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EU Type Examination Certificate

No. DK 0199.617

5x23-SPSX

NON-AUTOMATIC WEIGHING INSTRUMENT

Issued by DELTA Danish Electronics, Light & Acoustics
EU - Notified Body No. 0199

In accordance with the requirements in the Directive 2014/31/EU of the European Parliament and Council.

Issued to Eilersen Electric A/S
Kokkedal Industripark 4
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Denmark

In respect of Non-automatic weighing instrument designated 5x23-SPSX with variants of modules.
Accuracy class III
Maximum capacity, Max 30 kg or 60 kg
Verification scale interval: $e = \text{Max} / n$
 $n \leq 3000$ (depending on the compatibility of 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 of the Directive is met by the application of the European Standard EN 45501:2015 and OIML R76:2006

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. Name and type of instrument and modules

The instrument is a non-automatic weighing instrument, designated Eilersen Electric 5x23-SPSX, consisting of a digital weighing terminal 5x23 (see Fig. 1) and a load receptor equipped with one digital load cell type SPSX, and with the load cell communicating through a digital load cell interface directly into the coax connection of 5x23.

The instrument is a class III, 24 VDC powered, self-indicating weighing module with single-interval.

The weighing instrument is composed of separate modules and units that are listed in Sections 3.1 to 3.4; the principle of composition of modules is set out in Section 6.1.

2. Description of the construction and function

2.1 Construction

2.1.1 Indicator

The indicator is specified in Section 3.1.

Enclosures and keyboard

The indicator is housed in an enclosure made of steel.

The front panels of the indicator comprise:

- A 8-digit 14-segment LED display and appropriate LED state indicators.
- 7 push-button function keys with name/symbol next to it.

Electronics

The indicator consists of one pcb-board with microcontroller, power supply, display, led indicators, push-button keys and interfaces for connection to the digital load cells, digital I/O and communication lines.

All instrument calibration and metrological setup data are contained in non-volatile memory. The indicator is power supplied by 24 VDC.

2.1.2 Load cell

Set out in Section 3.3.

2.1.3 Load receptor

Set out in Section 3.4.

2.1.4 Interfaces and peripheral equipment

Set out in Section 4.

2.2 Function

The functions provided are detailed below.

2.2.1 Power-up

On power-up, the 5x23 firstly turns on all display segments and LED diodes. Secondly it shows the name of the manufacturer for 5 seconds, while it performs a self-test and initial zero-setting. It then displays the software version after which it enters normal weighing mode.

2.2.2 Zero-setting

The instrument is equipped with an initial zero-setting device with the effect of $\pm 10\%$ of Max from the calibration zero.

The instrument is also equipped with a semi-automatic zero-setting device operated by the key marked 'Zero'. The semi-automatic zero device has a maximum effect of $\pm 2\%$ of Max from the initial set zero.

Zero-setting is only possible when the load receptor is not in motion (the 'Stable' indicator is on).

The '>0<' indicator is on, when the weight result is within $\pm 0.25e$ of the zero-point.

2.2.3 Zero-tracking

The instrument is optionally equipped with a zero-tracking device, which operates up to $\pm 2\%$ of Max from the initial set zero when the load receptor is not in motion and the indicated weight is zero. The corrections are not more than $0.5e$ per second.

2.2.4 Tare

The instrument is equipped with a semi-automatic tare balancing device operated by the 'Tare' key.

2.2.4.1 Semi-automatic tare

The current weighed value is entered as a tare by pressing the 'Tare' key. Repeated pressing causes the actual tare to be cleared and the new tare to be entered in its place.

The '◀▶' key toggles the display between showing the net weight and gross weight. When showing net weight the 'Net' indicator turns on.

The tare device is a subtractive tare device with maximum effect $T = -Max$.

2.2.5 No-motion indication

The 5x23 indicates no-motion by a no-motion indicator 'Stable', which extinguishes when the load receptor is in motion.

2.2.6 Event counter

The 5x23 is equipped with a not resettable event counter, which increments each time a setup or calibration parameter is changed. The value of the event counter can be displayed in the menu: Service → Sys.info.

2.2.7 Extended resolution

When enabled pressing the '↓' key will show the current weight with extended resolution for 3 seconds. During this the 'Dd/10' led will be on.

2.2.8 Operator information messages

The weight indicator has a number of general and diagnostic messages, which are described in the user's guide.

2.2.9 Software version

The approved software version is STD.140326.2vXX, where XX is minor version numbers for changes and corrections not influencing the legal function of the software.

3. Technical data

3.1 Scale

Type:	5x23-SPSX
Accuracy Class:	III
Weighing ranges:	Single-interval
Maximum capacity (Max):	30 kg or 60 kg
Minimum capacity (MIN):	20×e
Verification scale interval (e=):	0.010 kg or 0.020 kg
Maximum number of verification scale intervals:	3000
Maximum tare effect:	-Max
Operating temperature range:	-10 °C / +40 °C
Power supply:	24 Vdc ± 10 %, 2 A, not to be supplied from DC Mains
Peripheral interfaces:	Set out in Section 4

3.2 Digital indicator

Manufacturer:	Eilersen Electric A/S
Type:	5x23
Accuracy Class:	III
Weighing ranges:	Single-interval or multi-interval
Maximum number of verification scale intervals:	≤ 10000
Internal resolution:	24 bit
Maximum tare effect:	-Max
Operating temperature range:	-10 °C / +40 °C
Power supply:	24 Vdc ± 10 %, 2 A, not to be supplied from DC Mains
Peripheral interfaces:	Set out in Section 4

3.3 Digital load cell

Digital load cell SPSX made by Eilersen Electric is to be used for instruments under this certificate provided it's E_{max} value is within the range 40 kg to 100 kg.

3.4 Load receptor

3.4.1 Platform

Construction in brief:	Steel construction on which there may be a roller conveyor
Reduction ratio:	1
Junction box:	None
Load cells:	Load cell according to Section 3.3
Drawings:	Various

3.5 Documents

The documents filed at DELTA (reference No. T202907) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interfaces

All cables used for connection to the interfaces shall be shielded.

4.1.1 Digital load cell bus

The digital indicator has a RS485 interface used for communication with the digital load cell(s). The indicator can also be equipped with up to 4 coax connectors for communication directly with digital load cells using Eilersen Electric's interface 2000.

4.1.2 I/O and communication interfaces

- Ethernet
- RS485
- Digital I/O

4.2 Peripheral equipment

The instrument may be connected to any simple recipient printer with a CE mark of conformity (see WELMEC 2). A printer like this may be used for legal transactions.

5. Approval conditions

5.1 Measurement functions other than non-automatic functions

Measurement functions that will enable the use of the instrument as an automatic weighing instrument are not covered by this type approval.

5.2 Other weight displaying units

If the 5x23 indicator is connected to another display unit used for display of the measured weight, this unit shall either be certified by a notified body for module B under EU Directive 2014/31/EU, or the unit shall be marked with the restrictive use symbol according to EU Directive 2014/31/EU article 18 indicating that the display unit must not be used for legal transactions.

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 according to ANNEX II, module F or D of Directive 2014/31/EU.

7.1.1 Event counter

The digital indicator has a non-resettable event counter, which is incremented each time the setup or calibration data are changed. The event counter is also incremented, if new software is downloaded into the indicator.

7.1.2 Digital indicator

The digital indicator shall be sealed against disassembling by means of brittle plastic stickers inscribed with verification mark of a notified body. Any attempt to remove the cover plate shall result in damage to the seal.

7.1.3 Digital indicator –digital load cell connection

The connectors of the cables between the digital indicator and the digital load cell shall all be sealed with brittle plastic stickers or with wire and seal.

7.1.4 Peripheral interfaces

All peripheral interfaces are “protective”; they neither allow manipulation of weighing data or Legal Setup, nor change of the performance of the weighing instrument in any way that would alter the legality of the weighing.

7.2 Verification marks

7.2.1 Display module

A green M-sticker and a sticker with verification marks shall be placed visible on the digital indicator.

7.2.2 Printers used for legal transactions

Printers according to Section 4.2 shall not bear a green M-sticker, as a non-automatic weighing instrument shall only bear one green M.

8. Location of CE mark of conformity and inscriptions

8.1 CE mark

CE mark and supplementary metrological marking shall be applied to the indicator according to article 16 of Directive 2014/31/EU.

8.2 Inscriptions

Near the display shall the following information be found:

- Max, Min, e = , d =

The following information shall be found at the inscription plate:

- Manufacturer's name or trademark
- Manufacturers postal address
- Type designation
- Accuracy class
- Max, Min, e = , d =
- Tare (if $T \neq -\text{Max}$)
- EU type examination certificate number
- Model no., serial no., electrical data and other inscriptions

9. Pictures

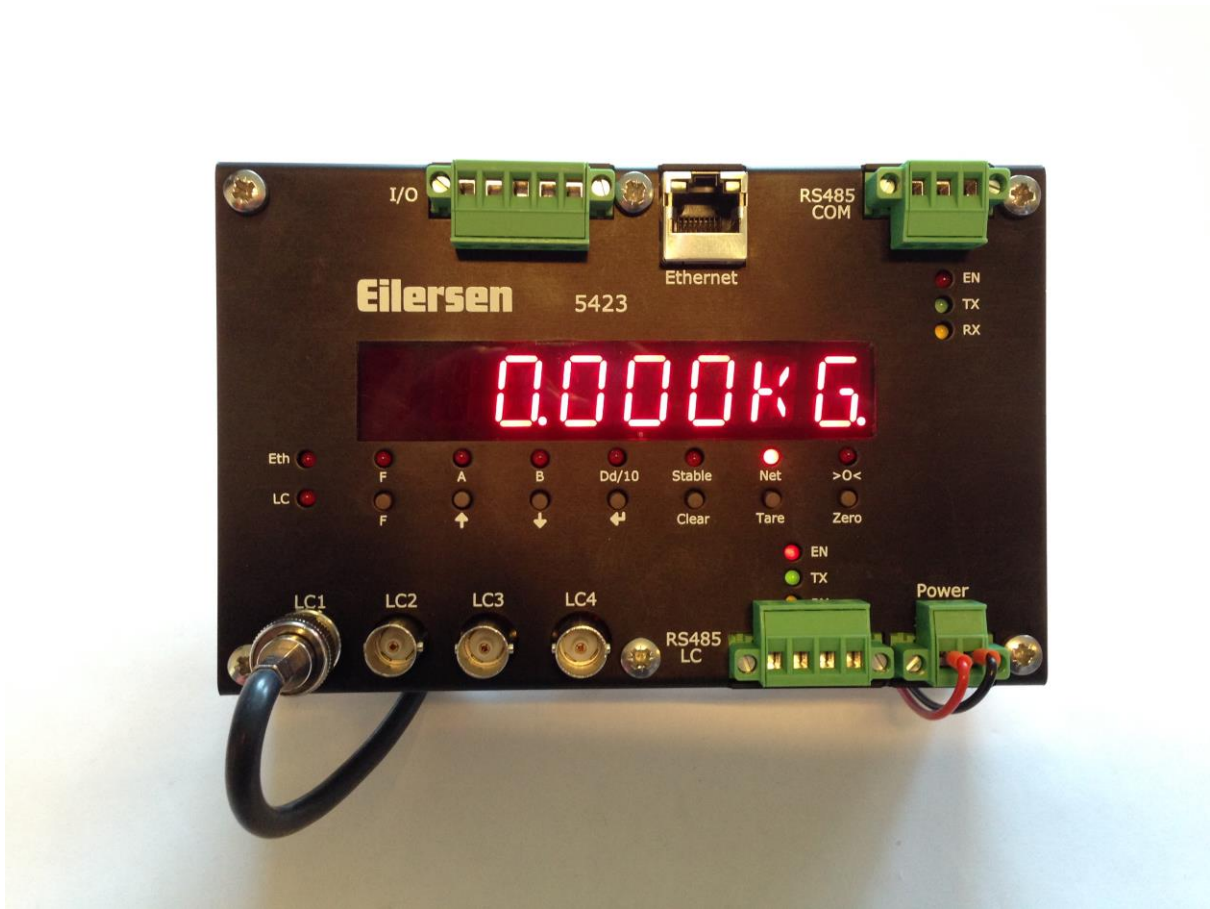


Figure 1. 5x23 digital indicator.



Fig.2 Digital load cell type SPSX.



Fig.3 Example of scale using 5x23-SPSX.