CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

S-EA.618

OTTAWA, April 16, 1964.

TYPE APPROVAL

SANGAMO TYPE "HVA15M" KVA THERMAL CONVERTER

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: Type "HVA15M" KVA Thermal Converter, manufactured by Sangamo Company Limited, Leaside, Toronto 17, Ontario.

Rating of Apparatus:

Rated Current	5 amperes
Rated Voltage	115 or 120 volts
Frequency	60 cycles
Phase	3
Wire	3
Elements	2
Output	100 mv D.C. for 1 KVA AC input
Response Period	15 minutes
Single Phase Test Constant	1.3

Description: The type "HVA" KVA thermal converter is similar in construction to the type HW thermal converter in that it also has a sealed thermal element.

It differs from the type HW in that the current applied to the heaters is rectified D.C. obtained through a network of rectifiers supplied from the secondaries of two transformers in the voltage circuit and two transformers in the current circuit.

In this respect it is very similar to the type 4L3 but, owing to a different circuit arrangement of the rectifiers in the voltage circuit, the single phase test constant is 1.3 against .75 for the equivalent 4L3. In order to obtain a reading of 100 mv corresponding to 1 KVA input when testing on single phase it is necessary to apply 500 x 1.3 or 650 VA to each element in series.

As the type HVA is a rectifier type of instrument, it is subject to errors due to waveform distortion and should only be verified on a test board known to produce a waveform having low harmonic content.

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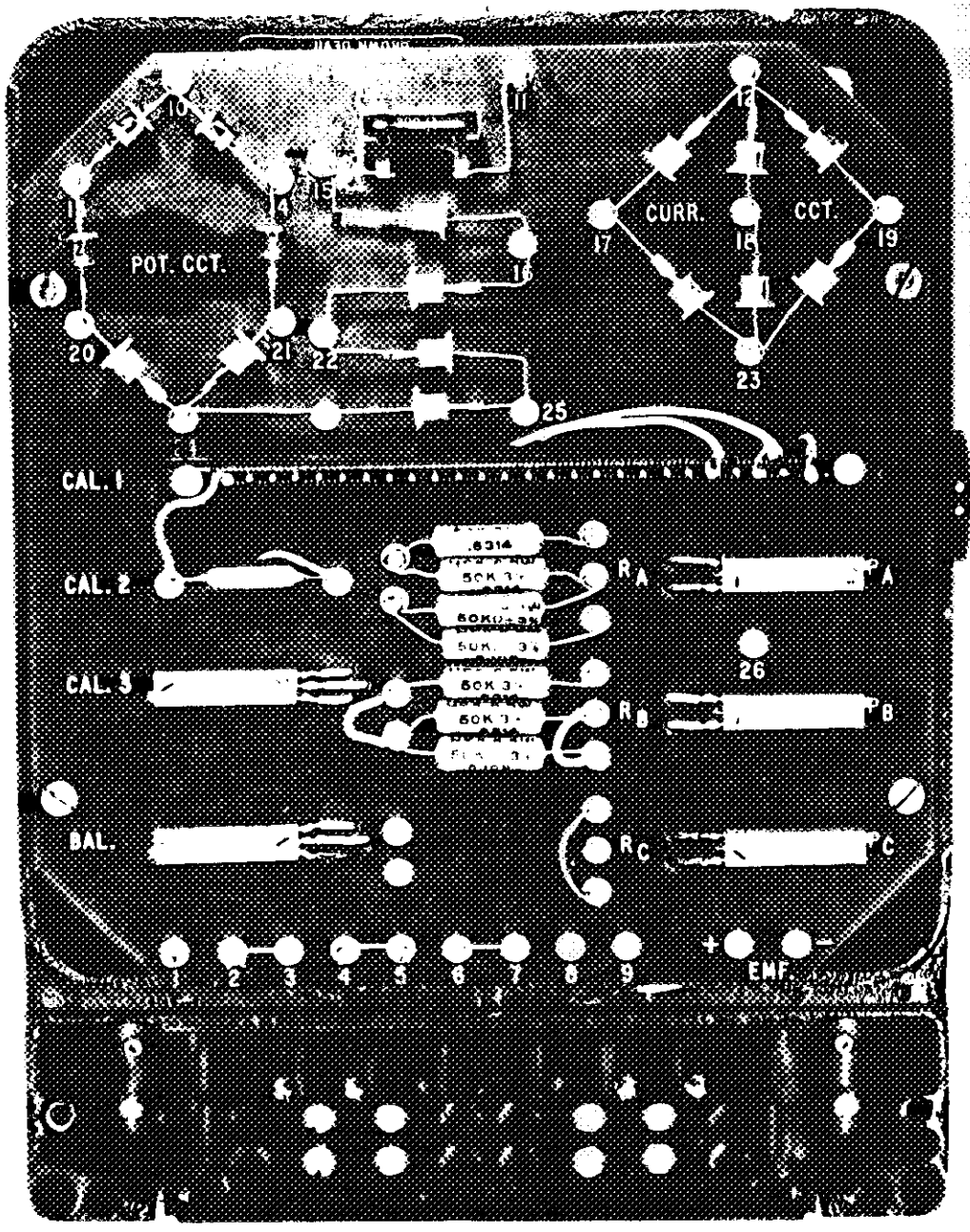

The millivolts produced by the type HVA are the result of the vector volt-amperes in a polyphase circuit according to the formula $\sqrt{3}$ EI, where "E" is the average of the three line to line voltages and "I" is the average of the three line currents.

As the type HVA reads volt-amperes it is independent of power factor, and if a wattmeter is used as a standard, the power factor should be unity.

W. J. S. Fraser

(for) E. F. Power,
Chief, Electricity and Gas Division,
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Ref: A13

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