



F&F Filipowski L.P.
Konstantynowska 79/81, 95-200 Pabianice, POLAND
phone/fax (+48 42) 215 23 83 / (+48 42) 227 09 71
www.fif.com.pl; e-mail: biuro@fif.com.pl

LE-03MW

Electric energy meter,
3-phase, 4-tariff, 2-way



511902431167186411

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

Directive MID

2014/32/EU

Certificate number

0120/SGS0306

Purpose

The LE-03MW is a static, (electronic), 2-way calibrated electricity meter of three-phase or three-phase designed for measurement in a direct system.

A built-in real-time clock allows energy consumption to be measured by different tariff zones. Equipped with communication interfaces: RS-485 with Modbus RTU protocol and an optical port compliant with EN62056 (IEC1107) allows remote reading and configuration of the meter.

Configuration of the meter is done through the communication port according to the software features of the Modbus RTU.

Operation and programming manual

Detailed PDF instructions can be downloaded from the website: www.fif.com.pl from the product subpage.

Functions

- » 3-phase, 2-way energy meter;
- » Direct measurement up to 80 A;
- » Energy measurement in 4 tariff zones;
- » Built-in real-time clock with battery backup for switching tariff zones;
- » Registration of total and tariff-divided consumption:
 - total active and reactive energy;
 - imported and exported, active and reactive energy*;
- » 8 time schedules dividing the day into tariff zones;
- » Possibility of energy billing according to different schedules for working days and weekend;
- » Possibility of dividing the year into 8 time intervals, in each interval the energy (for weekdays) may be billed according to a different schedule;
- » Indication of network parameters (voltages, currents, active power, reactive power, apparent power, power factor, frequency);
- » Calculation of power demand for individual tariffs;
- » Additional, erasable energy consumption meter;
- » MID-compliant;
- » RS-485 port;
- » Modbus RTU protocol;

* Reading of energy consumption with breakdown into active/reactive, consumed/rejected energy possible via Modbus RTU interface.

- » Optical communication port in accordance with EN62056 (IEC1107);
- » Pulse output SO with programmable number of pulses per kWh;
- » Multifunction LCD display.

Measured values

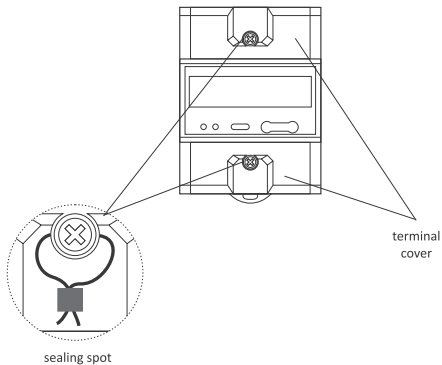
Consumed and supplied active energy	AE+/AE-	[kWh]
Consumed and supplied reactive energy	RE+/RE-	[kvarh]
Phase voltages	U1, U2, U3	[V]
Phase currents	I1, I2, I3	[A]
Frequency	f	[Hz]
Active power	P	[W]
Reactive power	Q	[var]
Apparent power	S	[VA]
Power factor		

Pulse output

The indicator has a SO+/SO- pulse output. This allows you to connect a pulse meter-reading pulses generated by the counter. For proper operation of the indicator is not required to connect additional devices.

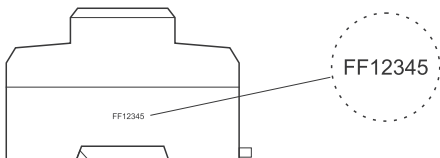
Sealing

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

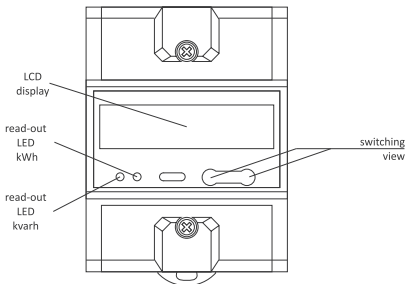


Meter number

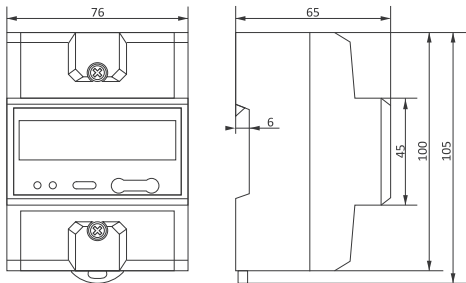
The meter is marked with individual serial number allowing its unambiguous identification. The marking is laser engraved and cannot be removed).



Front description



Dimensions



Mounting

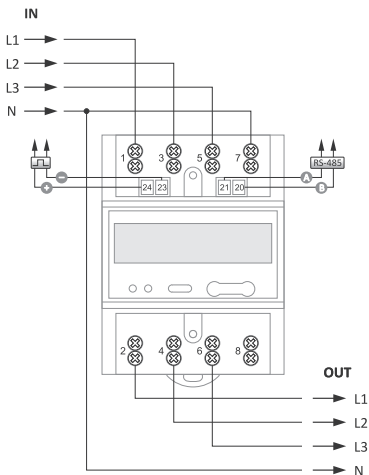
1. Disconnect the power supply.
2. The indicator mounted on a rail in the distribution box.
3. Connect the power in accordance with the markings to the terminals 1 (L1), 3 (L2), 5 (L3).
4. Connect the measured circuit or a single receiver to the terminals in accordance with the markings to the terminals 2 (L1), 4 (L2), 6 (L3).
5. N-wire connect to terminal 7.
6. Connect the RS-485 network cables to terminals 20(B)-21(A).
7. Additional pulse receiver connected to terminals 23(-) and 24(+). The terminals are located under the top terminal cover.



Additional pulse receiver is not required.

8. Put the meter terminals covers.

Wiring diagram



- 1 L1_{IN} phase
- 2 L1_{OUT} phase
- 3 L2_{IN} phase
- 4 L2_{OUT} phase
- 5 L3_{IN} phase
- 6 L3_{OUT} phase

- 7 neutral N-wire
- 20 output RS-485 (B)
- 21 output RS-485 (A)
- 23 pulse output (-)
- 24 pulse output (+)

Technical data

reference voltage	3×230/400 V
base current	3×5 A
maximum current	3×80 A
minimum detection current	0.04 A
voltage measurement	
L-N	100÷289 V AC
L-L	173÷500 V AC
measurement accuracy (EN50470-1/3)	B class
overload	30×I _{max} /10 ms
insulation	4 kV/1 min.; 6 kV/1 μs
rated frequency	50 Hz
own power consumption	<10 VA; <2 W
indication range	0÷999999.99 kWh
meter constant [kWh]	1000 pulses/kWh
meter constant [kvarh]	1000 pulses/kvarh
read-out signalling	2× red LED
communication	
port	RS-485
communication protocole	Modbus RTU
baud rate	1200, 2400, 4800, 9600 bps
parity	EVEN
stop bits	1
pulse output	
type	open collector
maximum voltage	27 V DC
maximum current	27 mA
pulse constant of output	1; 10; 100; 1000 pulses/kWh
pulse time	10 ms
working temperature	-25÷55°C

terminal dimensions	25 mm ² screw terminals
mounting	4.5 modules (75 mm)
ingress protection	on TH-35 rail IP51

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 L.P. 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 on the product subpage.

General work safety conditions

- » Please read the instructions carefully before installation.
- » The device should be installed and operated by qualified personnel who are familiar with its design, operation, and associated risks.
- » Do not install a meter that is damaged or incomplete.
- » The user is responsible for proper grounding of the system, proper selection, installation, and efficiency of other devices connected to the meter, including safety devices such as over-current, residual current and overvoltage circuit breakers.
- » Before connecting the power supply, make sure that all cables are connected correctly.
- » It is essential to observe the operating conditions of the meter (supply voltage, humidity, temperature).
- » To avoid electric shock or damage to the meter, turn off the power supply whenever the connection is changed.
- » Do not make any changes to the unit yourself. Doing so can result in damage to or improper operation of the device, which in turn can pose a threat to people operating it. In such cases, the manufacturer is not responsible for the resulting events and may refuse the provided warranty in the event of a complaint.

