# Enclosure to the EU type examination certificate No. A 0445/1423/2009, 4th revision

## 1. Design of the instrument

1.1. Construction
Continuous totalizing automatic weighing instrument (belt weigher) of type E-EBW.

The E-EBW is designed as a belt weigher. It consists primarily of the load receptor with strain gauge load cell(s), pulse transmitter for determining the belt speed and the indicator of type DWC-6.

1.2. Sensor
following strain gauge load cells are used:

| Manufacturer | Type | Accuracy class | Number of scale intervals „n“ |
|---|---|---|---|
| HBM | Z6 FD 1 | D | ≤ 1000 |
| HBM | Z6 FC 3 | C | ≤ 3000 |
| HBM | Z6 FC 4 | C | ≤ 4000 |
| HBM | Z6 FC 6 | C | ≤ 6000 |

1.3. Measurand value processing

- Hardware:

The force is transmitted via the weighing cells(s). The measurement signal is then transferred to the indicator and prepared for the software with the help of an A/D converter. The belt speed is determined via the displacement transducer connected to the tachometer input.

- Software:

The digitalised measurement signals of the weighing cell are prepared and displayed as a weight value / instantaneous net load (in % of the maximum load).
The speed "v" is calculated from the signals received from the tachometer input taking the tacho frequency specified and the weigh length "l" into consideration. The current value for the speed can be displayed as an absolute value or as a percentage value.

1.4. Indication of the measurement results
The indicator DWC-6 is used to determine and display the measured value. It consists of an LCD graphic display, a membrane keyboard with 8 keys and is designed either for installation in switching cabinets or for wall mounting.

The "graphic picture" is used by default to display the measurement process (Figure 1). The current values for the flowrate (shown in t/h or kg/h), the belt speed, the current weight value (shown in t or kg) and some additional information are displayed. By operating the "UP" or "DOWN" keys, you can switch between the counter values A (general totalization indicating device, cannot be reset), B and C (partial totalization indicating device, can be reset).

Additional information can be displayed with the help of the "text picture" or in the main menu by pressing the "Mode" key. The arrow keys "UP", "DOWN", "LEFT" and "RIGHT" are used in the process for navigation, and the "OK" key is used to choose a particular menu option or to confirm an input that has been made.
To reset the partial totalization indicating device B, the "UP" key shall be continuously pressed for at least 5 seconds and to reset the partial totalization indicating device C, the "DOWN" key shall be continuously pressed for at least 5 seconds.
(For detailed information, please refer to the operating manual and clause 2.4.1 respectively)

- Technical specifications for indicator DWC-6:

Power supply: 85 - 265 V, AC (47 – 440 Hz) or 18 – 36 V, DC
Load cell supply voltage: 3.3 V, DC
Maximum signal voltage for dead load: 5 mV
Minimum signal voltage for dead load: 0.5 mV
Smallest permissible input signal per verification scale interval: 0.33 μV/e
Range of load cell signal (measuring voltage): 0.5 … 6.7 mV
Range of load cell impedance: 350 … 480 Ohms
Maximum load cell cable length: 100 m
Load cell cable cross-section: 6 x 0.14 mm²
Load cell connection: 6-wire system
Ratio of cable length to cross-section = 120 m/mm²

## 1.5. Optional equipment and functions subject to MID requirements

The instruments may be aquipped with a printer and/or data storage device for legal purpose.

- Legally relevant functions – Software:

The primary task of the software is to determine the measured value and to display it subsequently on the display unit (see clause 1.3).

The software version is displayed when the instrument is switched on in the lower part of the screen.
The valid software version is: E1.xx.

xx…Placeholder for numbers between 00 and 99; a new version is generated when software components which do not affect the metrologically relevant functionality are modified. They may adopt any number on putting into service.

Moreover, a data storage device in conformity with the directive has been implemented. An entry is generated automatically when the partial totalization indicating device C is reset. The current counter value is stored with the date and time and a running number as identification in the storage device.
About 1500 records can be saved in this manner and then recalled subsequently (see clause 5.4).

- Legally relevant functions – Protection of the software:

In order to prevent modification to the parameters or subsequent implementing of new software, the following hardware security systems have been foreseen:

- New software can be installed only after removing the front of the housing. The front of the housing is fixed with screws and sealed. In this way, it is not possible to open the unit after verification (see clause 6.1).
- In order to readjust the device or to modify parameters specific to the measurement, the "PA switch" shall be operated. This is located on the back side of the indication meant for installation in switching cabinets or in the case of wall-mounted devices, it is located directly near the weighing cell connections and is protected by a cover that is also sealed.

## 1.6. Technical documentation

- Operating manual for the indication device DWC-6
- Instructions for configuring the parameters of the DWC-6 indicator
- Connection assignment for the DWC-6 indicator
- Installation manual for the load cell of type Z6
- Description of the software used
- EMC Test Report no. 55423-070417
- Construction drawings of the indicator and load receptor
- Instructions on securing the DWC-6 indicator

## 1.7. Integrated equipment and functions not subject to MID

- Pulse counter
- Field bus interfaces
- Inductive proximity sensor
- PC
- Printer

## 2. Technical data

### 2.1. Rated operating conditions

1.2.1 Measurand
Mass

2.2.1 Measurement range
maximum flowrate $Q_{max} \leq 2000$ t/h

The minimum flowrate $Q_{min}$: shall be specified by the manufacturer, but the instantaneous net load on the weighing module shall be at least 20 % of the maximum capacity.

Minimum totalized load $\Sigma_{min}$: is specified by the manufacturer; the minimum totalized load, however, shall be equal or greater than the three subsequent values:

- 1 Belt revolution at $Q_{max}$
- 2 % of Qmax
- 800 d (for accuracy class 0.5), or
  400 d (for accuracy class 1) and
  200 d (for accuracy class 2)

Scale interval : $d \geq 1$ kg (depending on the maximum flowrate Qmax)

3.2.1 Accuracy class
0.5 / 1 / 2

4.2.1 Environment – influence quantities

- climatic

  Temperature range: -10 °C bis +40 °C

  Humidity: up to 85 % (non condensing)

- mechanic

  not applicable

- electromagnetic

  class E2

### 2.2. Other operating conditions

zero setting device (semi-automatic): Zero setting range $\leq 4$ % of $Q_{max}$

Power supply: according to 1.4 “technical specifications for indicator DWC-6“

## 3. Interfaces and compatibility conditions

Serial interface (RS-232) for connecting a PC or printer
Field bus interface for further processing of data

## 4. Requirements on production, putting into use and utilisation

4.1. Requirements on production
The weighing instruments shall be designed in such a manner that they are suitable for their intended purpose, the products to be weighed and the accuracy class specified.

The weighing instruments shall only be put into operation if:

- The conveyor belt is continuously in contact with the weighing pulleys,
- The inclination of the conveyor belt does not cause the weighing product to slide,
- Equipment to clean the conveyor belt does not affect the result of the weighing operation.

The weighing product shall possibly be transported in the middle of the conveyor belt.

Conformity with this type examination certificate in particular means:

- The metrological characteristics should not get affected by any random mis-adjustment or misalignment.
- Any mal-operation of the controller of the belt weigher during a weighing operation should not cause any incorrect weighing results.
- It shall not be possible to reset the general totalization indicating device.
- In case of failure in the power supply, the conveyor belt shall be stopped and the total weighed value added up to then shall be maintained.
- If the weighing instrument is operated outside the scope of application (instantaneous net load greater than "Max" or the permissible flowrate is overshot or undershot), an error message shall appear on the display.

4.2. Requirements on putting into use

- An operating manual in the official language shall be available for the instrument.
- Moreover, information on the weighing instrument according to Annex I, 9.3 of the Directive 2004/22/EC shall be enclosed.
- A label with the following inscription or with the similar meaning in the official language shall be affixed near the display: "The zero value shall be set before starting a new measurement or 1 time daily. Value set to zero at least after 1 complete belt circulation."
- Load cells shall be marked with their specifications (type, serial no., nominal load).
- Measurement cables shall be interrupted only within sealed junction boxes.
- An assignment label shall be affixed on the load receptor with specification of the type examination certificate no. and the serial number of the indicator as a minimum.
- The sealing positions (see clause 6.1) shall be easily and safely accessible, as well as without the need of any tools.

4.3. Requirements on utilisation
The zero value shall be set before starting a new measurement or 1 time daily.

**5. Control of measuring tasks of the instrument in use**

5.1. Documentation of the procedure

- The operating manual
- EU type examination certificate no. A 0445/1423/2009, or
- EU type examination certificate no. A 0445/1423/2009, 1st revision or
- EU type examination certificate no. A 0445/1423/2009, 2nd revision or
- EU type examination certificate no. A 0445/1423/2009, 3rd revision or
- EU type examination certificate no. A 0445/1423/2009, 4th revision

5.2. Special equipment or software

- Suitable non-automatic instrument for checking the mass of the product of each weighing operation
- Standard weights for checking the non-automatic weighing instrument
- Adequate product for carrying out the number of weighing operations foreseen at the minimum totalized load

5.3. Identification

- Hardware: see figure 1

- Software: see clause 1.5

5.4. Metrological inspection
The initial verification and in-service inspection shall be performed with consideration of the normative document OIML R50 or according to the specifications of the testing body and the national regulations respectively.

1.5.4 Testing the Software:

- Checking the data storage device in conformity with the directive

Five measurements need to be done to test the data storage device. The measured values shall be noted accordingly. The stored values in the data storage device shall then be checked whether they correspond with the noted measurement data.

The data storage device can be read out in the main menu by selecting the "Testing" option and "ALIBI-MEMORY". The data is then loaded from the storage device and displayed without being changed. The last entry in the storage device is the first one displayed. You can select the individual entries by pressing the "UP" or "DOWN" key.

Blank lines appear for unoccupied memory locations. "FALSE" appears for the CChecksum.

"FALSE" also appears in the CChecksum if the records are defective.

- Checking the software protection

The software should neither be updated subsequently nor should the parameters of the weighing instrument be modified.

For this purpose, the verification switch (PA) is brought to the lower position. Finally, you can no longer access the adjustment of the weighing instrument.

## 6. Security measures

6.1. Sealing
The marking label shall be secured with the help of a seal against replacement.

The indicator shall be secured as follows when it is installed in switching cabinets:

- on the front side with the help of a seal to prevent it from being opened (see Figure 1)
- The cover of the verification switch on the back side of the device with the help of a seal to prevent it from being removed (see Figure 2)

The indicator shall be secured as follows when it is installed as a wall-mounted device:

- on the front side with the help of a seal to prevent it from being opened (see Figure 3)
- the cover over the load cell connection and verification switch with the help of the seal to prevent it from being removed (see Figure 3)

Any junction boxes in the measurement line shall be secured with the help of a seal to prevent them from being opened

The additional label on the load receptor shall be secured with the help of a seal against being replaced

## 7. Labelling and inscriptions

7.1. Information to be borne by and to accompany the instrument
The following inscriptions shall be fixed permanently to the measuring instrument:

- Name or Logo oft he manufacturer: Kukla Waagenfabrik GmbH & Co KG
- Type designation: E-EBW
- Serial number of the instrument: ....
- EU type examination certificate No.:
  „A 0445/1423/2009“or
  „A 0445/1423/2009, 1st revision“ or
  „A 0445/1423/2009, 2nd revision“ or
  „A 0445/1423/2009, 3rd revision“ or
  „A 0445/1423/2009, 4th revision“
- Type of instrument: continuous totalizing automatic weighing instrument
- Accuracy class: ....
- Scale interval: d = ... [kg] or [t]
- Depending on the type:
  - Nominal value of belt speed: v = ... [m/s]
  - Range of belt speed: v = ... / ... [m/s]
  - Mains voltage: ... V
  - Mains frequency: ... Hz
- Maximum flowrate: Qmax = ...
- Minimum flowrate: Qmin = ...
- Minimum totalized load: Σmin = ...
- Maximum capacity: Max = ... [kg] or [t]
- Weigh lenght: l = ...
- Temperature range: -10 °C up to +40 °C
- Weighing product: ...
- Inspection value: ... %

7.2. Markings and inscriptions in accordance to Annex I, 9
The conformity marking shall be affixed to the marking label.

## 8. List of illustrations annexed to the certificate

| Abbildung | Titel |
|---|---|
| Figure 1 | (display of the weighing operation) – graphic picture and front view from indicator DWC-6 installed in switching cabinets |
| Figure 2 | sealing of the verification switch on the back side |
| Figure 3 | Front-view of the indicator DWC-6, installed as a wall-mounted device and sealing of the cover over the load cell connection and verification switch |
| Figure 4 | seal of the manufacturer (Kukla Waagenfabrik GmbH & Co KG) |

## 9. Changes in 4th revision

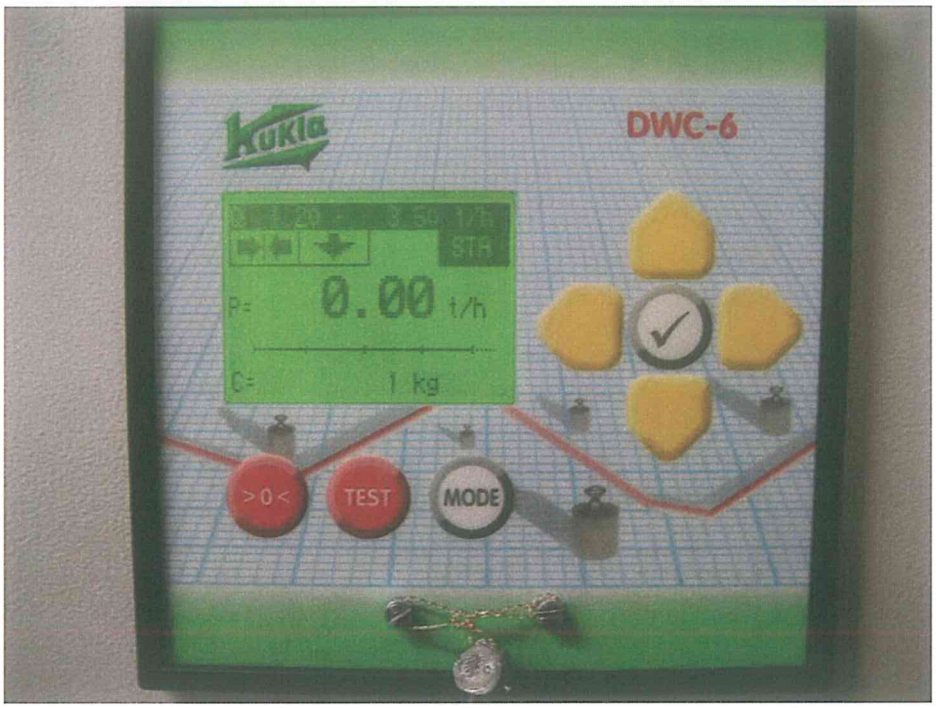
- Appending load cells of type „Z6 FC3“, „Z6 FC4“ und „Z6 FC6“ from manufacturer HBM
- Revising the certificate for instruments of accuracy class 0.5

## 10. Remark to this version oft he EU type examination certificate:

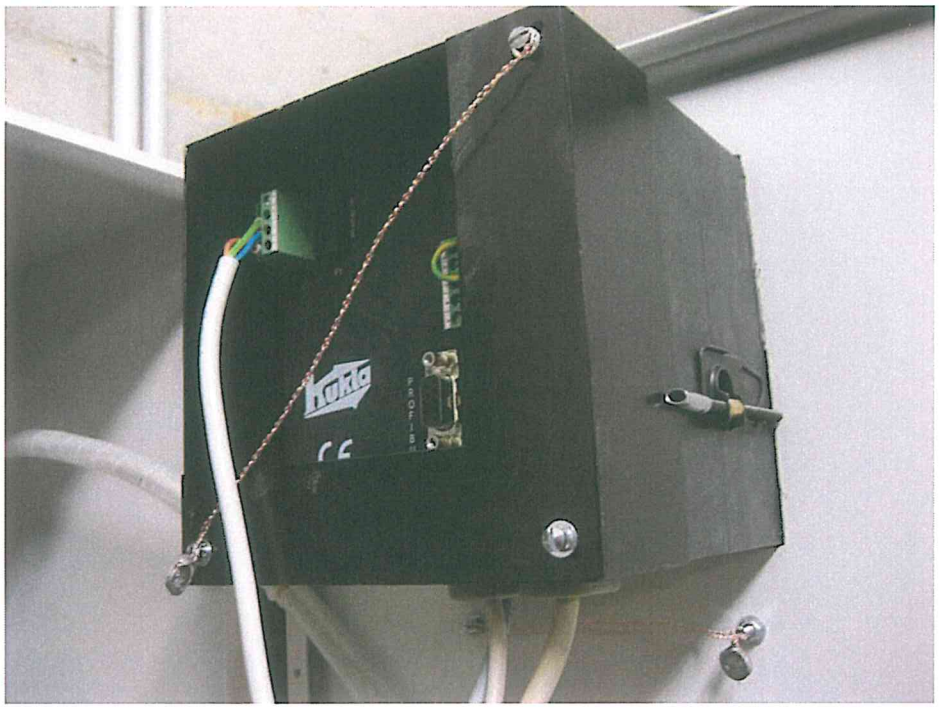
In case of doubt the requirements of the original German version are applicable.

## 11. Annex

11.1. Figure 1: (display of the weighing operation) – graphic picture and front view from indicator DWC-6 installed in switching cabinets




11.2. Figure 2: sealing of the verification switch on the back side



11.3. Figure 3: Front-view of the indicator DWC-6, installed as a wall-mounted device and sealing of the cover over the load cell connection and verification switch

11.4. Figure 4: seal of the manufacturer (Kukla Waagenfabrik GmbH & Co KG)