DANAK
PROD Reg. nr 7026

FORCE Certification

EU Type Examination Certificate

No. 0200-MID-05857

ZM505 / ZM510 / ZM605 / ZM615 Series

AUTOMATIC CATCHWEIGHING / CHECKWEIGHING 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**
Foundry Lane
Smethwick
West Midlands B66 2LP
UNITED KINGDOM

In respect of An automatic check-/catchweighing instrument designated **ZM505 / ZM510 / ZM605 / ZM615 Series** with variants of modules of load receptors, load cells and peripheral equipment.
Accuracy class XIII(1), Y(a)
Weighing mode: Static
Maximum capacity, $Max_i = n_i \times ei$
Verification scale interval: $e \geq 0.1$ g
Number of verification scale intervals: $n_i \leq 10000$ (ZM505, ZM510, ZM605, ZM615 standard indicator and $10V_{EXC}$ load cell option card)
$n_i \leq 6000$ ($5V_{EXC}$ 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 R51:2006, 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 10 pages.

Jens Hovgård Jensen
2019-03-22
Digitally signed by Jens Hovgård Jensen
jhje@force.dk
Certification Manager

Issued on **2019-03-22**
Valid until **2029-03-22**

FORCE Certification references:
Task no.: 119-23235.90.10 and ID no.: 0200-MID-05857

Signatory: J. Hovgård Jensen

Descriptive annex

Contents

1. Introduction

This pattern of an automatic catchweighing instrument, comprising a controller designated the ZM505 / ZM510 / ZM605 / ZM615, appropriate conveyors, pack detection and pack flow management devices, and a weighing unit comprising a load receptor and associated load cell(s), is designed to operate as an automatic weight labeller (Category Y), or checkweigher (Category X).

The instruments are designed to weigh packs statically. Sufficient time must be allowed for the static weight to be correctly taken for each application; a maximum conveyor speed must be determined, secured and checked at initial verification to ensure that the errors in automatic operation are less than the MPEs (Category Y). Similarly, the maximum conveyor speed must be determined, secured and checked at initial verification to ensure that the MPME, and MPSD in automatic operation are respected (Category X).

Pack and labelling information is stored in files called PLUs selectable by the operator for the commodity or labels being processed. Labels are printed for the above transaction data and are applied to the packs automatically (Category Y). Alternatively, the measurement data can be stored using the Data Storage Device. Batch data must be printed or stored using the Data Storage Device (Category X). The data may be transmitted to a host computer for use in other applications, beyond the scope of this approval.

2. Description of the construction and function

2.1 Mechanical

The instrument comprises a frame on which are mounted the modular conveyor sections (typically infeed, weighing, out-feed). The conveyors' type, number, size and shape are not restricted.

2.2 Weigh platform

The weighing device comprises a number of single strain gauge load cells fitted to the weigh platform.

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.

2.3 Electrical

The ZM505 / ZM510 / ZM605 / ZM615 indicator (weighing controller) is described fully in Evaluation Certificate 0200-WL-05858.

The system uses pack detection devices (e.g. photocells) and pack flow management devices (e.g. PLC) to determine where and when the packs have to be stopped on the weigh platform. The instrument also comprises a number of motors, drivers and relays to ensure correct pack flow.

2.4 Software

The software and the version of it is fully described in Evaluation Certificate 0200-WL-05858.

3. Technical data

Technical data for the ZM505 / ZM510 / ZM605 / ZM615 indicator (weighing controller) is provided in Evaluation Certificate 0200-WL-05858.

4. Interfaces and peripheral equipment

4.1 Interfaces

The instrument may have the following interface types (fully described in Evaluation Certificate 0200-WL-05858):

- 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 Parts 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 measuring instrument, other than to release a printout, checking for correct data transmission or validation;
- it prints measurement results and other data as received from the measuring 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 7 hours 27 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 1 hour 57 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 5 hours 3 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 1 hour 55 min, via semi-automatic zero-setting, zero-tracking or tare devices.

5.4 Checkweigher

When used as a checkweigher (Category X), the instrument calculates batch statistics (mean and standard deviation) using internal high resolution values. The algorithms have been checked for compliance with 2014/32/EU at type-examination and may be used for verification purposes.

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 e= 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
- Accuracy class
- Max, Min, e =
- 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 ≠ -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