CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

E-68

OTTAWA January 18, 1968

NOTICE OF APPROVAL

FOR

DUNCAN TYPE "PG-5RT" IMPULSE GENERATOR

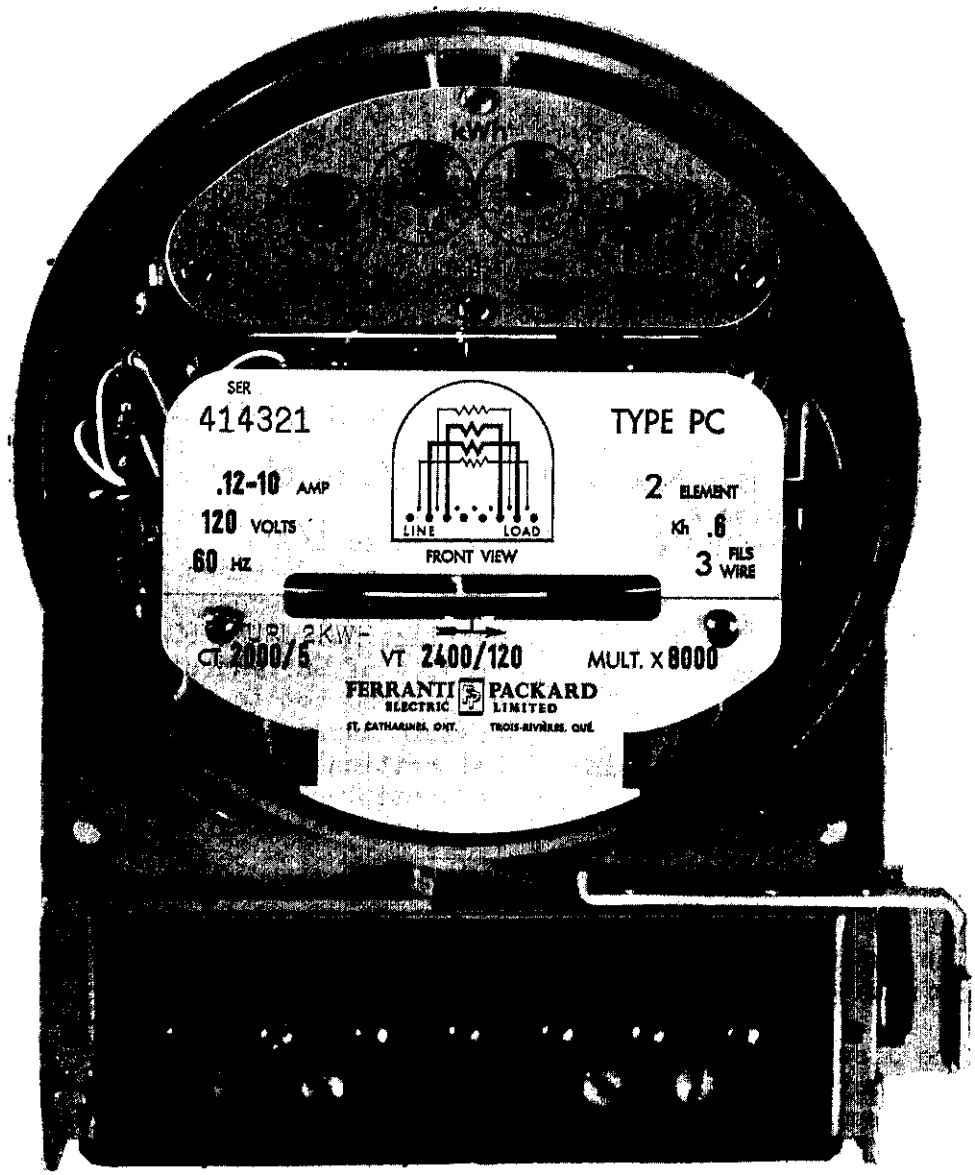
Apparatus

Input Voltages *	120, 240, 345, 480 and 600 volts
Frequency	60 hz
Disc revs/shutter disc revs(Cg)#	From 30/1 to 1/1
Holes in shutter disc #	2 to 12
Disc revs per pulse(Mp) #	From 15 to 1/12
Impulse rate	Maximum 650 Impulses per minute
Output contacts	SPDT Form C, Mercury, Bistable, Adams and Westlake No. AWCX-16042-S relay
Capacity of Contacts	Product of Current at opening and voltage at closing not to exceed 100 voltamperes. Maximum current 2 amperes, maximum voltage 500.
Lead resistance KYZ terminals	Not critical
Approved for use on	Ferranti-Packard Types PC, PCS and PCD Polyphase Watthour Meters

* The input voltage is that of the meter on which this impulse Generator is mounted.

\# The disc revs to shutter disc revs ratio(Cg), the number of holes in the shutter disc, and the disc revs per pulse(Mp), will be marked on the impulse generator but may be obscured by the nameplate.

Note: The value of each pulse in primary units will be marked on the nameplate.


SER
414321
TYPE PC
.12-10 AMP
120 VOLTS
60 HZ
2 ELEMENT
Kh .6
3 FILS WIRE
LINE
LOAD
FRONT VIEW
CT. 2000/5
VT 2400/120
MULT. X 8000
FERRANTI PACKARD
ELECTRIC LIMITED
ST. CATHARINES, ONT.
TROIS-RIVIÈRES, QUÉ.

Description

The Duncan type "PG-5RT" Pulse Generator is made up of two major components - (1) an Initiator consisting of a shutter disc, two photocells, a lamp and a gear train and (2) a bistable relay with mercury wetted contacts and transient suppressors.

The initiator is mounted with spacers on the frame of the meter between the two discs, the shaft of which has been milled for an extra 8-tooth gear. This gear drives a train of gears which in turn drives a blackened shutter disc having two rows of openings, each at a different radius and staggered with respect to each other.

A small lamp located beneath the disc shines through the openings and as the shutter disc rotates it illuminates alternately two small photocells on the opposite side of the disc.

Light on the photocells triggers associated transistors into conduction so that current flows through the relay coil in one direction or the other depending upon which photocell is illuminated.

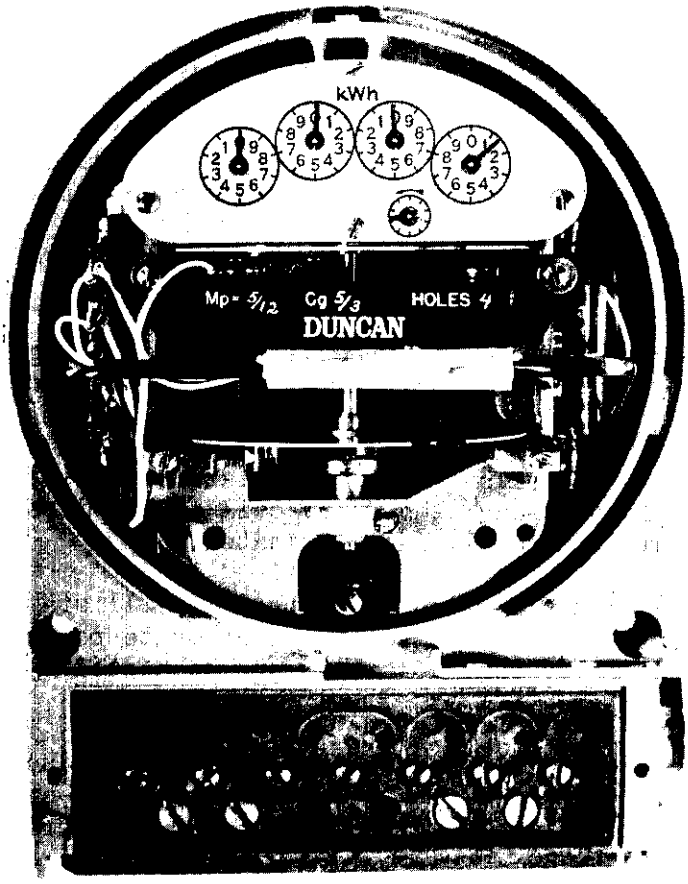
The relay is bistable which means that it will stay in its last position until it receives a pulse of the opposite polarity. This produces SPDT action of the relay contacts which are connected by leads to the KYZ terminals of the meter.

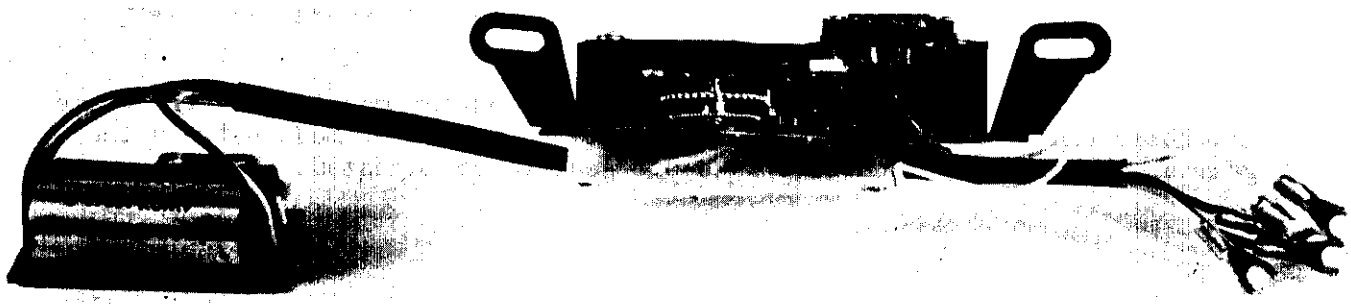
To prevent reverse rotation of the disc from producing false pulses, the gear train is equipped with a detent and the take-off gear has a slip clutch which permits the meter disc to run backward without damaging the initiator.

This pulse generator is intended to be mounted on transformer type or transformer rated meters, all of which will be equipped with an auxiliary nameplate installed over the lower part of the main nameplate.

This nameplate will carry the value of each pulse in the form "UPI" (units per impulse). In the case of transformer rated meters the UPI will be in primary units and the transformer ratios will be shown along with the multiplier.

The initiator is equipped with slotted holes for mounting on the frame and these along with spacer washers permit the degree of mesh between the gear on the disc shaft and the take-off gear to be adjusted.


kWh
Mp- 5/12
Cg 5/3
HOLES 4
DUNCAN



Care should be taken when verifying to ascertain that the degree of mesh is not too shallow or too deep.

Approval granted to:

Ferranti-Packard Electric Limited,
St. Catharines, Ontario.

J. S. T. Swanson,
Chief, Standards Laboratory,
Standards Branch.

for W. J. S. Fraser,
Chief, Electricity and Gas Division,
Standards Branch.

Ref. SL-100-457N