



# EC-Type Examination Certificate

## Measuring Instrument Directive

**Certificate number: DK-0200-MI002-007**

Issued by FORCE Certification, Denmark  
EC-notified body number 0200

In accordance with The Danish Safety Technology Authority's statutory order no. 436 of 16<sup>th</sup> May 2006 which implements the Directive 2004/22/EC of the European Parliament and Council of March 31<sup>st</sup>, 2004 on measuring instruments (MID).

**Issued to:** **Flonidan DC A/S**  
**Islandsvej 29**  
**DK-8700 Horsens**

Reference No.: 80.976-020/07

Type of instrument: Diaphragm Gas Meter with temperature conversion

Type designation: Uniflo G10E, Uniflo G16E

Valid until: May 13, 2018

Number of pages: 5, including appendix

Date of issue: May 13, 2008

Approved by

Hans Falster  
Director

Processed by

Kurt Rasmussen  
Certification Manager

The conformity markings may only be affixed to the above type approved equipment. The manufacturer's Declaration of Conformity may only be issued and the notified body identification number may only be affixed on the instrument when the production/product assessment module (D or F) of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.

This EC-type examination certificate may not be reproduced except in full, without written permission by FORCE Certification.



# Appendix to EC-Type Examination Certificate Measuring Instrument Directive

## Certificate no.: DK-0200-MI002-007

Issued by FORCE Certification, Denmark  
EC-notified body number 0200

### Applied standards and documents:

EN 1359:1998/A1:2006. Pressure absorption with integrated valve (option V) exceeds the initial permissible values in table 3.

EN 12405-1:2005/A1:2006 with the following extension:

A.9 Electromagnetic susceptibility. Severity level 4 for electromagnetic fields caused by digital radio telephones (OIML D11, clause 12.1)

The instrument shall correspond to the following specifications:

### Type designation

Uniflo G10E, Uniflo G16E

### Description

Uniflo G10E, G16E is a diaphragm gas meter with electronic index. The mechanical measuring unit is mounted in steel plate housing with either two-pipe or mono-pipe (coaxial) connections. The measuring unit includes a mechanical blockage which prevents registration of more than 50 cyclic volumes in case of reverse flow through the meter.

The measuring unit's movements are transmitted via an optical scanning to the electronic index. The gas meter converts the measured volume to volume at base condition (converted volume). The conversion is based on measured temperatures, a fixed set value of gas pressure and a fixed set conversion constant.

The calculator in the index registers the measured gas volume and calculates a volume corrected for the meter error determined during calibration. The calculator is fitted with a display showing the corrected volume, or the converted accumulated volume in m<sup>3</sup> at base condition.

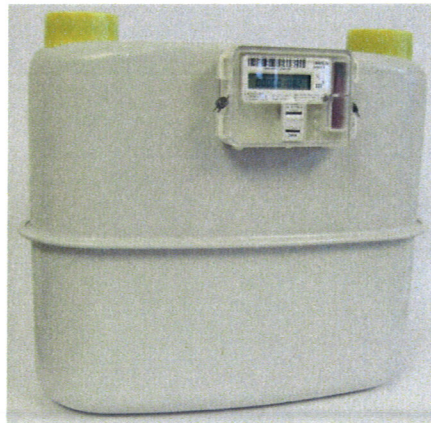
Functional errors activate a warning triangle on the display.

The calculator is supplied with a data interface which may be used for remote reading and coding of the calculator. Coding can only be made with special software after an electrical connection (jumper) has been mounted on the printed circuit board protected by the sealing plate, which again is secured by a verification label. The software used in the calculator has version number 00.2100.xx, where xx is a serial number for changes that are of no significance to the measurement or in any other way may change the properties of the meter according to this EC-type examination certificate.

The meter is available with the following options:

- T temperature conversion
- M M-bus output
- V integrated valve
- R radio communication
- (blank) without any of the above options

The meter is resistant to high ambient temperature and suitable for differential temperature and intermittent operation.



## Technical documentation

FORCE Certification File no. 80.976-020/07

### Technical data

Instrument type:	Diaphragm gas meter		
Accuracy class:	1,5		
Environment class:	M1, E2		
Climatic class:	G10E	G16E	
	-25 °C to +55 °C	-10 °C to +55 °C	
	Condensing closed outdoor location.		
Volume indication:	m <sup>3</sup> at base condition or actual conditions		
Flow rates:	G10E	G16E	
Maximum flow rate:	Q <sub>max</sub> 16	25	m <sup>3</sup> /h
Minimum flow rate:	Q <sub>min</sub> 0,1	0,16	m <sup>3</sup> /h
Transitional flow rate:	Q <sub>t</sub> 1,6	2,5	m <sup>3</sup> /h
Overload flow rate:	Q <sub>r</sub> 19,2	30	m <sup>3</sup> /h
Cyclic volume	V <sub>c</sub> 5	5	dm <sup>3</sup>
Gas family:	Fuel gasses of 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> family (EN 437:2003)		
Maximum pressure:	p <sub>max</sub> 0,5 barg		
Gas temperature range:	G10E	G16E	
	t <sub>m</sub> -25 °C to +55 °C	-10 °C to +55 °C	
Base gas temperature:	t <sub>b,i</sub> 0 to 20 °C		
Base pressure:	p <sub>b</sub> 1013 mbar		

Base volume:  $V_b$  0 – 999999999 m<sup>3</sup>  
 Specified temperature:  $t_{sp}$  20 °C  
 Power supply 3 or 3.6 V Lithium battery, AA or C-cell, ER 6 / ER20 according to IEC 86-1, "Primary batteries"  
 Software version: 00.2100.xx, where xx is serial number for non-significant changes

The meter is supplied with different connections:

Two-pipe, with centre distance 152,4 to 300 mm, threads from 5/4" to 2"

Mono-pipe (coaxial) 2 3/4"

## Verification

### Errors

Maximum permissible errors (MPE) according to Directive 2004/22/EC of the European Parliament and Council of March 31<sup>st</sup>, 2004 on measuring instruments (MID), Annex MI-002.

Ambient temperature	G10E	G16E
$t_{am}$ :	-25 °C to +55 °C	-10 °C to +55 °C

Maximum permissible errors

For	$t_{am}$ :	+5 °C to +35 °C
		±3 % for $Q_{min} \leq Q < Q_t$
		±1,5 % for $Q_t \leq Q < Q_{max}$

When the errors between  $Q_t$  and  $Q_{max}$  all have the same sign, they shall all not exceed 1 %.

If the meter is supplied with option T (temperature conversion) an additional increase of 0,5 % to MPE is permitted for each interval of 10 °C for  $t_{am}$  below 5 °C and above 35 °C.

### Procedure

Verification is carried out at laboratory conditions. It is permitted to use air as verification gas.

The verification is valid only for the display reading of converted volume  $V_b$  or corrected volume  $V_c$ .

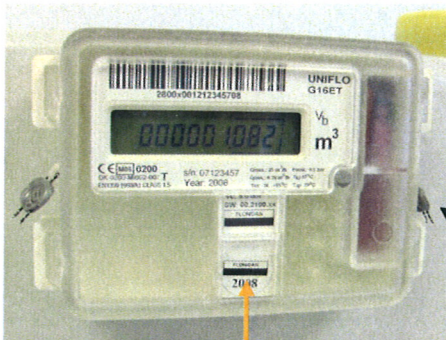
## Sealing

### Verification sealing

Verification label designed as a void label which contains verification mark and year is placed over the screw on the sealing plate. This also secures the coding label.

### Installation sealing

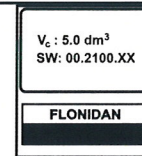
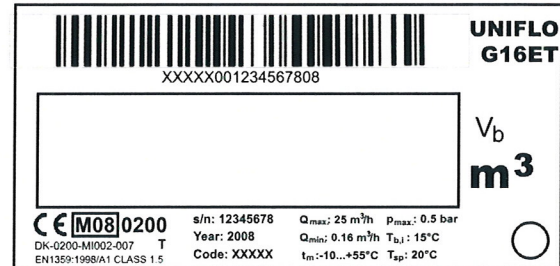
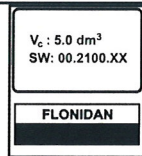
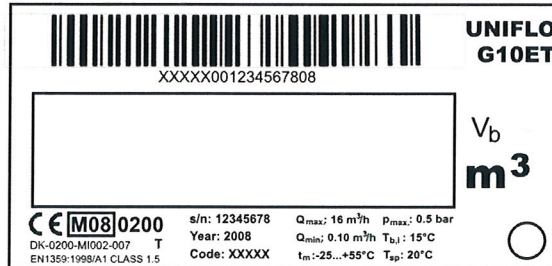
The transparent front cover can be secured by a sealing label or a wire seal placed over the joint between the front cover and the white plastic box.



Verification seal

Installation seal

## Labelling and inscriptions



Conformity marking (CE + M + Year of affixing + NB no.)

EC-type examination certificate number

Manufacturer designation or logo

Type, production year and serial number

Applied European Standard : EN 1359:1998/A1:2006

Class : 1,5

G10E G16E

Maximum flow rate: Q<sub>max</sub> : 16 25 m<sup>3</sup>/h

Minimum flow rate: Q<sub>min</sub> : 0,1 0,16 m<sup>3</sup>/h

Ambient and gas temperature: t<sub>m</sub> -25 °C ... +55 °C -10 °C ... +55 °C

Base gas temperature: t<sub>b,i</sub> : 0 to 20 °C

Specified temperature: t<sub>sp</sub> : 20 °C

Maximum working pressure: p<sub>max</sub> : 0,5 barg

Volume: V<sub>b</sub> or V<sub>c</sub> : m<sup>3</sup>

Cyclic volume: V<sub>c</sub> : 5 dm<sup>3</sup>

Software version : 00.2100.xx

High ambient temperature resistant : T

## Accompanying information

Rated operating conditions not included on the label:

- Transition flow rate, Q<sub>t</sub>: G10, Q<sub>t</sub> = 1,6 m<sup>3</sup>/h. G16, Q<sub>t</sub> = 2,5 m<sup>3</sup>/h.
- Overload flow rate, Q<sub>r</sub>: G10, Q<sub>r</sub> = 19,2 m<sup>3</sup>/h. G16, Q<sub>r</sub> = 30 m<sup>3</sup>/h
- Climatic class: condensing, closed outdoor location
- Mechanical and electromagnetic environment classes: M1, E2
- Gas family: Fuel gasses of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> family (EN 437:2003)
- Power supply: Lithium battery, 3 or 3.6 V DC

Suitable for significantly different ambient and gas temperatures.

Instructions for installation, maintenance, repairs, permissible adjustments

Instructions for correct operation and any special conditions of use