



# INSTRUCTIONS

## TEMPERATURE INDICATOR HOTTEST SPOT DIAL TYPE

**Cover Mounted**

**Remote Indicating**

THE HOTTEST SPOT DIAL TYPE TEMPERATURE 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 bulb of a dial type 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 temperature indicator bulb is located inside of the heating coil, and both are immersed in the hottest part of the oil, the bulb will attain a temperature approximating that of the transformer winding.

The bulb is surrounded by a tube of such thickness that the difference in temperature between the bulb and the oil is the same as that between the windings and the oil.

*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*

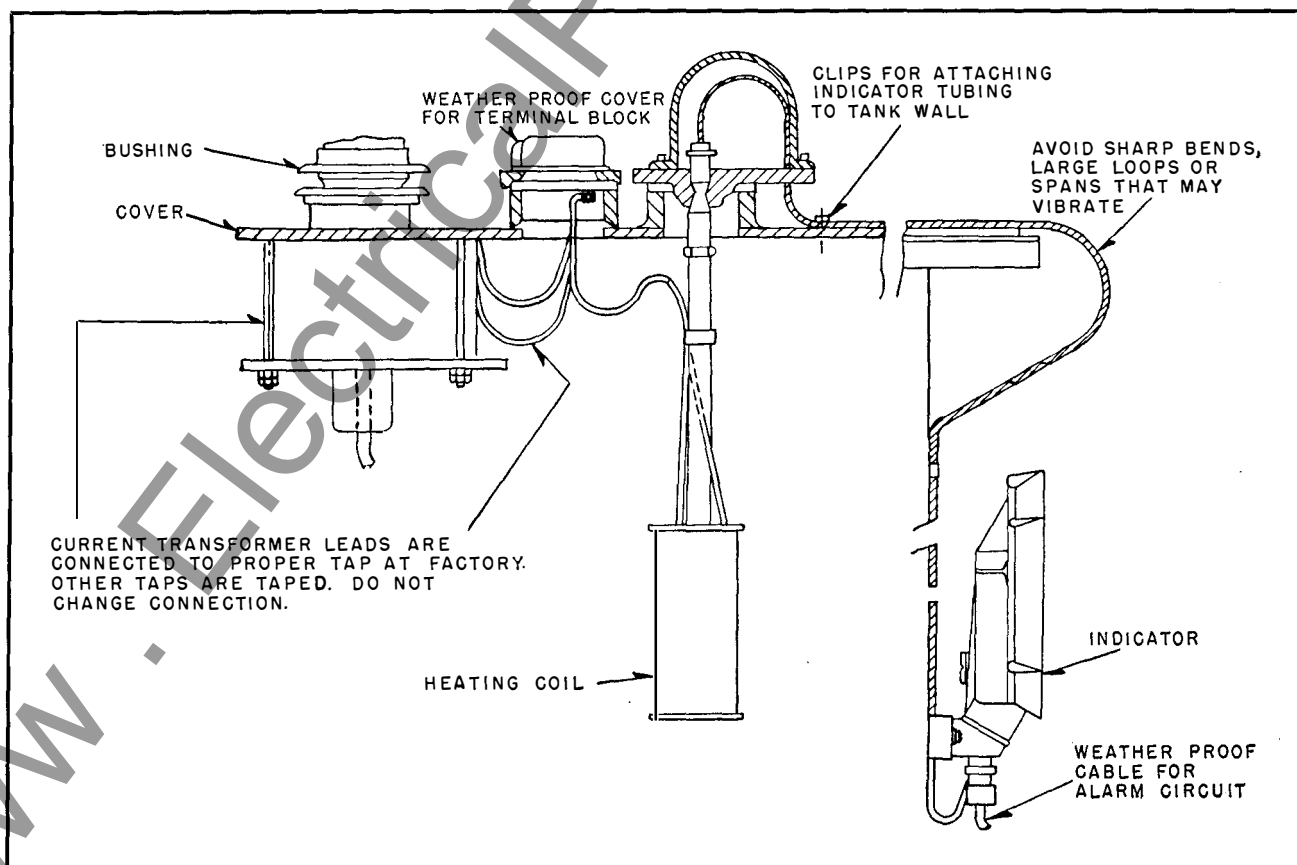


FIG. 1. Outline Drawing Showing Assembly of Temperature Indicator.

## TEMPERATURE INDICATOR

produces the additional increment of heat corresponding to a conventional  $10^\circ$  allowance for the hottest parts of the windings at full load.

The indicator is mounted at a convenient height on the side of the tank. The dial case is weather-proof but not submersible. The dial is calibrated from 0 to 120 degrees centigrade. The maximum temperature indicator is re-settable by an external knob. In the alarm circuit, white is closed on black below  $105^\circ\text{C}$  ( $221^\circ\text{F}$ ). At  $105^\circ\text{C}$  (See Fig. 2) the white lead opens on the black lead and closes on the red lead. See Table No. 1 for switch rating. 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.

**Important:** When checking circuits through this instrument it is necessary to follow Table No. 1. This means that a low voltage bell ringer cannot be used unless switched through a high impedance relay. An indicating light

type device is generally recognized as best for checking circuits through instruments containing micro-switches of similar capacities.

TABLE NO. 1

VOLTAGE	NON-INDUCTIVE LOAD—AMPS.	INDUCTIVE LOAD AMPS. L/R = .026*
125 AC	5	5
250 AC	2.5	2.5
125 DC	0.5	0.05
250 DC	0.25	0.025

\* Equal to or less than .026. If greater, refer to factory for adjusted ratings.

### REPLACEMENT

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

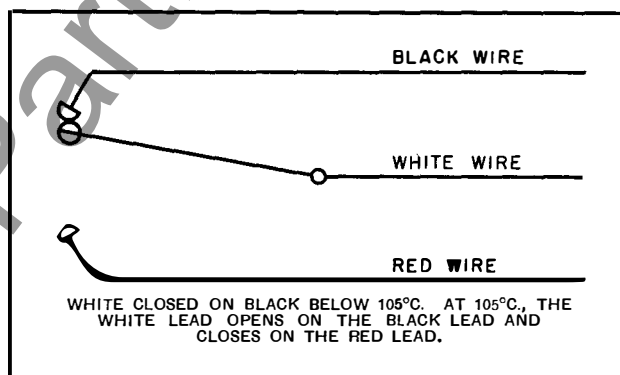


FIG. 2. Alarm Circuit.



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