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LE-03MB v2

Electric energy 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

Directive MID	2014/32/EU
Certificate number	0120/SGS0215

Purpose

The LE-03MB v2 is a static (electronic) calibrated AC electricity meter for single-phase or three-phase direct current. It is used for indication and registration of consumed electricity and parameters of the power supply network with the possibility of remote reading of indications via a network compliant with the M-Bus standard. The meter is configured via the configuration menu accessible from the front panel and via the communication port in accordance with M-Bus software functions.

Operation and programming manual

Detailed PDF instructions and MID declaration can be downloaded from the website: www.fif.com.pl from the product sub-page.

Functions

- » 1-phase or 3-phase system (3- and 4-wire);
- » 2-way active and reactive energy measurement (import and export);
- » Indication of kWh/kvar (input/output);
- » Indication of mains parameters;
- » MID compliance;
- » M-Bus protocol;
- » Pulse output SO (×2);
- » Backlit LCD multifunction display;
- » Meter configuration protected by password.

Measured values

Active energy consumed	AE+	[kWh]
Active energy supplied	AE-	[kWh]
Reactive energy consumed	RE+	[kVArh]
Reactive energy supplied	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	cosφ	
Harmonics THD	%	
Power and current demand	kW, kvar, kVA, I	

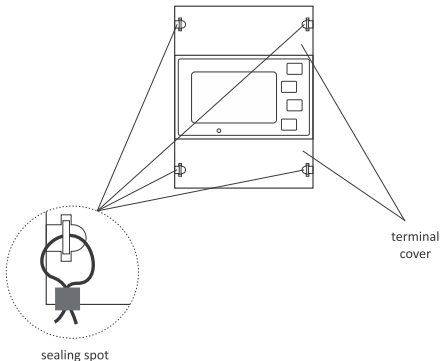
Pulse output

The indicator has the 2 pulse outputs. This allows you to connect a pulse meters-reading pulses generated by the counter.

For proper operation of the indicator is not required to connect additional devices.

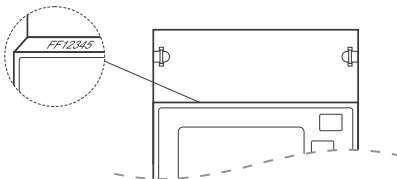
Sealing

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

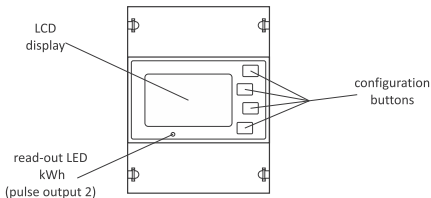


Meter number

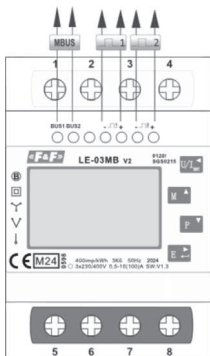
The meter is marked with individual serial number allowing its unambiguous identification. The marking is laser engraved and cannot be removed).



Front description



Terminals description



power inputs

1	L1
2	L2
3	L3
4	N

power outputs

5	L1
6	L2
7	L3
8	N

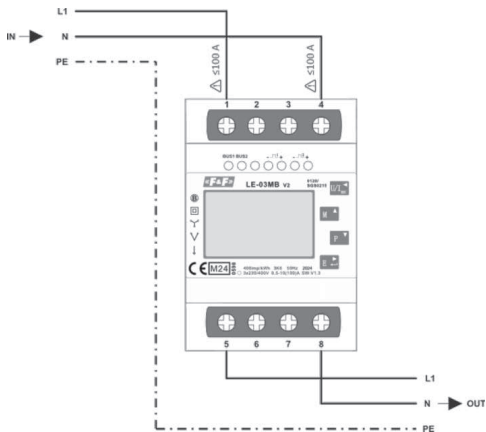
M-Bus communication outputs

BUS 1
BUS 2

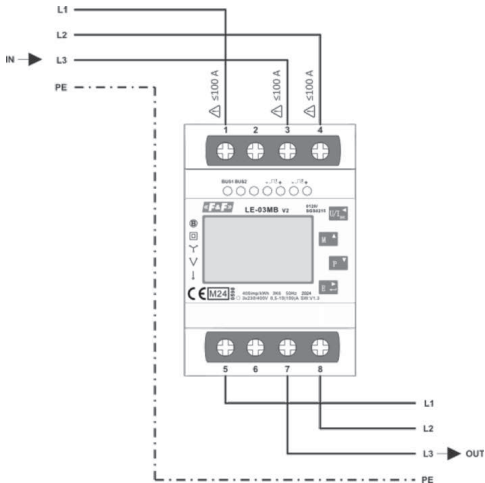
pulse outputs

	pulse output 1
	pulse output 2

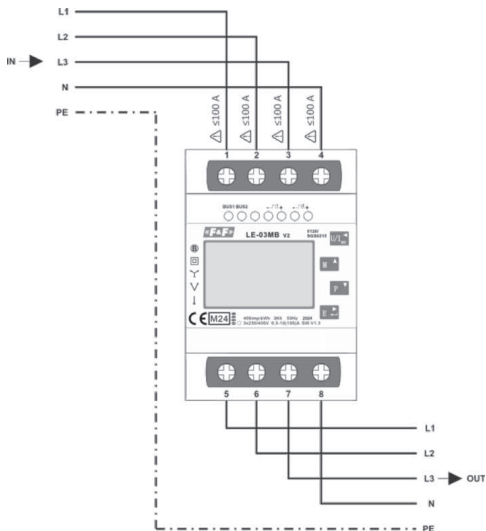
Wiring diagram



1-phase 2-wire system

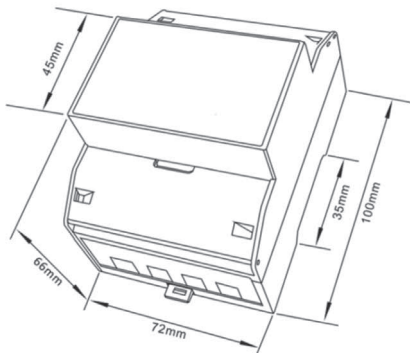


3-phase 3-wire system



3-phase 4-wire system

Dimensions



Dane techniczne

deklaracja MID
installation

measurement
rated voltage
current

minimum detection current
minimum
base
maximum

0120/SGS0215
1-phase (2-wire)
3-phase (3-, 4-wire)
direct
3×230/400 V AC

0.04 A
0.3 A
10 A
100 A

overload	30× I _{max} /10 ms
insulation	4 kV/1 min.; 6 kV/1.2 μs
insulation protection class	II class
environmental condition class	
mechanical	M1
electromagnetical	E2
voltage measurement range (L-N)	100÷289 V AC
voltage measurement range (L-L)	173÷500 V AC
measurement accuracy	
voltage	0.5%
current	0.5%
frequency	0.2%
active power	1%
reactive power	1%
apparent power	1%
active energy (EN50470-1/3)	B class
reactive energy (IEC62053-23)	2nd class
rated frequency	50 Hz
own power consumption	<10 VA; <2 W
indication range	0÷99999999.9 kWh/kVArh
display	LCD backlit (blue)
meter constant	400 pulses/kWh
pulse outputs	2
type	open collector
voltage maximum	27 V DC
current maximum	30 mA
output 1	
meter constant	0.01, 0.1, 1, 10, 100, 400* pulses/kWh(kVArh)
pulse time	60, 100* , 200 ms

output 2	
meter constant	400 pulses/kWh
pulse time	60 ms
communication	
interface	M-Bus
address	1*÷250
baud rate	600, 1200, 2400* , 4800, 9600 bps
parity	NONE, ODD, EVEN*
stop bits	1*, 2
read-out indication	red LED
working temperature	-25÷55°C
humidity (non-condensing)	≤95%
mounting altitude	up to 2000 m a.s.l.
terminal	
power input/output	4÷25 mm ² screw terminals
tightening torque (max)	3 Nm
M-Bus, pulse outputs	0.5÷1.5 mm ² screw terminals
tightening torque (max)	0.4 Nm
housing	PC+ABS plastic (self-extinguishing)
dimensions	4 modules (72 mm)
mounting	for TH-35 rail
internal (enclosure recommended)	IP51
external (enclosure required)	IP54
ingress protection	
front	IP51
whole	IP20

** factory settings*

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 MID and CE 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.
- » Do not tighten the terminals without the wire inserted. This may damage the lift mechanism of the terminal or the plastic cover of this terminal.