NMO

EU-type examination certificate
UK/0126/0225 Revision 1

Issued by:

NMO
Notified Body Number 0126

In accordance with the requirements of the Measuring Instruments Regulations 2016 (S.I. 2016 No. 1153) which implement, in the United Kingdom, Council Directive 2014/32/EU, this EU-type examination certificate has been issued to:

Strainstall UK Limited
9-10 Mariners Way
Cowes, Isle of Wight
United Kingdom

In respect of an automatic catchweighing instrument designated the CWS™ (diaphragm load cell based) and having the following characteristics:

Maximum capacity   Max   ≤ 45 t
Minimum capacity   Min   ≥ 2.4 t
Scale interval   e =   ≥ 0.2 t
Accuracy class   Y(b)

The necessary data (principal characteristics, alterations, securing, functioning etc) for identification purposes and conditions (when applicable) are set out in the descriptive annex to this certificate.

This revision replaces previous versions of the certificate.

Issue date: **11 September 2017**
Valid until   **15 June 2027**

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

UKAS
PRODUCT
CERTIFICATION

0135

Descriptive Annex

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.

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 configuration:

   − 4 load cells (E_{max} = 15 t) (Figure 3)

2.2   Devices

The instrument has the following devices:

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

Note: individual weights shall not 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 instrument has the following technical characteristics.

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

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

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).

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

3.3 Documentation

The instrument is fully described in the technical file held at NMO.

4 PERIPHERAL DEVICES AND INTERFACES

4.1 Interfaces

The instrument may have the following interface types:

- Link between interface and display unit
- RS 232 / RS 422 / RS 485
- CANBUS
- Ethernet
- Wifi

4.2   Peripheral devices

The instrument may be connected to any peripheral device that has been issued with Parts Certificate 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

The certificate is issued subject to the following conditions:

5.1   Inscriptions

The instrument shall bear the following inscriptions (Figures 5 and 6):

- CE marking
- Supplementary metrology marking
- Manufacturer's name, registered trade name or registered trade mark and postal address
- Identification number of the notified body involved in the production control phase
- Information in respect of its accuracy

and, when applicable:

- Information in respect of the conditions of use
- Measuring capacity
- Identity marking (a type, batch or serial number or other element allowing their identification)
- Number of the EU-type examination certificate
- Information whether or not additional devices providing metrological results comply with the provisions of Directive 2014/32/EU on legal metrological control

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.

6   LOCATION OF SEALS AND VERIFICATION MARKS

6.1   The data plate is located on the interface unit and is of a form such that it is destroyed when removed.

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

The securing mark may be either:

− a mark of the manufacturer and/or manufacturer's representative, or

− an official mark of a verification officer.

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

6.4 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.

7 ALTERNATIVES

7.1 Having modified software, identified by a version number and a checksum (Figure 8), which shall be as follows:

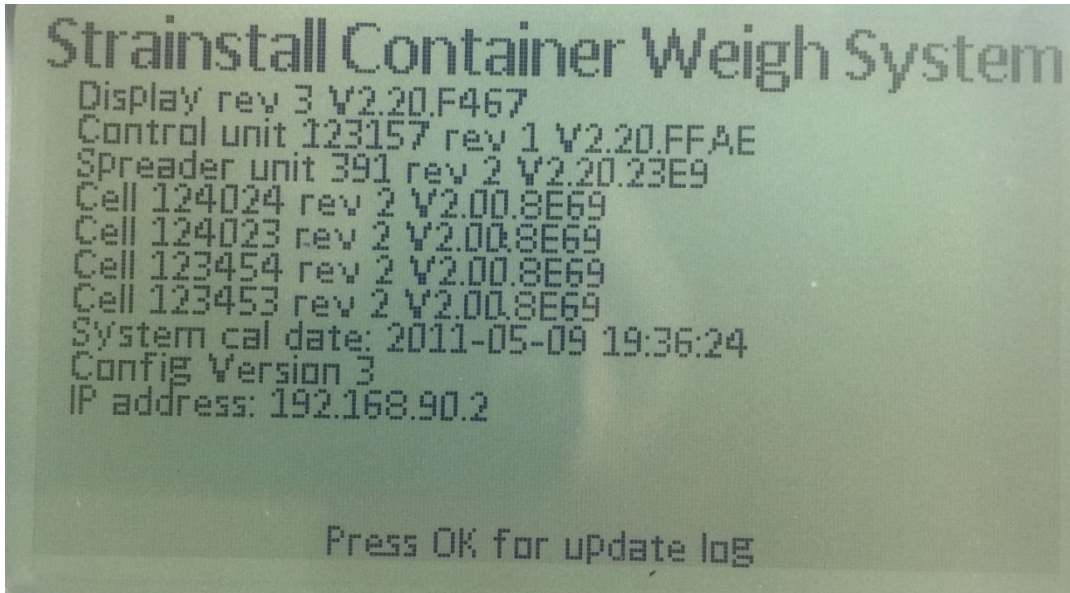|	Control unit	Spreader unit	Load cell
Software version number	V2.21	V2.22	V2.00
Checksum	C929	286B	8E69

8 ILLUSTRATIONS

Figure 1   Diaphragm digital load cell
Figure 2   Interface and the display units
Figure 3   Spreader configuration
Figure 4   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)
Figure 8   Software identification and configuration counter (Alternative 7.1)

CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
UK/0126/0225	16 June 2017	Type-examination certificate first issued.

UK/0126/0225 Revision 1	11 September 2017	Corrections:
		- Section 2.1, "called" replaced by "for example". - Section 2.1, "Spreader" removed. - Section 3.1: Maximum number of verification scale intervals changed to Minimum. - Section 3.2: Display unit and Interface unit changed to Control unit and Spreader unit. - Section 3.4 re-numbered 3.3. - Section 6.4 counter refers to Section 3.2. - Figure 6 updated. - - Section 7.1 and Figure 8 added.
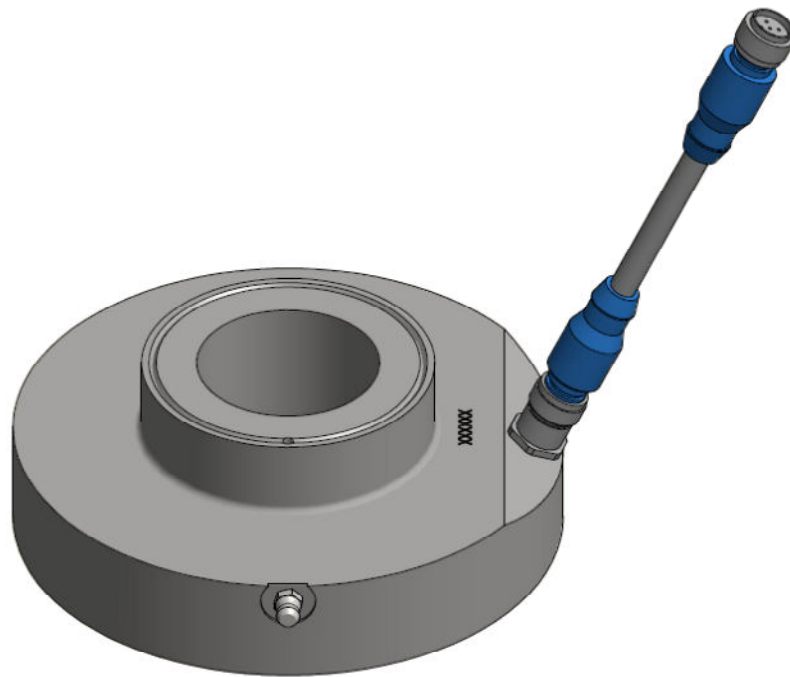
Figure 1   Diaphragm digital load cell

Figure 2   Interface and the display units

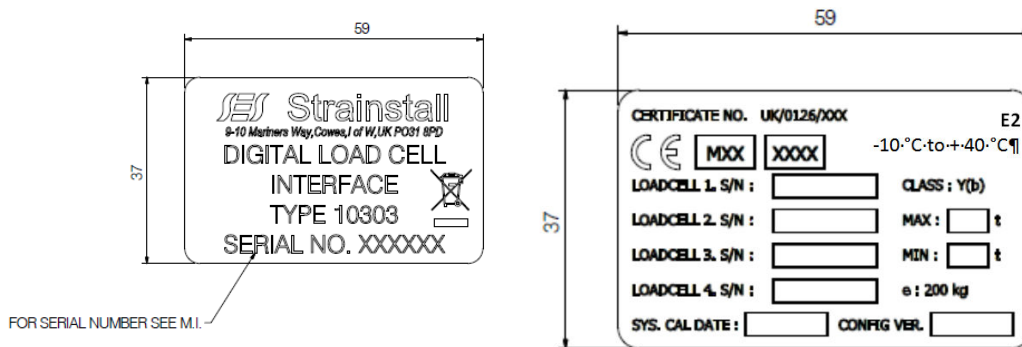Display Unit

Load cells

Digital
Load cell
Interface

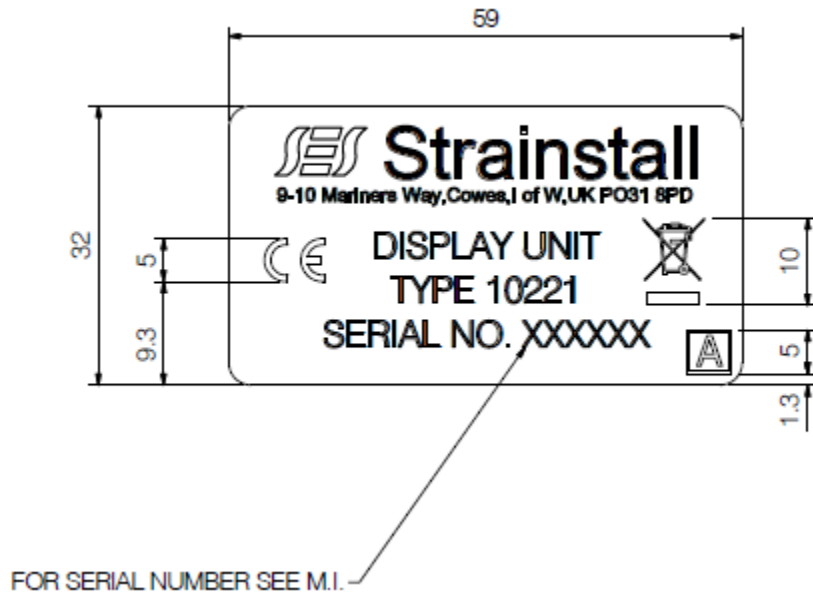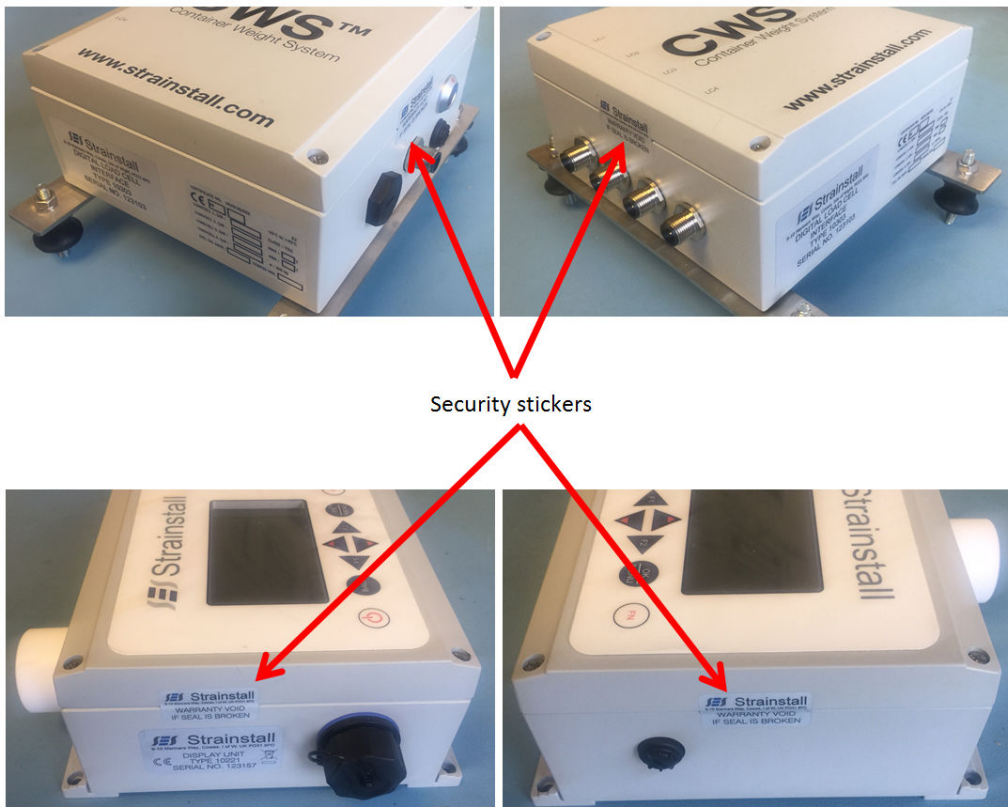**Figure 3**   Typical spreader configuration

Figure 4　　　Software identification and configuration counter
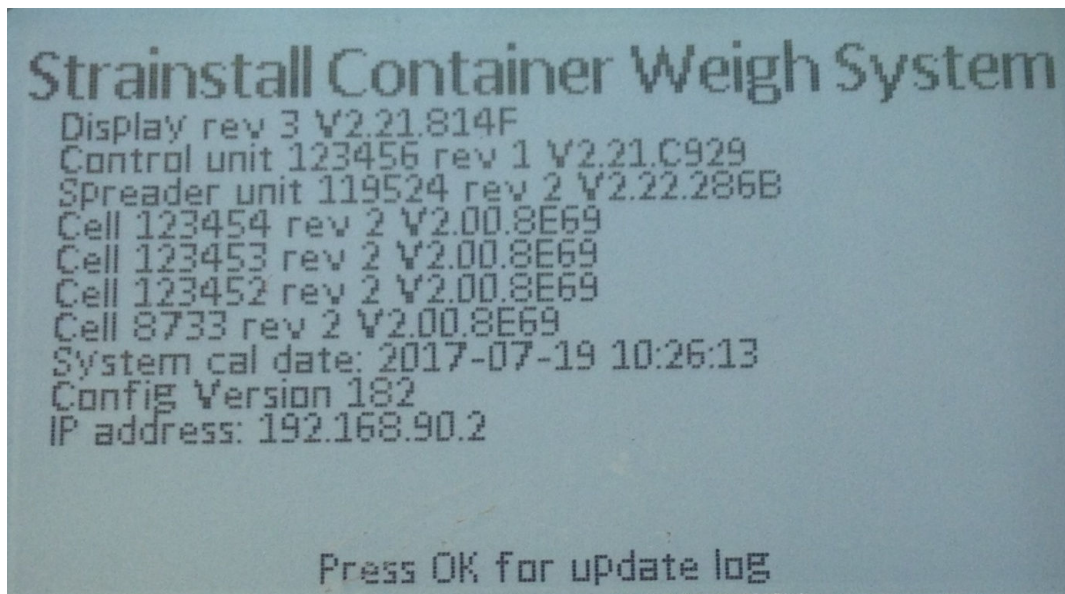

Figure 5　　　Rating plate example (Interface unit)

Figure 6   Rating plate example (Display unit)

Figure 7   Enclosure sealing method (Interface and Display units)

Figure 8   Software identification and configuration counter (Alternative 7.1)