

# EU Type Examination Certificate

**No. 0200-MID-05859**

**ZM505 / ZM510 / ZM605 / ZM615 Series**

**AUTOMATIC GRAVIMETRIC FILLING INSTRUMENT**

**Issued by**      **FORCE Certification**  
EU - Notified Body No. 0200

In accordance with the requirements in Directive 2014/32/EU of the European Parliament and Council.

**Issued to**      **Avery Weigh-Tronix**  
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UNITED KINGDOM

**In respect of**    An automatic gravimetric filling instrument designated **ZM505 / ZM510 / ZM605 / ZM615 Series** with variants of modules of load receptors, load cells and peripheral equipment.  
Reference class: Ref (x) = 0.05 (ZM505, ZM510, ZM605, ZM615 Standard build and when fitted with 10V EXC load celloption card(s))  
Ref (x) = 0.1 (5V EXC load cell option card)  
Maximum capacity,  $Max_i = n_i \times e_i$   
Verification scale interval:  $e \geq 0.5$  g  
Number of verification scale intervals:  $n_i \leq 10000$  (ZM505, ZM510, ZM605, ZM615 standard indicator and 10V<sub>EXC</sub> load cell option card)  
 $n_i \leq 6000$  (5V<sub>EXC</sub> load cell option card)  
(however, dependent on environment and the composition of the modules)  
Variants of modules and conditions for the composition of the modules are set out in the annex.

The conformity with the essential requirements in Annex 1 and the specific requirements in Annex VIII (MI-006), chapter I & II of the Directive 2014/32/EU is met by the application of OIML R61:2004, OIML D11:2013 and WELMEC Guide 7.2:2015.

The principal characteristics and approval conditions are set out in the descriptive annex to this certificate.

The annex comprises 9 pages.

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## Descriptive annex

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## 1. Introduction

This pattern of an automatic gravimetric filling instrument for dispensing predetermined loads of powdered, granular or liquid materials consists of a feeding device, a weighing unit, and a ZM505 / ZM510 / ZM605 / ZM615 weighing controller (Figures 1-8).

## 2. Description of the construction and function

### 2.1 Mechanical

The instrument comprises material handling facilities (feeding device and weighing unit) which shall enable it to respect the MPEs during normal operation.

#### 2.1.1 Material feeding device

The feeding device may be any one of the following:

- Gravity feeder
- Gravity feeder with agitator
- Single screw or double screw feeder
- Belt feeder
- Vibratory feeder

#### 2.1.2 Weighing unit

The weighing unit is either a load receptor incorporating a weigh hopper and associated discharge device for weighing of target weights in the weigh hopper (net weighing), or a load receptor without a discharge device for weighing directly into containers (gross weighing).

#### 2.1.3 Load cell

Any analogue load cell(s) may be used for instruments under this certificate of type examination provided the following conditions are met:

- 1) There is a respective OIML Certificate of Conformity (R60) or a Part / Evaluation / Test Certificate (EN 45501) issued for the load cell by a Notified Body responsible for type examination under Directive 2014/31/EU.
- 2) The certificate contains the load cell types and the necessary load cell data required for the manufacturer's declaration of compatibility of modules (WELMEC 2:2015), and any particular installation requirements). A load cell marked NH is allowed only if humidity testing to EN 45501 has been conducted on this load cell.
- 3) The compatibility of load cells and indicator is established by the manufacturer by means of the compatibility of modules form, contained in the above WELMEC 2 document, or the like, at the time of EC verification or declaration of EC conformity of type.
- 4) The load transmission must conform to one of the examples shown in the WELMEC 2.4 Guide for load cells.

### 2.2 ZM505 / ZM510 / ZM605 / ZM615 Weighing controller

The Avery Weigh-Tronix ZM505 / ZM510 / ZM605 / ZM615 weighing controller is fully described in Evaluation Certificate GB-1577.

## 2.3 Operation

The operator enters or selects the predetermined (target) weight and other operational inputs via the keys on the front of the controller. The controller operates the filling instrument in response to signals from the load cell(s) and plant sensors. The operation is fully described in Evaluation Certificate 0200-WL-05860

## 2.4 Software

The software and the version of it is fully described in Evaluation Certificate 0200-WL-05860.

## 3. Technical data

The technical data for the ZM505 / ZM510 / ZM605 / ZM615 weighing controller is as described in Evaluation Certificate 0200-WL-05860.

## 4. Interfaces and peripheral equipment

### 4.1 Interfaces

The instrument may have the following interface types (fully described in Evaluation Certificate 0200-WL-05860):

- Load cell 4-wire or 6-wire shielded connection
- Logic level inputs
- Open collector outputs
- Analogue outputs
- Current Loop
- RS232/422/485
- 10/100 Ethernet
- USB Host
- Wireless LAN 802.11b/g
- USB Device
- Bluetooth
- DeviceNet
- Profibus
- Power over Ethernet
- DC inputs
- DC outputs
- AC inputs
- AC outputs
- GSE & 1310 legacy interfaces
- Programmable Digital I/O interfaces

## **4.2 Peripheral devices**

The instrument may be connected to any peripheral device that has been issued with a Part Certificate or Evaluation Certificate issued by a Notified Body responsible for Module B under Directive 2014/32/EU and bears the CE marking of conformity to the relevant directives; or

A peripheral device without a Part or Evaluation certificate may be connected under the following conditions:

- it bears the CE marking for conformity to the EMC Directive;
- it is not capable of transmitting any data or instruction into the weighing instrument, other than to release a printout, checking for correct data transmission or validation;
- it prints weighing results and other data as received from the weighing instrument without any modification or further processing; and
- it complies with the applicable requirements of Paragraph 8.1 of Annex I.

## **5. Approval conditions**

### **5.1 Compatibility of modules**

The instrument shall fulfil composition of modules according to EN 45501:2015 annex F.

### **5.2 Installation**

The instrument shall be permanently installed or shall be provided with a level indicator.

### **5.3 Zero-setting**

The ZM505 and ZM510 instruments (including 10V EXC load cell option card) shall be set to zero at least every 16 min, while the ZM505 and ZM510 instruments if fitted with a 5V EXC load cell option card shall be set to zero at least every 15 min, via semi-automatic zero-setting, zero-tracking or tare devices.

The ZM605 and ZM615 instruments (including 10V EXC load cell option card) shall be set to zero at least every 2 hours 30 min, while the ZM605 and ZM615 instruments if fitted with a 5V EXC load cell option card shall be set to zero at least every 15 min, via semi-automatic zero-setting, zero-tracking or tare devices.

## **6. Special conditions for verification**

The environmental conditions should be taken into consideration by the composition of modules for a complete weighing instrument, for example instruments with load receptors placed outdoors and having no special protection against the weather.

The composition of modules shall agree with section 5.1.

## **7. Securing and location of seals and verification marks**

### **7.1 Securing and sealing**

Seals shall bear the verification mark of a notified body or alternative mark of the manufacturer or his representative according to ANNEX II, module F or D of Directive 2014/32/EU.

The inscription plate is located visible on the indicating device and is secured, either by sealing or by being of a form such that it is destroyed when removed.

Components that may not be dismantled or adjusted by the user (jumper on main board when applicable, electronics, load cell connection) must be secured. Common serial numbers, a wire and seal solution or a tamper-evident sticker (bearing a securing mark) may be used.

When software sealing is used, the CONFIG and CAL counters' values shall be written on a tamper-evident label on or near the rating plate.

## **8. Location of CE mark of conformity and inscriptions**

### **8.1 Scale**

#### **8.1.1 CE mark**

CE mark and supplementary metrological marking shall be applied to the instrument according to article 20 of Directive 2014/32/EU.

#### **8.1.2 Inscriptions**

Max, Min, and d shall be located near the display.

On the inscription plate of the instrument:

- Manufacturer's name and/or trademark
- Postal address of manufacturer
- Type designation
- Serial number
- Product(s) designation
- Reference class Ref(x)
- Accuracy class X(x)
- Max, Min, d
- Temperature range: -10 / +40 °C (optional)
- Electromagnetic class: E2
- Humidity: Non-condensing
- EU type examination certificate number
- Supply voltage
- Pneumatic/hydraulic pressure (if applicable)
- Maximum subtractive tare (if  $\neq$  -Max)
- Information in respect of the conditions of use (if applicable)
- Information whether or not additional devices providing metrological results comply with the provisions of Directive 2014/32/EU on legal metrological control (if applicable)

The markings and inscriptions shall fulfil the requirements of Article 8, Article 21, Article 22 and Point 9 of Annex I of Directive 2014/32/EU.

## 9. Pictures



**Figure 1** ZM505-SD3 weighing controller



**Figure 2** ZM505-SP3 weighing controller



**Figure 3** ZM510-SD4 weighing controller



**Figure 4** ZM510-SP4 weighing controller





**Figure 5** ZM605-SD4 weighing controller



**Figure 6** ZM605-SP4 weighing controller



**Figure 7** ZM615-SD5 weighing controller



**Figure 8** ZM615-SP5 weighing controller