Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S666

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 DD1050 Digital Indicator

submitted by NATIONAL WEIGHING & INSTRUMENTS PTY. LIMITED
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.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 7 approved – interim certificate issued	17/04/14
1	Pattern & variants 1 to 7 approved – certificate issued	13/06/14
2	Reference document changed to NMI R 76 (2015), review requirement changed, variants 8 & 9 approved – certificate issued	20/04/21
3	TABLE 4 in variant 8 amended, typo error in variant 9 corrected, variant 10 & 11 approved – certificate issued	07/12/23

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S666' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S666' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

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 S666

1. Description of Pattern approved on 17/04/14

A Bilanciai model DD 1050 digital mass indicator (Figure 1 and Table 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 6000 verification scale intervals.
- A multi-interval weighing instrument with up to three partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with:
  - a) In the case of class (III) instruments with two partial weighing ranges: up to 4000 verification scale intervals per partial weighing range.
  - b) In the case of class (III) instruments with three partial weighing ranges: up to 3000 verification scale intervals per partial weighing range.
  - c) In the case of class (III) instruments with two or three partial weighing ranges: up to 1000 verification scale intervals per partial weighing range.
- A multiple range weighing instrument with up to three weighing ranges in which case it is approved for use with:
  - a) In the case of class (III) instruments with two weighing ranges: up to 4000 verification scale intervals per weighing range.
  - b) In the case of class (III) instruments with three weighing ranges: up to 3000 verification scale intervals per weighing range.
  - c) In the case of class (III) instruments with two or three weighing ranges: up to 1000 verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

The instrument may incorporate up to 4 analogue to digital (A/D) conversion modules, each of which may be connected to a single load receptor. Hence the indicator may display weight values for up to 4 load receptors.

The instrument has a housing of stainless steel (front) and ABS plastic (rear).

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

The instrument is fitted with a graphic LCD touchscreen display.

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

TABLE 1 – Specifications for the Pattern (Model DD1050)

Maximum number of verification scale intervals	Refer to list above
Minimum sensitivity	0.6 μV / scale interval
Excitation voltage	10 V DC
Minimum load cell impedance	29 Ω
Maximum excitation current	344.83 mA
Load cell connection (analogue load cells)	6-wire shielded cable, maximum length: 580 m/mm^2

Note: The above specifications apply for each load receptor / A/D conversion module.

1.1 Zero

A zero-tracking device may be fitted.

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.

1.2 Tare

A semi-automatic subtractive tare device of up to the maximum capacity of the instrument may be fitted. A pre-set subtractive tare device of up to the maximum capacity of the instrument (or up to Max_1 for multi-interval instruments) may be fitted.

1.3 Power Supply

The power supply of the instrument is a 12 V DC, 5 A output AC/DC mains adaptor, made by EDACPOWER ELEC. The model number is EA1050A-120. Note:The submittor should be consulted regarding the acceptability of alternative power supply units.

1.4 Additional Features

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

1.4.1 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).

See the note at clause **1.4 Additional Features**.

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/422/485 serial data interfaces, Ethernet, USB, Profibus, SD card, analogue output (4 - 20 mA, 0 - 10V), Audio, USB Host, and may also have digital inputs/outputs.

1.4.2 Multiple Baseworks Facility

See the note at clause **1.4 Additional Features**.

(a) Individual weight display

Up to four baseworks (load receptors) may be connected to a single DD1050 digital indicator. The indicator screen can be arranged to show up to five individual displays (i.e. one display screen for each of the four baseworks and one display screen for the summing function). The display screen for each basework is identified by a letter on the top right corner of the display (e.g. A, or B, or C, or D).

A particular basework/display may be selected by touching the relevant display area (a red edge appears around the display to indicate that it has been selected). Relevant functions of the indicator (e.g. zero, tare and pre-set tare) will then act on the selected basework/display.

(b) Summed weight display

Where two or more baseworks are connected to a single DD1050 indicator, the sum of the gross weight values for the individual baseworks/displays may be calculated and displayed in the summing display (identified by ‘S’ in its top right corner). The displayed sum is the arithmetic sum of the gross weight values for all individual displays (the tare function is inoperative on the summing display).

Notes regarding summed weight display:

- The scale interval of the summing indicator shall be of a value to suit the sum of the scale intervals of the primary indicators being summed and the summed result. The summing indicator shall be able to display all possible combinations of the scale intervals of all primary indicators, e.g. where the primary indicators are dual range 20 kg and 50 kg, the summing indicator must be able to indicate 70 kg, therefore the summing indicator will need a scale interval of 10 kg.
- All weight displays in the system shall display the same units of measurement (e.g. all kg or all t).
- The summed value shall show non-numerical characters if any of the primary indicators display an error message or a negative value.

Note regarding zero function:

> The zero function may operate whilst the summed display is selected, but only when all the individual weight displays are displaying gross weight values. In this case the zero function will operate to zero all weight displays simultaneously.

Note regarding identification of baseworks/displays:

> Where a number of baseworks are connected to and displayed by the indicator, there shall be a clear identification and correspondence between each display and its corresponding basework. This may require additional markings (e.g. to identify baseworks as ‘A’, ‘B’, ‘C’ or ‘D’). Where a display showing the sum of weight values from different platforms is present, a clear indication of the baseworks comprising this sum shall be provided (e.g. ‘S = A + B + C + D’).

1.4.3 Weighbridge Modes

See the note at clause **1.4 Additional Features**.

The instrument may be fitted with facilities for facilitating transactions, particularly weighbridge transactions.

This may include the entry and recording of information such as client identification, product information and vehicle registration, and the storage of pre-set tare values.

These ‘weighbridge modes’ may provide for:

- Simple vehicle weighing, where the gross weight of a vehicle is determined by a single weighing;
- Inbound/outbound weighing, where a vehicle is weighed before and after a loading or unloading operation; and
- Weighing with pre-set vehicle weight, where the net weight of a vehicle is determined from the gross weighing operation and the application of a pre-set tare value.

Other functions such as to provide an indication of axle or group loading may be provided, however these are not approved for trade use.

1.4.4 Data Storage Memory

See the note at clause **1.4 Additional Features**.

The indicator may contain memory (or external memory may be provided) for the storage of weighing results.

For each weighing, weighing results together with information uniquely identifying the results such as the following are stored into the storage device:

- Unique ID to identify the each weighing
- Date/time of each weighing
- Unique serial number of the device used for each weighing
- Unique ID of the load receptor(s)
- NET weight with unit of measurement
- TARE weight with unit of measurement
- Checksum value for the complete data

1.5 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 and Instruments P/L
Indication of accuracy class	(III) or (IIII)
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 mark for the indicator	NMI S###
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.

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

Where more than one basework is connected to the indicator, appropriate markings shall be provided for each basework, and shall be clearly identified with the corresponding basework/display (e.g. 'A', 'B', 'C', 'D' as per note in 1.4.2(b) above).

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Sealing Provision

The instrument may be sealed via physical and/or software means.

a) Physical (hardware) sealing (Figure 2) (Note that hardware sealing for some variants is shown in Figure 4.)

Access to the calibration and metrological configuration requires operation of a calibration button accessible via a hole located at the rear of the indicator. Following calibration it should be checked that calibration of the instrument is protected (see following), and sealing stickers (destructible adhesive labels) should be placed to restrict access within the indicator housing, and to the calibration button (Figure 2).

To check that the calibration of the instrument is protected, follow the steps below.

- Press the Folder  icon to open the 'set up' screen.
- Press the Setup 

icon, the individual platform (e.g. A, B) and sum (e.g. S) will be displayed.
- Press 'A' or 'B' icon.
- If the instrument only displays the 'Configuration' icon, then the calibration is protected. Otherwise, if the 'Calibration' icon is shown then the calibration is not protected.

Press the X icon (twice) to return to weighing mode.

b) Software sealing (Figure 3)

Access to the calibration and metrological configuration may alternatively be password protected, with any change to the calibration or metrological parameters incrementing a non-resettable counter. The counter is designated 'SW seal counter' and can be displayed via the software menus. Changes are also logged on the instrument and can be viewed by the user.

To verify the software sealing status, follow the steps below.

- Press the Folder  icon to open the "set up" screen.
- Press the Information  icon to open the screen as shown in Figure 3.
- Press the Metrological Info icon.
- Observe the 'Seal current status' display. If the status indicates 'HW', physical (hardware) sealing is to be used (see 1.10a above).
- If the status indicates 'SW', software sealing is to be used.
- The 'SW seal counter' value shall be recorded on a destructible adhesive label attached to the instrument.
- Compare the 'SW seal counter' value with the value recorded on the seal label. If the values are the same then the calibration of the instrument has not been changed.
- Any subsequent alteration to the calibration or configuration will be evident as the recorded value and the current counter value will differ.

2. Description of Variant 1 approved on 17/04/14

The Bilanciai model DD1050I (Figure 5a) which has the same specifications and software as the pattern, and similar hardware. However the enclosure of this model is stainless steel only, and incorporates its power supply module within the enclosure.

2.1 Sealing Provision

Physical or software sealing may be used (similar to the pattern). However for physical (hardware) sealing, operation of the calibration button requires access within the indicator housing. Following calibration it should be checked that calibration of the instrument is protected (see 1.10a), and one of the screws on the front cover of the indicator shall be sealed to restrict access within the housing, using means such as a destructible adhesive label, screw covered with a lead filled cup or lead and wire seal.

3. Description of Variant 2 approved on 17/04/14

The Bilanciai model DD2050 (Figure 5b) which has the same specifications and software as the pattern, and similar hardware. However the enclosure of this model is stainless steel only, and incorporates a printer within the enclosure. Access within the enclosure is necessary (to change paper). Within the enclosure is an inner module which houses the main electronics (to the left of the enclosure).

3.1 Sealing Provision

Physical or software sealing may be used (similar to the pattern). However, for physical (hardware) sealing, operation of the calibration button requires access within the inner module within the enclosure. Following calibration it should be checked that calibration of the instrument is protected (see 1.10a), and one of the screws on the cover of the inner module within the enclosure shall be sealed to restrict access within this inner module, using means such as a destructible adhesive label, screw covered with a lead filled cup or lead and wire seal.

4. Description of Variant 3 approved on 17/04/14

The Bilanciai model DD1010H (Figure 5c) which is similar to the pattern, however this model has specifications as shown in Table 2 below. This model has a smaller graphic LCD display screen than the pattern, and has an ABS plastic enclosure.

The instrument may incorporate up to 2 analogue to digital (A/D) conversion modules, each of which may be connected to a single load receptor. Hence the indicator may display weight values for up to 2 load receptors.

4.1 Sealing Provision

Physical or software sealing may be used (similar to the pattern).

However for physical (hardware) sealing, operation of the calibration button is via a hole located at the rear of the indicator (covered by a screw). Following calibration it should be checked that calibration of the instrument is protected (see 1.10a), and access within the housing, and to the calibration button shall be restricted using means such as destructible adhesive labels, screw(s) covered with a lead filled cup or lead and wire seal(s), see Figure 4.

5. Description of Variant 4 approved on 17/04/14

The following models which are similar to the model DD1010H (Variant 3), including the specifications (Table 2), but use different housings:

- The Bilanciai model DD1050IH (Figure 5d) having a stainless steel enclosure and cable glands.
- The Bilanciai model DD1050ICH (Figure 5e) having a stainless steel enclosure and using various connectors.

TABLE 2 – Specifications for Variants 3 & 4 (Models DD1010H, DD1050IH & DD1050ICH)

Maximum number of verification scale intervals	As for the pattern
Minimum sensitivity	0.6 μV / scale interval
Excitation voltage	9 V DC #
Minimum load cell impedance	29 Ω
Maximum excitation current	310.4 mA
Load cell connection (analogue load cells)	6-wire shielded cable, maximum length: 293 m/mm^2

Note: The above specifications apply for each load receptor / A/D conversion module.

The manufacturer indicates 9 to 10 V DC. Use the excitation voltage of 9 V DC when carrying out calculations to ensure 6B/0 calculations are met.

6. Description of Variant 5 approved on 17/04/14

The Bilanciai model DD1010 (Figure 5c) which is similar to the pattern, however this model has specifications as shown in below. This model has a smaller graphic LCD display screen than the pattern, and has an ABS plastic enclosure.

The instrument may incorporate up to 2 analogue to digital (A/D) conversion modules, each of which may be connected to a single load receptor. Hence the indicator may display weight values for up to 2 load receptors.

6.1 Sealing Provision

As described for variant 3 in clause **4.1 Sealing Provision**.

7. Description of Variant 6 approved on 17/04/14

The following models which are similar to the model DD1010 (Variant 5), including the specifications (Table 3), but use different housings:

- The Bilanciai model DD1010I (Figure 5d) having a stainless steel enclosure and cable glands.
- The Bilanciai model DD1010IC (Figure 5e) having a stainless steel enclosure and using various connectors.

7.1 Sealing

As described for variant 1 in clause **2.1 Sealing Provision**.

TABLE 3 – Specifications for Variants 5 & 6 (Models DD1010, DD1010I DD1010IC)

Maximum number of verification scale intervals	As for the pattern
Minimum sensitivity	0.5 µV / scale interval
Excitation voltage	4.5 V DC ##
Minimum load cell impedance	29 Ω
Maximum excitation current	155.2 mA
Load cell connection (analogue load cells)	6-wire shielded cable, maximum length: 143 m/mm^2

Note: The above specifications apply for each load receptor / A/D conversion module.

The manufacturer indicates 4.5 to 5 V DC. Use the excitation voltage of 5 V DC when carrying out calculations to ensure 6B/0 calculations are met.

8. Description of Variant 7 approved on 17/04/14

The pattern and variants 1 to 6 used with compatible NMI-approved Eurocell (or Bilanciai) digital load cells (without an analogue to digital conversion module).

Where digital load cells are used, the excitation voltage supplied for the digital load cells is 10 to 18 V DC.

Note: Where multiple baseworks are connected to the indicator, each basework may use a different type of load cell (e.g. basework 'A' may use and analogue load cells, and basework 'B' may use digital load cells).

9. Description of Variant 8 approved on 20/04/21 amended on 07/12/23

The Bilanciai model DD2060 indicator (Figure 6) is similar to variant 2 but with an alternative main board with processor (CPU based on x86 Architecture).

TABLE 4

Maximum number of verification scale intervals	6000 for single interval (class ⓃⅢ) 4000 for multi-interval/ (2 partial ranges) (Class ⓃⅢ) 4000 for multiple range (2 ranges) Class ⓃⅢ) 3000 for multi-interval (3 partial ranges) (Class ⓃⅢ) 3000 for multiple range (3 ranges) (Class ⓃⅢ) 1000 for single range, multiple range (2 and 3 ranges), and multi-interval (2 and 3 partial ranges) (Class ⓃⅢ)
Minimum sensitivity	0.6 µV/scale interval
Excitation voltage	9 - 10 V DC
Maximum excitation current	310 mA
Fraction of maximum permissible error	p_i = 0.5
Minimum load cell impedance	29 Ω (for weighing module)
Maximum load cell impedance	1100 Ω

Measuring range minimum voltage	0 mV
Measuring range maximum voltage	27 – 30 mV
Maximum tare range	-100%Max
Maximum pre-set tare range	-100%Max (single and multiple range) -100%Max_1 (multi-interval)
Operating temperature range	-10°C to +40°C
Load cell connection	6 wire plus shield
Maximum value of load cell cable length per wire cross section*	3358 m/mm^2

(*) Additional connection cable between indicator and load cell or load cell junction box.

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.

8.1 Software Version

Instruments are fitted with weighing board and main board software.

a) Analogue version weighing board software:

Description	Identification	Release	Checksum
Analogue version 5 VDC	491032	1.6.x.x	5A3E
Analogue version 10 VDC	491039	1.6.x.x	B6C1

With x reflecting minor, non-legally relevant changes, for example bug fix.

The software ID, release number and checksum of the weighing board software can be displayed as shown in Figure 7a.

b) Main board software:

Software module	Release	Checksum
Bilanciai.WeighIndicator.exe	1.0.x.x	D4234307
	2.0.x.x	A31EB348
Bilanciai.ServiceLibrary.exe	1.0.x.x	C3930FF5
	2.0.x.x	81FEF1FC

With x reflecting minor, non-legally relevant changes, for example bug fix.

The release number and checksum of the main board module can be displayed as shown in Figure 7b.

Refer to Figure 10 for checking software identifications, version numbers and checksums.

8.2 Sealing Provision

The instrument may be sealed via physical, or software means.

a) Physical (hardware) sealing

Provision is made for the calibration to be sealed by means of destructible adhesive labels placed over the securing screws on the calibration switch access hole and

housing cover plate as shown in Figure 8a, and set as hardware seal in the software as shown in Figure 8b.

b) Software sealing

Access to the calibration and metrological configuration may alternatively be password protected, with any change to the calibration or metrological parameters incrementing a non-resettable counter. The counter is designated 'Software seal counter' (Figure 9b) and can be displayed via the software menus. Changes are also logged on the instrument and can be viewed by the user (Figure 9a).

To verify the software sealing status, follow the steps in Figure 10.

- Observe the 'Seal status' display (Figure 9b). If the seal type indicates 'Software', software sealing is to be used; if the seal type indicates 'Hardware', physical (hardware) sealing is to be used.
- The 'Software seal counter' value shall be recorded on a destructible adhesive label attached to the instrument.
- Compare the 'Software seal counter' value with the value recorded on the seal label. If the values are the same then the calibration of the instrument has not been changed.
- Any subsequent alteration to the calibration or configuration will be evident as the recorded value and the current counter value will differ.

Refer to Figure 10 for checking software seal.

10. Description of Variant 9 — approved on 20/04/21 amended on 07/12/23

The Bilanciai model DD2060 indicator (Figure 6) is similar to variant 8 but with a digital version weighing board or TTL digital version weighing board and used with compatible NMI-approved Eurocell (or Bilanciai) 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.

10.1 Software Version

Instruments are fitted with weighing board and main board software.

a) Digital version weighing board software:

Description	Identification	Release	Checksum
Digital version	491040	1.6.x.x	D6FC
TTL Digital version	491059	1.2.x.x	7BA4

With x reflecting minor, non-legally relevant changes, for example bug fix.

The software ID, release number and checksum of the weighing board software can be displayed as shown in Figure 7a.

b) Main board software:

Software module	Release	Checksum
Bilanciai.WeighIndicator.exe	1.0.x.x	D4234307

	2.0.x.x	A31EB348
Bilanciai.ServiceLibrary.exe	1.0.x.x	C3930FF5
	2.0.x.x	81FEF1FC

With x reflecting minor, non-legally relevant changes, for example bug fix.

The release number and checksum of the main board module can be displayed as shown in Figure 7b.

Refer to Figure 10 for checking software identifications, version numbers and checksums.

11. Description of Variant 10 approved on 07/12/23

The Bilanciai models Flynet50, Flynet50i, and Flynet50ic (Figure 11) which are similar to variant 5 and variant 6, and also known as DD1010 Flynet, DD1010I Flynet and DD1010IC Flynet respectively.

The main differences are as follows.

- it has an upgraded processor.
- it can be fitted with up to 12 analogue load cells, or 16 digital load cells, and maximum of 2 scale cards.
- Optional HDMI output, and WiFi communication device.
- Instruments may be fitted with 110-240 Vac, 50/60Hz mains power, or 12Vdc via AC/DC plug-in power supply.
- The differences between Flynet 50, Flynet 50i, and 50ic are the enclosures. Flynet 50 has an ABS plastic enclosure. Flynet 50i has a stainless steel enclosure and cable glands. Flynet 50ic has a stainless steel enclosure and the interface ports are mounted on the enclosure.

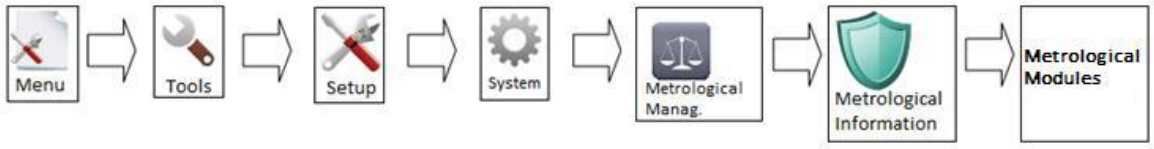
The main specifications are listed in the TABLE 5 below.

TABLE 5 – Main Specifications

Maximum number of verification scale intervals	6000 for single interval (class (III)) 4000 for multi-interval/ (2 partial ranges) (Class (III)) 4000 for multiple range (2 ranges) Class (III)) 3000 for multi-interval (3 partial ranges) (Class (III)) 3000 for multiple range (3 ranges) (Class (III)) 1000 for single range, multiple range (2 and 3 ranges), and multi-interval (2 and 3 partial ranges) (Class (IIII))
Minimum sensitivity	0.5 µV/scale interval
Excitation voltage	5 or 10 Vdc (analogue load cells) 10 – 18 Vdc (digital load cells)
Maximum excitation current	310 mA
Fraction of maximum permissible error	p_i = 0.5. pi = 0 for digital load cells. Pi = 0 for analogues load cells with junction box DILINK.

Minimum load cell impedance	29 Ω (for weighing module)
Maximum load cell impedance	1100 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	27 – 30 mV
Maximum tare range	-100%Max
Maximum pre-set tare range	-100%Max (single and multiple range) -100%Max_1 (multi-interval)
Operating temperature range	-10°C to +40°C
Load cell connection	6 wires plus shield
Maximum value of load cell cable length per wire cross section*	15162 m/mm^2

The software information can be displayed via the user interface: Menu / Info / Metrological Info/ Metrological modules, or alternatively with this path:



Instruments are fitted with main board and weighing board software as in TABLE 6 and TABLE 7.

TABLE 6 - Main board

Identification	**Type P release**	**Checksum**
PluginCBMpp.dll	4.1.x.x	F654A2B459BAEEE6F736D2CC36D992E8E31F282E
PluginBilancia.dll	4.1.x.x	2548BD87795BB40111CE508BF14D6055F061AB19
PluginCBWeightviewer.dll	5.0.x.x	A5E7CCD1ADD6FDC8E302A7805A9734C5D50E3852
Identification	**Type U release**	**Checksum**
PluginBilancia.dll	5.1.x.x	57BFF1EF4AF5B8DA9EEA794B94AE677476CCEE09A
PluginCBWeightviever.dll	7.0.x.x	01F91D37B5B6938F943930BDFCF2DB501388FDC1

TABLE 7 – Weighing board

Weighing board	**Identification**	**Type P Release**	**Type P Checksum**	**Type U Release**	**Type U Checksum**
Analogue version 5 VDC	491032	1.6.x.x	5A3E	2.0.x.x	63A8

Analogue version 10 VDC	491039	1.6.x.x	B6C1	2.0.x.x	8F57
Digital version	491040	1.6.x.x	D6FC	2.0.x.x	EF6A
TTL Digital version	491059	1.2.x.x	7BA4	2.0.x.x	02B6

11.1 Sealing Provision

As described for variant 3 in **clause 4.1 Sealing Provision.**

12. Description of Variant 11 approved on 07/12/23

The Bilanciai models Flynet 100i and Flynet 100ic (Figure 12) which are similar to variant 10.

The main differences are as follows.

- The instrument can be fitted with up to 12 analogue load cells, or 16 digital load cells, and maximum of 4 scale cards.
- Optional HDMI output, and WiFi communication device.
- 10.4 inch touch screen display.
- The differences between Flynet 100i, and 100ic are the enclosures. Flynet 100i has a stainless steel enclosure and cable glands. Flynet 100ic has a stainless steel enclosure and the interface ports are mounted on the enclosure.

The main specifications are listed in the TABLE 8 below.

- TABLE 8 – Main Specifications

Maximum number of verification scale intervals	6000 for single interval (class ⓘⅢ) 4000 for multi-interval/ (2 partial ranges) (Class ⓘⅢ) 4000 for multiple range (2 ranges) Class ⓘⅢ) 3000 for multi-interval (3 partial ranges) (Class ⓘⅢ) 3000 for multiple range (3 ranges) (Class ⓘⅢ) 1000 for single range, multiple range (2 and 3 ranges), and multi-interval (2 and 3 partial ranges) (Class ⓘⅢ)
Minimum sensitivity	0.6 µV/scale interval
Excitation voltage	10 Vdc (analogue load cells) 10 – 18 Vdc (digital load cells)
Maximum excitation current	310 mA
Fraction of maximum permissible error	p_i = 0.5. pi = 0 for digital load cells. Pi = 0 for analogues load cells with junction box DILINK.
Minimum load cell impedance	29 Ω (for weighing module)

Maximum load cell impedance	1100 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	27 – 30 mV
Maximum tare range	-100%Max
Maximum pre-set tare range	-100%Max (single and multiple range) -100%Max_1 (multi-interval)
Operating temperature range	-10°C to +40°C
Load cell connection	6 wires plus shield
Maximum value of load cell cable length per wire cross section*	3358 m/mm^2

The software information can be displayed via the user interface: Menu / Info / Metrological Info/ Metrological modules, or alternatively with this path:

Instruments are fitted with main board and weighing board software as shown in Table 6 and Table 7 in variant 10.

12.1 Sealing Provision

As described for variant 3 in **clause 4.1 Sealing Provision.**

TEST PROCEDURE No S666

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*.

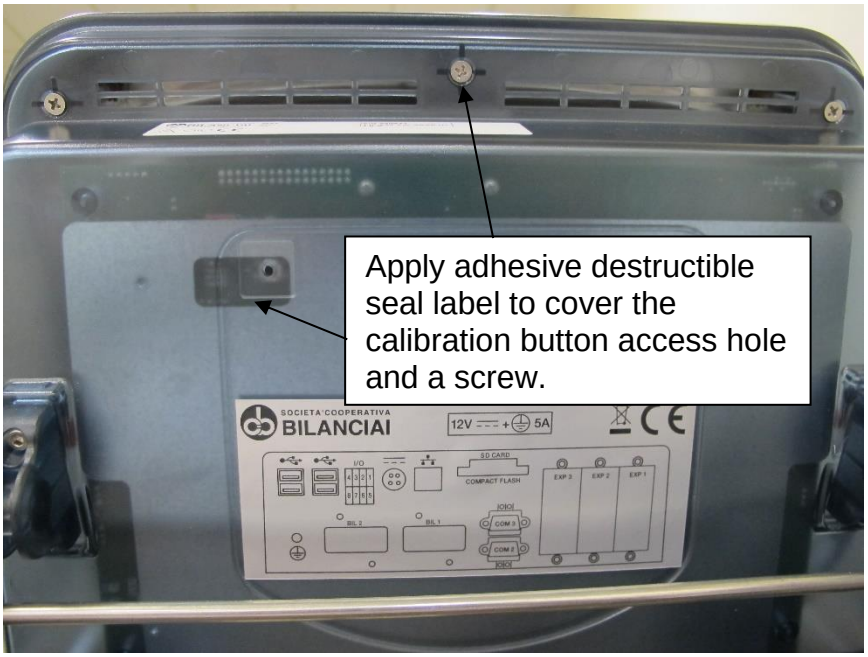
Tests

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 S666 – 1

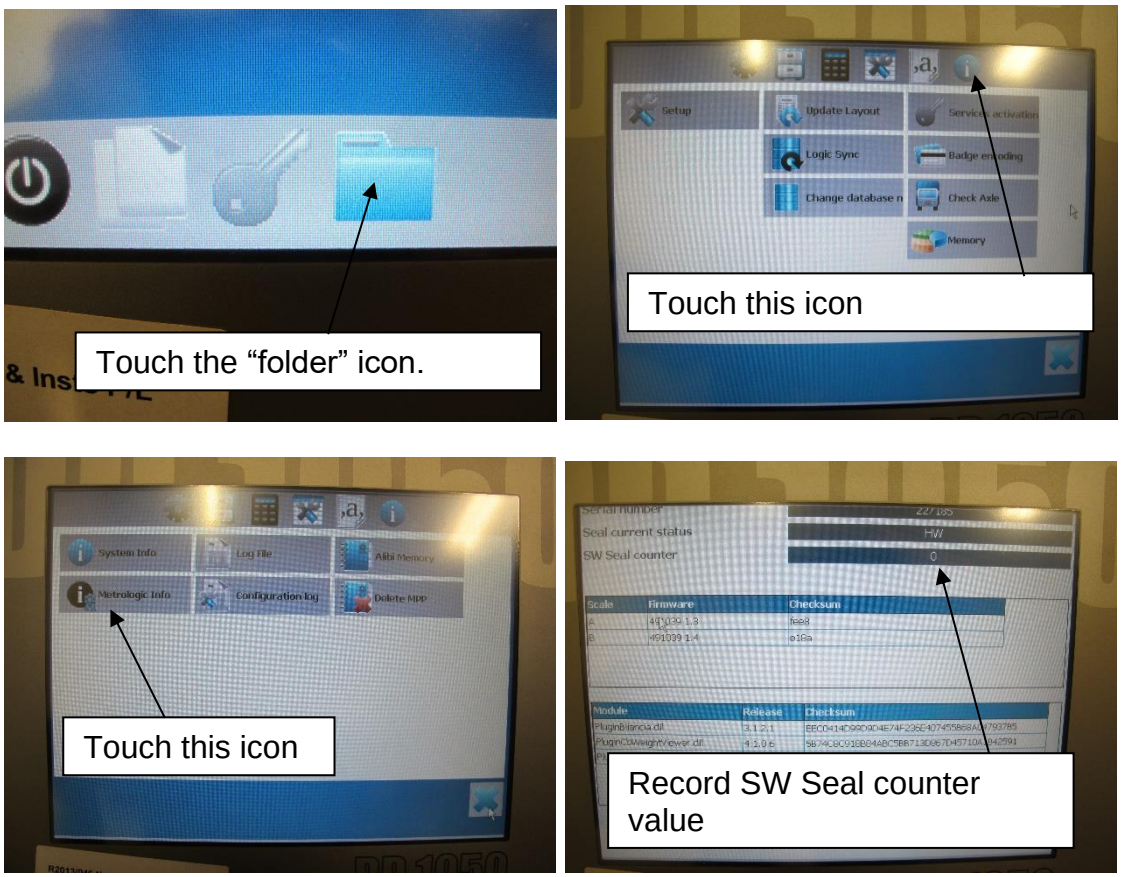
Bilanciai Model DD1050 Digital Indicator (The Pattern)

FIGURE S666 – 2



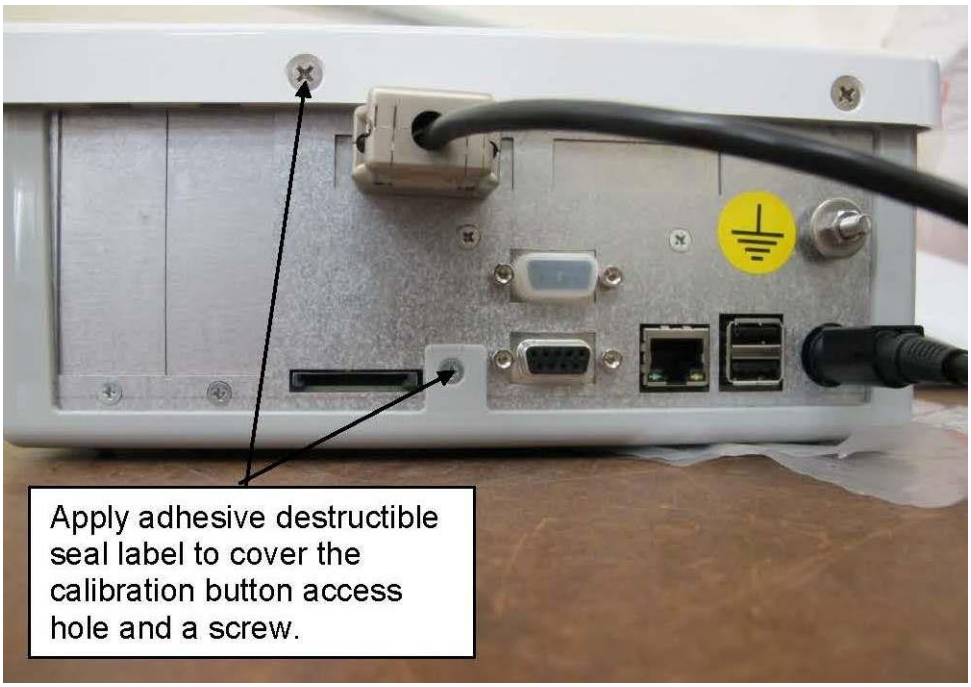
Typical Hardware Sealing of Model DD1050 Digital Indicator (The Pattern)

FIGURE S666 – 3



Typical Software Sealing of The Pattern and Variants

FIGURE S666 – 4



Typical Hardware Sealing of Models DD1010H & DD1010 (Variants 3 & 5)

FIGURE S666 – 5

(a) Model DD 1050I (Variant 1)

(b) Model DD2050 (Variant 2)

(c) Model DD1010H & model DD1010 (Variants 3 & 5)

Certain Additional Models of the Bilanciai DD Series of Digital Indicators

(d) Model DD1010IH & model DD1010I (Variants 4 & 6)

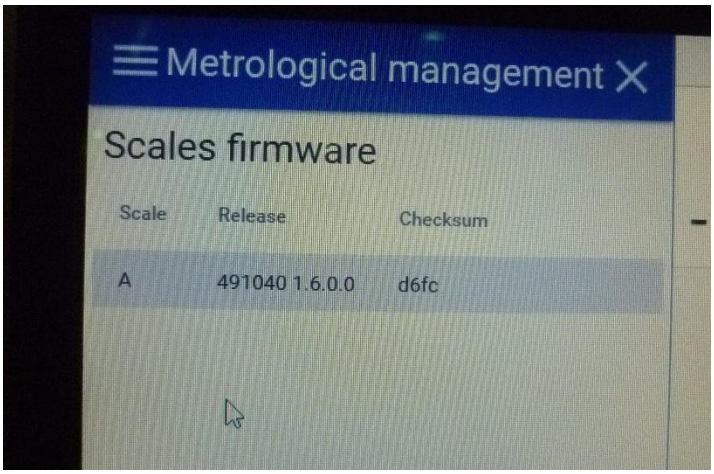
(e) Model DD1010ICH & model DD1010IC (Variants 4 & 6)

Certain Other Additional Models of the Bilanciai DD Series of Digital Indicators

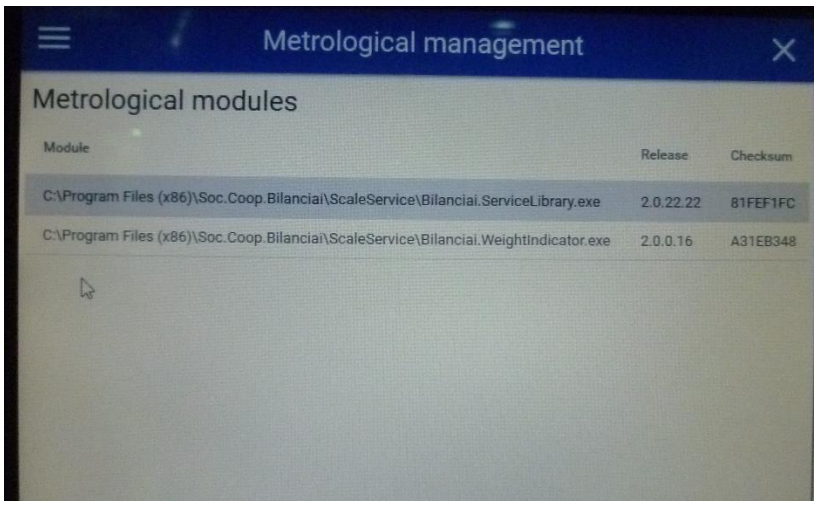
FIGURE S666 – 6

Model DD2060 indicator (Variant 8 & 9).

FIGURE S666 – 7



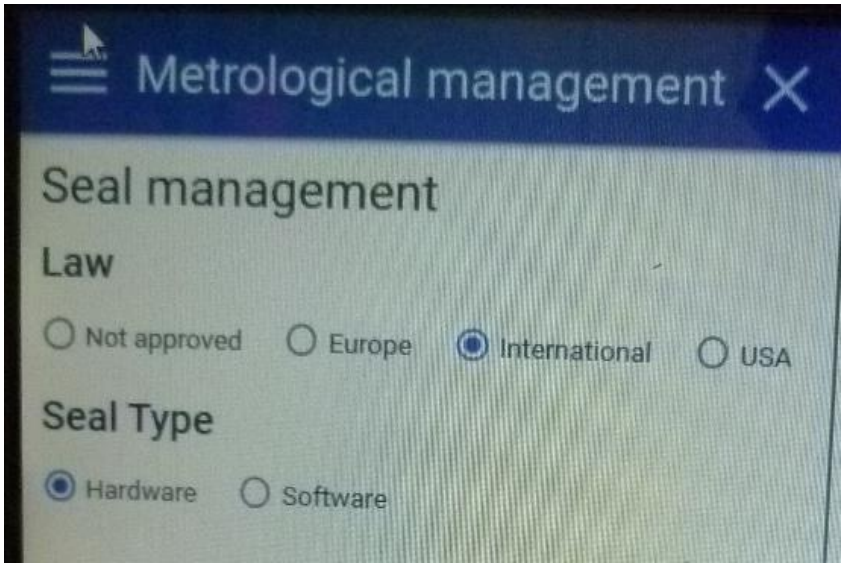
(a) Weighing Board Software Release Number and Checksum



(b) Main Board Modules Release Numbers and Checksums

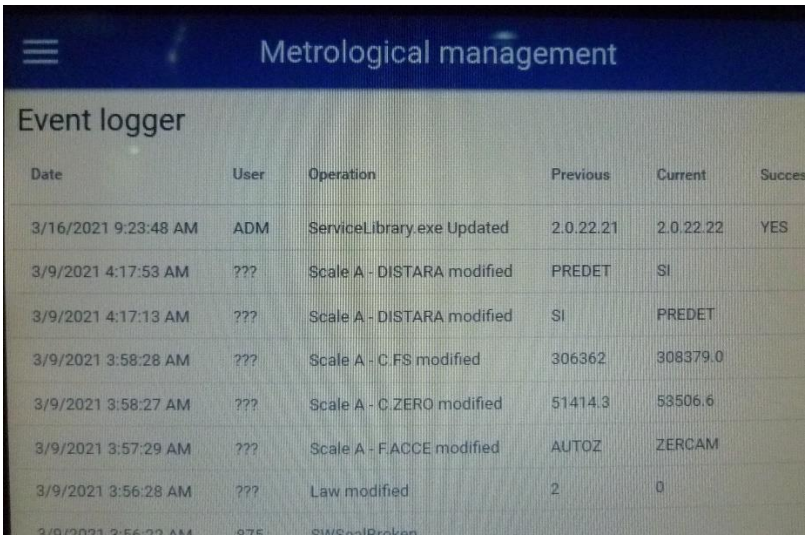
FIGURE S666 – 8

(a) Typical Hardware Seal of DD2060 Indicator

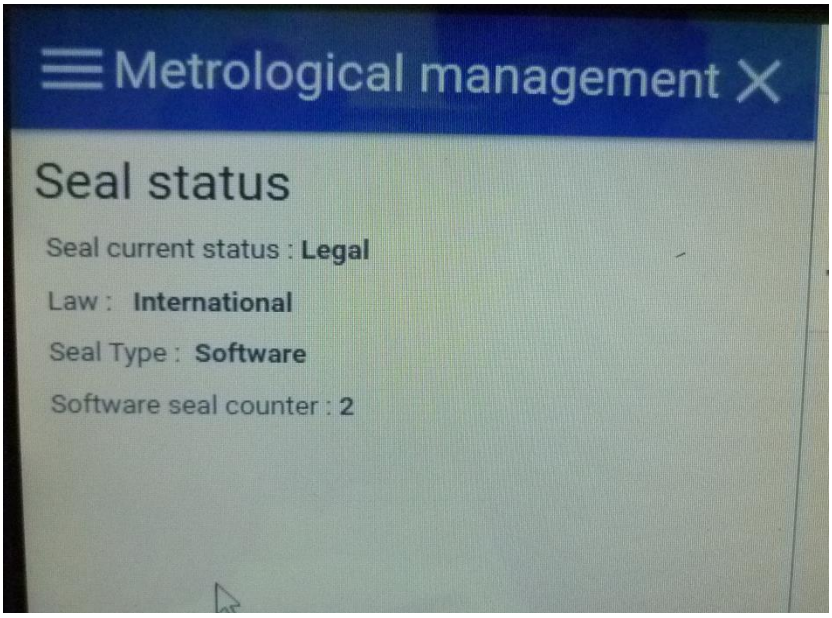


(b) Hardware Seal Shown by Software

FIGURE S666 – 9



(a) Typical Event Logger



(b) Typical Seal Status

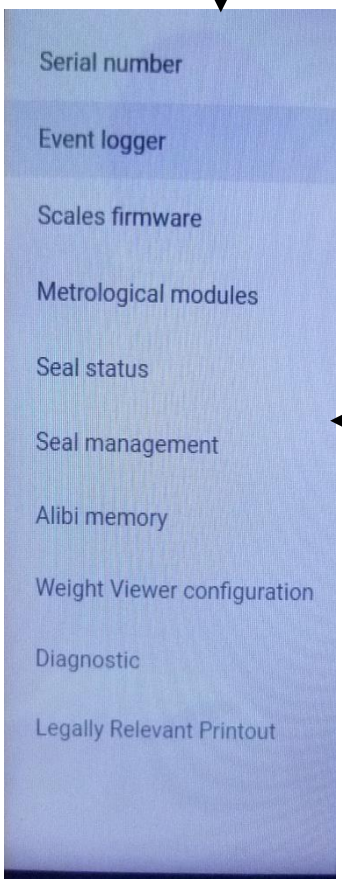
FIGURE S666 – 10

The following chart shows the steps for checking software version and software seal of DD2060.

Tap on '***ScaleConfiguration.exe***' icon on desktop screen to launch the App. The '***SELECTED SCALE: #***' screen will be displayed. Note: # is the scale ID. (E.g. Selected Scale: A).

Tap on weight value 5 times, a '***Metrological management***' screen showing the serial number of the instrument will be displayed.

Tap on the  icon to show the following information.



- Tap on '***Event logger***' to check for metrological parameters changes made; or
- tap on '***Scales firmware***' to check the software version and its checksum; or
- tap on '***Seal status***' to check the status of seal; or
- tap on '***Seal management***' to check the if the instrument is sealed to approved standards; or
- tap on other specifications to check their status.

FIGURE S666 – 11

Models Flynet50i, Flynet50, and Flynet50ic – Variant 10

FIGURE S666 – 12

Models Flynet 100i and Flynet 100ic – Variant 11

~ End of Document ~