Organisme notifié n°0071
Notified body

LABORATOIRE NATIONAL DE MÉTROLOGIE ET D'ESSAIS

CERTIFICAT D'EXAMEN UE DE LA CONCEPTION

EU DESIGN EXAMINATION CERTIFICATE

N° LNE - 25269 rév. 16 du 15 mars 2023

Renouvelle le certificat 25269-15

Délivré par **Issued by**	:	Laboratoire national de métrologie et d'essais
En application **In accordance with**	:	Directive 2014/32/UE, Module H1 Directive 2014/32/EU, Module H1
Fabricant **Manufacturer**	:	ITRON FRANCE - 9 rue ampère FRANCE 71031 MACON Cedex
Mandataire **Authorized**	:	
Concernant **In respect of**	:	compteur d'eau ITRON type X61 water meter ITRON type X61
Caractéristiques **Characteristics**	:	Les principales caractéristiques de la conception approuvée figurent dans l'annexe ci-jointe qui fait partie intégrante du certificat et comprend 10 page(s). Tous les plans, schémas et notices sont déposés au Laboratoire national de métrologie et d'essais sous la référence de dossier P224754 . The principal characteristics of the approved design are set out in the appendix hereto, which forms part of the approval documents and consists of 10 page(s). All the plans, shematic diagrams and documentations are recorded by Laboratoire national de métrologie et d'essais under reference file P224754 .
Valable jusqu'au **Valid until**	:	21 avril 2033 April 21st, 2033

Ce certificat d'examen UE de la conception est établi selon les dispositions de la section 4 du module H1 de la directive 2014/32/UE et n'est valide qu'en complément du certificat d'approbation de système qualité délivré par le LNE conformément aux modalités décrites par le module H1 de la directive 2014/32/UE.

This EU Design-Examination certificate is based on section 4 of module H1 of the directive 2014/32/EU and is only valid in addition to a valid certificate of quality system approval issued by LNE according module H1 of the council directive 2014/32/EU.

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Portée disponible sur www.cofrac.fr

Pour le Directeur Général
On behalf of the General Director

Laboratoire national de métrologie et d'essais
LNE

Signature numérique de Emeric MOREL ID

Responsable du Département Certification Instrumentation
Head of Instrumentation Certification Department

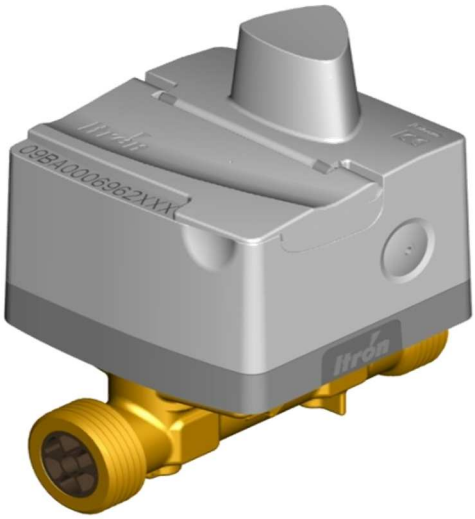
CIM7-V9-09-2022

Annex to EU design examination certificate n° LNE-25269 rev.16

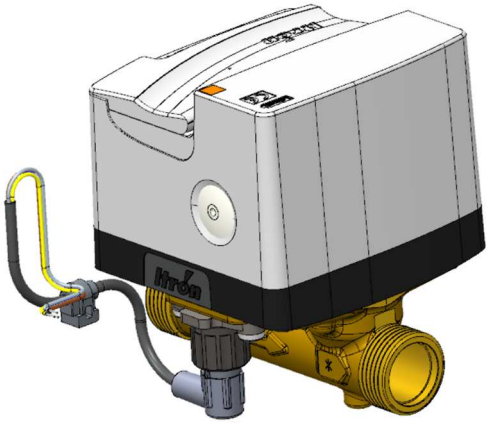
These instruments can be sold with other commercial names and may differ only by the presentation.

Description

The ultrasonic water meter ITRON type X61 is intended for the measurement of clean water volumes in the field of a residential, commercial or light industrial use. Other data than the volume recorded in forward flow and displayed on the meter indicating device are not covered by this certificate.



RF versions



M-Bus version (left) and Pulse or Encoder version (right)

The flow measurement is based on an acoustic wave time-of-flight principle.
The flow meter body is equipped with 2 ultrasonic transducers facing 2 acoustic reflectors

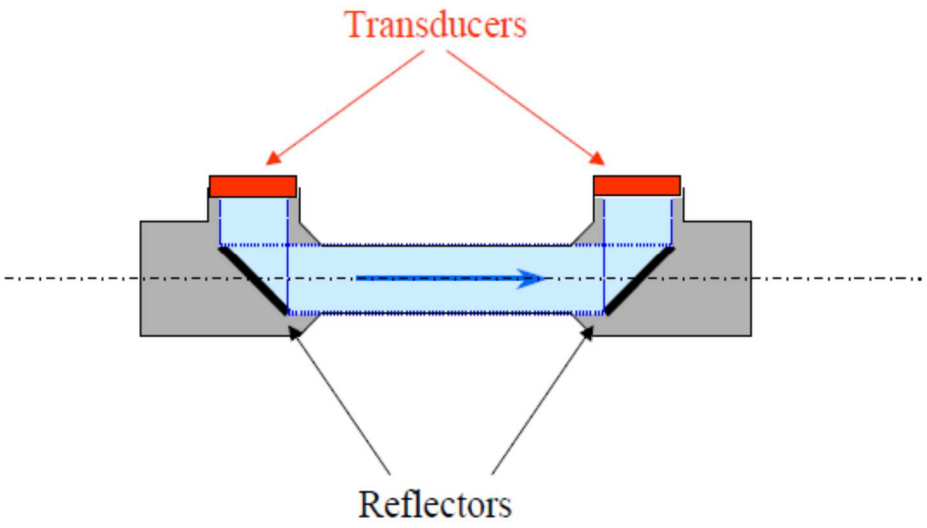


Figure 2: measurement principle

Annex to EU design examination certificate n° LNE-25269 rev.16

Meter characteristics

Indicating device	Glass-metal						
Version	Linear						
Nominal diameter (DN)	DN15	DN15&20		DN20	DN25	DN25&32	DN40
Model***	Insert 13	Insert 14			Insert DN 25 & 32		Insert DN40
Permanent flowrate Q_3 (m^3/h)	1,6	1,6	2,5	4	6,3	10	16
Q_3/Q_1 *	250	250	400	630	630	800	400
Q_2/Q_1	1,6						
Position	All positions						
Pressure loss at Q_3 (bar)	0,4	0,1	0,25	0,63	0,4	0,63	0,4
Length (mm)	110…190				260	260	300
Connections	Threads 3/4"gas for all lengths DN15 7/8" Inlet 3/4" outlet gas for length 115mm DN15 1"gas for all lengths DN20 except L=154 mm : 1,28" gas				1"1/4 gas	1"1/4; 1"1/2 gas	2" gas
Maximum admissible pressure (bar)	16						
Water temperature range	0,1°C … 70°C						
Indicating range (m^3)	99999999 or 99999999,9 or 9999999,9 or 9999999,99 or 999999,99 or 999999,999 or 99999,999 or 99999,9999 or 9999,9999						
Verification scale interval (dm^3)	0,001						
Minimum test mode resolution (cm^3)	7	7	10	12	31		48
Reverse flow measurement**	no						
Power supply	Battery / limit of DC supply: 3V;4V / Lifetime 15 years						
Metrological firmware identification Version / Checksum	09-13 / 0xBF22 for RF version 05-09 / 0xDA5D for Mbus version 02-02 / 0x698F for Wireless Mbus version 03-05 / 0xA274 for Intelis Wireless Mbus (T2/C2) 01-01 / 0x8056 for Intelis Pulse version 01-01 / 0x9D10 for Intelis Encoder version						
Climatic environment	-25°C…+70°C (with water condensation)						
Mechanical class	M1						
Electromagnetic influence class	E2 except Pulse and Encoder versions in E1 only						
Flow profile sensitivity class	U0D0						

*For a given nominal flowrate (Q_3) values of Q_3/Q_1 lower than those listed in the table above are permitted. However, values of this ratio cannot be below 40.

**The water meter is not designed to measure reverse flow but can withstand a reverse flow without any deterioration or change in metrological properties.

***Insert Model is defined in the part A document D7015900

Annex to EU design examination certificate n° LNE-25269 rev.16

Indicating device	Glass-metal			
Version	Linear			
Nominal diameter (DN)	DN50			
Model***	Insert DN40			
Permanent flowrate Q_3 (m^3/h)	16		25	
Q_3/Q_1 *	400	250	630	400
Q_2/Q_1	1,6			
Position	All positions			
Pressure loss at Q_3 (bar)	0,25		0,63	
Length (mm)	270 or 300			
Connections	G 2"1/2 or mobile flanges			
Maximum admissible pressure (bar)	16			
Water temperature range	0,1°C … 50°C	0,1°C … 70°C	0,1°C … 50°C	0,1°C … 70°C
Indicating range (m^3)	99999999 or 99999999,9 or 9999999,9 or 9999999,99 or 999999,99 or 999999,999 or 99999,999 or 99999,9999 or 9999,9999			
Verification scale interval (dm^3)	0,001			
Minimum test mode resolution (cm^3)	75			
Reverse flow measurement**	no			
Power supply	Battery / limit of DC supply: 3V;4V / Lifetime 15 years			
Metrological firmware identification Version / Checksum	09-13 / 0xBF22 for RF version 05-09 / 0xDA5D for Mbus version 02-02 / 0x698F for Wireless Mbus version 03-05 / 0xA274 for Intelis Wireless Mbus (T2/C2) 01-01 / 0x8056 for Intelis Pulse version 01-01 / 0x9D10 for Intelis Encoder version			
Climatic environment	-25°C…+70°C (with water condensation)			
Mechanical class	M1			
Electromagnetic influence class	E2 except Pulse and Encoder versions in E1 only			
Flow profile sensitivity class	U0D0			

*For a given nominal flowrate (Q_3) values of Q_3/Q_1 lower than those listed in the table above are permitted. However, values of this ratio cannot be below 40.

**The water meter is not designed to measure reverse flow but can withstand a reverse flow without any deterioration or change in metrological properties.

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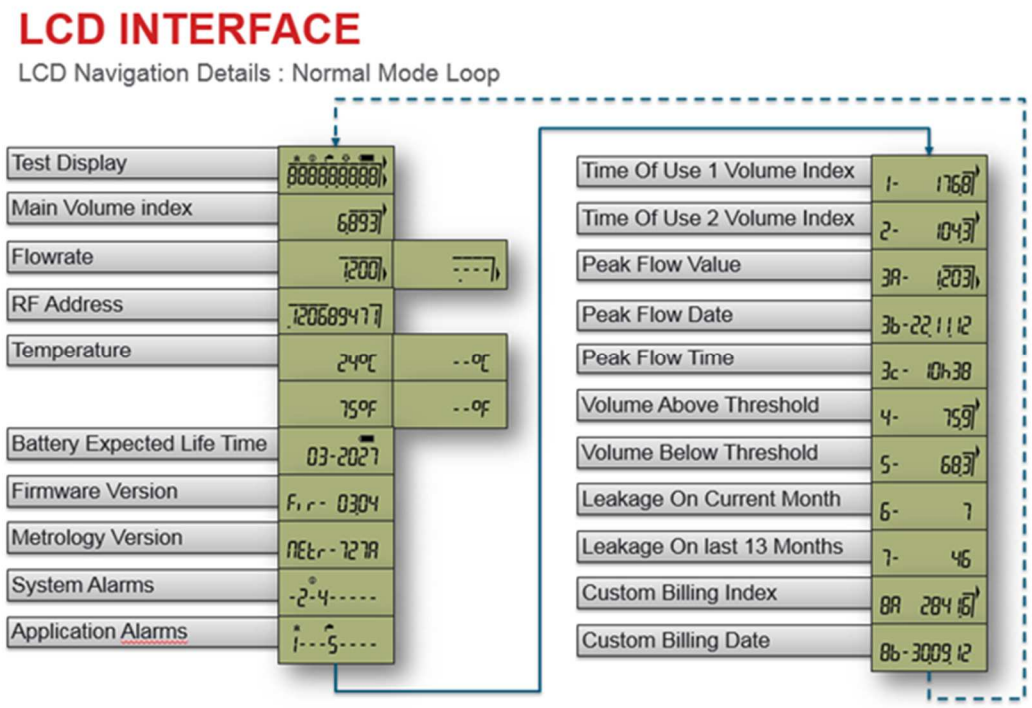
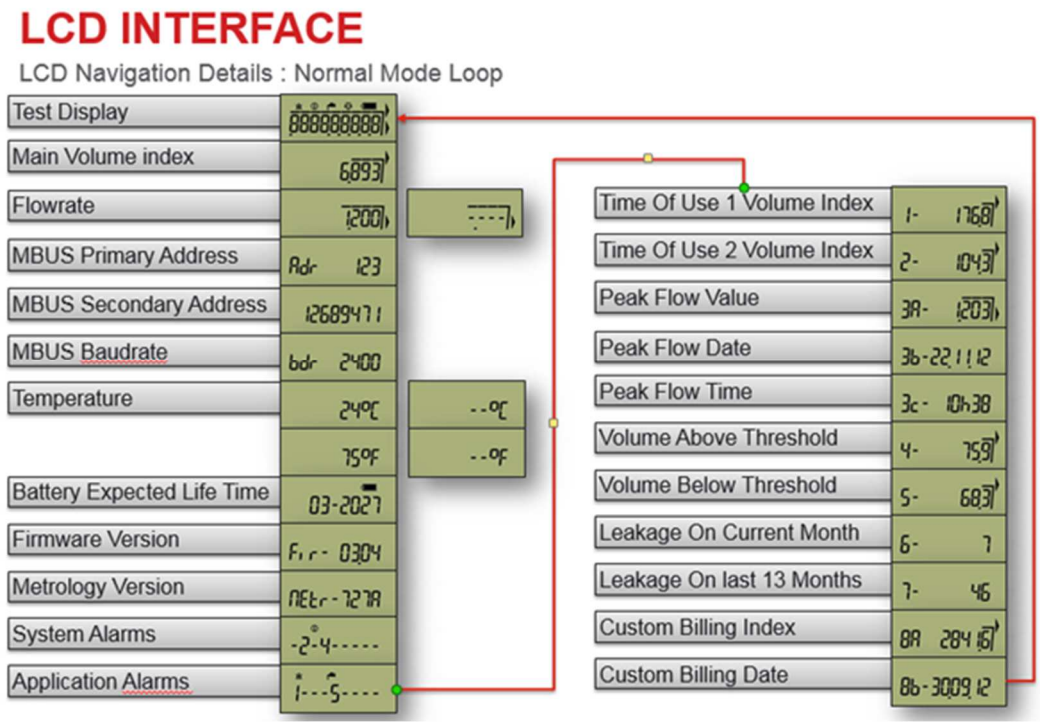
Annex to EU design examination certificate n° LNE-25269 rev.16

Information to be included in the type examination certificate according Welmec guide 7.2 issue 5 § 12.4

Reference to the documentation submitted for type examination	Intelis Wireless M-Bus OMS - Approval Description File - D7014988 – 30/11/2017 §7 D7015900-AC
Identification and description of the electronic (hardware) parts (subassemblies, modules) that are important for software/IT function of the measuring instruments	Information about microcontroller : EFM32LG Reference Manual D7015900-AC
Overview of the software environment, which is necessary to operate the software,	Intelis Wireless M-Bus OMS - Approval Description File - D7014988 – 30/11/2017 §7
Overview of SW modules under legal control (including SW separation, if implemented)	Intelis Wireless M-Bus OMS - Approval Description File - D7014988 – 30/11/2017 §7 + complentary document « Evolution Métrologique Intelis 9 août 2017 »
Overview and identification of hardware and software (if relevant) interfaces that are important for software / IT functions of the measuring instruments (including infrared, Blue tooth, Wireless LAN,...),	Not applicable
Identification and description of locations of software parts in the measuring instrument (i.e. EPROM, processor, hard disk, ...) that need to be sealed or secured,	Intelis Wireless M-Bus OMS - Approval Description File - D7014988 – 30/11/2017 §7
Instructions of how to check the identification of software (for metrological supervision),	D7014086-AA-PartA_Complement_Display_Management_X61 The display is activated when the lid position change from close to open. Display sequence is as described by figure 3
In case of electronic sealing: instruction for the inspection of audit trails	Logging of parameter intentional changes (See D7012236-AF-Approval_Description_File_X61 and D7014086-AA-PartA_Complement_Display_Management_X61



RF versions



M-Bus version

Figure 3 : LCD navigation

All screens except Test display and main volume index can be activated / de-activated in factory and on field through an Itron specific software tool.
For verification purpose, the identification screens (Battery lifetime / Firmware version / Metrology checksum) can be activated and de-activated on command through the specific Itron tool.
In addition, information related to firmware version and battery lifetime is written on the top cover of the meter and/or on the display.

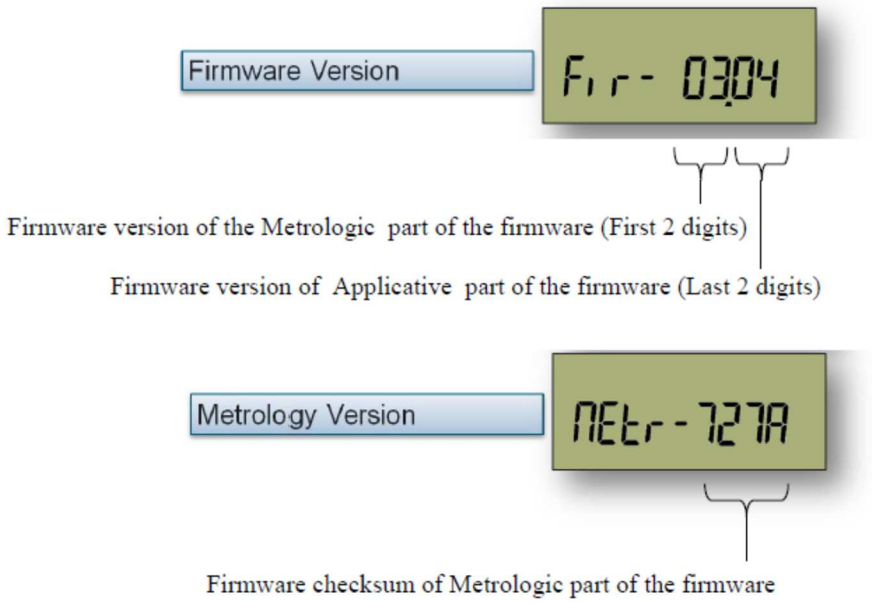


Figure 4 : software identification checking

Interfaces and compatibility conditions

Communication interfaces are outside the scope of this certificate
Cables used for communication purpose must have a 150 cm length maximum.

RF, M-Bus, WM-Bus, Pulse, Encoder communication:

Dedicated to communicate with the meter on field. It allows having access only to the applicative settings or data. It doesn't give access to any metrological settings.

Inductive communication:

- Used in production for calibration and settings (Metrologic and applicative).
- Used by certified laboratory to do maintenance.
- Used by end user to switch the meter in test mode.
- In case of maintenance (recalibration), a specific software managing password and identification will be provided by Itron. This software will also manage the change log inside the meter including the Laboratory identification. The laboratory identification will be managed by the software licensing provided by Itron. In addition, this software will be utilized for the following operations on field :
    - Activate/deactivate screens on field.
    - In particular, activation of legal screens on request (battery expected life time, firmware version, metrology checksum).
    - Battery replacement management.

Optical LED

The optical LED is activated only in test mode. It is dedicated to connect the X61 to the Metrological test bench using a specific interface.

Particular requirements on verification

See § 9.2 of EN 14154-1:2005+A2:2011

Security and sealing

The meter is fitted with 2 seals as shown on the picture below.
The meter cannot be disassembled without removing the seals.

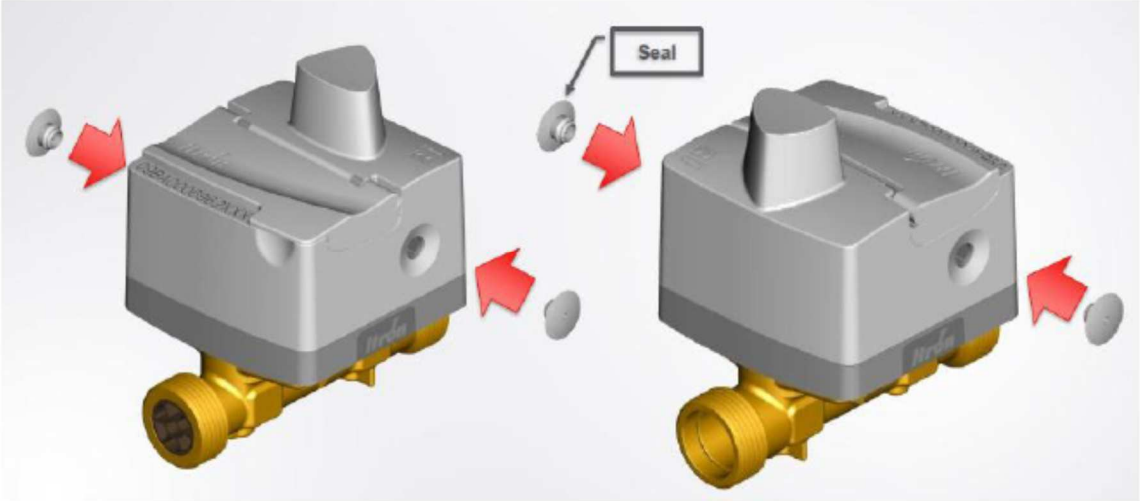


Figure 5 : sealing

Marks and inscriptions

The meter will be clearly and indelibly marked with the following information. The positioning of the marks is not contractual.

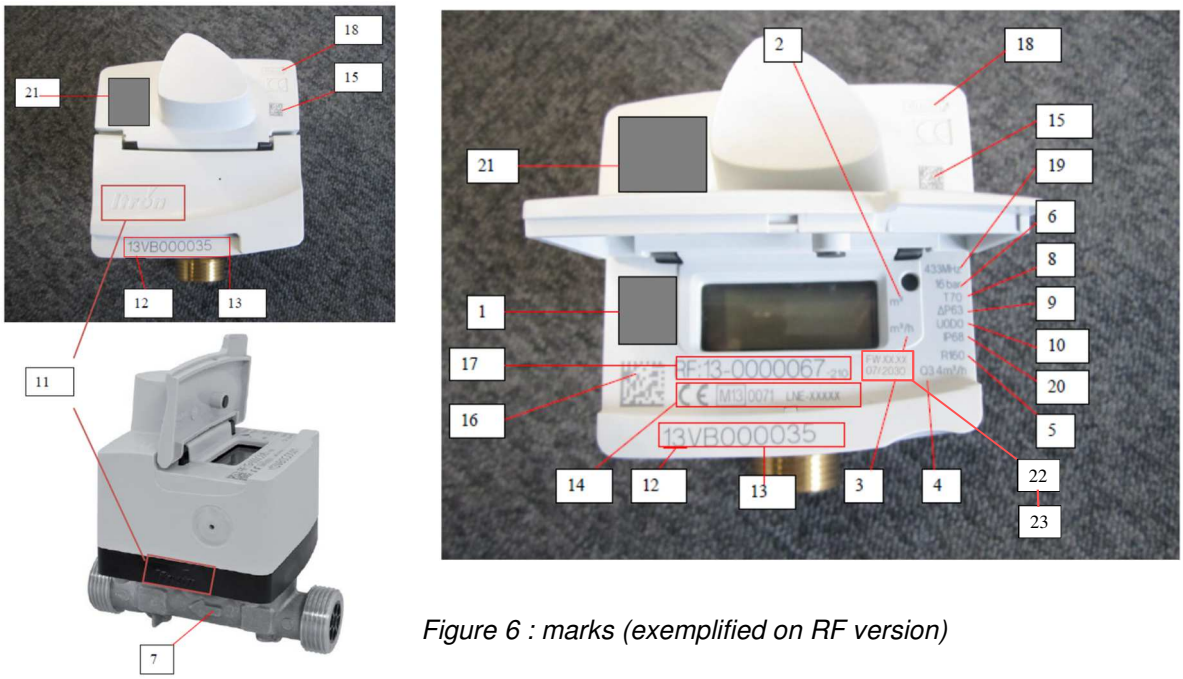


Figure 6 : marks (exemplified on RF version)

Item n°	Meaning
1	Customer logo or trade name
2	Volume unit
3	Flow unit
4	The numerical value of Q_3
5	The ratio Q_3/Q_1, (preceded by "R", i.e. "R160");
6	The maximum admissible pressure if it differs from 1 MPa (10 bar) ;
7	Direction of flow (shown on both sides of the body; or on one side only provided the direction of flow arrow will be easily visible under all circumstances);
8	The temperature class, where it differs from T30;
9	Pressure loss class, where it differs from $\Delta P\ 63$;
10	Flow profile sensitivity class
11	The name or trademark of the manufacturer
12	Year of manufacture (last 2 digits)
13	Serial number (as near as possible to the indicating device);
14	CE marking according 2014/32/EU article 22
15	2D bar code for production
16	1D or 2D bar code customer
17	X61 RF: RF address X61 mBus: MBus address including encryption symbol (Option) X61 Pulse: Not used X61 Encoder : Not used
18	Lithium battery sign
19	X61 RF: Radio frequency X61 mBus: not used X61 Pulse: Pulse weight X61 Encoder : Not used
20	IP level
21	Trade name or customer logo
22	Firmware version identification (could be on display)
23	Battery lifetime (could be on display)

Annex to EU design examination certificate n° LNE-25269 rev.16

Revision summary

Revision	Date	Object
LNE- 25269 rev 0	22/04/2013	Initial certification
LNE- 25269 rev 1	23/05/2014	Software modification
LNE- 25269 rev 2	25/07/2014	Mbus version
LNE-25269 rev 3	27/08/2015	New RF version and Software modification
LNE-25269 rev 4	10/03/2017	Software modification Introduction of DN 25, DN 32 and DN40
LNE-25269 rev 5	13/06/2017	Wireless Mbus version
LNE-25269 rev 6	10/08/2017	Software modification (backflow) Add of Q_3=1,6 with R 250 for DN15/20 Wireless Mbus checksum value correction
LNE-25269 rev 7	24/10/2017	Introduction of DN 50
LNE-25269 rev 8	08/12/2017	Wireless Mbus (T2/C2)
LNE-25269 rev 9	24/05/2018	Pulse version
LNE-25269 rev 10	19/11/2018	Editorial correction
LNE-25269 rev 11	05/04/2019	Pulse weight modification
LNE-25269 rev 12	01/08/2019	Encoder version and software modification Add of body length 270 mm
LNE-25269 rev 13	06/08/2019	Cancels and replaces previous version : editorial modification on software version DN50 pulse
LNE-25269 rev 14	07/08/2019	Cancels and replaces previous version : editorial modification on software version DN50 Wireless Mbus (T2/C2)
LNE-25269 rev 15	28/01/2020	Add Q_3=16m^3/h for DN50
LNE-25269 rev.16	15/03/2023	Renewal