Australian Government
Department of Industry and Science

National Measurement Institute

Certificate of Approval

NMI 6/9C/305

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.

Avery Weigh-Tronix Model AWB120 Weighing Instrument

submitted by Avery Weigh-Tronix
Foundry Lane, Smethwick
West Midlands B66 2LP UK

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 **1/03/20**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – interim certificate issued	5/02/10
1	Pattern & variants 1 & 2 approved – certificate issued	15/03/10
2	Variant 3 approved – interim certificate issued	23/03/15
3	Pattern & variants 1 & 2 updated & reviewed – variant 3 approved – certificate issued	10/09/15

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/9C/305' and only by persons authorised by the submittor.

It is the submittor'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 Nos S1/0/A and S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

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 6/9C/305

1. Description of Pattern approved on 5/02/10

An Avery Weigh-Tronix model AWB120 single interval self-indicating class (III) non-automatic weighing instrument (Figure 1) of 300 kg maximum capacity with a verification scale interval of 0.1 kg.

1.1 Basework

The Avery Weigh-Tronix model AWB120 basework (Figure 2a) has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 420 × 520 mm.

1.2 Load Cell

A ZEMIC model L6E3-C3 load cell of 500 kg maximum capacity is used (Figure 2b). The load cell model number may have a suffix indicating the capacity in kg.

1.3 Indicator

A Taiwan Scale Mfg model VW digital indicator is used (Figures 1 and 3). The indicator may be mounted on a column attached to the base.

1.3.1 Zero

Zero is automatically corrected to within ±0.25e whenever the instrument comes to rest within 0.5e 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.

1.3.2 Tare

A semi-automatic subtractive taring device which having a capacity of up to the maximum capacity of the instrument may be fitted.

1.3.3 Power Supply

Power supply may be either:

- 9 V DC supplied by an AC/DC mains adaptor (e.g. model: LK-D090080, 240 V AC/50 Hz input, 9 V DC/800 mA output) or other equivalent DC power source; or
- batteries (6 V DC, rechargeable).

Note: The manufacturer should be consulted regarding the acceptability of alternative power supply unit.

1.3.4 Display Check

A display check is initiated whenever power is applied.

1.3.5 Additional features

The indicator also has certain additional functions (e.g. checkweighing, accumulation) which can be assigned to a function key of the indicator. These additional functions (other than the indications of measured mass, i.e. gross, tare, net), are not approved for trade use.

1.3.6 Interfaces

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

Auxiliary devices (such as a computer and printer) used with this instrument shall comply with the requirements of NMI R76-1 and General Supplementary Certificate No S1/0/A.

1.4 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Avery Weigh-Tronix Ltd	
Indication of accuracy class	(III)	
Maximum capacity	*Max* ..... kg	#1
Minimum capacity	*Min* ..... kg	#1
Verification scale interval	*e* = ... kg	#1
Maximum subtractive tare	*T* = - ..... kg	#2
Serial number of the instrument	.....	
Pattern approval mark for the instrument	6/9C/305	

#1 These markings shall also be shown near the display of the result if they are not already located there.

#2 This marking is required if *T* is not equal to *Max*.

In addition, instruments not greater than 100 kg capacity (Variant 1) shall carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

1.5 Levelling

The instrument is provided with adjustable feet and adjacent to the level indicator is a notice advising that the instrument must be level when in use.

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Sealing Provision

The calibration adjustments are protected by software password and a non-resettable calibration counter which increases by one count for every calibration adjustment.

The checksum recorded by the calibration counter after calibration shall be recorded/stamped on the sealing label/sticker as the evidence of calibration adjustment (as shown in Figure 3).

The checksum of the calibration counter should be verified by the following steps.

(a) Ensure that the instrument is turned off and the receptor is empty.

(b) Turn the power of instrument on.

(c) Observe the initial checking of the display.

(d) Observe/record the “Cal ##”, where “##” is a number.

(e) Compare the number observed/recorded with the number recorded/ stamped on the seal label/sticker.

(f) If the numbers in (e) are the same, then the calibration has not been changed since last calibration. Otherwise, unauthorised calibration has carried out.

The destructible label/sticker should be applied to cover one of the screw holes of the indicator as shown in Figure 3.

2. Description of Variant 1 approved on 5/02/10

Certain other capacities of the AWB120 series with characteristics as listed below in Table 1.

TABLE 1

Maximum capacity (*Max*)	60 kg	150 kg	**300 kg (*)**
Minimum capacity (*Min*)	0.4 kg	1 kg	**2 kg (*)**
Scale interval (*e*)	0.02 kg	0.05 kg	**0.1 kg (*)**
Number of scale intervals (*n*)	3000		
Temperature range	–10°C to +40°C		
Platform size (in mm)	420 mm × 520 mm		
Load cell	ZEMIC model L6E3-C3 (#)		
Emax	100 kg	200 kg	500 kg
Number of load cells	1	1	1
Minimum value of verification scale interval for basework (*Vmin* of load cell)	0.0143 kg	0.0286 kg	0.0333 kg
Load cell sensitivity (at *Emax*)	2 mV/V		
Input impedance	406 Ω		
Excitation voltage (maximum)	18 Volt		
Cable length	3 metre		
Number of leads (plus shield)	4 wires + shield		

(*) These specifications in **bold** type are of the pattern.

(#) The load cell model number may have a suffix indicating the capacity in kg.

AWB120 Series – Approved Capacities

3. Description of Variant 2 approved on 5/02/10

The baseworks of this approval can be used with a compatible approved (by Supplementary Certificate) indicator to form a non-automatic weighing instrument, provided the conditions set out below are met.

The approved basework and its limiting characteristics are given in Variant 1.

The conditions to be met are:

- The excitation voltage used is within the range approved for the baseworks (5 – 18 V DC).
- The maximum load applied to the basework (live load plus any dead load) does not exceed the load cell maximum capacity.
- The verification scale interval of the weighing instrument is the same as the value specified in the pattern and variant 1 (Table 1).
- The number of verification scale intervals of the weighing instrument is less than or equal to the 3000.
- The signal voltage per verification scale interval is no less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval documentation for the indicator), i.e.

  Indicator Sensitivity $\leq 1000 \times E_x \times LC\_Sens \times e / E_{max}$

  where E_x = Excitation from indicator (V)

  LC_Sens = Load cell sensitivity (mV/V)

  E_{max} = Load cell maximum capacity (nominal) (kg)

  e = verification scale interval of the instrument (kg)

  Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (μV)

4. Description of Variant 3 approved on 23/03/15

With a heavier construction basework.

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

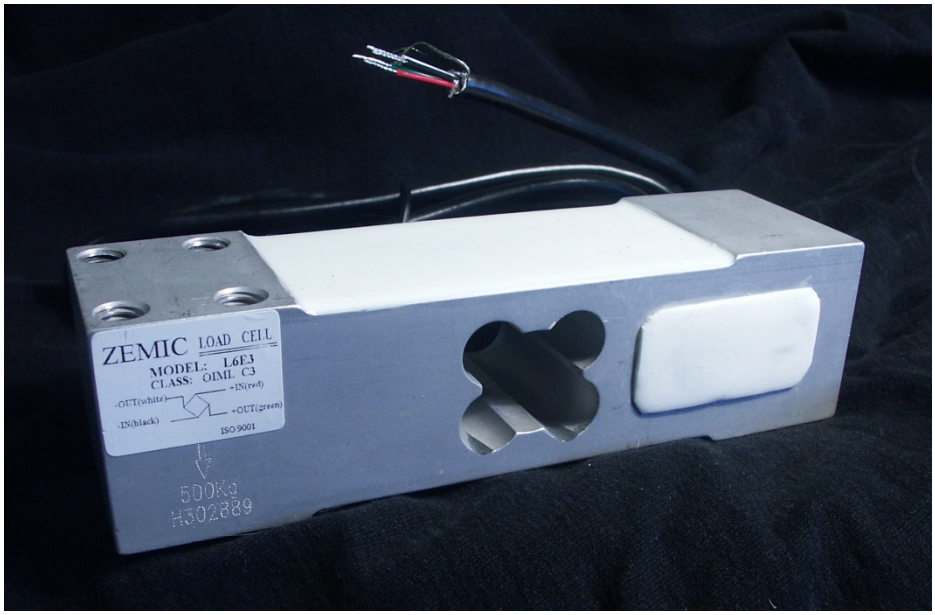
The maximum permissible errors are specified in the *National Trade Measurement Regulations 2009*.

FIGURE 6/9C/305 – 1

Avery Weigh-Tronix Model AWB120 Instrument (Pattern)

FIGURE 6/9C/305 – 2

(a) Avery Weigh-Tronix Model AWB120 Basework (Pattern)



(b) ZEMIC Model L6E3 Load Cell

FIGURE 6/9C/305 – 3

Taiwan Scale Mfg Model VW Digital Indicator

FIGURE 6/9C/305 – 4

Heavier Construction Model AWB120 Basework (Variant 3)

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