DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

E-71

OTTAWA March 20, 1968.

NOTICE OF APPROVAL

FOR

SANGAMO TYPE "KYWL-" COMBINATION POLYPHASE WATTHOUR METER AND THERMAL KW-KVA DEMAND METERS

Apparatus

Types KYWLP# and KYWLS

Service 3 phase 3 wire

	Voltages	120, 240, 480 and 600 volts				
	Current Range (amperes)	0.12-8	0.3-25	0.6-50	1.2-100	2.5-200
✱	Full Scale (KW-KVA)	1.5	5	10	20	40
✱	Multiplier	1	5	10	20	40
✱	Disc Constant (Kh)	0.72	1.8	3.6	7.2	14.4
	Register Ratio	166-2/3	333-1/3	333-1/3	333-1/3	333-1/3
o	Single Phase KVA Test Constant	0.866 (all ratings)				
	Indication 90%	15 minutes				
	99%	30 minutes				
	Frequency	50 hz and 60 hz (all ratings)				
	Scale	1500 watts/va and 1.5 KW/KVA on 8 ampere meters. 1000 watts/va and 1.0 KW/KVA on all other ratings.				

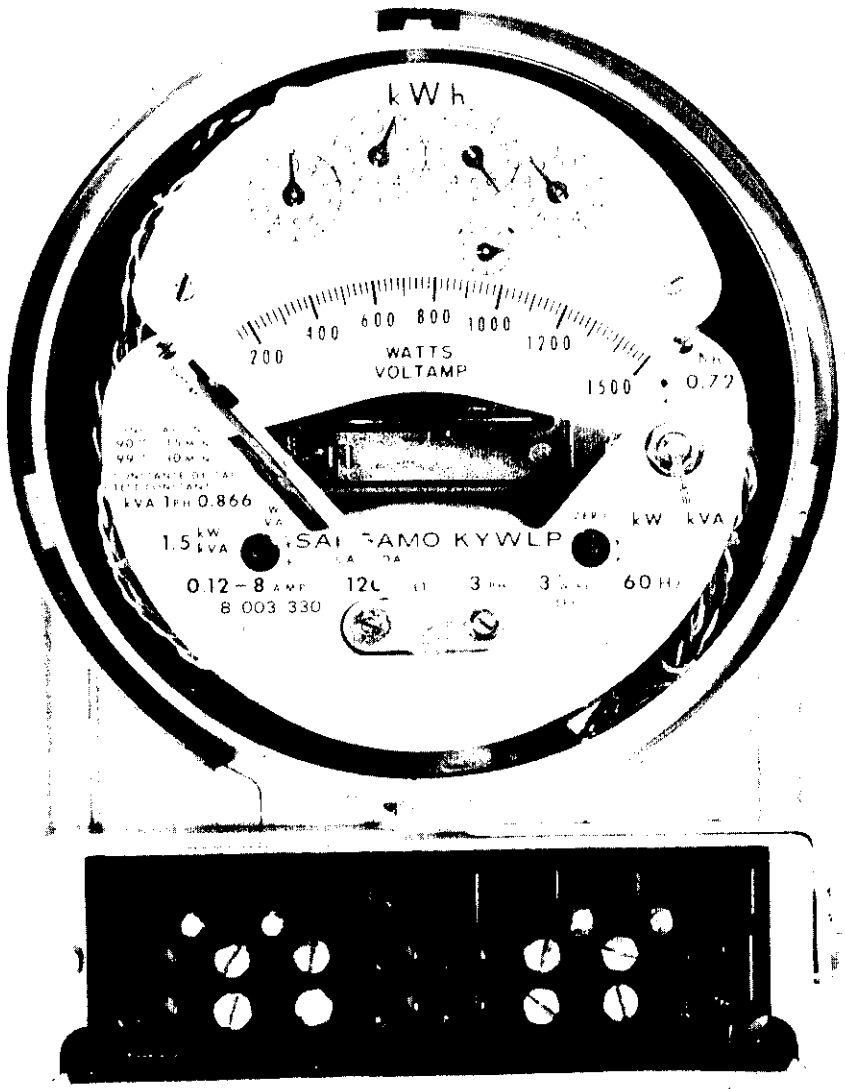
✱ Full scale value, multiplier and disc constant are given for 120 volts. For other voltages multiply by the voltage ratio.

✱ Multiplier applies also to the watthour register reading.

\# Maximum current rating on P base meters is 100 amperes.

o Applies only when the selector switch is set in the KVA position. All registers have test dials.

SANGAMO TYPE "KYWL-" COMBINATION POLYPHASE WATTHOUR METER AND THERMAL KW-KVA DEMAND METER



Service 3 phase 4 wire Wye

	Voltages	120, 240, 277 and 345 volts				
	Current Range (amperes)	0.12-8	0.3-25	0.6-50	1.2-100	2.5-200
x	Full Scale (KW-KVA)	3	9	18	36	72
x	Multiplier	2	7.5	15	30	60
x	Disc Constant (Kh)	1.08	2.7	5.4	10.8	21.6
	Register Ratio	222-2/9	333-1/3	333-1/3	333-1/3	333-1/3
o	Single Phase KVA Test Constant	1 (all ratings)				
	Indication 90%	15 minutes				
	99%	30 minutes				
	Frequency	50 hz and 60 hz (all ratings)				
	Scale	1500 watts/va and 1.5 KW/KVA on 8 ampere meters 1200 watts/va and 1.2 KW/KVA on all other ratings.				

x Full scale value, multiplier and disc constant are given for 120 volts. For other voltages multiply by the voltage ratio. (For 277 volts use 2.5)

o Applies with the selector switch in the KVA position.

NOTE: Meters of 0.12-8 ampere rating and all voltages listed above for both 3 phase 3 wire and 3 phase 4 wire wye services are available in "F" base mounting as type "KYWLF".

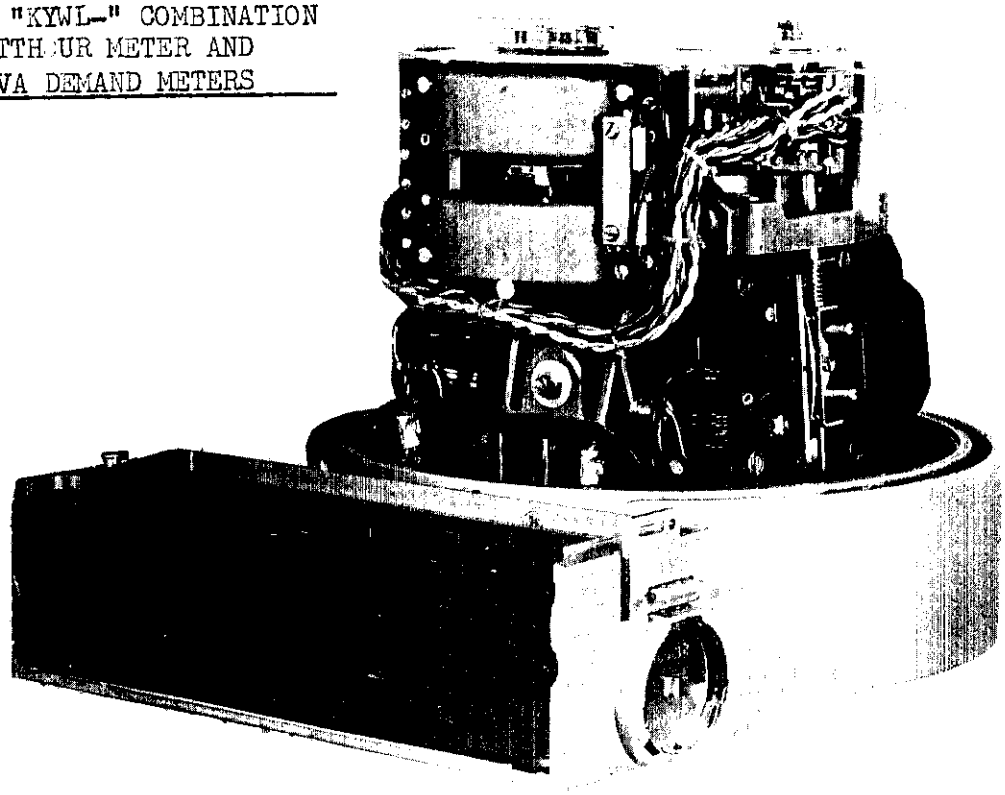
Description

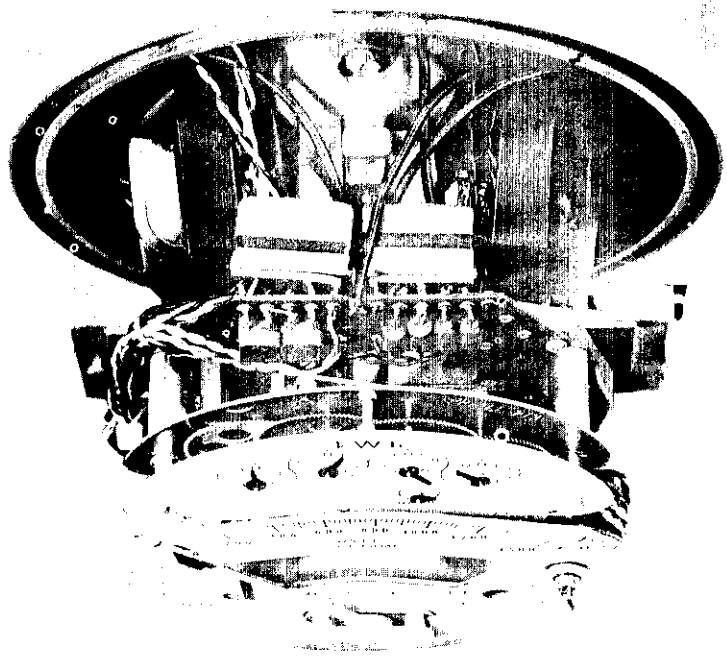
The watthour section of the type KYWL is identical to those of the corresponding ratings of the type "KY-" polyphase watthour meters receiving approval under circular E-60.

The thermal demand element is identical in design to that of the type "LY-" polyphase thermal KVA demand meter receiving approval under circular E-64 and all descriptive material on this circular applies also to the type "KYWL-".

The type KYWL- incorporates the same rectifier circuits as described in circular E-64 covering the type "LY-".

SANGAMO TYPE "KYWL-" COMBINATION POLYPHASE WATTHOUR METER AND THERMAL KW-KVA DEMAND METERS





The demand section of the type "KYWL-" is thus identical in design and construction to the type "WLY-" receiving approval under circular E-70.

The type "KYWL-" is therefore a combination in one enclosure of the polyphase watthour meter KY-, the polyphase thermal KW demand meter WY- and the polyphase thermal KVA demand meter LY-.

Like the type WLY-, a knob on the front of the glass cover changes the function of the demand element so that the scale reads in either KW or KVA depending upon the setting.

Any scale multipliers remain the same for either setting. However, when verifying on single phase, the KVA test constant must be applied when the switch is in the KVA position to obtain the desired scale indication.

After the meter has been verified and sealed, the utility may set the knob and seal it with a utility seal according to customer requirements.

The meters covered by this approval are designed for use on specific services and will only meter correctly when so used.

The 0.12-8 ampere rating designed for use on a 3 phase 3 wire service may have the current coils fed from the secondaries of two current transformers, but will not measure correctly if fed from the secondaries of three current transformers in delta on a 3 phase 4 wire wye service.

The type KYWL- has the usual zero and calibration adjustments which should only be used when the switch is set in the "KW" position so that the scale reads in watts.

A third calibration adjustment is usually set at the factory; is not intended as a routine adjustment, and is for the purpose of bringing the KVA indication, after the specified single phase test constant has been applied, into coincidence with the KW indication.

This adjustment is of the "trim-pot" type and may be found at the front of the meter behind the scale.

Meters covered by this approval are to be verified in three stages: (1) the watthour meter is verified with all the test points prescribed for the rating, (2) the switch is set in the "KW" position and the demand portion is verified at all the prescribed test points for watt demand meters and (3) the switch is set in the KVA position and the demand portion is verified at the test points to be set out in a circular letter from Headquarters.

With the switch set in the KVA position, the demand section becomes a rectifier type and should only be verified on a board known to produce a waveform having low harmonic content.

Approval granted to: Sangamo Company Limited,
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