Sagemcom

Siconia® EF4EVO+

Residential gas smart meter
for amr system

SICONIA®

Description

The Siconia® EF4EVO+ meter is a volumetric measuring instrument with diaphragms wall for natural gas, manufactured gas, LPG, and technical gases, designed for residential use. It is designed and built according to the highest standards, and in compliance with the EN1359 standard and the MID directive. Measurement precision and accuracy is guaranteed by the production and control process, and by an automated calibration system, which is used at the internal Metrological Laboratory upon 100% of the meters produced. The quality of the plastic and metal components makes the meters highly sensitive, even with a minimal gas flow, and ensures excellent performance over time. The accuracy and reliability of the measurement over time is guaranteed by the consolidated mechanical principle, which is based on a membrane and spool valve system.

The EF4 EVO+ model is the "electronic" version of Sagemcom's traditional mechanical meter, and has an integrated electronic module with the following features and functions:
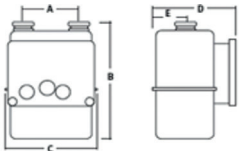- LCD display with multilevel menu
- Logging of consumption values
- Remote transmission of the readings (compensated by temperature)
- Remote control valve for gas flow management.

The integrated valve with integral passage is positioned on the meter's inlet and inside the casing; it can be controlled remotely for both closing and re-opening (in this case, after remote enabling and on-site activation). The use of a full-bore valve eliminates the possibility of any additional load loss. The EF4-EVO+ is part of Siconia® Smart Gas metering solution including central Head End System and Meter Data Management system.

REFERENCES
European Directive 2014/32/EU (MID) and 2014/34/EU (ATEX)
EN 1359:2017 norm
OIML R137-1&2:2012
WELMEC 7.2
ITALIAN AUTHORITY FOR ELECTRICITY, GAS AND WATER'S RESOLUTION 631-15

Characteristics

- Casing in galvanized sheet steel with polyester paint
- "H3" outdoor environments, in accordance with EN1359: 2017 standard
- Class 1.5 High stability of measurement
- 2 batteries for metrological unit and communication module (lifetime > 15 years)
- Equipped with a shut off valve meeting EN16314 standard with safe management software
- Measured or base volume, valve status and alarms indication
- Up to 3 tariff plans
- Internal data base for hourly and daily consumption profiles (up to 70 days), events and alarms (up to 1000)
- Alphanumeric LCD display
- Integrated tamper and electromagnetic interference protection
- User button for data reading and valve reset
- ATEX Zone 2-II 3G Ex ic IIA T3 Gc (- 25°C ≤Tamb ≤ + 55°C)
- Metallic casing colour: RAL 9002 standard colours

Data communication

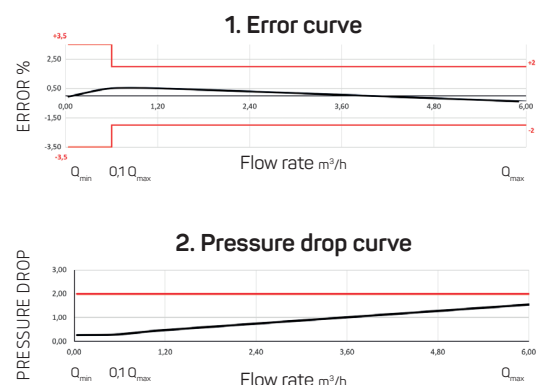**Point to Point cellular communication :** GSM/GPRS, 3G, NB-IoT NB1/2, LTE M

Point to Multipoint RF communication : WmBUS 169MHz, WmBUS 868MHz, LoRa 868 MHz

DLMS Protocol, OMS Primary Communication V4.1.2, UNI TS 11291

Product details

Model	EF4 EVO+
Type	Smart
Class	G4
Max. operating pressure (mbar)	500
Min. flow rate (m³/h)	0,04
Max. flow rate (m³/h)	6
Spacing distance	110mm / 160mm
Standard connection (according to ISO 228-1)	1 1/4" / 7/8"
Protection rating	IP66
Operating temperature range	-25 °C / + 55 °C
Precision class	1.5
Cyclic volume	1.2 dm³
Maximum computable volume	99999.999 m³
Minimum reading value	0.001 m³
Base temperature conditions	15 °C (other temperatures upon request)
Dimensions	A: 110/160mm, B: 240mm, C: 182,5mm, D: 166,5mm, E: 66,7mm
Weight	2,1 kg

Functionality

The pressure difference between the meter's intake and outlet results in the cyclic filling and emptying of the measuring chamber via the alternating movement of the deformable membrane.

The motion is converted into electrical pulse signals via the kinematic measuring system, which consists of spool valves with a connecting rod/crank coupling, and an electronic transducer module. These signals are then transmitted to the metrology card.

The temperature sensor for volume correction is installed on the transducer module, and is equipped with an effective fraud detection system.

1. Error curve

2. Pressure drop curve

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