



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Provisional Certificate of Approval
NMI P14/3/80**

VALID FOR VERIFICATION PURPOSES UNTIL 31 DECEMBER 2026

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.

Sensus Cordonei DN50 Water Meter

submitted by Sensus GmbH Hannover
 Meineckestrasse 10
 D-30880 Laatzen
 Germany

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 and NMI M 10-1 Meters Intended for the Metering of Water in Full Flowing Pipes, *Part 1: Metrological and Technical Requirements*, dated July 2010.

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 provisionally approved – certificate issued	05/05/26
1	Provisional approval extended, Figure 4 amended – certificate issued	30/07/26

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI P14/3/80' 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.

Special conditions of provisional approval

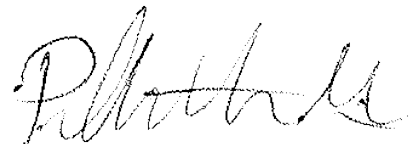
The approval will remain provisional pending completion of required testing and evaluation. In the event of unsatisfactory performance of the meter or non-compliance with the special conditions, the provisional approval may be varied, cancelled or withdrawn.

The submitter shall implement such modifications as required by the Chief Metrologist (or their Delegate). In the event that such modifications (if any are required) are not made to the satisfaction of the Chief Metrologist, the provisional approval may be varied, cancelled or withdrawn.

The submitter shall provide the Chief Metrologist with copies of all required test results and additional information by 31 December 2026.

For class 2.5 meters, this provisional approval is limited to 400 meters only.

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



Phillip Mitchell
A/Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No P14/3/80

1. Description of Pattern**approved on 05/05/26**

A DN50 sized Sensus Cordonei model water meter (Figure 1) used to measure cold potable water supplies for trade.

1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

Minimum flow rate, Q_1 :	0.04 m ³ /h
Transition flow rate, $Q_2^{(1)}$:	0.06 m ³ /h
Maximum continuous flow rate, Q_3 :	40 m ³ /h
Overload flow rate, Q_4 :	50 m ³ /h
Flow rate ratio, Q_3/Q_1 :	1000
Temperature class ⁽¹⁾ :	T50
Maximum admissible temperature:	50 °C
Maximum admissible pressure:	1600 kPa
Pressure loss class:	Δp 16
Accuracy class:	2 or 2.5
Flow profile sensitivity class:	U0/D0 (see 1.1.3)
Electromagnetic class:	E2
Environmental class:	B, O or M
Orientation:	H (indicator on top) or V
Flow Direction:	Forward & reverse
Power supply:	Battery (non-replaceable)

⁽¹⁾ Not applicable to class 2.5 meters.

1.2 Features/Functions

The pattern consists of an ultrasonic flow sensor and electronic indicating device and has features/functions as listed below:

Connection type:	Flanged
Display:	Electronic indicator allowing for a maximum indication range of 999999.999 m ³ in 0.001 m ³ increments.
Communications ⁽¹⁾ :	Radio (433 MHz or 868 MHz) including wM-Bus protocol and optional pulse output module (Figure 2).
Materials:	Flanges: Cast iron Flow tube: POM Case: Glass fibre reenforced plastic
Meter length:	200 mm

- ⁽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

No flow straightener or flow conditioner is required.

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

For Accuracy Class 2.5 (NMI M 10-1) the installation conditions by flow disturbance type are specified in Table 1.

Table 1 - Minimum pipe lengths required by flow disturbance type

Disturbance Type ⁽¹⁾	Minimum upstream pipe length (mm)	Minimum downstream pipe length (mm)
1	0 x DN ⁽²⁾	0 x DN
2	0 x DN	0 x DN
3	0 x DN	0 x DN

- ⁽¹⁾ For information on the different types of flow disturbances which are examined as part of pattern approval, refer to NMI M 10-2.

- ⁽²⁾ DN (Nominal Diameter) is the alphanumeric designation of size for components of a pipework system, including water meters. It comprises the letters DN followed by a dimensionless whole number that is directly related to the physical size, in millimetres (mm), of the bore or outside diameter of the end connections.

1.3.2 Specified Installations and Open Channel Emplacements

The meter (pattern and variants) has not been tested or evaluated for performance in specified installations or open channel emplacements as part of this approval.

More information regarding specified installation and open channel emplacement testing may be found in NMI M 10-1 and NMI M 10-2.

1.3.3 Water Quality

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

The meter is approved for use in the metering of non-potable water supplies of an unspecified quality.

1.4 Software Version

The pattern is approved with software version '302' (CRC checksum 'A3A6').

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

The meter is both mechanical and electronic sealed.

For DN50-DN125 sizes, the meter is designed and sealed in a manner that it cannot be opened without use of force and leaving visible traces.

In addition to the above, for the DN150 size (Figure 3), the register adaptor is affixed by means of four screw connectors in the cover flange and secured by sealing plugs.

After completion of manufacture and configuration, the meter is electronically sealing by a defined bit pattern. After electronic sealing, no modification to the metrologically relevant parameters is possible.

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 4):

Manufacturer's name or mark	...
Serial number	...
Pattern approval number	NMI P14/3/80
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	...
Unit of measurement	m^3
Temperature class ⁽¹⁾	T50
Maximum admissible pressure ⁽²⁾	1600 kPa
Pressure loss class ⁽³⁾	16 kPa or Δp 16
Orientation ⁽⁴⁾	...
Flow profile sensitive class ⁽⁵⁾	U0/D0
Direction of flow	→ or similar
Accuracy class ⁽⁶⁾	2 or 2.5

⁽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	E2
Environmental class	B, O or M
For battery powered meters	a replacement date or similar indication of expected battery life
IP rating	IP68

2. Description of Variant 1

approved on 05/05/26

The pattern is approved with a range of different sizes, flowrates and associated characteristics as specified in Table 2 below. The Pattern is shown in **bold** for completeness.

Table 2 - Meter sizes, flowrates and related information

Meter size	DN50	DN65	DN80	DN100	DN125	DN150
Minimum flowrate Q1 (m ³ /h)	0.04	0.06	0.1	0.16	0.25	0.4
Transitional flowrate Q2 (m ³ /h) ⁽¹⁾	0.06	0.1	0.16	0.25	0.4	0.64
Maximum continuous flowrate Q3 (m ³ /h)	40	63	100	160	160	400
Overload flowrate Q4 (m ³ /h)	50	78.75	125	200	200	500
Ratio Q3/Q1	1000	1000	1000	1000	1000	1000
Meter length/s (mm)	200, 270, 300 or 311	200 or 300	200, 225, 300, 350 or 413	250, 350 or 483	250	300 or 500
Pressure loss class	Δp 16	Δp 25	Δp 16	Δp 40	Δp 40	Δp 16

⁽¹⁾ Not applicable to class 2.5 meters.

TEST PROCEDURE No P14/3/80

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 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 P14/3/80 – 1



Sensus Cordonel DN50 Water Meter (the Pattern)

FIGURE P14/3/80 – 2



Optional pulse output module

FIGURE P14/3/80 – 3



Sensus Cordonel (DN150)

FIGURE P14/3/80 – 4



Example of required markings

~ End of Document ~