



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/249

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 MS-2020 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 1/12/16, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 4 approved – certificate issued	7/11/06
1	Variant 5 approved – certificate issued	28/05/08
2	Pattern & variants 1 to 5 reviewed & updated – certificate issued	5/04/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/4C/249' 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 S1/0/A or No S1/0B.

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

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the bottom.

TECHNICAL SCHEDULE No 6/4C/249

1. Description of Pattern

approved on 7/11/06

A Teraoka model Digi MS-2020 class III non-automatic single interval self-indicating weighing instrument (Figure 1) of 15 kg maximum capacity with a verification scale interval of 0.005 kg. The platform has maximum dimensions of 282 x 340 mm.

The model Digi MS-2020 also provides an integral laser scanner for reading bar codes.

The instrument platform is supported by a single Teraoka 'P-type' load cell located at the end of the platform.

The instrument display may be either a single or double-sided remote display. 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.

Note: One of the displays (for the vendor or the customer) may be a secondary electronic indicating device which complies with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

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

Power is supplied by a mains adaptor - Metrologic Part No. 6165A, also identified as model EPA-202D-1A (5 V DC, 1.5 A and 12 V DC, 1.5 A); the submitter should be consulted regarding the acceptability of alternative power supplies.

1.1 Levelling

The instrument is intended to be installed in a fixed position (e.g. a supermarket check-out) and hence a level indicator and levelling device are not required (although a level indicator may be available for installation purposes). However where the instrument (or variants) are to be installed in a non-fixed location, a level indicator and levelling device (e.g. bubble and adjustable feet) shall be provided, the level indicator shall be clearly visible to the operator when in use, and a notice adjacent to the level indicator stating 'Instrument must be level when in use', or similar shall be provided.

1.2 Zero

The instrument has an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument. This feature may, or may not, be enabled.

The instrument has a semi-automatic zero-setting device (to set the instrument to within $\pm 0.25e$ of zero) with a nominal range of not more than 4% of the maximum capacity of the instrument.

Zero may be automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero or whenever power is applied. This feature may, or may not, be enabled.

Note: In the case of multi-interval instruments (see variants) e in the above refers to e_1 .

1.3 Display Check

A display check is initiated whenever power is applied.


1.4 Sealing Provision

Calibration adjustments are made by use of an external plug-in device.

Provision is made for the calibration adjustments to be sealed by restricting access to the socket for the external device. A destructible adhesive label over the hole in the casing provided for the socket, and a destructible adhesive label restricting access within the casing, are used to seal the instrument (Figure 2).

1.5 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	
Maximum capacity	Max kg #1
Minimum capacity	Min kg #1
Verification scale interval	e = kg #1
Serial number of the instrument #2
Pattern approval mark for the instrument	NMI 6/4C/249

Notes:

- (a) In the case of multi-interval instruments (see variants) the markings shall be as above, with the exception of the following.

Maximum capacity	Max/..... kg #1
Verification scale interval	e =/..... kg #1

- (b) Where a semi-automatic subtractive tare facility is provided (see variants), its maximum capacity shall be marked.

Tare capacity	T = - kg #1
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Instruments may be required to be marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording) – refer to clause 1. **Description of Pattern.**

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

#2 May be located separately from the other markings.

2. Description of Variant 1

approved on 7/11/06

The Teraoka model Digi MS-2020 of 30 kg maximum capacity, with a verification scale interval of 0.01 kg.

3. Description of Variant 2

approved on 7/11/06

The Teraoka model Digi DS-866PS (Figure 3) which is similar to the pattern, however various components of the instrument are provided separately, as follows:

- A basework, with the instrument platform supported by a single Teraoka 'P-type' load cell located at the end of the platform. The basework may also incorporate separate laser bar code scanning equipment. Maximum platform dimensions are 251 mm x 274 mm.
- The remote instrument display (which may be single or double sided as described for the pattern)
- A box/housing which contains the main instrument electronics.
- The power supply – a Hon-Kwang Electric (Kun Shan) Co. Ltd model 0950SA, 9 V DC, 500 mA, or a Wedderburn model 9 V DC, 500 mA mains adaptor; the submitter should be consulted regarding the acceptability of alternative power supplies.

The model Digi DS-866PS weighing instrument is approved in the following versions:

Single interval instruments

Maximum capacity (<i>Max</i>)	Verification scale interval (<i>e</i>)	Maximum tare capacity (<i>T</i> = -)
15 kg	5 g	7.495 kg

Multi-interval interval instruments

Maximum capacity (<i>Max</i> ₁ / <i>Max</i> ₂)	Verification scale interval (<i>e</i> ₁ / <i>e</i> ₂)	Maximum tare capacity (<i>T</i> = -)
6 / 15 kg	2 / 5 g	5.998 kg

A semi-automatic subtractive tare facility may be provided with a maximum capacity as shown above.

Note: A typical location for the box/housing which contains the main instrument electronics may be beneath a counter or otherwise out of normal view. Where the box/housing is in such a location, the keypad provided on this housing (as shown in Figure 3) shall be covered (as shown in Figure 4) to prevent possible inadvertent operation.

Provision is made for sealing by restricting access to a switch which enables/disables adjustment facilities. Prior to sealing it shall be checked that the switch is in the 'OFF' position, i.e. to the right (as shown in Figure 4). A destructible adhesive label over the hole in the casing which provides access to the switch, and a destructible adhesive label restricting access within the casing, is used to seal the instrument. See Figure 4.

4. Description of Variant 3

approved on 7/11/06

The Teraoka model Digi DS-866SC (Figure 5) which is similar to the model DS-866PS (variant 2), except that the instrument basework comprises a centrally-located Teraoka 'P-type' or 'K-type' load cell, and does not include bar code scanner capabilities. Maximum dimensions of the basework are 341 x 284 mm.

The model Digi DS-866SC weighing instrument is approved in the following versions:

Single interval instruments

Maximum capacity	Verification scale interval	Maximum tare capacity
(Max)	(e)	(T = -)
6 kg	2 g	2.998 kg
15 kg	5 g	7.495 kg
30 kg	10 g	14.99 kg

Multi-interval interval instruments

Maximum capacity	Verification scale interval	Maximum tare capacity
(Max ₁ / Max ₂)	(e ₁ / e ₂)	(T = -)
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

Sealing arrangements are as shown for the model DS-866PS (Variant 2), and the note for that variant regarding the keypad shall be observed.

5. Description of Variant 4

approved on 7/11/06

The Teroaka models Digi DS-866ES (without a bar code scanner) and DS-866FS (with a bar code scanner) as shown in Figure 6.

The model Digi DS-866ES and DS-866FS are similar to the model DS-866PS (variant 2), except that the basework comprises a platform supported by two Teraoka 'P-type' load cells, one located at each end of the platform.

Maximum platform dimensions are 295 mm × 291 mm.

The model Digi DS-866ES and DS-866FS weighing instruments are approved in the following versions:

Single interval instruments

Maximum capacity	Verification scale interval	Maximum tare capacity
(Max)	(e)	(T = -)
6 kg	2 g	2.998 kg
15 kg	5 g	7.995 kg

Multi-interval interval instruments

Maximum capacity	Verification scale interval	Maximum tare capacity
(Max ₁ / Max ₂)	(e ₁ / e ₂)	(T = -)
6 / 15 kg	2 / 5 g	5.998 kg

Sealing arrangements are as shown for the model DS-866PS (Variant 2), and the note for that variant regarding the keypad shall be observed.

6. Description of Variant 5

approved on 28/05/08

The Teraoka model Digi DS-866SYC (*) which is similar to the model DS-866SC (variant 3) except that the circuitry of the main instrument electronics (enclosed in the separate box/housing shown in Figure 5) is now housed within the instrument basework, which has maximum dimensions of 341 × 284 mm.

(*) The SYC suffix is not necessarily shown on the nameplate.

The various versions and capacities of instrument described in variant 3 also apply.

Provision is made for sealing by use of two destructible adhesive labels – one to restrict access to the socket for the external device, and one over a hole containing a screw which holds the top to the bottom of the basework, as shown in Figure 7, thereby restricting access within the casing.

TEST PROCEDURE No 6/4C/249

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*.

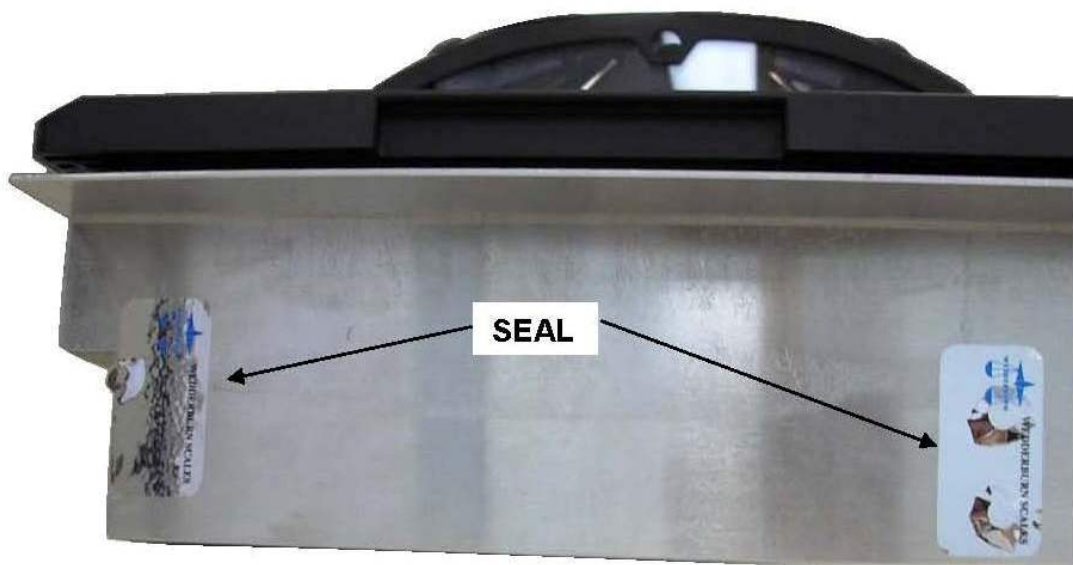
For multi-interval instruments with verification scale intervals of $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

FIGURE 6/4C/249 – 1



Teraoka Model Digi MS-2020 Weighing Instrument

FIGURE 6/4C/249 – 2



Sealing of Model MS2020

FIGURE 6/4C/249 – 3



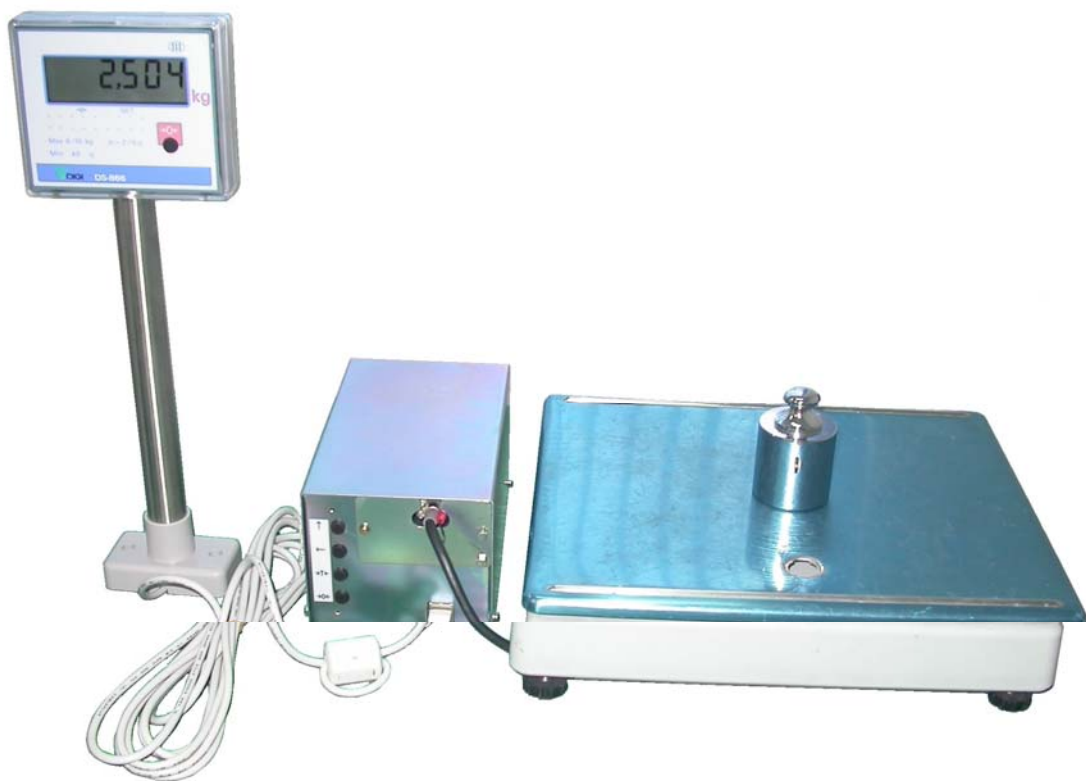
Model DS-866 PS

FIGURE 6/4C/249 – 4



Sealing of DS-866 Models

FIGURE 6/4C/249 – 5

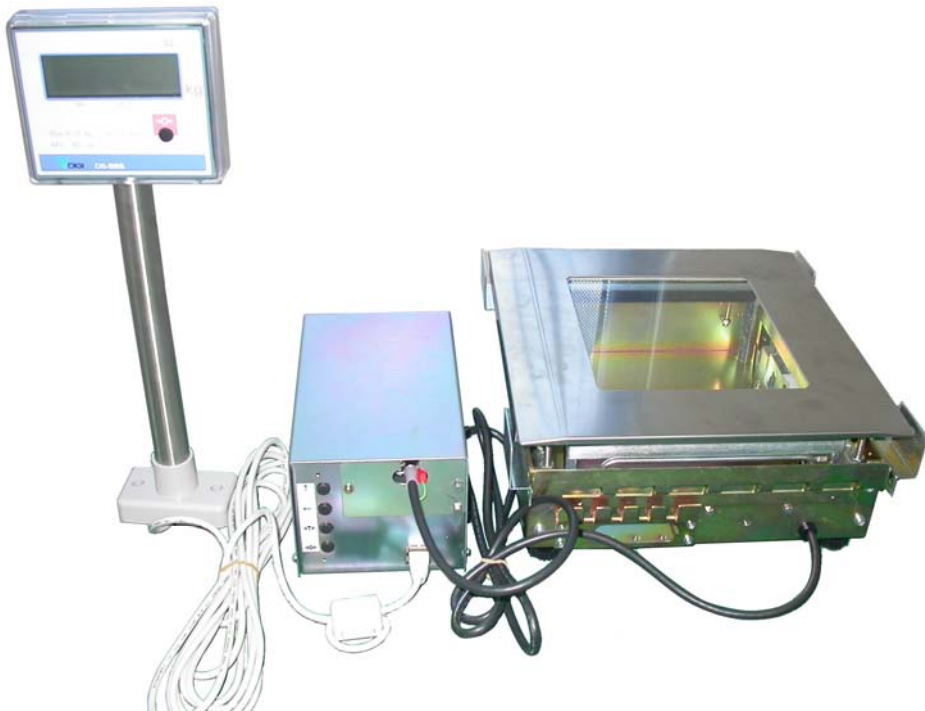


Model DS-866SC

FIGURE 6/4C/249 – 6

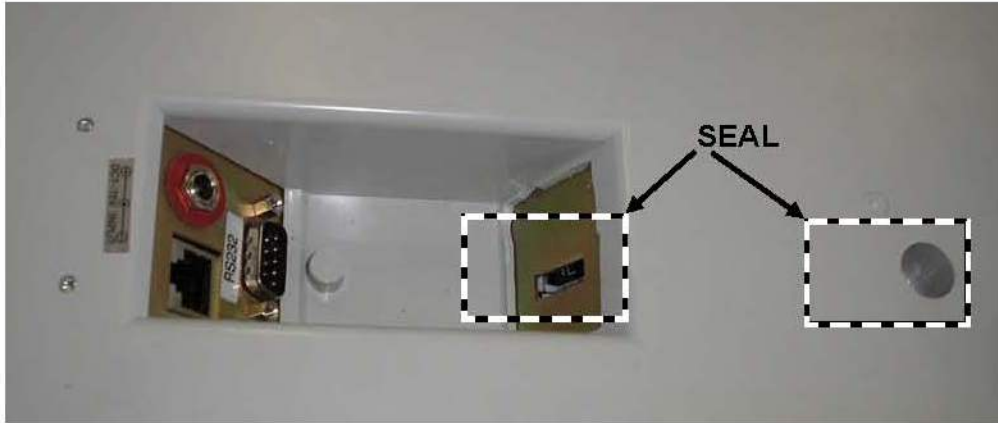


(a) Model DS-866 ES



(b) Model DS-866 FS

FIGURE 6/4C/249 – 7



Sealing of Teraoka Model Digi DS-866SYC

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