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LE-01DC

DC 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.



Purpose

The LE-01DC is an electronic meter designed to measure electricity consumption in DC circuits. The meter enables 2-way measurement of energy consumption and monitoring of current supply parameters: power, voltage and current. Thanks to the built-in real-time clock with battery backup, it is possible to measure energy consumption divided into 4 tariff zones, set by the user, on a daily basis. The meter's memory also stores the energy meter status for the last 30 previous days, and the last 12 months.

The monthly indicator records both total energy consumption and the distribution of consumption between tariffs.

The meter has a built-in relay and a programmable overload threshold - exceeding a pre-set load for a pre-set time will switch the relay.

The meter is also equipped with an RS-485 communication interface that supports the Modbus RTU protocol for remote reading and configuration.

Buttons on the front of the meter allow the user to select the displayed parameter and to change the meter settings. The backlit LCD display makes it easy to read the measured values.

Operation and programming manual

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

Functioning

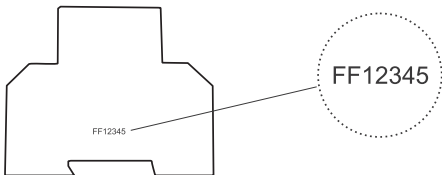
Under the influence of the current flowing through the external measuring shunt and the applied voltage, the meter precisely measures energy consumption and additional electrical parameters (power, voltage, current). The meter records the total energy consumption in non-volatile memory, divided into programmed tariff zones. The other parameters indicated by the meter are temporary and indicate the current values of the measured parameters, which are not stored in non-volatile memory.

Measured values

Active energy consumed	AE+	[kWh]
Active energy supplied	AE-	[kWh]
Phase voltage	U	[V]
Phase current	I	[A]

Meter number

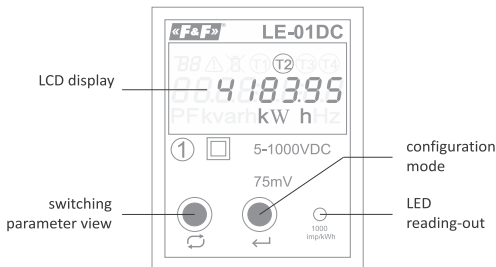
The meter is marked with individual serial number allowing its unambiguous identification. The marking is laser engraved and cannot be removed).



Sealing

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

Front description



Mounting



The meter is designed for connection to measuring shunts with a secondary voltage of 75 mV. The use of shunts with a different output voltage can lead to incorrect operation or damage to the meter.

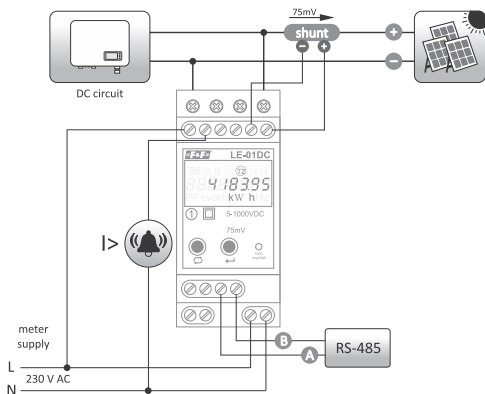


It is recommended to protect the meter's current circuit with a fuse with a level of protection adapted to the load current level.



230V AC voltage is required to power supply the meter.

Wiring diagram



Functions of the meter terminals



No	Function	Description
1	DC-	Measured voltage DC - 'minus' terminal
2	—	(unused)
3	—	(unused)
4	DC+	Measured voltage DC - 'plus' terminal
5		Auxiliary relay contact
6		

No	Function	Description
7	—	(unused)
8	—	(unused)
9		Measuring shunt (supply side)
10		Measuring shunt (receiver side)
11	—	(unused)
12	—	(unused)
13	AC L	Power supply of the meter - alternating voltage 230V AC
14	AC N	
20	RS-485 B	RS-485 - terminal B
21	RS-485 A	RS-485 - terminal A

Technical data

input voltage	5÷1000 V DC
auxiliary power supply	85÷300 V AC
power consumption	<8 VA, 0.4 W
meter display range	0÷999999.99 kWh
display	backlit LCD (blue)
meter constant	1000 pulses/kWh
withstand voltage AC	4400 V/min.
withstand surge voltage	6.4 kV - 1.2/50μs
measuring shunt	
primary side	do 2000 A
secondary side	75 mV
measurement accuracy	
voltage	0.5%
current	0.5%
active power	1%
communication	
port	RS-485
communication protocol	Modbus RTU
address	1*÷245
baud rate	9600*, 19200, 38400, 115200 bps
parity	NONE, ODD, EVEN*
stop bits	1*, 2
read-out indication	red LED
working temperature	-25÷70°C
humidity (non-condensing)	≤95%
auxiliary relay	
type	semiconductor
voltage	≤250 V AC/DC
current	<0.1 A

terminal	2.5 mm ² screw terminals
tightening torque	0.4 Nm
housing	PC+ABS plastic (self-extinguishing)
dimensions	2 modules (35 mm) (150×38×80,5)
mounting	for TH-35 rail
ingress protection	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 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.

