



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Certificate of Approval

NMI 6/4C/302

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.

Teraoka Model Digi DS-983SC Weighing Instrument

submitted by Austech Weighing (Aust) Pty Ltd
141 - 143 Williams Road
Dandenong South VIC 3175.

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 October 2015.

This approval becomes subject to review on 1/06/22, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 4 approved – interim certificate issued	10/05/17
1	Pattern & variants 1 to 4 approved – certificate issued	26/09/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/4C/302' 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 Certificates 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

TECHNICAL SCHEDULE No 6/4C/302

1. Description of Pattern

approved on 10/05/17

A Teraoka model Digi DS-983SC class III non-automatic self-indicating multi-interval weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.002 kg up to 6 kg and a verification scale interval (e_2) of 0.005 kg from 6 kg up to the maximum capacity of 15 kg.

Instruments use a Teraoka S-YC series base work, with a nominal platform size of 342 x 285 mm, and are fitted with a Teraoka 'P-type' load cell. The A/D module is fitted within the basework.

The instruments are fitted with a six digits double-sided column-mounted monochrome LCD type displays for display of the weight value.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.6 below).

The instrument operates from an AC/DC mains adaptor ENG model 3A-066WP09 switch-mode power supply (output 9 V DC, 0.67 A) – the submitter should be consulted regarding the acceptability of alternative power supply units.

1.1 Zero

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

A zero-tracking device may be fitted.

1.2 Tare

A semi-automatic subtractive tare device of up to 5.998 kg may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

The instrument has adjustable feet and a level indicator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.5 Verification Provision

Provision is made for the application of a verification mark.

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 Supplementary Certificate No S1/0B (in particular in regard to the data and its format).

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

1.7 Sealing Provision

Provision is made for the calibration and configuration to be sealed by setting a switch within the instrument to an OFF position, and then preventing access within the instrument housing.

It is possible to determine that the switch status is in the 'OFF' position as follows:

- Hold down the 'RE-ZERO' key, and press the '←' key once and 'T' key twice in weighing mode.
- If the switch is in the 'OFF' position, the instrument will display '888888'. In this case the instrument may be verified.
- Otherwise the instrument will display 'CAL00' in which case the instrument should not be verified until the switch has been correctly located in the 'OFF' position.

Provision is made for the calibration adjustment and configuration parameters to be sealed by using a destructible adhesive label placed over one of securing screw access holes underneath the platter (Figure 4a).

1.8 Software

The software is designated u 01.xx (where xx refers to the identification of non-legally relevant software).

The software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

1.9 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Teraoka
Name or mark of manufacturer's agent	Austech Weighing
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/302
Maximum capacity	<i>Max</i>/..... g or kg #1
Minimum capacity	<i>Min</i> g or kg #1
Verification scale interval	<i>e</i> =/..... g or kg #1
Maximum subtractive tare	<i>T</i> = - g or kg #2
Serial number of the instrument

#1 These markings are shown near the display of the result. For single interval instruments (see variants) there is only one range therefore only one value of maximum capacity and verification scale interval to be marked.

#2 This marking is required if *T* is not equal to *Max*.

2. Description of Variant 1

approved on 26/09/17

The pattern or variants as multi-interval instruments of certain other capacities as listed in Table 1 below (the pattern is shown in bold).

3. Description of Variant 2

approved on 26/09/17

The pattern or variants as single interval instruments of certain capacities as listed in Table 2 below.

4. Description of Variant 3 **approved on 26/09/17**

The Teraoka model DS-984SC which is similar to the pattern and variant 1 to 2 but having a DS-984PS display unit (Figure 2).

4.1 Sealing Provision

The calibration and configuration parameters are protected when a jumper located on the main circuit board within the DS-984PS display unit is set to OFF.

The instrument is sealed by preventing access within the display housing. This may be achieved by applying a destructible adhesive label over one of securing screw access holes underneath the display unit (Figure 4b).

For determining if the jumper is in the 'OFF' position, checking operations are similar to those described for the pattern (model DS-983SC – see clause 1.7 Sealing Provision).

5. Description of Variant 4 **approved on 10/05/17**

The Teraoka model DS-984PS which is similar to variant 3 but having a basework supported by a single Teraoka 'P-type' load cell at the end of the basework. The basework incorporates separate scanning equipment (Figure 3).

TABLE 1

Maximum Capacity (Max_1 / Max_2)	Verification Scale Interval (e_1 / e_2)	Maximum Subtractive Tare Capacity ($T = - \dots$)
3 / 6 kg	1 / 2 g	2.999 kg
6 / 15 kg	2 / 5 g	5.998 kg
15 / 30 kg	5 / 10 g	14.995 kg

TABLE 2

Maximum Capacity (Max)	Verification Scale Interval (e)	Maximum Subtractive Tare Capacity ($T = - \dots$)
6 kg	2 g	3 kg
15 kg	5 g	7.5 kg
30 kg	10 g	15 kg

TEST PROCEDURE No 6/4C/302

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

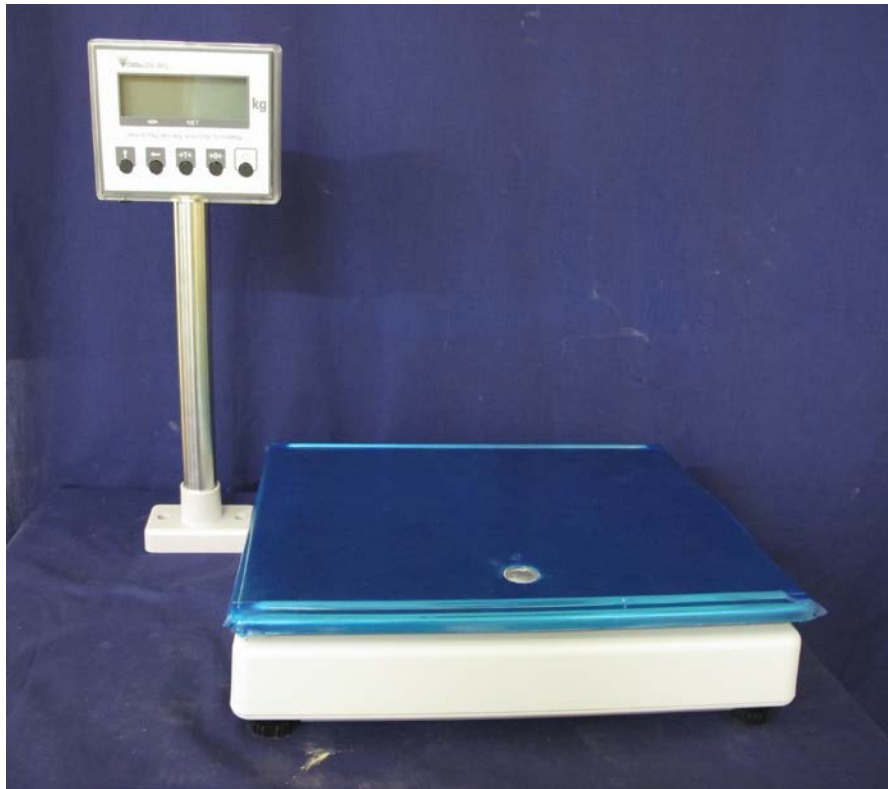
Maximum Permissible Errors

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

Tests

For multi-interval instruments with verification scale intervals of $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

FIGURE 6/4C/302 – 1



Teraoka Model Digi DS-983SC weighing Instrument (Pattern)

FIGURE 6/4C/302 – 2



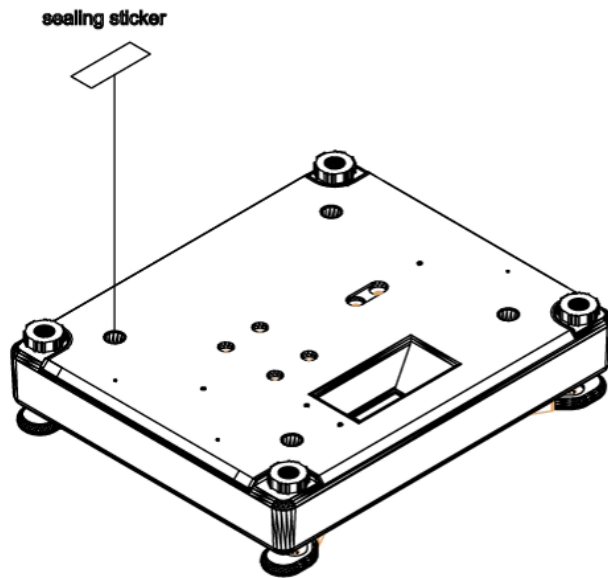
Teraoka Model Digi DS-984SC weighing Instrument (Variant 3)

FIGURE 6/4C/302 – 3

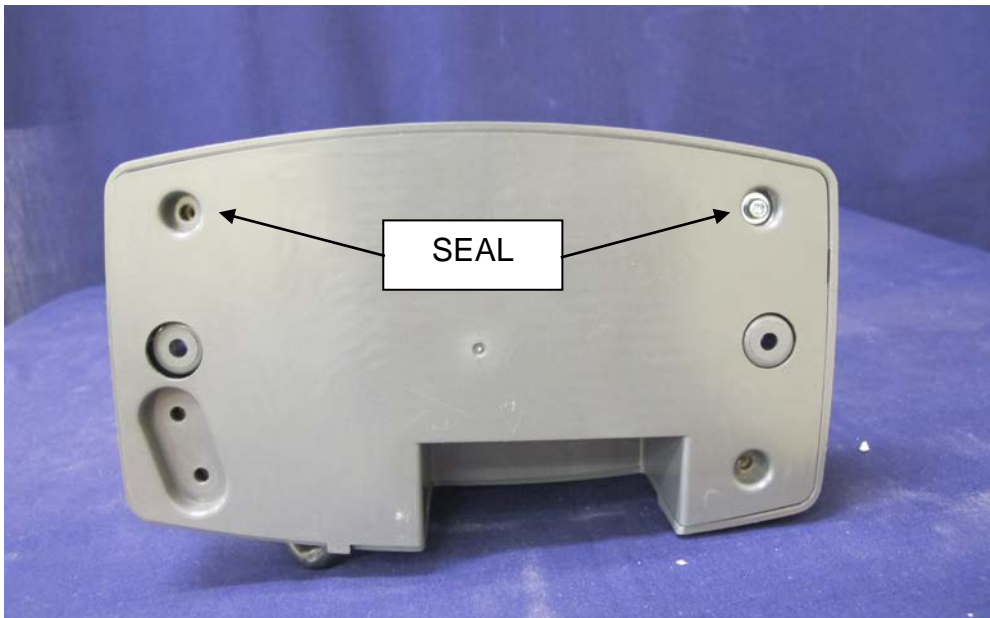


Teraoka Model Digi DS-984PS weighing Instrument (Variant 4)

FIGURE 6/4C/302 – 4



(a) Sealing of S-YC Basework



(b) Sealing of Model DS-984PS Display Unit

Showing Typical Sealing
~ End of Document ~