

Westinghouse

Class 11-200-A, 11-200-B or 11-200-C Across-the-Line Type, Non-Reversing, A-C. Magnetic Starters

Using Type 15-F or Type 35-F Contactor

With Thermal Relay Overload Protection

INSTRUCTIONS

Important: On the Classes 11-200-B and 11-200-C starters the thermal overload relay as shipped is arranged for automatic reset. Automatic resetting must not be used with a two wire master switch or with an automatic master switch, but the relay must be changed to hand reset. To change to hand reset, take out the cotter pin and remove from the main panel the small L shaped lever by means of which the contactor automatically resets the relay. (Class 11-200-A starter is arranged for hand reset only).

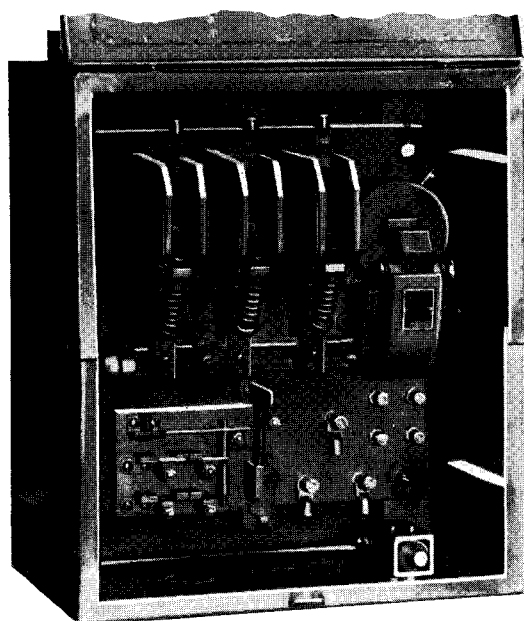


Fig. 1—Class 11-200 Across-the-Line Starter

This starter is intended

for the starting, by remote control, of squirrel cage induction motors directly across the line, where reversing is not desired; where the motor is closely rated and is subject to short intermittent overloads, but where it is desired to protect the motor from overloads that are prolonged.

Before installation

check the ratings of the thermal relay

heaters to see that they are of the correct value in accordance with the full load current stamped upon the name plate of the motor (for general purpose service the current rating of the relay heaters should be between 110 and 120 per cent of the motor's full load current.) The current value stamped on the heater, is the 100 per cent tripping current, or the current that will just cause the relay to trip when the calibration lever is set at 100 per cent.

Mount the heaters in place and tighten nuts (when properly mounted the heater straddles the bimetal strip without touching it, with $\frac{1}{16}$ inch clearance on the under side of the bimetal).

The location of the starter

should be clean, dry, and reasonably well lighted; the starter should not be subjected to excessive heat or excessive vibration.

A disconnecting switch and fuses

should be installed ahead of the starter. (The fuses should not exceed five times the rating of the thermal relay heaters.)

Conduit outlets (of starter Class 11-200-A):

The central knockout is for $\frac{1}{2}$ inch conduit; the outer knockouts are for $\frac{3}{4}$ inch conduit.

Conduit outlets (of starters Class 11-200-B and Class 11-200-C):

The top knockout and one knockout at the bottom accommodate either 1 or $1\frac{1}{4}$ inch conduit, the other knockouts at the bottom are intended for $\frac{3}{4}$ inch or one inch conduit.

Leads:

for control, No. 14 wire is the minimum that should be used; for power supply and motor, No. 10 is the maximum that ordinarily will be required for the Class 11-200-A starter; for the Class 11-200-B and Class 11-200-C starters, No. 6.

To install:

1. (removing the contactor and base from the cabinet leaves all the room inside the cabinet available for drawing in leads, and preparing them for connections; to remove the contactor and base) **remove the slotted head**

tap bolts that secure the contactor base to the back wall of the cabinet and take the starter unit out of the cabinet. (These bolts are two in number, in the case of the Class 11-200-A starter; for the Class 11-200-B and Class 11-200-C starter four bolts are used.)

2. **Mount box on wall:** make conduit connections and draw leads into the box. The leads should be reasonably long to facilitate connecting.
3. **Inspect starter mechanism:** while the starter is out of the box an inspection may be made to determine that the mechanism is in good condition. Close the contactor by hand a few times to make certain that the contactor is operating freely. The floating armature should seat flat against the magnetic pole faces; the contacts should meet squarely. The interlock bar (mounted on the cross arm of the contactor armature) should touch the interlock contacts before the main contacts of the contactor close (while they are approximately $\frac{1}{8}$ inch apart.) See that all nuts are tight, that terminals and contacts are clean, that flexible conducting parts (shunts, etc.) are well separated, that the armature hinge pin is in place, and that the hairpin cotter pins at each end are in their proper positions. The thermal relay may be operated by hand to see that it is working properly. This may be done by placing the finger on the bottom of the push rod and lifting the push rod until the relay trips; then move the trip lever a short distance to the right until the relay resets.
4. **Replace the contactor and base in the cabinet:** tighten the mounting tap bolts; (if the contactor has magnetic blowouts and arc shields) lower arc shields into position. **Connect leads to starter** according to the wiring diagram, **making connections to power leads last.**

Note: Before making any connections, be certain that all the lines to be handled are dead.

(Check all connections before power is turned on.)

To test the starter:

(by disconnecting the motor the starter may be tested without operating the motor;) the line is now energized and the contactor

is tested for proper closing and opening by pressing the start and stop buttons.

Check the rotation of the motor:

after seeing that the connections to the motor are complete, start the motor by pressing the start button. If the rotation of the motor is wrong, it may be changed by reversing two leads of a phase, preferably at the motor terminals. (If the power system is 2 phase 3 wire, the wire forming the common lead should not be one of those changed.)

If the motor does not start,

One of the following conditions may exist:

1. One of the connections is open;
2. The line is not energized;
3. The disconnecting switch is open;
4. A main fuse has blown;
5. The thermal overload relay has tripped.

Calibration setting of the thermal overload relay:

The heater of the thermal overload relay has stamped upon it the value of current that will just trip the overload relay with the calibration lever at the 100 per cent setting. The rating of the heater used should be between 110 and 120 per cent of the motor's full load current stamped upon the nameplate. Since a calibration scale ranging from 80 to 120 per cent is provided on the relay, the tripping current value may be adjusted by moving the calibration lever along the calibration scale, when conditions so require.

Special precaution:

if the starter is not provided with a **cabinet door interlock**, special precaution should be taken to see that the **disconnecting switch is opened and that the control circuit is dead before the starter cover is opened.**

(Note:—A cabinet door interlock is not used with the Class 11-200-A starter.)

Inspect the starter at regular intervals:

Inspect the starter monthly, or, depending upon conditions, often enough to keep it clean and to see that the parts that wear (main contacts or interlock contacts, etc.) are in good operating condition. Nuts, terminals, and current carrying parts should be tight and in good contact. Occasional notice should be taken to see that the thermal relay calibration lever is placed at the correct setting. Shunts should not be broken or touching other parts of the controller. **Do not oil the starter.**