Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/3/48

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 S110 model 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 Intended for the Metering of Cold Potable Water and Hot Water, *Part 1 Metrological and Technical Requirements*, dated September 2015.

This approval becomes subject to review on 01/12/2024, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 4 approved – certificate issued	01/11/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/48' 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.

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 14/3/48

1. Description of Pattern approved on 01/11/19

A DN15 Elster S110 class T30/T90 single jet water meter used to measure cold potable and hot water supplies for trade.

1.1 Field of Operation

The field of operation of the measuring system using the DN15 Elster S110 model water meter is determined by the following characteristics:

Minimum flow rate, Q_1:	0.040 m^3/h
Transition flow rate, Q_2:	0.064 m^3/h
Maximum continuous flow rate, Q_3:	1.6 m^3/h
Overload flow rate, Q_4:	2.0 m^3/h
Flow rate ratio, Q_3/Q_1:	40
Water Temperature class:	T30/T90
Minimum admissible temperature:	30 °C
Maximum admissible temperature:	90 °C
Maximum admissible pressure:	1600 kPa
Pressure loss class:	Δp 25
Accuracy class:	2
Flow profile sensitivity class:	U0/D0
Orientation:	Horizontal & 45° Vertically Inclined
Flow Direction:	Forward only

1.2 Features/Functions

The pattern (Figure 1) consists of DN15 single jet water meter incorporating an indicating device and has features/functions as listed below:

Connection type:	Threaded end connections G3/4”B.
Display:	A mechanical digital indicator having a series of 8 aligned digits allowing for a maximum indication range of 9999.999 kL in 1 L increments. The indicator also incorporates a dial allowing for a minimum resolution of 0.1 L.
Communications:	Provision for pulse output of 10 Litres per pulse
Materials:	Meter body: DZR Brass
	Indicating device and housing: Polymer material
Meter length:	115 mm.

1.3 Conditions

1.3.1 Installation Conditions:

No flow straightener or flow conditioner is required.

For Accuracy Class 2, the flow profile sensitivity class is U0/D0.

1.3.2 Water Quality

The meter is approved for use in the metering of warm potable and hot water supplies within the temperature range 30 °C to 90 °C.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Sealing Provision

The meter is factory assembled with the indicator device housing snap-fitted to the meter body such that attempts to mechanically access the meter will result in evidence of tampering.

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 (Figure 1 & 2):

Manufacturer's name or mark	...
Serial number	...
Pattern approval number	NMI 14/3/48
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	...
Unit of measurement	kL
Temperature class (1)	T30/T90
Maximum admissible pressure (2)	1600 kPa
Maximum pressure loss (3)	25 kPa or Δp 25
Orientation (4)	H and/or V45°
Flow profile sensitive class (5)	U0/D0
Direction of flow	→ or similar
Accuracy class (6)	2

(1) Optional for Class T30

(2) Optional for meters with MAP of 1400 kPa or 600 kPa for DN ≥ 500

(3) Optional for Class Δp 63

(4) Optional for meters approved for all orientations

(5) Optional for U0/D0 meters

(6) Optional for class 2 meters

2. Description of Variant 1 approved on 01/11/19

The Pattern and Variants may incorporate an alternative indicating device with provision for TMP-F M-Bus- and Pulse output module. The pulse output may be programmed for either; 1, 5, 10, 25, 50, 100, 250, 500 or 1000 litres per pulse (Figure 3).

3. Description of Variant 2 approved on 01/11/19

The Pattern and Variants may incorporate an integral non-return valve (Figure 4).

4. Description of Variant 3 approved on 01/11/19

The Pattern and Variants are approved with the following alternative pressure loss classes; Δp 40 or Δp 63.

5. Description of Variant 4 approved on 01/11/19

The Pattern and Variants may also be known as a Honeywell S110.

TEST PROCEDURE No 14/3/48

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*.

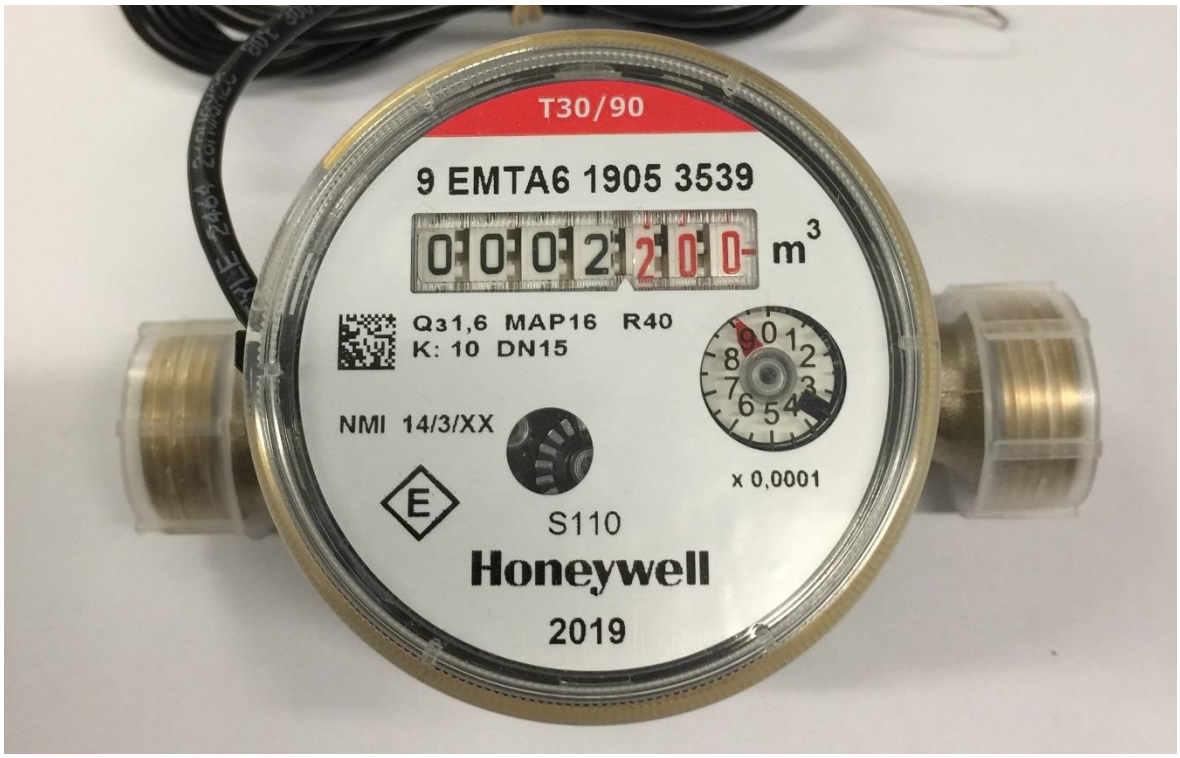
The following exception shall apply: during a test, the temperature of the water shall be maintained at 50 °C ±10 °C.

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

FIGURE 14/3/48 – 1

Elster S110 model water meter (a.k.a. Honeywell S110)

FIGURE 14/3/48 – 2



Elster S110 model water meter – Indicating device

FIGURE 14/3/48 – 3

Elster S110 model water meter – Variant 1

FIGURE 14/3/48 – 4

Elster S110 model water meter – Variant 2

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