



RELAYS & CONTACTORS

SOLID-STATE RELAY MODEL RSSDN

DESCRIPTION

The **Model RSSDN** is a photo-isolated solid-state relay. The 4-32 VDC input voltage allows the relay to be used on analog or digital outputs. While solid-state relays provide reliable switching and long-life operation, careful application is required as excessive temperature, high inrush currents, or induced currents can affect solid-state relay operation.

FEATURES

- *Photo isolation*
- *4000V optical isolation*
- *Zero voltage turn-on*
- *Input status LED*
- *High surge capability*
- *Dual SCR output*



RSSDN



SPECIFICATIONS

Input

Voltage range	4-32 VDC
Input current	Regulated 10 mA
Pick-up voltage	4 VDC
Drop-out voltage	1 VDC
Dielectric strength (input/output/base)	4000 Vrms min
Capacitance (input to output)	8 pF
Reverse voltage protection	Yes (-32 VDC)

Output

Contact	1 Form A, SPST-N.O.				
Current* (continuous)	10A	25A	50A	75A	90A
1-Cycle surge current	150A	300A	750A	1000A	1200A
1-Second surge current	30A	75A	150A	225A	300A
Minimum holding current	50 mA	50 mA	100 mA	100 mA	100 mA

Voltage drop @ rated current

1.6V (max)

Voltage range

48-660 VAC

Over-voltage rating

1200 PIV

Frequency range

47-80 Hz

Off-state leakage

20 mA (max)

@ rated voltage

Turn-on time 1/2 cycle @ 60 Hz

Turn-off time 1/2 cycle @ 60 Hz

Zero voltage switching Yes

Weight 0.22 lb (10g)

Dimensions 2.25"H x 1.75"W x 0.94"D
(5.72 x 4.45 x 2.38 cm)

Agency approvals UL-recognized component,
File #E194577; CE certified

Warranty 1 year

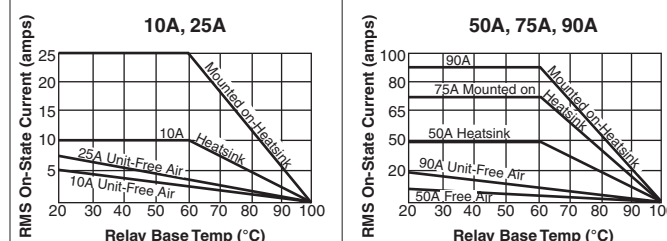
* Relay must be mounted to heat sink for full current ratings.
See Figure 1 below.

WIRING



Observe the polarity of input terminals. Failure to do so may cause damage to the solid-state relays.

FIGURE 1. CURRENT DERATING CURVES





INSTALLATION

- Install solid-state relays in dry, well-ventilated areas away from excessive heat.
- Use #6-32 screws, flat washers, and lock washers to secure mounting on heat sinks.
- Vertical mounting is recommended to allow air to flow unimpeded.
- A small-capacity load may not turn off due to the leakage current present after the solid-state relay has turned off. In this case, use a resistor in parallel with the load to shunt the leakage current.
- When the input signal contains a ripple voltage, the lowest ripple amplitude should exceed the minimum pick-up voltage of 4V.

Heat sinks are required to achieve the full output current rating. The recommended heat sink dimensions and materials are shown in the Table 1 below.

TABLE 1. RECOMMENDED HEAT SINK DIMENSIONS / MATERIALS		
Output Rating	Dimensions in (cm)	Material
10A	12 x 12 x 1/8 (30.5 x 30.5 x 0.3)	Aluminum (black anodized)
25A	15 x 15 x 1/8 (38.1 x 38.1 x 0.3)	Aluminum (black anodized)
50A	15 x 15 x 1/8 (38.1 x 38.1 x 0.3)	Aluminum (black anodized)
75A	17 x 17 x 1/8 (43.2 x 43.2 x 0.3)	Aluminum (black anodized)
90A	17 x 17 x 1/8 (43.2 x 43.2 x 0.3)	Aluminum (black anodized)

It is recommended to use a thermal compound (for example, Kele part number TCC-12) between the base of the solid-state relay and the heat sink for heat dissipation.

APPLICATION INFORMATION

Heater Loads

When using solid-state relays for driving heaters where the load is switched on and off rapidly and continuously, severe thermal stress will result. In such cases, use an solid-state relay at no more than 75% of the rating.

RECOMMENDED HEATER LOADS		
SSR Rating	@ 120 VAC	@ 240 VAC
10A	1 kW	2 kW
25A	2 kW	4 kW
50A	3 kW	6 kW

Lamp Loads

Zero-voltage switching is ideal for driving incandescent lamps since the cold filament will not be subjected to a large inrush current. Using a zero-switched solid-state relay will reduce inrush current and prolong lamp life.

RECOMMENDED LAMP LOADS		
SSR Rating	@ 120 VAC	@ 240 VAC
10A	1 kW	2 kW
25A	2 kW	4 kW
50A	3 kW	6 kW

Solenoid Valves and Contactors

Solid-state relays use high-noise immunity circuitry with a snubber to handle the electrical noise generated by inductive loads.

RECOMMENDED LOADS		
SSR Rating	@ 120 VAC	@ 240 VAC
10A	900W	1800W
25A	2100W	4200W
50A	3800W	7500W

Motor Loads

UL MOTOR LOAD RATINGS (hp)			
SSR Rating	@ 120 VAC	@ 240 VAC	@ 480 VAC
10A	1/2	3/4	3/4
25A	1/2	3/4	3/4
50A	3/4	1-1/2	1-1/2
75A	3/4	5	5
90A	3/4	5	5

ORDERING INFORMATION

MODEL	DESCRIPTION
RSSDN-10A	Solid-state relay, 10A continuous output current*
RSSDN-25A	Solid-state relay, 25A continuous output current*
RSSDN-50A	Solid-state relay, 50A continuous output current*
RSSDN-75A	Solid-state relay, 75A continuous output current*
RSSDN-90A	Solid-state relay, 90A continuous output current*
RSS-CVR	Finger-safe terminal cover

* With customer-supplied heat sinks. Back panels from the Enclosures section of this catalog may be used as heat sinks.