Consumer and Corporate Affairs | Consommation et corporations

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NOTICE OF APPROVAL
AVIS D'APPROBATION

E-147

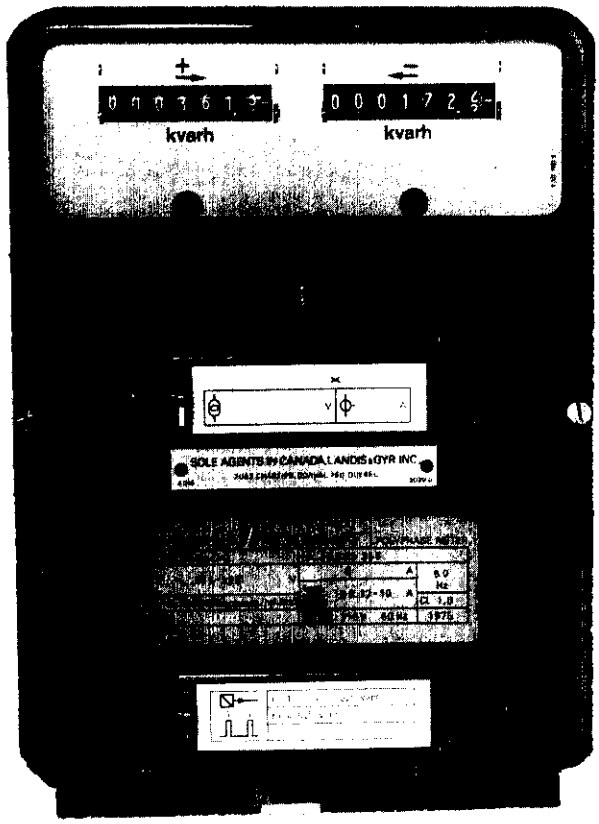
Ottawa, December 24, 1976

LANDIS & GYR TYPE ZFS1Q....., 2-ELEMENT AND
TYPE ZMS1Q.....3-ELEMENT STATIC VARHOUR METERS

Rated Voltage	115-120V
Current Range	0.12-10A
Frequency	60 Hz
Register	6 digit cyclometer, with test dial, stepping motor driven
Auxiliary Power Supply	120V, 60Hz, 9W
Element Consumption	0.1VA per voltage element 0.2VA per current element
Starting Load	less than 0.4% nominal load
Approved Options	.1 single register .2 dual (import & export) register with indicating lights d dual rate register c monitoring contact for direction of energy flow r13 SPDT 3-wire transmitting contact (s) r14 SPDT 2-wire transmitting contact (s)
Contact Loading	both r13 and r14, 250V, 0.5A, AC or DC
Operating Temperature	-5°C to +45°C
Accuracy Class	1.0 (IEC)

Description

These varhour meters are essentially the same as the watthour meters approved under Notice of Approval E-112-1, except that a phase shifting circuit is inserted ahead of each multiplier unit to produce a 90° phase shift between currents and voltages applied to the mark space amplitude modulators.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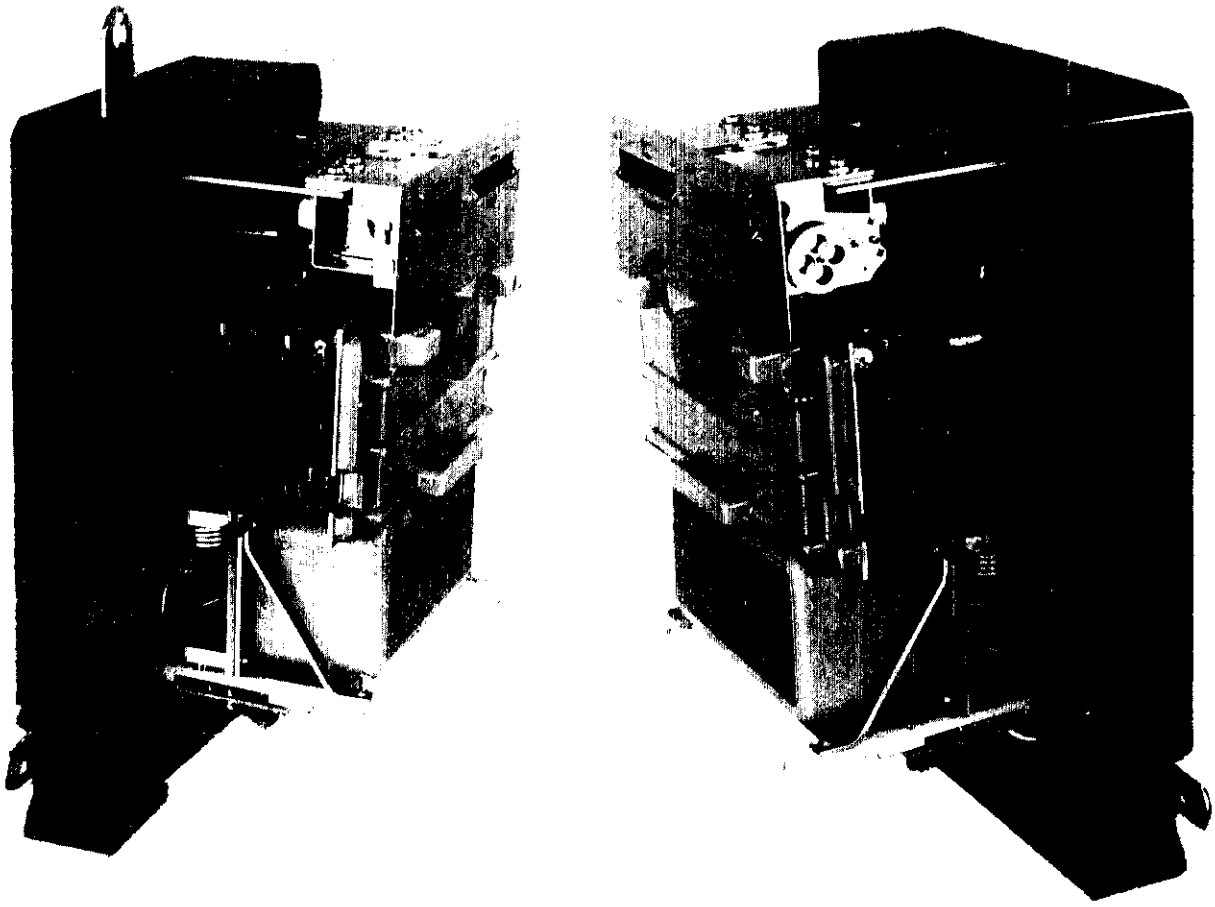
SOLE AGENTS IN CANADA LANDIS & GYR INC



The phase shifter for each element consists of a capacitor in parallel with the burden resistor across the secondary terminals of the input current transformer and an RC circuit across the secondary terminals of the input voltage transformer. This results in a current vector shift of 45° lead and a voltage vector shift of 45° lag, amounting to a 90° phase displacement between current and voltage.

However the magnitudes of current and voltage are reduced by $\sqrt{2}$ so that after multiplication, the quantity measured is actually only one half the reactive power, hence the meter constant Kh is double that of a corresponding Type of watthour meter.

Pulse constants are not specified herein due to the wide range available to meet customers' individual needs.

For verification purposes the Kh and Ki marked on the nameplate will be used.

Approval granted to:

Landis & Gyr Ltd.,
2063 Rue Chartier,
Dorval, Quebec.

J.L. Armstrong, P. Eng.,
Chief, Standards Laboratory

D.L. Smith, P. Eng.,
Chief, Electricity & Gas Division,
Metrology and Laboratory Services.

Ref: G 6565-L1-5