

Smart Gas Diaphragm Meters

- M-bus, wired or wireless, Zigbee RF and GSM data communication
- Secure AMR, using AES encryption
- Reliable, tamper safe optical detection of measuring unit with "Gray-Code"
- Excellent accuracy, using error curve correction
- Built-in, temperature conversion
- Data logger for readings, alarms and events
- Battery lifetime up to 20 years
- Built-in valve for remote closing and safe opening of gas flow
- Firmware updating Over The Air (OTA)



COMMUNICATION

Exchangeable communication module

Wired M-Bus EN13757-2

Wireless M-Bus 868 MHz
EN13757-4

ZigBee RF SEP 1,2

GSM / GPRS

Pulse out

Communication available in 2 versions:

- DSMR (Dutch Smart Meter Requirement)
- OMS (Open Metering System)

Display menu



OPERATING CONDITIONS

Temperature range:

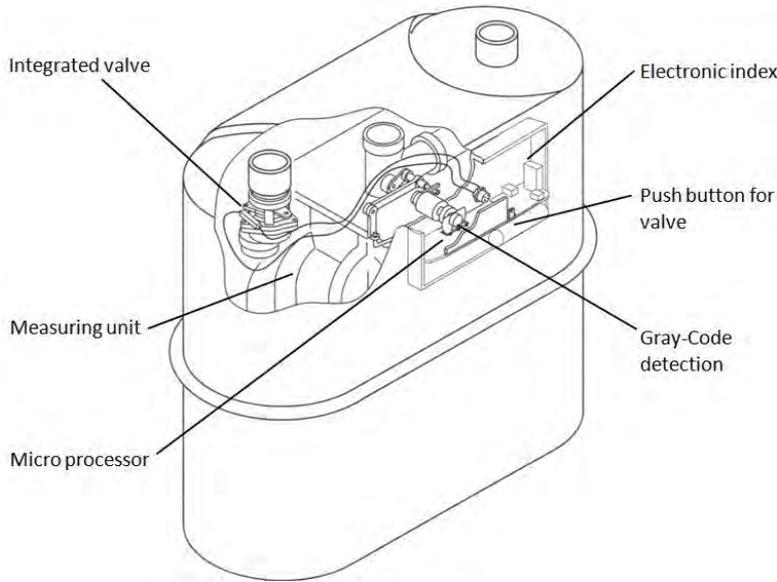
T_{amb} : -25...+55°C T_{gas} : -25...+55°C

Protection index:

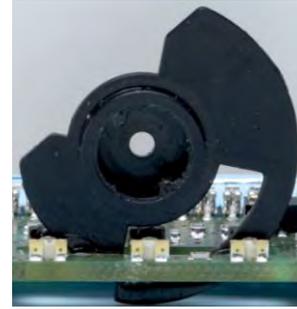
IP54 (Closed outdoor location)

Battery lifetime up to 20 years,
with 1 x AA, 2 X AA or C-Cell





curve correction.

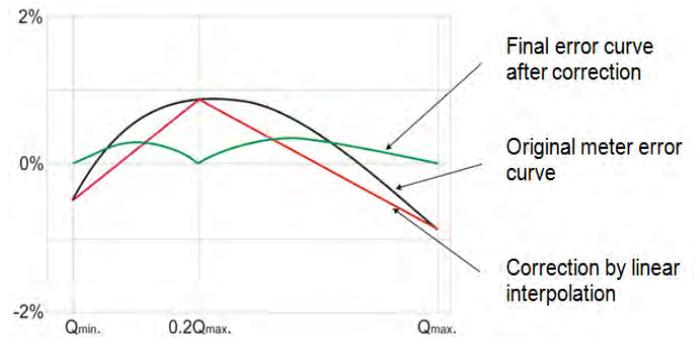


Gray-Code detection system

The movement of the gas measuring unit is detected by a unique, High Freqent optical detection system, based on Gray-Code and 3 optical sensors on the PCB. This system offers high resolution and a tamper proof and fail safe detection, fit for instant flow calculation and error correction

Excellent accuracy

The initial error curve of the diaphragm gas meter is programmed into the micro-processor in the index at 3 flows: Q_{min} , $0.2 Q_{max}$ and Q_{max} . With the High Frequency Gray-Code detection, flow is calculated and actual error calculated by linear interpolation. The final error is hereby corrected to approx. 0.1%.



Temperature conversion (option)

Temperature conversion can be performed for read-out of base volume or energy. A unique temperature measurement system ensures precise determination of gas temperature inside the measuring unit. This technique improves the accuracy with up to 3%, compared to conventional methods.

Logs

Uniflo GXS electronic indexes have various logs, depending on the model:

- Interval log (hourly, half hourly)
- Daily log
- Monthly log
- Yearly log
- Alarm log (several logs)
- Event log
- Configuration log
- Billing log



Security

Tamper alarm

Mechanical tampering is not possible, as moving parts in the index are reduced to a minimum. Removal of front cover will activate tamper alarm. The gas meter is not sensitive to normal magnetic fields. In case of extremely powerful magnets, a magnetic tamper alarm will be activated.

Safe communication

Communication is secured by encryption (AES) with individual encryption keys. Detection of invalid communication format will activate an alarm.

Reverse flow

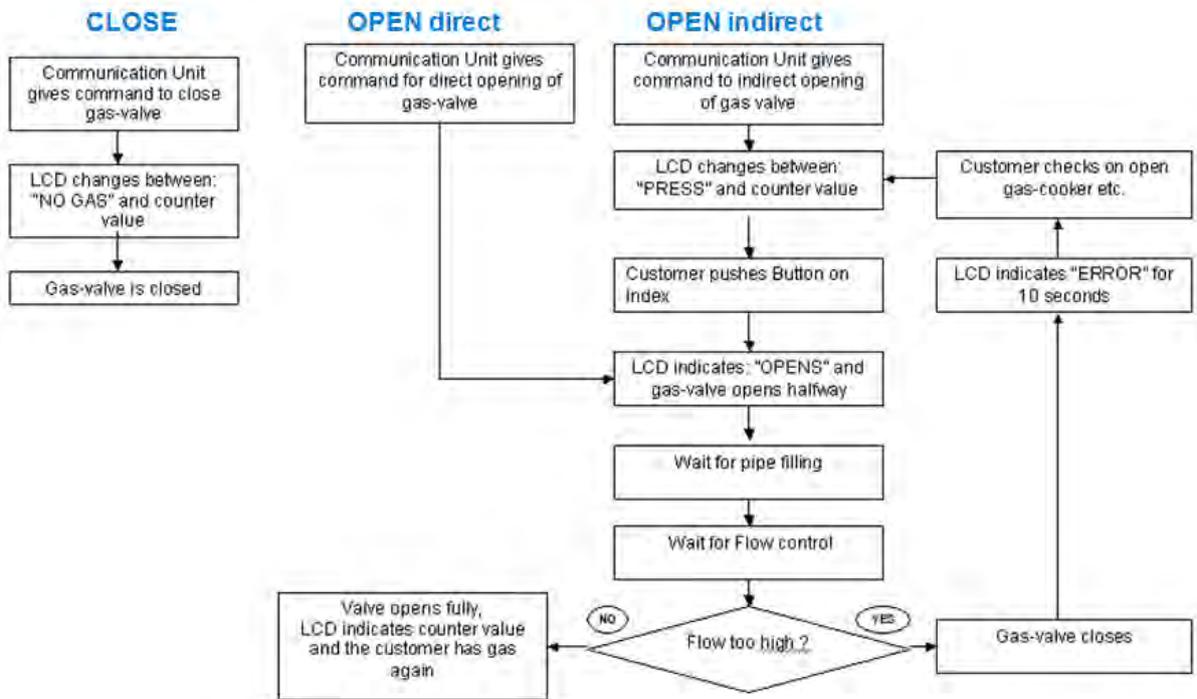
Reverse gas flow will be stopped by mechanical lock in the unit, and reverse rotation will be detected by the "Gray -Code" and immediately activate an alarm.

Integrated valve (option)

The meter can be supplied with built-in valve, offering remote closing of the gas flow.

The valve control system includes “Safe Open”, with customer intervention and flow control. Parameters for safe opening are configurable.

Command for safe opening without customer intervention is also available.



AMR (Automatic Meter Reading)

The meter can be supplied with M-bus, wired (EN13757-2) (standard with 2m cable) or wireless (EN13757-4, short distance radio frequency, 868 MHz), ZigBee radio (2.4 Ghz) or GSM/GPRS modem, for remote reading.

Upgradable firmware

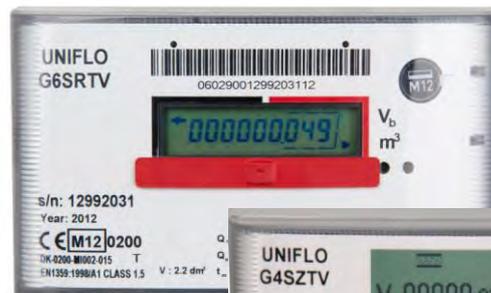
The meter supports remote upgrade of application firmware (OTA). If transfer of new firmware fails, or self diagnostic function report failure, roll back to previous firmware version is supported. Metrologic (legal) firmware will not be affected.

Multi function display

The meter supports several multi function readings, such as actual or converted volume read out switchable from back office, and auto scroll between total, monthly, weekly and daily consumption (EDL). For more advanced read out possibilities, we offer a full menu driven graphical display, with backlight.

Messages

The meter allows for messages from Utility to Consumer. The text will scroll over the display, until it is acknowledged.



Standard Index

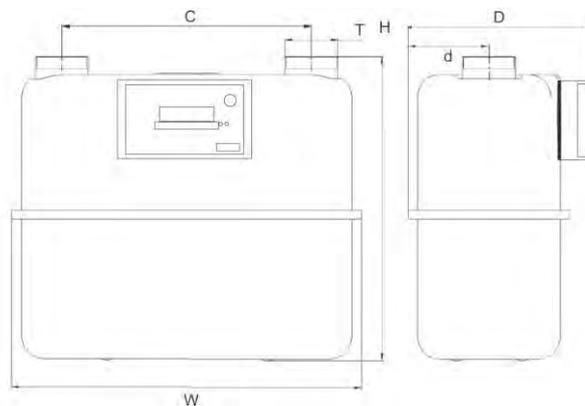


Advanced Index

TECHNICAL SPECIFICATIONS:

	V_c dm ³	Q_{max} m ³ /h	Q_{min} m ³ /h	P_{max} ¹⁾ bar	ΔP ²⁾ mbar
G1.6	1.2	2.5	0.016	0.5	0.8
G2.5		4	0.025		1.1
G4		6	0.040		1.4
G4	2.2	6	0.04	0.5	1.4
G6		10	0.06		2.0
G10	5	16	0.10	1.0	1.7
G16		25	0.16		3.0
G25		40	0.25		2.8

1) P_{max} without valve / P_{max} with valve 0.2 bar
2



Operating conditions:

1. Temperature range:

T_{amb} : -25...+55°C T_{gas} : -25...+55°C

2. Protection index:

IP54 (Closed outdoor location)

Battery lifetime:

15 years, calculated 20 years

Display:

Graphical display, menu driven

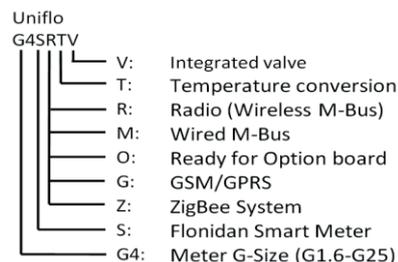
9 digits, 0, 3 or 4 decimals (configurable)

Approvals:

MID: DK-0200-MI002-013-017

ATEX: II 1/2G Ex ia/ib IIB T3
0044 10 ATEX 377834X

Type definition:



Conformity with:

EN14236:2007
SMETS 1 & 2 (UK)
EN12405-1:2006 (electronic index)
OIML D11(EMC) (electronic index)
Directive 94/9/EC (ATEX)