Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

# Supplementary Certificate of Approval

# NMI S719

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.

Rinstrum Model C510 Digital Indicator

submitted by Rinstrum Pty Ltd
Unit 4/31 Henry Street
Loganholme QLD 4129

**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 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 & variants 1 & 2 approved – certificate issued | 15/07/16 |
| 1 | Pattern (Table 1) amended and variant 3 approved – certificate issued | 22/08/24 |

CONDITIONS OF APPROVAL

## General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S719' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S719' 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 Certificate of Approval 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
Policy and Regulatory Services

TECHNICAL SCHEDULE No S719

## 1. Description of Pattern

**approved on 15/07/16**
**amended on 22/08/24**

A Rinstrum model C510 digital mass indicator (Figures 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 10 000 verification scale intervals; or
- A class (III) 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 two 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 (III) 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; or
- A class (III) multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 10 000 verification scale intervals per weighing range; or
- A class (III) multiple range weighing instrument with up to two 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 an ABS plastic enclosure with a LED display for display of the weight value.

The pattern may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.6 below).

TABLE 1 – Specifications

| | |
|---|---|
| Maximum number of verification scale intervals | 10 000 (class (III)) <br> 1000 (class (III)) |
| Minimum sensitivity | 0.5 µV/scale interval |
| Excitation voltage | 5 V DC |
| Maximum excitation current | 238 mA |
| Fraction of maximum permissible error | $p_i = 0.5$ |
| Minimum load cell impedance | 21 Ω |
| Maximum load cell impedance | 5000 Ω |
| Measuring range minimum voltage | 0.001 mV |
| Measuring range maximum voltage | 25 mV |
| Maximum tare range | -100%Max |
| Operating temperature range | -10°C to +40°C |
| Load cell connection | 4 or 6 wire plus shield |

| | |
|---|---|
| Maximum value of load cell cable length per wire cross section (*) | 227 m/mm$^2$ (10000 VSI)<br>378 m/mm$^2$ (6000 VSI)<br>755 m/mm$^2$ (3000 VSI) |

(*) Additional connection cable between indicator and load cell or load cell junction box. In case a 4-wire connection is used, the load cells are connected directly without a junction box or lengthening the load cell(s) cable.

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 Tare

A semi-automatic/automatic subtractive tare device of up to the maximum capacity of the instrument may be fitted.

### 1.3 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to ten (10) points.

### 1.4 Display Check

A display check is initiated whenever power is applied.

### 1.5 Power Supply

Power supply is 12 – 24 V DC supplied by an AC/DC mains adaptor or other DC power source.

Note: The AC/DC mains adaptor supplied was a Rinstrum model M5104 power supply unit – the submittor should be consulted regarding the acceptability of alternative power supply units.

### 1.6 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 Supplementary Certificate No NMI 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.

Auxiliary and/or peripheral devices may be connected to the onboard Ethernet, USB and infra-red optical interface ports. Instruments may also be fitted with RS232/RS422/RS485 serial data modules, an analogue output module and a digital input/output module.

## 1.7 Additional Features

The indicator may be provided with setpoints and counting functions. 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.

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.

In addition, the indicator may be provided with an integral data storage device (DSD).

For each weighing request, weighing results together with identification including date and time are stored into the storage device.

Data from the storage device shall only be used for trade if the format of the output complies with NMI General Supplementary Certificate of Approval No S1/0B.

## 1.8 Verification Provision

Provision is made for the application of a verification mark.

## 1.9 Sealing Provision

The indicator is sealed by recording the audit trail counter on verification.

Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

The indicator automatically increments a configuration or calibration value (audit trail number) each time the indicator is re-configured or calibrated.

The value of calibration event counter can be seen in the switch-on display sequence (when the power is first applied to the instrument) and may be recorded on a destructible adhesive label attached to the instrument (as C followed by a number).

Any subsequent alteration to the calibration or configuration will be evident as the recorded values and the current counter values will differ.

## 1.10 Descriptive Markings and Notices

Instruments carry the following markings:

| | |
|---|---|
| Manufacturer's mark, or name written in full | Rinstrum |
| Model number | ……. |
| Indication of accuracy class | (III) or (III) |
| Maximum capacity | *Max* ..... kg #1 |
| Minimum capacity | *Min* ..... kg #1 |
| Verification scale interval | *e* = .... .. kg #1 |
| Serial number of the instrument | ……. |
| Pattern approval mark for the indicator | NMI S719 |
| 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 shall 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 (*) | 1 | | 2 |
|---|---|---|---|
| $Max_1$ | …. kg | $Max_2$ | …. kg |
| $Min_1$ | …. kg | $Min_2$ | …. kg |
| $e_1$ = | …. kg | $e_2$ = | …. kg |

## 1.11 Software Version

The legally relevant software (alibi) is designated v1.0x (where x refers to the identification of the non-legally relevant part of the software, which may be modified by the manufacturer).

The application software (non-legally relevant) is designated x.x.x (where x.x.x may be modified by the manufacturer).

The application software version number can be seen in the switch-on display sequence when the power is first applied to the instrument, and when entering or exiting the setup menus.

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

- Press and hold the 'G/N' or 'Select' key until two short beeps.
- Press the 'G/N' or 'Select' key three times and then 'alibi' is displayed.
- Press the '*f*' or 'OK' key. The legally relevant version is displayed**.**

## 2. Description of Variant 1 approved on 15/07/16

The Rinstrum model C520 (Figure 2) which is similar to the pattern but having a 6 × 14 segment LED display and 6 function keys.

The indicator may be fitted with a Rinlink passive infra-red optical interface.

## 3. Description of Variant 2 approved on 15/07/16

The Rinstrum model C530 which is similar to variant 1 but with no display and function keys. A Rinstrum model D520 remote display shall be connected to the C530 via USB interface (Figure 3).

## 4. Description of Variant 3 approved on 22/08/24

The Rinstrum model C527 which is similar to variant 1 but having a stainless steel housing (Figure 4).

### 4.1 Power Supply

The instrument operates from either AC mains power (110 - 240 V AC, 50/60 Hz) or 12 – 24 V DC power source.

# TEST PROCEDURE S719

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.

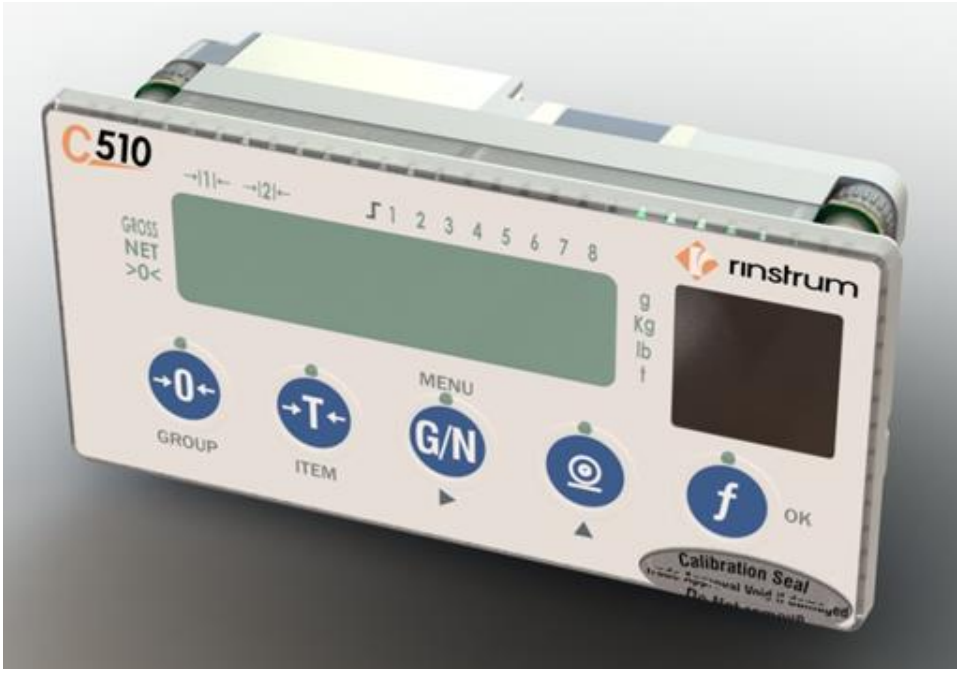
### Maximum Permissible Errors

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

FIGURE S719 – 1




Rinstrum Model C510 Indicator (Pattern)

FIGURE S719 – 2


Rinstrum Model C520 Indicator (Variant 1)

FIGURE S719 – 3


Rinstrum Model C530 Weighing Module with Remote display (Variant 2)

FIGURE S719 – 4


Rinstrum Model C527 Indicator (Variant 3)

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