



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

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 14/3/73

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.

Siconia WM20-NB28 W2P Water Meter

submitted by SAGEMCOM Energy & Telecom SAS
4 allée des Messageries,
92270 Bois-Colombes,
FRANCE

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	26/07/24
1	Pattern amended (sealing) – certificate issued	22/11/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/73' 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 14/3/73

1. Description of Pattern

**approved on 26/07/24
amended on 22/11/24**

A DN20 sized Siconia WM20-NB28 W2P water meter used to measure cold potable water supplies for trade.

1.1 Field of Operation

The field of operation of the measuring system using the Siconia WM20-NB28 W2P water meter is determined by the following characteristics:

Minimum flow rate, Q ₁ :	0.010 m ³ /h
Transition flow rate, Q ₂ :	0.016 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 :	400
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 (outdoor)
Orientation:	H and V
Flow Direction:	Forward only
Power supply:	Battery powered 2.55 V to 3.70 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.

Display: A digital, electronic, liquid crystal display (Figure 2) allowing for a maximum indication range of 9,999,999 m³ in 0.001 m³ increments.

The meter may be placed into a test mode that provides for a verification scale interval of 0.000001 m³.

Communications⁽¹⁾: Infrared optical port

Integrated antenna to support LPWAN NB-IoT

Materials: Inlet/outlet connections and flow tube: Brass DZR Lead Free
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 metrology firmware:

Version: 01.39 (C010)

Checksum: 02743B14

The software version number is accessible via the LCD display.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

The meter is mechanically sealed via the snap-fitting of the upper and lower sections of the meter casing, and the electronic circuit board and battery are fully potted, such that attempts to mechanically access the meter will result in evidence of tampering.

In addition, the meter is also provided with a tamper switch such that if the upper section of the meter casing is opened, a tamper alarm is raised.

Additional mechanical seals may be optionally applied (Figure 3).

The metrology firmware is separated from the (non-metrology) application software. The metrology firmware and all legally relevant parameters are set as part of the manufacturing process and protected against unauthorised modification.

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 14/3/73
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⁾	63 kPa or Δp 63
Orientation ⁽⁴⁾	H and V
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 meters with an external power supply	the voltage and frequency
For battery powered meters	a replacement date or similar

2. Description of Variant 1

approved on 26/07/24

The Pattern and Variants are approved with the alternative model numbers corresponding to certain configurations as specified in Table 1 below.

The meter may be supplied with different antenna dimensions (Figure 5) to support configuration with different frequency bands for the communication output and fitted with an optional pressure sensor.

Table 1 – Models designations and associated features

Model number	LTE Bands	Pressure sensor
Siconia WM20-NB28 W2P	28	Yes
Siconia WM20-NB28 W2	28	No
Siconia WM20-NB528 W3P	5 and 28	Yes
Siconia WM20-NB528 W3	5 and 28	No

TEST PROCEDURE No 14/3/73

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 14/3/73 – 1

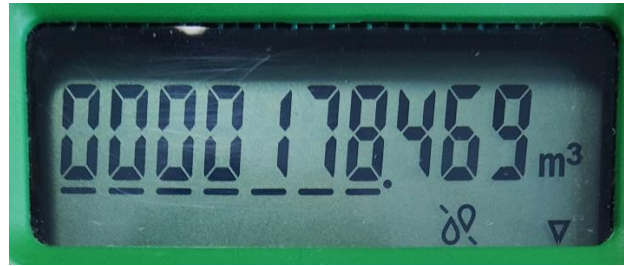


Siconia WM20-NB28 W2P (Front View) – the Pattern



Siconia WM20-NB28 W2P (Side View) – the Pattern

FIGURE 14/3/73 – 2



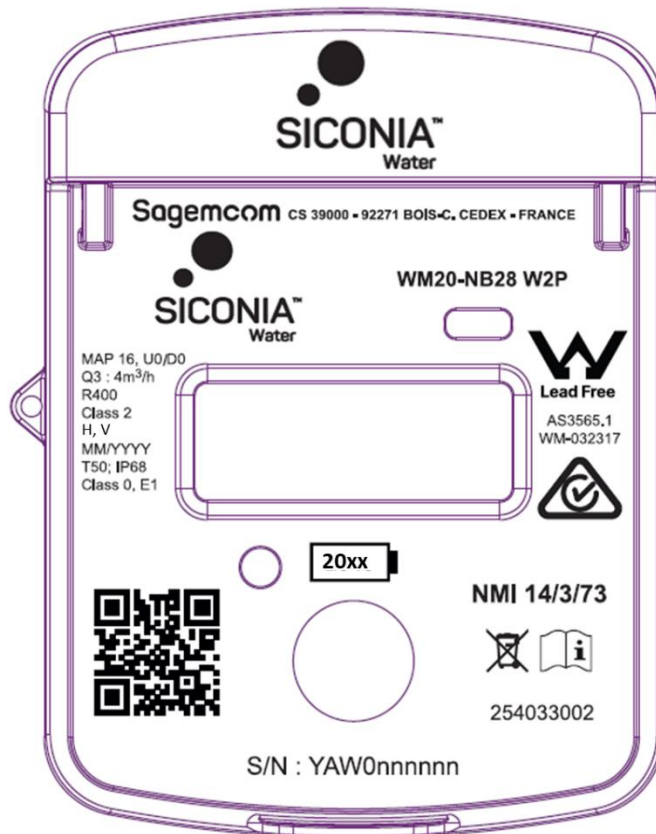
Indicating Device

FIGURE 14/3/73 – 3



Additional Optional Sealing Provisions

FIGURE 14/3/73 – 4



Generic Markings



Product markings

FIGURE 14/3/73 – 5



WM20-NB528 W3P (Side View) – Variant 1

~ End of Document ~