC
Resistive Load Rating (Arms)	8 and 15 A	10 A	10 A
Maximum Zero Turn-On Voltage (Vpk)	N/A	35 Vpk	N/A
Maximum Rate of Rise Off State Voltage (dv/dt)	N/A	200 to 500 V/uS	350 to 500 V/uS
Incandescent Lamp Rating (Arms)	N/A	8 A	8 A
Motor Load Rating (Arms)	N/A	4.5 A	4.5 A
Minimum Load Current to Maintain On	20 mA	50 mA	50 mA
Non-Repetitive Surge Current (1 cycle)	35 to 50 A	500 A	500 A
Maximum Rms Overload Current (1 second)	17 to 24 A	24 A	24 A
Maximum Off State Leakage Current on Output (Rms)	10 mA	10 mA	10 mA
Typical On State Voltage Drop on Output (Rms)	1.25 VDC	1.25 VDC	1.25 VDC
Maximum On State Voltage Drop on output (Rms)	1.6 VDC	1.6 VDC	1.6 VDC
Maximum I <sup>2</sup> t for Fusing (A <sup>2</sup> sec.)	N/A	600 to 1250	600 to 1250
INPUT CHARACTERISTICS			
Input Voltage	3.5 to 32 VDC	90 to 280 VAC	3 to 32 VDC
Must Release Voltage	1 VDC	10 VAC	1 VDC
Nominal Input Impedance	Current Regulator	16-25 Kohms	Current Regulator
Typical Input Current @ 5 VDC	12 mA	12 mA	16 mA
Reverse Polarity Protection on Input	Active Current Limiter	N/A	Active Current Limiter
Input Indication	Green LED	Green LED	Green LED
PERFORMANCE CHARACTERISTICS			
Maximum Turn-On/Turn-Off Time	5 ms	8.3 ms	5 ms
Dielectric Strength (Input to Output)	2500 Vrms	4000 Vrms	2500 Vrms
Dielectric Strength (Terminals to Chassis)	2500 Vrms	2500 Vrms	2500 Vrms
ENVIRONMENT			
Ambient Air Temperature Around the Device	Operation	-30 to 80 °C	-30 to 80 °C
	Storage	-40 to 100 °C	-40 to 100 °C
Safety Cover	IP20	IP20	IP20
MISCELLANEOUS CHARACTERISTICS			
Thermal Resistance J to C Tj=125°C °C/W	1.4 °C/W	0.66 °C/W	0.66 °C/W
Integral Heat Sink °C/W	4.0 °C/W	4.0 °C/W	4.0 °C/W
Maximum Terminal Wire Capacity	14 AWG (2.5 mm <sup>2</sup> )	14 AWG (2.5 mm <sup>2</sup> )	14 AWG (2.5 mm <sup>2</sup> )
Maximum Terminal Screw Torque	7.1 lb-in (0.8 Nm)	7.1 lb-in (0.8 Nm)	7.1 lb-in (0.8 Nm)
Weight	4.1 oz (127.1 g)	4.1 oz (127.1 g)	4.1 oz (127.1 g)

### PART NUMBER EXPLANATION

**861H SSR 2 10 - AC - 1**

**Series:** 861H

**Output Type:**  
 SSR = SCR  
 SSR = MOSFET (DD Only)  
 SSRA = Alternistor Triac

**Output Voltage:**  
 1 = 3 to 50 VDC  
 2 = 24 to 280 VAC  
 2 = 3 to 150 VDC (DD Only)  
 4 = 48 to 480 VAC  
 6 = 48 to 600 VAC

**Output Current:**  
 08 = 8 Amps  
 10 = 10 Amps  
 15 = 15 Amps

**Input Voltage:**  
 AC = 90 to 280 VAC  
 DC = 3 to 32 VDC  
 DD = 3.5 to 32 VDC

**Contact Configuration & Switching Type:**  
 1 = SPST-NO, Zero Cross  
 2 = SPST-NO, Random  
 4 = SPST-NC, Random  
 Null = SPST-NO, DC Switching

## DIMENSIONS

shown in inches (millimeters)



## WIRING DIAGRAM



## DERATING CURVES

A minimum spacing of 17.5 mm between relays is required in order to achieve the respective derating curves.

