



Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/3/22

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.

Ningbo Model PD-LFC DN20 DCV DR Water Meter

submitted by Ningbo Water Meter Co Ltd
355 Hongxing Road
Jiangbei District, Ningbo, 315033
CHINA

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 49-1 Water Meters Intended for the Metering of Cold Potable Water and Hot Water, *Part 1 Metrological and Technical Requirements*, dated April 2009.

This approval becomes subject to review on 1/01/19, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	20/12/13

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/22' 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*.

A handwritten signature in black ink, appearing to read 'Dr A Rawlinson', with a horizontal line underneath.

Dr A Rawlinson

TECHNICAL SCHEDULE No 14/3/22

1. Description of Pattern

approved on 20/12/13

A Ningbo model PD-LFC DN20 DCV DR class 2 positive displacement water meter (Figures 1 and 2) used to measure water for potable supply for trade.

1.1 Field of Operation

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

- Maximum continuous flow rate, Q_3 4.0 kL/h
- Flow rate ratio, Q_3/Q_1 200
- Minimum admissible temperature 0.1°C
- Maximum admissible temperature 30°C
- Limiting condition (water temperature) 50°C
- Maximum admissible pressure 1400 kPa
- Accuracy class 2

1.2 Features/Functions

A brass body, positive displacement volumetric rotary piston-type class 2 water meter of a size which is normally connected to a 20 mm pipe and is approved for metering domestic supplies and has features/functions as listed below:

- Threaded end connections as normally used in ACT, NSW, QLD, VIC, TAS, WA and NT.
- A mechanical digital indicator having a series of eight aligned digits giving a maximum display of 9999.9999 kL in 0.1 L increments.
- Nominal diameter: 20 mm
- Meter length: 154 mm.
- Minimum straight length of inlet pipe: 46.5 mm (20 mm coupling length)
- Minimum straight length of outlet pipe: 46.5 mm (20 mm coupling length)
- Provision for pulse output sensory device of 0.5 litre per pulse
- Dual check valves
- Orientation: Any
- Flow direction: Forward only

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Sealing Provision

Provision is made for the pattern and variants to be sealed by the application of one or more mechanical seals (Figure 2).

1.5 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:

Manufacturer's name or mark	...
Serial number	...
Pattern approval mark	14/3/22
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	...
Unit of measurement	m^3
Direction of flow	→ or similar
Accuracy class	... (#)
(#) Optional for class 2 meters.	

2. Description of Variant 1

approved on 20/12/13

A Ningbo model PD-LFC DN20 DCV PL class 2 positive displacement water meter which has the same technical characteristics (field of operation and features/functions) as the pattern, except that the meter body is made of Grivory GV-5H Black 9915 plastic material (Figure 3). The threaded-end connections are made of brass.

3. Description of Variant 2

approved on 20/12/13

A Ningbo model PD-LFC DN25 DCV DR class 2 positive displacement water meter (Figure 4) positive displacement which has the same technical characteristics as the pattern, except as follows:

3.1 Field of operation

- Maximum continuous flow rate, Q_3 6.3 kL/h
- Flow rate ratio, Q_3/Q_1 250

3.2 Features/Functions

- Nominal diameter: 25 mm
- Meter length: 178 mm
- Minimum straight length of inlet pipe: 47 mm (25 mm coupling length)
- Minimum straight length of outlet pipe: 47 mm (25 mm coupling length)

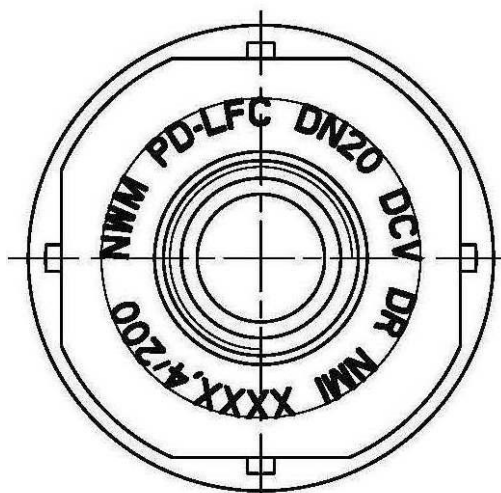
TEST PROCEDURE No 14/3/22

Water meters tested for initial verification shall comply with the Certificate of Approval, Technical Schedule, and the maximum permissible errors for initial and subsequent verifications at the operating conditions in effect at the time of verification. Maximum permissible errors for the initial and subsequent verification of water meters are given in the *National Trade Measurement Regulations 1999* (Cth).

Water meters shall be verified in accordance with NITP 14 *National Instrument Test Procedures for Utility Meters*.

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

FIGURE 14/3/22 – 1



Ningbo Model PD-LFC DN20 DCV DR Water Meter (The Pattern)
(including marking provision)

FIGURE 14/3/22 – 2



(a) Typical Sealing – Brass Body Meters



(b) Typical Sealing – Plastic Body Meters

FIGURE 14/3/22 – 3



Ningbo Model PD-LFC DN20 DCV PL Water Meter (Variant 1)

FIGURE 14/3/22 – 4



Ningbo Model PD-LFC DN25 DCV DR Water Meter (Variant 2)