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

STANDARDS BRANCH - DIRECTION DES NORMES

NOTICE OF APPROVAL E-120

OTTAWA January 25, 1973.

(1)

SANGAMO TYPE "O" PULSE INITIATOR

Type	Photoelectric with gear driven aperture disc
Output	SPDT "KYZ" output from form G mercury wetted contacts on relay
Relay	Clare type HGSR 52112P00
Capacity of Contacts	Maximum - 2 amperes or 500 volts or 100 voltamperes
Impulse Range P/DR (2)	20 to 0.05
Power Supply(3)	120, 240, 345, 480 and 600 volts 208, 416 and 600 on type KYROP
Frequency	50 and 60 Hz
Temperature Range	-30^{o}c to $+65^{o}$c
Burden of Power Supply	1.0 voltampere
Approved for use on	Types KYA, KYS, KYP, KYF, KYWA, KYWS, KYWP, KYWF, KYRS, KYRP and KYRF
Reverse Running Detent	Required on all meters on which this pulse initiator is installed.

(1) The "O" forms part of the meter type designation.

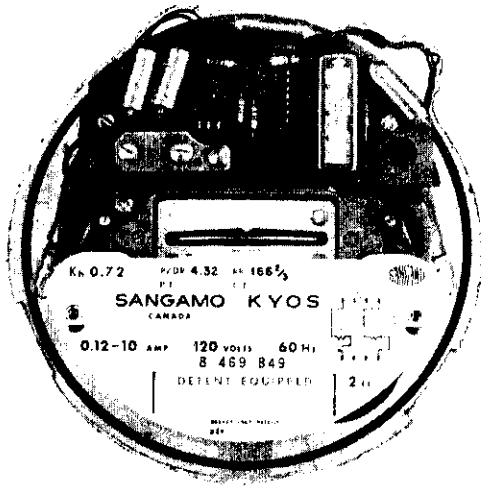
(2) P/DR (pulses per disc revolution) is marked on a small plate mounted above and behind the nameplate and also on a plate attached to the initiator.

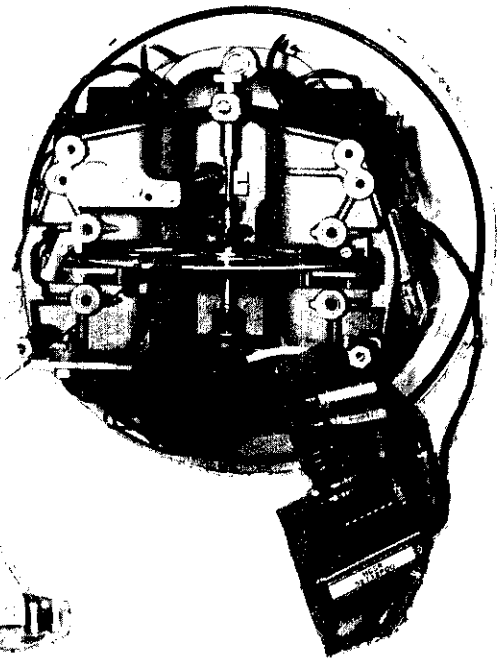
(3) Power for the pulse initiator is taken from the terminals feeding the LH potential coil.

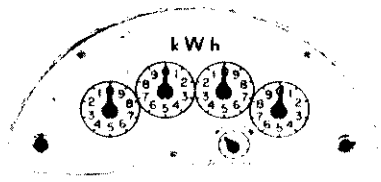
DESCRIPTION

The type "O" pulse initiator can be considered to consist of 3 assemblies:

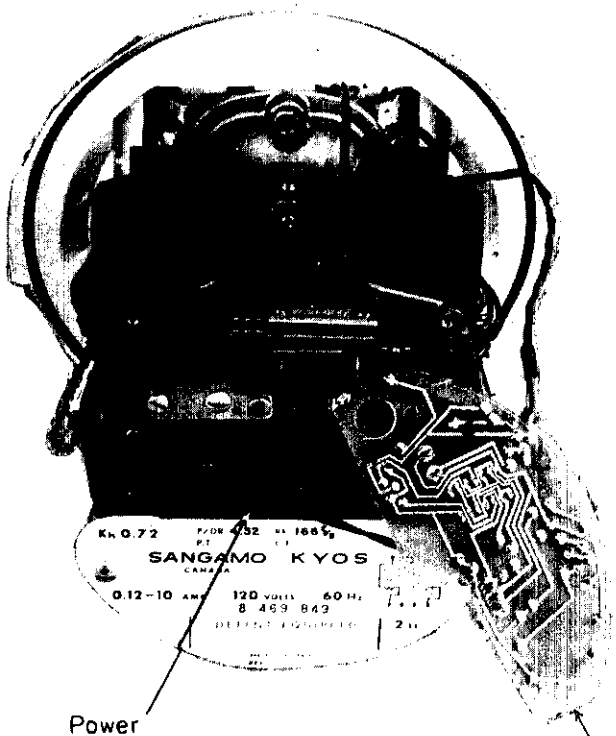
1. A mechanical train of gears that drives a small rotating aperture disc from a pinion on the meter disc spindle.





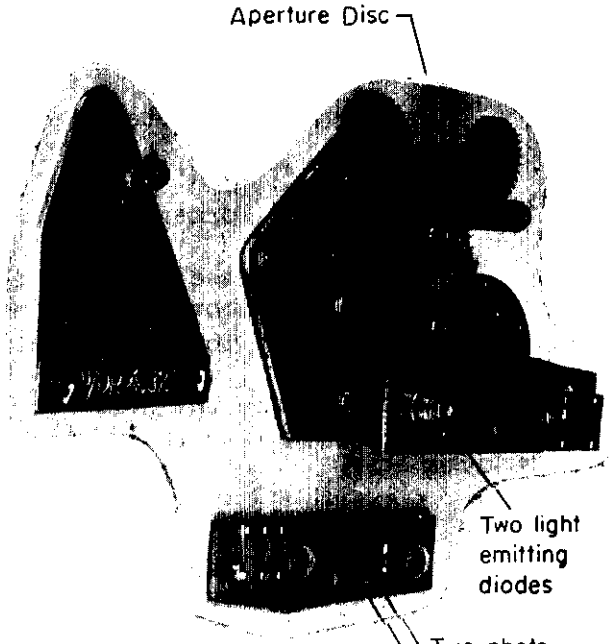


Gears & Aperture Disc Assembly



Power transformer

Electronic circuit board



2. The solid state electronic circuitry consisting of two photo transistors and two light emitting diodes mounted on opposite sides of a rotating aperture disc that has a series of small holes so arranged that as the disc rotates, one or the other of the photo transistors is illuminated. The output from the photo transistors is fed through integrated circuitry to a bi-stable mercury wetted relay whose contacts are connected to the KYZ terminals on the meter base.

3. A small power supply and isolating transformer that is energized at the voltage and from the same source as the left hand potential coil of the meter.

The pulse initiator may be primary-rated, i.e., the pulse value stated in primary quantities. This may be the case regardless of whether or not the meter is transformer-rated.

The mechanical gear train consists of 4 compound assemblies mounted on vertical staffs. These 4 compound assemblies plus the variable number of holes in the aperture disc give a wide flexibility in the ratio of pulses per disc revolution. Consequently, the pulse ratio is easily changed to suit the particular meter installation.

The pulse initiator gear train is mounted to a machined surface on the magnet housing of the meter frame. The two machine screws that mount the gear train to the magnet housing have a small amount of clearance in the lower plate to permit the mesh of the take-off pinion of the disc spindle to be adjusted and set at the factory.

The magnet housing and the pulse initiator gear train become an integral assembly which can be removed and replaced without disturbing the take-off mesh for the purpose of changing one or all of the four compound gear assemblies and/or aperture disc.

The electronic circuitry consists of 3 printed circuit boards. Two small boards carry the light emitting diodes and photo transistors and are mounted on the gear train on either side of the aperture disc. The third larger board carries the mercury wetted relay and plugs into the two small boards in the gear train. This larger board is secured to the meter frame behind the register by two screws and stand-off bushings.

The watthour register of the type KYW combination energy-demand meter remains in its original location with the pulse initiator mechanism and circuitry mounted behind it. The meter retains the same cover.

The registers of the type KY watthour and KYR varhour meters are moved out from the meter frame to the same level as the type KYW register. This provides room for the mechanism of the pulse initiator. The registers in this new location take the same worm-wheel spindle as the KYW register, and the meters take the same cover as the KYW combination meters.

The type "O" pulse initiator will not be added to existing meters in the field as a kit. It will only be supplied on new meters from the factory. When a meter is equipped with a type "O" pulse initiator, its type designation will change and the letter "O" will be added just prior to the base or enclosure designation, e.g., KYOP, KYWOS or KYROF.

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,
Standards Branch.

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