DEPARTMENT OF

TRADE AND COMMERCE
CANADA

S-EA.473

STANDARDS BRANCH

OTTAWA, September 21, 1960.

TYPE APPROVAL

FERRANTI-PACKARD TYPES "B3A", "B3S" SINGLE-PHASE WATTHOUR METERS, AND TYPES "B3TA", "B3TS" SINGLE-PHASE COMBINATION THERMAL DEMAND-ENERGY METERS

The apparatus specified and illustrated herein has been duly approved by the Standards Branch under the provisions of the Electricity Inspection Act, Chapter 94, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Types "B3A", "B3S" Single-Phase Watthour Meters and "B3TA", "B3TS" Single-Phase Combination Thermal Demand-Energy Meters, manufactured by Ferranti-Packard Electric Limited, St. Catharines, Ontario.

Rating of Apparatus: All the presently-approved ratings of types "B2A", "B2S" and types "B2TA", "B2TS" single and dual range as applicable.

Description: The "3" in the type designation indicates that the older type ball-and-jewel bearing has been replaced by magnetic suspension of the disc. Except for the suspension itself and minor modifications in the grid to hold it, there are no changes from the "B2" design.

The magnetic bearing consists essentially of two ring-shaped barium ferrite magnets, situated under the disc, and axially magnetized with adjacent faces repelling to provide the supporting force for the rotor. A ring of temperature-sensitive material surrounding the lower magnet provides temperature compensation. Lateral restraint is provided by flexible stainless steel pins in graphite ring bearings at both top and bottom of the rotor shaft. The top pin is unchanged from the "B2" meter. The sapphire end stone behind the lower graphite bushing acts as end stop. The height of the rotor in the gap and the end stop clearance are separately adjustable.

The barium ferrite material has extremely high resistance to demagnetizing effects and requires no shielding to be immune to accidental or deliberate attempts to cross-magnetize. The gap between magnets is large and visible and easy to check for the presence of foreign material. Because there is repulsion between the magnets, magnetic particles do not tend to bridge the gap between rotor and stator, but tend to lie flat on the poles.

NOTE: Small changes in level have a larger than usual effect on the meter error at the low load test point, so care should be taken to properly level the meter before verifying. The plane of the disc is to be used as reference.

PERTINENT CIRCULARS: SD-EA-342, -356, -385, S-EA-432, -437, -438, -447, -454, -462 and -465.

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