

EU TYPE EXAMINATION CERTIFICATE NO PL 17 002

Revision no 2

Issued by: GŁÓWNY URZĄD MIAR
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1440

Notified Body

In accordance with: Directive 2014/31/UE of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of non-automatic weighing instruments implemented by regulation of Minister of Economic Development of 2 June 2016 on requirements for non-automatic weighing instruments

Issued to manufacturer: RADWAG WAGI ELEKTRONICZNE Witold Lewandowski
ul. Toruńska 5, 26-600 Radom, Poland

In respect of: electronic non-automatic weighing instrument of general use,
single or multi range
type: PM

accuracy class:	II	III
Max:	$\leq 50 \text{ kg}$	$\leq 50 \text{ kg}$
Min:	$50 e (d)$	$20 e$
e:	$e \geq 0.1 \text{ g}$	$0.1 \text{ g} \leq e \leq 5 \text{ g}$
d:	$d=e$ or $d=0.1 e$	$d=e$
n:	$\leq 100\,000$	$\leq 10\,000$
T:	-Max	-Max
temperature range:	$+10\text{ °C} \div +40\text{ °C}$	$+10\text{ °C} \div +40\text{ °C}$

Final statement: non-automatic weighing instrument satisfies the requirements set out in the Directive 2014/31/UE of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of non-automatic weighing instruments

Valid until: 05.07.2027

Reference number: BC-WCW.4410.2.2020

Number of pages: 9

The principal characteristics, approval conditions and special regulations, if any, are set out in the Annex, which forms an integral part of the certificate.
This version of certificate replaces the earlier version.

Warszawa, 26.08.2021



Z up. Prezesa
Głównego Urzędu Miar

Rafał Henke
Wiceprezesa

President of GUM

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REFERENCE DOCUMENTS

The conformity assessment of the weighing instrument is proved on base of the harmonized standard EN 45501:2015 – “Metrological aspects of non-automatic weighing instruments” and the certification program GUM-PCertB.

1 NAME AND TYPE OF WEIGHING INSTRUMENT

Electronic non-automatic weighing instrument of accuracy class II or III operates based on electromagnetic load compensation. The instrument consists of a weighing module and a terminal. The weighing module consists of a load receiver, an analog load cell, an analog data processing device and a microprocessor that provides the weighing result signal in digital format. The terminal receives the weighing results via the digital interface of the weighing module. It further processes digital data. The terminal includes a fully graphic display, keypad and digital interfaces for connecting peripheral devices.

The scale has semi-automatic and automatic internal adjustment device.

The type designation is PM xxx.yyy.zzz. Symbols mean:

- xxx – maximum capacity Max in (kg),
- yyy – terminal model,
- zzz – special purpose of use.

The family of PM also includes weighing instruments made as two ranged.

2 DESCRIPTION OF SETUP AND FUNCTIONS

2.1 Devices and functions

Approved functions and features (reference to EN 45501:2015 in brackets)

- | | |
|---|--------------|
| - Semi-automatic zero setting device | (T.2.7.2.2), |
| - Initial zero setting device, ($\leq \pm 10 \% \text{ Max}$) | (T.2.7.2.4), |
| - Zero-tracking device | (T.2.7.3), |
| - Subtractive tare device | (T.2.7.4), |
| - Semi-automatic and automatic tare device | (T.2.7.4), |
| - Tare-weighing device | (T.2.7.4.2), |
| - Preset tare device | (T.2.7.5). |
| - Automatic and semi-automatic span adjustment with internal calibration mass | (4.1.2.5) |
| - Data Storage Device (Alibi memory) | (5.5.3) |
| - Additional weighing in carats | (2.1) |

2.2 Setup

2.2.1 Mechanical setup

The load cell with electromagnetic compensation system and electronic analyzing system with regulation is placed in stainless steel housing (the weighing module). The steel housing supports the load receptor.

The weighing instrument can be equipped with two types of load receptors. The load receptors are made of stainless steel.

On the back of the housing there is a terminal connection (display with a keypad) and a power cable.

The weighing instruments are fitted with an automatic or a semi-automatic span adjustment device. These devices are incorporated inside the instrument and access to them is secured.

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The type plate is located at the back of a weighing module (load receptor) and at the rear side of the terminal.

There is a menu access switch hole at the bottom of the terminal protected by a check mark.

The instrument is fitted with a levelling device and a level indicator (bubble level) in the C32 model or control by the AutoLEVEL System with information on the display and an alarm signal in the 4Y model.

There are several interfaces for peripheral devices in the display (terminal) housing. Interfaces are used to connect a PC, additional display or printing devices.

In the lower part of the weighing module and terminal housing, one of the screws has control markings to prevent opening.

2.2.2 Electrical setup

The instrument works on the basis of load cell with electromagnetic force compensation and an analysis electronic system with coil current regulation. The current is converted into an output signal which is then converted from analog to digital signal in the A/D device. The digital signal is corrected and temperature compensated. The signal is then sent to the terminal via a protective software interface. There is an indication of the weighing result on the display and it is possible to operate the weighing instrument with the keypad.

The weighing module and the terminal are one set. When switching on, the software checks that the serial numbers of the two parts match.

Plug-in power supply device (AC 100-240 V, 50-60 Hz / DC 12-16 V)

2.3 Adjustment

The weighing instrument is equipped with an internal automatic span adjustment device that is activated for a specified time or temperature change (automatic adjustment) or a semi-automatic adjustment activated by a key.

There is a possibility of external adjustment, but access to it is secured with a control mark or a seal.

2.4 Software and Data Storage Device (Alibi memory)

The weighing instrument has a separate software identification for the weighing module and the terminal. The software identification is provided by switch on the instrument.

The software of these modules is embedded and, once secured, cannot be modified or uploaded via any interface or otherwise.

For the weighing module (the load receptor) designated software is marked as 3.0.0.

For terminals designated software is marked as:

- L 1.0.0 for the model PM xxx.C32.zzz,
- NL 1.8 S (as standard) or NL1.8 P (as for prepackages) for the model PM xxx.4Y.zzz
- LL 1.9 S (as standard) or LL1.9 P (as for prepackages) for the model PM xxx.4Y.zzz

There is a data storage device (DSD) (Alibi memory) in the terminal for long-term storage of weighing data. It automatically saves weighing results according to recommendations of Guide WELMEC 2.5 in the internal flash memory. The program operates as a simply embedded software without any operating system making it impossible to run any external application. The program allows to upload the contents of the alibi memory to an external flash drive for archival purposes. The program does not allow to download the alibi memory content to the balance.

Each measurement is identified by the following data: measurement date, measurement time, measurement value (mass), tare value, operator (if logged in), product (if chosen).

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The memory allows to save 500 000 weighing results. After the full capacity is reached the single records of the oldest data are overwritten by the new data. In PM xxx.C32.zzz, single records and the entire database are protected with checksums. In PM xxx.4Y.zzz, the records and the database are protected by an internal file allocation system and database system. Any corruption of data prevents them from viewing or printing.

3 TECHNICAL DATA

3.1 Weighing instrument

Main metrological characteristics of:

One Range Exemplary Models

Type	Key [Unit]	PM 50.4Y.zzz		PM 50.C32.zzz	
Accuracy class		II	III	II	III
Maximum capacity	<i>Max</i> [kg]	50	50	50	50
Minimum capacity	<i>Min</i>	50 <i>e</i> (<i>d</i>)	20 <i>e</i>	50 <i>e</i> (<i>d</i>)	20 <i>e</i>
Verification interval	<i>e</i> [g]	1	5	1	5
Resolution	<i>d</i>	<i>d=e</i> or <i>d=0.1 e</i>	<i>d=e</i>	<i>d=e</i> or <i>d=0.1 e</i>	<i>d=e</i>
Tare range	T	– <i>Max</i>			
Working temperature	<i>T</i> [°C]	+10 / +40			
Supply		100-240V AC/50-60 Hz / 12 – 16 V DC			
Semi-automatic and automatic internal adjustment device		+	+	+	+

Type	Key [Unit]	PM 10.C32.zzz
Accuracy class		II
Maximum capacity	<i>Max</i> [kg]	10
Minimum capacity	<i>Min</i>	50 <i>e</i> (<i>d</i>)
Verification interval	<i>e</i> [g]	0.1
Resolution	<i>d</i>	<i>d=e</i> or <i>d=0.1 e</i>
Tare range	T	– <i>Max</i>
Working temperature	<i>T</i> [°C]	+10 / +40
Supply		100-240V AC/50-60 Hz / 12 – 16 V DC
Semi-automatic and automatic internal adjustment device		+

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Two Range Exemplary Models

Type	Key [Unit]	PM 6/35.4Y.zzz		PM 6/35.C32.zzz	
Accuracy class		III		III	
Range		W ₁	W ₂	W ₁	W ₂
Maximum capacity	Max _i [kg]	6	35	6	35
Minimum capacity	Min _i	20 e ₁	20 e ₂	20 e ₁	20 e ₂
Verification interval	e _i [g]	1	5	1	5
Resolution	d	d=e		d=e	
Tare range	T	-Max			
Working temperature	T [°C]	+10 / +40			
Supply		100-240V AC/50-60 Hz / 12 – 16 V DC			
Semi-automatic and automatic internal adjustment device		+	+	+	+

The weighing ranges with the values of Max, Min, scale intervals and number of scale intervals may be selected in accordance with No. 2 and 3 of Appendix I to Directive 2014/31/EU taking into account the weight limits from the above mentioned tables.

3.2 Documents

The technical documents relating to this Certificate are deposited in Central Office of Measures (GUM).

4 INTERFACES AND PERIPHERAL DEVICES

4.1 Interfaces

Model PM xxx.4Y.zzz: 2 x USB-A; 2 x RS 232; Ethernet; Wireless Connection (Wifi).

Model PM xxx.C32.zzz: 1 x USB-A; 1 x USB-B; 2 x RS 232; Ethernet; Wireless Connection (Wifi).

4.2 Peripheral devices

Devices which can be connected:

simple recipient peripheral devices with neither test or part certificate nor note in the EU type examination certificate if the requirements according to WELMEC Guide 2.5 (2000), section 3.3, are fulfilled.

For purposes not subject to legal verification any peripheral device may be connected.

4.3 Non-essential devices

Any non-essential device can be connected to the electronic instrument via any external hardware interface (additional displays, printers, barcode scanners, pen drives etc.) provided that it does not adversely affect the metrological characteristics.

5 RESERVATION TO THE APPROVAL

For the instrument that is the subject of this Certificate, the essential requirements according to Annex I of Directive 2014/31/EU (NAWID) of the European Parliament and of the Council of 26 February 2014

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on the harmonisation of the laws of the Member States relating to the making available on the market of non-automatic weighing instruments (OJ L96/107) apply.

6 ADDITIONAL INFORMATION FOR EU VERIFICATION (module F)

Documents required for the test:

- Copy of the EU type examination certificate including the Annex,
- Operating instructions.

A weighing instrument can be verified on manufacturer's site or other place in accordance with point 4 Annex II of the EC Directive 2014/31/EU.

Weighing instrument adjustment and securing against an unauthorized person should be in accordance with point 2.3 and 8 of the certificate.

7 VERIFICATION MARK LOCATION

The verification mark in the form of a self-adhesive label is located partly on the data plate and partly on the instrument housing.

8 STAMPING LOCATION

To secure components that cannot be dismantled or adjusted by the user, the non-automatic weighing instrument has to be properly secured as indicated in the relevant drawings.

Self-adhesive labels as control marks have to be applied according to figure 1

The securing components have to bear either:

- a mark of the manufacturer laid down in a notified body approved quality system (Annex II of the EC Directive 2014/31/EU)
- an official verification mark of the relevant notified body.

9 MARKING

The CE marking and the supplementary metrology marking as per article 16, paragraph 2 of the directive 2014/31/EU (it shows together with the CE-marking indicate the conformity with the essential requirements of directive 2014/31/EU) are located on the data plate.

The identification number of the notified body shall be affixed by the body itself or, under its instructions, by the manufacturer or his authorised representative.

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FIGURES

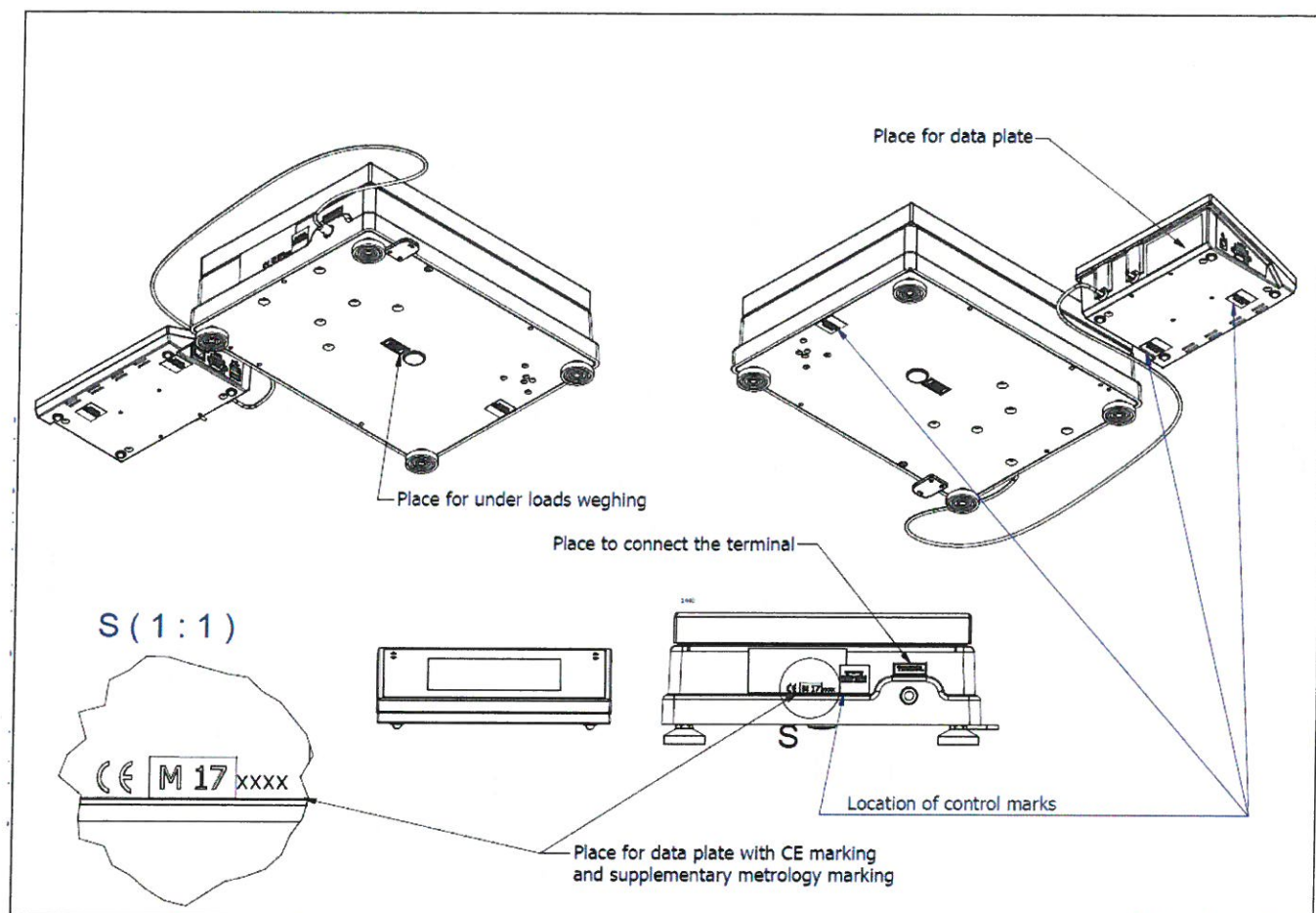


Figure 1 Location of control marks

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Figure 2 General View of PM xxx.4Y.zzz



Figure 3 General View of PM xxx.C32.zzz

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Figure 4 View of Additional Display

CERTIFICATE HISTORY

Issue No	Date	Description
PL 17 002	05 July 2017	Type examination first issued
PL 17 002 Revision 1	22 December 2017	widening the low range of e, now $e \geq 0.1$ g, only for accuracy class II: increasing the range of n, now $n \leq 100\,000$
PL 17 002 Revision 2	26 August 2021	another version of the terminal processor, terminal software and operating system for PM xxx.4Y.zzz language correction