DESCRIPTION • OPERATION

INSTRUCTIONS

Hottest Spot, Dial Type

THERMAL INDICATOR

For Transformers

Wall Mounted **Fluid Immersed**

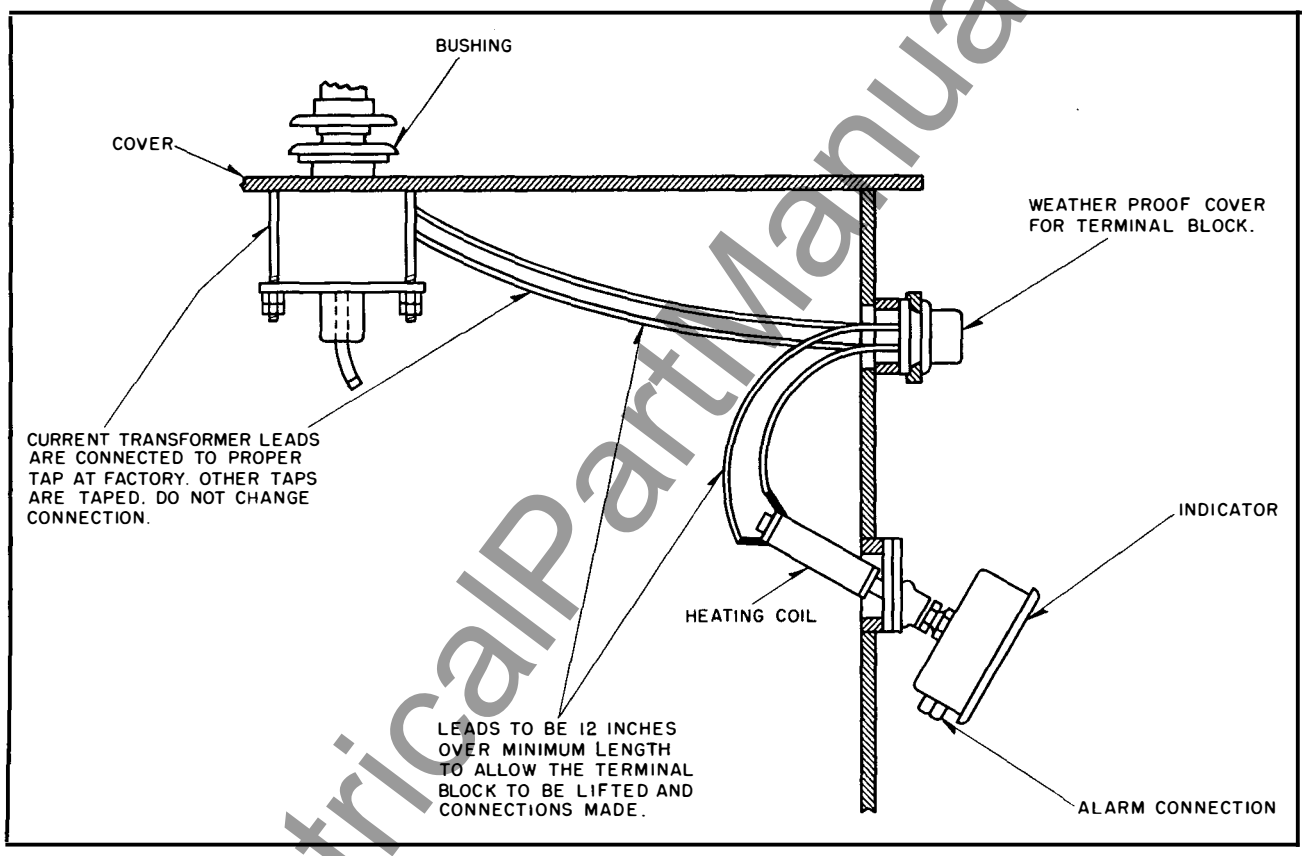

FIG. 1. Assembly Drawing Showing Proper Installation

THE HOTTEST SPOT DIAL TYPE THERMAL INDICATOR is an auxiliary piece of apparatus used to indicate the temperature of the hottest spot in the transformer windings. This temperature is approximately duplicated at the stem of a dial type bi-metallic thermometer, and is read directly on the externally located indicator dial.

This apparatus consists of an indicating dial type thermometer, a heating coil, and a current transformer.

The current transformer is mounted inside the case of the power transformer and is energized from one of the windings of this transformer, depending upon which is the most suitable with respect to the voltage and the current rating. The secondary winding of the current transformer is connected to the leads of the heating coil which therefore carries a current proportional to the load current of the main transformer. Since the thermal indicator bi-metal is located inside of the heating coil, and both are immersed in the hottest part of the oil, the bi-metal will attain a temperature approximating that of the transformer winding.

The bi-metal spiral is surrounded by a heating coil having insulation of such thickness that the difference in temperature between the bi-metal and the oil is the same as that between the windings and the oil.

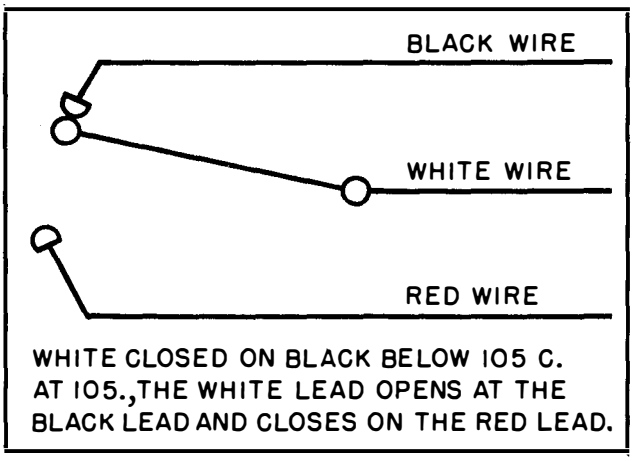

FIG. 2. Alarm Circuit Diagram

Note: At the time of the heat test of the transformer, the current flowing through the heating coil is determined to be sure that it produces the additional increment of heat corresponding to a conventional 10° allowance for the hottest parts of the windings at full load.

The indicator is mounted on the side of the tank with the stem and heating coil located in the hot oil. The dial case is weatherproof but not submersible. The dial is calibrated from 0 to 160 degrees centigrade. The maximum temperature indicator is re-settable. In the alarm circuit, (See Fig. 2) white is closed on black below 105°C (221°F). At 105°C the white lead opens at the black lead and closes on the red lead. The recommended maximum current is 5 amperes at 125 volts a-c. This is an ungrounded circuit.

RECEIVING

The current transformer is shipped with the main transformer assembly. It is usually mounted on the terminal board, bridges, or end frames, near the top of the main transformer tank. In some cases, a current transformer of the type which slips over the lower end of one of the bushings may be mounted on the underside of the cover.

A "Bushing Type" current transformer is sometimes shipped in a separate package marked "Details", and must be mounted under the cover around one of the bushings in the place provided.

All other parts are normally shipped in place, but if not, assemble carefully, following instructions in Outline and Fig. 1 of this Leaflet.

REPLACEMENT

In the event it becomes necessary to repair this apparatus, contact the nearest Westinghouse Office, giving serial number or shop order number of transformer.

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