Gas volume correctors

ELCOR and ELCOR*plus*

Highlights

- High accuracy and stability of measurement
- Embedded modem 2G/3G/4G/NB
- Robust design
- Modular technology
- MID and ATEX approved
- Long battery life
- Designed for the future upgrades
- Tamper proof

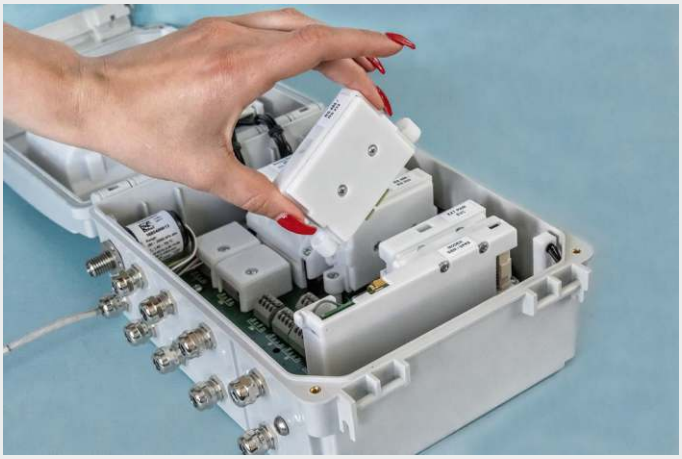
Introduction

The latest Elgas technology ELCOR*plus* and ELCOR represent powerfull solution applicable either like electronic volume corrector for billing purposes or like universal datalogger for station control and monitoring.

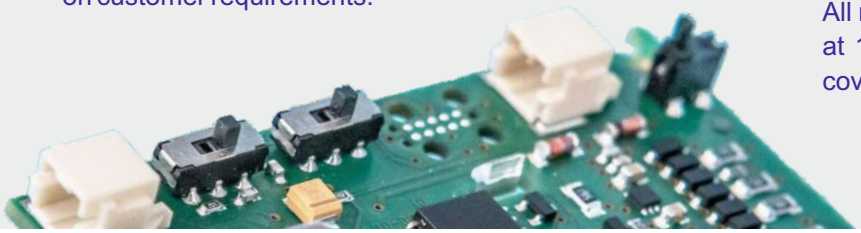
Both models are designed as compact devices integrating measuring metrological part together with communication unit and with telemetry features as well.

ELCOR*plus*

The most powerfull model is ELCOR*plus*. Its robust design together with tremendous modularity covers all known demands of gas segment over EVC (ELCOR*plus*) and datalogger installation (DATCOM*plus*).
Battery powered ELCOR*plus* converts gas volume under operating conditions to gas volume at base conditions, according to state equation. Information about primary volume can be received from all types of gasmeters through LF pulses (reed contact or wiegand sensor), HF pulses and absolute encoders (NAMUR, SCR+). The meter can be connected through mechanical index with Elgas relative encoder. EVC calculates the conversion factor C based on actual value of gas pressure, gas temperature and based on compressibility factor according to all known methods.
The basic concept enables to use device either as a single or dual channel EVC with possibility to add non-metrological channel. Modular architecture enables to create various configurations up to 6 pressure or temperature transducers, 12 digital inputs, 4 digital outputs, 6 analogue inputs and 4 analogue outputs, based on customer requirements.



Any configuration can be individually customised by parameter file locally or remotely.
All data (instantaneous, archived data, diagnostics) can be visible on backlit graphical LCD display with using 6-buttons keypad. This keypad and LCD combination enables simple parameters setup as well.
All measured and calculated data can be optionally stored at 11 different archieves with sufficient memory capacity covering couple of years without overwriting of old records.



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In addition to metrological measuring part ELCOR*plus* can handle two independent communication modems, internal and external. There are selectable modem modules for 2G, 3G, 4G and 4G NB. Modular design is suitable for easy replacement with future generation of modems without interruption of functioning. All versions even with internal modem are approved for installation in hazardous areas Ex Zone 0, 1, 2.

Lifetime of modem battery with regular calling once a day is guaranteed at least 6 years in defined mode of working. For more frequent communication (or permanent) the external power supply module (AC or solar) can be applied for powering EVC and modem separately.

Except modems there are paralelly usable two selectable serial interfaces RS232 and RS485 and local infrared interface.

The data can be transferred independently to data collection system (billing) or monitoring and control system (Scada). Various communication protocols are available. The protocol can be selected by enduser for each communication channel independently. The data transfer is equipped with access protection, encryption tools and system of certified firmware remote download.

ELCOR*plus* is designed in robust polycarbonate housing suitable for indoor or outdoor installation. This cabinet is fully resistant against external tampering and disturbances with massive locking lever.

ELCOR

ELCOR is simplified version of bigger ELCOR*plus*. The versatility is limited comparing the bigger model. It is designed as single channel EVC with only one RS485 (or RS232) serial port and with optional embedded modem both powered by batteries. ELCOR is suitable for standard projects where reliable and smart EVC is required.

Datalogger DATCOM and DATCOM*plus*

For telemetry projects where dataloggers are required DATCOM and DATCOM*plus* are available. They use identical HW and FW features as EVC series enhanced with functionality typical for dataloggers installations.

Advantages of open architecture together with flexible internal structure of ELGAS dataloggers series brings unlimited solution for any project in gas segment.

Technical specifications

	ELCOR	ELCOR*plus*
Housing	**The housing was designed for use in outdoor with focus on robustness and resistance against tampering. It can be sealed and secured by a suitable lock. The housing is equipped with a closing mechanism keeping the lid closed tightly even without securing the lid by screws.**	
Material	Glass fiber polycarbonate	
Dimensions	210 x 190 x 93 mm	263 x 201 x 111 mm
Weight (depends on configuration)	1.5 kg	2.2 kg
Protection class (EN 60529)	IP 66, outdoor environment	
Working temperature	-25°C to +70°C (optionally from -40°C)	
Control panel	**The new ELCOR series brings even better capacitive keypad very well known from picoELCOR series.**	
	6 button capacitive keypad	
Display	**Local reading of all measured instantaneous and archived data.**	
Standard variant	Graphic backlit LCD 128 x 64	
Optional	Alphanumeric segment backlit LCD (working from -40 °C; always ON)	
Digital transducers	**The new generation of digital transducers offers traditional high stability and accuracy of ELGAS pressure and temperature transducers.**	
	Up to 2 digital transducers	Up to 6 digital transducers
Pressure transducer type	EDT 96	
Standard MID approved ranges - absolute (accuracy 0.25% of measured value)	0.8 - 5.2; 2 - 10; 4 - 20; 7 - 35; 14 - 70; 25 - 130 bar	
Extended MID approved ranges - absolute (accuracy 0.25% of measured value)	0.8 - 10; 0.8 - 20; 4 - 70 bar	
Non MID ranges - absolute (accuracy 0.2% full scale)	0.8 - 35; 0.8 - 70; 0.8 - 130 bar	
Non MID ranges - gauge (accuracy 0.4% full scale - below 1 bar) (accuracy 0.2% full scale - above 1 bar)	0 - 0.2; 0 - 1; 0 - 1.6; 0 - 4; 0 - 6; 0 - 10; 0 - 25; 0 - 40; 0 - 70 bar	
Temperature transducer type	EDT 101	
Measuring range standard	-25°C to +70°C	
Measuring range extended	-40°C to +70°C	
Power supply	**The device is designed as battery power supplied (ELCOR) with an option of external power supply (ELCOR*plus*) either from solar pannel or from mains 120V/230V AC (using external modules placed in non-hazardous area).**	
EVC battery packs - battery life (in defined conditions)	B-03 (17Ah) lithium battery - up to 11 years	B-03 (17Ah) lithium battery - up to 11 years B-03D (30Ah) lithium battery - up to 18 years B-03A alkaline battery - up to 6 years
Modem battery packs - battery life (in defined conditions)	HB-03 (GSM/GPRS modem, lithium battery, 12Ah) - up to 6 years HB-03D (GSM/GPRS modem, lithium battery, 20Ah) - up to 11 years HB-04 (LTE modem, lithium battery, 12Ah) - up to 6 years	
External power supply	not available	PS-E external module (EVC) PS-M external module (MODEM)
Communication with the device	**Both models supports various communication interfaces allowing local or remote communication.**	
Serial communication interface	1x RS232 or RS485	2x RS232 or RS485
Optical communication interface	optical interface (EN 62056-21)	
Wireless communication (modem)	GSM/GPRS LTE Cat1 LTE M1 LTE-NB (preliminary)	

Technical specifications

		ELCOR	ELCOR*plus*
Inputs/Outputs		**The device provides digital inputs and outputs fully configurable by end user.**	
Digital inputs		3x (LF or binary)	up to 12x (LF, 2x HF, binary)
Digital outputs		2x (LF or binary)	4x (LF or binary)
Analog inputs (4-20mA)		not available	up to 6x (optional)
Analog outputs (4-20mA)		2x (using external module CLO)	up to 4x integrated (optional) up to 4x (using external module CLO)
Encoder interface		**Various encoders are supported**	
Encoder types supported		NAMUR SCR+ ELGAS	
Extension internal modules		**ELCOR and ELCORplus series was developed as modular device enabling full customization.**	
Communication	**Modems**	M2G: 2G modem M4G: 2G/3G/4G - LTE Cat1 modem M4GM1: LTE M1 modem LTE-NB (preliminary)	
	Serial interface	integrated	S1-COM: RS232/RS485 serial interface
Gas meter encoder interface		S0-SCR: SCR+ encoder interface S0-NAM: NAMUR encoder interface	
Analog 4 - 20mA input/output	**Inputs**	not available	S1-2AI: 2x input
	Outputs	not available (externally via CLO module)	S1-2AO: 2x output
External power supply	**EVC**	not available	S3-PWR1
	Modem		S4-PWR2
Multipurpose extension board		not available	S0-EXT1: 2x HF NAMUR input 6x LF/Binary digital input 2x Analog input (4 - 20 mA) 2x Digital transducer EDT