



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/3/17

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.

Reliance Model WM210 PD Water Meter

submitted by Reliance Worldwide
 27-28 Chapman Place
 Eagle Farm QLD 4009

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, Part 1: Metrological and Technical Requirements*, March 2009.

This approval becomes subject to review on 1/11/16, and then every 5 years thereafter.

DOCUMENT HISTORY

| Rev | Reason/Details | Date |
|---------|---------------------------------------|---------|
| Draft 0 | Pattern approved – certificate issued | 7/10/11 |
| | | |

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/3/17' and only by persons authorised by the submittor.

It is the submittor'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.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

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



TECHNICAL SCHEDULE No 14/3/17

1. Description of Pattern

approved on 7/10/11

A Reliance model WM210PD class 2 positive displacement meter (Figure 1) used to measure cold potable water for domestic 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
- Maximum admissible temperature 30°C
- Limiting condition (water temperature) 50°C
- Maximum admissible pressure 1400 kPa
- Accuracy class 2

1.2 Features/Functions

A positive displacement 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:

- Connection type: 1" BSP as normally used for DN20 meters.
- A mechanical digital indicator having a series of eight aligned digits giving a maximum display of 9999.9999 kL in 0.0002 kL increments.
- Meter length: 190 mm.
- Minimum straight length of inlet pipe: 0 mm.
- Minimum straight length of outlet pipe: 0 mm.
- Provision for the attachment of a reed switch for electronic data transmission.
- Provision for pulse output of 1 litre per pulse.
- Single check valve.

1.3 Verification Provision

Provision is made for the application of a verification mark.

1.4 Sealing Provision

Instruments shall include one or more devices (Figure 1) which can be sealed so as to prevent dismantling or modification of the instrument without damaging the device(s).

The device(s) may incorporate the verification mark.

1.5 Descriptive Markings

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 | RMC |
| Serial number | ... |
| Pattern approval mark | 14/3/17 |
| Numerical value of maximum continuous flow rate, Q_3 | ... |
| Flow rate ratio, Q_3/Q_1 | ... |
| Unit of measurement | kL |
| Direction of flow | → or similar |
| Accuracy class | ... (#) |
| (#) | Optional for class 2 meters. |

TEST PROCEDURE

Instruments 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 under Schedule 1, Part 3, Division 11 of the *National Trade Measurement Regulations 1999* (Cth).

TESTS

Testing shall be performed by a *Utility Meter Verifier* appointed by the Secretary under Part XIII of the *National Measurement Act 1960* (Cth). All meters shall be tested at the following flow rate:

- (a) between Q_2 and $1.1 Q_2$.

A sample of meters shall be drawn and tested at the following flow rates:

- (a) between Q_1 and $1.1 Q_1$ and
 (b) between $0.9 Q_3$ and Q_3 .

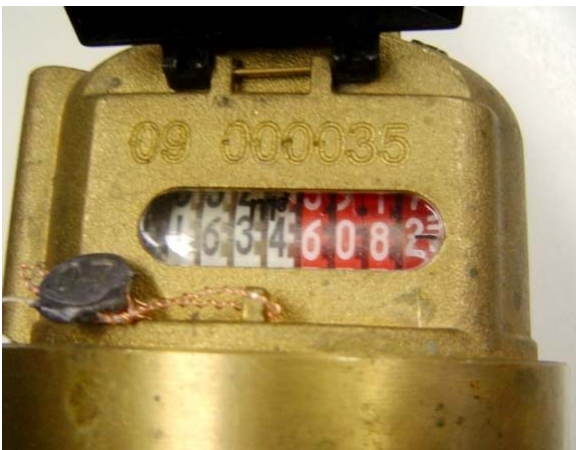
The drawing of such sample meters shall be in accordance with the relevant National Measurement Institute (NMI) document.

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

FIGURE 14/3/17 – 1



(a) Model WM210 PD Water Meter (including flow direction indication)



(b) Indicator and Sealing



(c) Marking Provision

Reliance Model WM210 PD Water Meter

~ End of Document ~