



Australian Government
Department of Industry, Science,
Energy and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S363

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.

Range Model 5000 Digital Indicator

submitted by Rinstrum Pty Ltd
(formerly Ranger Instruments Pty Ltd)
41 Success Street
Acacia Ridge QLD 4110

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 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 and variants 1 & 2 approved – certificate issued	2/11/98
1	Variant 3 approved – interim certificate issued	9/04/99
2	Variant 3 approved – certificate issued	24/05/99
3	Variant 1 amended – notification of change issued	27/07/99
4	Variant 4 approved – interim certificate issued	15/10/99
5	Variant 4 approved – certificate issued	25/11/99
6	Variant 5 approved – certificate issued	8/08/00
7	Variant 6 approved – certificate issued	25/08/03

Document History (cont...)

Rev	Reason/Details	Date
8	Pattern and variants 1 to 6 reviewed – notification of change issued	11/05/04
9	Pattern and variants 1 to 6 reviewed – notification of change issued	29/04/08
10	Pattern and variants 1 to 6 reviewed & variant 7 approved – certificate issued	20/09/18
11	Variant 8 approved – certificate issued	28/01/21

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI (or NSC) S363' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S363' 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 S1/0/A or 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 S363

1. Description of Pattern

approved on 2/11/98

A Ranger model 5000 digital indicator (Figure 1 and Table 1) which is approved for use with up to 6000 verification scale intervals and which may be fitted with output sockets for the connection of auxiliary and/or peripheral devices. May also be known as an HBM model WE2110.

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero or whenever power is applied.

The initial zero-setting device has a nominal range of not more than 4% 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 maximum capacity of the instrument may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of a destructible label over the calibration access on the indicator facia.

1.6 Linearisation Facility

Instruments are fitted with a two-point programmable linearisation correction facility.

1.7 Additional Features

The indicator has a set point facility and an optional set point card may be fitted to provide additional output signals. The set point card may also be used to provide remote operation of the four front panel buttons.

An optional analogue output card may be fitted.

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.

1.8 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Rinstrum or Ranger Instruments
Indication of accuracy class	Ⓜ 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/NSC S363
Pattern approval mark for other components #2

#1 These markings are also shown near the display of the result if they are not already located there.

#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.

2. Description of Variant 1

approved on 2/11/98

The indicator (Figure 1 and Table 1) may be configured with multi-intervals (two) in which case it is approved for use with up to 6000 verification scale intervals per interval range.

2.1 Zero

Zero is automatically corrected to within $\pm 0.25e_1$ whenever the instrument comes to rest within $0.5e_1$ of zero or whenever power is applied.

2.2 Descriptive Markings and Notices

Instruments shall carry the markings described for the pattern (refer to clause 1.8 Descriptive Markings and Notices), with the exception of the following:

Maximum capacity	Max/..... *
Verification scale interval	e =/..... *

3. Description of Variant 2

approved on 2/11/98

The indicator (Figure 1 and Table 1) may be configured with multiple ranges (two) in which case it is approved for use with up to 6000 verification scale intervals per range.

The changeover between weighing ranges is automatic.

3.1 Zero

Zero is automatically corrected to within $\pm 0.25e_1$ whenever the instrument comes to rest within $0.5e_1$ of zero or whenever power is applied.

3.2 Descriptive Markings and Notices

Instruments shall carry the markings described for the pattern (refer to clause **1.8 Descriptive Markings and Notices**), with the exception that the *Maximum capacity*, *Minimum capacity* and *Verification scale interval* for each range are marked.

TABLE 1 — Specifications

Maximum number of verification scale intervals	6000 or 6000 per range
Minimum sensitivity	0.5 μ V/scale interval
Excitation voltage	8 V DC
Maximum excitation current	200 mA

4. Description of Variant 3 approved on 9/04/99

With a linearisation correction facility having up to five correction points, and with certain additional functions.

These additional functions 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.

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.

5. Description of Variant 4 approved on 15/10/99

With a 12/24 V DC (nominal) power supply unit. Power may either be supplied by a battery, or by an external 'plug pack' power supply unit rated at from 12 V to 24 V DC output, with a current rating of at least 1 A.

6. Description of Variant 5 approved on 8/08/00

The Ranger model 5100 digital indicator, which is similar to the pattern, but with a liquid crystal display (LCD) and additional keys for data entry, including entry of a preset tare value.

The indicator (Figure 3 and Table 2) may be configured to form part of:

- A weighing instrument with a single weighing range of up to 6000 verification scale intervals; or
- 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 6000 verification scale intervals per partial weighing range; or
- A multiple range weighing instrument with two weighing ranges, in which case it is approved for use with up to 6000 verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

The indicator has a linearisation correction facility having up to five correction points.

The indicator also has certain additional functions, some of which (Totalising, Extended Setpointing Batch Control, Hold Functions, Live Weight, Counting) can be assigned to a function key of the indicator. 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.

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 (except as provided by clause 1.1 (e) of NMI General Certificate No S1/0/A), unless specifically mentioned in a certificate of approval for such an instrument. Note: NMI has indicated an intention to remove clause 1.1 (e) from General Certificate No S1/0/A.

TABLE 2 — Specifications for Model 5100 indicator

Maximum number of verification scale intervals	6000 or 6000 per range
Minimum sensitivity	1.5 uV/scale interval
Excitation voltage	8 V DC
Maximum excitation current	200 mA

6.1 Sealing Provision

For the model 5100 indicator, access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

To ensure that this protection has been enabled, hold down the ZERO and SET keys until “FULL SETUP” is displayed, this is followed by “ENTER PASS” being displayed, followed by 000000 flashing (requesting the passcode to be entered). Press the ENTER key twice to exit.

Note: If passcode protection has not been enabled “ENTER PASS” will not be displayed - the setup routine will continue until “build” is displayed. To exit at this point it is necessary to press the ZERO key a number of times until “-End-” is displayed and then press the ENTER key.

Whenever the calibration of the instrument is altered, a “*set-up counter*” is incremented.

The value of the set-up counter can be seen in the switch-on display sequence (when power is first applied to the indicator). The set-up counter is in the form “C*****” where * represents a number.

The instrument may be sealed (to provide evidence of alteration of calibration) by recording the set-up counter value with the verification mark.

7. Description of Variant 6 approved on 25/08/03

Ranger indicators of this approval may alternatively be known Rinstrum or as **** model 5000 or model 5100, as appropriate, where **** represents certain other names shown on the front overlay of the indicator.

Note: NMI may be contacted for confirmation of any name shown.

The nameplate on the rear of the indicator is marked with “Ranger Instruments” or with “Rinstrum” as the manufacturer, in accordance with clause 1.8 **Descriptive Markings and Notices** of Technical Schedule No S363.

8. Description of Variant 7 approved on 20/09/18

The pattern and variants having a revised power supply unit.

9. Description of Variant 8**approved on 28/01/21**

The pattern and variants having an internal Mean Well model LPV-20-12 power supply module.

TEST PROCEDURE No S363

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

FIGURE S363 – 1



Ranger Instruments Model 5000 Digital Indicator (Pattern)

FIGURE S363 – 2



HBM Model WE2110 Digital Indicator

FIGURE S363 – 3



Ranger Model 5100 Digital Indicator

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