User manual

ITKP-48-07-07-26-EN

Weighing terminal

PUE CY10

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JULY 2026

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1. INTENDED USE

The PUE CY10 weighing indicator is a device intended to be a component of industrial and laboratory scales operating on the basis of strain gauges. It is equipped with an ABS and aluminum housing and a 10'' color display guaranteeing perfect readability.

The indicator of standard design offers 2 USB type A interfaces, USB type C interface, Ethernet, wireless communication, Hotspot, 2 proximity sensors, RFID sensor, HDMI socket, speakers, camera and microphone. The device integrates with receipt and label printers, barcode scanners and PC accessories (mouse, keyboard, USB flash drive).

Thanks to the weighing indicator, it is possible to connect the IM02 communication module. In its standard design, the IM02 communication module expands the range of interfaces to include RS 232 IM02, Virtual COM, 4WE/4WY.

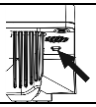
	***The device must not be operated in hazardous areas endangered with explosion of gases, and in dusty environments.***

2. SWITCHING ON

The device must be connected to the mains using exclusively the power supply (feeder cable) that comes standard with the product. The rated voltage of the power supply (given on the data plate) shall be accordant with the rated voltage of the mains.

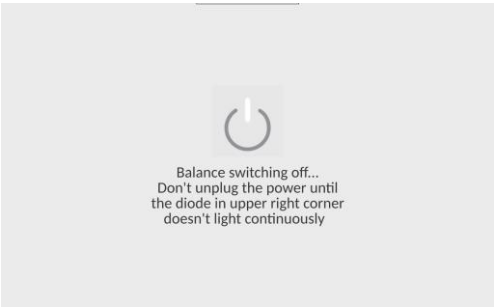
Activation procedure:

- Connect the power supply to the mains, connect the power supply plug to the weighing indicator socket at the back of the indicator housing.
- The operating system and RADWAG software start loading. During the program start-up, a signaling diode and LED diode located at the lower front part of the indicator will blink.
- Upon completed start-up, the home screen is displayed automatically.

	***Run the scale when unloaded – with an empty weighing pan. According to EN 45501 standard, in the case of verified instruments, display of weight value lower than -20e is prevented, therefore should the indication go below -20e, then <Lo mass> message is displayed in the home screen. This requires zeroing, to zero the scale press***  ***key.***
	***Should the software freeze during operation, the device needs rebooting. To reboot the device, press and hold the reboot button for about 5 seconds. Program will restart and device will reactivate.***

Shutdown procedure:

- Expand the top scale menu.
- Press the **<Off>** button.
- Select **<Off>**, the message below will be displayed.

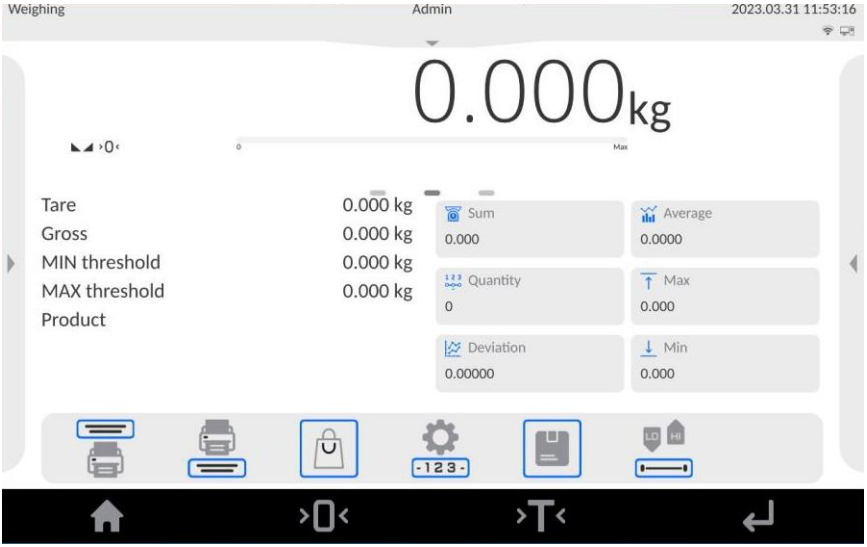


- After closing the program, the LED in the upper right corner of the display will light up continuously.
- Only then can you disconnect the power supply plug from the read head socket.

3. HOME SCREEN

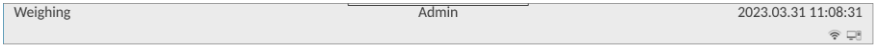
The home screen features 5 sections: top bar, weighing result window, workspace, programmable function buttons, fixed function buttons.

General view:



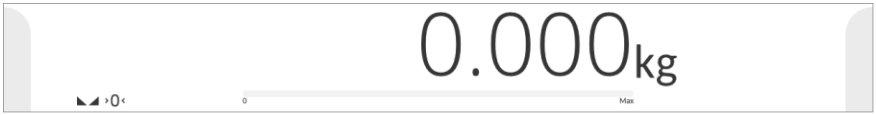
3.1. Top Bar

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



3.2. Weighing Result Window

The Weighing Result Window shows all information on weighing:



3.3. Workspace

The workspace comprises the following components: left side menu, right side menu and 3 display templates.

3.3.1. Left Side Menu

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

	For detailed description of working mode parameters, read section 20 of this manual.

3.3.2. 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.

3.3.3. Display Templates

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



Graphics at the top 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 21.3 of this manual) and widgets (statistics, ambient conditions, weighing windows of all connected platforms).
Right display template	Comprises a weighing result graph.

3.4. 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 21.2 of this manual.

3.5. 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

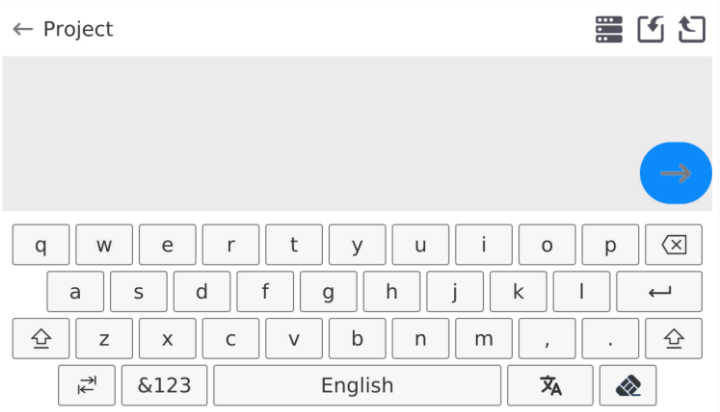
	Press to enter balance menu. Press to go to the home screen.
	Press to zero the scale.
	Press to tare the scale.
	Press to send the weighing result to a printer or computer.
	Press to confirm changes.
	Press to abort modifications and go back.
	Press to go back.
	Press to select variables for a printout from a list.
	Press to import a printout template from a pendrive.
	Press to export a printout template to a pendrive.
	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.
	Press to search for a particular record in a database by date.
	Press to search for a particular record in a database by name.
	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.



The touch keypad does not have some characters, such as a colon or diacritical letters typical of a specific menu language (menu language is signalled with description on ‘SPACE’ key). To use such characters or letters in the designed printout, press and hold the specific letter on the keyboard. It will cause additional keys with assigned characters to display. Click them to add to text. After entering the character, press ‘X’ to disable displayed characters.

The example of available characters for Polish keyboard:

Letter on the keyboard	Additional characters	Letter on the keyboard	Additional characters	Letter on the keyboard	Additional characters
„e”	ę	„t”	€	„u”	µ
„o”	ó	„a”	ą ~	„s”	ś
„l”	ł	„z”	ż ź	„x”	' `
„c”	ć \ |	„v”	[{	„b”	] }
„n”	ń	„,”	: < =	„.”	; >

4.4. Voice Commands

The scale software allows executing several functions through voice commands. These are the following: taring, zeroing, result printing/saving. Commands must be expressed in English, in a proper sequence. See below for the structure of particular commands.

Taring	**ellipsis [please] (tare | tar | terre) [the] device**
Zeroing	**ellipsis [please] zero [the] device**
Printing/saving	**ellipsis [please] save [the] (mass | measurement | mass measurement)**

4.5. 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.

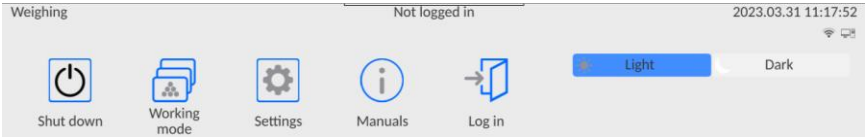
5. LOGGING

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.***

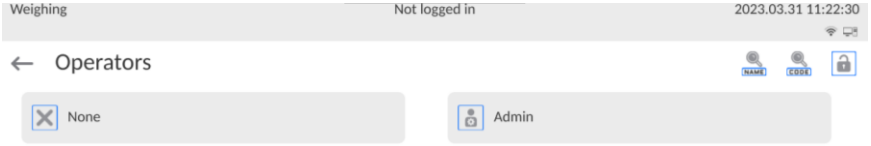
5.1. Manual Logging

In order to log in manually, press menu button located at the top of the display to expand it.



Procedure:

- 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.

5.2. Logging with Transponder Card

⚠	***The RFID scanner fixed in the head operates at the frequency of 13,56MHz and complies with ISO/IEC 14443 Type A. The cards of this standard are recognized by the scanner only.***

Procedure:

- Enter user base and edit the desired user.
- Enter **<Card Number>**, the **<Card Number>** edit field with the on-screen keyboard will be displayed.

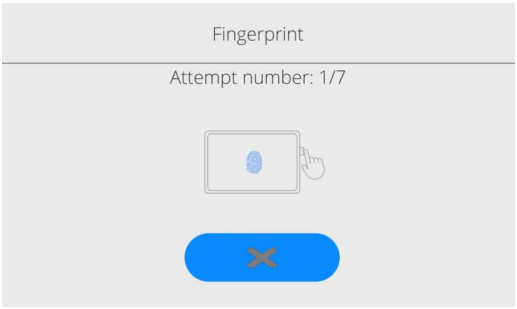
- Place the card in front of the proximity card scanner, the weighing software will automatically display registered card number in the **<Card Number>** edit box.
- Press → to confirm the number and go back to the home screen.
- From that moment on, you can automatically log in after placing this card in front of the RFID scanner.

5.3. Logging with Fingerprint Authentication

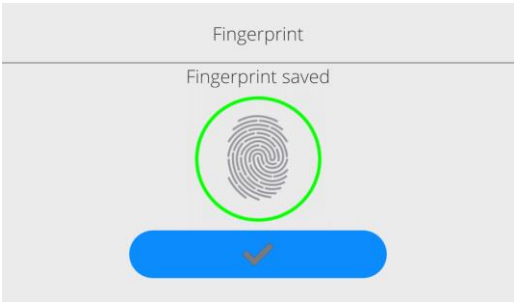
	***Only fingerprint scanners that are dedicated to the specific scales can be connected. For a list of accessories, visit the RADWAG's website.***

Procedure:

- Connect a fingerprint scanner to the USB type-A port.
- Enter user base and edit the desired operator.
- Go to **<Fingerprint>**, and wait for the following window to open:

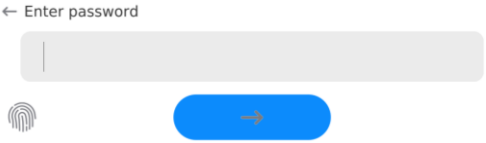


- Scan your fingerprint and repeat the procedure 7 times (as instructed in the box).
- If the procedure is successful, the summary box will be displayed:



- To confirm the procedure of assigning the fingerprint to the operator, press →.

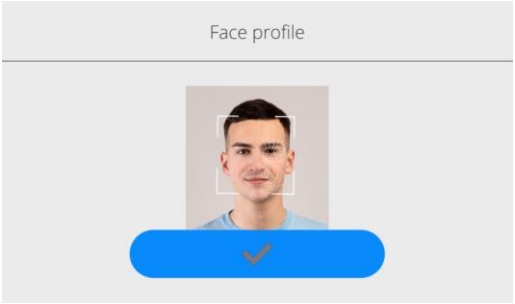
- From that moment on, if you have connected the fingerprint scanner to the USB port, the user login box will display the active fingerprint login function pictogram.



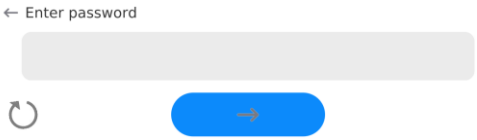
- After you have put the finger against the scanner and after the fingerprint has been confirmed, the pictogram will turn green for a while, the operator will be logged in and the software will go to the home screen. The name of the logged operator will be displayed in the top bar.
- If the fingerprint does not comply with the pattern, the pictogram will turn red for a while, and the operator will not be logged in and a login window will be displayed.

5.4. Logging with Face Recognition

- Enter user base and edit the desired operator.
- Go to **<Face Recognition>**, and wait for the message **<Loading Camera>** to pop up and face to be recognized.
- Position yourself properly in front of the camera so that the software is able to record your face in the memory.
- Once the face has been saved, the message and the camera photo will be displayed.



- Press  to close the box.
- The function description in the user configuration box will switch into **<Delete Face>**, which means that the face has been recorded.
- From that moment on, if you have added your face before and log in, software will automatically scan your face in the login box, which will be signaled by the pictogram on the left side of the box:



- The software automatically scans the operator's face photo and loads it. The camera activates afterwards (a glowing LED light next to the camera confirms it).
- The saved photo is simultaneously compared with the face scanned by the camera. If these images match, the home screen will be displayed and the name of the logged user showed in the top bar.

5.5. 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.

5.6. 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.

6. 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.

6.1. Zeroing

To zero mass indication, select the given platform on the scale display and press →0← 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>.***

6.2. Taring

To determine net weight value, load the weighing pan with a packaging, wait for a stable indication and press →T← 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>.***

6.3. Entering Tare Value Manually

- Press the previously defined on-screen key: →T← 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.

6.4. 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 >0< key.

6.5. 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 7.

6.6. 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 widget (it is located in the main display template of the home screen) with a graphic presentation of all operated platforms.



The active platform, simultaneously presented in the home screen, is distinguished by a blue screen.

7. 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.***

7.1. 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.

7.2. 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.***

7.3. 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.

7.4. 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.

8. STATISTICS

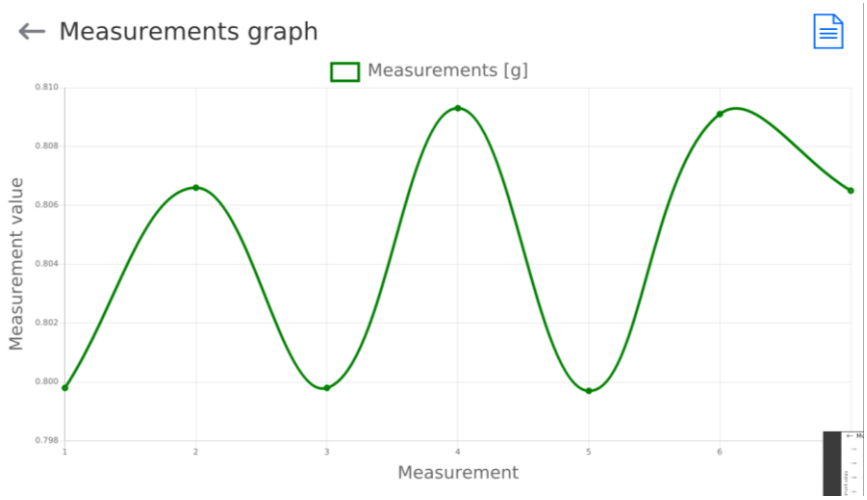
All statistical data is downloaded on a regular basis after each weighing confirmation, done by pressing ↵ key. For each series of measurement it is possible to: preview the results, print a report out, clear the most recent measurement, clear all statistics results, preview the measurement graph, preview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

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

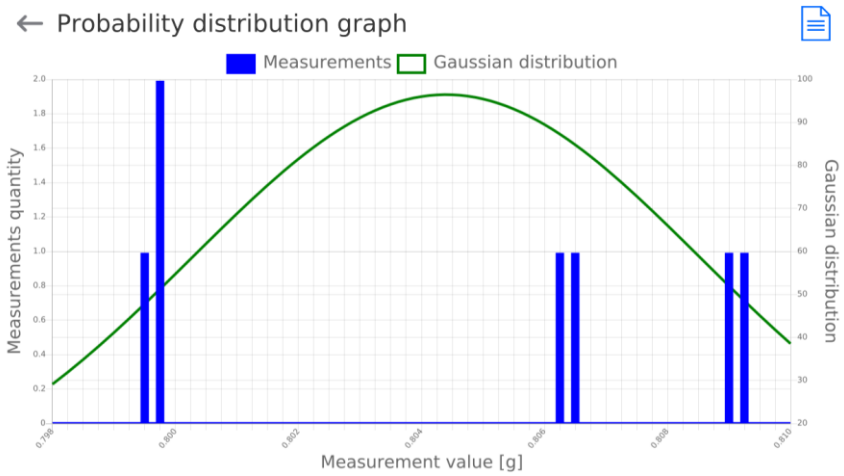
List of <Statistics> submenu options:

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 20.4.1.
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:



9. 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**.

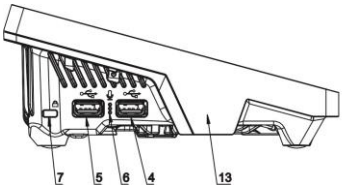
10. COMMUNICATION

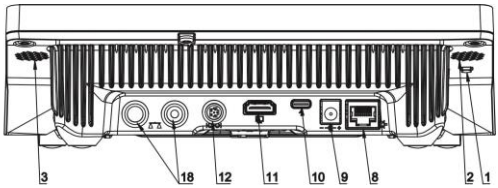
The scale can communicate with peripherals through the following ports: COM 1, COM 2, COM 3, Ethernet, Tcp, Wi-Fi®.

It is possible to expand the range of interfaces with the use of the IM02 communication module that is connected to the scale via COM3 interface. In its standard design, the IM02 communication module is supplied with the following interfaces: RS 232 IM02, Virtual COM, 4E/4S.

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

10.1. Description of connectors





4	USB type A port, upon connection to the converter recognized by the program as RS 232 port - COM1.
5	USB type A port, upon connection to the converter recognized by the program as RS 232 port - COM2.
8	Ethernet port.
10	USB type-C port.
11	HDMI port.
12	COM 3 port – RS 232 port.

10.2. RS 232 Port Settings

!	***To ensure correct cooperation with the peripherals via RS 232 ports, use USB to RS 232 converter.***

Procedure:

- Select **<RS 232>** port, where:

COM 1	Communication ports of the scale.
COM 2	
COM 3	
RS 232 IM02	Communication ports of the scale-connected IM02 communication module.

- Set transmission parameters:

Baud rate	4800, 9600, 19200, 38400, 57600, 115200, 921600* bit/s.
Data bits	5, 6, 7, 8.
Stop bits	None, 1, 1.5, 2.
Parity	None, Odd, Even, Marker, Space.

***) –** Speed value available only to the COM3 port for cooperation with IM02 communication module.

10.3. ETHERNET Port 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.

10.4. Wi-Fi® Port Settings

If the scale is equipped with an active wireless connection module, the following pictogram will be displayed in the top bar: .

	Wi-Fi® is a registered trademark of Wi-Fi Alliance. The trademark used in this document is for reference only and does not stand for compliance of any products with products certified by Wi-Fi® Alliance organization.

10.4.1. Transmission Parameters

- Select **<Wi-Fi®>** 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.

10.4.2. Network Status

- Press **<Network Status>** button and check selected network parameters.
- Respective window with network parameters is displayed:

Name	Value	Description
Network	-	Network name.
Network Status	Connected	Network status values: connected, disconnected.
RSSI	--- dbm	Network signal strength.
Forget network	-	Disconnecting current network.

The selected network and parameters for connection are stored by the scale program. The program connects to the network in accordance with the stored parameters each time the scale is switched on.

10.4.3. Available Networks

You can view a list of available networks detected by the scale.

Procedure:

- Enter **<WiFi® / Available Networks>** submenu and select the required network from the list.
- Press **<Refresh>** to search for (rescan) available networks.

10.4.4. Hot Spot

Hot Spot is an open access point that allows wireless connection to a scale using another device: laptop, tablet, telephone, via wireless network based on Wi-Fi standard.

Hot spot owner himself decides with whom and how he intends to share his link by logging in, which requires individual user name and password (data assigned during the hotspot service start-up and stored in the scale memory).

Procedure:

- Enter **<WiFi®>** parameter, set **<Hot Spot>** service on, message **<Waiting for a Service / Please wait>** is displayed.
- Hot Spot service settings are shown, **<WiFi®>** submenu features **<Name>** and **<Password>** fields.
- Provide user name and password (the password must comprise at least 8 characters) following the prompts.
- From now on, the Hot Spot service is on, the subnetwork will be detected by other devices such as smartphone under the set name, the user will be able to connect to it with the set password.

10.4.5. Virtual Network Computing (VNC)

This function allows user to gain access to the device and control it through smartphone, tablet or computer, without having to configure network connection manually.

To connect using the generated QR code, user has to scan it using for example camera in their smartphone and go into the decoded link. Device needs to have an app that processes VNC connections and it has to be in the same network as the scale.

10.5. 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.***

10.6. Virtual COM Settings

Applicable in the case of an active IM02 communication module

Virtual COM is intended for connecting the scale to a computer.

Steps:

1. Enter **<Peripherals / Computer / Port>** submenu and set **Virtual COM** option.
2. Run a PC software to read measurements made with the scale.
3. Set communication parameters in the PC software, i.e.: COM port, transmission parameters.
4. Start connection.

11. PERIPHERAL DEVICES

Settings for communication between the scale and the peripheral devices, e.g. printer, computer, barcode scanner, IM02 communication module.

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

11.1. Computer

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

11.1.1. Computer Port

The scale can communicate with the computer through the following ports: COM1, COM 2, COM 3, Tcp, USB Free Link*, RS 232 IM02**, Virtual COM**.

Procedure:

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

***) -** for port description, read section 11.1.2 of the manual.
****) -** Communication ports of the scale-connected IM02 communication module.

11.1.2. USB Free Link

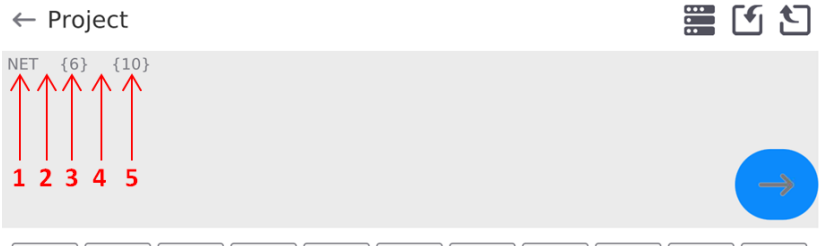
Tool enabling data entering, intended for peripheral devices, operating as a keyboard.

With this, upon respective modification of standard or non-standard printout, and upon either sending of a respective command from a computer, or pressing ENTER key on a scale keyboard, data contained in non-standard printout are entered directly from the scale to programs such as Excel, Word, Notepad and many other.

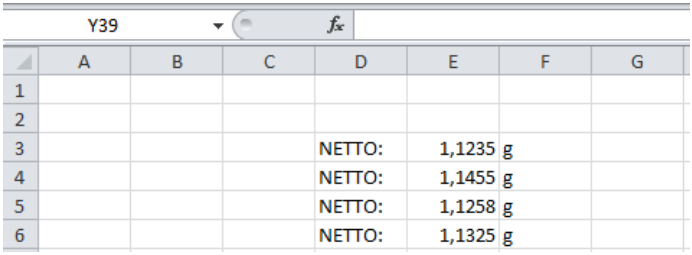
In order to ensure correct communication with program such as Excel, it is necessary to configure non-standard printout, which must be done by entering format characters, like Tab, Enter or diacritical signs, specific for a particular language, into the designed printout.
It must be also remembered to set the correct decimal point (either dot or coma), accepted by our program of Excel type. In order to set the decimal point go to: **< / Miscellaneous / Decimal Point>**.

USB Free Link is a USB type-C port (port no. 10 at the back of readout head – see 11.1 of the manual), to which the computer is connected via USB type-A/type-C cable.

Example of printout project, and printout printed in Excel:



1	fixed text.
2	tabulator (cursor movement to the next cell).
3	variable {6}, net mass in adjustment unit.
4	tabulator (cursor movement to the next cell).
5	variable {10}, mass unit.



11.1.3. 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.

11.1.4. 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).

11.1.5. 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.

11.1.6. 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.

11.1.7. 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.

11.2. Printer

11.2.1. Printer Port

The scale can communicate with the printer through the following ports: COM 1, COM 2, COM 3, USB, Tcp Client, USB Free Link*, RS 232 IM02**.

Procedure:

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

***) -** Printer port and computer port's description is likewise, read section 11.1.2 of the manual.
****) -** Communication ports of the scale-connected IM02 communication module.

	***Shall large amount of data be printed using Free Link, it is obligatory to set <Receipt Printer Speed [character/second]> parameter to value 15.***

11.2.2. 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.

11.2.3. Control Codes

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

11.2.4. 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} %
Formulations Printout Template	{165} {169}

11.3. 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.

11.3.1. Barcode Scanner Port

The scale can communicate with the scanner via USB port.

Procedure:

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

11.3.2. 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).

11.3.3. Field Selection

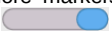
Parameter allowing you to specify for which field the search is to be carried out in particular databases.

Procedure:

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

Values: Product, Operator, Customer, Packaging, Warehouse, Formulation, 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.
Formulation	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.

11.3.4. 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>**.

11.4. IM02 communication module

The IM02 communication module allows the scale to cooperate with such accessories as printers, control keys, stack lights, buzzers, PLC controllers, as well as other control-signalling devices and PCs.

	***The procedure of connecting the IM02 communication module to the supply network and scale has been described in detail in the 'IM02 communication module' manual.***

11.4.1. Activation of IM02-to-scale connection

- Plug in the **IOIOI** connector of the IM02 communication module to **COM3 (IOIOI)** port of the scale by using a dedicated **PT0454** cable.
- Enter **<Peripherals / IM02 communication module / Aktive>** submenu and enable IM02 communication module ( - module active,  - module inactive).
- Once the IM02 communication module has connected to the scale, the following information will be automatically displayed:

Status	Active connection status, the status takes the following values: **Connected**, **Not connected**.
Software rev.	Software version of the IM02 communication module.
Manufacture variant	IM02 communication module manufacture version: **IM02.1*** - standard (RS232, 4IN/4OUT, Virtual COM); **IM02.2**** - standard + Analogue output 4-20mA.

***)** - Simultaneously the scale menu is extended to include **<Inputs / Outputs>** submenu and list of available communication ports in the **<Communication>** submenu.
****)** - Simultaneously the scale menu is extended to include **<Inputs / Outputs>** submenu, list of available communication ports in the **<Communication>** submenu and **<Current loop>** submenu in the **<Peripherals / IM02 communication module>** menu.

11.4.2. Current Loop

Applicable in the case of an active IM02.2 communication module

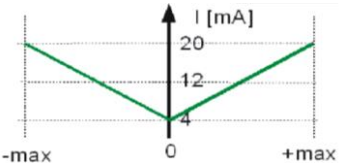
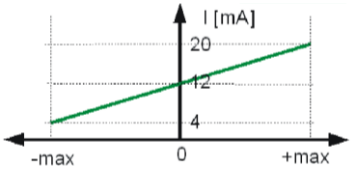
In order to configure the current loop module go to **<Peripherals / IM02 communication module / Current loop>**.

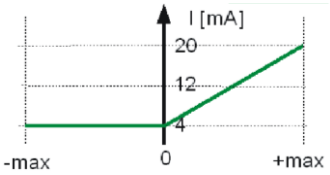
Submenu structure **<Current loop>**:

Mode	The choice of operating mode that determines current behavior of the current loop (see 11.4.2.1 of the manual).
Adjustment	Current loop module adjustment process (see 11.4.2.1 of the manual).
Min threshold	The determined calibration factor, corresponding to the **4mA** reading of the milliammeter connected to the measuring system.
Max threshold	The determined calibration factor, corresponding to the **20mA** reading of the milliammeter connected to the measuring system.

11.4.2.1. Operating mode

The choice of operating mode that determines current behavior of the current loop:

Absolute value of mass (default mode)	Working characteristics:  The **4mA** indication corresponds to a mass value equal **[0]**. The **20mA** indication corresponds simultaneously to the mass value **[-max]** and **[+max]**.
With negative range	Working characteristics:  Value **4mA** is related to **[-max]** mass value. Value **12mA** is related to **[0]** mass value. Value **20mA** is related to **[+max]** mass value.

Only positive values	Working characteristics:  Value **4mA** is related to **[-max] ÷ [0]** mass values. Value **20mA** is related to **[+max]** mass value.

11.4.2.2. Adjustment

The scale program enables determination of transient linear characteristics of 4-20mA module installed in IM02 communication module.

	***To determine the transient characteristics, connect the current loop module according to the diagrams in the "IM02 communication module " user manual.***
	***For readout of current values use milliammeter with min. range of 20 mA and resolution of 0.01 mA (20 mA – full range of current output module).***

Procedure:

- Enter **<Peripherals / IM02 communication module / Current loop / Adjustment>** submenu, **<Metered value [mA]>** edit box and keyboard are displayed.
- Enter the reading value of the milliammeter connected to the measuring system.
- Press → key to confirm changes, **<Metered value [mA]>** edit box and keyboard are displayed again.
- Repeat the above steps until **<Complete>** appears.
- Press ✓ button to confirm.
- At the same time, the **<Min Threshold>** and **<Max Threshold>** values will be determined, corresponding to the 4mA and 20mA readings of the milliammeter connected to the measuring system.
- Go to the home screen.

11.5. Transponder card scanner

The scale can cooperate with RFID card scanner. This solution allows users to improve and automate weighting processes through faster product identification and registration in the system.

Procedure:

- Go to submenu **<Devices / Transponder card scanner / Port>** and set the correct option.

11.6. Additional display

Additional display allows to replicate mass readings or presentation of extra process data in a place where it is easy to see for client or operator.

Procedure:

- Go to submenu **<Devices / Additional display / Port>** and set the correct option.
- In **<Devices / Additional display / Project>** define a template of displayed data using the print variables.

11.7. Additional bargraph

Scale can support connection of external bargraph, which is used for operators to have a graphical visualisation of mass thresholds and tolerance control in case of quality weighing.

Procedure:

- Go to submenu **<Devices / Additional bargraph / Port>** and select correct option.
- In **<Devices / Additional bargraph / Bargraph type>** submenu, select what function bargraph should fulfil (Linear, Checkweighing threshold signalling, Fast weighing).
- In **<Devices / Additional bargraph / Diode brightness>** parameter, there is an option to set the level of brightness that bargraph diodes will work on, in the scope of 0-100%
- In **<Devices / Additional bargraph / Visual printout confirmation>** parameter, user can activate special signalization in case of proper mass reading saving.

11.8. Ambient Conditions Module

The Ambient Conditions module connected to the scale enables record of the following to the scale memory: temperature, humidity, atmospheric pressure, vibrations. The scale can communicate with the ambient conditions module via UDP or USB port.

Procedure:

- Enter **<Peripherals / Ambient Conditions Module / Port>** submenu and set respective option.

11.9. Modbus TCP

	***For detailed information regarding Modbus protocol read „MODBUS TCP - Communication Protocol of PUE CY10".***

Modbus TCP protocol can be used via the Ethernet communication interface. Configuration of Modbus TCP protocol settings can be found herein the **<Devices / Modbus TCP>** submenu.

Submenu structure **<Modbus TCP>**:

Active	Activation/deactivation of the Modbus TCP transmission protocol.
Port	Number of port for transmission protocol (by default **502**).

12. INPUTS / OUTPUTS

Applicable in the case of an active IM02 communication module

The PUE CY10 meter can support **4 inputs / 4 outputs** via connection to the IM02 communication module.

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

12.1. 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 20.2.
- 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.***

12.2. 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.
! OK	Signalling of weighing result out of OK threshold.
Zero	Zero weighing result („zero" marker).

- 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.***

13. ADMINISTRATOR PANEL

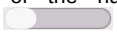
Parameter group allowing you to determine permission levels for particular operators. There are 4 permission level types: **Guest, Operator, Advanced Operator, Administrator**. The **<Administrator Panel>** submenu can be modified by the **Administrator** exclusively.

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

13.1. Password Setting

The menu group specifying the password complexity for scale operators.

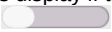
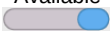
List of **<Password Setting>** submenu options:

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.

13.2. 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.

13.3. 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.
Videos	Parameter allowing you to change permission to **<Videos>** menu.
Change working mode	Parameter allowing you to change permission to working modes.

13.4. Backups

This function allows user to manage the security of the data gathered on the scale. It allows to secure the configuration from accidental loss or transfer of the data to another device too.

To create a copy you need to prepare and connect a pendrive into the scale. After selecting **<Make backup>**, a restart will occur and data duplication process will began. On successful completion, user will be alerted with suitable pop-up message.

In case of restoring the data from copy file, you need to connect a pendrive with a backup file (it has a .Ybackup2 extension). After running **<Restore backup balance data>** parameter, the scale will ask user to point to a file from the connected memory. After confirmation a restart will happen and restoring from backup process will begin.

13.5. Remote access password

The balance allows you to gain remote access, using connection between the balance and local Internet network that a PC is connected to. The **VNC Viewer** application can be used for this purpose.

A default access password in the program is a sequence of the following characters: **radwag1234.** If the operator does not wish to use the default password, he must enter its own unique access password in the relevant field.

	***Please remember a new password in order not to lose a remote access to the balance.***

14. MISCELLANEOUS

Global information on scale operation.

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

14.1. 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, Portuguese, Japanese, French (Switzerland).

14.2. 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	2026.04.04 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.yyyy, ▪ dd.MM.yy, ▪ dd.MM.yyyy, ▪ dd.MMM.yyyy, ▪ yyyy.MM.dd, ▪ yy/MM/dd, ▪ d/M/yy, ▪ dd/MM/yy, ▪ dd/MM/yyyy, ▪ M/d/yy, ▪ M/d/yyyy, ▪ MM/dd/yy, ▪ MM/dd/yyyy. ▪ dd-MM-yy, ▪ dd-MMM-yy, ▪ yy-M-dd, ▪ yy-MM-dd, ▪ yyyy-M-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.
NTP server adress	-	Parameter that takes NTP server address which user types.

***)** - 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.***

14.3. 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.***

14.4. Sound

Parameter allowing you to set the scale sounds.

Procedure:

- Enter **<Miscellaneous / Sound>** submenu and set the relevant option (- Function enabled; - Function disabled).

List of <Sound> submenu items:

- Result confirmation sound.
- Touch screen sound.
- Sensors.
- Volume (range: 0 to 100%).

14.5. Visual printout confirmation

The option that allows you to visually confirm the measurement and record it in the weighing record base. After entering value, every saved measurement will be communicated to the operator through temporary illumination of the mass display in blue.



14.6. Screensaver

Parameter allowing you to save screen.

Procedure:

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

Available values: None (default setting), 1, 2, 3, 5, 10, 15.

Digital values are set in minutes. Select one of the values to automatically select it and return to the previous menu.

	***Screen is saved only when the scale remains inactive (no changes to mass in the display). Weighing is back when the program detects any changes to the mass or when the display or button on the wall are pressed.***

14.7. Display Brightness

Parameter allowing you to change the display brightness from **0%** to **100%**.

Procedure:

- Enter **<Miscellaneous / Display Brightness>** submenu and select desired value.

Available values: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, **100%** (default setting).

	***Display brightness influences life of the scale if powered by storage battery. If operator intends to prolong the interval between battery charging cycles, brightness must be lowered.***

14.8. Ambient light

This function allows to turn on and off external LED backlight that is placed under the balance base. This light fulfils function of intuitive status indication, results of processes, procedures or alerts too. Backlight has colours assigned for specific actions: green, yellow and red.

14.9. 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.

14.10. Proximity Sensor Sensitivity

Parameter allowing you to set distance that triggers sensor reaction. This regulation ranges from 0 to 9, where the lowest values represent the smallest distance. By default this value must range from 5 to 7.

Procedure:

- Enter **<Miscellaneous / Sensor Sensitivity>** submenu and select desired value.

Available values: 0, 1, 2, 3, 4, **5** (default value), 6, 7, 8, 9.

14.11. Intro Logo

Parameter allowing you to change the image in the display during the system initiation.

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

14.12. Main screen layout

This function allows to set scale main screen widgets. In configuration of this option it is possible to define displaying left and right panel. Left pane contains Notes, compact space for writing related content to the weighting. Right pane contains Graphs, that shows user weighing, environmental condition or vibrations visualisation.

14.13. Platform name

It is a place where user can personalize balance platform names. Default name is “Platform x” where x means a number between 1 – 4.

14.14. Platform eccentricity

Platform eccentricity allows for the correction of eccentric load error for each platform, thus eliminating differences in weight readings that may occur, for example, when a load is placed outside the geometric centre of the pan.

In the menu, you define the correction factor value for the platform in the **<Platform x - Value>** parameter and the reference mass that must be used to perform eccentricity adjustment on a given platform in the **<Platform x - Reference mass>** parameter.

14.15. 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.***

14.16. Text into Speech Shift

Parameter allowing you to enable processing of names of particular groups and menu parameters into speech emitted from the measuring head speakers. The voice is available in English only.

15. 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.

15.1. 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.

15.2. 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.

15.3. Report printout

The <Report printout> parameter determines whether the calibration report is to be printed automatically after its completion. For automatic printing to occur, set the parameter to the active print position.



15.4. GLP Project

GLP is one way to document work in accordance with a quality system. The information selected for printing will be printed with each balance calibration report. The user can use the following information and symbols:

Adjustment	Working mode
Date	Time
Balance type	Balance S/N
Operator	Name and Surname
Level status	Nominal mass
Current mass	Difference
Nominal mass 2	Current mass 2
Difference 2	Temperature
Dashes (separate using „--”)	Empty line
Signature	Non-standard printout

15.5. Adjustment history

It contains all completed mass comparator calibrations. Recording is automatic. Each saved calibration contains basic data regarding the performed process. From this menu, you can view a list of saved calibrations. Each report can be printed.

To print a calibration report, go to the **<Calibration / Calibration History>** submenu, select the calibration to be printed, and after displaying the details, click the printer icon on the top bar.

	***Calibration reports are saved in memory continuously from the moment the scale is turned on. There is no limit to their number.*** ***However, if there are more than 100 reports in the scale's memory,*** ***the last 50 saved reports will be deleted upon restart, leaving 50 in the database.*** ***After turning the scale on again, the reports will be added to the scale's memory again.***

If internal procedures require complete documentation of all calibrations performed, a list of calibration records should be printed and archived periodically.

15.5.1. Searching for a Completed Calibration

It is possible, user can search for information about a completed calibration by pressing the 

button and entering the date it was performed.

15.5.2. Exporting Information About Completed Calibration

To export information about completed calibrations, insert a USB flash drive into the scale's port. Then, press the  button located in the upper right corner of the display. The process is automatic. Once completed, a file with the **.tdb** extension is saved, which can be edited in Excel or a text editor.

16. SCHEDULED TASKS

Parameters that allow you to schedule cyclical tasks, such as scale adjustment or special message display.

16.1. Scale Adjustment

<Scheduled Adjustments> is a parameter that allows you to declare precise time and interval for scale adjustments. This option is independent of automatic adjustment and triggering criteria (time, temperature). You can schedule the internal adjustment and external adjustment.

To schedule external adjustments, you need to introduce reference weights into the scale memory to make sure the adjustments are possible.

Procedure:

- Before you set the adjustment plan, enter reference weights together with their data for external adjustments. To do so, go to **<Adjustment / Adjustment Weights>** submenu.
- Enter the weight reference data: name, code, class, serial number, mass, assembly number.
- Go to **<Scheduled Tasks>** submenu. You will see the box in which the authorized operator (Administrator) can add items with scheduled adjustments.
- Press  button. The scheduled adjustment data box will be displayed.
- Select the scheduled task: automatic (internal) adjustment or external adjustment.
- If you have chosen the automatic adjustment, enter data on adjustment and its schedule.
- If you have chosen the external adjustment, enter data on adjustment, reference weight used to conduct it and its schedule.
- Once data have been entered, return to the previous box. The item with schedule scale adjustment will be added.
- After you have entered all data, leave the menu. From that moment on, adjustments will be automatic: at the schedule time and intervals.

16.2. Message

Parameter allowing you to declare the exact time and interval of displaying the special message that informs you about a need to take an instant action.

Procedure:

- Enter **<Schedule Tasks>** submenu. You will see a box in which the authorized operator (Administrator) can add items with scheduled messages.

- Click  button and go to **<Scheduled Tasks>** field.
- In the box – select **<Message>** item. The program will display the message settings box.
- After you have set the message display frequency (first occurrence, interval), select **<Message>** parameter and enter the content of the message.
- Press  button to confirm the entry. The program will display the previous box.
- The submenu box will display the scheduled task field. Leave the menu and go to the program main box.
- After you have met message display criteria (time), the box with the message will pop up automatically.
- Press  key to deactivate the box and perform scheduled tasks.

17. UPDATE

	***<Update> function is unavailable to verified scale (subject to metrological legal inspection).***
	***Access to this function is granted to <Administrator> exclusively.***

The submenu includes the following modules with the use of which you can update: operator-related field (application) and motherboard. The update is automatic by downloading information from the external USB memory.

Procedure:

- Prepare the external pendrive memory with the update file. The file must come with *.lab4 extension.
- Insert the pendrive into the USB port of the weighing indicator.
- Log in as an Administrator.
- Enter **<Update / Application>** submenu to see the content of the USB memory.
- Find the update file and click the relevant name field.
- The scale will restart and the application will be updated.
- If the above-stated procedure does not occur, you must force the start by turning the power off and back on.

The motherboard file update is analogical to the application update, yet the files must come with relevant *.cm4mbu extensions.

18. SYSTEM INFO (ABOUT)

The information on the scale and installed software. Most parameters are for reference only.

Available information:

Balance S/N	Contains the device's serial number
Balance Type	Indicates the device type
Network balance name	The name under which the device can be found in the ICT network
Software version	Device application version number
Product code	Application identification number
Weighing firmware version	Program version number in the weighing module
Product code 2	Weighing software identification number
System version	Application system version name
CPU Id	Processor identification code
Licence Id	Scale license code
Memory status	Flash and RAM memory usage information
Last adjustment	Last calibration date
Help	Instruction menu
License	Application license description
Wi-Fi certificates	Wi-Fi certificate description
Print settings	Parameter for printing all settings

In **<Environment>** parameter, you can see various ambient parameters: temperature, humidity, pressure (when the scale is equipped with relevant sensors).

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

19. 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.
Formulations	Using further ingredients, you can make any mixture; the formulation must be programmed by giving masses of particular ingredients.
SQC	Working mode that proves useful while products are packed in order to monitor and/or control packing process. It allows detecting excess and insufficient quantities of products in packaging.
PGC*	Responsible for controlling packed goods as per the packed goods act.

***)** - function not available in the standard variant.

19.1. 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.

20. 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).***

20.1. 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	✓	✓	✓	✓	✓	-
Labeling mode	✓	✓	✓	✓	✓	-
Printout / label	✓	✓	✓	✓	✓	-
Footer / C label	✓	✓	✓	✓	✓	-
CC label	✓	✓	✓	✓	✓	-
Result control	✓	✓	✓	✓	✓	-
Statistics	✓	✓	✓	✓	✓	✓

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

20.1.1. 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.

20.1.2. 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  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  button, previously totaled tare values will be overwritten.
Autotare	Automatic tare mode. Each first measurement after reaching stable state is tarred. Display will show NET sign to differentiate net mass. After taking the weight off the balance and returning to autozero scope, system will automatically discard tare value.
Each measurement	Automatic tare for each confirmed measurement.

20.1.3. 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.***

20.1.4. 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).

20.1.5. 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.

20.1.6. 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.

20.2. 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. You can also add or change buttons in other way. To do so, press and hold the field in the buttons bar for about 3 seconds.

Procedure:

- Press and hold the field in the buttons bar for about 3 seconds. The program will display the box with available buttons.
- Press the button to be added and the program will return to home screen. The button will be visible in the activated place.

	***You can browse the operating manual saved in the memory of the scale. To use this function, set ? help button in the buttons bar.***

List of button functions, depending on the working mode:

Symbol	Function	Working mode					
	None	✓	✓	✓	✓	✓	✓
	Local parameters	✓	✓	✓	✓	✓	✓
	Product	✓	✓	✓	✓	✓	✓
	Packaging	✓	✓	✓	✓	✓	✓
	Formulation						✓
	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	✓	✓	✓	✓	✓	✓
	Help	✓	✓	✓	✓	✓	✓
	Create screenshot	✓	✓	✓	✓	✓	✓
	Voice command	✓	✓	✓	✓	✓	✓
	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		✓				
	Determine mass using 20 parts		✓				
	Determine mass using 50 parts		✓				
	Determine mass using 100 parts		✓				
	Target value		✓	✓		✓	
	Percent weighing: set reference mass			✓			
	Percent weighing: set 100%			✓			
	Formulation using out of database						✓
	Formulation with multiplier						✓
	Formulation with target mass						✓
	Skip ingredient						✓
	Accept				✓	✓	✓
	Abort				✓	✓	✓

✓ *- Default settings.*

20.2.1. Proximity Sensors

The scale is equipped with two proximity sensors that allow controlling its operation with no need to press buttons on the touch screen. The program recognizes two motion modes near sensors:

1. Putting a hand in front of left sensor **<Left sensor>**.
2. Putting a hand in front of right sensor **<Right sensor>**.

3. Gesture to the left from one sensor to the other **<Proximity sensor: gesture to the left>.**
4. Gesture to the right from one sensor to the other **<Proximity sensor: gesture to the right>.**

Each gesture can be assigned one of functions. Functions are identical to buttons (see point 20.2 of the manual). After selecting the setting value and returning to weighing, the program recognizes the gesture and takes the relevant action.

Procedure:

- Enter **<Working Modes>** submenu and select desired working mode.
- Enter **<Button functions>** submenu and edit the desired proximity sensor.
- Select relevant function from the list and go back to home screen.

20.2.2. 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.

20.3. 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.

	***<Bar graph> information is the exception as its types differ depending on the working mode (see 20.3.1 of the manual).***

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.

20.3.1. Bar Graph

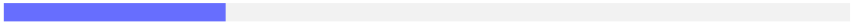
The bar graph is used to visualize weighing. It allows quick assessment whether the product has reached the expected mass and whether its value falls within the tolerance range.

Available types of bar graphs, depending on working mode:

Bar graph type	**Working mode**							
								
Linear	✓	✓	✓	✓	✓	✓	✓	✓
Zoom	✓	✓	✓	✓	✓	✓	✓	✓
Checkweighing thresholds signaling	✓	✓	✓	✓	✓			✓
Quick weighing	✓	✓	✓	✓	✓			✓

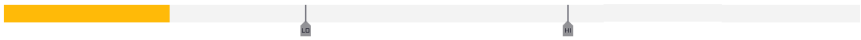
20.3.1.1. ’Linear’ Bar Graph

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

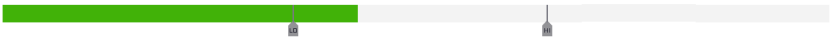


Additionally the bar graph shows MIN, MAX threshold signals if declared:

- Mass signal below MIN value:



- Mass signal between MIN and MAX values:



- Mass signal above MAX value:



20.3.1.2. 'Zoom' Bar Graph

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



20.3.1.3. '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**).



20.3.1.4. '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.

20.4. Printouts

<Printouts> menu includes the following units:

Formulation report	Group of parameters allowing declaration of variables that are to be included in the formulation report printout (see point 21.4.3 of the manual).
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.
Footer / 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.

20.4.1. 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.

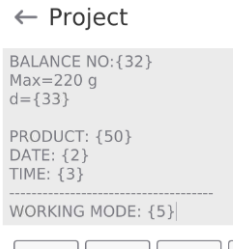
20.4.2. Non-standard Printouts

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 of printout 1 – use of edit field

	BALANCE NO: 400015 Max = 220 g d= 0.001 g PRODUCT: Product 1 Date: 2011.10.24 Time: 11:48:06
Template	*Template printout*

Example of printout 2 – printout from file

All printout templates can be prepared as external files that can be imported to the scale. Such a file must come with *.txt or *.lb extension and include all permanent information and variables. The content of such a file can be modified after importing.

Procedure:

- Create *.txt or *.lb file in any editor and copy into the USB memory.
- Insert the USB memory into the scale port.
- Press  button (download printout from file). The scale display will show content of USB memory.
- Find the file with printout and press its name.
- Printout will be automatically copied into edit field.

	***Operator can add printouts from external memory by importing already configured texts with the use of USB port.***
	***Printout name does not represent content of the printout.***



List of variables for printouts can be accessed in 'APPENDICES 03' manual.

20.4.3. Formulation Report Printouts

Group of parameters allowing you to declare data that is to be printed on a formulation report printout. Formulation report is generated automatically after either completion or abortion of each process.

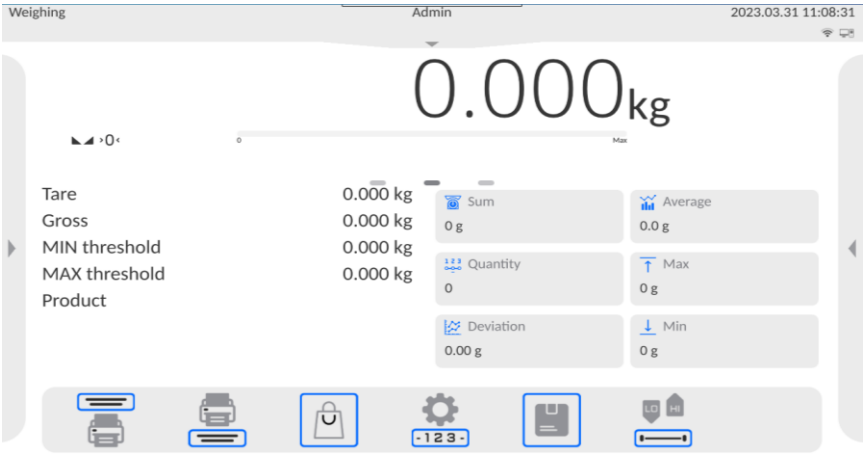
Formulation report data:

Working mode	Working mode name.
Operator	Operator performing formulation process.
Name and Surname	First and last name of the logged operator.
Customer	Customer for whom the formulation is carried out.
Warehouse	Name of current warehouse.
Formulation	Formulation name.
Formulation code	Formulation code.
Start date	Formulation start date.
End date	Formulation end date.
Ingredients quantity	Number of formulation ingredients.
Measurements quantity	Number of weighings performed within the formulation cycle.
Measurements	List of measurements made under the formula.
Target value	Preview of total mass of formulation.
Sum	Total weight value of the performed formulation.
Formulation difference	Sum and target value difference.
Status	Formulation status. Status values: **Ongoing**, **OK**.
Empty line	Empty line printout.
Dashes	Dashed line separating printout data and signature fields.
Signature	Signature field for the person carrying out the process.
Non-standard printout	Non-standard printout template.

21. WORKING MODE – WEIGHING

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

21.1. Home Screen



21.2. Local Parameters

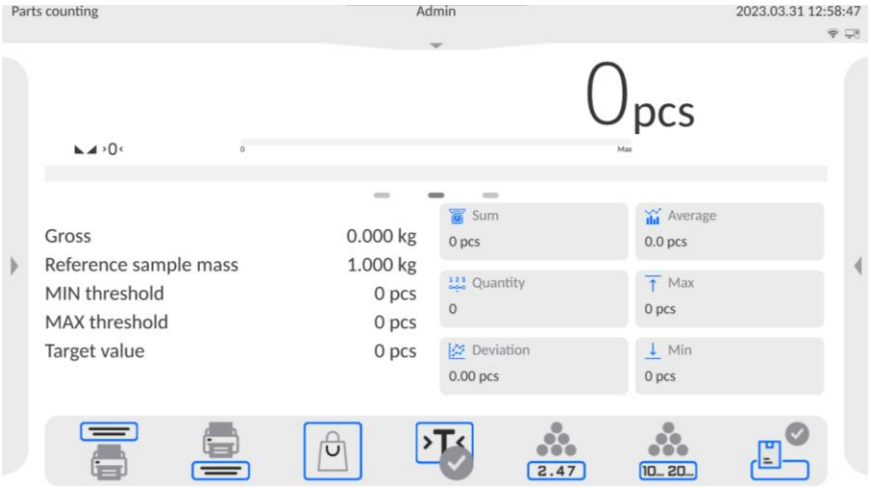
Local parameters are available in the left side menu, in <Settings> option:

Printout / Enter mode	Details in point 20.1.1 of the manual.
Tare mode	Details in point 20.1.2 of the manual.
Automatic footer / C label printout	Details in point 20.1.3 of the manual.
Automatic CC label printout	Details in point 20.1.4 of the manual.
Result control	Details in point 20.1.5 of the manual.
Statistics	Details in point 20.1.6 of the manual.
Dispensing	Switching on/off Dispensing mode

22. 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.

22.1. Home Screen



22.2. Local Parameters

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

ACAI	Details in point 22.2.1 of the manual.
Minimum reference mass	Details in point 22.2.2 of the manual.
Printout / Enter mode	Details in point 20.1.1 of the manual.
Tare mode	Details in point 20.1.2 of the manual.
Automatic footer / C label printout	Details in point 20.1.3 of the manual.
Automatic CC label printout	Details in point 20.1.4 of the manual.
Result control	Details in point 20.1.5 of the manual.
Statistics	Details in point 20.1.6 of the manual.
Dispensing	Switching on/off Dispensing mode

22.2.1. 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.

22.2.2. 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>.

22.3. 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>.***

22.4. 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.***

22.5. 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.

22.6. 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 22.3 and 22.4 of the manual).
- Press button (assign reference sample to product). The reference sample mass will be saved for your product as **<Mass>**.

22.7. 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].



22.8. 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).

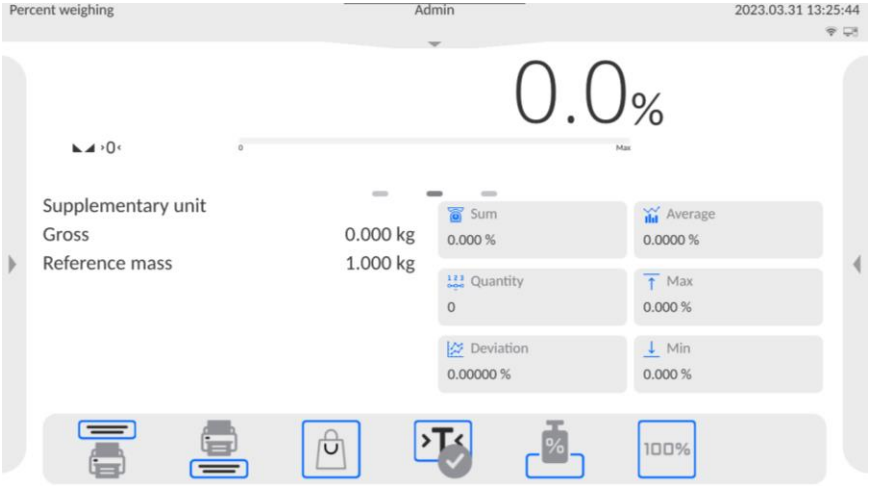
Procedure:

- 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).

23. 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.

23.1. Home Screen



23.2. Local Settings

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

Printout / Enter mode	Details in point 20.1.1 of the manual.
Tare mode	Details in point 20.1.2 of the manual.
Automatic footer / C label printout	Details in point 20.1.3 of the manual.
Automatic CC label printout	Details in point 20.1.4 of the manual.
Result control	Details in point 20.1.5 of the manual.
Statistics	Details in point 20.1.6 of the manual.
Dispensing	Switching on/off Dispensing mode

23.3. 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  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 %).

23.4. 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 %).

23.5. 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 %).

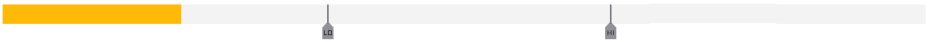
23.6. Checkweighing in Percent Weighing Function

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 [%].



23.7. 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).

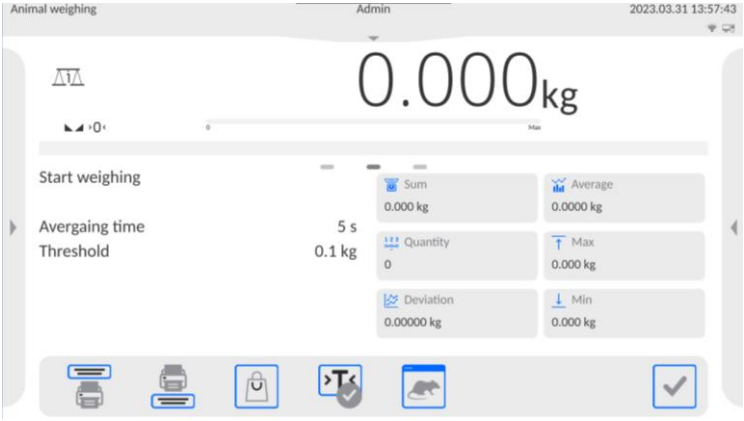
Procedure:

- 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).

24. 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.

24.1. Home Screen



24.2. Local Settings

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

Printout / Enter mode	Details in point 20.1.1 of the manual.
Tare mode	Details in point 20.1.2 of the manual.
Automatic footer / C label printout	Details in point 20.1.3 of the manual.
Automatic CC label printout	Details in point 20.1.4 of the manual.
Result control	Details in point 20.1.5 of the manual.
Statistics	Details in point 20.1.6 of the manual.
Dispensing	Switching on/off Dispensing mode

Additionally, in parameter „Animal weighing  ” in function button bar user can set:

Averaging time	Time, in which measurements are analyzed. From those measurements, final result is calculated.
Automatic operation	Activation of automatic course of the process. Object measurement begins automatically after crossing the set threshold. Next measurement can be started after taking the object from the balance and mass reading going under the set threshold.
Threshold	Value which sets the border that weighted object needs to cross to automatically begin the weighing process, expressed in measurement units.

24.3. Course of the Process

- Set function parameters as per 24.2 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.

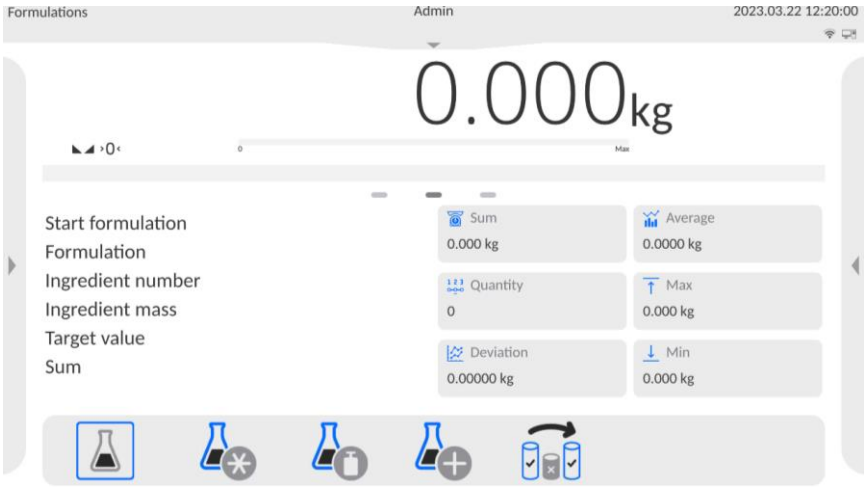
25. WORKING MODE – FORMULATIONS

<Formulations> is a working mode allowing you to prepare a multi-ingredient mixture. The whole process is carried out automatically.
While making mixtures, you can:

- **use formulations database** which stores formulations; the program helps you dispense particular amount of formulation ingredients, this is done by means of respective on-screen messages.
- make mixture on your own, without using formulations database; with this option you control dispensed ingredients, their sequence and quantity by yourself.

If you want to use the formulations database, first you have to create a recipe (make a formulation), next apply it. In order to create a recipe, you have to enter <Formulations> database. For detailed procedure informing you how to create a formulation, read later sections of this user manual.

25.1. Home Page



25.2. Local Settings

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

Automatic ingredients naming	Here you can automatically assign names of ingredients during manual mixture weighing.
Apply tare values from database	– every ingredient used will be assigned a tare value related to the specific product saved in the product base; - tare will not be used.

Means of ingredient verification	Option allowing you to choose the dependence used to specify correct mass of particular ingredients during preparation of the mixture. Available values: **Tolerance** [1)], **Thresholds** [2)].
Multiplier's editing	Option allowing you to prepare the multiple of mixtures as per the specific formula in one weighing procedure:  – after selecting the weighing formula, the program will ask you about the value of multiplier used to multiply the mass of particular ingredients weighed. The value you enter will apply to all ingredients.  – not possible to enter a multiplier, default value is set as **<1>**.
Ingredient control	Forced confirmation by reading the EAN code for each weighing of subsequent ingredient in the formula.
Cycles quantity	Setting the number of formula cycles, that is specification of the number of repetitions of the entire formula.
Automatic cycle	Allows for cyclical implementation of started process.
Formulation recalculation	Recalculates the amount of the rest of the ingredients in case of overfill one of them, according to the recipe proportions.
Automatic operation	Balance automatically begins the next weighing process, if the mass reading will go under LO threshold.
Statistics	Detailed description in point 20.1.6 of the manual.

25.3. Adding Formulation to the Formulations Database

Formulation database contains formulations names, ingredients names and their weight. Each product used for the formulation making process is saved to the database of products. When preparing a formulation, first name it, next add ingredients. The software is intuitive, and you are guided by means of respective messages. Make sure you know the complete recipe, as it is necessary to specify the name and weight of each ingredient. Formulations database menu has been designed to enable adding formulations.

Procedure:

- Enter **<Databases>** submenu and press **<Formulations>** button.
- Press  (Add) button, do it to add a new formulation.
- A new record is automatically added to the database, it is opened in an editing mode. Enter necessary data.

List of parameters defined for a formulation:

Name	Formulation name.
Code	Formulation code.
Ingredients quantity	Option is non-editable. It is updated on an ongoing basis by the program after adding every other ingredient to the formula.
Sum	The target mass of the formula, the total of masses of all ingredients, option is non-editable, and is updated on an ongoing basis by the program after adding every other ingredient to the formula.
Ingredient	List of ingredients used in the formula (for a new formula, the list is empty). Available options when you press  button (add): **<New ingredient>** - adding a product that has not been entered into the product base. After selecting this option, you need to enter the name of the product in the first place, and then product mass that is to be weighed for the formula. The program will automatically add the product to the product base. After adding the product, the operator can enter other data on the product from the product base level. **<New ingredient from database>** - after selecting this option, a product base window will be displayed. In the list, select the product that is to be used in the formula. With regard to the mass to be weighed, the program will adopt the mass saved in the product base for the specific product. The mass of each of added products can be edited. The modified mass of the product from the base will not cause the product mass to change in the product base.

The ingredient has a **<Ingredient Verification Method>** parameter, which allows you to select the relationship used to determine the correct mass of individual ingredients during mixture preparation. Available values are **<Tolerance>** or **<Thresholds>**.

Tolerance - the program assumes the correct mass of an ingredient if the mass falls within the assumed percentage tolerance of the ingredient's total mass (±%) (data in the product/recipe database).

Thresholds - the program assumes the correct mass of an ingredient if the mass falls between the set thresholds (data in the product database). The selected relationship applies to all ingredients in the mixture preparation procedure. If any ingredient is overweighed during mixture preparation, the program will display a message after confirming the ingredient's mass with the question **<Value out of range. Recalculate recipe?>**. After confirming this option, the program will automatically recalculate the masses of the remaining ingredients to maintain the mixture proportions.

25.4. Using Formulations in Weighing

Upon running **<Formulations>** mode, you can prepare the mixture either manually or by selecting a formulation from the database.
Mixture preparation options:

- formulation not recorded in the Formulations Database – manual preparation,
- formulation recorded in the Formulations Database,
- formulation recorded in the Formulations Database – using multiplier function,
- formulation recorded in the Formulations Database – determining target mass of the complete formulation.

	***In order to use the above options, it is necessary to add respective quick access buttons to the bottom bar and set parameters of the formulations mode.***

Select a formulation, weigh each of its ingredients. Wait for the indication to stabilize and press button. Weight of each ingredient is tared upon pressing button; i.e. it is accepted for the total mass of the formulation.
Press button to cancel all operations regarding formulation making process. Now, you can prepare a different formulation.

Procedure 1

Formulation not recorded in the Formulation Database – manual preparation. Follow the displayed prompts.

- Press button (formula without name) in the quick-access button bar.
- Assign a name to a new formula, and the program will automatically go to the ingredient selection box.
- Select the ingredient (new or from a product base), and the program will go to the home screen.
- Put the container on the weighing pan. The container used will include the ingredient. Once the readout has stabilised, tare the mass.
- Put the required amount of ingredient into the container.
- Press button to confirm.
- The program will go to another ingredient selection window.
- Taking steps as before, weigh all ingredients of the mixture.
- After weighing the last ingredient, select either of the following options:

Save and finish	Select to save the process to formulations database, the process is finished automatically, the final report is recorded in the formulations database.
Finish	Select to complete without saving the process to the formulations database; the process is finished automatically, the final report is recorded in the formulations database.

- Upon completion,the formulations home screen is displayed, message <Completed> is visible in the bottom bar. To proceed, press button.

	***It is possible to abort formulation making process at any moment. To abort the process, press button.***

Procedure 2

Formulation recorded in the Formulations Database. Basic recipe-making process. Procedure 2 allows you to prepare mixture multiplicity easily. Follow the displayed prompts.

- Press button (Formulation).
- List of Formulations is displayed, select the formulation that is to be carried out.
- Press button (Formulation with multiplier). If **<Multiplier's editing>** option is disabled (set to value), the software automatically skips to the formulation making process. If the **<Multiplier's editing>** option is enabled (set to value), the software displays a window with an on-screen keyboard for inserting the multiplier value. Mass of all formulation ingredients is multiplied by the specified value (mass of each ingredient is a product of mass saved to a formulation and multiplier value).
- Confirm entered multiplier value, formulation making process starts automatically. The following parameters are displayed: selected formulation name, the first ingredient name, ingredient number, mass to be weighed and target mass.
- Load the weighing pan with a container for a weighed product, wait for a stable measurement indication, tare the balance.
- Dispense specified amount of the ingredient.
- Confirm ingredient mass value; the software automatically adds the mass to the sum of weighed formulation ingredients, the next ingredient weighing begins.
- With all formulation ingredients weighed, a report on completed process is printed and saved to the reports database (report template is editable; to edit a report template go to **<Printouts>** parameter), message **<Completed>** is visible in the bottom bar. To proceed, press button.

Procedure 3

Formulation recorded in the Formulation Database – using multiplier function. This procedure is useful when you need to prepare a mixture of mass different from the total mass (previously saved to the database) of used ingredients. In such a case, there is no need for you to carry out complex calculations of ingredients' mass. The software adjusts mass of each ingredient in relation to the pre-defined target mass of the complete formulation. Follow the displayed prompts.

- Press  button (Formulation).
- List of Formulations is displayed, select the formulation that is to be carried out.
- Press  button (Formulation with target mass).
- Window with an on-screen keyboard for entering target mass of a mixture is displayed.
- Confirm entered multiplier value; formulation making process starts automatically. The following parameters are displayed: selected formulation name, the first ingredient name, ingredient number, mass to be weighed and target mass. Mass of each ingredient is automatically recalculated (proportionally) to the value of the defined target mass of the complete formulation.
- Load the weighing pan with a container for a weighed product, wait for a stable measurement indication, tare the balance.
- Dispense specified amount of the ingredient.
- Confirm ingredient mass value, the software automatically adds the mass to the sum of weighed formulation ingredients; the next ingredient weighing begins.
- With all formulation ingredients weighed, a report on completed process is printed and saved to the reports database (report template is editable, to edit a report template, go to **<Printouts>** parameter), message **<Completed>** is visible in the bottom bar. To proceed, press  button.

In order to print the report on completed formulation making processes, enter the Formulation Reports database.

25.5. Formulation Report

Formulation report is automatically generated at the end of each formulation process, next it is sent to port selected for **<Peripherals / Printer>**. To declare report content go to **<Working modes / Formulations / Printouts / Formulation report>** submenu. For instruction on how to declare adjustment report settings read section 'Printouts'.

Report example:

```
----------Formulation report----------
Operator                        Nowak Jan
Formulation name                Mixture 1
Start date           2026.07.10 13:21:40
End date             2026.07.10 13:23:28
Ingredients quantity                     5
Completed measurements quantity          5

------------Measurement 1--------------
0.600kg
------------Measurement 2--------------
0.608kg
```

```
------------Measurement 3-------------
0.602kg
------------Measurement 4-------------
0.605kg
------------Measurement 5-------------
0.603kg
Total mass                      3.018 kg
Target mass                     3.000 kg

Difference                      0.018 kg

Status                               OK
---------------------------------------
Signature

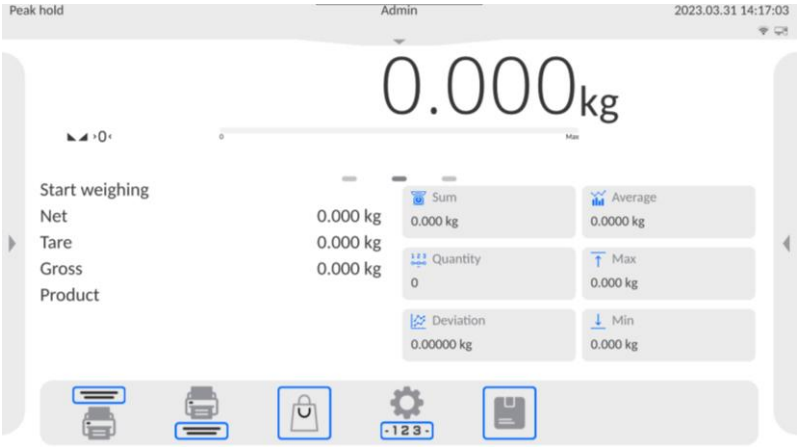
.....................................
```

Report on each completed process is saved to **<Formulation reports>** database, the file name is a combination of date and hour of process completion and of process status (for the list of dosing report data read section 30.3.4).

26. WORKING MODE – PEAK HOLD

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

26.1. Home Page



26.2. 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 20.1.1 of the manual.
Tare mode	Details in point 20.1.2 of the manual.
Automatic footer / C label printout	Details in point 20.1.3 of the manual.
Automatic CC label printout	Details in point 20.1.4 of the manual.
Result control	Details in point 20.1.5 of the manual.
Statistics	Details in point 20.1.6 of the manual.

26.3. 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.

27. STATISTICAL QUALITY CONTROL - SQC



<Statistical Quality Control> working mode is useful for various product packing processes for the purposes of monitoring and/or controlling the packing process. It allows detecting excess and insufficient quantities of the product in packaging. If samples are weighed and results stored in the base, the program allows analyzing trends that can be displayed as diagrams. The program also allows inspecting the series composed of up to 1000 samples. Every inspection is recorded in the SQC database and its results can be accessed at any time. For every series, the following data are calculated and stored in the base: maximum value, minimum value, standard deviation, average values for each batch, etc.

SQC control can be made manually (press <PRINT> button for each measurement) or automatically (measurements are automatically recorded when the sample value is stable).

Scales adopt the statistical control module whose basis is the database containing a list of products with declared errors: <T4->; <T3->; <T2->; <T1->; <T1+>; <T2+>; <T3+>; <T4+>.

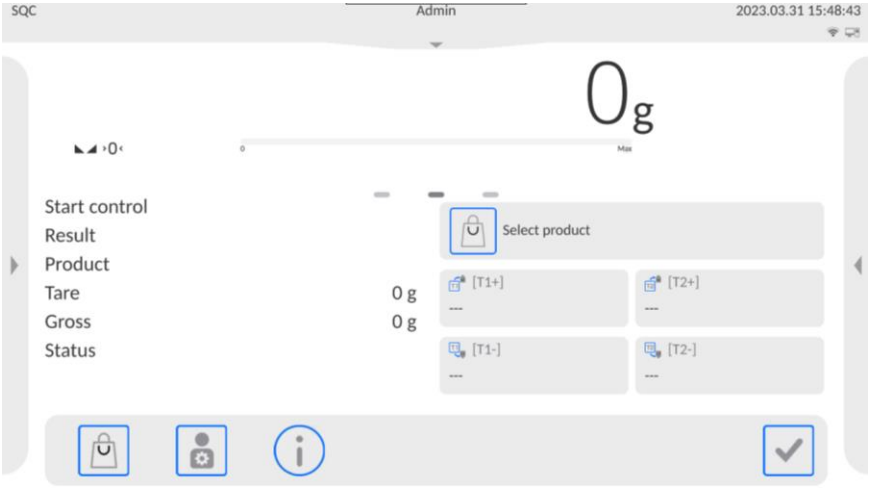
The control that is initiated from the scale is automatically finished upon inspecting a suitable number of samples, arranged by the operator in SQC mode settings. Once the control is over, the final report is generated to demonstrate all required information on the control and can be printed via the printer connected. Control data are also saved automatically in SQC Report Base.

Control occurs as per the following:

- operator selection,
- product selection,
- initiation of control,
- collection of weighing records,
- automatic end of the control after weighing a specific number of samples (batch),
- control report printout.

27.1. Activation of Working Mode

- Press top menu to open **<Working Modes>** submenu with a list of working modes to choose from.
- Select **<SQC>** mode to see the home screen of the working mode:



- The information field will display the message: **<Start control>**, while the buttons bar on the right hand side will display ☑ button (start control).

27.2. Local Settings

Local settings are available after pressing the left side menu and selecting **<Settings>**:

Ask about batch number	Function requiring you to enter batch number before control.
Batch number	Declare the number of batch in question.
Automatic taring	Enable/disable automatic taring of each sample that must be controlled.
Printout / enter mode	Details available in 20.1.1 of the manual.

27.3. Product Edition for Control

⚠	***In case of cooperation with <E2R System> software, database edition in the scale is locked. Products can be edited and exported to scales via software.***

Procedure:

- Enter **<Databases / Products>** submenu and press desired option.

List of data for control:

Mass	Product nominal mass.
Tare	Product tare value (set automatically upon product selection).

SQC	SWC working mode parameters submenu.
Thresholds mode	State if threshold values will be entered in mass units [g] or percents from product nominal value.
Threshold base value	State which value: Nominal or Average is to be base value for calculation of thresholds as per declared error values.
SQC mode	Type of control: Full, Empty-full, Full-empty.
SQC unit	Product measure unit: [g] or [ml].
Sample quantity	Declare sample quantity.
Error value [T4-]	T4 error limit value minus from nominal mass.
Error value [T3-]	T3 error limit value minus from nominal mass.
Error value [T2-]	T2 error limit value minus from nominal mass.
Error value [T1-]	T1 error limit value minus from nominal mass.
Error value [T1+]	T1 error limit value plus from nominal mass.
Error value [T2+]	T2 error limit value plus from nominal mass.
Error value [T3+]	T3 error limit value plus from nominal mass.
Error value [T4+]	T4 error limit value plus from nominal mass.
Disqualifying samples quantity [Qn-T4]	T4 errors limit quantity value minus from nominal mass.
Disqualifying samples quantity [Qn-T3]	T3 errors limit quantity value minus from nominal mass.
Disqualifying samples quantity [Qn-T2]	T2 errors limit quantity value minus from nominal mass.
Disqualifying samples quantity [Qn-T1]	T1 errors limit quantity value minus from nominal mass.
Disqualifying samples quantity [Qn+T1]	T1 errors limit quantity value plus from nominal mass.
Disqualifying samples quantity [Qn+T2]	T2 errors limit quantity value plus from nominal mass.
Disqualifying samples quantity [Qn+T3]	T3 errors limit quantity value plus from nominal mass.
Disqualifying samples quantity [Qn+T4]	T4 errors limit quantity value plus from nominal mass.

27.4. Control Start Procedure

- Select relevant product with correctly entered data on control.
- Enter general working mode parameters into scale memory (see 27.2 and 27.3 of the manual).
- Unload the weighing scale.

- Press  button. The program will go back to product control home screen.

Before control, if the operator:

- Fails to unload the weighing scale or fails to meet other zeroing conditions (e.g. unstable weighing result), the scale will display **<Zeroing Limit Exceeded. Tare or Restart Scale>** message.
- Fails to log in or logged operator is not authorized to conduct control, the scale will display: **<Operator not Logged in>** message.
- Fails to select product from database, the scale will display: **<No Product Selected>** message.

27.5. Control Abortion Procedure

After starting the control, the operator can abort it at any time by pressing an on-screen function button -  (stop control), located at the bottom of the box. Press  button to display the following message:

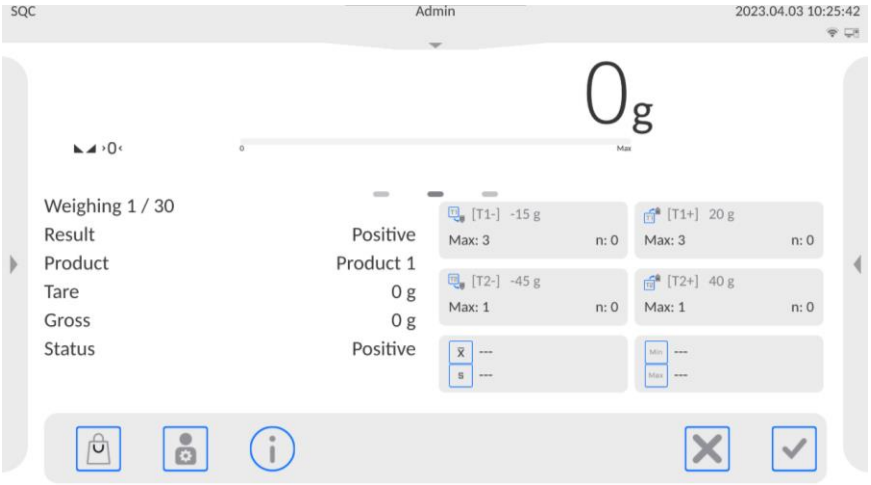


Where:

	Return to ongoing control.
	Abort control and return to **SQC** home screen. Simultaneously the control report with **<Aborted>** status will be saved in the **<Controls>** database.

27.6. Control Procedure

While conducting the control, the program analyzes measurement results on an ongoing basis and displays them in relevant fields to inform the operator about control results:



Where:

Weighing 1/30	Command on course of the process with quantity of all measurements for a batch.
Product	Product name.
Tare	Packaging tare.
Gross	Product gross mass.
Status	Control status: positive, warning, negative.
$\bar{x}$	Average product mass.
s	Standard deviation.
Min	Minimum product mass.
Max	Maximum product mass
[T1-] -15 g Max: 3 n: 0	T1 negative errors in sample: **-15g** – negative error value **T1**; **Max** – permissible number of negative errors **T1**; **n** – real number of negative errors **T1**.
[T2-] -45 g Max: 1 n: 0	T2 negative errors in sample: **-45g** - negative error value **T2**; **Max** - permissible number of negative errors **T2**; **n** - real number of negative errors **T2**.
[T1+] 20 g Max: 3 n: 0	T1 positive errors in sample: **20g** - positive error value **T1**; **Max** - permissible number of positive errors **T1**; **n** - r real number of positive errors **T1**.
[T2+] 40 g Max: 1 n: 0	T2 positive errors in sample: **40g** - positive error value **T2**; **Max** - permissible number of positive errors **T2**; **n** - real number of positive errors **T2**.

	Product selection.
	Operator selection.
	Information on ongoing control.
	Control abortion.
	Measurement approval.

Control status:

Control status is supplied with relevant graphic interpretation (background color) that informs you about exceed error limit values.

Values and quantities of errors are entered by the operator for the product in question.

[T1+] 20 g Max: 3 n: 2	Yellow color warns that emergence of another T+ error will trigger a negative control result.
[T1+] 20 g Max: 3 n: 3	Red color warns that T1+ error has occurred and triggered a negative control result.

Change of working area:

Press the rightmost marker of screens: to display the working field in the form of diagram with measurement results:

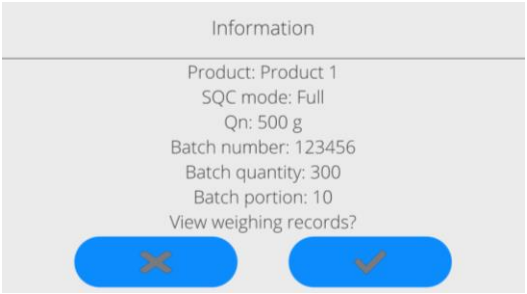


To return to previous window, press the central marker of screens: .

Control information:

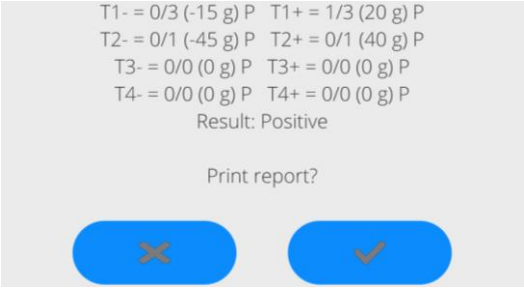
Press button to display the window with information on control settings:

If the control is underway, this window will be as showed below:



Press button to display the measurement box applicable to control.

Once the control is over, the process summary is generated and control is automatically saved in the scale database:



Where:

	Print out report from printer connected to scale.
	Return to **<SQC>** working mode home screen without printing the report out.

	In case of cooperating with <E2R System> software, the process summary message will not include the question about report printout. All data are automatically sent to software and can be printed out as a report from PC.
	For control report template and example, see 28.7 of the manual.

27.7. Product Control Report Example

```
SQC report:                          W/26/07/15/07/45

Scale type:                                      CY10
Scope:                                         3000g
Scale weighing interval:                         1g
Scale ID:                                     112233
Start date:                      2026.07.15 07:41:55
End date:                        2026.07.15 07:45:25
Operator:                                     Admin
Product:                                  Product 1
Batch number:                                123456
Nominal mass:                                  500g
Tare:                                            0g
Error value [T1-]:                              15g
Error value [T2-]:                              30g
Error value [T1+]:                              20g
Error value [T2+]:                              40g
Batch quantity:                                5000
Measurement quantity:                            15
Error quantity [T1-]:                             1
Error quantity [T2-]:                             0
Error quantity [T1+]:                             0
Error quantity [T2+]:                             0
Min:                                           477g
Max:                                           513g
Average:                                     502.4g
Total:                                        7536g
Standard deviation:                  8.22713281075
Method:                                         SQC

Result:                                    Positive

Measurements:
1. 513 g
2. 477 g
3. 492 g
.
.
.
.
.
15. 503 g

-------------------------------------------------
Signature

.................................................
```

Report template:

In the **<Printouts/ SQC Report Printout Template>** submenu, the scale operator can edit the product control report template. Variables which go together with **<Yes>** value will be printed out. Pay attention to the fact that here the operator declares if measurements are to be printed out, while **<Printouts / Weighing/Label Printout Template>** group includes content of every measurement.

28. WORKING MODE - PGC

<PGC> working mode checks packed products (one-stand or network inspection), based on the database that includes a list of products and operators. The check that is initiated from the scale is automatically finished after inspecting a suitable number of packages (sample).

Scales can connect to **E2R SYSTEM** software to create a multi-stand system (network). Every scale is an independent weighing stand while information on control sent on an ongoing basis to the software. The software allows collecting data in real time from each scale. The system allows initiating checks from the scale or from PC software. Based on collected data, it is possible to evaluate quality of packed products:

- with regard to compliance with requirements of the *Announcement of the Head of Central Office of Measures as of 3 April 1997 on requirements on quantitative inspection of packed products* – through random selection of measurement results and sending them to **packed products inspection** procedure (APPLIES TO EUROPEAN UNION),
- with regard to compliance with the company quality control system (internal check).

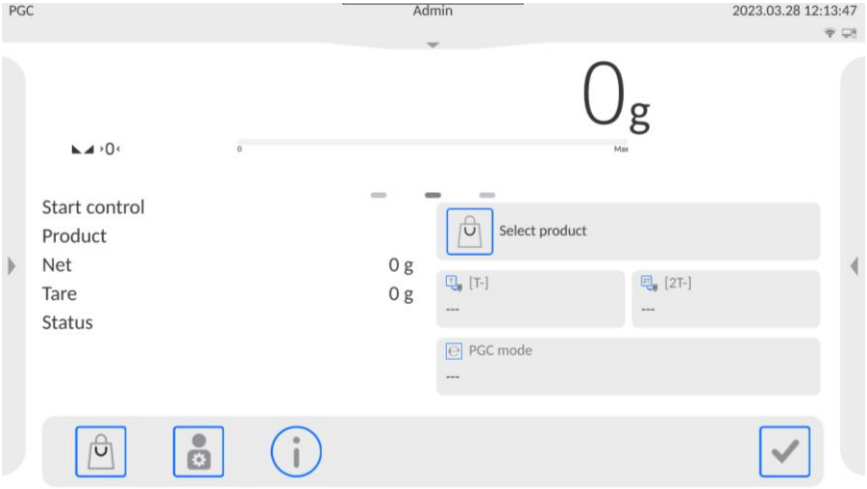
Control cycle is based on the following order:

- operator selection,
- product selection,
- initiation of control,
- collection of weighing records,
- automatic end of control after weighing a specific number of packages,
- control report printout.

	***Method of connecting the scale to <E2R System> is described in 11.1.7 of the manual.***

28.1. Working Mode Activation

- Press top menu to see **<Working Modes>** submenu with a list of working modes you can select.
- Select **<PGC>** mode. The home screen of the working mode will be displayed:



- The information field will also show **<Start Control>** message and the buttons bar on the right hand side will show button (Control start).

28.2. Control Settings Box

	Log in before entering the control settings box.

Control settings box will be displayed when you press (Control start) in the home screen of **<PGC>** working mode.

Options in control settings box:

Product	Select product from database.
Batch number	Declare batch number.
Batch quantity	Declare quantity of the sample in question.
Average tare determination	Enable/disable average tare determination function before control.
Tare	Tare value of the product in question. Field is available if average tare determination option is disabled.
Packaging quantity	Declare number of packaging that is subject to average tare determination. Field is available if average tare determination option is enabled.
Start	Press to start control.

28.3. Local Settings

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

Average tare determining	Enable/disable average tare determination option before control.
Gross mass on display	Enable/disable displaying of the gross mass on the main display.
Concurrent controls	Enable/disable possibility of running concurrent controls.
Printout / Enter mode	Details in point 20.1.1 of the manual.

28.4. Product Edition for Control



In case of cooperation with <E2R System> software, scale database edition is blocked. Products are edited and exported to scales via PC software.

Procedure:

- Enter **<Databases / Products>** submenu and press desired item.

Data defined for control:

Name	Product name.
Code	Product code.
EAN code	Product EAN code.
Mass	Product nominal mass.
Tare	Product tare value (set automatically when selecting products from base).
PGC mode	Type of control: Non-destructive Average Tare, Non-destructive Empty-Full, Destructive Full-Empty, Destructive Empty-Full.
Batch portion	Measuring series for control: Non-destructive Empty-Full, Destructive Full-Empty, Destructive Empty-Full.
PGC: unit	Product measure unit: [g] or [ml].
Batch quantity	Declare number of batch in question.
Average tare determination interval	Period of time in [h] that specifies how often it is necessary to determine average tare for specific product.
Packaging quantity	Declare number of packaging subject to average tare determination (for control – Non-destructive Average Tare).
Average tare coefficient	Standard deviation acceptance threshold coefficient for average tare. Range of values from 0.10 to 0.25.
Internal control	Internal criteria defining submenu for control (see: table below).
Density	Product density (values must range from 0,1g/cm^3 to 5g/cm^3).

Data for internal criteria:

Internal control	Enable/disable internal control criteria.
Sample quantity	Sample quantity value for product.
Error value [T1-]	**–T** negative error limit value entered in mass units for product. Measurement values below **Qn-T** will be considered as defective.
Error value [T1+]	**+T** positive error limit value entered in mass units for product. Measurement values above **Qn+T** will be considered as defective.
Disqualifying sample quantity [Qn – 2T]	**-2T** negative error quantity in sample in question, disqualifying the control
Disqualifying sample quantity [Qn – T]	**-T** negative error quantity in sample in question, disqualifying the control
Disqualifying sample quantity [Qn + T]	**+T** positive error quantity in sample in question, disqualifying the control
Disqualifying sample quantity [Qn + 2T]	**+2T** positive error quantity in sample in question, disqualifying the control
Average limit	Calculation of average limit value (fixed or automatic).
Average limit [-]	Average limit value (negative) for sample in question (applies to average limit value as „fixed”).
Average limit [+]	Average limit value (positive) for sample in question (applies to average limit value as „fixed”).
Coefficient value [-Wk]	Standard deviation multiplier for average limit value (negative), determined in automatic mode.
Coefficient value [+Wk]	Standard deviation multiplier for average limit value (positive), determined in automatic mode.

28.5. Control Start Procedure

- Select relevant product with correctly entered data on control.
- Enter general working mode parameters into scale memory (see 28.2 and 28.3 of the manual).
- Unload the weighing scale.
- Press 

and the program will display the product control home screen.

Before control, if the operator:

- Fails to unload the weighing scale or fails to meet other zeroing conditions (e.g. unstable weighing result), the scale will display **<Zeroing Limit Exceeded. Tare or Restart Scale>** message.
- Fails to log in or logged operator is not authorized to conduct control, the scale will display: **<Operator not Logged in>** message.

- Fails to select product from database, the scale will display: **<No Product Selected>** message.

28.6. Control Abortion Procedure

After starting the control, the operator can abort it at any time by pressing an on-screen function button - (stop control), located at the bottom of the box. Press button to display the following message:

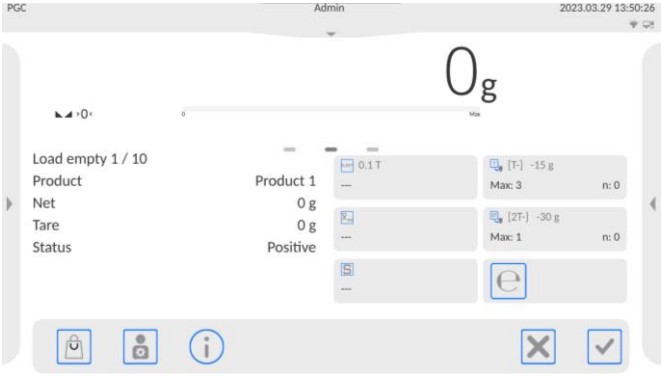


Where:

	Return to ongoing control.
	Abort control and return to **SQC** home screen. Simultaneously the control report with **<Aborted>** status will be saved in the **<Controls>** database.

28.7. Non-destructive Control in Mode with Average Tare

Before control starts, the operator can determine average tare by weighing packaging. It is possible after enabling **<Average Tare Determination>** function in the **PGC** working mode settings box. While controlling tare, the following window is displayed:



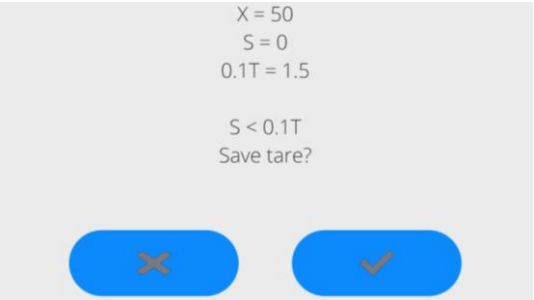
Where:

Load empty 1 / 10	Command on course of process with packaging for weighing.
Product	Product name.
Net	Packaging net mass.
Tare	Packaging tare.
	Value of condition 0,25T in [g].
	Average packaging mass in [g].
	Standard deviation.
	**T** negative errors in sample.
	**2T** negative errors in sample.
	Packaging control status.
	Product selection.
	Operator selection.
	Information on ongoing control.
	Control abortion.
	Measurement approval.



To make sure the product is controlled in the Non-destructive Average Tare mode, as per the Act, „S" standard deviation of the packaging mass determined on the basis of at least 10 measurements must range between 0.1 and 0.25 of the maximum permissible negative error (T) for nominal package mass. This range is set for each product separately, in <Product Base>.

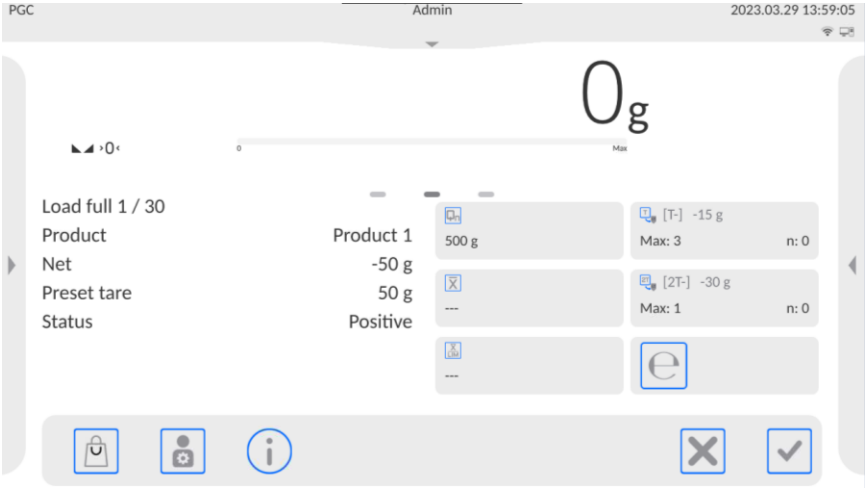
When operator makes the last measurement of the packaging mass, the program will display a summary window and the process report will be automatically saved in the scale database.



Where

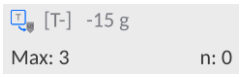
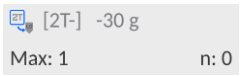
	Go to control and do not save a newly determined average packaging mass in product data.
	Go to control and save newly determined average packaging mass in product data.

While the control is underway, the program analyzes results on an ongoing basis and displays them in relevant fields of the screen to inform the operator about results:



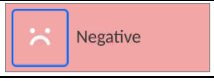
Where:

Load full 1/30	Command on course of the process with quantity of all measurements for specific batch.
Product	Product name.
Net	Product net mass.
Tare	Packaging tare.
Status	Control status: positive, warning, negative.

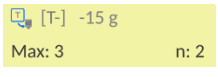
	Product nominal value.
	Product average mass.
	Disqualifying average value.
	**T** negative errors in sample: **-15g** – negative error value T; **Max** – permissible number of negative errors T; **n** – real number of negative errors T.
	**2T** negative errors in sample: **-30g** – negative error value 2T; **Max** - permissible number of negative errors 2T; **n** - real number of negative errors 2T.
	Product selection.
	Operator selection.
	Information on ongoing control.
	Control abortion.
	Measurement approval.

Control status:

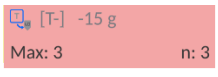
Control status has relevant graphic interpretation:

	Positive
	Warning (sample 2 control is permitted),
	Negative.

With regard to **<Warning>** status, a relevant working field filling turns yellow:

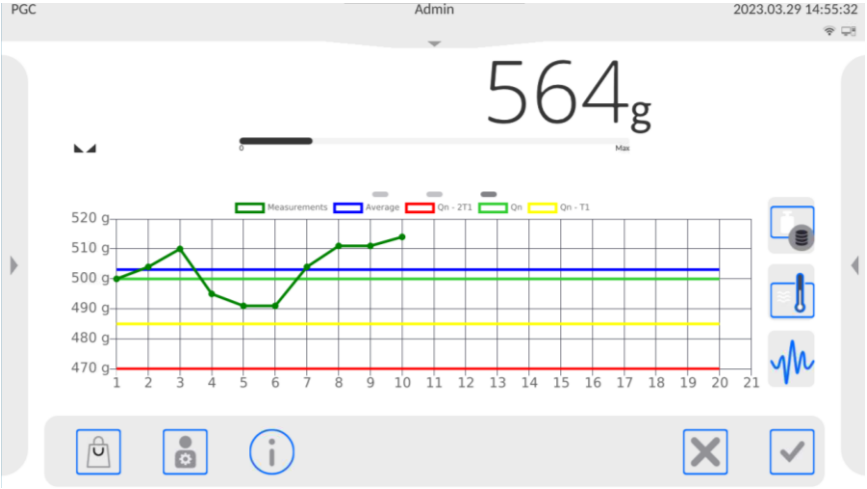
	Occurrence of **T** negative errors but sample 2 control is permitted.

With regard to **<Negative>** status, a relevant working field filling turns red:

	Permissible number of T negative errors exceeded.

Change of working field:

Press the rightmost marker of screens . The working field in the form of the diagram with measurement results will be displayed:



To return to previous box, press the central marker: .

Information on control:

Press button to display the window with information on control settings:



If control is underway, this box will be as showed below:



Press  button to display the window with measurements made for this control.

Once the control is over, a summary of process will be generated and control will be automatically saved in scale database:



Where:

	Report printout from printer connected to scale.
	Return to **<PGC>** working mode settings window without report printout.

	***In case of cooperating with <E2R System> software, the process summary message will not include the question about report printout. All data are automatically sent to software and can be printed out as a report from PC.***

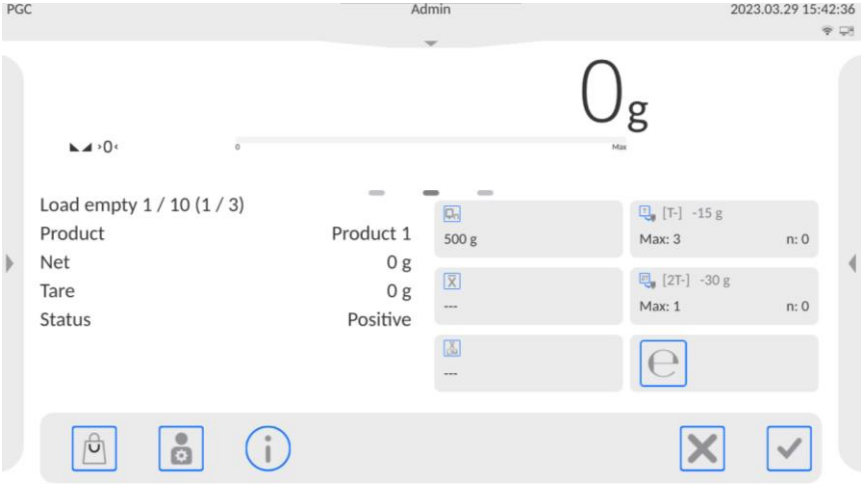
If during control there is a number of T negative errors for which according to the act the second sample from the batch must be controlled, after the end of measuring sample 1, the program will notify of a need to collect the second sample from the batch and control it: ***<Control sample 2>***.

Press  to confirm the message. Descriptions in the control box and permissible errors quantities will change. After the end of checking the second sample, the program will generate a control summary and the report will be printable from the printer connected to scale.

	Control report template and example are described in 28.11 of the manual. The packaging average tare determination report template and example have been specified in 28.12 of the manual.

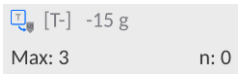
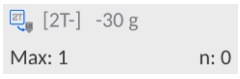
28.8. Non-destructive Control in Empty-Full Mode

For **Non-destructive Empty-Full** control mode, the operator sets the batch portion in the product data. Following the batch portion, the program sends a message to weigh empty packaging at first, and then filled packaging, with special regard to proper order of weighing:



Where:

Leave empty 1/10 (1 / 3)	Command on course of the process with quantity of samples in batch portion.
(1/3)	Batch portion quantity.
Product	Product name.
Net	Product net mass.
Tare	Packaging tare.
Status	Control status: positive, warning, negative.
	Product nominal value.
	Product average mass.
	Disqualifying average value.

	**T** negative errors in sample: **-15g** – negative error value T; **Max** – permissible number of negative errors T; **n** – real number of negative errors T.
	**2T** negative errors in sample: **-30g** – negative error value 2T; **Max** - permissible number of negative errors 2T; **n** - real number of negative errors 2T.
	Product selection.
	Operator selection.
	Information on ongoing control.
	Control abortion.
	Measurement approval.

When control is over, a process summary is generated (see 28.7 of the manual) and control is automatically saved in scale database.

	***Control report template and sample are described in 28.11 of the manual.***

28.9. Destructive Control in Empty-Full, Full-Empty Mode

For statutory **Destructive** control, regardless of the size of product series, above 100 pcs, the sample size adopted by the program for control is 20 pcs. Other control results assessing conditions are adopted in accordance with the Act.

After selecting the product with options for **Destructive** control, with specific batch portion and initiating the control, the program will display messages that facilitate control (analogically to control description presented above).

Depending on the mode, product weighing order is given: **Empty-Full** or **Full-Empty**.

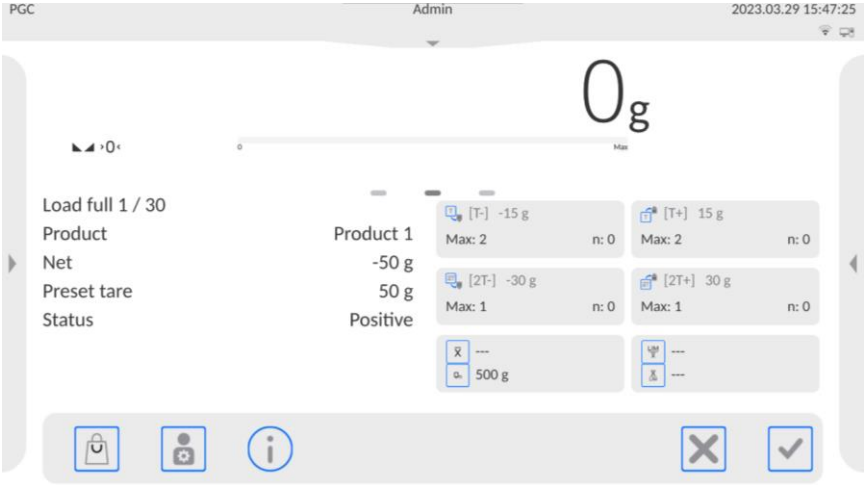
	***Remember to keep proper order of weighing products together with packaging and empty packaging. This is necessary to make sure the program makes a correct calculation of the product mass in a specific packaging.***

Once the control is over, a process summary is generated (see 28.7 of the manual) and control is automatically saved in scale database.

	***Control report template and sample are described in 28.11 of the manual.***

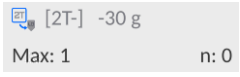
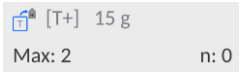
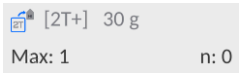
28.10. Control as per Internal Criteria

- Select product with correctly entered data on control as per internal criteria (see 28.4 of the manual).
- Start control as per 28.5 of the manual. Program will display the product control home screen:



Where:

Put full 1/30	Command on course of process with quantity of all measurements for specific batch.
Product	Product name.
Net	Product net mass.
Tare	Packaging tare.
Status	Control status: positive, warning, negative.
$\overline{X}$	Product average mass.
Q_n	Product nominal value.
$\frac{LIM}{\overline{X}}$	Disqualifying average positive value.
$\frac{\overline{X}}{LIM}$	Disqualifying average negative value.
[T-] -15 g Max: 2 n: 0	**T** negative errors in sample: **-15g** – negative error value T; **Max** – permissible number of negative errors T; **n** – real number of negative errors T.

	**2T** negative errors in sample: **-30g** - negative error value 2T; **Max** - permissible number of negative errors 2T; **n** - real number of negative errors 2T.
	**T** positive errors in sample: **15g** - positive error value T; **Max** - permissible number of positive errors T; **n** - r real number of positive errors T.
	**2T** positive errors in sample: **30g** - positive error value 2T; **Max** - permissible number of positive errors 2T; **n** - real number of positive errors 2T.
	Product selection.
	Operator selection.
	Information on ongoing control.
	Control abortion.
	Measurement approval.

When control is over, a process summary is generated (see 28.7 of the manual) and control is automatically saved in scale database.

	***Control report template and sample are described in 28.11 of the manual.***

28.11. Product Control Report Example

```
PGC report:                          U/06/05/23/14/17

Scale type                                       CY10
Range                                  1500/3000 g
Scale weighing interval                    0.5/1 g
Scale ID                                    123456
Start date:                      2023.05.06 14:15:49
End date:                        2023.05.06 14:17:04
Operator:                               Kacper Kowalski
Product:                                  Product 1
Batch number:                                    99
Nominal mass:                                520 g
Tare:                                        7.9 g
Error value T-:                               15 g
Error value 2T-:                              30 g
Batch quantity:                              100
Measurement quantity:                         30
Error quantity T-:                             0
Error quantity 2T-:                            0
Min:                                       518 g
Max:                                     529.5 g
Average:                                519.9833 g
Total:                                   15599.5 g
Average limit:                          518.9138 g
Standard deviation:                       2.159515
PGC mode:             Non-destructive Average Tare
Method:                                  Statutory

Result:                                   Positive

Measurements:
1. 518.0 g
2. 518.0 g
3. 529.5 g
.
.
.
30. 521.0 g

--------------------------------------------------
Signature


.................................................
```

Report template:

In **<Printouts / PGC Report Printout Template>** submenu, the operator can edit the product control report template. Variables that apply to **<Yes>** value will be printed out. Pay attention to the fact that here the operator declares whether measurements are to be printed out, while **<Printouts / Weighing / Label Printout Template>** group is for content of every measurement.

28.12. Example of Average Tare Determination Report

```
Average Tare Report:            U/07/05/23/13/37/T

Scale type                                   CY10
Range                                1500/3000 g
Scale weighing interval                  0.5/1 g
Scale ID                                  123456
Date                          2023.05.07 13:37:30
Product                                Product 1
Tare                                       7.9g
Average tare coefficient                   0,25
Average tare limit                         3.75g
Measurement quantity                         10
Standard deviation                    0.3162278
Method                                Statutory

Result                                 Positive

Measurements:
1. 8.5 g
2. 7.5 g
3. 8.0 g
4. 8.0 g
5. 8.0 g
6. 7.5 g
7. 7.5 g
8. 8.0 g
9. 8.0 g
10. 8.0 g

--------------------------------------------------
Signature


..................................................
```

Report template:

In **<Printouts / Average Tare Report Printout Template>** submenu, the operator can edit the product control report template. Variables that apply to **<Yes>** value will be printed out.

29. DATABASES

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

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

29.1. Database Management

Function that allows managing data in databases.

29.1.1. 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.

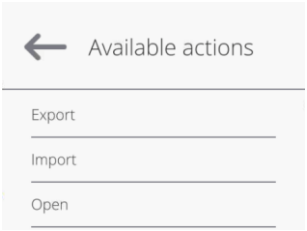
29.1.2. Export documents database

Device has a functionality of export documents database, that were gathered during the use of the balance. To perform an export there is a need to prepare external memory and go to <Database / Manage databases / Export documents database>. Inside this parameter user can filter the data before export. After turning filter option on, date input fields will show.

29.2. Operations with Databases

Operations with databases are available only to the authorized operator. To edit databases:

- Press and hold a database icon field.
- The screen will show context menu related to specific item (available options depend on base type).



Where:

Export	Exporting data saved in the database into an external memory, e.g. pendrive. Before selecting this option, assign the memory to any USB port. If the program detects memory, it automatically starts copying. When copying is finished, **<Done>** message together with file name which data have been saved in will be displayed. Confirm the process.
Import	Importing data from an external memory, e.g. pendrive. Before selecting this option, assign memory to any USB port. If the program detects memory, a box with saved files will be displayed. Choose file with data to be imported. Selection of file automatically leads to initiation of copying. When copying is completed, a box with **<Done>** message will be displayed. Confirm the process.
Open	Entering database edition (the same as single clicking of base field).

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.

29.3. Database Editing

29.3.1. 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.
Card number	Transponder card number for logging through transponder card scanner.
Face profile	Face profile for logging through a built-in camera.
Motif	Application background motif. Options: **Dark, Light**.

29.3.2. 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.

29.3.3. 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.

29.3.4. 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).
Card number	Packaging RFID tag.

29.3.5. Formulations

Formulations database stores all created recipes. The recipes can be carried out automatically by weighing of particular ingredients.

List of parameters defined for a formulation:

Name	Formulation name.
Code	Formulation code.
Ingredients	Defining formulation ingredients, and preview of formulation ingredient quantity.
Target value	Preview of total mass of formulation.

29.3.6. 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.

29.3.7. 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”**.

29.3.8. 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.

30. REPORTS

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

30.1. 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>.**

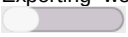
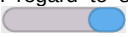
30.1.1. Exporting Weighing Base to File

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 Recrod 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.

30.1.2. Deleting Weighing Records and Reports

Deleting weighing records and reports from database.

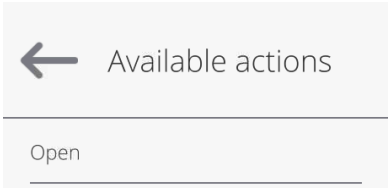
Procedure:

- 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.

30.2. Operations with Reports

Operations with reports are available only to permitted operator. The operator can preview data in the report. To open report preview:

- Press and hold field with report icon.
- The screen will show context menu related to this item (available options depend on type of base).



Where:

Open	Entering report preview (the same as single clicking of report field).

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.

30.3. Report Preview

30.3.1. 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.

30.3.2. Control Reports

Every product control conducted in **SQC** or **PGC** mode is sent to the printer and saved in **<Control Reports>** base. Every control saved in the base is assigned a unique number granted upon end of the control.

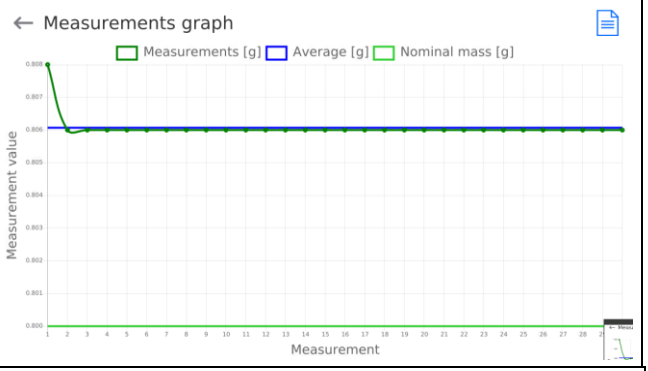
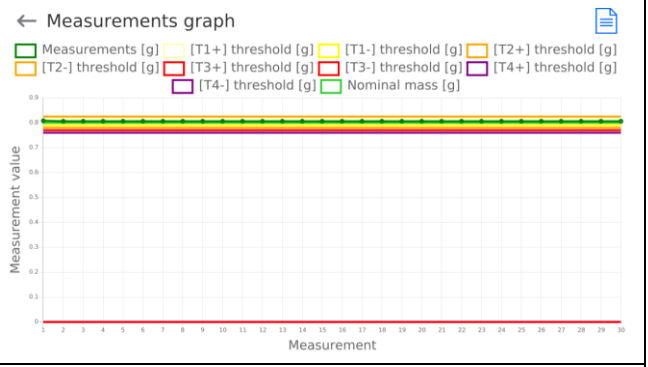
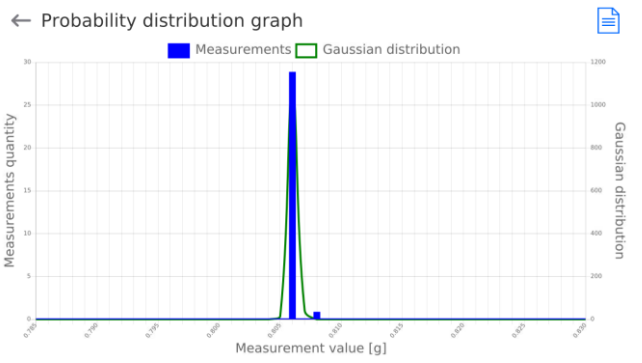
Control number format:

X / y y / M M / d d / H H / m m, where:

X	Type of control which adopts the following values: U – PGC statutory control; W – PGC internal control; Z – control completed by operator; S – SQC control.
yy	Control end year.
MM	Control end month.
dd	Control end day.
HH	Control end hour.
mm	Control end minute.

Data for control report:

Batch number	Product batch number.
Result	Control status (result).
Start date	Control start date.
End date	Control end date.
Product	Name of product in question.
Operator	Controller name.
Average	Average value of measurements.
Average limit [-]	Disqualifying average value.
Standard deviation	Average standard deviation.
Batch quantity	Batch quantity (size) for which the program adopts the size of sample, as per the Act.

Measurement quantity	Number of measurements made.
Method	Method according to which control (statutory, internal) was conducted.
Measurement graph	
Measurement with threshold graph	
Probability distribution graph	

30.3.3. Average Tare Reports

Before initiation of **Non-destructive Average Tare** control, it is possible to conduct the average tare determination process by weighing packaging. All aforesaid processes are automatically saved in **<Average Tares>**

submenu. Every average tare value determination control recorded in the report is assigned a unique number upon the end of the control.

Control number format:

X / y y / M M / d d / H H / m m / T, where:

X	Type of control which adopts the following values: U – statutory control; Z – control ended by operator.
yy	Control end year.
MM	Control end month.
dd	Control end day.
HH	Control end hour.
mm	Control end minute.
T	Average tare determination control.

Data for average tare report:

Product	Name of product whose packaging is subject to average tare determination process.
Status	Process status (result).
Date	Process date.
Tare	Determined tare of the packaging.
S	Average standard deviation.
0.25 T1	Process result condition value.
Measurement quantity	Number of measurements of tare value.
Operator	Name of process operator.
Method	Method used to conduct control (statutory, internal).

30.3.4. Formulation reports

Formulation report is generated automatically after completion of each formulation process. You can preview data for particular reports.

Start date	Formulation start date.
End date	Formulation end date.
Formulation	Formulation name.
Sum	Total weight value of the performed formulation.
Target value	Preview of total mass of formulation.
Operator	Operator performing formulation process.
Customer	Customer for whom the formulation is carried out.
Warehouse	Name of current warehouse.

Measurements quantity	Number of weighings performed within the formulation cycle.
Status	Formulation status. Status values: **Ongoing**, **OK**.

30.3.5. SQC Statistics

It allows monitoring a list of all measurements for a specific product. For each product, the following operations are allowed:

- report preview from particular controls,
- generation of measurement graph for all measurements of the product,
- data printout and export.

Options in <SQC Statistics> submenu:

Product	Selection of product specifying filtering data scope.
Operator	Selection of operator specifying filtering data scope.
Batch number	Batch number value specifying filtering data scope.
Start date	Start date specifying filtering data scope.
End date	End date specifying filtering data scope.
Control reports	Control report list with all filtering data scopes.
Collective report	Collective report from control report list.

30.3.6. Ambient conditions

It includes information related to environmental parameters. Depending on scale configuration, such a list can involve temperature, humidity, atmospheric pressure.

When a THB environmental module is connected to the scale, information on these values will be recorded too. The report name consists of date and time.

31. COMMUNICATION PROTOCOL



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

32. ERROR MESSAGES

Max weighing threshold exceeded
Unload the weighing pan.

Display capacity out of range
Unload the weighing pan

Min weighing threshold exceeded
Install weighing pan

Zeoring/tarring time out of range
Weighing indication unstable

Tarring out of range
Press zeoring button or restart
the balance

Zeoring out of range
Press tarring button or restart
the balance

Start mass out of range
Install weighing pan