CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

E-9

OTTAWA May 27, 1965

NOTICE OF APPROVAL

FOR

SANGAMO TYPE "4L3" COMBINATION POLYPHASE WATTHOUR METERS AND THERMAL KVA DEMAND METERS

Apparatus

Service:	3-Phase 3-Wire (2-Element)				
Voltages:	115, 120, 230, 240, 460, 480, 575 and 600 volts				
Current Ranges (amperes):	0.12-7.5	0.25-15	0.5-37.5	1.2-75	2.5-150
#Full Scale VA Polyphase:	1500	1500	1500	1500	1500
*#Multiplier:	1	2	5	10	20
#Disc constant (Kh) each disc:	1/6	1/3	1	1-2/3	3-1/3
Register Ratio (Rr), overall:	6000	6000	5000	6000	6000
°Demand Test Constant, single phase:	3/4 - all ratings				
Response Period:	10 and 16 minutes - all ratings				
Frequency:	60 cycles - all ratings				

Service:	3-Phase 4-Wire Y (2½ - Element Y)			
Voltages:	120, 240, and 345			
Current Ranges, (amperes)	0.12-8.5	0.25-20	0.5-40	1.2-85
#Full Scale VA polyphase:	1500	1500	1500	1500
*#Multiplier:	2	5	10	20
#Disc constant (Kh), each disc	1/2	1	2.5	5
Register ratio (Rr), overall	4000	5000	4000	4000
Demand Test Constant, single phase:	1 - all ratings			
Response Period	10 and 16 minutes - all ratings			
Frequency	60 cycles - all ratings			

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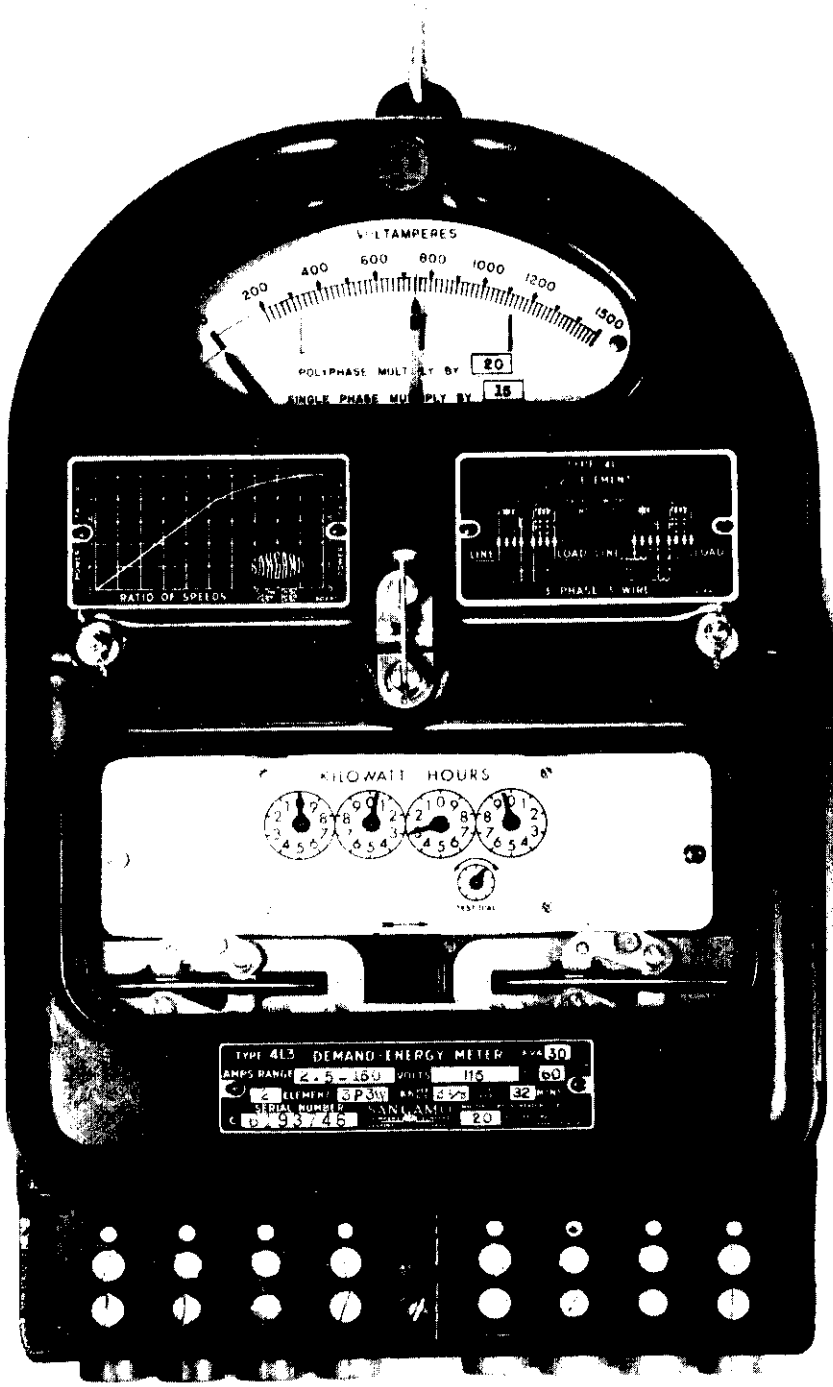

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Full scale VA, multiplier and disc constant are given for 115 or 120 volts. For other voltages multiply by the voltage ratio.

* Applies to both watthour and demand elements.

o When testing 2-element meters on single phase, the test load must be reduced by a factor of 3/4 to obtain the equivalent polyphase reading; e. g., the test load for a reading of 1.0 KVA will be .75 KVA, that is .375 KVA applied to both elements in series. All tests must be made with potential applied to both voltage coils.

The register for all ratings may be the differential, clock-type, 4-dial plus test dial, as approved under S-EA.493 and metal plate with serial number mounted between adjacent tapped holes in the magnet housings; or alternatively two separate clock-type registers may be used.

Description

This circular is a consolidation of the 16 minute ratings covered by Circular S-EA.555, the 10 minute rating covered by S-EA.610 together with additional 10 minute ratings so that it covers the complete line.

The 2-element design has two potential and two current transformers, the latter having a rectifier network arranged to derive the third current from the two that are supplied, and for this reason it will not register correctly if supplied from the secondaries of three current transformers connected in delta. The 2-1/2 element design has two potential transformers and three current transformers in the demand section, each giving the same pointer deflection for the same load. The watthour section of this design has the conventional split coil in each current circuit.

As the "4L3" is a rectifier type of instrument and while it is independent of power factor, its reading is proportional to the average values of the current and voltage waves. Therefore when verifying these meters; particularly if a wattmeter or rotating standard whose readings are proportional to the rms values is used; the test equipment should be one known to produce current and voltage waves of low harmonic content.

Approval granted to: The Sangamo Company Limited, Leaside, Toronto 17, Ontario

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