

## Compact Design Provides Versatile Solid State Option

The SERIES CZR solid state contactor 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 control, the CZR allows for simple and quick installation.

The extensive capabilities of the SERIES CZR include single-phase, 18 to 50 amp zero-cross and random switching up to 600V~(ac) (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. SERIES CZR contactors are available in V~(ac/dc) input contactor versions. All configurations are model number dependent and factory selectable.

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

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Your Authorized Watlow Distributor is:



### 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-0907

## 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 4V=(dc) max., turn off voltage 1V=(dc) min.
  - Input current: dc typically 10mA @ 4V=(dc), 13mA @ 32V=(dc)
- Input Type AC1
  - 90 to 140Vrms, must turn on at 90V~(ac), must turn off at 10V~(ac)
  - Input current: 15mA typical @ 120V~(ac)
- Input Type AC2
  - 18 to 36V~(ac) input, must turn on at 18V~(ac), must turn off at 10V~(ac)
  - Input current: 10mA typical @ 24V~(ac)

### Output Voltage

- 24 volt; 24V~(ac) min. to 280V~(ac) max.
- 480 volt; 48V~(ac) min. to 530V~(ac) max.
- 600 volt; 48V~(ac) min. to 660V~(ac) max.
- Off state leakage
  - 1mA at 25°C (77°F) max. for 600V~(ac) models; 10mA at 25°C (77°F) max. for 24 through 480V~(ac) 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	1,000	1,200
Maximum I <sup>2</sup> t for fusing	1,620	260	1,620	4,150	6,000

### 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 18 amp models:
  - Maximum wire size 3.0 mm (10 AWG), torque to 0.6Nm (5.3 in. lbs)
- For 24 to 50 amp models:
  - Maximum wire size 16.0 mm (6 AWG stranded) torque to 1.5-1.7Nm (13-15 in. lbs)

### Operating Environment

- Up to 80°C (176°F). See output rating curves for your application.
- 0 to 90 percent 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, 35 mm x 7.5 mm (1.38 in. x 0.30 in.)
- Minimum clipping distance: 34.8 mm (1.37 in.)
- Maximum clipping distance: 35.3 mm (1.39 in.)
- Mount cooling fins vertical

## Weight/Dimensions

- 260g (9.2 oz)
- 24 to 50 amp models: 100 mm (3.95 in.) high x 45 mm (1.75 in.) wide x 109 mm (4.3 in.) deep
- 18 amp models: 100 mm (3.95 in.) high x 22.6 mm (0.89 in.) wide x 99 mm (3.9 in.) deep

## Ordering Information

### SERIES CZR

**C**      **- A**      **V -**      **0**

#### Control Mode

- R = Random
- Z = Zero-cross

#### Output Amperage

- 18 = 18 amp
- 24 = 24 amp
- 34 = 34 amp
- 42 = 42 amp
- 50 = 50 amp

#### Output Voltage

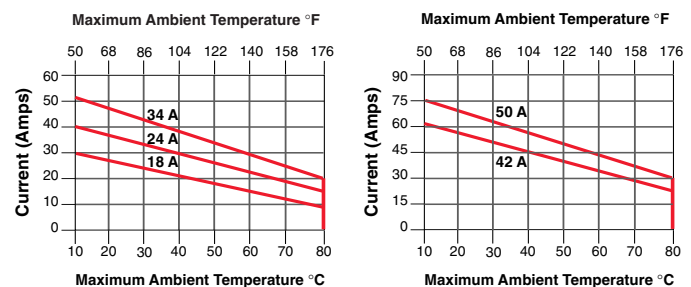
- 24 = 24 to 280V~(ac)
- 48 = 48 to 530V~(ac)
- 60 = 60 to 660V~(ac)

#### Input Type (Contactor)

- DC1 = 4 to 32V=(dc)
- AC1 = 90 to 140V~(ac)
- AC2 = 18 to 36V~(ac)

**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 and Sales Office:

**1-800-WATLOW2 • www.watlow.com • info@watlow.com**

**International Technical and Sales Offices:** Australia, +61-3-9335-6449 • China, +86-21-3950-9510 • France, +33 (0) 3073-2425 • Germany, +49 (0) 7253-9400-0 • Italy, +39 (0) 2 458-8841 • Japan, +81-3-3518-6630 • Korea, +82-2-575-9804 • Malaysia, +60-3-7980-7741 • Mexico, +52 (442) 217-6235 • Shanghai, +86-21-3950-9504 • Singapore, +65-6777-1266 • Spain, +34 91 675 1292 • Sweden, +46 35-27-11-66 • Taiwan, +886-7-288-5168 • United Kingdom, +44 (0) 115-964-0777