



# Mechanical Latch Relays

## CR120BL Series A

**Caution:** Before installing in a nuclear application, determine that the product is intended for such use.

**Warning:** Disconnect power before installing or servicing.

### Description

The CR120BL Series A mechanical latch relay is designed so that when energized, the relay latches in the picked-up position and remains in this position even when power is removed. Energization of the unlatch coil will allow the relay to drop out. This dropout action may also be accomplished by the use of the manual release lever.

The relay is designed so that if a normally open contact should weld closed, the normally closed contacts will not close and vice versa. When correctly designed into the circuit, this feature can be used in critical applications such as punch press applications where a check of each relay operation is required.

### Ratings

AC-NEMA A600

| Maximum Voltage | Maximum Continuous Current | Max. Voltamp Rating |       | Max. Current Rating |       |
|-----------------|----------------------------|---------------------|-------|---------------------|-------|
|                 |                            | Make                | Break | Make                | Break |
| 600             | 10                         | 7200                | 720   | 60                  | 6     |

DC-NEMA P300

| Maximum Current Rating |       | Maximum Voltamp Rating |
|------------------------|-------|------------------------|
| 125 V                  | 250 V | 300 V or Less          |
| 1.1                    | .55   | 138                    |

### Installation

1. Disconnect power from device.
2. Remove all packing.
3. Operate relay by pulling the manual operator and releasing with the manual release lever to assure free movement.
4. Mount the relay on a vertical plane.
5. Make all electrical connections. Normally open contacts are indicated by gold and normally closed by white.

### Operation

The latch relay requires the following minimum pulse times in order to operate reliably:

- Latch (relay coil)—60 Milliseconds.
- Release (unlatch coil)—20 Milliseconds

### Coil Removal—Relay or Latch Coil

1. Disconnect power from the device.
2. Remove from panel, if so mounted.
3. Insert a screwdriver blade between magnet and magnet retaining clip. Twist blade to force retaining clip away from magnet. Push down on screwdriver, dislodging magnet; then applying firm pressure with screwdriver, push magnet through coil to position shown in Figure 1.

4. Grasp the coil terminals and pull out.

### To Reassemble:

5. Insert coil and center in housing.
6. Slide magnet back through coil and center with housing window. Insert blade of screwdriver through window, perpendicular to magnet. Using blade of screwdriver, push retaining clip away from magnet and apply pressure on magnet from opposite side. Snap magnet back into position under retaining clip. Magnet must be centered in housing window in order for it to seat properly.

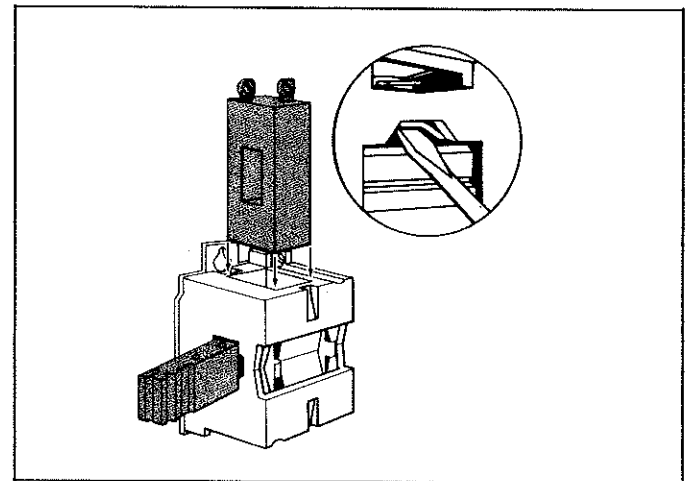


Figure 1.

### Coil Removal—Unlatch Coil

1. Disconnect power from the device.
2. Remove four screws and cover of latch.
3. Lift out rubber thrust washer and core assembly.
4. Remove coil.
5. To install, reverse procedure.

### Contact Removal/Conversion

1. Disconnect power from the device.
2. Loosen the two screws holding the latch attachment to the relay.
3. Pull the release lever of the latch attachment toward the coil and pull the latch attachment off the post.
4. Unscrew the steel center post.
5. Remove cover.
6. Lift out the contact module. Contacts may be inspected through the transparent side of module.
7. To convert contacts, remove terminal screws and reassemble on opposite side. Replace module in deck and replace cover.
8. Screw in the steel center post. Post should be tightened until retaining ring rests snugly against the white return yoke in the relay cover. Distortion of retaining ring by over tightening may cause loss of latch reliability.

9. Pulling the release lever of the latch attachment toward the coil, slip the latch attachment over the post.
10. Secure the latch attachment to the relay, using the longer screws that are supplied.
11. Check for proper operation, either electrically or by manually operating the armature through the hole in the baseplate. The relay may be released from the latched position by manually operating the release lever.

### Installing Overlapping Contacts

Standard contacts are non-overlapping, i.e., during pickup and drop-out there is a period where all contacts are open. If overlapping contacts are required, contact modules CR120BX1A may be used. These contacts will overlap with each other but not necessarily with standard contacts. Normally open and normally closed overlapping contacts will all be closed for a period of time during pickup and dropout.

For installing the contact modules, see section on Contact Removal/Conversion.

### Contact Module Identification

The type of contact module can be identified by the terminal color, even after installation. Standard modules have a brass terminal, overlapping modules have a gray color, and gold-plated contact modules have red on the terminals.

### Renewal Parts—Coils

Relay Coil, order 55-513696G plus suffix number per table below  
 Unlatch Coil, order 55-520208G plus suffix number per table below.

| Voltage | Frequency | Suffix Number |
|---------|-----------|---------------|
| 24      | 60        | 025           |
| 115     | 60        | 002           |
| 120     | 60        | 022†          |
| 200     | 60        | 023           |
| 230     | 60        | 003           |
| 460     | 60        | 004           |
| 575     | 60        | 005           |
| 600     | 60        | 006           |
| 110     | 50        | 007           |
| 220     | 50        | 008           |
| 360     | 50        | 004           |
| 440     | 50        | 009           |
| 550     | 50        | 010           |

† Coil is dual rated 120 Volt, 60 Hertz/110 Volt, 50 Hertz.

### Accessory Kits

|  |           |
|--|-----------|
| Standard Contact Module.....                       | CR120BX1  |
| Overlapping Module.....                            | CR120BX1A |
| Gold-plated Contact Module.....                    | CR120BX1B |
| Mounting Track (40 in. long for 16 relays)         |           |
| Breakaway Type.....                                | CR120BX4  |
| Non-breakaway Type.....                            | CR120BX18 |
| Indicating Light                                   |           |
| 115 Volt 50/60 Hertz.....                          | CR120BX5  |
| 230 Volt 50/60 Hertz.....                          | CR120BX6  |
| 460 Volt 50/60 Hertz.....                          | CR120BX7  |
| Surge Suppressor                                   |           |
| 115 Volt 50/60 Hertz.....                          | CR120BX2  |
| Wiring Trough Covers                               |           |
| 1½ in. wide x 6 ft.....                            | CR120X15A |
| 2 in. wide x 6 ft.....                             | CR120X16A |
| 2½ in. wide x 6 ft.....                            | CR120X17A |
| Type 1 Enclosure                                   |           |
| (For up to four-pole latched relay).....           | CR120BX15 |
| Retaining Shields—6 ft. long for use:              |           |
| With Mounting Track.....                           | CR120BX9  |
| Without Mounting Track.....                        | CR120BX8  |
| Retaining Shield Brackets (pkg. of eight) for use: |           |
| With Mounting Track.....                           | CR120BX13 |
| Without Mounting Track.....                        | CR120BX12 |

### Contact Modules

|                                 |           |
|---------------------------------|-----------|
| Standard Contact Module.....    | CR120BX1  |
| Overlapping Contact Module..... | CR120BX1A |
| Gold-plated Contact Module..... | CR120BX1B |

*These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further problems arise which are not covered sufficiently for the Purchaser's purposes, the matter should be referred to the nearest General Electric sales office.*

For further information  
 call or write your local  
 General Electric  
 sales office or distributor.  
 Or write . . .

General Electric Company  
 General Purpose  
 Control Department  
 P. O. Box 2913  
 Bloomington, IL 61702-2913

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