



GE Instructions

300-Line Part Winding Starters

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

Warning: Disconnect power before installing or servicing.

General Information

Part winding starting is a closed transition method of reducing inrush current by initially energizing part of the motor winding and the rest of the winding later.

The starter consists of two three-pole contactors, selected for half the horsepower rating involved, and two three-phase overload relays. The starter also has a pneumatic timer whose time delay on energizing contacts provide a preset time delay interval from *START* to *RUN*.

Installation

The starter must be mounted rigidly in the vertical position.

Remove all packing and clean the contactor magnetic mating surfaces.

Inspect all wiring for clean, tight connections. Operate the movable portion of the contactor magnets and contact units by hand to assure their free movement.

All external wiring from the starter must be made in strict accordance with the wiring diagram supplied with the starter.

Note: The timer (TR) is a pneumatic type timer. It is set at the factory for approximately two seconds. It can be adjusted to any desired time by turning the adjustment screw on the front of the timer, however, for settings exceeding five seconds, refer to the motor manufacturer.

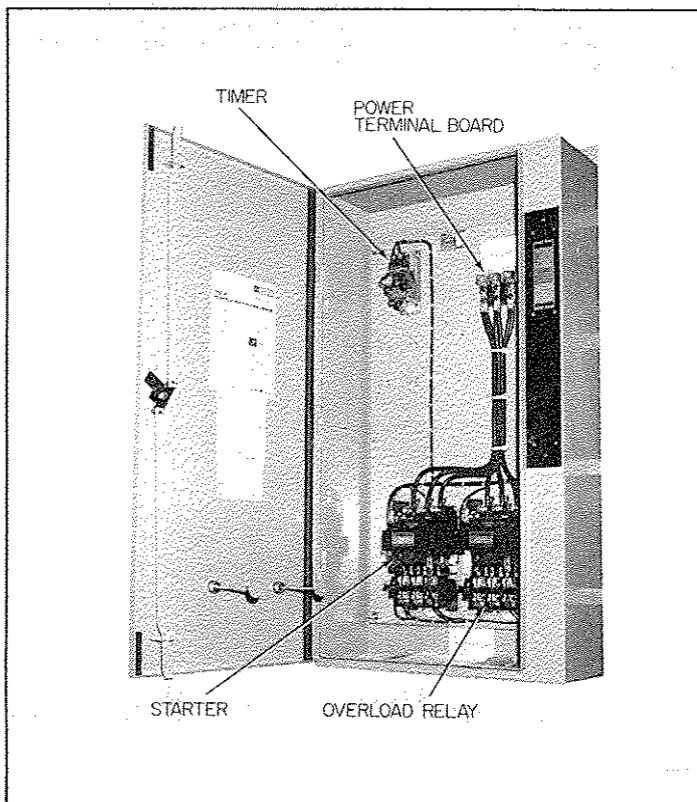
Overload Protection

The CR324 block type overload relay is designed to provide running overload and stalled motor protection. When an overload occurs, the heater elements are heated above their normal temperatures, causing the bimetal strips to deflect sufficiently to open the overload relay contacts. The opening of these contacts will cause the panel to disconnect the motor from the line. After an overload condition, where the overload relay has operated, the relay elements must cool before the relay may be reset. The average cooling time is three minutes; but the time required for the relays to cool is a function of the severity of the overload. The relays are shipped from the factory arranged for hand reset.

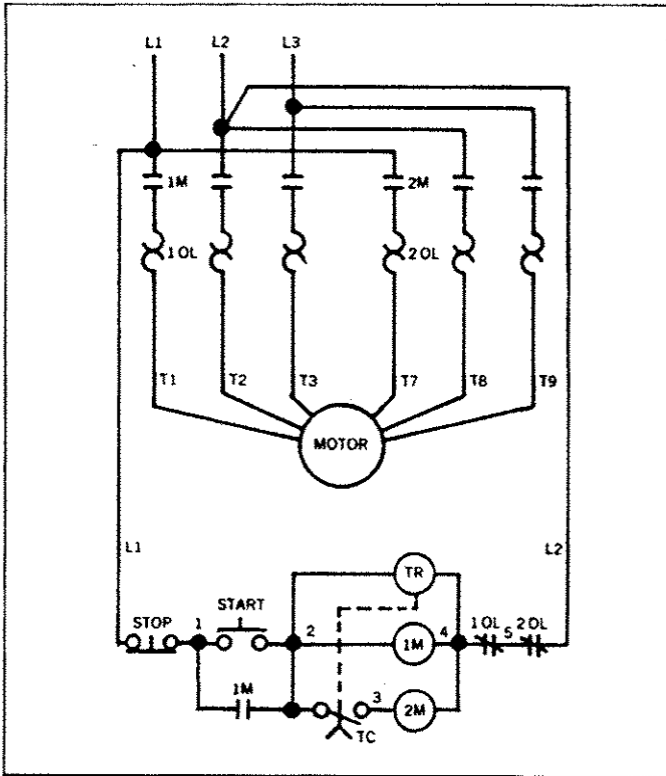
Heaters for the CR324 thermal-type overload relays should be selected for the motor's full-load current and rated temperature rise. Select the heater size required using the heater table supplied with the panel. Mount the heaters in the overload relays in accordance with the heater instructions. Before mounting the heaters, remove the two heater mounting screws. Mount the heater in the overload relay, insert the heater mounting screws in their original holes and tighten. *Do Not Bend The Bimetal Strip Inside Overload Relay.* With the exception of heaters, no renewal parts are supplied for the overload relays.

Operation

Depress the *START* button. This will energize the 1M (*START*) contactor) and the timing relay. Contact 1-2 closes, thereby completing the holding circuit for the magnetic coil of the contactor. This will connect 1/2 of the motor windings to the line depending on how the motor is connected to the starter (refer to the diagram furnished with the starter for motor connections). After a preset period of time, the timing relay contact 2-3 will close, energizing the 2M (*RUN*) contactor, connecting the remaining motor windings of the line.



Typical Wiring Diagram[Ⓞ] for CR330C Through F



Ⓞ CR330G and CR330H have auxiliary control relay.

Nomenclature

Symbol	Device
1M, 2M	Line contactors
TR	Pneumatic timer
TC	Time closing contact
1 OL, 2 OL	Thermal overload relays
TB	Terminal board

Note: Refer to the National Electrical Code. Additional control circuit overcurrent protection may be required.

Principal Renewal Parts

For contactor and relay renewal parts, refer to following component instructions.

CR330C	
1M and 2M starters, Size 1	GEH-5190
CR330D	
1M and 2M starters, Size 2	GEH-4774
CR330E	
1M and 2M starters, Size 3	GEH-4806
CR330F	
1M and 2M starters, Size 4	GEH-4807
CR330G	
1M and 2M starters	GEH-4839
Control relay	GEH-4115
CR330H	
1M and 2M starters	GEH-5198
Control relay	GEH-4115

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 purpose, the matter should be referred to the nearest GE sales office.



GE Electrical Distribution & Control

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