

Technical specification

Housing	polycarbonate
Dimensions (w x h x d)	225 x 220 x 82 mm
Weight	2.4 kg
Protection class	IP 65 (EN 60529)
Working temperature	-25°C to +70°C
Control panel	6 button keypad
Display	graphical backlit LCD display (also in battery mode), 128 x 64 pixels
Power supply	2 lithium battery packs, operating time more than 5 years in defined condition with option of intrinsic safe power supply (JBZ02)
Measuring temperature range	-25°C to +60°C
Measuring pressure ranges (bar, absolute)	
MID certified	- standard ranges 0.8 - 5.2; 2 - 10; 4 - 20; 7 - 35; 14 - 70
	- enhanced ranges 0.8 - 10; 4 - 70
without MID	- standard ranges 0.8 - 5.2; 0.8 - 10; 0.8 - 20; 0.8 - 35; 0.8 - 70
Accuracy	<0.5 % from measured value (MID) <0.15 % typically from measured value
Communication interface	RS-232 / RS-485 serial interface optical interface IEC-1107 GSM/GPRS modem
Communication speed	RS232/RS485: 9.6 - 57.6 kbit/sec optical interface (IEC-1107): 9.6 - 38.4 kbit/sec
Digital inputs	4 digital inputs (configurable as LF or binary)
Digital outputs	4 digital outputs (configurable as pulse or binary output)
Analog outputs	up to 4 analog outputs by using external CL1 module; 4-20mA
Approvals	
Approved according to the European metrology standard	TCM 143/11 - 4848
EN 12405-01 and 2004/22/EC (MID)	
ATEX approval for installation into hazardous area	FTZU 11 ATEX 180X
Classification (according to EN 60 079-0, EN 60 079-11)	ZONE 0, ZONE 1, ZONE 2
Accessories	
Standard delivery	user's manual TELVES - service and data collection software
Optional accessories	
Installation material	thermowell, mounting kit, three-way tap (type DN 3 PN 100)
Power supply	intrinsically safe power supply JBZ-02
Module of current loop	CL-1 (4 - 20mA)
Separation and communication modules	DATCOM-K3, DATCOM-K4
Digital transducers	pressure transmitter EDT 23, temperature transmitter EDT 34
Optical probes	infrared head HIE-03 (RS-232), infrared head HIE-04 (USB)
Expansion module for digital transducer connection	expansion module RS-485

BATTERY POWERED GAS VOLUME CONVERSION DEVICE with integrated GSM/GPRS modem

midIELCOR

Optimal solution for custody transfer measurement



- Single channel gas volume conversion device
- Integrated GSM/GPRS modem
- ATEX approved for hazardous area ZONE0, ZONE1 and ZONE2
- Battery lifetime for more than 5 years
- Typical error under reference conditions < 0.15 % of measured value
- Graphical backlit LCD display
- Remote firmware update
- Optional P or T transducer for monitoring purposes
- Compliant with MID according EN12405
- Microsoft Windows compatible service and communication software

Manufacturer: ELGAS, s. r. o., Ohrazenice 211, 533 53 Pardubice, Czech republic
tel.: +420/ 466 414 500, 466 414 511 fax: +420/ 466 411 190
E-mail: sales@elgas.cz, <http://www.elgas.cz>

Certificate according to EN ISO 9001:2001

Basic description

midIELCOR compact volume conversion device with integrated GSM/GPRS modem is based on modern components ensuring accurate calculation of volume and measurement of pressure and temperature with high accuracy. midIELCOR is designed for converting of gas volume in operating conditions to gas volume in standard conditions according to state equation. For that purpose, it reads pulses from gas meter, measures gas temperature and pressure.

midIELCOR belongs to the new generation of electronic volume conversion devices and it is constructed on the latest microprocessor technology. The device provides large capacity of archives and enables flexibly to change period of data recording.

The device supports various selection of algorithms for compressibility calculation.

As a standard function the device offers generator of output digital pulses which respond to primary and standard volume and flow, alarm signals or other quantities selected by service software.

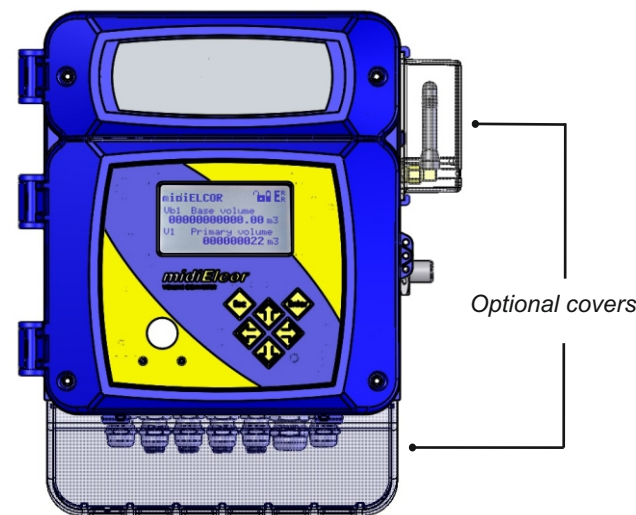
Protection of data is secured either by hardware switch or by using programmable passwords.

midIELCOR is battery power supplied with possibility to connect external power source. All required actual and calculated values are presented on back lighted graphical LCD display with using of 6-buttons keypad. It is possible to make basic parametrization through keypad.

Communication with superior system can be realized via serial interface RS232/RS485, optical port or via integrated GSM/GPRS modem.

Key features

- One channel gas volume conversion device
- Possibility to connect additional P or T transducer
- Remote download of the firmware
- Embedded GSM/GPRS modem
- Compact dimensions
- 4 digital inputs
- 4 digital outputs
- Long battery life



Device with optional covers

Connectivity

- serial interface RS 232
- serial interface RS 485
- optical port compatible with IEC-1107
- dual (quad) band GSM/GPRS modem

TCP/IP protocol is supported. The device is equipped with communication protocols ELGAS version 2, CTR and MODBUS®. Another protocols can be used on request.

Telemetry features

Device is equipped with functions which are standard for telemetric systems. It enables monitoring excesses of set limits, sending alarms to control centre and others.

Software

For setting, communication with the device and basic data administration Telves software is supplied. This software is highly sophisticated tool which allows you easy parametrization and maintenance of the device.



Internal arrangement

Temperature sensor

- Pt-1000 probe
- Length 120 mm, Ø 5.7 mm
- Two-wire, cable length: 2.5 m (up to 10 m)
- Accuracy: <0.1% from measured value

Pressure transducer

- Internal or external pressure transducer
- cable length: 2.5 m (up to 5 m)
- Silicon piezoresistive sensor
- Connection - thread M12 x 1,5
- Accuracy: <0.25 % from measured value

Accuracy of measurement

- Maximum error: < 0.5 % from measured value
- Typical error: < 0.15 % from measured value

Digital inputs

4 digital inputs (configurable as):

- LF input (max. 10 Hz, reed contact or Wiegand)
- HF input (NAMUR - DIN 19234, max. 5kHz - with external power supply)
- binary input or tamper LF input
- binary input NAMUR
- encoder

Digital outputs

4 digital outputs (configurable as):

- Pulse output (primary volume, standard volume, odorization control), programmable pulse 0.1 sec to 25 sec
- Binary output (alarm etc.)
- Analog output - realized through CL-1 module (4 - 20 mA)

Compressibility formulas

- AGA-8 92DC
- AGA NX-19mod
- SGERG-88
- GOST NX-19mod
- AGA 8-G1
- AGA 8-G2
- Fixed

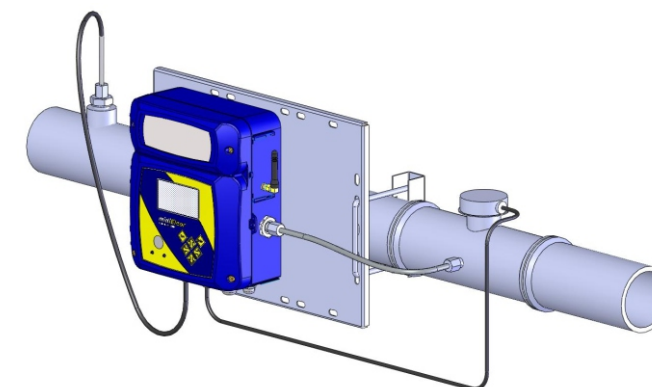
Display and keypad

- graphical backlit LCD display (backlit also in battery mode), operated by 6-button keypad
- Display of measured current values and pre-set parameters
- Possibility to configure basic parameters through keypad

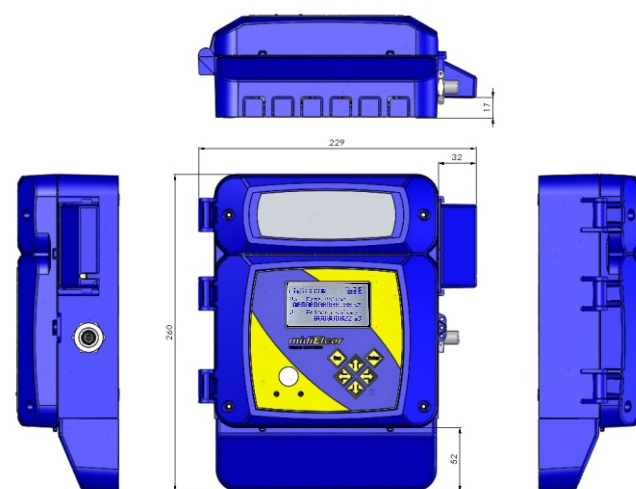
Error conditions

The device indicates and stores different error's conditions which can be set as alarm status, e.g.:

- Disturbation of gas meter
- Full audit log
- Low capacity of battery warning (3 months in advance)
- Exceeding of measured range of pressure and temperature
- Exceeding of upper limit of flow rate



Installation on pipe



Dimensions

Memory

- Memory type: FLASH, 1MB
- Data archive: 14300 records (flexible - according to configured parameters), programmable period: 1 - 60 min
- Daily archive: 400 records
- Status archive: over 500 records, contains formation and Extinction of errors, date and time.
- Monthly archive: 25 records
- Audit log: over 500 records, contains changes of parameters.

Data protection

- Password system
- Switch, inside the device
- Encryption

Communication interface

- Optical interface (IEC-1107)
- GSM/GPRS modem
- Serial line RS232, RS485