



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Cancellation
Supplementary Certificate of Approval
No S402

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

This is to certify that the approval for use for trade granted in respect of the

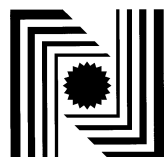
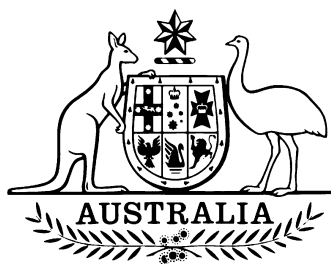
Schenck Model DISOMAT B *plus* Digital Indicator

submitted by Schenck Process GmbH
 Landwehrstrasse 55
 64293 Darmstadt
 GERMANY

has been cancelled in respect of new instruments as from 1 December 2008.

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. G. T.', written in a cursive style.



National Standards Commission

12 Lyonpark Road, North Ryde NSW

Supplementary Certificate of Approval

No S402

Issued 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

Schenck Model DISOMAT B *plus* Digital Indicator

submitted by Schenck Process GmbH
Landwehrstrasse 55
64293 Darmstadt
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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 June 2007, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No S402 and only by persons authorised by the submitter.

Instruments incorporating a digital indicator purporting to comply with this approval shall be marked NSC No S402 in addition to the approval number of the instrument.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the Commission 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 the Commission's Document NSC P 106.

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.

The Commission reserves the right to examine any instrument or digital indicator 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.

DESCRIPTIVE ADVICE

Pattern: approved 3 May 2002

- A Schenck model DISOMAT B *plus* digital indicator.

Technical Schedule No S402 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S402 dated 18 July 2002

Technical Schedule No S402 dated 18 July 2002 (incl. Table 1 and Test Procedure)

Figures 1 to 4 dated 18 July 2002

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.



TECHNICAL SCHEDULE No S402

Pattern: Schenck Model DISOMAT B *plus* Digital Indicator

Submittor: Schenck Process GmbH
Landwehrstrasse 55
64293 Darmstadt
GERMANY.

1. Description of Pattern

A Schenck model DISOMAT B *plus* digital indicator (Figures 1 & 2, and Table 1) which may be configured as:

- An instrument with a single weighing range of up to 6000 verification scale intervals.
- A multi-interval 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.
- A multiple range 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 may be powered from the mains power supply, or by a 24 V DC power supply with a current rating of at least 1.1A.

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.

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

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000 or 6000 per range
Minimum sensitivity	0.5 μ V/scale interval
Excitation voltage	12 V AC
Maximum excitation current	280 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 multi-interval or multiple range configurations e in this sentence refers to e_1). This feature may, or may, not be enabled.

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 semi-automatic subtractive and pre-set tare devices of up to maximum capacity (except for instruments configured as multi-interval instruments, in which case the maximum pre-set tare value is Max_1).

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Load Cell Connection Module

The cables from the load cell(s) are connected to a module (Figure 3) which plugs into the indicator. This module is referred to as a 'Dongle' and also contains a memory device so that calibration parameters of the platform can be stored within the 'Dongle'.

Contrary to the manufacturer's stated intention of this arrangement, if the indicator is replaced or repaired reverification/certification of the instrument is required.

Provision is made for the calibration parameters that are stored in the 'Dongle' to be sealed - refer to clause **1.12 Sealing Provision**.

1.5 Linearisation Facility

Instruments are fitted with a three-point linearisation correction facility; linearisation adjustments may be applied at 25%, 50% and 75% of maximum capacity.

1.6 Two Baseworks Facility

(a) Individual weight display

Up to two baseworks (using two 'Dongles') may be connected to a single DISOMAT B *plus* digital indicator.

The F1 and F2 keys of the indicator are used to select either platform.

The top line of the display changes to indicate the *Max*, *Min* and *e* values of the selected basework. In addition a number immediately above the mass units (e.g. "-1-" above "kg" - see Figure 4) indicates the basework selected ("-1-" indicates that F1 has been pressed and that the corresponding basework, e.g. scale 1 has been selected – the weight displayed will be that of scale 1). Note that the name of each basework is configurable.

Note: In the case of this feature including the combined weight function (clause 1.6 (b) below) each basework/combination shall be clearly identified to correspond to the appropriate scale display shown on the indicator. That is, there shall be a clear correspondence between the basework identification, the scale selected indication (shown by illumination of the annunciators -1-, -2- or -3-), and the scale selection function key (F1, F2 or F3). Trade Measurement Authorities may require additional markings or signs to ensure that these relationships are clear.

(b) Combined weight display

When two baseworks are connected to a single DISOMAT B *plus* indicator it is also possible for a mode ('TwinUnit') to be selected in which the combined weight on the platforms is displayed.

This has similarities to a summing indicator as described in NSC General Supplementary Certificate of Approval No S1/0/A however the feature has some significant differences.

In particular the 'TwinUnit' indication does not necessarily represent the mathematical sum of the values determined for each platform. This is because the 'TwinUnit' indication is assigned its own maximum capacity (*Max*), minimum capacity (*Min*) and verification scale interval (*e*) and the 'TwinUnit' indication is based on a separate determination of the weight value using these parameters. Note however that applying a gross load above the maximum capacity of either basework will result in the 'TwinUnit' indication blanking or showing an error.

The F3 key of the indicator is used to select the 'TwinUnit' indication.

The top line of the display changes to indicate the *Max*, *Min* and *e* values of the 'TwinUnit' indication. In addition a number immediately above the mass unit (e.g. "-3-" above "kg") indicates the selected mode ("-3-" indicating that F3 has been pressed and that the 'TwinUnit' indication has been selected). Note that the name of each basework is configurable.

Note regarding applicability of NSC General Certificate of Approval No 6B/0

The calculations of 6B/0 shall apply to each basework/indicator combination individually.

In the case of the 'TwinUnit' indication, the calculations of clauses 6.3 to 6.6 of General Certificate No 6B/0 shall apply, with the number of load cells being the total number in both baseworks.

1.7 Data Storage Device

A storage device of type VMM20400 may be incorporated into the electronic indicator.

For each weighing request, 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 NSC General Supplementary Certificate of Approval No S1/0/A.

1.8 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. The interfaces shall comply with clause 5.3.6 of the Commission's Document NSC R76.

Any measurement data output from the instrument shall only be used for trade if the data and its format comply with NSC General Supplementary Certificate No S1/0/A.

One or more of the following interface options may be fitted:

- Two serial RS 232, RS 422/485 (2-wire) or RS 485 (4-wire) for the connection of peripheral devices.
- 4 dual inputs and 6 dual outputs (opto-isolated) for control purposes.
- Analog output, maximum 20 mA.
- Extension for two RS 232 interfaces.
- Profibus, Interbus-S.
- A personal computer keyboard may be connected to the indicator for convenient data entry. Relevant functions (such as tare and zero setting) shall be unambiguously assigned to keys on the keyboard.

1.9 Additional Features

The indicator may be used with the certain other features, as indicated below:

- The bottom two lines of the display are configurable to show different items of information such as date/time, input/output status, set points or operator guidance.
- The indicator may be configured with certain pre-set operational arrangements, such as 'Filling Scale', 'Discharge Scale', 'Crane Scale', 'Cargo Scale'. There is also a 'Receiving/Load-Out Scale' arrangement, however this is clearly an automatic weighing instrument operation, and its use is not approved.
- The indicator has set point facilities, and operations (such as entering of set points, zero setting, tare (pre-)setting, printing) may be initiated through the interfaces of the instrument.

Notes: The use of these 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 NSC General Supplementary Certificate of Approval 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.

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.

- (a) Opening the 'Dongle' casing (prising apart the two halves) and checking that the selector plug is in the 'Wprot' location, as shown in Figure 3 – the casing can then be reassembled; or
- (b) Without opening the 'Dongle' casing and by the following procedure:
- (i) Press the yellow ↑ and the ← keys at the same time.
 - (ii) Note the status of the second bottom line in the display.
 - (iii) Change the status of the second bottom line in the display to 'Contacts' using the ← and → keys.
 - (iv) Accept this selection by pressing the 'OK' key.

The second bottom line of the display now indicates 'IN ... OUT ...'.

If 'W' or 'w' is indicated to the left of 'OUT' (e.g. 'IN ... w OUT ...'), this indicates that one of the connected 'Dongles' does not have the selector plug in the write protection position.

- (v) Following this check, repeat steps (i), (iii) and (iv), resetting the status of the second bottom line to that noted in step (ii).

Once it has been ensured that the selector plug is in the 'Wprot' position, a destructible adhesive label can be placed over the join on each side of the 'Dongle' casing to seal the calibration parameters.

Note: Simply checking that the casing of the 'Dongle' has the destructible adhesive labels does not determine that the calibration parameters are sealed.

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** and **multi-interval** 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 **multi-interval** and **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 S402 - 1



Schenck Model DISOMAT B *plus* Digital Indicator in Panel-mount Housing

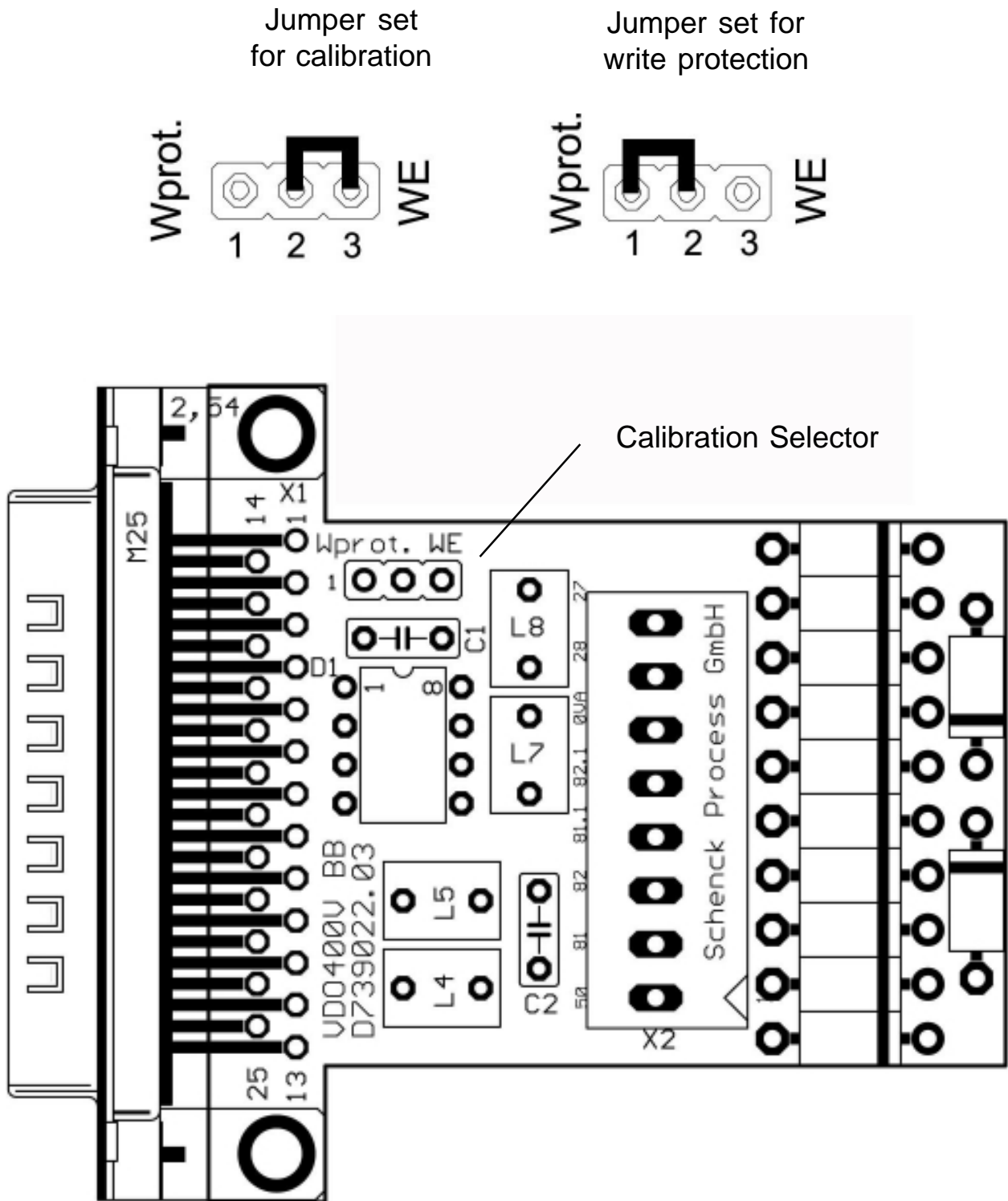
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FIGURE S402 - 2



Schenck Model DISOMAT B *plus* Digital Indicator in Desk-mount Housing

FIGURE S402 - 3



Showing 'Dongle' Module and Positions for Calibration Selector Plug (Jumper)

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FIGURE S402 - 4



Showing Indicator Facia Including Typical Display