



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

# Supplementary Certificate of Approval

## No S618

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 EV7S 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 1/01/20, and then every 5 years thereafter.

### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	31/01/13
1	Pattern reviewed & updated – variant 1 approved – certificate issued	12/11/15

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S618' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S618' 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 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*.



**Dr A Rawlinson**

TECHNICAL SCHEDULE No S618

**1. Description of Pattern** **approved on 31/01/13**

A Bilanciai model EV7S digital mass indicator (Figure 1 and Table 1) which may be configured to form part of a class  $\text{III}$  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 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; 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 have a stainless steel housing and may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000 or 3000 per range
Minimum sensitivity	1.0 $\mu\text{V}$ / scale interval
Excitation voltage	10 V DC
Maximum excitation current	233 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 Linearisation Facility**

Instruments are fitted with a linearisation correction facility having a single correction point.

## 1.5 Power Supply



The power supply may be either:

- (a) 12 – 18 V DC supplied by an AC/DC mains adaptor or other DC source; or
- (b) Optional internal rechargeable batteries.

Note: The AC/DC mains adaptor supplied was a DYNE Industries model 40402 power supply (output 12 V DC, 1 A) – the submitter should be consulted regarding the acceptability of alternative power supply units.

## 1.6 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	.....
Indication of accuracy class	 or 
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 number for the indicator	NMI S618
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	<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

## 1.7 Verification Provision

Provision is made for the application of a verification mark.

## 1.8 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 one of the access screws to prevent the back from being opened without breaking the seal (Figure 2).


## 2. Description of Variant 1


approved on 12/11/15

The Bilanciai model EV7S digital mass indicator, operating with a Bilanciai model 25/B2 - 404070 tilt sensor (inclinometer) (Figure 3).

This tilt sensor provides a signal to the indicator, and is used by the indicator to impose limits on the level condition, automatically compensate for out of level conditions in longitudinal or transverse directions, and disable the weight determination if acceptable levels of tilt are exceeded (nominally 1.4° tilt from horizontal).

The model Bilanciai EV7S and model 25/B2 - 404070 tilt sensor may be configured to form part of:

A class  weighing instrument with a single weighing range of up to 1250 verification scale intervals; or

A class  weighing instrument with a single weighing range of up to 1000 verification scale intervals.

**Note: The weighing instrument to which this variant is fitted must be NMI-approved for use with an automatic tilt sensor/compensation device.**

## TEST PROCEDURE No S618

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  $e_1, e_2 \dots$ , apply  $e_1$  for zero adjustment, and maximum permissible errors apply  $e_1, e_2 \dots$ , as applicable for the load.

FIGURE S618 – 1



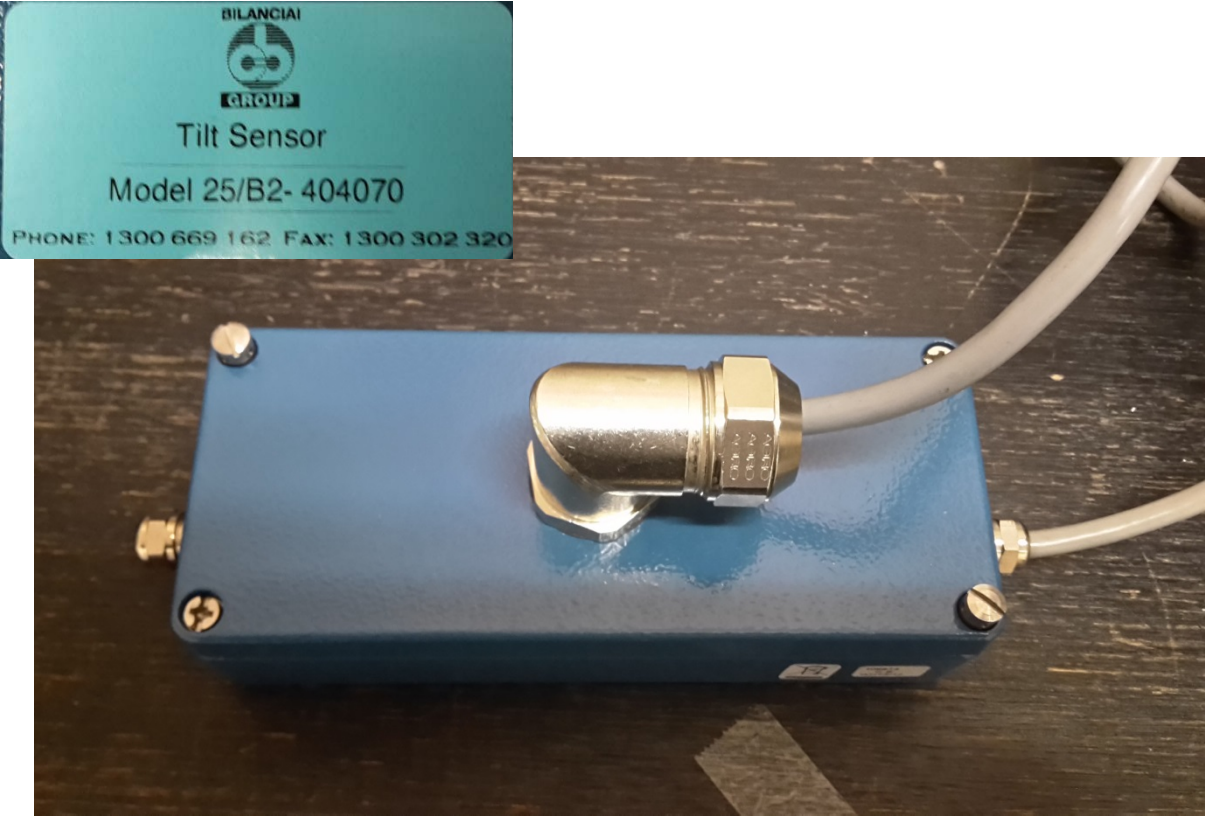
Bilanciai Model EV7S Digital Indicator

FIGURE S618 – 2



Typical Sealing

FIGURE S618 – 3



Bilanciai Model 25/B2 - 404070 Tilt Sensor (inclinometer)

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