Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S883

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.

Adam Equipment Model AE 403M Digital Indicator

submitted by Adam Equipment (S.E. Asia) Pty Ltd
70 Miguel Road
Bibra Lake WA 6163

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 approved – certificate issued	10/02/26

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S883' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S883' 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 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*.

Phillip Mitchell
A/g Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No S883

1. Description of Pattern approved on 10/02/26

An Adam Equipment Model AE 403M digital indicator (Figure 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 6 000 verification scale intervals; or
- A class (III) weighing instrument with a single weighing range of up to 1000 verification scale intervals

The instrument has a stainless-steel housing with an LCD display having the digits of 40 mm height for display of the weight value.

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

TABLE 1 – Specifications

Maximum number of verification scale intervals	6 000 (class (III)) 1 000 (class (III))
Minimum sensitivity	1.0 μV/scale interval
Excitation voltage	5 V DC
Maximum excitation current	14.3 mA
Fraction of maximum permissible error	p_i = 0.5
Minimum load cell impedance	350 Ω
Maximum load cell resistance	1100 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	16 mV
Maximum tare range	−100% Max
Operating temperature range	−10 °C to +40 °C
Load cell connection	4 or 6 wire plus shield
Maximum length of load cell connection cable (*)	4 m (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

A semi-automatic subtractive taring device of up to the maximum capacity of the instrument may be fitted.

A pre-set taring device of up to the maximum capacity may also be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Linearisation Facility

Instruments may be fitted with a linearisation correction facility having up to ten correction points.

1.5 Power Supply

Power supply may be either 230 V AC mains power source or 6 V DC rechargeable battery.

1.6 Additional Features

The indicator may have certain additional functions (e.g. holding/peak, parts count, check weighing backlight colours and/or alarm, percent weighing and accumulated total). 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.

Instruments may also be fitted with an animal (dynamic) weighing function. The 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 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 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.

Interfaces of the following types may be fitted:

- RS232 serial data interface
- Relay

1.9 Verification Provision

Provision is made for the application of a verification mark.

1.10 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Adam Equipment	
Indication of accuracy class	(III) or (III)	
Maximum capacity	*Max* ..... kg	#1
Minimum capacity	*Min* ..... kg	#1
Verification scale interval	*e* = ... kg	#1
Maximum subtractive tare	*T* = −.. .. kg	#2
Serial number of the instrument	…….	
Pattern approval mark for the indicator	NMI S883	
Pattern approval mark for other components	.....	#3

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

#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.

1.11 Sealing Provision

Provision is made for the calibration to be sealed by setting two pins on the motherboard within the instrument to an OPEN status, and then preventing access within the instrument housing either by the use of destructible adhesive labels placed on the side of the instrument housing as shown in Figures 2 or a 'lead and wire' type seal with drilled screws as shown in Figure 3.

It is possible to determine that the pin status is in the OPEN status as follows (starting from the normal weighing mode):

- Press and hold the ⏻ key to switch off the instrument.
- Press and hold the ⏻ key to switch on the instrument.
- Press the ↵ key during the self-test sequence.
- If the pins are in the OPEN status, the instrument will return to the normal weighing mode. In this case the instrument may be verified.
- Otherwise the instrument will display 'P ' for passcode. In this case the calibration pins are in the CLOSED status. The instrument shall not be verified until the pins are in the OPEN status.

Alternatively the instrument may be sealed by recording the count number on verification. Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.

The instrument automatically increments a configuration and/or calibration value (count number) each time the instrument is re-configured and/or calibrated. The value of the counters can be seen in the switch-on display sequence (when power is first applied to the indicator).

The value(s) of these counters may be recorded on a destructible adhesive label attached to instrument (e.g. as CALCnt xxx, ParCnt yyy).

Any subsequent alternation to the calibration or configuration will be evident as the recorded values and the current counter values will differ.

1.12 Software

The legally relevant software is designated v1.xx (where ‘xx’ represents the identification of non-legally relevant software).

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

TEST PROCEDURE No S883

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

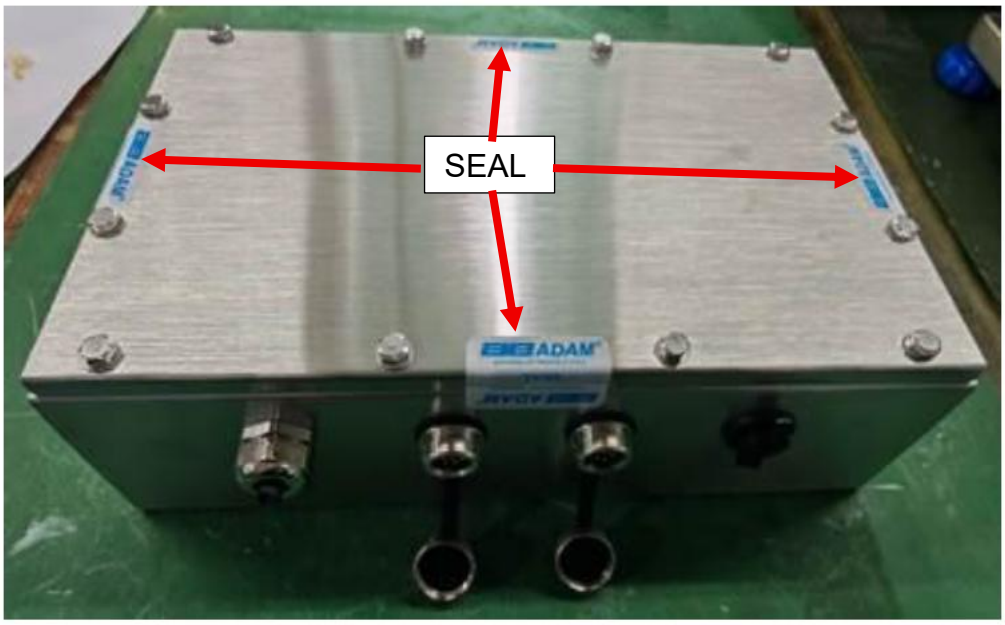
Maximum Permissible Errors

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

FIGURE S883 – 1

Adam equipment Model AE 403M Digital Indicator

FIGURE S883 – 2



Sealing of Model AE 403M Digital Indicator (Destructible Adhesive Labels)

FIGURE S883 – 3

Sealing of Model AE 403M Digital Indicator (Lead and Wire)

~ End of Document ~