UNICOM MICROSYSTEMS LTD.

SM100 SERIES

Static, single-phase, multi-rate, electric meter for direct connection and remote reading

5 YEAR WARRANTY

- **Accuracy class 1**
- **Bi-directional registration of energy**
- **Indication for wrong connection**
- **Remote reading of the consumed energy**
- **Real time reading**
- **Compact dimensions 165x88x45 mm**
- **Light and sturdy case meeting UL94 V0**
- **Meeting the requirements of BDS EN 61036 + A1:2001**

The SM100 series is a static electric meter that measure the active energy consumption in single-phase AC networks with a frequency of 50 Hz. It is for direct connection with an accuracy class 1 and bi-directional registration of energy. The meter is compact and light and is provided with an indicator for wrong connection to the electrical network. The energy consumption is accounted for according to one, two or more rates. The readings of the meter's registers and the information regarding its current status are shown on a liquid crystal display. The case of the meter is made of a material meeting the requirements of UL94 V0. The SM100 also meets the requirements of BDS EN 61036 + A1:2001. The meter is designed for household and industrial applications as commercial measuring device. With its built-in communication functionality the SM100 can operate over a control network for remote acquisition of data for the energy consumed by the subscribers.

ENGINEERING DATA

Electrical parameters	
Number of phases	1
Rated voltage Voltage range	230 VAC 110 ÷ 264 VAC
Frequency	50 Hz
Base current	5 A
Maximum current	60 A
Power consumption (1)	< 10 VA
Connection	Direct
Measurement	
Accuracy class	1
Measurement error (2)	< ±1%
Mean temperature coefficient (2)	0.05%/°C
Number of rates (3)	2 or 4
Meter constant	500 imp./KWh
Starting current	20 mA
Resolution	0.01 KWh
Register capacity	999999.99 KWh
Bi-directional energy measurement	Yes
Register type	Electronic
Data retention time	10 years

Control network	
Communication	ANSI/EIA-709
Network interface	Note 4
Number of meters in the network (5)	Unlimited
Protection from unauthorized access	Yes
Operation in real time	Yes
Connection of other devices	Note 6
Others	
Operating temperature range	от –20°C до +55°C
Storage temperature	от –25°C до +70°C
Protective class	II
Case	Isolating IP54 UL94 V0
Weight	440 g
Dimensions	165x88x45 mm

Notes:

1. Depending on the selected network interface the consumed power may have values exceeding that shown.
2. The parameter is determined with cos φ = 1 and $0.1I_b \le I \le I_{max}$.
3. The number of rates may be different and set by the customer.
4. The network interface is specified with the order. The selection of the network interface in no way influences the parameters of the meters related to the measurement of consumed electrical energy.
5. The number of electric meters connected in a network is not limited. Depending on the selected network interface, it may be necessary in some cases to add repeaters, routers or amplifiers.
6. Input-output devices for measurement and control of parameters, for access control and equipment security, for remote control of electrical energy supply to the consumers, etc. may be added to the network.

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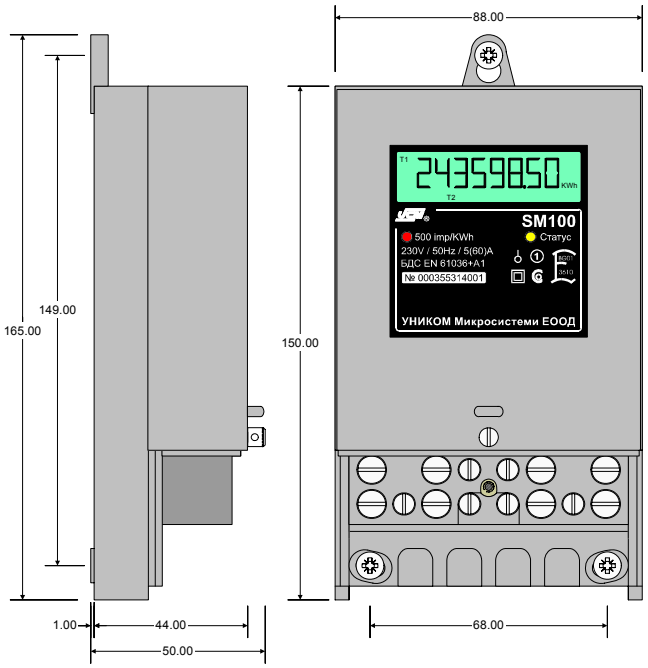
MECHANICAL MOUNTING

All dimensions are in millimeters



- The electric meter is mounted in a suitable place on a wall, panel or in a cabinet, on a flat surface in an arbitrary position.
- It is inadmissible to locate the meter near heaters or other surfaces that are heated to high temperatures.
- Fastening is achieved by means of three galvanized rapid screws Ø3.5 mm with a cylindrical head and of suitable length.

ELECTRICAL INSTALLATION

Terminal №	
1	Phase input
2	Phase output
3	Neutral input
4	Neutral output
5, 6, 7, 8, 9, 10	The designation of each terminal is determined depending on the specific options and is shown on a scheme attached on the inside of the terminal strip cover.

- All required safety measures shall be taken during electrical installation work of the meter.
- Electrical installation work of the electric meter shall be undertaken by qualified and certified engineering personnel.

SPECIFICATION

SM100 - 0 0 0

- 0 registration of energy regardless of its direction
- 1 registration of energy depending on its direction

- 0 one input for switching the rates (two rate electric meter)
- 1 two inputs for switching the rates (when 3 or 4 rates are used for measuring)
- 2 no input for rate switching (it is done over the network)

- 0 RS485 with transfer rate 9.8 KBit/s
- 1 RS485 with transfer rate 39 KBit/s
- 2 PL20 low voltage electrical network with transfer rate 3.9 KBit/s
- 3 UR-10 radio channel 433 MHz ISM band with transfer rate 4.9 KBit/s
- 4 TP/FT-10 twisted pair cable with transfer rate 78 KBit/s
- 9 without a communications channel and operation in a network

- When the last one or more digits in the specification are zero it is possible to drop them.

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