



NATIONAL STANDARDS COMMISSION
WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S149

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Toledo Model 8139 Digital Indicator

submitted by Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne Victoria 3207

are suitable for use for trade in any Commission-approved weighing instrument.

The approval is subject to review on or after 1/8/88.

Instruments purporting to comply with this approval shall be marked NSC No S149 in addition to the approval number of the pattern to which they are connected.

The approval may be withdrawn if instruments are constructed and used other than as described in the drawings and specifications lodged with the Commission.

Condition of Approval

The number of scale intervals applicable to any weighing instrument in which this indicator is used shall be no greater than the number of verification scale intervals approved for the basework, or the load cell(s) or the indicator (3000e) whichever is the smallest.

Signed

H. P. Kelly
Executive Director

Descriptive Advice

Pattern: approved 6/7/83

. Toledo model 8139 digital indicator.

Variants: approved 6/7/83

1. With an output socket for the connection of auxiliary or peripheral equipment.
2. In an alternative housing.
3. With a push-button marked lb/kg for export use only.

Technical Schedule No S139 describes the pattern and variants 1 to 3.

Variant: approved 19/4/84, re-approved 31/5/84

4. With the display in a separate housing and with a memory function allowing successive weighings to be accumulated.

Technical Schedule No S149 Variation No 1 describes variant 4.

Filing Advice

Certificate of Approval No S149 dated 25/7/83 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No S149 dated 15/6/84
Technical Schedule No S149 dated 25/7/83
Technical Schedule No S149 Variation No 1 dated 15/6/84
Test Procedure No S149 dated 25/7/83
Figure 1 dated 25/7/83
Figure 2 dated 15/6/84.



CANCELLED

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S149

Pattern: Toledo Model 8139 Digital Indicator

Submittor: Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne, Victoria, 3207.

1. Description of Pattern

A digital mass indicator (Figure 1) displaying up to 3000 scale intervals and approved for use with up to four 350 Ω load cells.

1.1 Zero

Zero within 0.25e, indicated by the ZERO light being illuminated, may be obtained either semi-automatically by using the zero control, or automatically by means of the automatic zero tracking device whenever the instrument comes to rest within 0.5e of zero.

1.2 Display Check

Pressing the TEST button causes the indicator to display all 8's. When the button is again pressed the display blanks.

1.3 Tare

Use of the subtractive tare push-button marked TARE, allows a mass on the receptor of up to maximum capacity to be tared to within 0.25e, and is indicated by the TARE light illuminating. When the mass is removed, the tare value prefixed by a minus sign is displayed.

1.4 Markings

The instrument is marked with the following data, together in one location:

Manufacturer's name or mark	
Model number	
NSC approval numbers - Indicator	NSC No S149
- Other components
Accuracy class	III
Maximum capacity in the form	Max*
Minimum capacity in the form	Min*
Verification scale interval in the form	e = d =*
Maximum subtractive tare in the form	T = -*
Indicator serial number	
Load cell serial number(s) - alternatively these may be marked on metal tags sealed to the indicator.	

1.5 Verification Mark

Provision is to be made for a verification mark to be applied.

*These markings are repeated in the vicinity of all reading faces, if not already there.

2. Description of Variants

2.1 Variant 1

With an output socket for the connection of auxiliary or peripheral equipment.

2.2 Variant 2

In an alternative, plastic desk-mounted housing.

2.3 Variant 3

With a push-button marked lb/kg, in which case the instrument bears the additional marking "FOR EXPORT USE ONLY".

The following tests should be carried out in conjunction with any test procedures in the Technical Schedule of the instrument to which this pattern is connected.

All load applications to the instrument should be in accordance with the Commission's recommended testing procedure for the elimination of rounding error as set out in Document 104.

The maximum permissible errors are:

- $\pm 0.5e$ for loads between 0 and 500e;
- $\pm 1.0e$ for loads between 501e and 2000e; and
- $\pm 1.5e$ for loads above 2000e.

1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity ($\pm 2\%$ approximately). Satisfactory setting may be checked by the following method:

With zero balance indicated, apply a load of, say, 2.5% of maximum capacity to the instrument, and adjust the zero control; the instrument should not rezero.

2. Zero Test

- (a) Check by means of Document 104, that when the ZERO light is lit, zero is set within 0.25e.
- (b) As the automatic zero tracking device resets zero when the weighing mechanism is in equilibrium within 0.5 scale interval of zero, zero should be checked, with a load equal to, say, 10 scale intervals on the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will then be 10e and 11e respectively.

3. Range of Indication

- (a) The maximum mass indicated should not exceed the maximum capacity (Max) by more than 10 scale intervals; above this indicated mass the indicator should be blank.
- (b) Below zero the indication may blank or the mass will be indicated, prefixed by a minus sign.

4. Taring

- (a) Attempt to tare a mass above maximum capacity as determined in 3(a). On removal of the mass no tare should have been entered, and the indicator should display all zeroes.
- (b) The tare function should reset the mass indicator to zero within 0.25e at any load within its tare capacity. This may be checked as described under 2(a) - Zero Test.

5. Test Loads

Test loads are to be applied to the complete weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

6. Multiple Indicators

Where the existing headwork is retained and used in conjunction with the pattern, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load on the device with the largest verification scale interval.



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TECHNICAL SCHEDULE No S149

VARIATION No 1

Pattern: Toledo Model 8139 Digital Indicator

Submitter: Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne Victoria 3207

1. Description of Variant 4

With the indicator display in a separate housing (Figure 2) and with a memory function allowing successive weighings to be accumulated.



NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S149

CHANGE No 1

The following changes are made to the description of the Toledo Model 8139 Digital Indicator.

1. In Supplementary Certificate of Approval No S149 dated 25/7/83,
 - (a) Delete, "Relevant drawings Commission."
 - (b) Insert, "The approval may be withdrawn if used other than as described in the drawings and specifications lodged with the Commission."
2. In Technical Schedule No S149 dated 25/7/83,
from Description of Pattern, delete the following from the first paragraph:

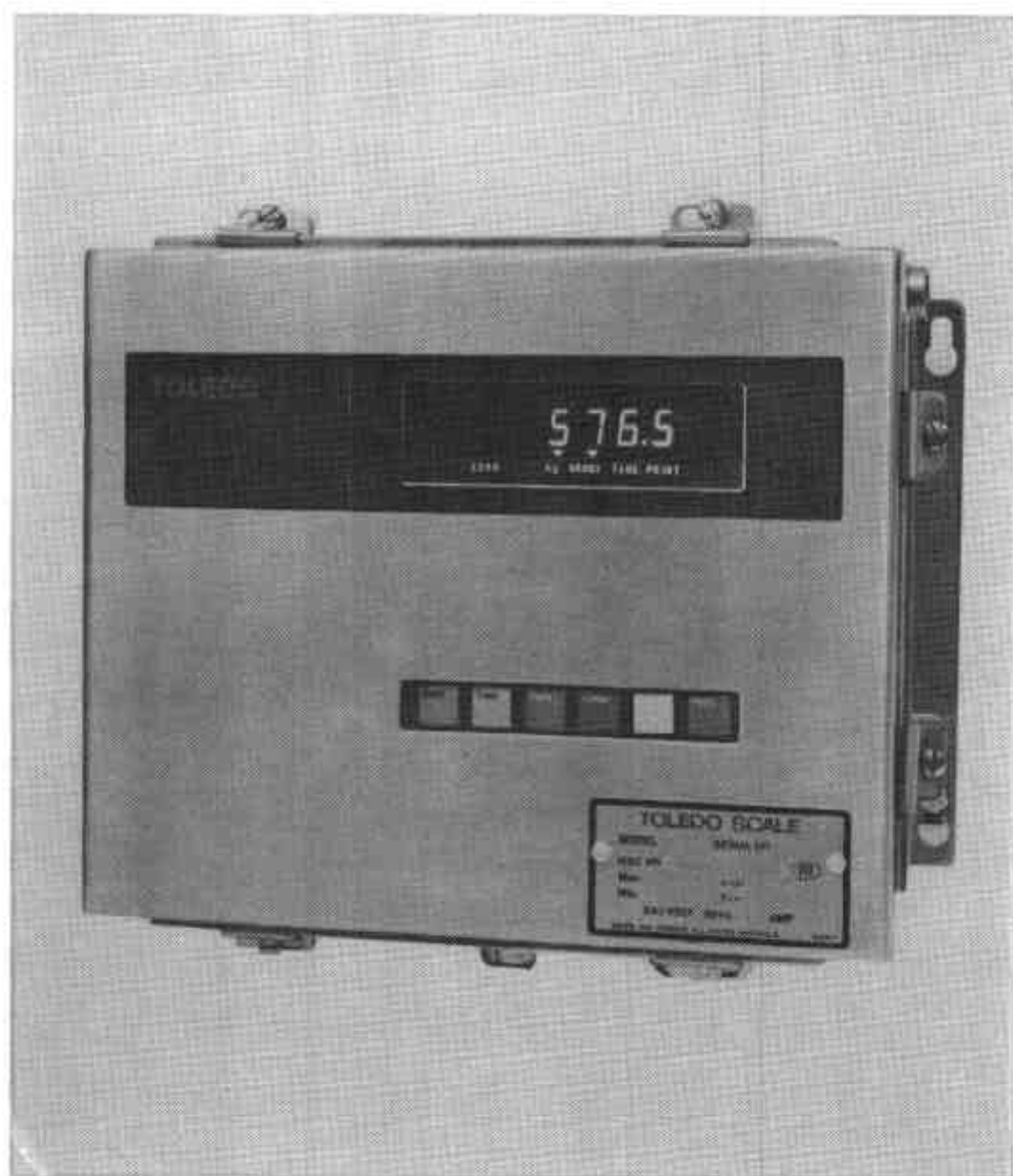
"... and approved for use with up to four 350 Ω load cells."

Signed

Executive Director

30/9/83

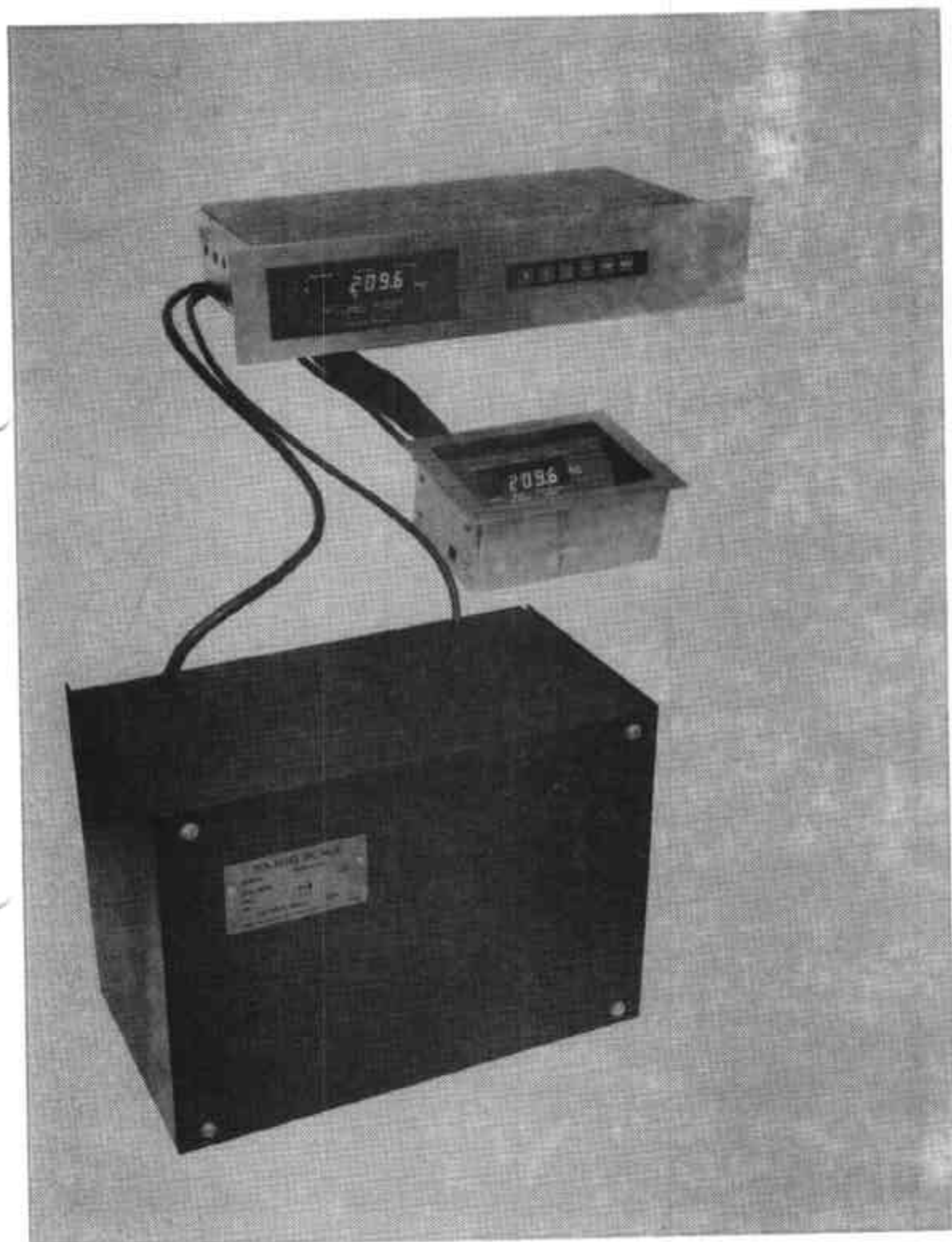
FIGURE S149 - 1



Toledo Model 8139 Indicator

25/7/83

FIGURE S149 - 2



Toledo 8139 With Separate Display