Department of consumer and corporate affairs / Ministère de la consommation et des corporations

STANDARDS BRANCH - DIRECTION DES NORMES

NOTICE OF APPROVAL
AVIS D'APPROBATION

E-66-3

OTTAWA March 4, 1975

SANGAMO TYPE "KYL-" COMBINATION POLYPHASE
WATTHOUR AND THERMAL VOLTAMPERE DEMAND METER

APPARATUS RATING

Types: KYLA and KYLS

Network for use on 2 wires and neutral of a 3-phase 4-wire Y circuit.

Voltages	120, 240, 277 and 345 volts		
Current Range (amperes)	0.6-50	1.2-100	2.5-200
*Full Scale Demand (KVA)	12	24	48
*Multiplier	10	20	40
*Disc Constant (Kh)	3.6	7.2	14.4
Register Ratio	333 1/3	333 1/3	333 1/3
Scale	1200 voltamperes and 1.2 KVA		
Single Phase KVA Test Constant	1.0		

Note: Network meters must not be used on a 3-phase 3-wire service.

Types: KYLP# and KYLS

For use on a 3-phase 3-wire service.

Voltages	120, 240, 480 and 600 volts			
Current Range (amperes)	0.3-25	0.6-50	1.2-100	2.5-200
*Full Scale Demand (KVA)	5	10	20	40
*Multiplier	5	10	20	40
*Disc Constant (Kh)	1.8	3.6	7.2	14.4
Register Ratio	333 1/3	333 1/3	333 1/3	333 1/3
Scale	1000 voltamperes and 1.0 KVA on all ratings			
Single Phase KVA Test Constant	0.866			

Note: Meters designed for use on a 3-phase 3-wire service must not be used on a network service or a 3-phase 4-wire Y service with delta-connected CT's.

Maximum Current of "P" base meters is 100 amperes.

2½ - element Y for use on a 3-phase 4-wire Y service

Voltages	120, 240, 277 and 345 volts			
Current Range (amperes)	0.3-25	0.6-50	1.2-100	2.5-200
*Full Scale Demand (KVA)	9	18	36	72
*Multiplier	7.5	15	30	60
*Disc Constant (Kh)	2.7	5.4	10.8	21.6
Register Ratio	333 1/3	333 1/3	333 1/3	333 1/3
Scale	1200 voltamperes and 1.2 KVA on all ratings			
Single Phase KVA Test Constant	1.0			

Types: KYLP, KYLS and KYLF (transformer type)
Network for use on 2 wires and neutral of a 3-phase 4-wire Y service.

Voltages	120, 240, 277 and 345 volts	
Current Range (amperes)	0.6-5[illegible]	0.12-8
*Full Scale Demand (KVA)	1	1.5
*Multiplier	1	1
*Disc Constant (Kh)	0.36	0.72
Register Ratio	333 1/3	166 2/3
Scale	1000 voltamperes and 1.0 KVA on 5[illegible] ampere meter 1500 voltamperes and 1.5 KVA on 8 ampere meter	
Single Phase KVA Test Constant	1.0	

Note: Network meters must not be used on a 3-phase 3-wire Service.

For use on a 3-phase 3-wire service

Voltages	120, 240, 480 and 600 volts	
Current Range (amperes)	0.6-5[illegible]	0.12-8
*Full Scale Demand (KVA)	1	1.5
*Multiplier	1	1
*Disc Constant (Kh)	0.36	0.72
Register Ratio	333 1/3	166 2/3
Scale	1000 Voltamperes and 1.0 KVA on 5[illegible] ampere meter 1500 voltampere and 1.5 KVA on 8 ampere meter	
Single Phase KVA Test Constant	0.866	

2½ - element Y for use on a 3-phase 4-wire Y service

Voltages	120, 240, 277 and 345 volts		
Current Range (amperes)	0.12-8		
*Full Scale Demand (KVA)	2	2	3
*Multiplier	1	2	2
*Disc Constant (Kh)	1.08	1.08	1.08
Register Ratio	111 1/9	222 2/9	222 2/9
Scale	1000 voltamperes and 1.0 KVA with multiplier of 2 1500 voltamperes and 1.5 KVA with multiplier of 2 2000 voltamperes and 2.0 KVA with multiplier of 1		
Single Phase KVA Test Constant	1.0		

Types KYLP, KYLS and KYLF 3-element Y for use on 3-phase 4-wire Wye Service

Voltages	120, 240, 277 and 345 volts			
Current Range (amperes)	0.12-8			1.2-100
*Full Scale Demand (KVA)	2	2	3	36
*Multiplier	1	2	2	30
*Disc Constant (Kh)	1.08	1.08	1.08	10.8
Register Ratio	111 1/9	222 2/9	222 2/9	333 1/3
Single Phase KVA Test Constant	1.0			
Scale:	1000 voltamperes and 1.0 KVA with mulitplier of 2			
Transformer Type	2000 voltamperes and 2.0 KVA with multiplier of 1			
0.12-8 ampere	1500 voltamperes and 1.5 KVA with multiplier of 2			
Self - contained 1.2-100 ampere	1200 voltamperes and 1.2 KVA			
Frequency	50 hz and 60 hz (all types and rating			
Indication (all ratings)	90% in 15 minutes, 99% in 30 minutes			

* 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).
Multiplier applies to both watthour and demand readings.
All registers have test dials.
All ratings may be supplied with potential indicating lamps.

Description

This circular supersedes and consolidates previous circulars E-66-1 and E-66-2. It extends the Approval to 3-element meters and revises the rating of the 2½-element Y meters for use on 3-phase 4-wire Y polyphase service (E-66-2).

The type "KYL-" Combination Polyphase Watthour Meter and Thermal "KVA" Demand Meter consists of the type "KY-" polyphase meter receiving approval under E-60 and the thermal demand element of the type "LY" receiving approval under "E-64-1".

As the demand section of the type "KYL" is a rectifier type of instrument, it is independent of power factor but 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, particularly if a wattmeter or rotating standard is used as a reference.

As in the case of the "KY-" polyphase watthour meter, the disc shaft is set well back within the meter element so that an extra shaft is required to connect the disc shaft worm to the take-off gear on the register. This shaft, which is the same for all ratings, has a gear on both ends with teeth so proportioned that it requires only 83 1/3 disc revoltuions to produce one revolution of the take-off gear.

The single phase test constant will appear on the nameplate as "Constantgd'essai, Test Constant KVA 1 ph."

A ground lug has been added to all "P" base meters and two additional holes have been added to the nameplate to permit easier access to the light load adjustments on the watthour section. The filter capacitor has been changed to a round hermetic sealed type. On transformer type "P" base meters, the potential terminal holes have been enlarged to accommodate two # 12 wires. The terminal block in the "P" base is a new design. The current terminal connectors are a larger size and are the same as used in the single-phase "K2A" terminal block using only one screw. The snap test links from the "K2A" single-phase block are now also used on this polyphase block.

The demand element toroidal current transformers are mounted on the current coils using heat shrinkable cross linked polyethylene tubing. The auxiliary wiring panel, formerly mounted on the left hand side of the thermal casting,has been eliminated and these connections are made on the existing panel mounted behind the register.

Approval granted to:

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