

# SERIES CZR

## Watlow® SERIES CZR Solid State Relay Offers Compact Design Providing Versatile Solid State Option

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 50 ampere zero-cross and random 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

- Versatile, quick and low-cost installation

#### Compact size

- Reduces panel space; less cost

#### Touch-safe terminals

- Increases safety for installer and operator

#### Mercury free

- Environmentally safe

#### Faster switching with solid state

- Saves energy and extends heater life

#### UL® 508 recognized, CSA LR700195 certified and CE 60950

- Applications requiring agency approval

#### Back-to-back SCR design

- Rugged design



ISO 9001



Registered Company  
Winona, Minnesota USA



WIN-CZR-0909

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## 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
- Input Type AC2
  - 18 to 36VAC input, must turn on at 18VAC, must turn off at 10VAC
  - Input current: 10mA typical @ 24VAC

### Output Voltage

- 24V; 24VAC min. to 280VAC max.
- 480V; 48VAC min. to 530VAC max.
- 600V; 48VAC min. to 660VAC max.
- Off state leakage
  - 1mA at 77°F (25°C) max. for 600VAC models; 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	50
Maximum Surge Current 16.6 mSec	625	250	625	1000	1200
Maximum I <sup>2</sup> t for fusing	1,620	260	1620	4150	6000

### Agency Approvals

- Class II construction
- UL® 508 recognition, File #E73741 and CSA File LR 700195
- 73/23/EEC CE Low Voltage Directive

### 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 50A models:
  - Max. wire size 16.0 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, non-condensing
- Insulation only 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.

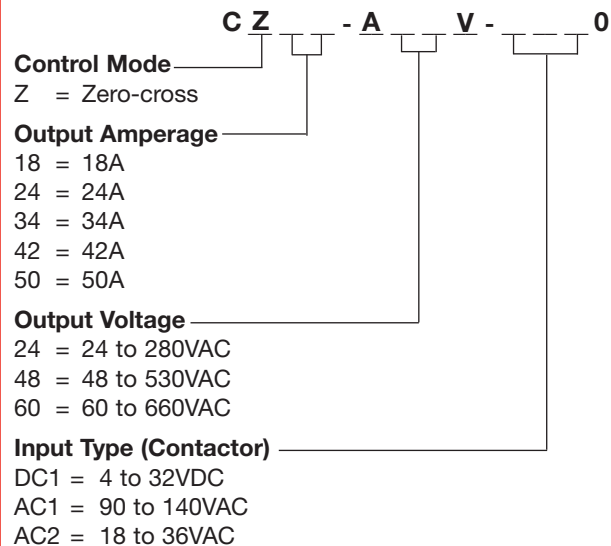
- The DIN-rail specification: DIN EN 50022, 1.38 in. x 0.30 in. (35 mm x 7.5 mm)
- Min. clipping distance: 1.37 in. (34.8 mm)
- Max. clipping distance: 1.39 in. (35.3 mm)
- Mount cooling fins vertical

### Weight/Dimensions

- 260g (9.2 oz)
- 24 to 50A 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

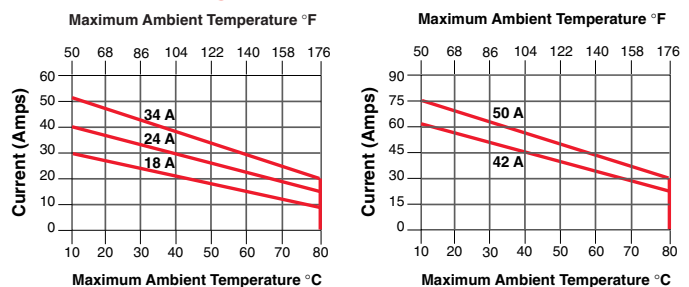
## Ordering Information

### SERIES CZR



**Note:** Do not use the AC1 and AC2 input type models with temperature control outputs that include an AC snubber filter. This could cause the CZR to stay full on.

## Output Rating Curves



To be automatically connected to the nearest North American Technical Sales Office:

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