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

STANDARDS BRANCH - DIRECTION DES NORMES

NOTICE OF APPROVAL - AVIS D'APPROBATION

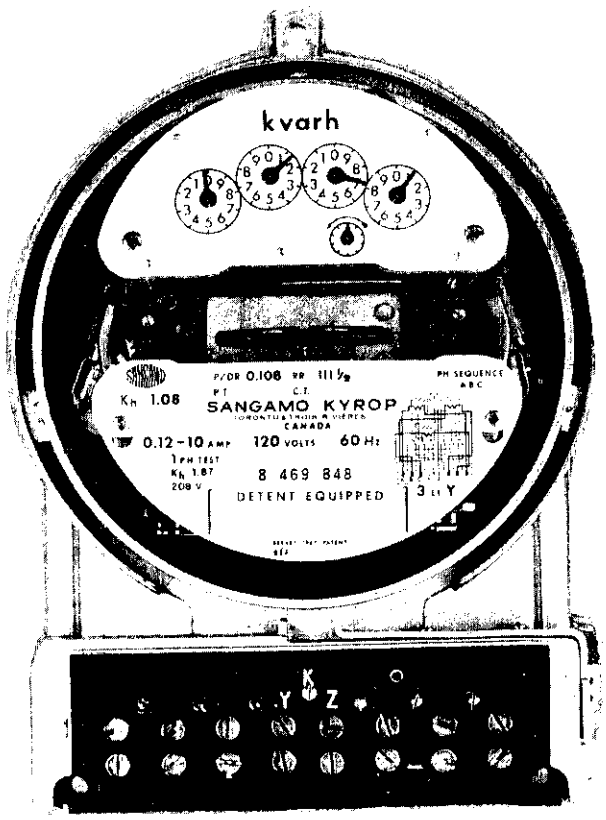
NO. E-96-1

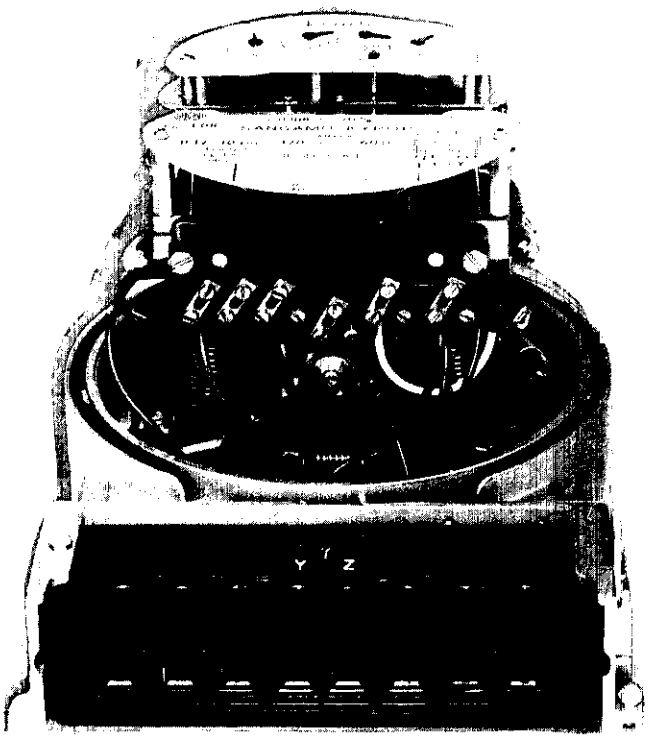
DATE January 31, 1973.

SANGAMO TYPE "KYRP" 3 - ELEMENT Y POLYPHASE REACTIVE KILOVOLTAMPEREHOUR METERS

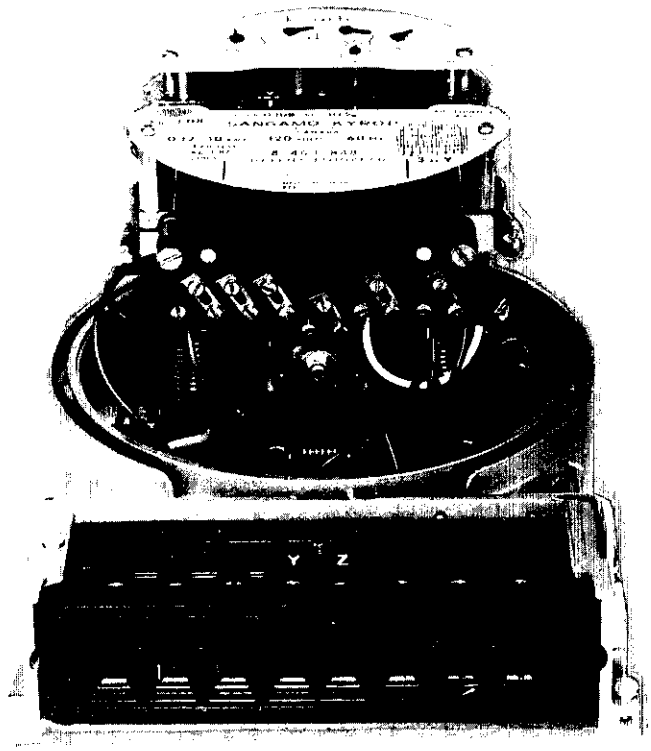
Current Range	0.12 - 10 amperes		
Voltages (1)	120	240	345
Varhour Disc Constant Kh	1.08	2.16	3.24
Single Phase Test (2)			
Watthour Disc Constant	1.87	3.74	5.61
Voltages	208	416	600
Register Ratio Rr (3)			
4 and 5-dial x 1	111-1/9	55-5/9	37-1/27
4-dial x 10	1111-1/9	555-5/9	370-10/27
Frequency	50 and 60 Hz		
Phase Rotation	ABC as shown on nameplate diagram		
Burden Data			
Potential Coil at 208 volts			
60 Hz	1.0 w	7.9va	7.8rva
50 Hz	1.25w	9.7va	9.6rva
Each Current Coil at 5 amperes			
60 Hz	0.95w	3.90va	3.75rva
50 Hz	0.95w	3.35va	3.20rva

(1) Line to neutral voltage
(2) With the links connected for single phase testing
(3) All registers are clock type with test dials
All meters can be supplied with potential indicating lamps
All ratings are available in "S" socket base, "P" base bottom connected and "F" base semi-flush panel enclosure


kvarh
Kh 1.08
SANGAMO KYROP
CANADA
0.12-10 AMP
120 VOLTS
60 Hz
8 469 848
DETENT EQUIPPED
3 EL Y



TEST



RUN

The single phase watthour disc constant marked on the nameplate is the value to be used when verifying or dial testing these meters on single phase.

The single phase voltage is the voltage that is to be applied to these meters when verifying on single phase.

Note: If there is an "O" in the type designation, it refers to the installation of the type "O" Pulse Initiator which is covered and described in Notice of Approval E-120. The gravity-operated reverse running detent used with this pulse initiator is also illustrated on E-120.

DESCRIPTION

The 3-element KYRP polyphase reactive kilovoltamperehour meter is basically the 3-element KY polyphase watthour meter.

The meter is designed to measure the varhours in a 3-phase 4-wire wye circuit with balanced voltages.

The external connections to the meter and to the polyphase circuit are the same as the corresponding 3-element polyphase watthour meters.

The connections to the potential coils internally within the meter are made from line to line and not from line to neutral. This shifts the phase of each voltage coil through 90° lagging when connected with the correct phase rotation in a polyphase circuit.

Because the line-to-line voltage is $\sqrt{3}$ times the line to neutral voltage, the potential coils have a higher voltage rating than that marked on the nameplate. 240 volt coils are used on 120 volt meters, 480 volt coils are used on 240 volt meters and 600 volt coils are used on 345 volt meters.

In order to test these meters on single phase, the connections to each of the potential coils are made at a sub-panel behind the meter nameplate. This sub-panel has 6 captive links and each link can make connection to one of two terminals.

When the links are connected to their respective right hand terminals, the potential coils are connected across the voltage lines for polyphase varhour measurement.

When the links are rotated to their respective left hand terminals, the potential coils are connected exactly like a conventional 3-element watthour meter, and the meter may then be tested on single phase with the potential coils in parallel for series and separate current coil tests.

No single phase tests should be made with the links swung to the right.

Each of the 3 elements is provided with balance, power factor and low load adjustments, and all except the balance and power factor adjustments of the middle element are accessible from the front of the meter as is the single full load adjustment.

These meters must be presented for verification with the cover unsealed as it is necessary to remove the cover in order to gain access to the links and rotate them to their left hand positions. After verification, the links are rotated to their right hand positions and securely fastened, after which the cover can be replaced and the meter sealed.

These meters are to be verified using the same test currents as prescribed for conventional 3-element watthour meters of the same current rating but using the single phase test voltages and watthour disc constants marked on the nameplates.

These meters will run backward on leading power factors so a reverse running detent is required if a type "O" pulse initiator is installed.

The meter illustrated is equipped with a type "O" pulse initiator and detent and the small plate above and behind the nameplate indicates that 0.108 pulses per disc revolution will be generated.

Approval granted to:

Sangamo Company Limited
Leaside,
Toronto 17, Ontario

for J.S.T. Swanson, P. Eng.,
Chief, Standards Laboratory,
Standards Branch.

W.J.S. Fraser
Chief, Electricity and Gas Division,
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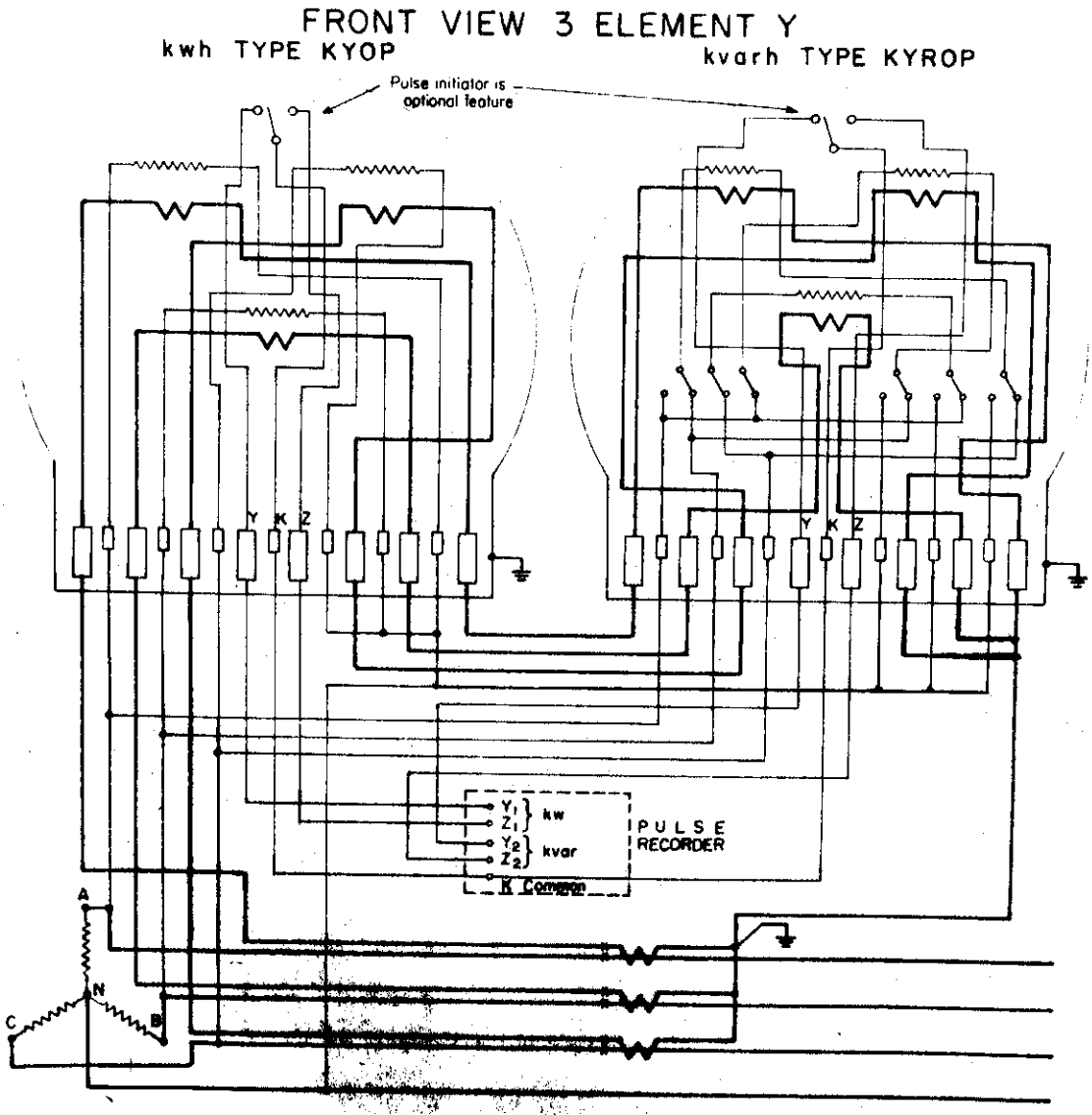
Ref: GL 1345-57/S2-93



PHASE SEQUENCE MUST BE A B C [illegible] ON LAGGING POWER FACTOR