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LE-03M v.2
Electric energy
consumption meter,
3-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

2014/32/EU

Certificate number

0598/MID/B/24/033

Purpose

The LE-03M is a static (electronic) calibrated electricity meter of three-phase alternating current in a direct system.

It is used for reading and recording of consumed electric energy and mains parameters with remote readout via a wired RS-485 network.

Operating and programming manual

Full user manual including advanced meter configuration and communication description to be downloaded from the website: www.fif.com.pl from the product sub-page.

Functioning

The LE-03M under the influence of current flow and applied voltage makes precise measurement of the amount of consumed electricity. Energy consumption is indicated by a flashing LED (800 pulses/kWh). The sum of energy consumed by all three phases is converted into the total energy consumed by the three-phase system and its value is shown on the LCD.

The digits after the decimal point represent tenths or hundredths of a kWh (depending on the energy consumption recorded). Communication with the meter operating as SLAVE devices takes place in accordance with the Modbus RTU standard via RS-485 serial port.

Measured value

Active energy consumed	AE+	[kWh]
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Pulse output

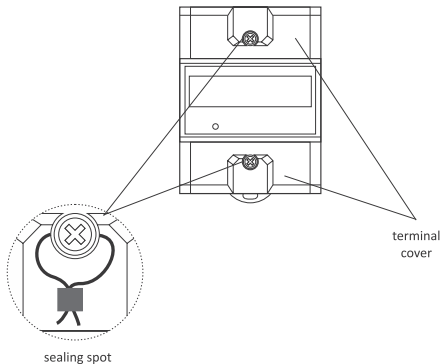
The meter is equipped with pulse output open collector (OC type). This allows you to connect another pulse device (SO) that reads pulses generated by the meter.

Pulse duration (high level) min. 90 ms.

Connection of a pulse receiver is not required for correct operation of the device.

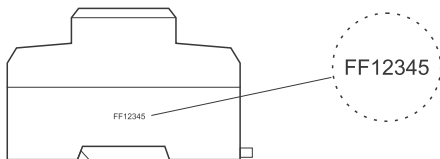
Sealing

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

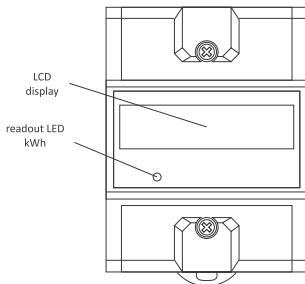


Meter number

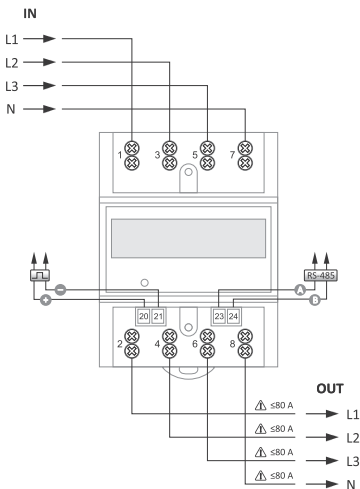
The meter is marked with individual serial number allowing its unambiguous identification. The marking is laser engraved and cannot be removed.



Front description



Wiring diagram



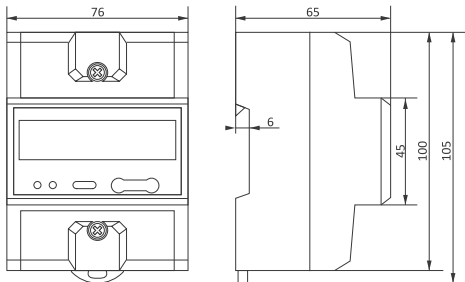
- 1 L1 IN phase wire
- 2 L1 OUT phase wire
- 3 L2 IN phase wire
- 4 L2 OUT phase wire
- 5 L3 IN phase wire
- 6 L3 OUT phase wire

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



Particular attention must be paid to the maximum currents flowing in the current circuits, especially the neutral conductor. In the event of high phase currents, there is a risk that the neutral current will exceed the limit value of 80A. **In this case, the output of the neutral conductor must not be connected to terminal 8!**

Dimensions



LE Config service program

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

Available at www.fif.com.pl (on the device's subpage).

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

Technical data

installation	4-wire
rated voltage	3×230/400 V
minimum measured current	0.02 A
base current	3×5 A
maximum current	3×80 A
voltage measuring range	185÷275 V
measurement accuracy (EN50470-3)	class B
rated frequency	50 Hz
insulation protection class	II
housing	PC+ABS material
environmental conditions class	
mechanical	M1
electromagnetic	E2
own power consumption	<10 VA; <2 W
indication range	0÷999999.99/9999999.9 kWh
constant	800 pulses/kWh
read-out signalling	red LED
communication	
port	RS-485
communication protocol	Modbus RTU
transmission parameters	1200, 2400, 4800, <u>9600</u> , 19200, 38400, 115200 bps
parity	NONE, ODD, EVEN
stop bits	1, 2
pulse output	
type	open collector
maximum voltage	27 V DC
maximum current	27 mA

pulse constant	800 pulses/kWh
pulse time	≥90 ms
working temperature	-25÷55°C
humidity	
(non-condensing)	≤95%
mounting altitude	up to 2000 m a.s.l.
terminal	
power circuits	16 mm ² screw terminals
tightening torque	1.5 Nm
pulse output	1 mm ² screw terminals
tightening torque	0.4 Nm
communication output	1 mm ² screw terminals
tightening torque	0.4 Nm
dimensions	4.5 modules (75 mm)
mounting	on TH-35 rail
internal (housing recommended)	IP51
external (housing required)	IP54
ingress protection	IP20

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 & MID 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.