Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S716

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.

Bilanciai Model DD700 ABS Digital Indicator

submitted by National Weighing & Instruments Pty Ltd
1/88 Magowar Road
Girraween NSW 2145

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.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	31/03/16
1	Pattern & variants 1 & 2 approved – certificate issued	17/08/16
2	Pattern amended (software) & variant 3 approved – certificate issued	19/03/19
3	Variant 4 approved – certificate issued	18/08/20

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S716' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S716' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

It is the submittor'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.

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*.

Darryl Hines
Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No S716

1. Description of Pattern

approved on 31/03/16
amended on 19/03/19

A Bilanciai model DD700 ABS digital mass indicator (Figure 1 and Table 1) which may be configured to form part of a class (III) weighing instrument as follows:

- A weighing instrument with a single weighing range of up to 6000 verification scale intervals;
- A multi-interval weighing instrument with up to 2 partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 4000 verification scale intervals per partial weighing range;
- A multi-interval weighing instrument with up to 3 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;
- A multiple range weighing instrument with up to 2 weighing ranges, in which case it is approved for use with up to 4000 verification scale intervals per weighing range.
- A multiple range weighing instrument with up to 3 weighing ranges, in which case it is approved for use with up to 3000 verification scale intervals per weighing range.

As a class (IIII) weighing instrument with a single range, or as a multi-interval instrument (2 and 3 partial ranges), or as a multiple range instrument (2 and 3 partial ranges), and with up to 1000 verification scale intervals.

The changeover between weighing ranges is automatic.

The indicator is approved for use with NMI approved Bilanciai analogue or digital load cells.

The Instrument has an ABS enclosure and may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

The instrument has a 240 × 64 mm graphics LCD display with a keyboard.

The instrument has a main board with processor with A/D converter which including 2 multiplexed inputs.

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	6000 Class (III) 4000 per range (2 partial range) Class (III) 3000 per range (3 partial range) Class (III) 1000 for Class (IIII)
Minimum sensitivity	0.5 µV / scale interval
Excitation voltage	5 V DC (10-18 V DC for digital load cell)
Minimum load cell impedance per weighing module	29 Ω
Maximum excitation current	172.41 mA

Load cell connection (analogue load cell)	6 wire shielded, maximum length 15.162 m/mm^2

1.1 Zero

Zero is automatically corrected to within ±0.25e whenever the instrument comes to rest within 0.5e of zero.

Note: For multi-interval or multiple range operation, zero is automatically corrected to within ±0.25e_1 whenever the instrument comes to rest within 0.5e_1 of zero.

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

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

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

1.2 Tare

A semi-automatic subtractive taring device of up to the maximum capacity of the instrument may be fitted. A pre-set taring device of up to the maximum capacity (or of up to the *Max*$_1$ for multi-interval instruments) may also be fitted.

1.3 Power Supply

The power supply is 12 V DC supplied by an AC/DC mains adaptor or other DC source.

Note: The AC/DC mains adaptor supplied was a EDAC Power ELEC model EA1050A-120 power supply (output 12 V DC, 5 A) – the submittor should be consulted regarding the acceptability of alternative power supply units.

1.4 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Societa Cooperativa bilanciai Campogalliano a.r.l., Italy
Name or mark of manufacturer's agent	National Weighing & Instruments
Indication of accuracy class	(III) or (III)
Maximum capacity (for each range)	*Max* ..... kg #1
Minimum capacity (for each range)	*Min* ..... kg #1
Verification scale interval (for each range)	*e* = ... kg #1
Maximum subtractive tare	*T* = - ..... kg #2
Serial number of the instrument	…….
Pattern approval number for the indicator	NMI S716
Pattern approval number 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.

In addition, instruments not greater than 100 kg capacity carry a notice stating

NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Note:

For multi-interval and multiple range instruments the markings shall be as above, with the exception of the following (examples are for instruments with two partial ranges):

(i) For multi-interval instruments;

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

(ii) For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication of the range to which they apply, e.g.

Range	1	2
Max	…. kg	…. kg
Min	…. kg	…. kg
e =	…. kg	…. kg

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

Provision is made for the calibration adjustments to be sealed by preventing access within the instrument case – this is achieved by placing a destructible label seal over access screws to prevent accessing the calibration switch (Figure 2). The instrument can also be audited by checking the access number as follows:

- Remove the calibration cover screw.
- Press the calibration button with a non-conductive object.
- Select the ‘English’ in language menu, then press ‘Enter’.
- Check or record or value shown next to ‘Number of access’.

The number of access should be recorded on the seal label.

1.7 Interfaces

The instrument 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/B (in particular in regard to the data and its format).

1.8 Additional Features

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.

1.9 Software

The legally-relevant software comprises the following modules (with x reflecting minor, non-legally relevant changes):

	Identification	Release	Checksum
Metrological software	BIL001	1.x	1CA3
Boot:	59300003	1.x	1691

The software information can be displayed by pressing the right arrow key and simultaneously switching on the indicator.

2. Description of Variant 1 approved on 31/03/16

The Bilanciai model DD700 IC digital mass indicator (Figure 3) has similar parameters and specifications to the pattern, except for having a stainless steel enclosure, and different sealing methods (Figure 4).

3. Description of Variant 2 approved on 31/03/16

The Bilanciai model DD700 I digital mass indicator has similar parameters and specifications to variant 1 but has a different stainless steel enclosure (Figure 5).

4. Description of Variant 3 approved on 19/03/19

The Bilanciai model DD700 panel mount version which is similar to the pattern but having a steel enclosure (Figure 6).

5. Description of Variant 4 approved on 18/08/20

The pattern and variants used with NMI approved Eurocell (or Bilanciai) model CPD-M digital load cells.

The maximum number of verification scale intervals (VSI) applicable is determined by the number of VSI given in the approval documentation for the load cell used.

TEST PROCEDURE

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*.

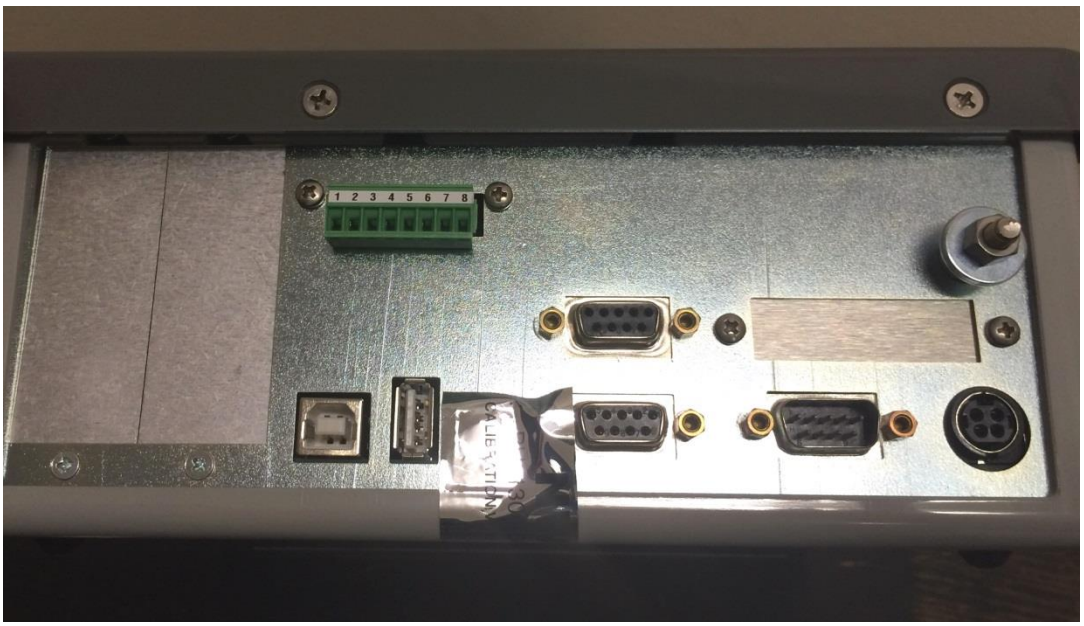
Tests

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

FIGURE S716 – 1

Bilanciai Model DD700 ABS Weighing Instrument (pattern)

FIGURE S716 – 2



Typical Mechanical Sealing Model DD700 ABS (pattern)

FIGURE S716 – 3

Bilanciai Model DD700 IC Weighing Instrument (variant 1)

FIGURE S716 – 4

Typical Mechanical Sealing Model DD700 IC, front and rear (variant 1)

FIGURE S716 – 5

Bilanciai Model DD700 I Weighing Instrument (variant 2)

FIGURE S716 – 6

Bilanciai Model DD700 Panel Mount Weighing Instrument (variant 3)

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