



Australian Government

National Measurement
Institute

Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

No S537

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

Mettler Toledo Model IND331 Digital Indicator

submitted by Mettler Toledo Limited
 220 Turner Street
 Port Melbourne VIC 3207.

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 August 2015, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S537' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S537' 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 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.

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 July 2010

- A Mettler Toledo model IND331 single range digital indicator for use with up to 6000 verification scale intervals. This model has a stainless steel housing and may also be known as a model 'IND331/Harsh'.

Variants: approved 2 July 2010

1. Model IND331 in an alternative housing designed for panel mounting. May also be known as a model 'IND331/Panel'.
2. Model IND131/DIN in a plastic housing designed for 'DIN' style rail mounting.
3. Model IND131/J-Box in a stainless steel housing.

Technical Schedule No S537 describes the pattern and variants 1 to 3.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S537 dated 5 July 2010
Technical Schedule No S537 dated 5 July 2010 (incl. Table 1)
Figures 1 to 4 dated 5 July 2010

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 S537

Pattern: Mettler Toledo Model IND331 Digital Indicator

Submittor: Mettler Toledo Limited
220 Turner Street
Port Melbourne VIC 3207

1. Description of Pattern

A Mettler Toledo model IND331 digital indicator (Figure 1 and Table 1) which is approved for use with up to 6000 verification scale intervals (in a single range).

The instrument comprises a stainless steel enclosure with a display and operator interface, which may be desk or wall mountable. In this form the indicator may also be known as a model 'IND331/Harsh'.

TABLE 1 — Specifications

Maximum number of verification scale intervals	6000
Minimum sensitivity	0.6 μ V/scale interval
Excitation voltage	5 V DC
Minimum load impedance	87 Ω
Maximum excitation current	57.47 mA

1.1 Zero

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

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.

The instrument does not have an initial zero-setting device.

1.2 Tare

The instrument has provision for a semi-automatic subtractive tare device of up to the maximum capacity of the instrument.

1.3 Display Check

A display check is initiated whenever power is applied by checking the dots of the dot matrix display.

1.4 Power Supply

The instrument may be powered from mains power (100 – 240 V AC nominal), or from a 24 V DC power supply (the submittor should be consulted regarding the acceptability of alternative power supply units).

1.5 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to three correction points.

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).

1.7 Additional Features

The model IND331 indicator may be provided with certain other features such as for the setting of targets (setpoints) and the control of product supply (fast feed, slow feed, etc).

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 General Supplementary Certificate No S1/0/A should be consulted.

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.

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 Markings and Notices

Instruments carry the following markings, in the form shown at right:

Manufacturer's mark, or name written in full	Mettler Toledo
Indication of accuracy class	Ⓜ
Maximum capacity	<i>Max</i> kg #1
Minimum capacity	<i>Min</i> kg #1
Verification scale interval	<i>e</i> = kg #1
Maximum subtractive tare	<i>T</i> = - kg #2
Serial number of the instrument
Pattern approval mark for the indicator	NMI No S537
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 These markings are also shown near the display of the result if they are not already located there.

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.



1.9 Verification Provision


Provision is made for the application of a verification mark.



1.10 Sealing Provision

A switch on the main board of the indicator (within the indicator enclosure) prevents (or enables) access to calibration adjustments of the indicator.


To ensure that access to calibration adjustments are protected, it is necessary that the instrument is configured in the 'OIML approved' mode. This may be checked using the following procedure, starting from the instrument indicating zero in normal weighing mode.


Press  button for 5 seconds – a symbol  should appear.

Press the **C** button successively until  appears.

Select , by pressing .

Select the Scale option, by pressing .








Select the Type option, by pressing .

Select the Approval option, by pressing **C**, followed by .

Note the approval mode indicated (it should be "OIML").

Attempt to change the OIML option, by pressing **C**.

At this point in the sequence, the indication should show "Err 0007" and the approval mode should have been "OIML". Otherwise the instrument has not been correctly configured and/or the switch preventing calibration adjustments has not been correctly set - the instrument should not be verified.

The instrument can be returned to normal weighing mode (from the "Err 0007" display), by pressing  and then      .

The stainless steel housing has click-in type latches to secure the two parts of the housing (with slots providing access to release the latches).

Once the check above has been carried out, the instrument may be sealed by restricting access within the instrument casing through use of a destructible adhesive label to cover one of the slots that provide access to the latches – see Figure 1b (the destructible adhesive label is shown as 'paper seal' in the figure). Alternatively lead and wire type sealing may be used.

2. Description of Variants

2.1 Variant 1

The Mettler Toledo model IND331/Panel (Figure 2) which is similar to the pattern, but which has a housing intended for panel mounting. The front panel operator interface/display is metallic, whereas otherwise the housing is plastic.

2.1.1 Sealing Provision

Sealing provisions are similar to those described for the pattern, however the plastic housing may be sealed as shown in Figure 2c.

Note: Trade measurement inspectors (and others) may require access to the means by which the instrument is sealed (e.g. destructible adhesive labels) to be able to determine whether unauthorised tampering has occurred. It is therefore important that the indicator is installed such that access to the means of sealing is readily available.

2.2 Variant 2

The Mettler Toledo model IND131/DIN (Figure 3a) which is similar to the pattern, however this indicator is housed in a plastic module intended for mounting to a 'DIN' style rail (typically used in industrial electrical switchboards).

The model IND131/DIN indicator incorporates a small display and operator interface which may be sufficient in some installations (where these are accessible for use and reading), however in other situations a separate display and operator interface (that of the model IND331/Panel, variant 1) may be connected to the model IND131/DIN as shown in Figure 3b.

2.2.1 Sealing Provision

Sealing provisions are similar to those described for the model IND331/Panel in variant 1 (also Figure 2c). The same requirements as described for variant 2 regarding accessibility apply.

2.3 Variant 3

The Mettler Toledo model IND131/J-Box (Figure 4) which comprises the IND131/DIN (variant 2) indicator module, incorporated within a stainless steel housing, together with provision for the connection of a number of load cells to the indicator module.

As the small display and operator interface of the model IND131/DIN module are within the housing and not accessible, the model IND131/J-Box shall be connected with the display and operator interface of the model IND331/Panel (variant 1) to provide an accessible display and operator interface.

2.3.1 Sealing Provision

Sealing provisions are similar to those described for the pattern, however the housing of the model IND131/J-Box may be sealed as shown in Figure 4b.

TEST PROCEDURE

Instruments shall be tested in accordance with any relevant tests specified in the Uniform Test Procedures.

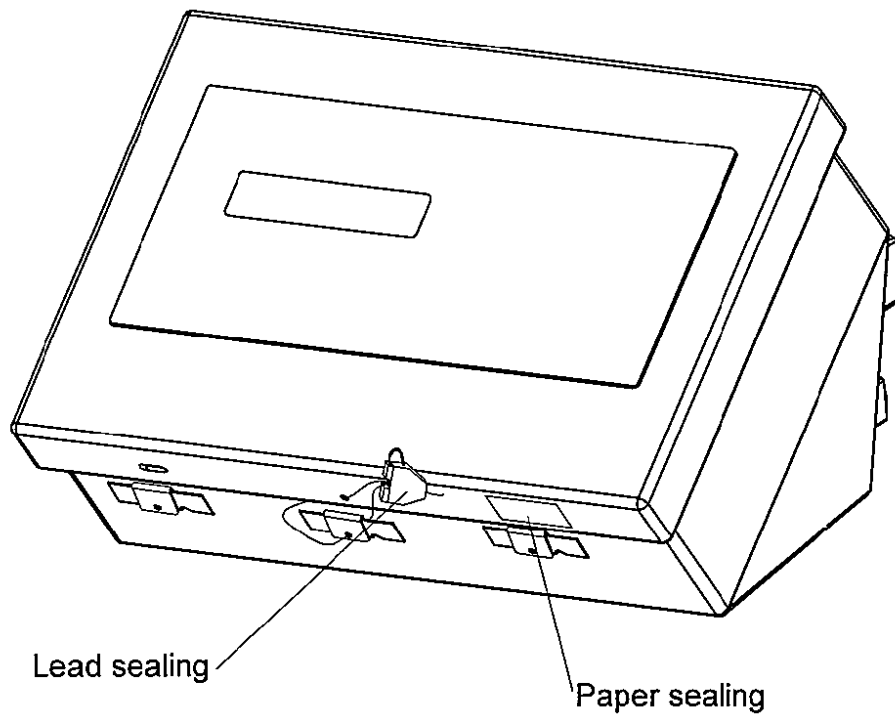
Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 12 of the *National Measurement Regulations 1999*.

FIGURE S537 – 1



(a) Mettler Toledo Model IND331 (aka IND331/Harsh) Indicator



(b) Model IND331 (aka IND331/Harsh) Indicator – Typical Sealing

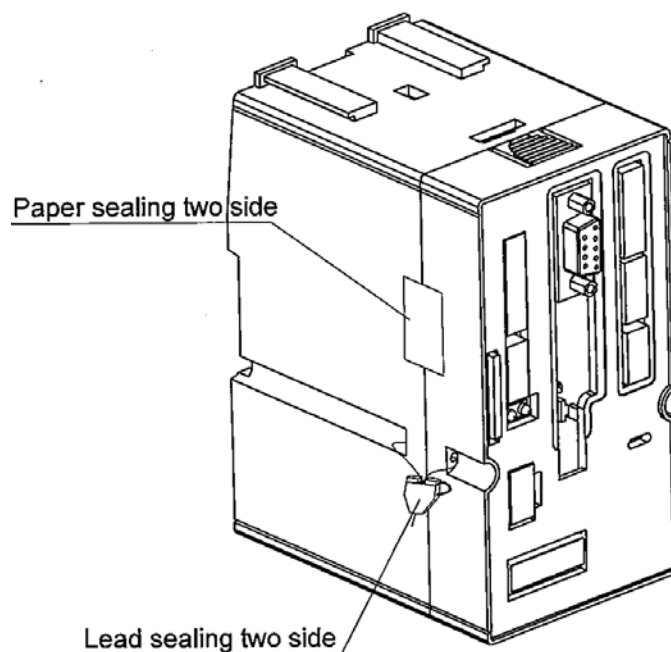
FIGURE S537 – 2



(a) Model IND331 (aka IND331/Panel) Indicator – side view



(b) Model IND331/Panel Indicator – front view of display/operator interface

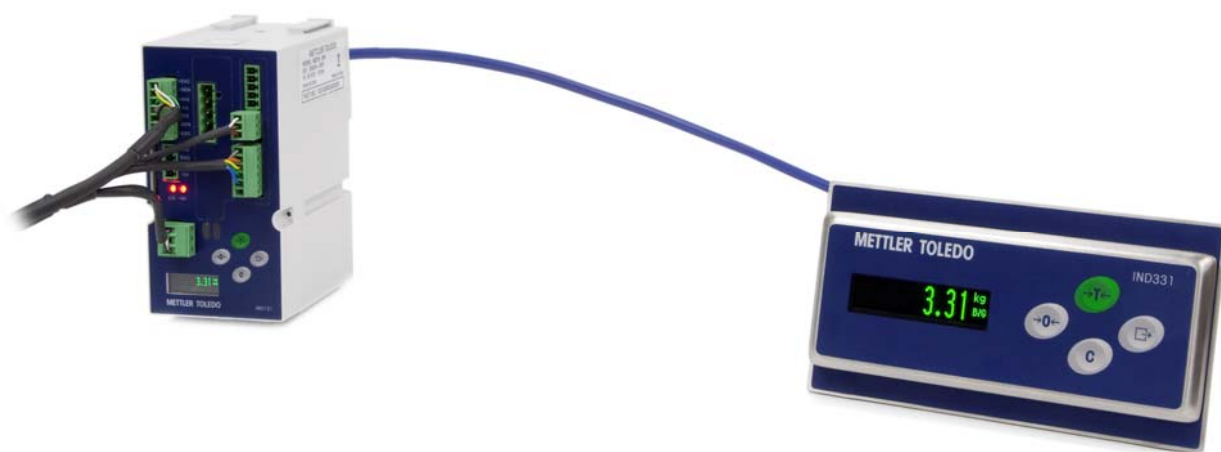


(c) Model IND331/Panel Indicator – Typical Sealing

FIGURE S537 – 3



(a) Model IND131/DIN Indicator

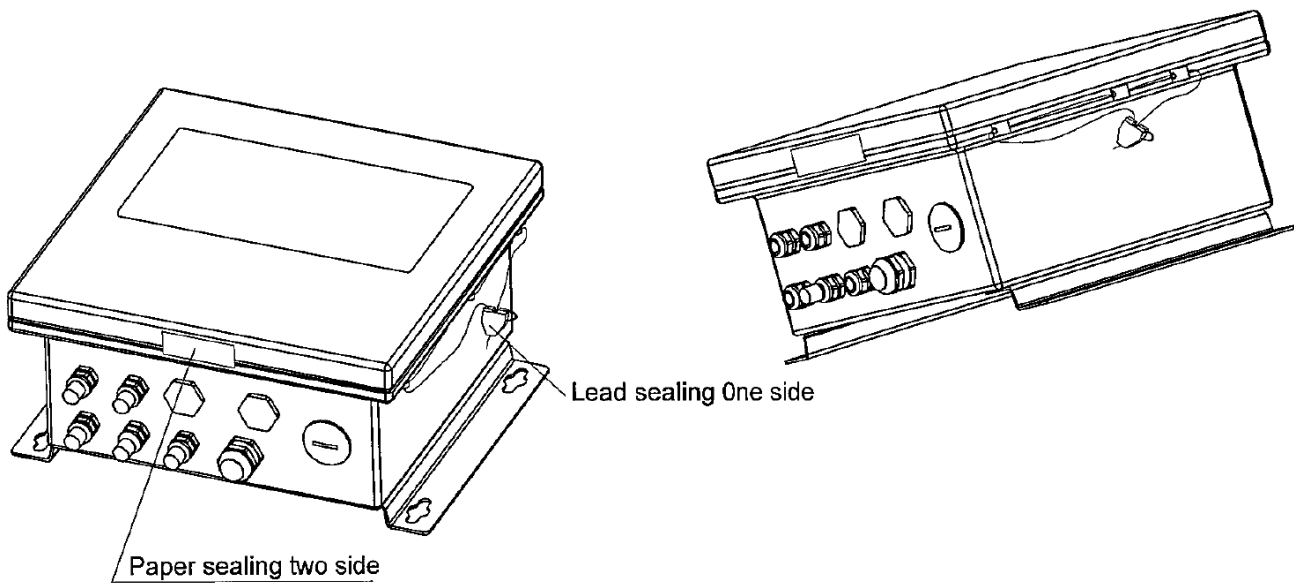


(b) Model IND131/DIN Indicator with Model IND331 Display/Interface

FIGURE S537 – 4



(a) Model IND131/J-Box Indicator



(b) Model IND131/J-Box Indicator – Typical Sealing