

EC-Type Examination Certificate Measuring Instrument Directive

Certificate number: DK-0200-MI001-034

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

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

Issued to: **GRUNDFOS Holding A/S**
Poul Due Jensens Vej 7
DK - 8850 Bjerringbro
Denmark


Type of instrument: Water meter
Type designation: Measuring Instrument, AQtap
Valid until: April 19, 2026
Number of pages: 7, including appendix
Date of issue: April 19, 2016

Approved by



Michael Møller Nielsen
Certification Manager

Processed by



Lars Poder
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.: 115-25160 and ID no.: DK-0200-MID-00547

Appendix to

EC-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI001-034

Issued by FORCE Certification A/S, Denmark
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Revision	Issue date	Changes
DK-0200-MI001-034	2016-04-19	Original certificate

Applied standards and documents:

OIML R 49:2013

The instruments/measuring systems shall correspond with the following specifications.

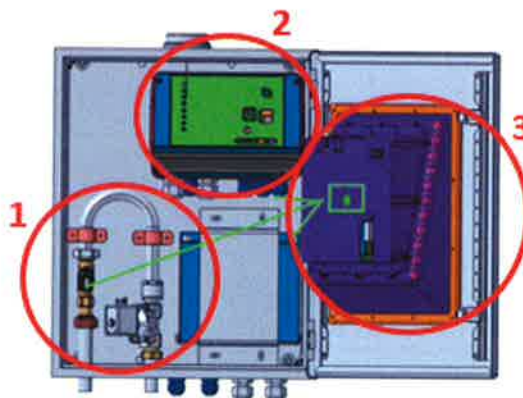
Type designation:

Measuring Instrument, AQtap

Description:

The instrument consists of

- 1) Measurement unit: GRUNDFOS MFS sensor and flow pipe
- 2) Calculation software under revision control (software edition shown in the display)
- 3) Display unit



Drawing 1: Structure of Measuring Instrument, AQtap

The measuring element, GRUNDFOS type MFS, is a combined flow, pressure and temperature sensor (3-in-1) based on the principle of vortex shedding behind a bluff body.

The instrument is interfaced to the GRUNDFOS AQtap ST-01, which is an intelligent water dispenser that operates precisely with minimum wastage of water.

The AQtap ST-01 can be operated with grid and/or solar power and an internal battery is used as a backup for approximately 12 hours of operation.

Technical documentation:
Reference No. 115-25160

Technical data

Instrument tested according to:	OIML R 49:2013
Q1	: 0.16 m ³ /h
Q2	: 0.25 m ³ /h
Q3	: 1.6 m ³ /h
Q4	: 2 m ³ /h
Water temperature	: 0.1 – 30 °C
Pressure	: PN = 10 bar
Environment class	: E1
Mechanical class	: M1
Protection class	: IP55
Climatic class	: -25...40 °C, condensing, open
Pressure loss class	: Δp 63
Sensitivity to irregularity in upstream velocity field	: U0
Sensitivity to irregularity in downstream velocity field	: D0
Power supply	: Grid: 110 – 240 VAC, 50/60 Hz Solar panel: 15 – 45 VDC, 3 A Battery: 12 V, 18 Ah
Software version	: Legal software id: 000012 Non-legal software id: 100xxx (xxx to be decided by the manufacturer)

Verification

Errors: Maximum permissible errors according to Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments (MID), Annex MI-001

Procedure: Test points and verification requirements according to OIML R 49:2013

The water temperature range shall be 20 ± 10 °C

At least the following three flow rates shall be used for verification:

$$Q_1 \leq Q \leq 1.1 Q_1 (\pm 5 \%)$$

$$Q_2 \leq Q \leq 1.1 Q_2 (\pm 2 \%)$$

$$0.9 Q_3 \leq Q \leq Q_3 (\pm 2 \%)$$

If the instrument is used at one specific flow rate only, verification can alternatively be carried out by dispensing three fixed volumes of 20, 40 and 60 liters.

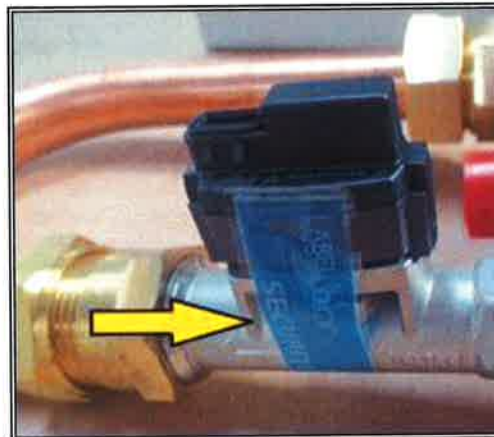
When using this alternative verification method, the accuracy of the three fixed volumes shall be $\leq \pm 2 \%$.

Sealing

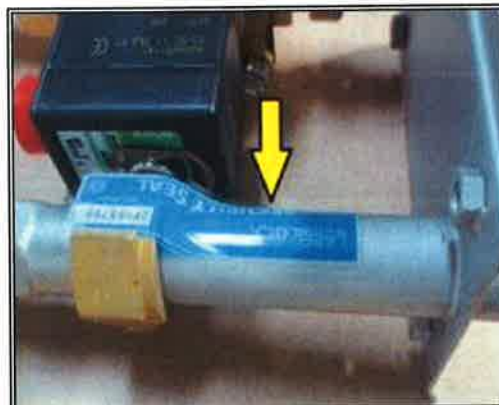
The instrument is sealed using two void labels – one on the flow sensor and one on the flow pipe.



Picture 1: Void label



Picture 2: Sealing of flow sensor



Picture 3: Sealing of flow pipe

Installation





The instrument can only be installed in a vertical position.

Marks and inscriptions

- Unit of measurement: Cubic metre
- Numerical value of Q_3
- The ratio Q_3/Q_1
- EC-Type examination certificate number
- Name or trademark of the manufacturer
- Year of manufacture
- Serial number
- Direction of flow
- Mounting position
- Power supply

The flow direction is marked with an arrow on the flow pipe. The other marks are placed on the nameplate belonging to the GRUNDFOS AQtap ST-01 water dispenser.

Type: AQT-AA-ST-1	
PN: 98794194	
Uin: 1x110-240 V~	fin: 50/60 Hz
Pin: 45 W	IP: 55
Tamb: 5-40 °C	Tliquid: 0.1-30 °C
Q3: 1.6 m ³ /h	Q3/Q1: 10
Q2/Q1: 1.6	
Uin solar panel:	Max. 45 Vdc/3 Adc
Rated pressure:	0.01-0.4 MPa/0.1-4 bar
Max. admissible pressure:	0.4 MPa/4 bar
PC:	Mounting: Vertical
Serial no:	Assembled in: India

DK-8650 Bjerringhøvd, Denmark

98820134

Drawing 2: Example of a nameplate