DESCRIPTION • OPERATION • MAINTENANCE

INSTRUCTIONS

UNIT CIRCUIT BREAKERS
TYPE AB DE-ION®
Temperature Compensated

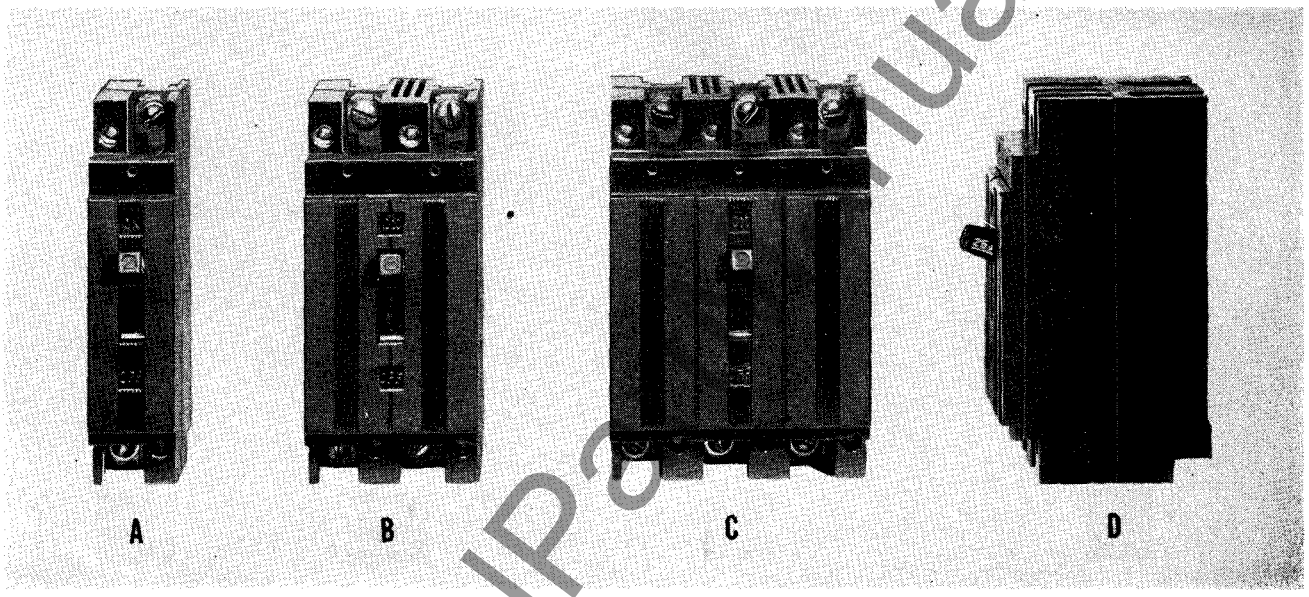

FIG. 1. Type "AB" De-ion Breakers: "A", Single-pole; "B", Two-pole; "C", Three-pole; "D", Side View of Three-pole

AB DE-ION® CIRCUIT BREAKERS with thermal-magnetic trip elements are used on Westinghouse tap changer equipment to provide overload protection for auxiliary transformer windings that supply power for the control. The mechanism is completely enclosed in a sealed case and requires no maintenance. All trip elements are thermally compensated for low sensitivity to variations in ambient temperature.

CONSTRUCTION AND OPERATION

The enclosing case, which resists entrance of dust into the mechanism, and the operating handle are molded from insulating material. The breaker is dead-front, with only the terminals being exposed, and it is unnecessary to open the sealed case to make connections.

Figure 1, ("A", "B" and "C") shows the front views of the single, double and three pole breakers, respectively. Figure 1, "D", shows a side view.

The butt-type silver alloy contacts are operated by a spring-loaded over-center toggle mechanism which snaps them either open or closed with a quick-make-and-break action. This toggle mechanism is trip-free from the handle under all conditions of overload, thereby making it impossible to hold the contacts closed on a faulted circuit.

The contacts open in front of a De-ion Grid in such manner that the magnetic field established by the arc links with the metal plates of the grid and moves the arc off the contacts into the plates. These plates divide the arc into a series of short arcs and on the first current zero the arc is extinguished by the action of a large number of cathodes in series.

When De-ion Breakers are mounted in the transformer oil, they have openings in the case adjacent to the De-ion Grids to allow free circulation of oil.

The breaker is tripped on overload by an element, consisting of a bimetal and magnet, which is calibrated to carry full load continuously, but to trip eventually on 125% load. The action of this element gives the breaker an inverse-time characteristic and makes it almost instantaneous in tripping under short-circuit conditions.

To assure relatively constant calibration over a wide range of temperatures, each pole of the breaker is equipped with a compensator. This compensator appears as a second bimetal which adjusts calibration in response to changes in ambient temperature.

When the breaker trips automatically, the handle moves to a mid-position which gives a visible indication that the breaker has tripped. Before the breaker can be closed again, it must be reset by pushing the handle firmly to the "off" position after which the contacts can be closed by throwing the handle to the "on" position. On multipole units, the separate trip elements are connected by an insulated common trip bar so that an overload on any element will cause the breaker to trip.

MAINTENANCE

The entire breaker mechanism is enclosed in its molded case and sealed at the factory to insure permanent calibration and to prevent tampering. No maintenance is necessary, since the contacts are protected against burning by De-ion Grids.

RENEWAL PARTS

In case the breaker should become inoperative or damaged, a new one should be ordered from the nearest Westinghouse Electric Corporation Sales Office or directly from the Sharon Works, Pa., giving serial and shop order number as stamped on the transformer nameplate, and style number and rating of breaker.

WESTINGHOUSE ELECTRIC CORPORATION
SHARON PLANT • TRANSFORMER DIVISION • SHARON, PA.
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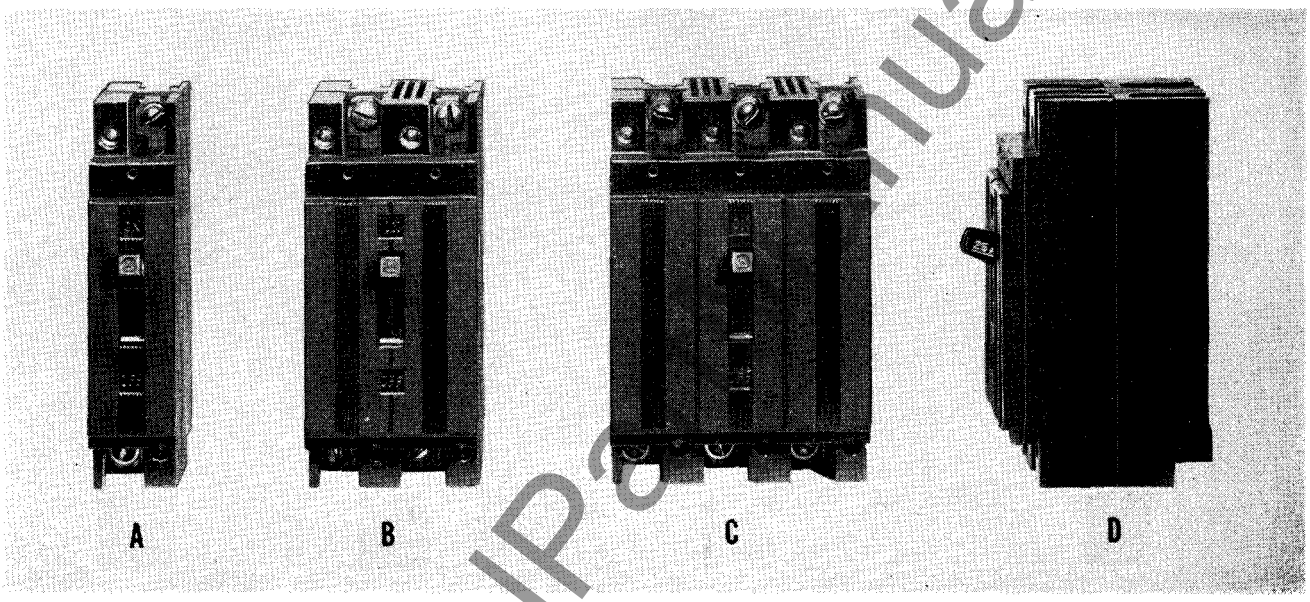

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