

EU Type Examination Certificate

No. 0200-NAWI-07916 Revision 1

IP20a / IP20b / PEa / PEb / AW20

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 **Tscale Electronics Mfg. (Kunshan) Co., Ltd.**
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Zhoushi, Kunshan, Jiangsu
CHINA

In respect of Non-automatic weighing instrument IP20a / IP20b / PEa / PEb / AW20 with variants of modules of load receptors and load cells.
Accuracy class III, single-interval, multi interval or multi-range
Maximum capacity, Max: From 6 kg to 30 kg
Verification scale interval: $e = \text{Max} / n$
Maximum number of verification scale intervals: $n \leq 3000$ or 2×3000 .
Variants of models 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

Note. This certificate is a revised edition which replaces previous revisions.

The principal characteristics and approval conditions are set out in the descriptive annex to this certificate.

The annex comprises 16 pages.

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Descriptive annex

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1. Name and type of instrument

The non-automatic weighing instruments designated IP20a / IP20b / PEa / PEb / AW20 are a family of self-indicating desktop scales of class III with single interval / multi interval (dual) / multi-range (dual).

The scales are intended for label printing (IP20a / IP20b / PEa / PEb) or normal weighing (AW20).

The scales consist of analogue to digital conversion, microprocessor control, power supply, keyboard, a graphic LCD display on front and a graphic display mounted on the rear side or on a pole except AW20, a non-volatile memory for storage of calibration and weight data contained within a single enclosure.

2. Description of the construction and function

2.1 Construction

Enclosures and keyboard

The scales are housed in an enclosure made of ABS plastic

The front panels of the scale comprise:

- A 4.3" graphic display with indication of weight and price and with status indicators
- A keyboard containing 68 keys for setup of the scale and for direct and indirect PLU's, a numerical keyboard and keys for zero-setting and taring. Each key is identified with a name and/or pictograph. (IP20a / IP20b / PEa / PEb) or
- A keyboard containing 37 keys for setup of the scale and for direct and indirect PLU's, a numerical keyboard and keys for zero-setting and taring. Each key is identified with a name and/or pictograph. (AW20)

The scales have a customer display, either in the rear (size 4.3" (IP20a) or 7" (PEa)) or on a pole (size 7" (IP20b and PEb)).

Electronics

The instruments use a single printed circuit board, which contains all the instrument circuitry. In addition to this there are a number of small PCB's for different interfaces and one with the calibration switch, so the small switch is accessible from outside.

All instrument calibration and metrological setup data are contained in non-volatile memory.

The IP20a / IP20b / PEa / PEb scales are power supplied from AC mains 100-240 VAC 50/60 Hz.

The AW20 is power supplied from 12 VDC external power supply intended for AC mains 100-240 VAC 50/60 Hz.

2.2 Function

The weight indicating instruments are microcontroller based self-indicating electronic price computing / label printing / weighing and counting scales.

The primary functions provided are detailed below.

2.2.1 Power-up

On power-up, the scale will first perform a check of its integrity. After that the scale will automatically establish the current weight as a new zero reference.

2.2.2 Display range

The scale will display weight from -Max (tare function) to Max (gross weight).

2.2.3 Zero-setting

Zero-setting range: $\pm 2\%$ of Max.

Automatic zero-tracking range: $\pm 2\%$ of Max.

Initial zero-setting range: $\leq \pm 10\%$ of Max.

Zero-setting is only possible when the load receptor is not in motion.

2.2.3.1 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.

2.2.3.2 Zero-tracking

The scale is equipped with a zero-tracking feature, which operates over a range of $\pm 2\%$ of Max and only when the scale is at gross zero and there is no motion in the weight display. The zero-tracking shall be set to 0.5 d per second.

2.2.4 Tare

The scale is provided with a semi-automatic subtractive tare.

2.2.4.1 Semi-automatic tare

Pressing the “TARE” key will enter the currently weight value as the new tare weight value.

When the tare function is active both the Tare, Net and Gross value is shown in the graphic display.

This tare value can be cleared by pressing the TARE key, when there is no load on the load receptor.

This tare entry cannot take place, if the load receptor is in motion.

2.2.5 Preset Tare

The instrument has the possibility for a preset Tare. The preset Tare value is associated to the PLU value.

2.2.6 Gravity compensation

The scale has a gravity compensation function making it possible to perform the verification at a place with another gravity constant than the place of use.

The function is sealed.

2.2.7 Operator information messages

The weight display can show a number of general and diagnostic messages, which are described in detail in the User's Manual.

2.2.8 PLU

The instrument can store up to 8000 unit price values. These are accessed using the direct keys (1-80) or the PLU key and the numeric keyboard.

Access to editing them can be obtained using the menu key and selecting products.

2.2.9 Printing

The IP20a / IP20b / PEa / PEb scales have a build-in printer. The scale will transmit the current weight and price to the printer when the "PRINT" key is pressed.

The AW20 can be connected to a printer via an interface

The printing will not take place if the load receptor is not stable, if the gross weight is less than zero, or if the weight exceeds Max.

2.2.10 Counting

The AW20 scale is intended for counting

2.2.11 Checkweighing

The AW20 scale is intended for checkweighing.

2.2.12 Software version

The software is separated in weighing software, application software, printing software and keyboard software.

The software version of the different softwares are shown under system settings in the menu.

The approved software versions are,

weighing software *): V1.10 or V2.10

application software *): A1.xx.yy(z)

screen keyboard: K1.xx

printing software: P4.01.xx (IP20a / IP20b / PEa / PEb only)

*) part of legal relevant software.

Where xx and yy can be 00 to 99, while z can be not present or a to z.

3. Technical data

3.1 Scales

The scales have the following characteristics:

Accuracy class:	III
Weighing range:	Single-interval, multi-interval (2 intervals) or multi-range (2 ranges)
Maximum number of Verification Scale Intervals:	≤ 3000 or 2×3000
Maximum capacity (Max):	6 kg to 30 kg
Minimum capacity (Min):	20 e
Verification Scale Interval (e):	≥ 1 g
Maximum tare effect:	$\leq -\text{Max}$
Mains power supply:	100-240 VAC 50/60 Hz Alternately 12 VDC supplied from external power supply intended for AC mains 100-240 VAC 50/60 Hz.
Operational temperature:	-10°C to 40°C
Peripheral interface:	Set out in Section 4

3.2 Load cell for scale

Tscale load cell type BX6 C3 or Zemic load cell type L6D C3 with $v_{\min} \leq e$ and $0.6 \times E_{\max} \leq \text{Max} \leq 0.9 \times E_{\max}$.

Other load cell types may be used if they have a test and/or part certificate (EN 45501) or an OIML R60 certificate of Conformity issued for the load cell by a Notified Body responsible for type examination under the Directive 2014/31/EU, and their specifications are the same as or better than those of the above mentioned load cells.

Load cells shall be marked with their certificate number.

3.3 Documents

The documents filed at FORCE (reference No. 119-33670 and 120-22474) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interfaces

4.1.1 The RS-232 interface

The scale is equipped with a RS-232 interfaces for connection to a computer or printer.

4.1.2 USB interface

The scale is equipped with a USB interfaces for connection to peripheral equipment.

The length of the USB cables is specified to be less than 3 meters.

4.1.3 Ethernet interface

The scale is equipped with a RJ45 connector for connection of the scale to a Local Area Network.

4.1.4 Cash drawer interface

The scale is equipped with a RJ11 connector with digital output signals for connection to a cash drawer. (IP20a / IP20b / PEa / PEb only)

4.1.5 Wi-Fi interface (optional)

The scale can be equipped with a Wi-Fi interface.

4.1.6 RS485 (AW20 only, optional)

The scale is equipped with a RS-485 interfaces for connection to a computer or printer.

4.1.7 Bluetooth (AW20 only, optional)

The scale is equipped with a Bluetooth interface.

4.1.8 Analog output (AW20 only, optional)

The scale is equipped with analog outputs

4.2 Peripheral equipment

The instruments may be connected to any simple peripheral with a CE mark of conformity using a screened cable.

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, module F or D of Directive 2014/31/EU.

7.1.1 Scale

Access to the configuration and calibration facility is achieved by pressing a calibration switch accessed through a hole in the bottom of the enclosure of the scale. Sealing of the access to the calibration switch, electronics and connection of the load cell is accomplished by:

Either. Wire and seal which at the same time seals the access to the calibration switch and the inside of the enclosure.

Or: A tamperproof sticker covering the hole through which the switch is accessed, and an additional sticker covering one of the assembling screws of the enclosure.

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.

Either In the top line of the display or indelibly printed on a brittle plastic sticker located on the front panel overlay:

- $Max_i, Min_i, e_i =$

On the inscription plate:

- Manufacturer's name and/or logo
- Manufacturers postal address
- Model no./Type designation
- Serial no.
- Type examination certificate no.
- $Max_i, Min_i, e_i =$
- Accuracy class
- Temperature range (optional)
- Electrical data and other inscriptions (optional).

9. Pictures



Figure 1 IP20a scale.



Figure 2 IP20a scale rear side.



Figure 3 IP20b scale.



Figure 4 PEa scale.



Figure 5 PEb scale.



Figure 6 AW20 scale.

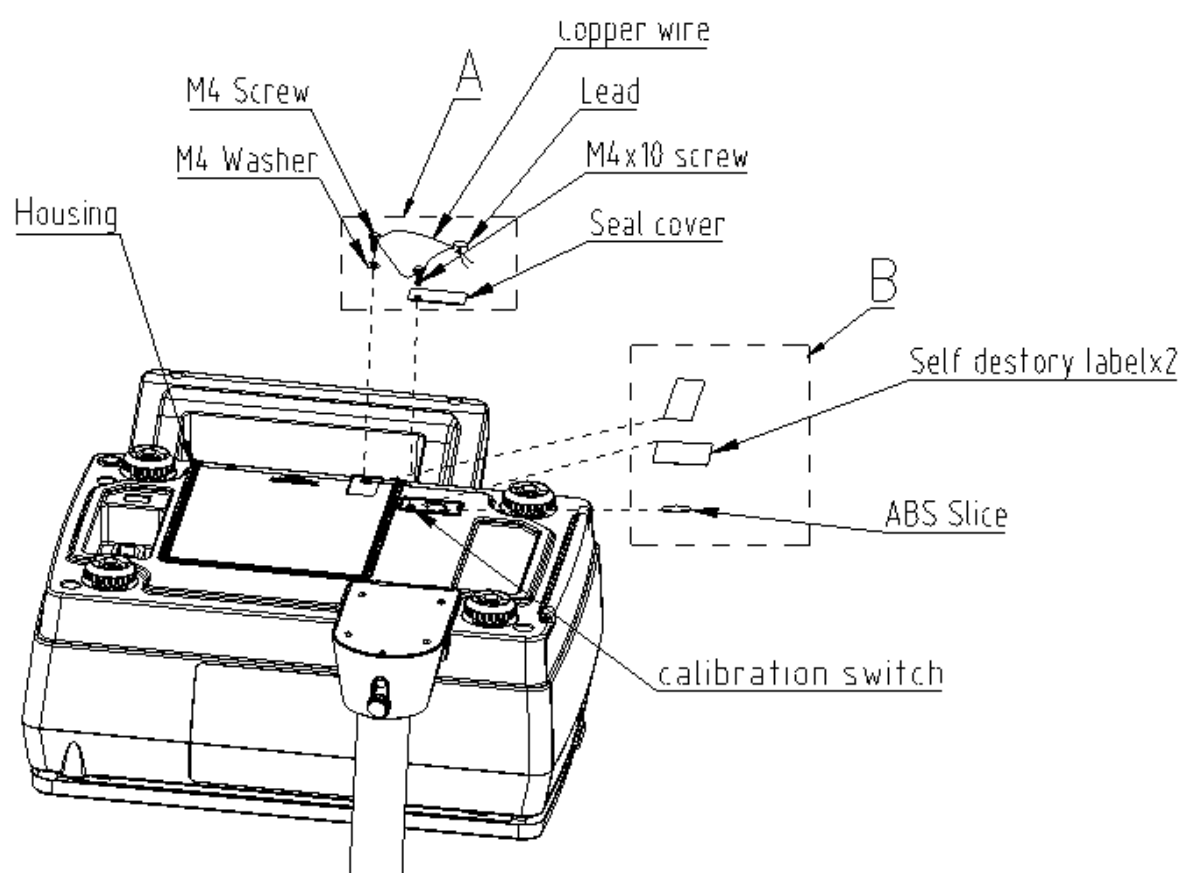


Figure 7 Sealing of the IP20a / IP20b scale

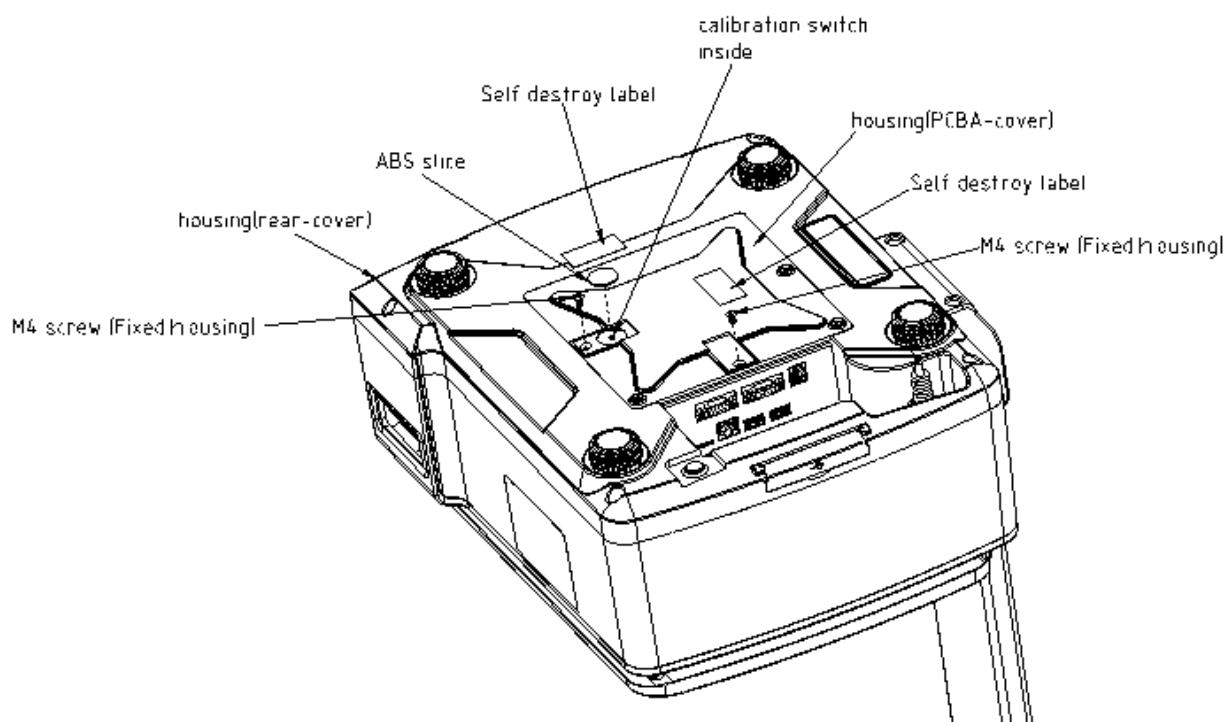


Figure 8 Sealing of Pea / PEb scale with tamperproof sticker

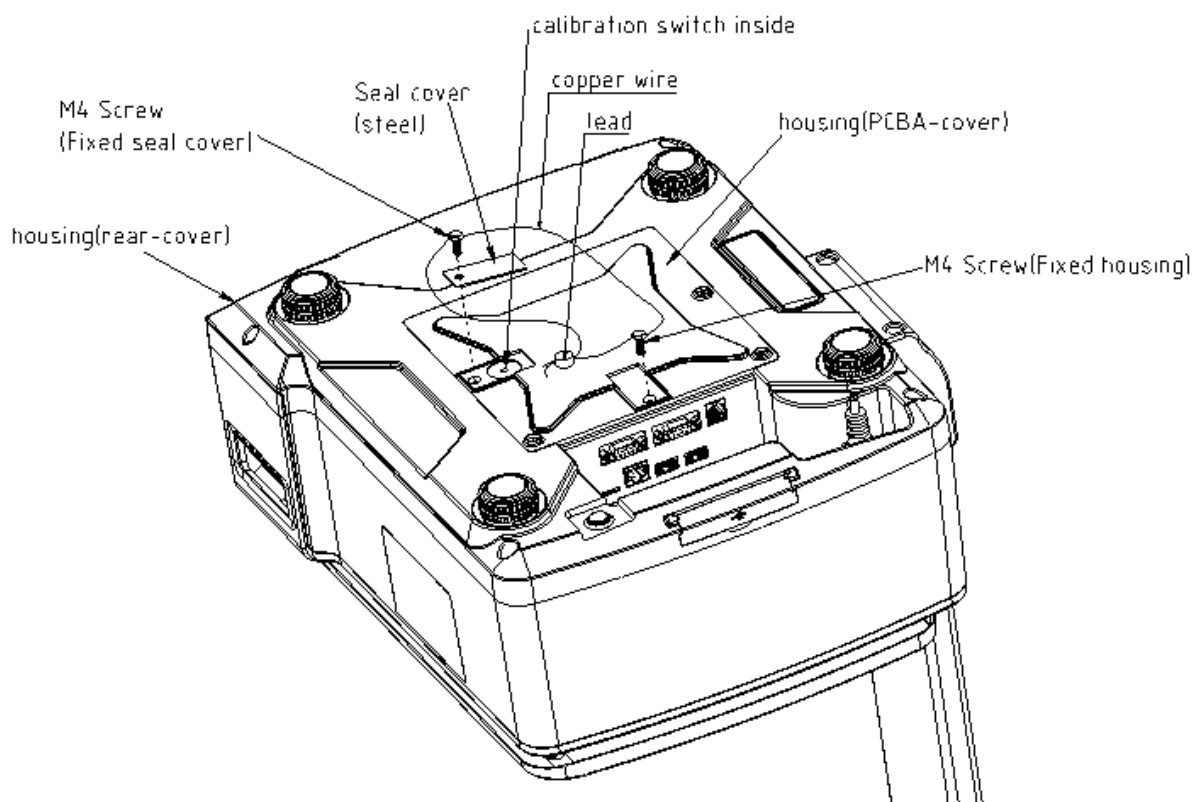


Figure 9 Sealing of Pea / PEb scale with wire and seal sticker

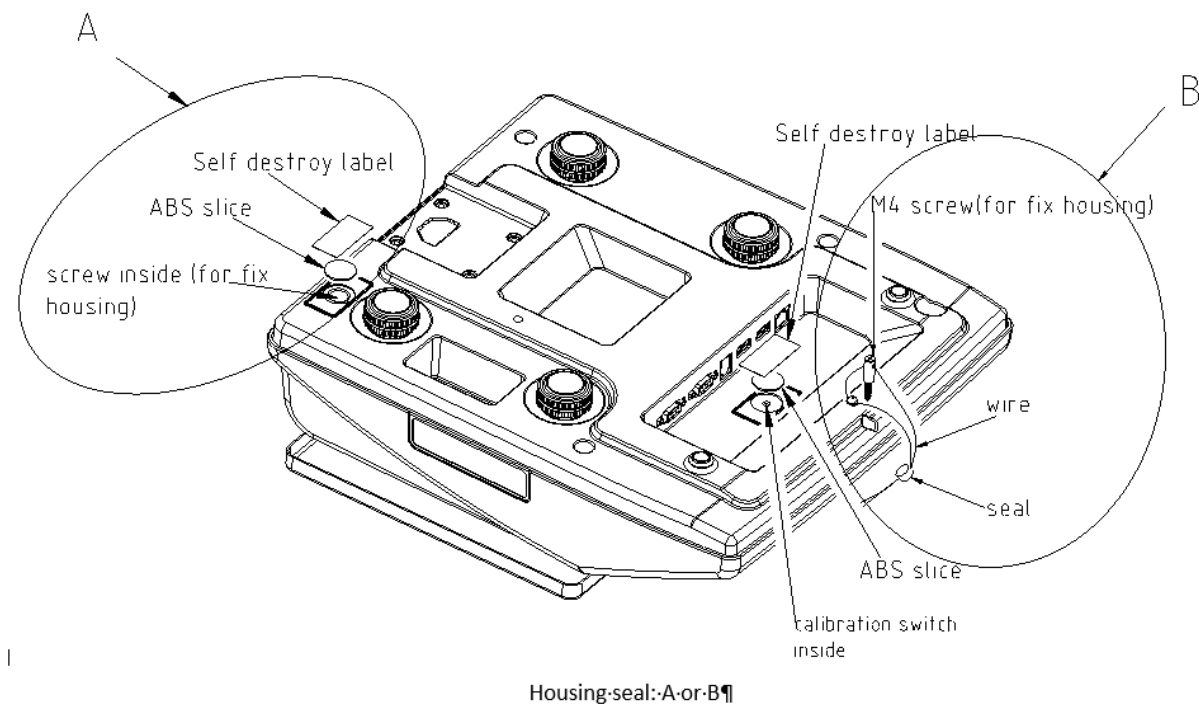


Figure 10 Sealing of the AW20 scale with either sticker (A) or wire and seal (B)