



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 14/3/27

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Itron Model Flostar M DN40 (TU1 40) Water Meter

submitted by Itron Australasia Pty Ltd
8 Rosberg Road
Wingfield SA 5013

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 49-1 Water Meters Intended for the Metering of Cold Potable Water and Hot Water, *Part 1 Metrological and Technical Requirements*, dated May 2022.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	26/08/14
1	Pattern & variant 1 approved – certificate issued	13/02/15
2	Pattern & variant 1 reviewed – certificate issued	15/07/19
3	Variant 2 approved – certificate issued	08/12/23
4	Pattern amended, Variant 3 approved, Figure 3 amended – certificate issued	11/09/24

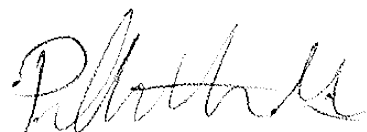
CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/27' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.



Phillip Mitchell
Acting Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/3/27

1. Description of Pattern

**approved on 26/08/14
amended on 11/09/24**

An Itron model Flostar M DN40 (TU1 40) water meter intended for the metering of cold potable water supplies for trade.

1.1 Field of Operation

The field of operation of the measuring system using the Itron model Flostar M DN40 (TU1 40) water meter is determined by the following characteristics:

Minimum flow rate, Q ₁ :	0.10 m ³ /h
Transition flow rate, Q ₂ :	0.16 m ³ /h
Maximum continuous flow rate, Q ₃ :	16.00 m ³ /h
Overload flow rate, Q ₄ :	20.00 m ³ /h
Flow rate ratio, Q ₃ /Q ₁ :	160
Maximum admissible temperature:	30 °C
Limiting condition (water temperature):	50 °C
Maximum admissible pressure:	1600 kPa
Pressure loss class:	Δp 63
Accuracy class:	2
Flow profile sensitivity class:	U0/D0
Environmental class:	B/O
Orientation:	Horizontal only
Flow Direction:	Forward only

1.2 Features/Functions

The pattern (Figure 1) consists of an inferential single jet turbine class 2 water meter of a size which is normally connected to a 40 mm pipe and is approved for metering potable domestic water supplies:

Connection type:	Flanged end connections as per AS 3565.1.
Display:	The meter incorporates a mechanical indicating device having a series of eight aligned digits giving a maximum display of 999999.999 m ³ in 0.001 m ³ increments
Materials:	Meter body: brass Indicating device: Composite material Meter length: 232 mm
Non-return device:	Single check valve (optional)

An optional strainer may also be fitted.

1.3 Conditions

1.3.1 Installation Conditions:

The flow profile sensitivity class is U0/D0 (Accuracy Class 2).

1.3.2 Water Quality

The meter is approved for use in the metering of potable water supplies.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

Provision is made for the instrument to be sealed by the use of a lead or plastic seal on an access screw as shown in Figure 2 such that attempts to mechanically access the meter will result in evidence of tampering.

1.7 Descriptive Markings and Notices

Instruments are marked with the following data, either grouped or distributed on the casing, the indicating device dial or an identification plate (Figure 3):

Manufacturer's name or mark	...
Serial number	...
Pattern approval number	NMI 14/3/27
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	...
Unit of measurement	m^3
Maximum admissible pressure ⁽¹⁾	1600 kPa
Maximum pressure loss ⁽²⁾	63 kPa or Δp 63
Maximum admissible temperature ⁽³⁾	T30
Orientation ⁽⁴⁾	H
Flow profile sensitive class ⁽⁵⁾	U0/D0
Direction of flow	→ or similar
Accuracy class ⁽⁶⁾	2

⁽¹⁾ Optional for meters with MAP = 1400 kPa

⁽²⁾ Optional for class Δp 63

⁽³⁾ Optional for T30 meters

⁽⁴⁾ Optional for meters approved for all orientations

⁽⁵⁾ Optional for U0/D0 class meters

⁽⁶⁾ Optional for class 2 meters

2. Description of Variant 1 approved on 26/08/14

The meter may be fitted with G 2" male thread end connections.

3. Description of Variant 2 approved on 08/12/23

The pattern and variants are approved with low-lead brass as an alternative material for the meter body.

4. Description of Variant 3

approved on 11/09/24

An Itron model Flostar M DN50 (TU1 50) water meter which has the same features and functions as the pattern except with a DN50 meter size and the flow rates and associated characteristics as specified in Table 1 below.

Table 1 – DN50 meter size, flowrates and associated characteristics

Minimum flowrate Q ₁ (m ³ /h)	0.079
Transitional flowrate Q ₂ (m ³ /h)	0.127
Maximum continuous flowrate Q ₃ (m ³ /h)	25
Overload flowrate Q ₄ (m ³ /h)	31.25
Ratio Q ₃ /Q ₁	315
Meter Length (mm)	300 or 311
End connection type	Flanged
Orientation	Horizontal (indicator on top)

TEST PROCEDURE No 14/3/27

Water meters tested for verification shall comply with the Certificate of Approval, Technical Schedule, and the maximum permissible errors for verifications at the operating conditions in effect at the time of verification. Maximum permissible errors for the verification of water meters are given in the *National Trade Measurement Regulations 2009* (Cth).

Water meters shall be verified in accordance with the following National Instrument Test Procedures:

- NITP 14.0 – Utility meters – general requirements
- NITP 14.3 – Utility meters – water meters

NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/3/27 – 1



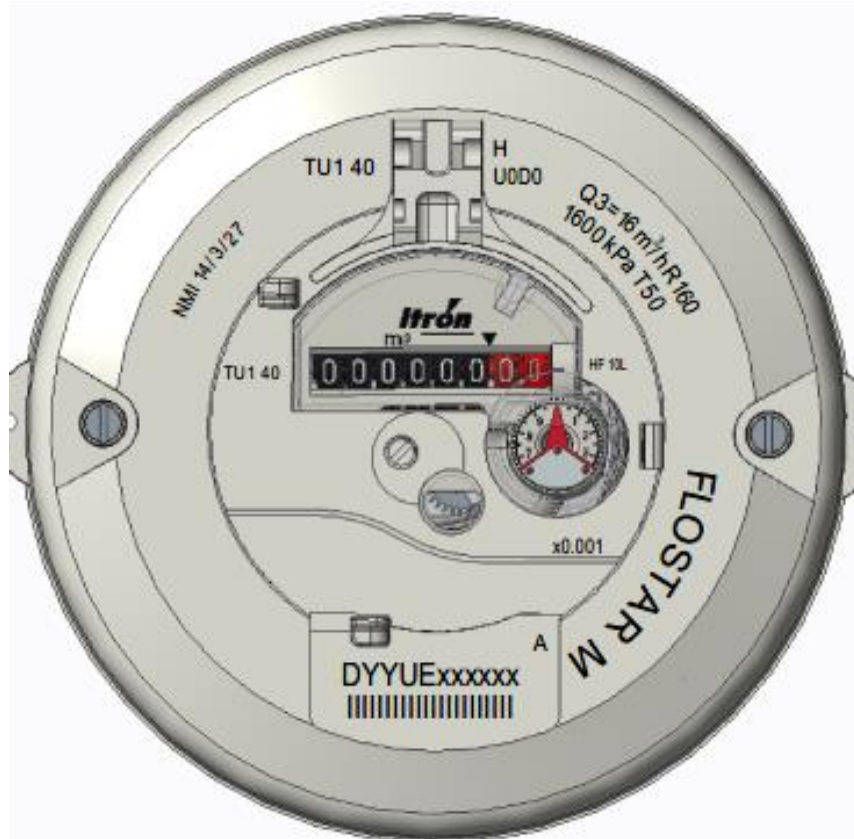
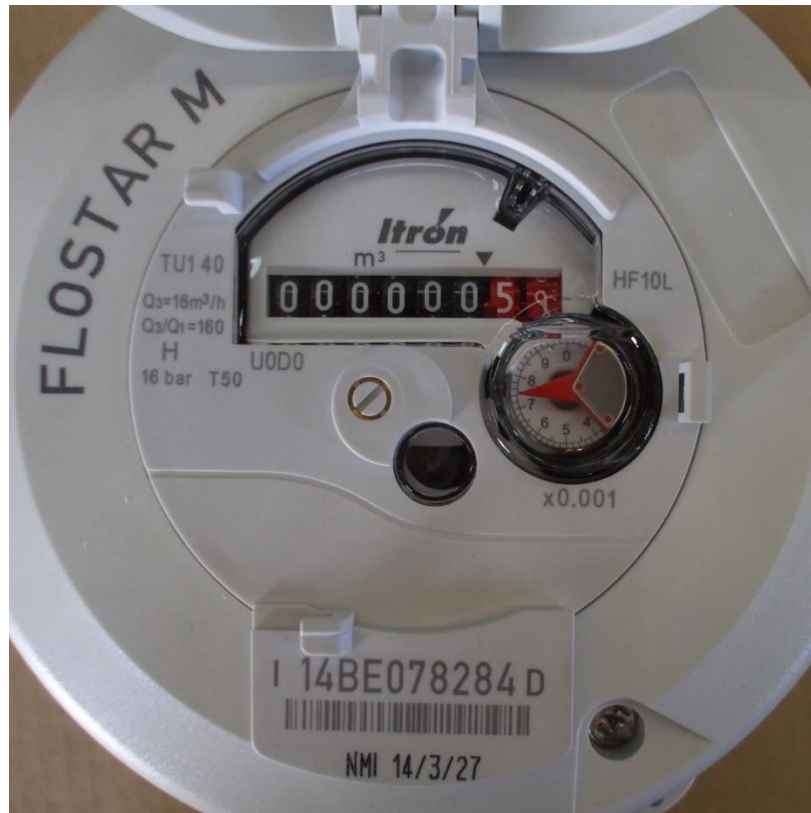
Itron Model Flostar M DN40 Water Meter (The Pattern)

FIGURE 14/3/27 – 2



Typical Sealing Arrangement

FIGURE 14/3/27 – 3



Examples of markings

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