



Australian Government
**Department of Industry,
Science and Resources**

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 14/3/72

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.

Ultrasonic Smart Water Meter Type WM1 Model W370

submitted by Landis & Gyr Pty Ltd
50 Cyanamid Street
Laverton North VIC 3026
Australia

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 – certificate issued	12/08/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/72' 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*.



Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 14/3/72

1. Description of Pattern **approved on 12/08/24**

A DN20 sized Ultrasonic Smart Water Meter Type WM1 Model W370 used to measure cold potable water supplies for trade.

1.1 Field of Operation

The field of operation of the measuring system using the Ultrasonic Smart Water Meter Type WM1 Model W370 is determined by the following characteristics:

Minimum flow rate, Q_1 :	0.0160 m ³ /h
Transition flow rate, Q_2 :	0.0256 m ³ /h
Maximum continuous flow rate, Q_3 :	4.0 m ³ /h
Overload flow rate, Q_4 :	5.0 m ³ /h
Flow rate ratio, Q_3/Q_1 :	250
Temperature class:	T50
Maximum admissible temperature:	50 °C
Maximum admissible pressure:	1600 kPa
Pressure loss class:	Δp 63
Accuracy class:	2
Flow profile sensitivity class:	U0/D0
Electromagnetic class:	E1 (residential, commercial & light industrial)
Environmental class:	O (outdoors)
Orientation:	All positions
Flow Direction:	Forward only
Power supply:	Non-replaceable battery 3.6 V

1.2 Features/Functions

The pattern (Figure 1) consists of an ultrasonic flow sensor, a flow computer electronic indicating device and has features/functions as listed below:

- Connection type: Threaded end connections (G1 DN20)
- Display: A digital, electronic, liquid crystal display (Figure 2) allowing for a maximum indication range of 99999.999 kL.
The meter can be placed into a test mode, providing a verification scale interval of 0.001 L
- Communications⁽¹⁾: NB-IoT(NB1&NB2) to Australian Requirements, Band 3, 5, 8 and 28 (Quectel BC660K-GL modem), e-sim 5x6mm, Supports OMA LwM2M protocol
- Materials: Flow tube and end connections: lead-free brass
Meter housing: composite material
- Meter length: 154 mm
- Non-return device(s): Dual check valves

⁽¹⁾ The pattern and variants may be fitted and/or configured with the communication options listed in this Certificate. However, the primary indication of volume displayed by the indicating device of the meter is the approved indication of volume.

1.3 Conditions

1.3.1 Installation Conditions

For Accuracy Class 2 (NMI R 49-1) the flow profile sensitivity class is U0/D0.

1.3.2 Water Quality

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

1.4 Software Version

The meter is approved with the software version 30.01

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

The meter is mechanically sealed (Figure 3) by way of ultrasonically welding the two housings together. Any attempt to access to the internal workings of the meter would result in physical damage to the meter housing, providing evidence of tampering.

The meter is electronically sealed following calibration. The meter employs electronic protection devices and event logs.

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 2):

Manufacturer's name or mark	...
Serial number	...
Pattern approval number	NMI 14/3/72
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	250
Unit of measurement	m^3
Temperature class ⁽¹⁾	T50
Maximum admissible pressure ⁽²⁾	1600 kPa
Pressure loss class ⁽³⁾	63 kPa or Δp 63
Orientation ⁽⁴⁾	...
Flow profile sensitive class ⁽⁵⁾	U0/D0
Direction of flow	→ or similar
Accuracy class ⁽⁶⁾	2

⁽¹⁾ Optional for temperature class T30 meters

⁽²⁾ Optional for meters with MAP = 1400 kPa

⁽³⁾ Optional for pressure loss class Δp 63

⁽⁴⁾ Optional for meters approved for all orientations

⁽⁵⁾ Optional for U0/D0 class meters and accuracy class 2.5 meters

⁽⁶⁾ Optional for accuracy class 2 meters

For instruments that incorporate electronic devices, the following information can either be physically marked on the instrument or provided electronically via the indicating device or similar means:

Electromagnetic class	E1
Environmental class	O
For battery powered meters	a replacement date or similar indication of expected battery life

2. Description of Variant 1

approved on 12/08/24

The pattern and variants may be fitted with a leak sensor and vibration sensor (Figure 4).

TEST PROCEDURE No 14/3/72

Water meters tested for verification shall comply with the Certificate of Approval, Technical Schedule, and the maximum permissible errors for verification 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 14/3/72 – 1



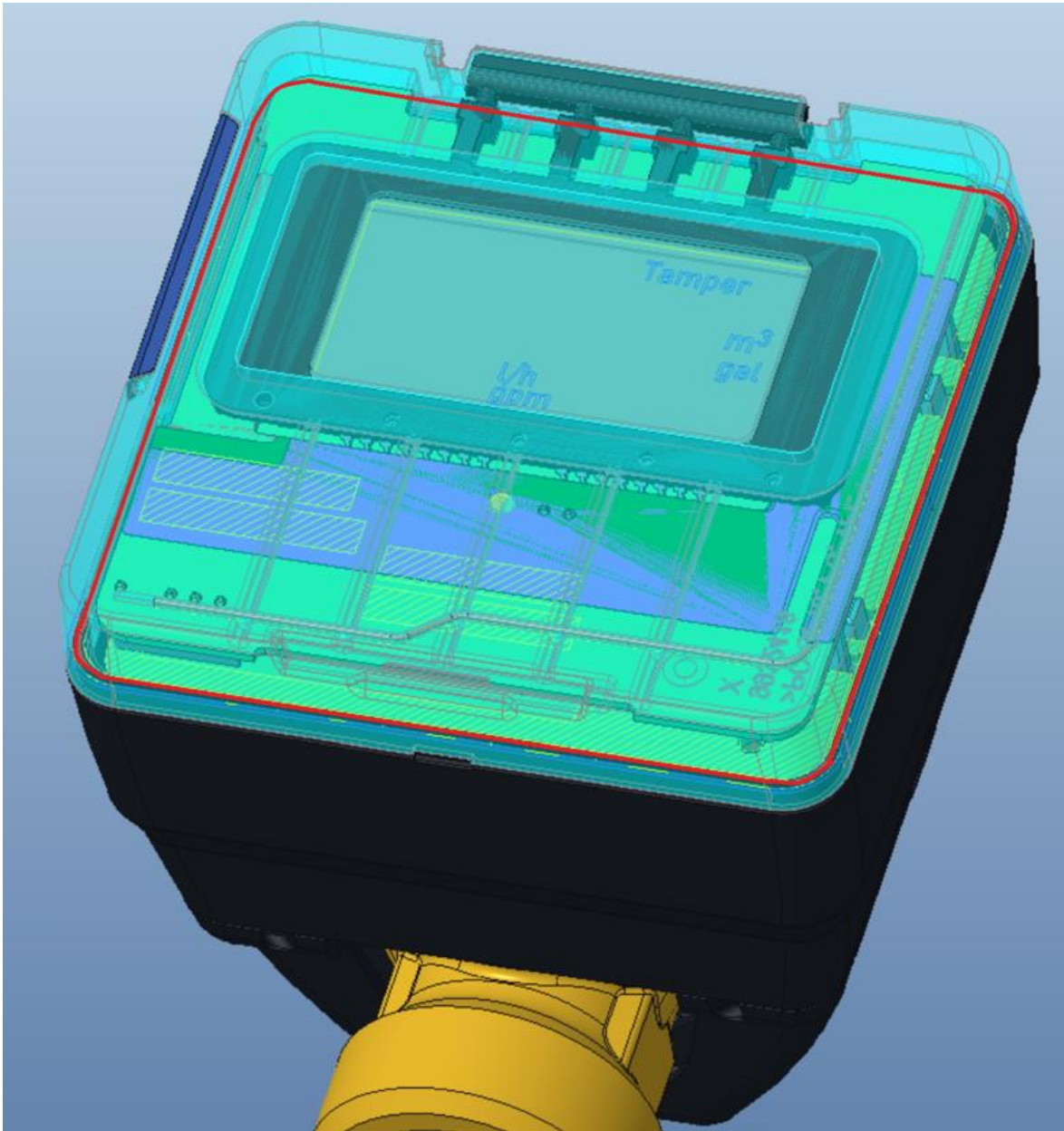
Ultrasonic Smart Water Meter Type WM1 Model W370 – the Pattern

FIGURE 14/3/72 – 2



The indicating device and required markings

FIGURE 14/3/72 – 3



The meter is mechanically sealed via ultrasonic welding of the two housings; shown as the red line.

FIGURE 14/3/72 – 4



The meter incorporating the leak and vibration sensors – Variant 1

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