

# EC-Type Examination Certificate

## Measuring Instrument Directive

**Certificate number: DK-0200-MI002-001**

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

In accordance with the Danish Safety Technology Authority's statutory order no. 1382 of November 25, 2016 which implements the Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID).

**Issued to:**           **gAvilar B.V.**  
**Kamerlingh Onnesweg 63**  
**3316 GK Dordrecht**  
**The Netherlands**

Type of instrument: Gas-volume conversion device type 1

Type designation: Uniflo 1000 TCE

Valid until: September 27, 2017

Number of pages: 5, including appendix

Date of issue: June 20, 2017

Version: 4

This certificate replaces all earlier versions. All previous versions are withdrawn.

Approved by

Certification Manager

*The certificate is only valid with one digital signature from FORCE Certification. The original version of the certificate is archived in FORCE Certifications database and is sent in electronic duplicate to the customer. The stored version of the certificate at FORCE Certification prevails as documentation for its contents and validity.*

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 A/S.

FORCE Certification references:

Task no.: 117-25681.01 and ID. No.: 0200-MID-02620

# Appendix to EC-Type Examination Certificate Measuring Instrument Directive

## Certificate no. DK-0200-MI002-001, Version 4

Issued by FORCE Certification A/S, Denmark  
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### Revision history

Revision	Issue date	Changes
Ver. 4	2017-06-20	Administrative renewal for 3 month
Ver. 3	2017-04-18	Editorial corrections
Ver. 2	2017-03-31	Certificate overhanded from Flonidan A/S to the company gAvilar B.V.
Ver. 1	2007-06-27	New identification number of software
DK-0200-MI002-001	2007-04-04	Original certificate

### Applied standards and documents:

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 1000 TCE

### Description

Uniflo 1000 TCE is a gas-volume conversion device type 1 which converts volume as a function of temperature only (called T conversion). Uniflo 1000 TCE consist of a calculator and a temperature sensor. Uniflo 1000 TCE has a display for indication of volume at base condition (converted volume). Uniflo 1000 TCE is supplied with a temperature sensor for measurement of the gas temperature and has a pulse input for connection to the pulse output of the gas meter.

Based on the measured gas temperature and the entered gas pressure, the measured gas volume is converted to volume at base condition. The conversion is based on a fixed constant representing gas composition and base condition.

The counter has the following functions:

- Count of measured volume (unconverted)
- Conversion from actual gas temperature and set gas pressure to base temperature and pressure (calculation of converted volume)

- Registration of historical data (consumption, max. flow rate and alarms)

The temperature measurement is carried out using a temperature sensitive resistor (NTC). The NTC resistor is mounted on a cable.

Converted volume is read out on the display with 0, 3 or 4 decimals (programmable).

Uniflo 1000 TCE is supplied with a data interface which may be used for remote reading and coding. Coding can only be made with special software after an electrical connection (jumper) has been mounted on a printed circuit board protected by the sealing plate, which is again secured by a verification label. The software used has a version number 02.1000.xx, where xx is a serial number for changes that are of no significance to the measurement or in any other way changes the properties of the meter according to this EC-type examination certificate.

The counter is write protected by means of a jumper mounted under the sealing plate.

Functional errors activate a warning triangle on the display.



## Technical documentation

FORCE-Dantest CERT File no. 80.976-012/07

## Technical data

Instrument type:	Gas-volume conversion device type 1
Environment class:	M1, E2
Climatic class:	-25°C to +55°C, condensing, closed location.
Power supply:	3 or 3.6V Lithium battery, AA-cell, ER 6 according to IEC 86-1, "Primary batteries"
Volume indication:	m <sup>3</sup>
Pressure range:	0 – 0.5 barg
Gas temperature range:	-25°C to +55°C
Base gas temperature:	t <sub>b</sub> 0°C, 15°C or 20°C
Base pressure:	p <sub>b</sub> 1013 mbar
Base volume:	V <sub>b</sub> 0 – 999999999 m <sup>3</sup>
Conversion constant:	K fixed
Max. pulse frequency:	2.5 Hz
Min. pulse duration:	40 ms
Min. pulse interval:	25 ms
Software version:	02.1000.xx, where xx is serial number for non-significant changes

## Verification

### Errors

Maximum permissible errors according to Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID), Annex MI-002.

MPE = 0.5%.

### Procedure

Verification is carried out at reference conditions and the accuracy test is performed at three gas temperatures: T<sub>min</sub>, T<sub>max</sub>, and T = (T<sub>min</sub> + T<sub>max</sub>)/2. The error is calculated for base volume.

## 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.

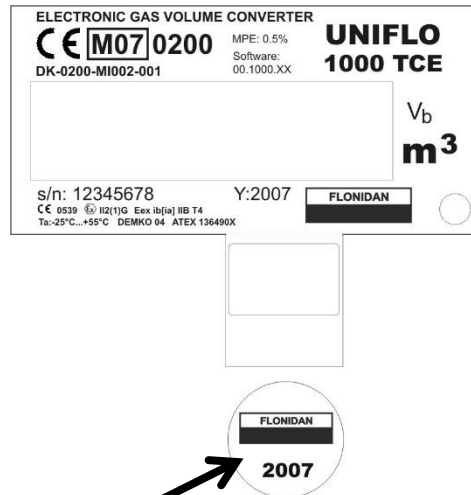
### Installation sealing

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



Installation seal

Verification seal



### Labeling and inscriptions

- Type approval mark
- EC-type examination certificate number
- Manufacturer designation or logo
- Type, production year and serial number
- MPE at reference condition
- Software version
- Notified body number
- Converted volume V<sub>b</sub> in m<sup>3</sup>

### Accompanying information

- Base conditions, T<sub>b</sub> = ... K, p<sub>b</sub> = ... bar
- Environmental temperatures, t<sub>amb,max</sub> = ... °C, t<sub>amb,min</sub> = ... °C
- Gas temperature, T<sub>max</sub> = ... °C, T<sub>min</sub> = ... °C
- Gas pressure, p<sub>max</sub> = ... bar, p<sub>min</sub> = ... bar
- Environmental classes
- Mechanical and electromagnetic environment classes
- Condition for compatibility with volume gas meter

**This certificate is overhanded from the original owner which is**

Flonidan DC A/S  
 Islandsvej 29  
 DK-8700 Horsens