Watlow® SERIES CZR Solid State Relay Offers a Compact, Versatile Mercury-Free Solution

The SERIES CZR solid state relay from Watlow® provides a low-cost, highly compact and versatile solid state option for controlling electric heat. With DIN-rail and back panel mounting standard on every controller, the CZR allows for simple and quick installation.

The extensive capabilities of the SERIES CZR include single-phase, 18 to 42 ampere zero-cross switching up to 600VAC (see output rating curve). The unique integrated design removes the guesswork associated with selecting a proper heat sink and precise terminations for the application.

This controller holds many agency approvals and is ideal for applications that require UL®, CSA and CE approvals. The SERIES CZR is available in VAC/VDC input contactor versions. All configurations are model number dependent and factory selectable.

SERIES CZR is reliably backed by a two-year warranty from Watlow.

Features and Benefits

DIN-rail or standard panel mount
• Provides versatile, quick and low-cost installation

Compact size
• Reduces panel space and cost

Touch-safe terminals
• Increases installer and operator safety

Mercury free
• Offers environmentally safe solution

Faster switching with solid state
• Saves energy and extends heater life

UL® 508 recognized, CSA LR700195 certified and CE 60950
• Assures safety

Back-to-back SCR design
• Offers rugged design for different application environments

WATLOW®
Powered by Possibility

Specifications

Control Mode
- Zero-cross fired contactor output

Operator Interface
- Command signal input
- Input signal indication LED

Input Command Signal
- Input Type DC1
  - Turn on voltage 4VDC max., turn off voltage 1VDC min.
  - Input current: dc typically 10mA @ 4VDC,13mA @ 32VDC
- Input Type AC1
  - 90 to 140Vrms, must turn on at 90VAC, must turn off at 10VAC
  - Input current: 15mA typical @ 120VAC

Output Voltage
- 24V; 24VAC min. to 280VAC max.
- 48V; 48VAC min. to 530VAC max.
- Off state leakage 10mA at 77°F (25°C) max. for 24 through 480VAC models
- Holding current: 250mA max.

Output Amperage
- See output rating curve. Ratings are into a resistive heater load.

Output Amperage Rating

Model	18	24	34	42
Maximum Surge Current 16.6 mSec	625	250	625	1000
Maximum I²t for fusing	1620	260	1620	4150

Agency Approvals
- Class II construction
- UL® 508 recognition, File #E73741 and CSA File LR 700195
- CE per 2006/95/EC Low Voltage Directive
- 2011/65/EU RoHS

Output Terminals
- Compression type
- For 18A models:
  - Max. wire size 3.0 mm (10 AWG), torque to 0.6Nm (5.3 in. lbs)
- For 24 to 42A models:
  - Max. wire size 16 mm (6 AWG stranded) torque to 1.5-1.7Nm (13-15 in. lbs)

Operating Environment
- Up to 176°F (80°C). See output rating curves for your application.
- 0 to 90% RH (relative humidity), non-condensing
- Insulation tested to 3,000 meters
- Units are suitable for "pollution degree 2"
- Cycle time should be less than 3 seconds

Mounting
Options include DIN-rail or standard back panel mounting.
- The DIN-rail specification: DIN EN 50022, 1.38 in. x 0.30 in. (35 mm x 7.5 mm)
- Min. clipping distance: 1.37 in. (34.8 mm)
- Max. clipping distance: 1.39 in. (35.3 mm)
- Mount cooling fins vertical

Weight/Dimensions
- 9.2 oz (260g)
- 24 to 42A models: 3.95 in. (100 mm) high x 1.75 in. (45 mm) wide x 4.3 in. (109 mm) deep
- 18A models: 3.95 in. (100 mm) high x 0.89 in. (22.6 mm) wide x 3.9 in. (99 mm) deep

Ordering Information

Part Number

①	② Control Mode	③ ④ Output Amperage	⑤	⑥ ⑦ Output Voltage	⑧	⑨ ⑩ ⑪ Input Type (Contactor)	⑫
C	Z –	–	A		V –		0

②	Control Mode
Z =	Zero cross

③ ④	Output Amperage
18 =	18A
24 =	24A
34 =	34A
42 =	42A

⑥ ⑦	Output Voltage
24 =	24 to 280VAC
48 =	48 to 530VAC

⑨ ⑩ ⑪	Input Type (Contactor)
DC1 =	4 to 32VDC
AC1 =	90 to 140VAC
Note: Do not use the AC1 input type with temperature controller outputs that include an AC snubber filter. This could cause the SERIES CZR to stay full on.	

Output Rating Curve

Maximum Ambient Temperature °F

CZ42
CZ34
CZ24
CZ18

Current (Amps)

Maximum Ambient Temperature °C