National Standards Commission

Supplementary Certificate of Approval

No S206

Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

Toledo 8142 Series Digital Indicator

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

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

J. Birch.

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CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/4/91.
This approval expires in respect of new instruments on 1/4/92.

Instruments purporting to comply with this approval shall be marked NSC No S206 and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S206 in addition to the approval number of the instrument.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the drawings and specifications lodged with the Commission 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 the Commission's Document 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

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.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

DESCRIPTIVE ADVICE

Pattern: approved 20/3/86

- A Toledo 8142 series digital mass indicator in various configurations as listed in Table 1.

Variant: approved 20/3/86

1. A Toledo 8140 series digital mass indicator in various configurations as listed in Table 1.

Technical Schedule No S206 describes the pattern and variant 1.

Variant: approved 1/6/90

2. With a facility to configure the instrument with another mass unit.

Technical Schedule No S206 Variation No 1 describes variant 2.

FILING ADVICE

Supplementary Certificate of Approval No S206 dated 7/8/86 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Supplementary Certificate of Approval No S206 dated 9/7/90
Technical Schedule No S206 dated 7/8/86
Technical Schedule No S206 Variation No 1 dated 9/7/90
Figures 1 to 4 dated 7/8/86

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S206

Pattern: Toledo 8142 Series Digital Indicator

Submittor: Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne Vic 3207

1. Description of Pattern

A digital mass indicator approved in various configurations with the features as described below, some of which are optional, and as set out in Table 1. The additional display on the dual display models is used for management data and tare mass values, and is not a mass display.

The indicator is approved in various housings (see Figures 1 to 3 for examples) and may be fitted with output sockets for the connection of auxiliary and/or peripheral devices.

1.1 Zero

(a) The instrument may be zeroed to within ± 0.25e, indicated by the zero light illuminating, by operating the zero button.

(b) Automatic Zero Correction

An automatic zero correction device, which resets zero to within ± 0.25e whenever the indicator returns to zero within ± 0.5e, may be fitted.

1.2 Display Check

A display check is initiated whenever power is applied to the instrument or by pressing the TEST button (where fitted).

1.3 Tare

A semi-automatic taring device and/or a digital taring device may be fitted.

(a) A tare which has been entered is only able to be cancelled when the instrument platter is empty (i.e. at gross zero). In addition, before a new tare value can be entered the previous value must be cleared.

(b) Use of a taring device will be indicated by the TARE indicator illuminating and the GROSS indicator going out.

(c) Semi-automatic Tare

The semi-automatic subtractive taring device allows a mass on the load receptor of up to maximum capacity to be tared to within ± 0.25e.

(d) Digital Tare

The digital taring device allows a tare value to be entered via the keyboard; this value will be tared to within ± 0.5e.

(e) Semi-automatic and Digital Tare

Where the indicator is fitted with both semi-automatic and digital taring devices these shall be independent i.e. only one device is able to be in use at any time.

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1.4 Recall Button

This button can be used to display the tare mass value, the TARE MASS indicator being illuminated. On the single display model, operation of the recall button will result in the tare mass value being displayed for approximately two seconds. On dual display models the tare mass value will be displayed on the second display, and successive operations of the recall button may cause the second display to indicate other management data.

1.5 Setpoint Capability

The instrument has the capability for up to 4 set points (which may be configured as preact, dribble or tolerance values) which provide output signals to peripheral equipment at the appropriate set point. The set point data may be selected and displayed on demand.

1.6 Management Functions

The instrument has facilities for various management functions e.g. identification or count numbers, or time and date information can be entered into the indicator, and these can be displayed on the second display.

1.7 Markings

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number	
NSC approval number	NSC No S206
Accuracy class	(III) or (IV)
Maximum capacity	Max ..... kg *
Minimum capacity	Min ..... kg *
Verification scale interval	e = d = ... kg *
Maximum subtractive tare	T = -..... kg
NSC approval numbers - Indicator	
- Other components (as applicable)	
Load cell serial number(s)	

* These markings are repeated in the vicinity of each reading face.

In addition the instrument is marked NOT FOR RETAIL COUNTER USE.

1.8 Verification Provision

Provision is made for a verification mark to be applied.

2. Description of Variant 1

Toledo model 8140 digital mass indicator in various configurations and with various options as outlined in Table 1. One configuration (Figure 4) has the display/keyboard in a separate housing, an additional mass display and has a memory function allowing successive weighings to be totalised (e.g. for applications such as airline baggage weighing).

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TABLE 1

Model	8142 Single Display	8142 Dual Display	8142 Dual Display Advanced	8140	8140
Photograph *	Figure 1	Figure 2		Figure 3	Figure 4
Maximum number of verification scale intervals	10000	10000	10000	5000	5000
Dual display - refer cl. 1.4	no	yes	yes	no	no
Additional Display - refer cl. 2	no	no	no	no	yes
Semi-automatic tare	optional	optional	optional	optional	no
Digital tare	optional	optional	optional	no	no
Semi-automatic and digital tare	optional	optional	optional	no	no
Automatic zero tracking	optional	optional	optional	optional	optional
Setpoint capability	no	no	yes	no	no
Data output socket(s)	optional	optional	optional	optional	optional
Management functions	no	optional	optional	no	no
Memory function (totalising)	no	no	no	no	yes
Recall button	yes	yes	yes	no	no
Test button	yes	yes	no	yes	yes

* Note: The figures show the various housings which apply to all models.

TEST PROCEDURE No S206

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:

± 0.5e for loads between 0 and 500e;
± 1.0e for loads between 501e and 2000e; and
± 1.5e for loads above 2000e.

1. Zero Test

As the automatic device (where fitted) may reset zero when the weighing mechanism is in equilibrium within 0.5e of zero, zero should be checked as described in Document 104, with a load equal to, say, 10e on the load receptor. The indications with 0.25e and 0.75e additional mass on the load receptor will be 10e and 11e respectively.

2. Zero Range

The maximum range of operation of the zero setting device should not exceed 4% of the maximum capacity (± 2% approximately). With zero balance indicated apply a load of, say, 2.5% of maximum capacity to the instrument and press the zero button; the instrument should not rezero.

3. Load Test

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

4. Range of Indication

(a) The maximum mass indicated should not exceed the marked maximum capacity by more than 10e; above this indicated mass the indication should be blank or show non-numerical characters.

(b) The minimum mass indicated should be zero; below this the indication should be blank, show non-numerical characters, or the mass will be indicated, prefixed by a minus sign.

5. Taring (where fitted)

The semi-automatic tare function should be able to reset the mass indicator to zero within 0.25e at any load within its capacity. This may be checked as described for Zero Test. A tare should not be able to be acquired above the marked tare capacity. The digital taring device should reset the indicator to zero within ± 0.5e.

When digital and semi-automatic tare are fitted together the operation of one will be inhibited while the other has been selected.

6. Multiple Indicators

Where more than one indicating system is used 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.

National Standards Commission

TECHNICAL SCHEDULE No S206

VARIATION No 1

Pattern: Toledo 8142 Series Digital Indicator.

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

1. Description of Variant 2

With a facility to configure the instrument with another mass unit viz. lb, in which case the instrument must be marked "lb not for trade use" or "lb for export use only". The scale interval, verification scale interval, maximum capacity and minimum capacity when used with this unit shall be marked in the vicinity of the reading face.

Note: The approval of this function relates to the metrological performance only; inspectors are advised that the use of this function must comply with the requirements of other statutory authorities.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S206

CHANGE No 1

The following changes are made to the approval documentation for the

Toledo 8142 Series Digital Indicator

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

In Technical Schedule No S206 dated 7/8/86;

(i) Amend clause 1.6 Management Functions by (adding reference to a totalising function) so that it now reads, in part;

"... various management functions e.g. identification or count numbers, a memory function allowing successive weighings to be totalised, or time and date information ..."

(ii) In Table 1, amend the entries for "Memory Function (totalising)" for both dual display versions of the model 8142 indicator, so that they now read "YES".

Signed and sealed by a person appointed under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under these Regulations.

J. Birch.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S206

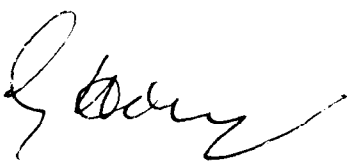
CHANGE No 2

The following changes are made to the approval documentation for the

Toledo 8142 Series Digital Indicator

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

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.



In Supplementary Certificate No S206 dated 9/7/90, the date of expiry of the approval is amended to be 1/10/92, to allow a review to be conducted.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S206

CHANGE No 3

The following changes are made to the approval documentation for the

Toledo 8142 Series Digital Indicator

submitted by Mettler Toledo Limited
(formerly Toledo Scale (Australia) Limited)
525 Graham Street
Port Melbourne VIC 3207.

In Supplementary Certificate of Approval No S206 dated 9/7/90, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 30/6/94."

NOTE: This was previously amended by Notification of Change No 2 dated 31/3/92.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

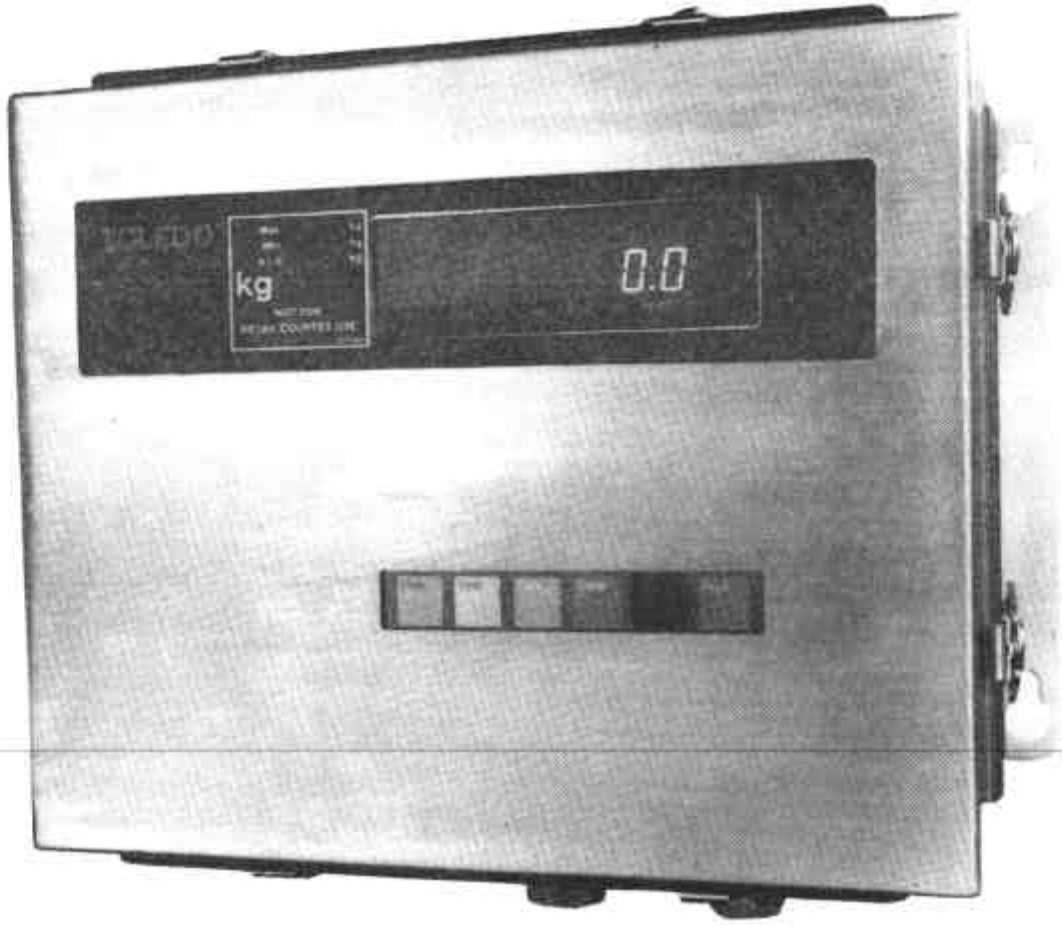
FIGURE S206 - 1

Model 8142

FIGURE S206 - 2

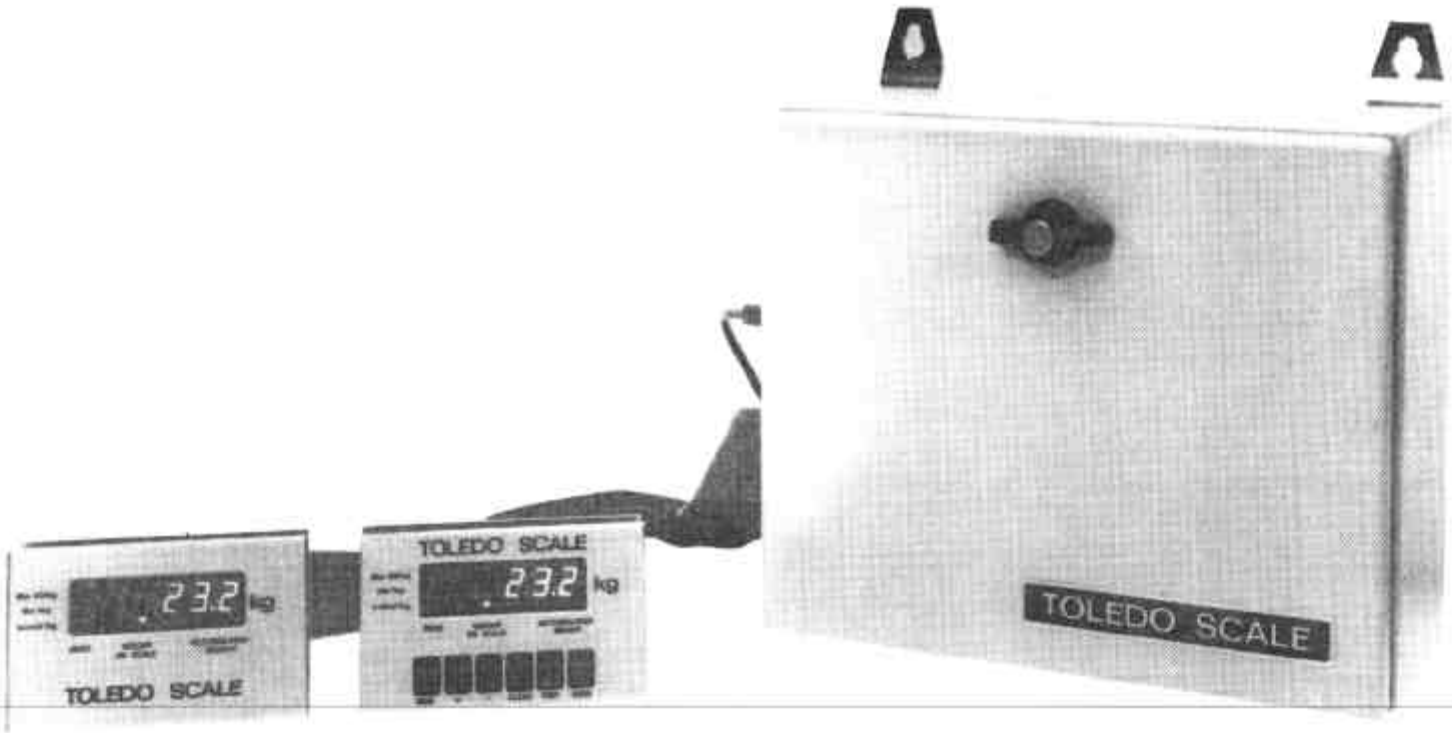
Model 8142 - Alternative Housing

FIGURE 5206 - 3



Model 8140

FIGURE S206 - 4



Model 8140 With Separate Display/Keyboard