USER GUIDE

PUE 5.19R

Radwag

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Software manual

ITKP-53-01-03-24-EN

Weighing Terminal

PUE 5

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MARCH 2024

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1. INTENDED USE

PUE 5.15, PUE 5.19 indicators are designed for scales that work with strain gauge load cells. The indicators' housing is made of stainless steel. PUE 5.15, PUE 5.19 are intended to be used in industry. A big colorful screen of the indicator with a touch panel makes the software operation much more comfortable since there is no need to use a keyboard.

PUE 5 indicator is a genuine device that consists of two units: the computer and the weighing module, placed in one housing. Both of these units are connected via an internal interface.

The possibility of using common operating systems allows external companies to create its software or to use the existing one. Such common devices as PC computers can be used with the terminal, which is a great advantage while creating a network. Individual workstation with the PC device is as well possible.

2. SWITCHING ON

- Turn the power on, do it by pressing **ON/OFF** switch located at the back of the indicator housing. Operating system loading begins.
- After completing the startup procedure, the device is ready for operation.

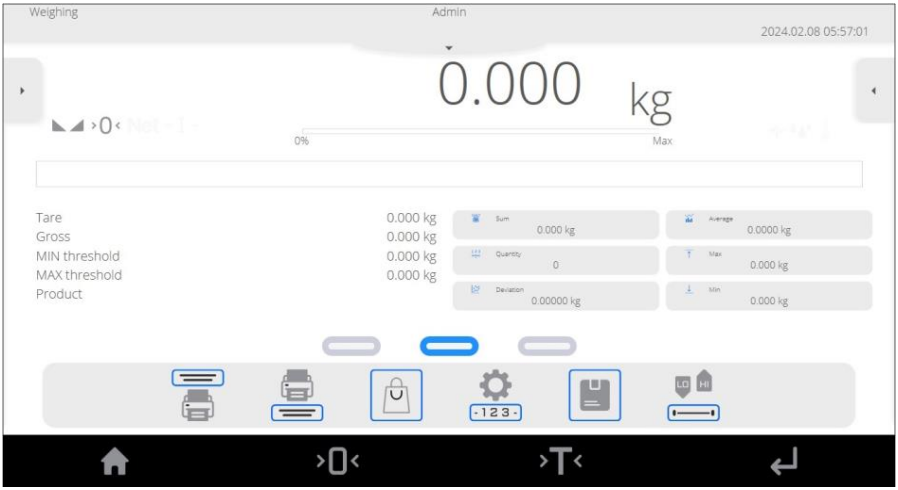
3. „PUE 5 CORE" SOFTWARE

"PUE 5 Core" is a program designed to enable control of MW-04 mass converter. The program allows you to calibrate the mass converter, read mass, tare, zero, set filters, etc.

3.1. Program Start-up

The program can be launched using the **<PUE 5 Core>** shortcut on the desktop. After starting the program, the main program window will be displayed.

3.2. Main Window



3.3. Top Bar

The top part of the screen shows the following data: active working mode, logged user, date, time, active connection to a computer.

3.4. Weighing Result Window

The Weighing Result Window shows all information on weighing:

Additionally, the weight result window contains the following components: left side menu, right side menu.

3.4.1. Left Side Menu

Left side menu (button) allows access to working mode parameters.

⚠	***For detailed description of working mode parameters, read section 21 of this manual.***

3.4.2. Right Side Menu

Right side menu (button) allows preview of the most recent weighing records. pictogram, to be found at the top of preview window, allows permanent pinning of the weighing preview to the workspace.

3.4.3. Display Templates

The workspace comprises 3 display templates: central display template, left display template, right display template.

Graphics at the bottom of the workspace informs which display template is active. To swap between the display templates, tap the respective pictogram.

Content of display templates:

Left display template	Comprises notes made by the user at any time during weighing.
Central display template	Comprises programmable information on weighing (for detailed description, read section 19.3 of this manual) and widgets (statistics, ambient conditions, weighing windows of all connected platforms).
Right display template	Comprises a weighing result graph.

3.5. Programmable Function Buttons

Programmable function buttons are located below the workspace:

	For detailed instruction on how to program the on-screen function buttons, read section 19.2 of this manual.

3.6. Fixed Function Buttons

Fixed function buttons are located at the bottom of the screen:

4. NAVIGATION IN THE MENU

Navigation in the weighing program software menu is intuitive and uncomplicated. The touch panel makes the software operation easy. Pressing a function button or an area on the display initiates an assigned function or process.

4.1. Main Menu Button Functions

	Press to enter balance menu. Press to go to the home screen.
	Press to zero the scale.
	Press to tare the scale.
	Press to send the weighing result to a printer or computer.
	Press to confirm changes.
	Press to abort modifications and go back.
	Press to go back.
	Press to deselect all marked information.
	Press to select all marked information.
	Press to restore default settings.

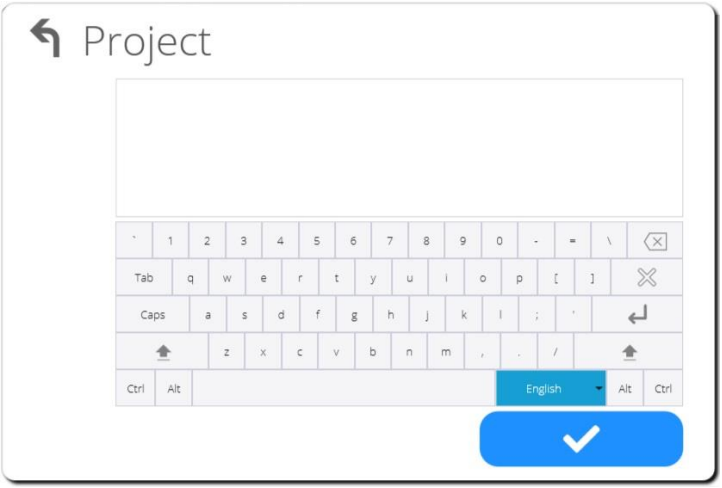
4.2. Database Menu Buttons

	Press to add a new record to a database.
DATE	Press to search for a particular record in a database by date.
NAME	Press to search for a particular record in a database by name.
CODE	Press to search for a particular record in a database by code.
	Press to print out a particular record from a database.

	Press to export databases/reports to a pendrive.

4.3. On-screen Keyboard

While creating a printout, you can use an external USB keyboard connected to the head, or a touch keypad that is identical in terms of possibilities as a typical PC keyboard.



4.4. Return to Weighing

Modifications to the scale memory are automatically recorded upon return to the home screen.

Procedure:

- Press repeatedly until you see the home screen.
- Press in the top bar, the home screen will be displayed immediately.

5. PROGRAM STRUCTURE

The program main menu is divided into 12 function groups. Each group contains parameters grouped by function.

Function groups in the main menu: Adjustment, Working modes, Readout, Units, Databases, Reports, Communication, Peripherals, Inputs/Outputs*, Administration panel, Misc., System info.

***) –** Option.

6. LOGGING

In order to access operator-related parameters and to edit databases, you need to log in as an operator with **<Administrator>** permission level.

⚠	***<Admin> is a default operator set on each brand new scale. The default operator is assigned with <Administrator> permission level. <Admin> account is not protected by password. Logging of default operator is carried out automatically upon scale start-up. In the case of modification of default operator data or upon adding new operators, it is necessary to log in manually.***

Procedure:

- Press menu button located at the top of the display to expand it.
- Once the top menu has expanded, press <**Log in>** button, wait for the operator database window with <**Admin**> to open.
- Select **<Admin>,** wait for the on-screen keyboard with a password box to open. By default this user has no password, therefore the home screen is displayed automatically.

6.1. Logout Procedure

- Expand the menu in the top part of the screen and press **<Log out>** button.
- After collapsing the top menu in the top bar, the logged-in operator's name will be replaced by **<Not Logged in>** text.

6.2. Permission Levels

There are four permission levels: Administrator, Advanced Operator, Operator, Guest.

Access to operator-related parameters and program functions is conditioned by a permission level:

Permissions	Access
Guest	Permission to edit operator-related parameters not granted. Operator can neither accept the weighing result nor start the following operations: entering reference sample mass and determining reference sample quantity in <Parts counting> mode, entering reference sample mass and determining reference sample in <Percent weighing> mode, dosing, making formulations.
Operator	Operator can edit <Misc.> parameter group (operation of <Date and time> parameter excluded). Operator can run and carry out all weighing operations.
Advanced operator	Operator can edit all operator-related parameters excluding <Readout> and <Date and time> parameters. Operator can run and carry out all weighing operations.
Administrator	Operator can edit all operator-related parameters and all databases, and use all functions. Operator can run and carry out all weighing operations.

7. WEIGHING

Load the weighing pan. Read the result when stability marker is displayed.

To record/print the weighing result, press button:

- For verified scales – stable weighing result exclusively (displayed).
- For non-verified scales – both stable (displayed) and unstable (not displayed) weighing results. In the case of unstable weighing results, <?> appears on the printout.

7.1. Zeroing

To zero mass indication, select the given platform on the scale display and press key. Zero indication and the following pictograms are displayed: 0 and .

Zeroing means determination of a new zero point, recognized by the weighing device as the precise zero. The instrument can be zeroed only when the indication is stable.

⚠	***Indication can be zeroed only within ±2% range of the maximum capacity. If the zeroed value is greater than ±2% of the maximum capacity, then the software displays a respective error message: <Zeroing out of range. Press taring button or restart the scale>.***

7.2. Taring

To determine net weight value, load the weighing pan with a packaging, wait for a stable indication and press key. Zero indication and the following pictograms are displayed: ***Net*** and . The scale has been tared.

Remember not to exceed the maximum capacity of the scale. Upon weighing pan unloading, the sum of tared masses with minus sign is displayed.

You can assign tare value to a particular product stored in the database. In such a case, the assigned tare value is automatically acquired upon selection of the given product.

⚠	***It is impossible to tare zero or negative values. When you tare zero or negative values, the scale responds with the following message: <Taring out of range. Press zeroing button or restart the scale>.***

7.3. Entering Tare Value Manually

- Press the previously defined on-screen key: and an on-screen keyboard will be displayed.
- Enter tare value and press button.
- Weighing mode is on again. The entered tare value with '**-**' sign and ***Net*** and symbols are displayed.

7.4. Dual Range Scales

N/A to single range scales

Switching from weighing with the accuracy of the **I weighing range** to weighing with the accuracy of the **II weighing range** takes place automatically upon exceeding Max of the **I weighing range.**

In the case of dual range scales:

- I weighing range is signaled through →|1|← indicator in the left corner of the display.
- II weighing range is signaled through →|2|← indicator in the left corner of the display.

Switching from weighing with the accuracy of the **II weighing range** to weighing with the accuracy of the **I weighing range,** upon returning of mass to AUTOZERO (→0← and pictograms are displayed) is performed manually, i.e. it takes place after pressing key.

7.5. Weighing Unit Change

You can change the weighing unit in two ways, to do it:

- press the unit displayed in the weighing result window, or
- press programmable button to which **<g·ct·lb Unit>** function has been assigned.

Options:

Unit	Denotation	Verification	Unit	Denotation	Verification
gram	[g]	yes	Taele Singapur	[tls]	no
kilogram	[kg]	yes	Taele Tajwan	[tlt]	no
carat	[ct]	yes	Taele Chiny	[tlc]	no
pond	[lb]	no	Momme	[mom]	no
ounce	[oz]	no	Grain	[gr]	no
ounce Troy	[ozt]	no	Tical	[ti]	no
pennyweight	[dwt]	no	Newton	[N]	no
Taele Hongkong	[tlh]	no	Mesghal	[msg]	no

You can declare start unit and two custom units – for detailed information read section 8.

7.6. Weighing Platform Number Change

The scale is optionally equipped with four weighing platforms. To change the weighing platform number, either simply press the particular platform number (displayed on the screen) directly, or press the button previously programmed to **<Change platform>** function.

You can add a widget (located in the left display pattern) with a graphical presentation of all supported platforms. The active platform, simultaneously presented in the home screen, is distinguished by a blue screen.

8. UNITS

Configuration of the device units.

Access path: **< / Units>**.

Accessibility of particular units is conditioned by the weighing device status; i.e. whether the instrument is verified or not.

8.1. Start Unit

Upon setting the start unit, the scale activates with the set start unit for these modes where change of the unit is possible.

Procedure:

- Enter **<Units / Start unit>** submenu, select start unit from the list.
- Go to home screen and restart the scale.
- After restarting, the weighing device runs with the declared start unit.

8.2. Custom Units

Option available for non-verified scales exclusively

Parameter allowing you to declare two custom units. The displayed custom unit value is a result of calculation done in accordance with the declared formula.

Procedure:

- Enter **<Units / Custom unit 1>** submenu, set the following parameters:

Formula	Custom unit recalculation formula: **Coefficient * Mass** or **Coefficient / Mass**.
Coefficient	Coefficient for recalculation done in accordance with the set formula.
Name	Unit name (3 characters maximum).

- Go to the home screen.
- Press unit symbol, list of available units including the custom unit is displayed.

	Procedure for declaring <Custom unit 2> is analogous.

8.3. Units Accessibility

Parameter allowing you to declare which units are to be accessible upon pressing unit symbol.

Procedure:

- Enter **<Units / Available units>** submenu.
- Set availability of desired units in the list displayed: - unit enabled; - unit disabled.

8.4. Gravitational Acceleration

<Gravitational Acceleration> parameter compensates changes of gravity force being a result of different latitude and altitude when the selected unit is „Newton" [N].

Procedure:

- Enter **<Units / Gravitational Acceleration>** submenu, **<Gravitational Acceleration [m/s^2]>** edit box is displayed.
- Enter gravitational acceleration value respective for the particular place of use and press button to confirm changes.

9. STATISTICS

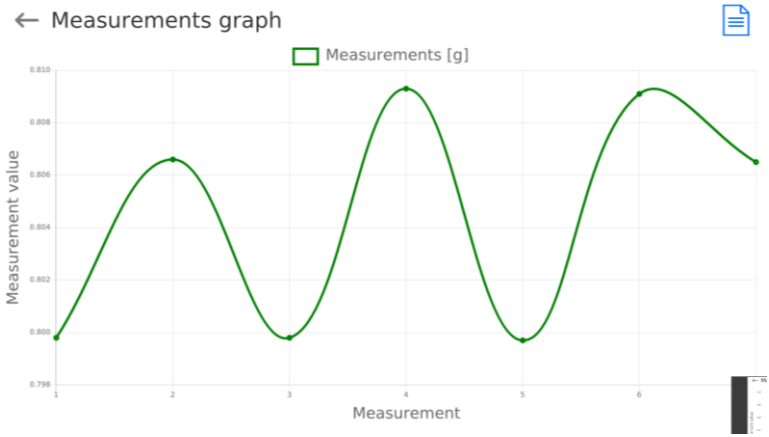
All statistical data is downloaded on a regular basis after each weighing confirmation, done by pressing key. For each series of measurement it is possible to: preview the results, print a report out, clear the most recent measurement, clear all statistics results, preview the measurement graph, preview the Gaussian distribution graph.

The displayed statistical data range is conditioned by the function internal settings. To access the function, press .

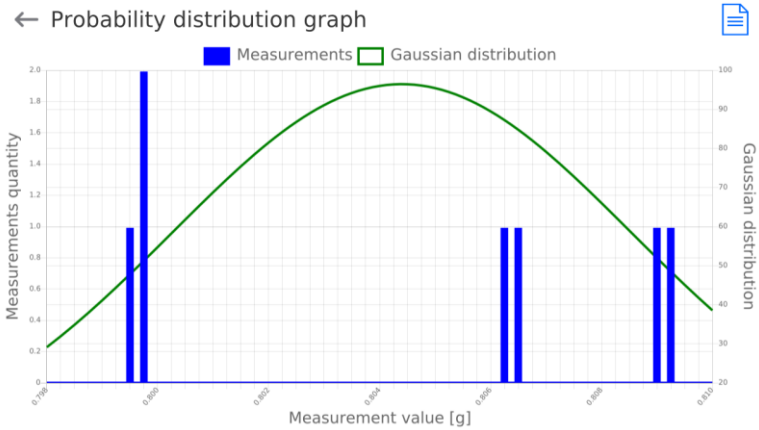
List of <Statistics> submenu options:

Result	Statistics preview including: N, SUM, X, MIN, MAX, D, SDV.P, SDV.S, RDV.P, RDV.S. For description of components of the statistics, read section 19.4.1.
Print	Clear the most recent measurement in the measurement series.
Delete last	Clear all statistics data.
Delete	Graph presenting distribution of the measurements, for a given series of measurements, in mass/measurement coordinate system.
Measurement graph	Graph presenting Gaussian distribution, for a given series of measurements.
Probability distribution graph	Clear the most recent measurement in the measurement series.

Exemplary measurement distribution graph:



Exemplary Gaussian distribution graph:



10. WEIGHING PARAMETERS

You can adjust the scale to ambient conditions (filter level) or to your own needs (Autozero).

Access path: **<** **/ Readout>**.

⚠	***Weighing parameters concern particular platform, therefore prior to setting their values it is necessary to select the platform.***

Weighing parameters:

Filter	Enter this parameter to adjust your weighing device to ambient conditions. The higher filter level, the longer the indication takes to stabilize. Values: **Very fast, Fast, Average, Slow, Very slow**.
Value release	Enter this parameter to adjust the rate of stabilization of the measurement result. Depending on the value, the weighing time is either shorter or longer. Values: **Fast, Fast plus reliable, Reliable**.
Autozero	Enter this parameter to enable automatic control and correction of zero indication. There are, however, some cases when this function can be a disturbing factor for the measuring process, e.g. very slow placing of a load on the weighing pan (load adding, e.g. pouring, filling). In such a case, it is recommended to disable the function. Options: - function disabled, - function enabled.
Last digits	Enter this parameter to enable/disable display of the last digit (placed on the right of the decimal point) of the weighing result. Values: **Always:** all digits displayed; **Never:** last digit disabled; **When stable:** last digit displayed only when the result is stable.
Last digits quantity	Enter this parameter to determine how many last digits are to be hidden. This function is correlated with <Last digit> function. Values: **1** - one last digit, **2** – two last digits, **3** – three last digits.
Ambient conditions	Parameter relating to ambient and environmental conditions of the workstation. Enter this parameter and set 'unstable' value if the ambient conditions are unfavorable (air drafts, vibrations). Values: **Stable, Unstable**.

11. COMMUNICATION

The scale can communicate with peripherals through the following ports: RS 232 (1), RS 232 (2), RS 232 (3)*, RS 485, Ethernet (1), Ethernet (2), USB (A).

Access path: **<** **/ Communication>**.

***) -** Optional design.

11.1. RS 232 Ports Settings

- Select **<RS 232>** port.
- Set transmission parameters:

Baud rate	4800, 9600, 19200, 38400, 57600, 115200 bit/s.
Data bits	5, 6, 7, 8.
Stop bits	None, 1, 1.5, 2.
Parity	None, Odd, Even, Marker, Space.

11.2. RS 485 Port Settings

- Select **<RS 485>** port.
- Set transmission parameters:

Baud rate	4800, 9600, 19200, 38400, 57600, 115200 bit/s.
Data bits	5, 6, 7, 8.
Stop bits	None, 1, 1.5, 2.
Parity	None, Odd, Even, Marker, Space.

11.3. ETHERNET Ports Settings

- Select **<Ethernet>** port.
- Set transmission parameters:

DHCP	Yes, No
IP Address	192.168.0.2
Subnet mask	255.255.255.0
Default gateway	192.168.0.1
DNS server	192.168.0.1
MAC address	- - -

⚠	***The above settings are for reference only. Set the transmission parameters in accordance with your local network.***
⚠	***<MAC address> parameter is automatically assigned to the weighing device with <Read-only> attribute.***
⚠	***In the case of <DHCP> parameter set on, and upon restart, the remaining transmission parameters are given <Read-only> attribute.***

- Upon making changes, press ✓ key, the message: **<Restart Scale to Implement Changes>** is displayed.
- Go back, and restart the device.

11.4. USB A

USB port of type A is intended for:

- connecting a USB flash drive in order to enable:
  - database export/import,
  - operator parameters export/import,
  - Alibi and weighing reports export,

- connecting a scale to a PCL printer,
- connecting RADWAG printer (featuring USB port).

⚠	***The USB flash drive must support FAT files system.***

11.5. TCP Settings

TCP (*Transmission Control Protocol)* is a stream protocol of communication between two computers. TCP operates in the client-server mode.

Server is waiting for a connection request from a specified port, whereas client initiates connection to a server. Scale program enables setting port number for **TCP** protocol.

Procedure:

- Select **<TCP / Port>**, **<Port>** box with an on-screen keyboard is displayed.
- Enter the required port number and press → to confirm.

⚠	***For RADWAG-manufactured devices, the default TCP port number is 4001.***

12. PERIPHERAL DEVICES

Settings for communication between the scale and the peripheral devices, e.g. printer, computer, barcode scanner, additional bar graph.

Access path: **<🏠 / Peripherals>**.

12.1. Computer

Active **scale – computer** connection is signaled by pictogram in the top bar of the home screen.

12.1.1. Computer Port

The scale can communicate with the computer through the following ports: RS 232 (1), RS 232 (2), RS 232 (3)*, Tcp.

***) -** Optional design.

Procedure:

- Enter **<Peripherals / Computer / Port>** submenu and select respective port from the list.

12.1.2. PC Address

Parameter that allows setting the address of the scale which the computer is connected to.

Procedure:

- Enter **<Peripherals / Computer / Address>** submenu, **<Address>** edit box and keyboard are displayed.
- Enter the address and press key to confirm changes.

12.1.3. Continuous Transmission

Parameter allowing you to activate scale - computer continuous transmission. In order to send the content of **<Weighing Printout Template>** to a computer continuously, you must activate **<Continuous Transmission>** parameter.

Procedure:

- Enter **<Peripherals / Computer / Continuous Transmission>** submenu and set respective value (- Continuous transmission disabled; - Continuous transmission enabled).

12.1.4. Interval

Parameter allowing you to set frequency of print of **<Weighing Printout Template>** for continuous transmission. Interval for printouts is set in seconds with 0.1 [s] accuracy within 0.1 - 1 000 [s] range.

Procedure:

- Enter **<Peripherals / Computer / Interval>** submenu, **<Interval>** edit box is displayed.
- Enter respective value and press key to confirm changes.

12.1.5. Weighing Printout Template

Template of an individual printout sent from the scale to the computer.

Procedure:

- Enter **<Peripherals / Computer / Weighing Printout Template>** submenu, **<Weighing Printout Template>** edit box with the on-screen keyboard is displayed.
- Modify the template and press key to confirm changes.

12.1.6. Communication with E2R System

Parameter allowing you to establish connection between the scale and **E2R System** PC software. **E2R System** is a modular solution designed to comprehensively manage production processes, some stages of which consist in weighing.

⚠	***<E2R> can be activated exclusively by the <Administrator> user. In the case of integration of the scale with <E2R System> software, editing of databases on scales is disabled.***

Access path: **<🏠 / Peripherals / Computer / E2R System>**.

<E2R System> submenu parameters:

System active	Enter to activate connection with **E2R System** PC software: - connection not established, - connection established. Successfully established connection is signaled with display of pictogram on a top bar of the home screen.
Lock product change	Enter to prevent product change: - lock disabled, - lock enabled.
Databases	Enter to configure databases communicating with the E2R System
Info	Enter to view list of database events occurring during active connection with E2R System.

12.2. Printer

12.2.1. Printer Port

The scale can communicate with the printer through the following ports: RS 232 (1), RS 232 (2), RS 232 (3)*, USB.

***) -** Optional design.

Procedure:

- Enter **<Peripherals / Printer / Port>** submenu and set the respective option.

12.2.2. Code Page

In order to provide correct communication of the weighing device with the printer (correct printout of diacritical signs of a given language), it is necessary to make sure that the code page of a sent printout is accordant with a code page of a printer.

There are two methods for obtaining code page accordance:

- by setting the right code page in the settings of a printer (read the user manual of the printer) – it must be accordant with the printout code page of a weighing device:

Code page	Language
1250	Polish, Czech, Hungarian.
1252	English, German, French, Spanish, Italian.
1254	Turkish.

- by sending the control code from the weighing device, which automatically sets the right code page of the printer (i.e. code page accordant with the one of a weighing device).

⚠	***Default code page value of the printer is 1250 – Central European code page.***

12.2.3. Control Codes

For a list and formulation of control codes supported by the RADWAG receipt printer, see the '**APPENDICES 03'** manual.

12.2.4. Printout Templates

Parameter allowing you to define individual printout templates.

Procedure:

- Enter **<Peripherals / Printer / Printouts>** submenu.
- Select and edit respective template, edit box with default value and an on-screen keyboard is displayed.
- Modify the address and press → button to confirm changes.

Default printout values:

Product Printout Template	{50} {51}
Operator Printout Template	{75} {76}
Customer Printout Template	{85} {86}
Warehouse Printout Template	{130} {131}
Packaging Printout Template	{80} {81} {82}

Ambient Condition Printout Template	IS T1: {278} °C IS T2: {279} °C THB T: {276} °C THB H: {277} %

12.3. Barcode Scanner

The barcode scanner is used to facilitate quick search for database records.

	Enter <Communication> submenu and set baud rate for a barcode scanner (by default 9600b/s). For detailed description of 'scale' - 'barcode scanner' communication read APPENDICES 03.

12.3.1. Barcode Scanner Port

The scale can communicate with the scanner via USB port.

Procedure:

- Enter **<Peripherals / Barcode Scanner / Port>** submenu and set respective port.

12.3.2. Prefix, Suffix

Parameter allowing you to edit **<Prefix>** and **<Suffix>** in order to provide synchronization of the scale program with a barcode scanner.

	In RADWAG-adopted standard, the prefix is 01 sign (byte) hexadecimal format, the suffix is 0D sign (byte) hexadecimal format.

Procedure:

- Enter **<Peripherals / Barcode Scanner / Prefix>** submenu and, using the on-screen keyboard, enter a required value (hexadecimal format).
- Go to **<Suffix>** submenu and, using the on-screen keyboard, enter a required value (hexadecimal format).

12.3.3. Field Selection

Parameter allowing you to specify for which field the search is to be carried out in particular databases.

Procedure:

- Enter **<Peripherals / Barcode Scanner / Field selection>** submenu, list of fields for search is displayed.

Values: Product, Operator, Customer, Packaging, Warehouse, Universal Variable 1, Universal Variable 2, Universal Variable 3, Universal Variable 4, Universal Variable 5, Lot number, Batch number.

- Enter selected option, the following list of parameters is displayed:

Filtering	Parameter allowing you to declare search criteria.
Offset	Parameter allowing you to set the first significant code's character, characters preceding the first significant character are skipped during comparison search.
Code Length	Parameter allowing you to set the number of code's characters to be taken into account during search procedure.
Start marker	Parameter allowing you to declare scanned code start to be taken into account during search procedure
End marker	Parameter allowing you to declare scanned code end to be taken into account during search procedure
Ignore markers	Parameter allowing you to ignore markers during barcode scanning: - function disabled, - function enabled.

Filtering criteria conditioned by the field type:

Field Selection	**Filtering**
Product	None, Name, Code, EAN code
Operator *	None, Name, Code,
Customer	None, Name, Code.
Packaging	None, Name, Code.
Warehouse	None, Name, Code.
Universal variable 1	None, Enabled.
Universal variable 2	None, Enabled.
Universal variable 3	None, Enabled.
Universal variable 4	None, Enabled.
Universal variable 5	None, Enabled.
Lot number	None, Enabled.
Batch number	None, Enabled.

***)** – After scanning the name or code, the operator gets selected, the password must be entered.

12.3.4. Test

Parameter allowing you to verify if operation of a barcode scanner connected to the scale is correct.

Procedure:

- Enter **<Barcode Scanner / Test>** submenu, message **<Test / Scan Code>** is displayed.
- The code is scanned and entered to the ASCII field and HEX filed, next the test result is displayed at the bottom of the screen.

When:

- **<Prefix>** and **<Suffix>** declared in scale settings comply with **<Prefix>** and **<Suffix>** of the scanned code, the test result is **<Positive>**.
- **<Prefix>** and **<Suffix>** declared in scale settings do not comply with **<Prefix>** and **<Suffix>** of the scanned code, the test result is **<Negative>**.

12.4. Additional Bar Graph

The scale can be integrated with an additional LED bar graph of type WSD-1.

12.4.1. Additional Bar Graph Port

The scale can communicate with an additional bar graph via the following ports: RS 232 (1), RS 232 (2), RS 232 (3)*.

***) -** Optional design.

Procedure:

- Enter **<Peripherals / Additional bar graph / Port>** submenu and select respective port.

⚠	***In <Communication> submenu, set the baud rate to match the additional bar graph (115200b/s).***

12.4.2. Additional Bar Graph Type

Parameter allowing you to set additional bar graph type.

⚠	***The additional bar graph types are analogous to the diode bar graph types and are described in detail in section 19.3.1 of the user manual.***

12.4.3. Additional Bar Graph's LED Brightness

Changing the brightness of the additional bar graph LEDs.

Procedure:

- Enter **<Peripherals / Additional bar graph / LED brightness>** submenu, **<LED brightness>** edit box is displayed.
- Enter respective value and press → key to confirm changes.

Values: from 0% to **100%** (set by default).

13. INPUTS / OUTPUTS

Optional design

The device is optionally equipped with 4 inputs / 4 outputs.

Access path: **<🏠 / Inputs/Outputs>**.

13.1. Input Setup

- Enter **<Inputs/Outputs>** submenu.
- Select **<Inputs>** parameter, list of available inputs is displayed.
- Edit selected input, list of functions to be assigned is displayed. Input functions list is identical like key functions list, read section 19.2.
- Select the function you want to assign to the input, next go back to the home screen.

⚠	***By default all functions are assigned with <None> value.***

13.2. Output Setup

Output gets activated at the moment of assigning it with a given function. Unassigned outputs remain inactive.

Procedure:

- Enter **<Inputs/Outputs>** submenu.
- Select **<Outputs>** parameter, list of available outputs is displayed.
- Edit selected output, list of functions to be assigned is displayed.

None	Output inactive.
Stable	Stable weighing result over LO threshold value.
MIN stable	Stable weighing result below the MIN threshold.
MIN unstable	Unstable weighing result below the MIN threshold.
OK stable	Stable weighing result between MIN and MAX thresholds.

OK unstable	Unstable weighing result between MIN and MAX thresholds.
MAX stable	Stable weighing result over the MAX threshold.
MAX unstable	Unstable weighing result over the MAX threshold.
! OK stable	Stable weighing result out of OK threshold.
! OK unstable	Unstable weighing result out of OK threshold.
MIN	MIN threshold signalling.
OK	OK threshold signalling.
MAX	MAX threshold signalling.
Zero	Zero weighing result („zero” marker).
Error	Message informing on error occurrence.

- Select the function you want to assign to the output, next go back to the home screen.

⚠	***By default all functions are assigned with <None> value.***

14. ADMINISTRATOR PANEL

Parameter group allowing you to determine permission levels for particular operators. There are 4 permission level types: **Guest, Operator, Advanced Operator, Administrator**. The **<Administrator Panel>** submenu can be modified by the **Administrator** exclusively.

Access path: **<🏠 / Administrator Panel>**.

14.1. Password Setting

The menu group specifying the password complexity for scale operators.

List of **<Password Setting>** submenu options:

Password minimum length	Parameter allowing you to specify the minimum number of characters in the password. For „0” value, you can set any number of characters.
Require lower- and upper-case letters	Parameter for requirement of the number of characters in user passwords: ○ - function disabled, ● - function enabled.
Require digits	
Require special characters	
Password validity term	Parameter allowing you to specify the period of time, in days, which when expired requires you to change the password. For „0” value, the password change is not required by the scale program.

14.2. Operator Account Setting

The menu group with additional scale operator account settings.

List of <Password Setting> submenu options:

Unlogged user permission	Parameter allowing you to grant permission to the scale operator who has not logged in (the so-called anonymous user). Available values: **Guest*, Operator, Advanced Operator, Administrator.**
Automatic logout	Parameter allowing you to enable automatic logout after a specific period of time, expressed in minutes, if the scale is unused. Available values: **None** (default value), **3**, **5**, **15**, **30**, **60 minutes**.
Hide mass when operator not logged in	Parameter allowing you to disable mass display if the operator is not logged in. Available values: - function disabled (default), - function active.

***)** - Set <Guest> to make sure the unlogged operator does not have any authorization to change program settings.

14.3. Permission Management

The menu group managing the permission levels to edit specific functions.

⚠	***Set the permission into <Guest" value for particular parameters to make access to settings open (no need to log in).***

List of <Permission Management> submenu options:

Databases	Parameter allowing you to change permission to database preview, database edition, weighing and report deletion and database edition.
Date and time	Parameter allowing you to change permission to **<Date and time>** menu.
Printouts	Parameter allowing you to change permission to **<Printouts>** menu.
Header printout	Parameter allowing you to change permission to **<Header printout>** function.
Footer printout	Parameter allowing you to change permission to **<Footer printout>** function.
Print / approve button	Parameter allowing you to change permission to **<Print>** item.
Change working mode	Parameter allowing you to change permission to working modes.

15. MISCELLANEOUS

Global information on scale operation.

Access path: **<🏠 / Miscellaneous>**.

15.1. Interface Language Selection

Parameter allowing you to select the language of scale menu descriptions.

Procedure:

- Enter **<Miscellaneous/Language>** submenu and select the interface language.

Available languages: Polish, English, German, French, Spanish, Korean, Turkish, Chinese, Italian, Czech, Romanian, Hungarian, Russian, Serbian.

15.2. Date and Time Setting

Parameter allowing you to set the current date and time as well as date and time format. You can edit the date and time settings in two ways:

- Press **<Date and time>** field in the top bar of the home screen.
- Go to: **<Setup / Miscellaneous / Date and Time>** submenu.

After entering the date and time settings, <**calendar window>** and **<time window>** will be displayed. Set relevant values, i.e. year, month, day, hour, minute, and confirm changes.

<Setup / Miscellaneous / Date and Time> submenu includes additional functions used to define date and time format:

Name	Value	Description
Time zone	Europe, Warsaw	Parameter with the value: zone name/country. The zone name/country is related to the information if the time switches from winter into summer (and the other way round) and specific day of the year.
Date and time	2016.04.04 08:00:00	Parameter for setting date and time of the internal clock of the scale.
Date format	yyyy.MM.dd *	Data format selection. Available values: d.M.yy, d/M/yy, d.M.yyyy, dd.MM.yy, dd/MM/yy, dd-MM-yy, dd.MM.yyyy, dd/MM/yyyy, dd-MMM-yy, dd.MMM.yyyy, M/d/yy, M/d/yyyy, MM/dd/yy, MM/dd/yyyy, yy-M-dd, yy/MM/dd, yy-MM-dd, yyyy-M-dd, yyyy.MM.dd, yyyy-MM-dd.
Time format	HH:mm:ss **	Time format selection. Available values: H.mm.ss, H:mm:ss, H-mm-ss, HH.mm.ss, HH:mm:ss, HH-mm-ss, H.mm.ss tt, H:mm:ss tt, H-mm-ss tt, HH.mm.ss tt, HH:mm:ss tt, HH-mm-ss tt, h.mm.ss tt, h:mm:ss tt, h-mm-ss tt, hh.mm.ss tt, hh:mm:ss tt, hh-mm-ss tt.

Hide time	No	Enable/disable date and time in home screen.
Internet time	Yes	If scale is connected to the Internet, this option allows you to update the time and date from the Internet.
Synchronized with Internet	Yes	Parameter that informs the operator if the time and date in the scale have been synchronized with Internet data.

***)** - For date format: y – year, M – month, d – day
****)** - For time format: H – hour, m – minute, s – second

Date and time formats can be previewed in **<Date and Time>** field and **<Date and Time>** submenu.

⚠	***Only properly permitted operator is allowed to access <Date and Time> parameters. Permission level can be changed by the administrator in <Permission> menu.***

15.3. Extension Module

Operation of additional modules activated through the license key:

- Module for activation of device compliance for FDA 21 CFR procedures.
- Module for extension of communication protocol functionality, allowing cooperation of the weighing indicator with external customer systems.
- Module for deactivation of standard scale license (the so-called demo scale).

Procedure:

- Enter **<Miscellaneous>** submenu, select **<Extension Module>** parameter and follow the messages displayed.

⚠	***To obtain the license number, contact the device manufacturer.***

15.4. Decimal Separator

Parameter allowing you to select the decimal separator for mass printout.

Procedure:

- Enter **<Miscellaneous / Decimal Separator>** submenu and select desired value.

Available values: Dot (default setting), comma.

15.5. System Event Export

The parameter allowing you to generate a special file that is recorded automatically after enabling the option in the external memory (pendrive) inserted into the USB port. This file is used to diagnose potential device malfunctions by RADWAG service technicians.

Procedure:

- Insert the pendrive into USB port of the weighing indicator.
- Enter **<Miscellaneous>** submenu and go to **<System Event Export>** item.
- Program generates a special file and saves it automatically on the pendrive.
- The file must be sent to RADWAG.

⚠	***Access to parameter settings granted to the <Administrator> only.***

16. ADJUSTMENT

Option available for non-verified scales exclusively

To assure very high weighing accuracy, the adjustment coefficient must be periodically introduced into the scale memory with reference to the mass standard – this is the so-called scale adjustment. The adjustment must be performed at the beginning of weighing or in case of an abrupt change of the ambient temperature. Before adjustment, unload the weighing pan.

16.1. External Adjustment

External adjustment is performed with the use of the external reference of a suitable precision and mass, dependent upon the scale type and lifting capacity. The procedure is semi-automatic and subsequent stages are signaled through display messages.

Procedure:

- Enter **<Adjustment>** submenu.
- Go to **<External Adjustment>** function, you will see **<Unload Weighing Pan>** message.
- Unload the weighing pan and press ✓ to confirm the message.
- While determining the start mass, the **<Determining Start Mass>** message will be displayed.

- Once the procedure is finished, the scale display will show **<Load xxx>** (where: xxx – adjustment mass).
- Place the required adjustment mass on the weighing pan and press button to confirm. The **<Adjustment>** message will be displayed.
- Once the procedure is finished, the **<Unload Weighing Pan>** message will be displayed.
- Unload the weighing pan and press button to confirm the message.
- The **<Done>** message will be displayed. The scale will return to **<Adjustment>** submenu automatically.

16.2. Start Mass Determination

If the scale does not need to be adjusted or operator does not have a suitable number of adjustment weights, only the start mass can be determined for the scale.

Procedure:

- Enter **<Adjustment>** submenu.
- Go to **<Start Mass Determination>** function. The **<Unload Weighing Pan>** message will be displayed.
- Unload the weighing pan and press button to confirm. The **<Start Mass Determination>** message will be displayed.
- Once the procedure is finished, the **<Done>** message will be displayed.
- Confirm the message through button. The scale will return to **<Adjustment>** submenu automatically.

17. SYSTEM INFO (ABOUT)

The information on the scale and installed software. Most parameters are for reference only. Available information: scale ID, scale type, application version, product code, weighing program version, CPU Id, CPU usage, license ID, memory environment, Checksum frontend / Checksum backend, settings printout.

Select **<Settings Printout>** to send the scale settings (all parameters) to the printer.

18. WORKING MODES – General Information

The scale offers the following working modes:

Weighing	The load weight is specified through an indirect measurement; the attractive force is measured. The result is processed into digital form and showed in the scale display.
Parts counting	Based on the piece unit mass, you can count pieces. It is assumed that the piece unit mass is precise enough, while further pieces are of the same mass.
Percent weighing	The percent control of the sample mass in relation to the reference, the effect of which is the information on the extent the specific sample is different from the reference sample.
Animal weighing	Mass is measured with the use of special filters that suppress movements of the animals, which allows obtaining a correct measurement.
Peak hold	Mass is held in the display – maximum scale result which reflects the peak load of the weighing pan.

18.1. Running Working Mode

- Press the top menu to expand.
- Press **<Working Mode>** item. The list of modes will be displayed.
- Select the name of mode that is to be used. The scale will activate the specific mode automatically.

19. WORKING MODES – Local Parameters

By changing parameters related to the specific working mode, you can program the scale operation.

Access path: **<** **/ Working modes>**.

List of working mode parameters:

Settings	Additional weighing options.
Buttons	Defining quick-access buttons.
Information	Selection of information to be showed in Info field.
Printouts	Printout type selection.

To gain direct access to parameters of specific working modes, press left side menu of the home screen or screen button (local parameters).

19.1. Parameters

Parameters of particular working modes offer special functions that allow adapting operation of the device to specific needs. Some special functions are global, that is apply to most available working modes, which is presented in the table below:

Printout/enter mode	✓	✓	✓	✓	✓
Tare mode	✓	✓	✓	✓	✓
Automatic Footer / C Label Printout	✓	✓	✓	✓	✓
Automatic CC Label Printout	✓	✓	✓	✓	✓
Result control	✓	✓	✓	✓	✓
Statistics	✓	✓	✓	✓	✓

Other special functions related to the specific working mode are described further in the manual.

19.1.1. Printout / Enter Mode

Information is sent from the scale to external device.

Procedure:

- Enter **<Working Modes>** menu and select working mode.
- Go to **<Parameters / Printout / Enter Mode>** submenu and set relevant options.

Where:

Printout/enter key	Manual printout mode. Available values: **Never –** inactive printout; **First stable –** Manual printout of the first stable weighing result above the parameter value <Threshold>; **Each stable –** Manual printout of every stable weighing result above the parameter value <Threshold>' **Each* -** Manual printout of every stable/unstable weighing result above the parameter value <Threshold>.
Automatic mode	Automatic printout mode. Available values: **Never –** inactive printout; **First stable –** Automatic printout of the first stable weighing result above the parameter value <Threshold>; **Last stable –** automatic printout of the last stable weighing result when mass drops below the parameter value <Threshold>; **With interval –** cyclical printout and recording of the weighing results in the weighing base with specific interval, set in <Interval> parameter.

Threshold	Parameter related to automatic working function. Another measurement is not saved as long as the mass is above the pre-defined net value <Threshold>.
Interval**	Result record frequency for automatic work with interval. The interval is set in [min]. The range of values: 1 s to 9 h 59 min 59 sec.

***)** – It is possible to print unstable data out only in case of non-verified scales.
****)** - Automatic operation with interval starts when options are activated. The first stable result that is higher than the parameter value <Threshold> is printed out and remembered as the first measurement. Further measurements are printed out as per the interval. To end the automatic operation with interval, disable the option.

19.1.2. Tare Mode

Mode that allows setting relevant taring parameters.

Procedure:

- Enter **<Working Modes>** menu and select the desired working mode.
- Go to **<Parameters / Tare Mode>** submenu and set relevant option.

Where:

Single	Regular tare mode. The specific tare value is overwritten after a new value is entered.
Sum of all	Summing up all subsequent tare values. When the scale is tared with >T< button, previous tare total values will be overwritten.
Sum of current	Summing up of currently entered product and packaging tare values with a possibility of adding the manually entered tare total value. When the product or packaging tare value is reset, the tare value entered manually will be deleted. When the scale is tared with >T< button, previously totaled tare values will be overwritten.
Autotare	Automatic tare mode. Every first measurement of the stable value is tared. When the display shows NET, you can specify the net mass. When unloaded and returned to the autozero zone, the program automatically deletes the tare value.
Each measurement	Automatic taring of each confirmed measurement.

19.1.3. Automatic Footer / C Label Printout

Function allowing you to automatically print out footer / C label after defining **<Mode>** and **<Threshold>** parameters.

Procedure:

- Enter **<Working Modes>** menu and select desired working mode.
- Go to: **<Parameters / Automatic Footer / C Label Printout>** and set relevant options.

Where:

Mode	Automatic footer/C label printout mode. Available values: **None –** manual printout of footer/C label; **Sum of measurements –** printout of footer/C label occurs when number of single labels set in <Threshold> parameter is exceeded; **Number of measurements –** printout of footer/C label occurs when number of single labels set in <Threshold> parameter is exceeded.
Threshold	Parameter allowing you to specify the value of threshold that determines printout of footer/C label. For <Sum of measurements> option set in <Mode> parameter, the value will be defined in mass unit, and for <Number of measurements> option set in <Mode> parameter, the value is specified as the number of measurements.

Manual C label printout is possible in two ways, through programmable buttons:

	Print out and reset statistics (with zeroing of number of measurements and sum of measurements).
	Footer/C label printout (without zeroing of number of measurements and sum of measurements).

	Count clearing function (number of weighing and total mass) is permanently assigned to automatic C label printout.

19.1.4. Automatic CC Label Printout

Function allowing automatic CC label printout after defining **<Mode>** and **<Threshold>** parameters.

Procedure:

- Enter **<Working Modes>** submenu and select desired working mode.
- Select: **<Parameters / Automatic CC Label Printout>** and set desired option.

Where:

Mode	Automatic CC label printout. Available values: **None –** manual printout of CC label; **Sum of measurements –** printout of CC label occurs when number of C labels set in <Threshold> parameter is exceeded; **Number of measurements –** printout of CC label occurs when number of C labels set in <Threshold> parameter is exceeded.
Threshold	Parameter allowing you to specify the value of threshold that determines printout of CC label. For <Sum of measurements> option set in <Mode> parameter, the value will be defined in mass unit, and for <Number of measurements> option set in <Mode> parameter, the value is specified as the number of measurements.

Manual printout of CC labels is possible in two ways, through programmable buttons:

	Print out and reset CC statistics (with zeroing of number of measurements and sum of measurements).
	CC Label printout (without zeroing of number of measurements and sum of measurements).

19.1.5. Result Control

If you enable the scale working mode with result control, the scale will print something out only when the load mass on the weighing pan ranges from **MIN** to **MAX** thresholds.

Procedure:

- Enter **<Working Modes>** menu and select desired working mode.
- Go to **<Parameters / Result Control>** submenu and set relevant option.

Where:

Brak	Result control disabled. The scale saves every weighing record.
Block	Result control enabled. The scale saves weighing records between MIN and MAX thresholds.
Require confirmation	Result control enabled. The scale saves weighing records between MIN and MAX thresholds. With regard to the weighing record that is between MIN and MAX thresholds, a message <Result Control> requiring weighing confirmation will be displayed.

19.1.6. Statistics

All statistical data are updated on an ongoing basis after entering subsequent measurements into the scale memory. Statistical data can be updated globally (irrespective of the weighed product) or separately for each product selected from the database.

Procedure:

- Enter **<Working Modes>** menu and select desired working mode.
- Select: **<Parameters / Statistics>** and set relevant option.

Where:

Global	Statistical data are globally updated.
Product	Statistical data are updated separately for each weighed product from the database.

19.2. Buttons

You can define 7 buttons that can be found in the lower bar. After you have assigned the function to the button, you will see a relevant icon in the lower bar of the home screen. Buttons availability depends on the working mode.

Procedure:

- Enter **<Working Modes>** submenu and select desired working mode.
- Enter **<Buttons>** submenu, edit a respective key.
- Select the function you want to assign to the key, next go back to the home screen.

List of button functions, depending on the working mode:

Symbol	Function	Working mode				
	None	✓	✓	✓	✓	✓
	Local parameters	✓	✓	✓	✓	✓
	Product	✓	✓	✓	✓	✓
	Packaging	✓	✓	✓	✓	✓
	Client	✓	✓	✓	✓	✓
	Operator	✓	✓	✓	✓	✓
	Warehouse	✓	✓	✓	✓	✓
	Checkweighing thresholds	✓	✓	✓	✓	✓
	Zero	✓	✓	✓	✓	✓
	Tare	✓	✓	✓	✓	✓
	Set tare	✓	✓	✓	✓	✓

	Disable tare	✓	✓	✓	✓	✓
	Enable tare	✓	✓	✓	✓	✓
	Print	✓	✓	✓	✓	✓
	Print header	✓	✓	✓	✓	✓
	Print footer/C label	✓	✓	✓	✓	✓
	Print CC label	✓	✓	✓	✓	✓
	Series number	✓	✓	✓	✓	✓
	Batch number	✓	✓	✓	✓	✓
	Universal variable 1	✓	✓	✓	✓	✓
	Universal variable 2	✓	✓	✓	✓	✓
	Universal variable 3	✓	✓	✓	✓	✓
	Universal variable 4	✓	✓	✓	✓	✓
	Universal variable 5	✓	✓	✓	✓	✓
	Statistics	✓	✓	✓	✓	✓
	Add to statistics	✓	✓	✓	✓	✓
	Zero statistics	✓	✓	✓	✓	✓
	Zero CC statistics	✓	✓	✓	✓	✓
	Zero all statistics	✓	✓	✓	✓	✓

	Print and zero statistics	✓	✓	✓	✓	✓
	Print and zero CC statistics	✓	✓	✓	✓	✓
	Number of labels	✓	✓	✓	✓	✓
	Number of C labels	✓	✓	✓	✓	✓
	Number of CC labels	✓	✓	✓	✓	✓
	Logout	✓	✓	✓	✓	✓
	Parameters	✓	✓	✓	✓	✓
	Working modes	✓	✓	✓	✓	✓
	Unit	✓			✓	✓
	Change platform	✓	✓	✓	✓	✓
	Create screenshot	✓	✓	✓	✓	✓
	E-signature	✓	✓	✓	✓	✓
	Hide 1 digit	✓			✓	✓
	Assign reference sample mass to product		✓			
	Parts counting: set part mass		✓			
	Parts counting: determine part mass		✓			
	Determine mass using 5 parts		✓			
	Determine mass using 10 parts		✓			

20	Determine mass using 20 parts		✓			
50	Determine mass using 50 parts		✓			
100	Determine mass using 100 parts		✓			
	Target value		✓	✓		✓
%	Percent weighing: set reference mass			✓		
100%	Percent weighing: set 100%			✓		
	Accept				✓	✓
	Abort				✓	✓

✓ *- Default settings.*

19.2.1. Default Button Settings

Function that sets default values of functional buttons and proximity sensors for each working mode.

Procedure:

- Enter **<Working Modes>** submenu and select desired working mode.
- Go to **<Buttons>**.
- Press button in the top right corner. You will see the following message: **<Are you sure you want to set default parameters?>**.
- Press button to confirm.
- Default values of functional buttons and proximity sensors will be set. The program will automatically return to the working mode submenu.

19.3. Information

The weighing-related information is showed on the left side of the central part of the scale display. The information field allows 6 pieces of information at the most. If more pieces have been chosen, the first 6 will be showed only.

Procedure:

- Enter **<Working Modes>** submenu and select desired working mode.
- Go to **<Information>** submenu. The list of information with availability attribute will be displayed: (- visible information; - invisible information).
- Enable visibility of required information and return to home screen.

Additionally you can quickly change information to be displayed through buttons in the top right corner:

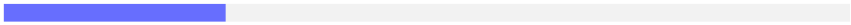
	Unselect all information.
	Select all information.
	Restore default selection.

19.3.1. Bar Graph

The bar graph is used to visualize weighing. It allows quick assessment whether the product has reached the expected mass and whether its value falls within the tolerance range.

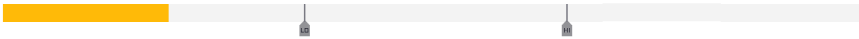
19.3.1.1. 'Linear' Bar Graph

Bar graph reflects the scope of weighing in a linear manner.

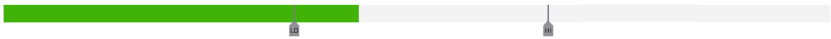


Additionally the bar graph shows MIN, MAX threshold signals if declared:

- Mass signal below MIN value:



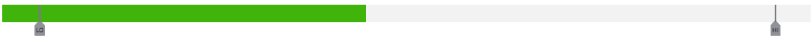
- Mass signal between MIN and MAX values:



- Mass signal above MAX value:

19.3.1.2. 'Zoom' Bar Graph

The 'linear' bar graph with **<Zoom>** option. Mass signaling between MIN and MAX values is automatically scaled (enlarged).



19.3.1.3. 'Checkweighing threshold signaling' Bar Graph

Bar graph is composed of 2 red and 1 green fields.

- **Leftmost - red –** the field signals that the mass on the weighing pan is lower than the low weighing threshold (**Min**).

- **Central - green –** the field signals that the mass on the weighing pan falls within the tolerance range for the specific product (OK).

- **Rightmost – red –** the field signals that the mass on the weighing pan is higher than the upper weighing threshold (**Max**).

19.3.1.4. 'Quick weighing' Bar Graph

Bar graph is composed of 2 red and 3 green fields.

- Green fields signal weighing between MIN and MAX thresholds, where:

  MIN = minimum threshold for good weighing LO.
  MAX = maximum threshold for good weighing HI.

- If the value is higher than MIN value (up to 1/3 of the MIN-MAX range), the green field with a triangular field on the left side are on. If the value is between 1/3 and 2/3 of the MIN-MAX range, the central green field (square) is on. If the value is between 2/3 of the MIN-MAX range and MAX value, the green field and triangular field on the right side are on.
- If mass value is below the MIN value, red field with red arrows on the left side appear. The lower the mass value, the more the red arrows.
- If mass value is above the MAX value, red field with red arrows on the right side appear. The higher the mass value, the more the red arrows.

MIN and MAX values are between outermost green fields and neighboring red fields.

19.4. Printouts

<Printouts> menu includes the following units:

Header printout template *	Group of parameters allowing declaration of variables that are to be in the header printout.
Weighing / label printout template *	Group of parameters allowing declaration of variables that are to be in the measurement printout.
Footer / C label printout template *	Group of parameters allowing declaration of variables that are to be in the footer/C label printout.
CC label printout template *	Group of parameters allowing declaration of variables that are to be in the footer/CC label printout.
Header copy quantity	Declare number of header copies that are to be printed from the printer connected to scale.
Label / printout copies quantity	Declare number of labels / printout copies that are to be printed from the printer connected to scale.
C label / footer copies quantity	Declare number of C labels/ footer copies that are to be printed from the printer connected to scale
CC label quantity	Declare number of CC labels that are to be printed from the printer connected to scale.
Printout / label base **	Collection of non-standard <printout / label> templates. The source catalog of the base is **<** **/ Data bases / Printouts/labels>**.

***)** - Standard printout template units.
****)** – Non-standard printout template unit.

19.4.1. Standard Printouts

Standard printout template units include a list of printout data. Each datum must be assigned a relevant availability attribute.

Data for standard printout:

Name				
Non-standard printout (1)	✓	✓	✓	✓
Lines (header)	✓			
N (measurement number)		✓		
Working mode	✓		✓	✓
Date	✓	✓	✓	✓
Time	✓	✓	✓	✓
Scale type	✓		✓	✓
Scale ID	✓		✓	✓

Operator	✓		✓	✓
First and last name	✓		✓	✓
Client	✓	✓	✓	✓
Warehouse	✓	✓	✓	✓
Product	✓	✓	✓	✓
Packaging	✓	✓	✓	✓
Series number		✓		
Series number		✓		
Universal variable 1…5	✓	✓	✓	✓
Net		✓		
Tare		✓		
Gross		✓		
Current result		✓		
Supplementary unit		✓		
Mass		✓		
N			✓	✓
SUM			✓	✓
X			✓	✓
MIN			✓	✓
MAX			✓	✓
D			✓	✓
SDV.P			✓	✓
SDV.S			✓	✓
RDV.P			✓	✓
RDV.S			✓	✓
Platform number		✓	✓	✓
ID		✓		
Lines (footer)			✓	✓
Empty line	✓		✓	✓
GLP report	✓		✓	✓
Signature			✓	✓
Non-standard printout	✓	✓	✓	✓

Principles of using standard printouts:

1. Press button on the scale wall to print data, with availability attribute, that are in **<Weighing / Label Printout Template>** unit.
2. Data with attribute that can be found in **<Header Printout Template>** and/or **<Footer / C Label Printout Template>** unit will be printed after pressing the relevant programmable button: **<Header Printout>** and/or **<Footer Printout>**.
3. Units for mass printout: **Net** – main (adjustment) unit; **Tare** – main (adjustment) unit; **Gross** – main (adjustment) unit; **Current result** – currently displayed unit; **Supplementary unit** – additional unit; **Mass** – main (adjustment) unit.

Data description:

Variable name	Variable description
Lines	Printout of lines that separate printout data.
Working mode	Name of scale working mode.
Date	Current date.
Time	Current time.
Scale type	Factory scale type.
Scale ID	Scale serial number.
Operator	Name of logged user.
First and last name	First and last name of logged user.
Client	Name of current client.
Warehouse	Name of current warehouse.
Product	Name of current product.
Packaging	Name of current packaging.
Universal variable 1…5	Values of universal variables 1, 2, 3, 4, 5.
Series number	Value of series number.
Batch number	Value of batch number.
Empty line	Empty line printout.
Net	Net mass in basic (adjustment) unit.
Tare	Tare value in current unit.
Gross	Gross mass in current unit.
Current result	Measurement result in current unit.
Supplementary unit	Net mass in supplementary unit.
Mass	Net mass in current unit, without prefix.
ID	Weighing identification number.

N	Measurement number.
SUM	Sum of measurements.
X	Average of measurements.
MIN	Minimum value.
MAX	Maximum value.
D	Difference between MIN and MAX.
SDV.P [1)]	Population standard deviation.
SDV.S [2)]	Sample standard deviation.
RDV.P [3)]	Population variability coefficient.
RDV.S [4)]	Sample variability coefficient.
Platform number	Platform number assigned to weighing.
GLP report	Adjustment report printout, as per settings declared for adjustment report printout.
Signature	Measurer signature field printout.
Non-standard printout	Non-standard printout template.

1	SDV.P - population standard deviation. $SDVP = \sqrt{\frac{\sum_{i=1}^{n}(X_i - \bar{X})^2}{n}}$, where: $\bar{X}$ - average measurement; X_i - next measurement, n – number of measurements.
2	SDV.S - sample standard deviation. $SDVS = \sqrt{\frac{\sum_{i=1}^{n}(X_i - \bar{X})^2}{n-1}}$, where: $\bar{X}$ - average measurement; X_i - next measurement, n – number of measurements.
3	RDV.P – population variability coefficient. $RDVP = \frac{SDVP}{\bar{X}} * 100\%$, where: SDVP – population standard deviation; $\bar{X}$ - average measurement.
4	RDV.S – sample variability coefficient. $RDVS = \frac{SDVS}{\bar{X}} * 100\%$, where: SDVS – sample standard deviation; $\bar{X}$ - average measurement.

19.4.2. Non-standard Printouts

Printout can contain text and variables (downloaded from the program upon printout). Every printout is a separate template, has its unique name for identification purposes, and is saved in database.

Procedure:

- Press **<Printout / Label Base>** area.
- Press button (add). Another box with the following data: Name / Code / Template will be displayed.

- Give name and code for the printout.
- Press **<Template>** button. The display will show a field with keyboard for printout edition.
- Use the touch keyboard (touch keyboard has the same capabilities as a typical PC keyboard) to design the printout; printout may include texts and variables.

Example:

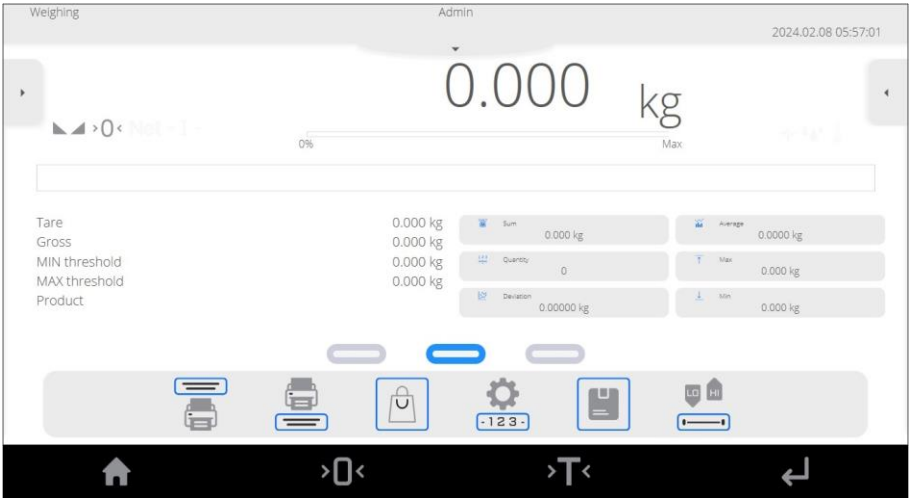
← Project BALANCE NO:{32} Max=220 g d={33} PRODUCT: {50} DATE: {2} TIME: {3} ---------- WORKING MODE: {5}	BALANCE NO: 700015 Max = 220 g d= 0.001 g PRODUCT: Product 1 Date: 2024.10.24 Time: 11:48:06
Template	*Template printout*

⚠	***Printout name does not represent content of the printout.***
⚠	***List of variables for printouts can be accessed in 'APPENDICES 03' manual.***

20. WORKING MODE – WEIGHING

<Weighing> working mode is a standard scale working mode that allows weighing together with record in database.

20.1. Home Screen



20.2. Local Parameters

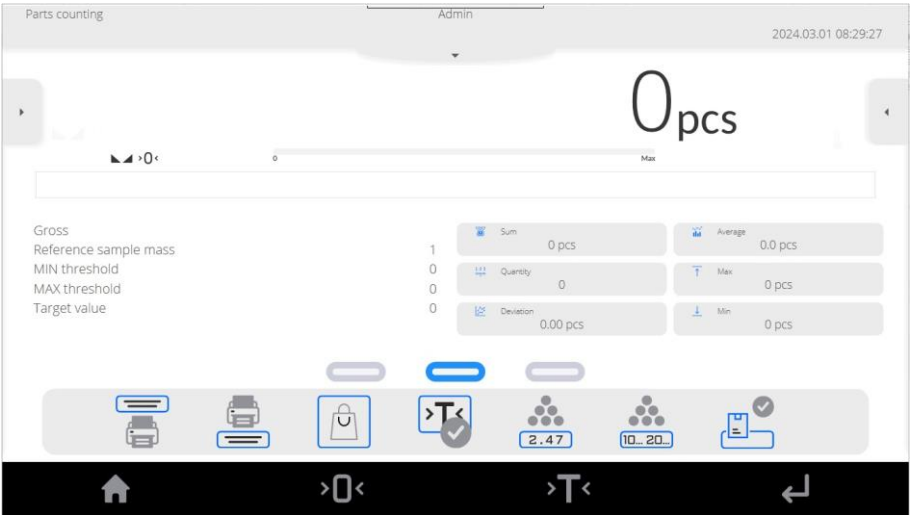
Local parameters are available in the left side menu, in <Settings> option:

Printout/enter mode	Details in point 19.1.1 of the manual.
Tare mode	Details in point 19.1.2 of the manual.
Automatic Footer / C Label Printout	Details in point 19.1.3 of the manual.
Automatic CC Label Printout	Details in point 19.1.4 of the manual.
Result control	Details in point 19.1.5 of the manual.
Statistics	Details in point 19.1.6 of the manual.

21. WORKING MODE – PARTS COUNTING

<Parts counting> is a working mode that allows counting minor items of the same mass on the basis of reference mass of the single piece on the scale or collected from database.

21.1. Home Screen



21.2. Local Parameters

Local parameters are available in the left side menu, in **<Settings>** option:

ACAI	Details in point 21.2.1 of the manual.
Minimum reference mass	Details in point 21.2.2 of the manual.
Printout/enter mode	Details in point 19.1.1 of the manual.
Tare mode	Details in point 19.1.2 of the manual.
Automatic Footer / C Label Printout	Details in point 19.1.3 of the manual.
Automatic CC Label Printout	Details in point 19.1.4 of the manual.
Result control	Details in point 19.1.5 of the manual.
Statistics	Details in point 19.1.6 of the manual.

21.2.1. Automatic Reference Sample Mass Adjustment Function

<ACAI> special function used to correct the part unit mass by the scale program.

Procedure:

- Press left side menu and select **<Settings>**.
- Go to **<ACAI>** parameter and set desired option: (- function enabled, - function disabled).

<ACAI> function is activated in the **<Parts counting>** mode upon determination of reference mass quantity and is signaled by the pictogram on the right side of the scale screen.

The scale program adopts four conditions for functions to be active:

1. Weighing result must be stable.
2. Number of parts must be increased.
3. Number of parts after increase must not be higher than twice the number of previous parts.
4. Current number of parts must not deviate from ± 0,3 of tolerance from total value.

If the operator decides that the reference sample quantity is sufficient, he/she can save the mass of a single part in the memory.

21.2.2. Minimum Reference Mass

Before the piece mass determination procedure is initiated, the operator can declare '**minimum reference mass**' condition, that is minimum total mass of all parts positioned on the weighing pan expressed in reading units.

Procedure:

- Press left side menu and select **<Settings>** option.
- Go to **<Minimum Reference Mass>** option and set relevant value.

Available values: 1 d, 2 d, 5 d, 10 d.

⚠	***If total mass of all parts placed on the weighing pan is lower than value declared in 'Minimum reference mass" parameter, the following message will be displayed: <Sample mass too low>.***

21.3. Setting Reference Sample Mass by Entering Mass of Single Part

- Press 2.47 button (Enter part mass). **<Reference Mass>** edit window and screen keyboard will be displayed.
- Enter desired value and press → button to confirm. **<Counting Parts>** working mode will be active with automatic setting of single part mass.

⚠	***If you enter unit mass that is higher than maximum scale weighing value, the scale program will display: <Value too high>.***
⚠	***If you enter unit mass that is lower than 0.1 of the reading unit, the scale program will display: <Value too low>.***

21.4. Setting Reference Sample Mass by Determining Mass of Single Part

If parts are weighed in the container, load it on the weighing pan and tare, and then:

- Press 10... 20... button (Determine part mass). **<Reference Sample Quantity>** edit window with screen keyboard will be displayed.
- Enter desired value and press → button to confirm. The message: **<Load Number of Parts: xx>** (where **xx** – previously entered value) will be displayed.
- Load the declared number of parts on the weighing pan and when the result is stable (◣◢ symbol) confirm the mass by pressing ✓.
- The scale program will automatically calculate mass of a single part and switch into **<Parts Counting>** mode. Eventually the number of parts (**pcs**) will be displayed.

⚠	***Mass of a single part must not be lower than 0.1 of the reading unit. If the aforesaid condition is not met, the scale will display: <Part mass too low>.***
⚠	***Total mass of all parts loaded on the weighing pan must not be lower than value declared in 'Minimum reference mass' parameter. If the aforesaid condition is not met, the scale will display: <Sample mass too low>.***
⚠	***Total mass of all parts loaded on the weighing pan must not be higher than maximum weighing limit.***

21.5. Setting Reference Sample Mass by Acquiring Mass of a Single Part from Database

After acquiring the product from the product base, the unit mass of a single part assigned to the product under **<Mass>** item is automatically introduced.

Procedure:

- Press button (product base) and then select product from the list.

	The product you select must have the declared unit mass of a single part. You can do so by editing the specific item in the product base.

21.6. Entering Reference Sample Mass to Scale Memory

The reference sample mass of a single part can be entered into the product base in the following way:

- Select desired product from database by pressing button.
- Determine reference sample mass (see 21.3 and 21.4 of the manual).
- Press button (assign reference sample to product). The reference sample mass will be saved for your product as **<Mass>**.

21.7. Checkweighing in Part Counting Function

Part counting process can be supported through the checkweighing – control function to check if the result is acceptable. Checkweighing requires two threshold values: Lower threshold [Min= … pcs], Upper threshold [Max= … pcs] and activation of bar graph.

It is possible to define values of Min and Max threshold in the Data Base by editing the Product or through a quick access button: (checkweighing thresholds).

Procedure:

- Press left side menu and select **<Information>** option.
- Set **<Bar Graph>** into **<Yes>** value.
- Go to left side menu again and select **<Buttons>**.
- Assign **<Checkweighing Thresholds>** to one of screen buttons and return to part counting function.
- Use button (Checkweighing Thresholds) to declare values of MIN and MAX Threshold values, and return to counting function.

- See the display, below the weighing result. It will show bar graph that displays current number of parts:
  - Yellow: current number of parts lower than MIN Threshold in [pcs].

  - Green: current number of parts between MIN Threshold in [pcs] and MAX Threshold in [pcs].

  - Red: current number of parts higher than MAX Threshold in [pcs].

21.8. Dosing in Parts Counting Function

Parts counting process can be supported through dosing – control function to check if the scale result does not exceed the target value. Dosing requires the operator to give value that is to be achieved, e.g. 100 pcs and related percent tolerance. The target value is showed as marker in the bar graph. To define values for target mass, use function button (target value).

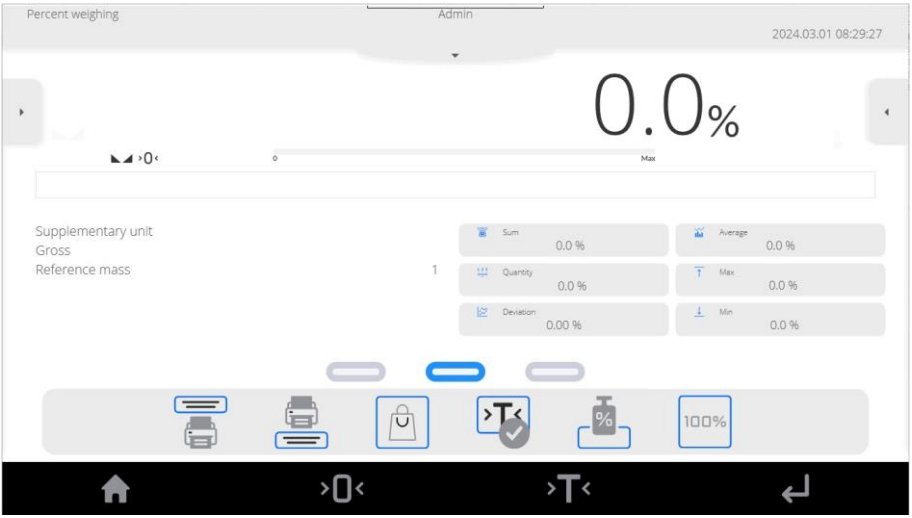
Procedure:

- Press left side menu and select **<Information>** option.
- Set **<Bar graph>** parameter into **<Yes>** value.
- Go to left side menu again and select **<Buttons>** option.
- Assign **<Target Value>** option to one of screen buttons and return to part counting function.
- Press (target value) and give number of parts to be achieved.
- If tolerance is used, give the range (0 – 100%).
- See the display, below the weighing result. It will show bar graph that displays current number of parts and target mass value (marker).

22. WORKING MODE – PERCENT WEIGHING

Checking deviation (in %) of mass of weighed loads in relation to reference sample mass. The reference sample mass can be defined by weighing or entered into the scale memory by the operator.

22.1. Home Screen



22.2. Local Settings

Local settings are available in the left side menu, in **<Settings>** option:

Printout/enter mode	Details in point 19.1.1 of the manual.
Tare mode	Details in point 19.1.2 of the manual.
Automatic Footer / C Label Printout	Details in point 19.1.3 of the manual.
Automatic CC Label Printout	Details in point 19.1.4 of the manual.
Result control	Details in point 19.1.5 of the manual.
Statistics	Details in point 19.1.6 of the manual.

22.3. Reference Sample Mass Determined by Weighing

If the reference sample is weighed in the container, place the container on the weighing pan, tare it, and then:

- Place (on the weighing pan) the load whose mass will be accepted as a reference and when the weighing result stabilizes (◣◢ symbol is on) press 100% button (Deviation: set 100%).
- The display will show 100.0%. The mass accepted as a reference has been automatically entered into **<Reference Mass>** field.
- From now on the display will not show mass of the weighed load but deviation of the load placed on the weighing pan in relation to the reference sample mass (in %).

22.4. Reference Sample Mass Entered to Scale Memory

- Press button (Enter part mass). The **<Reference Mass>** edit window will be displayed.
- Enter desired value and press to confirm.
- From now on the display will not show mass of the weighed load but deviation of the load placed on the weighing pan in relation to the reference sample mass (in %).

22.5. Setting Reference Sample Mass by Acquiring Mass of Single Part from Database

After acquiring the product from the database, the part reference mass assigned to the product under **<Mass>** is automatically entered.

Procedure:

- Press button (product) and then select desired product from the list.
- From now on the display will show deviation of the mass of the load placed on the weighing pan in relation to reference mass assigned to specific product (in %).

22.6. Checkweighing in Percent Weighing Function

The checkweighing option uses MIN and MAX thresholds expressed in [%] while checking the sample mass.

Procedure:

- Press left side menu and select **<Information>** option.
- Set **<Bar graph>** parameter into **<Yes>** value.
- Go to left side menu again and select **<Buttons>** option.
- Assign **<Checkweighing Threshold>** to one of buttons and return to part counting function.
- Press button (Checkweighing Thresholds) and enter values of MIN, MAX thresholds expressed in [%].
- See the display, below the weighing result. It will show a bar graph that displays current load mass deviation:
  - Yellow: current deviation lower than MIN Threshold in [%].

  - Green: current deviation between MIN Threshold in [%] and MAX Threshold in [%].

  - Red: current deviation higher than MAX Threshold in [%].

22.7. Dosing in Percent Weighing Function

<Percent Weighing> working mode can be supported through dosing – control function to check if the scale result exceeds the target value or not. Dosing requires the value that is to be achieved, e.g. 100% and related percent tolerance. The target value is showed as marker in the bar graph. To define value for the target mass, use function button (target value).

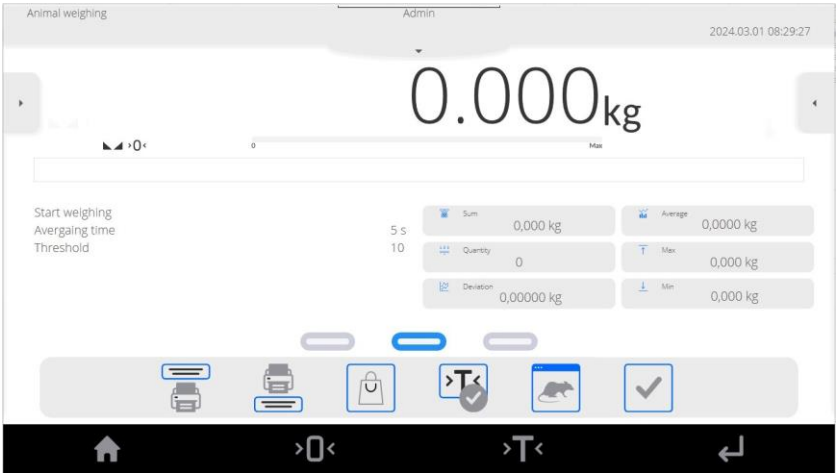
Procedure:

- Press left side menu and select **<Information>** option.
- Set **<Bar graph>** parameter into **<Yes>** value.
- Go to left side menu again and select **<Buttons>** option.
- Assign **<Target value>** to one of screen buttons and return to part counting function.
- Press (target value) and give target deviation.
- If tolerance is used, give the range (0 – 100%).
- See the display, below weighing result. It will show a bar graph which displays current deviation in [%] and target mass value (marker).

23. WORKING MODE – ANIMAL WEIGHING

The working mode that allows correct weighing of moving items. As a rule this type of the item generates unstable measurements, which requires the use of other measuring signal filtering method.

23.1. Home Screen



23.2. Local Settings

Local settings are available in the left side menu, in **<Settings>** option:

Averaging time	Time at which measurements are analyzed. The measurement result is calculated on the basis of parameters.
Automatic operation	Activation of automatic process. Item is measured automatically when the preset threshold value is exceeded. Another item can be measured after removing the item (when mass goes below the threshold value) and placing another item on the weighing pan when preset threshold value is exceeded.
Threshold	Value expressed in mass units. When exceeded, animal weighing process is initiated automatically.
Printout/enter mode	Details in point 19.1.1 of the manual.
Tare mode	Details in point 19.1.2 of the manual.
Automatic Footer / C Label Printout	Details in point 19.1.3 of the manual.
Automatic CC Label Printout	Details in point 19.1.4 of the manual.
Result control	Details in point 19.1.5 of the manual.
Statistics	Details in point 19.1.6 of the manual.

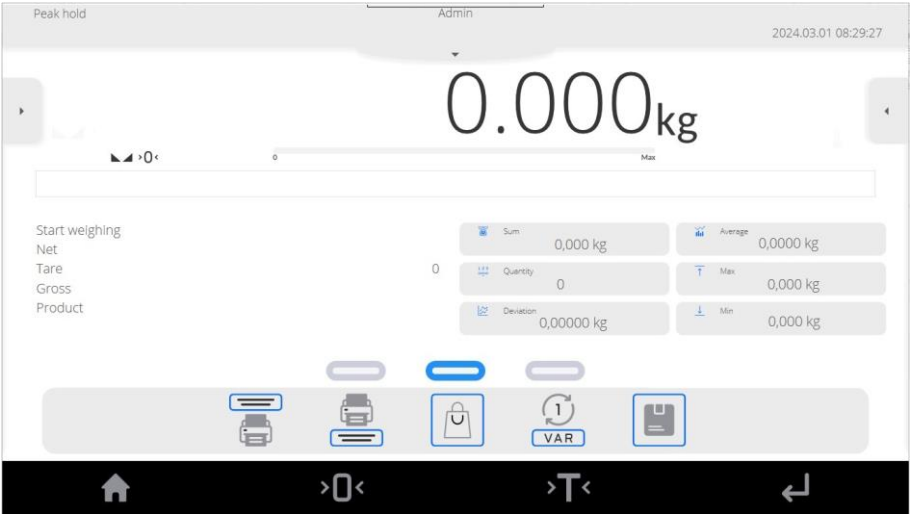
23.3. Course of the Process

- Set function parameters as per 23.2 of the manual.
- Place the item on weighing pan and press ✓ to confirm.
- When the **<Threshold>** preset mass value is exceeded, the scale program initiates item weighing. The process is signaled by the horizontal dashes in the scale window and a progressing bar graph that depends on the measurement analysis time set in **<Averaging time>**.
- Once the process is finished, the scale display shows „held" item mass value.
- Another measurement is allowed:
  - In case of non-automatic operation - after pressing ✓ to confirm.
  - In case of automatic operation – after removing the item and placing another item on the weighing pan.

24. WORKING MODE – PEAK HOLD

Working mode that allows holding the peak pressure on the weighing pan during one weighing process.

24.1. Home Page



24.2. Local Settings

Local settings are available in the left side menu, in **<Settings>** option:

Threshold	Value expressed in mass units. When exceeded, peak pressure control is initiated automatically.
Printout/enter mode	Details in point 19.1.1 of the manual.
Tare mode	Details in point 19.1.2 of the manual.
Automatic Footer / C Label Printout	Details in point 19.1.3 of the manual.
Automatic CC Label Printout	Details in point 19.1.4 of the manual.
Result control	Details in point 19.1.5 of the manual.
Statistics	Details in point 19.1.6 of the manual.

24.3. Course of the Process

- When **<Threshold>** mass value is exceeded, the function starts recording the pressure on the weighing pan. To signal holding the result, the Max pictogram on the left side of the screen is displayed.
- Another process is initiated upon removing the load from the weighing pan and pressing button.

25. DATABASES

The weighing software has the following databases: operators, products, customers, packaging, warehouses, printouts/labels, universal variables.

Access path: **< / Databases>**.

25.1. Database Management

Function that allows managing data in databases.

25.1.1. Database Deletion

Function that allows deleting data from specific databases.

Options: Products, Customers, Packaging, Warehouses, Printouts/Labels, Universal Variables, Operators.

Procedure:

- Enter **<Manage Databases / Delete Databases>** submenu.
- Select database you wish to delete. You will see the following message: **<Records quantity: x / Are you sure you want to delete?>.**
- Press to confirm the message.
- Once you have confirmed the operation, the program deletes data and displays a summary box: **<Records Deleted: x>.**
- After confirming the information, the program will go back to **<Manage Databases>** submenu.

25.2. Operations with Databases

After entering the specific base, the following options are available (depending on base type):

- Adding items to database.
- Searching items by name.
- Searching items by code.
- Searching items by date.
- Exporting data to USB mass storage memory.
- Printing information on database record.

The above-stated actions can be taken through buttons in the top right corner of the screen. Follow messages showed in the display.

25.3. Database Edition

25.3.1. Operators

Operators base contains a list of operators allowed to use the scale.

Data defined for operator:

Name	Operator's name.
Code	Operator's code.
Password	Login password.
First and last name	Operator's first and last name.
Permission	Operator's permission levels (guest, operator, advanced operator, administrator).
Active account	Account activity depends on validity period of account declared in **<Administrator Panel / Account Validity Period>** submenu.
Language	Language assigned to operator.
Motif	Application background motif. Options: **Dark**, **Light**.

25.3.2. Products

Product base contains names of all items that can be weighed, counted, controlled.

Data defined for product:

Name	Product name.
Description	Additional product description.
Code	Product code.
EAN code	EAN code for product (numerical value).
Mass	Product unit mass.
Min	Lower threshold for weighing products (result control).
Max	Upper threshold for weighing products (result control).
Tolerance	Deviation from ingredient mass in formula mode in [%].
Tare	Tare value (set automatically after selecting product).
Price	Product unit price.
Density	Product density value expressed in [g/cm^3].
Valid for (days)	Product expiry date (in days).
Date	Fixed product date.
VAT	VAT value of the product in [%].
Ingredients	Formula ingredients.
Printout / Label	Printout / single label template, assigned to product.
C label	C label template, assigned to product.
CC label	CC label template, assigned to product.

25.3.3. Customers

Customer base contains name of recipients which weighing is performed for.

Data defined for customer:

Name	Customer's name.
Code	Customer's code.
NIP [taxpayer's ID]	Customer's NIP.
Address	Customer's address.
Postal code	Customer's postal code.
City/town	Customer's city/town.
Discount	Customer's discount in [%].
Printout / Label	Customer's printout / label template.

25.3.4. Packaging

Base of packaging which products are weighed in. While weighing, after selecting the packaging from database, a tare value will be automatically selected. The screen will show it with a minus sign.

Data defined for packaging:

Name	Packaging name.
Code	Packaging code.
Mass	Packaging mass (set automatically while selecting packaging from database).

25.3.5. Warehouses

Depending on working organization, warehouses contain a list of places which sample has been collected from weighing or places which the sample has been delivered to. While weighing, after selecting the warehouse name, it will be automatically be assigned to result.

Data defined for warehouse:

Name	Warehouse name.
Code	Warehouse code.
Description	Additional warehouse description.

25.3.6. Printouts / Labels

Base contains printout / label templates which operator can assign to product or customer in order to work in the labeling scale mode.

Data defined for label:

Name	Printout / label name.
Code	Printout / label code.
Template *	Printout / label template.

***)** - Example of designing and sending label template to scale memory can be found in **„APPENDICES 03”**.

25.3.7. Universal Variables

Base contains universal variables templates that the operator can assign to function buttons in order to enter any text (e.g. numbers, letters) to be printed into the scale memory.

Data defined for universal variable:

Code	Universal variable code.
Name	Universal variable name.
Value	Universal variable value, for printout and/or weighing record.

26. REPORTS

The reports menu includes all result bases in which measurements and reports on measuring are recorded. The weighing software has the reports weighing.

26.1. Report Management

Functions that allow managing data in the report base. The following options are available: **<Export Weighing Base to File>** and **<Delete Weighing Records and Reports>**.

26.1.1. Exporting Weighing Base to File

All weighing records are saved in **<Weighing Records>** database. This information can be exported to file through a pendrive.

Procedure:

- Connect the pendrive to USB port of the scale.
- Enter **<Reports / Manage Reports / Export Weighing Record Base>** submenu. The program will display another box in which you need to set export options.

Options in <Export Weighing Record Base> submenu:

Product	Filtering exported weighing records depending on product assigned to specific weighing record. Default value: **<All>.**
Operator	Filtering exported weighing records depending on operator assigned to specific weighing record. Default value: **<All>.**
Filter by date	Exporting weighing records with regard to start date and end date: - function disabled, - function enabled.
Select data	Selection of data related to measurements to be exported. Available options: Date and time, Mass, Tare, Operator, Product, Customer, Packaging, Warehouse, Universal Variable 1, Universal Variable 2, Universal Variable 3, Universal Variable 4, Universal Variable 5, Result Control, Working Mode.
Export weighing record base to file	Exporting weighing record base to file through pendrive.
Print weighing records	Printing specific weighing records with regard to start date and end date. Option available to active function: **<Filter by Date>.**

- Set option and press **<Export Weighing Record Base to File>**. The program will start exporting weighing record base automatically.
- Once exporting is over, the following will be displayed: **<Done>** and information on number of data exported and file name (with *.txt extension), and then the scale will display **<Export Weighing Record Base>** submenu again.
- The file name is composed of a database name and scale factory number, e.g. **<Weighing Records_364080.txt>**.
- Disconnect the pendrive from scale USB port.

⚠	***If the scale cannot recognize pendrive, when you enter <Export Weighing Record Base to File> option, the following message will be displayed: <Operation Error>.***

File Template:

The file template takes a form of a table whose columns are separated through <Tab> mark for the purposes of exporting the file directly to <Excel> sheet. The table contains all information on weighing, such as date and time, mass and mass unit, tare and tare unit, series number, operator name, business partner name, packaging name, source warehouse name, target warehouse name, result control name.

26.1.2. Deleting Weighing Records and Reports

Deleting weighing records and reports from database.

Procedure:

- Enter **<Reports / Manage Reports / Delete Weighing Records and Reports>.** The calendar will be displayed. In the calendar, select limit date. The date specifies data deletion time limit – older than entered date.
- After confirming the date, the following message will be displayed: **<Are you sure you want to delete?>.**
- Press ✓ to confirm the message and all weighing records and reports covered by the time limit will be deleted.
- The number of deleted data will be showed in the message: **<Records deleted: x>**.
- After confirming the information, the program will return to **<Manage Reports>** submenu.

26.2. Operations with Reports

After entering the specific report, the following operations are possible (depending on base type):

- Searching item by name.
- Searching item by code.
- Searching item by date.
- Exporting data to USB mass memory.
- Printing information on record in report.

The above-stated actions are initiated through buttons located in the top right corner of the screen. Follow messages displayed.

26.3. Report Preview

26.3.1. Weighing Records

Every weighing result that is sent from the scale to printer or PC is recorded in the weighing record report. The operator can preview data for particular weighing records.

Data for weighing record:

Date	Weighing date and time.
Mass	Weighing result.
Tare	Tare value.
Stable	Stable weighing result marker.
Product	Product name.
Operator	Operator's name.
Customer	Customer name.
Working mode	Working mode name for weighing record.
Warehouse	Warehouse name.
Packaging	Packaging name.
Result control	Checkweighing threshold applicable to the measurement.
Universal variable 1	Value of universal variable 1.
Universal variable 2	Value of universal variable 2.
Universal variable 3	Value of universal variable 3.
Series number	Series number value.
Batch number	Batch number value.
Ambient conditions alerts	Ambient condition alerts showing temperature and humidity stability during measurement.
Platform number	Number of the platform which weighing was made on.
Note	Note assigned to weighing record.

27. COMMUNICATION PROTOCOL

⚠	***A detailed description of the protocol for communication between scale and PC can be found in „CBCP-07" manual.***

28. ERROR MESSAGES

Max weighing threshold exceeded Unload the weighing pan
Min weighing threshold exceeded Install weighing pan
Zeroing out of range Press tarring button or restart the balance
Display capacity out of range Unload the weighing pan
Tarring out of range Press zeroing button or restart the balance
Start mass out of range Install weighing pan
Zeroing/tarring time out of range Weighing indication unstable

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