ULTRASONIC GAS METERS G4EUS-2

FIELD OF OPERATION

The ultrasonic gas meters are designer and manufactured to measure the volume of natural gas, having maximum working pressure of 0.5 bar withing a measurement range of 0.04-6m³/h. The ultrasonic measurement unit is made by Panasonic.

STANDARD

The meter complies with UNI/TS 11291-1,6,8,9,10,11 and EN 14236:2018, EN 13757-3, EN 13757-4.

CONSTRUCTION

The meters are made from pressed steel ensuring robustness, external tightness, resistance against external and internal corrosion and resistance to high environment temperatures. The ultrasonic measurement unit is mounted inside the meter case on the run way of the gas flow. The meter is populated with a shut off valve on the inlet path and can be controlled locally or remotely.

The gas meter is equipped with two batteries: one for metrological part and one for communication part (GPRS or 169MHz).The metrological part is completely sealed. The communication battery is located separately and can be replaced .This compartment can be opened without breaking the metrological seal.

CHARACTERISTICS

Constructive

- LCD custom design display, 8 digits for volume values and 5 digits for OBIS codes;
- Lithium battery having minimum 15 years life time for 169 MHz interface version and min.10 years life time for GPRS interface version;
- Optical port according to EN 62056-21;
- GPRS or Wireless M-BUS 169MHz communication interface;
- Volume compensation with temperature within range -25°C ÷ 55°C;
- Wireless M-BUS 169 MHz - transmission power (max) = + 27 dBm(500 mW) and it uses N2 - mode which is described in EN 13757-4 standard.
- Class of protection: IP55.

Display

- The volume value is displayed in cubic meters with 3 decimals ("Normal" mode)or 4 decimals ("Service" mode) ;
- The LCD display sequence can be changed (left or right) through the display mode buttons.

Stored values

The ultrasonic gas meter has a non-volatile memory in which the billing values are stored, as well as the recorded events, as follows:

- The daily consumption values for the last 70 days;
- 13 billing records;
- The metrological events register (UNI-TS 11291-11-2), with a capacity of 180 events, including the below parameters:
- UNIX time of the record;
- event code;
- event number;
- current volume;
- daily diagnosis ;
- Main events recorded:
  - communication battery missing;
  - 10% of battery remaining life;
  - 90% of events register full;
  - battery under critical level;
  - Events register full;
  - Opening of the metrological compartment;
  - Opening of the communication battery compartment;
  - Changing encryption key;
  - Measured temperature exceeding the working temperature range (-25°C...+55°C)
  - Reverse flow detected
  - Clearing of the events register;
  - Changing the value of the base temperature;
  - Changing the tariff program;

Quality management system ISO 9001 certified by SRAC
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• Events register (UNI-TS 11291-11-2), with a capacity of 254 events, including the below parameters:
• UNIX time of the record;
• event code;
• event number;
• current volume;
• daily diagnosis ;

Communication interface

The ultrasonic gas meter has two serial communication interfaces: one optical interface for local communication purpose and another one with radio modem for remote communication purpose - both of them are using DLMS/COSEM protocol.
The optical interface complies with EN 62056-21 and the protocol used at application level is DLMS/COSEM. The optical port is designed for configuration, metrological checking or data reading, having a communication speed of 9600bps, 8 bits of data and even parity.
The remote communication interface can be populated with M-Bus radio modem having 169MHz carrier frequency acc. with EN 13757-3 and EN 13757-4 or GSM/GPRS modem using DLMS/COSEM protocol.

FUNCTIONAL CHARACTERISTICS

Meter functional states

• Unconfigured, Service, Normal;
Displayed values (acc. with UNI/TS 11291-6)
• Data and hour in format: dd_mm_yy; hh_mm;
• Current tariff;
• Redelivering station ID;
• Diagnos is;
• Total volumes in base conditions;
• Total volumes in alarm mode;
• ID of current billing period;
• Total volume for each tariff;
• End of previous billing period;
• Total volumes in base conditions for previous billing period;
• Total alarm volumes recorded at the end of previous billing period;
• Tariff ID used for previous billing period;
• Max conventional gas flow for previous billing period;
• Status of shut-off valve.

Programmed values , can be done locally or remotely restricted with user and password: (acc. with UNI/TS 11291-6)

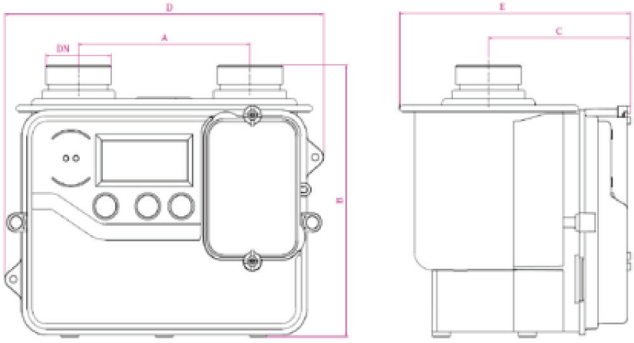
• For configured mode:
• Current day time: dd_mm_yy;
• Current hour time: hh_mm_ss;
• ID of redelivering point ;
• "Gas hour" and billing date ;

METROLOGICAL CHARACTERISTICS

Operating conditions

• Temperature: -25°C ... +55°C;
• Humidity: 95% at atmosphere temperature 0~35°C, for Ta>35°C max amount of water vapor is 37.6 g/m^3.
• Measurement range: 0.04 to 6 m^3/h;
• Measurement performance: 40 to 600L/h within ±3%, 600 to 6000L/h within ±1.5% according with EN 14236:2018 accuracy class 1.5;
•Pressure loss: less than 200 Pa acc. with EN 14236:2018;

PIPING AND MOUNTING DIMENSIONS



SIZE	A	B	C	D	E	DN
G4	110	166	91	204	148	G1 ½" (ISO 228)

OPTIONAL CHARACTERISTICS

• Communication modem could be radio M- BUS 169MHz or GSM/GPRS modem;
• Logo with personalized barcode

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