Australian Government
National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 14/3/10

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

Satobar Model Satobar 2 Water Meter

submitted by WINSLOW SERVICES
12 Winslow Crescent
Deer Park VIC 3023.

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*, July 2004.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 April 2012, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/3/10' 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.

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The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Special: for provisional variant 4

The approval of variant 4 becomes subject to review on 1 October 2010.

In the event of unsatisfactory performance this approval may be withdrawn.

DESCRIPTIVE ADVICE

Pattern: approved 7 March 2007

- A Satobar model Satobar 2 class 2 positive displacement meter used to measure water for domestic supply for trade.

Variants: approved 7 March 2007

1. With alternative connections.

2. With pulse output.

Technical Schedule No 14/3/10 describes the pattern and variants 1 & 2.

Variant: provisionally approved 18 September 2008
approved 18 September 2009

3. Model LXH2 having a plastic body and connections.

Technical Schedule No 14/3/10 Variation No 1 describes variant 3.

Variant: provisionally approved 18 September 2009

4. Model LXH 20 E having a plastic body and brass connections.

Technical Schedule No 14/3/10 Variation No 2 describes variant 4.

FILING ADVICE

Certificate of Approval No 14/3/10 dated 4 November 2008 is superseded by this Certificate, and may be destroyed. The Provisional status of variant 3 is hereby removed. The documentation for this approval now comprises:

Certificate of Approval No 14/3/10 dated 17 December 2009
Technical Schedule No 14/3/10 dated 15 May 2007 (incl. Test Procedure)
Technical Schedule No 14/3/10 Variation No 1 dated 4 November 2008
Technical Schedule No 14/3/10 Variation No 2 dated 17 December 2009 (incl. Note and Notification of Change)
Figures 1 and 2 dated 15 May 2007
Figures 3 and 4 dated 4 November 2008
Figure 5 dated 17 December 2009

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 14/3/10

Pattern: Satobar Model Satobar 2 Water Meter

Submittor: Satobar Pty Ltd
12 Winslow Crescent
Deer Park VIC 3023

1. Description of Pattern

A Satobar model Satobar 2 class 2 positive displacement meter (Figures 1 and 2) used to measure water for domestic supply for trade.

1.1 Field of Operation

The following characteristics determine the field of operation of the measuring system:

- Maximum continuous flow rate, Q_3 — 4 kL/h
- Flow rate ratio, Q_3/Q_1 — 200
- Maximum working temperature — 30°C
- Maximum admissible temperature — 50°C
- Maximum working 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 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 9999.9999 kL in 0.0001 kL increments.
- Meter length of 154 mm.
- Dual check valves.

1.3 Verification/Certification

Provision is made for the application of a verification/certification mark.

1.4 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/certification mark.

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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	Satobar Pty Ltd
Serial number	...
Pattern approval mark	14/3/10
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 Variants

2.1 Variant 1

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

2.2 Variant 2

With pulse output.

TEST PROCEDURE

Instruments tested for initial verification shall comply with the Certificate of Approval and Technical Schedule, and the maximum permissible errors for initial and subsequent verifications/certifications at the operating conditions in effect at the time of verification.

All meters shall be tested at flow rates of:

$Q_2(-0, +0.1\ Q_2)$, $0.1\ Q_3(\pm 0.01\ Q_3)$ and $Q_4(-0.1\ Q_4, +0)$

in the country of origin in a third party accredited facility which has reference standards traceable to primary national standards of the country of origin.

Each batch of meters and the results of the tests of these meters shall be supplied to the verifying authority. The verifying authority shall draw sample meters from the batch of meters supplied. The drawing of such sample meters shall be in accordance with the relevant National Measurement Institute (NMI) document.

All sample meters drawn shall be tested at flow rates of:

$Q_2(-0, +0.1\ Q_2)$ and $0.1\ Q_3(\pm 0.01\ Q_3)$.

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

$Q_1(-0, +0.1\ Q_1)$ and $Q_3(\pm 0.1\ Q_3)$.

The disposition of all meters from which the sample meters were drawn shall be determined in accordance with the relevant NMI document.

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

TECHNICAL SCHEDULE No 14/3/10

VARIATION No 1

Pattern: Satobar Model Satobar 2 Water Meter

Submittor: Satobar Australia
12 Winslow Crescent
Deer Park VIC 3023

1. Description of Variant 3

A Satobar model LXH2 class 2 positive displacement meter (Figure 3) with features/functions as described for the pattern (in Technical Schedule No 14/3/10) but now with the meter body made of Grivory GV-5H Black 9915 type plastic rather than brass.

1.1 Special Markings

A limited number of model LXH2 meters (200 instruments) may have the following information marked on a tag (Figure 4) attached to the body of the meter rather than marked on a nameplate:

- The name of the manufacturer;
- The nominal diameter of the meter;
- The pattern approval mark;
- The maximum flowrate, Q3; and
- The ratio of Q3/Q1.

The seal may incorporate the verification/certification mark.

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TECHNICAL SCHEDULE No 14/3/10

VARIATION No 2

Pattern: Satobar Model Satobar 2 Water Meter

Submittor: WINSLOW SERVICES
12 Winslow Crescent
Deer Park VIC 3023

1. Description of Variant 4

A Satobar model LXH 20 E class 2 positive displacement meter with features/functions as described for the pattern (in Technical Schedule No 14/3/10) but now with the meter body made of Grivory GV-5H Black 9915 type plastic and the threaded end connections made of brass (Figure 5), and with a single check valve in the inlet and in the outlet ports.

NOTE

The Provisional status of variant 3 has been removed.

NOTIFICATION OF CHANGE

In Technical Schedule No 14/3/10 Variation No 1 dated 4 November 2008, clause **1. Description of Variant 3** should be amended to read, in part:

> "… but now with the meter body **and the threaded end connections** made of Grivory GV-5H Black 9915 type plastic rather than brass."

14/3/10
13 January 2009

Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Notification of Change
Certificate of Approval No 14/3/10
Change No 1

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

The following changes are made to the approval documentation for the

Satobar Model Satobar 2 Water Meter

submitted by Satobar Australia
12 Winslow Crescent
Deer Park VIC 3023.

1. In Certificate of Approval No 14/3/10 and its Technical Schedule Variation No 1 both dated 4 November 2008, and in Technical Schedule No 14/3/10 dated 15 May 2007, all references to the name of the submittor should be amended to now read:

   "WINSLOW SERVICES"

   The address remains unchanged.

2. In Certificate of Approval No 14/3/8 dated 4 November 2008, the FILING ADVICE should be amended by adding the following:

   "Notification of Change No 1 dated 13 January 2009"

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

FIGURE 14/3/10 – 1

Satobar Model Satobar 2 Water Meter

FIGURE 14/3/10 – 2

Showing Display and Manufacturer' Mark

FIGURE 14/3/10 – 3

Satobar Model LXH2 Water Meter

FIGURE 14/3/10 – 4

Marking Tag – Certain Model LXH2 Water Meters

FIGURE 14/3/10 – 5

Satobar Model LXH 20 E Water Meter
(having a plastic body and brass connections)