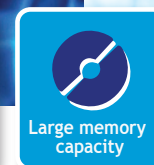
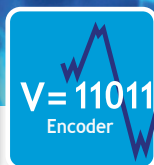
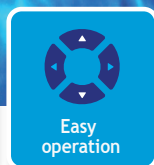


Gas Measuring equipment

Electronic Volume Converter,
Datalogger and Modem



UNIGAS 300

Electronic volume converter

General

UNIGAS 300 is a compact electronic volume converter with MID approval that is easy to operate for the end-user and extraordinary versatile for gas utilities. UNIGAS 300 converts the volume measured by the gas meter over a wide pressure and temperature range to billable data, not excluding many additional functions. It complies with current European standards and directives.

The UNIGAS 300 has a durable aluminum casing and an IP66 protection class, with a patented solution for humidity control. The temperature range extends from -40°C to $+55^{\circ}\text{C}$, making the device suitable for almost all weather conditions. As UNIGAS 300 is ATEX approved for zone 0, the volume converter may also be installed in the vicinity or directly above the gas meter.

Three counters are available in UNIGAS 300, of which counter one is used as the converter input. Input one can be programmed as Encoder (NAMUR), Low Frequency pulse, or High Frequency pulse input. All pulse inputs are equipped with a filter that suppresses pulse instability. Therefore, the counter readings in UNIGAS 300 are up-to-date and reliable. UNIGAS 300 accepts the Encoder signal from all gas meter manufacturers. This assures maximum flexibility for the type of gas meter used, for today and tomorrow.

Measurement

UNIGAS 300 is available in four different models: PTZ, PT, TZ and T.

For gas temperature measurements, UNIGAS 300 has a PT500 temperature sensor with a three meter long cable. The most compact version of UNIGAS 300 has an internal pressure sensor, an external pressure sensor with a three meter long cable can also be supplied. The following pressure ranges are available:

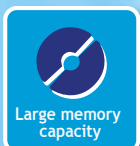
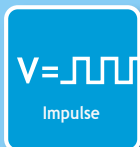
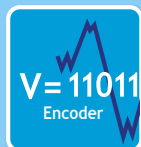
- 0.8 - 2.5 bar abs.
- 0.9 - 6 bar abs.
- 2.5 - 10 bar abs.
- 5 - 20 bar abs.
- 10 - 40 bar abs.
- 20 - 80 bar abs.

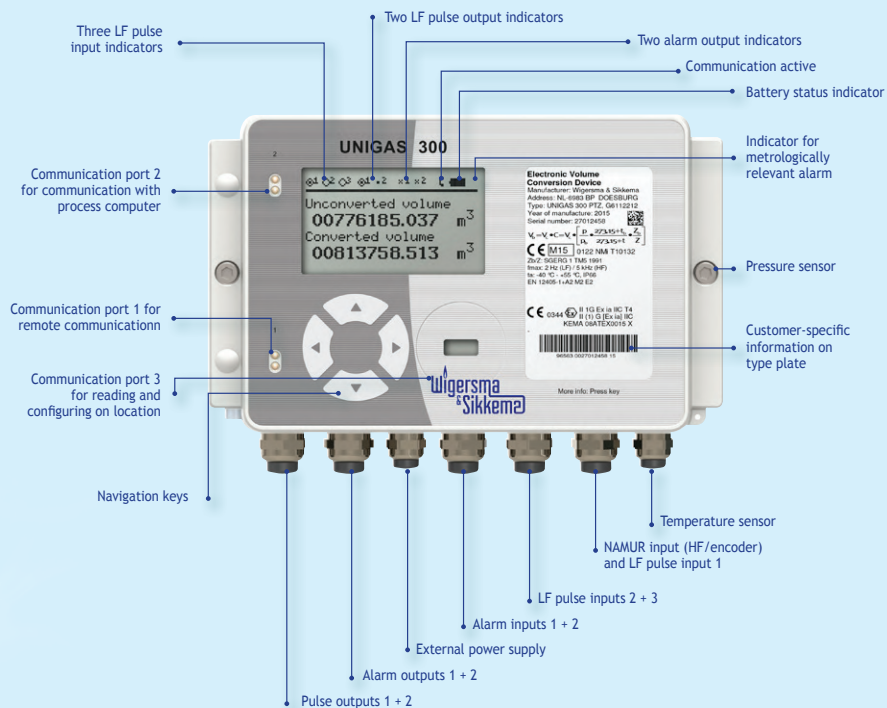
Only the highest quality pressure sensors which have proven their stability over time are used in UNIGAS 300. The drift of the sensor remains within the MID accuracy limits for at least 5 years. Therefore, UNIGAS 300 is the perfect device to reduce the cost of metrological re-inspection.

UNIGAS 300 calculates the compressibility factor based on the compressibility algorithm. This algorithm is not determined by an approximation method, but by using the full algorithm. UNIGAS 300 is available with compressibility algorithms SGERG TM5 1991 (methods 1-4), AGA NX19 modified (Gasunie), AGA 8 gross method 1 or set to a fixed compressibility.

Advanced Memory

UNIGAS 300 has ample memory space for data storage. Every 5-minutes, the measured and converted values are saved in the interval logger. The UNIGAS 300 memory stores these 5-minute values over a period of 150 days. The logged data can be retrieved by UNITOOL and displayed in the menu of UNIGAS 300. One can choose to display 5, 10, 15, 30 60-minute, daily or monthly values. By retrieving and analyzing the data of 5-minute values, it is possible to retrieve extremely detailed consumption profiles.





Communication

Up-to-date data provides crucial information, not only for the gas utility, but also for the end user. Two optical ports are available for serial data transmission. The upper communication port can transmit real time data to the end user. This makes it possible to read out the actual flow and thus avoid high consumption peaks in order stay within the contract limits. The lower port can be used simultaneously to transmit data to the gas utility over the cellular network. An optical service port is available for local reading and configuration of the UNIGAS 300.

Battery supply

UNIGAS 300 is equipped with a lithium DD cell as standard for an extra long service life up to 15 years. It is also possible to connect an external power supply to power the High Frequency input, or to provide a more frequent interval of serial readout. The battery will then function as a backup with a minimum life of 1000 hours.



UNICOM 300

GPRS / LTE CAT 1 Modem and Datalogger for gas meters and for UNIGAS 300



UNICOM 300 is a GPRS / LTE CAT 1 EU modem and data logger designed for gas measurement devices. It can be connected directly to an Electronic Volume Conversion Device such as the UNIGAS 300 or to a gas meter. The battery-powered UNICOM 300 is designed for use within the hazardous area and meets the requirements of explosion safety. This means that the UNICOM 300 can be mounted directly on the gas meter. The mains operated UNICOM 300 is designed for installation in the safe zone up to Ex-Zone 2, can power the UNIGAS 300 and can be supplied with a back-up battery or a rechargeable accumulator. A standard external antenna is included, other external antennae can be easily mounted without opening the UNICOM 300.

UNICOM 300 is capable of 2 input pulse counting, encoder readout including automatic initialization and B telegrams, data storage (5 minute values are available for 155 days), UNIGAS 300 readout, communication via 2G and 4G which can be active at the same time (including CSD, TCP, FTP and NTP services), 2 pulse outputs to provide consumption information to the gas consumer and a configurable scheduler.

UNICOM 300 is designed for easy and fast installation and maintenance with a minimum of tools and may be installed outdoors. UNICOM 300 is extremely well protected against moisture corrosion with a patented solution.

Special care is taken to ensure long battery life. UNICOM 300 will use the full capacity of the batteries. It is equipped with an intelligent modem scheduler which powers the modem only when needed for remote data communication. The internal NTP functions can be set to a dedicated NTP server in a dedicated APN. Secure time synchronization mechanisms make it possible to use UNICOM 300 for pure push use, thereby extending the battery life beyond 15 years. Depending upon use, a lifetime battery power supply is possible, making UNICOM 300 a one-time installation and a lifetime without service solution.



ISC 230B

The design of the ISC 230B is specially adapted to the installation of meters with the UNIGAS 300 and a third-party solution. It combines the functionalities of an ATEX barrier, an intrinsically safe external power supply for UNIGAS 300 and intrinsically safe circuits for analogue and serial signal conversion.

The ISC 230B operates with 230 VAC, but can also be operated with 12 VAC or 12 - 15 VDC. The ISC 230B is therefore ready for use with sustainable external systems, such as a solar module.



UNITOOL Software

With the user-friendly and free downloadable UNITOOL software, UNIGAS 300 and UNICOM 300 can be read and configured locally and remotely, via a GSM or TCP/IP connection. UNITOOL is available in Dutch, German, English, Danish and Italian.

Specifications



Housing

Specification UNIGAS 300

coated aluminum 194 x 120 x 70 mm
IP66

Display

66 x 33 mm, 8 lines x 20 characters

Navigation keys

4

Approvals

MID approved by NMI, T10132

PTB approved, 7.732 / 11.46

ATEX approved, 08ATEX0015X

Compressibility

S-GERG 91 method 1-4, AGA 8 GM, AGA NX 19 modified, Fixed Z

Inputs

1. Converter input, LF (2 Hz), or HF (5 kHz) or Encoder (Namur)
2. LF (2 Hz) or Encoder (when Input 1 is LF) with compare function
3. LF (2 Hz)
4. Alarm input 1
5. Alarm input 2

Analogue outputs

- 2 Alarm outputs, freely programmable
- 2 Impulse outputs, freely programmable

Optical outputs

- Port 1: Modem, optical RS232
- Port 2: End user, optical RS232 (activated by module)
- Port 3: service port optical RS232 to USB

Pressure ranges

0.8 - 2.5 bar abs., 0.9 - 6 bar abs, 2.5 - 10 bar abs., 5 - 20 bar abs., 10 - 40 bar abs., 20 - 80 bar abs.

Temperature sensor

PT500, 2-wire

Temperature range gas

-40°C ... + 55°C (-30°C ... + 55°C for 40 and 80 bar)

Ambient temperature

-40°C ... + 55°C

Memory capacity

every 5 minutes (fixed) over 150 days

Daily logger

100 days

Monthly logger

36 months

Power supply

Battery powered device, with Lithium D or DD-cell. Lifetime at standard conditions 15 years

External power

6 - 10 VDC, by UNICOM 300 mains supplied or ISC 230B

Communication

Standard Protocol IEC 62056-21 (former 1107)

FTP, Modbus, IDOM by CI-Module



Housing

Specification UNICOM 300

Polycarbonate 194 x 120 x 70 mm
IP65

Ambient temperature

-40°C ... + 60°C

Approval

Battery powered

08ATEX0015X, Zone 0, Mounting in ATEX Zone 2, 1, 0 and in the safe area

External powered

ATEX approval is pending, Zone 0, mounting in Ex-Zone 2 and in the safe area

Modem

2G/4G CAT1 EU-Frequencies modem

1. Converter input, serial

2. LF1

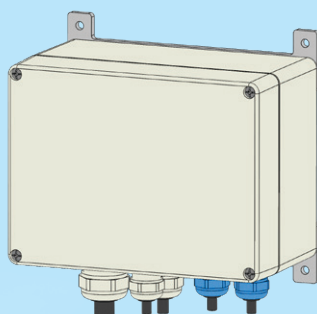
3. LF2 or Alarm

4. Encoder

Specifications



Encoder	Compatible with Itron, GWF, Elster, Dresser, FMG, GFO, RMA and RMG
Analogue outputs	2 outputs, programmable to LF or Alarm
Optical outputs	Optical service port RS232 to USB
Memory capacity	all 5-minute values (fixed) over 155 days, daily 100 days, monthly 36 months
Power supply	Battery powered device, with 1 or 2 battery packs. Lifetime with 2 packs, FTP and LF pulse is 15 years Lebensdauer bei 2 Pakete, FTP und NF ist 15 Jahre
External Power	230 VAC or 24 VDC Backup battery for log functionality Rechargeable accumulator pack for full functionality and UNIGAS 300 power supply
Time synchronisation	NTP
Communication	Standard Protocol IEC 62056-21 (former 1107), FTP



Specification ISC230B

Housing	Polycarbonate 160 x 120 x 105 mm IP65
Ambient temperature	-25°C ... + 55°C
Approval	ZELM 14 ATEX 0523 X, Zone 0, mounting in safe area
Inputs	1. Converter input, serial 2. NF1 3. NF2 4. Namur input
Analogue output	Pulse out module (2 x 2), 4 - 20 mA module, Alarm extension module
Serial outputs	RS485 module, RS232 module, Ethernet module, PSTN module
External power	230 VAC or 12 VAC or 12 - 15 VDC

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