Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Notification of Change
Supplementary Certificate of Approval No S408A
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 PR1713/00 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 S408A and its Technical Schedule both dated 20 July 2006, all references to the name of the submittor should be amended to read:

"Sartorius Mechatronics T&H GmbH"

B. In Supplementary Certificate of Approval No S408A 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 March 2016, 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 S408A 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*.

Australian Government

National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

No S408A

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 PR1713/00 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.

This Certificate is issued upon completion of a review of approval No S408.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 March 2011, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S408A' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S408A' in addition to the approval number of the instrument.

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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 2 February 2006

- A Sartorius model PR1713/00 digital mass indicator.

Variants: approved 2 February 2006

1. With an Arlec model ENG750 external power supply.
2. Certain models of the PR5610 series.
3. Certain models of the PR5710 series.

Technical Schedule No S408A describes the pattern and variants 1 to 3.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No S408A dated 20 July 2006
Technical Schedule No S408A dated 20 July 2006 (incl. Table 1 and Test Procedure)
Figures 1 to 3 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*.

TECHNICAL SCHEDULE No S408A

Pattern: Sartorius Model PR1713/00 Digital Indicator

Submittor: Sartorius Hamburg GmbH
Meiendorfer Strasse 205
22145 Hamburg Germany

1. Description of Pattern

A Sartorius model PR1713/00 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 5000 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 5000 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	5000 or 5000 per range
Minimum sensitivity	1.2 μV/scale interval
Excitation voltage	12 V DC (±6 V DC)
Maximum excitation current	160 mA

1.1 Zero

Zero may be automatically corrected to within ±0.25*e* whenever the instrument comes to rest within 0.5*e* of zero or whenever power is applied (in the case of multiple range configurations *e* in this sentence refers to e_1). 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 ±0.25*e* of zero) with a nominal range of not more than 4% of the maximum capacity of the instrument.

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The instrument has an initial zero-setting device with a nominal range of not more than 20% 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.

The software identification number is displayed at start-up.

1.4 Power Supply

The instrument operates from mains AC power, or alternatively from a 24 V AC or DC power supply (the submittor shall be consulted regarding suitable power supplies).

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).

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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:

- Analog outputs (voltage or current)
- An RS232 serial data interface
- PS2 interface (e.g. to connect an external keyboard or barcode scanner)
- PR1713/06 – analogue output
- PR1713/07 – analogue output and 4 analogue inputs
- PR1713/08 – BCD interface
- PR1713/04 – serial data interfaces RS232 and RS422/485
- PR1713/05 – additional memory
- PR1713/12 – digital interfaces, 4 inputs, 4 outputs, optoisolated
- PR1713/13 – Fieldbus interface
- PR1713/14 – ethernet interface
- PR1713/15 – digital interfaces, 4 optoisolated inputs, 4 relay outputs
- PR1713/17 – digital interfaces, 6 inputs, 8 outputs, optoisolated
- PR1713/24 – 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.

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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.

The indicator may also have the facility for two weighing instruments each with its own indicator to be networked. The indicator displays 'A' or 'B' to indicate from which weighing instrument the mass indication is derived. The indication to be displayed is selected by the WP key. Each basework shall be clearly identified to correspond to the appropriate weighing instrument display shown on the indicator. That is, there shall be a clear correspondence between the basework identification and the scale selected indication (shown by illumination of the 'A' or 'B' annunciators).

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

Provision is made for the calibration adjustments to be sealed by preventing access to within the indicator housing, thus preventing access to the calibration switch within the case. This may be achieved by use of destructible adhesive labels over at least two opposing screws which secure the cover of the instrument to the main housing.

To ensure that the calibration switch is in the 'calibration protected' state, the instrument casing may be opened and it can be checked that the switch (wire link) is closed as shown in Figure 2.

Alternatively it is possible to check that the calibration switch is in the 'calibration protected' state, by entering the Setup menu of the indicator, then selecting Calibration (press the enter key); if the calibration switch is in the 'calibration protected' state the words "Can not calibrate jumper is closed" will appear.

After any calibration or alteration of instrument parameters and prior to carrying out verification/certification, the instrument shall be turned off and then on, to ensure that the stored calibration and parameter data is used by the instrument.

1.9 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Sartorius Hamburg GmbH
Indication of accuracy class	(III)
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 S408A
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.

1.10 Verification/Certification Provision

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

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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

Certain models of the PR5610 series including the model PR5610/00 (X5 table/wall mounted – Figure 3a) digital mass indicator which may be configured as:

- A weighing instrument with a single weighing range of up to 5000 verification scale intervals at 1.2 μV /e; or
- A multiple range instrument with up to three weighing ranges in which case it is approved for 3000 verification scale intervals at 1.0 μV /e.

In both cases the excitation voltage is 12 V DC (±6 V DC), with a maximum excitation current of 160 mA.

The indicator may have additional features as described for the pattern in clause **1.7 Additional Features** (please refer to this clause for notes and limitations). In this case indicators incorporating additional features or software may be known as various models shown below:

- PR5610/0y – Pro-X5
- PR5610/2y – Batch-X5
- PR5610/3y – IBC-X5
- PR5610/4y – Flow-X5
- PR5610/5y – Fill-X5
- PR5610/6y – Mix-X5
- PR5610/7y – Bulk-X5
- PR5610/8y – Log-X5
- PR5610/9y – Phase-X5

Each of the above models is available in several versions as designated by “y” in the model number.

y = 0, For use with 230 V power supply

y = 1, For use with 24 V AC/DC power supply

y = 2, For use with 230 V power supply, with an explosion-proof rating

y = 3, For use with 24 V AC/DC power supply, with an explosion-proof rating.

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Additionally a model PR5610/05 X5-EX Terminal is also available; this item does not have its own capability to connect directly to weighing baseworks or load cells. However it is able to operate as a remote terminal to control other connected PR5610 series weighing indicators, and display their results.

2.3 Variant 3

Certain models of the PR5710 series including the model PR5710/00 (X6 rack mounted – Figure 3b) digital mass indicator which may be configured as:

- A weighing instrument with a single weighing range of up to 5000 verification scale intervals at 1.2 μV /e; or
- A multiple range instrument with up to three weighing ranges in which case it is approved for 3000 verification scale intervals at 1.0 μV /e.

In both cases the excitation voltage is 12 V DC (±6 V DC), with a maximum excitation current of 160 mA.

Alternatively, an excitation voltage of 20 V DC (±10 V DC) can be used, in which case the maximum excitation current is 267 mA.

The instrument operates from mains power (230 V AC nominal).

The indicator may have additional features as described for the pattern in clause **1.7 Additional Features** (please refer to this clause for notes and limitations). In this case indicators incorporating additional features or software may be known as various models shown below:

- PR5710/00 – Pro-X6 Process Controller
- PR5710/10 – Truck-X6 Process Controller
- PR5710/20 – Batch-X6 Process Controller
- PR5710/30 – IBC-X6 Process Controller
- PR5710/40 – Flow-X6 Process Controller
- PR5710/50 – Fill-X6 Process Controller
- PR5710/60 – Mix-X6 Process Controller
- PR5710/70 – Bulk-X6 Process Controller
- PR5710/80 – Log-X6 Process Controller
- PR5710/90 – Phase-X6 Process Controller

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:

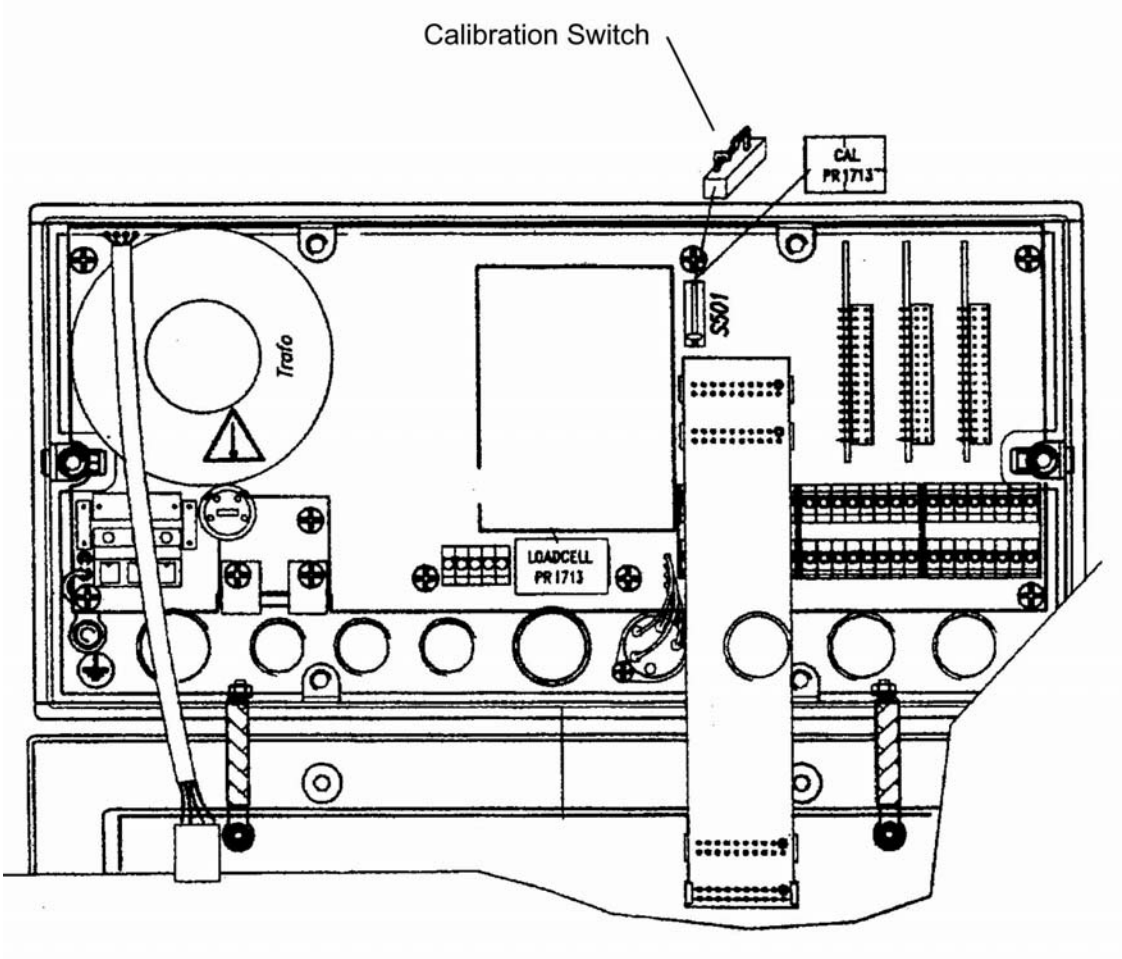
±0.5*e* for loads $0 \leq m \leq 500$;
±1.0*e* for loads $500 < m \leq 2\,000$; and
±1.5*e* for loads $2\,000 < m \leq 10\,000$.

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

FIGURE S408A – 1

Sartorius Model PR1713/00 Digital Indicator

FIGURE S408A – 2



Showing Location of Calibration Switch

FIGURE S408A – 3

(a) A Model PR5610/00 (X5 Table/Wall Mounted)

(b) A Model PR5710/00 (X6 Rack Mounted)