DANAK
PROD Reg. nr 7026

FORCE Certification

EU Type Examination Certificate

No. 0200-NAWI-08685

WPB

NON-AUTOMATIC WEIGHING INSTRUMENT

Issued by **FORCE Certification**
EU - Notified Body No. 0200

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

Issued to **Cardinal Scale Manufacturing Company**
102 East Daugherty Street,
Webb City, Missouri 64870
USA

In respect of Non-automatic weighing instrument designated with variants of modules of load receptors, load cells and peripheral equipment.
Accuracy class III, single-interval or dual range
Maximum capacity, Max: From 3 kg up to 30 kg
Verification scale interval: $e_i = Max_i / n_i$
Maximum number of verification scale intervals: $n_i = 3000$.
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 8 pages.

Issued on **2020-07-03**
Valid until **2030-07-03**

Jens Hovgård Jensen
2020-07-03

Digitally signed by Jens Hovgård Jensen
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FORCE Certification references:
Task no.: 120-28285.90.10 and ID no.: 0200-NAWI-08685

Signatory: Jens Hovgård Jensen

Descriptive annex

Contents

1. Name and type of instrument

The non-automatic weighing instruments designated WPB is a self-indicating price computing scale. The scale is Class III with single-interval or dual range, supplied from 230 VAC and with an internal rechargeable battery.
The name of the scale may be followed by alphanumeric characters for technical, legal or commercial characterization of the unit.

The scales consist of analogue to digital conversion, microprocessor control circuitry, keyboard, non-volatile memory for storage of calibration and weight data. The scale has a front vendor display and rear customer display contained within a single enclosure.

2. Description of the construction and function

2.1 Construction

Enclosure

The scales are housed in a plastic enclosure with a top cover of stainless steel.
The enclosures are designed primarily for all shops but could also be used in industrial environment.
A level indicator (gas bubble) is built into the enclosure near the front display.

Keyboard

The keyboard is containing 4 keys. The membrane keys are used to enter commands or to set up the instrument. Each key is identified with a name and/or pictograph.

Displays

Two 7-segment LED display sets (vendor and customer) each having 6 digits for weight and status indicators for: Zero, Net weight, Stable, and Range.

Electronics

The instruments have a main board with A/D conversion, non-volatile memory, keys and vendor display. There is a board for the customer display and some small boards for interconnection.

Models

Models	Weighing range	Max capacity	Min capacity	e	n	Load cell		
						No.	E_{max}	v_{min}
WPB	Single interval	3 kg	20 g	1 g	3000	1	5 kg	≤ 1 g
		6 kg	40 g	2 g	3000		10 kg	≤ 2 g
		15 kg	100 g	5 g	3000		20 kg	≤ 5 g
		30 kg	200 g	10 g	3000		35 or 40 kg	≤ 10 g
	Dual-range	1.5/3 kg	10/20 g	0.5/ 1 g	3000/3000		5 kg	≤ 0.5 g
		3/6 kg	20/40 g	1/2 g	3000/3000		10 kg	≤ 1 g
		6/15 kg	40/100 g	2/5 g	3000/3000		20 kg	≤ 2 g
		15/30 kg	100/200 g	5/10 g	3000/3000		35 or 40 kg	≤ 3.5 g

2.2 Function

The weight indicating instruments are microcontroller based electronic scales. The weight information appears in the digital display. The instruments are available for operation from 230 VAC 50-60 Hz and from an internal 6 V rechargeable battery.

The primary functions provided are detailed below.

2.2.1 Power-up

On power-up, the scale will perform a self-test, a display test and show the configuration, the battery voltage and software version.
After that it will automatically establish the current weight as a new zero reference.

2.2.2 Test function

On power-up, the weight indicator will test all memory functions followed by a display test.

2.2.3 Display range

The weight indicators will display weight from –Max (tare function) to Max + 9e (gross weight) within the limits of the display capacity.

2.2.4 Zero-setting

Zero-setting range: ±2 % of Max.
Initial zero-setting range: ≤ ±10 % of Max.
Zero-setting is only possible when the load receptor is not in motion.

2.2.4.1 Semi-automatic zero-setting

Pressing the ZERO key causes a new zero reference to be established and ZERO annunciator to turn on, indicating that the display is at the centre of zero.

2.2.4.2 Zero-tracking

The scales are equipped with a zero-tracking feature, which operates over a range of ±2 % of Max with a speed of ±0.25 e_1/s and only when the indicator is at gross zero and there is no motion in the weight display.

2.2.5 Tare

The instrument models are provided with a semi-automatic subtractive tare feature activated using the "TARE" key.

When the tare function is active the Net indicator is on.

2.2.6 Operator information messages

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

2.2.7 Software version

The software revision level is displayed during the power-up sequence of the instrument.
The approved software version is: C.0.

2.2.8 Battery operation

The scale models can be operated from the internal 6 V rechargeable battery. The scale contains the circuitry necessary to recharge the battery when the scale is connected to the mains power.

3. Technical data

3.1 Scales

The scales have the following characteristics:

Accuracy class:	III
Weighing range:	single-interval or dual range
Maximum number of Verification Scale Intervals:	3000 per interval
Maximum capacity (Max):	From 3 kg to 30 kg
Verification Scale Interval:	e ≥ 0.5 g
Maximum tare effect:	≤ -Max
Excitation voltage:	5 VDC
Minimum load cell input impedance:	350 ohm
Maximum input impedance:	1050 ohm
Mains power supply:	230 VAC, 50-60 Hz, 6 V internal rechargeable battery
Operational temperature:	-10 °C to +40 °C
Peripheral interface:	Set out in Section 4

3.2 Load cells

3.2.1 Accepted load cells

The following load cell type is to be used according to the table of models in Section 2.1.
Zemic Co. Ltd.: Model LD-6, Class C3.

3.2.1.1 General acceptance of modules

Any load cell(s) may be used for instruments under this certificate of type approval provided the following conditions are met and their specifications are the same or better than those of the above Zemic load cell:

1) A test certificate (EN 45501) or OIML Certificate of Conformity (R60) respectively issued for the load cell by a Notified Body responsible for type examination under the 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.

3.3 Documents

The documents filed at FORCE (reference No. 120-28285.90.10) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interface

The instrument has no interface or possibility for connection to a peripheral equipment

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.

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, section 2.3 of the Directive 2014/31/EU.

7.1.1 Scale

Access to the configuration and calibration facility requires that a calibration switch connected to the main board is activated.

Access to this switch is covered by a plastic plate. This plate is secured with wires and a lead or plastic seal. Furthermore, a brittle sticker is placed so that the above mentioned plastic cover cannot be removed (See Figure 2).
The metal cover is also secured by is a brittle sticker. (See Figure 3).

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 scale according to article 16 of Directive 2014/31/EU.

8.1.2 Inscriptions

Manufacturer's trademark and/or name and the type designation is located on the front panel overlay.

Indelibly printed on a brittle plastic sticker located on the front panel overlay and next to the customer display: Max, min, e =

On a label located on the side of the scale enclosure:

- Manufacturer's name and/or trademark
- Postal address of manufacturer
- Type examination number
- Accuracy class
- Type designation
- Max, min, e =
- Tare
- Model no., serial no., electrical data and other inscriptions
- Other inscriptions are allowed

9. Pictures

Figure 1 WPB scale

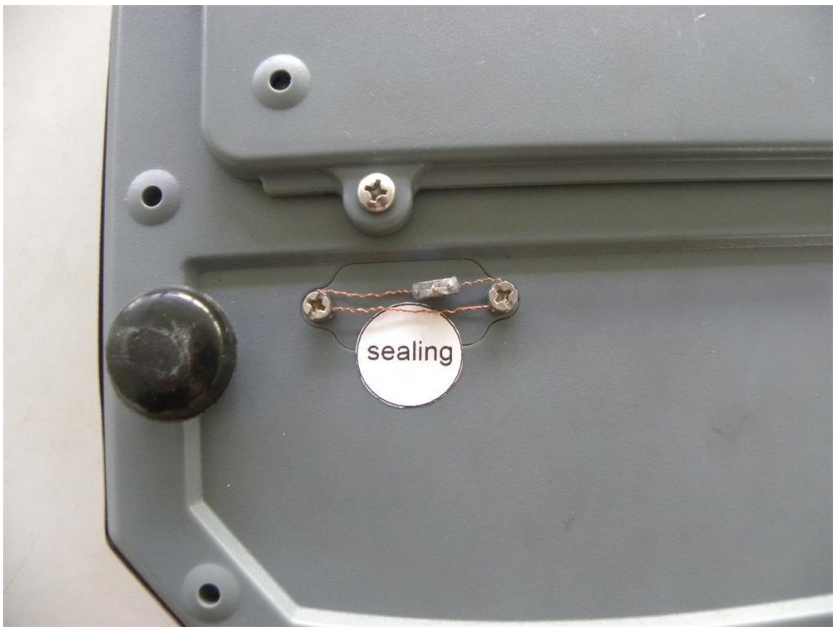

Figure 2 Sealing of scale enclosure with wire and plastic seal in the rod and brittle sticker.

Figure 3 Sealing of scale enclosure with brittle sticker.