



Australian Government
Department of Industry and Science

**National
Measurement
Institute**

Certificate of Approval

NMI 14/3/11

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.

Elster Model V100 25 mm Water Meter

submitted by Elster Metering Pty Ltd
 55 Northcorp Boulevard
 Broadmeadows VIC 3047

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 for Cold Potable Water and Hot Water, Part 1 Metrological and technical requirements*, dated September 2015.

This approval becomes subject to review on 01/04/23, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 3 approved – interim certificate issued	15/01/09
1	Pattern & variants 1 to 3 approved – certificate issued	29/01/09
2	Pattern & variants 1 to 3 reviewed & updated – variant 4 approved – certificate issued	18/12/14
3	Pattern updated, Variant 4 amended – certificate issued	16/03/18

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/11' 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.



D Hines
Manager, Pattern Approval,
Policy and Licensing

TECHNICAL SCHEDULE No 14/3/11

1. Description of Pattern **approved on 15/01/09**

An Elster model V100 25 mm class 2 positive displacement water meter (Figures 1 and 2) used to measure water for domestic supply for trade.

1.1 Field of Operation

The field of operation of the Elster model V100 25 mm water meter is determined by the following characteristics:

Minimum flow rate, Q_1 :	0.20 kL/h
Transitional flow rate, Q_2 :	0.32 kL/h
Maximum continuous flow rate, Q_3 :	6.3 kL/h
Overload flow rate, Q_4 :	7.875 kL/h
Flow rate ratio, Q_3/Q_1 :	315
Maximum admissible temperature:	30°C
Limiting condition (water 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:	All positions

1.2 Features/Functions

A positive displacement piston-type class 2 water meter of a size which is normally connected to a 25 mm pipe and is approved for metering domestic supply and has features/functions as listed below:

- Threaded end connections as normally used in QLD, VIC, TAS, WA and NT.
- A mechanical digital indicator having a series of eight aligned digits giving a maximum display of 99999.999 kL in 1 L increments.
- Meter length of 178 mm.
- Provision for pulse output.
- Single check valve.

1.3 Conditions

1.3.1 Installation conditions:

No flow straightener or flow conditioner is required.

The flow profile sensitivity class is U0/D0.

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 or an identification plate:

Manufacturer's name or mark
Serial number
Pattern approval number	NMI (or NSC) 14/3/11
Numerical value of maximum continuous flow rate, Q_3
Flow rate ratio, Q_3/Q_1
Unit of measurement	kL
Maximum admissible pressure	1600 kPa
Maximum pressure loss ⁽¹⁾	63 kPa or Δp 63
Orientation ⁽²⁾
Flow profile sensitivity	U0/D0
Direction of flow	→ or similar
Accuracy class ⁽³⁾	2

⁽¹⁾ Optional for Class Δp 63

⁽²⁾ Optional for meters approved in all orientations

⁽³⁾ Optional for 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 indication of expected battery life

2. Description of Variant 1 approved on 15/01/09

With threaded end connections as normally used in NSW and ACT (ball seat).

3. Description of Variant 2 approved on 15/01/09

With threaded end connections as normally used in SA.

4. Description of Variant 3 approved on 15/01/09

With dual check valves (Figures 3 and 4).

5. Description of Variant 4

approved on 18/12/14

An Elster DN25 V200 series water meter (Figures 5 to 7) having the same technical characteristics as the DN25 V100 series water meter with the following differences:

- Shroud designs and mechanical indicator layout with eight (8) aligned digits and one (1) sub-wheel (Figure 5)
- An alternative shroud design with an electronic indicator (Figure 6), incorporating an encoder, pulse or AMR interface utilised by radio modules, with a maximum display of 999999.99999 kL
- Provision for e-sens inductive pulse output of 1 to 10 litres per pulse per litre or AMR-AMI transmitter
- Threaded end connections as normally used in QLD, VIC, TAS, WA, NT and G 1-1/4"
- Meter length of 178 mm
- With or without dual check valves (Figures 5 to 7).

Meters are assembled to be tamper evident; therefore no additional sealing is required.

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*.

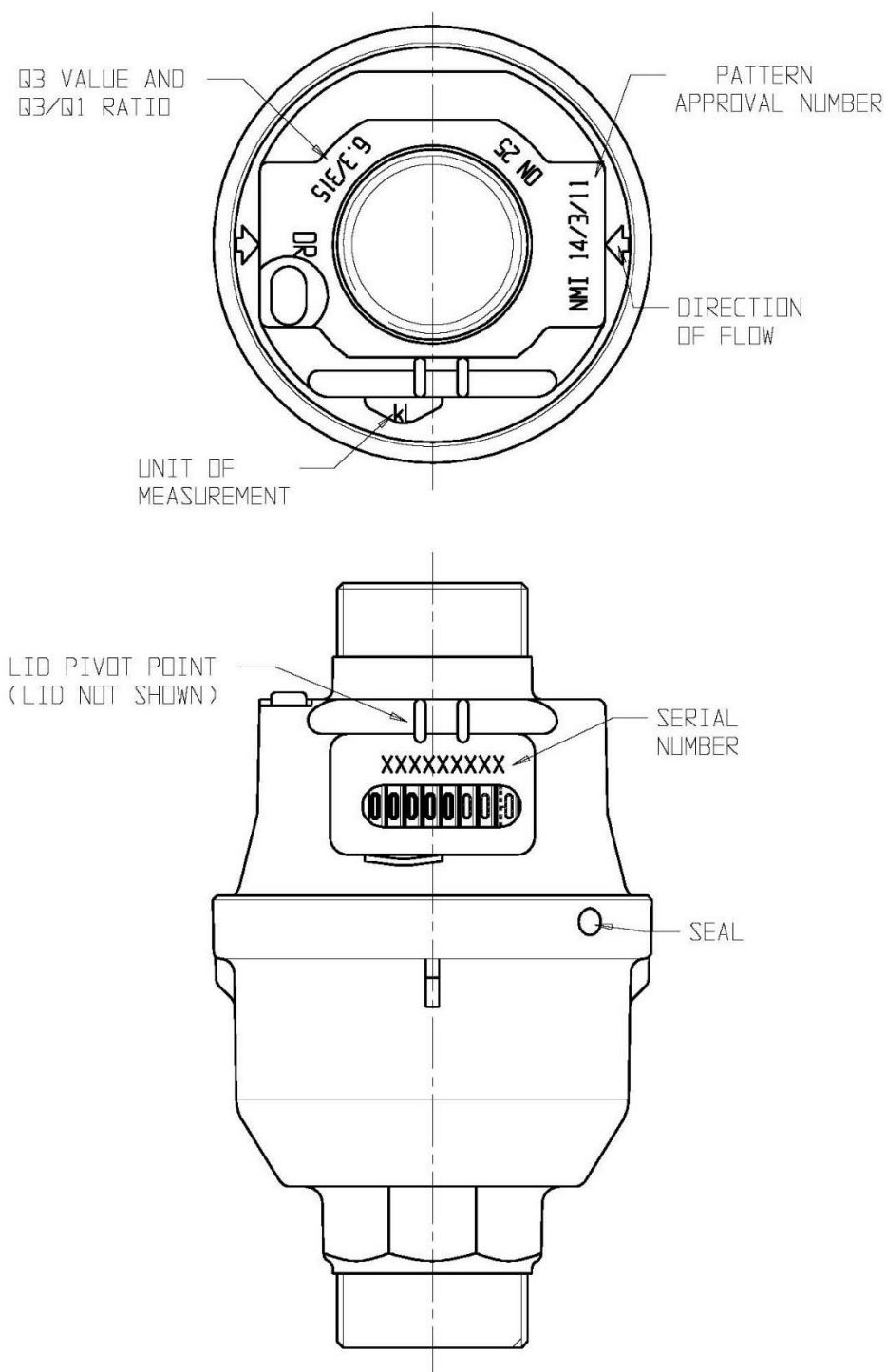
NOTE: NMI reserves the right to vary this procedure. Any such variation shall be notified in writing by NMI.

FIGURE 14/3/11 – 1



Elster Model V100 25 mm Water Meter – The Pattern
(Single Check Valve Version)

FIGURE 14/3/11 – 2



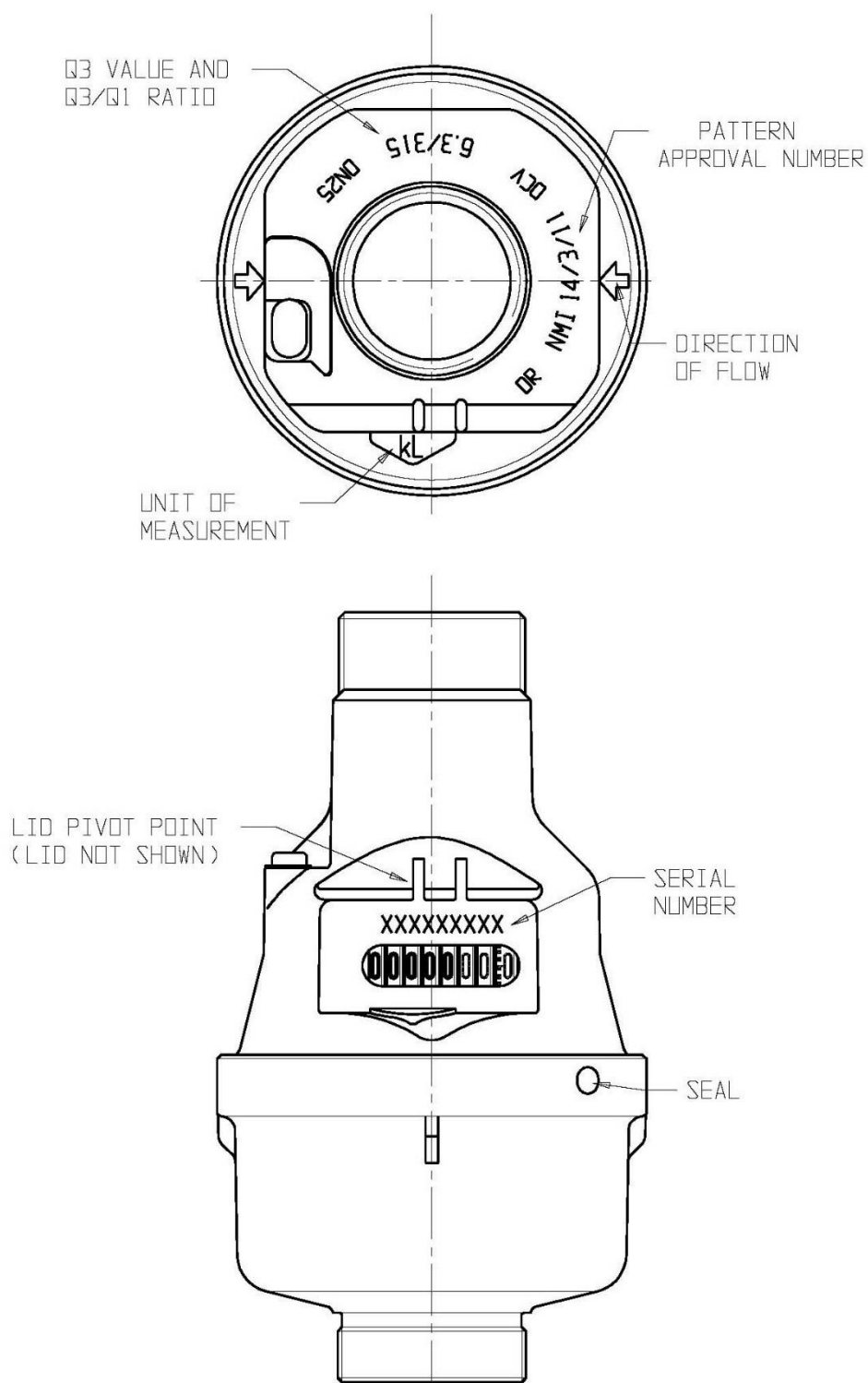
Elster Model V100 25 mm Water Meter – The Pattern
(Single Check Valve Version)

FIGURE 14/3/11 – 3



Elster Model V100 25 mm Water Meter – Variant 3
(Dual Check Valve Version)

FIGURE 14/3/11 – 4



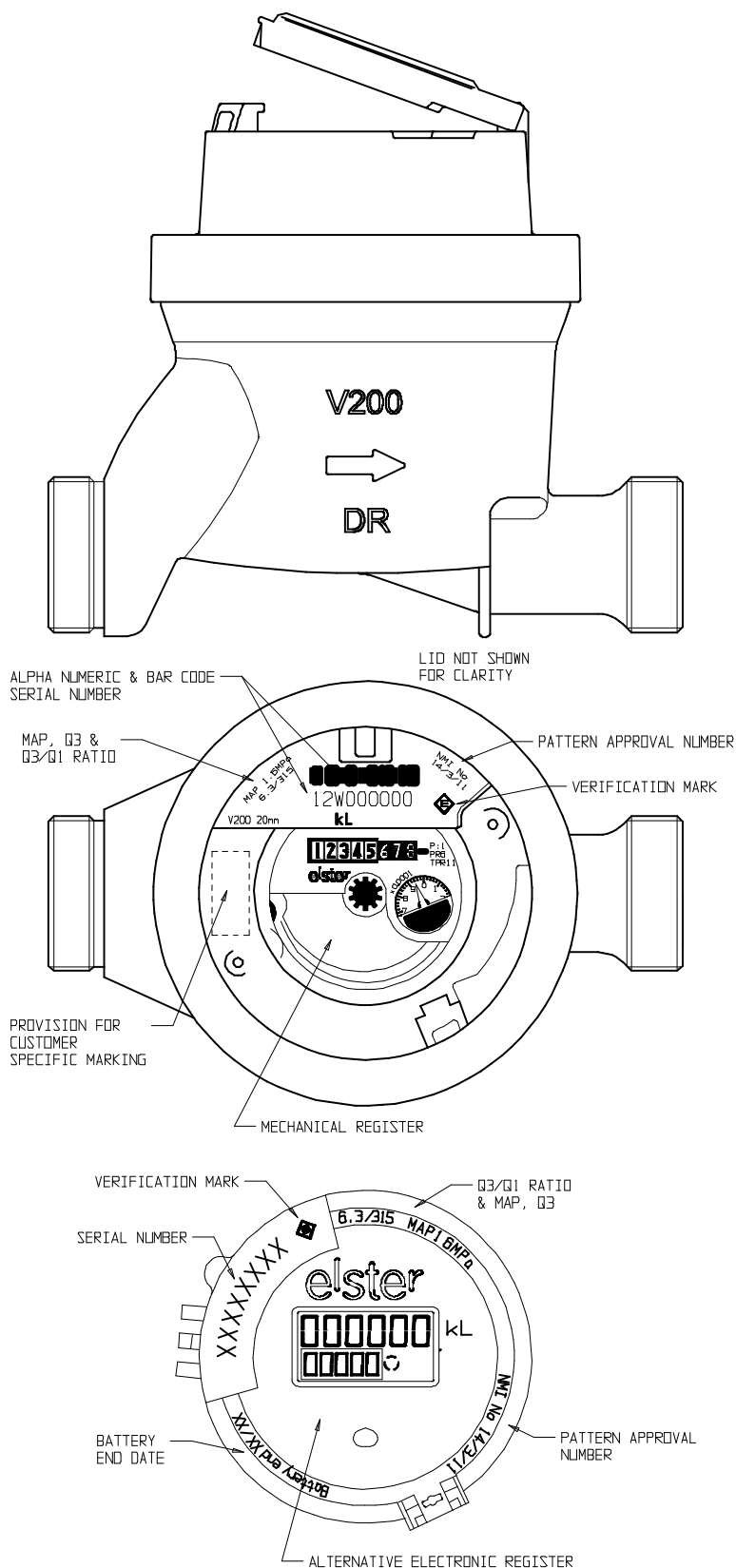
Elster Model V100 25 mm Water Meter – Variant 3
(Dual Check Valve Version)

FIGURE 14/3/11 – 5



Elster Model V200 25 mm Water Meter – Variant 4
(Non Dual Check Valve Version With Mechanical Register)

FIGURE 14/3/11 – 6



Elster Model V200 25 mm Water Meter – Variant 4
(Dual Check Valve Version)

FIGURE 14/3/11 – 7



Elster Model V200 25 mm Water Meter – Variant 4
(Dual Check Valve Version With Mechanical Register)

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