CANADA

DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

S-EA.613

OTTAWA, February 25, 1964.

TYPE APPROVAL

LANDIS & GYR TYPE "sy" SINGLE RATE AND TYPE "s2y" DUAL RATE EXCESS CONSUMPTION ATTACHMENTS

The apparatus specified and illustrated herein has been duly approved by the Standards Branch under the provisions of the Electricity Inspection Act, Chapter 94, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Type "sy" Single Rate and Type "s2y" Dual Rate, Excess Consumption attachments, manufactured by Landis & Gyr, Zug, Switzerland, and distributed in Canada by Landis & Gyr, Inc., 725 Decarie Blvd., Montreal 9, P. Q.

Rating

Power supply to synchronous motor and relay	-	115 volts 60 cycles
Point at which excess consumption begins		Any rate up to maximum capacity of the meter

Restriction

On dual rate (s2y). With relay de-energised excess consumption must begin at the higher rate. May be used only with an approved time clock.

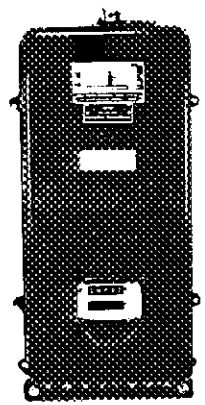
Description: This attachment consists mainly of two units, (1) a synchronous motor and gear train and (2) a double cyclometer register with a special differential gear, the two joined by a metal rod link.

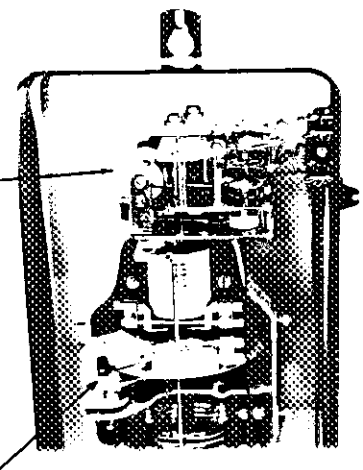
The synchronous motor drives a single ratio gear train in the type "sy", and in the type "s2y" a relay moves a gear that effectively makes the gear train a double ratio.

The register, with the exception of the different register ratios necessary to match the meter rating, is the same in both types.

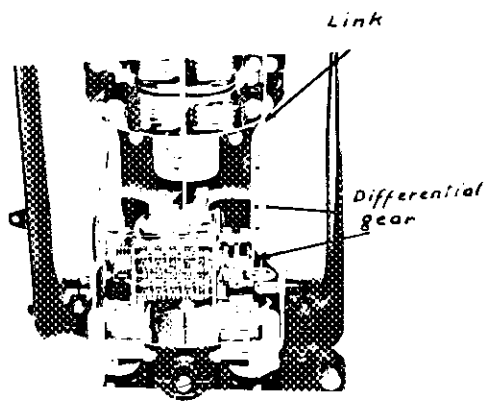
...../2

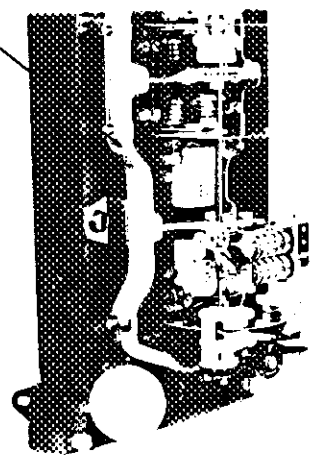
LANDIS & GYR TYPE "sy" SINGLE RATE AND TYPE "s2y" DUAL RATE EXCESS CONSUMPTION ATTACHMENTS S-EA.613





MF8
Element





The operation of the register is two-fold -

1. The lower register records all the consumption of energy recorded by the disc revolutions.

2. The upper register records only that portion of the kilowatt hours that are consumed at a rate above a certain preset value. This rate is determined by the synchronous motor gear train ratio.

The action of the upper register is as follows -

The synchronous motor operates at a fixed speed and through the gear train causes the connecting link to rotate at another fixed lower speed. The lower end of this link is connected through gearing to one side of differential gear, the other side of the differential being driven through a train of gears from the disc.

The satellite gear of the differential drives the top register through a ratchet.

As long as the disc speed remains below a fixed point, i.e., the watts remain below the value marked on a tag attached to the cover; the side of the differential driven by the disc rotates slower than the side driven by the synchronous motor so that the satellite gear rotates in a certain direction, but owing to the ratchet does not affect the upper register.

However, if the disc speed increases above the preset point, the side of the differential driven from the disc rotates faster than the side driven by the synchronous motor and the satellite gear reverses its direction. This causes the ratchet to drive the upper register recording the kilowatt hours that were consumed above the fixed rate.

The fixed rate(s) shown on the tag on the cover must be within $\pm$ 0.5% of the true value(s).

It is important that the principle of operation of the excess demand attachment be clearly understood in order to interpret the readings of the two registers insofar as they affect billing.

1. The lower register operates in the normal way and records all the consumption.

2. The upper register records only that part of the consumption that occurs at a rate higher than the preset value.

This means that the energy that is recorded on the upper register has also been recorded in duplicate on the lower register.

...../3