



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Supplementary Certificate of Approval NMI S349

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.

Teraoka Seiko Model DC-180 Digital Indicator

Submitted by W W Wedderburn Pty Ltd
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 Ingleburn NSW 2565

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 **1/12/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	20/11/97
1	Pattern approved – certificate issued	11/03/98
2	Pattern reviewed – notification of change issued	28/07/04
3	Pattern amended (address & test procedure) & reviewed – notification of change issued	19/11/10
4	Pattern reviewed & updated – certificate issued	10/03/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI (or NSC) S349' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S349' 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 Certificates No S1/0/A or 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*.

Signed

Stephen Horrocks

TECHNICAL SCHEDULE No S349

1. Description of Pattern **approved on 20/11/97**

A Teraoka Seiko model DC-180 class III digital indicator (Figure 1) which is approved for use with up to 2500 verification scale intervals.

Instruments may be fitted with output sockets for the connection of auxiliary and/or peripheral devices and are either battery-operated, or powered by 240 V AC (mains power).

The integral basework is either disabled or may be retained when a second basework is connected as described in clause **1.8 Baseworks**.

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e$ whenever power is applied and whenever the instrument comes to rest within $0.5e$ of zero.

The initial zero-setting device has a nominal range of not more than 4% 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 and/or a keyboard-entered pre-set subtractive taring device, each of up to maximum capacity, may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Verification Provision

Provision is made for the application of a verification mark

1.5 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of destructible labels over the access hole located on the underside of the instrument and over the casing joint on either side of the instrument.

1.6 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	
Indication of accuracy class	III	
Pattern approval number for the instrument	NMI/NSC S349	#
Maximum capacity	Max kg	*
Minimum capacity	Min kg	*
Verification scale interval	e = kg	*
Serial number of the instrument	

* These markings are also shown near the display of the result if they are not already located there.

Refer to clause **1.8 Baseworks**.

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

1.7 Management Functions

Instruments may be fitted with a number of management functions which are not approved for trade use, including 'set point' and 'counting'.

1.8 Baseworks

Instruments may be connected to up to two NMI-approved baseworks. One of the baseworks shall be integral with the indicator (as shown in Figure 1 and as described in the documentation of NMI approval No 6/4C/99) in which case instruments are marked 'NMI/NSC No 6/4C/99' in addition to 'NMI/NSC No S349'.

The basework to be used is selected using the 1/2 button and is indicated by either the 'SCALE 1' or 'SCALE 2' light illuminating.

The counting functions of the two baseworks may interact, however the weighing and taring functions are independent and do not interact.

TABLE 1 — Specifications

Maximum number of verification scale intervals	2500
Minimum sensitivity	2 μ V / scale interval
Excitation voltage	12 V DC
Maximum excitation current	280 mA *

* This indicator is able to supply a maximum excitation current of 280 mA. Where two baseworks are connected the total of the excitation currents required by both baseworks shall not exceed 280 mA. Where the internal basework is used this draws 34 mA.

TEST PROCEDURE

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 S349 – 1



Teraoka Seiko Model DC-180 Digital Indicator

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