Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S475

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 1310 Digital Indicator

submitted by Avery Weigh-Tronix Ltd
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 1/09/16, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	28/08/06
1	Pattern approved – certificate issued	18/10/06
2	Pattern reviewed & updated – certificate issued	14/03/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number ‘NMI S475’ and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked ‘NMI S475’ in addition to the approval number of the instrument, 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 No S1/0/A or No 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 his powers under Regulation 60 of the *National Measurement Regulations 1999*.

TECHNICAL SCHEDULE No S475

1. Description of Pattern approved on 28/08/06

An Avery Weigh-Tronix model 1310 digital mass indicator (Table 1 and Figure 1) which may be configured to form part of:

- A weighing instrument with a single weighing range of up to 6000 verification scale intervals; or
- A multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 3000 verification scale intervals per partial weighing range.

The indicator may also be known as a Railweight model X-line.

The instrument has a liquid crystal display (LCD) including provision for display of the weight value and other alphanumeric information/menus.

Instruments are approved for use over a temperature range of 0°C to +40°C and must be so marked.

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

TABLE 1 – Specifications

Maximum number of verification scale intervals	6000 or 3000 per range
Minimum sensitivity	2.0 µV / scale interval
Excitation voltage	10 V DC
Maximum excitation current	357 mA

1.1 Zero

Zero may be automatically corrected to within ±0.25*e* whenever the instrument comes to rest within 0.5*e* of zero (in the case of multi-interval configurations *e* in this sentence refers to e_1). This feature may, or may, not be enabled.

The instrument has a semi-automatic zero-setting device (to set the instrument to within ±0.25*e* of zero) with a nominal range of not more than 4% of the maximum capacity of the instrument.

The initial zero-setting device of the pattern has a nominal range of not more than 20% of the maximum capacity of the instrument.

1.2 Tare

Instruments with a single weighing range may only be fitted with a subtractive pre-set taring device (keyboard-entered and/or stored) of up to the maximum capacity of the instrument. Pre-set tare values may be stored and recalled, and may be associated with product or item look-up tables. If a semi-automatic taring device is fitted to an instrument with a single weighing range, then it must be disabled.

Multi-interval weighing instruments must not have any taring device (semi-automatic or pre-set) in operation, i.e. if any taring device is fitted then it must be disabled.

The SELECT key (shown in Figure 1) may be used to alternatively display gross, or net, or tare values.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Linearisation Facility

Instruments are fitted with a programmable 10-point linearisation correction facility.

1.5 Power Supply

The instrument operates from mains AC power (240 V AC nominal).

1.6 Data Storage Memory

The indicator may contain memory for the storage of weighing results (an additional memory expansion board may be used).

For each weighing, weighing results together with identification including date and time are stored into the storage device.

The use of this feature for trade use is subject to the agreement of the applicable trade measurement authority.

In any case, data from the storage device shall only be used for trade if the format of the output complies with General Supplementary Certificates No S1/0/A or No S1/0B.

1.7 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with General Supplementary Certificates No S1/0/A or No S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Data derived from any analog output or interface shall not be used for trade use.

Interfaces of the following types may be fitted:

- Three RS232 serial data interfaces,
- One powered RS422 serial data interface,
- Analogue output interfaces,
- Ethernet interface (10/100Mb) or Profibus-DP interface

1.8 Additional Features

Instruments may be configured to display in a different format to that shown in Figure 1, e.g. with smaller digits to allow more information to be presented. These formats must comply with the requirements of NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

The indicator may also have certain additional functions including setpoints ('cut-offs') and checkweighing ('under/accept/over') functions. Some functions can be assigned to a function key of the indicator.

However this approval relates only to use for trade of the instrument (incorporating the indicator) as a non-automatic weighing instrument, in which static weighing (gross or net) of product on the weighing platform (hopper/tank etc) is carried out. In particular, **the approval does not extend to, nor provide any endorsement by the National Measurement Institute, of the additional software or functionality.** The additional functions (other than the indications of measured mass – i.e. gross, tare, net – displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

Notes: The use of the abovementioned features may or may not be appropriate in different situations. The acceptability in any particular situation must be assessed in-situ and may require consultation with the appropriate trade measurement authority. In some situations it may be necessary for a print-out of the weighing result to be produced for the method of operation to be considered acceptable. In such situations General Supplementary Certificates No S1/0/A or No S1/0B should be consulted.

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

1.9 Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Avery Weigh-Tronix Ltd	
Name or mark of manufacturer's agent	……..	
Indication of accuracy class	Ⓘ	
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 indicator	NMI S475	
Pattern approval mark for other components	……..	#3
Special temperature limits	0°C to +40°C	

#1 These markings are also 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*.

#3 May be located separately from the other markings.

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

Note: For multi-interval instruments the markings shall be as above, with the exception that the 'Maximum capacity' and 'Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

Maximum capacity	*Max* ...../..... kg	#1
Verification scale interval	*e* = .../..... kg	#1

1.10 Verification Provision

Provision is made for the application of a verification mark.

1.11 Sealing Provision

Access to the configuration and calibration facility is via a push-button located on the power supply PCB, and is accessed through a hole in the rear cover of the enclosure. Access within the main enclosure may be sealed by placing destructible adhesive labels over the join between the rear cover and the main enclosure on each side of the indicator, and access to the push-button may be sealed by placing a destructible adhesive label over the access hole (Figure 2).

Alternative means to seal access may also be used (such as use of lead and wire type seals with drilled screws).

The current sealing status of the configuration and calibration push-button may be checked as follows:

- Enter the user mode by holding the ‘Esc’ key for approximately 5 seconds.
- Enter the user password ‘111’ and press the ‘Enter’ key.
- Press the ‘View’ [F4] key to enter the User-View mode.
- Press the ‘Seal’ [F2] key to display the ‘seal’ status.
- Press any key to exit the mode.
- Press the ‘Esc’ key once and then press ‘Exit’ [F5] to return to the normal weighing mode.

The indicator automatically increments a configuration and/or calibration value (audit trail number) each time the indicator is re-configured and/or calibrated.

The value(s) of these counters may be recorded on a destructible adhesive label attached to the instrument (e.g. as CFG x, CAL y).

Any subsequent alteration to the calibration or configuration will be evident as the recorded values and the current counter values will differ.

The current value can be displayed by using the following sequence (starting from the normal weighing mode):

- Enter the user mode by holding the ‘Esc’ key for approximately 5 seconds.
- Enter the user password ‘111’ and press the ‘Enter’ key.
- Press the ‘View’ [F4] key to enter the User-View mode.
- Press the ‘Count’ [F4] key to enter the Audit Counters display mode. The calibration (‘CAL’) and configuration (‘CFG’) counter values are displayed.
- Press any key to exit the mode.
- Press the ‘Esc’ key once and then press ‘Exit’ [F5] to return to the normal weighing mode.

TEST PROCEDURE No S475

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*.

Tests

For multi-interval and multiple range instruments with verification scale intervals of e_1, e_2 …, apply e_1 for zero adjustment, and maximum permissible errors apply e_1, e_2 …, as applicable for the load.

Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

FIGURE S475 – 1

Avery Weigh-Tronix Model 1310 Digital Indicator

FIGURE S475 – 2

Sealing Arrangement (view from rear of housing)

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