Voltage Regulating Apparatus

4-Step • Overhead Type • Single-Phase • 60-Hz
Specifications • 50- and 100-ampere units

GENERAL

This specification covers McGraw-Edison Power Systems Division's single-phase pole-type 4-step voltage regulator that is designed, manufactured and tested in accordance with the latest applicable ASA, NEMA and IEEE standards.

The regulator includes the following features:

RATINGS

Maximum top oil temperature rise.....65C

Range of regulation.....±6% in 1½% steps or ±10% in 2½% steps

Number of steps.....4

Continuous current.....50 or 100 amperes

Short circuit capacity.....See Table 1

Voltage.....2.4 through 14.4 kv

System voltage regulator application.....
Nameplate rating except multi-voltage units

OPERATING REQUIREMENTS

Range of voltage level adjustment.....
Continuous from 115 through 140 volts

Range of regulation.....±6 to ±10%

Range of bandwidth.....4 volts

Time delay..30 seconds for first tap change in either direction; 10 seconds for subsequent tap changes.

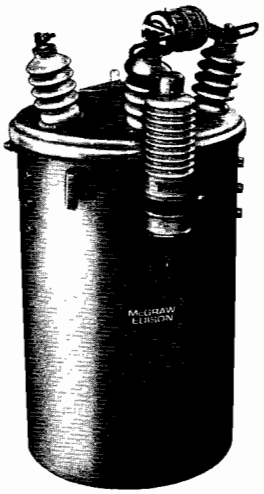
OPERATING FEATURES

The operation of the regulator is controlled by an electronic control unit that can be located at the regulator or remote from it. The control is housed in a waterproof cabinet.

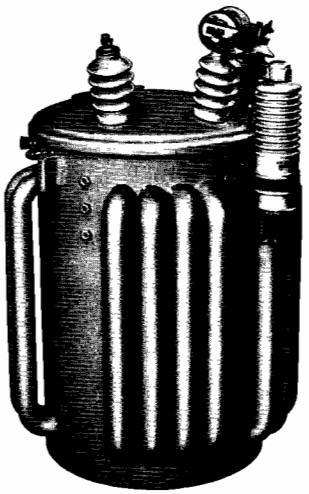
The regulator is completely self-contained with a single potential winding capable of operating the control and tap changer. The tap changer is driven by a single-phase shaded-pole motor. A neutral indicating light accurately indicates when the regulator is in neutral. A lightning arrester, mounted between the S and L bushing outside the regulator, protects the series winding from all surges.

TANK OIL

Regulators are housed in a round tank and are filled to the proper level with oxidation-resistant transformer oil.



50-ampere Unit



100-ampere Unit

TABLE I

Load Current—Amperes	Short Circuit Capacity—Percent of Rated Current	Short Circuit Duration—Seconds
50 and 100	40 x 100 25 x 100 20 x 100 16.6 x 100	.8 2.0 3.0 4.0

BUSHINGS

Bushings are wet-process porcelain.

TAP CHANGER

The main current carrying contacts are copper, tipped with copper-tungsten to minimize erosion.

These instructions do not claim to cover all details or variations in the equipment, procedure, or process described, nor to provide directions for meeting every possible contingency during installation, operation, or maintenance. When additional information is desired to satisfy a problem not covered sufficiently for the user's purpose, please contact your McGraw-Edison Power Systems Division sales engineer.

McGRAW-EDISON POWER SYSTEMS DIVISION
GENERAL OFFICES, P.O. BOX 440
CANONSBURG, PENNSYLVANIA 15317

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