Dial Type Indicating Thermometers Not Submersible

INSTRUCTIONS

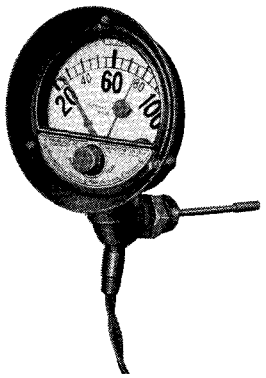

FIG. 1—THERMOMETER WITH ALARM CONTACTS FOR DIRECT MOUNTING

GENERAL

Westinghouse Not-Submersible Thermometers designed for outdoor application on transformers to indicate oil temperatures are a self-contained weatherproof 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 to a thermometer, whose bulb is 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 movement of an indicating hand over the dial. A red hand, actuated by the movement of the indicating hand, records the maximum temperature reached between readings, and may easily be reset by a knurled knob on the front of the case.

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 250 volts.

Flexible braid-covered contact leads are brought out through a carefully reamed nipple to which standard conduit may be attached.

The dials have large figures that are read easily at a distance. The mounting is upright and on a level with the eye; direct mounting for smaller tanks, and with a flexible tube for larger tanks to allow the instrument to be placed at eye level regardless of the height of the transformer.

Figures 1 and 2 show a thermometer for direct tank mounting with and without alarm contacts and Figure 3 shows a typical mounting for the same on a transformer. Figure 4 and 5 show a thermometer for distant mounting with and without alarm contacts, and Figure 6 shows a typical mounting for the same on a transformer.

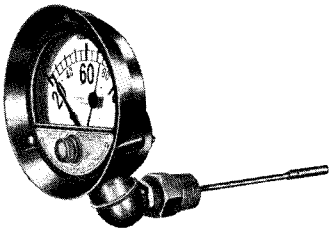

FIG. 2—THERMOMETER WITHOUT ALARM CONTACTS FOR DIRECT MOUNTING

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.

Thermometers provided with alarm contacts may be used for providing a signal, or through relays for providing additional cooling when the transformer reaches a maximum safe temperature.

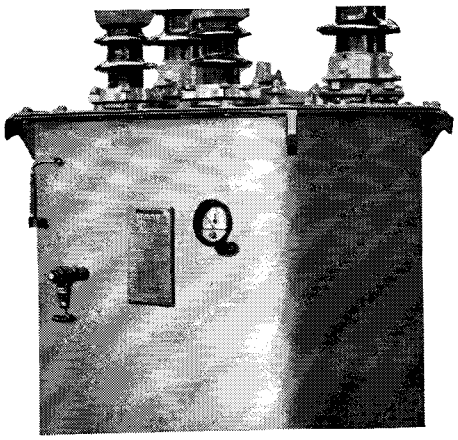

FIG. 3—THERMOMETER INSTALLED IN TRANSFORMER TANK DIRECT MOUNTING

Dial Type Indicating Thermometers Not Submersible—Continued

INSTRUCTIONS—Continued

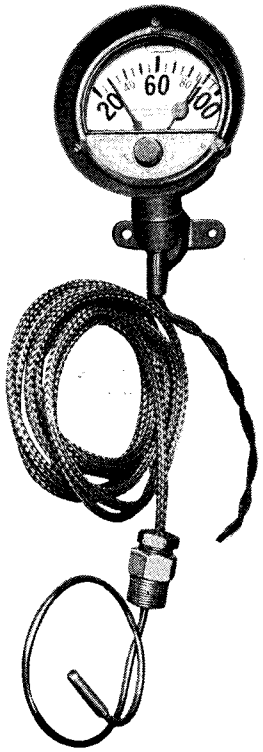

FIG. 4—THERMOMETER WITH ALARM CONTACTS AND FLEXIBLE TUBE FOR DISTANT MOUNTING

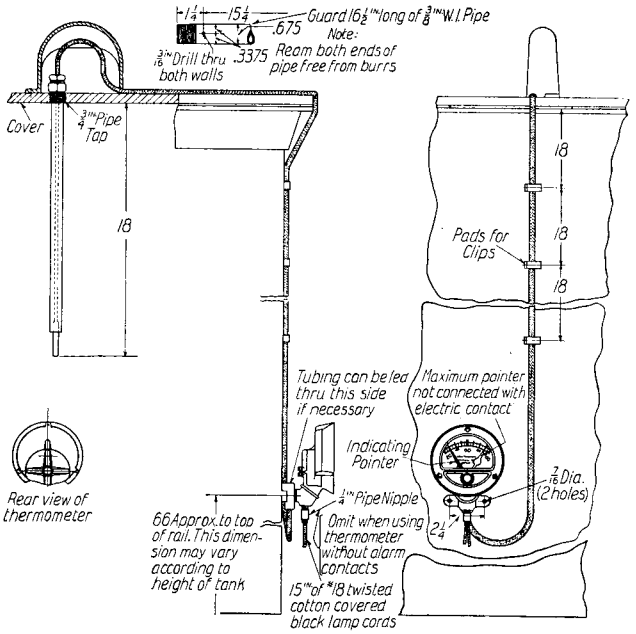

FIG. 6—CROSS SECTION OF TRANSFORMER SHOWING MOUNTING OF THERMOMETER WITH FLEXIBLE TUBE AND ALARM CONTACTS

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 outline. Particular care should be used not to bend the capillary tube at sharp angles. In the case of cover mounted thermometers the bulb must be in the top oil.

The threads on 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 connections should be made to the flexible leads projecting out of a pipe on the bottom of the instrument.

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.

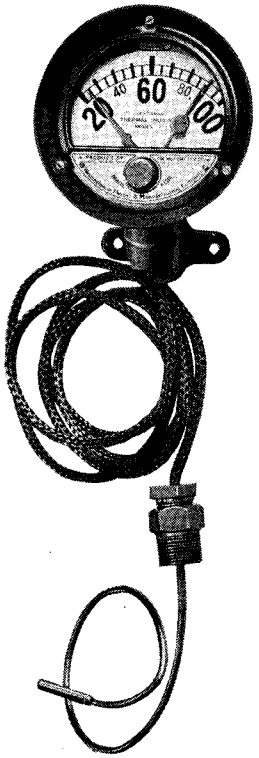

FIG. 5—THERMOMETER WITHOUT ALARM CONTACTS AND WITH FLEXIBLE TUBE FOR DIRECT MOUNTING

Westinghouse Electric & Manufacturing Company

Sharon, Pa.

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