

EU Type Examination Certificate

No. 0200-MID-09921

CWSTTM

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 **Strainstall UK Limited**
9-10 Mariners Way
Cowes, Isle of Wight PO31 8PD
United Kingdom

In respect of An automatic catchweighing instrument designated CWSTTM (diaphragm load cell based) with variants of modules of load receptors, load cells and peripheral equipment.
Accuracy class Y(b)
Maximum capacity: Max \leq 45 t
Minimum capacity: Min \geq 2.4 t
Scale interval: e \geq 0.2 t
(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 D11:2004 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 11 pages.

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FORCE Certification references:

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Descriptive annex

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1. Introduction

The CWS™ (diaphragm load cell based) is an automatic catchweigher designed to weigh containers statically with no operator intervention. The instrument comprises digital load cells, an interface unit and a control and display unit. The instrument captures the container weight automatically once the container has been lifted and reached a stable position.

The name of the instrument may be followed by alphanumeric characters for technical, legal or commercial characterization of the instrument.

2. Description

2.1 Construction

The system is designed for permanent installation on the various types of container handlers (for example 'straddle carriers'). The load cells and electronics are permanently installed on the spreader. The system uses Diaphragm digital load cells (Figure 1) which are fitted to the lifting equipment. The load values from the load cells are transmitted to a display unit (typically installed in the operators cab) via an interface unit. The final data is transmitted to the container loading system (Terminal Operating System, TOS) which oversees the operation of the weighing instrument.

The interface and display units (Figure 2) have aluminium enclosures for all types of the systems. The display unit comprises a communications and display controller fitted with an LCD display and 8 keys: 6 functional control keys and 2 navigation keys. The units are powered by the container handlers with a nominal 24V DC external source. The interface unit provides the supply voltage for the strain gauge bridges in the load cells.

The instrument can be installed in the following configurations:

- 4 load cells ($E_{\max} = 15$ t) (Figure 3)

2.2 Devices

The instrument has the following devices:

- Semi-automatic zero-setting ($\leq 4\%$ Max) via user interface or TOS
- Long term storage device
- Display and storage of individual and total weights

Note: individual weights cannot be used for legal purposes

2.3 Operation

The interface unit receives the output from the digital load cells and converts these to a single output. The output is transmitted to the display unit either via a cable or a wireless link. The interface and display units are paired up via software means at installation.

The individual and total weights are captured when the weight indication is stable (displayed as "holding"). The values are stored in the communications interfaces card.

The display unit combines/processes the signals to provide the following functionality

- Displays the individual loads (4.5mm LCD display)
- Indicates a calculated load eccentricity
- Calculates and displays the total weight (18mm LCD Display)
- Computes outputs for the TOS via Ethernet/RS485 etc.
- Stores the individual/container weight data, time/date stamped
- Stores event log - error messages, communications errors etc.

3. Technical data

3.1 The system has the following technical characteristics:

Maximum capacity (Max):	≤ 45 t
Scale interval (e =):	≥ 0.2 t
Minimum capacity (Min):	≥ 2.4 t
Minimum number of verification scale interval (n)	≥ 100
Accuracy class:	Y(b)
Operation	Static
Climatic environment	-10°C to +40°C Open, condensing
Electromagnetic environment:	E2
Power supply:	24 VDC

3.2 Software

The software modules are protected by a version number and checksum, held on the eMMC memory. The software is identified by a version number and a checksum, which shall be as follows:

	Control unit	Spreader unit	Load cell
Software version number	V2.20	V2.20	V2.00
Checksum	FFAE	23E9	8E69

or

	Control unit	Spreader unit	Load cell
Software version number	V2.21	V2.22	V2.00
Checksum	C929	286B	8E69

or

	Control unit	Spreader unit	Load cell
Software version number	V2.23	V2.24	V2.00
Checksum	DACD	A574	8E69

Access to the legally relevant parameters is password-protected; a non-editable counter designated Config Version counter increments every time a legally relevant parameter is changed.

The software identification and value of the Config Version counter can be displayed on the display unit by pressing the "OK | MENU" button on the display (Figure 4, 4a, and 4b).

The software complies with Welmec Guide 7.2:2015, Type P, Risk Class B, Extensions L, T and D.

3.3 Documents

The documents filed at FORCE (reference No. 121-20907) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interfaces

The instrument may have the following interfaces:

- Link between interface and display unit
- RS232 / RS422 / RS485
- CANBUS
- Ethernet
- WiFi

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 for MI-006 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 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

None special.

6. Special conditions for verification

None.

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 interface unit and is secured, either by sealing or by being of a form such that it is destroyed when removed.

Access to the electronics (interface and display unit) is prevented by securing the enclosure with a seal (Figure 7) bearing a securing mark.

The load cell serial numbers are indelibly written on the data plate.

The value of the Config Version counter described in Section 3.2 must 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 (Figure 5 and 6).

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 =
- Config version
- Temperature range: -10 / +40 °C (optional)
- Electromagnetic class: E2
- Humidity
- EU type examination certificate number
- Supply voltage

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

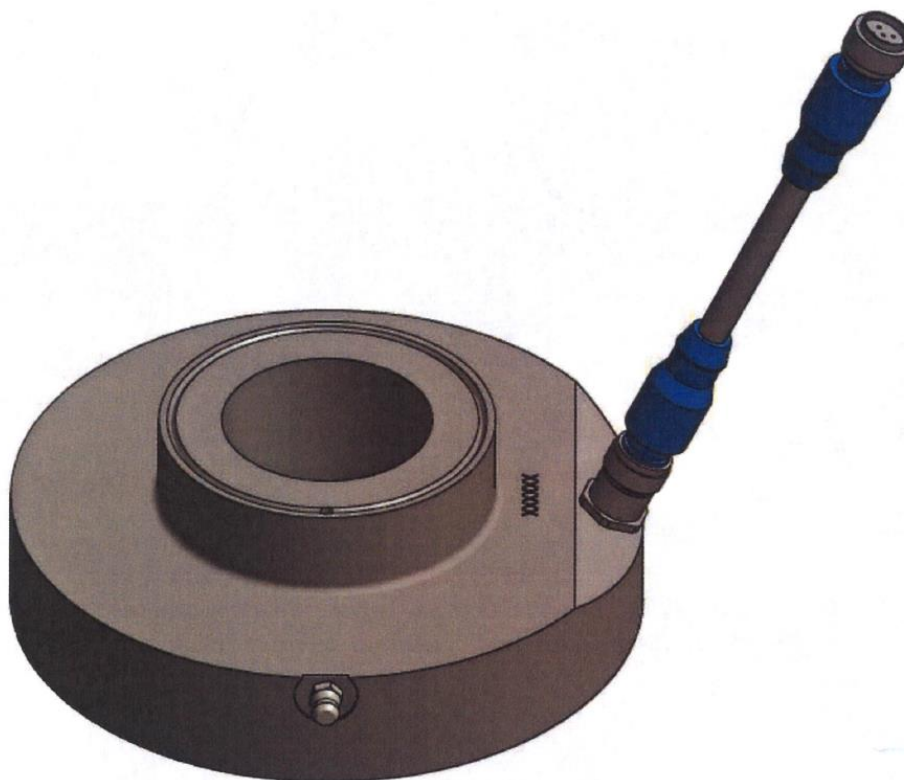


Figure 1 Diaphragm digital load cell



Figure 2 Interface and display units



Figure 3 Typical spreader configuration

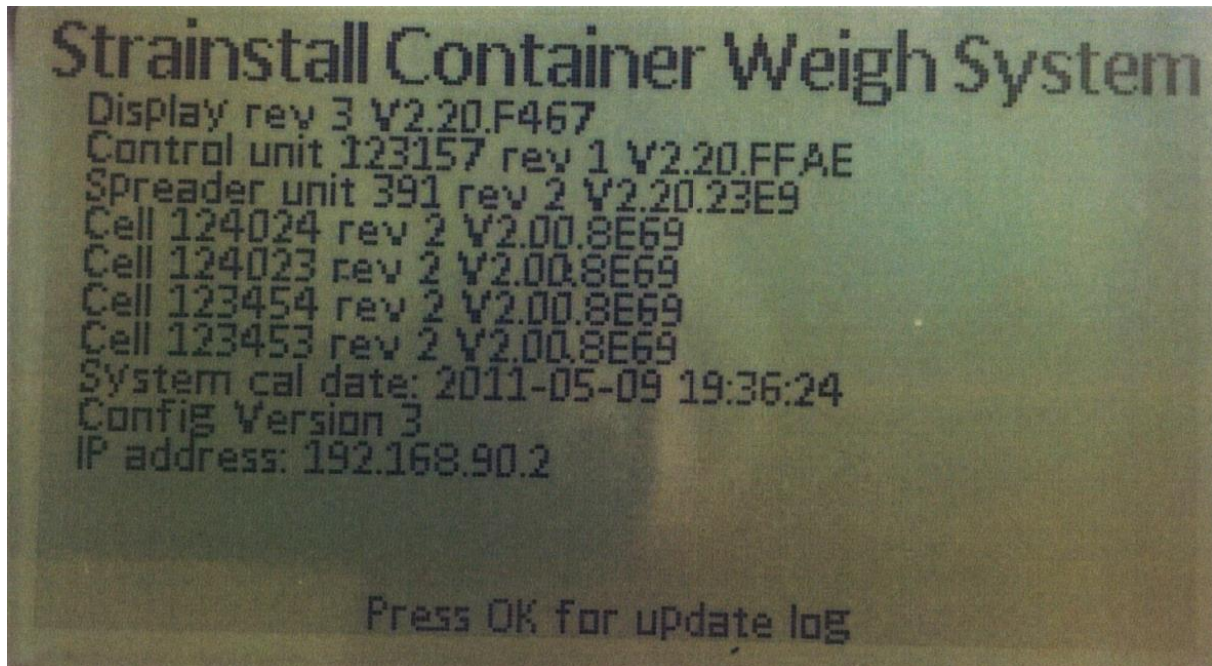


Figure 4 Software identification and configuration counter



Figure 4a Software identification and configuration counter

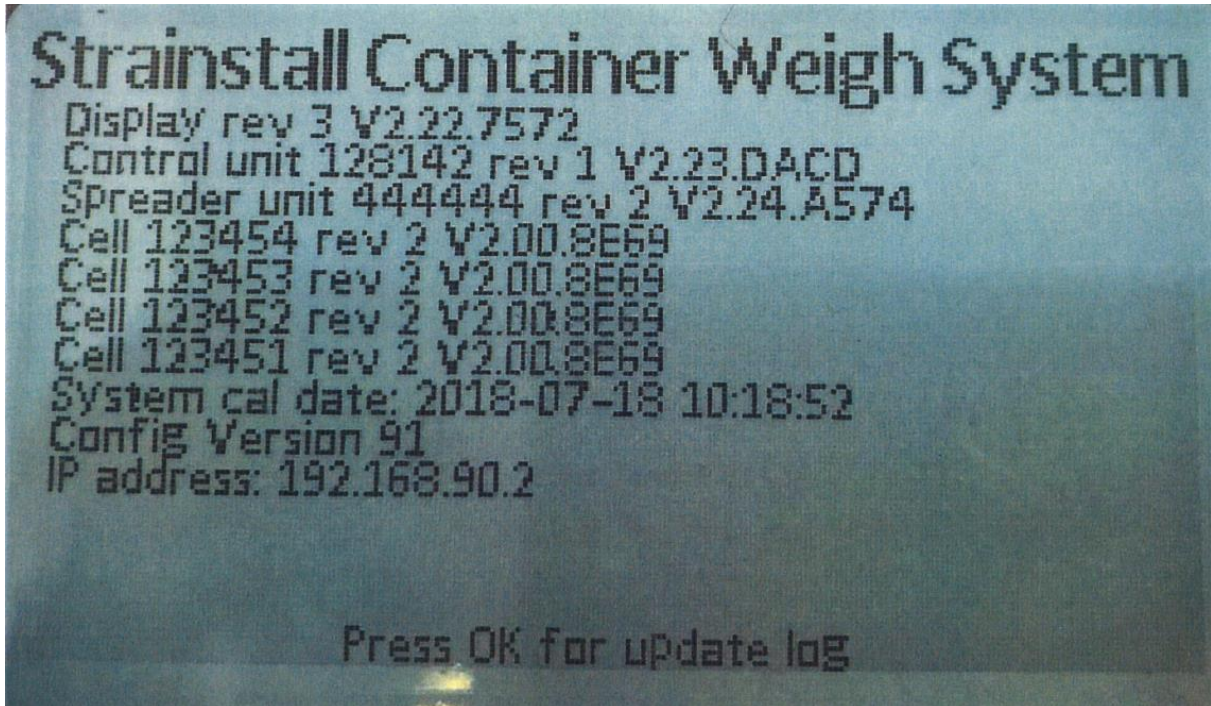


Figure 4b Software identification and configuration counter

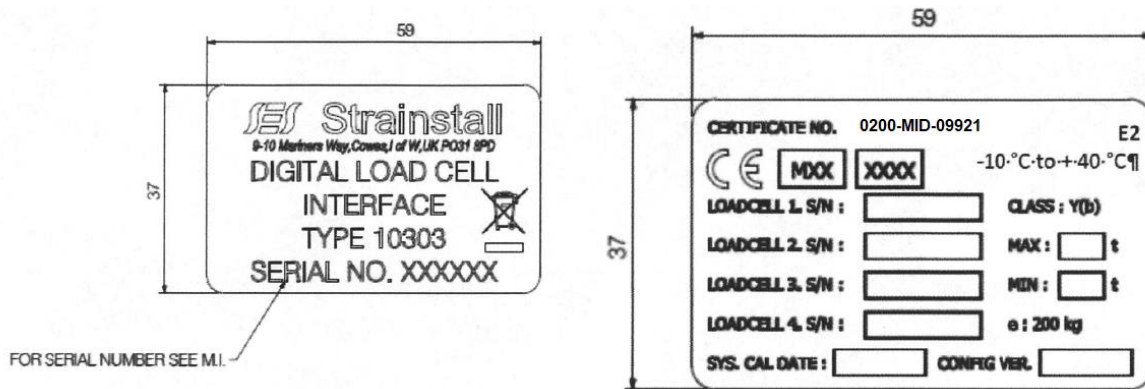


Figure 5 Rating plate example (Interface unit)

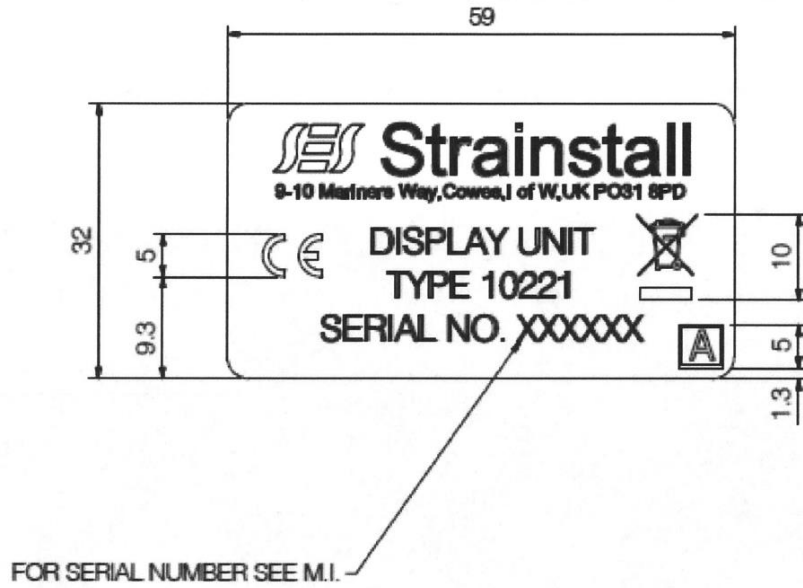


Figure 6 Rating plate example (Display unit)

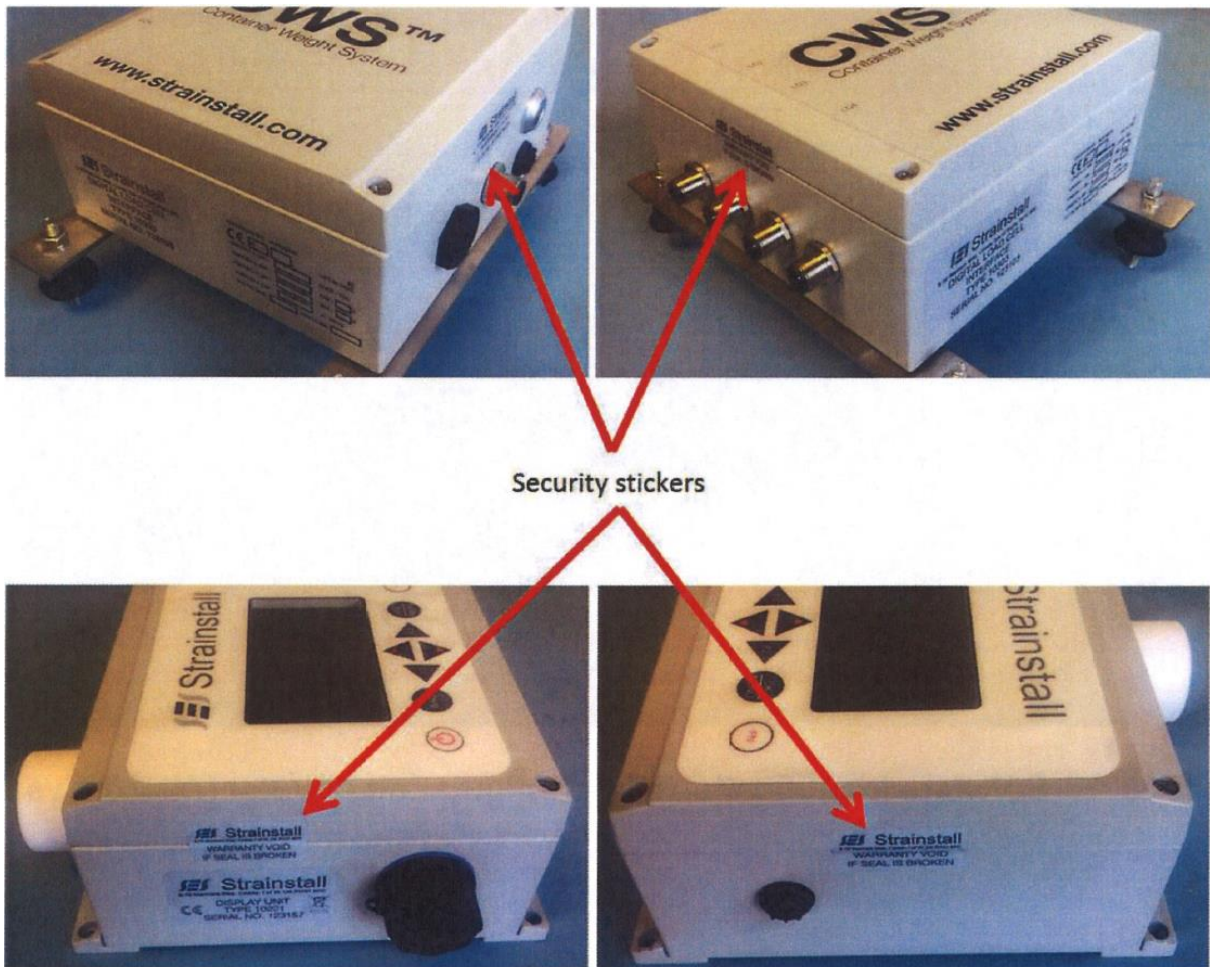


Figure 7 Enclosure sealing method (Interface and Display units)