



EU TYPE EXAMINATION CERTIFICATE NO PL 17 002

Revision no 1

Issued by: GŁÓWNY URZĄD MIAR
ul. Elektoralna 2, 00-950 Warszawa

Notified Body 1440

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
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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:	$+10\,^{\circ}\text{C} \div +40\,^{\circ}\text{C}$	$+10\,^{\circ}\text{C} \div +40\,^{\circ}\text{C}$

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: BSM-WR.4410.5.2017.PR.8

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, 22.12.2017



PREZES

dr inż. Włodzisław Lewandowski

Prezes GUM

Descriptive annex to REVISION No. 1 dated 22.12.2017 to
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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, accuracy class II or III, operates on basis of electromagnetic compensation of weight load. The instrument consists of a weighing module and a terminal. The weighing module includes load receptor, an analog load cell, an analog data processing device and an microprocessor that supplies a signal of weighing result in a digital format. The terminal gets weighing results via a digital interface of the weighing module. It further processes the digital data. The terminal includes a full graphic display, keypad and digital interfaces to connect 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 evaluation unit with regulation is placed in stainless steel housing (the weighing module). The steel housing is a support for a load receptor.

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

In a back of the housing there is a connection for a terminal (display with a keypad) and a wire for power supply.

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



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

At the bottom of the terminal is located a hole of the menu access switch secured by control mark.

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

In the housing of the display (the terminal) there are some interfaces for peripheral devices. The interfaces are used to connect a PC computer, an additional display or printing devices.

At the bottom of the housing of the weighing module and the terminal there are control marks on one of screws as securing against opening.

2.2.2 Electrical setup

The instrument works on base of load cell with electromagnetic force compensation and electronic evaluation unit with regulation of the coil current. The current is changed into output signal which next is converted from analog to digital signal in A/D device. The digital signal is corrected and subjected of a temperature compensation. Next the signal is transmitted to terminal by protective software interface. There is an indication of the weighing result via display and operation possibility of the weighing instrument via keypad.

The weighing module and the terminal are one set. It is checked by software during switch on if serial numbers of two parts fit together.

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

2.3 Adjustment

The weighing instrument is fitted with inside automatic span adjustment device, what is activated by certain period of time or temperature change (automatic adjustment) or semi-automatic adjustment activated by key.

There is possible external adjustment but access to it is secured by control mark or seal.

2.4 Software and Data Storage Device (Alibi memory)

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

Software of these modules is embedded and cannot be modified or uploaded via any interface or by other means after securing.

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

For terminals software is designated:

- for a model PM xxx.C32.zzz L 1.0.0
- for a model PM xxx.4Y.zzz NL 1.8 S (as standard) or NL1.8 P (as for prepackages)

In a terminal there is a data storage device (DSD) (Alibi memory) used 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. A program operates as a simply embedded software without any operating system which prevents from running any external application. The program allows to upload the content 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 on), 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 new data. Single records and the whole database are protected by checksums. Any corruption of data prevents them from viewing or printing.

3 TECHNICAL DATA

3.1 Weighing instrument

Main metrological characteristic of:

One Range Exemplary Models

Type	Key [Unit]	PM 50.4Y.yyy		PM 50.C32.yyy	
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	-Max			
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.yyy
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	-Max
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.yyy		PM 6/35.C32.yyy	
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 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 considering the limiting values of the weighing instruments of 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 4Y: 2 x USB-A; 2 x RS 232; Ethernet; Wireless Connection (Wifi).

Model PM C32: 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.

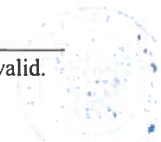
For purposes not subject to legal verification any peripheral device may be connected.

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 the metrological characteristics are not adversely influenced.

5 RESERVATION TO THE APPROVAL

For the instrument mentioned in 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 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.



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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 unauthorized person should be in accordance with point 2.3 and 8 of the certificate.

7 VERIFICATION MARK LOCATION

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

8 STAMPING LOCATION

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 as indicated on 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

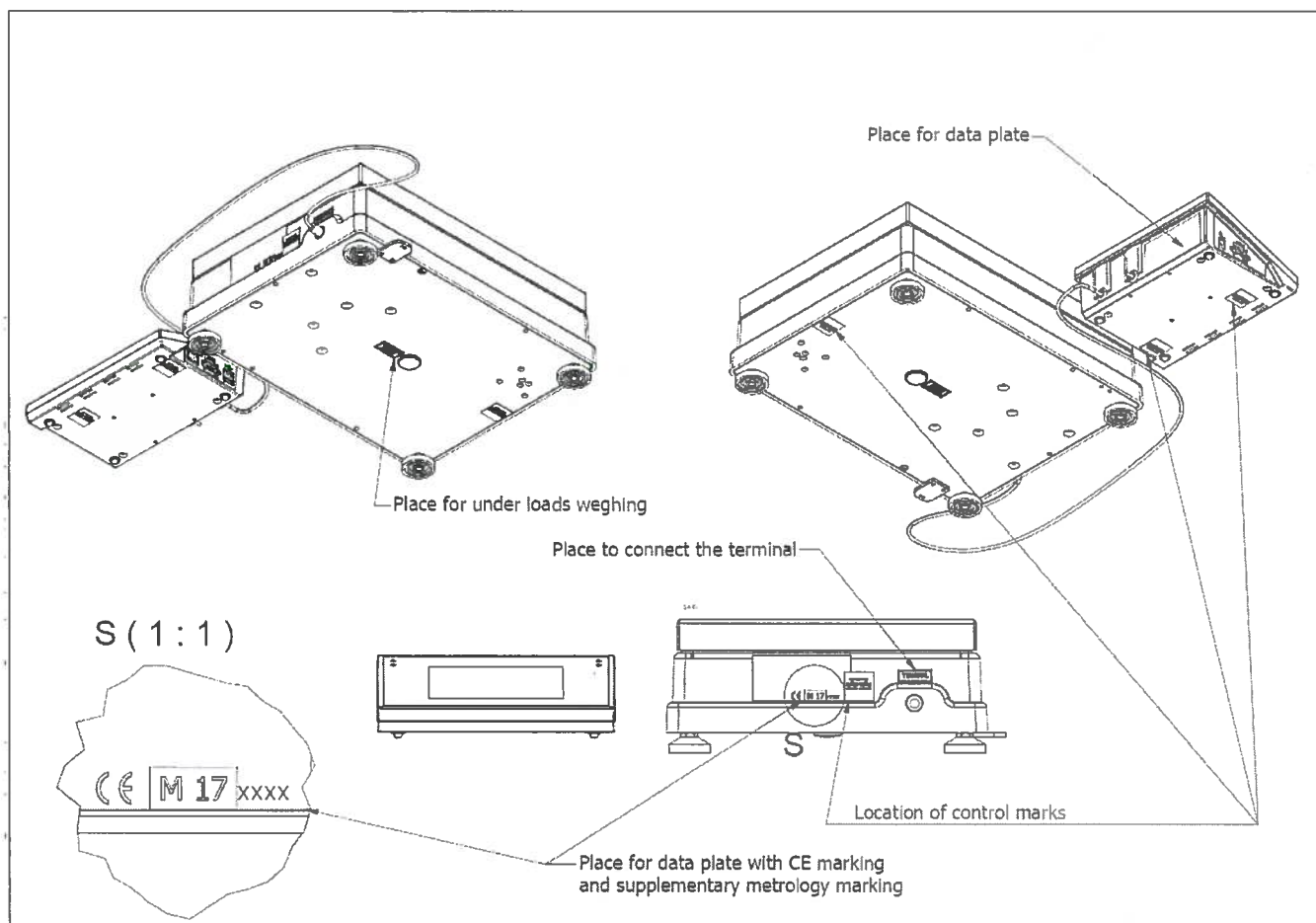


Figure 1 Location of control marks

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Figure 2 General View of PM.4Y



Figure 3 General View of PM.C32



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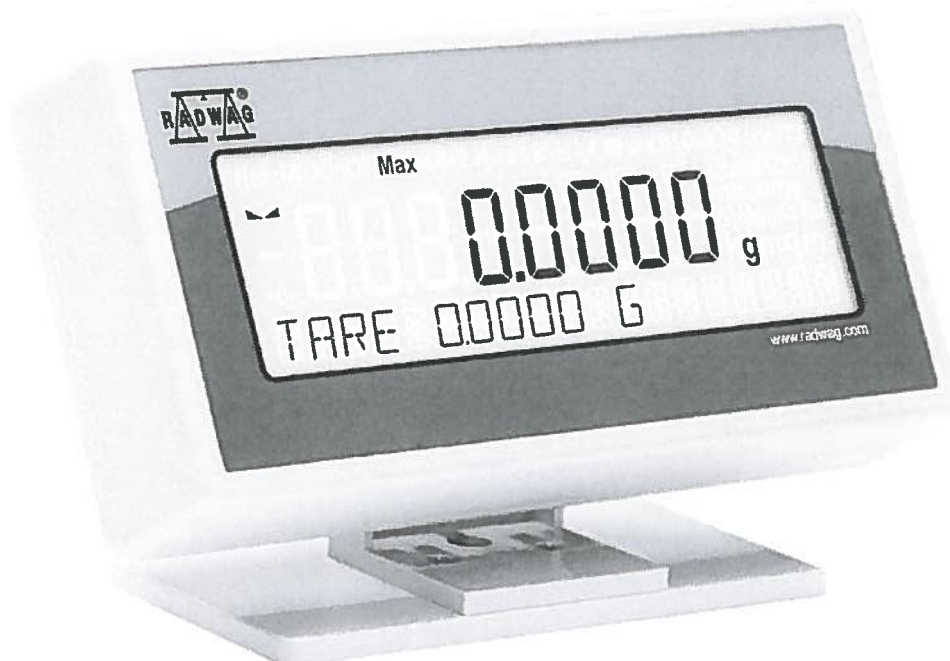


Figure 4 View of Additional Display

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 $n \leq 100\,000$



