



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Notification of Change

Supplementary Certificate of Approval No S464

Change No 1

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

The following changes are made to the approval documentation for the

Sartorius PR5510/00 (X4) Digital Indicator

submitted by Sartorius Mechatronics T&H GmbH
(formerly Sartorius Hamburg GmbH)
Meiendorfer Strasse 205
D-22145 Hamburg Germany.

- A. In Supplementary Certificate of Approval No S464 and its Technical Schedule both dated 20 July 2006, all references to the name of the submitter should be amended to read:
- “Sartorius Mechatronics T&H GmbH”
- B. In Supplementary Certificate of Approval No S464 dated 20 July 2006;
1. The Condition of Approval referring to the review of the approval should be amended to read:
- “This approval becomes subject to review on 1 December 2015, and then every 5 years thereafter.”
2. The FILING ADVICE should be amended by adding the following:
- “Notification of Change No 1 dated 25 May 2011”
- C. In Technical Schedule No S464 dated 20 July 2006;
- (i) the first sentence of the first paragraph of the TEST PROCEDURE should be amended as follows;
- “Instruments shall be tested ... in accordance with any relevant tests specified in the **national inspection** test procedures.”

Signed by a person authorised by the Chief Metrologist
to exercise his powers under Regulation 60 of the
National Measurement Regulations 1999.

A handwritten signature in black ink, appearing to be 'M. J. ...', written over a horizontal line.



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

No S464

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

Sartorius Model PR5510/00 (X4) Digital Indicator

submitted by Sartorius **Hamburg** GmbH
Meiendorfer Strasse 205
22145 Hamburg
Germany.

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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 December **2010**, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S464' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S464' in addition to the approval number of the instrument.

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.

The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

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.

DESCRIPTIVE ADVICE

Pattern: approved 17 November 2005

- A Sartorius model PR5510/00 (X4) digital mass indicator.

Variants: approved 17 November 2005

1. With an Arlec model ENG750 external power supply.
2. A model PR1626/60.

Technical Schedule No S464 describes the pattern and variants 1 and 2.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No S464 dated 20 July 2006

Technical Schedule No S464 dated 20 July 2006 (incl. Tables 1 to 3,
and Test Procedure)

Figure 1 dated 20 July 2006



Signed by a person authorised by the Chief Metrologist
to exercise his powers under Regulation 60 of the
National Measurement Regulations 1999.

A handwritten signature in black ink, appearing to be 'J. H. T.', written in a cursive style.

TECHNICAL SCHEDULE No S464

Pattern: Sartorius Model PR5510/00 (X4) Digital Indicator

Submittor: Sartorius **Hamburg** GmbH
Meiendorfer Strasse 205
22145 Hamburg Germany



1. Description of Pattern

A Sartorius model PR5510/00 (X4) digital mass indicator (Table 1 and Figure 1) which may be configured to form part of:

- A weighing instrument with a single weighing range of up to 6000 verification scale intervals; 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.

The instrument has a vacuum fluorescent display (VCF) including provision for display of the weight value and for two lines of alphanumeric information/menus.

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

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.

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000 or 3000 per range
Minimum sensitivity	0.5 μ V/scale interval
Excitation voltage	12 V DC
Maximum excitation current	160 mA

1.1 Zero

Zero may be automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero or whenever power is applied (in the case of multiple range configurations e in this sentence refers to e_i). This feature may, or may, not be enabled.

If the instrument comes to rest outside that range but within the zero setting range, zero may be set by pressing the zero button.

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.

1.2 Tare

The instrument has provision for subtractive semi-automatic and pre-set tare devices of up to maximum capacity.

The value of tare currently in use may be displayed temporarily using the tare recall key (T within the shape of a mass); the NET indicator is extinguished and a T indicator appears.

The gross value of the mass on the load receptor may be displayed temporarily using the gross value recall key (**B** within the shape of a mass); the NET indicator is extinguished and a **G** indicator appears.

Note: The symbol 'B' represents 'gross' in some languages other than English.

Pre-set tare values may be stored and recalled, and may be associated with product or item look-up tables.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Power Supply

The instrument operates from mains AC power.

1.5 Data Storage Memory

The indicator may contain memory for the storage of weighing results.

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

The use of this feature for trade use is subject to the agreement of the applicable trade measurement authority.

In any case, data from the storage device shall only be used for trade if the format of the output complies with General Supplementary Certificate No S1/0/A.

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 S1/0/A (in particular in regard to the data and its format).

Note particularly that 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.

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.

Data derived from any analog output or interface shall not be used for trade use.

Interfaces of the following types may be fitted:

- An RS232 serial data interface
- An interface to connect an external keyboard or barcode scanner
- PR5510/06 – analogue output
- PR5510/07 – analogue output and 4 analogue inputs
- PR5510/08 – BCD interface
- PR5510/09 – as for PR5510/08
- PR5510/04 – serial data interfaces RS232 and RS422/485
- PR5510/12 – digital interface, 6 inputs, 12 outputs, optoisolated
- PR5510/14 – ethernet interface
- PR1721/xx – fieldbus interface

1.7 Additional Features

The indicator may incorporate software (which may require additional license codes from the manufacturer to be enabled) intended by the manufacturer for particular applications. The software and related hardware may include process control related aspects, and utilise features such as: set point facilities; product flow control and stopping/starting; databases to store order or product information, recipes, client data etc; counting facilities; ability for programming sequences of operations, etc.

In addition the instrument may have facilities for a number of dialogue (menu access) and function keys to be programmed to perform various functions. Any use of this feature shall be implemented so as not to cause confusion with the normal weighing results.

However this approval relates only to use for trade of the instrument (incorporating the indicator) as a non-automatic weighing instrument, in which static weighing (gross or net) of product on the weighing platform (hopper/tank etc) is carried out. In particular, **the approval does not extend to, nor provide any endorsement by the National Measurement Institute, of the additional software or functionality.** 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.

Indicators incorporating additional features or software may be known as various models, shown below:

- PR5510/00 Pro-X4 Process Controller
- PR5510/20 Batch-X4 Process Controller
- PR5510/30 IBC-X4 Process Controller
- PR5510/40 Flow-X4 Process Controller
- PR5510/50 Fill-X4 Process Controller
- PR5510/60 Phase-X4 Process Controller

Notes: The use of the abovementioned features may or may not be appropriate in different situations. The acceptability in any particular situation must be assessed in-situ and may require consultation with the appropriate trade measurement authority. In some situations it may be necessary for a print-out of the weighing result to be produced for the method of operation to be considered acceptable. In such situations General Supplementary Certificate No S1/0/A should be consulted.

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.

1.8 Sealing Provision

1. Sealing of the internal components and external calibration switch is achieved at two different locations:
 - (a) To seal the components a destructible adhesive label is applied to a casing join, typically as shown in Figure 1b.
 - (b) To seal the external calibration, a destructible adhesive label is applied over the slide switch as shown in Figure 1b.

2. The software automatically updates counters when either the calibration or the configuration has been altered. These consecutive numbers must be recorded on a destructive adhesive label applied to the instrument.

To view these numbers from the normal weighing indication:

- Press EXIT and select YES.
- Select SETUP then press the DOWN arrow – displays 'Weighingpoint'.
- Press OK - 'Cannot calibrate Jumper is closed' is displayed. This indicates that the calibration and configuration are sealed.
- Select NTEP when it is displayed. The calibration and configuration consecutive numbers are displayed.

To return to the normal weighing indication, press EXIT three times then select START.

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

1.9 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.10 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Sartorius Hamburg GmbH
Indication of accuracy class	Ⓜ
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
Maximum subtractive tare	T = - kg #2
Serial number of the instrument
Pattern approval mark for the indicator	NMI S464
Pattern approval mark 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 shall carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

For multiple range instruments the markings shall be as above, with the exception that 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, as shown in the instrument display (e.g. '|', '||' or '≡')

Range			(#)
Max kg kg	
Min kg kg	
e = kg kg	

- (#) The markings for each weighing range shall be clearly associated with an indication of the corresponding range (i.e. '|', '||' or '≡') to correspond to the weighing range designations shown in the instrument display.

2. Description of Variants

2.1 Variant 1

With an Arlec model ENG750 external power supply (in a model PC6 enclosure) in which case instruments have maximum excitation current of 500 mA.

2.2 Variant 2

With a model PR1626/60 explosion-proof module, in which case the instrument has specifications as set out in either Table 2 or Table 3 below (according to the excitation voltage in use).

TABLE 2 – Specifications

Maximum number of verification scale intervals	3000
Minimum sensitivity	0.5 μ V/scale interval
Excitation voltage	12 V DC
Maximum excitation current	80 mA

TABLE 3 – Specifications

Maximum number of verification scale intervals	3000
Minimum sensitivity	0.5 μ V/scale interval
Excitation voltage	7.5 V DC
Maximum excitation current	93 mA

TEST PROCEDURE

Instruments should be tested in conjunction with any tests specified in the approval documentation for the instrument to which the pattern is connected, as appropriate, and in accordance with any relevant tests specified in the **Uniform** Test Procedures.



Maximum Permissible Errors at Verification/Certification

For single range instruments, the maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

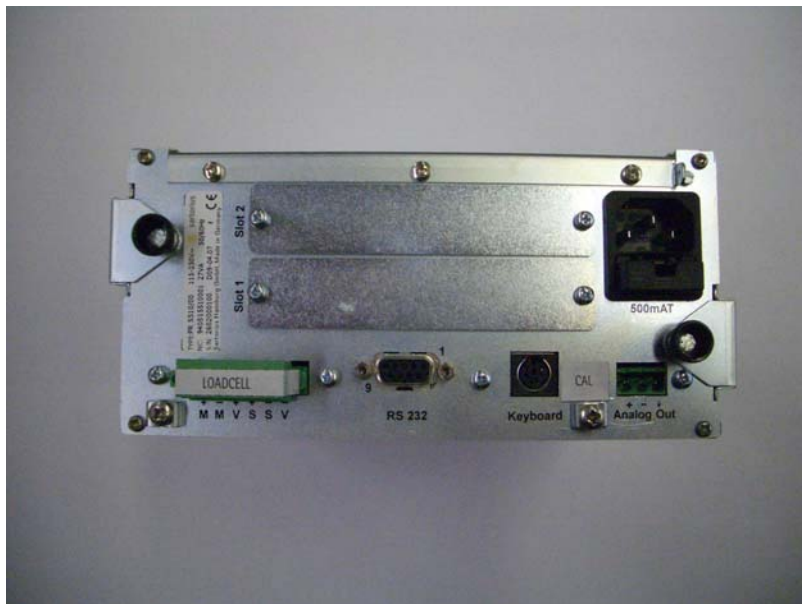
- $\pm 0.5e$ for loads $0 \leq m \leq 500$;
- $\pm 1.0e$ for loads $500 < m \leq 2\,000$; and
- $\pm 1.5e$ for loads $2\,000 < m \leq 10\,000$.

For multiple range instruments with verification scale intervals e_1, e_2, \dots , apply e_1 for zero adjustment, and for maximum permissible errors apply e_1, e_2, \dots , as applicable for the load.

FIGURE S464 – 1



(a) Front View



(b) Rear View Including Typical Sealing