

Position Indicator Dial Type Motor and Transmitter Unit INSTRUCTIONS

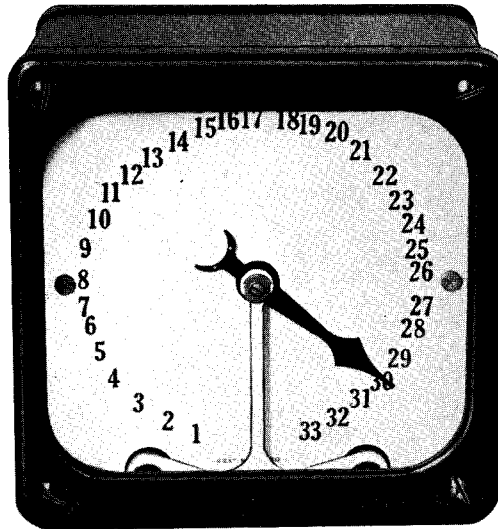


FIG. 1—A 33 POSITION INDICATOR

GENERAL

The Westinghouse position indicator as used with Westinghouse tap changer equipment on transformers and regulators consists of a transmitter on the tap changer mechanism and a motor operated indicator, or receiver, mounted on the switchboard to indicate the position of the tap changer. The transmitter and motor use very low speed and move over a total angle of a little less than 360 degrees, therefore the parts do not need to be lubricated by the customer. Only an occasional inspection and cleaning of the brushes on the transmitter is needed. A 33 position indicator is shown in Fig. 1.

CONSTRUCTION AND OPERATION

The dial type position indicator utilizes electrical circuits for indicating the positions of the tap changer which may be located at a considerable distance. This system makes use of 2 specially-wound motors, one of which acts as a transmitter and the other as a receiver to operate a pointer around a numbered dial.

Both the transmitter and receiver motors are similar in operation to small polyphase induction motors except the

stator is wound single phase and the rotor is 3 phase. The rotors are connected in parallel and stators are connected to a common single phase source of power.

When the stators are excited, a-c voltage is impressed on the rotors of both the transmitter and the receiver and as the transmitter rotor is turned, the receiver rotor follows at the same speed and in the same direction.

The receiver motor is enclosed in a square meter case that matches Westinghouse meters and is designed for switchboard mounting and is rear connected, a balanced pointer attached to the motor shaft swings in front of a numbered dial, the numbers corresponding to the positions of the tap changer. The motor movement is damped by an aluminum vane attached to the motor shaft, the vane setting up a retarding force as it rotates in front of a permanent magnet.

The transmitter motor is mounted on the tap changer operating mechanism to which it is connected by gears so that each tap changer position always corresponds to the same angular position of the transmitter motor.

INSTALLATION

If the indicator is shipped as a detail item to be installed by the customer, it should be unpacked carefully and mounted on the switch board. Make the connections as shown on the wiring diagram supplied with the transformer or regulator. After installing the indicator it should be checked by operating the tap changer. If the pointer moves in the reverse direction, it will be necessary to interchange two of the three wires of the three-phase secondary.

MAINTENANCE

The indicator is adjusted before being shipped and should not require any additional adjustments. Keep indicator clean and cover tightly in place.

RENEWAL PARTS

If the indicator becomes damaged or out of adjustment, it is recommended that the complete unit be returned to the nearest Westinghouse Service Dept. Office or to the Newark Works.

ORDERING INFORMATION

The complete indicator should be ordered from Sharon Works, giving reference to S.O. or serial number of indicator and transformer or regulator with which it was furnished.

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