

EU Type Examination Certificate

No. 0200-NAWI-06874

**WX / WXS / CST / WTS / PC5 / PC5S / PC5H / PC5SH / PC6
/ PC6S / PC6H / PC6SH**

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 **Moorange Electronics MFG (Shanghai) Co., Ltd.**
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In respect of Non-automatic weighing instrument designated WX / WXS / CST / WTS / PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH with variants of modules of load receptors, load cells and peripheral equipment.
Accuracy class III, single interval or multi-range (2 ranges)
Maximum capacity, Max: From 3 kg up to 60 kg
Verification scale interval: $e_i = \text{Max}_i / n_i$
Maximum number of verification scale intervals: $n_i = 3000$ (however, dependent on environment and the composition of the 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 19 pages.

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Descriptive annex

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1. Name and type of instrument

The weighing instruments designated WX / WXS / CST / WTS are self-indicating scales, while PC5 / PC5S / PC5H / PC5SH / PC6 PC6S / PC6H / PC6SH are self-indicating price computing scales, all of Class III with single interval or dual-range, an external AC/DC mains adapter, and an internal rechargeable battery (optional).

The scales consist of analogue to digital conversion, microprocessor control, power supply, keyboard, non-volatile memory for storage of calibration and weight data, and display contained within a single enclosure.

2. Description of the construction and function

2.1 Construction

Enclosure

The scales WX / CST / PC5 / PC5H / PC6 / PC6H are housed in an ABS enclosure approximately 320 mm wide, 115 mm high, 340 mm deep.

The scales WXS / WTS / PC5S / PC5SH / PC6S / PC6SH are housed in a stainless-steel enclosure approximately 320 mm wide, 118 mm high, 345 mm deep

It is designed primarily for an office environment but may also be used in industrial environment.

Keyboard

The keyboard is containing either 8 keys (model WX / WXS) or 22 keys (model CST / WTS) or 34 keys (model PC5 / PC5S / PC5H / PC5SH) or 44 keys(model PC6 / PC6S / PC6H / PC6SH) membrane keys used to enter commands or data into the weight indicator, including one key for turning the indicator on and one key for turning it off. Each key is identified with a name and/or pictograph.

Displays

The weighing scales (WX / WXS / CST / WTS) have a 7-segment LCD display 6 digits, backlight and appropriate status indicators.

The price-computing scales have two set of LCD displays - vendor and customer - each comprising 18 7-segment digits (6 weight, 6 unit price and 6 total price display digits), backlight and appropriate status indicators.

The vendor display is on the front of the scale, while the customer display is on the rear of the scale for PC5 / PC5S / PC6 / PC6S, while it for PC5H / PC5SH / PC6H / PC6SH is placed on a pole.

Electronics

The instrument uses four printed circuit boards, one for main board, one for the RS-232 interface, and two for the displays (vendor and customer).

Models

Models	Max Capacity	e.	n	Load cell		
				No.	E _{max}	V _{min}
WX / WXS / CST / WTS / PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH	3 kg	1 g	3000	1	5 kg	≤ 1 g
	6 kg	2 g	3000	1	10 kg	≤ 2 g
	15 kg	5 g	3000	1	20 kg	≤ 5 g
	30 kg	10 g	3000	1	35 or 40 kg	≤ 10 g
	60 kg	20 g	3000	1	≥ 75 kg	≤ 10 g
	1.5/3 kg	0.5/1 g	3000/3000	1	5 kg	≤ 0.5 g
	3/6 kg	1/2 g	3000/3000	1	10 kg	≤ 1 g
	6/15 kg	2/5 g	3000/3000	1	20 kg	≤ 2 g
	15/30 kg	5/10 g	3000/3000	1	35 or 40 kg	≤ 5 g
	30/60 kg	10/20 g	3000/3000	1	≥ 75 kg	≤ 10 g

Other models are allowed, if their technical data are in accordance with Chapter 3, and they fulfil the requirements in Sections 3.1, 3.2 and 5.4.

2.2 Function

The primary functions provided are detailed below.

2.2.1 Display range

The weight indicators will display weight from –Max to Max (gross weight) within the limits of the display capacity.

2.2.2 Zero-setting

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

Semi-automatic 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.

2.2.3 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 “N/G” or “Net/Gross” key will toggle the display between showing Net and Gross value.

2.2.4 Pre-set Tare

The CST / WTS models are provided with a pre-set tare function activated using the “PT” key.

When the pre-set tare function is active the PT indicator will be on.

2.2.5 Units

The UNITS key on models WX / WXS / CST / WTS is used to toggle between the configured weight units, if more than one.

2.2.6 Price Look Up (PLU)

The price-computing scales have a number of keys for direct unit price look up.

2.2.7 Printing

A printer may be connected to the optional serial data port. The WX / CST / WXS / WTS weighing scales will transmit the current to the printer when the "PRINT" key is pressed.

The PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH price-computing scales will transmit the current transaction, when "M+" or "+" is pressed.

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.

2.2.8 Display test

A self-test routine is initiated by pressing the off key to turn the instrument off, then pressing the on key to turn the instrument on again. The test routine turns on and off all of the display segments and light indicators to verify that the display is fully functional.

2.2.9 Operator information messages

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

2.2.10 Software version

The software version is displayed on WX / WXS / CST / WTS as part of the turning off sequence. On PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH it can be displayed by pressing the "Tare" and "5" keys simultaneously.

The approved software versions are:

WX / WXS / CST / WTS	version	100115
PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH	version	200115

2.2.11 Totalisation

The CST / WTS model has a totalisation function, adding actual weight display values to the memory when pressing "M+" key if the equilibrium is stable.

Pressing the "RECALL" key displays the total accumulated weight.

Pressing the "MC" key will clear the totalised value.

2.2.12 Totalisation on price computing scales

The PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH models have a totalisation function, adding actual price to pay to the total price memory when pressing the “M+” key if the equilibrium is stable. Similar can the actual price to pay for non-weighed articles be added to the total price memory by pressing the “+” key.

Pressing the “MR” key steps through the display of the stored prices to pay and the total price. Pressing the “MC” key will clear the totalisation.

This function shall be disabled, if the scale is not connected to an operational printer.

2.2.13 Battery operation

The indicator can be operated from an internal rechargeable battery, if this option is installed.

3. Technical data

3.1 Scales

The WX / WXS / CST / WTS / PC5 / PC5S / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH scales have the following characteristics:

Accuracy class:	III
Weighing range:	Single interval or multi-range (2 ranges)
Maximum number of Verification Scale Intervals:	3000 pr. interval
Maximum capacity Max):	from 3 kg to 60 kg
Verification Scale Interval:	$e \geq 0.5$ g
Maximum tare effect:	-Max
Minimum input voltage per VSI:	1 μ V
Excitation voltage:	5 VDC
Minimum load cell input impedance:	350 ohm
Maximum input impedance:	1000 ohm
Mains power supply:	100-240 VAC, 50/60 Hz using external AC to 12 VDC adapter
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 types are to be used according to the table of models in Section 2.1.

ZEMIC L6D C3

TEDEA 1022 C3-MR10 or C4-MR10

HBM PW6KR C3

Marvin NA C3 (except 1.5/3 kg and 3/6 kg models)

3.2.2 General acceptance of load cells

Any load cell(s) may be used for instruments under this certificate of type examination provided the following conditions are met:

- 1) There is a respective Part / Evaluation / Test Certificate (EN 45501) or an OIML Certificate of Conformity (R60:2000 or 2017) issued for the load cell by a Notified Body responsible for type examination under 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 Composition of modules

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

3.4 Documents

The documents filed at FORCE (reference No. T201760) are valid for the weighing instruments described here.

4. Interfaces and peripheral equipment

4.1 RS-232 interface

The WX / WXS / CST / WTS / PC5 / PC5s / PC5H / PC5SH / PC6 / PC6S / PC6H / PC6SH may be equipped with a RS-232 interface for connection to peripheral equipment. This interface is characterised as a "Protective interface" according to paragraph 8.4 in the Directive.

4.2 Peripheral equipment

The instrument may be connected to any simple printer with a CE mark of conformity by 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.

5.2 No consecutive tare

Consecutive tare operation shall be disabled, when used for directly sale to the public.

5.3 Compatibility of modules

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

6. Special conditions for verification

6.1 Composition of modules

The environmental conditions should be taken into consideration by the composition of modules for a complete weighing instrument, for example instruments with load receptors placed outdoors and having no special protection against the weather.

The composition of modules shall agree with Section 5.3.

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 the Directive 2014/31/EU.

7.1.1 Scale

Access to the configuration and calibration facility requires that a calibration jumper on the main board is put in position unlocked.

Sealing of the access hole to the calibration jumper is accomplished with tamperproof sticker, or with a cover plate plus wire and seal.

Sealing of the cover of the enclosure - to prevent access to the calibration jumper and to secure the electronics against dismantling/adjustment - is accomplished either by using wire and seal, or by a tamperproof label placed so access to one of the screws of the enclosure assembly is prohibited, or by two tamperproof stickers placed on opposite sides of the enclosure across the assembly of the enclosure.

7.1.2 Peripheral interfaces

All peripheral interfaces are “protective”; they neither allow manipulation with 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.

7.1.1 Printers used for legal transactions

Printers covered by this type approval and other printers according to Section 4.2, which have been subject to the conformity assessment procedure, shall not bear a separate green M-sticker in order to be used for legal transactions.

8. Location of CE mark of conformity and inscriptions

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 on PC5 / PC5S / PC5H / PC5SH / PC6 PC6S / PC6H / PC6SH also next to the customer display:

- Max_i , Min_i , $e_i =$, accuracy class

On the inscription plate:

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

9. Pictures



Figure 1 WX scale.



Figure 2 WXS scale.



Figure 3 CST scale.



Figure 4 WTS scale.



Figure 5 PC5 price-computing scale.



Figure 6 PC5S price-computing scale.



Figure 7 PC5H price-computing scale.



Figure 8 PC5SH price-computing scale.



Figure 9 PC6 price-computing scale.



Figure 10 PC6S price-computing scale.



Figure 11 PC6H price-computing scale.



Figure 12 PC6SH price-computing scale.



Figure 13 PC5S / PC6S price-computing scale – rear side.

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Figure 14 Alternative trademark, which may be used on the scales instead of HiWEIGH.

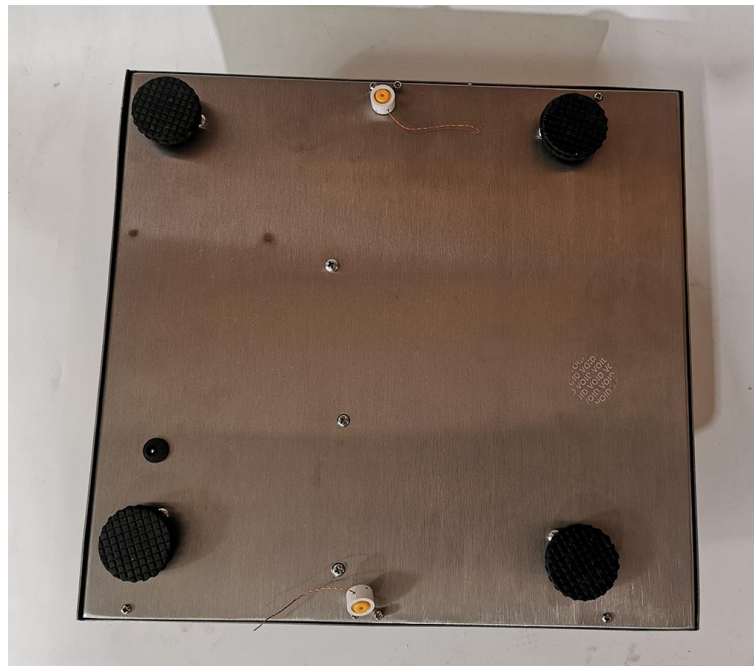


Figure 15 Sealing of calibration jumper with tamperproof sticker and of stainless steel enclosure with wire and seal

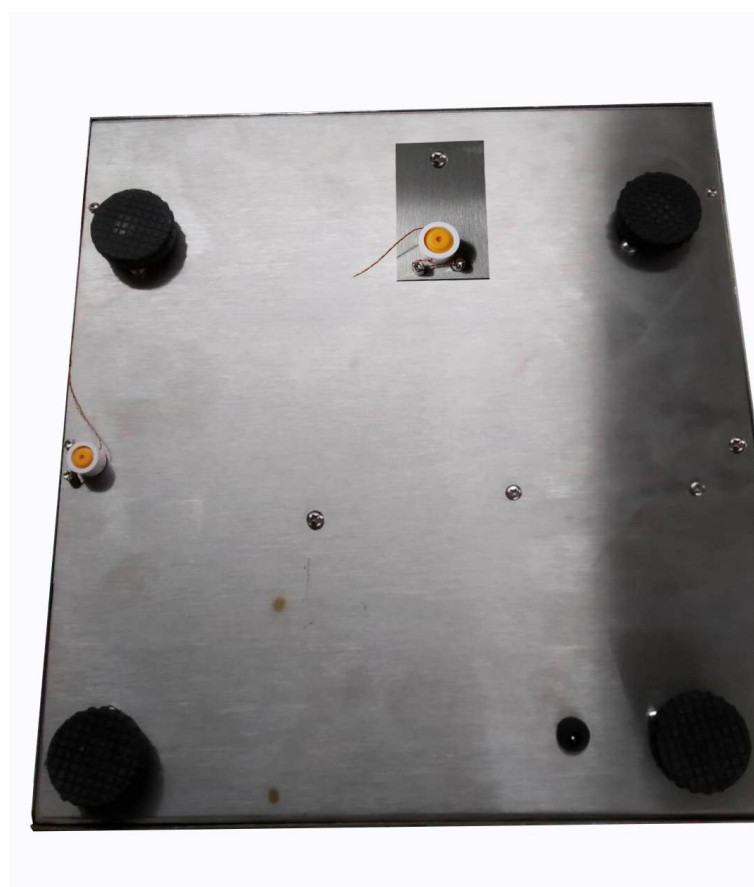


Figure 16 Sealing of calibration jumper and stainless steel enclosure with wire and seal



Figure 17 Sealing of ABS enclosure with wire and seal



Figure 18 Sealing of the enclosure with stickers on two opposite sides