

ELECTRICITY METER  
 1-phase, 2-wire, tariff  
 (MID compliance)

**LE-01MW**

**WARRANTY.** The F&F products are covered by a warranty of the 24 months from the date of purchase. Effective only with proof of purchase. Contact your dealer or directly with us. More information how to make a complaint can be found on the website: [www.fif.com.pl/reklamacje](http://www.fif.com.pl/reklamacje)



**Do not dispose of this device in the trash along with other waste!** According to the Law on Waste, electro coming from households free of charge and can give any amount to up to that end point of collection, as well as to store the occasion of the purchase of new equipment (in accordance with the principle of old-for-new, regardless of brand). Electro thrown in the trash or abandoned in nature, pose a threat to the environment and human health.

#### Purpose

LE-01MW is an electronic, compliant with the MID Directive, single-phase electricity meter, designed for measurement in a 2-wire direct system.

The built-in real-time clock allows energy consumption to be measured with different tariff zones.

The meter is equipped with RS-485 communication interface with Modbus RTU protocol allowing remote reading and configuration of the meter.

#### Conformity

Directive MID 2014/22 /EC  
 Certificate number: SGS 0120/SGS0305

#### Characteristics of the device

- \* 1-phase energy meter;
- \* direct measurement up to 100 A;
- \* DIN rail mounting (1 module);
- \* operate in one of two measurement modes:
  - active and reactive energy measurement,
  - measurement of active energy consumed and supplied to the grid
- \* energy measurement in 4 tariff zones;
- \* built-in real time clock with battery backup to switch tariff zones;
- \* 8 time schedules dividing the day into tariff zones;
- \* it can settle energy according to schedules specific for business days and weekends;;
- \* it can divide year into 8 time intervals; in each interval the energy (for weekdays) can be settled according to a different schedule;
- \* indication of network parameters (voltages, currents, active power, reactive power, apparent power, power factor, frequency);
- \* compliance with MID;
- \* RS-485 port;
- \* Modbus RTU protocol;
- \* backlit LCD display;
- \* the possibility of a local reading of the indication of energy consumption also in the case of a power failure of the meter.

#### Measured values

Active energy consumed	AE+ [kWh]
Reactive energy	RE+ [kVArh]
Phase voltage	[V]
Phase currents	[A]
Active power	[W]
Reactive power	[var]
Apparent power	[VA]
Power factor (absolute value)	cosφ
Frequency	[Hz]



For advanced configuration of the LE-01MW meter (tariff zones, public holidays, etc.), it is recommended to use the free **LE Config** configuration software available on the product webpage.

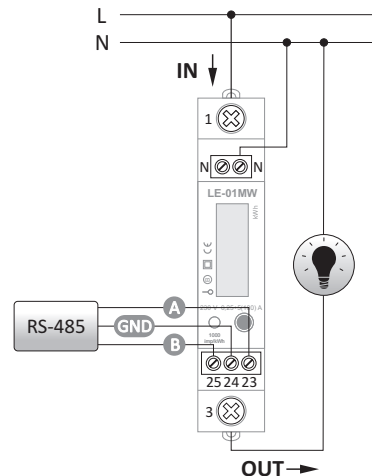
#### Meter number

The meter is marked with an individual factory number, allowing its unambiguous identification. The marking is indelible (laser engraving).

#### Sealing

The meter has the option of sealing the cover of the input and output terminals, making it impossible to bypass meter.

#### Connection diagram



#### Description of leads

1	Power (phase)
3	Reception (phase)
N	Line N (neutral)
23	RS-485 - Line A
24	RS-485 - GND
25	RS-485 - Line B

## Operation of the meter



### The content of the LCD display

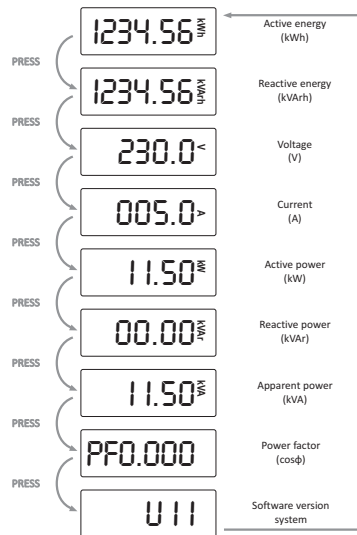


<b>kvarhkWh</b>	Indicates the unit of value shown in the numeric field of the display. The symbols have the following meanings:
kW	– active power
kWh	– active energy
kvarh	– reactive energy
VA i kVA	– apparent energy
V	– voltage
A	– current

The button located on the casing of the meter is designed to change the displayed parameters. If the meter is not powered up, pressing the button will activate the display for a few seconds and enable an emergency reading of energy consumption.

## Data displayed on the LCD

The meter's display shows cyclically the following measured values

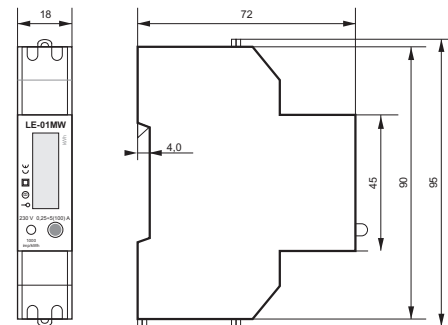


The list of displayed parameters and the frequency of switching the displayed parameter can be parameterized via the RS-485 interface.

## Technical data

reference voltage	230 V AC
minimum current/base current	0.25/5(100) A
maximum current	100 A
minimum detection current	0.02 A
voltage measuring range	100÷289 V AC
rated frequency	50 Hz
measurement accuracy	class B
installation	1-phase, 2-wire
overloading	30×I <sub>max</sub> /10 ms
insulation	4 kV/1 min.; 6 kV/1 μs
own meter consumption	<8 VA; <0,4 W
indication range of the meter	6 digits
meter constant	100; 1000; 2000 pulse/ /(kWh/kvarh)
communication port	RS-485
communication protocol	Modbus RTU
transmission speed	1200, 2400, 4800, 9600 bps
parity	BRK, EVEN, ODD
parity bits	2
working temperature	-25÷55°C
terminal	25 mm <sup>2</sup> screw terminals
dimensions	1 module (18 mm)
mounting	on the TH-35 mm rail
protection level	IP51
insulation protection class	II class

## Dimensions



Full technical documentation of the device, CE declaration, copy of the MID certificate, description of the communication protocol and software for meter configuration via the RS-485 interface is available for download from the product website: [www.fif.com.pl](http://www.fif.com.pl).