DANAK
PROD Reg. nr 7026

FORCE Certification

EU Type Examination Certificate

No. 0200-NAWI-03408

L10 / LE7 / PE7 / P10 / P10a / P10b / P10e / PE10a / PE10b / PE10e / PL10 / L15 / P15a / P15b / P15c / P18

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.**
No. 99 Shunchang Road,
Zhoushi, Kunshan, Jiangsu
CHINA

In respect of Non-automatic weighing instrument designated L10 / LE7 / PE7 / P10 / P10a / P10b / P10e / PE10a / PE10b / PE10e / PL10 / L15 / P15a / P15b / P15c / P18 with variants of modules of load receptors and load cells.
Accuracy class III, single-interval or dual-range
Maximum capacity, Max: From 6 kg to 30 kg
Verification scale interval: e = Max/ n
Maximum number of verification scale intervals: n $\leq$ 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 of DK0199.516 revision 1.

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

The annex comprises 25 pages.

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Valid until **2025-12-11**

Signatory: J. Hovgård

FORCE Certification references:
Task no.: 117-36790 and ID no.: 0200-NAWI-03408

Descriptive annex

Contents

1. Name and type of instrument

The non-automatic weighing instruments designated L10 / LE7 / PE7 / P10 / P10a / P10b / P10e / PE10a / PE10b / PE10e / PL10 / L15 / P15a / P15b / P15c / P18 are self-indicating desktop scales of class III with single-interval or dual-range.

The model name is followed by an identification of the installed software package which can be,

- 11: Price computing POS software package.
- 15: This price computing software package can be configured as either price labelling or as self-service.
- 60: Weighing software package which includes manual check weighing and counting.

Scales with software package 11 or 15 can be used for direct sale to public.

The scales - except for P15c and P18 - have an additional rear display for customers. The vendor touch display and/or customer display may depend on model being placed on a pole. The customer display can on the P… scales optional be a touch display, but the touch function can only be used for non-legal application functions.

The scales have one or two built-in printers and L10 / LE7 / L15 have a barcode reader and optional RFID reader on the pole.

All models are power supplied either from 100 – 240 VAC, 50/60 Hz, or from an external AC/DC mains adapter in which case they can be equipped with an optional internal 6 V rechargeable battery.

Each scale consists of analogue to digital conversion, microprocessor control, power supply, one or two displays – of which one or both are touch-screen - and 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 panel of the scales comprise of a 7”, 10”, 15” or 18.5” touch-screen LCD display with backlight, incorporating all keys and appropriate state indicators. The front panel is placed in front of the enclosure or on a pole depending of model.

In addition to this the following scale models L10 / LE7 / PE7 / P10a / P10b/P10e/ PE10a / PE10b / PE10e / PL10 / L15 / P15a / P15b have a 7”/10”/15” customer display on the rear or on a pole.

Electronics

The instruments have the following printed circuit boards, a microprocessor controlled mainboard, a piggy-back for A/D conversion, and a piggy-back for battery charging circuits, which together contain all of the instrument circuitry. The metrological circuitries for the different models of scales are identical.

All instrument calibration and metrological setup data are contained in non-volatile memory.
The scales use a load cell excitation voltage of 5 VDC.

2.2 Function

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 scales will establish the current weight as a new zero reference and then automatically start up in menu mode from where the mode for weighing can be selected.

2.2.2 Display range

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

2.2.3 Zero-setting

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

2.2.3.1 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 scales are equipped with a zero-tracking feature, which operates over a range of ±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 instrument models are provided with a semi-automatic subtractive tare.

2.2.4.1 Semi-automatic tare

Pressing the "TARE" key will enter the current weight value as the new tare weight value, if the tare function is not already active or setup allows multi-tare operation. The later one is not allowed for price computing scales.
The weight display will automatically change to the net weight display mode and turn on the NET annunciator and the tare value will be displayed. 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.

2.2.4.2 Preset tare

The scales have a preset tare function.

2.2.5 Price Look Up (PLU)

The price computing scales can store up to 9999 unit price values. These are accessed using the PLU keys, the three product category keys, and the two arrow keys.

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

2.2.6 Check weighing

The scales with '60' software package can be set to check the actual weight against a high and/or a low limit set by the user or recalled from the look up table.

2.2.7 Check-weighing limits Look Up (PLU)

The scales with '60' software package can store up to 9999 high and/or low limits for check-weighing. These are accessed using the PLU keys, the three product category keys and the two arrow keys.

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

2.2.8 Counting

The scales with '60' software package has a counting function. The number of samples on the load receptor can be keyed in using the "SAMPLES" key, or the unit weight of one piece can be keyed in using the "U.W." key, or it can be recalled from the look-up table of unit weights using the "PRODUCT" key.

The count shown in counting mode and the unit weight, however, are not to be regarded as approved weighing results.

2.2.9 Piece unit weight Look Up (PLU)

The scales with '60' software package can store up to 9999 piece unit weight values. These are accessed using the PLU keys, the three product category keys, and the two arrow keys.

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

2.2.10 Totalisation

The scales with '11' software package have a totalisation function for accumulating transactions. All transactions and total are printed on the built-in printer.

The scales with '60' software package have a totalisation function for accumulating weighing results. Totalised weight value is a calculated value and shall be marked as such when printed.

2.2.11 Facilitated weighing operations

The scales with '60' software package has a number of functions facilitating weighing operations. These are,

Class operation	for sorting items into 5 different grades based on weight.
Take out operation	for display of removed weight during down weighing and also accumulating the removed weight.
Target operation	for comparing the accumulated weight of a number of separate weighings against a target
Recipe operation	assisted weighing of components for a recipe.

2.2.12 Extended resolution (×10)

The scales with '60' software package have an extended resolution function, pressing the key will show the weight with d = 0.1e for 5 seconds.

2.2.13 Gravity compensation

The scales have a gravity compensentation function making it possible to perform the verification at a place with another gravity constant than the place of use. This function is sealed.

2.2.14 Printing

The scales have a built-in printer, and printing takes place automatically or when the user press 'Print' depending on the model.

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.

2.2.15 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.

2.2.16 Software version

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

The software version of the software packages is shown under system settings in the menu.
The application software version is also displayed in the top line of the T-Touch screen.

The approved software versions are,

OIML version *):	V1.10
weighing software *):	S1.02.xx
application software:	A2.xx.yy(z)
screen keyboard:	K1.xx.yy
printing software *):	P1.06.xx

*) part of legal relevant software.
Where xx and yy can be 00 to 99, while z can be not present or a to z.

2.2.17 Battery operation

The scale models supplied with 12 or 24 VDC from an external AC/DC adapter can be operated from an optional internal 6V rechargeable battery. The scales with battery contain 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 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:	≤ -Max
Minimum verification scale interval:	e ≥ 1.5 µV for single-interval e ≥ 1.0 µV for dual-range
Excitation voltage:	5 VDC
Minimum load cell impedance:	87.5 Ω for single interval 350 Ω for dual range
Mains power supply:	12 or 24 VDC / 100 - 240 VAC, 50/60 Hz using external AC/DC adapter 6 V battery (optional)
Operational temperature:	0°C to 40°C for single-interval 5°C to 35°C for dual-range
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 $0.6 \times E_{max} \leq Max \leq 0.9 \times E_{max}$.

3.3 Documents

The documents filed at DELTA (reference No. T210043) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 Interfaces

The interfaces are characterised “Protective interfaces” according to paragraph 8.4 in the Directive.

4.1.1 Load cell input from an external second platform (optional)

A 7-terminal connector for connection of the load cell cable from an external second platform to the scale. This feature is only supported by the ‘60’ software package.

4.1.2 RS-232 interface

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

4.1.3 USB interface

The scale is equipped with two USB interfaces for connection to peripheral equipment.
The length of the USB cables is specified to be less than 3 meter.

In addition, the scale is equipment a third USB interface for a storage device.

4.1.4 Ethernet interface

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

4.1.5 Cash drawer interface

The scale is equipped with a RJ11 connector with digital output signals for connection to a cash drawer.

4.1.6 MIC/phone interface (optional)

The scale is equipped with a MIC/phone interface. The connected cable shall be < 3 m.

4.1.7 HDMI interface (optional)

The scale is equipped with a HDMI interface. The connected cable shall be < 3 m.

4.1.8 Wi-Fi interface (optional)

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

4.2 Peripheral equipment

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

4.3 Electronic Point of Sale (EPOS), Electronic Cash Register (ECR), Electronic Fund Transfer (EFT/ECU)

The instruments may be connected to an Electronic Point of Sale (EPOS) or Electronic Cash Register (ECR) if the following conditions are met,

- *The EPOS or ECR have a Part Certificate or Evaluation certificate issued by a Notified Body appointed to certify instruments according to module B of Annex II of the Directive 2014/31/EU.*
- *If the EPOS or ECR have a preset tare function, they shall carry out this function autonomously and this function shall be in conformity with EN45501.*
- *The connection shall be made in such a way that the weight indication, the unit price and price-to-pay are positioned adjacent to each other.*

The instruments may be equipped with Electronic Funds Transfer equipment (EFT/ECU) on the provision that the ECR/ECU shall only display the total price for a transaction.

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 Compatibility of modules

In case of external platform, the composition of modules, EN 45501:2015 annex F shall be satisfied.

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 is accomplished by,

Models L10 / L15: Wire and seal which at the same time seal the access to the calibration switch and the inside of the enclosure.

P10 / P10a / P10b / P10e / PE10a / PE10b / PE10e / PL10 /P18: A sticker covering the hole through which the switch is accessed, and an additional sticker covering one of the assembling screws of the enclosure.

7.1.2 Connection to external platform

Sealing of the connection from the scale to an external platform is done in the following way:

- Sealing of the load cell connector with the scale using sticker or by a lead wire seal.

In special cases where the place of installation makes it impossible to use the above sealing.

- Inserting the serial number of the load receptor as part of the principal inscriptions contained on the indicator identification label.
- The load receptor bears the serial number of the indicator on its data plate.

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

In the top line of the display:

- Max, Min, e = , application software version

On the inscription plate:

- Manufacturer's name and/or logo plus postal address, model no., serial no., type-approval certificate no., accuracy class, temperature range, electrical data and other inscriptions.

9. Pictures

Figure 1 L10 scale with price computing software.

Figure 2 LE7 scale with price computing software.

Figure 3 PE7 scale with price computing software.

Figure 4 P10a/PE10a scale with price computing software.

Figure 5 P10 scale with weighing / counting software.

Figure 6 P10b/PE10b scale with price computing software.

Figure 7 P10e/PE10e scale with price computing software.

Figure 8 PL10 scale with price computing software.

Figure 9 L15 scale with price computing software.

Figure 10 P15a scale with price computing software seen from rear side.

Figure 11 P15b scale with price computing software.

Figure 12 P15c scale with price computing software

Figure 13 P18 scale with price computing software.

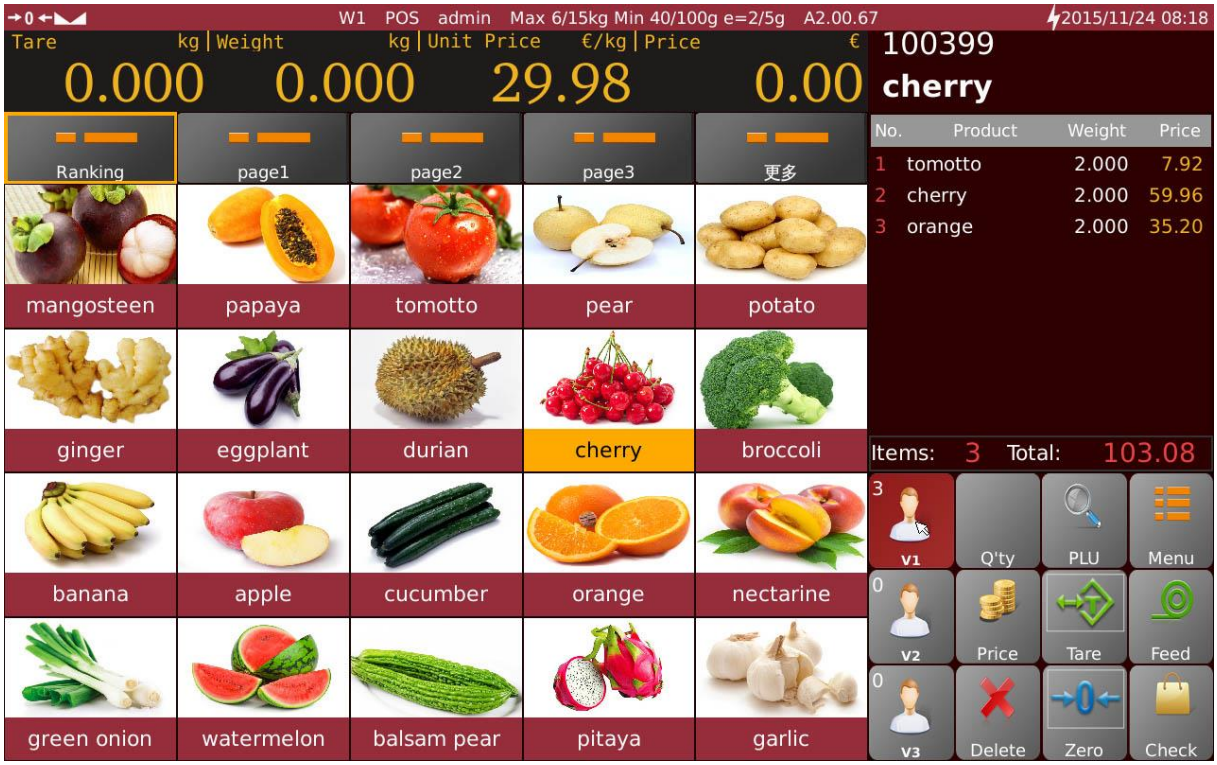

Figure 14 Software package 11 for POS – vendor's display.

Figure 15 Software package 11 for POS – customer's display.

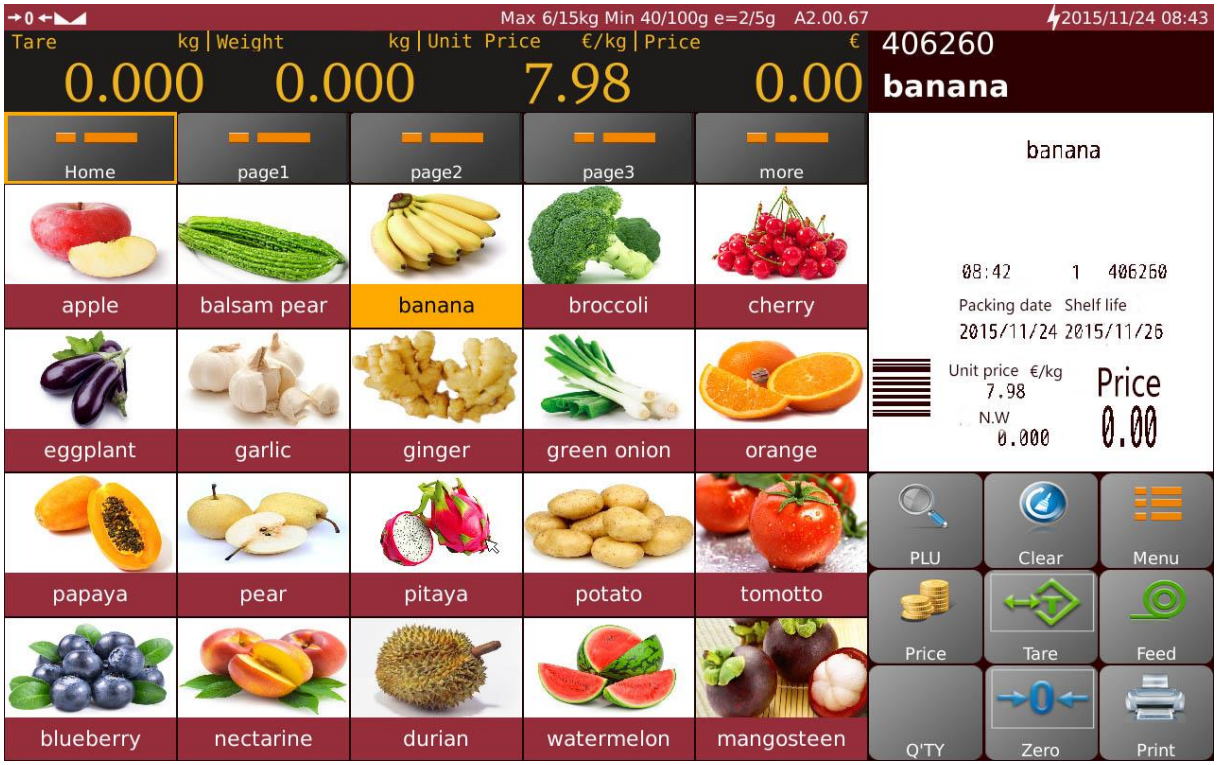

Figure 16 Software package 15 for labelling – vendor's display.

Figure 17 Software package 15 for labelling – rear display.

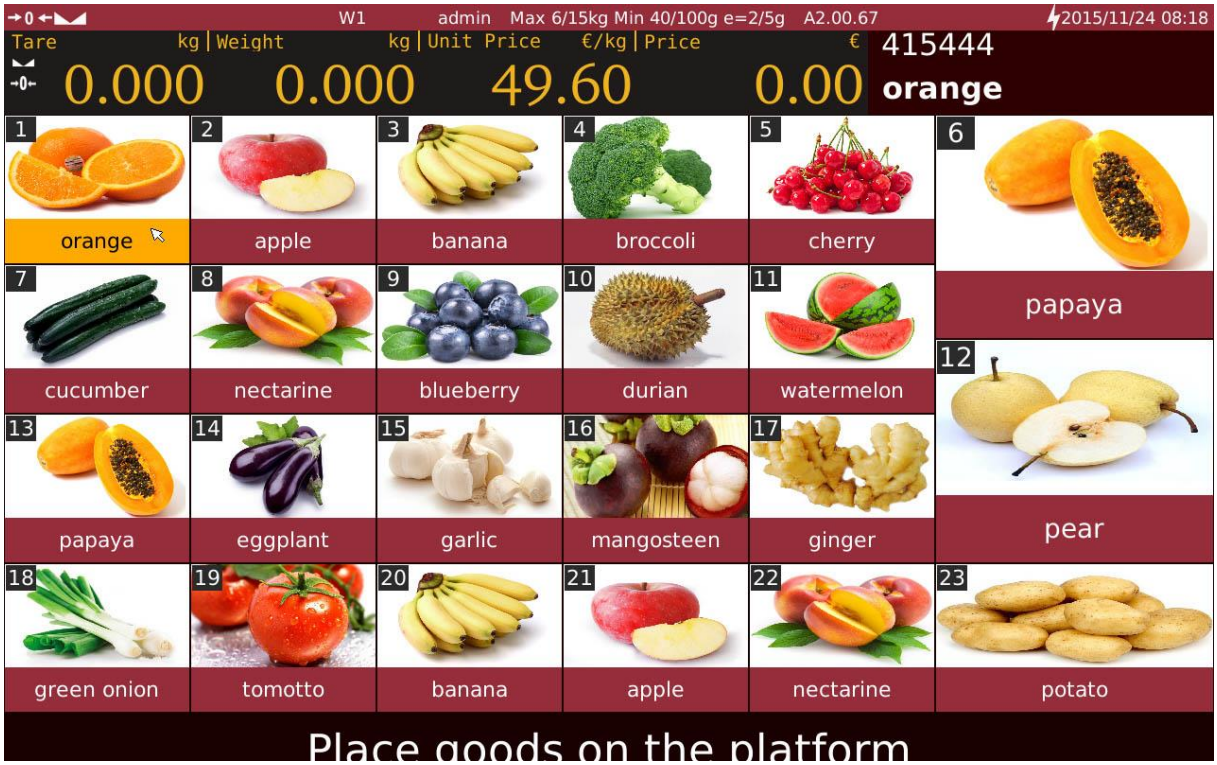

Figure 18 Software package 15 for self-service.

Figure 19 Software package 60 for Weighing / counting / Checkweighing.

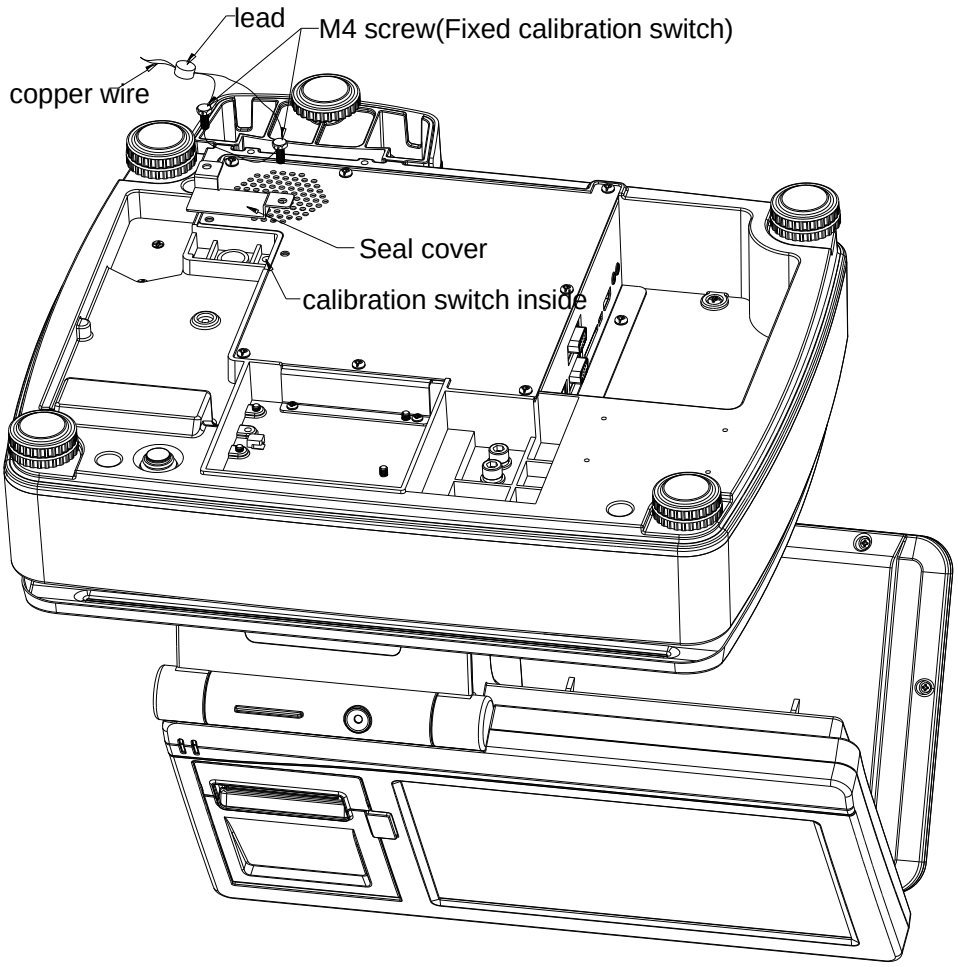

Figure 20 Sealing of L10 and L15 scales

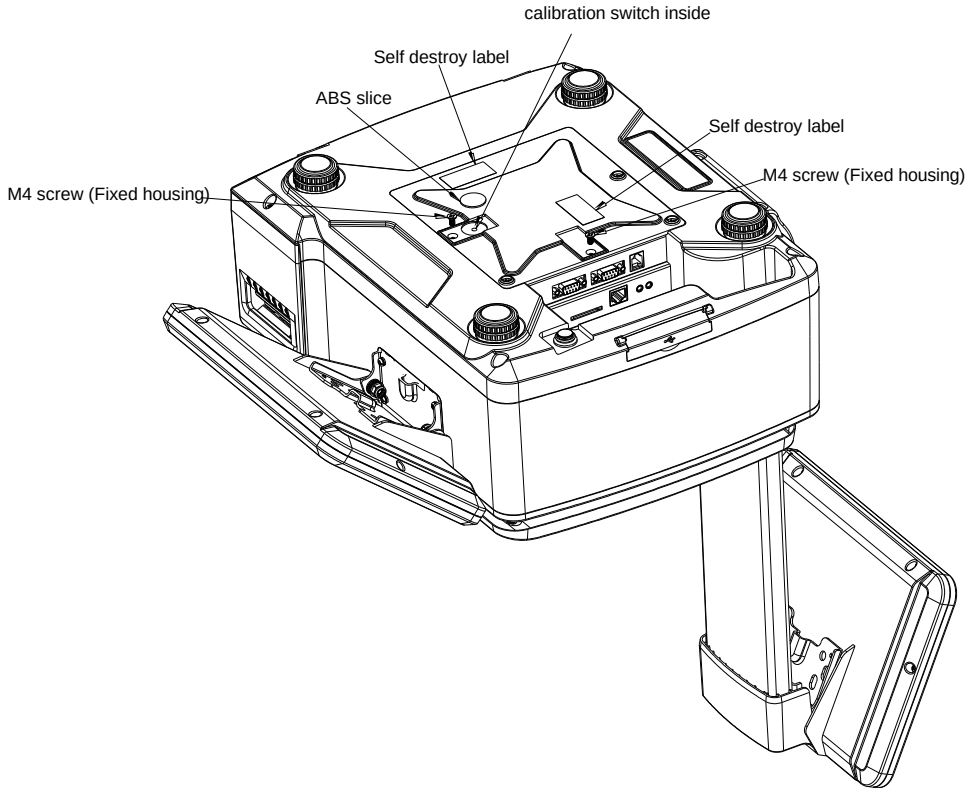

Figure 21 Sealing of PE7, P10x, PE10x, P15x and P18 scales