DANAK
PROD Reg. No. 7025

FORCE Certification

EC-Type Examination Certificate

Measuring Instrument Directive

Certificate number: DK-0200-MI002-019

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: **Itron GmbH**
Hardeckstrasse 2
76185 Karlsruhe
Germany

Type of instrument: Diaphragm Gas Meter with temperature conversion

Type designation: G4 RF1 e WL, G6 RF1 e WL

Valid until: August 23, 2020

Number of pages: 7, including appendix

Date of issue: February 02, 2017

Version: 5
This certificate amends rev. 1, 3 and 4 which are still valid
Rev. 2 is replaced.

Approved by

Lars Poder
Certification Manager

Processed by

Kurt Rasmussen
Examiner

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.: 116-30993.02 and ID. No.: DK-0200-MID-01877

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Appendix to
EC-Type Examination Certificate
Measuring Instrument Directive

Certificate no. DK-0200-MI002-019. Revision 5.

Issued by FORCE Certification A/S, Denmark
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Revision history

Version	Issue date	Changes
Ver. 5	2017-02-02	New Index with ESMR 5 functions. SW version 05 added. New type designation.
Ver. 4	2015-03-13	New PCB for SW version 02 added, (removing of components for controlling of valve from PCB.) Editorial corrections on page 4
Ver. 3	2012-07-04	Device to prevent registration of reverse flow is made optional
Ver. 2	2012-05-01	New index with K-display and DSMR 4.0 functions
Ver. 1	2012-02-15	Change of manufactory address from Dordrecht to Karlsruhe
DK-0200-MI002-019	2010-08-23	Original certificate

Applied standards and documents:

EN 1359:1998/A1:2006. Gas meters – Diaphragm gas meters. Pressure absorption with integrated valve (option V) exceeds the initial permissible values in table 3 for model G6.
EN 12405-1:2005+A2:2010. Gas meters – Conversion devices – Part 1. Volume conversion.
WELMEC Guide 7.2, Issue 2015. (Measuring Instruments Directive 2014/32/EU).

The software fulfils the basic requirements for type P and specific requirements I2

The software fulfils the requirements for extension S.

The instrument shall correspond to the following specifications:

Type designation

G4 RF1 e WL, G6 RF1 e WL

Description

GX RF1 e WL is a diaphragm gas meter with electronic index; X being the size designator 4 or 6. The mechanical measuring unit is mounted in steel plate housing with two-pipe connections. The measuring unit may include a mechanical blockage which prevents registration of more than one cyclic volume 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^3 at base condition.

Independent of the above options, the meter may be operated with temperature conversion or without temperature conversion.

Functional errors activate an alarm symbol on the display.

The calculator is supplied with a wireless interface which may be used for remote communication with the calculator. Remote communication is only for the non-metrological part of the firmware. The calculator is also supplied with a IR-port for communication but only for testing purpose. Coding via the IR-port can only be made with a special configuration software after an electrical connection (jumper) has been mounted on the printed circuit board.

The printed circuit board is protected by the metrological cover, which again is secured by a verification seal. The software used in the calculator has version number 052400XX-YY, where XX and YY 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.

On start-up of the meter the index will show an abbreviated version of the software version number: 05 XX YY, where 05 is the metrological version, XX the application version, and YY the software type.

The meter is resistant to high ambient temperature and suitable for significantly different ambient and gas temperatures.

Technical documentation

Electronic index: FORCE Certification A/S File no. 116-30993

Gas meter: FORCE Certification A/S File no. 80.976-095/09

Technical data

Instrument type:	Diaphragm gas meter
Accuracy class:	1,5
Environment class:	M1, E2
Climatic environment:	Closed location – non-condensing.
Volume indication:	m^3 at base condition or actual conditions

Model		G4	G6
Maximum flow rate	Q_{max} [m^3/h]	6,0	10
Minimum flow rate	Q_{min} [m^3/h]	0,04	0,06
Transitional flow rate	Q_t [m^3/h]	0,6	1,0
Overload flow rate	Q_r [m^3/h]	7,2	12

Cyclic volume V 2 dm^3

Gas family: Fuel gasses of 1st, 2nd and 3rd family (EN 437:2003)

Maximum pressure: p_{max} 0,5 barg without high temperature option

p_{max} 0,2 barg with high temperature option

Model:		G4	G6
Lower temperature limit:	t_m	-25 °C	-25 °C
Upper temperature limit:	t_m	+55 °C	+55 °C

Base gas temperature: $t_{b,i}$ 0 to 20 °C

Storage temperature: t_s -40 °C to +70 °C

Base pressure: p_b 1013 mbar

Base volume: V_b 0 – 99999.9999 m^3

Specified temperature: t_{sp} 20 °C

Specified pressure: P_{sp} (P_a) selectable

Power supply: 3 or 3.6 V Lithium battery, AA, double AA or C-cell, ER 6 / ER20 according to IEC 86-1, "Primary batteries"

Connections: 220 mm

High ambient temperature resistant

Suitable for significantly different ambient and gas temperatures

Estimated life time for gas meter: 20 years

Estimated battery time: Up to 20 years

Software

SW version*	Checksum for metrological part of the software	PCB number** wireless M-bus
05.2400.XX-YY	8740	6024060-04-TT

*The first number is the version no. for the approved legal part of the software, the second (2400) is the product type and XX is the non-metrological version and YY refers to the product version

**The first number is a unique ID, the second (04) is the legal metrological number and the last number (TT) is a version number that do not include changes to metrology.

The Software version can also be found by using press button on index.

Display: In the display is shown 05 XX YY on start-up

Verification

Errors

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

Unconverted volume

Ambient temperature	t_{am}:	-25°C to +55 °C	
Maximum permissible errors		±3 % for	$Q_{min} \leq Q < Q_t$
		±1,5 % for	$Q_t \leq Q \leq Q_{max}$

Converted volume

Ambient temperature	t_{am}:	+5 °C to +35 °C	
Maximum permissible errors		±3 % for	$Q_{min} \leq Q$ Q_t
		±1,5 % for	$Q_t \leq Q \leq Q_{max}$

If the meter indicates the converted volume an additional increase of 0,5 % to MPE is permitted in the temperature interval 5 °C to 35 °C. Outside this temperature ranges an additional increase of 0,5 % is permitted in each interval of 10 °C.

The gas meter shall not exploit the MPEs or systematically favour any party.

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

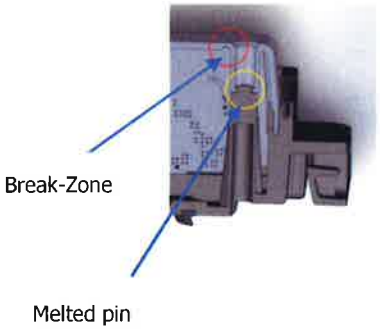
The index is sealed between the index and the mechanical part, by pressing metal parts into the index.

The printed circuit board is protected by the metrological cover, which again is secured by a metrological seal.
The Metrological seal is a plastic pin formed on the bottom part of the cabinet, which penetrates a hole in the bottom of a pocket in the metrological seal. During assembly of the Index, the top of the pin is melted. For a closer view see yellow circle at the picture. After melting the metrological seal cannot be removed again without damaging the parts.

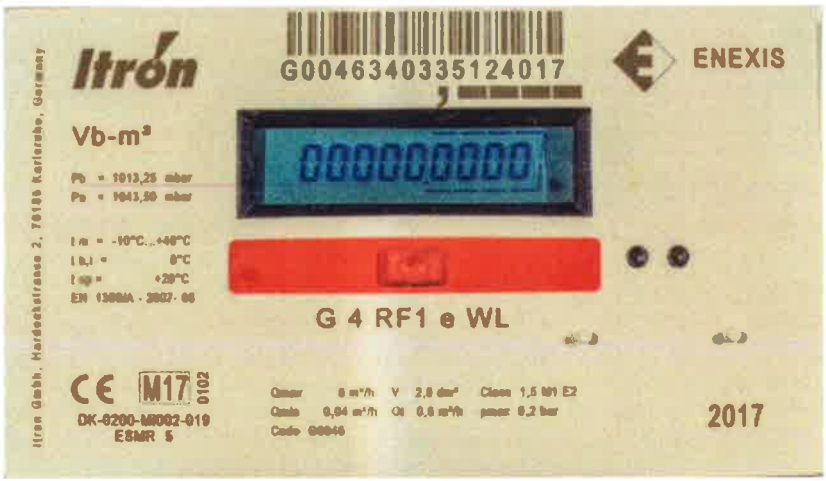
A "Break-Zone" (a weak area) is made in the front surface area around the pocket, where it is marked with the red circle. This has the effect, that if an attempt is made of removing the metrological seal by force, it will break in a very visible way, leaving clear evidence that the Index has been tampered or attempted to be tampered.

Installation sealing

The front cover is secured by two installation seals, one on each side of the index. The installation seals are small plastic caps which are pressed and locked into a hole in the cover and index.



Labelling and inscriptions



Conformity marking (CE + M + Year of affixing + NB no.)
EC-type examination certificate number
Manufacturer designation or logo and address
Type, production year and serial number

Applied European Standard : EN 1359:1998/A1:2006
Class : 1,5

Flow rates:

Model		G4	G6
Maximun flow rate	Q_{max} [m^3/h]	6,0	10
Minimum flow rate	Q_{min} [m^3/h]	0,04	0,06

Ambient and gas temperature:

Model		:	G4	G6
Lower temperature limit:	t_m	:	-25 °C	-25 °C
Upper temperature limit:	t_m	:	+55 °C	+55 °C
Base gas temperature:	$t_{b,i}$	:	0 to 20 °C	
Specified temperature:	t_{sp}	:	20 °C	
Base Pressure	P_b	:	1013,25 mbar	
Specified pressure:	P_{sp}	:	selectable to fixed value, default value 1013,25 mbar.	
Maximum working pressure:	p_{max}	:	0,5 barg without high temperature option	
	p_{max}	:	0,2 barg with high temperature option	
Volume:	V_b or V_c	:	m^3	
Cyclic volume:	V	:	2 dm^3	

Mechanical and electromagnetic environment classes: M1, E2

High ambient temperature resistant : T

Accompanying information

Rated operating conditions not included on the label:

Model		G4	G6
Transitional flow rate	Q_t [m^3/h]	0,6	1,0
Overload flow rate	Q_r [m^3/h]	7,2	12

- Climatic class: non-condensing, closed location
- Storage temperature, t_s: -40 °C to +70 °C
- Gas family: Fuel gasses of 1st, 2nd and 3rd family (EN 437:2003)
- Power supply: Lithium battery, 3 or 3.6 V DC
- Software version number
- Legal software checksum

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