



Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S501

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 DI-162 Digital Indicator

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 **1/10/18**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – certificate issued	17/09/07
1	Pattern & variant 1 reviewed & updated – certificate issued	26/07/13

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S501' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S501' in addition to the approval number of the instrument, 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.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

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 S501

1. Description of Pattern

approved on 17/09/07

A Teraoka model DI-162 digital mass indicator (Table 1 and Figure 1a) which may be configured to form part of:

- A class  weighing instrument with a single weighing range of up to 7500 verification scale intervals (or class  with up to 1000 verification scale intervals).
- A multi-interval class  weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 3000 verification scale intervals per partial weighing range (or class  with up to 1000 verification scale intervals per partial weighing range).





Note: The indicator may also be known as a Digi model DI-162.

The instrument has a liquid crystal display (LCD) with backlight capability, 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.

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

TABLE 1 – Specifications

Maximum number of verification scale intervals	7500 (single range, ) or 1000 (single range, ) or 3000 per range (multi-interval, ) or 1000 per range (multi-interval, )
Minimum sensitivity	0.67 μ V/scale interval
Excitation voltage	5 V DC
Maximum excitation current	58.8 mA

1.1 Zero

Zero may be automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero (in the case of multi-interval configurations e in this sentence refers to e_1).

If the instrument comes to rest outside that range but within the zero setting range, zero may be set by pressing the zero button.

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 (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.

1.2 Tare

A semi-automatic subtractive taring device and/or a preset tare device, each of up to the maximum capacity of the instrument, may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Power Supply

The instrument operates from the mains AC power supply.

1.5 Additional Features

The indicator also has certain additional functions (e.g. set point controls). The additional functions (other than the indications of measured mass, i.e. gross, tare, net displayed either on the indicator or an auxiliary or peripheral device) are not approved for trade use.

1.6 Interfaces

The indicator 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 S1/0/A (in particular in regard to the data and its format).

Note particularly that this approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with RS-232C serial data interfaces.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Sealing Provision

It can be checked that the switches within the indicator housing have been set in the correct 'locked' state (to prevent adjustment without breaking the seals) by the following:

Press and hold the REZERO button, whilst holding the REZERO button press the buttons T, then ←, then ←. If the display shows "S-off" then this indicates that the adjustment switch is not in the 'locked' state. The instrument shall not be used for trade when the calibration adjustment switch is not in the 'locked' state.

Provision is made for sealing of the instrument by preventing access to switches within the indicator housing. This may be achieved by use of destructible adhesive labels, one at each side of indicator (over the join in the indicator housing).

1.9 Descriptive Markings and Notices

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full	Teraoka
Name or mark of manufacturer's agent	WEDDERBURN
Indication of accuracy class	III or IIII
Pattern approval number for the instrument	NMI S501
Maximum capacity	Max g, kg or t #1
Minimum capacity	Min g, kg or t #1
Verification scale interval	e = g, kg or t #1
Maximum subtractive tare	T = - ... g, kg or t #2
Serial number of the instrument
Pattern approval mark for the indicator	NMI S501
Pattern approval mark for other components #3

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

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

#3 May be located separately from the other markings.

Instruments with a maximum capacity of less than 100 kg shall be marked 'NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Note: For multi-interval instruments the markings shall be as above, with the exception that the 'Maximum capacity' and 'Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

Maximum capacity	Max / kg
Verification scale interval	e = / kg

2. Description of Variant 1

approved on 17/09/07

The Teraoka model DI-162SS (also known as Digi model DI-162SS) which has the same functions and characteristics as the DI-162, except that DI-162 SS uses a stainless steel housing (Figure 1b).

Sealing is achieved in a similar way to the pattern.

TEST PROCEDURE No S501

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*.

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

FIGURE S501 – 1



(a) Teraoka Model DI-162 Digital Indicator (the pattern)



(b) Teraoka Model DI-162SS Digital Indicator (variant 1)

~ End of Document ~