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 - 19864 rév. 1 du 13 octobre 2020

Renouvelle le certificat 19864-0

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 ITALIA S.p.A - Strada Valcossera, 16
Mandataire **Authorized**	:	
Concernant **In respect of**	:	single jet water meter ITRON type TU1M20 intended for the measurement of cold water in the field of residential and commercial use
Caractéristiques **Characteristics**	:	Les principales caractéristiques de la conception approuvée figurent dans l'annexe ci-jointe qui fait partie intégrante du certificat et comprend 8 page(s). Tous les plans, schémas et notices sont déposés au Laboratoire national de métrologie et d'essais sous la référence de dossier P200491 . The principal characteristics of the approved design are set out in the appendix hereto, which forms part of the approval documents and consists of 8 page(s). All the plans, shematic diagrams and documentations are recorded by Laboratoire national de métrologie et d'essais under reference file P200491 .
Valable jusqu'au **Valid until**	:	12 octobre 2030 October 12th, 2030

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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Pour le Directeur Général
On behalf of the General Director

Laboratoire national de métrologie et d'essais

Signature numérique de STEPHANE GENEAU DE LAMARLIERE ID

Responsable du Département Certification Instrumentation
Head of the Instrumentation Certification Department

CIM7-V8-05-2019

Annex to EU design examination certificate n° LNE- 19864 rév.1

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

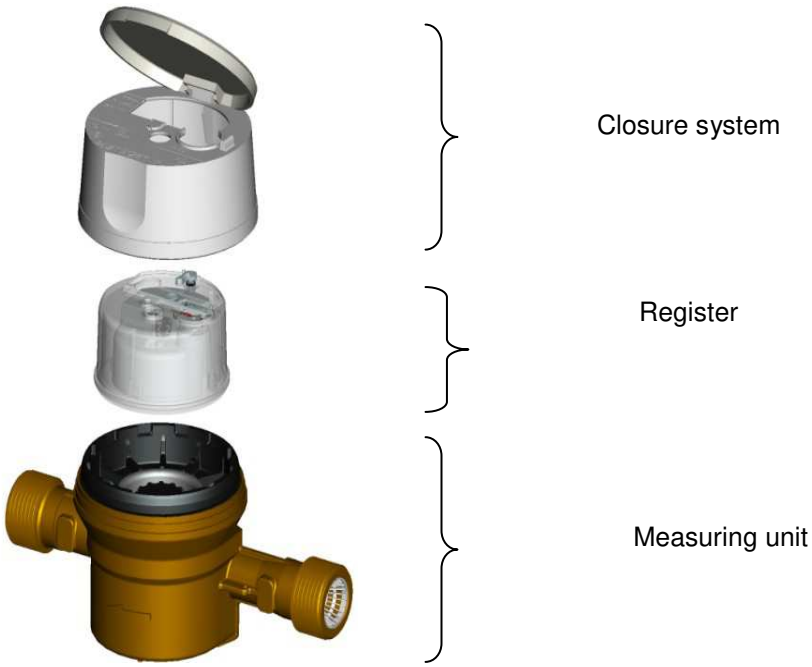
Description

The measurement instrument ITRON type TU1M20 is a mechanical water meter with dry register and direct magnetic drive. This meter is intended for the measurement of clean water in the field of a residential and commercial use.

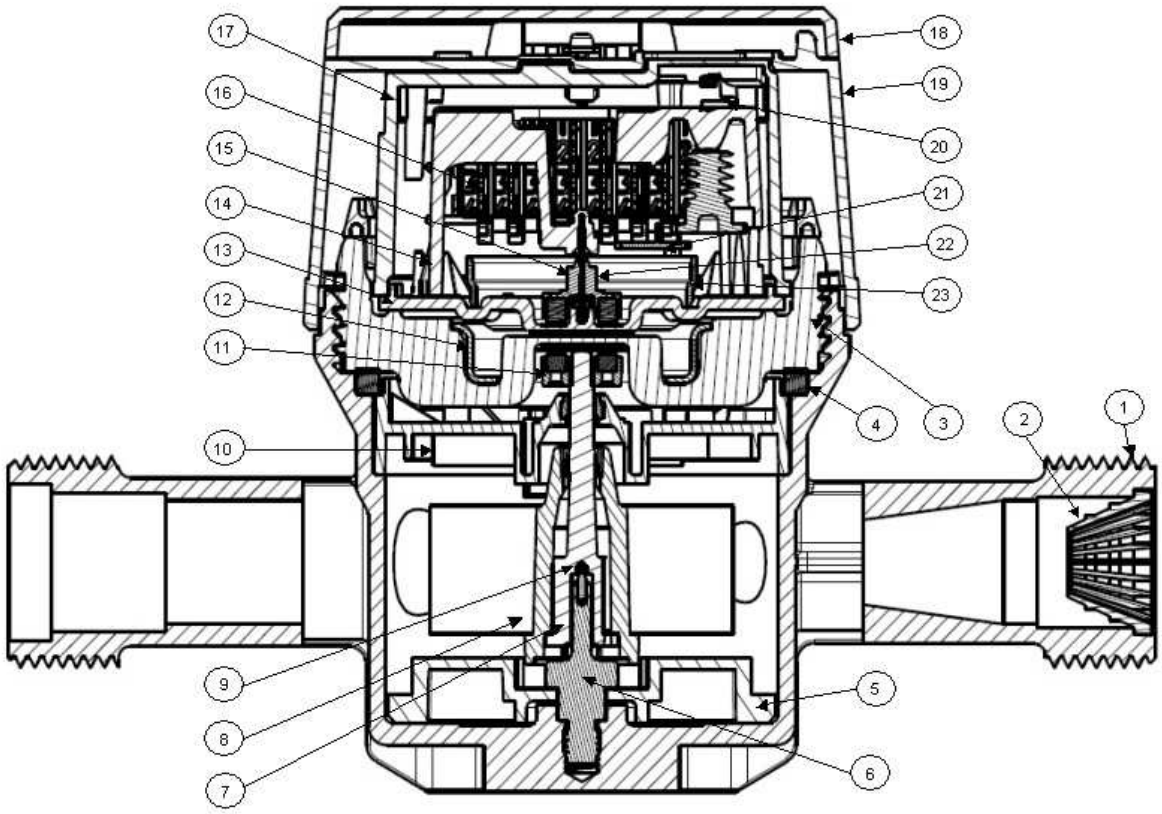
It includes the following main subsets :

- A measuring unit
- An indicator device
- A closure system

The meter can be assembled in several configurations, with the same measuring unit, while register and closure system can change.



TU1M20 main subsets



Measuring unit

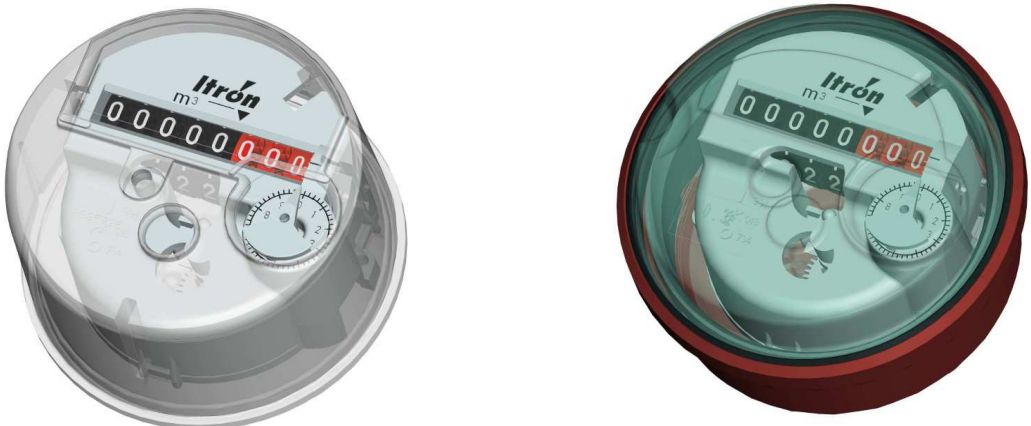
The Measuring Unit is directly in contact with the water. It consists of :

- A metallic body (1) with two threaded pipes for the connection to mains water supply. On each side of the body an arrow indicates the water flow direction.
- A plastic filter (2) lodged in the inlet pipe of the body.
- A composite threaded pressure plate (3).
- A gasket (4) placed between the body and the pressure plate ensures the tightness.
- A lower plate (5) fixed at the body thanks to the central metal pivot (6).
- A turbine composed by a bushing (7), the blades (8) and a stone (9).
- An upper plate (10) guides the turbine rotation.
- A magnet (11) mounted on the upper level of the turbine axis.
- A metallic ring (12)

Register

The register consists of a watertight case that can be made in transparent plastic (TSN type) or glass and metal (type TVM).
The indicating device is orientable on site and it is protected by a cap. It consists of :

- A base (13) and an intermediate plate (14) between which is disposed the train of transmission (15)
- A drum of rollers (16) plus a needle (19) to display the volume of water flowed through the meter. The needle also allows communication with an automatic reading device.
- A transparent upper part (17). It is in plastic for TSN and mineral glass for TVM. The register TSN can be equipped with an optional wiper
- A star (21) with 3 or 10 branches on the second mobile for the initial verification
- One or more metal rings (23)



TSN **TVM**

View of the compatible registers

Closure system

The cap (19) closes and seals the meter and it can be equipped with a lid (18).There is also a repairable version.
The meter can be interfaced with a communication module. This feature is not covered by this certificate.

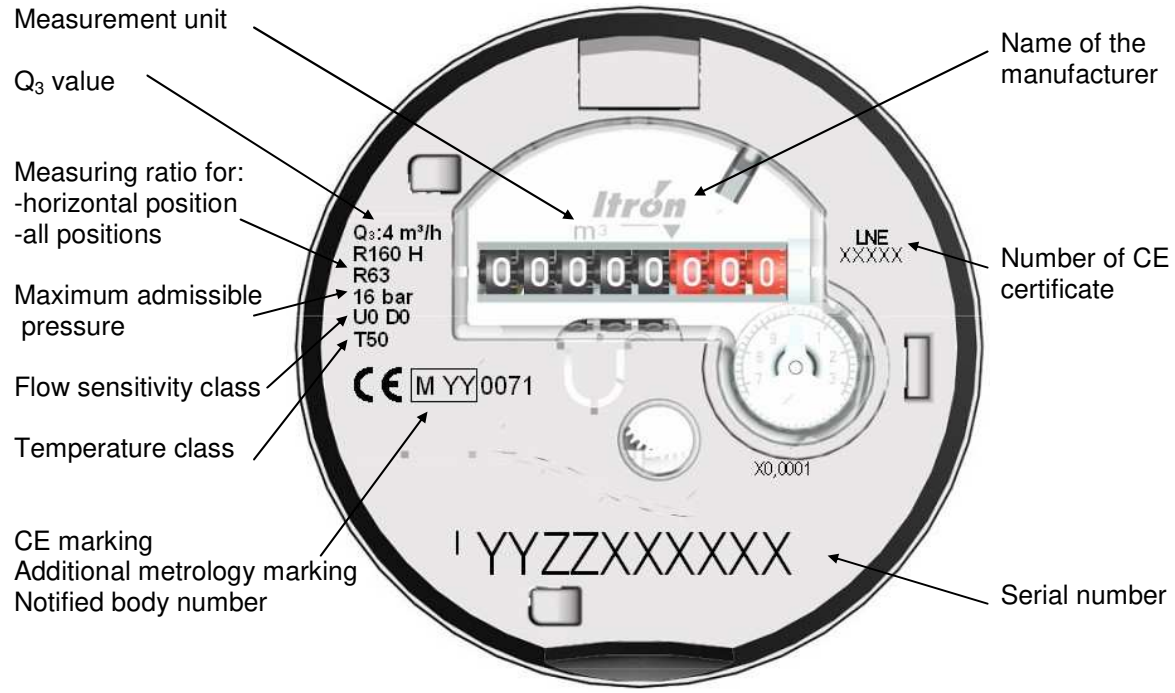
The volume stored remains readable despite the presence of the module..

Meter not equipped

Meter equipped with communication module

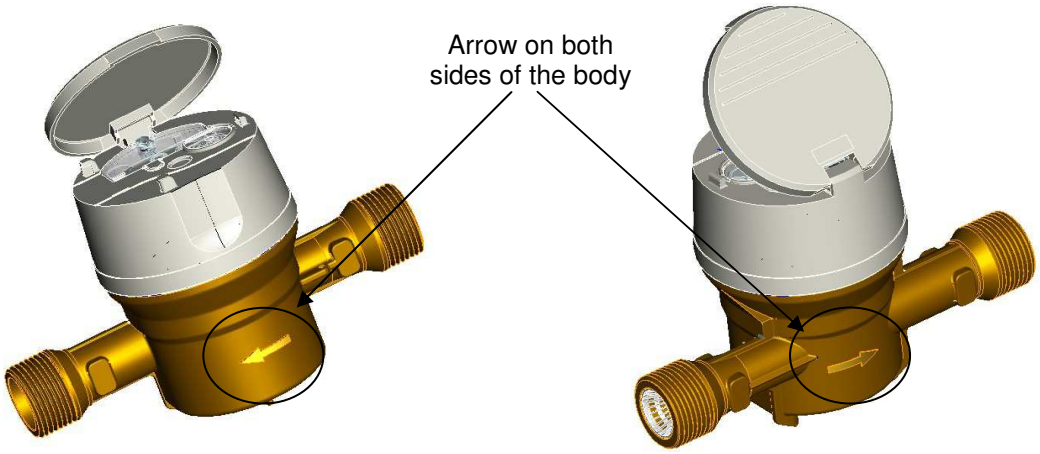
Markings

Example of markings :



Marking scheme Sealing type A

Arrows located on both sides of the body indicate flow direction.



Direction of flow

Characteristics

Indicating device	Glass metal (TVM) or plastic (TSN)			
Version	In line			
Nominal Diameter	20			
Permanent flowrate Q_3 (m^3/h)	2,5		4,0	
Overload flowrate Q_4 (m^3/h)	3,125		5,0	
Position	Horizontal	Vertical	Horizontal	Vertical
Q_3/Q_1 *	100	40	160	63
Q_2/Q_1	1,6			
Maximal pressure loss at Q_3 (bar)	0,25		0,63	
Length (mm)	130…190			
Connections	Male threads G 1”			
Maximum Admissible Pressure (bar)	16			
Water temperature range	0,1°C…50°C			
Indicating range (m^3)	99.999,99995 or 99.999,99998			
Verification scale interval (dm^3)	0,02 or 0,05			
Cyclical volume (cm^3)	65			
Climatic environment	-10°C … +70°C			
Mechanical environment class	N/A			
Electromagnetic influence class	N/A			
**Reverse flow measurement ** **	No			

* For a given nominal flowrate (Q_3) values of Q_3/Q_1 lower than those listed in the table above are permitted. However the values of this ratio cannot be below 10.

** This meter is not designed to measure reverse flow but can withstand accidental reverse flow without deterioration or change in its metrological properties for forward flow.

Interfaces and compatibility conditions

Possible interface with the communication modules for automated meter reading. This feature is not covered by this certificate.

Particular requirements on production

N/A

Particular requirements on putting into use

The clean cold water meter ITRON type TU1M20 does not require a straight length at the inlet or at the outlet, neither a straightener.

Particular requirements on use

See measuring range in the table of characteristics

Particular requirements on inspection / verification

The clean cold water meter ITRON type TU1M20 must be tested in horizontal position, at a water temperature within 10 °C and 30 °C.

Static pressure test

A test shall be performed, the results of which are capable of demonstrating leakproof performance, equivalent to an applied pressure of at least 1,6 time the maximum admissible pressure for one minute.

Error (of indication) measurements

between Q_1 and 1,1 x Q_1 : ± 5%,

between Q_2 and 1,1 x Q_2 : ± 2%,

between 0,9 x Q_3 and Q_3 : ± 2%.

The tested flowrates must match the Q_3, Q_3/Q_1 and Q_2/Q_1 values displayed on the water meter ITRON type TU1M20.

The testing condition shall meet the clauses described in the harmonized standard EN 14154-1: 2005+A1 §9.2

If all the errors (of indication) of the water meter have the same sign, at least one of the errors shall not exceed one half of the maximum permissible error.

Security and sealing

The meter is sealed by a clipping system that prevent from any fraud attempted. Two sealing system are possible.

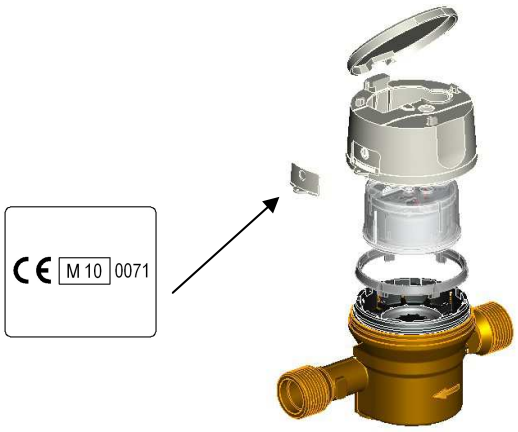
Sealing type A – Standard version

The meter is sealed by the cap. The cap is clipped on the meter's body, preventing from any disassembly. It cannot be removed without destroying it.
Sealing marking are indelibly reported on the cap.

Sealing type A

Sealing type B – Repairable version

The repairable version is equipped with one sealing clip, whose central part is broken by removal. The clip seal may be reintroduced and sealed by a sealing label, or replaced by a new marked clip.



Sealing type B

Revision history

Revision number	Date	Revision purpose
0	13/10/2010	Initial certification
1	13/10/2020	Certificate renewal