



Australian Government
**Department of Industry, Science,
Energy and Resources**

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S816

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.

Mettler Toledo Model IND360 Digital Indicator

submitted by Mettler-Toledo Limited
 Unit 3, 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 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 to 2 approved – certificate issued	04/02/22

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S816' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S816' in addition to the approval number of the instrument, and only by persons authorised by the submitter.

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.

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 S816

1. Description of Pattern **approved on 04/02/22**

A Mettler Toledo model IND360 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 II weighing instrument with a single weighing range of up to 1000 verification scale intervals.

The instrument has a housing intended for panel mounting and with an LCD for display of the weight value. The front panel is metallic, whereas otherwise housing is ABS.

Instruments 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)
	1000 (class II)
Minimum sensitivity	0.3 μV /scale interval
Excitation voltage	5 V DC
Maximum excitation current	116 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	43 Ω
Maximum load cell impedance	1245 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	20 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 (*)	1571 m/mm ² (6-wire only)

(*) 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.

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 subtractive tare device of up to the maximum capacity of the instrument may be fitted.

Pre-set 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 three points.

1.4 Display Check

A display check is initiated whenever power is applied.

1.5 Power Supply

The indicator operates from 20 - 28 V DC power source (not suitable for a road vehicle power supply).

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 General Supplementary Certificate of Approval 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.

Instruments may be fitted with RS485, Ethernet, industrial Ethernet, Profibus, Modbus, analogue outputs and digital inputs/outputs.

1.7 Additional Features

Instruments may be fitted with additional functions including PAC (Application Pack) management and Comparators (<, <=,=,>, >=,<>, _<>_ and >__<). 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.

1.8 Verification Provision

Provision is made for the application of a verification mark.



1.9 Sealing Provision

The instrument is sealed by preventing access to the security switch SW1. This may be achieved by the use of a destructible adhesive label placed over the access hole to the security switch and a join in the instrument housing (Figure 1).

1.10 Software Version



The software version is designated 1.xx.yyyy, where 'xx' refers to the identification of major updates of non-legally relevant software and 'yyy' refers to the identification of minor updates of non-legally relevant software.

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

- Navigate keys to the Information Recall  icon.
- Press the ENTER  key.
- The software version is displayed in the 'Info recall' menu.

1.11 Descriptive Markings and Notices

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

Manufacturer's mark, or name written in full	Mettler Toledo
Model number
Indication of accuracy class	 or 
Maximum capacity	<i>Max</i> g or kg or t #1
Minimum capacity	<i>Min</i> g or kg or t #1
Verification scale interval	<i>e</i> = g or kg or t #1
Serial number of the instrument
Pattern approval number for the indicator	NMI S816
Pattern approval mark for other components #2

#1 These markings are shown in the electronic markings field above the display of the result (IND360 and harsh version); these markings are shown near the display of the result (DIN version).

#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.

2. Description of Variant 1

approved on 04/02/22





The Mettler Toledo model IND360 DIN (Figure 2a) which is similar to the pattern but is housed in an ABS module intended for mounting to a 'DIN' style rail (typically used in industrial electrical switchboards).

2.1 Sealing Provision

The instrument is sealed by preventing access to the security switch SW1. This may be achieved by the use of a destructible adhesive label placed over the access hole to the security switch and a join in the instrument housing (Figure 2).

2.2 Software Version

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

- Press the RIGHT  key to display the Information Recall  icon.
- Press the RIGHT  key again, then press the DOWN  key until 'Main SW' is displayed.

3. Description of Variant 2 approved on 04/02/22

The Mettler Toledo model IND360 harsh version (Figure 3) which is similar to the pattern but having a stainless steel enclosure.

3.1 Power Supply

The indicator operates from 100 - 240 V mains AC power.

3.2 Sealing Provision

The instrument is sealed by preventing access to the security switch SW1. This may be achieved by the use of destructible adhesive labels placed over the opposite sides of a join in the instrument housing as shown Figure 3.

4. Description of Variant 3 approved on 04/02/22

The Mettler Toledo model IND360 which is similar to the pattern but with CANbus interface, in which case the indicator shall be used with the NMI approved Mettler Toledo model SLC820 (may also be known as POWERCELL PDX) series digital load cells as described in the documentation of approval NMI S529 for the instruments which approved with reference to document NMI R 76 dated October 2015 or earlier.

This variant may also be used with the NMI approved Mettler Toledo model SLB615D series digital load cells as described in the documentation of approval NMI S697 for the instruments which approved with reference to document NMI R 76 dated July 2004 or earlier.

The maximum number of verification scale intervals (VSI) applicable is determined by the number of VSI given in the approval documentation for the load cell used.

TEST PROCEDURE No S816

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

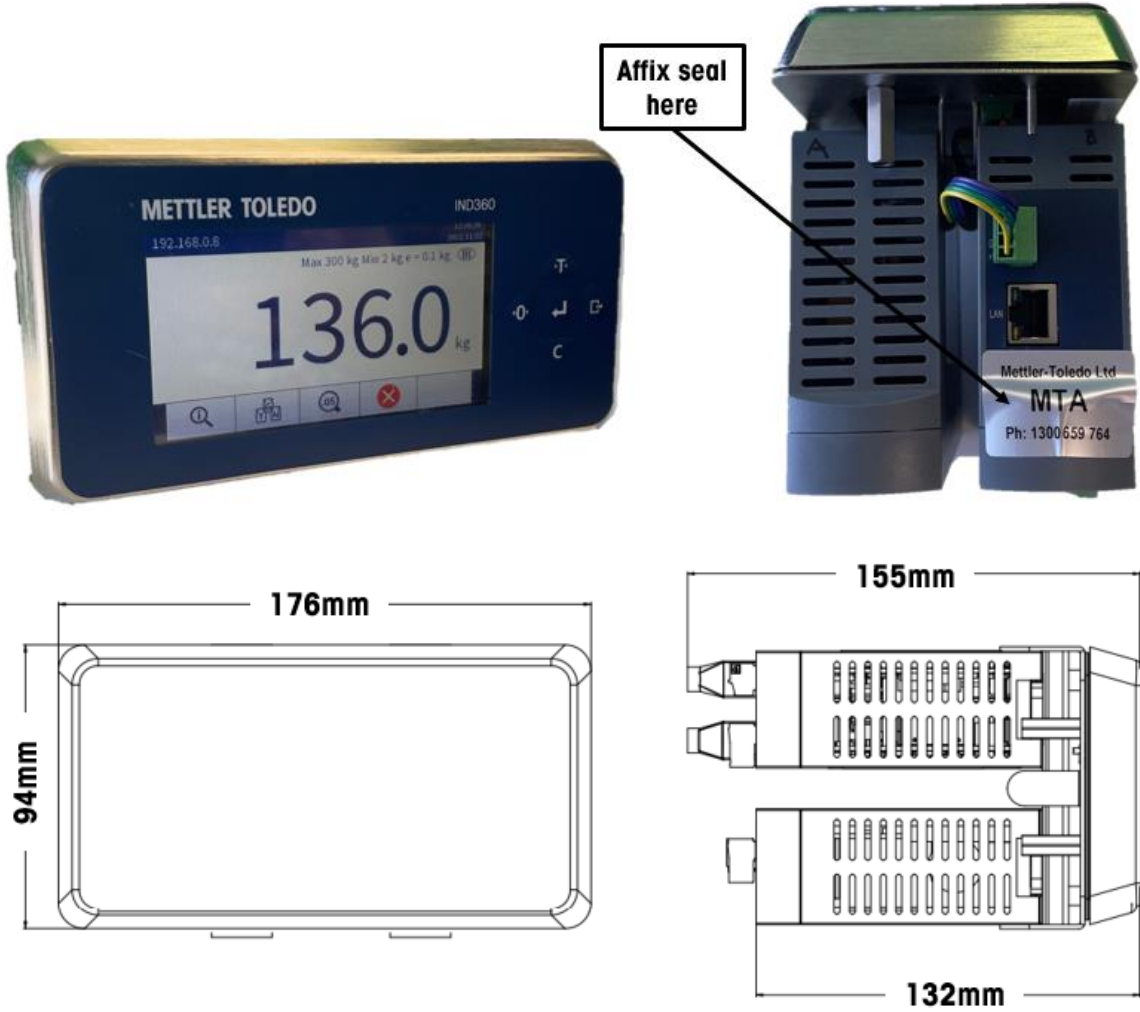
Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

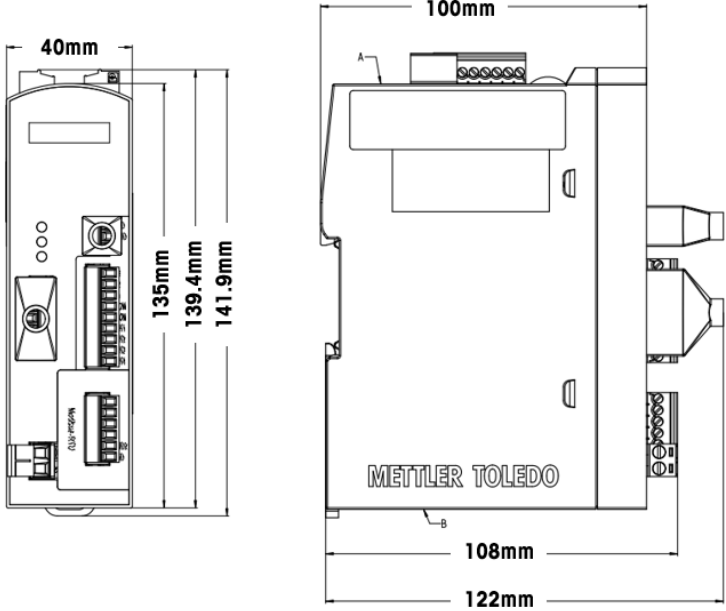
For multi-interval and multiple range instruments with verification scale intervals of $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

FIGURE S816 – 1



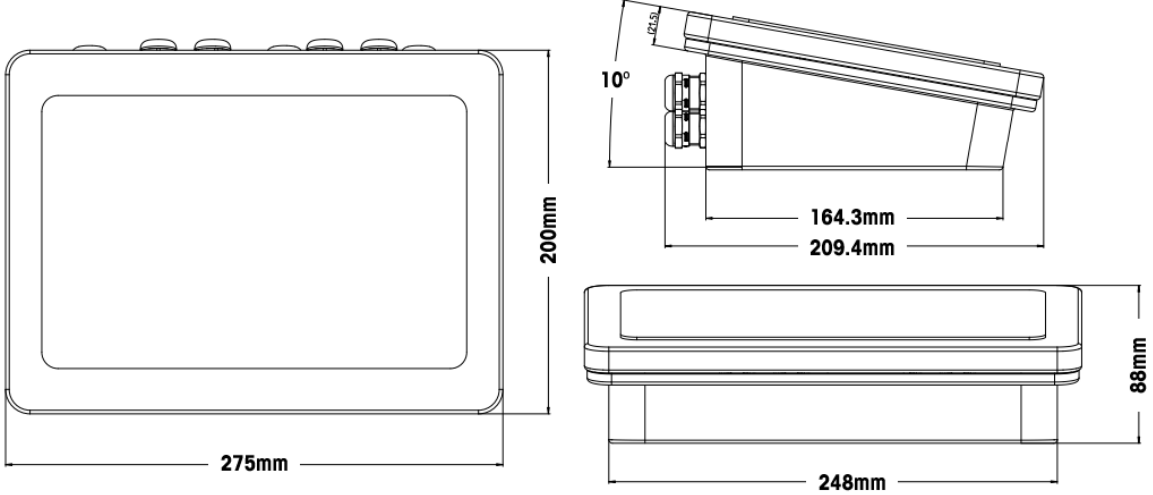
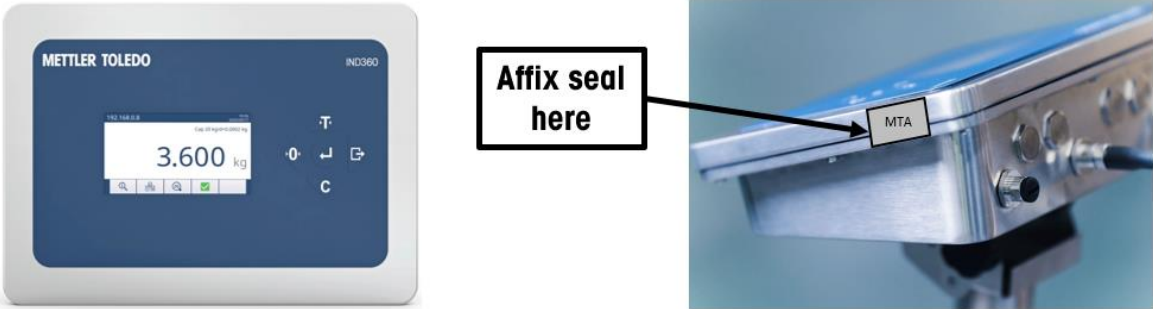
Mettler Toledo Model IND360 Digital Indicator and Sealing Method (Pattern)

FIGURE S816 – 2



Mettler Toledo Model IND360 DIN and Sealing Method (Variant 1)

FIGURE S816 – 3



Mettler Toledo Model IND360 Harsh Version and Sealing Method (Variant 2)

~ End of Document ~