Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S871

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.

Ohaus Model Defender i-DT61PW Digital Indicator

submitted by Ohaus Australia Pty Ltd
Level 1, 191 Salmon 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 and variant 1 approved – certificate issued	20/05/25

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S871' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S871' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

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.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates 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 S871

1. Description of Pattern approved on 20/05/25

An Ohaus model Defender i-DT61PW digital mass indicator (Figure 1 and Table 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 10000 verification scale intervals; or
- A class (III) weighing instrument with a single weighing range of up to 1000 verification scale intervals; or
- A class (III) multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 10 000 verification scale intervals per partial weighing range; or
- A class (III) multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 1000 verification scale intervals per partial weighing range.

The instrument has an ABS enclosure with an LCD display for display of the weight value.

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000 (class (III))
	1000 (class (III))
Minimum sensitivity	0.66 µV / scale interval
Excitation voltage	3.3 V DC
Maximum excitation current	38 mA
Fraction of maximum permissible error	p_i = 0.5
Minimum load cell impedance	87.5 Ω
Maximum load cell impedance	1140 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	15 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection	4-wire or 6-wire shielded
Maximum value of load cell cable length per wire cross section (*)	122 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 or lengthening the load cell(s) cable.

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

An automatic subtractive tare device and/or semi-automatic subtractive tare device, each of up to maximum capacity of the instrument, may be fitted.

A pre-set taring device of up to the maximum capacity (or of up to the Max_1 for multi-interval instruments) may also be fitted.

1.3 Power Supply

The instrument operates from 6 x D size 1.5 V dry batteries.

1.4 Display Check

A display check is initiated whenever power is applied.

1.5 Linearisation Facility

Instruments are fitted with a linearisation correction facility having one correction point.

1.6 Additional Features

The indicator may be fitted with certain additional functions including counting, percent weighing, target/check weighing, 'Lo/OK/Hi' display, dynamic weighing, accumulation with statistical information. 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.

Instruments may also be fitted with a 'weighing unstable sample' or 'dynamic weighing' function. This function shall not be used 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.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Software

The legally relevant software is designated Sr 1.xx, where 'xx' refers to the identification of non-legally relevant software.

The software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

1.9 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Ohaus
Indication of accuracy class	III or III
Maximum capacity (for each range)	*Max* ..... g or kg or t #1
Minimum capacity (for each range)	*Min* ..... g or kg or t #1
Verification scale interval (for each range)	*e* = ... g or kg or t #1
Serial number of the instrument	…….
Pattern approval mark for the indicator	NMI S871
Pattern approval mark for other components	..... #2

#1 These markings are shown near the display of the result.

#2 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Notes:

For multi-interval instruments the markings shall be as above, with the exception that the 'Maximum capacity' and 'Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

Maximum capacity	*Max* ...../..... g or kg or t
Verification scale interval	*e* = .../..... g or kg or t

1.10 Sealing Provision

Provision is made for the calibration to be sealed by setting a switch on the main board within the instrument to 'ON' position, and then preventing access within the protective cover (Figure 3).

The switch status (Figure 5a) can be seen in the switch-on display sequence when the power is first applied to the instrument.

- If the switch is in the 'ON' position, the instrument will display 'LFt ON'. In this case the instrument may be verified.
- Otherwise the instrument will not display 'LFt ON' in the switch-on display sequence in which case the instrument should not be verified until the switch has been correctly set to the 'ON' position.

Sealing to prevent access within the protective cover may be achieved by the application of lead and wire type seals or similar with drilled screws or using a destructive label placed over the securing screw in the protective cover as shown in Figure 3.

2. Description of Variant 1 approved on 20/05/25

The Ohaus model i-DT61XWE (Figure 2 and Table 2) which is similar to the pattern but having a stainless steel enclosure with an LED display for display of the weight value.

TABLE 2 – Specifications

Maximum number of verification scale intervals	10 000 (class III) 1000 (class IIII)
Minimum sensitivity	0.8 µV / scale interval
Excitation voltage	5 V DC
Maximum excitation current	57 mA
Fraction of maximum permissible error	p_i = 0.5
Minimum load cell impedance	87.5 Ω
Maximum load cell impedance	1140 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	15 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection	4-wire or 6-wire shielded
Maximum value of load cell cable length per wire cross section (*)	122 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 or lengthening the load cell(s) cable.

2.1 Power Supply

The instrument operates from mains AC power (100–240 V AC, 50/60 Hz).

2.2 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 R 76 (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 NMI General Supplementary Certificate of Approval No 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 RS232, RS485, USB, Ethernet and digital inputs/outputs.

2.3 Additional Features

Instruments may be fitted with certain additional functions including counting, percent weighing, target/check weighing, dot matrix colour LED display, dynamic weighing, accumulation with statistical information, filling/setpoints and a ‘library’ function to allow storing/recall of ‘under/accept/over’ values, average piece weight for counting, reference weight for percentage weighing, setpoint values for filling, tare values and material name against part numbers. 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.

Instruments may also be fitted with an ‘animal weighing’ or ‘dynamic’ function. This function shall not be used for trade use.

2.4 Sealing Provision

Provision is made for the calibration to be sealed by setting a switch on the main board within the instrument to 'ON' position, and then preventing access within the protective cover (Figure 4).

The switch status (Figure 5b) can be seen in the switch-on display sequence when the power is first applied to the instrument.

- If the switch is in the 'ON' position, the instrument will display 'LFt ON'. In this case the instrument may be verified.
- Otherwise the instrument will not display 'LFt ON' in the switch-on display sequence in which case the instrument should not be verified until the switch has been correctly set to the 'ON' position.

Sealing to prevent access within the protective cover may be achieved by the application of lead and wire type seals or similar with wire holes or using a destructive label placed over the securing screw in the protective cover as shown in Figure 4.

TEST PROCEDURE No S871

Instruments should 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*.

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

FIGURE S871 – 1

Ohaus Model Defender i-DT61PW Digital Indicator

FIGURE S871 – 2

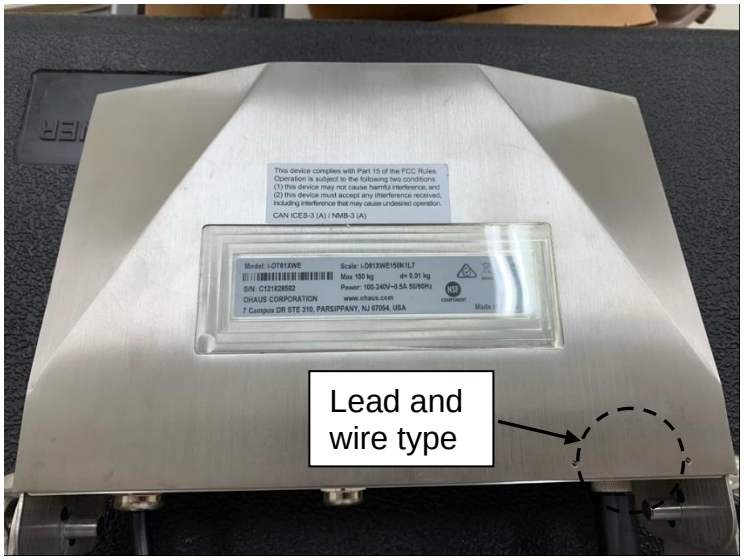
Ohaus Model Defender i-DT61XWE Digital Indicator

FIGURE S871 – 3

Sealing of i-DT61PW Digital Indicator

Typical Sealing Methods

FIGURE S871 – 4



Sealing of i-DT61XWE Digital Indicator

Typical Sealing Methods

FIGURE S871 – 5

(a) Model i-DT61PW Digital Indicator Calibration Switch Status

(b) Model i-DT61XWE Digital Indicator Calibration Switch Status

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