



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S554

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.

NUWEIGH Model JAC 190 Digital Indicator

submitted by Newcastle Weighing Services Pty Ltd
 104-114 Hannell Street
 Wickham NSW 2293

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.

This approval becomes subject to review on 1/10/16, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved –certificate issued	2/09/11

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S554' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S554' 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 S1/0/A or No S1/0B.

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, consisting of a series of loops and a long horizontal stroke at the bottom.

TECHNICAL SCHEDULE No S554

1. Description of Pattern

approved on 2/09/11

A NUWEIGH model JAC 190 digital mass indicator (Figure 1 and Table 1) which may be configured to form part of a weighing instrument with a single weighing range of up to 10 000 verification scale intervals.

The instrument has a liquid crystal display including provision 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 (see clause **1.7 Interfaces** below).

TABLE 1 – Specifications

Maximum number of verification scale intervals	10 000
Minimum sensitivity	0.5 μ V / scale interval
Excitation voltage	5.18 V DC
Maximum excitation current	89.31 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	58 Ω
Maximum load cell impedance	1100 Ω
Measuring range minimum voltage	0.5 mV
Measuring range maximum voltage	40 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection	6-wire shielded

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.

1.3 Display Check

A display check is initiated whenever power is applied. Only the digital display is approved for trade purposes.

1.4 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to three correction points (plus zero and maximum capacity points).

1.5 Power Supply

The instrument may be powered from mains power (100–240 V AC nominal), or from a Cardinal model GFP121-1210BX 12 V DC power supply. The submitter should be consulted regarding the acceptability of alternative power supply units.

1.6 Additional Features

The indicator also has certain additional functions, e.g. pre-set weight comparators, hold function, count function peak, checkweigher, live weight function, and accumulated weight function. The additional functions are not approved for trade use.

When a printer is used with the indicator, the format of printout shall comply with General Supplementary Certificates No S1/0/A or No S1/0B.

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 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 NMI General Supplementary Certificates No S1/0/A or 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 RS-232/RS422/RS485 serial data interfaces, Ethernet and USB interfaces, Modbus, Profibus, Devicenet, Wifi, and Fibre Optic, and may also have digital inputs/outputs associated with the set-point facility.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Sealing Provision

The weight calibration parameter is protected when the calibration inhibit jumper J4 on the main circuit board (Figure 2a) is installed. To determine whether or not the weight calibration parameter is in the protected mode, switch on the power of the instrument, then press and hold the 'Fn' button and 'Unit' button at same time. If the calibration inhibit jumper is closed (calibration parameters are protected), then the instrument should display 'Sealed' and access to set up mode is prevented. Otherwise, the calibration parameters are not secured and verification mark should not be applied.

The calibration event counter (CAL:) could be used for verification of calibration. It would be incremented once each time a change is made to the calibration parameter (e.g. span adjustment). To access the event counter, press the 'Fn' button and 'Net/Gross' button after the indicator is turned on. The display should show 'Cal:'. Press the 'Tare' button, then the display should show the number of times the indicator has been calibrated. This number should be used for verification record.

If the weight calibration parameter is protected, calibration adjustments may be sealed by use of lead and wire (or similar) seals, connecting the pair of sealing screws at each side of the instrument, to prevent access to the calibration switch within the instrument housing. Figure 2b shows the sealing on one side of the instrument.

1.10 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Nuweigh	
Indication of accuracy class	Ⓜ	
Maximum capacity (for each range)	<i>Max</i> kg	#1
Minimum capacity (for each range)	<i>Min</i> kg	#1
Verification scale interval (for each range)	<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 S554	
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 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

TEST PROCEDURE No S554

Instruments shall be tested in accordance with any relevant tests specified in the national instrument test procedures.

Maximum Permissible Errors

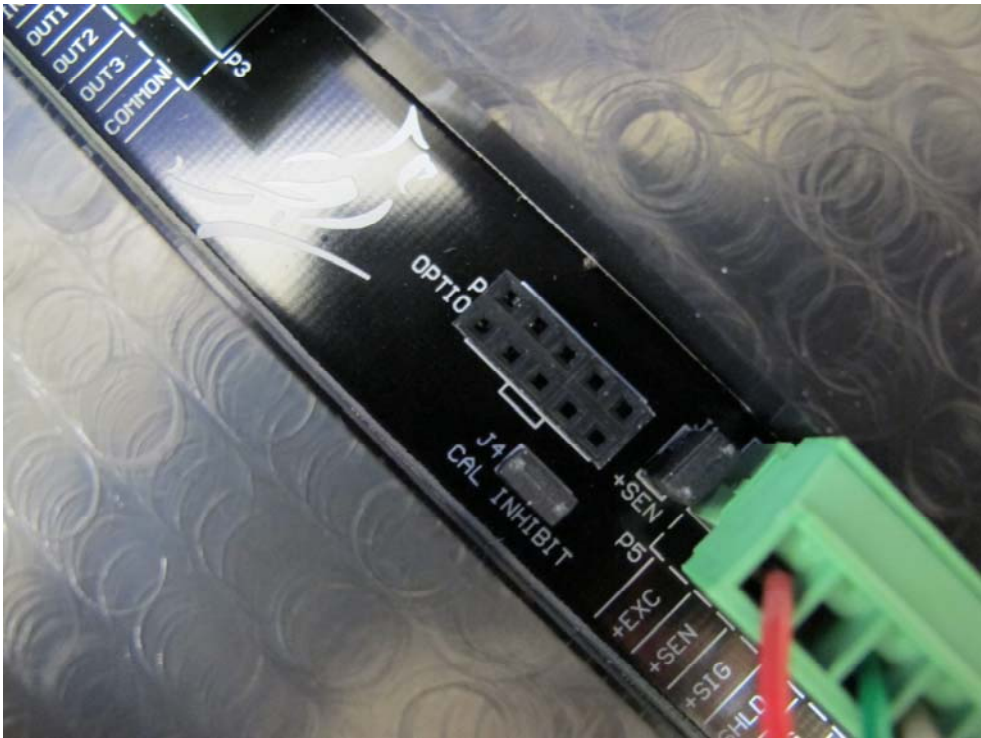
The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE S554 – 1



NUWEIGH Model JAC 190 Digital Indicator

FIGURE S554 – 2



(a) Showing Location of Calibration Jumper J4



(b) Typical Sealing

~ End of Document ~