# Model 999

## Electronic volume corrector

## This product is discontinued!

### Applications

Universal volume corrector with integrated flexible data logging function and three independent serial interfaces

### Brief information

The Model 999 electronic volume corrector converts the operating volumes recorded, using the gas meter's LF pulses on the basis of gas pressure and gas temperature measurements. Compressibility is calculated to S-GERG-88, AGA NX 19, AGA 8 and nitrogen (100%) or is taken into account as a fixed value. The volume corrector is intrinsically safe and can be installed on the gas meter directly in hazardous areas or in close proximity to them.

The front contains two LCD displays for visualising all the data, controlled by five freely programmable buttons and an infrared interface for data communication.

The permanently connected temperature sensor (Pt-100), the mechanical pressure sensor connector (1/4" NPT), 3 cable glands for the internal connection terminals and a screw for connecting the equipotential bonding are all located on the outside of the housing. A 3-pin plug connector (Fischer receptacle) is intended for local serial data communication.

**Data logging function:** The corrector can be configured to log up to 5 separate tables of data. Each table can be configured to log selected parameters at a specific time interval. The time interval can be different for each table and can be set from 1 minute to 24 hours.

The number of logs for each table can be set up to the available memory size.

Logged data can be read via one of the serial communication ports or by the lower LCD display.

An event/alarm archive records all parameter changes and alarm messages, each with a date/time stamp.

**Additional functions:** Two electrically isolated passive transistor outputs can be configured for the output of flow-proportional pulses for both operating and standard volumes. In addition, a digital, optically isolated status output is used for signalling alarm states.

The volume corrector has three independent serial ports, an infrared port on the front cover and a local port (Fischer connector) for local data read out or service/maintenance. The internal modem port can be used for connecting external devices (e.g. modems). The volume corrector can be used for applications for remote data readouts. In this context, there is the additional opportunity to use a self-dialling function for error/alarm signalling or data transmission.

### Main features

- **Volume corrector for pressure ranges up to 80 bar**
- **Approval according to European standard EN 12405**
- **Mains-free operation**
- **Aluminium weather-proofed housing IP 66**
- **Use in hazardous areas**
- **High accuracy**
- **Freely configurable data storage function**
- **Alarm and event archives**
- **Time or volume-weighted temperature and pressure average values**
- **Compressibility in accordance with S-GERG-88, AGA NX-19, AGA 8 (GC1 or GC2), nitrogen (100%) or programmable as fixed value**
- **Possible integration into remote data transfer systems**
- **Self-dialling function in the case of error/alarm or for data transmission**
- **Two configurable LCD displays**
- **Alarm state input**
- **Two pulse outputs**
- **Status output**
- **Three independent serial ports**

ELSTER ◆ Instromet

# Model 999: Electronic volume corrector

## Technical data

| | |
|---|---|
| Order number | BOM1904 |
| Housing | Cast aluminium, wall or meter mounting |
| Dimensions | H 225 mm x W 205 mm x D 100 mm (not including connections) |
| Weight | Approx. 4.3 kg (including batteries) |
| Metrological approvals* | Approvals in accordance with European standard EN 12405<br>NMI - T2909, T3253<br>PTB - 7.741/96.38 |
| ATEX approval | Approval for use in Zone 0, ID: EEx ia IIA T4 |
| Protection class | IP 66 (suitable for outdoor installation) |
| Ambient conditions | Temperature: -20 to +60 °C |
| Power supply | One 7.2/19 Ah lithium battery module (service life > 5 years under standard operating conditions)<br>Optional additional battery module to double the service life<br>Mains connection (Model 999-P) in conjunction with one of the following devices:<br>• Model 555 interface unit (modem)<br>• Model 999 aux analogue output unit |
| Control panel | Keypad with 5 freely programmable buttons |
| Display | Two liquid crystal displays (LCDs)<br>- LCD 1: display to indicate the uncorrected, corrected meter readings and legends for alarm and errors<br>- LCD 2: display to indicate operating, configuration and logger data |
| Pulse input | 1 pulse input for connection to the gas meter (max. input frequency 0.5 Hz, input divider 1, 10, 100 provided for pulse scaling, max. 50 Hz)<br>1 digital status input for connecting message signals (e.g. manipulation contact) |
| Pressure sensor | Absolute sensor, PDCR900 pressure type integrated in housing<br>Connection (1/4" NPT internal thread) for precision steel pipe (Ermeto 6L)<br>Available pressure measuring ranges up to 80 bar, depends on national metrological approvals.<br>(details in bar absolute, overpressure-proof to 125% $P_{max}$) |
| Temperature sensor | Pt-100 resistance thermometer according to DIN 60751 with Ø 6 mm protective tube, for use with temperature sensor thermowell. The shielded cable (length 3 m) is permanently connected to the unit.<br>The maximum permitted temperature range is -30 to +60 °C. |
| Compressibility | Calculation in accordance with S-GERG-88, AGA NX-19, AGA 8 (gross method), nitrogen (100%) or programmable as a constant (fixed value). |
| Data logger | - Up to 5 independent free configurable tables<br>- Number of logs (or period of time) for each table can be set, up to the available memory size<br>- Time interval selectable from 1 min. up to 24 hours<br>- Tables 1 and 2 can be made secure (partly secure mode)<br>- Logger data can be displayed at the lower LCD-display or can be read via the serial communication ports |
| Signal outputs | Two pulse outputs and one alarm output, each freely programmable.<br>Pulse duration can be selected: 10, 40 or 320 milliseconds.<br>The outputs are electrically isolated, passive, open collector outputs.<br>Maximum voltage 10 V / maximum current 0.5 mA |
| Data interfaces | - Optical infrared port (front cover) according to IEC 62056-21<br>- 3-pin plug connector (Fischer receptacle) for connecting the Model 999 programming cable.<br>- Internal terminals (modem port) for connecting external devices (modems or Auxiliary Analogue Output Unit).<br>  The baud rate of the serial ports can be set independently for each port. |

* In addition several national approvals are also available. For further information please contact our corresponding office

## Your contacts

Elster-Instromet GmbH
Steinern Str. 19 - 21
55252 Mainz-Kastel, Germany
Tel. +49 6134 605 0
Fax +49 6134 605 223
www.elster-instromet.com
info@elster-instromet.com

Elster-Instromet N.V.
Rijkmakerlaan 9
2910 Essen, Belgium
Tel. +32 3 670 0700
Fax +32 3 667 6940

American Meter Company
132 Welsh Road, Suite 140
Horsham, PA 19044, USA
Tel. +12 15 830 1800
Fax +12 15 830 1890
www.americanmeter.com

For your local contact refer to
www.elster-instromet.com

ELSTER Instromet