



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval NMI S429

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 D800 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 July 2004.

This approval becomes subject to review on 1/3/22, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	6/2/04
1	Variant 3 approved – certificate issued	4/5/04
2	Pattern amended – notification of change issued	6/12/04
3	Variant 4 approved – interim certificate issued	17/12/04
4	Variant 4 approved – certificate issued	20/12/04
5	Variants 5 & 6 approved – certificate issued	19/2/07
6	Pattern & variants 1 to 6 reviewed – notification of change issued	5/8/09

Document History (cont...)

Rev	Reason/Details	Date
7	Pattern & variants 1 & 2 reviewed & updated – certificate issued	9/2/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) S429' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S429' in addition to the approval number of the instrument.

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*.



Mario Zamora

TECHNICAL SCHEDULE No S429

1. Description of Pattern

approved on 6/2/04

A Bilanciai model D800 digital mass indicator (Table 1 and Figure 1) which may be configured to form part of:

- A weighing instrument with a single weighing range of up to 6000 (*) verification scale intervals;
- A multi-interval weighing instrument with two 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 three 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 two weighing ranges, in which case it is approved for use with up to 4000 (*) verification scale intervals per weighing range; or
- A multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 3000 (*) verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

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	6000 (*)
Minimum sensitivity	0.75 μ V/scale interval
Excitation voltage	10 V DC
Maximum excitation current	435 mA

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e$ 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 $\pm 0.25e_1$ 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 $\pm 0.25e$ of zero) 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 Display Check

A display check is initiated whenever power is applied.

1.4 Power Supply

The instrument operates from mains AC power (110-240 V AC nominal).

1.5 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to two correction points.

1.6 Additional Features

The model D800 indicator may be fitted with input/output cards, or BCD cards which provide input and output signals used by the set point facility of the indicator.

The indicator also has certain additional functions including totalising, setpoints, and batching. Some functions can be assigned to a function key of the indicator. These additional functions also include the facility for delivering a batch consisting of a mixture of products. However 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.

The additional functions (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 approved for trade use.

1.7 Two Baseworks Facility ('Duplex Option')

Up to two baseworks may be connected to a single D800 digital indicator. The instrument may be operated in either an individual or a combined weighing mode.

(a) Individual weighing mode

The function key '>' identified as 'SELSCL' is used to select either 'Scale A' or 'Scale B', as indicated in the top line of the display.

(b) Combined weighing mode

Each basework indicates its weight in a separate display marked 'Scale A' or 'Scale B'. The function key '>' identified as 'SELSCL' is used to select either 'Scale A' or 'Scale B' or the sum of the two baseworks. The selected weight is displayed in a third display marked 'Scale Selected A, or B or A+B'.

Instruments shall comply with clause **1.3.3.1 Requirements for Summing Indicator** of General Supplementary Certificate of Approval No S1/0B."

1.8 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	Societa Cooperativa Bilanciai Campogalliano a.r.l., Italy
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Name or mark of manufacturer's agent
Indication of accuracy class	Ⓜ
Maximum capacity (for each range)	<i>Max</i> kg #1
Minimum capacity (for each range)	<i>Min</i> kg #1
Verification scale interval (for each range)	<i>e</i> = kg #1
Maximum subtractive tare	<i>T</i> = - kg #2
Serial number of the instrument
Pattern approval mark for the indicator	NMI (or NSC) No S429
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 shall 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	<i>Max</i>/..... kg *
Verification scale interval	<i>e</i> =/..... 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
<i>Max</i> kg kg
<i>Min</i> kg kg
<i>e</i> = kg kg

1.9 Sealing Provision

Provision is made for the calibration adjustments to be sealed by the use of a destructible adhesive label over the screw at the back of the indicator (Figure 2) which provides access to the calibration switch. Sealing of this screw (the screw must be in place) also prevents access within the instrument housing.

1.10 Verification Provision

Provision is made for the application of a verification mark.

2. Description of Variant 1 **approved on 6/2/04**

The model D400 (Figure 3) which is similar to the pattern but has basic functions only (namely zero, tare and printing). This model can only be connected to a single basework.

2.1 Sealing Provision

Provision is made for the calibration adjustments to be sealed by the use of a destructible adhesive label over the screw at the front bottom of the indicator (shown as item '1' in Figure 4) which provides access to the calibration switch. Sealing of this screw (the screw must be in place) also prevents access within the instrument housing.

3. Description of Variant 2 **approved on 6/2/04**

The model D410 (Figure 5) which is similar to variant 1 but has a numeric/functional keyboard and alphanumeric capabilities. This model can only be connected to a single basework.

3.1 Sealing Provision

As described in clause 2.1.1 for the model D400 (variant 1).

4. Description of Variant 3 **approved on 4/5/04**

The model D430 (Figure 6) which is similar to the model D410 (variant 2) but which has a stainless steel enclosure. This model also has an UNDER/OK/OVER management function which is not approved for trade use.

4.1 Sealing Provision

Provision is made for the calibration adjustments to be sealed by preventing access within the instrument case – this is achieved by use of a lead and wire seal between two diagonally opposite sealing screws on the back of the indicator.

5. Description of Variant 4 **approved on 17/12/04**

A Bilanciai model D800 digital mass indicator which may accept a 12 – 24 V DC supply and convert it to provide suitable DC power to the indicator. This version incorporates filters to protect against disturbances. The 12 – 24 V DC supply may be provided by an AC/DC mains adaptor or by some other means, e.g. a 12 V battery.

6. Description of Variant 5 **approved on 19/2/07**

The pattern (model D800), variant 1 (model D400) and variant 2 (model D410) for use with compatible approved Eurocell (or Bilanciai) digital load cells.

When used with digital load cells, the maximum number of verification scale intervals (VSI) applicable is determined by the number of VSI given in the approval.

7. Description of Variant 6

approved on 19/2/07

Up to three baseworks may be displayed on a single D800 indicator. The instrument may be operated in either an individual or a combined weighing mode.

Two of the baseworks are connected directly to the D800 indicator (as described in clause 1.7 Two Baseworks Facility for the pattern). The third basework is connected to a Bilanciai model EV7 digital indicator (as described in approval NMI S426) or a model D400, D410 or D430 digital indicator (see variants 1, 2 and 3 in this approval). This additional indicator displays the weight information regarding the third basework and also transfers the weight information to the D800 indicator through a serial interface, where the information is displayed and may also be summed as described in (b) below.

(a) Individual weighing mode

The function key '>' identified as 'SELSCL' is used to select either 'Scale A' or 'Scale B' or 'Scale C' as indicated in the top line of the display.

(b) Combined weighing mode

Each basework indicates its weight in a separate display marked 'Scale A' or 'Scale B' or 'Scale C'. The function key '>' identified as 'SELSCL' is used to select either 'Scale A' or 'Scale B' or 'Scale C' or the sum of the two or three baseworks. The selected weight is displayed in a fourth display marked 'Scale Selected A or B or C or A+B or A+C or B+C or A+B+C'. See Figure 7.

Note: Each basework shall be clearly identified with the corresponding description (e.g. Scale A, Scale B, Scale C).

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 the *National Trade Measurement Regulations 2009*.

FIGURE S429 – 1



Bilanciai Model D800 Digital Indicator

FIGURE S429 – 2



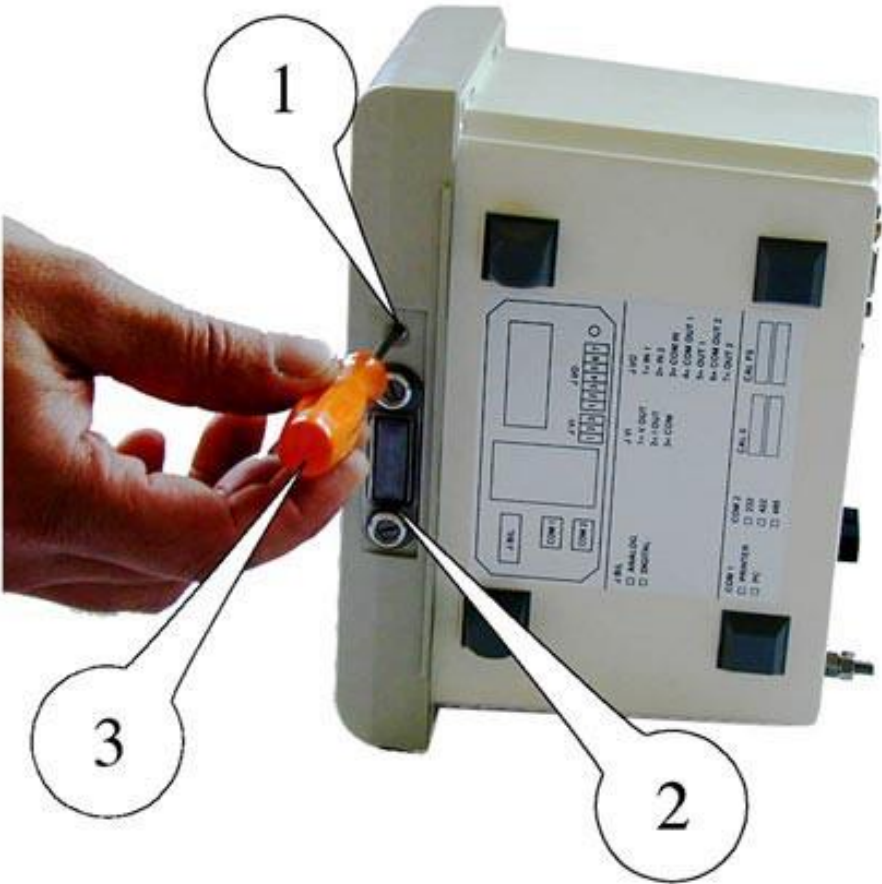
Sealing of Bilancai Model D800 Digital Indicator

FIGURE S429 – 3



Bilanciai Model D400 Digital Indicator

FIGURE S429 – 4



Sealing of Bilanciai Model D400/D410 Digital Indicators

FIGURE S429 – 5



Bilanciai Model D410 Digital Indicator

FIGURE S429 – 6



Bilanciai Model D430 Digital Indicator

FIGURE S429 – 7



(a) Typical indication



(b) Showing separate display of third basework

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