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

STANDARDS BRANCH - DIRECTION DES NORMES

NOTICE OF APPROVAL E - 105

OTTAWA July 9, 1971.

GENERAL ELECTRIC TYPE "D-51" IMPULSE GENERATOR

Type	Photoelectric with gear driven Shutter Disc
Output	S.P.D.T. "KYZ" output from Form C mercury wetted contacts on relay
Relay	Adams & Westlake AWCM-16182-1, bi-stable
Capacity of Contacts	2 amperes maximum 500 volts maximum 100 voltamperes maximum
Impulse Range (R/I)	10 revolutions per impulse to 1 revolution per 10 impulses
Max. Impulse Rate	4 per second
Watthours per impulse	Marked on the meter nameplate
Power Supply(1)	120, 240 and 277 volts, 50 and 60 Hz
Burden on Power Supply	2 voltamperes
Temperature Range	-23°C to 66°C (-10°F to 150°F)
Approved for use on(2)	Types DS-53, DS-54, DS-55, DS-63, DS-64, DS-65, DS-66, V-62, V-63, V-64, V-65 and V-66

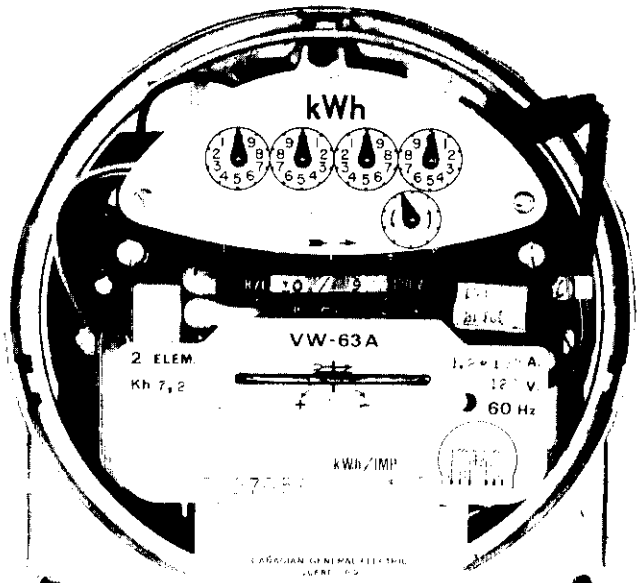
(1) The impulse generator is energized from the same source as the left potential coil of the meter on which it is installed.

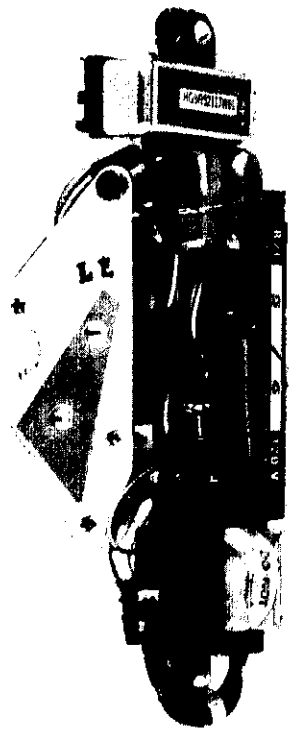
(2) Also approved for use on superseded types DS-19, DS-20, DS-34, DS-38, DS-39, DS-40, DS-41, DS-43 and DS-44 when conversion kits are used.

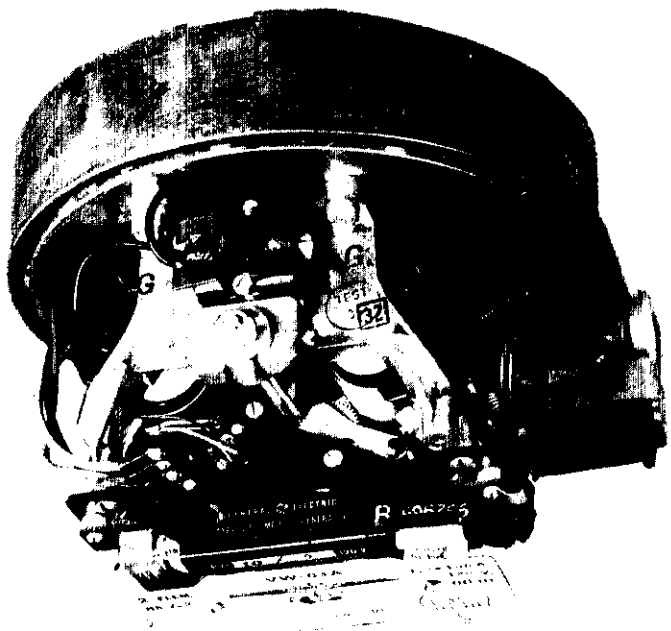
Description

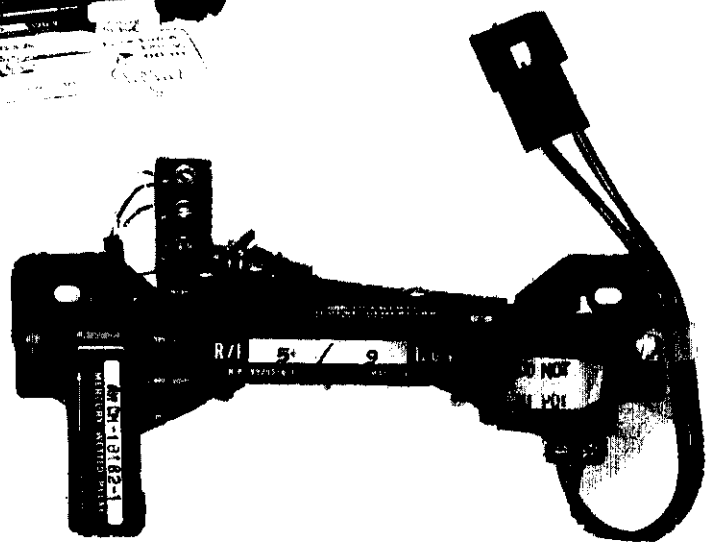
The type D51 impulse generator is a self-contained device that mounts on the meter grid above the disc.

It contains a ratio gear train driving a shutter disc and an anti reverse detent, a lamp and photocell assembly, a mercury-wetted relay and a transformer.


kWh
VW-63A
2 ELEM.
Kh 7,2
60 Hz
kWh/IMP







The ratio gear train is available in a range of ratios to produce the required revolutions per impulse and the take-off spur gear engages an 8 tooth pinion gear on a special disc shaft. G.E. publication GET-3048 lists the available ratios.

The shutter disc has 10 punched slots so arranged that as the disc rotates, light from a miniature lamp falls alternately on two photocells. Small diodes connected in opposite polarity to each of the photocells permit half wave rectified current to flow through the relay coil in one direction or the other depending upon which photocell is illuminated.

The relay is bistable which means that the contacts remain closed in the last position until a current of the opposite polarity passes through the coil.

The transformer steps down the line voltage to 14 volts for the relay circuit and 3.5 volts for the lamp.

The type D-51 incorporates the proper arc-suppression protection and contact capacity for use with all approved Canadian General Electric demand meters which have self-contained arc protection.

It is not recommended for use with devices, such as counters, which do not have self-contained arc protection to limit inductive surges within the rating of the mercury-wetted relay when its contacts open.

The built-in anti reverse detent may not be sufficient to prevent the generation of the occasional false pulse on "floating" or "backup" conditions with high ratios above R/I=1/4, in which case, secondary reverse-running detents E-21 and E 106 may be installed.

The installation of the D-51 Impulse Generator on any approved meter is indicated by the addition of "W" in the type designation, e.g. "V63A" becomes "VW63A".

Adjustment is provided for setting the depth of mesh between the take-off spur gear and the pinion on the disc shaft. This can be checked visually, along with the clearance between the spur gear and the RH potential coil shield.

These impulse generators are manufactured by General Electric, Somersworth, N.H., U.S.A. and are distributed in Canada by Canadian General Electric.

Approval granted to:

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