



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

### Certificate of Approval

#### NMI 6/4C/303

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-983 C 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 October 2015.

This approval becomes subject to review on 1/01/22, and then every 5 years thereafter.

#### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 4 approved – certificate issued	2/12/16

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/4C/303' 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*.



**Dr A Rawlinson**

TECHNICAL SCHEDULE No 6/4C/303

**1. Description of Pattern**

**approved on 2/12/16**

A Teraoka model Digi DS-983 C class  $\text{III}$  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 basework, 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 either a 6-digit double-sided monochrome LCD type or 6-digit single-sided TFT type (Figure 2) remote display mounted on a column. Instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording) unless two displays are present or unless the single display is located such that all primary indications are clearly and simultaneously displayed to both the vendor and the customer.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause **1.7 Interfaces** below).

The instrument operates from an AC/DC mains adaptor ENG model 6A-061WP06 switch-mode power supply (output 5.95 V DC, 1 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 is provided with adjustable feet and a level indicator.

**1.5 Verification Provision**

Provision is made for the application of a verification mark.

**1.6 Sealing Provision**

Provision is made for the calibration and configuration to be sealed by setting a switch within the instrument's basework 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 label placed over one of securing screw access holes underneath the platter (Figure 6a).

### 1.7 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.

### 1.8 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	WEDDERBURN
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/303
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 also shown near the display of the result if they are not already located there. 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 2/12/16**

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

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
<b>6 / 15 kg</b>	<b>2 / 5 g</b>	<b>5.998 kg</b>
15 / 30 kg	5 / 10 g	14.995 kg

**3. Description of Variant 2**

**approved on 2/12/16**

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

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

**4. Description of Variant 3**

**approved on 2/12/16**

The Teraoka model Digi DS-983 SC which is similar to the pattern and variants 1 and 2 except that the circuitry of the main instrument electronics and the span switch board are now housed in the separate control box shown in Figures 3 and 5.

The instruments are fitted with a double-sided LCD type and/or single-sided TFT type remote displays. Instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording) unless two displays are present or unless the single display is located such that all primary indications are clearly and simultaneously displayed to both the vendor and the customer.

Provision is made for the control box to be sealed by placing destructible labels over the securing screws as shown in Figure 6b.

**5. Description of Variant 4**

**approved on 2/12/16**

The Teraoka model DS-983 PS which is similar to the 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 4).

Provision is made for the scanner basework to be sealed by placing destructible labels over the securing screws as shown in Figure 6c.

## TEST PROCEDURE No 6/4C/303

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

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

### **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/303 – 1



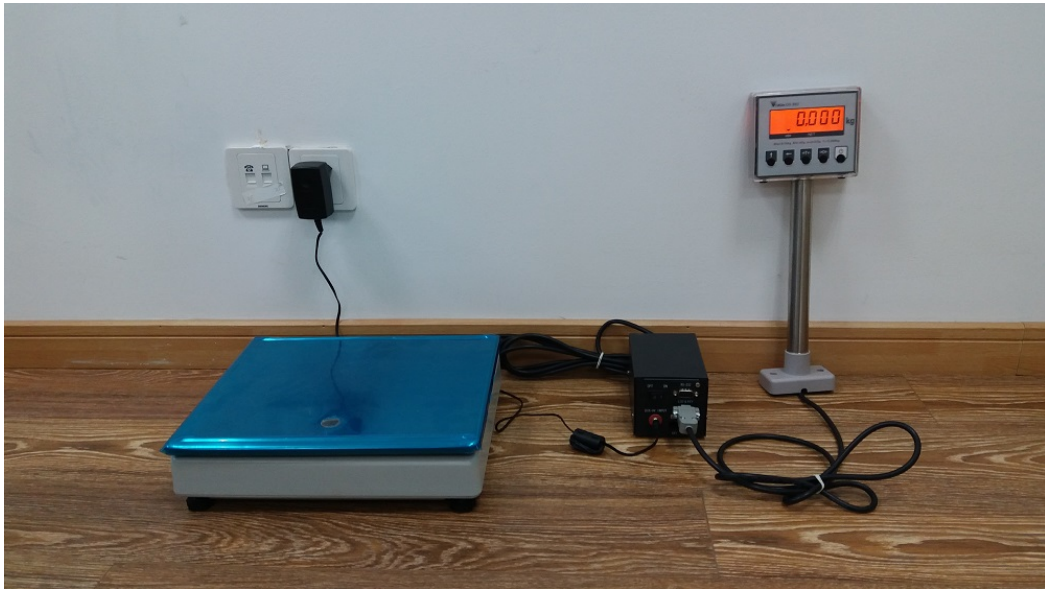
Teraoka Model Digi DS-983 C Weighing Instrument (Pattern)

FIGURE 6/4C/303 – 2



TFT Type Display

FIGURE 6/4C/303 – 3



Teraoka Model Digi DS-983 SC Weighing Instrument (Variant 3)

FIGURE 6/4C/303 – 4



Teraoka Model Digi DS-983 PS Weighing Instrument (Variant 4)

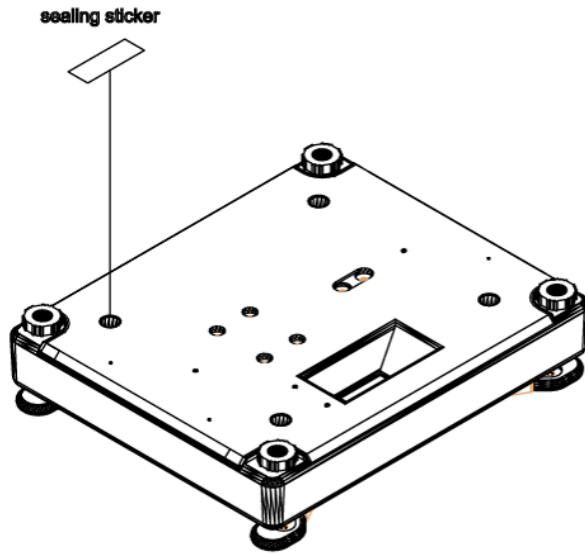


FIGURE 6/4C/303 – 5

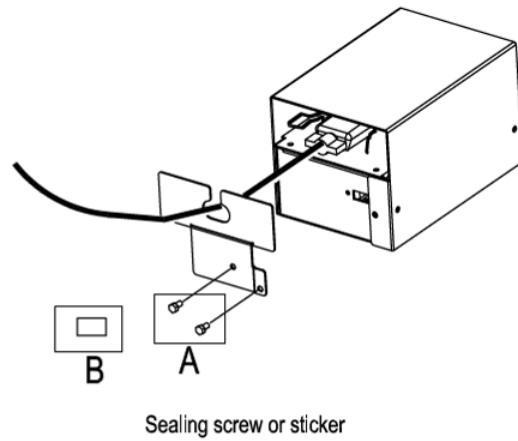


Front View of External Control Box

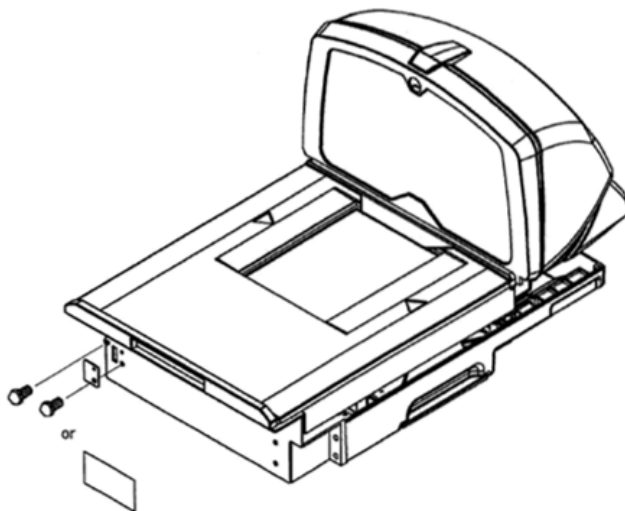
FIGURE 6/4C/303 – 6



(a) Sealing of S-YC Basework



(b) Sealing of Control Box



Note: We can use sealing screw or sealing sticker.

(c) Sealing of Scanner Scale Basework