



National  
Measurement &  
Regulation Office



Member State of OIML  
United Kingdom of Great Britain  
and Northern Ireland

OIML Certificate No  
R76/2006-GB1-15.07

## OIML CERTIFICATE OF CONFORMITY

Issuing authority: **National Measurement and Regulation Office**

Person responsible: **Paul Dixon – Director, Certification Services**

Applicant: **Avery Weigh-Tronix  
Foundry Lane  
Smethwick  
West Midlands B66 2LP  
United Kingdom**

Manufacturer: **The applicant**

Identification of the  
certified pattern: **ZM401, ZM405 Series**

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report) with the requirements of the following Recommendation of the International Organisation of Legal Metrology (OIML):

**OIML R 76 - Edition 2006(E) for accuracy class: [III] and [IIII]**

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

This certificate does not bestow any form of legal international approval.

Important note: Apart from the mention of the certificates reference number and the name of the OIML Member State in which the certificate was issued, partial quotation of the certificate or of the associated test report is not permitted, though they may be reproduced in full.

Issue Date: **07 October 2015**

Reference No: **TS1201/0120**

**G Stones**  
Technical Manager - Certification Services



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The NMRO is an Executive Agency of the Department for Business Innovation and Skills

The conformity was established by testing and examination described in the associated Evaluation Report P01479 which includes 14 pages.

### **Characteristics of the instrument:**

#### Characteristics:

The family of indicating devices is designated the Avery Weigh-Tronix ZM401 / ZM405 Series. The indicators are programmable, self-indicating, mains, DC or battery-powered, and are designed to be used as part of a Class III or IIII, Non-Automatic Weighing Instrument.

#### Construction:

The indicator construction is dependent on the model number, the designation follows the following format: "Prefix-XYZ", with

- Model Number Prefix:  
ZM401, ZM405 = Standard Indicator
- First Digit X – Enclosure material  
S = Stainless enclosure
- Second Digit Y – Mounting orientation  
D = Desktop  
P = Panel Mount
- Third Digit Z – Display Type  
3 = IBN with dot graphic – Black background with Green Digits

The ZM401 features 6 operational keys, whereas the ZM405 overlay is fitted with 24 operational keys, including a numeric keypad.

#### Devices:

- Semi-automatic zero setting ( $\leq 4\%$  Max)
- Zero tracking ( $\leq 4\%$  Max)
- Semi-automatic subtractive tare weighing
- Pre-set tare
- Recall of Gross indication when tare is active
- Determination of stability of equilibrium
- Indication of stability of equilibrium
- Checking of display
- Printing
- PLUs
- Alibi storage device
- Gravity compensation
- Real time clock
- Command via external device (PC)
- Gross, Net, Tare, Preset tare, Print, Zero, Motion, Accumulation, Over/Under weight, Network and Battery indicators.
- Single or multi-range / multi-interval (maximum of 3 partial ranges)
- Range in use indicators (multi-range variant)
- Connection to up to 2 load receptors, with load receptor number indicator

Technical data:

Power supply	ZM401-SP3, ZM405-SP3: 12-36V DC via mains adaptor or external battery pack. ZM401-SD3, ZM405-SD3: 110-240V AC (50/60Hz)	
Load Cell Input Variants	ZM401, ZM405 standard indicator and 10V EXC analogue load cell interface option card	5V EXC analogue load cell interface option card
Maximum number of scale intervals	10,000	6,000
Maximum Tare	-100% Max	
Maximum Preset Tare	-100% Max (single interval) - Max <sub>1</sub> (multi-interval/range)	
Load cell excitation voltage	10 VDC	5 VDC
Minimum load cell impedance	21.87 Ω	58.33 Ω
Maximum load cell impedance	1,100 Ω	
Minimum input voltage per scale interval	0.5 μV	0.8 μV
Measuring range minimum voltage	0 mV	
Measuring range maximum voltage	15 mV	
Fraction of maximum permissible error	P <sub>ind</sub> = 0.5	
Operating temperature range	-10 °C to +40 °C	
Load cell connection	4 or 6-core with braided outer screen, flexible PVC overall Jacket	
	Maximum length (6-wire) = 211 m/mm <sup>2</sup>	Maximum length (6-wire) = 196 m/mm <sup>2</sup> (limited to 30 m)

Interfaces:

- Load cell 4-wire or 6-wire shielded connection
- 3 x logic level inputs
- 3 x open collector outputs
- 2 x RS232 serial ports
- 10/100 Ethernet
- USB Host

Optional Interface & PCBs:

- (i) Analogue output card, providing 0-10 VDC and 4-20mA outputs
- (ii) Current loop card, providing 4-20mA loop and RS485 / RS422
- (iii) Internal Wireless LAN card, providing an 802.11b/g wireless link
- (iv) USB Device card, providing USB interface to PC
- (v) Load cell interface board, with 5V Excitation (to allow the connection of a second platform, maximum 6 load cells). Refer to section 3.1 for full technical data.
- (vi) Load cell interface board, with 10V Excitation (to allow the connection of a second platform, maximum 16 load cells). Refer to section 3.1 for full technical data.

- (vii) Bluetooth card, providing a Bluetooth wireless link
- (viii) DeviceNet card, providing one DeviceNet Fieldbus interface.
- (ix) Profibus card, providing one Profibus Fieldbus interface
- (x) Ethernet to PoE Supply side card, providing an Ethernet pass-through interface, with Power over Ethernet available on the output port.
- (xi) Quad DC input card, providing four 4-30VDC Opto-Isolated inputs
- (xii) Quad DC output card, providing four 3-60VDC Solid State Relay outputs
- (xiii) Quad AC input card, providing four 120-240VAC Opto-Isolated inputs
- (xiv) Quad AC output card, providing four 20-240VAC Solid State Relay outputs
- (xv) External I/O Expansion Card, providing interfaces to legacy installations previously fitted with External I/O or SSCU8 cards

Software:

The software is designated AWT30-500161 version 2.x.x.x (where x.x.x refers to the identification of non-legally relevant software, which may be modified by the manufacturer).

The calibration and legally relevant parameters are protected via physical (jumper located on main board) or software means (password and incrementing counters).

**CERTIFICATE HISTORY**

ISSUE NO.	DATE	DESCRIPTION
R76/2006-GB1-15.07	07 October 2015	Certificate first issued.
-	-	No revisions have been issued.