

# BIMETALLIC OVERLOAD RELAYS



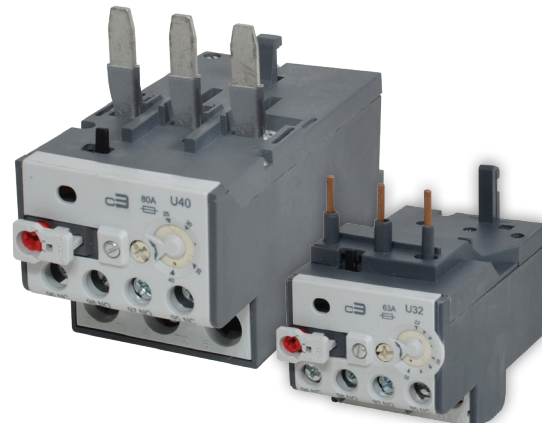
## SERIES 320 PRODUCT PROFILE

c3controls **Series 320 Overload Relays** provide thermal Trip Class 10 overload protection for single and three phase motors, and phase loss protection for three phase motors. Other features like IP20 guarded terminals with dual terminal markings, integral stop button, and direct mounting will help you reduce your total installed costs and enhance the features and performance of your equipment.

### DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE

|                                        |                                                                                                                                                                                             |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ✓ <b>Proven</b>                        | Our Series 320 Overload Relays are UL Listed and CE marked meeting global standards requirements.          |
| ✓ <b>Reliability</b>                   | Trip Class 10 for reliable and accurate protection against overload conditions. Trips within 10 seconds when carrying a current of 720%.                                                    |
| ✓ <b>Trip Indication</b>               | Visible trip indication to provide clear indication of what device tripped, simplifies troubleshooting in panels.                                                                           |
| ✓ <b>Visible Markings</b>              | High visibility labels and markings; dual IEC and NEMA terminal markings for ease of wiring anywhere in the world.                                                                          |
| ✓ <b>Modular Design</b>                | Modular design allows Series 320 Overload Relays to be direct mounted onto Series 300 Contactors.                                                                                           |
| ✓ <b>Visible Certifications</b>        | Our product certifications and electrical ratings are clearly marked on the outside of the devices for easy reference during installation.                                                  |
| ✓ <b>Added Safety</b>                  | IP20 guarded terminals with dual terminal markings prevent accidental contact with live parts.                                                                                              |
| ✓ <b>36-Month Warranty*</b>            | Every product is backed by our 36-Month Warranty—giving you confidence in the quality, reliability, and performance of components designed for the most demanding applications.             |
| ✓ <b>Guaranteed Same-Day Shipping*</b> | Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day. |
| ✓ <b>Advantage Pricing</b>             | Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.                |

\*See c3controls Terms & Conditions



### MULTIPLE FUNCTION ADVANTAGES

#### High Fault SCCR

- High fault short circuit current rating of 100kA @ 480V and 600V with Class J fuses, provides safety and reliability in high fault applications.

#### Adjustable Current Setting

- Full load current adjustment ratio of approximately 1:1.5 enables overload relay to be set to exact FLA of motor.

#### Phase Loss Sensitivity

- Single phase sensitivity to protect motors against damaging phase loss conditions.

#### Selectable Reset Mode

- Manual or automatic reset and test modes, and stop button all in a single device for convenient control circuit wiring.

#### Seamless Compatibility

- Series 320-B2 Overload Relays direct mount onto all Series 300 Non-Reversing and Series 310, 9A to 25A AC/DC, Reversing Contactors and Series 320-B1 Overload Relays direct mount onto all Series 300/310 Miniature Non-Reversing and Reversing Contactors.

#### Trip Test Function

- Trip test function standard on all c3controls Series 320-B2 to 320-B5, allows for easier installation, testing, and troubleshooting.



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# BIMETALLIC OVERLOAD RELAYS

## SPECIFICATIONS

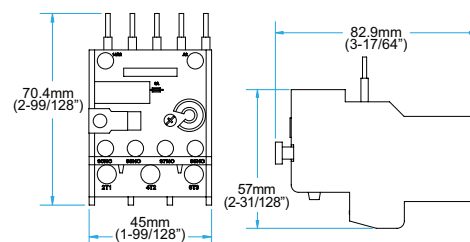
|                                                                                                                                     |         | 320-B1                   | 320-B2    | 320-B3      | 320-B4    | 320-B5   |
|-------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------|-----------|-------------|-----------|----------|
|                                                                                                                                     | UNITS   |                          |           |             |           |          |
| ELECTRICAL GENERAL                                                                                                                  |         |                          |           |             |           |          |
| Current Setting Range                                                                                                               | A       | 0.28 ~ 17                | 0.28 ~ 32 | 25 ~ 50     | 40 ~ 80   | 63 ~ 112 |
| Operating Frequency                                                                                                                 | Hz      | 0 ~ 400                  |           |             |           |          |
| Power Dissipation per Pole                                                                                                          | W       | 0.9 ~ 1.4                | 1.3 ~ 2.0 | 1.3 ~ 2.0   | 1.9 ~ 4.8 | 3 ~ 4.8  |
| ELECTRICAL UL/CSA APPLICATIONS                                                                                                      |         |                          |           |             |           |          |
| MAIN CIRCUITS                                                                                                                       |         |                          |           |             |           |          |
| Rated Operating Voltage, Ue                                                                                                         | VAC     | 600                      |           |             |           |          |
| Standard Short Circuit Current                                                                                                      | kA      | 5                        | 5         | 5           | 10        | 10       |
| Max. Fuse Size *                                                                                                                    | A       | 60                       | 90        | 125         | 200       | 250      |
| High Fault Short Circuit Current                                                                                                    | kA      | 100                      |           |             |           |          |
| Max. Fuse Size * (Class J)                                                                                                          | A       | 30                       | 60        | 60          | 100       | 150      |
| CONTROL CIRCUITS                                                                                                                    |         |                          |           |             |           |          |
| Pilot Duty Rating                                                                                                                   |         | AC: C600                 |           | DC: R300    |           |          |
| ELECTRICAL IEC APPLICATIONS                                                                                                         |         |                          |           |             |           |          |
| MAIN CIRCUITS                                                                                                                       |         |                          |           |             |           |          |
| Rated Insulation Voltage, Ui                                                                                                        | V       | 690                      |           |             |           |          |
| Rated Impulse Voltage, Uimp                                                                                                         | kV      | 6                        |           |             |           |          |
| Rated Operating Voltage, Ue                                                                                                         | VAC     | 690                      |           |             |           |          |
| Max. Rated Operating Current, Ie                                                                                                    | A       | 17                       | 32        | 50          | 80        | 112      |
| Max. Fuse Size *                                                                                                                    | A       | 40                       | 63        | 100         | 125       | 250      |
| CONTROL CIRCUITS                                                                                                                    |         |                          |           |             |           |          |
| Rated Insulation Voltage, Ui                                                                                                        | V       | 690                      |           |             |           |          |
| Rated Operating Current, Ie                                                                                                         |         |                          |           |             |           |          |
| @ 24V                                                                                                                               | A       | AC-15 : 4                |           | DC-13 : 1   |           |          |
| @ 48V                                                                                                                               | A       | AC-15 : 3.5              |           | DC-13 : 0.5 |           |          |
| @ 60V                                                                                                                               | A       | AC-15 : 3.5              |           | DC-13 : 0.5 |           |          |
| @ 110V                                                                                                                              | A       | DC-13 : 0.25             |           |             |           |          |
| @ 120V                                                                                                                              | A       | AC-15 : 3                |           |             |           |          |
| @ 220V                                                                                                                              | A       | DC-13 : 0.1              |           |             |           |          |
| @ 230V                                                                                                                              | A       | AC-15 : 2                |           |             |           |          |
| @ 250V                                                                                                                              | A       | DC-13 : 0.1              |           |             |           |          |
| @ 400V                                                                                                                              | A       | AC-15 : 1.5              |           |             |           |          |
| @ 500V                                                                                                                              | A       | AC-15 : 0.5              |           |             |           |          |
| @ 690V                                                                                                                              | A       | AC-15 : 0.3              |           |             |           |          |
| Max. Fuse Size (gL/gG)                                                                                                              | A       | 6                        |           |             |           |          |
| ENVIRONMENTAL                                                                                                                       |         |                          |           |             |           |          |
| Ambient Operating Temp.                                                                                                             | °C / °F | -25 to +60 / -13 to +140 |           |             |           |          |
| Ambient Storage Temp.                                                                                                               | °C / °F | -40 to +70 / -40 to +158 |           |             |           |          |
| Altitude                                                                                                                            | m / ft. | 2,000 / 6,562            |           |             |           |          |
| CONSTRUCTION                                                                                                                        |         |                          |           |             |           |          |
| Number of Poles                                                                                                                     | uL      | 3                        |           |             |           |          |
| Trip Class                                                                                                                          | uL      | 10                       |           |             |           |          |
| ROHS COMPLIANCE For RoHS compliance documentation by product, refer to <a href="http://www.c3controls.com">www.c3controls.com</a> . |         |                          |           |             |           |          |
| * Varies by current adjustment range of overload relay.                                                                             |         |                          |           |             |           |          |

\* Varies by current adjustment range of overload relay.

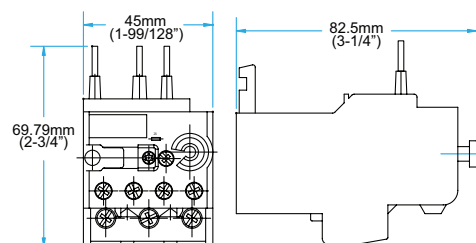
For complete ratings and detailed specifications refer to [www.c3controls.com](http://www.c3controls.com).

## DIMENSIONS

Series 320-B1

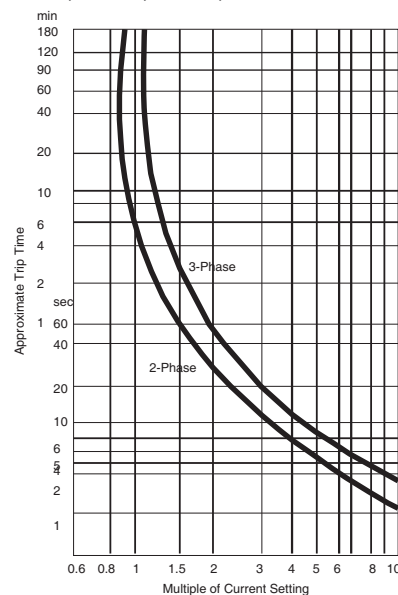


Series 320-B2



## TRIP CHARACTERISTICS

For Series 320-B1, 320-B2, 320-B3, & 320-B4.



## PROVEN

### Conformity to Standards:

UL 508, 60947-4-1A  
CSA C22.2 No. 14  
IEC 60947-1, 60947-4-1

### Certifications:

UL File #: E68568 (Guide NKCR, NKCR7)

CE Marked (per EU Low Voltage Directive 2006/95/EC and RoHS Directive 2011/65/EU)



Visit [c3controls.com](http://c3controls.com) to download product certifications.



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