



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

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S161

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

Mercury Model AD-4316 Digital Indicator

submitted by Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
THEBARTON SA 5031

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

The approval is subject to review on or after 1/12/88.

Instruments purporting to comply with this approval shall be marked NSC No S161 in addition to the approval number of the pattern to which they are connected.

The approval may be withdrawn if instruments are used other than as described in the drawings and specifications lodged with the Commission.

Condition of Approval

The number of scale intervals applicable to the 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 (6000e) whichever is the smallest.

Signed


Executive Director

Descriptive Advice

Pattern: approved 28/10/83

. Mercury model AD-4316 digital indicator.

Variants: approved 28/10/83

1. Without the tare facility.
2. Without the automatic zero tracking device.
3. In alternative housings.

Technical Schedule No S161 dated 17/11/83 describes the pattern and variants 1 to 3.

Filing Advice

The documentation for this approval comprises:

Certificate of Approval No S161 dated 17/11/83
Technical Schedule No S161 dated 17/11/83
Test Procedure No S161 dated 17/11/83
Figure 1 dated 17/11/83.

17/11/83



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S161

Pattern: Mercury Model AD-4316 Digital Indicator

Submitter: Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
THEBARTON SA 5031

1. Description of Pattern

A digital mass indicator (Figure 1) approved for use with up to 6000 scale intervals.

The indicator may be provided with output sockets for the connection of auxiliary or peripheral devices.

1.1 Zero

- a) The instrument may be zeroed to within $0.25e$, indicated by the zero light illuminating steadily, by operating the zero button.
- b) An automatic zero tracking device resets zero to within $0.25e$ whenever the indicator returns to zero within $0.5e$.

1.2 Tare

- a) A semi-automatic subtractive taring device allows a mass on the load receptor of up to maximum capacity to be tared to within $0.25e$.
- b) When in gross mode the TARE indicator illuminates and the GROSS indicator extinguishes when the TARE button is pressed.

1.3 Net/Gross Button

When this button is pressed the indicator will display the net or gross mass with the appropriate lamp illuminating.

1.4 Display Check

Applying power initiates a display check.

1.5 Marking

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

Manufacturer's name or mark	
Accuracy class	(III)
Serial number of instrument	
Maximum capacity in the form:	Max
Minimum capacity in the form:	Min
Verification scale interval in the form:	$e = d = \dots$
Maximum subtractive tare in the form:	T = -
NSC approval numbers - Indicator	NSC No S161
- Other components	
Load cell serial number(s)	

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

1.6 Verification Mark

Provision is made for a verification mark to be applied.

2. Description of Variants

2.1 Variant 1

Without the tare facility.

2.2 Variant 2

Without the automatic zero tracking device.

2.3 Variant 3

In alternative housings.

TEST PROCEDURE No S161

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



25/3/88

NATIONAL STANDARDS COMMISSION

NOTIFICATION OF CHANGE

VARIOUS CERTIFICATES OF APPROVAL

The following changes are made to the approval documentation for the approvals listed overleaf

submitted by Mercury Weighing and Control Systems Pty Ltd
32 Dew Street
Thebarton SA 5031.

In the Certificates and Technical Schedules listed, the following changes should be made:

- 1) The submittor should be changed to read;

A & D Mercury Pty Ltd

(the address remains unchanged)

- 2) Any Mercury instrument or component of an instrument approved in the documentation, may now also be known as "AND Mercury" or similar.

Signed

Executive Director

APPROVAL PATTERN

TYPE: weighing instruments counter scales

6/3/007 Model 92
6/3/008 Model 131

TYPE: counter machines semi-self-indicating

6/4A/012 Model 304A

TYPE: counter machines freely-suspended < 30 kg (spring scales)

6/5/011 Model 211 DA

TYPE: weighing instruments non-self-indicating

6/9A/001 Models 692 and 682
6/9A/004 Model 522D
6/9A/007 Model 211
6/9A/008 Model 600

TYPE: weighing instruments self-indicating

6/9C/005 Model 211D
6/9C/013 Up to 2500 lb or 1200 kg
6/9C/066 Model 522 AL
6/9C/067 Model SM100/479/522D
6/9C/081 Model SB-LP 1200
6/9C/088 Model 522D LT-10K

TYPE: weighbridges self-indicating

6/10B/040 Model WB-LT
6/10B/045A Model RVB-H20

TYPE: automatic weighing instruments (except belt conveyors)

6/14B/012 Model HSD automatic hopper

TYPE: overhead weighing instrument (suspended load or receptor)

6/18/005 With 211DA headwork
6/18/017 Model OHT 500

TYPE: digital indicators

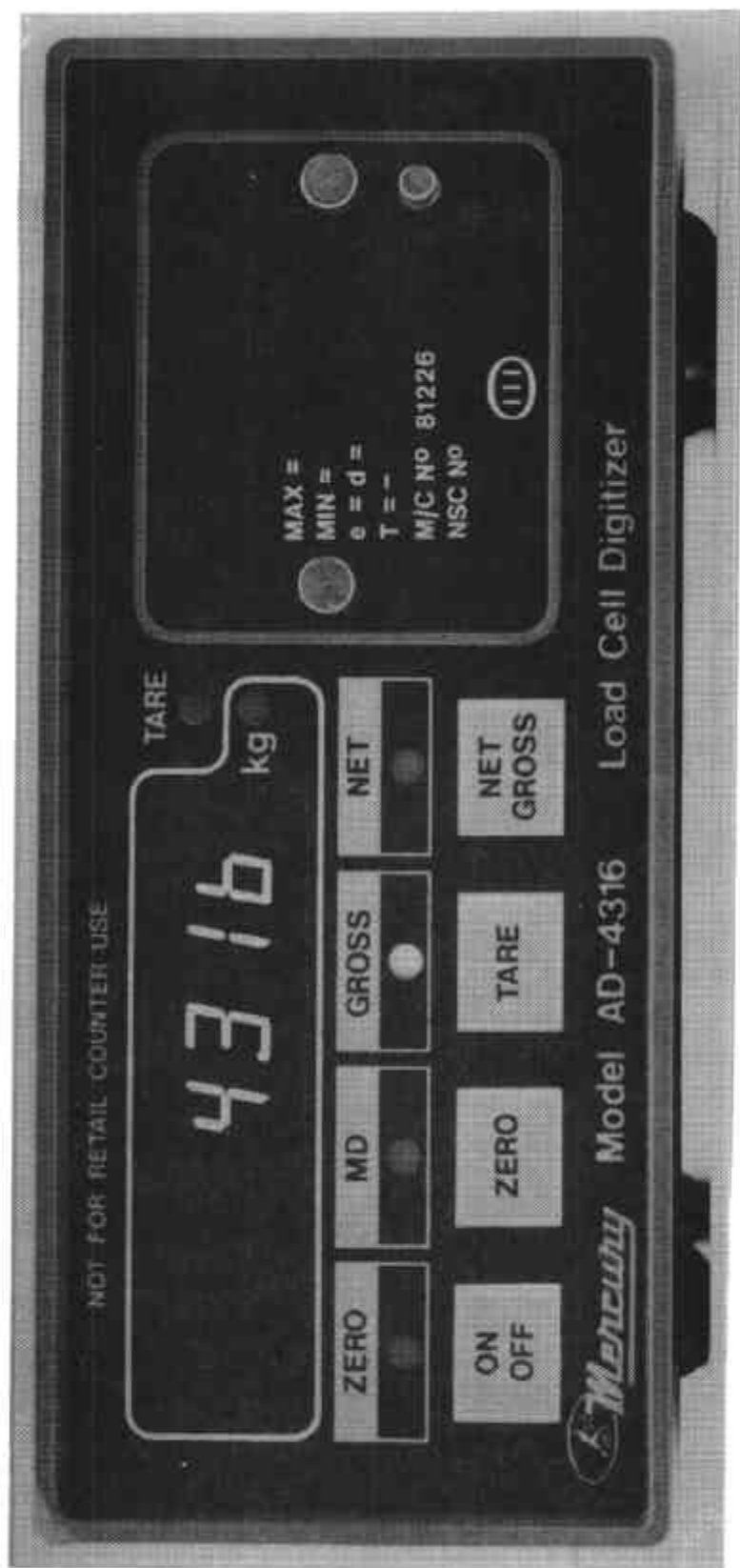
S114 Model 579
S128 Model 1300
S132 Model 900
S161 Model AD4316
S199 Model AD-4321

TYPE: load cells

S117 Interface model SM25-12 kg
S163 Transducers model B5112.1K
S221 HBM model TRT-50 (Mercury model TRT3K-50)

17/11/83

FIGURE S161 - 1



Model AD-4316 Indicator