



300-Line Magnetic Contactors and Starters—CR305/CR306 NEMA Size 2

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

Warning: Disconnect power before installing or servicing.

Description

GE's 300-Line full-voltage magnetic motor starters include a magnetic contactor and a three-leg block overload relay, providing motor protection against running and stalled motor overloads. The overload relay is provided with a yellow trip indicator which is located to the right of the reset arm, and is visible when the overload relay is tripped. (Series A forms will not have this trip indicator feature.) To insure against welded overload relay contacts in the tripped condition, perform the *Check For Welded Contacts In Overload Relay* as described below.

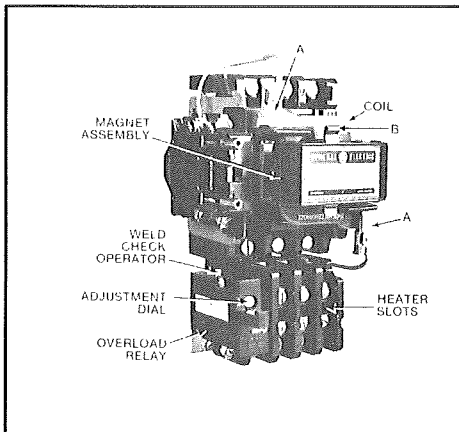


Figure 1. Typical 300-Line magnetic starter.

Ratings

CR305 contactors are suitable for use on a circuit capable of delivering not more than 5,000 rms symmetrical amperes, 600 volts maximum when protected by H, J, K1, K5, RK1, RK5 class fuses or a circuit breaker having an interrupting rating not less than 5,000 rms symmetrical amperes, 600 volts maximum.

Provide motor branch and control circuit over-current protection in accordance with the National Electrical Code.

Installation

Before connecting the starter:

1. Remove all packing.
2. Clean magnet mating surfaces of any dirt or foreign matter.
3. Select and install heater(s) in accordance with heater table, which accompanies each starter unit.
4. Operate movable magnet and operating arm by pressing on the armature to assure free movement.
5. Mount starter on a sturdy vertical support.
6. Make the electrical connections.
7. The overload relay can be reset manually by depressing and releasing the reset arm. The optional normally open contact on overload relays is electrically isolated from the normally closed contact.

Coil Removal

The encapsulated coil is impervious to moisture, contaminants and oil. It resists mechanical damage and failures due to high humidity. No tools are required to remove coil.

1. Remove all power from device.
2. Press against coil while pulling up slightly on coil retainers, (A—Fig. 1) and move retainers away from coil.
3. Withdraw magnet assembly, coil, molded cover, and movable arm from device.
4. Withdraw spring clip (B—Fig. 1) and remove armature from movable arm.
5. Remove coil from magnet.
6. Replace coil.
7. Reassemble device by reversing procedure.

Contact Removal

Movable contacts can be inspected and replaced in seconds — without tools.

1. Perform steps 1 through 5 under *Coil Removal*.
2. Remove magnet from molded cover and movable arm.
3. Remove return spring from center of movable arm.
4. Remove molded cover from movable arm.
5. Depress and slide movable contact and spring from movable arm.

6. Remove screws holding stationary contacts in place and remove stationary contacts.

7. Reassemble device by reversing procedure.

NOTE: Do not attempt to remove or replace Arc Traps in Arc Chute Cover.

When reassembling, note that the Arc Chute Cover will only fit one way and is marked "TOP" in upper right-hand corner. Magnet and movable arm will fit either way but will be quieter if reassembled the same way they were taken apart.

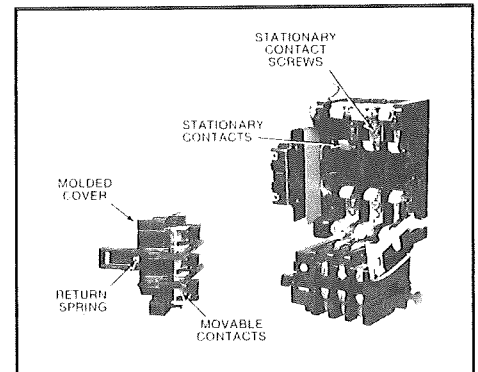


Figure 2.

Check For Welded Contacts In Overload Relay

This feature permits the maintenance person to check for welded contacts. With power disconnected from the device, disconnect the control wiring from the terminals of the relay and place a bell set or resistance measuring instrument across the relay terminals. Depress and release the reset arm to insure the relay is reset. In this condition there should be continuity between the terminals. Depress the white manual check operator to trip the relay. In the tripped condition the circuit between the terminals should be open indicating the contacts are operating normally. Remove the bell set or resistance measuring apparatus, rewire the relay terminals and reset the relay for normal operation.

Maintenance

300-Line starters require virtually no corrective maintenance. Preventive maintenance will assure many years of dependable on-line service.

1. Always remove power from device before performing any maintenance.
2. Keep magnet mating surfaces free of accumulated dirt or dust.
3. **DO NOT OIL OR GREASE** the magnet mating surfaces.
4. Contacts are carefully designed for maximum life. They need only be replaced when nearly all the silver tip is gone and the contact tip support is exposed. **DO NOT FILE** the contacts. Filing or otherwise dressing the contacts only results in lost tip material and reduces starter life.
5. The ultimate tripping current of the installed relay heater can be adjusted $\pm 10\%$ by using adjustment dial shown in Figure 1.

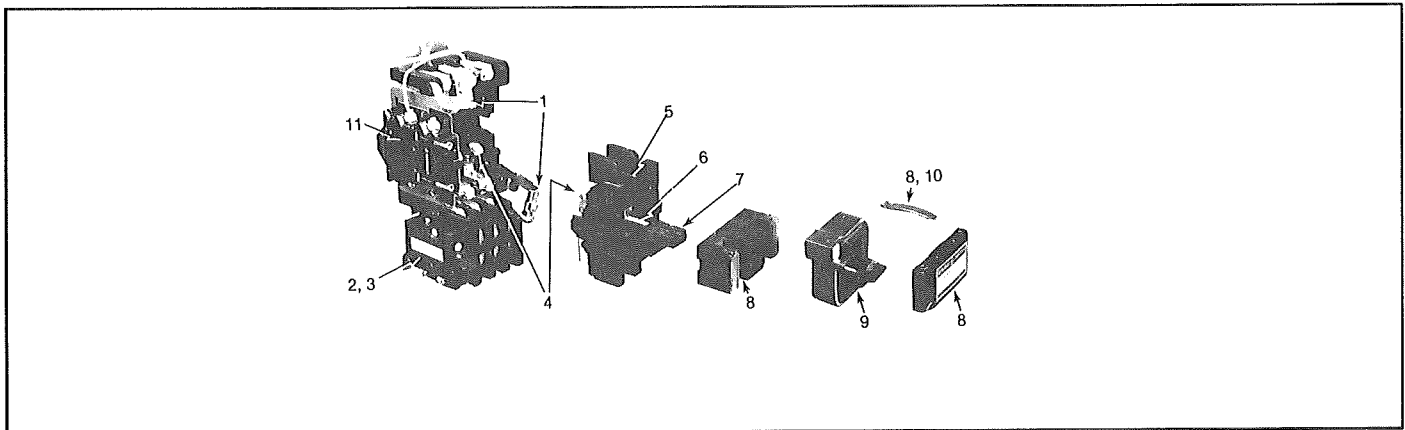
Coil Data For two- and three-pole devices, order Cat. No. 15D22G plus number in table.
For four- and five-pole devices, order Cat. No. 15D23G plus number in table.

Frequency	115V	200/ 208V	230V	460V	575V	600V
60 Hertz	002	023	003	004	005	006
Frequency	110V	220V	380V	440V	550V	600V
50 Hertz	007	008	064	009	010	011

Use 022 for 120V 60 Hertz / 110V 50 Hertz coil.

Accessory Kits

1 st NO aux. contact for CR305 (right side mounting)	CR305X200A
1 st NC aux. contact for CR305 (right side mounting).....	CR305X200B
1 st NO-NC aux. contact for CR305 (right side mounting).....	CR305X200C
Additional NO aux. contact for all forms.....	CR305X100D
Additional NC aux. contact for all forms	CR305X100E
Push button.....	CR305X220N
Selector Switch, H-O-A	CR305X230N
Selector Switch, OFF-ON	CR305X230D
Indicating Light.....	CR305X250N
Fifth pole (for adding to 4-pole form only)	CR305X211B
Control circuit fuse.....	CR305X241A, B, C, D



Principal Renewal Parts

Ref. No.	Description	Catalog Number	Quantity Required	
			CR305	CR306
1	Coil Retainer Assembly	546A780G052	2	2
2	Overload relay (3-heater, non-compensated form, 1 NC contact)	CR324D310FX	-	1
3	Overload relay (3-heater, non-compensated form, 1 NO-1 NC contacts)	CR324D360F	-	1
4	Set of stationary and movable contacts with springs and screws for 3 poles	546A780G051	1	1
5	Molded cover for stationary and movable contacts	546A780G054	1	1
6	Return spring for movable contact support	547A524G001	1	1
7	Molded movable contact support for 2, 3 poles	188D700P001	1	1
8	Armature and frame (magnet) with retainer	546A780G053	1	1
9	Operating coil for 2- and 3-pole forms	15D22G***	1	1
10	Spring retainer for armature	546A627P001	1	1
11	Cross electrical interlock	CR305X200C	1	1

***Add suffix numbers for particular coil rating required. See COIL TABLE above.

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 Industrial Systems

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