



CR120BD, CR120BC Series A 600 Volt Industrial Relay

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

Description

The GE CR120BD Series A industrial relay is the dc form of the standard CR120B relay. This dc relay is furnished with a dual winding coil and a special contact is supplied in the coil circuit to make available the higher current needed during the first part of the armature stroke. This contact should be replaced only with a CR120BX1A contact module. Because of the higher watts used during pickup, the relay should not be operated continuously more than 80 operations per minute.

The CR120BC catalog numbers designate the latch forms of the dc relay. Since these relays have an intermittent rating on the unlatch coil it should be limited to a 25 percent of duty cycle.

Operation

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

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

Ratings

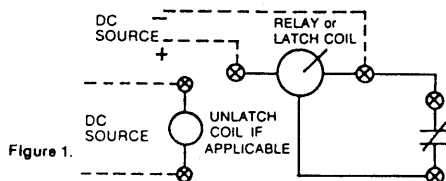
AC—NEMA A600

Max. AC Voltage	Max. Continuous Current	Max. Voltamp Rating		Max. Current Rating	
		Make	Break	Make	Break
600	10 Amp	7200	720	60	6

DC—NEMA P300

DC Max. Current Rating		DC Max. Voltamp Rating
125 V	250 V	300 V or Less
1.1	.55	138

Coil Connection Diagram



Installation

1. Disconnect power from source.
2. Remove all packing.
3. Operate the magnet and operating arm by pulling the manual operator to assure free movement.

4. Mount the relay on a vertical panel.
5. Make all electrical connections. Normally open contacts are indicated by gold and normally closed by white.

Coil Removal Relay Or Latch Coil

1. Disconnect power.
2. Disconnect all wires.
3. Remove from panel.
4. 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 2.
5. Grasp the coil terminals and pull out.

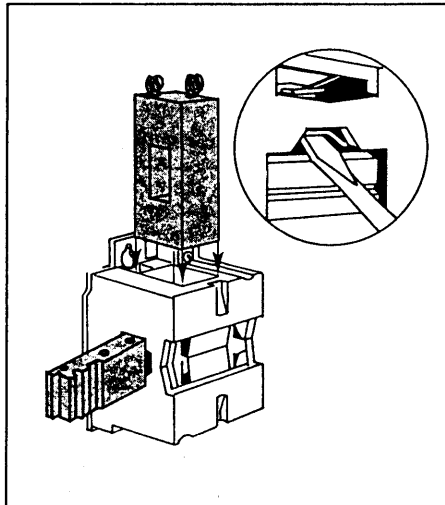


Figure 2.

To Reassemble:

6. Insert coil and center in housings.
7. 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 retraining clip. Magnet must be centered in housing window in order for it to seat properly.

Contact Removal/Conversion

1. Disconnect power.
2. Loosen cover screws or screws above the appropriate deck and remove.
3. List out contact module. Contacts may be inspected through gold transparent side of module.

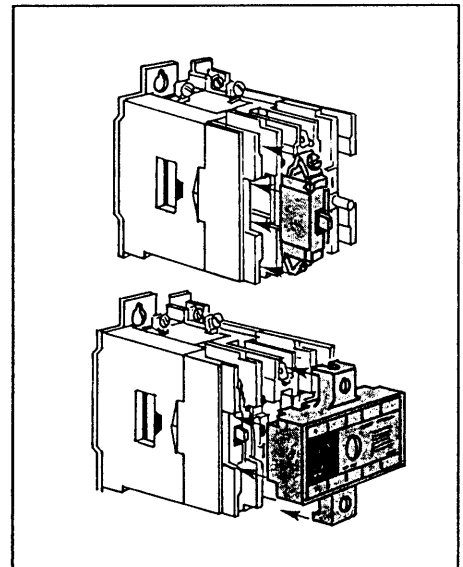


Figure 3.

4. To convert from normally open to normally closed, or vice versa:
 - a. Remove contact module terminal screws and reassemble on opposite side.
 - b. Replace contact module in back.
5. Reassemble.

Installing Adder Blocks

Additional decks of contact modules may be added to the relay making a relay with up to eleven poles. Up to seven poles may be normally closed.

To install additional adder decks:

1. Disconnect power.
2. Loosen cover screws and remove cover.
3. Unscrew steel post and replace with the longer post supplied with the adder deck. If adding two decks, only the extra long post supplied with the second adder block should be used.
4. Add the deck to the relay using the screws provided

Installing Adder Blocks (continued)

- Slip the T-shaped yoke over the steel post.

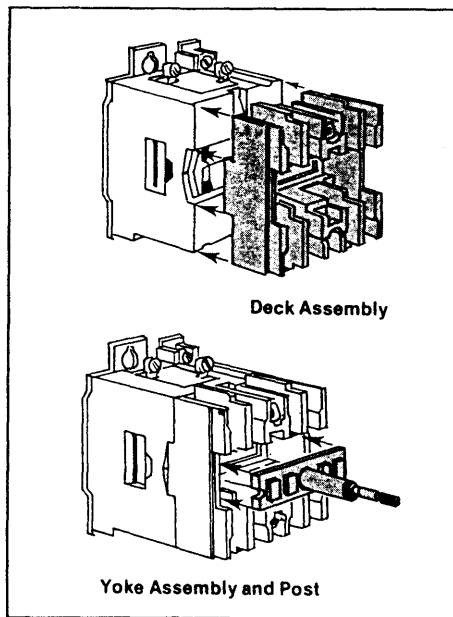


Figure 4.

- Add the contact modules. For a normally open contact, assemble with gold taps up. A normally closed contact should have the white side up. Make sure the screws are on the top side of each module.
- If another adder deck is being used, repeat steps 4, 5, and 6.
- Reassemble the cover..

Installing Overlapping Contacts

Standard contacts are non-overlapping, i.e., during pickup and dropout 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 brass terminal, overlapping modules have a gray color, and gold-plated contact modules have red on the terminal.



Latch Relay

Coil Removal-Unlatch Coil

- Disconnect power.
- Remove four screws and cover of latch.
- Lift out spring washer and core assembly.
- Remove coil.
- To install, reverse procedure.

Contact Removal/Conversion

- Disconnect power from the device.
- Loosen the two screws holding the latch attachment to the relay.
- Pull the release lever of the latch attachment toward the coil and pull the latch attachment off the post.
- Unscrew the steel center post.
- Remove cover.
- Lift out the contact module. Contacts may be inspected through the transparent side of module.
- To convert contacts, remove terminal screws and reassemble on opposite side. Replace module in deck and replace cover.
- 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.
- Pulling the release lever of the latch attachment toward the coil, slip the latch attachment over the post.
- Secure the latch attachment to the relay, using the longer screws that are supplied.
- 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.

Time Delay Relays

Time-delay relays are available as complete relays or timer attachments. See General Purpose Control Catalog, GEP-1260, for Ordering and Pricing Information.

DC Surge Suppressor

Surge suppressor is connected across integral screw connections of coil.

Connect wire termination of suppressor to screw connection with added jumper and connect integral bracket on suppressor to other integral screw connection of coil.

Positive supply must be connected to suppressor bracket and negative supply to wire side of suppressor.

If surge suppressor is not used, then polarity is not important.

Accessory Kits

Standard Contact Modules	CR120BX1
Overlapping Modules	CR120BX1A
Gold-plated Contact Modules	CR120B*
First Adder Deck (Can accommodate up to eight total contact modules) includes one contact module	CR120BX3
Second Adder Deck (Use with first adder deck on eight pole relay to accommodate up to 12 total contact modules) includes four contact modules	CR120BX14
Module Track (40 in. long for 16 relays) Breakaway Type	CR120BX4
Non-Breakaway Type	CR120BX18
Indicating Light 115V 50/60 Hz	CR120BX5
230V 50/60 Hz	CR120BX6
460V 50/60 Hz	CR120BX7
Surge Suppressor 115V 50/60 Hz	CR120BX2
120V DC Maximum	CR120BX24
Wiring Trough Covers 1 1/2 in wide X 6 ft.	CR120X15A
2 in. wide X 6 ft.	CR120X16A
2 1/2 in. wide X 6 ft.	CR120X17A
NEMA 1 Enclosure (For up to three-pole relays)	CR120BX19
(For up to seven-pole relays)	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

Renewal Parts

Coils

(Order Relay Coils 55-513696G*** plus suffix number per table below).

(Order Unlatch Coils 55-520208G*** plus suffix number per table below).

DC Voltage	Suffix No. ***
12	044
18	043
24	048
32	046
36	047
48	049
64	045
72	050
90	051
125	041

Instantaneous Contacts

Standard Contact Modules

CR120BX1

Overlapping Contact Modules

CR120BX1A

Gold-plated Contact Modules

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 information be desired or should particular problems arise which are not covered sufficiently for the Purchaser's purposes, the matter should be referred to the nearest GE Sales Office.

GE Electrical Distribution & Con...

General Electric Company
41 Woodford Avenue, Plainville, CT 06062

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