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NOTICE OF APPROVAL
AVIS D'APPROBATION

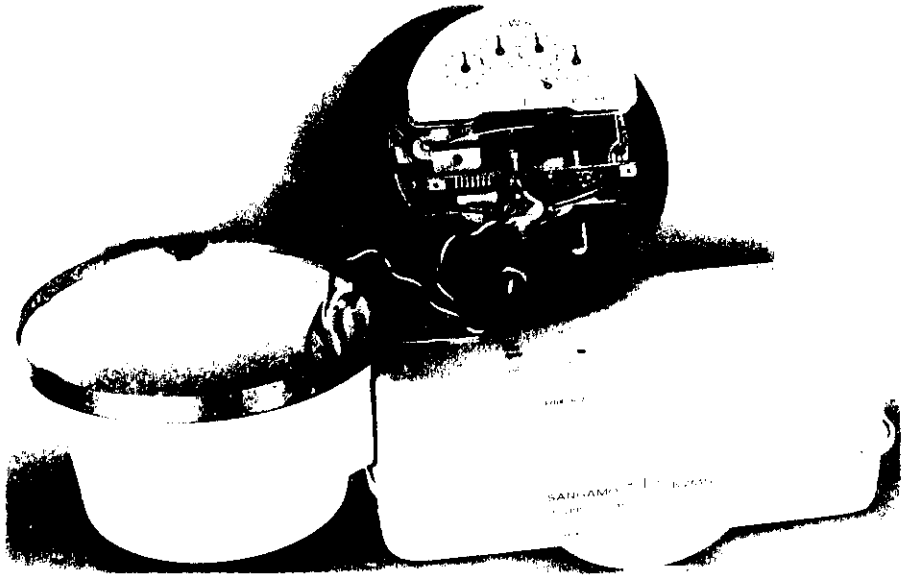
E-151

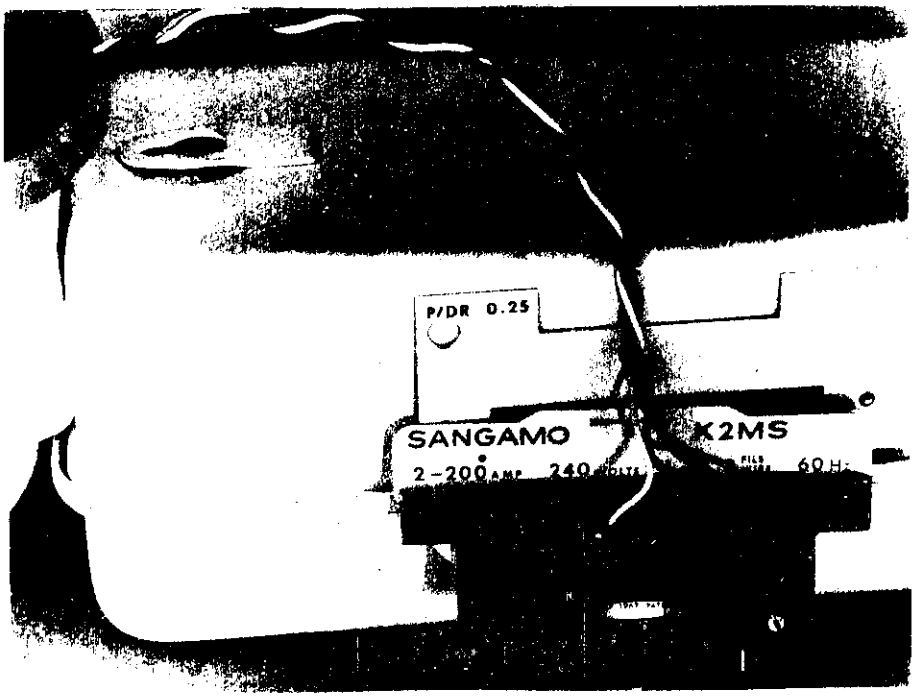
Ottawa, June 1, 1977

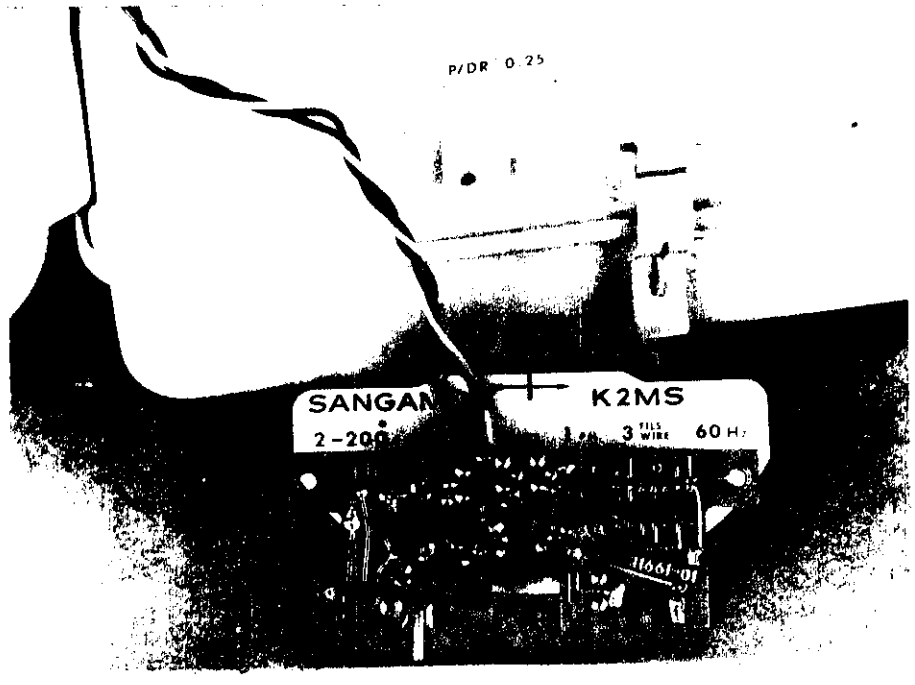
SANGAMO TYPE "M" PULSE INITIATOR (1)

Type	Solid state circuitry, using light emitting diode and phototransistor system, senses revolutions of the meter disc.
Output	2-wire (form A) solid state switch (unidirectional open collector transistor).
P/DR ratios (2)	0.125 R/P = 8 0.25 R/P = 4 Standard 0.50 R/P = 2 1.0 R/P = 1
Capacity of Switching Circuit	The output of this pulse initiator is an open collector transistor capable of switching: Max. Voltage 40V dc Max. Current 200 ma dc Max. Power Dissipation 200 m watts
Power Supply	12 volts dc ±10%
Operating Temperature Range	-40°C to 65°C
Approved for Use On	Any Sangamo approved watthour meter or combination demand-energy meter.

(1) The "M" forms part of the meter type designation. For instance, type "K2S" with the pulse initiator becomes type "K2MS".




P/DR 0.25
SANGAMO
K2MS
2-200 AMP 240 VOLTS
60 Hz


P/DR 0.25
SANGAM
K2MS
2-200
3 WIRE 60 Hz

(2) P/DR (pulse per disc revolution) is marked on a plate mounted above and behind the meter's nameplate and is held by the same two screws or is marked on the nameplate in case of the combination demand-energy meters.

Description

The type "M" pulse initiator is mounted within the watthour meter by two screws below the meter disc and behind the nameplate. In the case of the combination demand-energy meter the pulse initiator is mounted via two screws and brackets behind the register while the reflective sensor is mounted on the meter's frame, below the disc and connected to the pulse initiator by a wiring harness. In each case, the pulse initiator generates pulses proportional to the load.

The pulse initiator is of solid state printed circuit construction, and is only optically coupled to the meter disc by means of a light emitting diode and a phototransistor.

The sensing requires no torque and therefore, does not affect meter accuracy. The output consists of a solid state (2-wire form A) unidirectional - open collector transistor switch, therefore, the pulse initiator has no internal moving parts.

A small black zone on the disc interrupts the path of reflected light from a light emitting diode to a phototransistor each time the disc makes one revolution. This optical signal is converted to a change in voltage at the collector of the phototransistor. This electrical signal is applied to a Schmitt trigger circuit for noise immunity and pulse shaping. The Schmitt trigger output is applied to a factory programmable "divide by" circuit to generate one pulse for a given number of meter disc revolutions (8, 4, 2 or 1).

The output pulse is then amplified by a driver transistor and delivered through a shielded cable to the receiving recorder. The 12 volt dc input to the pulse initiator is normally supplied by the recorder.

Approval granted to:

Sangamo Company Limited,
Toronto, Ontario.

J.L. Armstrong, P.Eng.,
Chief, Standards Laboratory,

D.L. Smith, P.Eng.,
Chief, Electricity & Gas Division,
Metrology and Laboratory Services.

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