Consumer and Corporate Affairs | Consommation et corporations

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NOTICE OF APPROVAL
AVIS D'APPROBATION

E-135

Ottawa, February 18, 1976

LANDIS AND GYR TYPES m11...m15 AND m21...m25

CUMULATIVE MAXIMUM DEMAND REGISTERS

Technical Data: Demand interval (minutes): m11...m15; 10, 15, 30.
m21...m25: 5, 10, 15, 30, 60, 120, 135, 375.

Reset time: for types with built-in timers the reset time correction is incorporated in the fixed gearing of the demand register. for types using external timers, where the reset time is exclusive of the demand period, multiply register value by 0.99. Reset time is 1% of demand interval.

Cumulative maximum demand transfer cycle: 30 days standard initiated by built-in control (types m13/14 and m23/24 only).

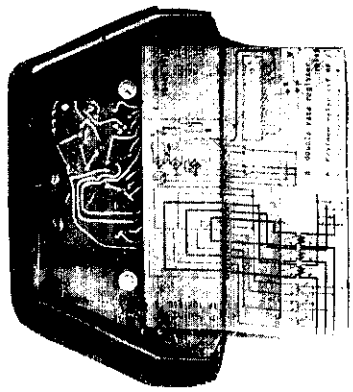
Cumulation transfer time: approximately 60 seconds.

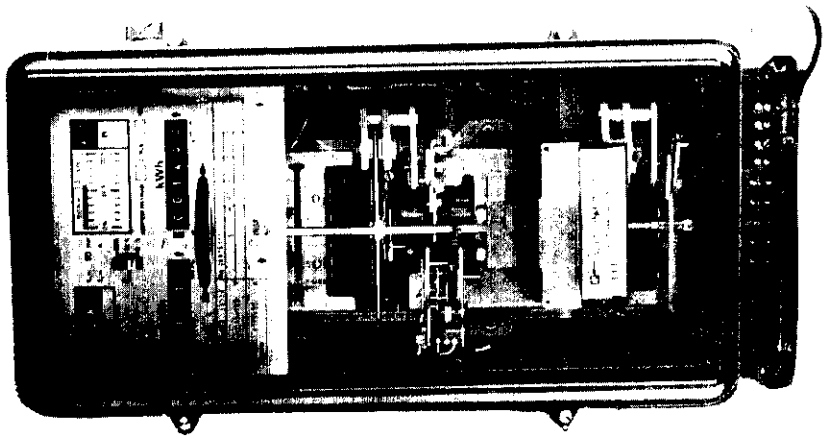
Coarse indication of M.D. status in % of full scale: red band indicator.

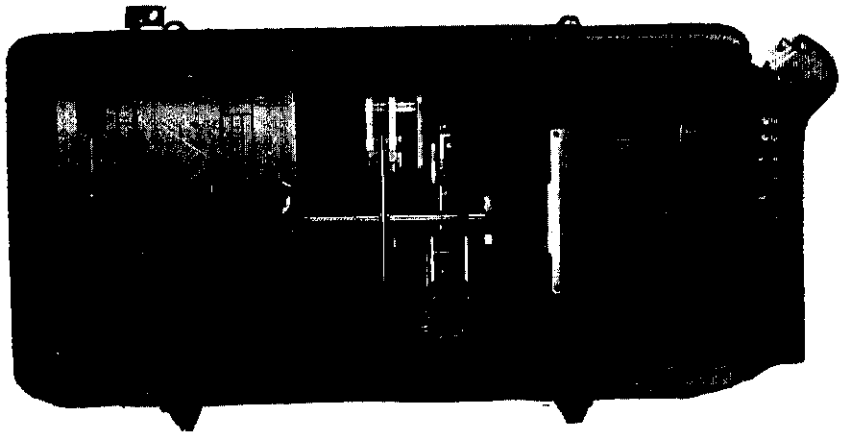
Coarse indication of average demand status in % of full scale: black band indicator.

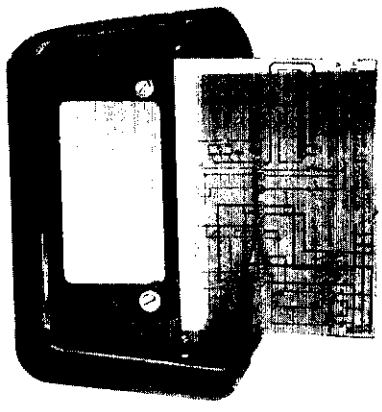
Resolution in % of full scale value, depending on f.s. value: m11...m15, approx. 0.3-0.6%
m21...m25, approx. 0.1-0.2%.

Inherent error in % of full scale value:
m11...m15 $\leq$ 1.0%
m21...m25 $\leq$ 0.3%.









Type Summary: Initiation of the cumulation process:

by hand	m11	m21
by remote control	m12	m22
by built-in timing unit	m13	m23
by hand or built-in timing unit	m14	m24
by hand or remote control	m15	m25

The following units are contained in the basic execution of all types except as noted:

integrating period controlled by separate time switch.
cumulation via built-in motor.
cumulative register kW (5-digit).
kWh register (6 or 7-digit single tariff).
reset register (2-digit).
indication drum for M.D. status in %.

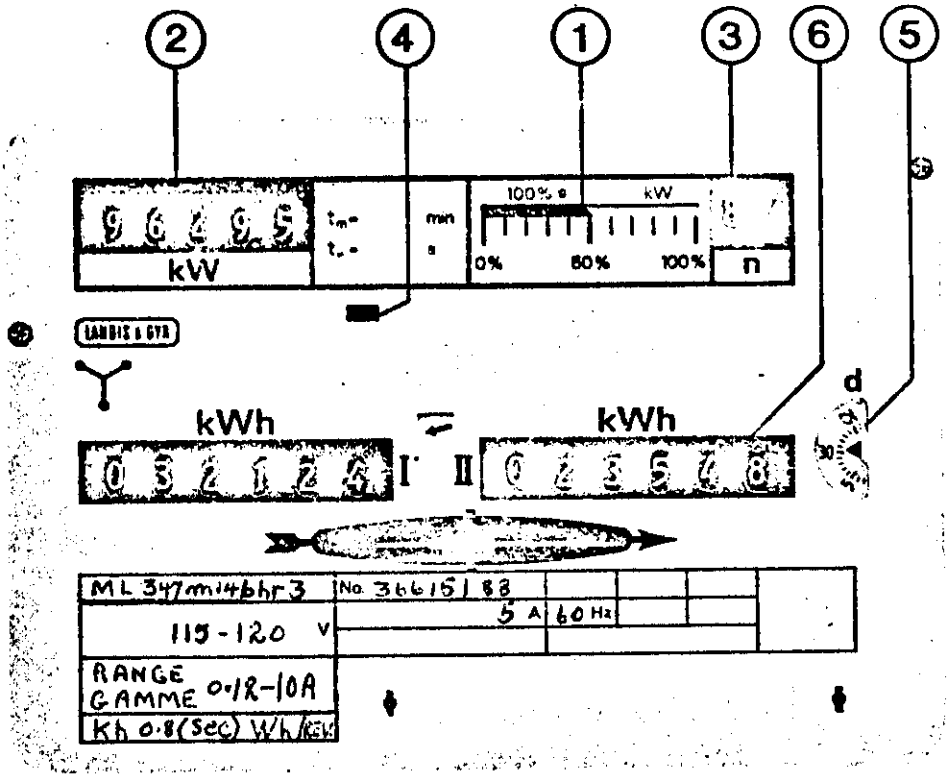
Note:
(indication of days elapsed (m13/14 and m23/24 only).
(indication of coupling condition (designated by a "b" in type reference).
(indication drum for average demand status in %. (Only on types m21...m25).

Possible Options:

	additional designation
integrating period controlled by built-in synchronous motor (same motor is used for cumulation).	y
integrating period controlled by built-in synchronous motor with the possibility of time limitation on the measurement of maximum demand, by means of built-in relay	.ly
indication of time elapsed in the integrating period instead of coupling condition indication (only possible with the m21...m25 with Y)	a
kWh two-rate tariff register	d
Separately built-in timing mechanism, which ensures that the measurement of M.D. begins with a full integrating period after a time limitation	m...ye4.2

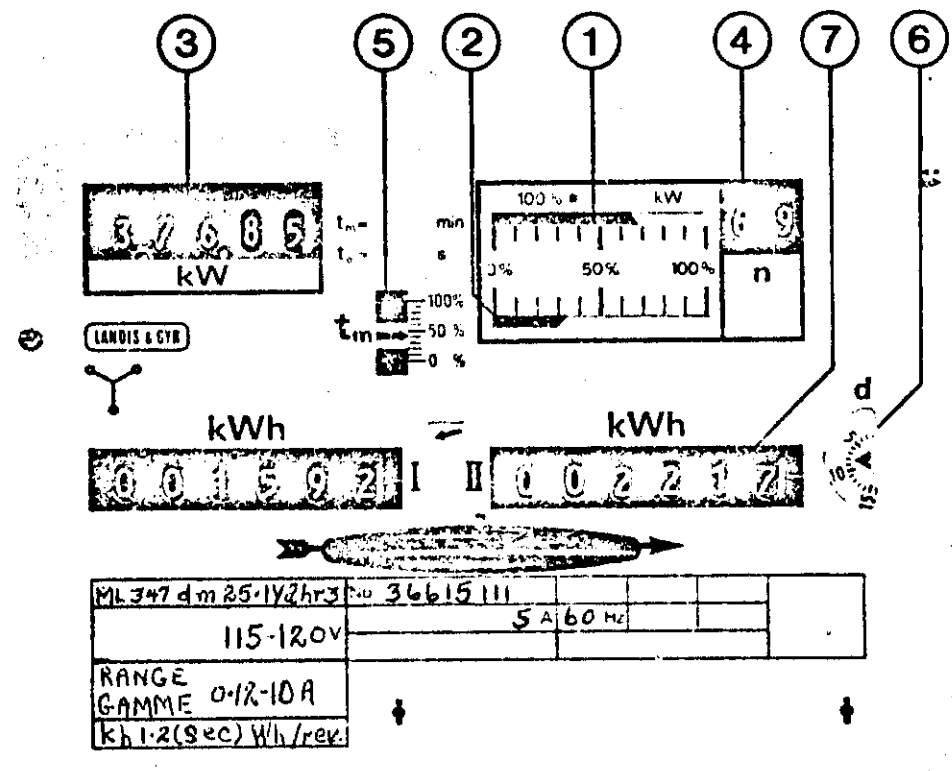
Example of complete type designations taking the ML Meter as a basis:

ML3dm13.lyb
ML3dm25ya
ML3dm22.lyb



Information on the series m11 to m15

1 **Indication of the highest average demand value per reading period**
2 **Cumulative maximum demand on 5-digit register**
3 **Number of completed resetting operations (accumulation processes) on 2-digit register**
4 **Indication of maximum demand coupling condition**
5 **Indication of days elapsed (with initiation of the cumulation process by built-in timing unit)**
6 **kWh-register, 6 or 7-digit, single or two-rate tariff**



Information on the series m21 to m25

1 **Indication of the highest average demand value per reading period**
2 **Indication of average demand status**
3 **Cumulative maximum demand on 5-digit register**
4 **Number of completed resetting operations (accumulation processes) on 2-digit register**
5 **Indication of time elapsed in the integrating period (only for version with integrating period controlled by the built-in timing unit, and then in place of the coupling indication) Standard version is fitted with coupling indicator (see m11 to m15)**
6 **Indication of days elapsed (with initiation of the cumulation process by built-in timing unit)**
7 **kWh-register, 6 or 7-digit, single or two-rate tariff**

Description

A modular design is used for the new cumulative maximum demand register. The result is a simple and easily surveyed mechanism which is highly reliable and requires little maintenance. The cumulative maximum demand registers are assembled using the following modules, depending on the execution required.

Basic Unit: This comprises the register frame with driving spindle and helical spur gear (driven by the meter rotor), planetary gearing and average demand drive section, indication drum for the maximum demand status "H" and the reset register "I" with the resetting mechanism. The basic unit of the type "series m21...m25" has, in addition to the above-mentioned parts, a storage spring for the return of the average demand unit (relieves the meter of the necessity of winding the return spring) and the indication drum for the average demand status.

Motorized Resetting Mechanism "D": With synchronous motor and gear train to reset the maximum demand indication drum and to transfer the M.D. value to the cumulative register at the end of a reading period. The motorized resetting mechanism is used when the integrating period is controlled by means of a time switch or a separate timing unit built into the meter.

In the remaining versions the following combined modules are used:

Motorized Timing Unit "C": Comprises the motorized resetting mechanism "D" and a cam control for the determination of the integrating period.

Release Mechanism for the Cumulation Process "Q": With an indication of the days elapsed (fitted to the version with initiation of the cumulation process by built-in timing unit).

Rotating Armature Solenoid "N": Initiates the cumulation process on versions having remote reset. This solenoid is attached to the meter frame and is connected to the demand register via a lever arrangement.

Segmental Rotary Switching Unit: When the cumulation process is initiated by remote control, this unit de-energizes the rotating armature solenoid after the process has been completed.

Rotating Armature Solenoid "O": For the control of the integrating period using a separate time switch and for limiting the maximum demand measurement. This solenoid is also used to limit the maximum demand measurement with built-in timing unit for the integrating period.

Cumulative Register (kW)"B": With guide wheel and overriding gear train.

Energy Register (kWh)"A": For single or two-rate tariff. The rotating armature solenoid "R" is used as the tariff change-over relay and is mounted on the meter frame.

On the 2-rate energy register the individual kWh registers are identified as I and II in place of High and Low. With solenoid "R" de-energized register II is engaged which should then be used as the Low tariff register.

Regarding the "m" relay .1 feature used to inhibit demand registration during certain times of the day: upon de-energization, the lower demand drum (average demand) will immediately reset. The period indicator is not affected and will continue its operation, as it is riding on the timing cam for the demand period which is controlled by the built-in synchronous motor. The demand measurement is activated when the "m" relay is re-energized.

Note: If kh is Wh/rev, but the cumulative register reading in kW, then the 3-digit decimal mask is fitted.

These registers are approved for use with L300 series polyphase watthour meters approved July 7, 1975, Notice of Approval E-134.

The cumulative register with the FL,2 element meter will be mounted on the three element meter frame and all cumulative maximum demand meters will be housed in a standard case.

The register nameplate will carry the full type designation, serial number, nominal voltage and current, current range, frequency, kh and Rr.

Approval granted to:

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