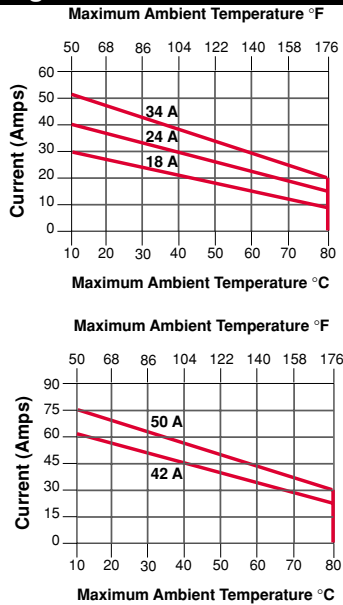


## Output Rating Curves



# Series CZR

## Solid State Contactor

### User's Manual

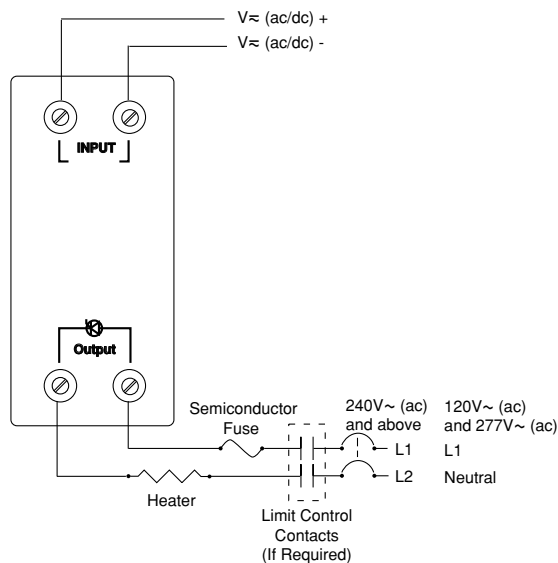


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Winona, Minnesota USA 55987-5580  
Phone: +1 (507) 454-5300, Fax: +1 (507) 452-4507  
Internet: <http://www.watlow.com>

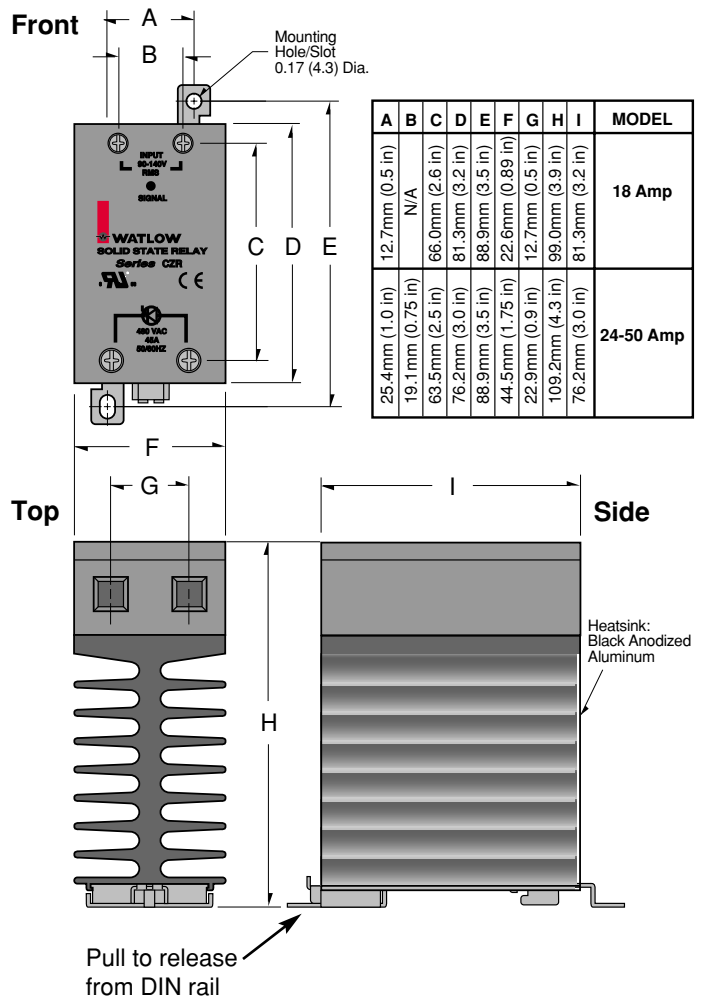
Printed on Recycled Paper  
10% Postconsumer Waste

## Wiring

Model number dependent



## Unit Dimensions



## Warnings

- Wiring must conform to National Electric Code (NEC) safety standards, as well as locally applicable codes. Failure to do so could result in death or personal injury.
- Wiring examples show L2 in 240V~ (ac) or 480~ (ac) configuration. In 120V~ (ac) or 277V~ (ac) applications, L2 is neutral and must not be fused or switched. Failure to follow this guideline could result in death or personal injury.
- Installation and service by qualified personnel only. Failure to do so could result in death or personal injury.
- Hot surface, do not touch heat sink. Failure to follow this guideline could result in personal injury.

Mount cooling fins vertical ↑

## Specifications (1992)

### Control Mode

- Zero cross or random fired contactor output

### Operator Interface

- Command signal input
- Input signal indication LED

### Input Command Signal

- Input Type DC1
  - Turn ON voltage 4V<sub>DC</sub> max., turn OFF voltage 1V<sub>DC</sub> min.
  - Input current: DC typ. 10mA @ 4V<sub>DC</sub>, 13mA @ 32V<sub>DC</sub> (dc)
- Input Type AC1
  - 90-140Vrms, must turn ON at 90 V<sub>AC</sub>, must turn OFF at 10V<sub>AC</sub>
  - Input current: 15mA typical @ 120V<sub>AC</sub> (ac)
- Input Type AC2
  - 18 to 36 V<sub>AC</sub> input, must turn ON at 18V<sub>AC</sub>, must turn OFF at 10V<sub>AC</sub>
  - Input current: 10mA typical @ 24V<sub>AC</sub> (ac)

### Output Voltage

- 24 volt; 24V<sub>AC</sub> min. to 280V<sub>AC</sub> max.
- 480 volt; 48V<sub>AC</sub> min. to 530V<sub>AC</sub> max.
- 600 volt; 48V<sub>AC</sub> min. to 660V<sub>AC</sub> max. (not available on 18 amp version)
- Off State Leakage
  - 1mA at 25°C/77°F max. for 600V<sub>AC</sub> models; 10mA at 25°C/77°F max. for 24 through 480V<sub>AC</sub> models
- Holding current: 250mA max.

### Output Amperage

- See output rating curve on page 1. Ratings are into a resistive heater load.

Output Amperage	18	24	34	42	50
Max. surge current 16.6mSec	625	250	625	1000	1200
Max. I <sup>2</sup> t for fusing	1620	260	1620	4150	6000

### Agency Approvals

- Class II construction
- UL 508 recognition file number E73741
- CSA file LR 700195
- 73/23/EEC CE Low Voltage Directive
- VDE 0805, registration number 126921
  - License number 136037 for 18 amp models
  - License number 130515 for 24 to 50 amp models

### Output Terminals

- Compression type
- For 18 amp models:
  - Maximum wire size 3.0mm (10 AWG), torque to 0.6Nm (5.3 in. lbs.)
- For 24 to 50 amp models:
  - Maximum wire size 16.0mm (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% 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,
  - 35mm x 7.5mm.
- Min. clipping distance:
  - 34.8mm (1.37 in).
- Max. clipping distance:
  - 35.3mm (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

**Specification subject to change without notice.**

## Ordering Information (1993)

Part Number **C** **A** **V** **0**

### Control Mode

- R = Random
- Z = Zero cross

### Output Amperage

- 18 = 18 amp (not available with 600V output)
- 24 = 24 amp
- 34 = 34 amp
- 42 = 42 amp
- 50 = 50 amp

### Output Voltage

- 24 = 24 to 280V<sub>AC</sub> (ac)
- 48 = 48 to 530V<sub>AC</sub> (ac)
- 60 = 60 to 660V<sub>AC</sub> (ac) (not available with 18A model)

### Input Type (Contactor)

- DC1 = 4 to 32V<sub>DC</sub> (dc)
- AC1 = 90 to 140V<sub>AC</sub> (ac)
- AC2 = 18 to 36V<sub>AC</sub> (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.**

### Recommended Semiconductor Fuses

CZR Model	Fuse*	Fuse Holder
18A	17-8025	17-5110
24A	17-8030	17-5114
34A	17-8040	17-5114
42A	17-8063	17-5122
50A	17-8063	17-5122

\*Recommended at base rating.

## Warranty

The Series CZR is warranted to be free of defects in material and workmanship for 24 months after delivery to the first purchaser for use, providing that the units have not been misapplied. Since Watlow has no control over their use, and sometimes misuse, we cannot guarantee against failure. Watlow's obligations hereunder, at Watlow's option, are limited to replacement, repair or refund of purchase price, and parts which upon examination prove to be defective within the warranty period specified. This warranty does not apply to damage resulting from transportation, alteration, misuse, abuse or improper fusing.

**TOTAL  
CUSTOMER  
SATISFACTION**

## Returns

1. Call Customer Service: 507-454-5300, or fax: 507-452-4507, for a Return Material Authorization (RMA) number before returning any item for repair.
2. Make sure the RMA number is on the outside of the carton, and on all paperwork returned. Ship on a freight prepaid basis.
3. A restocking charge of 20% of the net price applies for all returned stock controls and accessories in like new condition and within 120 days after shipment. Non-stock and modified stock items are not returnable.
4. If the unit is unrepairable, it will be returned to you with a letter of explanation. Repair costs will not exceed 50% of the original cost.

# Declaration of Conformity

## Series CZR

Watlow Controls

1241 Bundy Boulevard

Winona, Minnesota 55987 USA



Declares that the following product: **English**  
Designation: **Series CZR**  
Model Number(s): (CR or CZ) (18, 24, 34, 42 or 50)- (A) (24, 48 or 60) (V)- (AC10, AC20 or DC10)  
Classification: Solid State Contactor  
Rated Voltage: 24 to 660V~ (ac)  
Rated Frequency: 50/60 Hz  
Meets the essential requirements of the following European Union Directive(s) using the relevant section(s) of the normalized standards and related documents shown:

### **73/23/EEC Low-Voltage Directive**

**EN 60950 Safety of Information Technology Equipment Including Electrical Business Equipment**

Erklärt, daß das folgende Produkt: **Deutsch**  
Beschreibung: Serie CZR  
Modellnummer(n): (CR oder CZ) (18, 24, 34, 42 oder 50)- (A) (24, 48 oder 60) (V)- (AC10, AC20 oder DC10)  
Klassifikation: Halbleiterschütz  
Nennspannung: 24 bis 660V~ (ac)  
Nennfrequenz: 50/60 Hz  
Erfüllt die wichtigsten Normen der folgenden Anweisung(en) der Europäischen Union unter Verwendung des wichtigsten Abschnitts bzw. der wichtigsten Abschnitte der normalisierten Spezifikationen und der untenstehenden einschlägigen Dokumente:

### **72/23/EEC EWG Niederspannungsrichtlinie**

**EN 60950 Sicherheit von Informationstechnikprodukten einschließlich elektrischer Büroausrüstungen**

Déclare que le produit suivant : **Français**  
Désignation : Série CZR  
Numéro(s) de modèle(s): (CR ou CZ) (18, 24, 34, 42 ou 50)- (A) (24, 48 ou 60) (V)- (AC10, AC20 ou DC10)  
Classification : Contacteur à semi-conducteur  
Tension nominale : 24 à 660V~ (ac)  
Fréquence nominale : 50/60 Hz  
Conforme aux exigences de la (ou des) directive(s) suivante(s) de l'Union Européenne figurant aux sections correspondantes des normes et documents associés ci-dessous :

### **73/23EEC Directive sur les basses tensions**

**EN 60950 Sécurité du matériel informatique, matériel électrique de gestion inclus**

Declara que el producto siguiente: **Español**  
Designación: Serie CZR  
Números de modelo: (CR ó CZ) (18, 24, 34, 42 ó 50)-(A)(24, 48 ó 60) (V)- (AC10, AC20 ó DC10)  
Clasificación: Contactor de estado sólido  
Tensión nominal: 24 a 660V~ (ac)  
Frecuencia nominal: 50/60 Hz  
Cumple con los requisitos esenciales de las siguientes Directivas de la Unión Europea, usando las secciones pertinentes de las reglas normalizadas y los documentos relacionados que se muestran:

### **73/23/EEC Directiva de Baja Tensión**

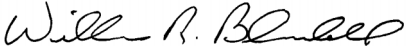
**EN 60950 Seguridad de equipos de tecnología de la información, entre los que figuran equipos eléctricos comerciales**

William R. Blaisdell  
Name of Authorized Representative

Winona, Minnesota USA  
Place of Issue

Plant Manager  
Title of Authorized Representative

August, 2001  
Date of Issue

  
Signature of Authorized Representative