

Issued by NMI Certin B.V.,
designated and notified by the Netherlands to perform tasks with respect to conformity procedures mentioned in Article 13 of Directive 2014/31/EU, after having established that the measuring instrument meets the applicable requirements of Directive 2014/31/EU, to:

Manufacturer Shanghai Teraoka Electronic Co., Ltd.
No.6058 of Nan Ting Road
Ting Lin Town, Jin Shan District
Shanghai 201505
China

Measuring instrument **A Non-automatic weighing instrument**
Type : PS-160 (B or P)
PS-178

Further properties are described in the annexes:
– Description T8226 revision 5;
– Documentation folder T8226-6.

Valid until 5 July 2033
Initially issued 5 July 2013

Remarks This revision replaces the earlier versions, including its documentation folder.

Issuing Authority **NMI Certin B.V., Notified Body number 0122**
18 March 2024

Certification Board

NMI Certin B.V.
Thijsseweg 11
2629 JA Delft
The Netherlands
T +31 88 636 2332
certin@nmi.nl
www.nmi.nl

This document is issued under the provision that no liability is accepted and that the manufacturer shall indemnify third-party liability.

The designation of NMI Certin B.V. as Notified Body can be verified at <http://ec.europa.eu/growth/tools-databases/nando/>

Reproduction of the complete document only is permitted.

This document is digitally signed and sealed. The digital signature can be verified in the blue ribbon at the top of the electronic version of this certificate.

1 General information about the non-automatic weighing instrument

All properties of the non-automatic weighing instrument, whether mentioned or not, shall not be in conflict with the legislation.

1.1 Essential parts

The electronics;
The mechanical assembly with load cell.

EMI protection measures (for a maximum number of 4 partial weighing ranges):

- The A/D board is shielded with a metal cover;
- One ferrite on the cable from the load cell to the A/D board;
- One ferrite on the cable from the main board to the power switch;
- One ferrite on the cable from the main board to the A/D board;
- One ferrite on the cable from the main board to the display board;
- One ferrite on the cable from the main board to the power supply board;
- Two ferrites on the cable from the power supply board to the power plug.

EMI protection measures (for a maximum number of 3 partial weighing ranges):

- The A/D board is shielded with a metal cover;
- Ferrite on cable between main board and I/O board;
- Ferrite on cable between main board and A/D board;
- Two ferrites on cable between display and I/O board.

EMI protection measures for PS-178:

- The A/D board is shielded with a metal cover;
- Ferrite on the cable between main board and external battery connector;
- Ferrite on the cable between main board and display;
- Ferrite on the AC/DC adaptor cable.

1.2 Essential characteristics

Type		PS-178	PS-160	
Accuracy class		(III)		
Maximum capacity		35 kg	30 kg or 35 kg	6 kg ≤ Max ≤ 30 kg
Verification scale interval		$e \geq 0,5 \text{ g}$		$e \geq 1 \text{ g}$
Minimum capacity		20 e 5 e (for postal use)		
Weighing range(s)		Multi-interval		Single interval Multi-interval
Maximum number of scale intervals (one weighing range)		-		$n \leq 7500$
Maximum number of scale intervals (multi-interval)		$n \leq 4000$ (per partial weighing range)		$n \leq 7500$ (per partial weighing range)
Maximum number of partial weighing ranges		4		3
Tare		$T \leq -(\text{Max}_1 - e_1)$	-	-
Temperature range		$-10 \text{ °C} / + 40 \text{ °C}$		
Power supply voltage		12 V DC supplied by 100 – 240 V AC 50/60 Hz plug-in power supply		
		9 V DC supplied by external battery, or 12 V DC supplied by RS232 interface		-
Software identification	Version number	1.xx		1.xx
		Where xx is a number between 10 and 99 which represents the non-legally relevant software		Where xx is a number between 03 and 99 which represents the non-legally relevant software

The software identification is displayed at start-up.

The non-automatic weighing instrument has embedded software.

1.3 Essential shapes

Number	Pages	Description	Remarks
8226/3-01	5	Exploded views PS-160 (B or P)	-
8226/5-01	1	Exploded view PS-178	-

The data plate is secured against removal by sealing or will be destroyed when removed.

Inscriptions:

- fulfil the requirements stated in Directive 2014/31/EU Annex III and EN45501:2015 clause 7.

1.4 Conditional parts

The instrument may be equipped with the following parts that further process the measurement result without modification under the conditions stated in the table:

Part	Condition(s)	Reference document
Simple recipient printer	CE marking present	WELMEC 2.10 clause 3.1.3
Printer Data Storage Device	CE marking present and the part is certified to be connected to a weighing instrument by a Notified Body responsible for type examination under Directive 2014/31/EU.	WELMEC 2.10 clause 3.1.3

The non-automatic weighing instrument is fitted with a levelling device and a level indicator, unless the instrument is installed in a fixed position. The level indicator has a sensitivity of at least 2 mm for a tilt of 2/1000. A ring on the level indicator indicates when the maximum tilt is exceeded.

The non-automatic weighing instrument may be equipped with one or more of the following protective interfaces that have not to be secured:

- RS232;
- External battery.

Power supply, AC/DC plug-in power supply brand name, type:

- ENG, 6A-151DA12 (for PS-160);
- ENG, 6A-126WU12 (for PS-178).

1.5 Non-essential parts

The non-automatic weighing instrument may be connected to non-essential devices, for example but not limited to bar code readers, foot switches, second displays and cash drawers, provided that:

- They do not present primary data used for purposes mentioned in Directive 2014/31/EU Article 1(2), (a) to (f) unless the (Preliminary observation) in Directive 2014/31/EU Annex I is satisfied;
- They do not lead to an instrument having other essential characteristics than those fixed by this certificate.

2 Information about the main constituent parts of the non-automatic weighing instrument

2.1 The electronics

2.1.1 Essential parts

Number	Pages	Description	Remarks
8226/3-02	2	Mainboard PS-160 (B or P) type STB-2201	Including IC list
8226/5-02	2	Mainboard PS-178 type STB-2219	Including IC list
8226/5-03	2	A/D board type STB-2202	Including IC list

2.1.2 Essential characteristics

List of legally relevant functions for all types:

- Determination stability of equilibrium;
- Indication of stable equilibrium;
- Zero indicating;
- Semi-automatic zero-setting;
- Initial zero-setting;
- Zero-tracking;
- Locking device;
- Adjustment / set-up mode via a switch on the main board;
- Acting upon significant faults;
- Checking the display.

Additional legally relevant functions for type PS-178:

- Semi-automatic subtractive tare balancing.

2.1.3 Non-essential parts

Display.

2.2 The mechanical assembly with load cell

2.2.1 Essential parts

Number	Pages	Description	Remarks
8226/4-01	1	Load cell specification sheet R30-6	-
8226/4-02	1	Load cell specification sheet R30-3	-
8226/5-04	2	Load cell specification sheet L6D	-
8226/5-05	2	Load cell specification sheet L6C	-

2.2.2 Essential characteristics

For load cell R30-6: $e_1 \geq E_{max}/45000$ for multi-interval instrument;
 For load cell R30-3: $e_1 \geq E_{max}/90000$ for multi-interval instrument;
 For load cell L6D: $e_1 \geq E_{max}/12000$ for multi-interval instrument;
 For load cell L6C: $e_1 \geq E_{max}/25000$ for multi-interval instrument;
 Excitation voltage 3,3 V DC.

2.2.3 Essential shapes

Number	Pages	Description	Remarks
8226/3-05	3	Load cell assembly drawings PS-160 (B or P)	-
8226/5-06	1	Load cell assembly drawings PS-178	-

3 Seals

To secure components that may not be dismantled or adjusted by the user, the non-automatic weighing instrument has to be secured in a suitable manner on the locations indicated in the drawings:

Number	Pages	Description	Remarks
8226/5-07	2	PS-160 sealing position	-
8226/5-08	1	PS-178 sealing position	-

The connecting cable of the load cell or the junction box is provided with possibility to seal.

Inside the cabinet is an adjustment switch, connected to the main board.

The protected position is:

- PS-160: the pushbutton is in unpressed position;
- PS-178: the sliding switch is in position towards the back of the instrument and covered with a metal bracket.

4 Conditions for conformity assessment

The marks, facilities for the marks and the inscriptions on the non-automatic weighing instrument fulfil the requirements of Directive 2014/31/EU Annex III clause 1.