



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval NMI S520

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.

@Weigh Model BW Digital Indicator

submitted by @Weigh Pty Ltd
Unit 31, 102 Keys Road
Moorabbin VIC 3189

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 **1/04/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	3/03/09
1	Pattern & variant 1 approved – certificate issued	12/02/09
2	Pattern amended (Table 1) – notification of change issued	5/08/09
3	Pattern & variant 1 amended (clause 1.6), reviewed & updated – variants 2 to 4 approved – certificate issued	26/02/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S520' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S520' 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 S520

1. Description of Pattern

approved on 3/03/09

An @Weigh model BW single interval digital mass indicator (Table 1 and Figure 1) approved for use with up to 6000 verification scale intervals.

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000
Minimum sensitivity	1 μ V/e
Excitation voltage	5 V DC
Maximum excitation current	57.5 mA

1.1 Zero Setting

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 taring device of up to the maximum capacity of the instrument may be fitted.

1.3 Power Supply

Power may be supplied by either a 9 V AC/DC mains adaptor or with an internal rechargeable 6 V DC sealed lead-acid battery.

Note: The AC/DC mains adaptor supplied was a ChangZhou Linke Electronics model LK-D090080 power supply (output 9 V DC, 800 mA) – the submittor should be consulted regarding the acceptability of alternative power supply units.

1.4 Display Check

A display check is initiated whenever power is applied.

1.5 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. The interfaces shall comply with clause 5.3.6 of 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 NMI General Supplementary Certificate No S1/0/A (in particular in regard to the data and its format).

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.

Serial interface options (e.g. RS 232) may be fitted.

1.6 Additional Features

The indicator may have additional 'checking-weighing', 'keyboard lock', accumulation, and counting functions. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

Instruments may also be fitted with 'animal weighing' function. This function shall not be used for trade use.

1.7 Markings

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Taiwan Scale
Importer's name	@Weigh Pty Ltd
Indication of accuracy class	Ⓜ
Maximum capacity	Max kg #1
Minimum capacity	Min kg #1
Verification scale interval	e = kg #1
Maximum subtractive tare	T = - kg #2
Serial number of the instrument
Pattern approval mark for the indicator	S520
Pattern approval mark for other components #3

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 #1
Verification scale interval	e =/..... kg #1

#1 These markings shall also be 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.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Sealing Provision

(i) The calibration parameters are protected when a 'F2' link located on the main circuit board within the indicator housing, is set to OPEN.

The indicator is sealed by preventing access within the indicator housing. This may be achieved by applying a destructible adhesive label over the accessing hole to the screw in the indicator housing, as shown in Figure 1.

- (ii) If the 'F2' link is set to CLOSE, the calibration and setup mode of indicator can be secured with a password. In addition, two non-resettable event counters increment each time that any parameter or calibration is changed and saved. The first counter increments (Figure 2a) when a calibration is made (CAL followed by a two-digit number); the other counter (Figure 2b) increments when a parameter is altered (OPT followed by a two-digit number).

The values of the two event counters are displayed as part of the power-up display sequence, and the value at the time of verification/certification shall be recorded on a destructible adhesive label attached to the instrument.

Any subsequent alteration to the calibration or parameters will be evident as the recorded value and the current calibration event counter value will differ.



2. Description of Variant 1 **approved on 3/03/09**

An @Weigh model BWS digital indicator which is similar to the pattern but has a stainless steel housing (Figure 3).

Provision is made for the housing to be sealed after verification. Sealing is as described for the pattern, except that sealing method as shown in Figure 3 may be used.

3. Description of Variant 2 **approved on 26/02/16**

Any model indicator of this approval now configured to form part of:

- A class  multi-interval 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
- A class  multi-interval 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 1000 verification scale intervals per partial weighing range.

3.1 Software

The software for this variant is designated version u 1.08. The software version number can be seen in the switch-on display sequence (when power is first applied to the instrument).

4. Description of Variant 3 **approved on 26/02/16**

An @Weigh model NSW (Figure 4) digital indicator which is similar to variant 1 but has a different stainless steel housing.

Provision is made for the calibration adjustments to be sealed by means of lead and wire (or similar) type seals with drilled screws, or by a destructible adhesive label, to prevent the access to the calibration switch and the opening of the housing as shown (Figure 4).

5. Description of Variant 4

approved on 26/02/16

An @Weigh model NTW digital indicator which is similar to the pattern but has a different ABS housing (Figure 5).

Provision is made for the calibration adjustments to be sealed by means of an ABS slice and a destructible adhesive label placed over an access hole to the calibration switch as shown in Figure 5. The housing is secured by a lead and wire (or similar) type seal as shown in Figure 5.

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 S520 – 1



@Weigh Model BW Digital Indicator incl. Typical Sealing (The pattern)

FIGURE S520 – 2



(a) CAL Counter



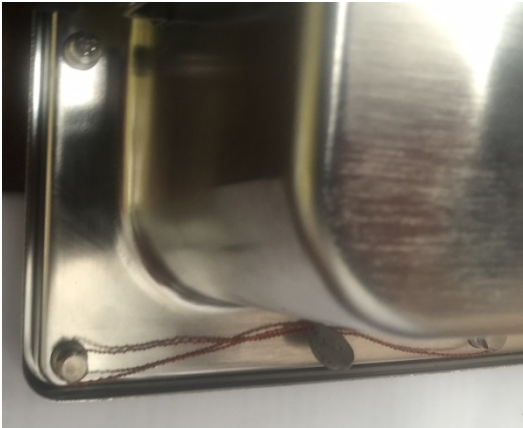
(b) OPE Counter

FIGURE S520 – 3



@Weigh Model BWS Digital Indicator incl. Typical Sealing (Variant 1)

FIGURE S520 – 4



@Weigh Model NSW Digital Indicator Including Typical Sealing (Variant 3)

FIGURE S520 – 5



@Weigh Model NTW Digital Indicator Including Typical Sealing (Variant 4)

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