SMART DIAPHRAGM GAS METER

picoELCOR v.2, v.3

for volume measurement under base condition
with GSM/GPRS modem

- All in one
- High accuracy
- Full PTZ volume conversion
- Integrated GSM/GPRS/SMS modem
- MID approved
- Compliant with italian standards ARG 155/08 and UNI/TS 11291
- Designed for hazardous area ZONE 1
- Battery lifetime 15 years
- Pulse output
- Available sizes G10, G16 and G25

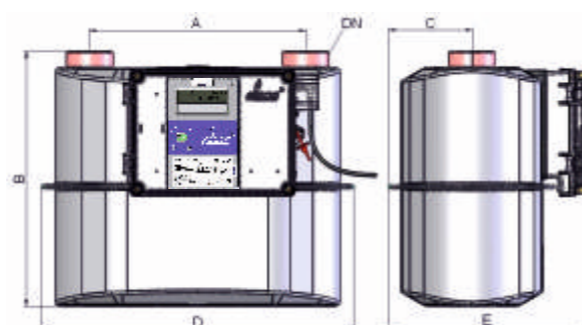## Technical specification

Technical specification	
Dimensions and weight	see table below
Protection class	IP 65 (EN 60529)
Working temperature	-25°C to +55°C
Control panel	2 button keypad hidden under front cover
Display	alphanumeric LCD display with icons
Measuring temperature range	-25°C to +55°C
Measuring pressure ranges (bar, absolute, MID certified)	0.8 - 1.6
Total accuracy (MPE)	1.5 %
Communication interface	optical interface (IEC 62056-21) GSM/GPRS modem
Digital outputs	1 digital output - configurable as pulse or analog output (CL-1 module is required for the analog output)
Battery power supply (metrologic part)	B-02 lithium battery, 3.6V, battery life >15 years in defined conditions
Battery power supply (modem part)	HB-02 lithium battery, 3.6V, double battery pack is available battery life >5 years in defined conditions
CE approved	MID, ATEX, EMC, radio
Metrological approval - MID approved according to European metrology standards 2014/32/EU, EN 1359, EN 12405-01	TCM 143/13 - 5018
ATEX approval 2014/34/EU	FTZÚ 13 ATEX 0024X
Classification (EN 60079-0, EN 60079-11, EN 13463-1, EN 13463-5)	Ex II -/2 G IIA T3, ZONE 1

Flow rates

Model	Qmin [m³/h]	Qmax [m³/h]	V [dm³]
	operating conditions = base conditions		
picoELCOR v.2 (v.3) G10	0.1	16	6 (5.6)
picoELCOR v.2 (v.3) G16	0.16	25	6 (5.6)
picoELCOR v.2 (v.3) G25	0.25	40	12 (11.2)

Mechanical connection

Model	DN	Thread
picoELCOR v.2, v.3 G10	25	1 1/4"
	32	1 3/4"
	40	2"
picoELCOR v.2, v.3 G16	40	2"
picoELCOR v.2, v.3 G25	50	2 1/2"

Dimensions and weight

Model	Dimensions [mm]					Weight [kg]
	A	B	C	D	E	
picoELCOR v.2 (v.3) G10	250	320 (349)	85 (94)	334 (398)	243 (250)	5.3 (7.5)
	280	330 (349)	108 (94)	405 (398)	259 (250)	6.9 (7.5)
picoELCOR v.2 (v.3) G16	280	330 (349)	108 (94)	405 (398)	259 (250)	6.9 (7.5)
picoELCOR v.2 (v.3) G25	335	398 (360)	138 (140)	465 (460)	313 (347)	11.2 (13)

CE M 14 1383, 1026, 0889

Take advantage of revolutionary solution for custody gas measurement with the diaphragm gas meter integrating volume conversion and wireless data transfer.

General description

picoELCOR is a new ELGAS product line of SMART diaphragm gas meters integrating the electronic index, volume conversion, datalogger and GSM/GPRS/SMS modem with the ELSTER or APATOR METRIX mechanical diaphragm gas meter. Solid mechanical design, proven technology and using the latest low power microprocessor technology with high processing power brings to customer guarantee of smooth functioning and space for future software and hardware extensions.

The measurement principle is based on measuring the volume running through mechanical measuring units. Each measuring unit has four measuring chambers, separated by synthetic diaphragms. The mechanical movement is transfered via gear to a crankshaft moving the valves. Rotating movement is scanned by tamper proof optical element. This optical element ensures maximum protection against an external magnetic fields helping to eliminate tampering of the meter.

The base volume is calculated on the basis of precise measurement of the pressure, temperature and using conversion formula. Pressure and temperature transducers are integrated into the gas meter body. The electronic index with LCD display controlled by 2 button keypad (accessible after opening of the front cover) gives the information about measured volume and providing user friendly interface to the customer for reading data.

The integrated battery powered GSM/GPRS/SMS modem transfers the collected data via cellular network.
Power supply is realized by two separate lithium batteries (EVC battery and modem battery) able to power the device for up to 15 years (metrological part).

Key features

- All in one
- High accuracy
- Simple installation
- Lowest total cost of ownership
- Maximum protection against tampering
- Volume conversion based on measuring pressure, temperature and conversion formula
- GSM/GPRS/SMS modem
- Data logging capability
- Optical sensing of the flow
- Battery life for up to 15 years - 2 separate batteries
- Data available on alphanumeric LCD display with icons
- Front housing cover opening detection (optionally)
- Firmware remote download according to WELMEC 7.2
- Galvanically isolated pulse output
- Compliant with italian standards ARG155/08 and UNITS11291

Device variants

- picoELCOR v.2
  - based on ELSTER diaphragm gas meter
  - available in sizes G10, G16 and G25
- picoELCOR v.3
  - based on APATOR METRIX diaphragm gas meter
  - available in sizes G10, G16 and G25

Transducers

- High accuracy
- Digital technology
- Semiconductor temperature sensor
  (MPE <0.1% from measured value; Kelvin degree scale)
- Silicon piezorezistive pressure sensor
  (MPE <0.25% from measured value)

Output

- 1 digital pulse output
- Low frequency pulse output (primary volume, base volume, odorization control, etc.), programmable pulse width

Communication interface

- Optical interface (IEC 62056-21)
- GSM/GPRS/SMS modem

Communication protocols

- CTR (UNI-TS 11291-3), Elgas ver. 2, MODBUS-RTU, FTP client

Data protection

- Multilevel password system
- Security hardware switches
- Data encryption AES128 standard
- Front cover opening detection (optional)

Display and keypad

- Clear alphanumeric LCD display with icons
- 2-button keypad accessible after opening of the front cover
- Display of measured current values and preset parameters
- Automatic alternating of selected values on the LCD display

Main display

Power supply

The device operates from two independent lithium batteries powering separately the meter section and modem section. Both batteries were designed to have enough capacity for smooth device operation.
Using of two separate batteries means troublefree functioning of the meter independent from using the modem.

On field verification and calibration

Optionally picoELCOR can be equipped with a thermowell and a pressure tap for verification purposes in field.

Software

For the initial configuration, on field settings and basic data administration the TELGUIDE software is supplied. This software is user friendly tool allowing easy configuration and maintenance of the picoELCOR.

Front cover opening sensor (optional) • EVC battery • LCD display • Metrological section sealed separately • SIM card holder • External antenna installation place • Place for mechanical seal • GSM/GPRS modem board • Pulse output terminals • Configuration switch • 2 button keypad • Optical interface • Nameplate • Modem battery