Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S750

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-More Solutions Model WMS-3950EGTC Digital Indicator

submitted by AWS (Aussie Weighbridge Systems) Pty Ltd
T/A Weigh-More Solutions
Unit 9/160 Hartley Road
Smeaton Grange NSW 2567

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 becomes subject to review on 1/11/22, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – Interim certificate issued	18/10/17
1	Pattern and variants 1 to 9 approved – certificate issued	20/04/18
2	Variant 10 approved – certificate issued	11/04/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S750' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S750' 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 Certificates 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
Pattern Approval, Policy and Licensing Section

TECHNICAL SCHEDULE No S750

1. Description of Pattern — approved on 18/10/17

A Weigh-More Solutions model WMS-3950EGTC 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 10000 verification scale intervals; or
- A class (IIII) weighing instrument with a single weighing range of up to 1000 verification scale intervals; or
- A class (III) 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 10 000 verification scale intervals per partial weighing range; or
- A class (IIII) 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 1000 verification scale intervals per partial weighing range; or
- A class (III) multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 10 000 verification scale intervals per weighing range; or
- A class (IIII) multiple range weighing instrument with up to three weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per weighing range.

  The changeover between weighing ranges is automatic.

The instrument has a stainless steel enclosure with a LCD touch screen display for display of the weight value and for alphanumeric information and/or menu.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.4 below).

The instrument operates from mains AC power (110-240 V AC, 50/60 Hz).

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000 (class (III)) 1000 (class (IIII))
Minimum sensitivity	0.3 µV / scale interval
Excitation voltage	5 V DC
Maximum excitation current	250 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	20 Ω
Maximum load cell impedance	3000 Ω
Measuring range minimum voltage	0.3 mV
Measuring range maximum voltage	30 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Maximum value of load cell cable	30m (6-wire)
Load cell connection	4-wire or 6-wire shielded

Maximum value of load cell cable length per wire cross section	200 m/mm^2

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.

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 Display Check

A display check is initiated whenever power is applied.

1.3 Additional Features

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.

Instruments may be fitted with setpoint/batch, weight limits, checkweighing, counting, peak hold, over/under, tare and preset tare functions. These functions are not approved for trade use.

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 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).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with NMI General Supplementary Certificate No S1/0B (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.

Instruments may be fitted with a RS-232/485 serial data interfaces and digital inputs/outputs (2 inputs and 4 outputs).

1.5 Linearisation Facility

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

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Weigh-More Solutions	
Indication of accuracy class	Ⓘⅲ or 	
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
Serial number of the instrument	…….	
Pattern approval mark for the indicator	NMI S750	
Pattern approval mark for other components	.....	#2

#1 These markings are shown near the display of the result.

#2 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.

Notes:

(i) 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
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 (*)	W1	W2	W3
Max_1	…. kg	Max_2 …. kg	Max_3 …. kg
Min_1	…. kg	Min_2 …. kg	Min_3 …. kg
e_1 =	…. kg	e_2 = …. kg	e_3 = …. kg

1.8 Software

The legally relevant software is identified by instrument type number 01 and metrological software version number 01.

The instructions for accessing the legally relevant version numbers are as follows (starting from the normal weighing mode):

- Press the ‘MENU’ key and then ‘Diagnostic’ key.
- Press the ‘Indicator information’ key. The legally relevant version is displayed**.**

1.9 Sealing Provision

Provision is made for the calibration to be sealed by setting a link on the main board within the instrument to ‘CLOSE’ position, and then preventing access within the protective cover (Figure 12).

It is possible to determine that the link status is in the ‘CLOSE’ position by pressing the ‘TARE’ key to enter setup menu when the power is first applied to the indicator.

- If the link is in the ‘CLOSE’ position, the instrument will display ‘Technical setup (LEGAL FOR TRADE)’. In this case the instrument may be verified.
- Otherwise the instrument will display ‘Technical setup (INTERNAL USE ONLY)’ in which case the instrument should not be verified until the link has been correctly set to the ‘CLOSE’ position.

Sealing to prevent access within the protective housing may be achieved by using a destructible label placed over the securing screw in the protective cover within the instrument as shown in Figure 12.

2. Description of Variant 1 approved on 20/04/18

The Weigh-More Solutions model WMS-3950ET (Figure 2) which is similar to the pattern but having an ABS enclosure and without numeric keyboard.

3. Description of Variant 2 approved on 20/04/18

The Weigh-More Solutions model WMS-3950ETT (Figure 3) which is similar to the pattern but having a different stainless steel enclosure without numeric keyboard.

4. Description of Variant 3 approved on 20/04/18

The Weigh-More Solutions model WMS-3950 EGTT (Figure 4) which is similar to the pattern but having a different stainless steel enclosure.

5 Description of Variant 4 approved on 20/04/18

The Weigh-More Solutions model WMS-3950EGT8 (Figure 5) which is similar to variant 3 but without numeric keyboard.

6. Description of Variant 5 approved on 20/04/18

The Weigh-More Solutions model WMS-3950EGT3GD (Figure 6) which is similar to the pattern but having a stainless steel waterproof enclosure.

7. Description of Variant 6 approved on 20/04/18

The Weigh-More Solutions model WMS-DFWL (Figure 7) which is similar to the pattern but having an ABS enclosure with a LCD display for display of the weight value.

7.1 Software

The legally relevant software is identified by instrument type number 02 and metrological software version number 01.

8. Description of Variant 7 approved on 20/04/18

The Weigh-More Solutions model WMS-DFWXP (Figure 8) which is similar to variant 6 but having a different ABS enclosure with a smaller LCD display.

9. Description of Variant 8 approved on 20/04/18

The Weigh-More Solutions model WMS-DFWLI (Figure 9) which is similar to variant 6 but having a stainless steel enclosure.

10. Description of Variant 9 approved on 20/04/18

The Weigh-More Solutions model WMS-DFWLID (Figure 10) which is similar to variant 8 but having a larger LCD display.

11. Description of Variant 10 approved on 11/04/19

The Weigh-More Solutions model WMS-DGTP (Figure 12) which is similar to variant 6 but having a panel mount enclosure with an LED display for display of the weight value.

11.1 Software

The legally relevant software is identified by instrument type number 09 and metrological software version number 01.

TEST PROCEDURE No S750

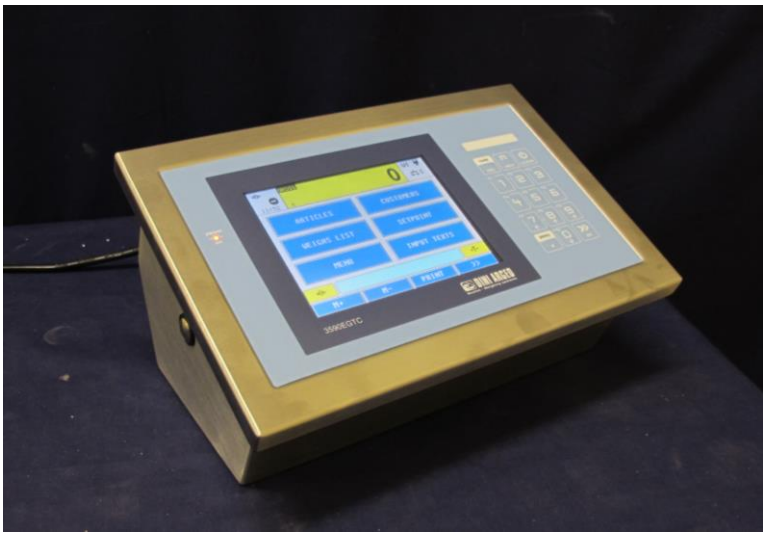
Instruments should be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

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 S750 – 1



Weigh-More Solutions Model WMS-3950EGTC Digital Indicator (Pattern)

FIGURE S750 – 2

Weigh-More Solutions Model WMS-3950ET Digital Indicator (Variant 1)

FIGURE S750 – 3

Weigh-More Solutions Model WMS-3950ETT Digital Indicator (Variant 2)

FIGURE S750 – 4

Weigh-More Solutions Model WMS-3950EGTT Digital Indicator (Variant 3)

FIGURE S750 – 5

Weigh-More Solutions Model WMS-3950EGT8 Digital Indicator (Variant 4)

FIGURE S750 – 6

Weigh-More Solutions Model WMS-3950EGT3GD Digital Indicator (Variant 5)

FIGURE S750 – 7

Weigh-More Solutions Model WMS-DFWL Digital Indicator (Variant 6)

FIGURE S750 – 8

Weigh-More Solutions Model WMS-DFWXP Digital Indicator (Variant 7)

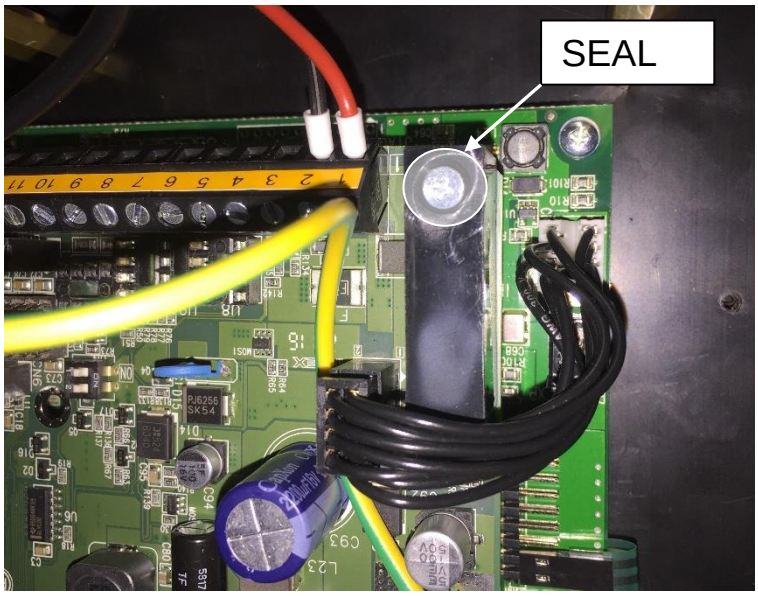
FIGURE S750 – 9

Weigh-More Solutions Model WMS-DFWLI Digital Indicator (Variant 8)

FIGURE S750 – 10

Weigh-More Solutions Model WMS-DFWLID Digital Indicator (Variant 9)

FIGURE S750 – 11



Typical Sealing Methods

FIGURE S750 – 12

Weigh-More Solutions Model WMS-DGTP Digital Indicator (Variant 10)

~ End of Document ~