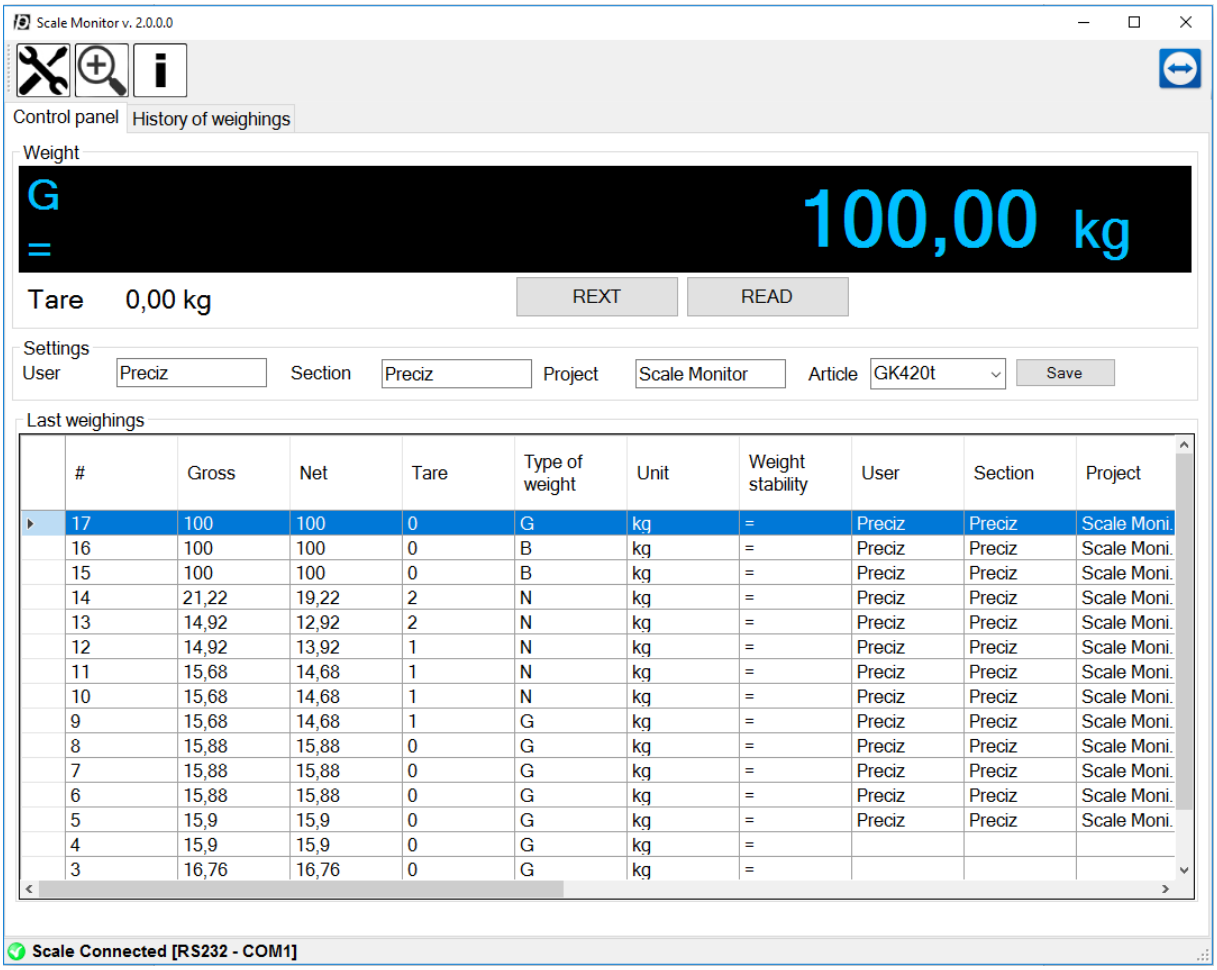
Instruction manual
Scale Monitor ©



#	Gross	Net	Tare	Type of weight	Unit	Weight stability	User	Section	Project
17	100	100	0	G	kg	=	Preciz	Preciz	Scale Moni.
16	100	100	0	B	kg	=	Preciz	Preciz	Scale Moni.
15	100	100	0	B	kg	=	Preciz	Preciz	Scale Moni.
14	21,22	19,22	2	N	kg	=	Preciz	Preciz	Scale Moni.
13	14,92	12,92	2	N	kg	=	Preciz	Preciz	Scale Moni.
12	14,92	13,92	1	N	kg	=	Preciz	Preciz	Scale Moni.
11	15,68	14,68	1	N	kg	=	Preciz	Preciz	Scale Moni.
10	15,68	14,68	1	N	kg	=	Preciz	Preciz	Scale Moni.
9	15,68	14,68	1	G	kg	=	Preciz	Preciz	Scale Moni.
8	15,88	15,88	0	G	kg	=	Preciz	Preciz	Scale Moni.
7	15,88	15,88	0	G	kg	=	Preciz	Preciz	Scale Moni.
6	15,88	15,88	0	G	kg	=	Preciz	Preciz	Scale Moni.
5	15,9	15,9	0	G	kg	=	Preciz	Preciz	Scale Moni.
4	15,9	15,9	0	G	kg	=			
3	16,76	16,76	0	G	kg	=			

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1. Requirements

Program	Scale Monitor ©
Version	2.1.0.0

Operating System

Windows	7, 8, 8.1, 10 OR later (any edition)
Windows Server	Windows Server 2008 R2 or later

Hardware

Hardware requirements	Same as for operating system
Recommended disk space	4 Gb
A4 compatible printer	Only if you want to print weighing

2. Communication settings

In the communication settings, we first select communication mode, which may be a serial interface (RS232 or RS485 interface) or an Ethernet/WI-FI over TCP/IP protocol.

When using serial interface, we must set the same parameters as these are set on the scale. These parameters are usually found in the instruction manual of the scale.

In TCP/IP mode, we need to enter the IP address of the scale and TCP port, through which TCP/IP connection will be established. For use of TCP/IP connection, the scale must be configured for such communication.

3. Protocol

The protocol defines how program receives data and how to extract weighing data. In case the protocol is not on the list of predefined protocols, we need to create new protocol.

3.1. Defining a new protocol

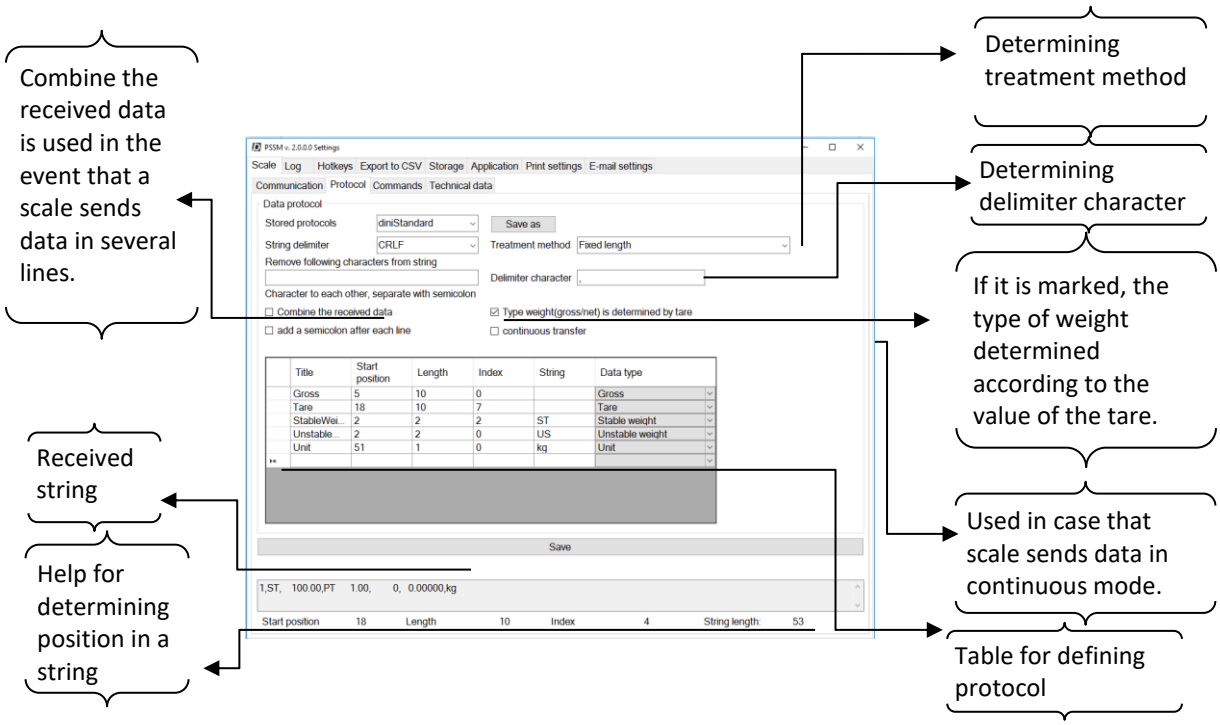
Before we begin with defining new protocol we must first properly set up scale connection. When the connection with the scale is properly set, we need to open protocol menu. The new protocol is created by pressing the button »Save as«, new window is shown where we enter the name of the new protocol. When creating a new protocol, it is important to properly set the string terminator, so that we can receive data from the scale (usually a CRLF).

Application offers two ways of processing the acquired string from scale. Processing by fixed length, or by processing on the basis of separation by the character (delimiter). Protocol by which the application extract weighing data is defined in the table. In case of processing the data by fixed length, we need to define starting position and length of the string. In case of processing data by separated by delimiter, we need to define index. In both cases, we must define data types, which are:

- **Gross** – used when at a given position in the string, which is obtained from scale, we expect gross weight.
- **Net** - used when at a given position in the string, which is obtained from scale, we expect net weight. Also used when, the scale on the same positon in the string sends gross or net.
- **Tare** - used when at a given position in the string, which is obtained from scale, we expect tare.
- **Unit** - used when at a given position in the string, which is obtained from scale, we expect unit. In case that scale does not send unit or the unit cannot be changed we can define unit by entering it into string column (eg. kg). In this case, the program will take into account the entered unit.
- **String for net weight** - used when at a given position in the string, which is obtained from scale, we expect string for net weight (eg. NT). In the case of string for net weight, it is necessary to enter expected string for net weight (eg. NT) in column string. When acquiring the data, the program will compare string which is obtained from scale at certain position, and string we have typed in. In case that both string are same, the program will determine

that the weight is net.

- **String for gross weight** - used when at a given position in the string, which is obtained from scale, we expect string for gross weight (eg. GS). In the case of string for gross weight, it is necessary to enter expected string for gross weight (eg. GS) in column string. When acquiring the data, the program will compare string which is obtained from scale at certain position, and string we have typed in. In case that both string are same, the program will determine that the weight is gross.
- **Stable weight** - used when at a given position in the string, which is obtained from scale, we expect stable weight (eg. ST). In the case of stable weight, it is necessary to enter expected string for stable weight (eg. ST) in column string. When acquiring the data, the program will compare string which is obtained from scale at certain position, and string we have typed in. In case that both string are same, the program will determine that the weight is stable.
- **Unstable weight** - used when at a given position in the string, which is obtained from scale, we expect unstable weight (eg. US). In the case of unstable weight, it is necessary to enter expected string for unstable weight (eg. US) in column string. When acquiring the data, the program will compare string which is obtained from scale at certain position, and string we have typed in. In case that both string are same, the program will determine that the weight is unstable.
- **Variable data** – when defining the protocol, we can also use variable data, which are used when scale is sending the other non weighing data (eg. article, customer, article id …). Variable data can be one of three different data types: text, integer and real number. If we want to use variable data, we have to select proper data type (text, integer, real number), and in the table, enter start position, length, or index. It is important to set the correct data type, otherwise the storage in the database will not be successful.



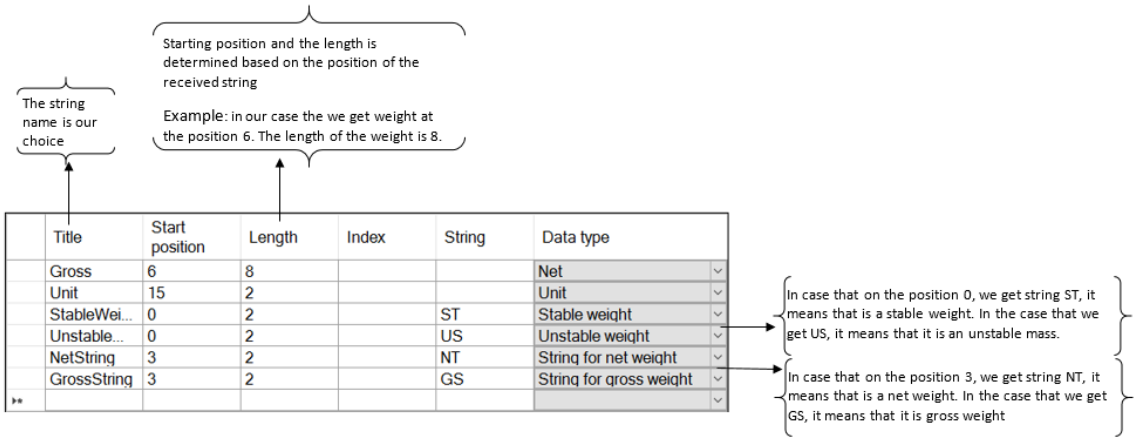
NOTE: To determine start position, length or index, we can help with text in lower part of window,

which shows the string that was received from scale. If the scale is not set to continuous transmission, we must press the Print button or the corresponding button on scale, which sends weighing data to computer. If communication is set properly, in bottom of windows string received from scale will appear. In the case, we click on the received string, start position, length and index (index will be shown only if we have set a delimiter character) will automatically be shown under.

3.1.1. Processing method - fixed length

Processing data by fixed length is determined by selecting fixed length for processing method. When using, this method is required to enter start position and length of the string.

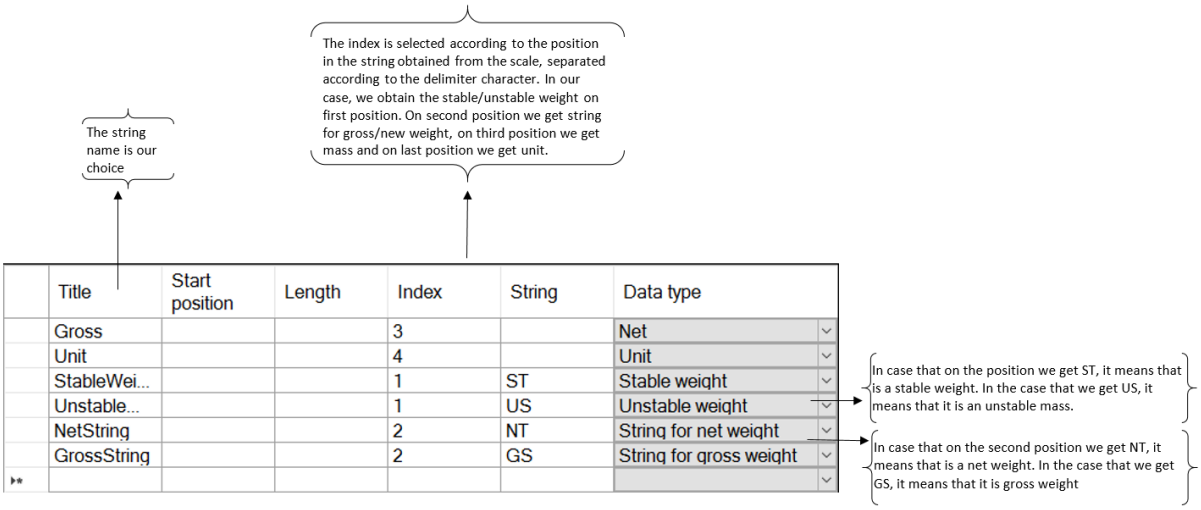
Example: In case that scale sends string "ST,GS, 100,kg", we will define the protocol, as show in the picture below:



3.1.2. Processing method - data separated by delimiter

We can select this method by choosing data separated by delimiter for processing method. When this method is used, it is mandatory to enter delimiter for separating obtained string and it is mandatory to enter index in table.

Example: In case that scale sends "ST,GS, 100,kg", we determine character for separating as »,« (comma). The protocol will be defined, as shown in the picture below:



	Title	Start position	Length	Index	String	Data type
	Gross			3		Net
	Unit			4		Unit
	StableWei...			1	ST	Stable weight
	Unstable...			1	US	Unstable weight
	NetString			2	NT	String for net weight
	GrossString			2	GS	String for gross weight
▸*						

In case that we use treatment method by data separated by delimiter we can enter start position and length of the string. In this case, the data is acquired within a string (a string between of two separators) obtained from the given index, with given start position and length. In the case that the length is 0, the data is obtained from given start position to the next separator.

Example: In case that scale sends " 1,ST, 102.62,PT 1.00, 0, 0.00000,kg", we determine character for separating as »,«. The protocol will be defined, as shown in the picture below:

	Title	Start position	Length	Index	String	Data type
	Gross	0	0	3		Gross
	Tare	8	0	4		Tare
	StableWei...	0	0	2	ST	Stable weight
	Unstable...	0	0	2	US	Unstable weight
	Unit	0	0	7	kg	Unit
▸*						

We get tare at position 4, we also get string PT at position 4. So if we determine start position 8, we get value 1.00 for tare.

WARNING: Choosing another protocol or editing existing protocol may cause loss of previously stored variable data.

3.2. Commands

Under the tab commands we can define four commands that we can send to scale. We must enter command text (the text of the command is displayed on the button on the control panel), command, expected response (the answer which we expect from the scale). We can choose the option, that reply is treated as weight in that case received data will be processed using selected method and protocol. We can also determine hotkey, which we use for sending commands to scale.

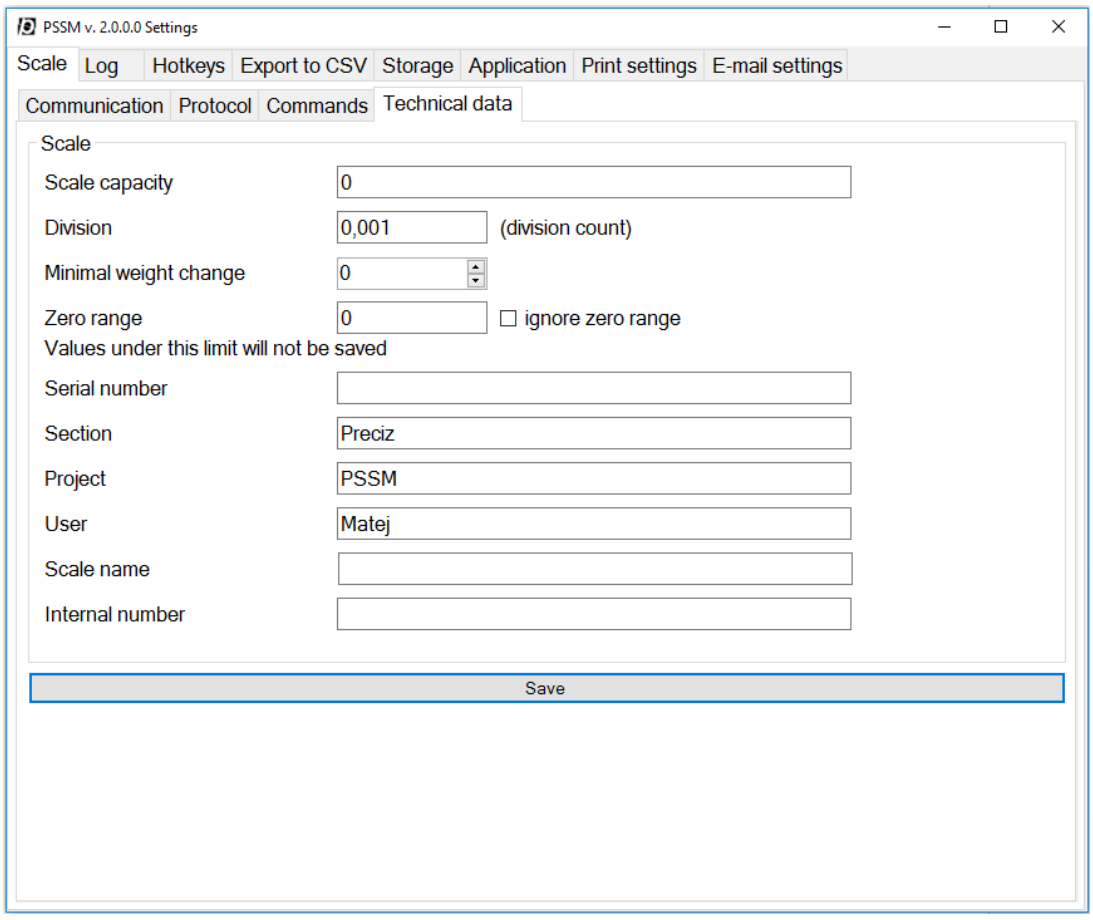
In this menu, we can also define the commands that are sent to scale when we successfully process

weighing data (we can also send commands to scale in case of error). Defining this commands it is very useful because we can send back feedback to user for instance message “PC ok” which would mean that weighing was successfully stored. In case of error we can send back “PC error” which would tell user that something went wrong and weighing was not stored successfully. In both cases, you can enter three commands, and expected answers from the computer. It is also necessary to set delay between sending commands.

NOTE: The commands that are available depend on the scale that is being used.

3.3. Technical data

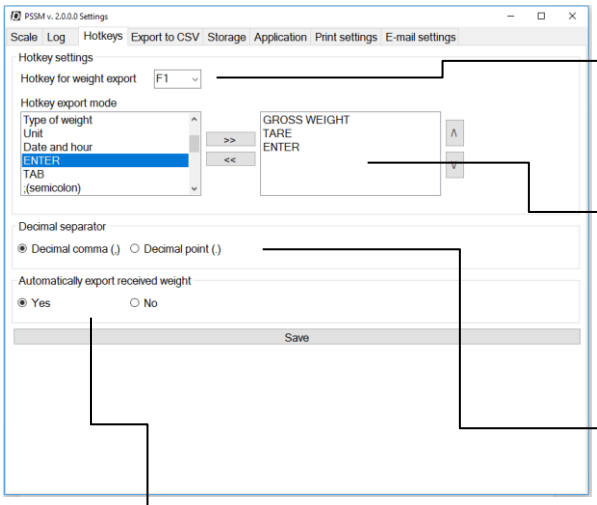
In this menu, we determine scale settings. Division we entered is also used to display the number of decimal places of weight on control panel.



4. Settings

4.1. Setting hotkey

In this menu, we are setting hotkey for exporting weighting data. We need to determine what data we want to export, and with which key we want to export data. We can also determine the decimal separator, and if we want automatic export of data.



Key we want to use for export data.

Data that will be exported by hotkey. In this case, it will be exported gross weight, tare and added enter key. In Excel, this would mean to export gross weight, tare in the current cell and jump to new row.

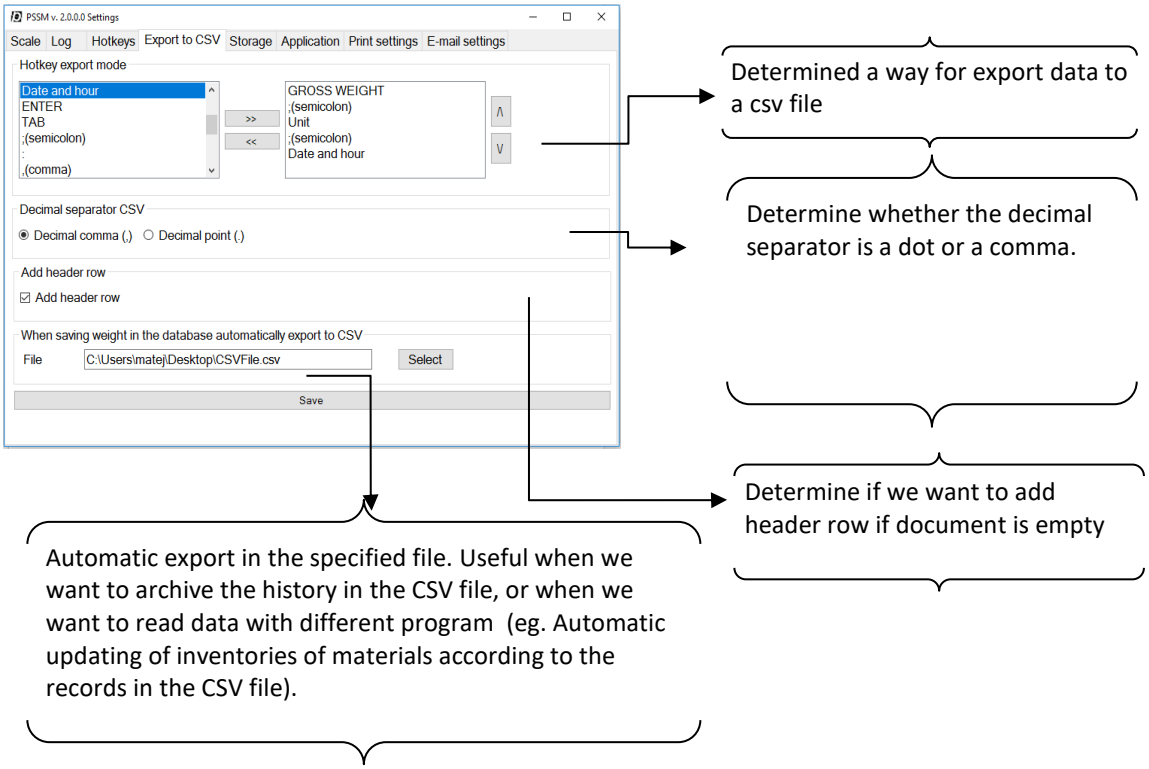
Determine whether the decimal separator is a dot or a comma.

If it selected the automatic export of weight, weight will be automatically exported to the current position of cursor. Convenient when you want to export weight to eg. Excel.
WARNING: this feature should not be used with continuous data transfer!

4.2. CSV export settings

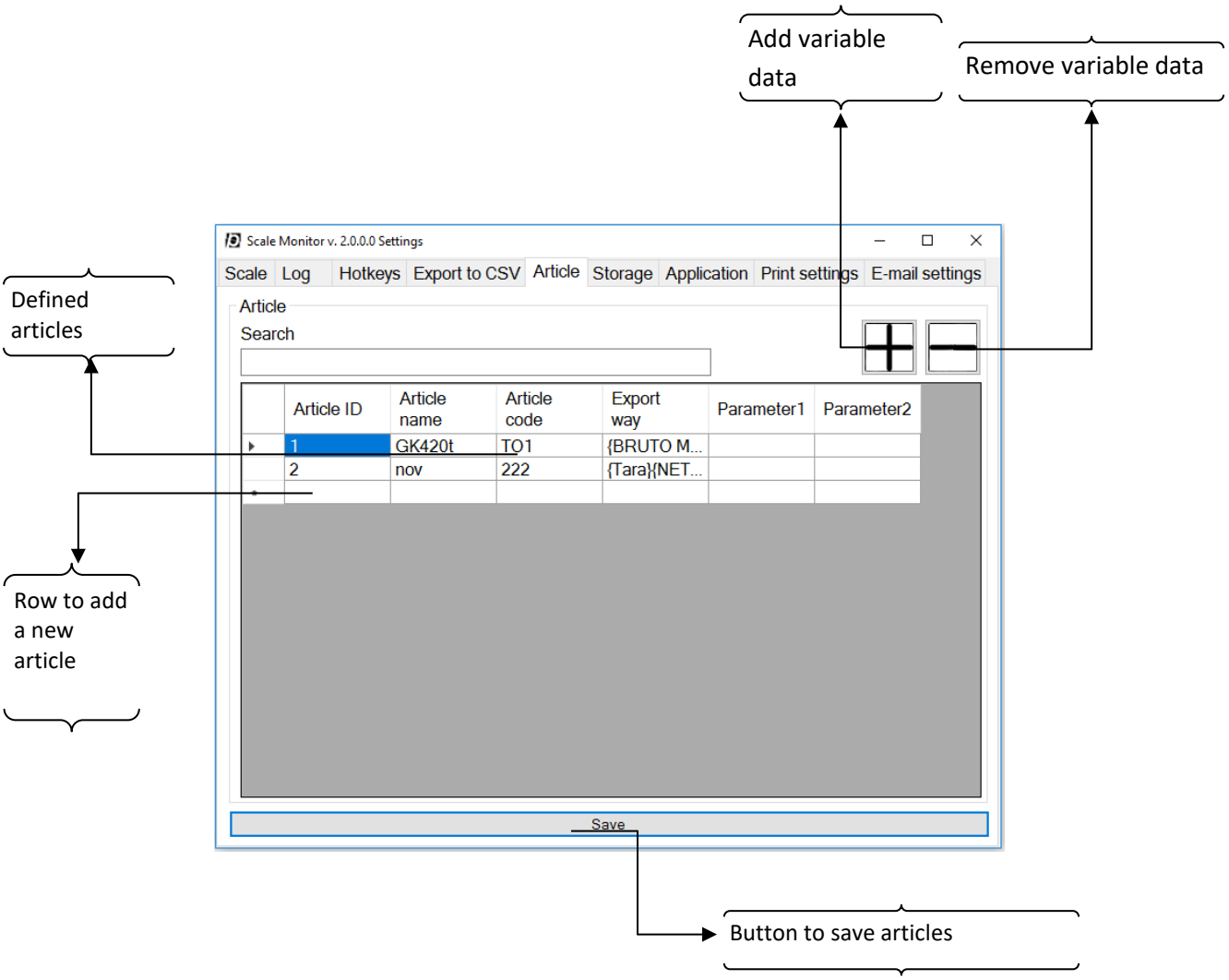
In this menu we can set a way how to export data to a csv file. We define the decimal separator and file for automatic export of weight data.

In the case of export to a CSV file is required to add separator, a comma or a semicolon, for each data, that the values displayed correctly in CSV (Excel) file.



4.3. Article

In this menu, we can define articles. We can define article name, article code and export protocol for article. We can also add variable data to articles. Variable data are custom data which can be added freely to any article such as customer article number, article weight, article average piece weight etc.. With export protocol we can replace the default protocol which is defined for hot key export. When article with defined export protocol is selected in control panel this protocol will be used for export. This way you can customize export to for every article. That way for instance you can export data to Excel for article Test as: weight unit and for article Test2 gross, net, tare, unit.



4.4. Storage

In this menu, we choose the method of data storage. We can choose between:

- **Do not save anything** – weight data is not stored to database.
- **Time interval** – in the database is stored weight data in specified interval. We can set, that only stable weight will be saved. Or we can set that only weighings with minimal weight change will be saved.
- **All weighings are saved** - every weighing is stored to database.
- **Save only different weighings** (required weight change) – each weighing with weight change is stored to database.
- **Save only different weighings** (required return to the zero range) – each weighing is stored to database, required return to the zero range.

NOTE: Required minimum change of weight and the zero range, are set in Technical data menu.

4.5. Application

In this menu, we can change application language (to apply the changes the application needs to

restart).

We can also set whether the application starts minimized or starts with Windows. There is also a choice that application starts in zoom mode.

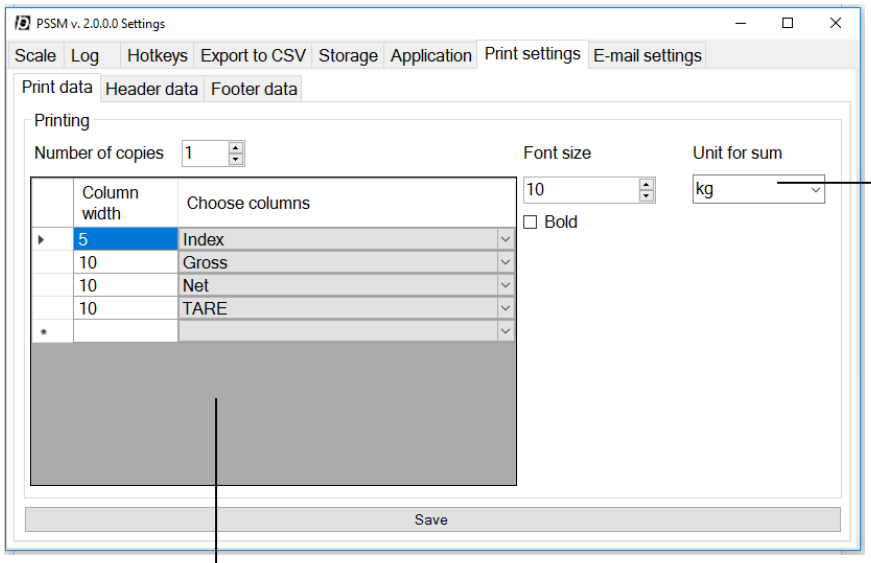
Application provides activation of GLP/GMP (Good laboratory practice/Good manufacturing practice), that disable possibility to change or delete weighting data.

WARNING: If we activated GLP/GMP, this activation cannot be unset.

4.6. Print settings

In this menu, we can set printing format, which is used when we want print desired weighting. This menu includes three submenus.

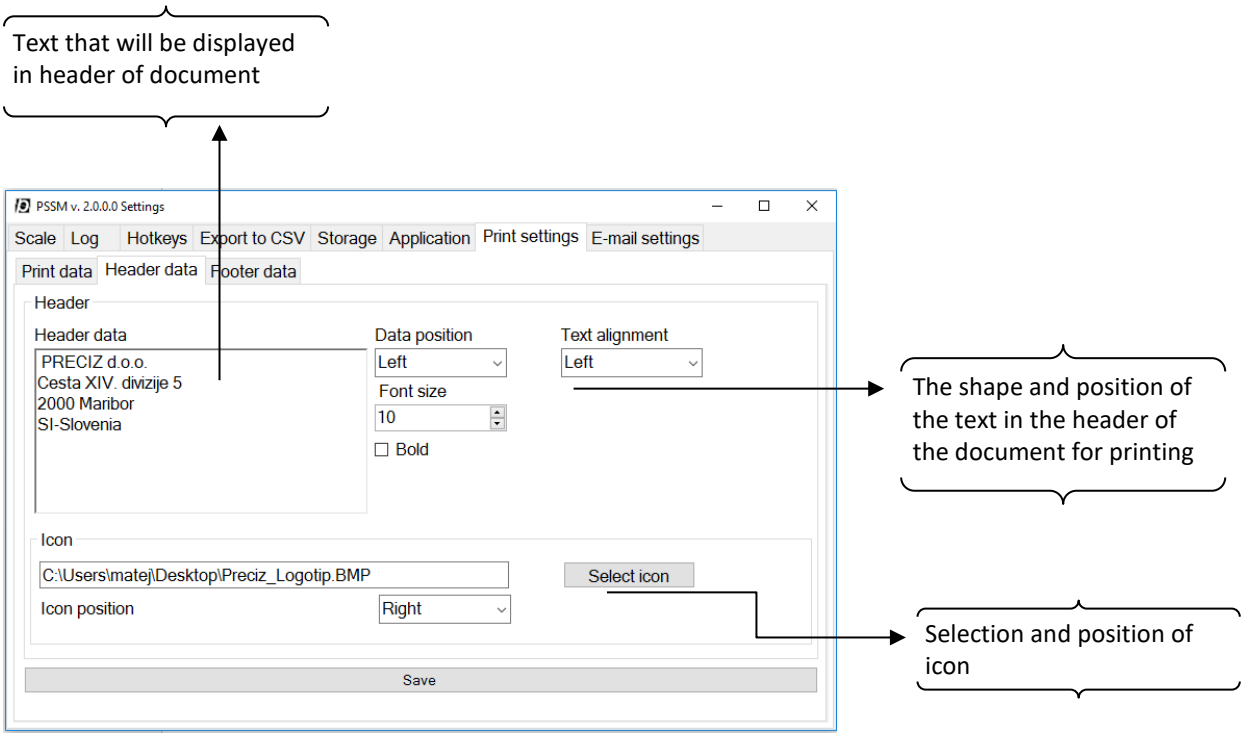
In first submenu, we are setting number of copies, data that we want to print, and font size of selected data.



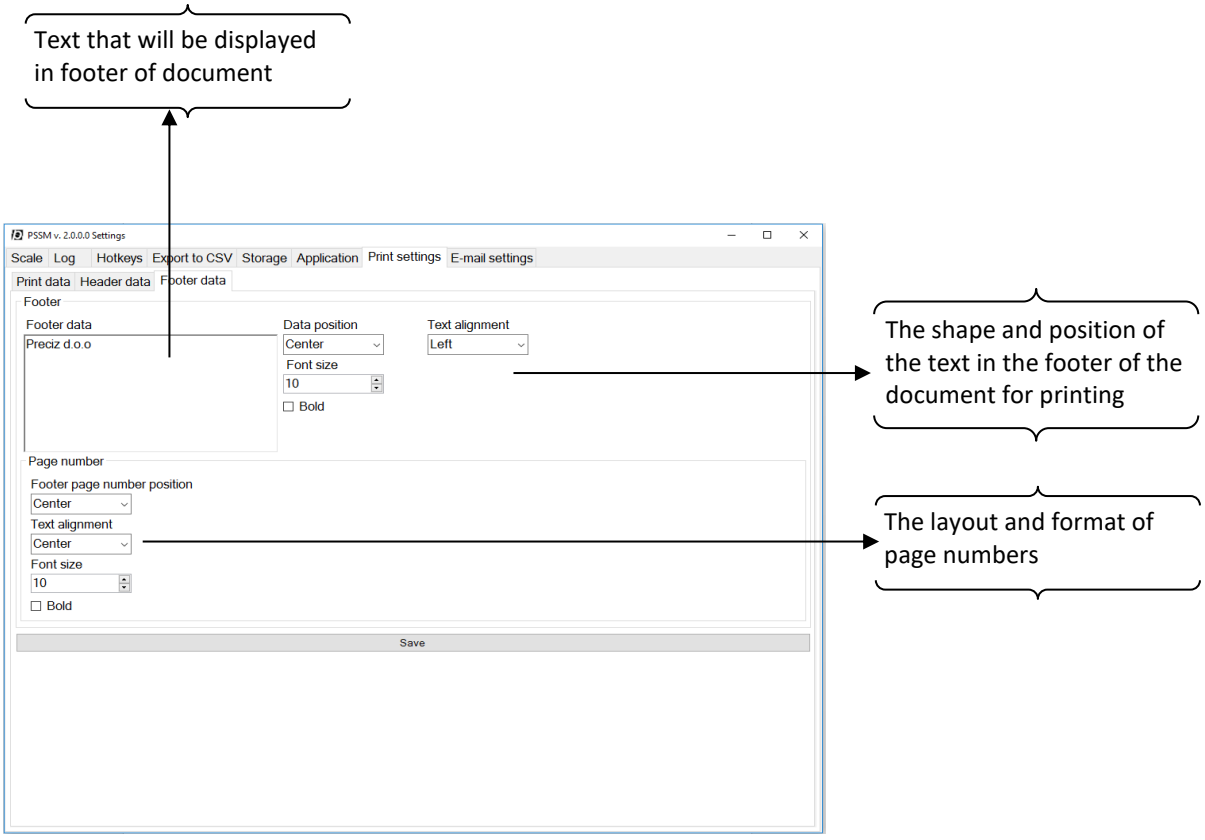
Selecting unit that is taken into account in the sum calculation of selected weighings.

Selection of data that we want to print. The column width defines the width of a column in a table that will be printed. The data is printed in the same order as specified in this table.

In submenu Header data we are setting print document header. We can set the text and icon that will be inside header.



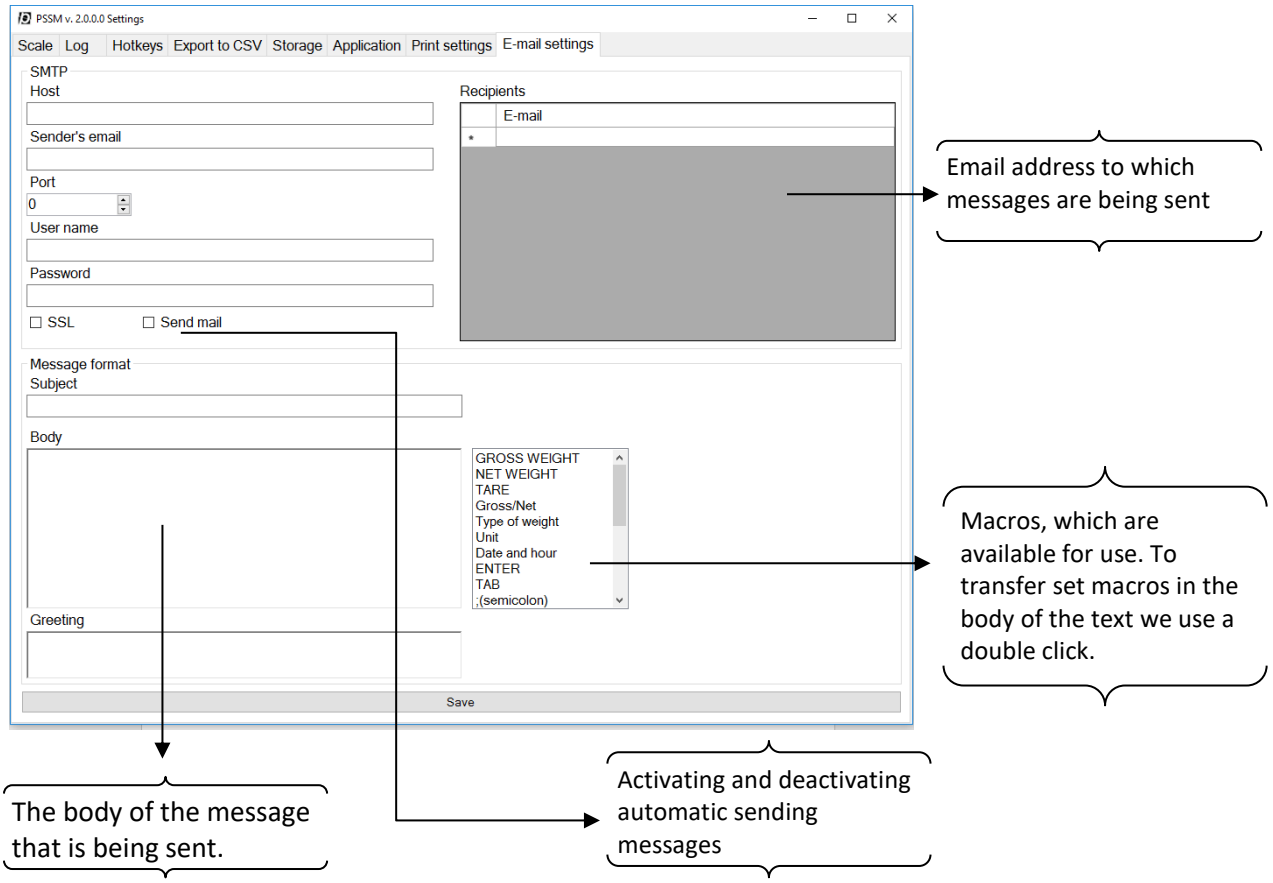
In submenu Footer data we are setting print document footer. We can set the text that will be printed in footer of document, his size, and position. We can also set the position and size of page number.



4.7. E-mail settings

In this menu we set settings for sending email. Email is sent on the specified email address, each time the weight data received. It is important that we correctly entered email addresses. To send emails we must to enter host, port, sender's email, user name and password. These parameters will be used for sending emails. We can also choose if we want to use SSL (Secure Sockets Layer).

We can specify the format of the message by entering text in the body field. If we want to include weighing data, we need to double click on offered macros.

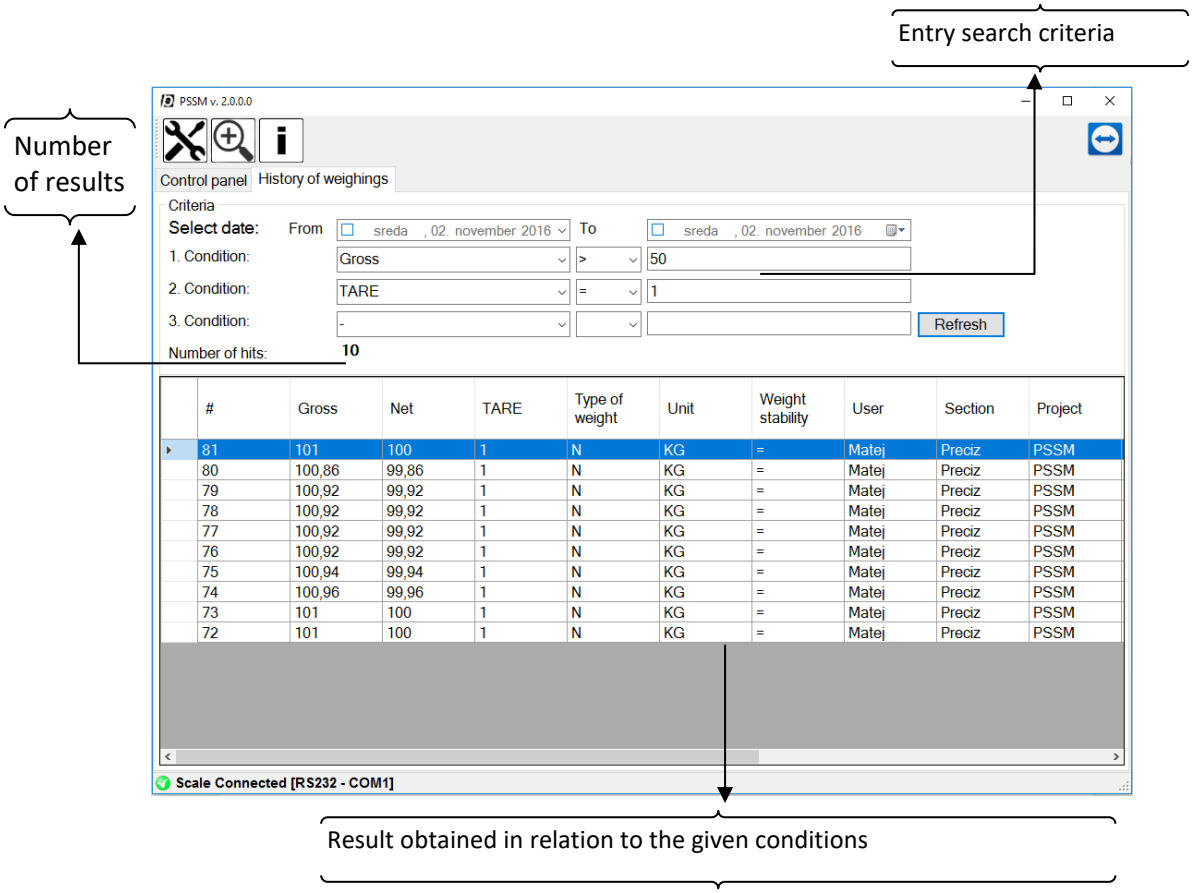


5. Control panel

Control Panel serves for the display of weight on the scale with all data, such as stability, tare, gross, net, etc., ... The data that appear, depend on the data sent by the scale, and by protocol settings.

6. History of weighing's

History of weighs provides an overview of weightings according to different criteria. We can enter three different conditions, which will be considered in the search for weightings.

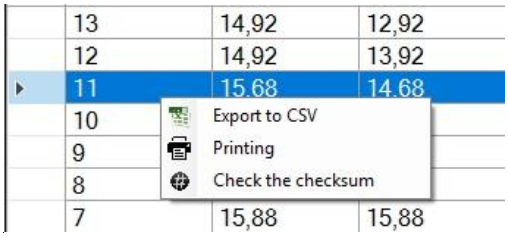


7. Edit, delete, print, export weightings

On the control panel we can edit weightings. The data can be edited by double clicking on desired data in table. If we want to delete weighting, we need to select desired row and press DELETE button.

Note: In the case that has been activated GLP/GMP, editing and deleting is no longer possible. We can still add notes.

Selected weighing can be printed or exported into a CSV file. We can do this by selecting desired rows, which we want to print or export, in table on control panel or table on panel with history of weighing's. Then press the right mouse button and it will show us context menu where we have possibility of exporting to CSV or printing.



Note: The format of the CSV export file is set in the menu, Export to CSV. Printing format is set in menu Print settings.

8. Checking the checksum

Each saved weighing contains checksum, which provides a view, if the data have been altered, outside the program. We can check checksum by right-clicking on the table on control panel, or history of weighing's table, and then select check the checksum.

It opens the form, that displays whether the checksums match or not. In case that the checksums do not match, it means that the value has changed outside the program.

Checksum offers validity check tool with which we can check if data, were altered outside program using some third party tool. We cannot see what were changed but we can verify if any of data were changed. This is a proof tool for pharmaceutical companies and companies that follow Good Laboratory Practice – GLP or Good Manufacturing Practice – GMP.

9. Zoom

The application also offers display in zoom mode (show only basic mask with buttons). Switch to the increase mode is performed on the control panel or by setting that the application start in zoom mode, in application settings.

Window size can be adjusted by pressing the + or - button.

10. Technical support

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Technical support can be retrieved also by TeamViewer by clicking icon in upper right corner of application.