sensata DR45 SERIES DIN Rail Mount AC Output SSR Instruction Manual

Contents

Sensata Technologies

sensata DR45 SERIES DIN Rail Mount AC Output SSR

Product Information

The DR45 Series is an AC single-phase output DIN rail mount solid-state relay (SSR) designed for industrial applications. It offers reliable control of heating elements, motors, and other resistive loads. The compact design allows for easy installation on a DIN rail.

Ordering Options

The DR45 Series has various ordering options. Control voltage 18-52 VAC/VDC is available upon request.

Wiring Diagrams and Wire Size

The SSR can handle a variety of wire sizes and types, as specified in Table 1 of the installation guide. The recommended wire size for solid/stranded wires for input is 30 AWG (0.05 mm2) minimum to 12 AWG (3.3 mm2) maximum, while for output is 1 x 18 AWG (1 mm2) minimum to 1 x 8 AWG (10 mm2) maximum or 2 x 8 AWG (10 mm2) maximum. The terminal type and wire pull-out strength are also specified in Table 1.

Derating Curves

Derating curves for the DR45 Series are included in the installation guide to ensure proper operation under different ambient temperature conditions.

Recommended Accessories

Table 2 provides a list of recommended accessories that can be used with the DR45 Series, including connectors, ID markers, and strips.

Product Usage Instructions

Before installing the DR45 Series SSR, read the installation guide carefully and make sure you have all the necessary tools and accessories.

Installation Steps

1. Disconnect power before installation to prevent electrical shock or damage.
2. Install the DR45 Series SSR on a DIN rail by snapping it onto the rail. Make sure the SSR is securely in place.
3. Wire the input and output terminals according to the wiring diagrams in the installation guide. Proper polarity must be observed for the DC control power supply, with terminal +3/A1 being positive with respect to terminal -4/A2.
4. Make sure all wiring connections are secure and tight. Use the recommended wire sizes and accessories.
5. Connect the load to either terminal 1/L1 or terminal 2/T1.
6. Apply power and test the SSR for proper operation. Refer to the derating curves for proper operation under different ambient temperature conditions.
   If you have any questions or concerns about the installation or usage of the DR45 Series SSR, contact Sensata Technologies customer support through the provided contact information.

ABOUT COMPANY

- Sensta | Crydom DR45 Series Solid State Relays were developed to offer the advantages of semiconductor switching technology in a standard 45 mm industrial package. Quick and easy installation is coupled with low drive power requirements and an efficient and reliable power SCR output. This compact new design offers up to 60 Amps in ambient temperatures of 40ºC.
- Read all installation instructions before using your DIN Rail Mount Solid State Relay (SSR) and refer to the product datasheet for more information. For assistance, please contact Tech Support.

INSTALLATION INSTRUCTIONS

- **Mounting on DIN Rail**
  - Locate rail and align with non moveable end of DR45 DIN clip.
  - Using reasonable force, push DR45 in the direction of the arrow (as shown in fig.1).
  - For removal pull release tag in direction of arrow using blade of screwdriver and pull it away from DIN rail.

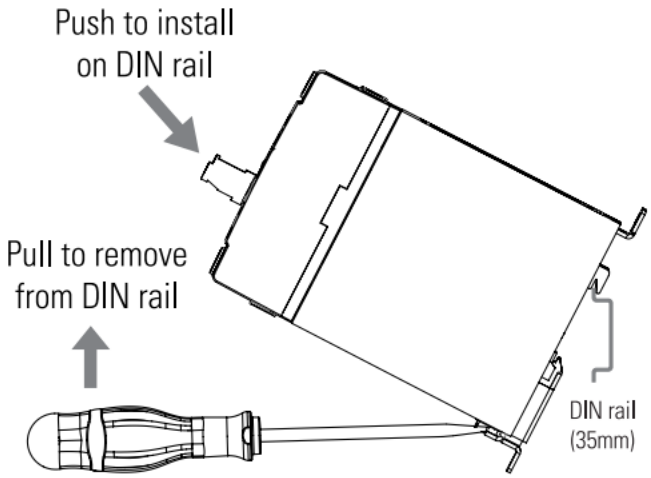


fig. 1 SSR mounted on DIN rail

- **Mounting on Panel**

- Locate the panel section on which the DR45 SSR will be mounted on (as shown in fig.2)
- DIN clip includes tabs for this type of mounting. Tab holes have a diameter of 4.5 mm. You will need three screws (not included) no larger than that to mount the SSR onto panel.
- Align SSR tabs with panel surface and screw both top and bottom sides. Recommended torque is 12 in-lbs (1.36 Nm).

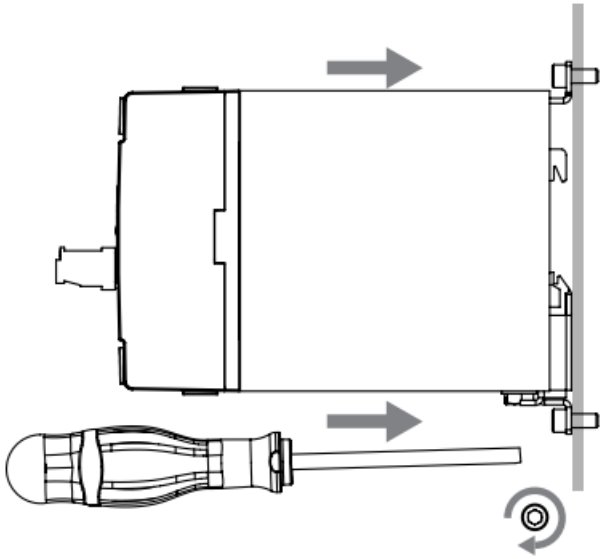


fig. 2 SSR mounted on Panel Mount

- **Wiring Instructions**
  - Recommended wire sizes as shown in TABLE 1
  - Maximum terminal screw torque input terminal 5 lb-in (0.5 Nm) (screw terminal only)
  - Maximum terminal screw torque load terminal 18-20 lb-in (2.0-2.2 Nm)
  - If multiple units are installed be sure to follow derating curves

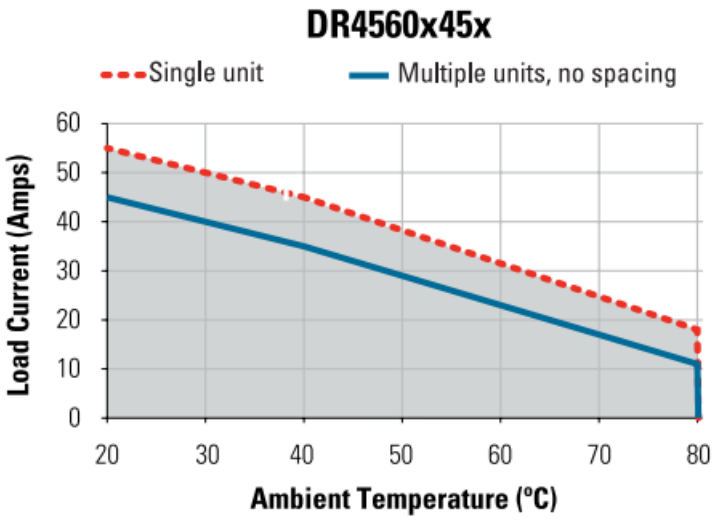
    WARNING! Latching system could be damaged if product is removed incorrectly out of the DIN rail.

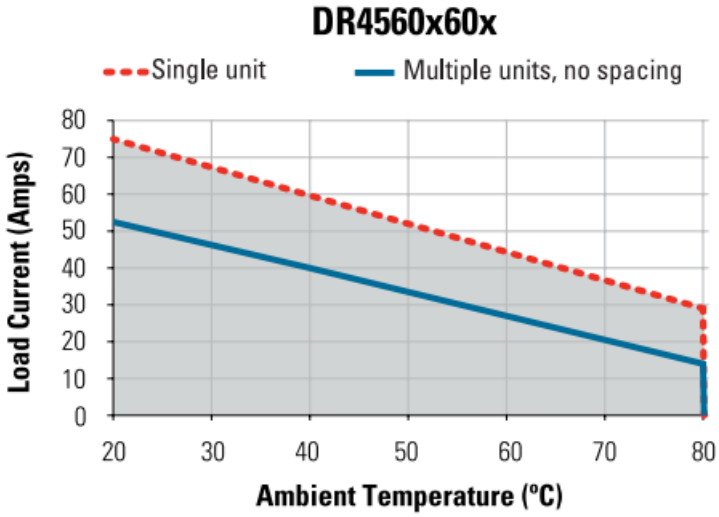
SPECIFICATION

TABLE 1. Wire Size & Pull Out Strenght			
Terminal Type		**Recommended Wire Size (Solid / Stranded)**	**Wire Pull-Out Strength (lb)[N]***
Output		1 x 18 AWG (1 mm2) [minimum]	20 [88]
		1 x 8 AWG (10 mm2) [maximum]	90 [400]
		2 x 8 AWG (10 mm2) [maximum]	80 [355]
		1 x 3 AWG (26.67 mm2) [maximum]	90 [400]
Input	**Screw**	30 AWG (0.05 mm2) [minimum]	4.5 [20]
		12 AWG (3.3 mm2) [maximum]	30 [133]
	Spring	26 AWG (0.13 mm2) [minimum]	5 [22]
		12 AWG (3.3 mm2) [maximum]	5 [22]

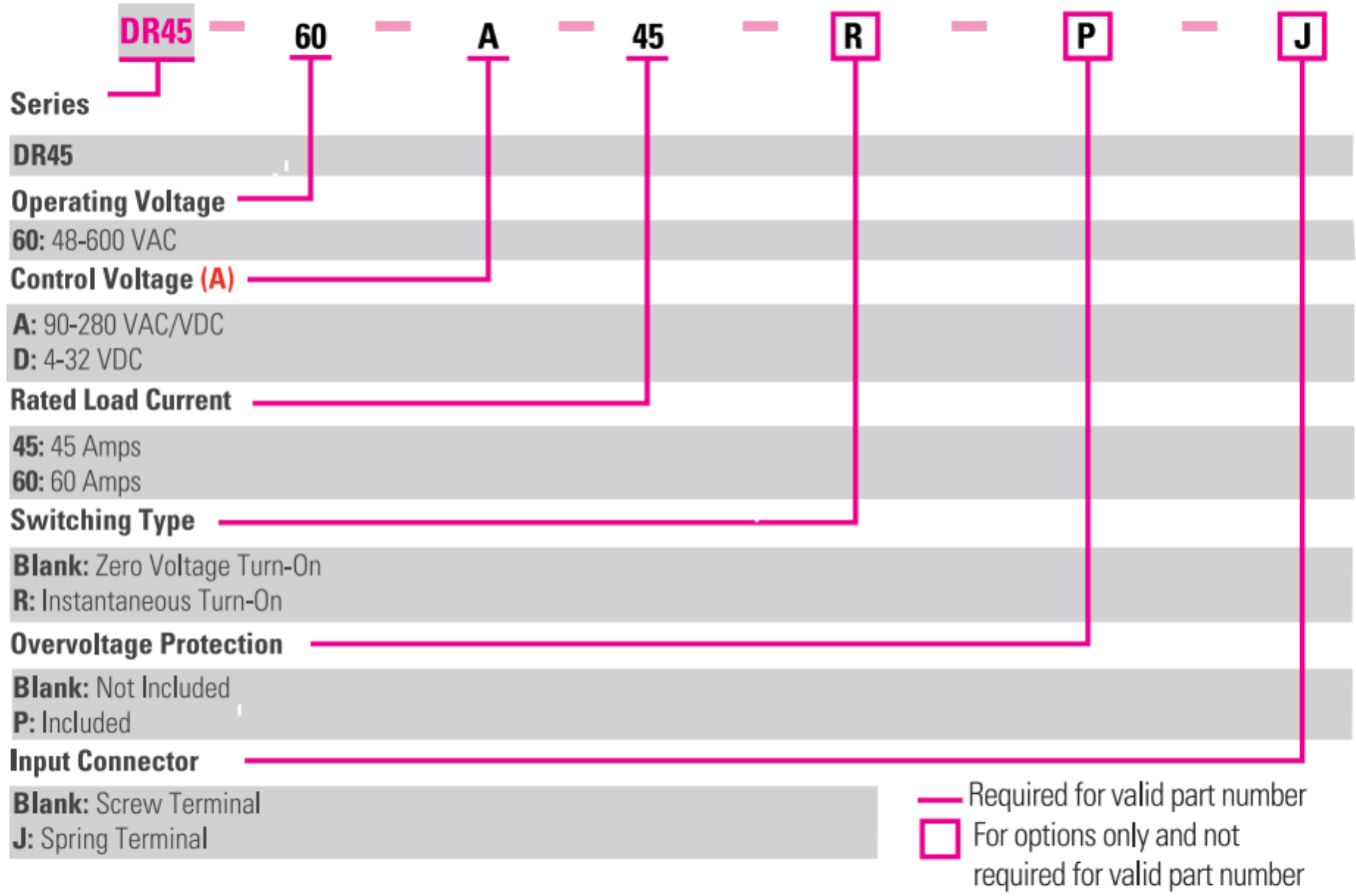
Tests performed on Stranded wire

DERATING CURVES

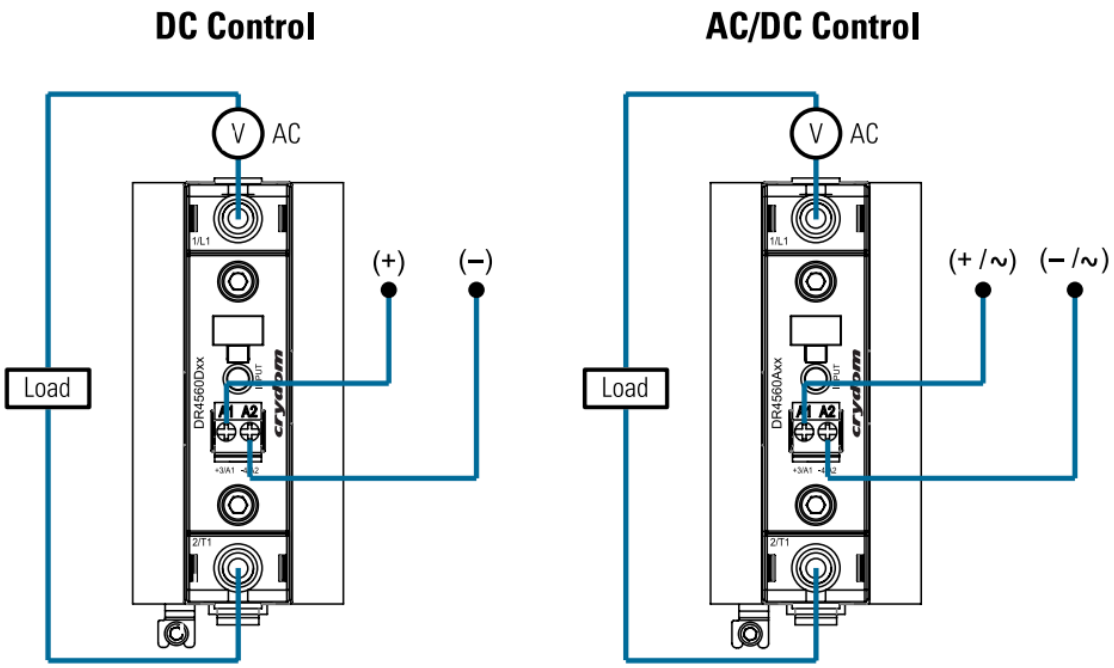




ORDERING OPTIONS

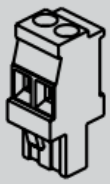
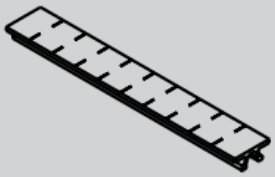


WIRING DIAGRAMS



Important Considerations

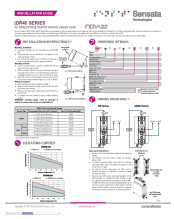
- Be sure to use input and output voltages within operating ranges.
- LED indicates only input status. It does not represent output status.
- To achieve maximum ratings, there must be a minimum spacing of 0.89 in (22.5 mm) between the devices in free air (as shown in fig.2).
- For optimal thermal performance the SSR must be installed vertically on a sidewall to maximize natural convection air flow.
- Protective earth (PE) screw type recommended is 10-32 UNC standard, not provided with SSR. Through the use of a DIN rail ground (protective conductor) terminal block, the DIN rail itself can be used as the grounding bus bar. In this case, the zinc plated steel material used for the DIN rail clip of DR45 models, permits a secure path to ground and avoid the need of a further PE connection (see fig.3).

TABLE 2. Recommended Accessories	
 Connectors	 ID Marker
CP201 Screw Terminal CP202 Spring Terminal	CNLB Blank Strips CNLN Numbered 1 to 10 Strips CNL2 Numbered 11 to 20 Strips

GENERAL NOTES

- Control voltage 18-52 VAC/VDC is available upon request.
- Load can be wired to either terminal 1/L1 or terminal 2/T1. Proper polarity must be observed all the time for the DC control power supply, with terminal +3/A1 being positive with respect to terminal -4/A2.

Documents / Resources

	sensata DR45 SERIES DIN Rail Mount AC Output SSR [pdf] Instruction Manual DR45 SERIES DIN Rail Mount AC Output SSR, DR45 SERIES, DIN Rail Mount AC Output SSR, Rail Mount AC Output SSR, Mount AC Output SSR, AC Output SSR, Output SSR, SSR

References

- Sensata Technologies: Sensing is What We Do