

1 INFORMATION ON THE ELECTRICITY METER

- The CE207 R7 electricity meter is designed to measure active and reactive electric energy in single-phase AC circuits and to organize multi-tariff electric energy metering.

- The meter meets the requirements of IEC 62052-11, IEC 62053-21, IEC 62053-23, IEC 62056, IEC 60068-2-5:2018.

- Operating temperature range is -40 to +70 °C.

- Average service life of the meter is 30 years.

The meter that has reached the end of its service life and is unsuitable for further operation (burnt out, broken, etc.) is subject to disposal.

2 TECHNICAL CHARACTERISTICS

Accuracy class	1/2
Nominal phase voltage, V	220
Operating phase voltage range, V	176...253
Base (max.) currents, A	5 (80)
Nominal network frequency, Hz	50 ± 2.5
Limit of basic absolute error of the clock rate, max., s/day	± 0.5
Number of energy metering tariffs	up to 5
Depth of load profile storage, days	128 at an averaging time of 60 min

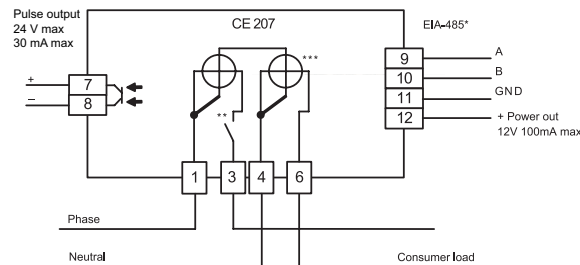
3 INSTALLATION PROCEDURE

Connect the electricity meter to a single-phase AC network with a nominal voltage of 220 V. To do this, remove the terminal block cover and connect the lead wires by fixing them in the terminals of the block according to the connection diagram shown in Figure 1.

ATTENTION! METER CONNECTION MUST BE PERFORMED WITHOUT POWER SUPPLY! ONLY PERSONS WHO HAVE RECEIVED SPECIAL TRAINING FOR WORKING WITH VOLTAGES UP TO 1000 V AND WHO HAVE STUDIED THIS OPERATIONAL MANUAL ARE ALLOWED TO WORK WITH THE METER.

When installing the meter, the wire (cable) must be stripped of insulation by approximately 20 mm. The stripped part of the wire must be smooth, without bends. Insert the wire into the terminal without tilts. It is not allowed to insert a wire with insulation into the terminal, as well as to protrude the stripped area outside the block.

First, tighten the top screw. Pull the wire lightly to make sure that it has been clamped. Then tighten the bottom screw. After several minutes, tighten the connection again. The recommended tightening torque for the terminal block screws is 2 N·m.



* - for modifications with the EIA-485 interface (CE207 R7.839.x.OA.xxxx)

** - for modifications with a built-in load control relay (CE207 R7.839.x.Ox.Qxxx)

*** - for modifications with a measuring element in the neutral wire (CE207 R7.839.2.Ox.xxxx)

Fig. 1. Meter connection diagram

4 APPEARANCE OF THE METER'S LCD



☑: turns on when opening is detected by any opening sensor, turns off by an interface command;

🔋: turns on when the lithium cell is missing or discharged and blinks when the voltage of the lithium cell is low;

"T1 T2 T3 T4": display of tariffs from 1 to 4, for tariff 5 all indicators turn on;

"P-": (marker 1) turns on at the reverse flow of active power (supply);

⚡: (marker 2) turns on when displaying supplied energy: active (Ae), reactive (Re);

⚡: (marker 3) turns on when any relay is actuated, turns off when all relays return to their normal state (return);

🕒: (marker 4) indicates a fault of the built-in real time clock; energy accumulation is performed in the emergency tariff;

🧲: (marker 5) turns on when detecting exposure of the meter to a magnetic field, turns off by an interface command;

"UL": (marker 6) indicates the state of the phase voltage (on: voltage is within tolerance, blinking: voltage is out of tolerance, off: voltage is off).

"N": (marker 7) indicates energy metering via the neutral channel;

⚖: (marker 8) indicates current consumption imbalance. The imbalance is determined by the exceedance of the difference in consumption in the phase and neutral wires by 5% or 10% (see operational manual).

5 INFORMATION DISPLAY ON THE LCD

The selection of a group and parameter in manual mode is carried out by pressing the "FRAME" button: ⏪

- Holding the button pressed for less than 1 s switches the parameters in the group;

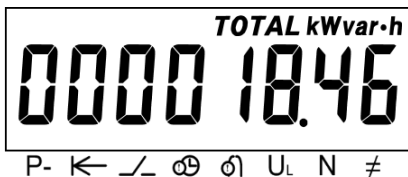
- Holding the button pressed for more than 1 s switches the group.

5.1 Autoscrolling Mode

If the information autoscrolling mode is enabled, then after 60 seconds of button inactivity, the switch to the indication of the first parameter of group 1 will be performed. Then, after the specified time, the switch to the display of the next parameter in the group will be performed. At the end of the display of parameters in the group, the switch to the next group will be performed, etc. The group number message is not displayed. The display of any parameters for the autoscrolling mode can be masked (turned off), except for the consumed active (Ai) energy.

5.2 Group 1. Energy accumulations on a cumulative total.

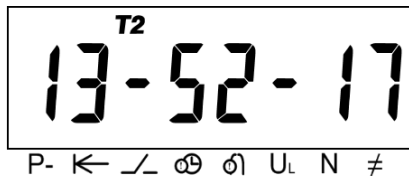
5.2.1 Data on consumed active energy accumulated on a cumulative total as per all tariffs in kilowatt-hours



5.2.2 Data on supplied reactive energy accumulated on a cumulative total as per tariff 1 in kilovar-hours



5.2.3 Display of the current time/date



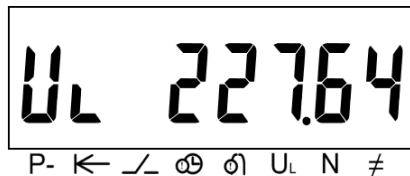
5.3 Group 2. Energy accumulations recorded in the previous billing period.

Energy accumulations on a cumulative total recorded in the previous billing period (month) are displayed. The order and method of displaying energies are similar to group 1. The display of all energies can be turned off.

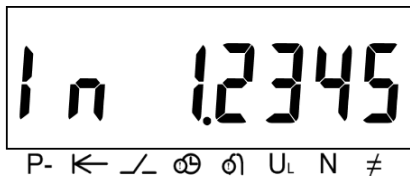
5.4 Group 3. Basic network parameters.

Information on the neutral wire is displayed for a two-element meter. 3 parameters are displayed: voltage (phase, neutral, and battery), current and active power (phase and neutral).

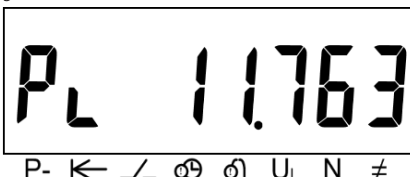
5.4.1 Effective phase voltage value in volts. Voltage designations used: UL, Un, Ubat.



5.4.2 Neutral load current values in amperes. Current designations used: IL, In.



5.4.3 Phase active power value in watts "W" or kilowatts "kW". Power designations used: PL, Pn.



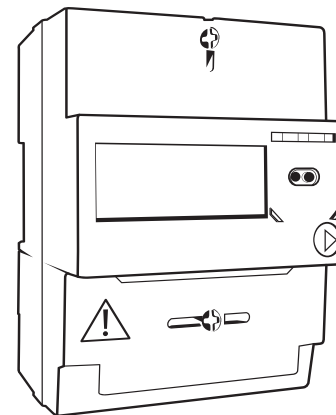
5.4.4 In the remaining groups of the meter indication, special parameters are displayed (for advanced users). The order of their display can be found in the user manual.

Single-phase Multifunctional Electricity Meter

CE207 R7

Operational Manual

RCP 42 2863 6
CN FEA CU 9028 30 110 0



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