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User manual

ITKU-76-01-07-16-EN

E2R Checkweigher

PC SOFTWARE

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1. GENERAL INFORMATION

1.1. Intended Use

E2R SYSTEM fully supports manufacturing processes, consisting in various stages, some of which require performance of weighing operations. Its modular structure makes it flexible therefore the system can be adopted to particular company nature and needs, and to individual requirements of the customer.

E2R CHECKWEIGHER: system diagram

E2R CHECKWEIGHER is a computer system comprising RADWAG-manufactured checkweighers and E2R SYSTEM software. It has been designed to provide synchronization of operators and products databases and to record measurements carried out by ETHERNET-connected scales. With the system, scales state can be previewed in real time.

It enables you to carry out PGC controls and to simultaneously generate reports on completed controls performed by means of checkweighers. Checkweigher-performed weighings are recorded in **MS SQL 2008 R2** database, stored on a computer.

E2R CHECKWEIGHER system enables generating advanced reports on statistics, based on weighings acquired from checkweighers over a specified time interval.

Statistics Reports list:

- **Mean mass**
  - detailed report providing products' nominal mass values, average mass values, standard deviation, quantity of weighings with mass value lower than low limit value, quantity of rejected and accepted products, batch giveaway in % and weighed product loss for each shift, given in currency,
  - report providing summary for products, average mass values, standard deviation, quantity of weighings with mass value lower than low limit value, quantity of rejected and accepted products, batch giveaway in % and weighed product loss for each shift, given in currency,
  - report providing summary for nominal mass values, average mass values, standard deviation, quantity of weighings with mass value lower than low limit value, quantity of rejected and accepted products, batch giveaway in % and weighed product loss for each shift, given in currency,
  - chart presenting quantity of accepted products and quantity of products marked with various statuses, e.g. products of mass greater than high limit, products of mass lower than low limit, products with metal contamination,
  - chart presenting quantity of accepted products that are assigned to a particular scale and quantity of products marked with various statuses, e.g. products of mass greater than high limit, products of mass lower than low limit, products with metal contamination.

- **Shifts**
  - detailed report providing e.g. quantity of weighed, accepted and rejected products, total mass of a manufactured product, expected throughput value, average throughput value, product uptime and downtime for each shift,
  - summary for products' nominal mass values, quantity of weighed, accepted and rejected products, average mass value for all products and for accepted products, expected throughput value, average throughput value for each shift,

- chart presenting summary of availability, throughput, quality and performance (efficiency) for each shift,
- chart presenting quantity of manufactured products and total mass for each shift,
- chart presenting mass bar graph for a particular shift,
- chart presenting throughput for a particular shift,
- preview of efficiency coefficient for a particular shift.

- **Hourly**
  - detailed report presenting packagings quantity, packaging quantity increase, packagings total in kg, mass increase in kg,
  - chart presenting total manufactured quantity and providing information on amount of pcs. manufactured per hour,
  - chart presenting total manufactured mass and providing information on mass manufactured per hour.

- **Efficiency**
  - report providing either detailed or summary information on availability, throughput, quality and efficiency for shifts.

- **Productivity**
  - report providing information on productivity of each dynamic scale, comprising data such as total mass and quantity of manufactured pcs.,
  - chart presenting mass bar graph for a particular product,
  - chart presenting throughput for a particular product.

- **Uptime and Downtime**
  - report providing information on status duration for each dynamic scale, comprising data such as mass and manufactured pcs. quantity,
  - mass bar graph for a particular product.

- **Contaminated Pcs.**
  - report providing information on product contamination, comprising data referring to batch and logged operator.

E2R CHECKWEIGHER module, like other E2R SYSTEM modules, is a multi-workstation software that can cooperate with many dynamic scales and computers.

***CAUTION**:*

1. *Please note that due to software updates this manual content may be slightly incompatible with the software version you operate.*
2. *RADWAG company is not responsible for consequences and potential errors being an effect of improper use.*

1.2. Database

Engine of the installed database is **SQL Server 2008 R2 Express**.
Due to performance, scalability and system reliability use of commercial SQL Server platform is recommended, e.g.: SQL Server 2008 R2.

1.3. Minimum System Requirements

In order to operate and function properly the system requires:

- **server** with Windows Server 2008 R2 operating system,
- **2 GHz quad-core** procesor, or better,
- **4 GB** internal memory (16 GB or more preferably),
- at least **100 GB** free disk space, or more depending on amount of stored data,
- monitor of at least 1024x768 resolution,
- DVD drive,
- printer operating in Microsoft Windows OS
- default system font size (**96 dpi**)!

CAUTION:
It is possible to install the software on a computer not adhering to the above minimum requirements but it can be done only when record of weighings into E2R SYSTEM database is off for each dynamic scale. In such case both weighings carried out using dynamic scales and advanced reports will not be saved!

Minimum System Requirements when record of weighings into the database and additional customer's computers with option of preview is off:

- **computer** with Windows 7 (Starter version excluded); Windows Server 2003 Service Pack 2; Winds Server 2008 Service Pack 2; Windows Server 2008 R2; Windows Vista Service Pack 2; Windows XP SP 3,
- **2 GHz dual-core** processor, or better,
- **4 GB** internal memory or more,
- at least **10 GB** free disk space,
- monitor of at least 1024x768 resolution,

- DVD drive,
- printer operating in Microsoft Windows OS
- default system font size (**96 dpi**)!

CAUTION:

1. *It is not recommended to install any other programs on the computer.*
2. *If the program is to be installed on other than RADWAG-delivered computer, e.g. on customer's computer, then the customer has to:*
    - *install the SQL server (if not installed previously),*
    - *attach databases (if the SQL server has already been installed).*
3. *In case of installing the program on customer's computer, it is the customer who is responsible for any equipment and program related faults.*
4. *RADWAG is not liable for:*
    - *potential influence of E2R CHECKWEIGHER and SQL server on operation of other programs (installed on the computer),*
    - *faulty operation of E2R CHECKWEIGHER and SQL server being a result of other programs' operation (system under heavy load).*

1.4. Scales Intended for Cooperation

Due to the applied protocol of data exchange, the **E2R CHECKWEIGHER** software can cooperate with RADAWAG-manufactured scales exclusively.

Scales series cooperating with the program:

DWR/H

DWT/HL/HP

DWT/HL/HPW

DWM/WL/HP

Prior start of program-scale cooperation it is necessary to set respective parameters of each network-connected scale in order to provide expected weighing accuracy and faultless communication between the scale and the program. For detailed information on parameters setup read user manual of a particular scale.
Scale name is a crucial parameter linking scales in the system, make sure that identical names are entered into network-related parameters on the scale and in E2R Synchronizer.

2. E2R CHECKWEIGHER INSTALLATION

CAUTION:

- *Complete installation of the program can be performed on a computer on which SQL database engine with BAZARADWAG2008R2 instance has not been installed,*
- *Installation manual has been designed with reference to Windows 7 OS.*

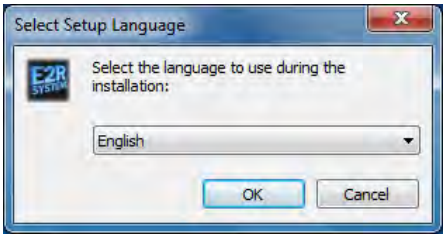
2.1. Database

Engine of the installed database is MS SQL Express 2008 R2.
E2R SYSTEM database is saved to system disc in the course of E2R CHECKWEIGHER installation.

2.2. E2R CHECKWEIGHER Installation

Run **E2R SYSTEM *(program version)*.exe** file.

Select Installation Language window opens:



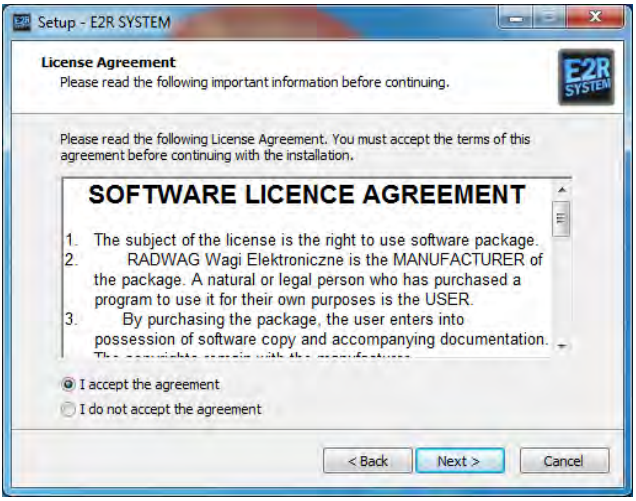
Press **OK** button for confirmation.

Follow the Setup Wizard guides.

E2R SYSTEM Setup Wizard, installation start:

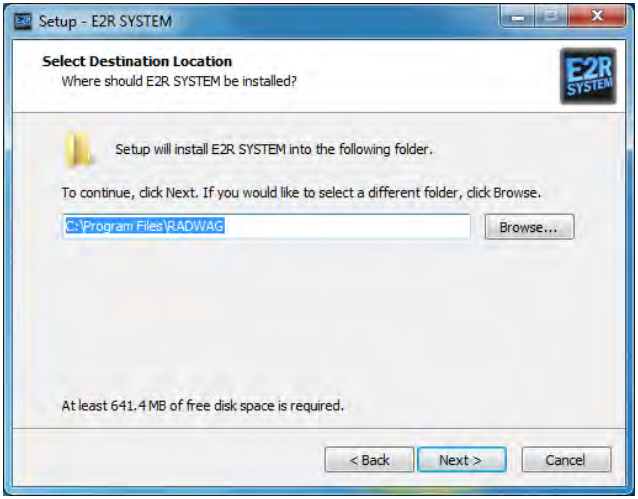
Press **Next** button.

Licence Conditions screen:



Tick „I agree to License Conditions" box and press **Next** button.

Installation directory setup:

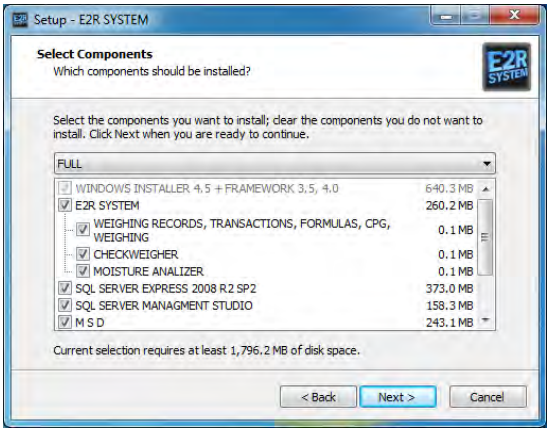


Select directory for the E2R CHECKWEIGHER program (it is recommended to use the default directory), next press **Next** button.

CAUTION:

Make sure that the system partition, C drive most frequently, features around 3 GB free space. With this condition met the E2R System will be installed properly.

E2R SYSTEM components setup:

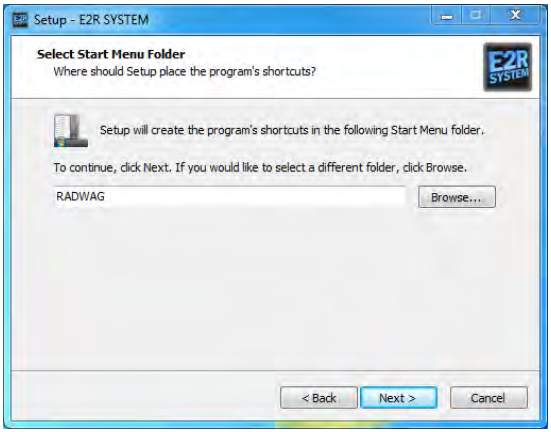


Tick E2R System components that are to be installed (by default all the components required for correct post-installation operation are ticked), next press **Next** button.

Installation variants:

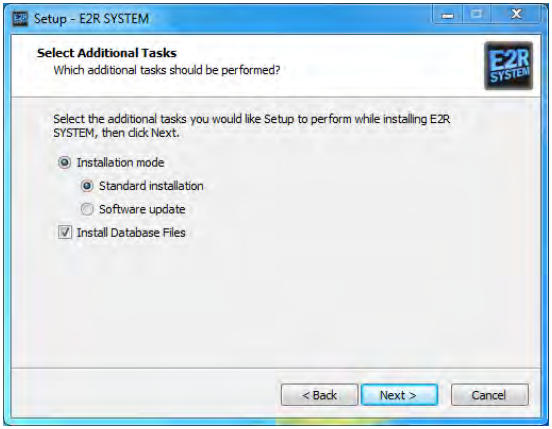
BASIC / SERVER	-	Complete server installation of the program, Database, Synchronizer, Manager and MSD. 1 license permits 1 BASIC /SERVER installation on 1 computer/server.
CUSTOMER / E2R CHECKWEIGHER EXCLUSIVELY	-	Program installation with preview intended for network-connected computers.
DATABASE EXCLUSIVELY	-	Selected MS SQL database installation. By default MS SQL Express 2008 R2 database is required.
E2R MANAGER EXCLUSIVELY+ SYNCHRONIZER	-	Synchronizer and E2R Manager installation. In E2R System one Synchronizer and one Manager can operate at a time.
USER	-	Selected installation variant defined by a user manually.

Menu Start directory setup:



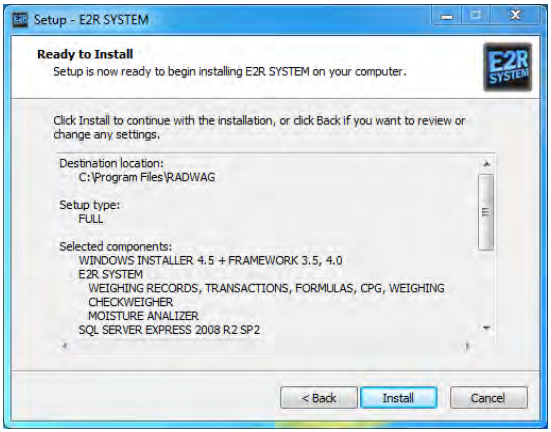
Press **Next** button.

Setup of extra tasks to be carried out in the course of installation:



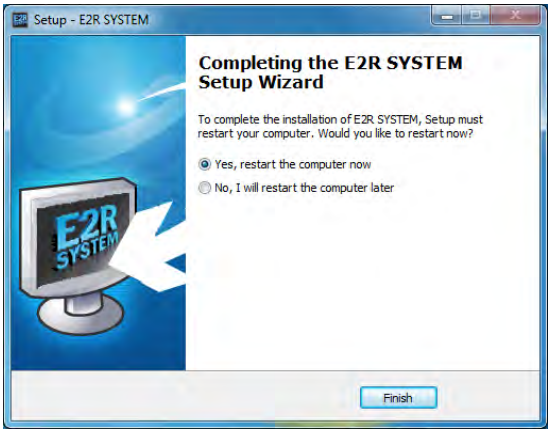
Tick extra tasks that are to be carried out in the course of E2R CHECKWEIGHER installation. If the module has already been installed on your computer then there is no need to install Database files again.
Press **Next** button.

Ready to Install screen:



To start installation press **Install** button.

E2R SYSTEM Setup Wizard, successful completion screen:



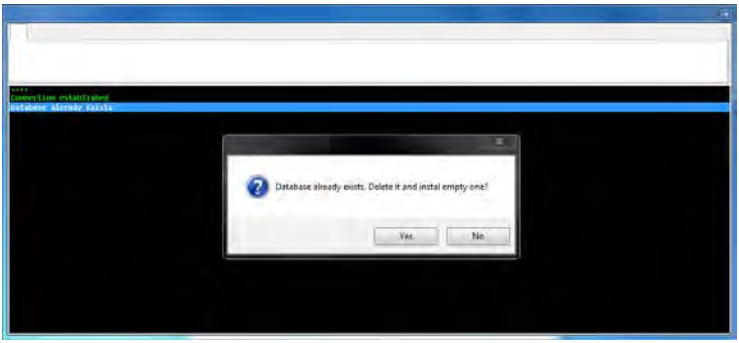
Computer restart is necessary upon successfully completed installation. Press **Finish** button, the computer restart is carried out automatically.

E2R System Database (SQL database) and **E2R Synchronizer** and **E2R Manager** modules are installed along with the E2R SYSTEM program.

2.3. E2R CHECKWEIGHER Update

Upon running Setup Wizard, the **E2R Synchronizer** is automatically uninstalled. On successfully completed program update, install and run the synchronizer again.

While updating the program follow Setup Wizard guides. At the final stage the below window opens, using it decide whether to replace the existing database with a new one or not.



CAUTION:
*Upon pressing **Yes** button all database stored data gets deleted.*
*Upon pressing **No** button no database stored data gets deleted.*

3. E2R SYNCHRONIZER

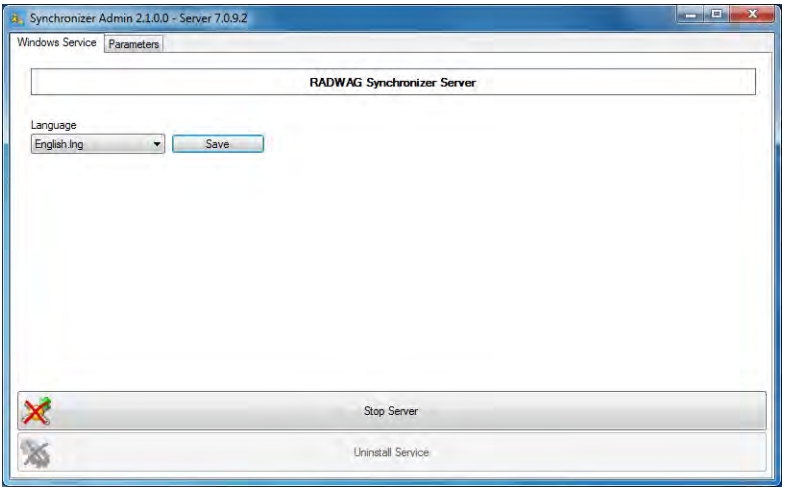
E2R Synchronizer has been designed to enable monitoring of dynamic scales state.

The program operates as a system service – upon successfully completed setup it does not require any user support. It is run automatically in the course of Windows startup (user logging in is not necessary). E2R Synchronizer connects with specified dynamic scales.

3.1. RADWAG Synchronizer Service – Windows service

E2R SYNCHRONIZER (SynchAdmin.exe) home screen features buttons enabling you to operate **Radwag Synchronizer** service and to select software language.

Home screen:



Top bar provides information on versions of **RADWAG Synchronizer** components: Admin and Server.

Where:

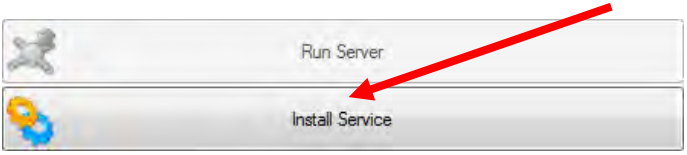
Install service	Press to install **RADWAG Synchronizer** service into MS Windows OS.
Uninstall service	Press to uninstall **RADWAG Synchronizer** service from MS Windows OS.
Start server	Press to start **RADWAG Synchronizer** service server
Stop server	Press to stop server enabling program-scale communication.

Language	Press to change language: Polish, English, German, Spanish. Software restart is required upon swapping form one language to another.
Save	Press to save language change. **CAUTION: software language changes upon software restart**.

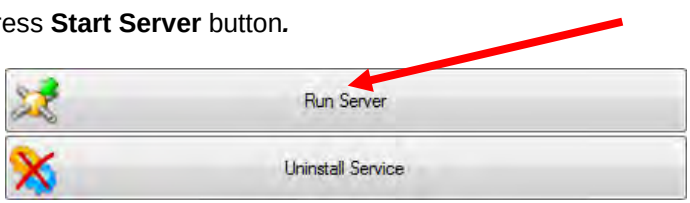
CAUTION
The buttons availability changes automatically in the course installation, uninstallation, start and stop of the of service.

3.1.1. E2R Synchronizer Service Start

- Press **Install service** button.



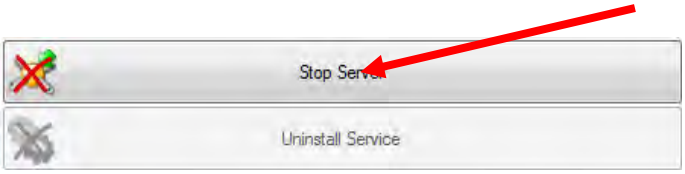
- Press **Start Server** button.



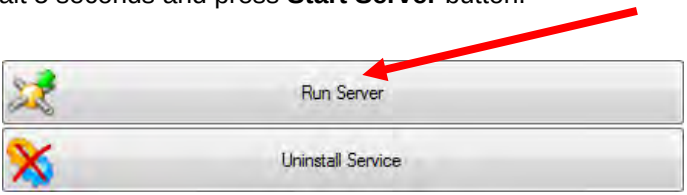
- Upon server start, the **Start Server** button turns to **Stop Server** button. This means that server has been successfully activated.

3.1.2. E2R Synchronizer Service Restart

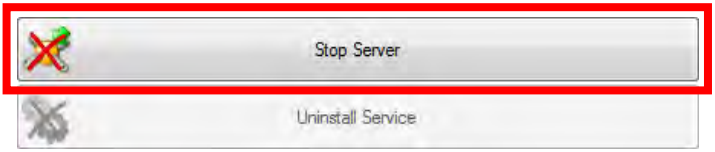
- Press **Stop Server** button.



- Wait 5 seconds and press **Start Server** button.



- Upon server start, the **Start Server** button turns to **Stop Server** button. This means that server has been successfully activated

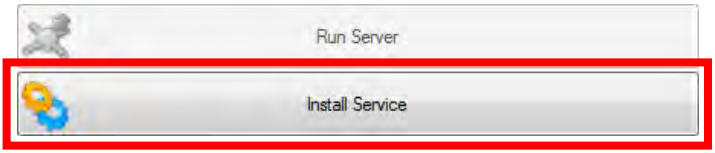


3.1.3. Uninstalling E2R Synchronizer Service:

- Press **Stop Server** button.

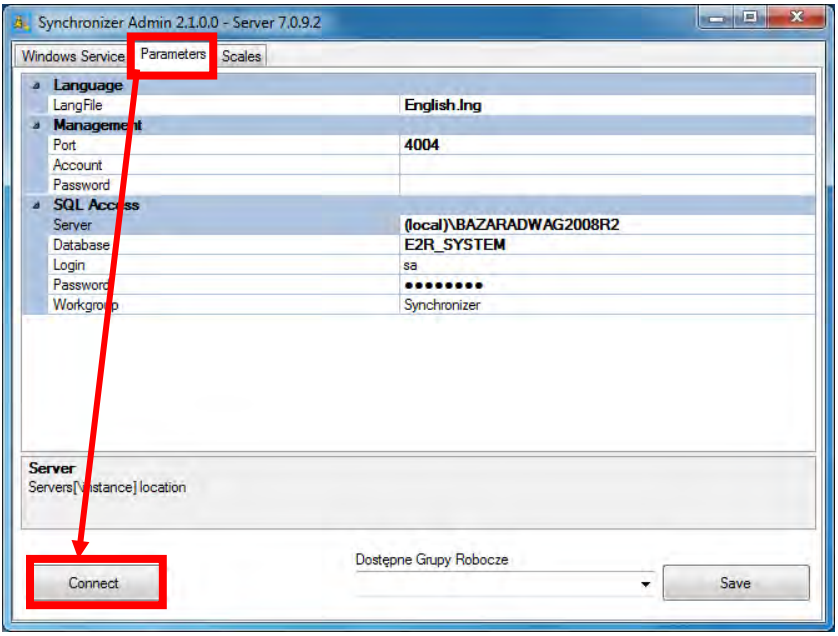
- Press **Uninstall service** button.

- Upon completed uninstallation, the **Uninstall service** button turns to **Install service** button.



3.2. Parameters of RADWAG Synchronizer Server

In order to set parameters of MSSQL server to which the scales are connected go to **Parameters** tab.



Press **Connect** button in order to connect the database and carry out scales setup.

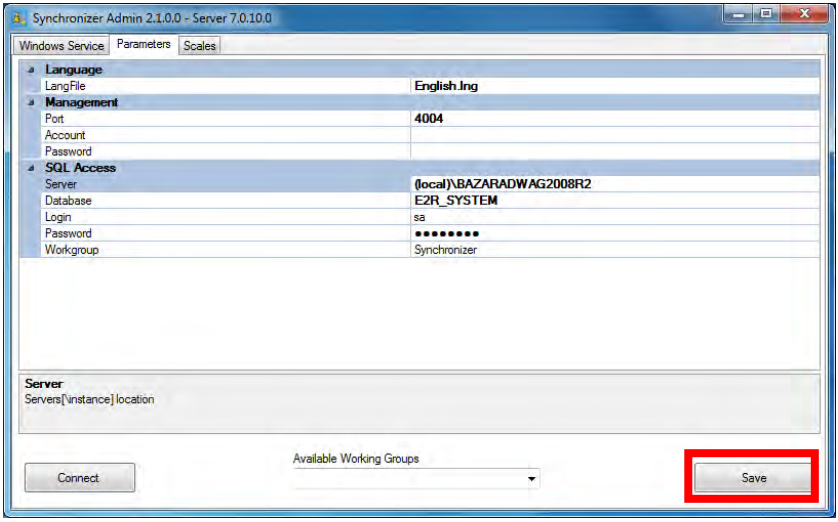
Parameters tab:

Server	SQL server entry path By default - local server: **127.0.0.1\bazaradwag**
Database	Database name By default : **E2R**

Login	Database user name By default: **sa**
Password	User password By default: **radwag**
Workgroup	Scales' workgroup used for complex systems By default: **Synchronizer**
LangFile	Language of scale displayed messages
Port	TCP Port used by E2R Manager By default: **4004**
Account	E2R Manager user name By default: empty field, no protection
Password	E2R Manager user password By default: empty field, no protection

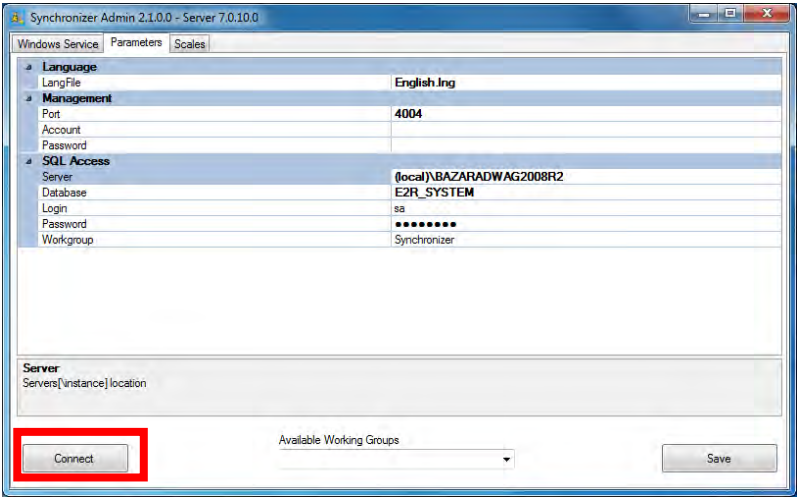
CAUTION
If SQL database has been installed on a different computer then it is necessary to enter its IP address into **Server** field, e.g.: ***192.168.1.1***\bazaradwag.

Having completed parameters editing press **Save** button.

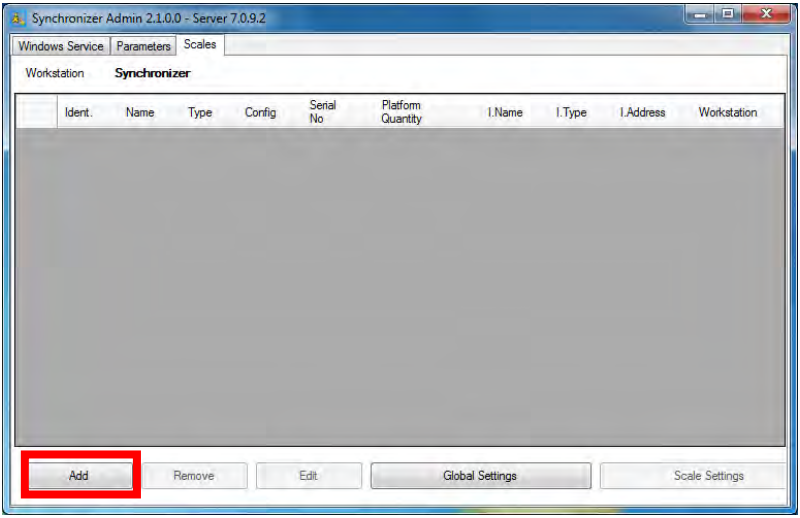


3.3. Adding New Sacels to Synchronizer

In order to set scales' parameters connect to database, do it by pressing ***Connect*** *button.*

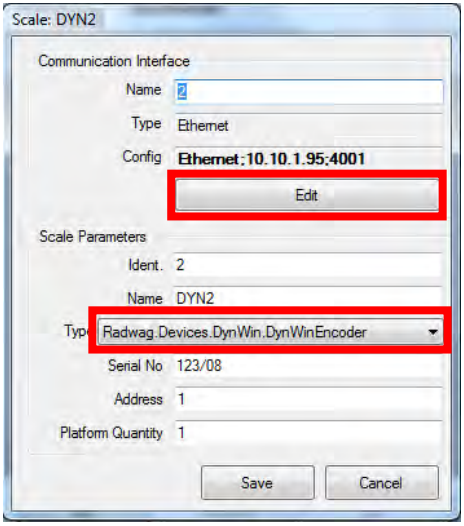


Upon establishing the connection you can add new scales to the E2R Synchronizer, to do it go to **Scales** tab and press **Add** button.



Scales editor opens. Fill in the data (see the figure below).

An example of adding new scale.



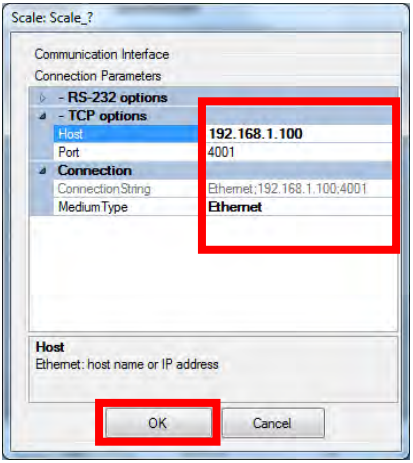
Parameters:

Name	Freely selected interface name
Type	Interface type (Serial, Ethernet)
Config	Interface configuration field
Edit	button, press to edit the interface
Ident.	Scales ID (field of numerical character)
Name	Freely selected scale name printed on reports

Type	Connection type: • *Radwag.Devices.PUE41.PUE41Encoder* – connection with PUEC41H indicator • *Radwag.Devices.PUE7Lab.PUE7LabEncoder* – connection with 3Y series balance • *Radwag.Devices.PUE7.PUE7Encoder* – connection with WLY, WPY and HTY scales featuring standard program version • *Radwag.Devices.WeightDryer.WeightDryer Encoder* – connection with MAX series moisture analyzer • ***Radwag.Devices.DynWin.DynWinEncoder* – connection with a dynamic scale** • *Radwag.Devices.PUE4L.PUE4LEncoder* – connection with scales based on PUE4L indicator • *Radwag.Devices. PUE7.PUE7PcsEncoder* – connection with scales based on PUE7 and HY terminals (version featuring Parts Counting function) *Not applicable for standard program version in Parts Counting mode*
Serial No.	Scales serial number
Address	Address set on a scale in computer parameters
Platform No.	Platform number

In case of dynamic scales select:
Radwag.Devices.DynWin.DynWinEncoder *value for* ***Type*** *field.*

Press **Edit** button to run editor of communication interface parameters.



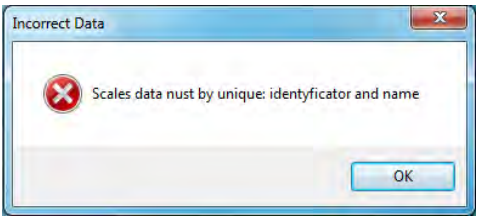
Interface parameters:

MediumType	Medium type: (None – no connection, Serial – scale connected via RS232, Ethernet – scale connected via Ethernet)
ConnectionString	Shortened connection address, interface configuration preview
Host/IP	Scale-set IP Address (for connection the following types: Ethernet, Tcp)
Port	Local TCP port (by default **4001**)
BaudRate	Baud rate RS232 (default settings for the moisture analyzer: **9600 bps**, for WPW and PUE7 **scales** set **115200 bps**)
DataBits	Data bits quantity (by default **DB_8**)
Handshake	Control Protocol enabling communication identification (by default **None**)
Parity	Parity control (by default **None**)
Numer portu	Number of COM communication port to which the scale is connected
StopBits	Stop bits value (by default **One**)

CAUTION:

It is necessary to check and compare all of the above settings with settings of the scale and MS Windows communication port.

*Shall you see the following message in the course of adding the scale (upon pressing **Save** button while operating editor designed to add a new scale) mind that the scale ID you have just provided is already occupied.*

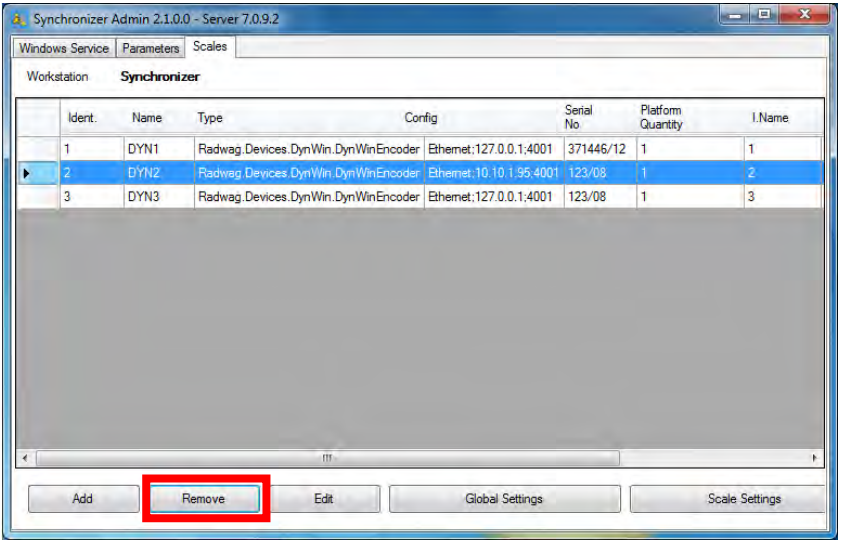


*In such a case change **Scales ID** and press **Save** button again.*

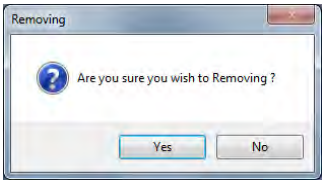
3.4. Deleting and Editing Database-Recorded Scale

CAUTION:
It is not possible to print on a report any weighing data related to a scale that has been deleted form a system.

If a particular scale does not operate in the system then it is possible to delete it form the Synchronizer, scales that have been deleted are not detected in the course of synchronization process. Select scale that is to be deleted and press **Delete** button.



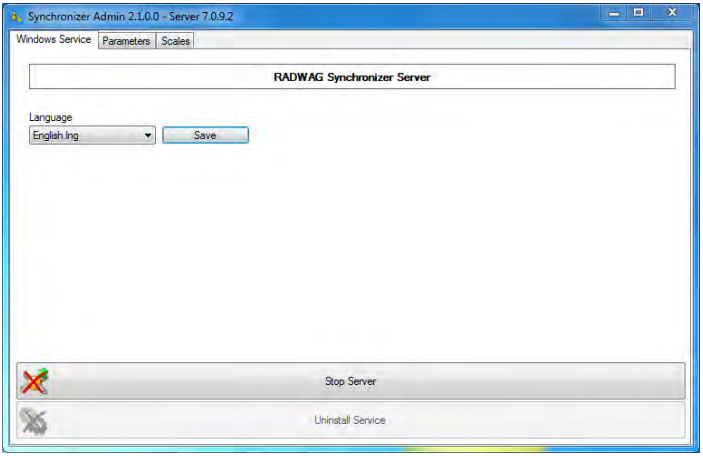
When you press **Remove** button, the following question is displayed:



You are asked twice whether to delete a selected scale or not, this reduces the risk of accidental scale removal. In order to delete the particular scale from the synchronizer list, press **Yes** button.

In order to edit and modify selected scale parameters in the E2R Synchronizer press **Edit** button. Scale editor opens.

With all modifications saved go to **Windows Service** tab and check whether **RADWAG Synchronizer Server** operates or not.



If Synchronizer server is on you can run **E2R Manager** and preview system-connected scales operation.

4. E2R MANAGER

E2R Manager program has been designed to display the program-scale communication status, and to monitor the scale displayed state and data relating to an ongoing weighment. Among displayed information there is the following data: logged operator, weighed product, nominal net mass (reference sample mass), weighed product batch/series number, customer, tare, min and max therholds, working mode etc.

All messages serve informative purposes therefore they cannot be recorded or printed. In order to save or print the messages install **E2R SYSTEM** program.

Upon **E2R STSTEM** installation a E2R MANAGER EW shortcut is created on the desktop.

E2R Manager home screen

Detailed information on the checkweigher.

In order to enable display of additional scale-referred data, press the scale pictogram. Respective box is displayed.

Detailed information:

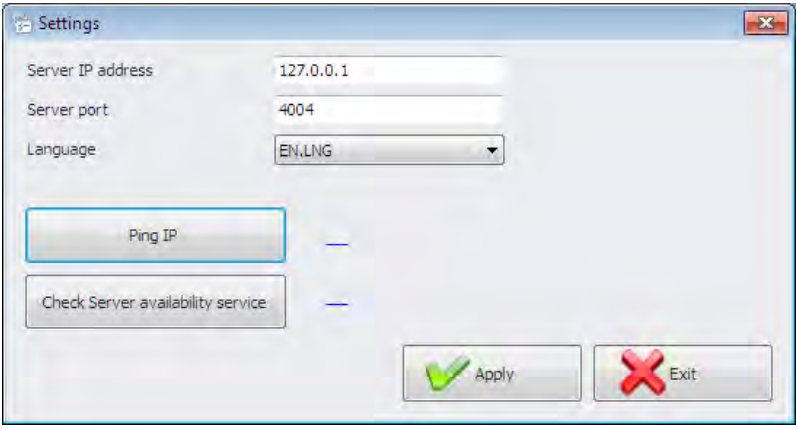
About scale	Scale parameters,
Scale ID	Scale serial number,
Software version	Scale program version,

Caution:
*When there is no connection between **E2R Manager** and **Radwag Synchronizer** or when Radwag Synchronizer is not activated this window will not be displayed.*

If the program is activated on more than one computer as a multi-stand software, mind that only one preview at one computer station is possible at a time.

4.1. Connection with Radwag Synchronizer - Settings

To run **Settings** editor press **File** tag, next press **Software settings** button.



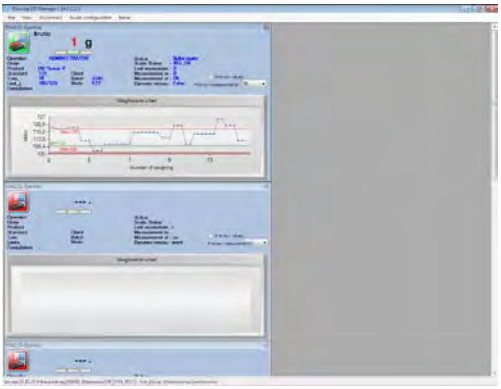
Where:

Server IP address	IP address of a computer by which the Synchronizer is operated
Serwera port	TCP port of a computer by which the Synchronizer is operated

Language	Language of E2R Manager program
Ping IP	Test of connection with a selected IP, by default: local IP address
Check Server service availability	Sprawdzenie dostępności programu E2R Synchronizer

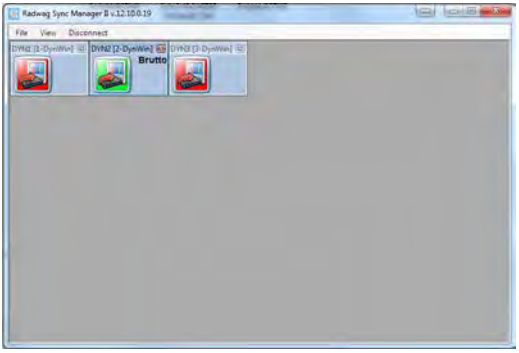
4.2. E2R Manager Screen.

Home screen, an extended view (default setting).



To swap to an extended view press **View** tag and press **Extended** button.

Home screen, a standard view (simplified).



To swap to a standard view press **View** tag and press **Standard** button.

4.3. E2R Manager: Scale‘s Status

Status informing you whether communication between a computer and a scale has been established or not.

	Communication established. Correct scale setup. Correct scale setup in E2R Synchronizer.
	Communication established. Temporary lack of response. Incorrect scale setup or incorrect scale setup in E2R Synchronizer.
	Communication not established. Scale switched off or no communication interface connection. Incorrect scale setup or incorrect scale setup in E2R Synchronizer.

4.4. Scales Restart and Update in E2R Manager

All databases that can be edited in **E2R System**, except for product databases, are sent (updated) from a computer to scales upon restart of program, connection or scale.
In the course of system operation you can restart the scale using E2R Manager program, to do it click the selected scale twice. Upon few seconds the scale gets reconnected and all the databases are updated.

CAUTION:
If scales databases have not been updated, even though they were previously edited, then it is necessary to edit one freely selected database record and to carry out restart once more, update shall proceed.

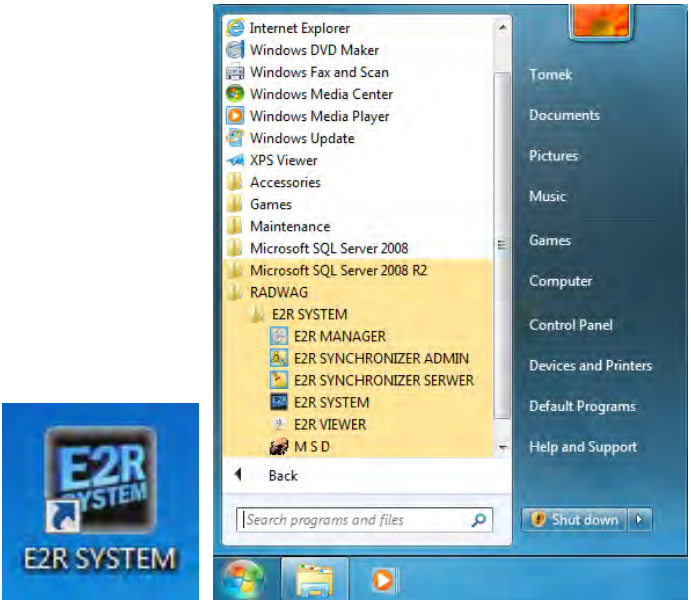
Having encountered problems when updating databases mind that they might be a result of the new scale’s ID which could have been previously used as some other device’s ID.

5. E2R CHECKWEIGHER

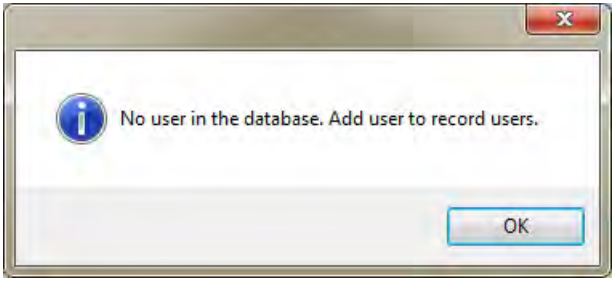
This user manual has been designed with reference to **E2R CHECKWEIGHER,** version **12.10.19**. Mind that it might slightly differ from the software version you operate.

5.1. E2R System Start-up

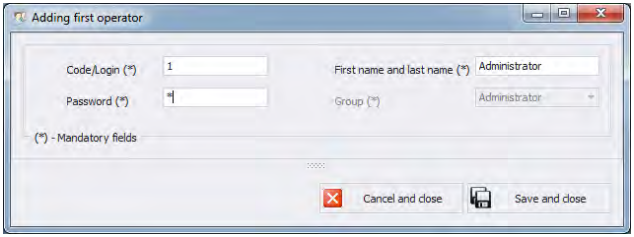
To run the program press desktop icon or use Start Menu of the operating system: **START/PROGRAMS/RADWAG/E2R SYSTEM/E2R SYSTEM**.



When running the program for the first time, message informing you on an empty Operator Database is displayed. Press **OK** button, **Operator** editor opens automatically, add the operator.

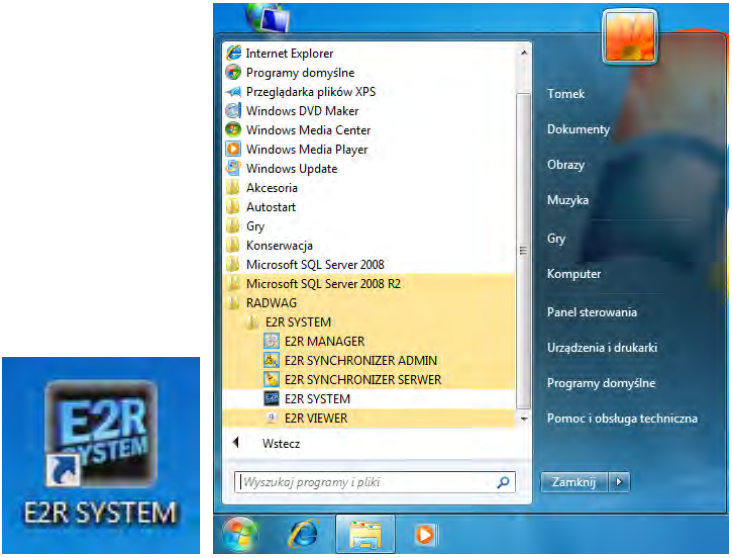


CAUTION:
Make sure that the first operator you add is the administrator. With this you will avoid problems when setting program parameters in the future.
Fill in all mandatory fields, remembering that the code is login.

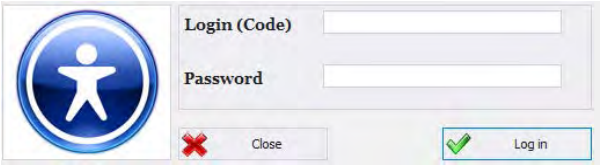


5.2. Running E2R System

To run the program press desktop icon or use Start Menu of the operating system: **START/PROGRAMS/RADWAG/E2R SYSTEM/E2R SYSTEM**.



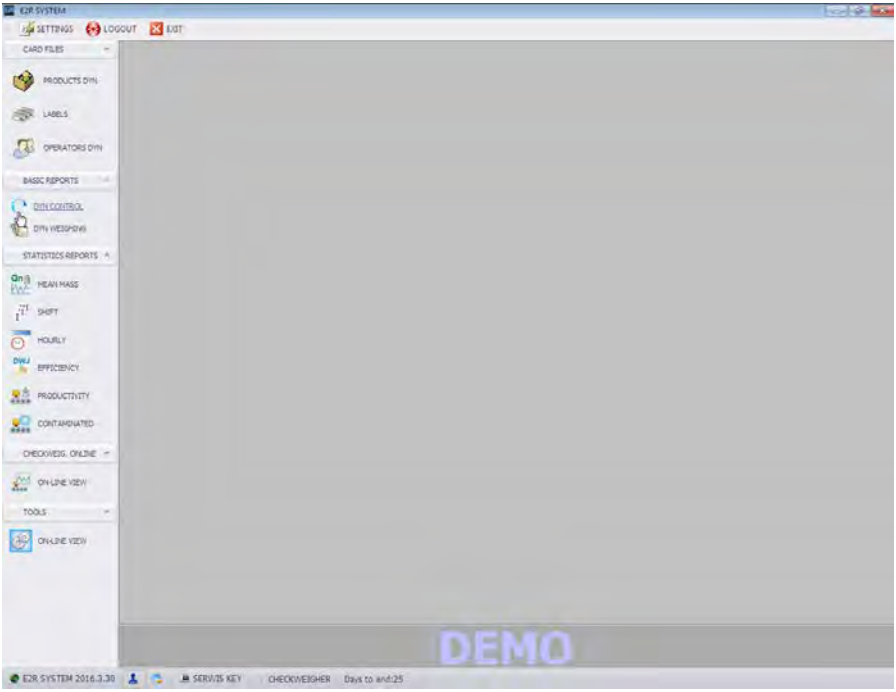
Upon running the program, it is obligatory to log in. Enter respective **Login** and **Password**.



Press **OK** button to confirm the entered values, the program displays Home Screen.

5.3. E2R System Home Screen

Home Screen of **E2R SYSTEM** is displayed upon successfully completed logging in operation.

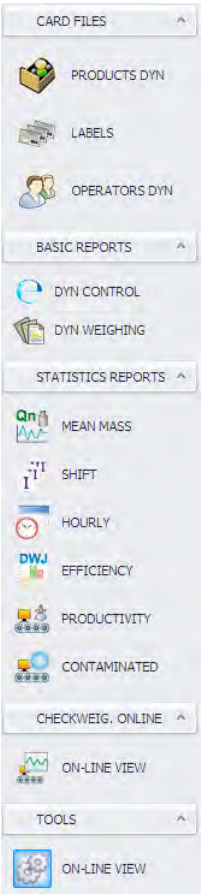


The Home Screen has been divided into 4 sections:

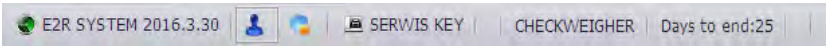
- Top bar – System toolbar,
- Side bar – Navigation pane,
- Bottom bar – Status bar,
- Workpane.

System toolbar features **Exit** and **Logout** buttons along with program **Settings** and **Layout** (E2R System skins) setup.

Navigation pane comprises modules featuring buttons for activation of program functions.



Status bar displays information on software version, logged in user, user permissions level and current operation mode.

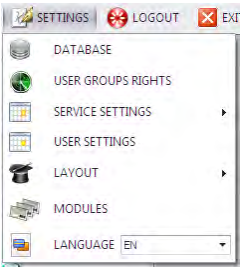


Workpane has been designed to display windows triggered by Navigation Pane buttons. The windows provide all data and information.

5.4. E2R System Settings

To run settings go to the system toolbar and press **Settings** tag,

.



5.4.1. Database

To run Database settings go to the system toolbar and press **Settings** tag, SETTINGS, next press **Database** button.

Database setup features the following functions:

- Check Connection,
- Configure Connection.

Top section of the window features status of connection with the database. Bottom section of the window features parameters for connection with the database.

Press Cancel button to cancel introduced changes.

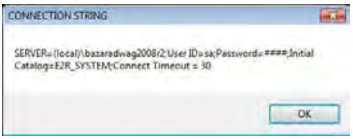
5.4.2. Setting up Connection

Press Configure Connection button to activate window with database settings providing parameters for connection.

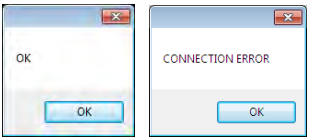
Where:

Server	IP or name of server with running SQL server (add also server instance if declared). Format: SERVER\INSTANCE
Database	SQL database name
User	Operator's name, by default: **sa**
Password	User's password, by default: **Radwag99**

To check connection with database, press **Test connection** button. **Connection String** window, featuring previously specified data, is displayed.



Press **OK** button to confirm, window informing on connection status is displayed.



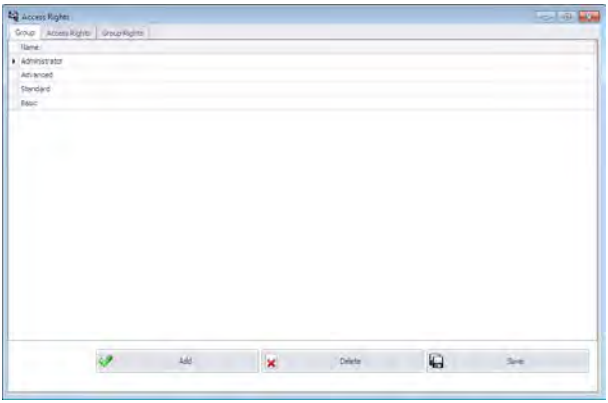
5.4.3. Checking Connection

To check connection with database, press **Check connection** button.

5.4.4. Users Groups and Access Rights

To run User and Users Group access rights go to the system toolbar and press **Settings** tag, SETTINGS, next press USER GROUPS RIGHTS button.

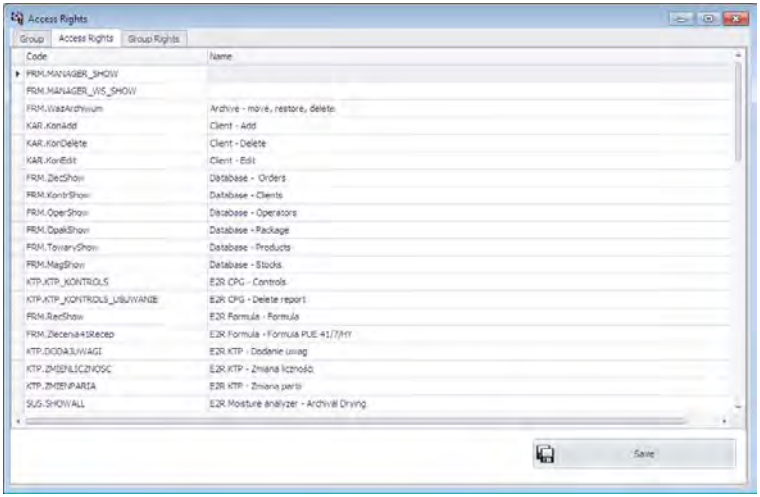
Go to **Group** tab to view defined groups of users.



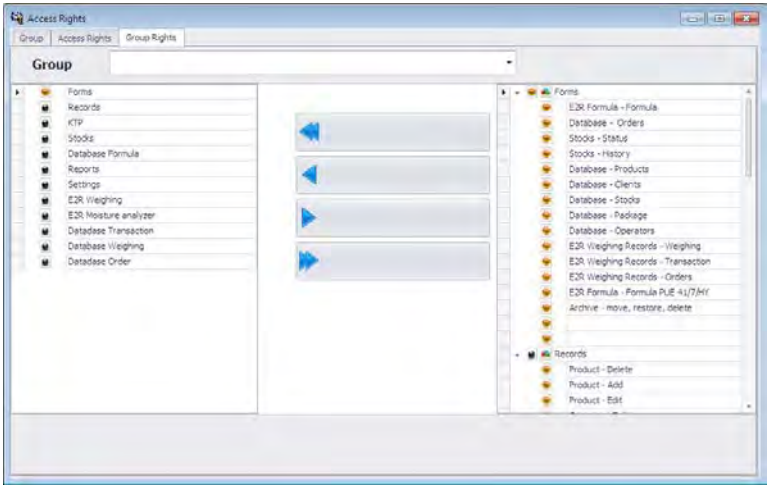
Where:

Add	Button for adding group of users
Delete	Button for deleting group of users *It is not recommended to delete any of the 4 default groups. They are added automatically upon program restart.*
Save	Button for saving the settings

Access Rights tab provides list of all codes and assigned names used in Group Rights tab.



Group Rights tab has been designed to enable you to set permissions levels for particular groups to program modules.



Using **Group** combo box select particular group and enable or disable it with given set of rights.

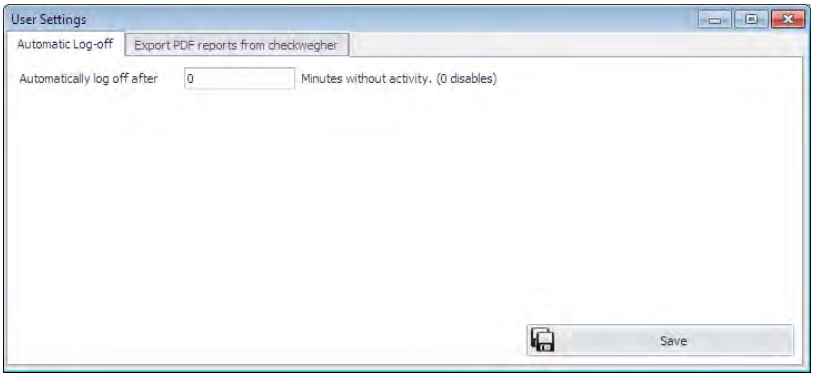
5.4.5. Service Settings

To run service settings go to the system toolbar and press **Settings** tag, SETTINGS, next press SERVICE SETTINGS button.

CAUTION:
Access to the service settings is enabled for authorized users only.

5.4.6. User Settings

To run user settings go to the system toolbar and press **Settings** tag, SETTINGS, next press USER SETTINGS button.

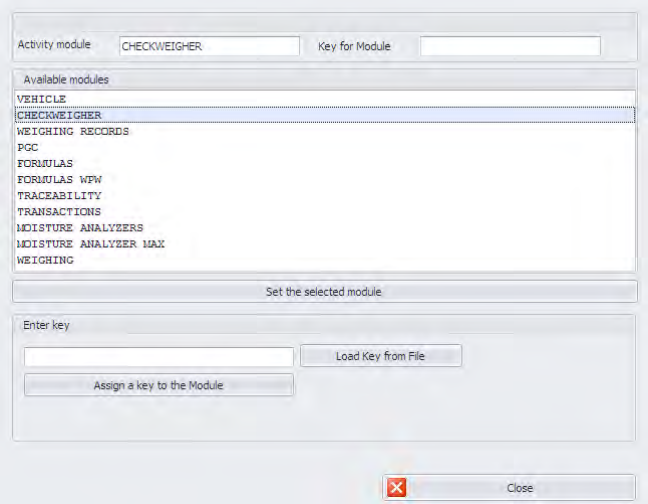


Where:

Automatically log off after	Option enabling to log the user off after passage of predefined number of minutes. With value set to 0 the function is off.

5.4.7. Modules

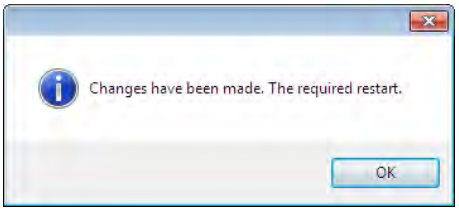
To access license key in order to modify it or to assign it to a current module, press **Settings** tag, SETTINGS, next press MODULES button.



The window provides you with a list of available program modules. Here you can check what key numbers are assigned to particular modules.

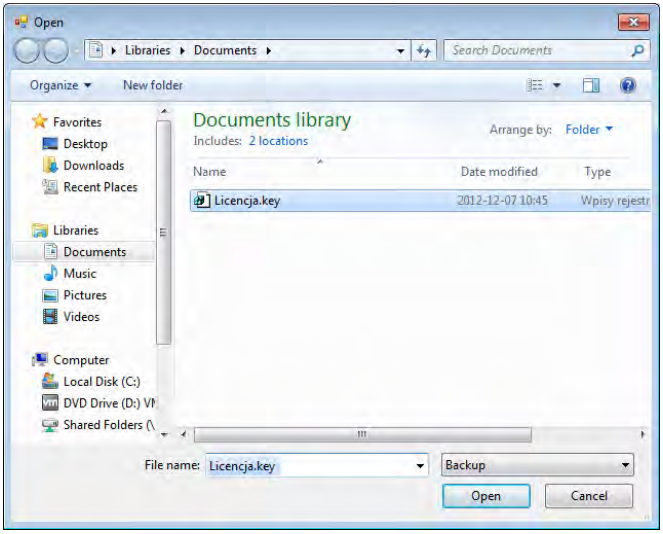
- **Module change**

Select particular module from the list and press **Set the selected module** button. The program restart proceeds, the selected module is run upon the restart.

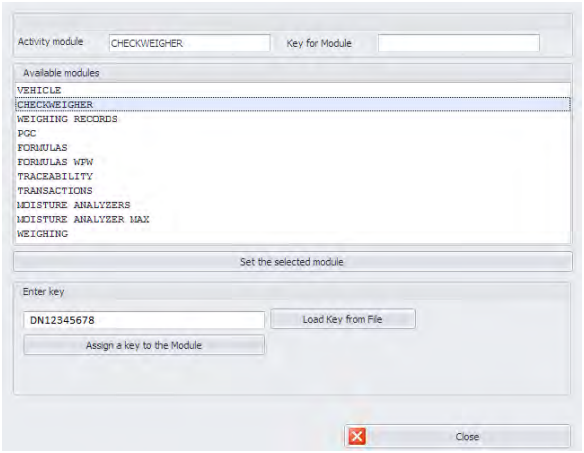


- **Assigning module key from file**

In order to read licence key from file press **Load key from file** button. Operating system window opens, search for the licence file, select it and press **Open** button.



The key is displayed in **Enter key** box. Now select the purchased module and press **Assign a key to the module** button. Confirm and restart the program.



- **Entering module key**

Another method for update of licence key is to paste it or enter by means of a keyboard.

Copy the licence key from a file or an e-mail, place a mouse cursor over the **Enter key** box, press the right mouse button and select **Paste** option. The key is displayed in the box. Now select the purchased module and press **Assign a key to the module** button. Confirm and restart the program.

5.5. Miscellaneous Settings

5.5.1. Language Setup

To swap between software languages use **Language** combo box providing you with list of available languages.

Where:

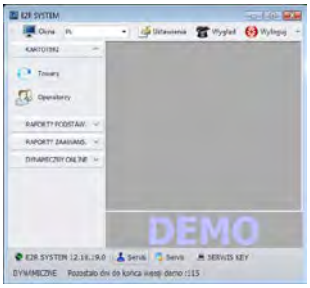
PL	Polish
EN	English
DE	German
ES	Spanish
RU	Russian

5.5.2. Program Layout

To customize program layout press button and select respective option.

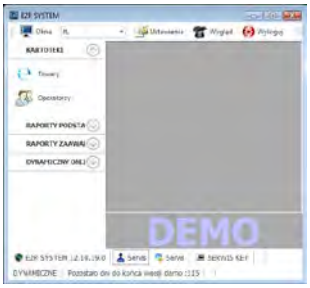
Available program skins:

DevExpress Style



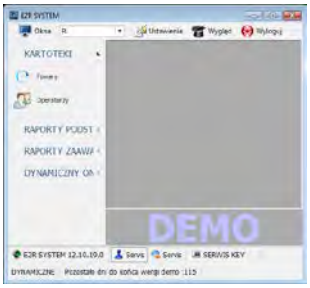
DevExpress Dark style

Metropolis



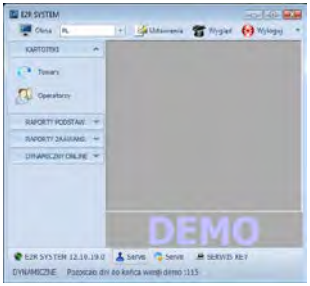
VS2010

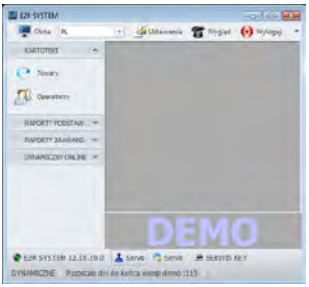
Seven Classic



Office 2010 Black

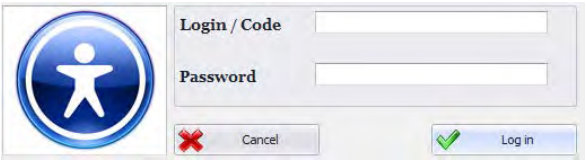
Office 2010 Blue **Office 2010 Silver**





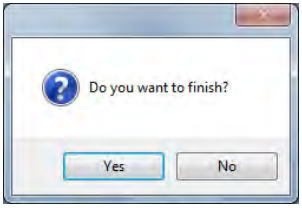
5.5.3. Logout Procedure

Upon pressing LOGOUT button you are logged out and the following window is displayed.
If you still want to operate the software, provide **Login (Code)** and **Password**, next press **Log in** button to confirm.



5.5.4. Exit Operation

To exit the program press EXIT button, respective window requesting your confirmation is displayed.



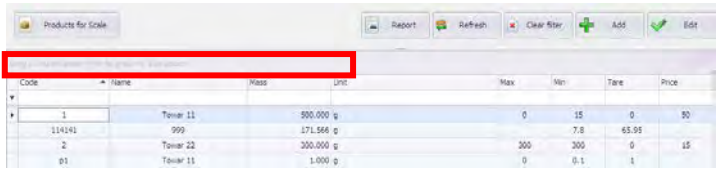
Press **Yes** button to exit, press **No** button to display Home Screen of E2R SYSTEM software.

5.6. Work Pane

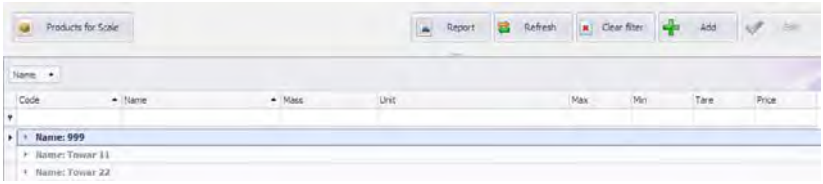
5.6.1. Data Sorting

Data displayed in a work pane of any available module can be freely sorted.

In order to group displayed data, first select particular column header, next drag it over the area marked with a red border and drop it.

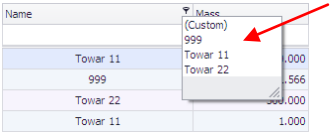


Dropped header turns into a button with a name. Press the button once to enforce list sorting in either ascending or descending order.

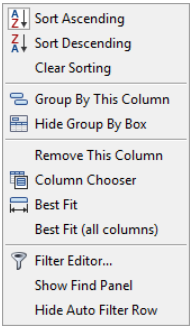


5.6.2. Extra Filtering Options

In order to activate extra filtering options, press right hand top corner of a particular column's header. List of available options is displayed.



Click the right mouse button to operate the following context menu with sorting options.



Where:

Sort Ascending	Click to sort from A to Z
Sort Descending	Click to sort from Z to A
Clear Sorting	Click to delete grouping filter
Group By This Column	Click to group data by selected column
Hide Group By Box	Click to hide quick grouping option
Remove This Column	Click to delete selected column, the column is no longer displayed in a window
Column Chooser	Click to run column view editor
Best Fit	Click to modify column width to get the most optimal view
Best Fit (all columns)	Click to modify all columns widths to get the most optimal view
Filter Editor…	Advanced filter
Show Find Panel	Click to run common filter field allowing search all columns for specified value
Hide Auto Filter Row	Click to hide filter row option

Each work pane features navigation bar allowing you to add, edit or delete records and to move forward or backward.

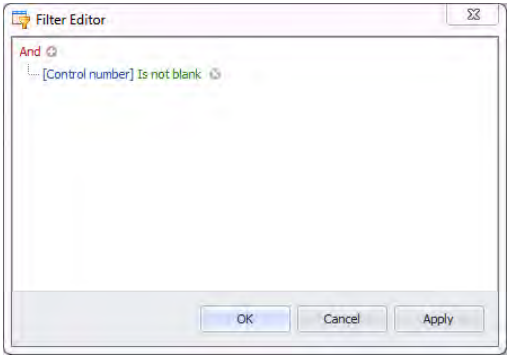
Bottom work pane area features handy data filter allowing to generate 5 basic statistics for a particular column. To select statistics type, move the cursor over the bottom bar of a work pane and press right mouse button.

Basic statistics:

Sum	Click to display sum of all values of particular column
Min	Click to display minimum value of particular column
Max	Click to display maximum value of particular column
Count	Click to display quantity of rows of particular column
Average	Click to display average value of particular column

5.6.3. Filter Editor

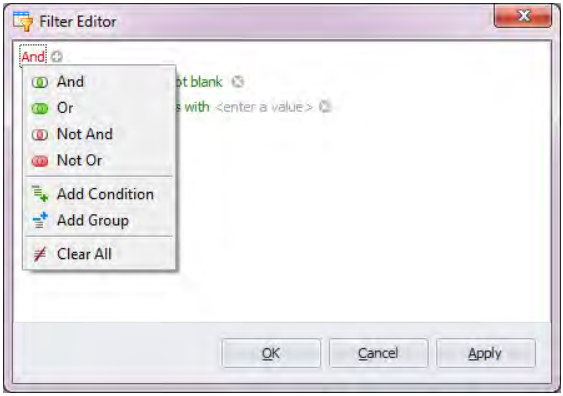
Upon setting a filter, Edit Filter button is displayed in the bottom part of a workpane. By means of this button Filter Editor window is activated where database data can be freely filtered.



Using the editor you can set one or many filtering conditions, this provides detailed filtering. It is possible to generate reports on the filtered data.

Filter Editor window provides the following filtering criteria:

a) Filtering groups (and, or, not and, not or)

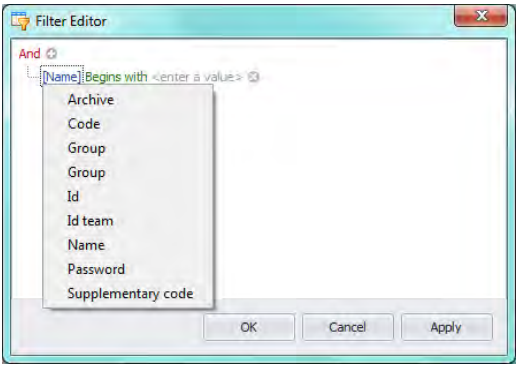


Where:

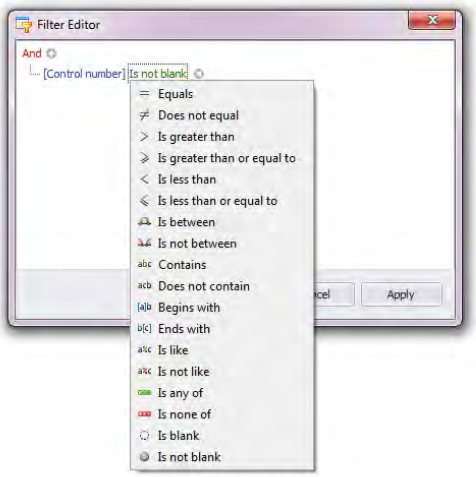
And	all filter criteria are met
Or	one of filter criteria is met
Not And	opposites of all filter criteria are met
Not Or	opposite of one filter criteria is met
Add Condition	adding a new filter criteria
Add Group	adding a new group of filtering criteria
Clear All	deleting all filtering criteria

b) Filtering conditions – specifies the data to be filtered and the methods of filtering:

- selecting a column for filtering (Operator or Product in this very case, the columns may differ depending on a work pane)



- selecting filtering range and method



Where:

Equals	Displaying only records from the selected column which are exactly the same as the entered value
Does not equal	Displaying all records from the selected column which are different from the entered value (opposite to filter „Equal”)
Is greater than	Displaying only records from the selected column which values are greater than the entered value,
Is greater than or equal to	Displaying only records from the selected column which values are greater or equal to the entered value,
Is less than	Displaying only records from the selected column which values are lower than the entered value,
Is less than or equal to	Displaying only records from the selected column which values are lower or equal to the entered value,
Is between	Displaying only records from the selected column which values are in the range between two given values
Is not between	Displaying only records from the selected column which values are beyond the range between two given values

Contains	Displaying only records from the selected column which include the given string of characters
Does not contain	Displaying only records from the selected column which do not include the given string of characters
Begins with	Displaying only records from the selected column which start form the given string of characters
Ends with	Displaying only records from the selected column which end with the given string of characters
Is like	Displaying only records from the selected column which have the same beginning and end, the filtering criterion has the following format „begin%end”
Is not like	Displaying only records from the selected column which have not the given beginning and end, the filtering criterion has the following format „begin%end”
Is blank	Displaying only records from the selected column which are empty
Is not blank	Displaying only records from the selected column which are not empty
Is any of	Displaying only records from the selected column which are the same as one of the given patterns
Is none of	Displaying only records from the selected column which are different from all of the given patterns – opposite to „Is any of” filtering

Here you can specify the exact criterion for filtering the selected column, e.g.: if you want to get a result concerning product **„Apple”** choose **„Name - Equals – value: Apple”**. Press **„+”** button, located next to the filtering group, to add another criterion.

Having completed operating Filter Editor, when all necessary filters are set, press **Apply** button, the filter gets activated.

The bottom bar displays selected filter type.

In order to display **Filter Editor** again press **Edit Filter** button.

6. DATABASES

E2R CHECKWEIGHER comprises the following databases:

- Products,
- Operators.

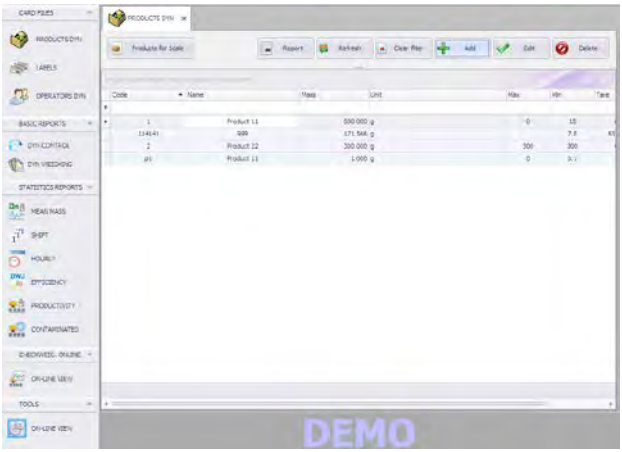
Products database may be edited by the checkweigher and by a computer. Operators database can be edited by a computer exclusively.

6.1. Products

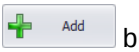
Each product added to a database is sent to a checkweigher only upon being assigned to the checkweigher.

Product database allows managing records of products. To run **Products** module, press **Products** button of the side toolbar.

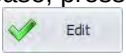
Products work pane:



6.1.1. Adding / editing a product

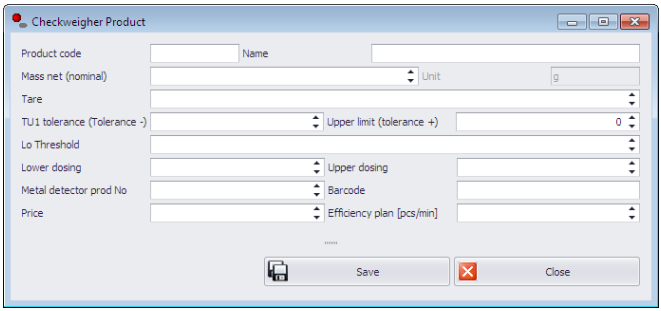
To add a new product to the database, press 

button.

To edit a particular product, press 

button.

Product editor (window for adding and editing product records):

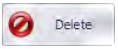


Where:

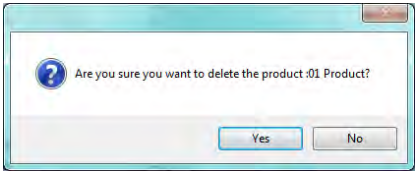
Name	Product name comprising 50 alphanumeric characters
Product Code	Alphanumeric product code
Mass net (nominal)	Nominal weight value of a product given in grams
Tare	Tare value for products packed into packaging of constant tare weight, taring carried out automatically by scale upon product selection
TU1 Tolerance (Tolerance -)	Deviation for TU1 or tolerance (-), T1 error
Upper limit (Tolerance +)	Deviation for high limit or tolerance (+)
LO Threshold	LO theshold value,
Lower Dosing	Deviation for dosing – low limit,
Upper Dosing	Deviation for dosing – high limit,
Metal detector prod No.	Serial number of metal detector which is to be used in order to carry out metal detection
Price	Product loss cost per kg (loss – surplus amount of product),
Efficiency plan [pcs/min]	Planned throughput expressed as pcs./min.,
Barcode	Product's barcode

When all required product data has been entered press **<Save>** button, next press **<Close>** button.

6.1.2. Deleting Product

To delete a particular product from a database press 

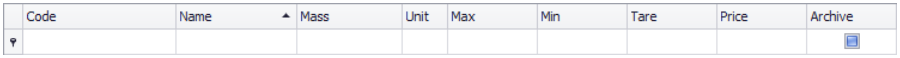
button.
The following message is displayed:



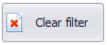
Press **Yes** button to confirm deletion of a selected product.

6.1.3. Product Finding and Filtering

Each product registered by the system can be found by name, number etc., i.e. by an appropriate string of characters entered in a given column.



After typing the characters in the selected column, a list of products with the same string of characters is displayed.

To delete a filter for products display, press 

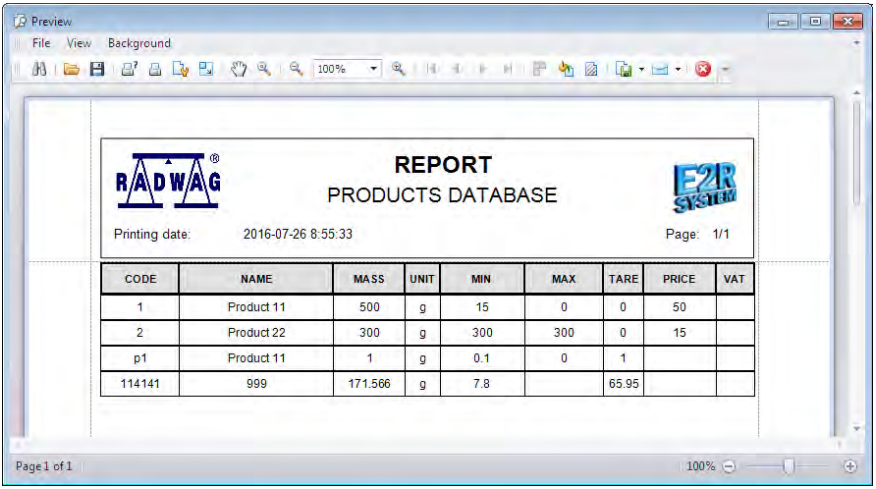
button.

CAUTION!
Information displayed in Products database work pane can be sorted and filtered with use of additional filtering options.

6.1.4. Products Report

To generate report featuring list of products, go to Products work pane and press

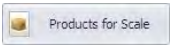
button. A report is generated and opened is a **<Preview>** window.



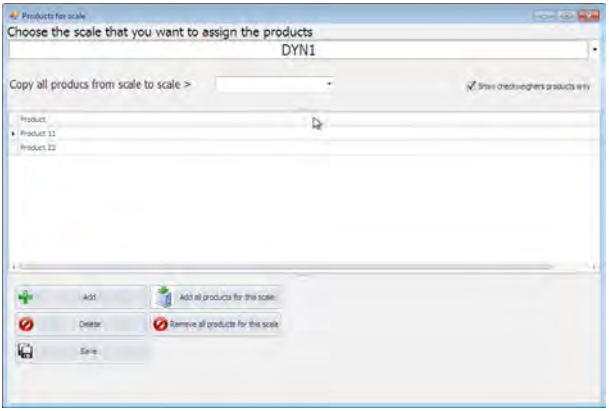
CODE	NAME	MASS	UNIT	MIN	MAX	TARE	PRICE	VAT
1	Product 11	500	g	15	0	0	50	
2	Product 22	300	g	300	300	0	15	
p1	Product 11	1	g	0.1	0	1		
114141	999	171.566	g	7.8		65.95		

The generateed report can be exported to the following file formats: **PDF, HTML, MHT, RTF, XLS, XLSX, CSV, TXT, BMP, JPEG, PNG, TIFF, GIF, WMF, EMF.**

6.1.5. Assigning Products to Scales

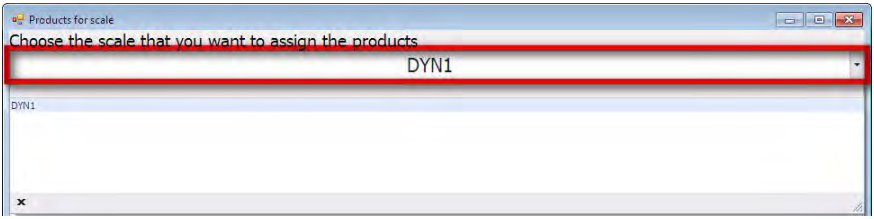
In order to assign particular products to a given scale press 

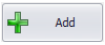
button. **Product for Scale Editor** opens. Use it to assign selected products to a scale of your choice or to copy products from one scale to another.



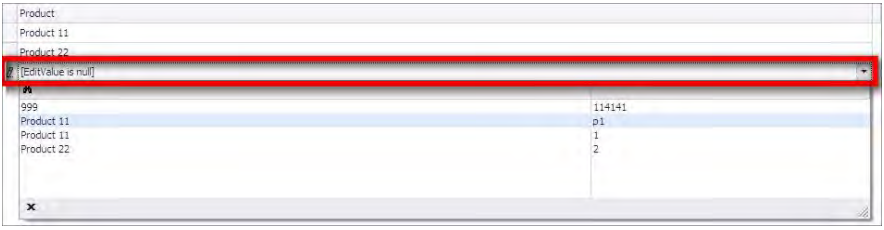
- **Assigning operation:**

Using combo box select the scale.

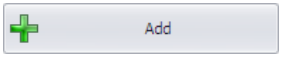
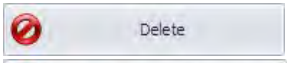


Press 

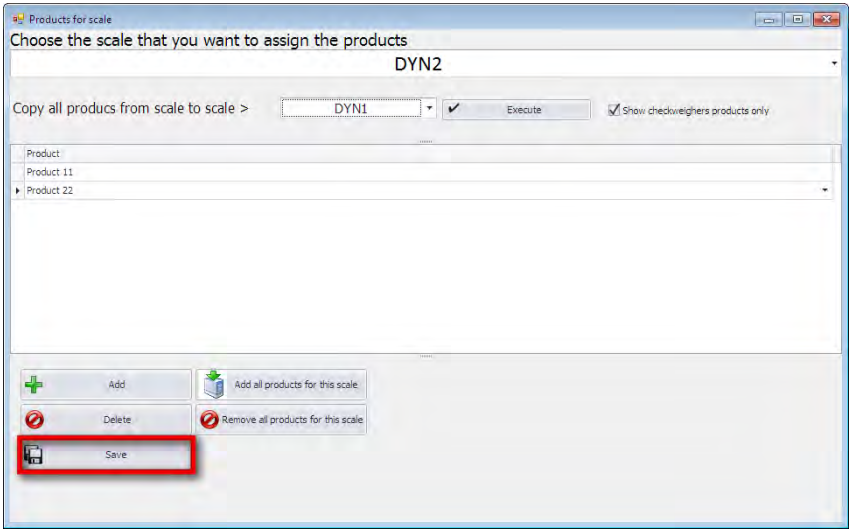
button, products list is displayed, select the product.



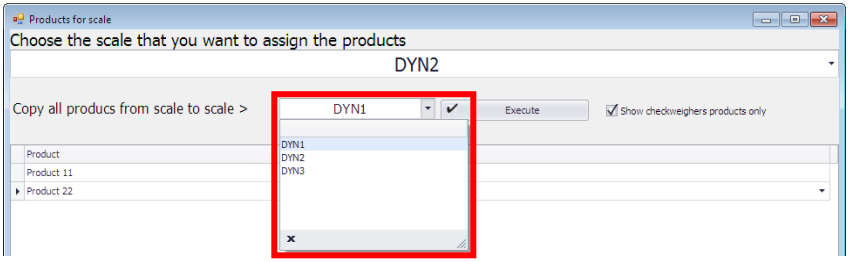
Buttons list

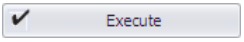
Button	Function
	Press to add a new database-stored product.
	Press to add all database-stored products.
	Press to delete selected product
	Press to delete all selected products
	Press to save changes

In order to save the assigned products press **<Save>** button.



- **Copying operation:**

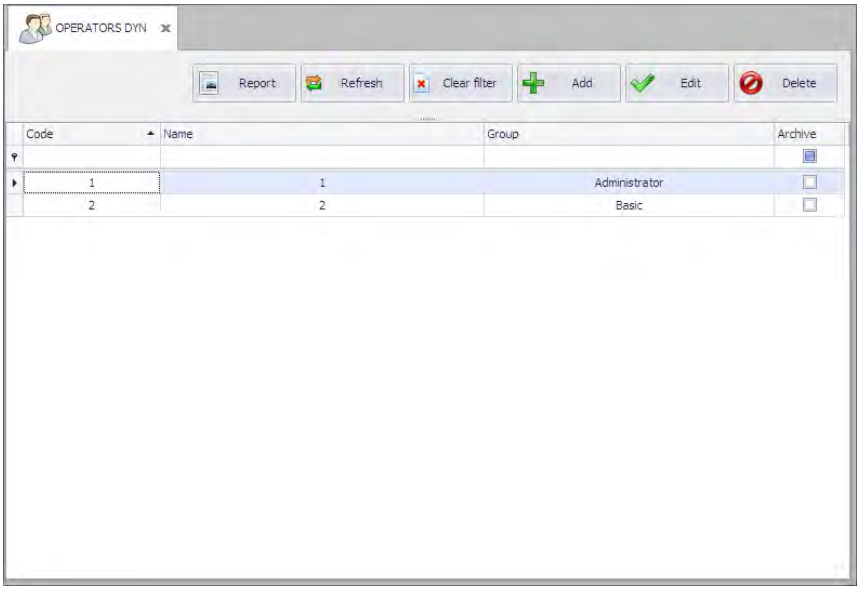


Using combo box select the scale. Press  button.
In the above example products are copied form DYN2 scale to DYN1 scale.

6.2. Operators

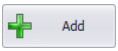
Operators database allows managing records of program users.
To run **Operators** module, press **Operators** button of the side toolbar.

Operators work pane:



Operators work pane enables adding, deleting, modifying accounts of operators.

6.2.1. Adding / editing an operator

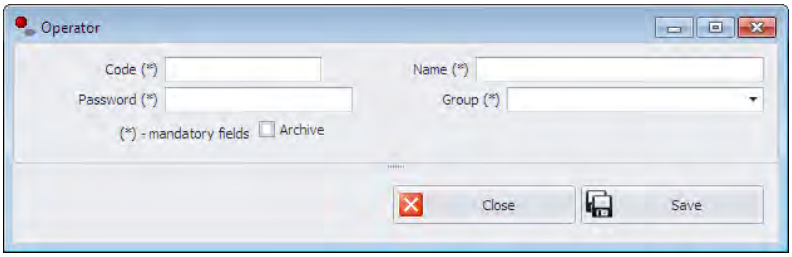
To add a new operator to the database, press 

button.

To edit a particular operator, press

button.

Operator editor (window for adding and editing operators records):

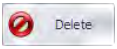


Where:

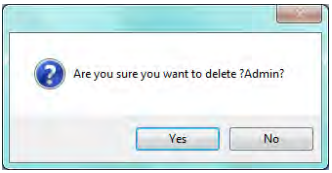
Code	Operator's code, login
Name	Operator's name and surname
Password	Operator's password
Group	Authorization group specifying access levels to particular program functions. **<Administrator>** – full access to program functions **<Wagowy>** – limited access to program functions
Archive	This box, when ticked, makes the particular operator inactive

When all required data has been entered or modified press <Save> button, next press <Close> button.

6.2.2. Deleting Operator

To delete a particular operator from a database press 

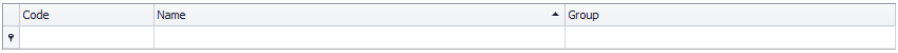
button. The following message is displayed:



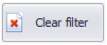
Press **Yes** button to confirm deletion of a selected product.

6.2.3. Operator Finding and Filtering

Each operator registered by the system can be found by name, number etc., i.e. by an appropriate string of characters entered in a given column.



After typing the characters in the selected column, a list of operators with the same string of characters is displayed.

To delete a filter for products display, press 

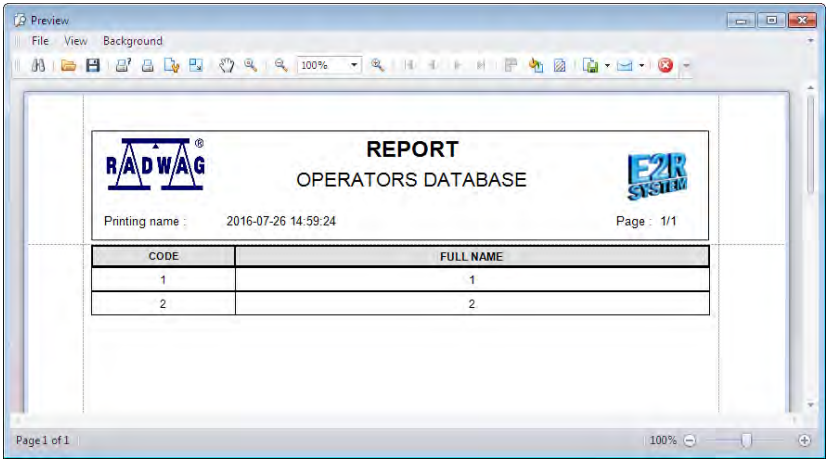
button.

CAUTION!
Information displayed in Operators database work pane can be sorted and filtered with use of additional filtering options.

6.2.4. Operators Report

To generate report featuring list of operators, go to Operators work pane and press

button. A report is generated and opened is a <Preview> window.



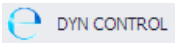
The generateed report can be exported to the following file formats: **PDF, HTML, MHT, RTF, XLS, XLSX, CSV, TXT, BMP, JPEG, PNG, TIFF, GIF, WMF, EMF.**

7. STANDARD REPORTS

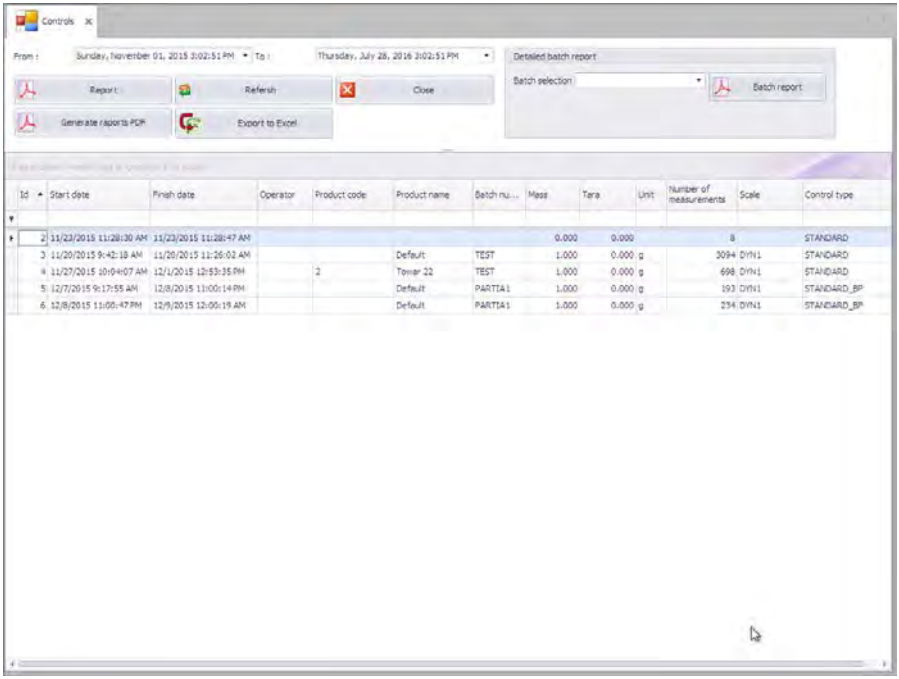
7.1. CONTROLS

Controls work pane features reports generated and stored by each checkweigher.

7.1.1. Control Work Pane

To open Control work pane press press 

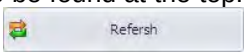
button of the side toolbar.



Control work pane enables preview and printout of Control Reports.

Reports can be sorted by more than one column at a time, e.g. by start date, control type and product.

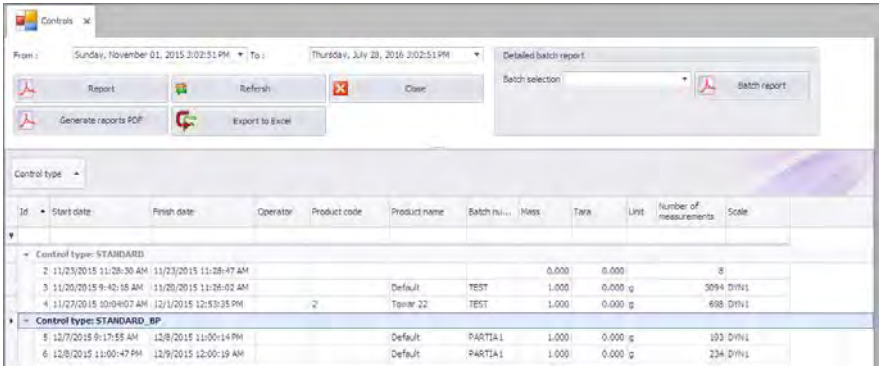
Sorting conditions are grouped depending on order of addition. Section enabling operator to set time interval for the report is to be found at the top.

Upon editing time parameters it is necessary to press 

button in order to make the new values valid.

Control work pane features option of advanced filtering carried out using **Filter Editor**.

Reports grouping example:

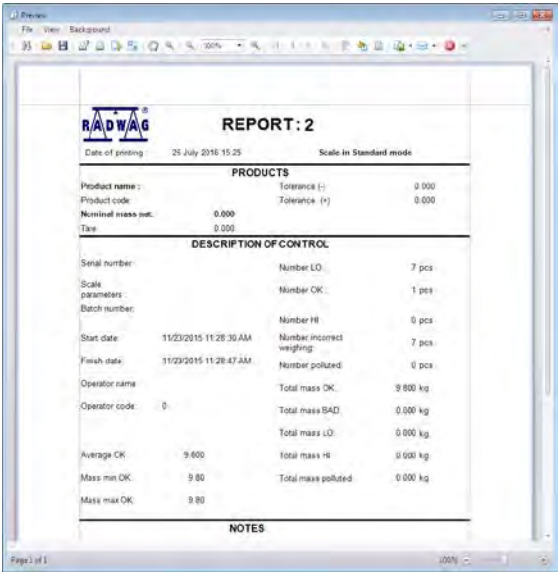


7.1.2. Report Preview

There are three report types:

- PGC
- STANDARD
- PRODUCT

It is possible to preview all reports of particular type for a specified time interval.



Functions Overview

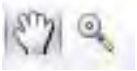
Print, options of printer selection and print setup enabled

Page Setup

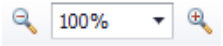
Quick Print

Scale

Search button enabling to find a given phrase



Mouse operation mode change



Zoom in/out

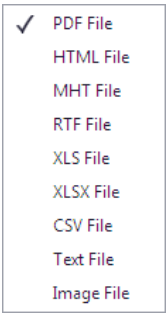
Report’s background colour

Watermark

Export to file

Preview exit

List of available file formats:



7.2. FG WEIGHINGS

Preview of weighings carried out by the scale.

8. STATISTICS REPORTS

<Statistics Reports> database enables:

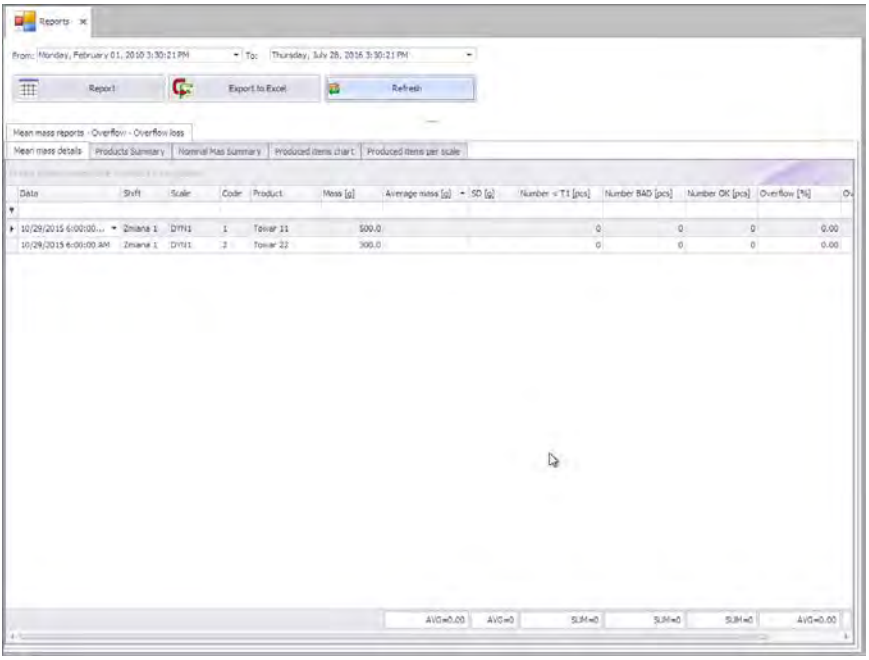
- generating various types of reports for user-specified time interval
- analysis of weighing process and production performance based on weighings that can be filtered and presented in a graphic form (graphs).

Reports types:

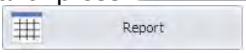
- Mean Mass Report
- Shift Report
- Hourly Report
- Efficiency Report
- Productivity Report
- Uptime/Downtime Report
- Contaminated Pcs.Report

8.1. Mean Mass Report

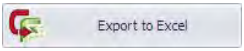
To run **Mean Mass Report** module, press **Mean Mass** button of the side toolbar.



Specify time interval and press

button. In order to generate report, press 

button. The generated report is based on **Mean Mass Report** work pane table, it can be either printed or saved.

To export table data to MS Excel press 

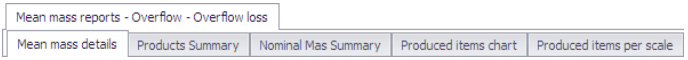
button.

The data can be sorted by more than one column at a time, e.g. by date, product and a nominal mass.

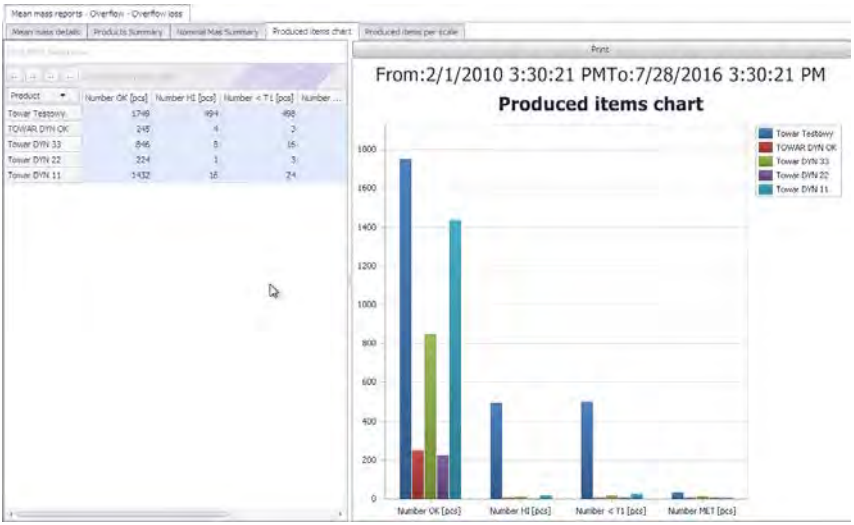
The Mean Mass work pane features option of advanced filtering carried out using **Filter Editor** (read section 4.6.2. and 4.6.3.).

Work pane tabs provide access to the following reports and graphs:

- Mean mass details
- Product summary
- Nominal mass summary
- Produced items chart
- Produced items per scale



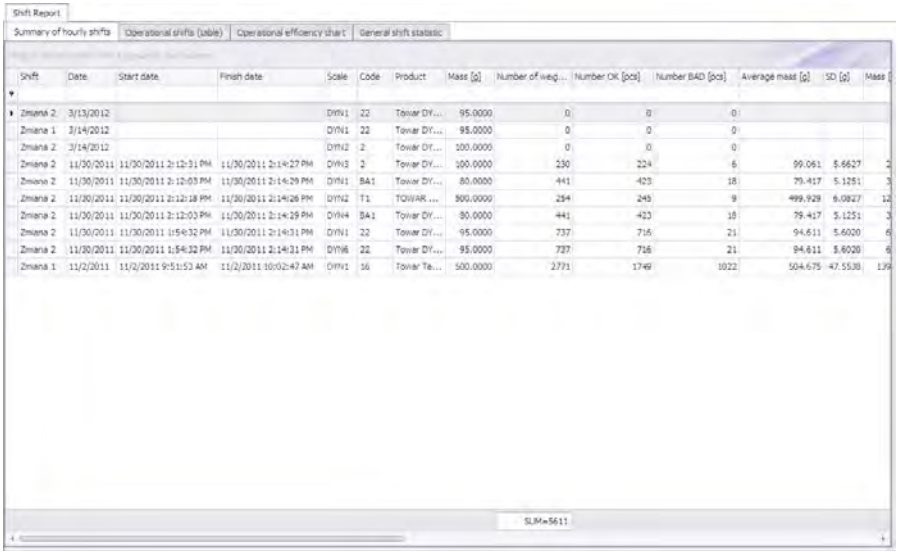
Graph are generated on the basis of specified data range. The data can be filtered, for instruction on filtering read section 5.6. The graph can be printed, to do it press **<Print>** button.



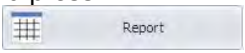
Data selection is carried out using the mouse, drag the cursor over particular cells pressing left button down.

8.2. Shift Report

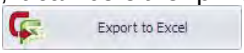
To run **Shift Report** module, press **Shift** button of the side toolbar.



Specify time interval and press

button. In order to generate report, press 

button. The generated report is based on **Shift Report** work pane table, it can be either printed or saved.

To export table data to MS Excel press 

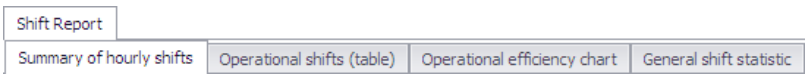
button.

The data can be sorted by more than one column at a time, e.g. by date, product and a nominal mass.

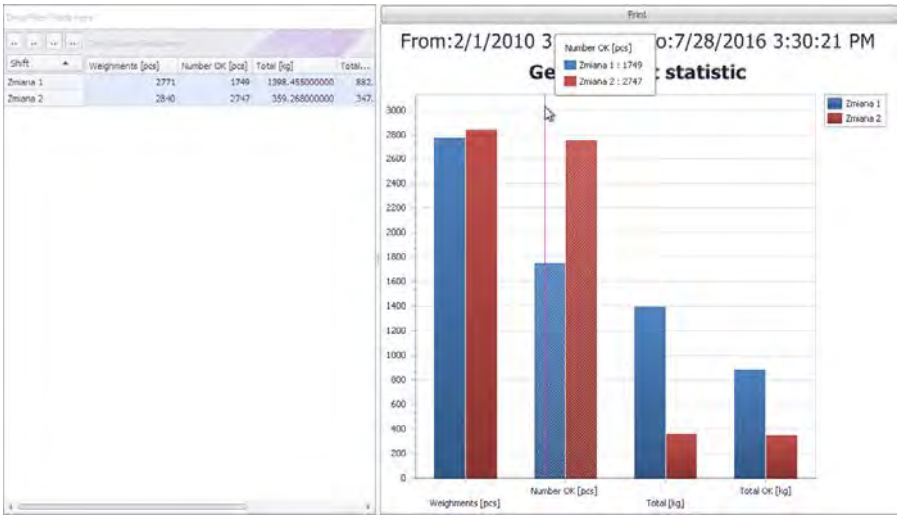
The **Shift Report** work pane features option of advanced filtering carried out using Filter Editor (read section 4.6.2. and 4.6.3.).

Work pane tabs provide access to the following reports and graphs:

- Summary of hourly shifts
- Operational shifts (table)
- Operational efficiency chart
- General shift statistics



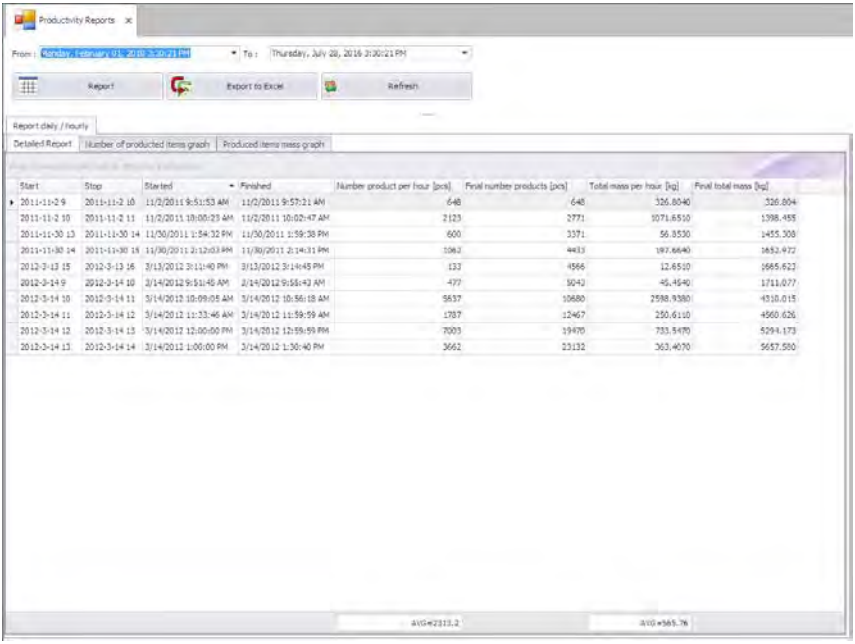
Graph are generated on the basis of specified data range. The data can be filtered, for instruction on filtering read section 5.6. The graph can be printed, to do it press **<Print>** button.



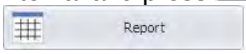
Data selection is carried out using the mouse, drag the cursor over particular cells pressing left button down.

8.3. Hourly report

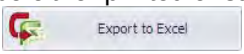
To run **Hourly Report** module, press **Hourly** button of the side toolbar.



Specify time interval and press

button. In order to generate report, press 

button. The generated report is based on **Hourly Report** work pane table, it can be either printed or saved.

To export table data to MS Excel press 

button.

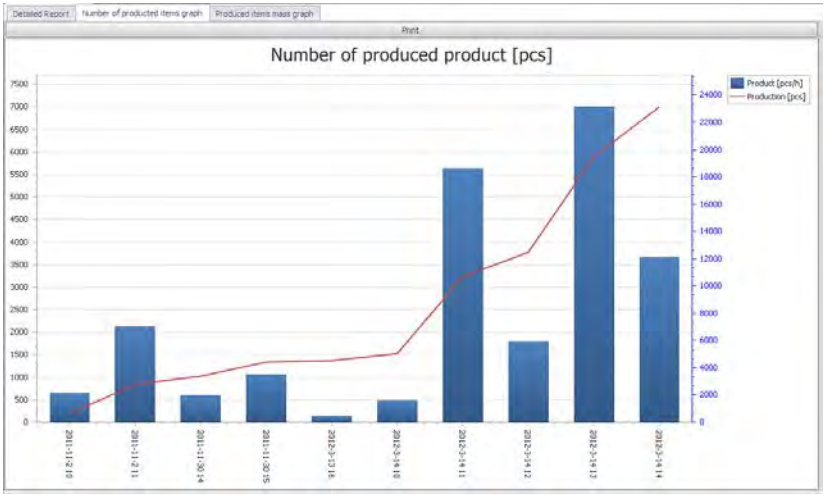
The data can be sorted by more than one column at a time, e.g. by date, product and a nominal mass.

The **Hourly Report** work pane features option of advanced filtering carried out using Filter Editor (read section 4.6.2. and 4.6.3.).

Work pane tabs provide access to the following graphs:

- Number of produced items graph
- Produced items mass graph

The graphs are generated for a specified time interval.



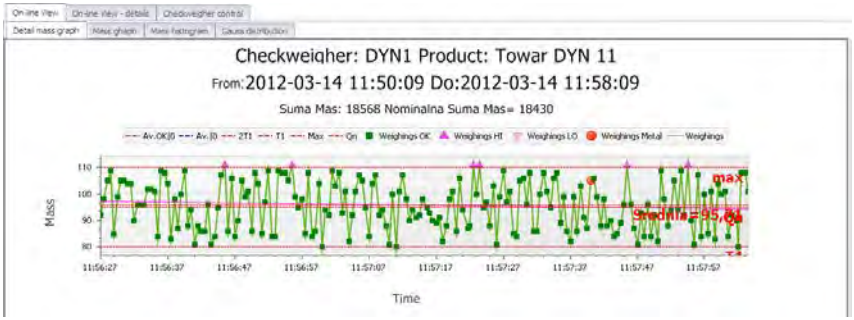
By pressing **<Print>** button you can access print settings and save graph.

8.4. Efficiency report.

9. Checkweigher Online

9.1. Online Preview

To run **Online Preview** window, press **Online Preview** button of the side toolbar.

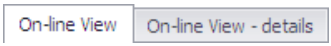


Operating this window enables online preview of weighings carried out on system-connected scales and analysis of measurements performed within specified time interval.

Select scale and specify how long the measurement is to be previewed (1 – 120 minutes). The window provides information on currently selected product.

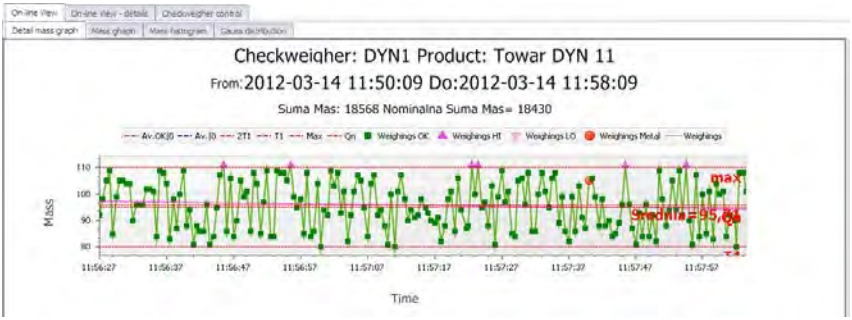
There are two preview types:

- On-line View
- On-line View - details

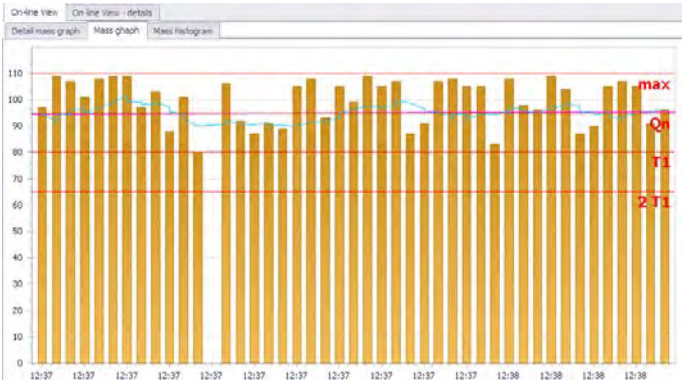


On-line preview enables you to watch particular scale in the course of operation. The measurements are previewed on the basis of:

- detailed mass graph
- mass graph
- mass bar graph



Detailed mass graph



Mass graph

On-line2 enbles you to analyse measurements of all scales at one time.
The analysis is based on bar charts and tables with the following data:
Quantity of all measurements
Quantity of measurements below LO threshold
Quantity of measurements above HI threshold
Quantity of measurements with metal contamination detected
Quantity of measurements per minute
Nominal mass of product Qn
Permissible minimum mass
Maximum measured mass
Average mass