

Dial Type Indicating Thermometers Not Submersible

LONG BULB—FOR HOT OIL OR HOTTEST SPOT TEMPERATURE

INSTRUCTIONS

GENERAL

Westinghouse not-submersible thermometers with long bulb designed for outdoor application on transformers to indicate hot oil or hottest spot temperatures are a self-contained unit made with or without alarm contacts, are of the dial type operated by a Bourdon gage connected to a thermometer bulb located in the region of the hottest oil. They are usually shipped mounted on the transformer case and require no maintenance. These thermometers are suitable for use in oil or Inerteen.

CONSTRUCTION AND OPERATION

These thermometers are dial type instruments calibrated for temperature. Each consists of a Bourdon gage, connected through a capillary tube, which in turn is protected by a flexible tube, to a thermometer, the bulb of which is extra long and located in the region of the hottest oil in the transformer. The Bourdon gage is calibrated in degrees centigrade, and continuous indications of temperature are given by the movements of an indicating hand over the dial.

Provisions are made on the bulb so that the secondary of a current transformer in the load circuit, can be connected across the bulb and the thermometer used as a hottest spot indicator.

These instruments are of sturdy and reliable design, utilizing well established principles in a simple construction. This assures a high degree of accuracy under severe operating conditions.

In the styles designed with bell alarm contacts, the indicating hand carries an insulated cam, which at a predetermined temperature (normally 80 degrees centigrade) closes a pair of spring-supported electrical contacts. These contacts are of ample size for operation of

alarm bell or light, or for operation on small relays. The contacts are designed for operation on alarm circuits up to 100 watts 110/220 volt a-c. and 10 watts 115/230 volt d-c.

Connections from the contacts are brought out to binding posts near the bottom of the thermometer case.

The dials have large figures that are read easily at a distance and the flexible tube allows the thermometer to be placed on a level with the eye.

Figure 1 shows a thermometer with alarm contacts. The connections for the secondary of the current transformer, when used, are shown at the ends of the bulb.

The thermometers are provided with a special bushing for screwing into the transformer case. The inside of the fitting has a tapered seat which matches a similar taper on a collar attached to the capillary tube. The two surfaces are clamped together by a gland nut which screws into the special fitting to form an oil tight joint.

INSTALLATION

Westinghouse thermometers are usually shipped mounted on the transformer. When shipped as a separate item to be installed in the field, they should be carefully unpacked and installed as shown on the transformer outline drawing. Particular care should be used not to bend the capillary tube at sharp angles and to be sure the thermometer bulb is in the top oil.

The threads on the outside of the special bushing should be coated with Westinghouse gasket cement (S#-1150419, 1 pt. size can or S#471880, 1 qt. size can) which is oil and Inerteen proof. Do not put cement on the tapered joint.

When thermometers with alarm contacts are used the external electrical con-

nections should be made to the binding posts projecting out of the case.

When used as a hottest spot indicator see also I.L. 3225, Westinghouse Hottest-Spot Dial Type Temperature Indicators for Transformers for complete instructions for this application.

RENEWAL PARTS

In case it becomes necessary to repair the thermometer it should be sent to the nearest Westinghouse Service Department or directly to the Westinghouse Electric and Manufacturing Company at Sharon, Pa., giving serial number or stock order number of transformer from which it was taken.

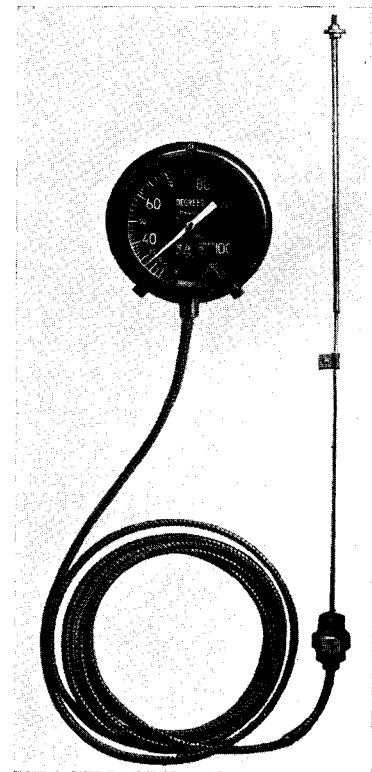


FIG. 1—STYLE No. 436993 WITH ELECTRICAL CONTACTS

Westinghouse Electric & Manufacturing Company
Sharon, Pa.

Westinghouse Press
Printed in U.S.A. (Rep. 11-42)

EVERY HOUSE NEEDS WESTINGHOUSE

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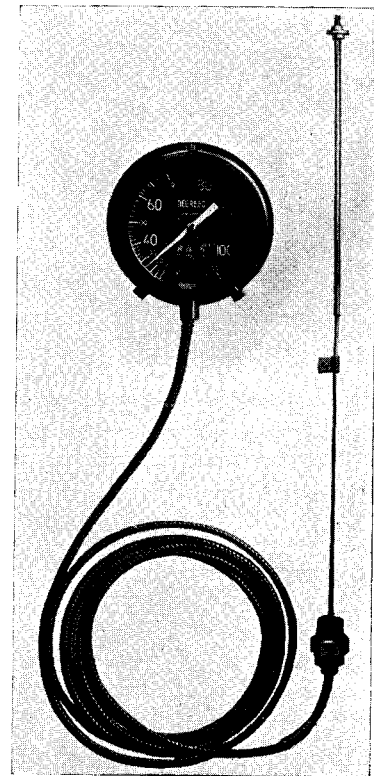


FIG. 1—STYLE NO. 436993 WITH ELECTRICAL CONTACTS