



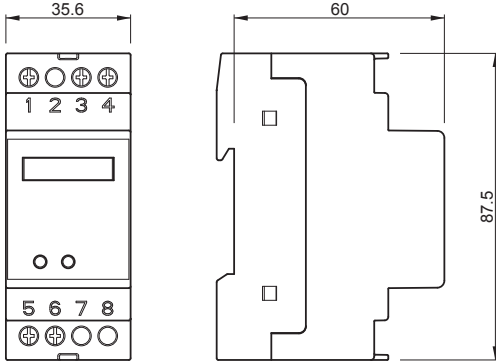
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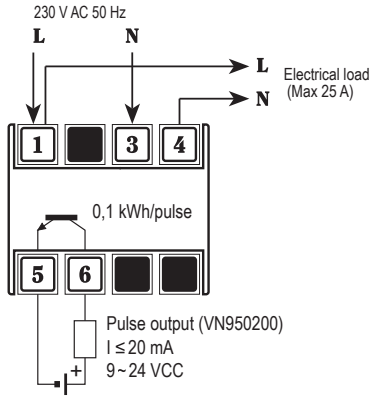
# Energy-230 M LC Energy-230 M

## User Manual SINGLE-PHASE ACTIVE ENERGY METER Read all the instructions carefully

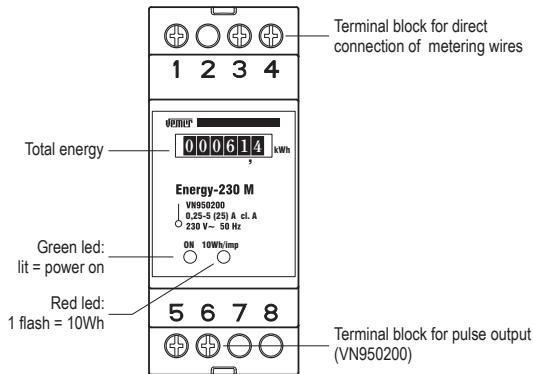
### Dimensions



### Connection

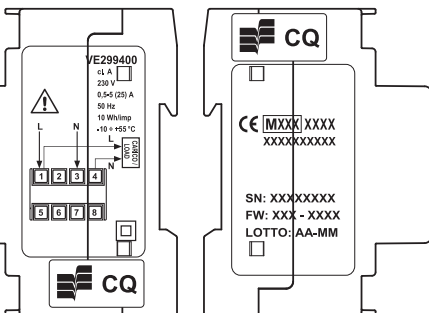


### Description



### Marking

#### MARKING OF METER



#### METROLOGY SEAL



- The **Energy-230 M** series are static energy meters to read active energy in single-phase 230V systems for indoor application
- **Energy-230 M** energy meters comply with **MID** directive (2004/22/CE) and are intended for type M1 and type E2 mechanical and electromagnetic environment

### SAFETY WARNINGS

To guarantee correct installation, proceed as follows:

- 1) The appliance should be installed by a competent operator
- 2) The appliance should be installed in a panel in such a way as to guarantee that the terminals are inaccessible after fitting
- 3) The appliance should be installed in a panel in such a way as to guarantee a degree of protection IP51 according to EN 60529
- 4) A protection device against over-currents should be installed in the electrical system, upstream of the energy meter
- 5) Connect the instrument as shown in the alongside diagrams
- 6) Before touching the connector terminals make sure that the wires to be connected or already connected to the instrument are not live
- 7) Do not power or connect the instrument if any part of it is damaged

Model	Type	Description
VE299400	Energy-230 M LC	Single-phase MID active energy meter
VN950200	Energy-230 M	Single-phase MID active energy meter with pulse output

### TECHNICAL SPECIFICATIONS

- Rated voltage: 230 V CA (-15%/+10%), 50 Hz
- Maximum power consumption: 4 VA
- Starting current:  $I_{st} = 20$  mA
- Minimum current:  $I_{min} = 0,25$  A
- Reference current:  $I_{ref} = 5$  A
- Maximum current:  $I_{max} = 25$  A
- Current circuit consumption: < 4 VA
- Class index: A
- Operating temperature:  $-10 \div +55$  °C
- Storage temperature:  $-25 \div +70$  °C
- Relative humidity: 10% ÷ 90% non-condensing
- Connection type: direct for current conductors
- Signaling leds: green = power on  
red = flashing at 10Wh
- Meter constant: 10 Wh/pulse
- Display: 6-digit mechanical counter
- Reading resolution: 0,1 kWh (full scale: 99999,9 kWh)
- Housing: 2 DIN, gray RAL 7035
- Protection degree: IP20/IP51 on the front
- Optoinsulated pulse output (only VN950200 model) for energy consumption remote-monitoring (0,1 kWh/pulse)
- Pulse specifications: duration =  $100 \text{ ms} \pm 15\%$   
voltage =  $9 \div 24 \text{ V CC} (\pm 10\%)$   
switchable output current = 20 mA max

### OPERATION

- In normal operation, the **green** led is on and the **red** led flashes in proportion to the active power (flashing at 10Wh)  
The meter counts the consumption of active power with a resolution of 0,1 kWh.

### PHASE ERROR

- When the energy meter is turned on, a connection check-up is automatically carried out to detect any connection errors: in case of improper connection, the **red** and **green** leds flash alternate and the meter is locked

**Warning: to restore correct meter operation after an error reading has been showed, switch the meter off, invert connections of voltage or current and turn on again.**

### REFERENCE STANDARS

Conformity to EU directive:  
 2004/22/CE (MID)  
 is declared with reference to the following harmonised standards:  
**EN 50470-1** and **EN 50470-3**