

Technical specification

Housing	polycarbonate
Dimensions (w x h x d)	307 x 222 x 87 mm
Weight	2.2 kg
Protection class	IP 65 (EN 60529)
Working temperature	-25°C to +70°C
Control panel	6 button keypad
Display	graphical LCD display with backlighting (also in battery mode), 128 x 64 pixels
Power supply	2 lithium battery packs, operating time is 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 + 2 digital inputs (configurable as LF, HF or binary)
Digital outputs	4 digital outputs (configurable as pulse or binary output)
Analog inputs	2 analog inputs; 4-20mA (maxiElcor var. B and C)
Analog outputs	up to 4 analog outputs by using external CL1 module; 4-20mA
maxiElcor variants	
maxiElcor var. A	single channel device equipped with integral GSM/GPRS modem
maxiElcor var. B	single or dual channel device equipped with integral GSM/GPRS modem and additional digital inputs and outputs
maxiElcor var. C	single or dual channel device equipped with additional digital inputs and outputs (without modem)
Approvals	
Approved according to the European metrology standard	TCM 143/10-4722
EN 12405-01 and 2004/22/EC (MID)	
ATEX approval for installation into hazardous area	FTZÚ 09 ATEX 290X
Classification (according to EN 60 079-0, EN 60 079-11)	II 2G Ex ia IIC T4/T3 (maxiElcor var. C) II 2G Ex ia IIA T3 (maxiElcor var. A and B)
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

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Certificate according to EN ISO 9001:2001

Revision 2

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

maxiElcor

Complex solution for custody transfer measuring
and telemetric data collecting



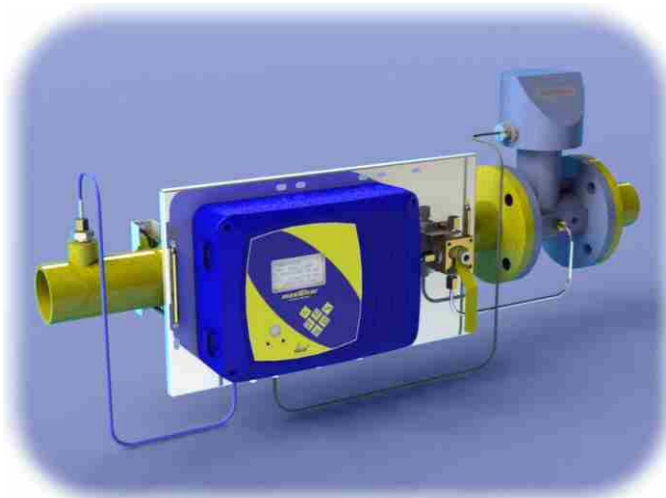
- Single or dual channel gas volume conversion device
- Integrated GSM/GPRS modem
- Designed for hazardous area ZONE1 and ZONE2
- Battery lifetime more than 5 years
- Typical error under reference conditions < 0.15 % of measured value
- Graphical LCD display with backlighting
- Possibility to connect 3rd pressure and temperature sensor
- Analog inputs
- EC certificate FTZU 09 ATEX 0290X
- Microsoft Windows compatible software

Basic description

maxiElcor 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. The gas volume corrector is of the PTZ, PT, TZ or T type. The device supports those algorithms for calculation of compressibility factor according to standards AGA 8-92DC, AGA NX-19 mod, AGA 8-G1, AGA 8-G2, SGERG-88 or fixed.

Mechanical concept of the device is selected to operate as a single or dual channel with possibility to add another non-metrological channel. It means that in full version maxiElcor can handle three measuring channels. Device configuration also enables measuring and monitoring other quantities. Integrated GSM/GPRS modem providing transfer of collected data to the superior system via cellular network.

maxiElcor is also equipped with two analog inputs, six digital inputs and four digital outputs.



maxiElcor belongs to a 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.

As a standard function the device offers generator of output digital pulses which respond to primary and standard volume and alarm signal. Protection of data is secured either by hardware switch or by using programmable passwords.

maxiElcor is designed for complex solution based on flexible modular system. maxiElcor is battery power supplied with option of external power feeding. All required actual and calculated values are presented on back lighted graphical LCD display with using of 6-buttons keypad.

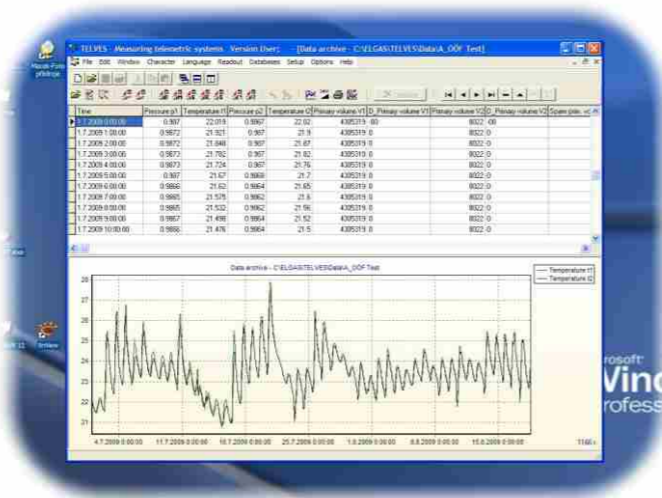
It is also possible to make basic parametrization through keypad. Communication with superior system can be realized via serial interface RS-232/RS-485, infra-red head or via integrated GSM/GPRS modem.

Key features

- One or dual channel gas volume conversion device
- 6 digital inputs
- 4 digital outputs
- 2 analog inputs (4 - 20 mA)
- possibility to add another temperature and pressure sensors for monitoring purposes
- Optionally maxiElcor can be equipped with GSM/GPRS modem

Power supply

The device operates from inbuilt lithium battery for 5 years in defined operating conditions. It is possible to use pulse outputs during battery power supply. In case of request for operation mode with increased consumption, external power supply with intrinsically safe sources can be used (JBZ-02, DATCOM-K3/K4).



Communication with superior system

For connection with superior system can be used RS-232 or RS-485 interface, infrared optical port or integrated GSM/GPRS modem.

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

Telemetry

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

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.

Temperature sensors

- Pt-1000 probe
- Length 120 mm, Ø 5.7 mm
- Two-wire cable length up to 10 m
- Accuracy: <0.1% from measured value
- Possibility to add another temperature transducer (EDT 34)

Pressure transducers

- Internal or external pressure transducers
- Possibility to add another pressure transducer (EDT 23)
- cable length 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

Display and keypad

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

Error conditions

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

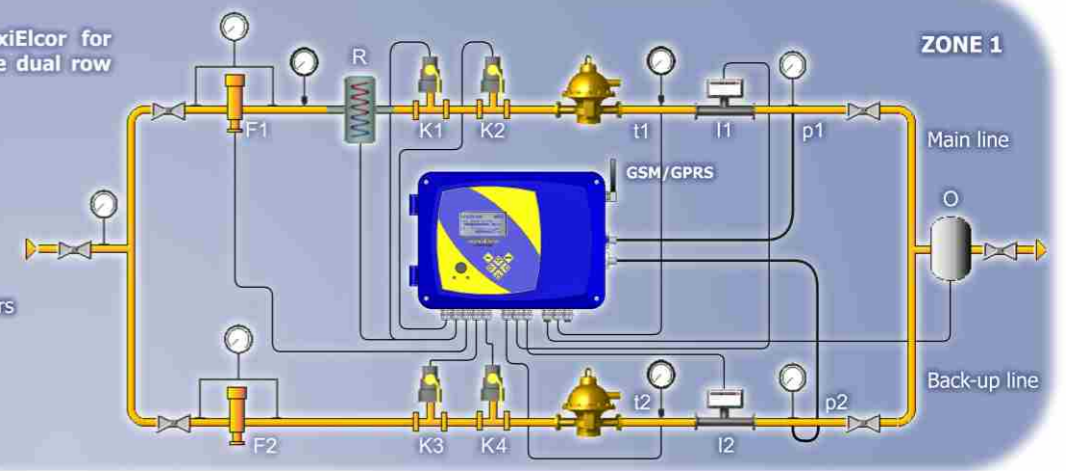
- Disturbance of gas meter
- Full audit log
- Low capacity of battery warning (3 months in advance)
- Exceeding of measured range of pressure and temperature
- Exceeding of upper limit of flow rate

Compressibility formulas

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

Example of using maxiElcor for monitoring single stage dual row regulation station

- Legend:
- p - pressure transducers
 - t - temperature transducers
 - I - gas meter pulses
 - K - fast safety valves
 - F - filter clogging
 - O - odorization
 - R - preheating



Digital inputs

6 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, etc.), programmable pulse 0.1 sec to 25 sec
- Binary output (alarm etc.)
- Analog output - realized through CL-1 module (4 - 20 mA)

Analog inputs

2 analog inputs 4 - 20 mA (maxiElcor var. B and C only)

Data protection

Data are protected by:

- Using password
- Switch, which is placed inside of the device

Communication interface

- RS-232 / RS-485 serial interface
- Optical interface (IEC-1107)
- GSM/GPRS modem

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.