

EC 600 Electronic Volume Corrector



A recognized leader in natural gas measurement and control, RMG has enhanced its product portfolio with the EC 600—a certified and best-in-class electronic volume corrector. The EC 600 offers a low total cost-of-ownership and meets gas volume conversion requirements at exit points throughout the natural gas industry. It is a proven and precise gas measurement solution.

Proven Performance. Robust Functionality.



Rely on RMG

- Over 150 years of combined experience in the natural gas industry
- Worldwide solution leader in control, measurement and analysis technology
- Products for natural gas transportation, storage, distribution and consumption
- Local support with global expertise
- Single source provider with a wide portfolio



In the natural gas business, fiscal metering is dictated by industry standards, government regulations, custody contracts and metrology standards. There is a need for precision instruments to convert the actual volume of gas to reference conditions based upon the effects of temperature and pressure.

Dependability Matters

The RMG EC 600 electronic volume corrector (EVC) meets the challenges of today's demanding natural gas industry. Featuring simple "plug and measure" operation, it is designed to correct gas meter volume and record the customer's usage information. The volume corrector communicates alarms, maintenance information and customer consumption records to data collection systems.

Proven Reliability

The EC 600 is a very compact and rugged device specifically intended for the natural gas consumption market, including commercial and industrial applications. It enables gas distribution service organizations and their customers to precisely measure gas flow, correct the measured volume based on the equation-of-state for ideal gases, and read-out all data via standard protocols.

Modular and Scalable

A fully modular solution, the EC 600 provides a certified EVC for volume conversion at the gas exit point, either as a stand-alone system or bundled with a gas meter. A single system fits all applications at the exit point in a gas grid. The EC 600 is also available with or without the CU600 communication unit, which provides remote access via GSM/GPRS connection. This electronic volume corrector is competitively priced and offers a low total cost-of-ownership.

Single-source Solution

Users of the EC 600 can rely on RMG, a recognized global leader in the gas measurement field. We serve as a single-source supplier for a complete exit point offering. The EC 600 can be bundled with a choice of flowmeter technologies to meet specific application requirements.

A non-metrology converter easily enhances the unit for pressure or temperature measurement. This upgrade can be performed without breaking the official mark on an already installed device.

The EC 600 satisfies all current requirements for gas volume correction, archiving and communication.



Typical applications include:

- Custody Transfer
- Commercial/Industrial Consumption
- Gas Distribution Service
- Compressor Stations
- Gas Pressure Reducing Skids
- Remote Station Monitoring
- Gas Storage

Easy commissioning and installation are supported via intuitive Windows®-based software, which provides data processing, graphical visualization, device setting and data export.

Meeting Your Needs



Easy to Use

IRMG has optimized the technique for precision, certified and standards-based gas flow measurement and volume correction. The advanced EC 600 system is designed to work simply, with reliable operation and less maintenance. It features a backlit, configurable LCD display and pushbutton activation. Easy commissioning and installation are supported via intuitive Windows®-based software, which provides data processing, graphical visualization, device setting and data export.

Flexible Communications

For communication with its superior system, the EVC utilizes an RS-232 or RS-485 serial interface. Various communication protocols installed in the instrument allow secure connection to SCADA systems or Automated Meter Reading (AMR). Additionally, the device works with the optional Communication Unit CU600, which has an integrated GSM/GPRS modem, and in case of an alarm condition, initiates the connection.

Remote data reading can also be performed via modem. Internal battery power lasts for at least five years.

Rugged Construction

The EC 600 employs a compact, yet durable polycarbonate enclosure providing IP66 protection for use in demanding application environments. The unit carries Zone 0, 1 and 2 hazardous area classifications.

Standards Compliant

The EC 600 is constructed and approved as a conversion device type 1 (compact system) based on the EN 12405-1 standard, and can be supplied as a T, PT or PTZ conversion device. In terms of safety, it is constructed according to EN 60079-11. The EVC is also manufactured and supplied in compliance with relative European Parliament directives, including 1994/9/EC (equipment and protective systems for use in potentially explosive atmospheres), 2004/108/EC (electromagnetic compatibility) and 2004/22/EC (directive on measuring instruments).



The EC 600 satisfies all current requirements for gas volume correction, archiving and communication.

Robust Functionality



The EC 600 electronic volume corrector is a measuring instrument designed for the conversion of natural gas volume at measurement conditions to gas volume at base conditions. Information on gas volume passing through the device is measured using the impulse outputs of the gas meter. Integrated converters measure the gas temperature and pressure.

The EVC calculates the ratio of compressibility factors of gas based on standard methods, or a constant value is used.

Operating Modes

The EC 600 offers a host of functions and possible operating modes. From a simple battery-powered device processing LF volume pulses, to an externally supplied device fitted with an internal radio modem or connected to an external communication module, it satisfies all current requirements for gas volume correction, archiving and communication.

Data Logging

The instrument's integrated tariff memory can store hourly values for more than six months. Furthermore, there are archives for daily and monthly values/events as well as logbooks. There is also a legal metrological logbook as per PTB-A 50.7, which allows parameters under legal control to be changed without an inspector from the Weights and Measures Office being present.

User Interface

Operation of the EVC is either via its keypad or through an interactive program available from RMG. An electrical interface and optical interface enable the instrument to be connected to a PC.

Hazardous Area Installation

The EC 600 is certified for Ex zones 0, 1 and 2, depending on its version and equipment. The external communication unit CU600 with electrical isolation allows the device to be employed in Ex zone 1 while using the communication functions at the same time.



All data, including recorded ones, are visible. Activation and parameter setup are from the six-button keypad.

Features and Functions



Power Supply

Lithium battery (3,6V/13 Ah standard D cell) provides more than six years of operating life. An external power supply is optional. There is no pulse loss during battery replacement.

Display and Keyboard

The instrument utilizes a graphical, backlit LCD display (128x64 pixels), with standard 4x16 character readout. All data, including recorded ones, are visible. Activation and parameter setup are from the six-button keypad.

Accessories

Communication Unit CU600

Thermowell Mounting kit

Intrinsically safe power supply

Module of current loop

Three-way tap (Type DN 3 PN 100)



Technical Specification

Model Type	EC 600	
Housing	Polycarbonate	
Dimensions (w x d x h)	193 x 160 x 73	
Weight	1.2 kg	
Protection class	IP66 (EN 60529)	
Working temperature	-25°C to -70°C	
Power supply	Lithium battery, operating time is more than 6 years in defined condition with option of intrinsic safer power supply JBZ-02	
Type of battery	SAFT standard lithium battery (D size 3.6V / 17Ah)	
Control panel	6 button keypad	
Display	Graphical LCD display with backlighting (also in battery mode), 128 x 64 pixels	
Communication and software solutions	EC 600 software for Windows	
Ambient temperature	Temperature Class T4: $-25^{\circ}\text{C} \leq T_2 \leq +40^{\circ}\text{C}$ Temperature Class T3: $-25^{\circ}\text{C} \leq T_2 \leq +70^{\circ}\text{C}$	
Measuring pressure range (absolute)	MID certified	non MID
	0.8 - 5.2	0.8 - 5.2
	2 - 10	0.8 - 10
Standard range (bar):	4 - 20	0.8 - 20
	7 - 35	0.8 - 35
	14 - 70	0.8 - 70
Enhanced range (bar):	0.8 - 10	
	4 - 70	
Accuracy	<0,5% from measured value (MID) <0.15% typically from measured value	
Communication Unit CU600	RS-232 / RS-485 serial interface Optical interface: IEC-1107 GSM / GPRS modem	
Communication speed	RS-232 / RS-485: 9.6 - 57.6 kbit / sec. Optical interface: 9.6 - 38.4 kbit / sec.	
Analog output	External CL 1 module (4 - 20 mA)	
Digital input	4 digital inputs (configurable as LF, HF or binary)	
Digital output	4 digital outputs (configurable as pulse or binary output)	

Key features

- Compact, rugged design
- Simple and intuitive operation
- Standards compliant
- Modular architecture
- Advanced sensor technology
- Choice of communication protocols
- RS-232/RS-485 serial interface
- Remote access via GSM/GPRS connection
- Backlit LCD display with keypad
- Windows-based HMI software
- Optional data archive structures
- Five-year lithium power supply
- IP66 enclosure
- Hazardous area classifications
- Easy commissioning and installation
- Competitive price
- MID approval

For More Information

To learn more about products and solutions from RMG, visit www.rmg.com or contact your account manager.

RMG Messtechnik GmbH
Otto-Hahn-Strasse 5
35510 Butzbach, Germany
Tel: +49 (0)6033 897-0
Fax: +49 (0)6033 897-130

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