



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

### Certificate of Approval

### NMI 6/4C/289

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.

Shinko Denshi Model AB 1202CE Weighing Instrument

submitted by W W Wedderburn Pty Ltd  
101 Williamson Road  
Ingleburn NSW 2565

**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 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on 1/01/20, and then every 5 years thereafter.

#### DOCUMENT HISTORY

| Rev | Reason/Details   | Date     |
|-----|--|----------|
| 0   | Pattern & variants 1 & 2 approved – certificate issued                     | 19/12/14 |
| 1   | Pattern amended (markings) – variants 3 to 5 approved – certificate issued | 9/02/16  |
| 2   | Variant 6 approved – certificate issued                                    | 24/08/18 |

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/289' 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.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0B.

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  
Pattern Approval, Policy and  
Licensing Section

TECHNICAL SCHEDULE No 6/4C/289

**1. Description of Pattern**

**approved on 19/12/14**

The Shinko Denshi model AB 1202CE high accuracy class  $\text{II}$  weighing instrument (Figure 1 and Table 1) of 1200 g maximum capacity with a verification scale interval of 0.1 g. Instruments may also be known as Shinko Denshi VIBRA (or VIBRA) AB series of the same model.

The instruments are fitted with differentiated scale interval ( $d$ ) of 0.01 g.

The instruments use a 'tuning-fork' technology and have a liquid crystal display (LCD).

Instruments are approved for use over a temperature range of +5°C to +35°C, and are so marked. Instruments are not for trading direct with the public, and are so marked.

Power is supplied by a Glob Tek switching power supply model GT-41134-0606 (6 V DC, 1 A) mains adaptor; the submitter should be consulted regarding the acceptability of alternatives.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

**1.1 Zero and Tare**

Instruments have an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

Instruments have a combined semi-automatic zero-setting and subtractive tare balancing device (operated by the ' $\rightarrow 0/T \leftarrow$ ' key). Operation of this device zeroes the instrument if the load is within the zero-setting range (up to 3% of the maximum capacity of the instrument), otherwise the instrument is tared (' $\rightarrow T \leftarrow$ ' appears). The subtractive taring device operates up to the maximum capacity of the instrument.

A zero-tracking device may also operate to automatically correct to within  $\pm 0.25e$  (or  $\pm 0.5d$  where  $d < e$ ) whenever the instrument comes to rest with the display indicating zero (including net zero).

**1.2 Alternative Units**

Use of units other than grams (g) is not approved for trade use.

**1.3 Additional Features**

Instruments may be fitted with a number of additional functions including checkweighing (HI, OK, LO), percentage (%), counting (pcs) and progress bar.

These functions and displays are not approved for trade use.

**1.4 Display Check**

A display check is initiated when the instruments are switched on.

**1.5 Levelling**

The instrument is provided with adjustable feet and adjacent to the level indicator is a notice advising that the instrument must be level when in use.

## 1.6 Interfaces

Instruments may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with General Supplementary Certificate No S1/0/B (in particular in regard to the data and its format).

Instruments may be fitted with RS-232 serial data interface.

## 1.7 Software

The software is identified by a checksum number EE52.

The software checksum number appears in the switch-on display sequence when the power is first applied to the instrument.

## 1.8 Verification Provision

Provision is made for the application of a verification mark.

## 1.9 Sealing Provision

Provision is made for the calibration to be sealed by setting a switch on the main board within the instrument to a LOCK position, and then preventing access within the instrument housing (Figure 2).

It is possible to determine that the switch status is in the 'LOCK' position by:

- Hold down the FUNCTION key in normal weighing mode.
- If the switch is in the 'LOCK' position, the instrument will display 'Func' and then blank. In this case the instrument may be verified.
- Otherwise the instrument will display 'Func' and then 'CAL' in which case the instrument should not be verified until the switch has been correctly located in the 'LOCK' position.

Sealing to prevent access within the instrument housing may be achieved by using destructible labels placed over the span switch access hole and opposite sides of a join in the instrument housing in Figure 2.

## 1.10 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate. Instruments carry the following markings:

|  |                       |
|--|-----------------------|
| Manufacturer's mark, or name written in full | Shinko Denshi Co. Ltd |
| Name or mark of manufacturer's agent         | WEDDERBURN            |
| Indication of accuracy class                 | Ⓜ                     |
| Pattern approval number for the instrument   | NMI 6/4C/289          |
| Maximum capacity                             | Max ..... g #         |
| Minimum capacity                             | Min ..... g #         |
| Verification scale interval                  | e = ..... g #         |
| Actual scale interval                        | d = ..... g #         |

Serial number of the instrument .....  
Special temperature limits +5°C to +35°C

# These markings are also shown near the display of the result if they are not already located there.

In addition, instruments shall carry a notice stating NOT FOR TRADING DIRECT WITH THE PUBLIC, or similar wording with the exception of instruments used for the weighing of precious metals and precious stones provided that instruments are located such that the instrument and its display are clearly visible to both parties to the transaction.

**2. Description of Variant 1** **approved on 19/12/14**

Certain other capacities of the Shinko Denshi model AB instruments as listed in Table 1 below (the pattern is shown in **bold**).

Instruments may have a wind shield provided over the load receptor.

In each case the subtractive taring device operates up to the maximum capacity of the instrument.

TABLE 1

| Model            | Maximum Capacity<br>(Max) | Minimum Capacity<br>(Min) | Verification Scale Interval<br>(e) | Differential Scale Interval<br>(d) | Platter                |
|------------------|---------------------------|---------------------------|------------------------------------|------------------------------------|------------------------|
| AB 323CE         | 320 g                     | 0.02 g                    | 0.01 g                             | 0.001 g                            | Round with wind shield |
| AB 623CE         | 620 g                     | 0.02 g                    | 0.01 g                             | 0.001 g                            | Round with wind shield |
| <b>AB 1202CE</b> | <b>1200 g</b>             | <b>0.5 g</b>              | <b>0.1 g</b>                       | <b>0.01 g</b>                      | <b>Rectangular</b>     |
| AB 3202CE        | 3200 g                    | 0.5 g                     | 0.1 g                              | 0.01 g                             | Rectangular            |
| AB 12001CE       | 12 000 g                  | 5 g                       | 1 g                                | 0.1 g                              | Rectangular            |

**3. Description of Variant 2** **approved on 19/12/14**

The pattern and variants may be fitted with a Vibra model SDI customer display unit (Figure 3) via an RS232 interface.

**4. Description of Variant 3** **approved on 9/02/16**

Instruments which are similar to the pattern and variant 1 but have a different mainboard with a software checksum number 0689 or d31C.

**5. Description of Variant 4** **approved on 9/02/16**

Variant 3 may be fitted with an internal 'self-calibration' system. This comprises an internal calibration mass that may be applied to the instrument in an automatic adjustment cycle that is initiated manually by pressing the 'Function' key.

Instruments may be identified by having a 'R' within the model number, .g. AB 1202RCE.

**6. Description of Variant 5**

**approved on 9/02/16**

Power for the pattern and variants may be powered by 4 × AA dry cell batteries.

**7. Description of Variant 6**

**approved on 24/08/18**

Instruments which are in the same design of variant 3 and similar to the pattern and variant 1, but with alternative software checksum number 803A, or A568, or 10CB.

**TEST PROCEDURE No 6/4C/289**

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

**Maximum Permissible Errors**

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 6/4C/289 – 1



Typical Shinko Denshi Vibra AB Series Weighing Instrument

FIGURE 6/4C/289 – 2



Typical Sealing Arrangement Using Destructible Adhesive Labels

FIGURE 6/4C/289 – 3



Vibra Model SDI External Display Unit

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