DANAK
PROD Reg. No. 7026

FORCE Certification

EU-Type Examination Certificate

Measuring Instrument Directive

Certificate number: DK-0200-MI001-047

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

In accordance with Annex II Module B of the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of measuring instruments (MID).

Issued to: **Kamstrup A/S**
Industrivej 28, Stilling
DK-8660 Skanderborg

Type of instrument:	Water meter
Type designation:	KWM3231
Valid until:	2035-01-09
Number of pages:	11, including appendix
Date of issue:	2026-02-25
Version:	2 This version of DK-0200-MI001-047 is issued due to addition of a new communication module and new SW versions. The previous certificate is withdrawn.

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.

FORCE Certification references: TASK no.: 125-21167.03 and ID no.: 0200-MID-18701-3

Appendix to

EU-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI001-047

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

Revision	Issue date	Changes
DK-0200-MI001-047	2025-01-09	Original certificate
DK-0200-MI001-047 ver 1	2025-04-29	New SW version G1 added
DK-0200-MI001-047 ver 2	2026-02-25	New communication module LoRaWAN OMS added, new SW versions D1 and F1 added

Applied standards and documents:

OIML R 49:2013[1]
WELMEC Guide 7.2:2020

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

Type designation:

KWM3231 Water meter

[1] The content is the same in substance as that of ISO 4064:2014 *Water meters for cold potable water and hot water*

DK-0200-MI001-047

Description:

KWM3231 is an integrated and hermetically sealed static water meter based on the ultrasonic measuring principle, without any moving parts. The meter body is made of PPS composite material or stainless steel. KWM3231 has a display indicating the registered volume, measuring unit, error codes and more. Furthermore, an optical eye is located on the front, whereby data reading of data loggers and configuration of the meter, can be made for service and diagnostic purposes.

KWM3231 is power supplied from internal lithium batteries (2xA-cell). Battery providing long battery life, even with high performance communication. A separate pulse interface can be used for converting the data telegram into volume pulses during calibration of the meter.

The KWM3231 meter platform is fully IP68 rated – protected against both internal moisture penetration and external water ingress and can thus be submerged in water. This applies throughout the whole lifetime of the meter.

The water meter can and must only be opened by Kamstrup A/S. If the meter has been opened and the sealing has thus been broken, the meter is no longer valid for billing purposes and the warranty is void.

Technical documentation:

Reference numbers:

- 125-21167.03
- 125-21167.02
- 125-21167.01

Technical data for stainless steel meters

Flow designations

Meter size 1" x 190mm DN20

Q_1 Minimum flow rate [l/h]	6.3		
Q_2 Transitional flow rate [l/h]	10		
Q_3 Permanent flow rate [m^3/h]	2.5	4	6.3
Q_4 Overload flow rate [m^3/h]	3.1	5	7.9
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

Meter size 1¼" x 260mm DN25

Q_1 Minimum flow rate [l/h]	10		
Q_2 Transitional flow rate [l/h]	16		
Q_3 Permanent flow rate [m^3/h]	4	6.3	10
Q_4 Overload flow rate [m^3/h]	5	7.9	12.5
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

Meter size 1½" x 260mm DN32

Q_1 Minimum flow rate [l/h]	16		
Q_2 Transitional flow rate [l/h]	25.6		
Q_3 Permanent flow rate [m^3/h]	6.3	10	16
Q_4 Overload flow rate [m^3/h]	7.9	12.5	20
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

Meter size 2" x 300mm DN40

Q_1 Minimum flow rate [l/h]	25		
Q_2 Transitional flow rate [l/h]	40		
Q_3 Permanent flow rate [m^3/h]	10	16	25
Q_4 Overload flow rate [m^3/h]	12.5	20	31.3
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

1) The meters can also be used for dynamics range: R315, R250, R200, R160, R125, R100
2) The meters can also be used for dynamics range: R500, R400, R315, R250, R200, R160, R125, R100
3) The meters can also be used for dynamics range: R800, R630, R500, R400, R315, R250, R200, R160, R125, R100

Technical data for PPS meters

Flow designations

Meter size 1¼" x 260mm DN25

Q_1 Minimum flow rate [l/h]	10		
Q_2 Transitional flow rate [l/h]	16		
Q_3 Permanent flow rate [m^3/h]	4	6.3	10
Q_4 Overload flow rate [m^3/h]	5	7.9	12.5
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

Meter size 1½" x 260mm DN32

Q_1 Minimum flow rate [l/h]	16		
Q_2 Transitional flow rate [l/h]	25.6		
Q_3 Permanent flow rate [m^3/h]	6.3	10	16
Q_4 Overload flow rate [m^3/h]	7.9	12.5	20
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

Meter size 2" x 300mm DN40

Q_1 Minimum flow rate [l/h]	25		
Q_2 Transitional flow rate [l/h]	40		
Q_3 Permanent flow rate [m^3/h]	10	16	25
Q_4 Overload flow rate [m^3/h]	12.5	20	31.3
Dynamic range Q_3/Q_1	400[1)]	630[2)]	1000[3)]

1) The meters can also be used for dynamics range: R315, R250, R200, R160, R125, R100
2) The meters can also be used for dynamics range: R500, R400, R315, R250, R200, R160, R125, R100
3) The meters can also be used for dynamics range: R800, R630, R500, R400, R315, R250, R200, R160, R125, R100

Other designations for all meters

Instrument type:	Complete water meter
Temperature class:	T30 (0.1 – 30 °C) Also tested T50 according to OIML R 49:2013
Pressure stage:	PN6, PN10 and PN16
Accuracy class:	2
Electromagnetic environment class:	E1 and E2
Mechanical environment class:	M1, Class B and O (building and outdoors)
Climatic class:	-25 °C – 55 °C, condensing
Sensitivity to irregularity upstream velocity field classes:	U0
Sensitivity to irregularity downstream velocity field classes:	D0
Orientation requirements:	Horizontal, vertical or at an intermediate angle
Protection class:	IP68
Power supply:	3.65 VDC lithium battery (2xA-cell)
Battery lifetime:	Up to 16 years

Communication

Communication modules:

Module designation	Module description
02L/N-52	Wireless M-Bus C1/C2/T1 OMS linkIQ®
02L/N-73	LoRaWAN OMS

Approved software versions

Module description	Version no.	Checksum for metrological part of the software	Description
Wireless M-Bus C1/C2/T1 OMS linkIQ®	E1	2530574173 (Dec) 96D5 7F5D (Hex)	L
	G1	2134248358 (Dec) 7F36 0BA6 (Hex)	N
LoRaWAN OMS	D1	3389838083 (Dec) CA0C D303 (Hex)	L
	F1	2628908775 (Dec) 9CB1 F6E7 (Hex)	N

N: Non-legally Relevant Software Change
L: Legally Relevant Software Change

Verification procedure

Errors: Maximum permissible errors according to the Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measurement instruments (MID), Annex III (MI-001)

Procedure: The test points and verification according to OIML R 49:2013
It is also possible to use water at a temperature of 20 °C ± 10 °C.

Test points (flows): $Q_1 \leq Q \leq 1.1\ Q_1$
$Q_2 \leq Q \leq 1.1\ Q_2$
$0.9\ Q_3 \leq Q \leq Q_3$

Test of water meter via display reading (Standing start/stop)

Preparation: Use the software Kamstrup LABTOOL and an optical head to set the meter in high resolution display mode (00000,001 L)

- Mount the water meter in the test rig
- Connect flow (start)
- Disconnect flow (stop)
- Read the LC-Display and compare the reading to the actual volume

Test of water meter via pulse interface (Flying start/stop)

Preparation: Connect a pulse interface type 66-99-143 to each water meter in the test rig and connect the volume pulse output to the pulse input on the test rig

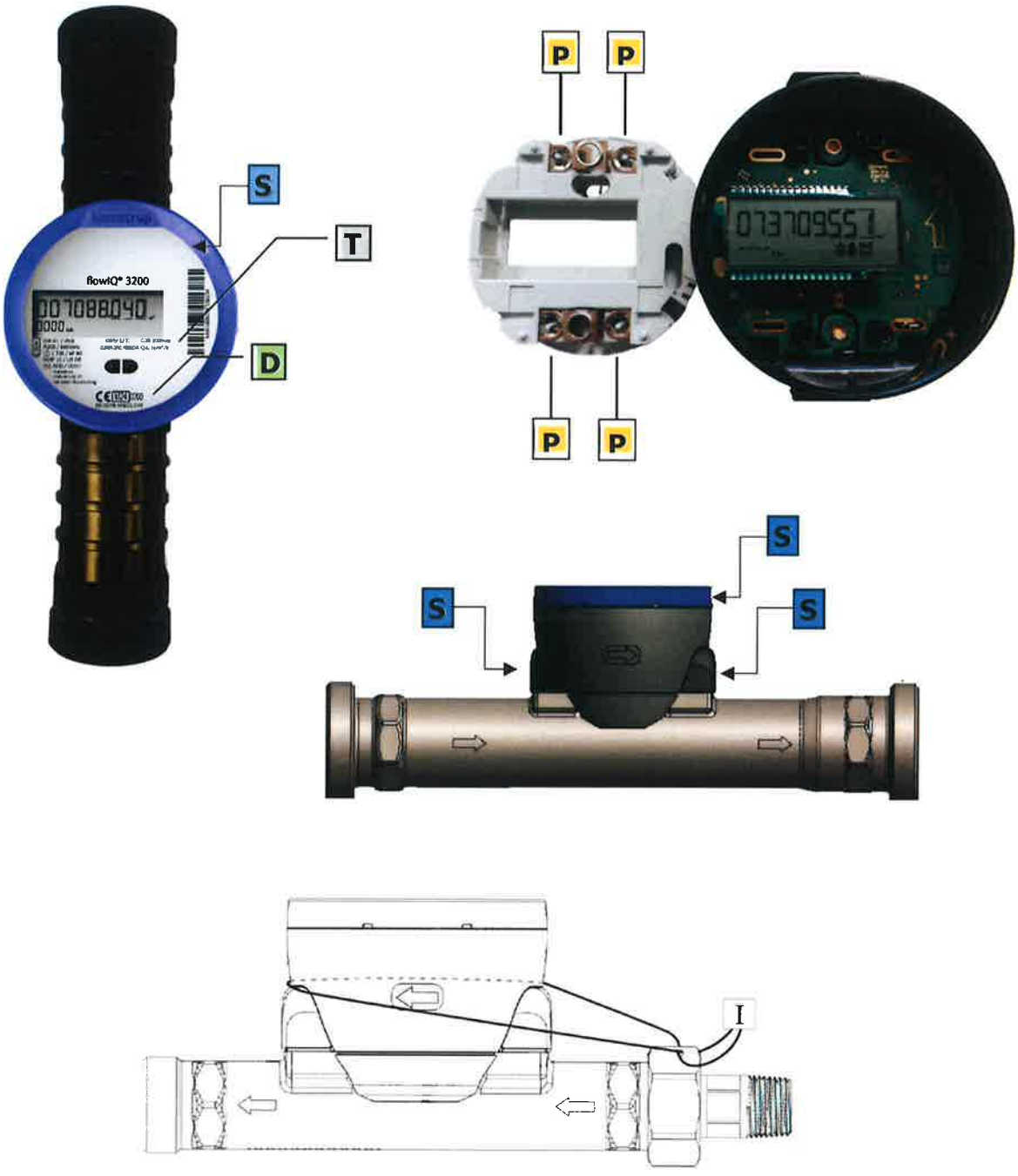
- Mount the water meter in the test rig
- Connect flow and wait for stabilisation of flow rate
- The measuring period is started and stopped
- Compare the EUT volume pulses to the master volume

Pulse Interface type 66-99-143 mounted on KWM3231 water meter via the optical support type 65-61-355.

	**Optical holder wireless**	65-61-355
	**Pulse interface**	66-99-143

Seals and markings

D	Module D label (Behind the front glass)
S	Security seal (Void sealing ring)
T	Type label (Behind the front glass)
P	Security seals (Snap points for sealing)
I	Installation sealing



Inscriptions

Front cover for KWM3231

- System designation
- Manufacturer designation or logo
- Manufacturer postal address
- Type, production year and serial number
- Accuracy class
- Frequency
- Max pressure loss
- Mechanical and electromagnetic environment classes
- Climatic class
- Flow limits
- Sensitivity velocity field classes
- Temperature of medium
- Maximum working pressure (PN)
- Protection class
- Dynamic Range (Q3/Q1) [2]
- Software version (e.g.: SW:E1)

[2] KWM3231 water meter may be labelled with a lower dynamic range than used under the verification procedure.

Photos of KWM3231

PPS composite meter body

Stainless steel meter body