



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/277

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 ZQ375 Weighing Instrument

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 OIML R 76, *Non-automatic weighing instruments, Part 1*, Edition 2006.

This approval becomes subject to review on 1/12/17, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 3 approved – certificate issued	12/11/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/277' and only by persons authorised by the submitter.

It is the submitter'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.

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 his powers under Regulation 60 of the *National Measurement Regulations 1999*.

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the bottom.

TECHNICAL SCHEDULE No 6/4C/277

1. Description of Pattern

approved on 12/11/12

The Avery Weigh-Tronix model ZQ375 class (III) single interval self-indicating non-automatic weighing instrument (Figure 1 and Table 1) of 45 kg maximum capacity with a verification scale interval of 0.01 kg.

The instrument has a Diamond Base BS basework (Figure 3) directly supported by an Avery Weigh-Tronix stainless steel single point load cell model FLS of 56.7 kg maximum capacity.

The instrument is fitted with an IBN liquid crystal display (LCD) for of the weight value.

The instrument operates from the mains AC power supply and/or a ZQ-BAT battery box.

Instruments shall be marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording).

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

1.1 Zero

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

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.

A zero-tracking device may be fitted.

1.2 Tare

A semi-automatic and/or a pre-set subtractive tare device, each of up to maximum capacity may be fitted.

Note: Tare functions are not available when Sim375 is fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

The instrument is provided with adjustable feet and adjacent to the level indicator is a notice stating 'Instrument must be level when in use' or similar wording.

1.5 Additional Features

Instruments may be fitted with a number of additional functions including under/over weight, target weighing and one of a several checkweighing applications, e.g. simple checkweighing (Sim375), mid-level checkweighing (Mid375), advanced checkweighing (Adv375), percentage checkweighing (Per375) and grading checkweighing (Grad375). These functions and displays are not approved for trade use.

Instruments may be fitted with an optional model ZQ-OPTO interface box, with or without a 'beacon' assembly (light stack display for checkweighing).

1.6 Interfaces

Instruments 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 Supplementary Certificate No S1/0/B (in particular in regard to the data and its format).

Instruments may be fitted with RS-232/RS422/RS485 serial data interface, Ethernet and USB interface, Wi-Fi and digital/analogue inputs/outputs.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Software

The software is designated AWT30-500161 version 1.x.x.x where x.x.x refers to the identification of non-legally relevant software.

The instructions for accessing the software id are as follows (starting from the normal weighing mode):

- Press and hold F1 key until PASS is displayed.
- Enter the password '111' and press the 'ZERO' key to enter the USER menu level.
- Press the 'UNITS' key until 'About' is displayed and then press the 'SELECT' key.
- Press the 'UNITS' key until 'Firm' is displayed and then press the 'SELECT' key.
- Press the 'SELECT' key while 'Partno' is displayed and then press the 'UNITS' key.
- Press the 'ZERO' key and then press the 'TARE' key until 'Save no' is displayed.
- Press the 'ZERO' key to return to the normal weighing mode.

1.9 Sealing Provision

The instrument is sealed by preventing access within the indicator housing. This may be achieved by applying destructible adhesive labels on opposite sides of a join in the indicator housing as shown Figure 2.

Alternatively the instrument is sealed by recording the audit trail counter on verification.

The instrument 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 CONFIG 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 instructions for accessing the configuration and calibration audit trail are as follows (starting from the normal weighing mode):

- Press and hold F1 key until PASS is displayed.
- Enter the password '111' and press the 'ZERO' key to enter the USER menu level.
- Press the 'UNITS' key until 'Audit' is displayed and then press the 'SELECT' key twice.
- Press the 'SELECT' key while 'ConFig' is displayed. The 'CONFIG' counter value is displayed; or
- Press the 'UNIT' key then press the 'SELECT' key while 'CALib' is displayed. The 'CAL' counter value is displayed
- Press the 'ZERO' key and then press the 'TARE' key until 'Save no' is displayed.
- Press the 'ZERO' key to return to the normal weighing mode.

1.10 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	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/277
Maximum capacity	<i>Max</i> g or kg #1
Minimum capacity	<i>Min</i> g or kg #1
Verification scale interval	<i>e</i> = g or kg #1
Maximum subtractive tare	<i>T</i> = - g or kg #2
Serial number of the instrument

#1 These markings are shown near the display of the result.

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

In addition, instruments shall carry a notice stating NOT FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

2. Description of Variant 1 approved on 12/11/12

Other ZQ375 models having a Diamond Base BS basework (Figure 3) in certain other capacities as listed in Table 1.

3. Description of Variant 2 approved on 12/11/12

Other ZQ375 models having a Torsion Base BSG basework (Figure 4) which use Vishay model 1130 load cells as listed in Table 2.

4. Description of Variant 3 approved on 12/11/12

Other ZQ375 models having a Torsion Base BSF basework (Figure 4) which use HBM model PW15AHC3 load cells as listed in Table 3.

TABLE 1 – ZQ375 models having a Diamond Base BS basework

Base Model Number	Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (e)	Avery Weigh-Tronix Load Cell Used
BS-2020-45	45 kg	0.2 kg	0.01 kg	FLS 56.7 kg
BS-2424-90	90 kg	0.4 kg	0.02 kg	FLS 113.4 kg
BS-2424-200	200 kg	1 kg	0.05 kg	FLS 453.6 kg

Note: The basework of the pattern is shown above in **bold** type.

TABLE 2 – ZQ375 models having a Torsion Base BSG basework

Base Model Number	Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (e)	Vishay Load Cell Used
BSG-99-6	6 kg	0.04 kg	0.002 kg	1130-10 kg
BSG-1214-15	15 kg	0.1 kg	0.005 kg	1130-20 kg
BSG-1214-30	30 kg	0.2 kg	0.01 kg	1130-50 kg

TABLE 3 – ZQ375 models having a Torsion Base BSF basework

Base Model Number	Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (e)	HBM Load Cell Used
BSF-99-3	3 kg	0.02 kg	0.001 kg	PW15AHC3MR/10 kg
BSF-99-6	6 kg	0.04 kg	0.002 kg	PW15AHC3MR/10 kg
BSF-1214-15	15 kg	0.1 kg	0.005 kg	PW15AHC3MR/20 kg
BSF-1214-30	30 kg	0.2 kg	0.01 kg	PW15AHC3MR/50 kg
BSF-1214-45	45 kg	0.4 kg	0.02 kg	PW15AHC3MR/100 kg

TEST PROCEDURE No 6/4C/277

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 Schedule 1 of the *National Trade Measurement Regulations 2009*.

FIGURE 6/4C/277 – 1



Avery Weigh-Tronix Model ZQ375 Weighing Instrument

FIGURE 6/4C/277 – 3



Typical Diamond Base BS Basework

FIGURE 6/4C/277 – 4



Typical Instrument With a Torsion Bases BSF/BSG Basework