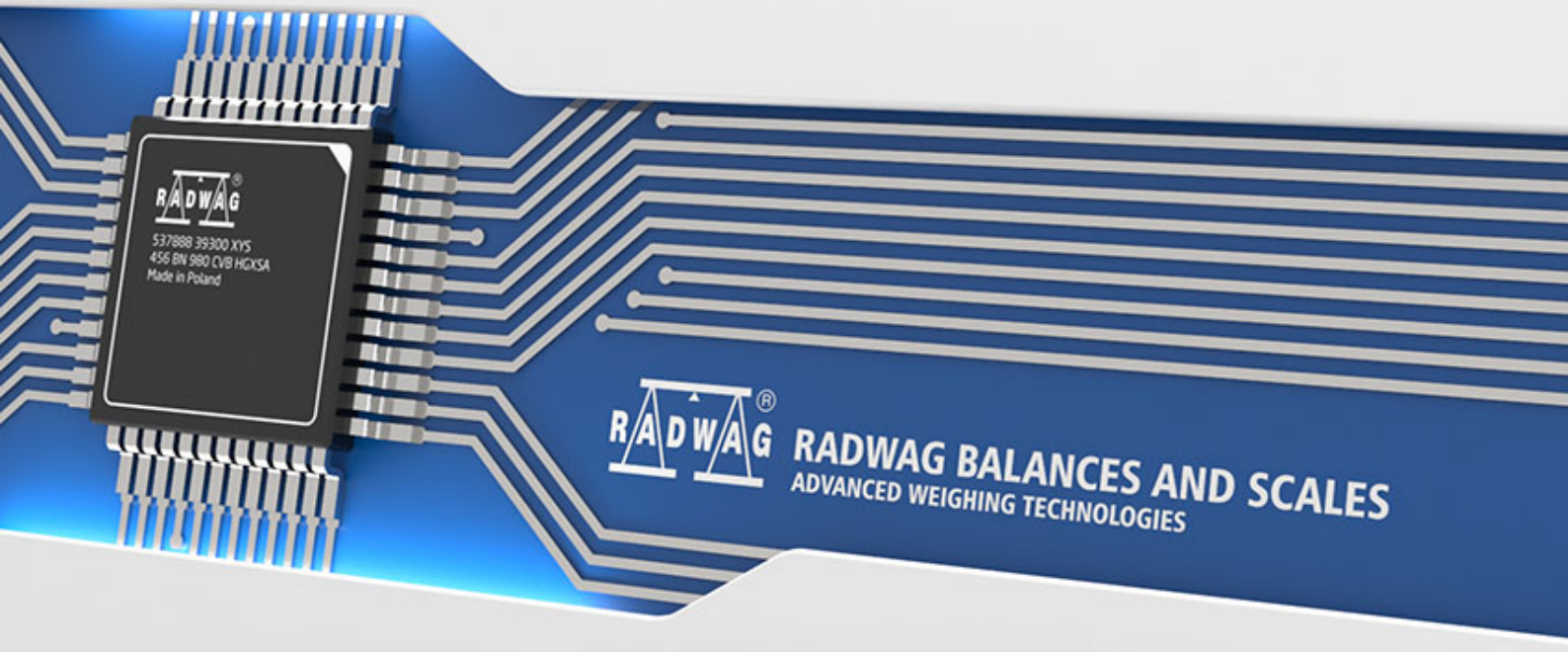
MWMH-Manager

Configuration Program

HRP Platforms
MWSH Weighing Modules
MWMH Weighing Modules
MWLH Weighing Modules

USER MANUAL

IMMU-20-03-10-16-EN



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OCTOBER 2016

"The drawings, photos and graphics
used are for illustrative purposes only."

Contents

1. Intended Use

„MWMH-Manager” is a computer software operating in MS Windows environment, it is intended for operation and configuration of parameters of **HRP** platforms and **MWSH, MWMH, MWLH** magnetoelectric weighing modules.
The program facilitates the following: mass readout, taring, zeroing, setting filters, adjustment, setting communication parameters, simulation of digital inputs and outputs operation.

„MWMH-Manager” software enables communication with modules using RS232, RS485 and TCP/IP.

2. MWMH-Manager Installation

Caution:

- *If you want to install **‘MWMH-Manager’** on a computer with already installed previous version of this software, you have to uninstall it first.*
- *For correct operation of the software, Microsoft.NET Framework version 2.0 or later is required.*
- *For correct operation of the software, you need an operating system with the latest Microsoft ServicePack installed.*
- *Due to software update, you may find that the provided information is partly incomplete.*
- ***RADWAG** does not bear responsibility for any effects of software operation and potential errors being a result of inappropriate use.*
- ***RADWAG** does not bear responsibility for loss of the data being a result of inappropriate use of the software or a computer.*

2.1. General Requirements

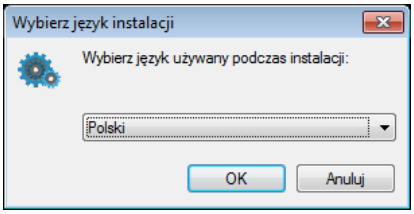
For correct operation of the program, you need:

- computer operating in Windows environment: 2000/XP/2003/Vista/7/8.1/10
- 2,4 GHz processor or faster,
- 512 MB internal memory or more (1 GB recommended),
- at least 200 MB of free space on a hard drive,

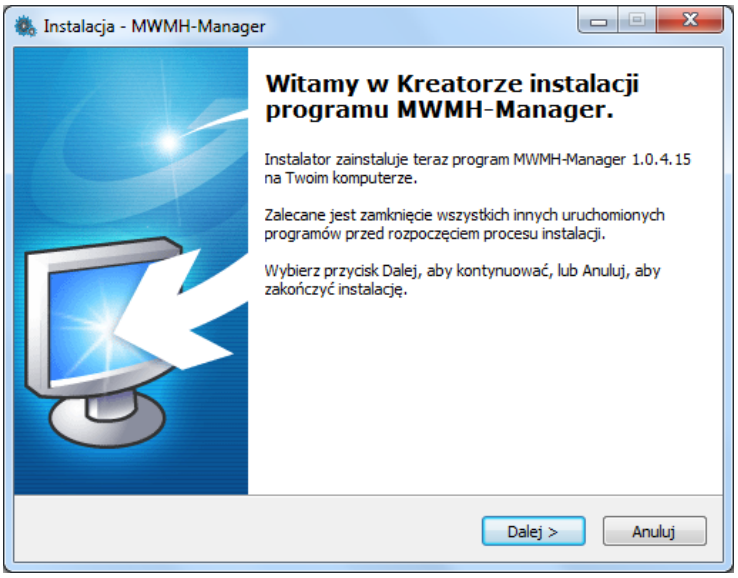
- computer monitor with at least 800 x 600 px resolution,

2.2. Installation Procedure

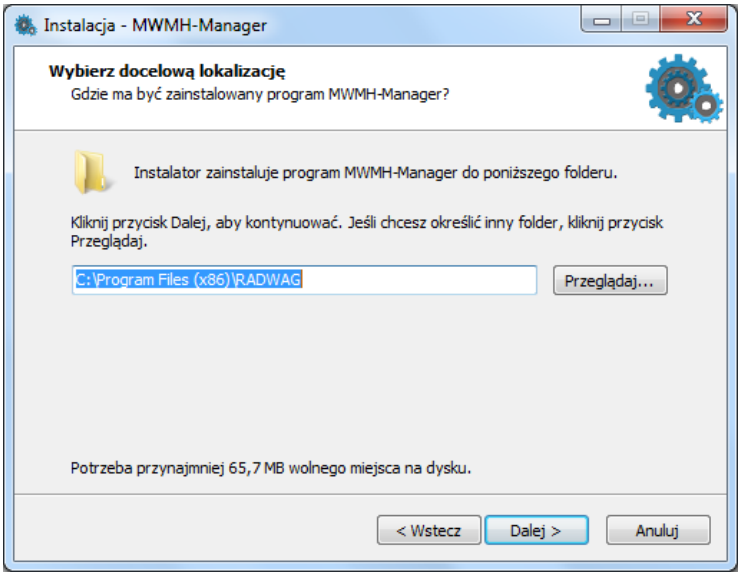
- Upon obtaining installation version of the software, run **MWMH-Manager x.x.x.x.exe** file, select language version and press **„OK”**.



- Software wizard opens, press **„Next”** button.

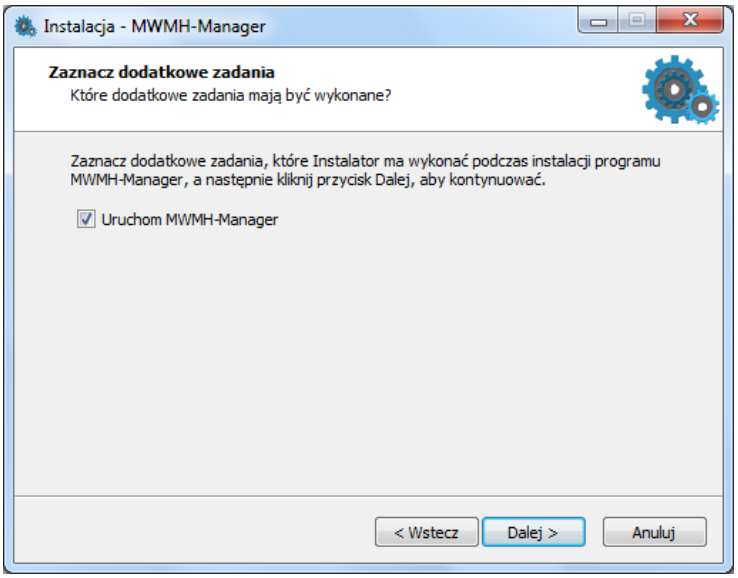


- Window for selecting installation path:



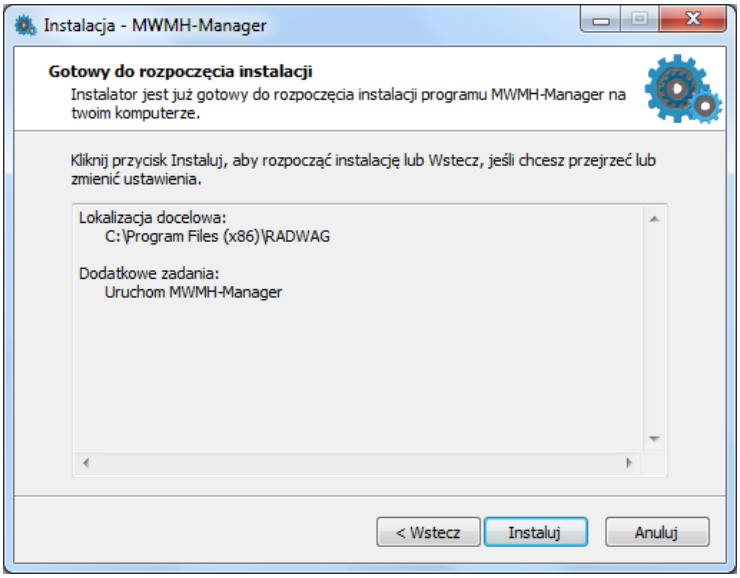
- Select localization (by default, the path remains unchanged) and press **„Next”** button.

- Window for selecting tasks:



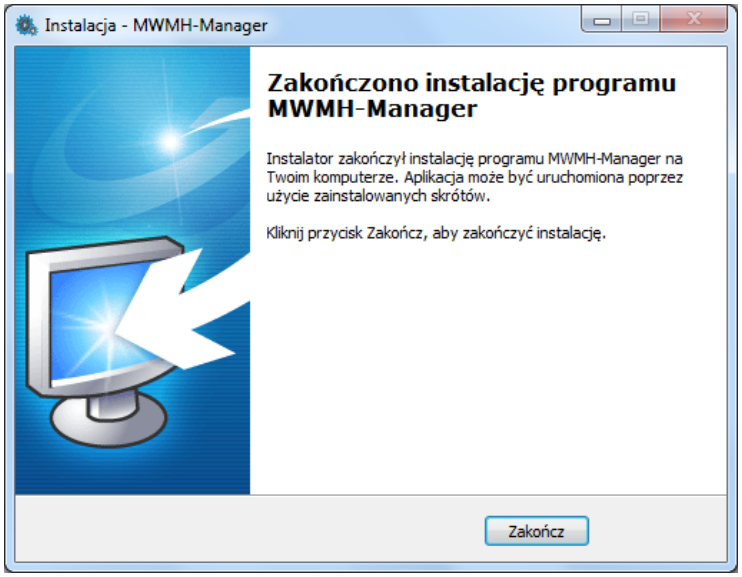
On selecting/deselecting options, press **„Next”** button.

- Ready for installation window:



Press **„Install”** button to continue.

- Window for installation completion:



Press **„Finish”** button to complete installation process.

- Software shortcut is created on the desktop.

3. MWMH-Manager STRUCTURE

„MWMH-Manager” enables changing parameters of **HRP** platforms and **MWSH, MWMH, MWLH** magnetoelectric weighing modules.

Caution:

- *This user manual is compliant with **„MWMH-Manager”** software version **1.0.4.16** and later, and MWMH weighing module program version **2.20** and later.*
- *All changes are saved to the weighing module upon pressing **Save** button. All temporary parameters that are not saved to the weighing module are marked red.*

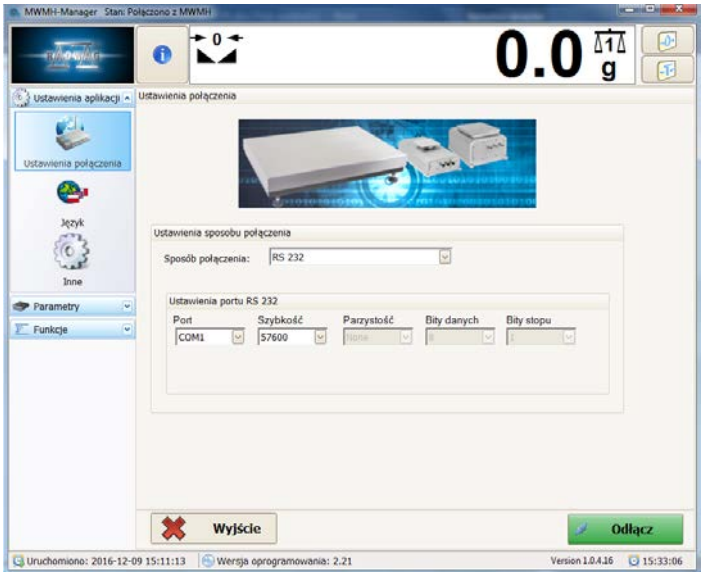
3.1. Running the Software

To run the software use:

- desktop shortcut 

,
- **START/PROGRAMS/RADWAG/MWMH-Manager** Windows menu.

Upon running the software, the home screen is displayed.

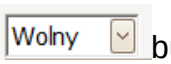


Home screen

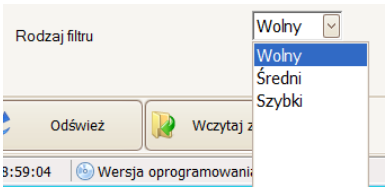
In order to check version of installed software, press  pictogram.

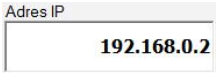
3.2. Parameters Editing

Parameters editing depends on parameter type.

- Press 

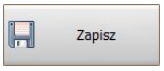
button to select particular setting from the list.



- Press particular parameter box 

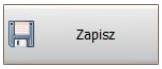
and enter value using displayed keyboard.

Saving settings:

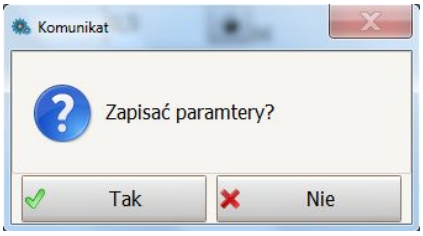
All changes are saved to the weighing module upon pressing 

button. All temporary parameters that are not saved to the weighing module are marked red.

Procedure:

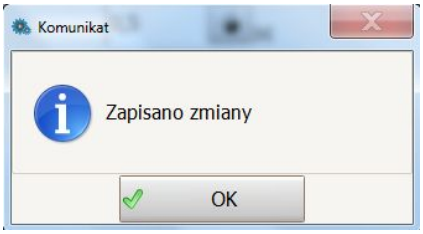
- Press 

button,
- The following message is displayed



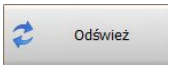
press **<YES>** button,

- The following message is displayed



press **<OK>** button,

- The changes are saved to ROM memory of the weighing module.

Settings modifications although entered may not be saved, to read the current settings press  button.

3.3. Weighing Result Window

Weighing result window

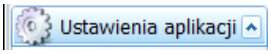
Pictograms:

0	- zero indication
	- stable weighing result
g	- weighing unit
1	- weighing platform number

Buttons' Functions:

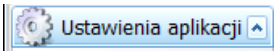
	-	Press to zero the weighing device
	-	Press to tare the weighing device

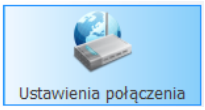
3.4. Settings



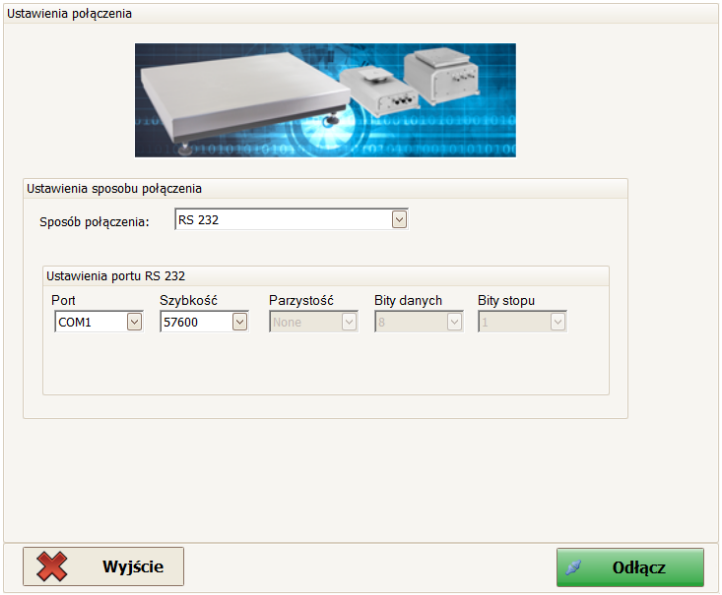
tab comprises the following settings: MWMH - weighing module connection, language and miscellaneous parameters.

3.4.1. Connection Settings



tab features 

button, press it to edit settings of MWMH – weighing module connection.



Connection settings

First, select connection type. Next, set its options.

Description:

Connection type	Selecting interface for connection with the weighing module
RS 232	Connection established using RS232 connector
TCP/IP	Connection established using Ethernet network
RS 485	Connection for RS 485 network
Offline	Offline option is used during saving and editing of crucial parameters in configuration file

RS232:

Port	Selecting number of COM connector to which the weighing module is connected
Baud rate	Baud rate of RS232 connector. **57600** b/ps by default
Parity	Parity value. 'none' value by default (disabled for edition)
Data bits	Quantity of data bits. 8 data bits by default (disabled for edition)

Stop bits	Quantity of stop bits. 1 stop bit by default (disabled for edition)

TCP/IP:

IP Address	IP address of the balance, **192.168.0.2** by default
Port	Port set in the weighing module, **4001** by default

RS485:

Port	Selecting number of COM connector to which the weighing module is connected
Baud rate	Baud rate of RS485 connector. **57600** bit/s by default
Parity	Parity value. 'none' value by default (disabled for edition)
Data bits	Quantity of data bits. 8 data bits by default (disabled for edition)
Stop bits	Quantity of stop bits. 1 stop bit by default (disabled for edition)
Address	Address of the weighing module in the network

Caution:

- *When connection with the weighing module is established, <Connection settings> are not available.*

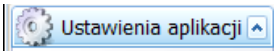
Buttons' description:

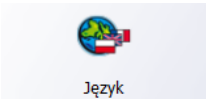
Press to connect with the weighing module. Upon establishing connection, the button changes its function to **„Disconnect”** and the colour to green.

Press to disconnect the weighing module. Upon disconnection, the button changes its function to **„Connect”** and the colour to red.

Press to exit „**MWMH-Manager”**

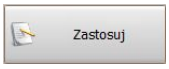
3.4.2. Language



tab features 

button, press it to run window for software language selection.

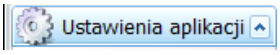
Language selection window

Upon selecting language, press 

button to save the changes. The following languages are available in current version of the software:

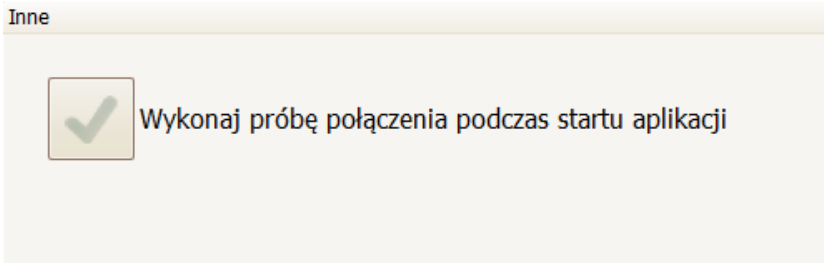
- German
- English
- Polish

3.4.3. Others



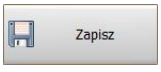
tab features 

button, press it to run miscellaneous software options.



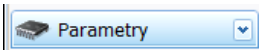
Miscellaneous parameters window

„Establish connection on application startup” - upon selecting this option**,** the software automatically connects with the weighing module in accordance with the default or last selected connection type.

Having selected this option, press 

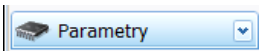
button to save the changes.

3.5. Parameters



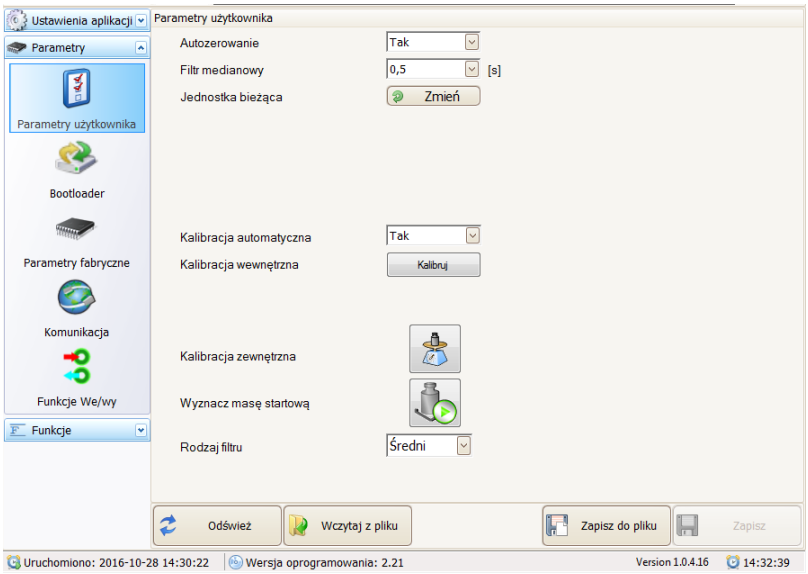
tab features the following parameters: user parameters, weighing module communication parameters, input/output functions with preview of their state and simulation of checkweighing and dosing functions.

3.5.1. User Parameters



tab features 

button, press it to run the window with user parameters. The displayed parameters are parameters of currently selected (active) platform, they can be modified by every program user.



User parameters

User parameters:

Autozeroing	-	enabling/disabling autozero
Median filter	-	setting median filter value. None – median filter disabled
Current unit	-	Changing current unit in the weighing window
Automatic adjustment	-	Enabling/disabling automatic adjustment
Internal adjustment	-	Carrying out internal adjustment
External adjustment	-	Carrying out platform adjustment using external weight mass of which is saved in factory settings
Adjust start mass	-	Adjusting new platform start mass within the scope permissible for a user

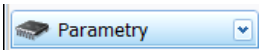
Filter type	-	Setting filtering operation rate

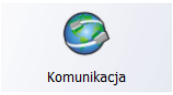
CAUTION

- ***„Internal adjustment”*** *and* ***„ Automatic adjustment”*** *options are not available when the platform or the weighing module is not equipped with internal adjustment option.*

- ***„External adjustment”*** *and* ***„Adjust start mass”*** *options are not available for verified platforms and weighing modules.*

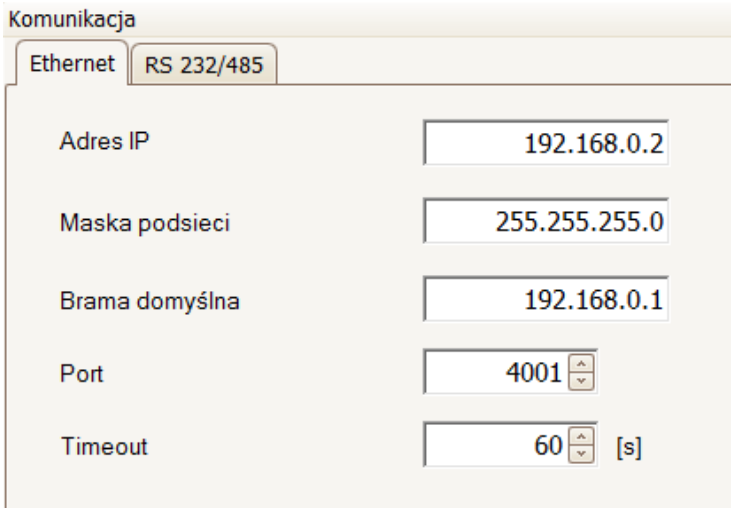
3.5.2. Communication



tab features 

button, press it to display window with weighing module communication parameters. The parameters can be modified by every program user who establishes communication with the weighing module.

- **Ethernet**

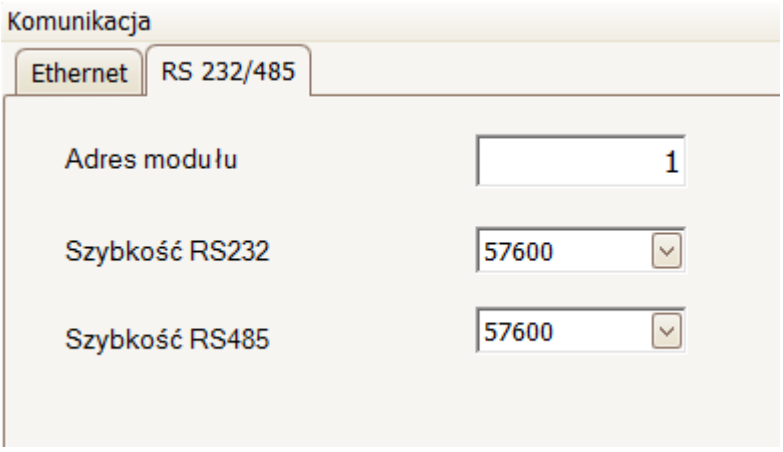


Ethernet communication parameters tab

Description:

IP Address	-	IP address of the balance, **192.168.0.2** by default
Subnet mask	-	Ethernet subnet mask, **255.255.255.0** by default
Default gateway	-	Ethernet default gateway, **192.168.0.1** by default
Port	-	TCP communication port, **4001** by default.
Timeout	-	Timeout after which connection is broken, expressed in seconds 0 – 300 [s].

- **RS 232/485**



RS communication parameters tab

Description:

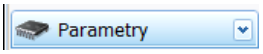
Module address	-	Weighing module address in the RS485 network (different addresses for various devices), **1** value set by default. Ranging from 1 to 254.
Baud rate RS232	-	Setting baud rate for RS232 communication interface. **57600** bit/s by default
Baud rate RS485	-	Setting baud rate for RS485 communication interface. **57600** bit/s by default

CAUTION

- *Upon changing communication parameters it is necessary to save changes and restart the weighing module in order to introduce all the modifications.*
- *Remember, new parameters are entered in the home screen of connection settings for the weighing module.*

3.5.3. I/O functions

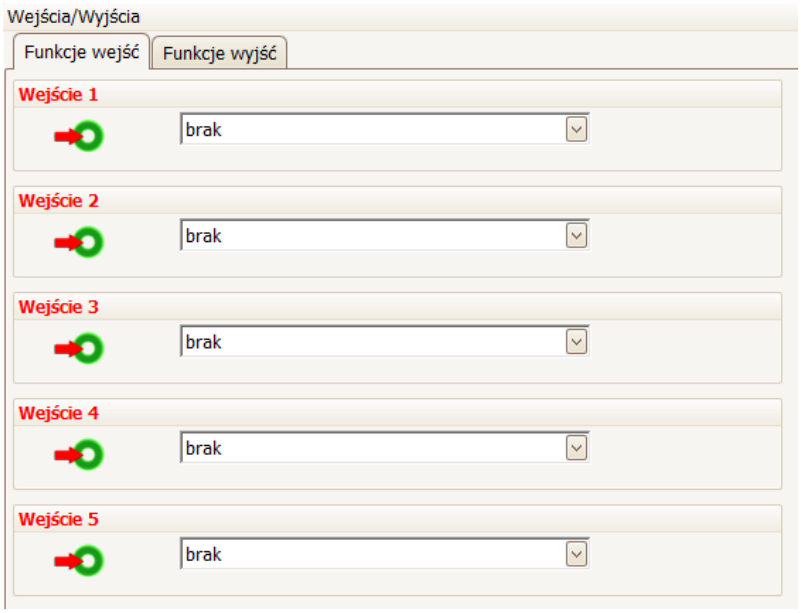
HRP platforms and magnetoelectric weighing modules, depending on their version, are equipped with inputs and outputs to which you can assign different functions.



tab features 

button, press it to run window for configuration of weighing module inputs and outputs.

- **Inputs Configuration**

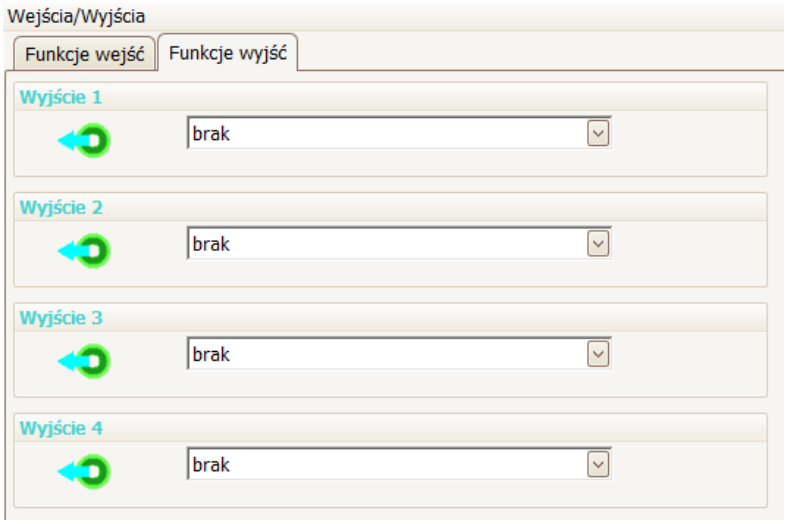


Inputs configuration tab

Inputs functions:

None	Input inactive
Taring	Platform taring
Zeroing	Platform zeroing
Start dosing	Dosing process start
Stop dosing	Dosing process stop

- **Outputs Configuration**



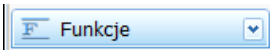
Outputs configuration tab

Outputs functions:

None	Output inactive
Stable	Stable measurement result above LO mass value on selected platform
MIN stable	Stable measurement result above LO mass value and below MIN threshold on selected platform
MIN	Unstable measurement result above LO mass value and below MIN threshold on selected platform
OK stable	Stable measurement result between MIN and MAX thresholds on selected platform
OK	Unstable measurement result between MIN and MAX thresholds on selected platform
MAX stable	Stable measurement result above MAX threshold on selected platform
MAX	Unstable measurement result above MAX threshold on selected platform

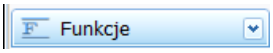
Caution:
If you set specific function to an output for which quick or accurate dosing function has already been assigned, then during dosing process start and in the course of it, the output operates in accordance with the settings of dosing parameters. Upon dosing process completion the output switches to the set specific function.

3.6. Functions



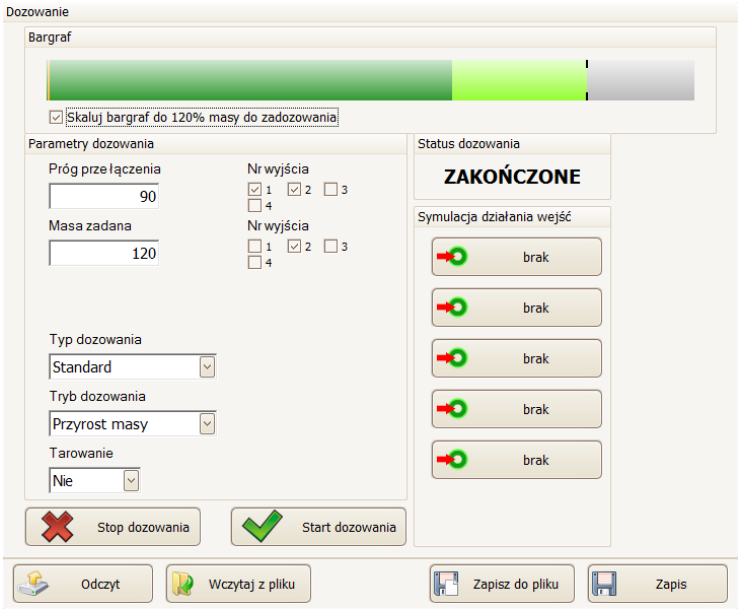
tab allows you to set dosing and checkweighing functions and to check operation of digital inputs and outputs.

3.6.1. Dosing



tab features 

button, press it to run window for setting dosing parameters of currently selected platform.



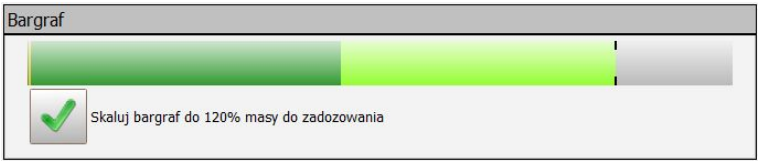
*Parameters for „**Standard**” dosing*

- **Bar graph**

Dosing mode home screen features a bar graph showing mass indication within 0 - Max range. Bar graph zooms with reference to values entered in the fields below: switch point and preset mass.

Upon selecting an additional option, the bar graph zooms up to 120% of the preset mass.

Bar graph for small mass value, zoom off



Bar graph for the same mass value, zoom on

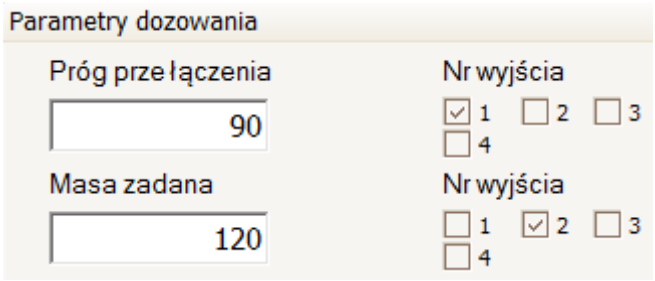
- **Dosing method**

There are two methods of dispenser operation, both to be set in **„Dosing method”** parameter. The remaining dosing parameters are displayed depending on the dispenser type.

- **Common dosing parameters**

Dosing method	**Standard**- one- or two-phase dosing for pre-determined thresholds **With flow control**- dosing to pre-determined threshold with flow control
Dosing mode	**Mass loss-** dosing from vessel or container located on the balance **Mass gain-** dosing to vessel or container located on the balance
Taring	Enabling/disabling automatic taring before dosing start

- **Parameters for „Standard" dosing**



Window for setting dosing parameters

Depending on the needs, the dosing process can be one- or two-phase operation (fast/slow).

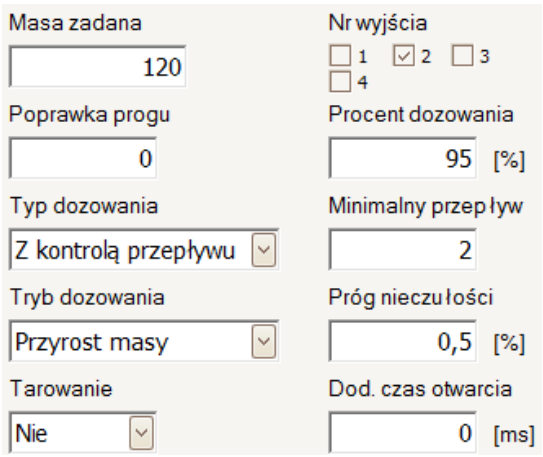
Description:

Switch point	**Output no.**
Mass value for which the first phase of dosing process gets completed. (Switching to the second phase of dosing. Entering '0' value disables two-phase dosing).	Selecting number of output or several outputs active during the first phase of dosing until the threshold for switching is reached. (Fast dosage).

Preset mass	**Output no.**
Mass value for which the dosing process gets completed.	Selecting number of output or several outputs active during the second phase of dosing (Slow

	dosing) or active for the whole dosing process during the one-phase dosing.

- **Parameters for „With flow control” dosing**



Preset mass	Mass value to be dosed
Output no.	Selecting number of output or several outputs active during dosing
Threshold correction	Correction value expressed in reading units referred to when dosing is carried out below minimum flow value
Dosing percent	Mass threshold expressed in [%], automatic dosing is carried out until this threshold is reached
Minimum flow	Minimum flow value, expressed in balance reading unit, initializing dosing algorithm with flow control
Insensitivity threshold	Permissible ± error of dosed mass expressed in [%]
Extra dosing time	± time correction of output operation during dosing expressed in [ms]

- **Status of dosing process**

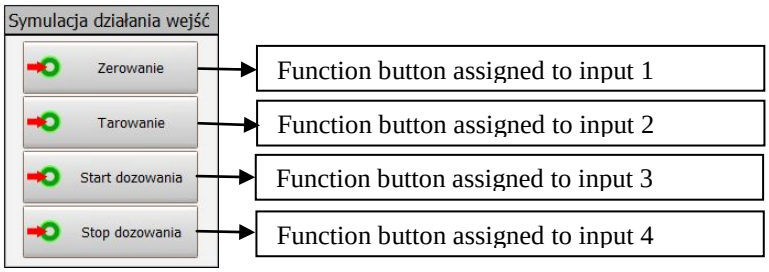
Window with dosing status informs on current state of dosing process that is carried out on a platform displayed in the weighing window.

Description:

Status of dosing	Dosing process status: DOSING – dosing in progress TERMINATED – dosing terminated upon pressing stop button. STOP – dosing stopped, COMPLETED – dosing completed.

- **Simulation of inputs**

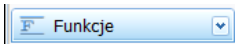
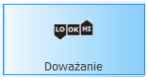
  Inputs simulation enables simulating operation of a function assigned to a particular input.

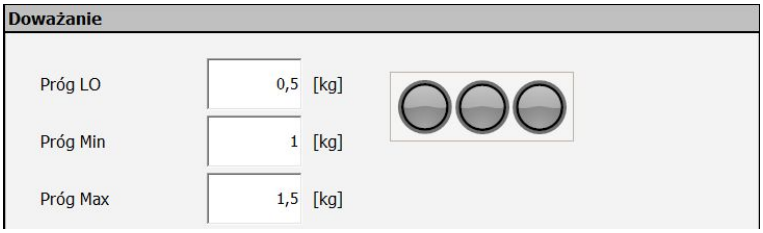


- **Dosing process simulation**

  Start and stop dosing buttons are located at the bottom of the window. The buttons start and stop dosing process independently from functions assigned to the inputs.

3.6.2. Checkweighing

Upon selecting  option and pressing  button, checkweighing operation settings for a platform displayed in the weighing result window are enabled.



Window for setting checkweighing parameters

Description:

LO	Net weight value above which checkweighing function is

Threshold	active
Min threshold	Mass values for determining tolerance thresholds. - Below **Min threshold**, MIN threshold is signalled
Max threshold	- Between **Min threshold - Max threshold** values, an OK threshold is signalled. - Above **Max threshold**, MAX threshold is signalled

Checkweighing thresholds signals:

MIN

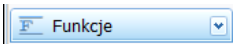
OK

MAX

Caution:

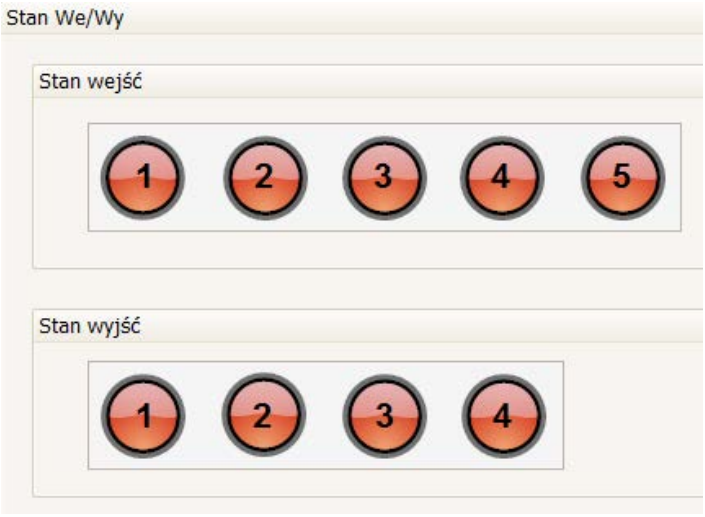
In order to enable checkweighing signals, set the checkweighing function for outputs.

3.6.3. I/O Status

Upon selecting 

option and pressing 

button, window for signalling inputs status, and for test setting of outputs status, is displayed.



Status window of inputs and outputs

Inputs/outputs numbers in the software reflect numeration in the weighing module.

	Input/output active
	Input/output inactive

Simulation of output operation is possible upon pressing output number. The output is immediately activated on condition that no other function is assigned to it.

Simulation of inputs operation is available in the dosing home screen.

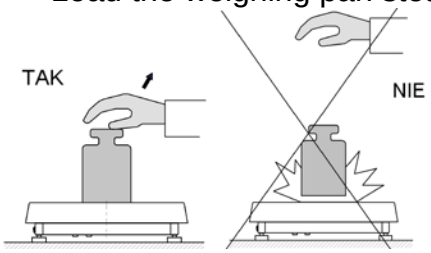
4. Weighing Process Using MWMH-Manager

Load the weighing pan. You can read the result when ◣◢ pictogram is displayed .

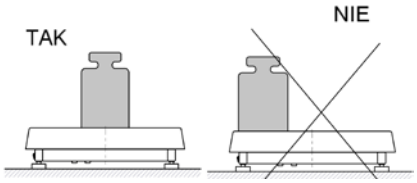
4.1. Warranty Conditions

To assure long-term operation and correct mass measurements, follow the rules presented below:

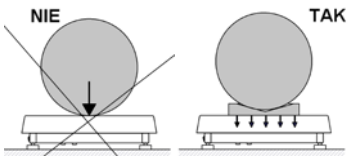
- Load the weighing pan steadily avoiding shocks:



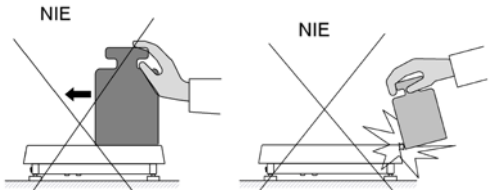
- Place weighed loads centrally on the weighing pan (eccentricity errors are specified by PN-EN 45501 standard, points 3.5 and 3.6.2.):



- Do not load the pan with concentrated force:



- Avoid side loading, in particular side shocks:



4.2. ADJUSTMENT

In order to ensure the highest weighing accuracy, it is recommended to periodically correct indications by entering a corrective factor to balance memory, the said factor must be referred to a reference mass. Adjustment has to be carried out before weighing process, after a long break between measurements series or when ambient temperature changed rapidly. The adjustment has to be carried out when the weighing pan is unloaded and working conditions are stable (no drafts and vibrations). When one of the above-listed conditions is not fulfilled an error message is displayed. In such case, unload the weighing pan or eliminate other distorting factors and repeat the adjustment. Do not use the balance until the adjustment is carried out. Follow the displayed messages. In case of balances equipped with an internal weight, the adjustment can be carried out using either this weight or an external one. Balances not equipped with an internal weight can only be adjusted using external weight. Verified balances cannot be adjusted using external weight.

Tthere are three adjustment modes (accessed in **<Parameters>** menu, in **<User parameters>** tab):

•adjustment using external weight
•automatic internal adjustment initiated by the balance
•manual internal adjustment initiated by the balance

You can delay or abort the adjustment. The balance returns to weighing mode and displays previous measurement result. After 3 minutes, message about automatic adjustment start is displayed again. Adjustment can be delayed repeatedly, but you have to remember that too many delays cause larger errors during weighing.

4.3. Balance Zeroing

In order to zero mass indication of selected platform, in weighing window of **„MWMH-Manager”** software (in the right upper part) press  button or trigger the zeroing function defined for specific output.

Zero indication and the following pictograms are displayed: →0← and ◣◢. Zeroing process is an equivalent for determining new zero point, recognized by the balance as precise zero. Zeroing is possible only for stable indication.

Caution:
*Indication zeroing is possible only within **±2%** range of balance's maximum capacity. If the zeroed value is above **±2%** of the maximum capacity, then the software indicates a respective **Err2** error message.*

4.4. Balance Taring

In order to determine net weight of the object, place object's container (packaging) on the weighing pan of selected platform, next wait for a stable indication and press  button or trigger taring function determined for a specific input.

Zero indication and the following pictograms are displayed: ***Net*** and ◣◢. The balance has been tared.
Remember not to exceed balance maximum capacity, i.e. sum of tare weight value and load weight value must be lower than the maximum capacity value. Upon unloading the weighing pan, the sum of tared masses with minus sign is displayed.

Caution:

*Taring negative values is impossible. When you tare negative values the balance responds with an **Err3** message.*

4.5. Weighing for Dual Range Balances

Switching from weighing with the accuracy of the **I weighing range** to weighing with the accuracy of the **II weighing range** takes place automatically upon exceeding Max of the **I weighing range**.
Upon switching to weighing with the accuracy of the II weighing range, ►2◄ symbol is displayed on the left. Upon unloading the weighing pan, the indication zeroes. The weighing is carried out with the **II weighing range** accuracy until the indication is zeroed.

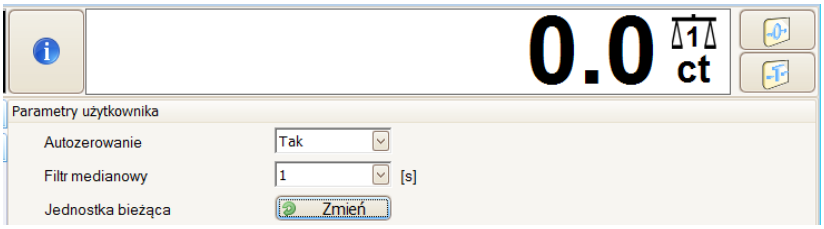
Weighing result window for the II weighing range

Switching from weighing with the accuracy of the **II weighing range** to weighing with the accuracy of the **I weighing range** takes place automatically upon unloading the weighing pan and returning to AUTOZERO - (symbol -0- is displayed). II weighing range pictogram is blanked and the balance switches back to the **I weighing range.**

4.6. Changing Weighing Unit

In order to change weighing unit of a selected platform, open **„MWMH-Manager"** weighing result window and press 

button located in the user parameters tab.



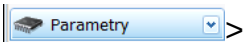
Window with changed weighing unit

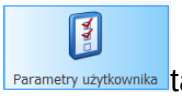
Options:

- When [g] is the main unit, then you can select the following units: [g, kg, lb, oz, ct, N]. *[lb, oz, N] units are unavailable for verified balances*.

5. BALANCE PARAMETERS

You can adjust the balance operation to ambient conditions (filter level) or to your own needs (autozero, tare value).

The parameters are to be found in 

> 

tab.

Balance parameters:

- Autozero,
- Median filter,
- Automatic adjustment
- Internal adjustment
- Adjust calibration factor
- Adjust start mass
- Filter type

5.1. Autozero

For ensuring precise mass measurements, the software features an 'AUTOZERO' function. The function has been designed to enable automatic monitoring and correction of zero indication.

If the function is enabled, the following measurement results are compared to each other in constant time intervals. If the results differ less than declared AUTOZERO range, e.g. 1 division, the balance is automatically zeroed, and the markers of stable indication – ◣◢ and precise zero – →0← are displayed.

Active AUTOZERO means, that each measurement starts from the precise zero point. There are, however, some cases when this function can be a disturbing factor for the measuring process. For instance during very slow load placing or pouring onto the balance's weighing pan. In such case, the correcting system of zero indication may also correct the actual indication of a load placed on the weighing pan.

Procedure:

- Open 

tab,

- Select respective **<Autozeroing>** parameter option:
  Yes - autozero enabled, **No** – autozero disabled.

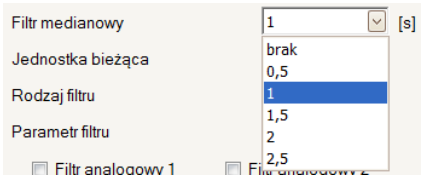
5.2. Median filter

Median filter eliminates short impulsive distortions (e.g. mechanical shocks).

Procedure:

- Open 

tab,
- Select **<Median filter>** parameter and press  button



- Select respective setting from the list

Options:

None	- median filter disabled
0.5, 1, 1.5, 2, 2.5	- median filter enabled

5.3. Automatic Adjustment

Automatic adjustment parameter has been designed to let you decide whether internal adjustment (using internal weight) is to be carried out automatically when particular conditions are met: 3°C temperature change, 3-hour long time interval from the previous adjustment, and powering the balance (in case of verified balances).

Procedure:

- Open 

tab,
- Select respective **<Automatic adjustment>** parameter option: **Yes** –Automatic adjustment enabled, **No** – Automatic adjustment disabled.

5.4. Internal Adjustment

Internal adjustment is carried out by means of internal adjustment weight.

Procedure:

- Open 

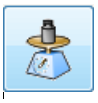
tab,
- Select **<Internal adjustment>** parameter, press **<Adjust>** button.

5.5. External Adjustment

External adjustment is carried out by means of an external mass standard of specified accuracy class and weight.

Procedure:

- Open 

tab,
- Select **<External adjustment>** parameter, press  button.

- Follow the displayed messages.

Caution

*„**External adjustment**” parameter is not available for verified weighing modules and platforms.*

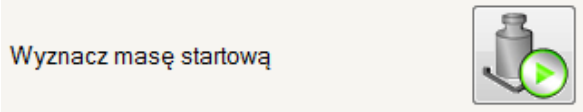
5.6. Adjust Start Mass

You can determine zero point of HRP platforms and magnetoelectric weighing modules. This option is used in case of using additional conveyor or container that permanently loads the balance. Determining start mass with additional load does not reduce balance maximum capacity. By standard, this procedure is possible within ±10% of balance maximum capacity.

Procedure:

- Open 

tab,
- Select **<Adjust start mass>** parameter, press  button



- Follow the displayed messages.

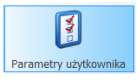
Caution

***„Adjust start mass”** parameter is not available for verified weighing modules and platforms.*

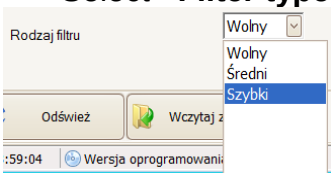
5.7. Filter type

Moving average filter adapts the balance to the external ambient conditions.

Procedure:

- Open 

tab,
- Select **<Filter type>** parameter and press  button



- Select respective setting from the list

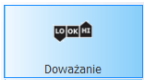
Options:

fast, medium, slow

Caution

The higher filter level, the longer it takes for the indication to stabilise.

6. CHECKWEIGHING

Checkweighing 

is a working mode using two thresholds (Min and Max) to control samples weight (LO - sample mass too small, HI - sample mass to large, OK - sample mass correct).

Such solution enables fast evaluation of sample mass. There is no need for constant control of the weighing result. LO, OK, HI states are presented on the display in a graphic form.

LO, OK, HI states are signalled with colours or presented by means of control of external equipment systems.

LO, OK, HI states ranges

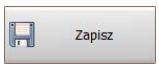
Caution:
For description on how to enable checkweighing and its signals, go to point 3.6.2 of this user manual.

6.1. LO Threshold

<LO threshold> parameter specifies displayed value of the net weight above which checkweighing function is active.

Procedure:

- Press parameter's window:

- Enter **LO** threshold value.
- Press 

button to save the changes to ROM memory of the weighing module.

6.2. MIN/MAX Threshold

<MIN threshold> parameter specifies net weight threshold in the checkweighing mode, to which the threshold between OK and MAX is switched.

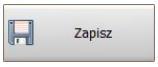
<MAX threshold> parameter specifies net weight threshold in the checkweighing mode, to which the threshold between OK and MAX is switched.

Output signals are enabled when net **LO threshold** value is higher than the net value.

Procedure:

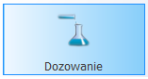
- Press **<Min threshold>** or **<Max threshold>** parameter window,

- Enter threshold value**,**

- Press 

button to save changes to ROM memory of the weighing module

7. DOSING

Dosing 

is a working mode enabling precise filling, wherein the filling takes as long as it is necessary to obtain the pre-defined target weight. Dosing is carried out by a weighing device using digital outputs to adjust external equipment responsible for feeding the products such as valves, bolts or dispensers.

Magnetoelectric weighing modules and HRP platforms offer two dosing methods: **„Standard”** and „**With flow control”.** Each method features two dosing modes: **„Mass gain”** is a situation when the products are dispensed onto the platform and **„Mass loss”** is a situation when the products are dispensed from the platform. It is possible to tare the container on the platform before dosing. To do that, set **„Taring”** parameter.

7.1. Standard Dosing

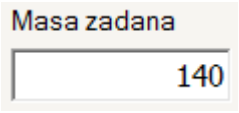
Standard dosing can be a one-phase process using one or more outputs active from the moment of starting the dosing operation to the moment of reaching preset mass value. Standard dosing can also be a two-phase process (slow/fast) with determined switch point. In such case, when the switch point is reached (end of fast dosing) dosing outputs are changed to slow dosing outputs responsible for slow dosing of pre-determined mass.

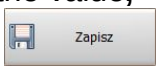
<Switch point> parameter is a net weight value below which one or more fast dosing outputs are active. On exceeding the switch point, fast dosing switches to slow dosing.

<Preset mass> parameter is a net weight value pre-determined for dosing. One or more outputs determined for this phase of the process are active below preset mass value. In case of one-phase dosing, those outputs are active until start of the dosing process. In case of two-phase dosing (fast/slow with the value of **„Switch point"** parameter) the outputs become active upon exceeding the value specified as switch point. Upon reaching the preset mass, the dosing process is completed. Outputs assigned to this phase get deactivated.

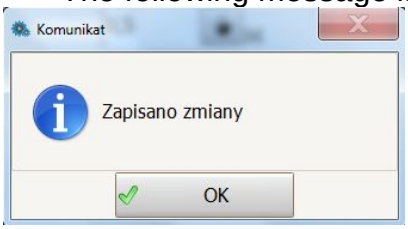
Procedure:

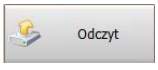
- Press **<Preset mass>** or **<Switch point>** parameters



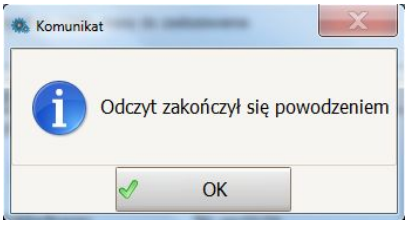
- Enter the value**,**
- Press  button to save the changes to ROM memory of the weighing module

- The following message is displayed for confirmation:



- Thresholds values although changed may not be saved, to read the current settings press  button.

- The following message is displayed for confirmation:



Caution:
For description of the dosing mode and its parameters, go to point 3.6.1 of this user manual.

7.2. Dosing With Flow Control

This parameter is an operation algorithm. During dosing, flow measurement is carried out to precisely measure the preset mass. It is a two-phase process. The first phase is dosing the product up to the percent value (preset mass) specified in dosing percent parameter. Upon reaching this value the dosing is stopped, the measurement stabilizes and the flow is calculated. Second phase is restarting the dosing process for a specified period of time (determined basing on the flow), necessary for reaching the preset mass. For both phases, the dosing process is carried out using the same balance output.

<Preset mass> is net weight value that is to be achieved during dosing. One or more outputs determined for this process are active below the preset mass value.

<Dosing percent> is a percent value of the preset mass. The first phase of dosing process is completed upon reaching this value. Product mass, measured in this phase, is used for calculating flow and boot time of the dosing output in the second phase.

<Minimum flow> parameter specifies the minimum value of the flow required for initialization of flow control algorithm operation. When the flow is below this value, the dosing is carried out in a standard way.

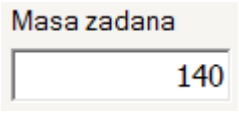
<Insensitivity threshold> parameter determines ± dosing error in [%] of pre-defined mass.

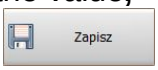
<Extra dosing time> is a ± time correction expressed in [ms] of output operation during the dosing process. This parameter enables to shorten or lengthen the dosing process and to correct the result. In order to shorten output operation, precede the value with minus sign.

<Threshold correction> is a ± correction expressed in balance reading units in relation to the preset mass. This correction is considered when dosing is carried out below minimum flow value. If you want entered value to reduce mass of the dosed product, precede the value with minus sign.

Procedure:

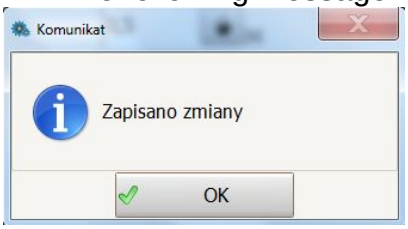
- Press **<Preset mass>** or other parameter window,



- Enter the value**,**
- Press 

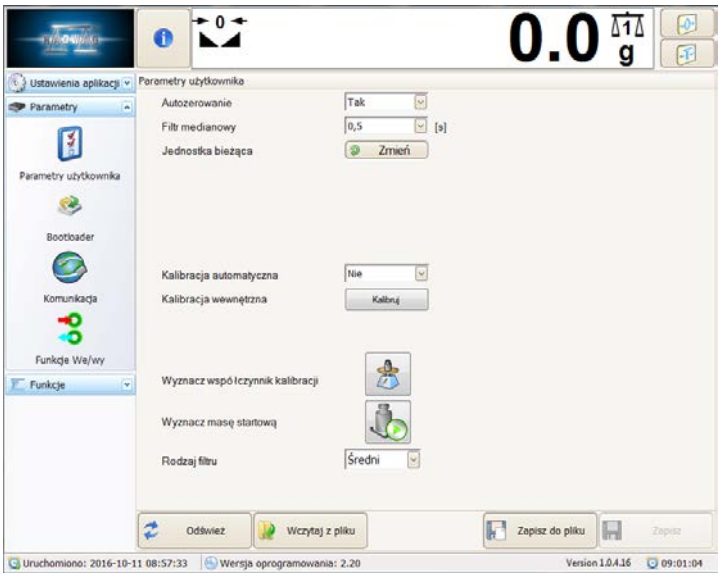
button to save the changes to ROM memory of the weighing module

- The following message is displayed for confirmation:



8. PARAMETERS IN FILE

„MWMH-Manager” software is equipped with option of saving set parameters to ***.sav** file. This function can be used to save weighing module settings as backup, in case of its malfunction and for further use of the parameters when configuring more weighing modules.



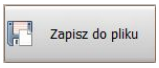
An exemplary window with file save and read option.

File format:

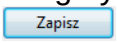
MWMH_(serial number)_RRRR-MM-DD_HH-MM.sav

8.1. Save to File

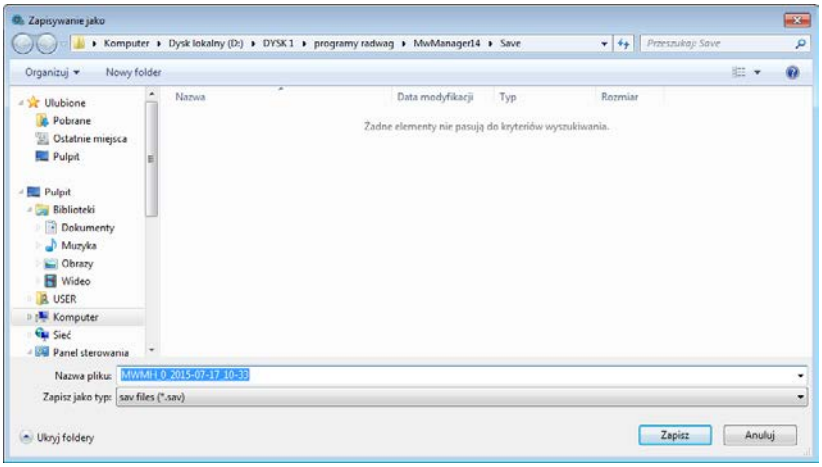
Procedure:

- Upon setting weighing module parameters, press 

button to save them to file.

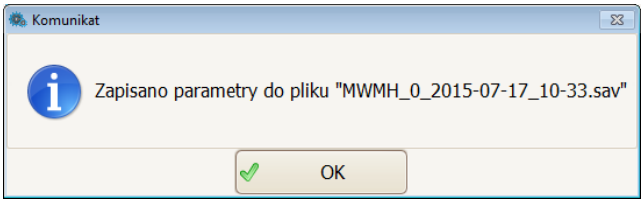
- Next, in the operating system window select the location where the file is to be saved and press 

button.



'Save as' system window

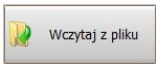
- Correctly saved parameters result in displaying the following message.

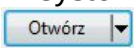


Caution:
System window look depends on installed operating system version and can differ from the one showed above.

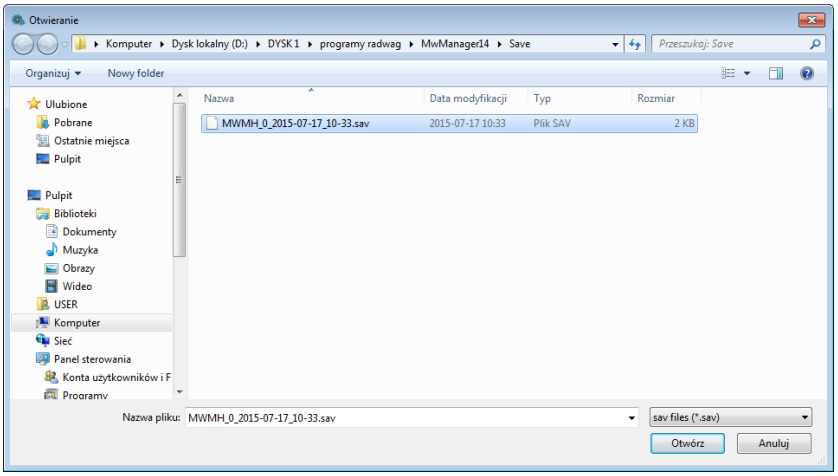
8.2. Uploading File Data

Procedure:

- In order to upload parameters from a file, press 

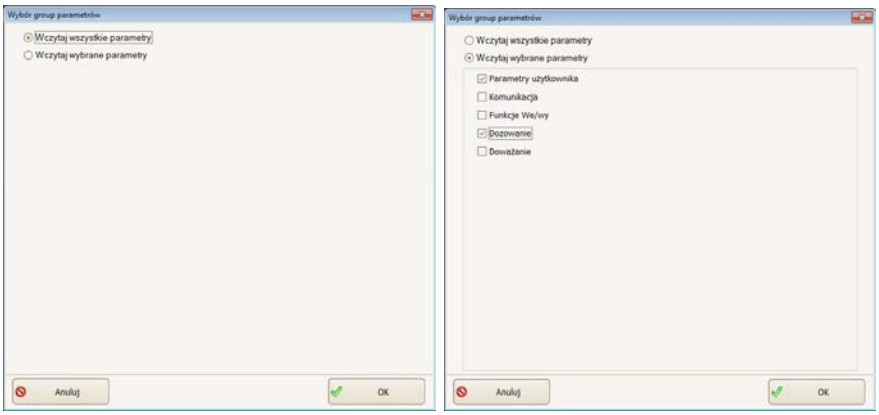
button.
- In system window, see the graphic below, select previously saved file and press 

button.



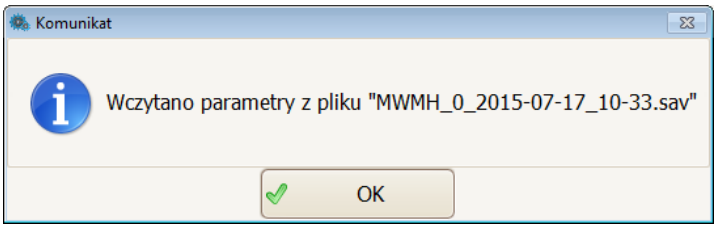
'Open' system window

- Next, using window for uploading groups of parameters, select one or all parameters to be uploaded to the weighing module, press **<OK>** button.



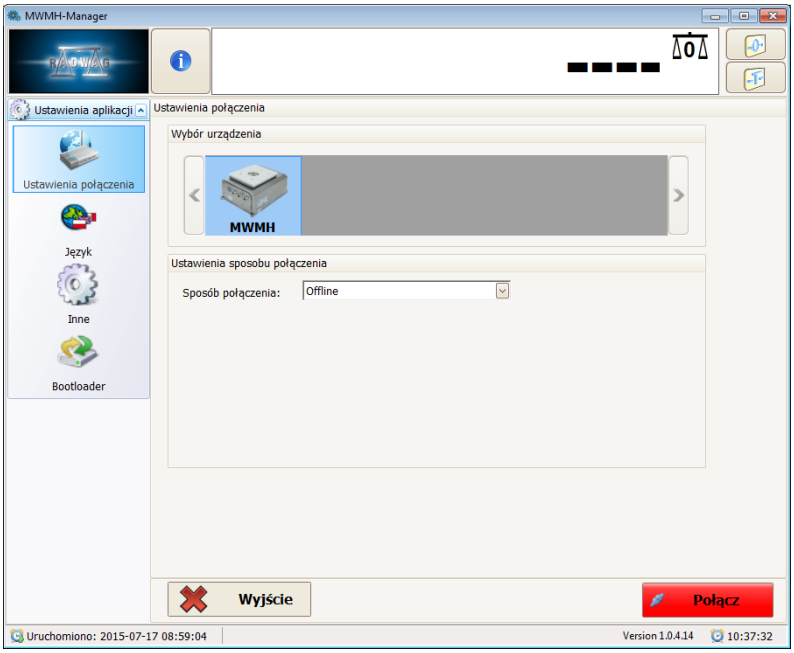
Window for selecting groups of parameters.

- Parameters that are correctly uploaded are confirmed by the following message:



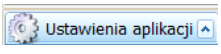
9. OFFLINE MODE

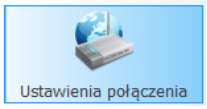
Offline mode enables running selected options of the software when there is no connected weighing module. This way of connection enables saving crucial parameters without the need to connect to the external equipment.



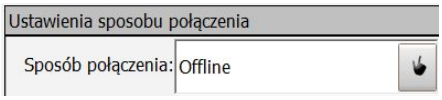
Running 'Offline' mode window.

Procedure:

- Select 

menu, next select 

option.
- Go to connection settings box and select **Offline** option.



- Press 

button,
- In the weighing result window, 'Offline'' message is displayed.

- Set parameters and save the configuration to the file, the description is to be found in this section.

10. ERROR MESSAGES

Err2	-	Value beyond zero range
Err3	-	Value beyond tare range
Err8	-	Time of the taring/zeroing exceeded
NULL	-	Zero value from converter
FULL	-	Weighing range exceeded
HI	-	Display range exceeded
LH	-	Start mass error, indication out of range (-10% – +10% of start mass)

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