



Australian Government

National Measurement  
Institute

Bradfield Road, West Lindfield NSW 2070

## Certificate of Approval

### NMI 14/3/4

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 MRP Water Meter

submitted by Reliance Worldwide  
(formerly Reliance Manufacturing Company)  
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 49-1 Water Meters Intended for the Metering of Cold Potable Water and Hot Water, *Parts 1 and 2*, dated April 2009.

This approval becomes subject to review on **1/09/19**, and then every 5 years thereafter.

#### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	14/08/02
1	Pattern & variants 1 & 2 approved – certificate issued	31/10/02
2	Variants 3 & 4 approved – certificate issued	26/05/04
3	Pattern & variant 1 to 4 reviewed (address amended) – notification of change issued	11/02/08
4	Pattern & variants 1 to 4 amended (submitter name plus Conditions added), reviewed & updated – certificate issued	29/01/15

## CONDITIONS OF APPROVAL

### **General**

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) 14/3/4' 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 'A Rawlinson', with a horizontal line underneath.

**Dr A Rawlinson**

## TECHNICAL SCHEDULE No 14/3/4

### 1. Description of Pattern

**approved on 14/08/02  
amended 29/01/15**

A Reliance model MRP class 2 turbine 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 using the model MRP meter, is determined by the following characteristics:

- Maximum continuous flow rate,  $Q_3$  4 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

Suitable only for horizontal upright operation

#### 1.2 Features/Functions

An inferential multi-jet turbine class 2 water meter of a size which is normally connected to a 20 mm pipe and is approved for metering domestic supplies.

- Connection type: Threaded end connections as normally used in NSW and ACT (ball seat)
- Display: A mechanical indicator with digital display having a series of five aligned digits and four dial and pointer type displays giving a maximum display of 99999.9999 kL in 0.1 L increments
- Provision for a pulse output of 100 litres per pulse
- Dual check valves
- Meter length: 154 mm
- Orientation: Suitable only for operation in a horizontal position with the meter upright (i.e. indicator visible from above)
- Flow direction: Forward only

#### 1.3 Conditions

##### 1.3.1 Installation conditions:

- No flow straightener or flow conditioner is required.
- Minimum straight length of inlet pipe: 0 mm
- Minimum straight length of outlet pipe: 0 mm

##### 1.3.2 Use conditions:

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

#### 1.4 Verification Provision

Provision is made for the application of a verification mark.

#### 1.5 Sealing Provision

Instruments shall include one or more devices 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.

#### 1.6 Descriptive Markings and Notices

Instruments are marked with the following data, either grouped or distributed on the casing, the indicating device dial, an identification plate or the cover if it is not detachable:

Manufacturer's name or mark	RMC
Serial number	...
Pattern approval mark	NMI (or NSC) No 14/3/4
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.

#### 2. Description of Variant 1 approved on 14/08/02

With threaded end connections as normally used in QLD, VIC, TAS, WA and NT.

#### 3. Description of Variant 2 approved on 14/08/02

With a manifold configuration (Figure 2).

#### 4. Description of Variant 3 approved on 26/05/04

With threaded end connections as normally used in SA.

#### 5. Description of Variant 4 approved on 26/05/04

The Reliance model MRP water meter (the pattern or variants 1 and 3) with a single check valve.

### TEST PROCEDURE

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 2009* (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 14/3/4 – 1



Reliance Model MRP Water Meter (The Pattern)

FIGURE 14/3/4 – 2



Reliance Model MRP Water Meter With a Manifold Configuration (Variant 2)

~ End of Document ~