CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

S-EA.643

OTTAWA, January 6, 1965.

TYPE APPROVAL

LANDIS & GYR TYPE "CAC3/VA/CAC3" SUMMATING TRIVECTOR

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 "CAC3/VA/CAC3" Summating Trivector, manufactured by Landis & Gyr, Zug, Switzerland, and distributed in Canada by Landis & Gyr Inc., 725 Decarie Blvd., Montreal 9, P.Q.

Rating of Apparatus: The same as those given for Impulse Summators type "CAC3" under circular S-EA.556 of June 25, 1962.

Approved Attachments *

"m"	maximum demand register
"ye"	demand timing unit with 15, 20, 30 and 60 minute test periods
"r"	retransmitting contacts
"f1" and "f2"	switchboard mounting, flush and surface.

* The incorporation of any of these attachments will be shown in the Type designation, e.g. CAC3.3mr/VAmyer/CAC3.3mr. The number of receiving relays and registers will be indicated by the number following the decimal point in the type designation as CAC3.(3). A Summating Trivector may have 1, 2 or 3 maximum demand attachments, and may be operated with an external approved timing unit.

Description: The Summating Trivector consists of two Summators of the CAC3 (circular S-EA.556) mounted in a common case and connected to a third gear mechanism and register located between them. This third gear mechanism receives the output from the two summators and combines them in such a manner as to produce the vector sum according to the formula $VA = \sqrt{wh^2 + rvah^2}$, where the quanties under the root sign are in the form of pulses originating from "r4" contacts installed on watthour and reactive voltampere hour meters respectively. VA is also in pulse form.

Because of the internal gear ratios available, the values of the pulses from the various feeders may be different, and a small label placed adjacent to each input register will identify the source of each input pulse, the value of

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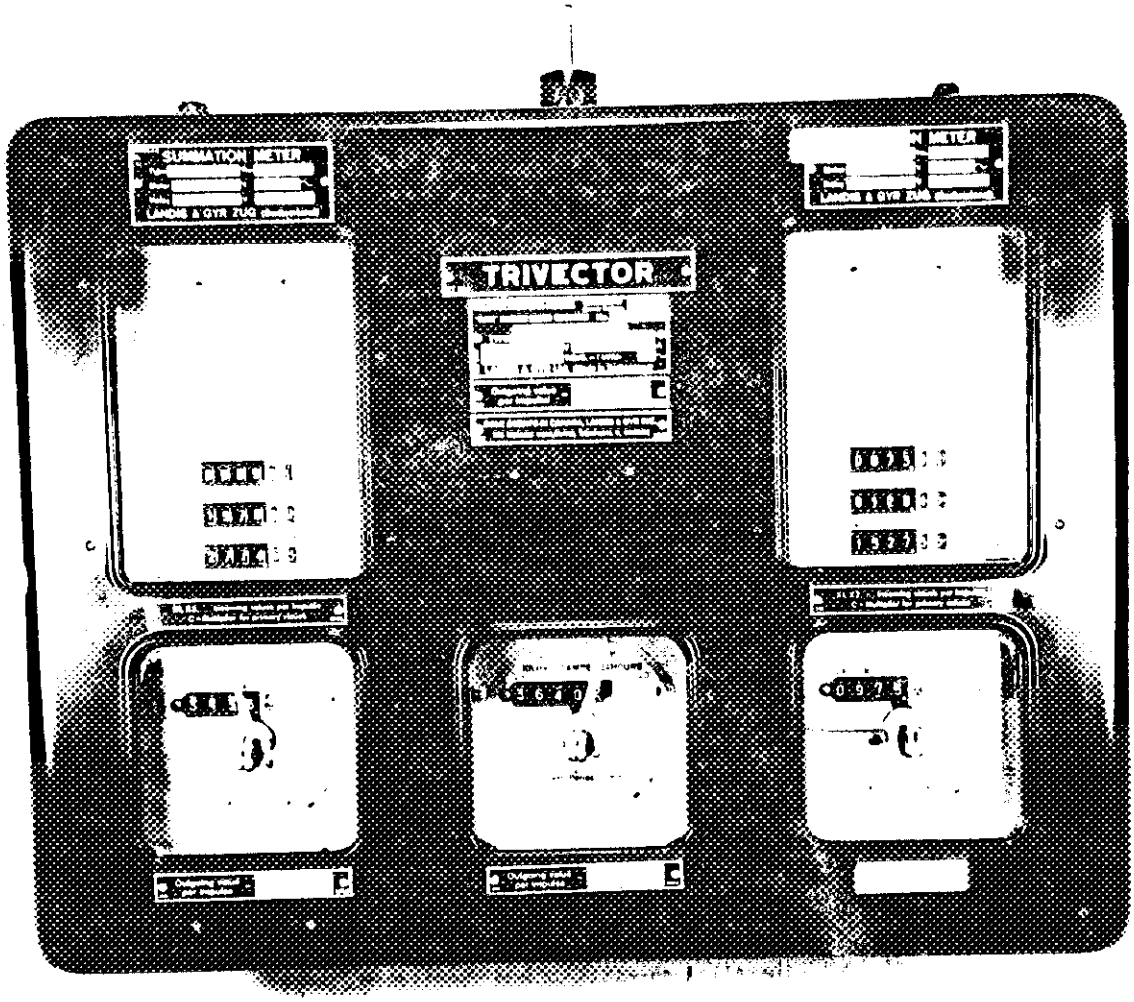

Description (Con'd)

each pulse and the multiplier to be applied to each register reading. Similar labels are placed adjacent to the summation registers, and a multiplier placed on the dial face is to be applied to the demand reading.

This approval covers the use of inputs and registers that may be subtractive.

The maximum demand attachment "m" illustrated on the back of this circular is similar in appearance to that shown on the backs of circulars S-EA.551 and S-EA.636 covering types FF8/VA/FF8[illegible] and MF8/VA/MF8[illegible] Trivectors respectively, except that the dial face is somewhat smaller and it is pulse driven.

The wording will be as shown on the back of circular S-EA.636.

A cut-out in the face of each dial displays a cyclometer register showing the total kilowatt hours, kilovar hours or kilovoltampere-hours. If there is no demand attachment, the register will be shown as on the back of circular S-EA.558.

A wiring diagram will normally be supplied for each installation, so that it is necessary when verifying to make sure that the output pulses from each transmitting meter arrive at the correct input, that each impulse has the correct value and all multipliers are taken into account.

If for any reason it becomes necessary to verify the summator by feeding pulses into it from a separate source, cognizance should be taken of the fact that the gear train of the demand attachment is designed for the summator receiving evenly-spaced pulses over a complete test period which includes the resetting time which is set by the spacing of the timing contacts and can be up to 1.2% of the test period. It is thus possible that the number of pulses calculated to produce a certain demand reading would give a reading high by this amount.

This circular supersedes circular S-EA.558 of July 18, 1963, to cover Summating Trivectors with demand attachments and to inform that the Summating Trivector type "CAC1/VA/CAC1" is no longer produced.

W.J.S. Fraser,
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Ref: A837B