User Manual

of WAD 1/A4 scales

Manual number:
ITKU-62-07-12-11-A

Automatic batching scale

MANUFACTURER OF ELECTRONIC WEIGHING INSTRUMENTS

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1. INTENDED USE

WAD vibratory batchers are intended for multiline dosing loose and granulated materials.

Typical materials: salt, sugar, grain, flour, spices, coffee, tea, beans, rice, dried fruits and other loose, granulated, frozen products.

The state-of-the-art weighing terminal with TFT 5.7” colour graphic displays with touch panels allows for intuitive operation without using keys.

Scales are equipped with 2 USB interfaces, 2 RS232 connectors, port Ethernet and 4 inputs/4 outputs (digital). They can cooperate with barcode scanners, receipt printers, label printers, transponder card readers (RFID) and standard PC equipment: mouse, keyboard, pendrives (limited use).

2. PRECAUTIONARY MEASURES

2.1. Operation

A. Please, read carefully this user manual before and use the device according to its intended use;
B. To use the touch panel do not use sharp tools (e.g., knife, screwdriver, etc.);
C. The use in potentially explosive areas or surrounded by harmful gases, vapours, dust, radiation or close to acids is forbidden;
D. It is forbidden to run and use the weight of damaged;
E. Work on the device for installation, running and maintenance may be performed only by qualified persons properly trained in operating the scale and current health and safety regulations;
F. Devices that are to be withdrawn from usage should be utilized according to the law.

2.2. Operation in a strong electrostatic field

If the device is about to operate in a strong electrostatic field (e.g. printing houses etc.) it should be connected to the earthing.

Connect it to the clamp terminal signed ⏚.

3. WARRANTY CONDITIONS

A. RADWAG is obliged to repair or change those elements that appears to be faulty because of production and construction reason,

B. Defining defects of unclear origin and outlining methods of elimination can be settled only in participation of a user and the manufacturer representatives,

C. RADWAG does not take any responsibility connected with destructions or losses derives from non-authorized or inappropriate (not adequate to manuals) production or service procedures,

D. Warranty does not cover:

- Mechanical failures caused by inappropriate maintenance of the device or failures of thermal or chemical origin or caused by atmospheric discharge, overvoltage in mains or other random event,
- Inappropriate cleaning.

E. Forfeiture of warranty appears after:

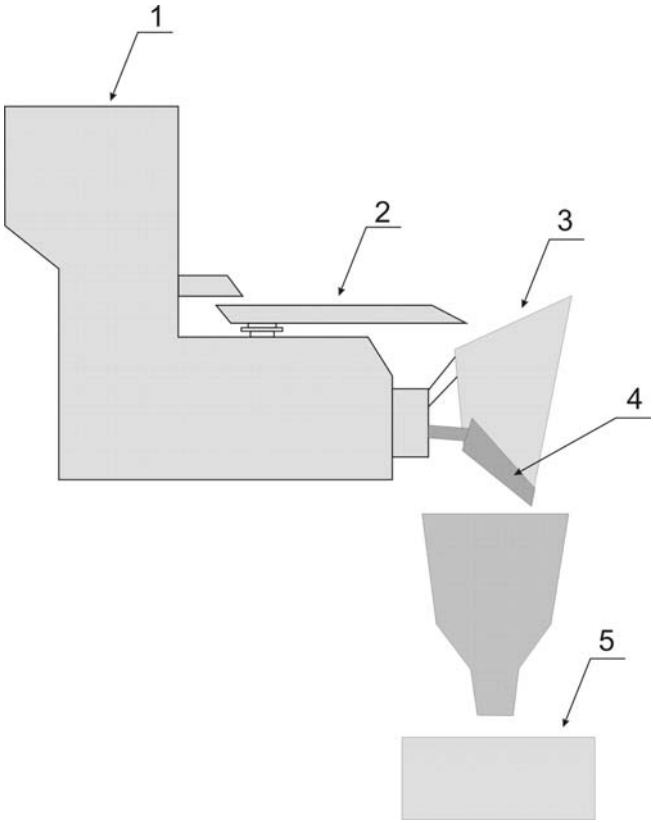
- Access by an unauthorized service,
- Intrusion into mechanical or electronic construction of unauthorized people,
- Installing another operating system,
- Removing or destroying protection stickers.

F. The detailed warranty conditions one can find in warranty certificate.

G. Contact with the central authorized service:
+48 48 384 88 00 ext. 106 or 107.

4. CONSTRUCTION AND PRINCIPLE OF OPERATION

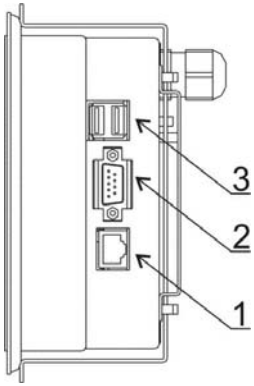
WAD batchers are equipped with a container for loose products placed on the top of the device. The product is pouring from the container to the vibrators lines. At the end of vibrators are the chute chambers with flaps where the product is weighed. Flaps are opened when the declared mass of dosing is reached.



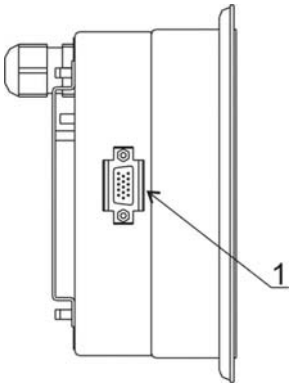
1 - the main container for the dosed product
2 - feeders lines
3 - chute chamber (weighing)
4 - chute flap
5 – container, bag or packaging for the product

5. DESCRIPTION OF CONNECTORS

5.1. Connectors' description

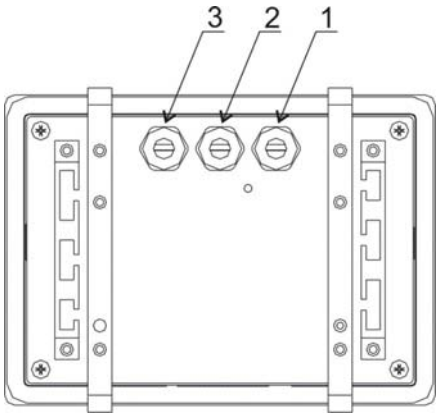


1 – Ethernet RJ45
2 – RS232 (COM1)
3 – USB



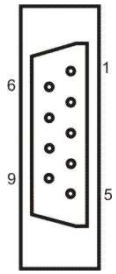
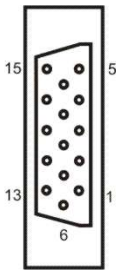
1 – I/O, RS232 (COM2)

5.2. Description of glands



1 – Supply cord gland
2 – Gland for platforms 1, 2
3 – Gland for platforms 3, 4

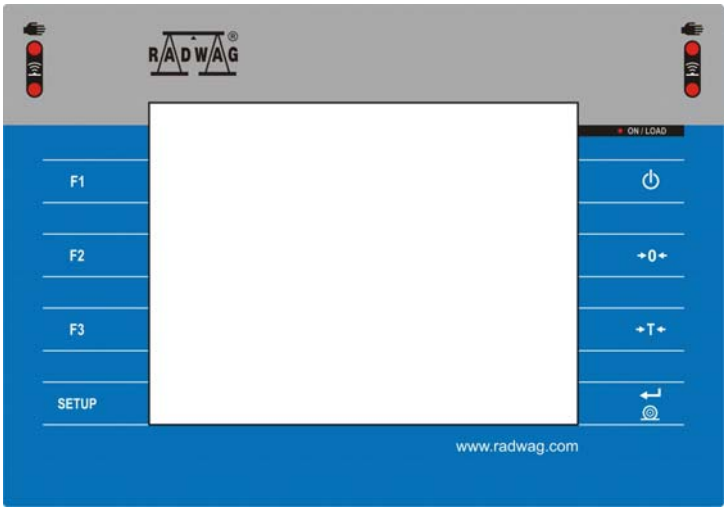
5.3. Connector with RS232 and I/O

	**RS232 - DB9/M (male),** **top view:** Pin2 - RxD Pin3 - TxD Pin5 - GND
	**I/O, RS232 DSUB15/F (female),** **top view:** Pin1 - GNDWE Pin2 - OUT1 Pin3 - OUT2 Pin4 - COMM Pin5 - 6÷9VDC Pin6 - IN4 Pin7 - IN3 Pin8 - TxD2 Pin9 - 5VDC Pin10 - GNDRS Pin11 - IN2 Pin12 - IN1 Pin13 - RxD2 Pin14 - OUT4 Pin15 - OUT3

6. GETTING STARTED

- After the terminal is connected to power the ON/LOAD  diode starts to light.
- Press  to start the operating system loading procedure. Windows CE together with RADWAG software loading is signalled by blinking the red diode ON/LOAD.
- When the loading procedure is completed the main software window appears.

7. KEYPAD OVERLAY



8. FUNCTIONS OF KEYS

Key	Description
⏻	Turning on/off the scale
→0←	Zeroing
→T←	Tarring
↵	Printing out the result or confirming some entered data
SETUP	Function key (entering the menu)
F1	Selecting products
F2	Selecting contractors
F3	Inscribing a tare value

9. PROGRAM STRUCTURE

The main menu has been divided into twelve functional groups.
In every group there are parameters of similar use.

9.1. Main menu items

Icon	Description
	Scale
	Databases
	Working Modes
	Communication
	Devices
	Display
	Inputs / Outputs
	Authorization
	Units
	Other
	User Calibration
	Info

9.2. Inventory of parameters

9.2.1. Scale parameters - weighing

Icon	Description	Value
	Median Filter	0.5
	Filter	Fast
	Autozero	Yes
	LO threshold	0
	Last digit	Always

9.2.2. Working modes

Icon		Description	Value
		Vibratory Batcher	-
		Chute permission mode	Impulse
		No. of weighings for calculating the correction	0
		Statistics	Global

9.2.3. Communication

Icon		Description	Value
		COM1	-
		Baud Rate	9600
		Data bits	8

		Stop bits	1
		Parity	None
		COM2	-
		Baud Rate	9600
		Data bits	8
		Stop bits	1
		Parity	None
		Ethernet	-
		DHCP	No
		IP Address	192.168.0.2
		Subnet mask	255.255.255.0
		Gateway	192.168.0.1
		Tcp	-
		Port	4001

9.2.4. Devices

Icon			Description	Value
			Computer	
			Port	None
			Address	1
			Continuous transmission	No
			Weighing Printout Template	-
			E2R System	-

			System is active	No
			Lock selecting products	No
			Printer	-
			Port	COM1
			Code page	1250
			Printouts	-
			Weighing printout template	See ch. 15.2.3
			Cumulative printout template	See ch. 15.2.3
			Cumulative printout template for cumulative data	See ch. 15.2.3
			Adiustment report printout template	See ch. 21.3
			Product printout template	See ch. 15.2.3
			Operator printout template	See ch. 15.2.3
			Client printout template	See ch. 15.2.3
			Warehouse printout template	See ch. 15.2.3
			Package printout template	See ch. 15.2.3
			Barcode reader	-
			Port	None
			Prefix	01
			Suffix	0d
			Field selection	See ch. 16.3.3
			Test	See ch. 16.3.3
			Transponder card reader	-

			Port	None
			Additional display	-
			Port	None
			Template	See ch. 15.5.2

9.2.5. Display

Icon		Description	Value
		Text information	-
		Displaying template	See ch. 16.1.1
		Font	Courier
		Font size	Small
		Bold	Yes
		Actions	
		F1 Button	Choose product
		F2 Button	Choose client
		F3 Button	Set tare
		Screen button 1	Local parameters
		Screen button 2	Set MIN and MAX
		Screen button 3	Statistics C: Print
		Screen button 4	CCStatistics : Print
		Screen button 5	C Statistics : Zero

		Screen button 6	Choose package
		Screen button 7	Edit batch number
		Screen button 8	None
		Screen button 9	None
		Left proximity sensor	None
		Right proximity sensor	None
		Set Default	-
		Show all platforms	No
		Bargraph type	None

9.2.6. Inputs / Outputs

Icon		Description	Value
		Inputs	-
		Input 1	None
		Input 2	None
		Input 3	None
		Input 4	None
		Outputs	-
		Output 1	None
		Output 2	None
		Output 3	None
		Output 4	None

9.2.7. Authorizations

Icon		Description	Value
		Anonymous operator	Operator
		Date & Time	Administrator
		Printouts	Administrator
		Databases	
		Products	Administrator
		Clients	Administrator
		Formulation	Administrator
		Packages	Administrator
		Warehouses	Administrator
		Labels	Administrator
		Delete older data	Advanced Operator

9.2.8. Units

Icon		Description	Value
		Start unit	None
		Defined unit 1	-
		Multiplier	0
		Name	-
		Defined unit 1	-
		Multiplier	0
		Name	-

[g] [ct]		Acceleration of gravity	9.80665

9.2.9. Other

Icon	Description	Value
	Language	Polish
	Date & Time	-
	Beep	Yes
	Cursor	No
	Touch screen calibration	-

9.2.10. User Calibration

An option only for non-verified scale

Icon	Description	Value
	Setting of start mass	-
	Calibration	-
	Report printout	No
	Adjustment track record	-

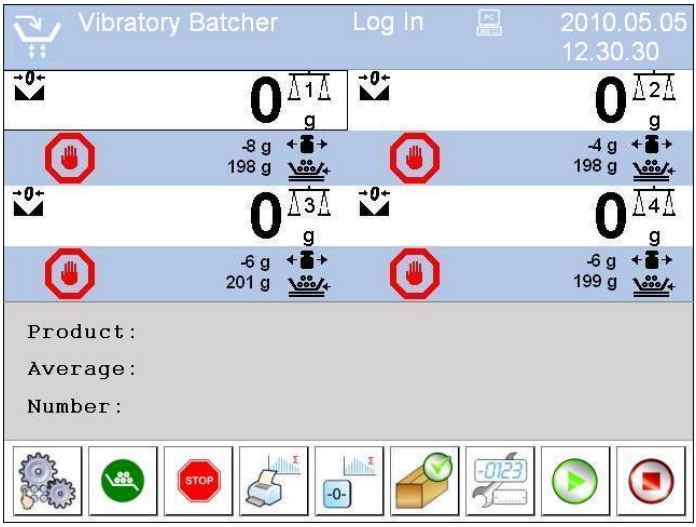
9.2.11. Info

Submenu **<**  **Info>** is for viewing information:

- Scale factory number,
- Program version,
- Scale program version.

10. INDICATING WINDOW

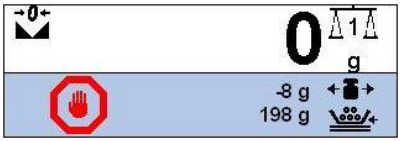
Main view:



In the main application window one can see four separate parts:

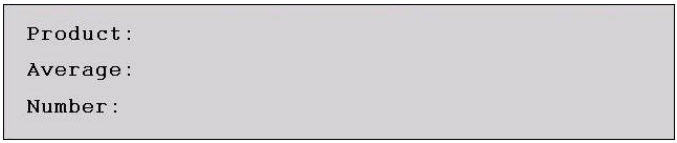
- In the top part of the window there is a status bar where a work mode, logged-in user, time&date are displayed and active connection with a computer are displayed.

- Below the status bar you can see weighing window(s):



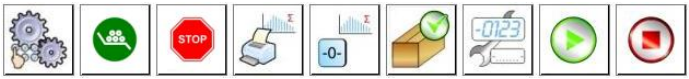
Notice:
A detailed description of the information contained in the status windows of the feeding lines can be found in ch. 22.3 of this manual.

- There is a workspace below this window:



Notice:
The workspace is freely programmable. The default pattern is described in ch. 16.1.1 of this manual.

- There are screen buttons below the workspace:



Notice:
In the working mode: ***<Vibratory Batcher>*** *can be defined up to 7 buttons displayed in order (from 1 to 7) from left to right. Two right buttons are permanently assigned because of the specific funcionality. The defining procedure is described in ch. 16.2 of this manual*

11. LOGGING IN

In order to have full access to user parameters and databases, the user should log in as an **<Administrator>**.

11.1. Logging in procedure

- While in the main window press **<log in>** on the top of the screen and the window with operators attributed to **<**  **Admin>** will appear,
- After entering **<**  **Admin>** a screen keyboard runs with editing window for inscribing a password,
- Type password **„1111”** and confirm by pressing  ,
- The program returns to the main window and in the title bar you will see **<Admin>** instead of **<log in>**.

11.2. Logging out procedure

- While in the main applilcation window press the name of a logged in operator in the top bar on the screen to open the database of operators,
- Press logging out button situated in the top bar of the operators' database window:

- The program returns to the main window and in the top bar the operators name is substituted by **<Log in>**.

11.3. Authorization access levels

Weighing software uses four access levels: administrator, advanced operator, operator, none. Every user with any attributed access level can perform weighings and select data from in databases to be used during weighing.

Access to user parameters, databases and working modes depending on the authorization access level attributed:

Operator type	Access level description
None	No access to user parameters. No weighing can be confirmed. Cannot start the dosing process. No access to <Export the weighing database to a file> in menu <Databases>[2)].
Operator	Access to parameters in submenu: <Weighing>, <Display>[1)] (excluding the group <Actions>), <Others>[1)]. Can start and perform the dosing process. Access to <Export the weighing database to a file> in menu <Databases>[2)].
Advanced Operator	Access to parameters in submenus: <Weighing>, <Working modes>, <Communication>, <Devices>[1)], <Display>[1)], <Others>[1)]. Can start and perform the dosing process. Access to <Export the weighing database to a file> in menu <Databases>[2)].
Administrator	Access to all user parameters, functions and databases[2)]. Can start and perform the dosing process.

1. Authorization level for editing functions:

   - **<Printouts>** in submenu **„Devices / Printer”**,
   - **<Sample>** in submenu **„Devices / Additional display”**,
   - **<Displaying template>** in submenu **„Display / Text information”**,
   - **<Date and Time>** in submenu **<Others>**,

   It can be declared in submenu **<Authorizations>**, which is accessable only for users with the **<Administrator>** authorization level (see ch. 18 of this manual).

2. A user logged in as **<Administrator>** in submenu **<Authorizations>** (see ch. 18 of this manual) can change authorization levels for accessing different databases and functions **<Delete older data>**. The exception are database **<Weighings / Alibi>**, that have the status **„Read only”**.

12. NAVIGATING WITHIN THE MENU

Owing to the colour display with the touch panel navigating within the menu is simple and intuitive.

12.1. Keys

SETUP	Entering the main menu
	Menu list „up”
	Menu list „down”
	Scrolling „up-down”

Enter (OK)

Abort

Add a new item in a database

Disabeling the formerly selected record e.g. logging out the operator

Searching a database according to a date

Searching a database according to a name

Searching a database according to a code

Printing on item from a database

Clearing an editing field

Screen keyboard on / off

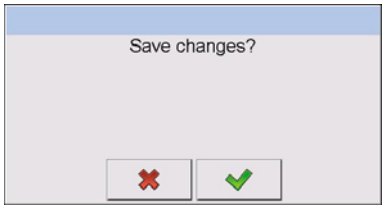
Reading a printout template from a *.lb file
(active after connecting a pendrive)

Variables for a printout template

One level up

12.2. Return to weighing

The changes introduced are saved for good after they are confirmed. Press  or  several times until the following message box appears:



Press:  – to confirm changes or  – to abort changes. The program returns to weighing.

13. SCALE PARAMETERS

Users can set the scale according to the ambient conditions (filtering level) or own needs (autozero) and set the LO threshold for minimum load that enables operation of some functions. This parameters are placed in **<** **Weighing>**.

In order to enter submenu **<** **Weighing>,** press SETUP and then: **„** **Weighing”**.

Notice:
Weighing parameters are directly related to a specific weighing platform, so at the beginning the weighing platform should be selected for which we want to set parameters.

Inventory of scale parameters:

- Median Filter
- Filter
- Autozero
- LO Threshold
- Last digit

13.1. Median filter

The median filter is intended for eliminating short-lasting mechanical shocks.

Procedure:

- Enter **<** **Weighing>** according to ch. 13 of the manual, select **<** **Median Filter>** and then set an appropriate value.

Accessible settings:

None - median filter is off
0.5, 1, 1.5, 2, 2.5 - filtering level to choose

13.2. Filter

This filter is intended to suppress continuous mechanical vibrations at the cost of stabilization time.

Procedure:

- Enter <  **Weighing>** according to ch. 13 of the manual, select <  **Filter>** and then set an appropriate value.

Accessible settings:

None, V.Fast, Fast, Average, Slow.

Notice:
The higher filtering level the longer stabilization time.

13.3. Autozero

The autozero function has been implemented in order to assure precise indications. This function controls and corrects **„0”** indication.

While the function is active it compares the results continuously with constant frequency. If two sequentional results differ less than the declared value of autozero range, so the scale will be automatically zeroed and the pictograms and **0** will be displayed.

If AUTOZERO is disabled zero is not corrected automatically. However, in particular cases, this function can disrupt the measurement process e.g. slow pouring of liquid or powder on the weighing pan. In this case, it is advisable to disable the autozero function.

Procedure:

- Enter <  **Weighing>** according to ch. 13 of the manual, select <  **Autozero>** and then set an appropriate value.

Accessible settings:

NO	-	Autozero off
YES	-	Autozero on

13.4. Minimum weight for different functions (LO)

Parameter **<LO THRESHOLD>** is associated with automatic weighing. Next weighing will not be saved until the indication goes under the **THRESHOLD LO** (net).

Procedure:

- After entering **<Threshold Lo>** according to ch. 13 of this manual a keyboard is displayed,
- Inscribe LO and confirm by pressing .

13.5. Last digit

The last digit option **<Last digit>** is to switch off the last digit of measured mass indication – the measurement is carried out with decreased accuracy.

Procedure:

- Enter group of parameters **<Weighing>** in accordance with ch. 13 of this user manual, select parameter **<Last digit>** and set its desired value.

Accessible settings:

Always	-	Last digit always visible
Never	-	Last digit always switched off
When stable	-	Last digit visible only on stable indication of mass

14. COMMUNICATION

The scale can communicate with external devices via different ports:

- COM 1 (RS232),
- COM 2 (RS232),
- Ethernet,
- Tcp.

The communication can be configured in parameters' group **<Communication>**.

In order to enter **<Communication>**, press SETUP and then:

„Communication".

14.1. RS 232 settings

Procedure:

- Enter **<Communication>** according to ch.14 of the manual, select **<COM1>** or **<COM2>**, and then set an appropriate value.

For RS 232 following parameters are accessible:

- Baud Rate - 4800, 9600, 19200, 38400, 57600, 115200 bit/s
- Data bits - 5, 6, 7, 8
- Stop Bit - No, 1, 1.5, 2
- Parity - No – Odd – Even – Mark – Space

14.2. ETHERNET setting

Procedure:

- Enter **<Communication>** according to ch.14 of the manual, select **<Ethernet>** and then set an appropriate value.

Following settings are accessible for Ethernet:

- DHCP - Yes – No
- IP Address - 192.168.0.2
- Subnet Mask - 255.255.255.0
- Default gateway - 192.168.0.1

Notice:
The settings above are only for information purposes. Transmission parameters should be matched to the local client network.

- After making changes press  , then a new message is displayed: **<Restart to apply the changes>**,
- Go back to weighing saving parameters and restart the device.

14.3. TCP protocol setting

TCP *(Transmission Control Protocol)* is a protocol for communication between two computers. It operates in mode client-server. Server awaits on connection iniciation on a specified port while client initiates connection to the server. Scale software allows setting the port for the **„Tcp”** protocol.

Procedure:

- Enter **<**  **Communication>** parameter group as described in chapter 14 of the manual,
- Select: **„**  **Tcp /**  **Port”** then you will see window **<Port>** with the screen keyboard,
- Enter the required number and press  .

15. DEVICES

15.1. Computer

The scale can cooperate with a computer. Active connection **scale-computer** is signalled by icon  in the top bar of the main window.

In submenu **<Computer>** some settings needs to be configured for cooperation with computers.

Enter submenu **<Computer>**, press SETUP and then: **„Devices / Computer”**.

15.1.1. Computer port

Procedure:

- Enter parameters' group **<Devices>** according to ch. 15 of this manual,
- Select **„Computer / Port”** and then set the appropriate option.

The scale can communicate with a computer via following ports:

- RS 232 (COM1),
- RS 232 (COM2),
- Tcp.

15.1.2. Computer address

Procedure:

- Enter **<Devices>** parameter group as described in chapter 15 of the manual,
- Choose **„Computer / Address”** then the window **<Address>** with the screen keyboard appears,
- Enter the required address and confirm it by pressing  .

15.1.3. Continuous transmission

Users can enable continuous transmission from the scale to a computer. Setting parameter **<Continuous transmission>** starts subsequent sending data from **<Weighing Printout Template>** set in submenu:

„Setup /  **Devices /**  **Computer /**  **Weighing Printout Template”**.

Procedure:

- Enter parameters' group **<**  **Devices>** according to ch. 15 of this manual,
- Choose **„**  **Computer** /  **Continuous transmission”** and then set an appropriate value.

Accessible settings:

No	-	Continuous transmission off
Yes	-	Continuous transmission on

15.1.4. Weighing printout template

Users in parameter **<**  **Weighing Printout Template>** can define variables included in the printout from the scale to a computer.

Procedure:

- Enter **<**  **Devices>** parameter group as described in chapter 15 of the manual,
- Choose **„**  **Computer** /  **Weighing Printout Template”** then the editing field **<Weighing Printout Template>** with the screen keyboard appears,
- Modify the template if necessary and confirm the changes by pressing  .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a printout template.:

 *Screen keyboard on/off*

 *Reading a printout template from a *.lb file (button active while connecting a USB pendrive)*

List of variables for printout templates (see the list in APPENDIX A of this manual)

Clear the editing field

15.1.5. Cooperation with „E2R System"

Scales can cooperate with computer software **„E2R System"** that is a modular system for complex production supervising by monitoring of weighings processes. In order to allow the cooperation with **„E2R System"** enable parameter **<E2R System>**.

Notice:

*The parameter **<E2R System>** can be activated by an authorized service or the manufacturer.*

Procedure:

- Enter **<Devices>** parameter group as described in chapter 15 of the manual,
- Choose **„Computer / E2R System / System is active"** and then set an appropriate value.

Accessible settings:

No	-	System is not active
Yes	-	System is active

- If during cooperation with **<E2R System> product selection lock** is required for operators, go to parameter **<Lock selecting products>** and set its value to **<Yes>**.

15.2. Printer

In **<Printer>** submenu users can:

- Setting communication with a printer,
- Setting code page of a printer,

- Setting templates of printouts.

To enter **<**  **Printer>**, press SETUP and then: **„**  **Printer”**

15.2.1. Printer port

Procedure:

- Enter **<**  **Devices>** parameter group as described in chapter 15 of the manual, choose **„**  **Printer** /  **Port”** and then select an appropriate option.

Printers can be attached to:

- RS 232 (COM1),
- RS 232 (COM2),
- USB,
- Tcp.

15.2.2. Printer code page

Procedure:

- Enter parameters **<**  **Devices>** as described in chapter 15 of the manual,
- Choose **„**  **Printer /**  **Code Page”** then the screen keyboard will be displayed,
- Write the required code page and confirm by pressing  .

  Notice:
  The default value is 1250 – code page for Middle-East Europe.

15.2.3. Templates for printouts

Enter **<**  **Printouts>** to define printout templates.

Procedure:

- Enter parameter group **<** **Devices>** as described in chapter 15 of the manual, then choose **„** **Printer /** **Printouts”**,
- After editing a template a memo box with the default content and the screen keyboard,
- Modify the template according to your requirements and confirm it by pressing .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a printout template.:

	Screen keyboard on/off
	*Reading a printout template from a *.lb file (button active while connecting a USB pendrive)*
	List of variables for printout templates (see the list in APPENDIX A of this manual)
	Clear the editing field

Default printouts' settings:

Weighing Printout Template	{0}
Cumulative Printout Template	N={15} SUM={16}
Cumulative of Cumulative Printout Template	N2={20} SUM2={21}
Product Printout Template	{50} {51}
Operator Printout Template	{75} {76}
Client Printout Template	{85} {86}
Warehouse Printout Template	{130} {131}

	Package Printout Template	{80} {81} {82}
	Adiustment report printout template	See ch. 21.3

15.3. Barcode scanner

The balance allows for cooperation with a barcode scanner. The scanner can be used for quick search of:

- Products,
- Clients,
- Packages,
- Warehouses,
- Universal variables,
- Batch number.

Configuration of communication can be configured in:
“ SETUP **/** **Devices /** **Barcode reader”**.

Notice:

In submenu **<*Communication*>** *set the baud rate (default 9600b/sec). The detailed description of cooperation scale – barcode scanner can be found in* ***APPENDIX F*** *in this manual.*

15.3.1. Port for barcode scanner

Procedure:

- Enter **<** **Devices>** according to ch.15 of the manual, choose **„** **Barcode reader** / **Port”** and then set the appropriate value.

Barcode scanners can be connected to:

- RS 232 (COM1),
- RS 232 (COM2),

15.3.2. Prefix / Suffix

Users can edit a prefix <**Prefix>** or / and suffix <**Suffix>** in order to adjust the program to accept transmission frames from the scanner.

Notice:
*A special protocol is required in order the code be received by RADWAG equipment. It is required to program an appropriate prefix and suffix. Prefix – one byte 01 hexadecimally, suffix one byte 0D hexadecimally. The detailed description of cooperation scale – barcode scanner can be found in **APPENDIX F** in this manual.*

Procedure:

- Enter <**Barcode Scanner>** according to ch.15.3 of the manual,
- Chose parameter <**Prefix>** and then enter, using the screen keyboard, a required value (hexadecimal) and confirm it by pressing .
- Chose parameter <**Suffix>** and then enter, using the screen keyboard, a required value (hexadecimal) and confirm it by pressing .

15.3.3. Field selection

This option is connected with selecting data which the program will search after reading a barcode.

Procedure:

- Enter <**Devices>** according to ch.15 of the manual,
- Chose „**Barcode Scanner** / **Field selection”** and then the following list will be displayed:

  Product

  Contractor

  Package

 Source warehouse

 Target warehouse

 Universal variable

 Batch number

- Select an item and then you can edit following parameters:

	**Filtering**	Declaring an item, according to which searching is supposed to be performed (see the table below)
	**Offset**	Setting the first significant character in code from which the comparison with items is performed during searching. All preceding characters are skipped
	**Code length**	Setting the number of characters to be taken for the search procedure counting form Offset
	**Start marker**	Start marker declaration
	**End marker**	End marker declaration

Inventory of items to be selected for filtering:

Record	**Item for filtering**
Product	None, Name, Code, EAN Code
Client	None, Name, Code
Package	None, Name, Code
Source warehouse	None, Name, Code
Target warehouse	None, Name, Code
Universal variable	None, Code
Batch number	No, Yes

15.3.4. Test

Operators, using parameter **<Test>,** can verify if a barcode connected to the scale works properly.

Procedure:

- Enter submenu **< Barcode Scanner>** according to ch. 15.3 of this manual,
- After entering parameter **<Test>** window **<Test>** is opened with an ASCII text box and HEX (hexadecimal) field,
- After scanning the code is entered to the ASCII field and HEX filed and at the bottom of the window a test result is displayed.

When:

- **<Prefix>** and **<Suffix>** declared in settings are the same as **<Prefix>** and **<Suffix>** in the read code then the test result is **<Positive>**,
- **<Prefix>** and **<Suffix>** declared in settings are not the same as **<Prefix>** and **<Suffix>** in the read code then the test result is **<Negative>**.

15.4. Transponder card reader

Selecting operator (logging in) can be done in two ways:

- Typing a password on a keyboard,
- Approaching a transponder card to the reader.
  The card needs to be registerd first.

Notice:

In case of problems with reading transponder cards check the submenu ***<Communication>*** *and set appropriate baud rate (default 9600b/s).*

15.4.1. Com port for transponder card readers

Procedure:

- Enter group of parameters **<**  **Devices>** according to ch. 15 of this manula, select **„**  **Transponder cards reader** /  **Port”** and set appropriate option.

The scale can communicate with the reader via following ports:

- RS 232 (COM1),
- RS 232 (COM2).

15.4.2. Procedure of attributing the card number to an operator

To use a transponder card to log on an operator the card needs to be ascribed to the operator in the database of operators.

Procedure:

- Connect the transponder card reader to the required communication port (RS 232 COM1 or RS 232 COM2),
- Choose a communication port for the reader (see ch. 15.4.1 in this manual),
- In submenu **<**  **Communication>** set the baud rate to the same as in the reader (default 9600b/s),
- Enter the database of operators and edit the selected operator going to the field **<**  **Card Number>**,
- After entering the field **<**  **Card Number>** you will see the editing field **<Card Number>** with the screen keyboard,
- Having approached the card to the reader the program automatically displays in editing field **<Card Number>** the number of read card,
- Confirm the number by pressing  and return to weighing.

15.5. Additional display

15.5.1. Additional display port

Procedure:

- Enter parameters group **<**  **Devices>** according to ch. 15 of this manual, select **„**  **Additional display** /  **Port”** and then choose an appropriate option from the list.

Communication with additional displays can be performed via following ports:

- RS 232 (COM1),
- RS 232 (COM2),
- Tcp.

15.5.2. Communication protocol frame

WAD scale with following displays:

- WD display,
- WWG display.

To start cooperation of WAD scale with displays go to parameter **<**  **Sample>** and define an appropriate communication protocol.

Procedure:

- Enter parameters' group **<**  **Devices>** according to ch. 15 of this manual,
- Choose **„**  **Additional display** /  **Sample”** then the editing field **<Sample>** with the screen keyboard appears,
- Inscribe the required frame template using the screen keyboard or choose the it from the list after pressing  .

  Specified templates for displays:

  {141} - Protocol template for WD displays
  {142} - Protocol template for WWG display

- Confirm the changes by pressing  .

Notice:

In default settings parameter **<Sample>** *has ascribed* ***{141}*** *(WD display).*

16. DISPLAY

Users can adapt the main display and visible information to their needs. All parameters of the display can be found in the parameters' group **<Display>**. Entering **<Display>** can be made in two ways:

- Direct pressing in the work area of the main display,
- Pressing SETUP and then: **„Display"**.

Inventory of parameters of the main display:

- Text information
- Buton functions
- Show all platforms
- Bargraph Type

16.1. Text strings

In **<Text information>** users can set:

- Display template
- Screen font
- Font size
- Bold font

16.1.1. Display templates

The main application window comprises a work area including information that can be freely configured by a user.

Procedure:

- Enter **<**  **Display>** according to ch. 16 of this manual,
- Choose: **„**  **Text information /**  **Displaying template”**, then an editing field with prompted value is displayed together with the screen keyboard,
- Modify the template if necessary and confirm the changes by pressing  .

Notice:

There are additional buttons in the bottom line of the screen keyboard. They can be used while modifying a display template. :

Screen keyboard on/off

*Reading a display template from a *.lb file (button active while connecting a USB pendrive). *.lb files with the default templates of display in every language version are accessible on the CD attached to the device*

List of variables for display templates (see the list in APPENDIX A of this manual)

Clear the editing field

Default display template:

```
{40:Product:,-15}{50}
{40:Tare:,-15}{9}{11}
{40:Gross:,-15}{8}{11}
{40:Number:,-15}{15}
{40:Total:,-15}{16}{11}
```

16.1.2. Screen font

The font type can be changed in the display workspace.

Procedure:

- Enter  **Display>** according to ch. 16 of this manual,
- Choose: **„**  **Text information /**  **Font”** and set the required font type.

Accessible fonts:

- Arial,
- Courier.

16.1.3. Font size

Setting the font size for the workspace in the display.

Procedure:

- Enter  **Display>** according to ch. 16 of this manual,
- Choose: **„**  **Text information /**  **Font size** and set the required font size.

Accessible sizes:

- small,
- Average,
- Large.

16.1.4. Bold fonts

Setting bold fonts in an area of the workspace of the display.

Procedure:

- Enter  **Display>** according to ch. 16 of this manual,

- Choose: „ **Text information /** **Bold”** and choose a setting.

Accessible settings:

NO	-	Bold is off
YES	-	Bold is on

16.2. Function keys

In submenu **<** **Actions>** users can set actions following keys:

- function keys,
- screen keys,
- proximity sensors.

If a button has been attributed a function it has been activated at the same time. If a button or sensor has no ascribed a function in stays inactive.

Procedure:

- Enter **<** **Display>** according to ch. 16 of this manual,
- Choose **<** **Buton functions>** and choose a required setting for a choosen button: F1, F2, F3, 9 screen buttons or proximity sensors.

Notice:
The list of functions that can be attributed to keys or buttons is listed in ***APPENDIX B*** *of this manual.*

16.3. Displaying platforms

If a scale is equipped with two platforms users can switch between platforms in three ways:

- By pressing the platform number on the scale screen,

- By pressing a formerly defined button <**Change platform>**.
- By activating in parameters all platforms that will be separately placed in the main window of the program. In that case platforms can be activated by pressing the area of this platform.

Notice:
The procedure of attributing functions to buttons is described in ch. 16.2 of this manual.

To activate all platforms press SETUP, choose:

„**Parameters /** **Display /** **Show all platforms”**, and set appropriately.

NO	-	Displaying all platforms disabled
YES	-	Displaying all platforms enabled

16.4. Bargraph type

A bargraph is a typical visualisation procedure. It helps in quick weighing. It requires less concentration to read if a weighing is between minimum and maximum thresholds.

To see the bargraph on the screen enable it in parameters.

Procedure:

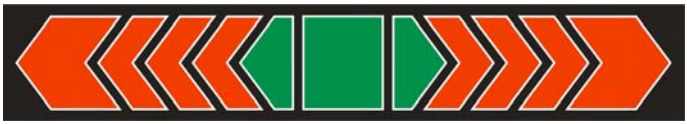
- Enter <**Display>** according to ch. 16 of this manual,
- Choose <**Bargraph type>** and set the required bargraph type.

Accessible bargraphs:

- Quick weighing,
- None (Bargraph is not displayed),
- Signalling checkweighing ranges,
- Linear.

16.4.1. Bargraf “Quick weighing”

- The bargraph consists of 8 red fields and three green fields.



- The green fields signal weighings between MIN and MAX threshold, where:

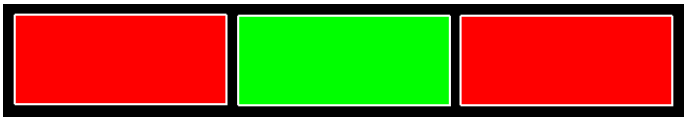
  MIN = the minimum threshold of acceptable weighing - LO
  MAX = the maximum threshold of acceptable weighing - HI

- If a measurement is over the MIN (to the value of 1/3 of MIN-MAX) the green field with a triangle on the left is visible. If the measurement is between 1/3 and 2/3 of MIN-MAX the rectangular green field is visible. If the measurement is between 2/3 of MIN-MAX and MAX a green field with a triangle on the right is visible.
- If the mass value is below the MIN threshold red fields with red arrows on the left are visible. The lower mass value the more red arrows are visible.
- If the mass value is over the MAX threshold red fields with red arrows on the right are visible. The higher mass value the more red arrows are visible.

Thresholds MIN and MAX are on the borders between red and green fields.

16.4.2. Bargraph “Signalling checkweighing ranges”

- This type of bargraph comprises one green and 2 red fields.

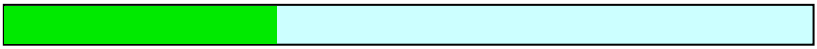


- **The left red field –** signals that the load on the pan is lower than the minimum weighing threshold (**Min** threshold);

- **The central green field –** signals that the load on the pan is within the set required interval for the weighed product (**OK** value between **Min** and **Max** thresholds);
- **The right red field –** signals that the load on the pan is greater than the maximum weighing threshold (**Max** threshold).

16.4.3. Bargraph „Linear”

The bar graph represents in a linear way the measuring range of a scale.



In addition, the bar graph can indicate weighing thresholds MIN, MAX, if they have been determined:

- Signalization of mass below the value set in MIN threshold:

- Signalization of mass within MIN and MAX values of thresholds:

- Signalization of mass exceeding the value set in MAX threshold:

17. INPUTS / OUTPUTS

WPY scales are equipped with 4 inputs / 4 outputs. To adjust software to the users needs configure inputs outputs in the submenu

in the submenu **<Inputs / Outputs>**:

- indicator inputs,
- indicator outputs.

In order to enter submenu **<Inputs / Outputs>**, press SETUP and then: **„Inputs / Outputs”**.

17.1. Configuration of inputs

Procedure:

- Enter **<Inputs / Outputs>** according to ch. 17 of this manual,
- Choose **<Inputs>** and enter the selected input you will see a list of functions to ascribe,
- Choose the required function from the list and return to weighing saving the changes according to ch. 12.2 of this manual.

Notice:
*The list of functions to ascribe to inputs are described in **APPENDIX B** of this manual. By default inputs have no ascribed functions **<None>**.*

17.2. Configuration of outputs

Ascribing a function to the output enables the output at the same time.
If an output has no ascribed function it is disabled.

Procedure:

- Enter **<Inputs / Outputs>** according to ch. 17 of this manual,
- Choose **<Outputs>** and enter the required output, then you will see the list of functions:

None	Output disabled
Stabile	Stable weighing result over LO threshold value
MIN stable	Stable weighing result below the MIN threshold
MIN non-stable	Non-stable weighing result below the MIN threshold
OK stable	Stable weighing result between MIN and MAX thresholds

OK non-stable	Non-stable weighing result between MIN and MAX thresholds
MAX stable	Stable weighing result over the MAX threshold
MAX non-stable	Non-stable weighing result over the MAX threshold
Confirmation of cycle completion *	Signal that confirms that a cycle of dosing has been completed (the defined amount)

***)** Not applicable to **„Standard"** software.

- Choose the required function from the list and return to weighing saving the changes according to ch. 12.2 of this manual.

Notice:
By default all outputs have no function attributed – setting ***<None>****.*

18. AUTHORIZATION

The submenu **<** **Authorization>** is accessible only while being logged in as the **Administrator**. In this group of parameters access levels can be outlined.

To enter submenu **<** **Authorization>**, press SETUP and then:

„ **Authorization"**.

18.1. Anonymous Operator

The program allows to attribute the authorization access level to an operator who does not perform the log-in procedure (anonymous operator).

Procedure:

- Enter **<** **Authorization>** according to ch. 18 of this manual, choose **<** **Anonymous Operator>**, and then set the authorization access level.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

18.2. Date and time

Default settings allow a logged-in **Administrator** to change settings of date and time. Software however allows to change the access level to this option: **<**  **Date and time>**.

Procedure:

- Enter parameters' group **<**  **Authorization>** according to ch. 18 of the manual, choose **<**  **Date and time>**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

Notice:
Setting ***<None>*** *allows free access to settings of date and time (without the need of logging in).*

18.3. Printouts

Default settings of the scale allows a logged on **Administrator** to edit printout templates. Software allows to change the access level to option **<**  **Printouts>**.

Procedure:

- Enter parameter group **<**  **Authorization>** according to ch. 18 of this manual, choose **<**  **Printouts>**, and set appropreately.

Access levels to printouts that can be set:

None, Operator, Advances Operator, Administrator.

Notice:
When you choose setting ***<None>*** *printout templates can be changed even without logging on.*

18.4. Databases

It is possible to set the access levels to the following databases:

- Database of Products,
- Database of Clients,
- Database of Formulas,
- Database of Packages,
- Database of Warehouses,
- Database of Labels.

Procedure:

- Enter parameters' group **<**  **Authorization>** according to ch. 18 of the manual, choose **<**  **Databases>**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

Notice:
Setting ***<None>*** *allows free access to settings of date and time (without the need of logging in).*

18.5. Delete older data

Default settings allow a logged-in **Advanced Operator** delete older data from the **<**  **Weighings / Alibi>** database. Software however allows to change the access level to this option: **<**  **Delete older data>**.

Procedure:

- Enter parameters' group **<**  **Authorization>** according to ch. 18 of the manual, choose: **„**  **Databases /**  **Delete older data"**, and then set the parameter.

Accessible authorization levels:

None, Operator, Advanced Operator, Administrator.

19. UNITS

Scale, in submenu **<** [ct] [lb] [g] **Units>** enables selecting:

- Declaring the start unit,
- Determining two user defined units (custom units),
- Changing the value of g-cor (the value of gravitational acceleration force).

To enter submenu **<** [ct] [lb] [g] **Units>**, press SETUP and then: **„** [ct] [lb] [g] **Units”**.

19.1. Start unit

Procedure:

- Enter submenu **<** [ct] [lb] [g] **Units>** in accordance with ch. 19 of this user manual,
- Select option **<** [g] [ct] **Start units>** and choose a start unit from displayed list of available weighing units.

Possible selection:

- none
- gram [g]
- kilogram [kg]
- carat [ct]
- pound [lb] *
- ounce [oz] *
- Newton [N] *

***)** – weighing unit inaccessible in a verified scale

- Exit to main manu with procedure of saving changes,
- On restarting the scale, the instrument operates with enabled start unit.

19.2. User defined units

Procedure:

- Enter submenu **< Units>** in accordance with ch. 19 of this user manual,
- Select option **< Defined unit 1>** and determine the values of the following parameters:

00285	**Multiplier**	Multiplier of scale's adjustment unit
N	**Name**	Unit name (Max 3 characters)

- Exit to main manu with procedure of saving changes,
- Press symbol of the new weighing unit visible in the weighing window, which activates list of available weighing units with new custom unit added at the end of the list.

Notice:

The procedure of defining the second custom unit ***< Defined unit 2>*** *is equal to the procedure described above.*

19.3. Acceleration of gravity

Parameter **< Acceleration of gravity>** eliminates the changes of gravitational acceleration force at different latitudes and altitudes in case of weighing process with application of "Newton" [N] weighing unit.

Procedure:

- Enter submenu **< Units>** in accordance with ch. 19 of this user manual,
- Select option **< Acceleration of gravity>** which opens an editing window **< Acceleration of gravity>** with a numeric keyboard,
- Insert the new value of acceleration of gravity for the place of use and accept it by pressing key,
- Exit to main manu with procedure of saving changes.

20. OTHER PARAMETERS

There is a group of parameters different from others which influence the operation of the scale. They are gathered in group **<Others>** e.g. language, beep etc. To enter **<Others>**, press SETUP and then: **„Others”**.

20.1. Languages

Procedure:

- Enter submenu **<Others>** according to ch. 20 of this manual, choose **<Language>** and set the parameter.

Accessible languages:

- Polish, English, German, French, Russian, Spanish, Czech, Hungarian, Estonian, Latvian, Italian, Greek, Turkish.

20.2. Setting date and time

Users can set date and time that are visible in the main window of the display. Entering the edition of date and time can be made in two ways:

- Pressing the field **„date and time”** in the top bar of the main screen,
- Pressing button SETUP and then: **„Others / Date and Time”**.

After entering the setting of date and time the screen keyboard appears. Set year, month, day, hour, minutes and confirm by pressing .

Notice:

*Parameter **<Date and Time>** is accessible in the scale menu depending on the authorization access level set in the related parameter.*

20.3. Sound signal

Procedure:

- Enter  **Others>** according to ch. 20 of this manual,  **Beep>** and set accordingly.

Settings:

None	-	Sound for buttons and proximity sensors disabled
Buttons	-	Sound for buttons enabled
Sensors	-	Sound for proximity sensors enabled
All	-	Sound for buttons and proximity sensors enabled

20.4. Cursor

In order to start working with a computer mouse enable parameter **<Cursor>**.

Procedure:

- Enter  **Others>** according to ch. 20 of this manual, choose parameter  C**ursor>** and set an option.

Settings:

No	-	Cursor disabled
Yes	-	Cursor enabled

20.5. Touch panel calibration

Touch panel calibration is required when inappropriate operation is recognized. E.g. the reaction in a different place than the touching point.

Procedure:

- Enter submenu  **Others>** according to ch. 20 of this manual,
- Select  **Touch Screen Calibration>** and then an editing field appears,
- Using a thin and soft pointer press (keep pressed for some time) in the point where the cross appears, after indicating the 4th place confirm changes by pressing **ENTER/PRINT**.

21. USER ADJUSTMENT

An option only for non-verified scale

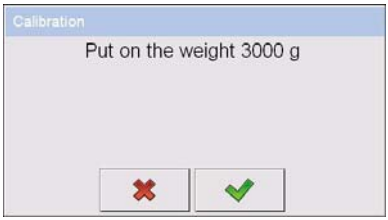
Scales require to recalculate internal divisions to more suitable ones (e.g. g, kg etc.). In order to do this they require an adjustment factor. It is adjusted during the adjustment procedure using a mass standard. Adjustment should be carried out if weighing a standard mass shows a different mass value.

To enter **<User Adjustment>**, press SETUP key and then: **„User Adjustment”**.

21.1. Adjusting procedure

- Enter submenu **<User Adjustment >** according to ch. 21 and select: **“Adjustment”**,
- After entering the parameter the following message box appears:

- Take the load off the pan of platform 1,
- Press button . The following message appears during adjusting start mass: **„Evaluation of starting mass”**,
- After the procedure has been completed the following message box appears:



- Place determined mass on pan of platform 1 and then select  ,
- After the procedure of adjustment factor determination following command appears:

- Return to weighing, saving parameters.

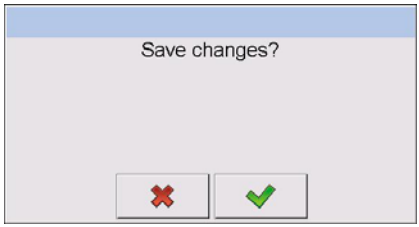
<Setting of start mass> parameter allows to adjust start mass of platform 1.

Notice:
The factory calibration process for platforms 2, 3, 4 is analogical to the one described above.

Return to weighing:

The changes introduced are saved for good after they are confirmed.

Press  several times until the following message box appears:



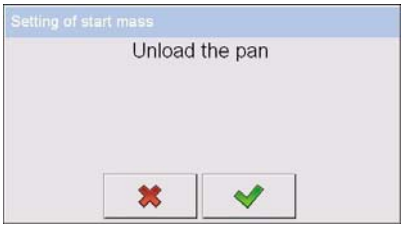
Press:  – to confirm changes or  – to abort changes. The program returns to weighing.

21.2. Start mass adjustment

It is possible to adjust only a start mass, it helps to correct the start zero when the span does not change.

Procedure:

- Enter submenu **<** **User Adjustment >** according to ch. 21 and select: **"** **Setting of start mass"**,
- After entering the parameter the following message box appears:



- Take the load off the pan of platform 1,
- Press button . The following message appears during adjusting start mass: **„Evaluation of starting mass"**,
- After the procedure has been completed the following message box appears:

- Return to weighing, saving parameters.

21.3. Report from adjustment process

Parameter **<** **Report printout>** enables activating the function of automatic printout of a report from adjustment process on a printer plugged to the scale.

Procedure:

- Enter submenu **<User Adjustment>** in accordance with ch. 21 of this user manual, select parameter **<Report printout>** and set its appropriate value.

Where:

No - Automatic report printout switched off
Yes - Automatic report printout switched on

Notice:

*Submenu: "**Devices / Printer / Printouts / Adjustment report Printout template"** enables optional modification of report template (see ch. 15.2.3 of this user manual).*

21.4. Adjustment track record

Each completed adjustment process is automatically saved in scale's database in submenu **<Adjustment track record>**.

In order to enter submenu **<Adjustment track record >**, press SETUP key, and: **„User Adjustment / Adjustment track record"**. Files comprising reports have names with time and date when the process was performed.

List of data for a carried out adjustment process:

	Date	Data of carried out operation
	Operator	Operator name
	Nominal Mass	Mass of adjustment weight
	Platform number	Platform number on which an operation was performed

The user can print data on a specific entry by pressing key, located in the upper bar of software's window.

22. WORKING MODE – VIBRATORY BATCHER

< **Vibratory Batcher>** is a working mode for vibratory portioning out loose and granular materials. It allows concurrent save and printout In this mode it is possible to simultaneously record and print the individual weighings and the co-operation with external devices.

22.1. Setting parameters of working modes

The working mode can be configured in submenu **<** **Working Modes>**.
To enter the working mode **<** **Vibratory Batcher>** setting,
press SETUP and then:

„ **Parameters /** **Working Modes /** **Vibratory Batcher**.

Working mode's parameters:

- Chute permission mode
- No. of weighings for calculating the correction
- Statistics

Notice:

The first left screen button *(local settings) in the main window serves as the direct access to settings of working mode* ***<*** ***Vibratory Batcher>****.*

22.1.1. Chute permission mode

Users in parameter **<** **Chute permission mode>** can choose one of two types of input signals enabling CHUTE.

Procedure:

- Enter **<** **Vibratory Batcher>** according to ch. 22.1 of this manual,

- Choose <  **Chute permission mode>** and then set the type.

Accessible settings:

State	-	Long-lasting input signal (upheld high state) enabling chute of a product batch
Impulse	-	Short lasting input signal enabling chute of a product batch

22.1.2. Number of weighings for calculating the correction

Users in parameter <  **No. of weighings for calculating the correction>** can set the number of weighings (dosing cycles) to consider in calculating the correctional value for dosing.

Procedure:

- Enter the working mode settings <  **Vibratory Batcher>** according to ch. 22.1 of this manual,
- Choose parameter <  **No. of weighings for calculating the correction>**, then the editing window **<No. of weighings for calculating the correction>** with the screen keyboard is displayed,
- Enter the required number of weighings (dosing cycles) to consider in calculating the correctional value for dosing and confirm it by pressing  .

22.2. Statistics

All statistics are continuously updated after each measurement is saved in the scale memory. Statistics can be calculated globally (does not depend on the selected product) or separately for every product from the assortment database. It can be set in parameters <  **Statistics>**.

Procedure:

- Enter the working mode settings <  **Vibratory Batcher>** according to ch. 22.1 of this manual,

- Choose parameter <  **Statistics>** and then select an appropriate option.

Options:

Global - global statistics,
Product - statistics for every product.

Notice:

*In case of operation with <  **Statistics>** set to **<Product>** bare in mind that after restarting only statisics of the last weighed product are recovered.*

22.3. Starting of dosing process

To initiate the dosing process:

- An operator with the appropriate authorization level needs to be logged in.

  Notice:

  1. *To start the process the operator needs to have set the access level at least **<operator>** or higher. If the anonymous operator with access level **<None>** is logged in and tries to start the dosing process the following message is displayed: **<Unauthorized access>**,*
  2. *The logging in procedure is described in ch. 11 and the setting of authorization level in ch. 18 of this manual.*

- After pouring a product to the container on the top choose the same product from the assortment database (button F1) with appropriately entered data referring to the dosing process:

	**Mass**	Nominal mass for batching
	**Dosing intensity**	Intensity of precise dosing in [%]
	**Mass for fast dosing**	Mass value to be exceed for switching from bulk to precise dosing
	**Intensity of fast dosing**	Intensity of bulk dosing in [%]

	Number of batches	Number of rations for dosing as the repetitions of the declared one
	Chute time	Chute opening time in [ms]
	Correction 1	Start correction of the 1st dosing line
	Correction 2	Start correction of the 2nd dosing line
	Correction 3	Start correction of the 3rd dosing line
	Correction 4	Start correction of the 4th dosing line
MAX	**Maximum correction value**	Maximal value of dosing correction

Notice:

1. *Start corrections for dosing lines are the mass values to be added to the nominal mass of dosing batch. When a correction value is set to 0 the function of automatic correction for this line is disabled and the correctional value is not calculated.*
2. *Operating on the assortment database is described in ch. 23.7.2 of this manual.*

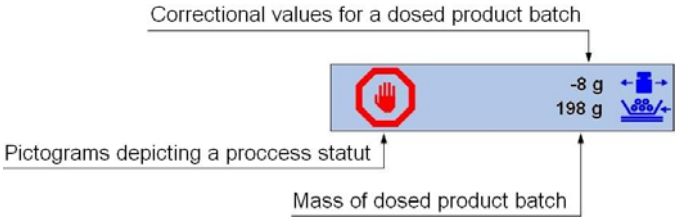
- Main parameters for the working mode **< Vibratory Batcher>** needs to be set (ch. 22.1),
- In the main window of **< Vibratory Batcher>** push screen button (start dosing process) in the bottom part of the display.

  Notice:
  Remember about placing a container or a package under the chute chamber for the dosed product.

22.4. Dosing process

At the moment of starting the dosing process the flap in every chute chamber is opened and closed to remove the leftovers from previous processes.

Subsequent process stages are visualised by displayed pictograms and additional information in status windows of every dosing line:



Stages of dosing process:


Automatic zeroing of indication


Pouring a product from the top container on vibrating dosing lines.


Weighing in chambers with chutes covered with flaps


Waiting for chute permission to be activated by pressing button on the display or an appropriately connected and configured external push button


Chute of product after opening weighing chambers' flaps and pouring the product to a container or package placed under the chute chamber


Stopping vibrating lines dosing the set number of batches

Notice:

1. *Users can terminate the dosing process at any time by pressing*  *in the lower part of the display. The process will stop after completing currently dosed batches of product;*
2. *In the event of failure of the device users can unconditionally (immediately) interrupt the process by pressing the screen button*  *(failure).*

23. DATABASES

WAD databases hold different data:

 Products

 Operators

 Weighings / Alibi

 Clients

 Recipes

 Reports from recipes

 Density

 Packages

 Warehouses

 Labels

Universal variables

In order to enter <  **Databases>**, press SETUP and choose <  **Databases>**.

23.1. Searching databases

Users can quickly search databases according to the following criteria:

- 

Name,
- 

Code.

The quick search according to the criteria above is applicable for databases of: operators, products, clients, packages, warehouses and labels.

Additionally users can search the weighing database according to  **weighing date>**.

23.1.1. Quick name search

Procedure:

- Enter  **Databases>** according to ch. 23 of the manual,
- Enter  **Products>**,
- Press  , then an editing field appears **<Search by name>** with the screen keyboard,
- Inscribe the name of a product or its part and press  .
- The program will automatically edit the required product.

23.1.2. Quick code search

Procedure:

- Enter  **Databases>** according to ch. 23 of the manual,
- Enter  **Products>**,
- Press  , then an editing field appears **<Search by code>** with the screen keyboard,
- Inscribe the name of a product or its part and press  .
- The program will automatically edit the required product.

23.1.3. Weighing date search

Procedure:

- Enter  **Databases>** according to ch. 23 of the manual,
- Enter  **Weighings>**,
- Press  , then an editing field appears **<Specify year>** with the screen keyboard,

- Inscribe: year, month, day, hour, minute of weighing and confirm it by pressing  .
- The program will automatically display the list of weighings putting at the top the position with the entered date.

23.2. Adding new items in databases

Procedure:

- Enter **<**  **Databases>** according to ch. 23 of this manual,
- Enter database **<**  **Products>**,
- Press  , then the message is displayed: **<Create new record?>**,
- Confirm it by pressing  , the program automatically enters edition of new record.

Notice:
Adding new records in databases is possible only by logged-in administrators. It does not concern the database of weighings.

23.3. Deleting items in databases

Procedure:

- Enter **<**  **Databases>** according to ch. 23 of the manual,
- Enter **<**  **Products>**,
- Give a long press to the item, then the context menu is displayed,
- Press **<Delete>**, then a message is displayed: **<Are you sure you want to delete?>**,
- Confirm it by pressing  .

Caution:
Deleting records in databases is possible only by logged-in administrators. It does not concern the database of weighings.

23.4. Deleting older data

A user after logging on as **administrator** can delete older position in the database of weinghings  **Weighing / Alibi>**.

Caution:
Factory settings prevent users from deleting weighings that are up to one year old. Because of incompatible regulations in different countries concerning the time of protecting data this period can be modified by distributors.

Procedure:

- Enter the submenu  **Databases>** according to ch. 23 of the manual,
- Enter  **Delete older data>**, then an editing field is displayed **<Give year>** with the screen keyboard,
- Give a date before which data need to be removed and confirm it by pressing  ,

  Caution:
  If a user enters a date from the protected period the program displays a message box: ***<Wrong value>****.*

- After entering a date beside protected period the program displays a message box: **<Are you sure you want to delete?>**,
- After it is confirmed by  the program will start removing data and after completing it displays the number of deleted records,
- Press  to leave.

23.5. Printing items from databases

Users can print any record in databases.

Procedure:

- Enter the submenu  **Databases>** according to ch. 23 of the manual,
- Enter  **Products>** and press the required item,
- After editing the required record press  in the top bar of the display,

- If a printer is connected information about the selected product is printed.

Notice:
Default printout templates for printing records from different databases are described in ch. 16.2.3 of this manual.

23.6. Export a database to a file

An operator after a series of weighings can export a database to a file using a pendrive.

Procedure:

- Connect a pendrive to USB,
- Enter submenu **<**  **Databases>** according to ch. 23 of this manual,
- Enter option **<**  **Export database of weighings to a file>**, the program automatically starts saving the database on the pendrive,

Notice:

In case a pendrive is not recognized after entering **<**  **Export database of weighings to a file>** *a message is displayed:* ***<Operation failed>****.*

- After the operation has been completed: **„Operation finished successfully”** is displayed together with the file name (with extention *.txt) created on the pendrive,

Notice:
The file name consists of a database name and scale factory number, e.g. ***<Weighings_239800.txt>****.*

- Disconnect the pendrive to USB.

File template:

The created file comprises a table with columns separated by tabulation characters **<Tab>** in case to allow direct export to a spreadsheet **<Excel>**. The table includes all informations about weighings in subsequent columns:

- Date&time,
- Weighing result with unit,
- Tare value with unit,

- Batch number,
- Operator name,
- Client name,
- Package name,
- Source warehouse,
- Target warehouse,
- Checkweighing.

23.7. Database edition

The database edition can be performed by an administrator.

23.7.1. Operators' database

Procedure:

- Enter <  **Databases>** according to ch. 23 of this manual,
- Enter <  **Operators>** and press the required position.

Record of operator:

	**Name**	Operator name
	**Code**	Operator code
	**Password**	Password to log on (max. 16 characters)
	**Access level**	Authorization access level
	**Card number**	Transponder card reader for logging on

23.7.2. Database of products

Procedure:

- Enter <  **Databases>** according to ch. 23 of this manual,
- Enter <  **Products>**and press the required position.

Product record:

	**Name**	Product name
	**Code**	Product code
	**EAN code**	Product barcode
	**Mass**	Mass value for dosing
	**Dosing intensity**	Intensity of dosing in [%]
	**Mass for fast dosing**	Mass value that is the switching point between bulk dosing and precise dosing
	**Intensity of fast dosing**	Intensity of bulk dosing in [%]
	**Number of batches**	Number of rations for dosing as the repetitions of the declared one
	**Chute time**	Chute opening time in [ms]
	**Correction 1**	Value of dosing correction for weighing platform no. 1
	**Correction 2**	Value of dosing correction for weighing platform no. 2
	**Correction 3**	Value of dosing correction for weighing platform no. 3
	**Correction 4**	Value of dosing correction for weighing platform no. 4
	**Maximum correction value**	Maximal value of dosing correction
	**Min**	Minimum mass for checkweighing
	**Max**	Maximum mass for checkweighing
	**Tare**	Tare value (it is preset automatically after selecting a product)
	**Price**	Unit price
	**Number of validity dates**	Number of days to calculate expiery date
	**Date**	Constant product date

	**VAT**	Value Added Tax in [%]
	**Ingredients**	Dialogue box for entering ingredients
	**Label**	Basic label template attributed to a product
	**C Label**	Cumulative label template attributed to a product
	**CC Label**	Cumulative of cumulative label template attributed to a product

23.7.3. Database of Weighings / Alibi

Every weighing sent from a scale to a printer or a computer is saved in the database of <**Weighings / Alibi**>. Users can view the data afterwards.

Procedure:

- Enter <**Databases**> according to ch. 23 of this manual,
- Enter <**Weighings / Alibi**> and press the required position.

Weighing record:

	**Date**	Weighing date
	**Mass**	Weighing result
	**Tare**	Tare value
	**Product**	Product name
	**Operator**	Operator name
	**Client**	Client name
	**Batch number**	Number of produced batch

	**Source warehouse**	Source warehouse name
	**Target warehouse**	Target warehouse name
	**Package**	Package name
	**Checkweighing**	A weighing threshold (MIN, OK or MAX)
	**Platform number**	Platform number to perform weighings

23.7.4. Database of clients

Procedure:

- Enter  **Databases>** according to ch. 23 of this manual,
- Enter  **Client>** and press the required position.

Client records:

	**Name**	Client's name
	**Code**	Client's code
	**Tax ID**	Client's tax ID
	**Address**	Client's address
	**Postal code**	Client's postal code
	**City**	Client's Town/City
	**Discount**	Client's discount
	**Label**	Client's label template

23.7.5. Database of formulas

Procedure:

- Enter  **Databases>** according to ch. 23 of this manual,
- Enter  **Recipes>** and press the required position.

List of data for a specific formulation:

	**Name**	Formulation name
	**Code**	Formulation code
	**Platform 1**	Weighing platform no. 1 determined for a specific terminal
	**Platform 2 ***	Weighing platform no. 2 determined for a specific terminal
	**Platform 3 ***	Weighing platform no. 3 determined for a specific terminal
	**Platform 4 ***	Weighing platform no. 4 determined for a specific terminal

***) –** inumber of weighing platforms depends on determined data in the terminal settings

23.7.6. Database of reports from formulation

Procedure:

- Enter  **Databases>** according to ch. 23 of this manual,
- Enter  **Report from recipes>** and press the required position.

List of data for a specific report from a formulation:

	**Status**	Status of correctness for a completed formulation
	**Start date**	Start date of formula making process
	**End date**	End date of formula making process

	Recipes	Name of completed formulation
	Operator	Operator preparing a formulation
	Client	Client for which the formulation is prepared
	Number of Measurements	Number of measurements within a completed formula making process

23.7.7. Database of density

Procedure:

- Enter **<Databases>** according to ch. 23 of this manual,
- Enter **<Density>** and press the required position.

List of data for a specific report from density determination process:

	Sample number	Number of sample for which the density is determined
	Start date	Start date of density determination process
	End date	End date of density determination process
	Density	Value of determined density
	Volume	Value of determined volume
	Determination metod	Method used in process of determining density
	Operator	Operator carrying out density determination process
	Produkt	Product for which density is determined
	Standard liquid	Standard liquid utilized during density determination process
	Standard liquid density	Density value assigned to the standard liquid

	**Temperature**	Temperature of the density determination process
	**Sinker volume**	Value of sinker's volume immersed in tested liquid
	**Weighing 1**	Mass value of the 1 measurement
	**Weighing 2**	Mass value of the 2 measurement
	**Weighing 3**	Mass value of the 3 measurement
	**Pycnometer mass**	Value of pycnometer's mass utilized during density determination process
	**Pycnometer density**	Value of pycnometer's volume utilized during density determination process

23.7.8. Database of packages

Procedure:

- Enter <**Databases>** according to ch. 23 of this manual,
- Enter <**Packages>** and press the required position.

Package record:

	**Name**	Package name
	**Code**	Package code
	**Mass**	Package weight (set automatically after choosing after choosing a package from the database)

23.7.9. Database of warehouses

Procedure:

- Enter <**Databases>** according to ch. 23 of this manual,

- Enter **<**  **Warehouses>** and press the required position.

Warehouse record:

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

23.7.10. Database of labels

The database comprises templates of labels which users can attribute to products or clients to operate in labelling mode.

Procedure of editing databases:

- Enter **<**  **Databases>** according to ch. 23 of this manual,
- Enter **<**  **Labels>** and press the required position.

Label record:

	**Name**	Label name
	**Code**	Label code
	**Label template***	Label printout template

***)** *Ways of designing and sending templates to a scale can be found in **APPENDIX C** of this manual.*

23.7.11. Database of universal variables

The database include templates of general purpose variables which users can attribute to screen function buttons Var 1, Var 2, Var 3, Var 4, Var 5 in order to enter any alphanumeric text intended to be printed.

Notice:
The procedure of attributing functions to buttons is described in ch. 16.2 of this manual.

Procedure of editing databases:

- Enter <**Databases>** according to ch. 23 of this manual,
- Enter <**Universal variables>** and press the required position.

Universal variable record:

	Code	Universal variable code
	Value to pay	Universal variable value intended to be printed

24. COMMUNICATION PROTOCOL

24.1. General information

A. A character protocol scale-terminal has been designed for communication between RADWAG scales and external devices via RS-232 interface.
B. It consists of commands sent from an external device to the scale and a responses from a scale.
C. Responses are sent every time after receiving a command (reaction for any command).
D. Using commands allows users to receive some information about the state of scale and/or influence the operation e.g.: Requesting weighing results, display control.

24.2. Inventory of RS commands

Commands	Description of commands
Z	Zeroing
T	Tarring
OT	Get tare value
UT	Set tare value
S	Send the stable result in basic unit
SI	Send the result immediately in basic unit
SIA	Send immediate results from all platforms in basic units
SU	Send the stable result in current unit
SUI	Send the result immediately in current unit
C1	Switch on continuous transmission in basic unit
C0	Switch off continuous transmission in basic unit
CU1	Switch on continuous transmission in current unit
CU0	Switch off continuous transmission in current unit
DH	Set lower threshold
UH	Set upper threshold
ODH	Read lower threshold
OUH	Read upper threshold
PC	Send all implemented commands

Notice:

1. *Each command have to be terminated in CR LF;*
2. *The best Policy for communication is not sending another command until the former answer has been received.*

24.3. Respond message format

After sending a request message you can receive:

XX_A CR LF	command accepted and in progress
XX_D CR LF	command completed (appears only after XX_A)
XX_I CR LF	command comprehended but cannot be executed

XX _ ^ CR LF	command comprehended but time overflow error appeared
XX _ v CR LF	command comprehended but the indication below the
XX _ OK CR LF	Command done
ES_CR LF	Command not comprehended
XX _ E CR LF	error while executing command – time limit for stable result exceeded (limit time is a descriptive parameter of the scale)

XX - command name
_ - substitutes spaces

24.4. Command's description

24.4.1. Zeroing

Syntax **Z CR LF**

Possible answers:

Z_A CR LF - command accepted and in progress
Z_D CR LF - command completed

Z_A CR LF - command accepted and in progress
Z_^ CR LF - command comprehended but zero range overflow appeared

Z_A CR LF - command accepted and in progress
Z_E CR LF - time limit for stable result exceeded

Z_I CR LF - command comprehended but cannot be executed

24.4.2. Tarring

Syntax: **T CR LF**

Possible answers:

T_A CR LF - command accepted and in progress
T_D CR LF - command completed

T_A CR LF - command accepted and in progress
T_v CR LF - command comprehended but tare range overflow appeared

T_A CR LF - command accepted and in progress
T_E CR LF - time limit for stable result exceeded

T_I CR LF - command comprehended but cannot be executed

24.4.3. Get tare value

Syntax: **OT CR LF**

Reply: **OT_TARA CR LF** – command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
O	T	space	tare	space	unit			space	CR	LF

Tare - 9 characters justified to the right
Unit - 3 characters justified to the left

Notice:
Tare values are always send in calibration unit.

24.4.4. Set tare value

Syntax: **UT_TARE CR LF**, where **TARE** – tare value

Possible replies:

UT_OK CR LF - command completed
UT_I CR LF - command correct, but not accessible at the moment
ES CR LF - command incorrect (e.g. incorrect tare format)

Notice:
Use dots as decimal points in tare values.

24.4.5. Send the stable result in basic unit

Syntax: **S CR LF**

Possible answers:

S_A CR LF - command accepted and in progress
S_E CR LF - time limit for stable result exceeded

S_I CR LF - command comprehended but cannot be executed

S_A CR LF - command accepted and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2-3	4	5	6	7-15	16	17	18	19	20	21
S	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S CR LF – computer command
S _ A CR LF - command accepted and in progress
S _ _ _ _ - _ _ _ _ _ _ 8 . 5 _ g _ _ CR LF – command done, mass value in basic unit is returned.

24.4.6. Send the result immediately in basic unit

Syntax: **SI CR LF**

Possible answers:

SI_I CR LF - command comprehended but cannot be executed at the moment
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S I CR LF – computer command
S I _ ? _ _ _ _ _ _ _ 1 8 . 5 _ k g _ CR LF - command done, mass value in basic unit is returned immediately.

24.4.7. Send immediate results from all platforms in basic units

Syntax: **SIA CR LF**

Possible answers:

SIA_I CR LF - command comprehended but cannot be executed at the moment

MASS FRAME „P1" CR LF
MASS FRAME „P2" CR LF - mass values are immediately returned from all platforms in basic units

Frame format with mass from subsequent platforms as indicator reply:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
P	n	space	stability	space	sign	mass	space	unit			CR	LF

n - weighing platform number
mass - 9 characters justified to the right
unit - 3 characters justified to the left

Example:

Let us assume that both platforms are connected to indicator PUE HY.

S I A CR LF – computer command
P 1 _ ? _ _ _ _ _ _ 1 1 8 . 5 _ g _ _ CR LF
P 2 _ _ _ _ _ _ _ _ _ 3 6 . 2 _ k g _ CR LF - command done, mass values from both platforms are returned in basic units

24.4.8. Send the stable result in current unit

Syntax: **SU CR LF**

Possible answers:

SU_A CR LF - command accepted and in progress
SU_E CR LF - timeout while waiting for stable results

SU_I CR LF - command comprehended but cannot be executed

SU_A CR LF - command accepted and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S U CR LF – computer command
S U _ A CR LF - command accepted and in progress
S U _ _ _ - _ _ 1 7 2 . 1 3 5 _ N _ _ CR LF - command done, mass value in current unit is returned.

24.4.9. Send the result immediately in current unit

Syntax: **SUI CR LF**

Possible answers:

SUI_I CR LF - command comprehended but cannot be executed
MASS FRAME - mass value in current unit is returned immediately

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

Example:

S U I CR LF – computer command
S U I ? _ - _ _ _ 5 8 . 2 3 7 _ k g _ CR LF - command executed and mass returned

24.4.10. Switch on continuous transmission in basic unit

Syntax: **C1 CR LF**

Possible answers:

C1_I CR LF - command comprehended but cannot be executed

C1_A CR LF - command comprehended and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

24.4.11. Switch off continuous transmission in basic unit

Syntax: **C0 CR LF**

Possible answers answers:

C0_I CR LF - command comprehended but cannot be executed

C0_A CR LF - command comprehended and executed

24.4.12. Switch on continuous transmission in current unit

Syntax: **CU1 CR LF**

Possible answers:

CU1_I CR LF - command comprehended but cannot be executed

CU1_A CR LF - command comprehended and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

24.4.13. Switch off continuous transmission in current unit

Syntax: **CU0 CR LF**

Possible answers:

CU0_I CR LF - command comprehended but cannot be executed
CU0_A CR LF - command comprehended and executed

24.4.14. Set lower threshold

Syntax: **DH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

DH_OK CR LF - command executed
ES CR LF - command not comprehended (wrong mass format)

24.4.15. Set upper threshold

Syntax: **UH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

UH_OK CR LF - command executed
ES CR LF - command not comprehended (wrong mass format)

24.4.16. Read lower threshold

Syntax: **ODH CR LF**

Possible answers: **DH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
D	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right
Unit - 3 characters justified to the left

24.4.17. Read upper threshold

Syntax: **OUH CR LF**

Possible answers: **UH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
U	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right
Unit - 3 characters justified to the left

24.4.18. Send all implemented commands

Syntax: **PC CR LF**

Possible answers:

PC_A_"Z,T,S,SI,SIA,SU,SUI,C1,C0,CU1,CU0,DH,ODH,UH,OUH,OT,UT, PC" – command executed, the indicator have sent all the implemented commands.

24.5. Manual printouts / automatic printouts

Users can general manual or automatic printouts from the scale.

- Manual printouts can be performed after loading the pan and stabilizing indication by pressing **ENTER/PRINT**.
- Automatic printouts can be performed only after loading the pan and stabilizing indication.

Format frame:

1	2	3	4 -12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

Example:

_ _ _ _ _ _ **1 8 3 2 . 0** _ **g** _ _ **CR LF –** the printout generated from the scale after pressing **ENTER/PRINT**.

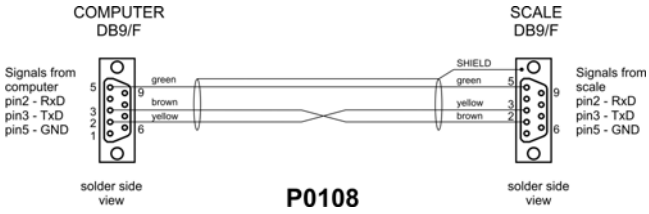
25. COOPERATION WITH EXTERNAL DEVICES

WAD scales can cooperate with the following devices:

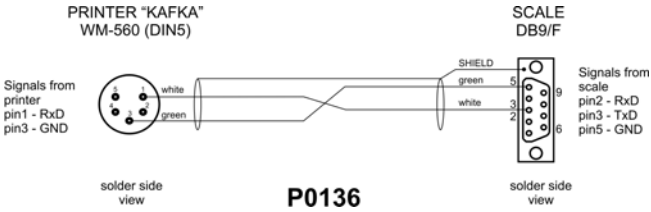
- Computer,
- Receipt printer,
- Label printer,
- Additional display,
- Barcode scanner,
- Any peripheral device with the compatible ASCII protocol.

26. DIAGRAMS OF CONNECTION CABLES

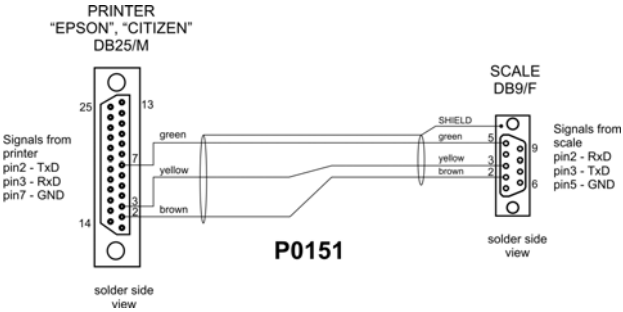
Notice:
Cable „scale – Ethernet" is a standard network cable with RJ45 connectors on both sides.



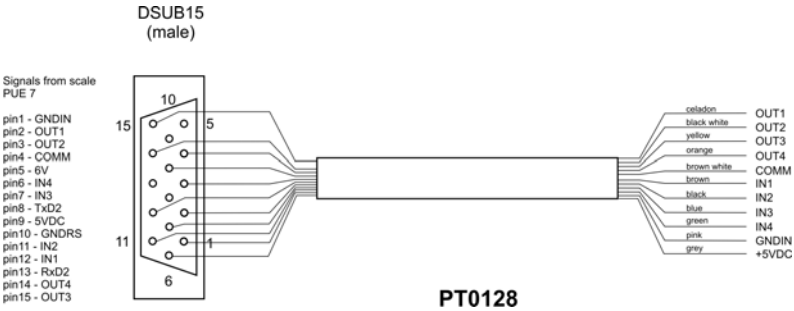
Scale – computer cable



Scale – Kafka printer cable



Scale – printer (CITIZEN, EPSON) cable



Scale – I/O cable

27. TECHNICAL PARAMETERS

Scale type	WAD 1/A4
Maximum capacity	1kg
Readability	1g
Dosing accuracy	±0,5%
Number of dosing lines	4
Operation temperature	0°C to +40°C
Interfaces	2×USB, RS 232, 4WE / 4WY
Ingress protection rating	IP66/67
Power supply	85-265V AC 50/60 Hz
Display	5.7'' with touch panel
Keyboard type	Membrane
Mass	180kg

28. ERROR MESSAGES

Err2 - Value beyond the zero range,

Err3 - Value beyond the tare range,

Err8 - Tarring / zeroing operation time exceeded,

NULL - Zero value from the AD converter,

FULL - Measurement range overflow,

HI Display range overflow,

LH - Start mass error, the mass on the weighing platform is beyond the acceptable range (-5% to +15% of start mass)

29. ADDITIONAL EQUIPMENT

Accessories:

- KAFKA printer cable - **P0136**,
- Computer cable - **P0108**,
- EPSON printer cable - **P0151**,
- Thermal printer - **KAFKA**,
- Dot matrix printer - **EPSON**,
- Label printer - **CITIZEN**,

- Additional display in plastic casing - **WD- 4/1**,
- Large size display (2") - **WWG-2**,
- Transponder card reader - **CK-01**,
- Barcode scanner - **LS2208**,
- Current loop in plastic casing - **AP2-1**,
- PC keyboard.

Computer programs:

- **"EDYTOR ETYKIET"** computer program,
- **"RAD-KEY"** computer program,
- **"PW-WIN"** computer program.

30. APPENDIX A – Variables for printouts

30.1. Inventory of variables

Notice:
Every variable needs to be included in brace brackets e.g. {x}, where x – variable number.

A list of variables accessible in the system for defining printout templates and data displayed in the workspace of scale's screen:

Symbol	Description
{0} [1)]	Standard printout in calibration unit
{1} [1)]	Standard printout in current unit
{2}	Date
{3}	Time
{4}	Date & Time
{6}	Net mass in current unit
{7}	Net mass in calibration unit
{8}	Gross mass
{9}	Tare
{10}	Current unit
{11}	Calibration unit
{12}	Minimum threshold
{13}	Maximum threshold

{14}	Batch number
{15}	Cumulative Statistics: Number
{16}	Cumulative Statistics: Sum
{17}	Cumulative Statistics: Average
{18}	Cumulative Statistics: Minimum
{19}	Cumulative Statistics: Maximum
{20}	Cumulative of Cumulative Statistics: Quantity
{21}	Cumulative of Cumulative Statistics: Sum
{22}	Cumulative of Cumulative Statistics: Average
{23}	Cumulative of Cumulative Statistics: Minimum
{24}	Cumulative of Cumulative Statistics: Maximum
{25}	Mass: lb
{26}	Checkweighing
{27}	Value to pay
{28}	C Value (cumulative amount to pay)
{29}	CC value (cumulative of cumulative amount to pay)
{30}	Gross (amount to pay + VAT)
{31}	Platform number
{32}	Factory Number
{33}	Scale division
{34}	Range
{35}	Counting pieces: Sample weight
{36}	Deviations: Sample weight
{37}	Statistics: Standard deviation
{38}	CC Statistics: Standard deviation
{39} [2)]	Universal variable
{40}	Text information
{50}	Product: Name
{51}	Product: Code
{52}	Product: EAN Code
{53}	Product: Mass
{54}	Product: Tare
{55}	Product: Unit price
{56}	Product: Minimum
{57}	Product: Maximum
{58} [3)]	Product: Testing Prepackages mode (CPG)
{59}	Product: Number of validity days
{60}	Product: VAT

{61}	Product: Date
{62}	Product: Expiry Date
{63} [3)]	Product: Density
{64} [4)]	Product: Ingredients
{65}	Product: Description
{75}	Operator: Name
{76}	Operator: Code
{77}	Operator: Access level
{80}	Package: Name
{81}	Package: Code
{82}	Package: Mass
{85}	Client: Name
{86}	Client: Code
{87}	Client: Tax ID
{88}	Client: Address
{89}	Client: Postal code
{90}	Client: City
{91}	Client: Discount
{100} [3)]	CPG Report: Batch Number
{101} [3)]	CPG Report: Start date
{102} [3)]	CPG Report: End date
{103} [3)]	CPG Report: Result
{104} [3)]	CPG Report: Batch quantity
{105} [3)]	CPG Report: Number of Measurements
{106} [3)]	CPG Report: T1 error border
{107} [3)]	CPG Report: 2T1 error border
{108} [3)]	CPG Report: Number of T1 errors
{109} [3)]	CPG Report: Acceptable number of T1 errors
{110} [3)]	CPG Report: Number of 2T1 errors
{111} [3)]	CPG Report: Total
{112} [3)]	CPG Report: Min
{113} [3)]	CPG Report: Max
{114} [3)]	CPG Report: Average
{115} [3)]	CPG Report: Limit of the average
{116} [3)]	CPG Report: Standard deviation
{117} [3)]	CPG Report: Measurements
{118} [3)]	CPG Report: Unit
{119} [3)]	CPG Report: Report Number

{120} [3)]	Average Tare Report: Date
{121} [3)]	Average Tare Report: Result
{122} [3)]	Average Tare Report: Standard deviation
{123} [3)]	Average Tare Report: 0.25T1
{124} [3)]	Average Tare Report: Number of Measurements
{125} [3)]	Average Tare Report: Measurements
{126} [3)]	Average Tare Report: Report Number
{130}	Source Warehouse: Name
{131}	Source Warehouse: Code
{132}	Source Warehouse: Description
{135}	Target Warehouse: Name
{136}	Target Warehouse: Code
{137}	Target Warehouse: Description
{140}	Net mass in calibration unit: Total
{141}	Additional display: WD
{142}	Additional display: WWG
{143}	Hex
{144}	Hex UTF8
{145}	Partial mass
{146}	Gross mass in current unit
{147}	Tare in current unit
{148}	Additional display: PUE7
{155} [3)]	Density: Start date
{156} [3)]	Density: End date
{157} [3)]	Density: Method
{158} [3)]	Density: Standard liquid
{159} [3)]	Density: Standard liquid density
{160} [3)]	Density: Temperature
{161} [3)]	Density: Sinker volume
{162} [3)]	Density
{163} [3)]	Density: Unit
{164} [3)]	Density: Sample number
{165} [3)]	Density: Weighing 1
{166} [3)]	Density: Weighing 2
{167} [3)]	Density: Weighing 3
{168} [3)]	Density: Volume
{169} [3)]	Density: Pycnometer mass
{170} [3)]	Density: Pycnometer density

{175} [3]	Recipe: Name
{176} [3]	Recipe: Code
{180} [3]	Recipe report: Start date
{181} [3]	Recipe report: End date
{182} [3]	Recipe report: Result
{183} [3]	Recipe report: Number of measurements
{184} [3]	Recipe report: Total
{185} [3]	Recipe report: Measurements
{186} [3]	Recipe report: Nominal mass
{187} [3]	Recipe report: Difference
{190} [3]	Comparator: Report number
{191} [3]	Comparator: Start date
{192} [3]	Comparator: End date
{193} [3]	Comparator: Order number
{194} [3]	Comparator: Tested standard number
{195} [3]	Comparator: Reference standard number
{196} [3]	Comparator: Measurements
{197} [3]	Comparator: Average difference
{198} [3]	Comparator: Standard deviation
{199} [3]	Comparator: Number of cycles
{200} [3]	Comparator: Method
{205}	Adjustment track record: Nominal Mass
{206}	Adjustment track record: Platform number
{210} [3]	Vehicle: Name
{211} [3]	Vehicle: Code
{212} [3]	Vehicle: Description
{213} [3]	Vehicle scale: Start date
{214} [3]	Vehicle scale: Status
{215} [3]	Vehicle scale: Entry mass
{216} [3]	Vehicle scale: Exit mass

Notice:

1) *Variables {0} and {1} is terminated by CR LF, i.e. the cursor is moved to the beginning of the next line by default,*

2) *In case of variable {39}, each position from the database (1,2-n) is formated as follows: Position 1 - {39:1}, Position 2 - {39:2}, etc.*

3) *Variables not related to* ***„Vibratory Batcher”****,*

4) *In case of variable {64}, each line (L1-Ln) is formatted according to the template: Line 1 - {64:L1}, Line 2 - {64:L2}, etc.*

30.2. Formatting variables

Users can format numeric, text and date variables intended for displaying or printing out.

Different format commands:

- Justification to the left,
- Justification to the right,
- Setting the number of characters for printout / display,
- Declaration of the number of digital places for numeric variables,
- Date&Time formatting,
- Formatting numeric variables for EAN13 codes,
- Formatting numeric variables and dates for EAN128/GS1-128 codes.

Format characters:

Character	Description	Example
,	Separates veriables from format strings	**{7,10}** – Net mass in calibration unit situated in 10-character string justified to the right.
-	Minus sign or justification to the left	**{7,-10}** - Net mass in calibration unit situated in 10-character string justified to the left
:	Precides formatting or sepatates hours, minutes and seconds	**{7:0.000}** - Net mass in calibration unit always with three decimal places ; **{3:hh:mm:ss}** – Present time in the format : hours : minutes : seconds
.	The first dot in the format string determines the location of the decimal separator in the formatted value; any additional dot characters are ignored.	**{55:0.00}** – Unit price always with two decimal places; **{17:0.0000}** – Average value form weighings with four decimal places;
F	The number is converted to a string of the form "-ddd.ddd…" where each 'd' indicates a digit (0-9). The string starts with a minus sign if the number is negative.	**{7:F2}** - Net mass in calibration unit always with two decimal places. **{7,9:F2}** - Net mass in calibration unit always with two decimal places in 9-character string justified to the right.
V	Formatting mass and derivatives for EAN13 codes	**{7:V6.3}** - Net mass for EAN13 (6-character code) with three decimal characters
T	Formatowanie masy i wielkości pochodnych do masy w kodzie EAN128	**{7:T6.3}** – Net mass for EAN128/GS1-128 with two decimal places.

/	Date separator between days, months and years	**{2:yy/MM/dd}** – Present date formatted as: year - month - day, where **yy** represents two less significant digits of year.
****	„Escape" character removing formatting function form next character to allow it to be used as a character in a text string.	**{2:yy\/MM\/dd}** – Present date formatted as yesr / month / day; **{2:yy\:MM\:dd}** –Present date formatted as: year : month : day. In case of necessity of using **„\"** as literal it should be preceded by another escape characterj "\\".

Format examples:

Symbol	Description
{7:V6.3}	Net mass for EAN 13 (6-character code)
{7:V7.3}	Net mass for EAN 13 (7-character code)
{27:V6.3}	Net amount to pay for EAN 13 (6-character code)
{27:V7.3}	Net amount to pay for EAN 13 (7-character code)
{7:T6.3}	Net mass for EAN 128/GS1-128
{16:T6.3}	Cumulative net mass for EAN 128/GS1-128
{21:T6.3}	Cumulative of cumulative net mass for EAN 128/GS1-128
{25:T6.3}	Net mass in lb for EAN 128/GS1-128
{8:T6.3}	Gross mass for EAN 128/GS1-128
{55:T6}	Product price for EAN 128/GS1-128
{2:yyMMdd}	Date for EAN 128/GS1-128
{61:yyMMdd}	Product date for EAN 128/GS1-128
{62:yyMMdd}	Expiary date for EAN 128/GS1-128
{16:V6.3}	Cumulative net mass for EAN 13 (6-character code)
{16:V7.3}	Cumulative net mass for EAN 13 (7-character code)
{28:V6.3}	Total/cumulative amount to pay for EAN 13 (6-character code)
{16:V7.3}	Total/cumulative amount to pay for EAN 13 (7-character code)
{21:V6.3}	Cumulative of cumulative net mass EAN 13 (6-character code)
{21:V7.3}	Cumulative of cumulative net mass EAN 13 (7-character code)
{29:V6.3}	Total/cumulative of cumulative amount to pay EAN 13 (6-character code)
{29:V7.3}	Total/cumulative of cumulative amount to pay EAN 13 (7-character code)

31. APPENDIX B – Functions of programmable buttons

Icon	Function name
	Print
	Zero
	Tare
	Enter tare
	Parameters
	Local Parameters
	Set MIN and MAX
	Statistics (cumulative) : Print and zero
	Statistics (cumulative) : Print
	Statistics (cumulative) : zero
	Statistics (cumulative of cumulative) : Print and zero
	Statistics (cumulative of cumulative) : Print
	Statistics (cumulative of cumulative) : zero
	Edit batch number
	Start

	Stop
	Choose an operator
	Choose an operator by name
	Choose an operator by code
	Choose a product
	Choose a product by name
	Choose a product by code
	Choose a package
	Choose a package by name
	Choose a package by code
	Choose a client
	Choose a client by name
	Choose a client by code
	Choose a source warehouse
	Choose a source warehouse by code
	Choose a target warehouse
	Choose a target warehouse by name

	Choose a target warehouse by code
	Change working mode *
	Counting pieces: Specify piece mass *
	Counting pieces: Estimate piece mass *
	Counting pieces: Ascribe standard *
	Deviations: Specify sample mass *
	Deviations: Estimate sample mass *
	Emergency stop
	Chute permission
	Disable tare
	Restore tare
	Change unit *
	Change platform
	Edit universal variable 1
	Edit universal variable 2
	Edit universal variable 3
	Edit universal variable 4

	Edit universal variable 5
	Choose a vehicle *
	Choose a vehicle by name *
	Choose a vehicle by code *
	Choose transaction *
	Start entry transaction *
	Start exit transaction *
	Select recipe *
	Select recipe by name *
	Select recipe by code *
	Determine liquid density *
	Determine solid density *
	Determine pycnometer density *
	Determine porous body density *

***) –** Functions of programmable buttons not related to **„Vibratory Batcher”**.

32. APPENDIX C – Label template

A label template can be created in 2 ways:

- From the terminal level using variables,
- Using PC software **EDYTOR ETYKIET R02**. A created project needs to be saved as an **„lb"** file then copied on a pendrive that can be connected to the terminal. Finally transfer the file to the database in the scale.

While a label is in the database of labels it can be ascribed to products or/and clients in order to work in labelling mode.

32.1. Designing a label from the terminal level

Procedure:

- Enter <**Databases>** according to ch. 23 of this manual,
- Enter <**Labels>** and press on the required position.
- After entering <**Label template>** an editing field with the screen keyboard appears
- Modify the existing template using the list of variables accessible after pressing ,
- Confirm changes by pressing .

Notice:

In the bottom line of the screen keyboard there are additional buttons that help to modify a label template:

Screen keyboard on / off

*Read label templates from *.lb files (see – ch. 32.3)*

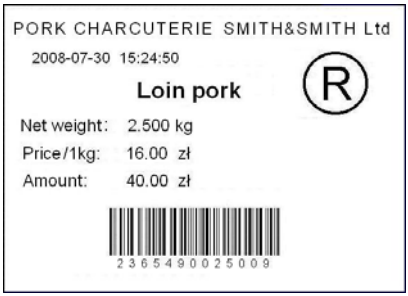
Select variables for the display template (inventory of variables can be found in APPENDIX A)

Clearing the editing field

32.2. Designing a label on a computer

Example:

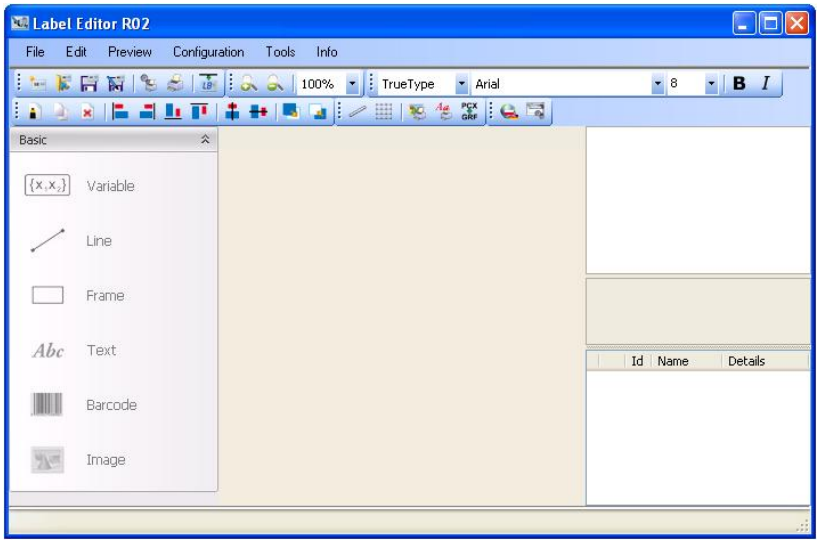
Let us create a label template for the label below:



Notice:
*The installer of **EDYTOR ETYKIET R02** is accessible to download on website: **www.radwag.com.** on the overlap: Products / Measuring indicators / PUE HY.*

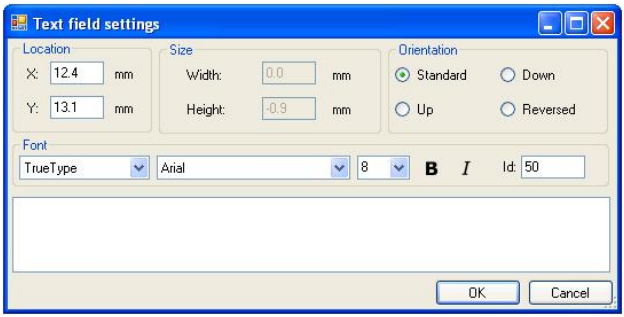
Procedure:

1. Run computer program **LABEL EDITOR R02**, then the main window of the program is displayed:



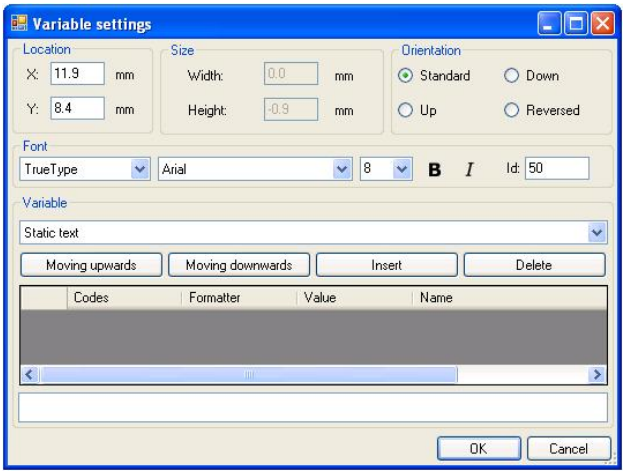
Notice:
Prior to designing a label a new project needs to be created with initial printer and label settings. A description of creating new projects can be found in instruction manual „Label Editor R02" accessible in the program menu: „Info / User manual".

2. In order to add a text to the label chose **<Abc Text>** from the list of objects and then click on the workspace of label, then window **<Text field settings>** opens:



3. Type the required text in the box at the bottom of the window: PORK CHARCUTERIE SMITH&SMITH Ltd and press OK to confirm, then the text is put automatically on the label,

4. In order to add a variable to the label chose **<{x1x2} Variable>** from the list of objects and then click on the workspace of label, then window **<Variable settings>** opens:

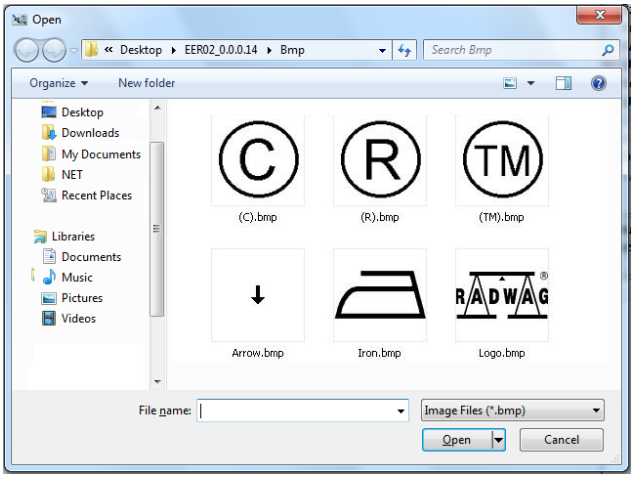


5. From list **<Variable>** chose variable type **„4 Date and time”** and press Insert, then the variable is placed in the table of variables show below.

6. Confirm it by pressing OK, then the variable is automatically placed on the label.

7. Place the rest of variables and constant texts on the label in the same way,

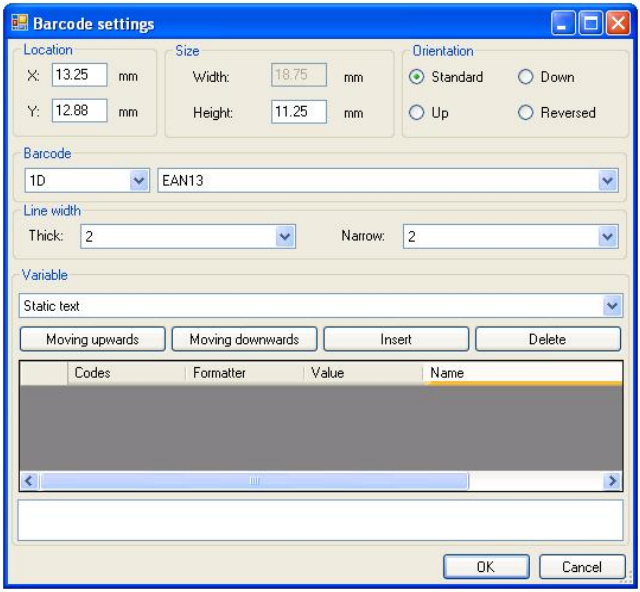
8. In order to put an image on the label chose **<Image>** from the list of objects and then click on the workspace of label, then window **<Open>** opens:



9. Chose one and press **<Open>**, then the image is placed on the label.

Notice:
Graphic images placed on the label can be printed only when they are downoladed to the printer memory. It is described in the instruction manual „Label Editor R02” accessible in the program menu on the overlap: „Info / User manual”.

10. In order to add a barcode to the label chose **<Barcode>** and then click on the workspace of label, then window **<Barcode settings>** opens:



11. Chose **<Barcode>** from the list e.g. **EAN-13**.

12. Chose from list **<Variable>** item **„7 Net mass in adjustment unit”** and press Insert, then the variable is placed in the table of variables show below.

13. In column **<Formatter>** type**:V6.3** (mass in EAN13 as a 6-digit code with 3 decimal places).

14. Confirm the entered item by pressing OK, then the barcode is automatically placed on the label.

15. Save the created pattern chosing from the menu **„File / Export *.lb”**.

Notice:
*Recorded templates of labels in files with ***.lb** extension are not editable. This is advisable to record designs of labels in files with ***.lab** extension as well (software menu: File / Save as…) to use/edit the designs of labels in the future.*

32.3. Saving label templates in the scale

Procedure:

- A label template ***.lb** created in **EDYTOR ETYKIET R02** needs to be copied to a pendrive,
- Connect the pendrive to USB in the scale,
- Enter: **„ Parameters / Databases / Labels”** and press the required item,
- Enter **<Label templates>**, then an editing field and the screen keyboard appears,
- Press , to open a window showing files on the pendrive,
- Select the required ***.lb** file. It is automatically copied to the editing field,
- Confirm the changes by pressing .

Notice:

If a pendrive is not recognized by the system button will remain inactive.

32.4. Attributing a label to a product

Procedure:

- Enter **<Databases>** according to ch. 23 of this manual,
- Enter **<Products>** and press the required item,
- Enter **<Label>**, then the database of labels is open with the list of all labels,
- Choose the required label. The program automatically ascribes the label to the product.

32.5. Attributing a label to a client

Procedure:

- Enter <  **Databases>** according to ch. 23 of this manual,
- Enter <  **Clients>** and press the required item,
- Enter <  **Label>**, then the database of labels is open with the list of all labels,
- Choose the required label. The program automatically ascribes the label to the client.

32.6. Printing labels

Procedure:

- While in the main window choose a product (button F1) or a client (button F2) that has attributed a label,
- Place a load on the pan and wait for ◣◢ then press **ENTER/PRINT**,
- The label is printed on a printer connected to the scale.

Notice:

1. *Labels can be attributed to products or/and clients. After pressing* **ENTER/PRINT** *a label is printed on a connected printer, provided a selected client or product has an ascribed label.*
2. *Users can perform the test label printout – see ch. 23.5 of this manual.*

33. APPENDIX D - CITIZEN printer setting

Baud rate	**: 9600b/sec**
Parity control	**: No**
Number of data bits	**: 8bit**
Number of stop bits	**: 1 bit**
Flow control	**: No**
IEEE 1284	**: ON**

Information printed by the printer via RS232:

[Interface Menu]
RS-232C Baud rate : **9600bps**
RS-232C Parity : **None**
RS-232C Length : **8 bit**
RS-232C Stop bit : **1 bit**
RS-232C X-ON : **No**
IEEE 1284 : **On**

The way of generating the setup printout and setting CITIZEN printers are described in manuals attached to printers or present on the website of the manufacturer.

34. APPENDIX E - ZEBRA printer setting

Baud rate – 9600b/sec
Parity control – none
No of data bits – 8bit
No of stop bits – 1 bit

Information printed by the printer via RS232:

Serial port : **96, N, 8, 1**

The way of generating the setup printout and setting ZEBRA (Eltron) printers are described in manuals attached to printers or present on the website of the manufacturer.

35. APPENDIX F - Communication with barcode scanners

1. For communication with barcode scanners RADWAG scales use RS232 interfaces and simplex transmission (one direction) without handshaking. Only two wires are required for assuring such a transmission. Used scanners should be equipped in such interface with disabled both hardware and software handshaking.
2. Both scales and scanners have the possibility of setting of transmission parameters. Both devices are required to have the same parameters set : baud rate, number of data bits, parity control, stop bits. e.g. 9600,8,N,1 – baud rate 9600 bit/s, data 8-bits, no parity control, 1 stop bit.

3. Barcode scanners can send additional information apart from the expected barcode e.g. symbology (type of barcode). It is advisable to disable such information because RADWAG devices and software do not use it.
4. Some RADWAG systems can omit unnecessary information by using parameters that mark the beginning and the length of the code required to analyse.
5. A special protocol is required in order the code be received by RADWAG equipment. It is required to program an appropriate *prefix and suffix*. Prefix – one byte 01 hexadecimally, suffix one byte 0D hexadecimally.
6. Most barcode scanners allow to enable/disable different symbologies (barcode types).
7. Programming of scanners is usually performed by reading special barcodes or by using an external software tool.
8. Scanners marketed together with RADWAG systems are always configured according to the rules above.

Barcode with required prefix and suffix in hexadecimal format	**Barcode without required –fixes in ASCII format**	**Code type**
01 30 30 32 31 30 31 32 36 0D	00210126	EAN-8
01 30 31 32 33 34 35 36 37 38 39 0D	0123456789	2 of 5
01 43 4F 44 45 20 33 39 20 54 45 53 54 0D	CODE 39 TEST	CODE 39
01 31 31 30 31 32 33 34 35 36 37 38 39 31 0D	1101234567891	EAN-13
01 43 6F 64 65 20 31 32 38 20 54 65 73 74 0D	CODE 128 Test	CODE 128

MANUFACTURER

OF ELECTRONIC WEIGHING INSTRUMENTS

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