

Australian Government

Department of Industry, Innovation and Science

National Measurement Institute

# Supplementary Certificate of Approval NMI S394

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.

Ishida Model IWQ-D Digital Indicator

submitted by Heat and Control Pty Ltd 407 Creek Road Mt Gravatt QLD 4122

**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 **1/11/21**, and then every 5 years thereafter.

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	12/10/01
1	Pattern & variants 1 & 2 approved – certificate issued	26/10/01
2	Pattern & variants 1 & 2 reviewed – notification of change issued	2/10/07
3	Pattern & variants 1 & 2 <b>reviewed</b> & updated – certificate issued	14/07/16

# DOCUMENT HISTORY

## CONDITIONS OF APPROVAL

## General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) S394' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S394' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or 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*.

Dr A Rawlinson

## TECHNICAL SCHEDULE No S394

#### 1. Description of Pattern

#### approved on 12/10/01

An Ishida model IWQ-D digital indicator (Figure 1 and Table 1). Instruments may be configured with single interval or multi-intervals (two). Instruments are fitted with a numeric keypad and a vacuum fluorescent display. They may be fitted with output sockets for the connection of auxiliary and/or peripheral devices.

Instruments are approved for use with up to 6000 verification scale intervals per interval range when used over a temperature range of  $+5^{\circ}$ C to  $+35^{\circ}$ C; the temperature range is marked on the instrument. When used over a temperature range of  $-10^{\circ}$ C to  $+40^{\circ}$ C, instruments are approved for use with up to 3000 verification scale intervals per interval range.

### 1.1 Zero

Zero is automatically corrected to within  $\pm 0.25e_1$  whenever the instrument comes to rest within  $0.5e_1$  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 has an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

#### 1.2 Tare

A semi-automatic and/or a non-automatic keyboard-entered subtractive pre-set taring device may be fitted. Each device has a capacity of up to the maximum capacity of the instrument (where it has a single interval range) or up to the maximum capacity of the lower scale interval range (where the instrument has multi-intervals).

When the pre-set tare device is fitted, instruments are marked NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

## 1.3 Display Check

A display check is initiated whenever power is applied.

#### 1.4 Management Functions

Instruments may be fitted with a number of management functions which are not for trade use, including counting function and UNDER/ACCEPT/OVER facility.

#### 1.5 Verification Provision

Provision is made for the application of a verification mark.

#### 1.6 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of two sealing screws at the rear of the indicator. Alternatively, the calibration adjustments may be sealed by means of a destructible adhesive label over the retaining screw. (Figure 2 actually shows a model IWB-D indicator but the sealing method is typical). It is important to ensure that this screw is in place and tightened prior to the label being applied.

# **1.7 Descriptive Markings and Notices**

Instruments are marked with the following data, together in one location, in the form shown at right:

Manufacturer's mark, or name written in full Name or mark of manufacturer's agent Indication of accuracy class	Ishida, Japan Heat and Control Pty Ltd
Pattern approval number for the instrument	NMI (or NSC) No S394
Maximum capacity	<i>Max</i> / g or kg #1 & #2
Minimum capacity	<i>Min</i> g or kg  #1
Verification scale interval	e =/ g or kg #1 & #2
Maximum subtractive tare	<i>T</i> = g or kg #2
Special temperature limits (if applicable #3)	+5°C to +35°C
Serial number of the instrument	

- #1 These markings are also shown near the display of the result if they are not already located there.
- #2 For single interval instruments there is only one range therefore only one value of maximum capacity and verification scale interval to be marked.
- #3 Refer to clause **1. Description of Pattern** and Table 1 below.

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

When the pre-set tare device is fitted, instruments are marked NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

TABLE 1 — Specifications

Temperature range	+5°C to +35°C φ	-10°C to +40°C
Maximum number of verification scale	6000	3000
intervals per interval range		
Minimum sensitivity per scale interval	0.6 µV/e	0.6 µV/e
Excitation voltage	5 V DC	5 V DC
Maximum excitation current	50 mA	50 mA

 $\phi$  When used with more than 3000 verification scale intervals per interval range, instruments are marked with the limited temperature range of +5°C to +35°C.

## 2. Description of Variant 1

An Ishida model IWX-D digital indicator (Figure 3) which is similar to the pattern, including taring devices and vacuum fluorescent display. The UNDER/OVER/ ACCEPT management facility of the pattern is also available but the counting function and the numeric keypad are not.

#### 3. Description of Variant 2

An Ishida model IWB-D digital indicator (Figure 4) which is similar to variant 1, including taring devices but which is powered by battery or by an Ishida model IWB DC mains adaptor and which has a liquid crystal display (rather than the vacuum fluorescent display used for the pattern and variant 1).

The UNDER/OVER/ACCEPT management facility of the pattern is also available but the counting function and the numeric keypad are not.

#### approved on 12/10/01

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# TEST PROCEDURE

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

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

## Maximum Permissible Errors

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

### Tests

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.

Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule, where applicable – refer to clause **1. Description of Pattern** and Table 1.

FIGURE S394 - 1



Ishida Model IWQ-D Digital Indicator (pattern)

FIGURE S394-2



Showing Typical Sealing – Model IWB-D Shown

FIGURE S394-3



Ishida Model IWX-D Digital Indicator (variant 1)



FIGURE S394-4

Ishida Model IWB-D Digital Indicator (variant 2)

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