Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 14/3/16

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.

Aquiba Model A200 Water Meter

submitted by Aquiba Pty Ltd
U4, 209 Leitchs Road
Brendale, QLD 4500

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 01/07/22, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variant 1 approved – interim certificate issued	30/06/11
1	Pattern and variant 1 approved – certificate issued	7/10/11
2	Variant 2 approved – certificate issued	27/08/12
3	Variant 3 approved – interim certificate issued	26/06/13
4	Variant 3 approved – certificate issued	13/09/13
5	Variant 4 approved – interim certificate issued	4/04/14
6	Variant 4 approved – certificate issued	15/08/14
7	Pattern and variants reviewed – certificate issued	22/06/17
8	Variant 5 approved, change of address – certificate issued	29/08/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 14/3/16' 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 14/3/16

1. Description of Pattern approved on 30/06/11

An Aquiba Model A200 class 2 DN20 electromagnetic meter (Figures 1 and 2) 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 Aquiba Model A200 water meter is determined by the following characteristics:

Minimum flow rate, Q_1:	0.016 m^3/h
Transition flow rate, Q_2:	0.026 m^3/h
Maximum continuous flow rate, Q_3:	4.0 m^3/h
Overload flow rate, Q_4:	5.0 m^3/h
Flow rate ratio, Q_3/Q_1:	250
Maximum admissible temperature:	30 °C
Limiting condition (water temperature):	50 °C
Temperature class:	T30
Maximum admissible pressure:	1400 kPa
Pressure loss class:	Δp 63
Accuracy class:	2
Flow profile sensitivity class:	U0/D0
Electromagnetic class:	E2 (industrial)
Environmental class:	O (outdoors)
Orientation:	All positions
Flow Direction:	Forward only
Power supply:	Non-replaceable battery 3.3 V DC nominal

1.2 Features/Functions

The pattern (Figure 1) consists of an electromagnetic flow sensor, a flow computer electronic indicating device and has features/functions as listed below:

Connection type:	Threaded end connections type standard G1.
Display:	A digital, electronic, liquid crystal display allowing for a maximum indication range of 99999.99995 m^3 in 0.00005 m^3 increments
Communications:	Optical + IEEE 802.15.4 radio
Materials:	Inlet/Outlet connections: brass
	Meter housing: Composite material
Meter length:	154 mm

An optional strainer may also be fitted

1.3 Conditions

1.3.1 Installation Conditions:

The flow profile sensitivity class is U0/D0 (Accuracy class 2).

1.3.2 Water Quality

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

1.4 Software Version

The Pattern and Variants are approved with the firmware version designated r151.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

Instruments are constructed so as to prevent dismantling or modification of the instrument without resulting in evidence of tampering.

1.7 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 2):

Manufacturer's name or mark	...
Serial number	...
Pattern approval number	NMI 14/3/16
Numerical value of maximum continuous flow rate, Q_3	...
Flow rate ratio, Q_3/Q_1	...
Unit of measurement	m^3
Maximum admissible pressure (1)	1400 kPa
Maximum pressure loss (2)	63 kPa or Δp 63
Maximum admissible temperature (3)	T30
Orientation (4)	…
Flow profile sensitive class (5)	U0/D0
Direction of flow	→ or similar
Accuracy class (6)	2

(1) Optional for meters with MAP = 1400 kPa

(2) Optional for class Δp 63

(3) Optional for T30 meters

(4) Optional for meters approved for all orientations

(5) Optional for U0/D0 class meters

(6) 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	E2
Environmental class	O
For battery powered meters	a replacement date or similar indication of expected battery life

2. Description of Variant 1 approved on 30/06/11

The pattern and variants are approved with alternative threaded end connections as normally used in QLD, VIC, TAS, WA and NT.

3. Description of Variant 2 approved on 27/08/12

The pattern and variants are approved with modified optical port and electrodes.

4. Description of Variant 3 approved on 26/06/13

An Aquiba model A210 class 2 electromagnetic meter (Figures 3, 4 and 5) which has the same features/functions as the pattern (model A200) except as follows:

- Has an offset body to allow space for a dual check valve assembly
- May be fitted with a dual check valve; and
- The threaded end connections are made of brass

5. Description of Variant 4 approved on 4/04/14

The pattern and variants are approved with the firmware version designated r181.

Firmware version r181 has been modified to include improvements to the meter display, and the way the meter interprets pressure pulsations and overflow.

6. Description of Variant 5 approved on 29/08/19

An Aquiba model A210 meter is approved to be equipped with a LTE Cat M1/NB1 cellular radio or ISM band radio.

TEST PROCEDURE No 14/3/16

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).

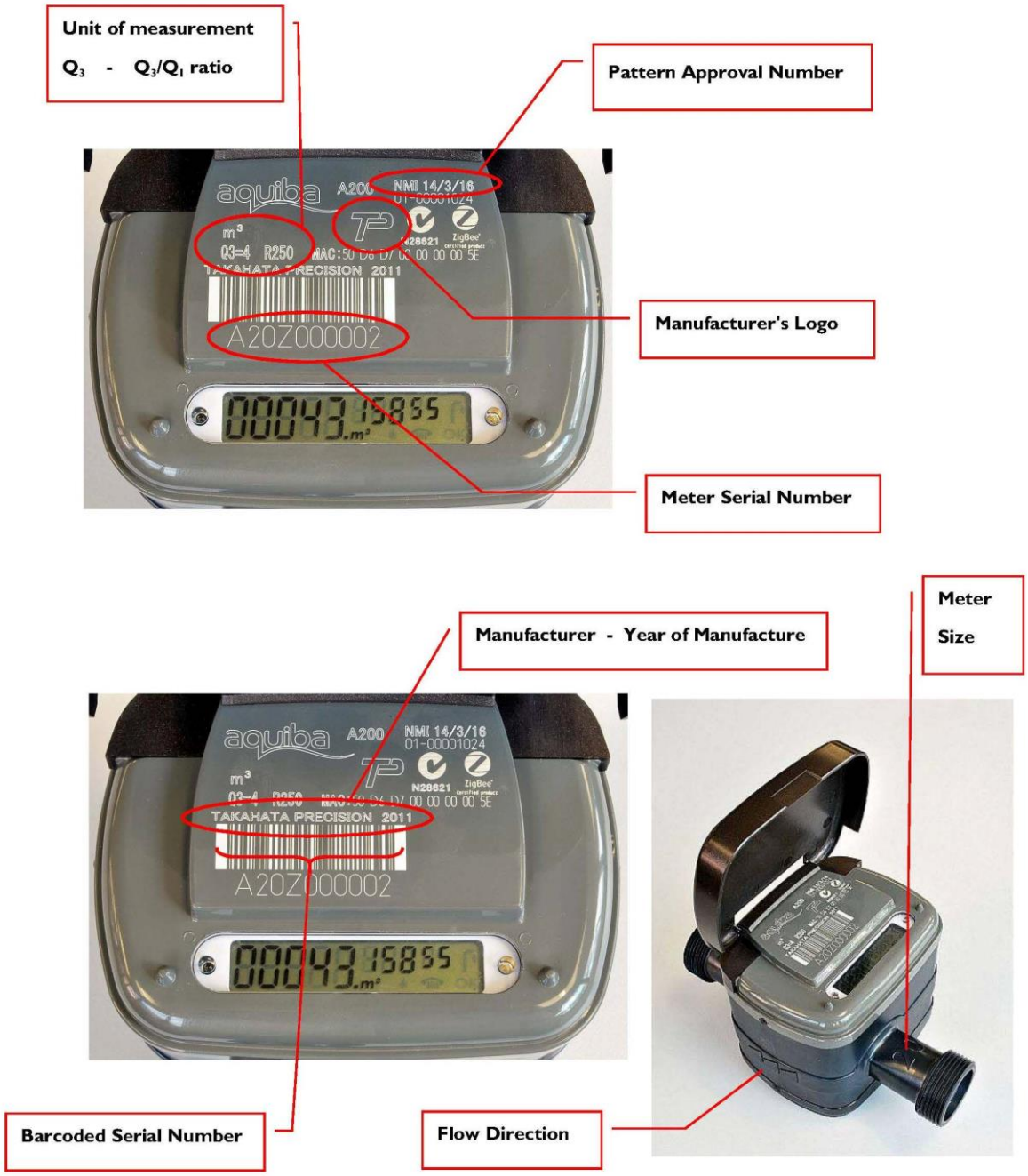
Water meters shall be verified in accordance with NITP 14 *National Instrument Test Procedures for Utility Meters*.

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

FIGURE 14/3/16 – 1

Aquiba Model A200 Water Meter

FIGURE 14/3/16 – 2

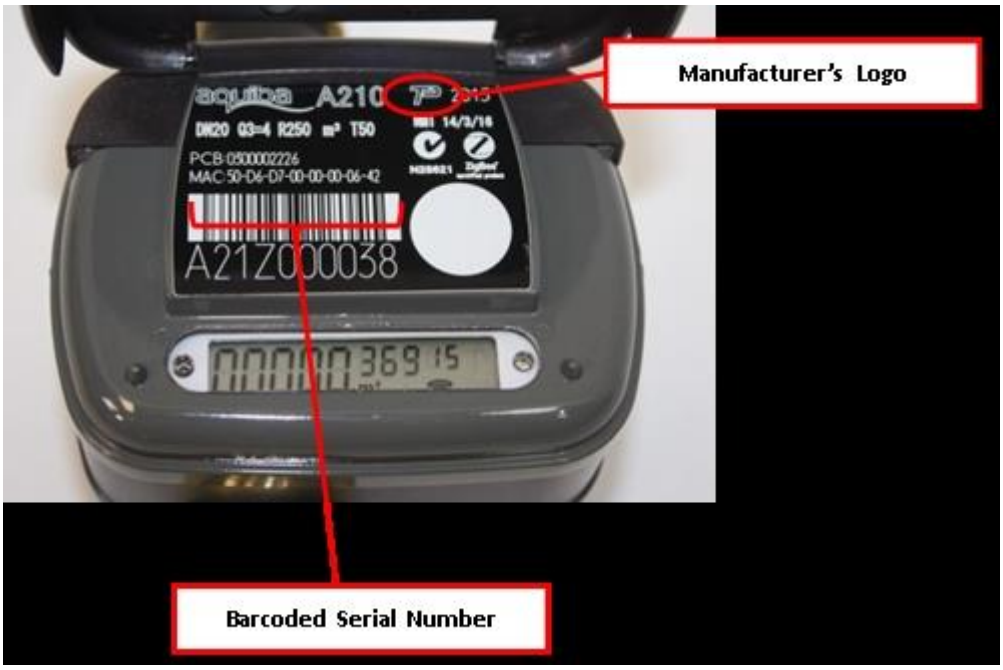


Aquiba Model A200 Showing Typical Markings

FIGURE 14/3/16 – 3

Aquiba Model A210 Water Meter

FIGURE 14/3/16 – 4



Aquiba Model A210 Showing Typical Markings

FIGURE14/3/16 – 5

Aquiba Model A210 Showing Alternative Label

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