



CONTROLLERS

GENERAL INSTRUCTIONS

INSPECTION UPON RECEIPT OF SHIPMENT

1. The packages received should check with the items on the shipping notice.
2. Examine each package to see that no damage has been done in shipment.
3. Bolts, small brackets, and extra parts are usually shipped in cloth bags with tag attached, indicating contents.
4. Special instructions are given on tags accompanying individual pieces of apparatus or in specially prepared instruction books. These special instructions should be carefully studied and observed.
5. When necessary to store prior to installation, leave the apparatus in the original package and keep it in a safe dry location.
6. Unpack carefully and use only light tools in order to avoid damaging the controller.
9. Master switch or push button stations; locate where convenient for the operator, and if possible where the machinery is in full view when starting. Locate emergency stop buttons where easily reached.

INSTALLATION:

This industrial type control is designed to be installed, operated, and maintained by adequately trained workmen. These instructions do not cover all details, variations, or combinations of the equipment, its storage, delivery, installation, check-out, safe operation, or maintenance. Care must be exercised to comply with local, state, and national regulations, as well as safety practices, for this class of equipment.

LOCATION

The control equipment should be located within plain view of the motor and as close to it as conditions will permit. If possible, locate it in a direct line between the power supply and the motor to save cable and to minimize resistance losses. In determining this location, the following points should be considered:

1. Safety and convenience of the operator.
2. Accessibility for inspection or repairs.
3. Protection of the controller from corrosive gases, excessive heat, moisture, vibration, abrasive dust, inflammable material or accidental injury.
4. Conformity to the fire and safety codes that govern the locality.
5. Ventillation of the resistor, and other parts that dissipate heat.
6. Natural lighting, if possible, to facilitate reading meters and inspecting equipment.
7. Working space about controller for safety and convenience in inspections or adjustments; including mechanical clearance for lifting arc shields, etc.
8. Arcing clearance between live parts and nearby metal parts (where this is insufficient, barriers must be placed between these parts and the adjacent apparatus).
1. The name plate readings of the controllers should agree with the power supply and motor characteristics.
2. Foundations should be solid to prevent vibration. When the controller is provided with a channel iron base, the base should be grouted.
3. In wiring and connection apparatus, the National Electric Code, the Associated Factory Mutual Fire Insurance Companies, and local fire underwriters' rules should be followed.
4. Make connections in accordance with the wiring diagram furnished with the controller.
5. Before making any connections, be certain that all leads to be handled are dead.
6. Make connections to power leads last.
7. A disconnecting switch should be installed ahead of the controller, unless such a switch is included as a part of the controller.
8. Do not put individual alternating current conductors in single conduit on account of the transformer action produced.
9. Fill oil dash pot relays with special dash pot oil, and screw dash pots up to the proper calibration setting.
10. On high voltage controllers, the line contacts are usually oil immersed. Make certain that the tank is filled with a high grade transformer or insulating oil to the proper level before the starter is put into operation.

INSPECTION OF INSTALLATION:

1. With the power off, operate contactors, relays and electrical interlocks by hand to see that they work freely and that they make good contact.
2. Mechanical interlocks should prevent the contacts of one contactor from touching while the other contactor is closed.
3. See that all relays and contactors are tightly mounted and that armature hinge pins are in place and properly secured.
4. Turn the handles of rheostats throughout their travel to see that the contact arm does not stub in passing over the contacts.
5. See that all terminals and current carrying contacts are clean and tight.
6. No lubrication is necessary or desirable on contactor bearings or on surfaces making contact.
7. Petrolatum is spread over the magnet sealing surfaces to prevent rusting during shipment and this should be removed before the switch is placed in service. The sealing surfaces should be kept clean by wiping occasionally with an oil-moistened rag. Avoid any contact of oil with other parts of the device as an oil film hastens the accumulation of dust.

OPERATION

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national regulations, as well as safety practices, for this class of equipment.

1. Before starting, disconnect the motor and check the operating sequence of the controller.
2. After the control sequence is checked, the motor may be tested for correct rotation.
3. Inspect the controller periodically to see that it is clean and in good operating condition, and that the springs and parts subject to wear are replaced when necessary.
4. Do not file contacts; continual use will wear them to a satisfactory seat.
5. Contacts should be replaced before wear makes it impossible to maintain the proper operating pressure. Low pressure causes excessive heating.
6. In the event of trouble that cannot readily be remedied, communicate at once with the nearest Sales Office or Service Representative of the Westinghouse Company.

RENEWAL PARTS

When ordering renewal parts, give the complete name plate reading. Always give the name of the part wanted, also the stock order or style number of the individual apparatus on which it is to be used, as well as the stock order or style of the complete controller. The style number of coils will be found on a metal tag or marker attached to the coil. State whether shipment is desired by express, freight, or by parcel post. Send all orders or correspondence to nearest Sales Office of the Company. Small orders should be combined so as to amount to a value of at least one dollar, as order handling and shipping expenses prevent us from billing a smaller amount.