NMO

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

OIML Certificate No
R76/2006-GB1-16.03
Revision 1

OIML CERTIFICATE OF CONFORMITY

Issuing authority: **NMO**

Person responsible: **Mannie Panesar – Head of Technical Services**

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

Manufacturer: **The applicant**

Identification of the certified pattern: **ZM505, ZM510, ZM605, ZM615 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.

This revision replaces previous versions of the certificate.

Issue Date: **13 September 2017**

Grégory Glas
Technical Manager
For and on behalf of the Head of Technical Services

UKAS PRODUCT CERTIFICATION
0135

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NMO is part of the Regulatory Delivery directorate within the Department for Business, Energy & Industrial Strategy

The conformity was established by testing and examinations described in the associated Evaluation Report P01821 which includes 14 pages.

Characteristics of the instrument:

Characteristics:

The family of indicating devices are designated the Avery Weigh-Tronix ZM505 / ZM510 / ZM605 / ZM615 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:
  ZM505, ZM510, ZM605, ZM615 = 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
  4 = Dot graphic – Green background with Black Dots (capable of negative image)
  5 = Large dot graphic – Green backlight with Black Dots (capable of negative image)

  The ZM505, ZM605 and ZM615 feature 29 operational keys, including a numeric keypad and 5 “soft keys” (F1 to F5), the current functions of which are shown above them on the display.

  The ZM510 features 48 operational keys, including a QWERTY keypad and 5 “soft keys” (F1 to F5), the current functions of which are shown above them on the display.

Devices:

- Semi-automatic zero setting (≤ 4% Max)
- Zero tracking (≤ 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 4 load receptors, with load receptor number indicator
- Connection to digital load cells

Technical data:

<table>
<tr><td>Power supply</td><td colspan="3">- ZM505-SP3, ZM510-SP4, ZM605-SP4, ZM615-SP5:
12-36V DC via mains adaptor or external battery pack
- ZM505-SD3, ZM510-SD4, ZM605-SD4, ZM615-SD5:
110-240V AC (50/60Hz)</td></tr>
<tr><td rowspan="2">Load Cell Input Variants</td><td>ZM605, ZM615</td><td>ZM505, ZM510</td><td rowspan="2">5V EXC analogue load cell interface option card(s)</td></tr>
<tr><td>Standard build and when fitted with10V EXC analogue load cell interface option card(s)</td><td>Standard build and when fitted with10V EXC analogue load cell interface option card(s)</td></tr>
<tr><td>Maximum number of scale intervals</td><td colspan="2">10,000</td><td>6,000</td></tr>
<tr><td>Maximum Tare</td><td colspan="3">-100% Max</td></tr>
<tr><td>Maximum Preset Tare</td><td colspan="3">-100% Max (single interval)
- Max_1 (multi-interval/range)</td></tr>
<tr><td>Load cell excitation voltage</td><td colspan="2">10 VDC</td><td>5 VDC</td></tr>
<tr><td>Minimum load cell impedance</td><td>10.94 Ω</td><td>14.58 Ω</td><td>58.33 Ω</td></tr>
<tr><td>Maximum load cell impedance</td><td colspan="3">1,100 Ω</td></tr>
<tr><td>Minimum input voltage per scale interval</td><td colspan="2">0.5 µV</td><td>0.8 µV</td></tr>
<tr><td>Measuring range minimum voltage</td><td colspan="3">0 mV</td></tr>
<tr><td>Measuring range maximum voltage</td><td colspan="3">15 mV</td></tr>
<tr><td>Fraction of maximum permissible error</td><td colspan="3">P_{ind} = 0.5</td></tr>
<tr><td>Operating temperature range</td><td colspan="3">-10 °C to +40 °C</td></tr>
<tr><td rowspan="2">Load cell connection</td><td colspan="3">4 or 6-core with braided outer screen, flexible PVC overall Jacket</td></tr>
<tr><td>Maximum length (6-wire) = 212 m/mm^2</td><td>Maximum length (6-wire) = 143 m/mm^2</td><td>Maximum length (6-wire) = 196 m/mm^2 (limited to 30m)</td></tr>
</table>

Interfaces:

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

(xvi) Programmable Digital I/O card, with eight programmable logic level inputs or outputs, providing pulse counter, frequency measurement, Quadrature decode, and PWM output functionality.

Software:

The software is designated AWT30-500208 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 (sealed jumper located on main board) or software means (password and incrementing counters).

Alternatives:

The ZM505 / ZM510 / ZM605 / ZM615 indicators may be connected to a maximum of two Avery Weigh-Tronix BSQ series digital bases to form a complete single-interval or multi-range Class III Non-Automatic Weighing Instrument. The BSQ base(s) must be set up for operation in “Raw, unprocessed digital counts” mode.

The instrument has the following characteristics for the BSQ weighing input(s):
$n \leq 10{,}000$ for Class III instruments with single interval
$n_i \leq 10{,}000$ for Class III instruments with multi-range operation, per weighing range, with a maximum of three weighing ranges
$n \leq 1{,}000$ for Class IIII instruments with single interval

CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
R76/2006-GB1-16.03	21 July 2016	Certificate first issued.
R76/2006-GB1-16.03 Revision 1	13 September 2017	Addition of ZM505 / ZM605 / ZM615 series Technical data updated to reflect additional models in the range. “Programmable Digital I/O card” added under Optional Interface & PCBs. Added connection to BSQ bases under Alternatives.