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## LE-01MR

Electric energy meter,  
1-phase



**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.



### Compliance

MID Directive  
Certificate

2014/32/EU  
0120/SGS0305

### Purpose

The LE-01MR is a static (electronic) calibrated electricity meter of single-phase alternating current in direct system. It is designed to indicate and register the consumed electricity and parameters of the power supply network with the option of remote reading of indications via RS-485 network.

### Functioning

The LE-01MR meter precisely measures the amount of consumed electricity under the influence of flowing current and applied voltage. Power consumption is indicated by the flashing LED (1000 pulses/kWh). In addition, the meter measures the parameters of the supply network and the temperature of its own system. The values are indicated cyclically on the LCD display.

The parameter is changed by default every 5 seconds or at the frequency set by the user and manually, using the button on the front of the casing of the meter. The display is active when the indicator power is on.

The meter operates in the communication network as a Slave device.

The communication takes place in accordance with the Modbus RTU standard via the RS-485 serial port. The read-out values of registers after conversion give results according to the indications on the indicator display.

### Measured values

Active energy consumed	AE+/AE-	[kWh]
Reactive energy	AE+	[kWh]
Phase voltage	U	[V]
Phase current	I	[A]
Frequency	F	[Hz]
Active power	P	[W]
Reactive power	Q	[var]
Apparent power	S	[VA]
Power factor	$\cos\varphi$	

### Modbus registers

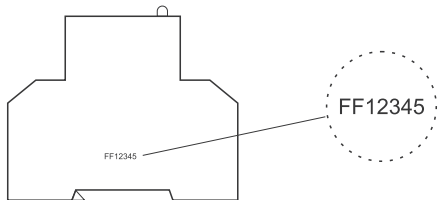
Description of measurement and configuration registers available on the website [www.fif.com.pl](http://www.fif.com.pl) (on the device's subpage).

## Meter address

Change of meter address is done via the RS-485 port using the Modbus RTU protocol command to set the desired value in the meter register. The default meter address: 1.

## Meter number

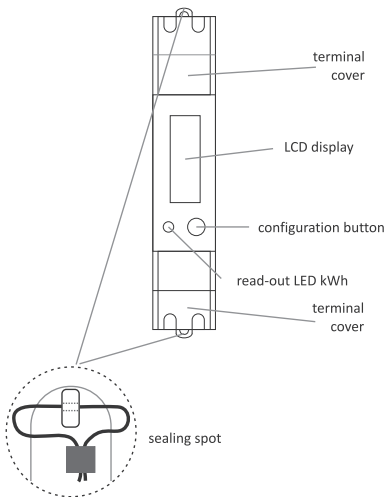
The meter is marked with individual serial number allowing its unambiguous identification. The marking is laser engraved and cannot be removed).



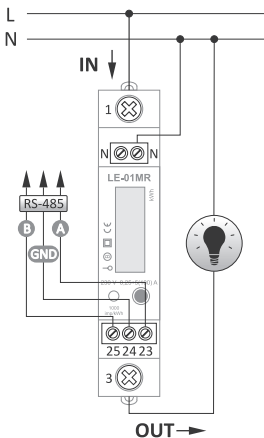
## Sealing

The meter has sealable input and output terminal covers to prevent any attempts to bypass the meter.

## Front panel



## Wiring diagram



- 1 L<sub>IN</sub> power input
- 3 L<sub>OUT</sub> power output
- N N-wire neutral
- 23 RS-485 output (A)
- 24 RS-485 output (GND)
- 25 RS-485 output (B)

## Mounting

1. Disconnect the power supply.
2. Mount the indicator on the rail in the distribution box.
3. Connect the neutral wire to terminal N.
4. Connect the input phase to terminal 1.
5. Connect the measured circuit or single receiver to terminal 3 (output phase L) and to N.
6. Connect terminals 23, 24 and 25 to the RS-485 network.

## LE Config service programm

Program for test reading of the counted energy value and for basic settings of the meter parameters.

Available at [www.fif.com.pl](http://www.fif.com.pl) (on the device's subpage).

For communication of the meter with the computer, the USB converter CN-USB-485 or any RS-485/USB standard is required.

## Technical data

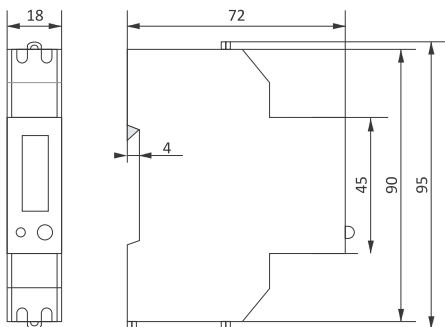
installation	2-wire
rated voltage	230 V AC
minimum measured current	0.02 A
base current	5 A
maximum current	100 A
voltage measuring range	100÷289 V AC
measurement accuracy (EN50470-1/3)	class B
rated frequency	50 Hz
insulation protection class	II
housing	PC material
own power consumption	8 VA; 0,4 W
indication range	0÷99999 kWh
constant	1000 pulses/kWh

communication	
port	RS-485
communication protocol	Modbus RTU
transmission parameters	1200, 2400, 4800, 9600* bps
parity	NONE, ODD, EVEN*
stop bits	1*
read-out signalling	red LED
working temperature	-25÷55°C
terminal	
100 A	25 mm <sup>2</sup> screw terminals
RS-485	1 mm <sup>2</sup> screw terminals
tightening torque	0.4 Nm
dimensions	1 module (18 mm)
mounting	on TH-35 rail
ingress protection	IP20

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\* factory settings

## Dimensions



## Warranty

F&F products are covered by a 24-month warranty from the date of purchase. The warranty is only valid with proof of purchase. Contact your dealer or contact us directly.

## CE declaration

F&F Filipowski sp. j. declares that the device is in conformity with the essential requirements of The Low Voltage Directive (LVD) 2014/35/EU and the Electromagnetic Compatibility (EMC) Directive 2014/30/UE.

The CE and MID Declaration of Conformity, along with the references to the standards in relation to which conformity is declared, can be found [www.fif.com.pl](http://www.fif.com.pl) on the product subpage.