Sagemcom


# Siconia® ECOR4

Compact electronic volume converter device for industrial applications

## Description

The Siconia® ECOR4 is a compact volume converter device of Type 1, MID and ATEX approved, in accordance with the highest European standards. It is provided with a built-in communication module for remote management. ECOR4 performs the conversion of natural gas volume measured in operating conditions into reference conditions (such as PTZ, PT or T).

The gas volume is acquired using pulses from any volumetric meter. The gas temperature and pressure are measured using external sensors. The electronic device is provided with two digital outputs, one to repeat converted volumes and the second to signal alarms. It is programmable using a 6 button keypad and a digital alphanumeric LCD display. An optical local port using EN62056-1 standard can be used for parameter reading and setup. ECOR4 can be equipped with a RS232/ RS485 serial port for SCADA or PLC wired communication.

Data integrity is guaranteed by means of metrological seals and password-protected access. ECOR4 is autonomously powered by an internal and replaceable long lifetime battery. The integrated and compact design of ECOR4 fits the needs of gas distributor companies and offers a lot of advantages among which :
- Easy installation
- High immunity towards vandalism and tampering
- High safety and reliability

The ECOR4 is part of Siconia® Smart Gas metering solution including central Head End System and Meter Data Management system.

**REFERENCES**
ATEX Directive 2014/34/EU
MID Directive 2014/32/EU
UNI TS 11291
WELMEC 7.2
EN 12405-1

## Product details

| | |
|---|---|
| Model | ECOR4 |
| Temperature measurement range | -25 °C to +60 °C |
| Pressure measurement range (available options depending on transducer) | 0.8/2 bar A |
| | 0.7/5 bar A |
| | 2/10 bar A |
| Operating temperature range | -25 °C / + 70 °C |
| Storage temperature | -30 °C / + 70 °C |
| Base temperature conditions | 15 °C |
| Error under reference condition | <0.5 % of the measured value (MID) |
| Error under operating conditions | <1 % operating conditions |
| Protection rating | IP66 |
| Mechanical class | M2 |
| Electromagnetic environment | E2 |
| Dimensions | 230x150x54 mm (l x h x d) |
| Weight | 2 Kg |

## Characteristics

- Compact, warterproof sealed and protected casing made of polycarbonate and ABS plastic
- To be mounted on the wall, or other supports on the pipeline or the meter itself (using optional adaptor brackets)
- ATEX Zone 1-II 2(1)G Ex ib [Ex ia Ga] T3 IIB T3 Gb -25 ≤ T amb ≤ 70°C
- PTZ, PT or P volume conversion using SGERG-88 compressibility formula
- 2 digital inputs (configurable as 5Hz max. count input or binary)
- 2 digital outputs (impulsive for repetition of correct volumes and programmable binary)
- High measurement stability (0.5% under reference conditions)
- PT-1000 sensor for gas temperature reading Len gth 50mm, diameter 5mm Four-wire cable length 2.5 meters
- Precision: ≤0.1% of the measured value
- External pressure transducer
  - Cable length 2.5 m Silicon-based piezoresistive sensor
  - Connection to the M12x1.5 process
  - Accuracy: ≤0.25% of the measured value
- Alphanumeric LCD display with three lines of 16 characters
- Integrated tamper protection
- 6 button keypad for setting the basic parameters
- Local Communication via ZVEI infrared optical port, in accordance with EN 62056-21
- Built-in point to point cellular commucation module (GSM/ GPRS, 3G, Nb1 option)
- CTR and DLMS data communication prototocols
- Power supply: 2 size D 3.6 V lithium batteries
  - Estimated battery life > 8 years using GSM/GPRS under standard conditions
  - Estimated battery life > 15 years using Nb1 under standard conditions

## Functionality

The measured volume is converted using an algorithm that requires the following variables:
- Volume of gas measured by the meter: acquired by the device via the pulse input.
- Temperature: measured by a digital sensor
- Gas pressure: measured by a digital transducer

The device calculates the gas compressibility ratio using standard methods or a constant value, and then provides the value of the converted volume (in standard $m^3$)

## Data communication

- GPRS communication (point-to-point)
- NB-IoT RF communication (point-to-point)*
- Local communication via ZVEI infrared optic2al port, in accordance with EN 62056-21



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