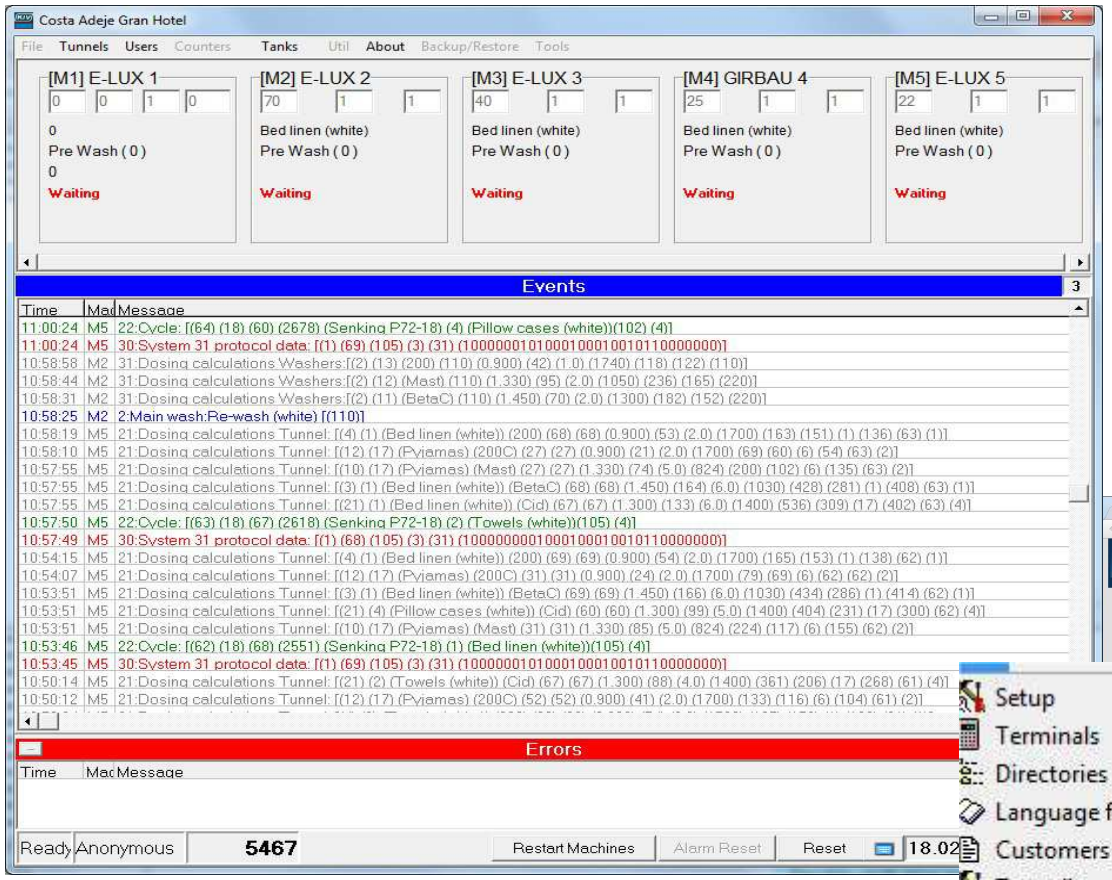
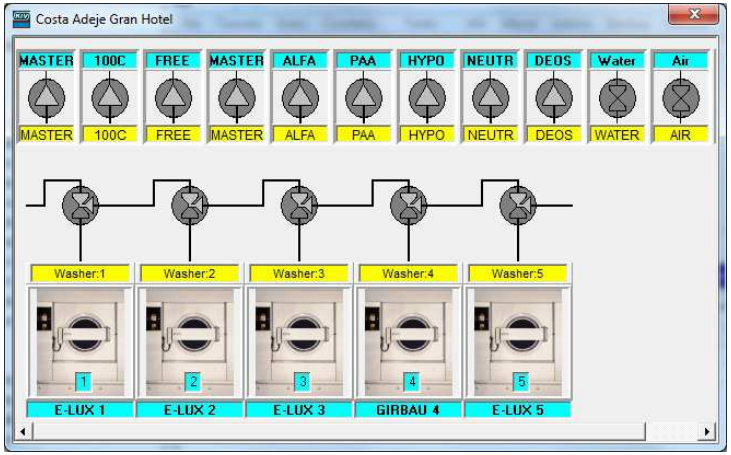
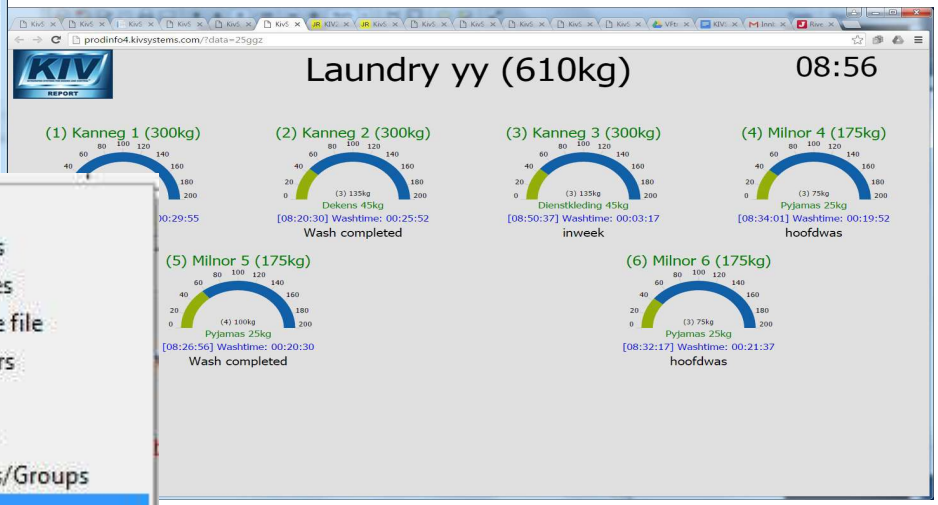
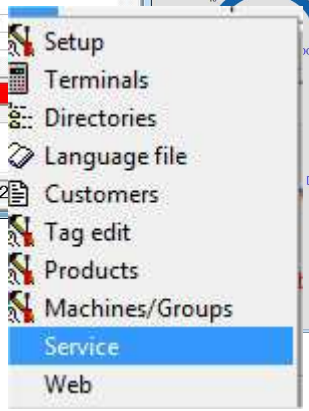
User manual KIV2: Software









Revision History

Date	Revision	Description
09.01.2015	A	Issued for comments.
18		

Table of Contents, main chapters.

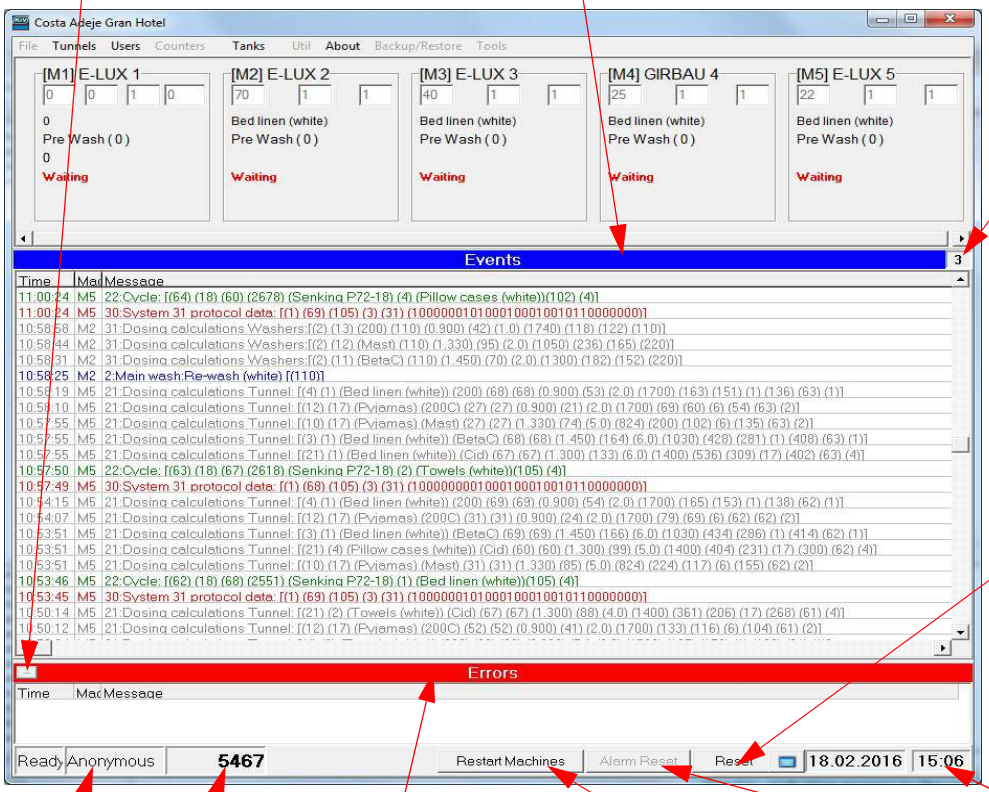
Index

Chapter 1: Software.

Basic Screen.

Trouble Setups.
Double click gives access to the sub menu. See “Alarm Definitions.” on page 161 (UM).

Event-Bar.
Double click gives access to the sub menu. See: “Event-Database” on page 6 (UM).



Info label.
Number off washers put into dosing queue

Reset
Button only visible when there is a Trouble message active.
See: “Alarm Definitions.” on page 161 (UM).

User Name (Current active).
See: “User Identification.” on

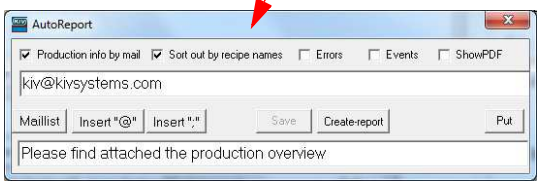
Kilo wash goods.
Also used as double click point to show hidden menus. Right mouse click to open menu for mail reports

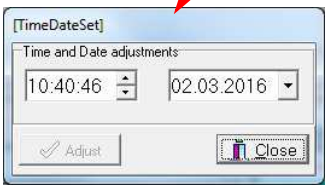
Error-Bar.
Double click gives access to the sub menu.
See page 7.

Reset Machines
Button only visible when stop machines are active, and the stop is activated by the software. Se page 113.

Alarm reset
Set audible alarm off if active.

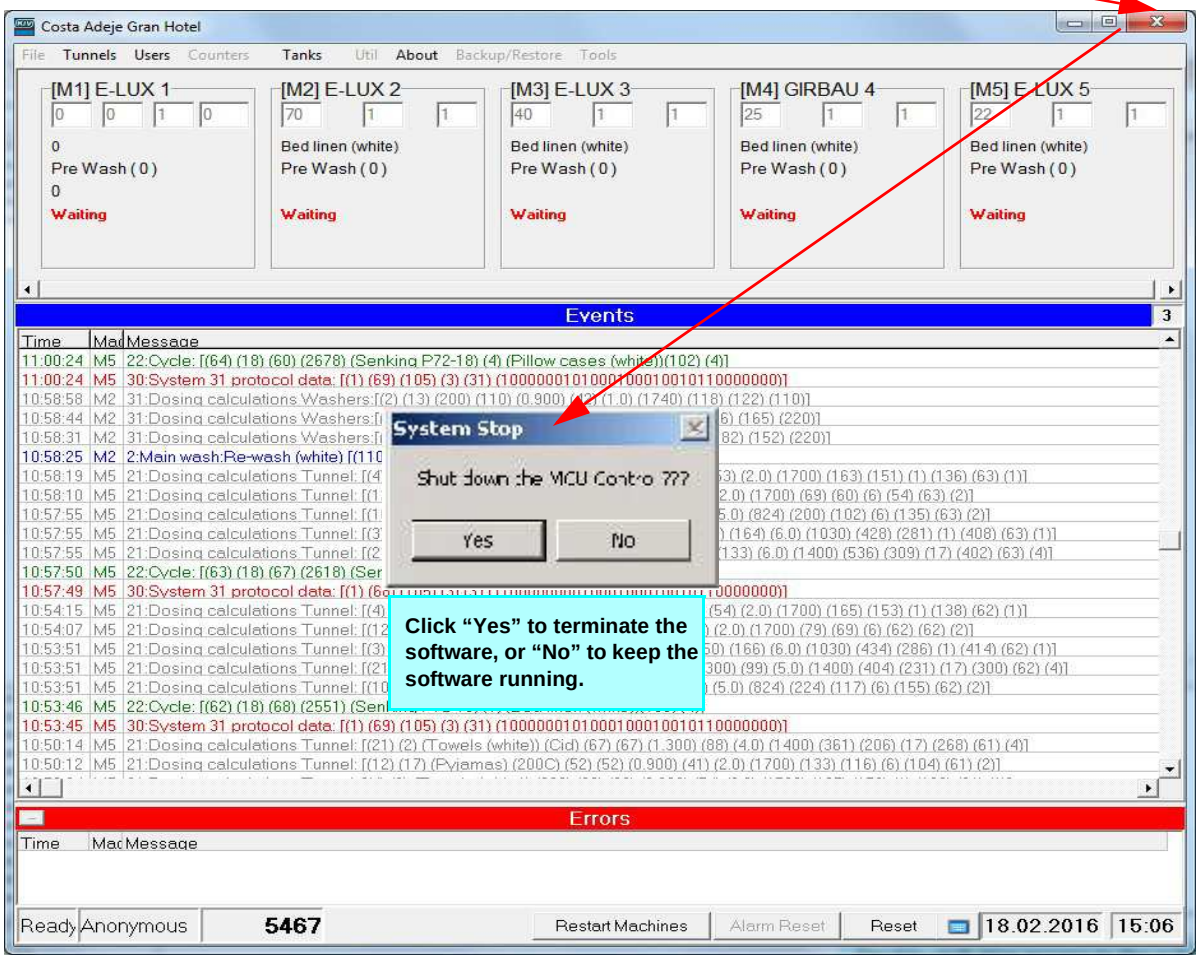
Date & Time
A mouse click to open menu for change of date time. Time zone adjustment done by control panel.





Stop of Software.

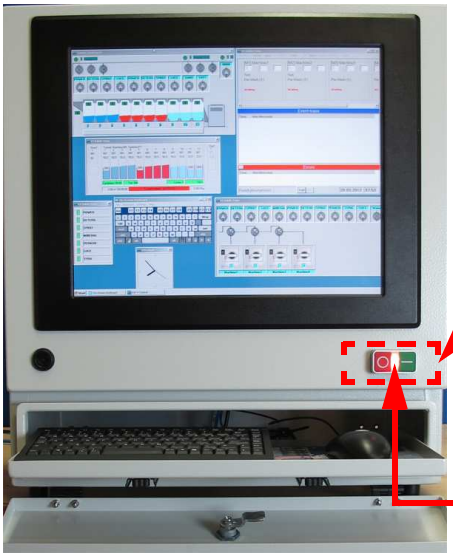
Mouse click on “Close” software icon, then a message box will appear.



If any dosings are active this message box will appear.

Restart software.

Restarting KIVControl or shutdown of the computer is controlled by the software kivkicker.exe. When KIVControl is terminated the menu below will appear. A click on the button <Shut down computer> will stop the computer, while a click on button <Start KIVControl> will restart the system. A mouse click on the button <More> will give access to a utility menu. See: “KIV-Kicker:” on page 183 (UM).

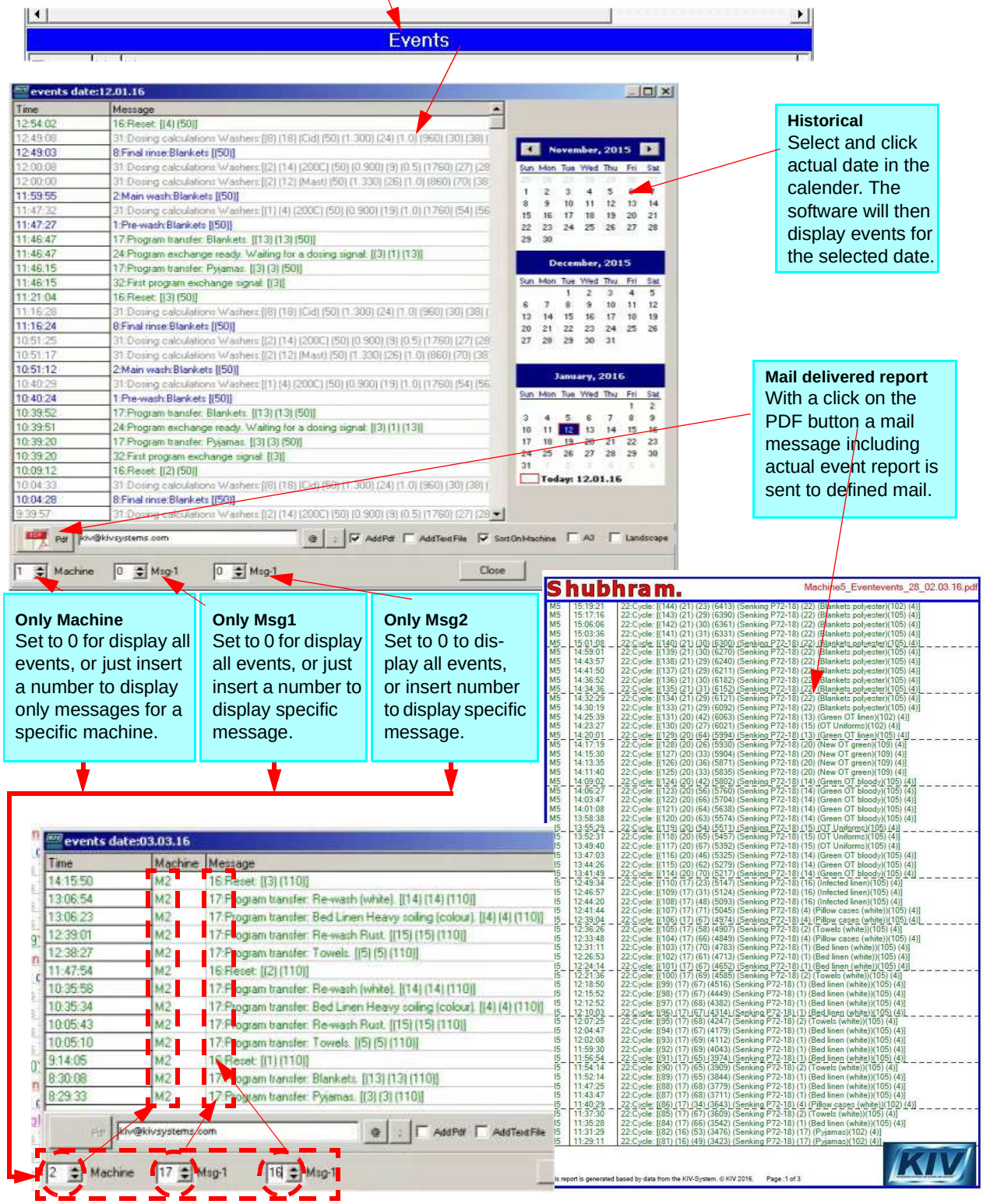


Start the system: Press the green button (switch) integrated in the computer cabinet.

Stop system: Press and hold (approximately 1 sec.) the red button, the computer will now automatically save all files and shut down KIVControl, and finally shut down OS. The shutdown process is indicated by a flashing light in the start/stop button.

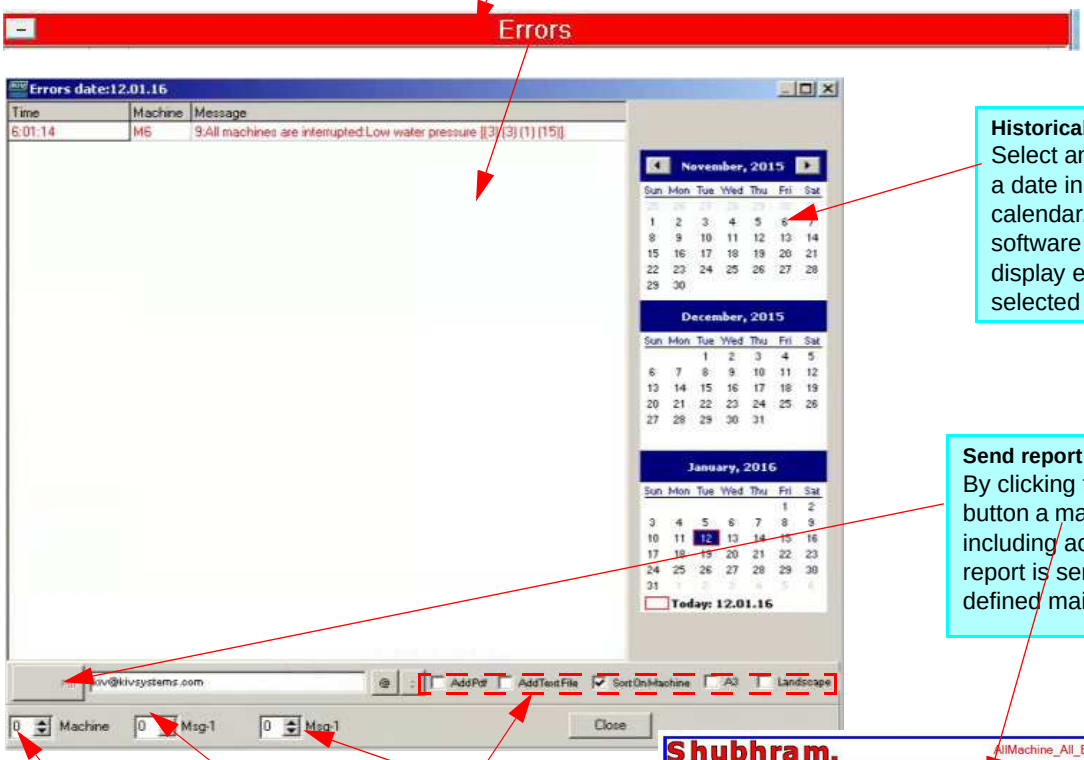
Event-Database

This picture below is found if you click the blue Event-base bar.



Errors

Menu below will appear if you click the red Error bar.



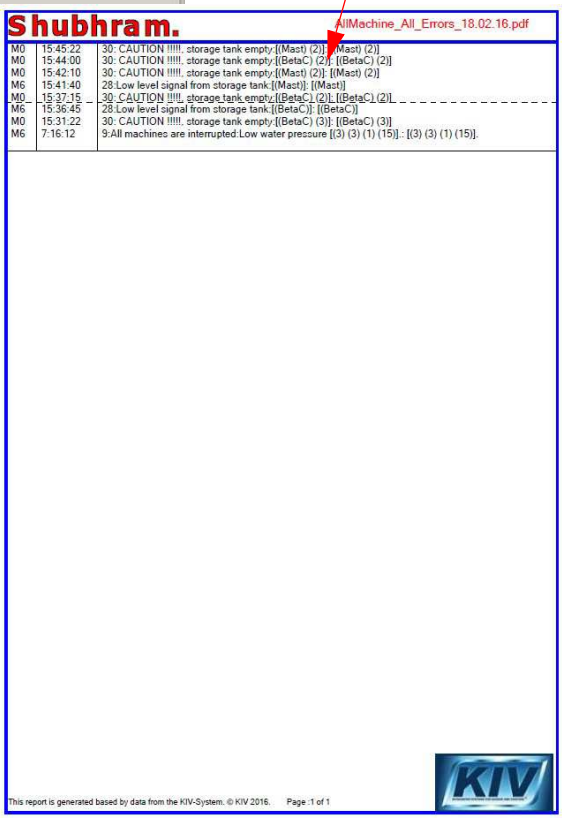
Historical
Select and click a date in the calendar. The software then will display events for selected date.

Send report
By clicking the PDF button a mail message including actual event report is sent to defined mail address.

Only Machine
Set to 0 to display all events, or insert a number to display messages for a specific machine.

Only Msg1
Set to 0 to display all events, or insert a number to display specific message.

Only Msg2
Set to 0 to display all events, or insert a number to display specific message.



Add Pdf, Checked will enable the PDF button for mail sending.

AddTextFile, will include the textfile in the mail

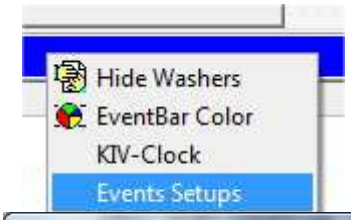
SortOnMachine, PDF report sorted by machine number, else the report is sorted by event time.

A3, Checked A3 paper size used for the PDF report.

LandScape, Checked paper orientation as landscape for PDF report.

Event / Error msg setup

Menu appear by right mouse click in events or errors menu.



All checked messages also available from software KIV-Report.

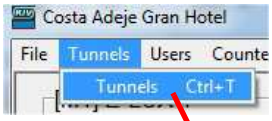
Right click Pop up menu to remove messages from the menu. Messages never in use will be removed to reduce number of messages in this menu.

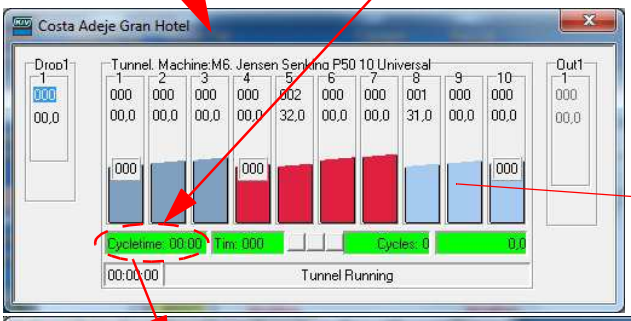
See next page

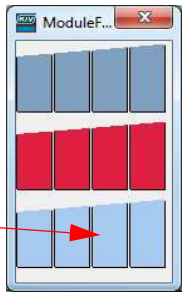
Pos	Descriptions
1	**Messages by SMS or and mail** Send SMS or mail by an event or error message> Select actual message (turn it blue), set check-box <Mail/SMS> checked, insert SMS number or/and mail address, see picture above
2	**Hide for NON admin** Select actual message (mark it blue), set check-box <Hide for NON Admin> checked. If this message occur, then only visible for logged on administrator.
3	Extra message string added to the standard message
4	Mail address, multiple mail addresses separated by a semicolon. Example: mail1@company.com;mail2@company.com;mail3@company.com

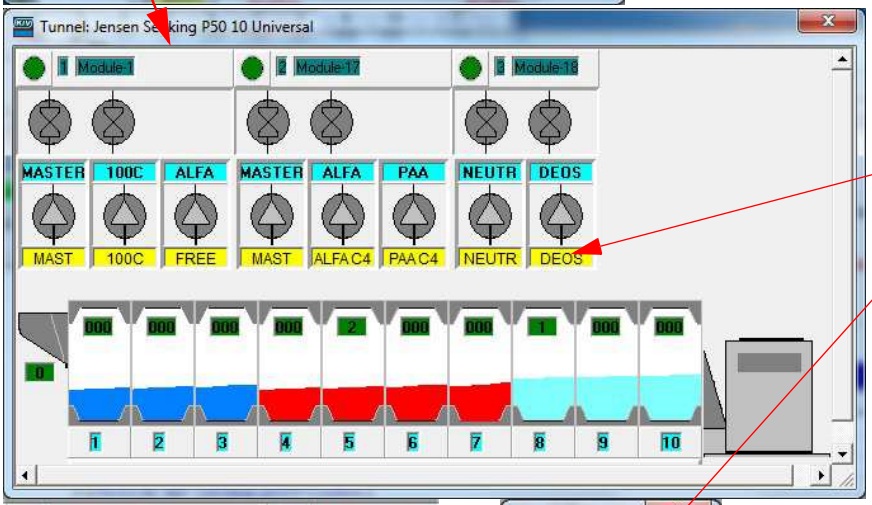
Tunnel pumps:

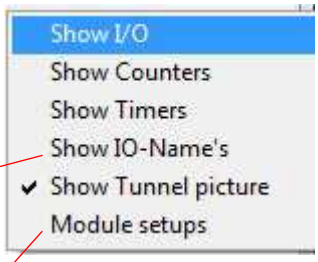
The tunnel image picture is opened by mouse clicking the label “Cycle timer” in the tunnels window. The image below is a graphic image of tunnel configuration; (dosing groups, output’s, I/O names etc.). Modification of I/O labels, run a pump, checking timer status and counter status are accessible by a mouse click, all i nformation in real-time. A mouse click on one of the modules open a menu to select module colors.



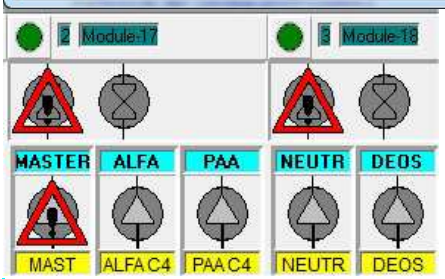




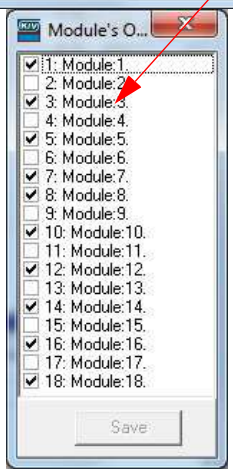




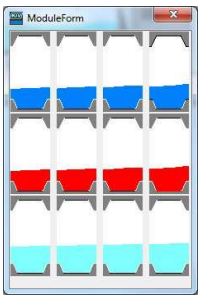
Popup menu (a right mouse click)
Set on/off visibilities by selecting items from this menu.



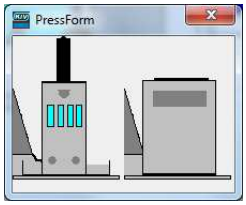
Double click on a pump or valve symbol will activate the output, when output active the symbol is set to a warning image.



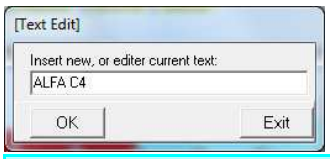
Uncheck to remove actual module.
May be used if the tunnel is very long and to reduce menu size on the screen, or just to fit the tunnels image and pump battery image.



A mouse click at one of the module images.
A module image menu will appear



A mouse click at press image.
A press image menu will appear



A mouse click in the I/O labels (Yellow colored) open this menu.
Used for modifying of the I/O names.

Washers pumps menu:

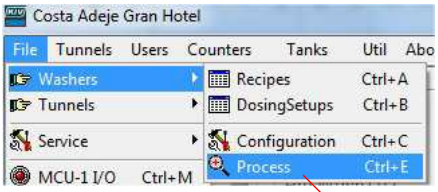
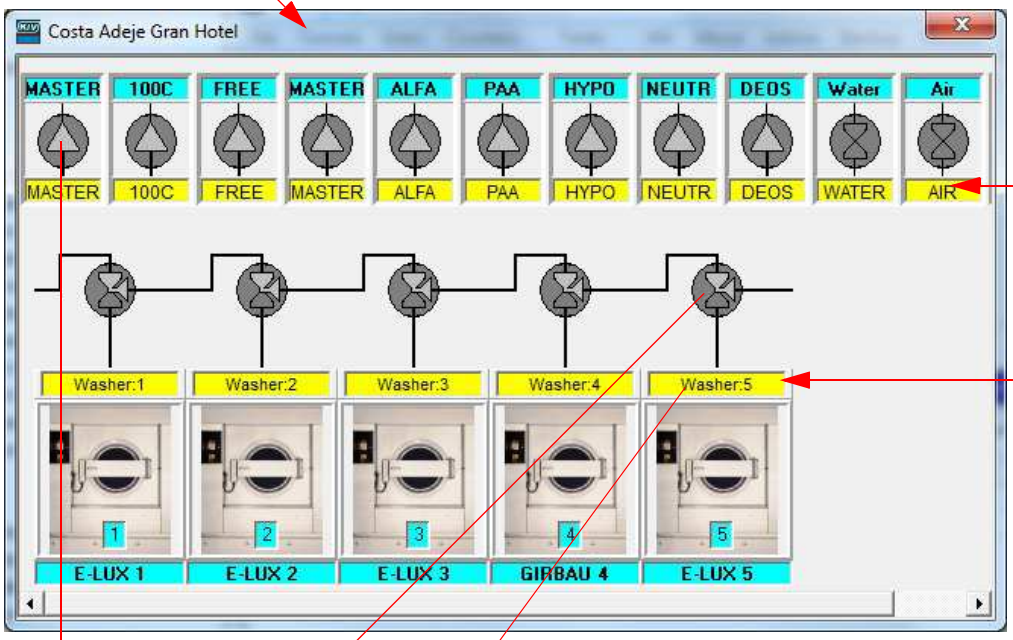
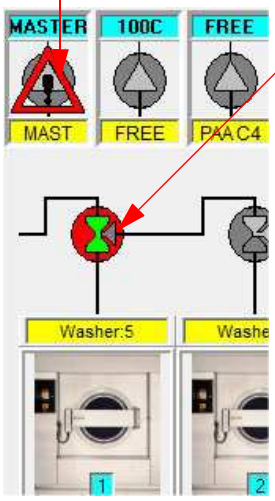
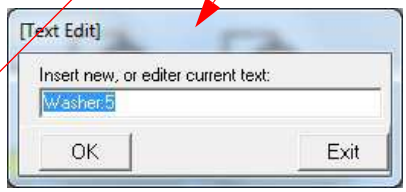


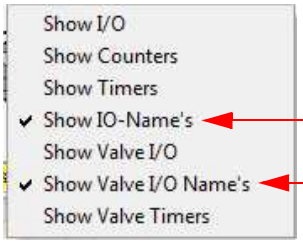
Image below is a graphic image of the system configuration; (dosing groups, para groups, output's, I/O names etc.). Modification of I/O names, starting pumps, checking timer status and counter status are accessible by mouse click or right click menu. All information in real-time.







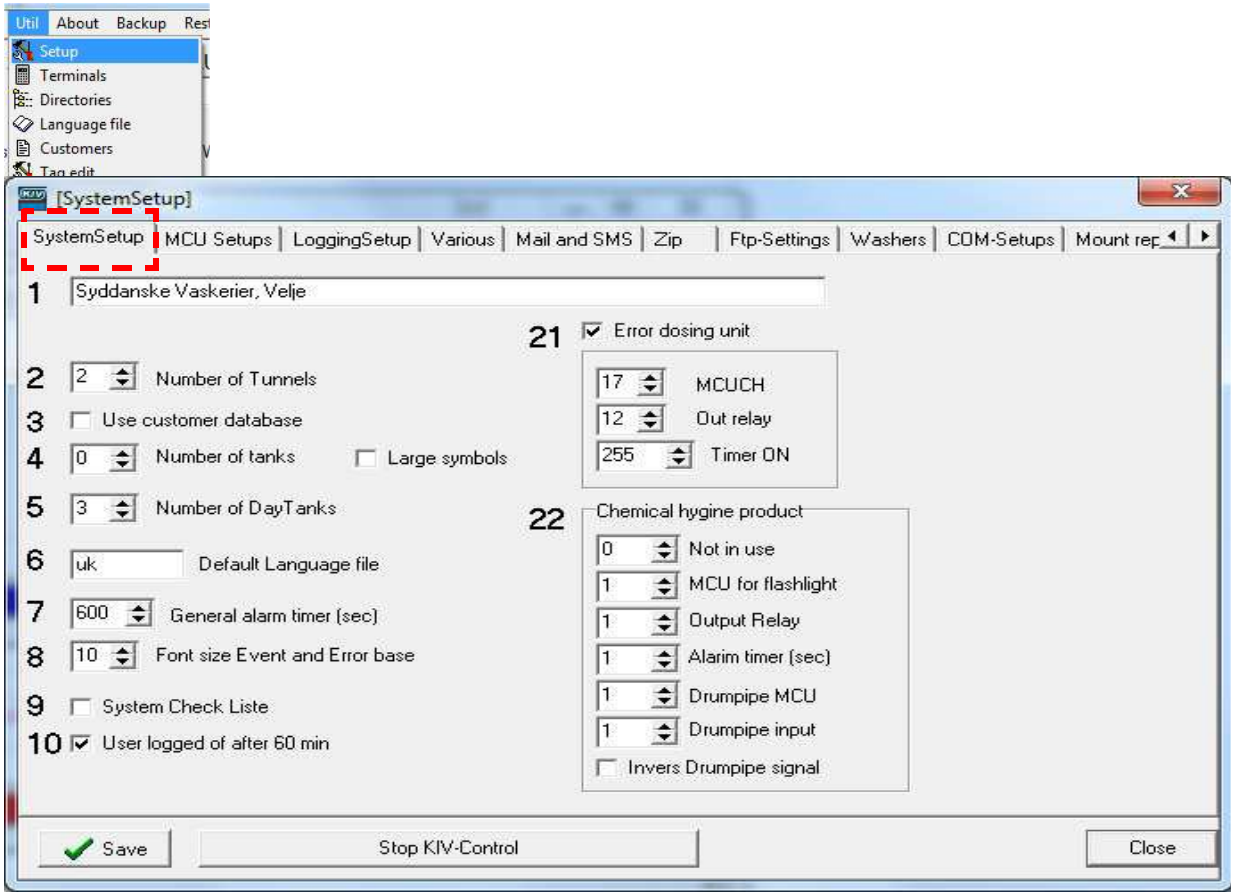
A mouse click on of off the I/O labels (Yellow colored) open this menu. Used for modifying of the I/O names.



Popup menu (a right mouse click)
Set on/off visibilities by selecting items from this menu.

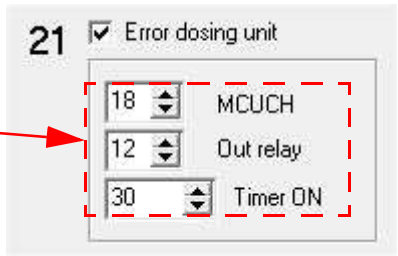
Chapter 2: KIV System config.

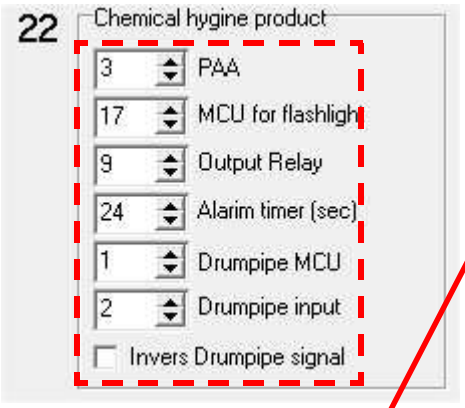
Setup:



Pos	Descriptions
1	**Laundry Name:** Name of the laundry.
2	**Number of tunnels:** The number of tunnel washers. Max 8.
3	**Customer database:** Checked to activate customers for Tunnel and Washers. See: “Customers” on page 31.
4	**Number of storage tanks:** Number of product tanks. (Large or small product storage tanks with analogue or digital levels signals). See: “Product storage:” on page 174.

Pos	Descriptions
5	**Number of day tanks:** Number of Day tanks that are refilled from huge storage bulk tanks. See: “Day tanks:” on page 179
6	**Language file:** Short name of the default language file. Files found in the catalog for language files. See Chapter 4 “Project File Structure.” on page 44. To affect changing in the default language file (New country), the program has to be re-started. The system will create a new file if actual file does not exist. How to translate is described in Chapter 3 “Language Translation.” on page 38
7	**General Alarm:** Number of seconds before the general audible alarm is forced to OFF.
8	**Font size:** Font size of the event or error texts.
9	**System check list:** Checked will give access to <Service> from menu <Util>. See: “Service:” on page 34.
10	**User logoff:** Number of seconds of inactivity before current user will be forced out.

Pos	Descriptions
21	**Error dosing unit:** External audible alarm is an output that is activated by dosing error or general defined alarms. Checked= Active. **Need to be defined:** MCU for the output signal". Output relay. Number of second the output stay active.  EDU product setup for wash extractors and tunnel washers found in col 5 in the property grid. For tunnels see: Chapter 11 "EDU:" on page 105. For Washers see: Chapter 8 "EDU:" on page 78. For general alarms see: Chapter 17 "EDU (Error Dosing Unit):" on page 165. Product / W.T / A.T / P.W / D.Fail% / EDU 1 / 2 / 3 / 4 / 5 1:MASTER (3) 10 10 3 400 2:MAST (4) 3 250 3:100CC (5) 3 250 4:ALFA (10) 3 250 5:MAST (11) 3 250 6:100CC (12) 10 10 3 250 7:PAA (16) 10 10 3 250 ☑ 8:NEUTR (21) 3 400 9:DEOS (22) 3 250 10:FREE (24) 10 250
22	**Chemical hygiene control:** Chemical dosing control, the software are able to put a washer that receive less than the calculated amount off a product on hold, then followed by a operator action continue to dose remaining product quantity to actual washer. **Need to be defined:** -Product number to control as PAA in this example. -MCU number for blitz warning light -Output relay number for the blitz light. The KIV blitz light needs 2 signals, one for audible alarm and one for the flash light itself. Wire audible signal to the value specified, the following output number used as the flash light signal. -Audible alarm off timer (sec). -Off timer for blitz light equal to 2 x audible alarm off timer. -Suction pipe float signal MCU. -Suction pipe float input signal. -Inverse Drum pipe signal; Checked only if NC signal when out of product.



Setup chemical dosing control using 3 menus.

In Tunnel program menu, insert column 11, as shown in picture below. See :“Tunnel program.” on page 98.

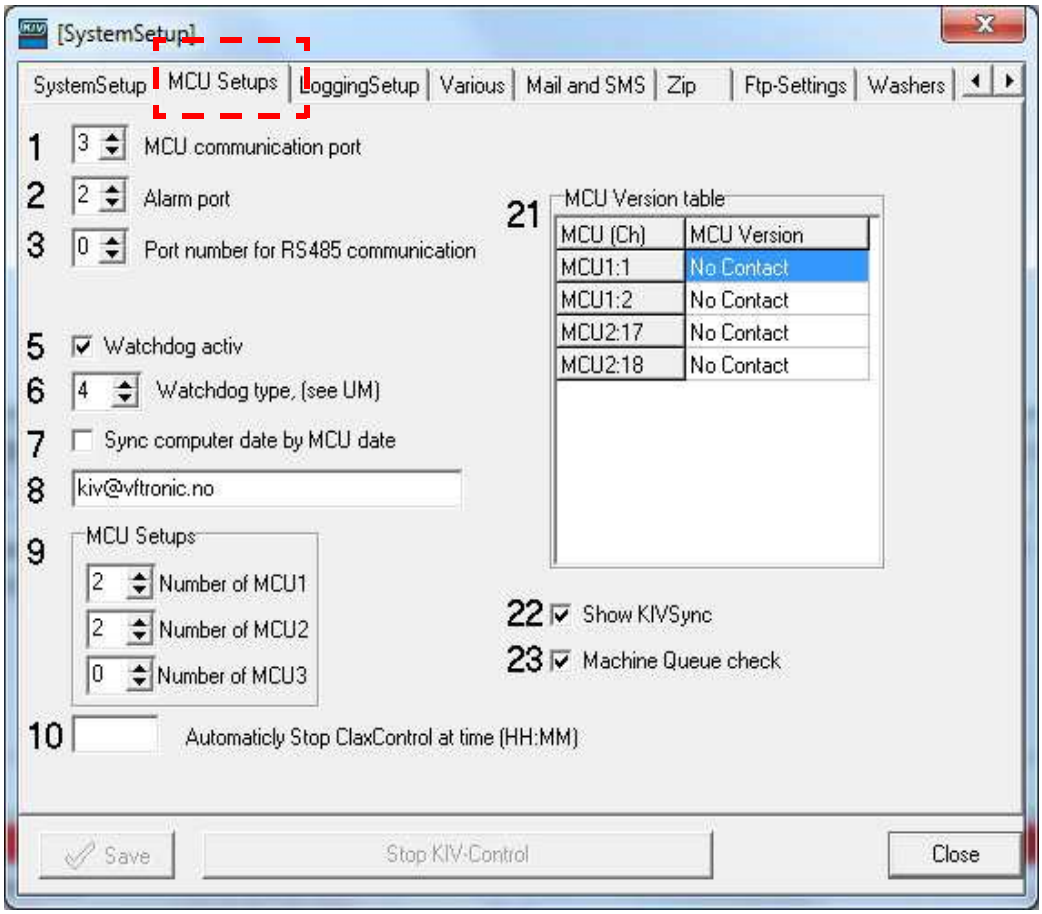
Insert % result and number of errors
See page :“Properties products tunnels.” on page 104.

Low%	Errors	MaxErr
30	31	32
75	0	3
75	0	3
75	0	3
75	0	3
75	0	3
75	0	3
99	0	1
75	0	3
75	0	3
75	0	3

Prg	Classification	Kilo Drop	Chemi Control
0	00:		☐
1	01:D	72	☐
2	02:Towels (white)	60	☐
3	03:Doctors uniforms (white)	50	☑
4	04:Pillow cases (white)	72	☐
5	05:Geriatric (white)	72	☐
6	06:Table linen (white)	72	☐
7	07:Re-wash bed linen (white)	60	☐
8	08:Re-wash towels (white)	72	☐
9	09:New linen (white)	60	☐
10	10:New towels (white)	72	☐
11	11:Bed linen (colour)	60	☐
	12:Towels (colour)	72	☐
	13:Green OT linen	72	☑
	14:Green OT bloody	55	☑
	15:OT Uniforms	72	☐
	16:Infected linen	72	☐
	17:Pyjamas	72	☐
	18:	72	☐
	19:Re-wash green	72	☐

MCU Setup:

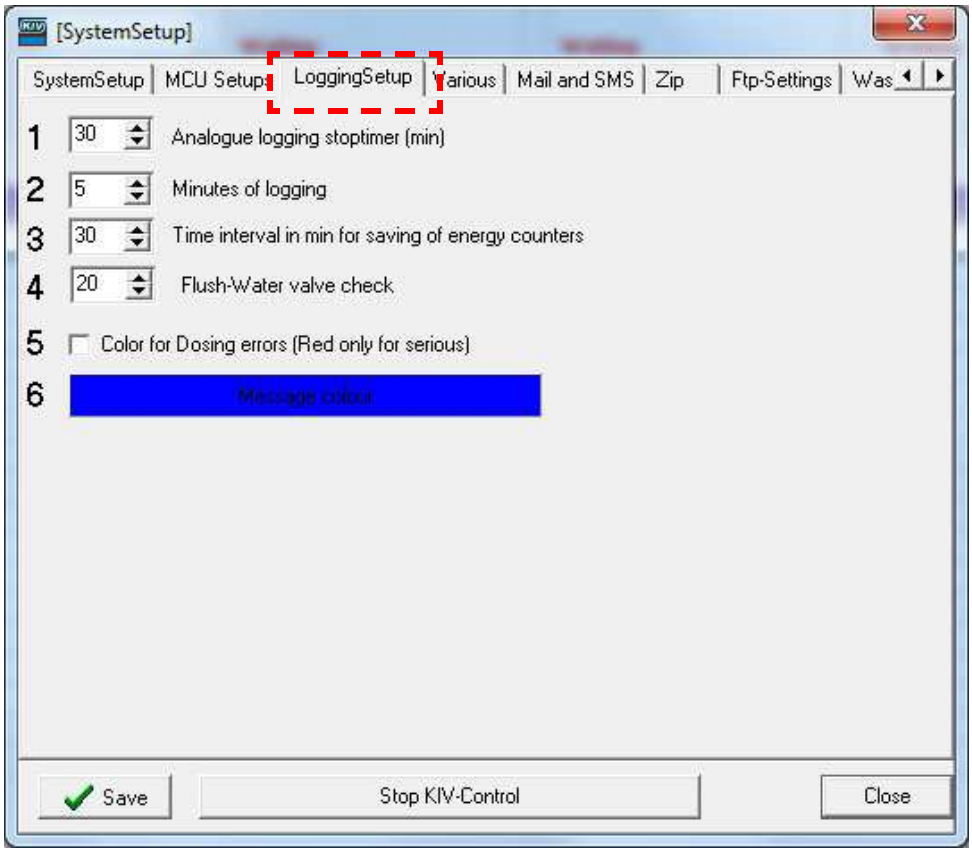
Pos	Descriptions
1	**Communication port:** RS232 port used for communication to the MCU cards. Default value 3.
2	**Alarm port:** RS232 port used to communicate with the computer control card (CCC). If executing software on a NON KIVController (Laptop etc.) set this variable to 0. Default value 1.
3	**DMIS port:** COM port used for RS485 protocol. See: “Washer type:” on page 43 (UM)



Pos	Descriptions
5	**Watchdog:** The purpose of watchdog is continuously checking that software is running well. If the software stop the CCC card will reboot computer. Default value 4. Read more about Computer and CCC in the hardware UM.
6	**Watchdog types:** 0=Discativated 1=Evalue cards. 2=New type of Evalue cards. 3=UNO Computer mark1. 4=CCC (default value)
7	**Date sync:** Sync computer date by CCC microprocessors date.
8	**Date sync mail address:** Mail warning message delivery address for date sync.
9	**Number of MCU1:** Number of MCU1,2 and 3 cards used by actual the system.

Pos	Descriptions
10	**Stop KIVControl at time:** If yo want to automatically shut down the KIV-system on a timer, insert the time of shut-down in format (HH:)). At this time the KIVControl computer will terminate automatically and execute a system shut down.
21	**MCU version table:** Overview of active MCU's and it's firmware date version.
23	**Un hide KIVSync:** If checked the KIVSync software will be appear visible when KIVControl startup, See UM KIV Hardware for more info. The software KIVSync will be automatically started and then hided by the software KIV-Control, the purpose of KIVSync is to maintain files used by KIVReport, if a twin computer system in use this software will synchronize INI files and production files from the master computer to slave computer.
23	**Machine queue check:** If checked, any washer that stay active more than 900 sec. (fixed value) will be forced out of the dosing queue and machine hold signal released.

Logging Setups:

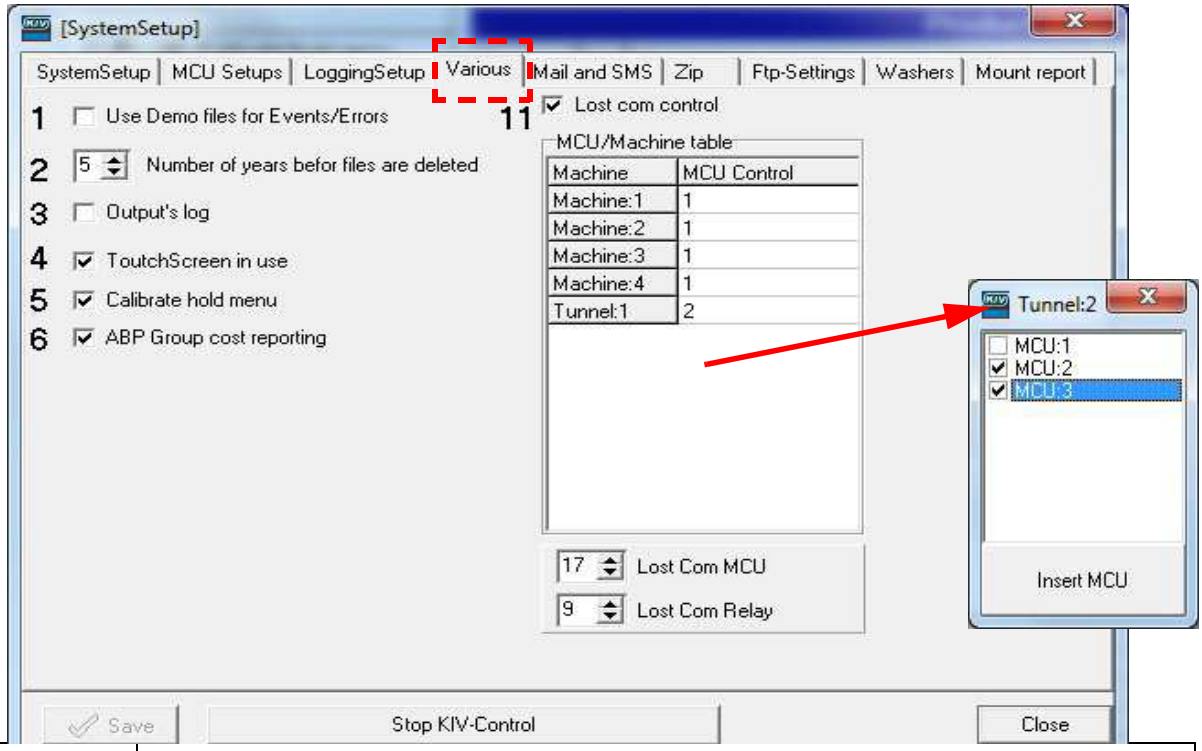


Pos	Descriptions
1	**Analogue logging stop timer:** Number of minutes the analogue logging will stay active (for washers) after one of the input signals (dosing signals) are executed. If no new signals are executed within this timer, the logging is terminated. This function will prevent logging of analogue “dummy” values during late evenings, holidays etc. See also “Setup and calibrate analog inputs.” on page 169.

Pos	Descriptions
2	**Logging minutes:** Minutes of sampling to analogue I/O menus before the logging is stopped. (Only to prevent logging if the user forgets to close the analogue window). See:“Graph menu:” on page 137.
3	**Energy Timer:** Interval in Minutes for sampling data from energy counters to the real-time log file.
4	**Flush Check:** Water check pulses, set to 0 will deactivate this function. When final water and final air flush are completed, the system reads pulses from counter to verify that no more pulses are counted at this moment (if water valve is closed). If number of pulses found exceed this variable there is a water leakage in the solenoid valve caused by a mechanical fault.
6	**Message color:** Color of event message for non-serious dosing results.

Various setups:

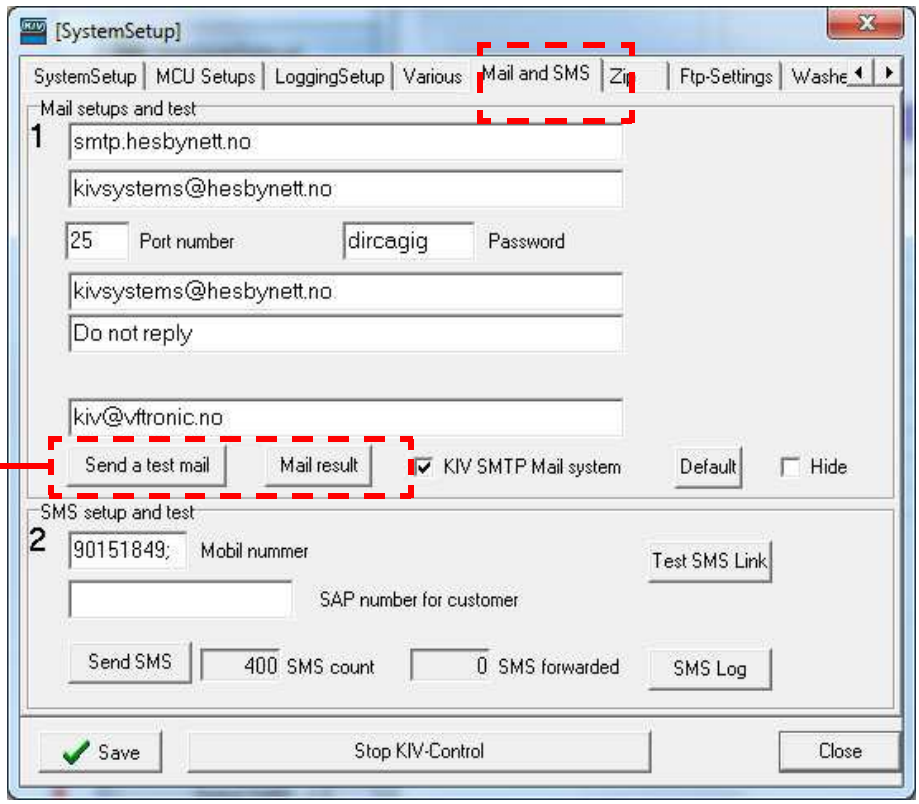
Pos	Descriptions
1	**Use Demo files:** Set to On, only if KIVControl run in demo-mode.
2	**Delete Old files:** Delete files older than. Files older than this value (years), will be deleted by the system when current year-”value” is exceeded. Purpose: clean disk for old files. Default value 5 years.
3	**Output’s Log:** Log file with outputs, when setting ON or OFF Only for fixed outputs, (Dosing valves, Stop washers etc.). Name off the file: “\errordir\”OutPutLogyyyymm.Txt”.
4	**Touch screen in use:** Checked only if touch screen for KIV computer is in use.
5	**Calibrate hold menu:** For tunnel washers only. When checked it’s possible to put dosing groups on hold Purpose: To avoid executing a dosing group while calibrating a product. Handy if tunnel only needs to run continuous. See:“Stop a group:” on page 90.
6	**ABP cost setup:** Used for report of washed kilo each chemical cost group. See:“ABP SETUP” on page 37.



Pos	Descriptions
11	**Lost Communication control:** In case off a MCU1 breakdown, it is possible to activate stop outputs for actual machine (s). To do that insert or select by the right click menu; which washing machine belong to which MCU1. If a machine use more than one MCU1 card, MCU1 values are separated by a decimal point. See settings above. **Need to be defined:** -MCU number for error signal. -Relay output for error signal This relay will be set to on by the software when it start. If there is a serious failure for one of the MCU's in the network this output is forced off. The function is activated by selecting a output relay > 5, for the actual MCU.

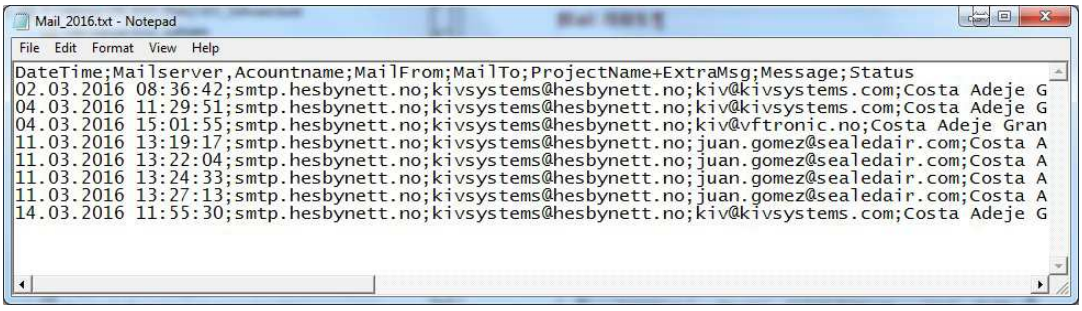
Mail /SMS:

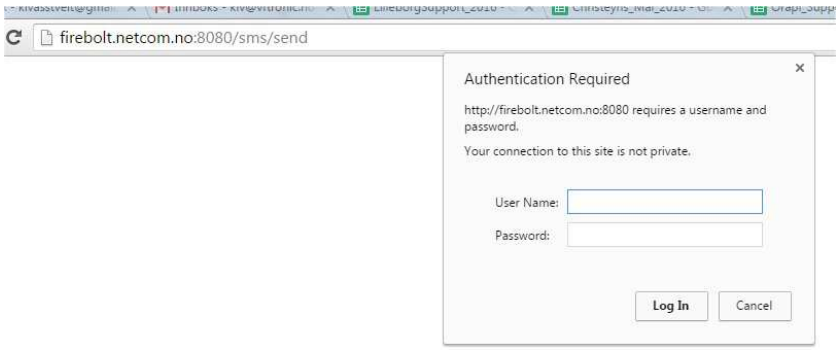
Pos	Descriptions
1	**Server-name:** SMTP name for the server that run a post office. **Need to be defined:** -Mails server name. -Account name. -Port number. -Password. -Mail from name -Additional text added after project name -Test mail address. **Buttons:** <Send a test mail>, will forward test mail to the defined mail address. <Mail result>, result log file for the mail system. **Check boxes:** <KIV SMTP mail system>, checked for take use of default mail system. <Hide>, checked the mail software will be hidden after start up (Default)



To check that mail is properly sent click button <Send a test mail>, Check mail results by a click on button <Mail Result>

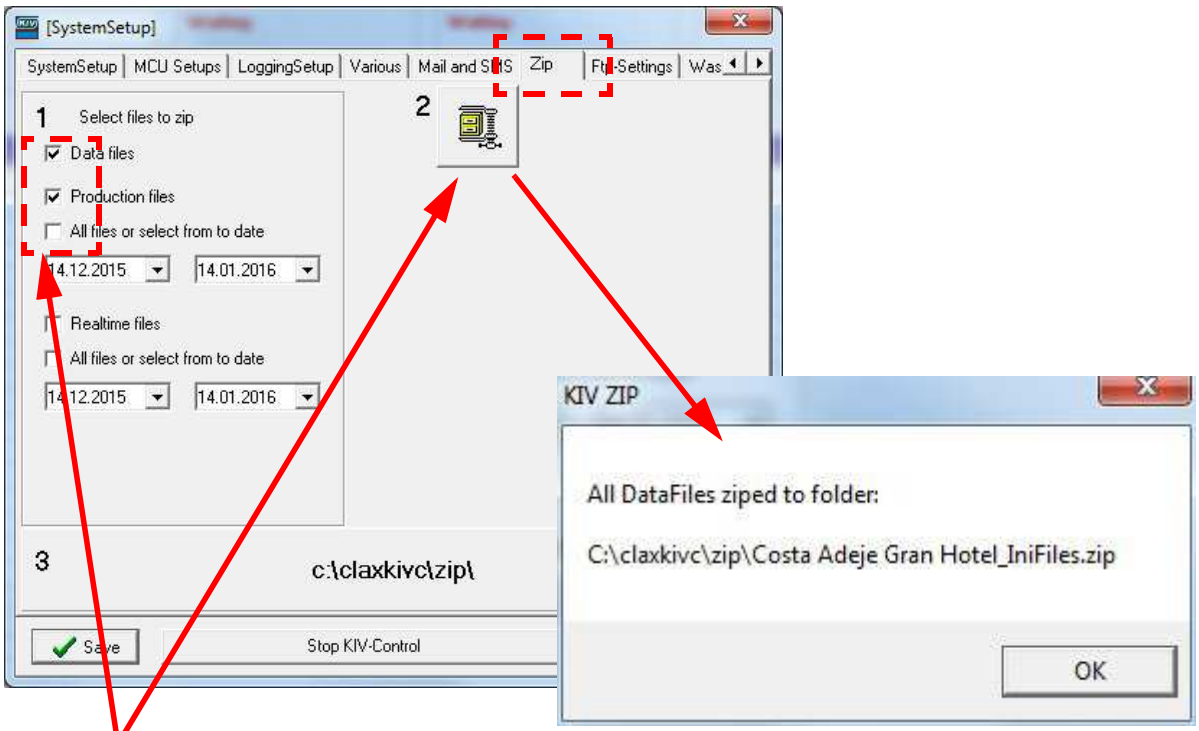
14.03.2016 11:55:30;smtp.hesbynett.no;kivsystems@hesbynett.no;kiv@kiv-systems.com;Costa Adeje Gran Hotel Do not reply;Test message from KIV-System;;Successfully



Pos	Descriptions
2	**Need to be defined:** -phone number -SAP customer number from Lilleborg SAP system **Buttons:** <Send SMS>, Button which will send a test SMS to a defined phone number. <SMS log>, Log file for all sent SMS messages. <Test SMS Link>, This button will test connection to internet. Read the given instructions when this button is pressed. 

Zip menu:

Ftp menu:



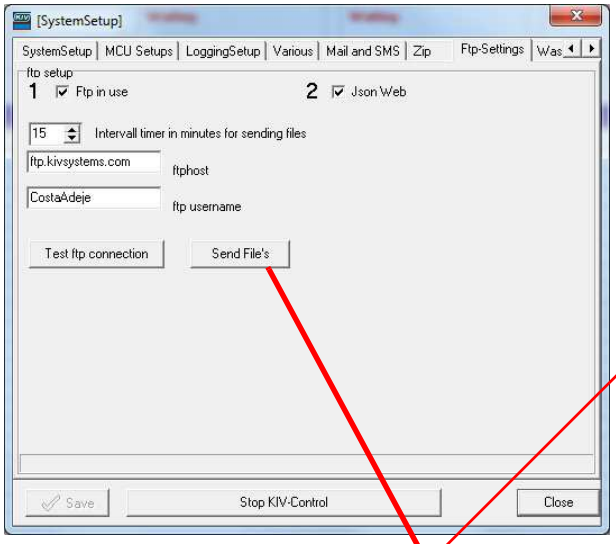
Select which files to ZIP

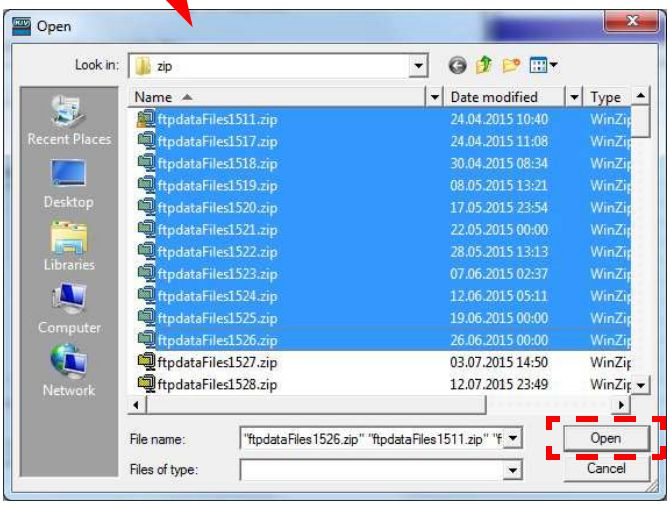
-Datafiles
-Production files
-Realtime files
-Select all files or specify date range

Info about catalogue and filenames shown when active.

JSon web:

Data exchange for washers:





Pos:1 <FTP in use>, checked to activate the FTP client.

Interval (number of sec.) for updating of the FTP server default value 15 minutes.

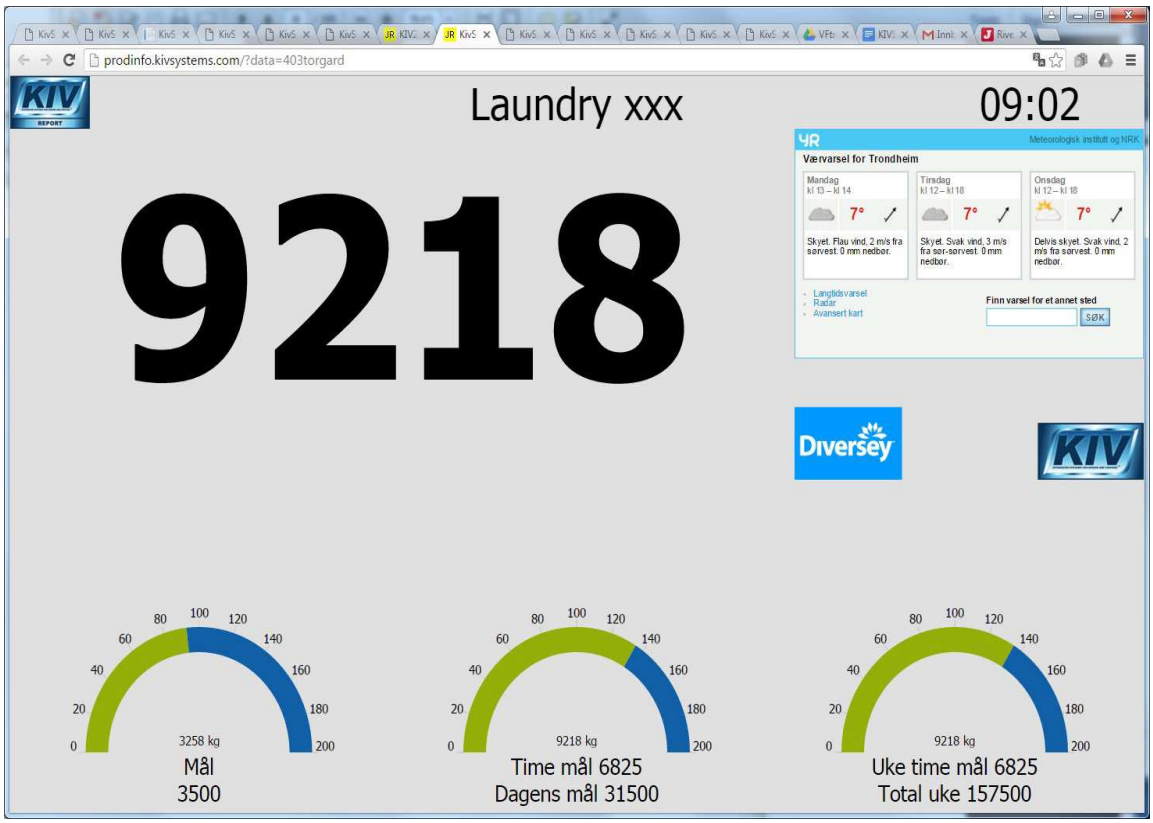
Ftp host name.

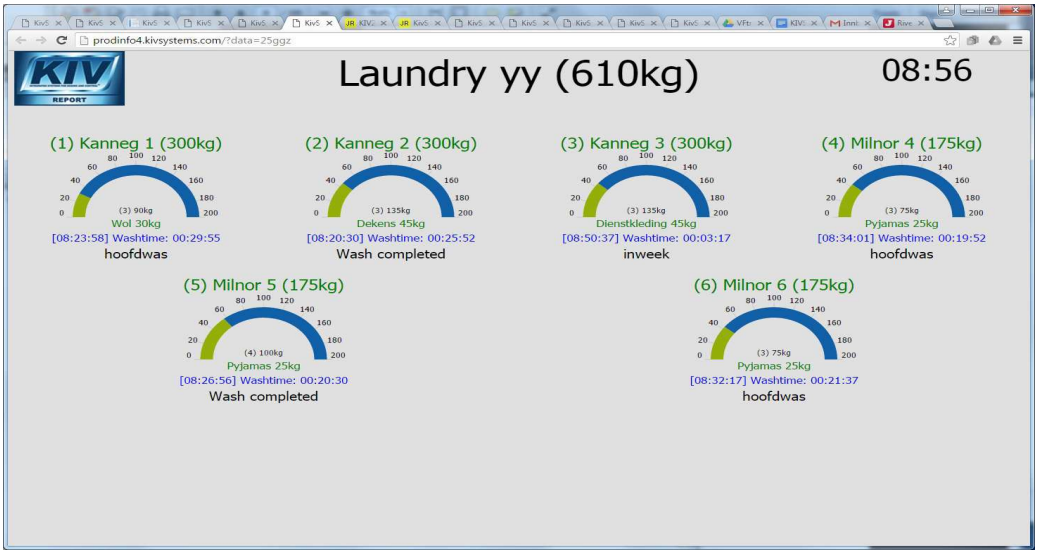
Ftp user name.

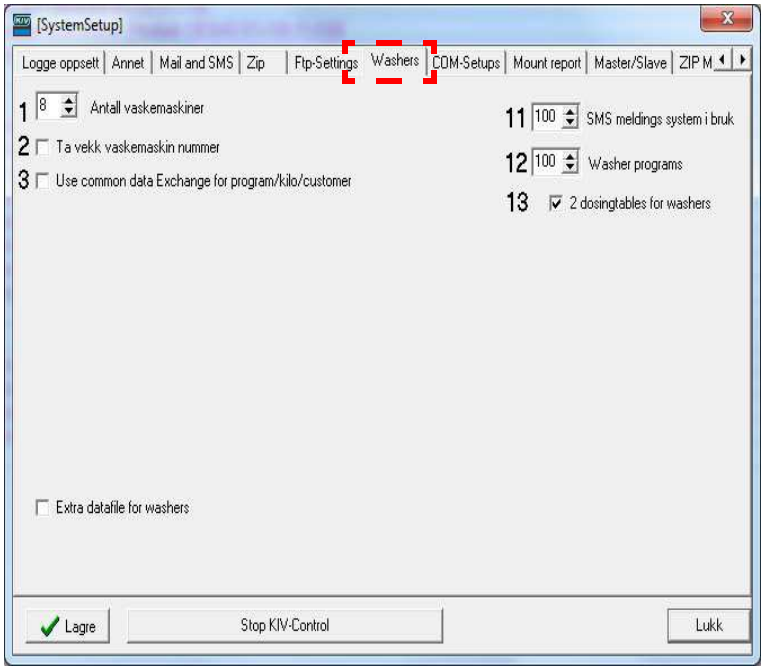
Buttons:
<Test FTP connections>, click on this button will execute a FTP logon, if successful a message box as below appear

<Send files>, click on this button and a file selection menu appear. From this menu it is possible to select and send zipped productions files. Handy if there are missing production files for the actual system in the FTP server.

Pos 2: Checking this will give access to a submenu <Web> from menu <Util> for setup of internet information url links as examples below.
See: “Web setup:” on page 35.







Pos: 1
Number of wash extractors.

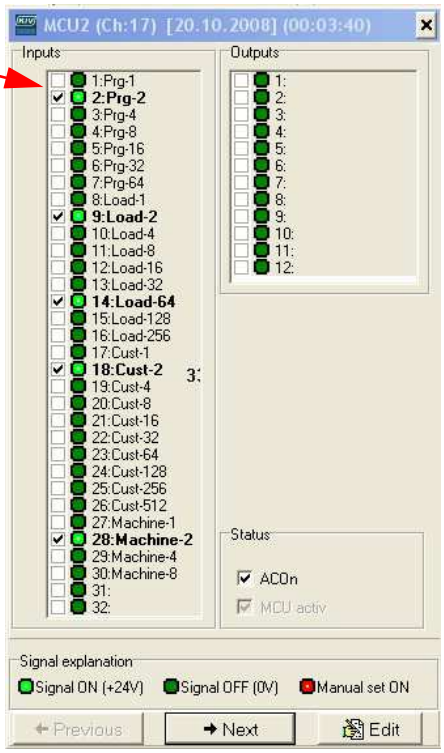
Pos: 2
Checked will remove washer number label in front of the washer name.

Pos: 3
Checked to activate reading of program number, kilo and customer for all washers by one MCU.

Pos: 11
Number of dosing recipes for washers (max 127).

Pos: 12
Number of machine program for washers (max 127).

Pos: 13
Extra dosing tables for washers, if checked an extra dosing table for washers will be used.

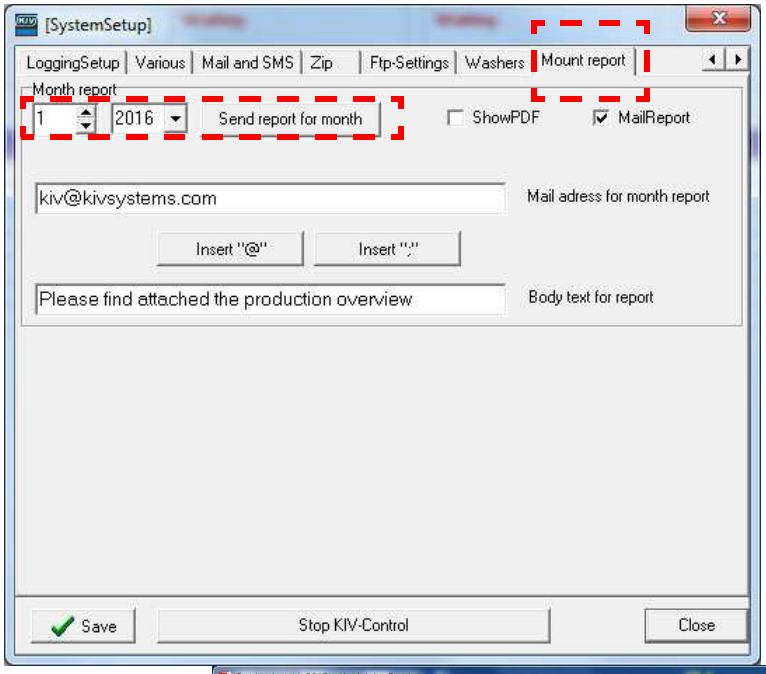


MCU ch where data is given by the PLC system.

Check box <Values as BCD>, Set to on for BCD values (1,2,4,8,10,20) else binary values (1,2,4,8,16).

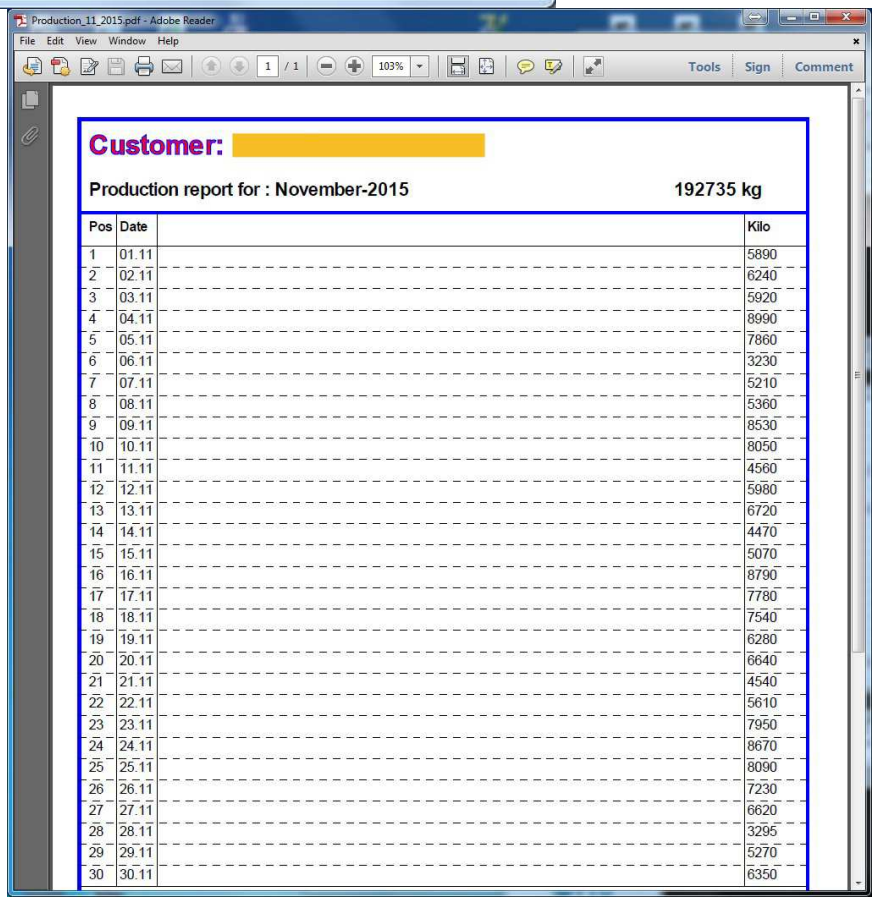
Event	Bits	I/O input
Program	8	0..7
Kilo	9	8..16
Customer	10	17..26
Machine	4	27..30

Mount report by mail:



Select actual mount and year, then click button <Send report for mount>. PDF file as pictured below will then be transmitted to defined mail address.

When check box <ShowPDF> checked the PDF is shown on local computer. Check box is only visible if a local installation of PDF viewer is located.



Production_11_2015.pdf - Adobe Reader

File Edit View Window Help

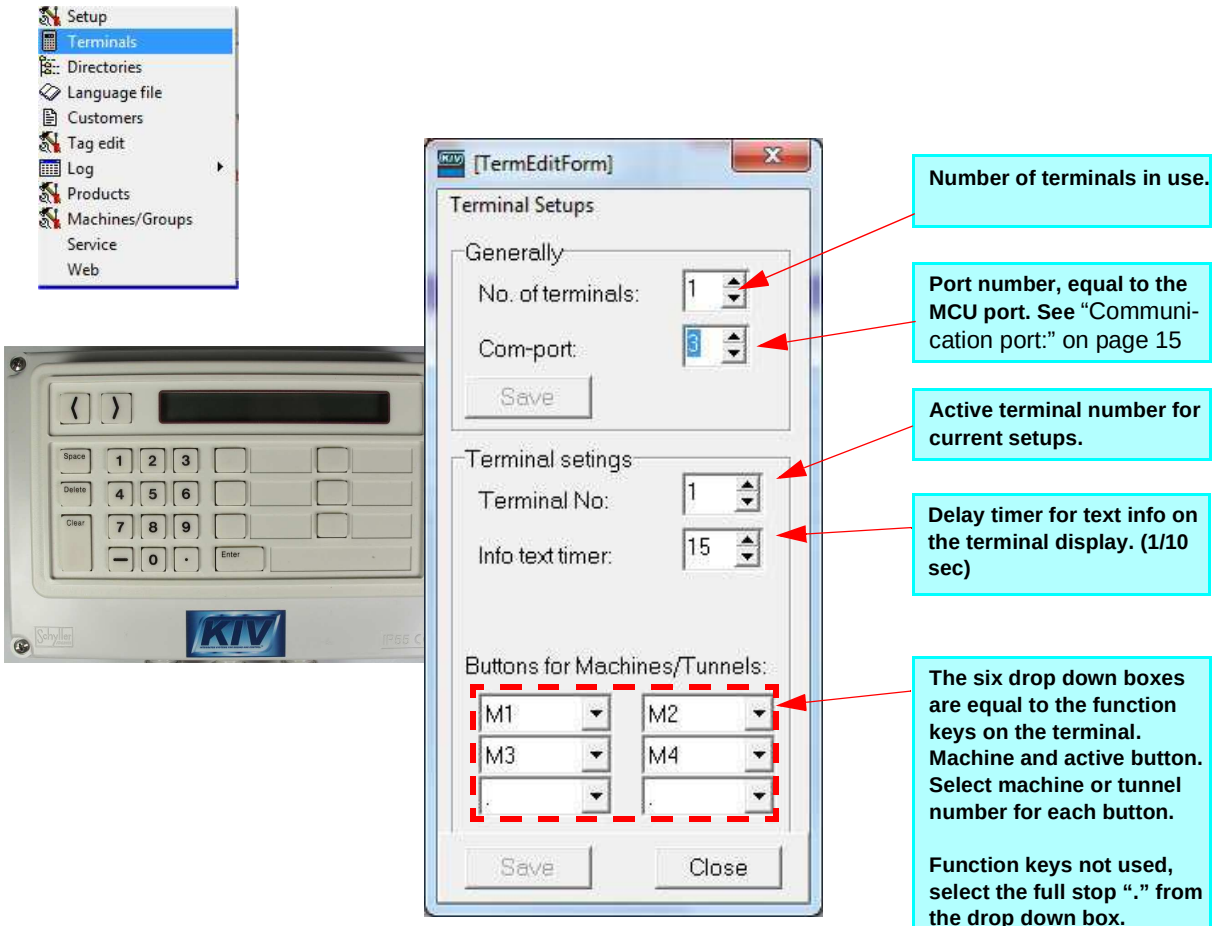
Tools Sign Comment

Customer:

Production report for : November-2015 **192735 kg**

Pos	Date		Kilo
1	01.11		5890
2	02.11		6240
3	03.11		5920
4	04.11		8990
5	05.11		7860
6	06.11		3230
7	07.11		5210
8	08.11		5360
9	09.11		8530
10	10.11		8050
11	11.11		4560
12	12.11		5980
13	13.11		6720
14	14.11		4470
15	15.11		5070
16	16.11		8790
17	17.11		7780
18	18.11		7540
19	19.11		6280
20	20.11		6640
21	21.11		4540
22	22.11		5610
23	23.11		7950
24	24.11		8670
25	25.11		8090
26	26.11		7230
27	27.11		6620
28	28.11		3295
29	29.11		5270
30	30.11		6350

Terminal-setups:

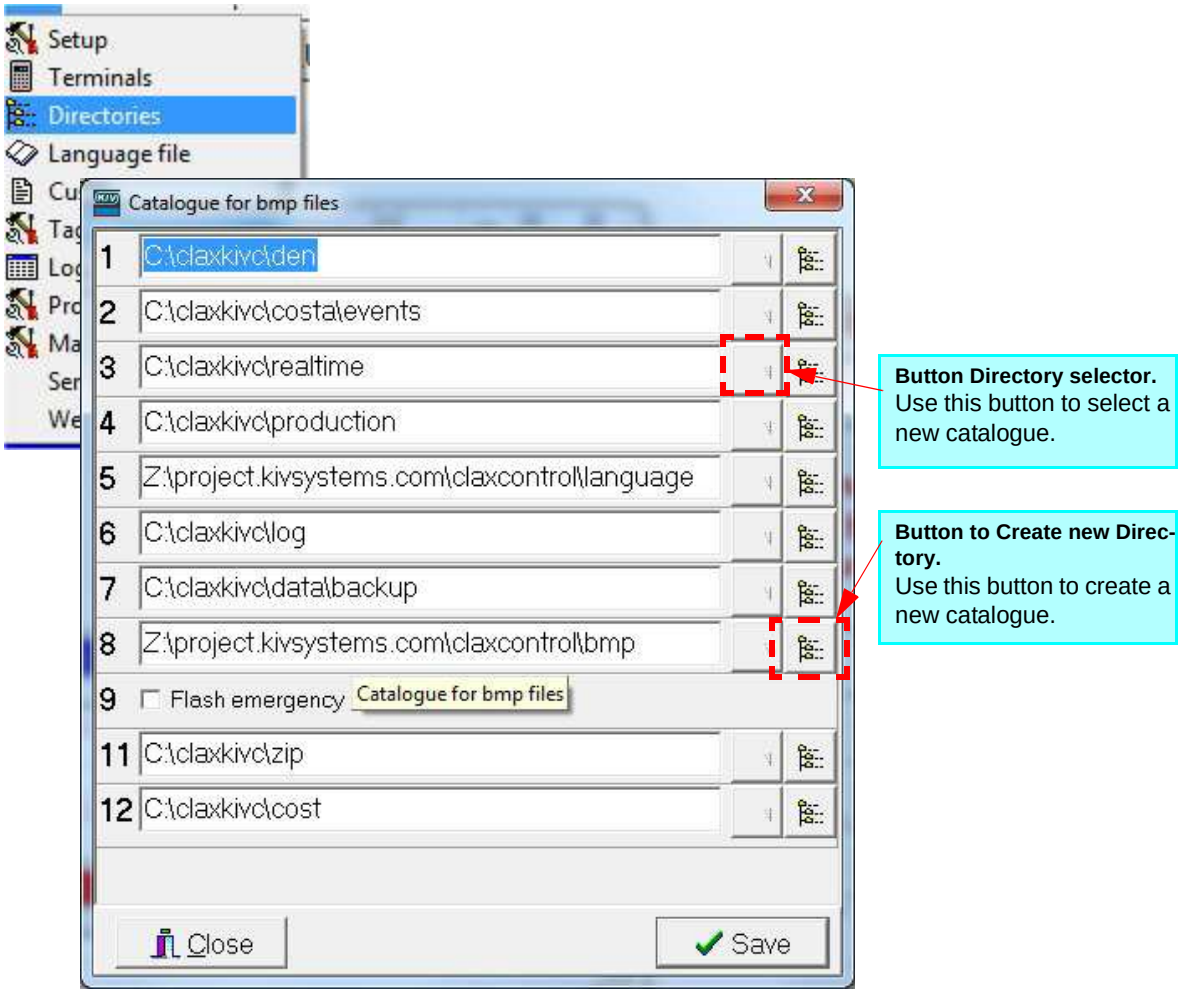


Setup configuration of a new micro terminal (only first time in use).

Start: Press the key "full stop" and power up the terminal.
Arrow right will step the parameters one position forward.
<F1> (First function key) saves each parameter.
Parameters: VW=4
TM=1
MA=01,02,03..32. (Terminal number)
TD=0
BR=2
DF=4
HS=0
EN=1
KC=0
KR=0
CU=1

End: Press <Enter> will store the information to the terminal EEPROM.

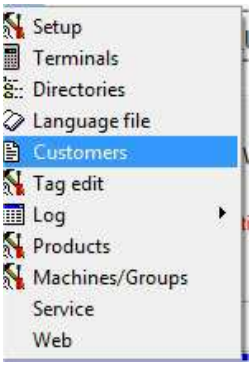
Directories



Different catalogues:

1:Catalog for program data files:
2:Catalog for events and error files:
3:Catalog for real-time files:
4:Catalog for production files:
5:Catalog for language files:
6:Catalogue for system log files:
7:Catalogue for backup of ini files:
8:Catalogue for bmp files:
9:Flash emergency disk in use:
10:Flash-Disk catalogue.
11:Catalogue for Ftp Zip files:
12:Catalogue for cost files (cost files may used by the software KIV-Report).

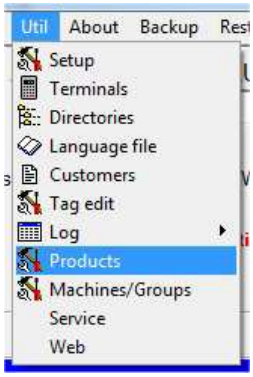
Customers

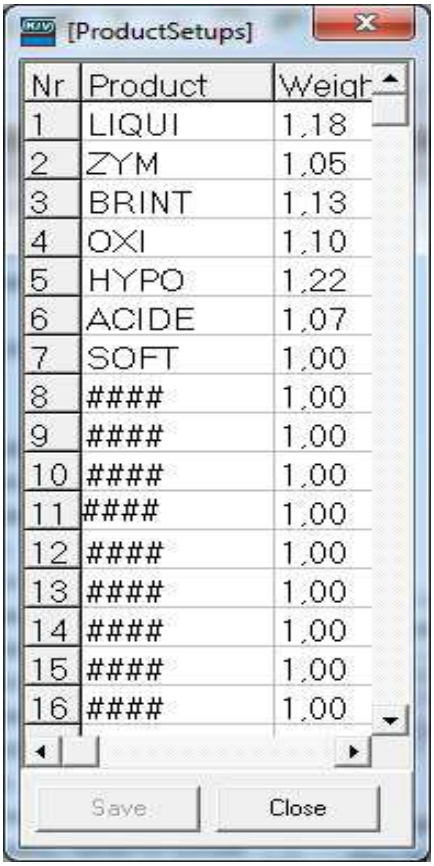


Menu found from <Util>, <Customers>.

Remark!
This menu is a read only menu. Change of customer names are done by the software KIV-Report. If needed during startup of KIV Control, change of customer names is reachable by opening the file customerdata.ini using software Notepad.

Products





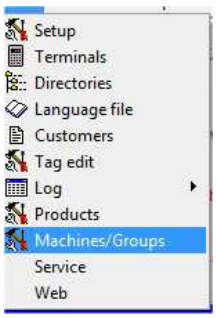
Product name:

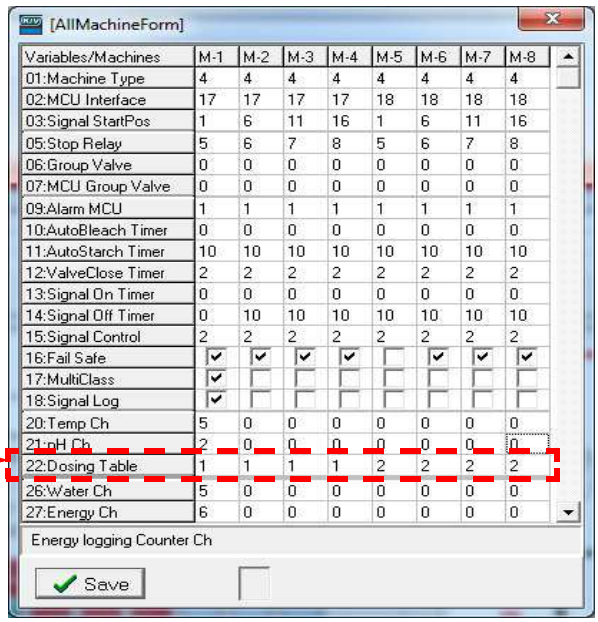
Name of the product. Use short names for “best fit”.
Fill in 4 of these characters “#” for product lines not in use.
Be aware that changing or adding new names will affect KIV-Report.

Specific weight:

The product specific weight. The values are entered with comma as decimal separator. Lowest legal value for a product is 0,025..

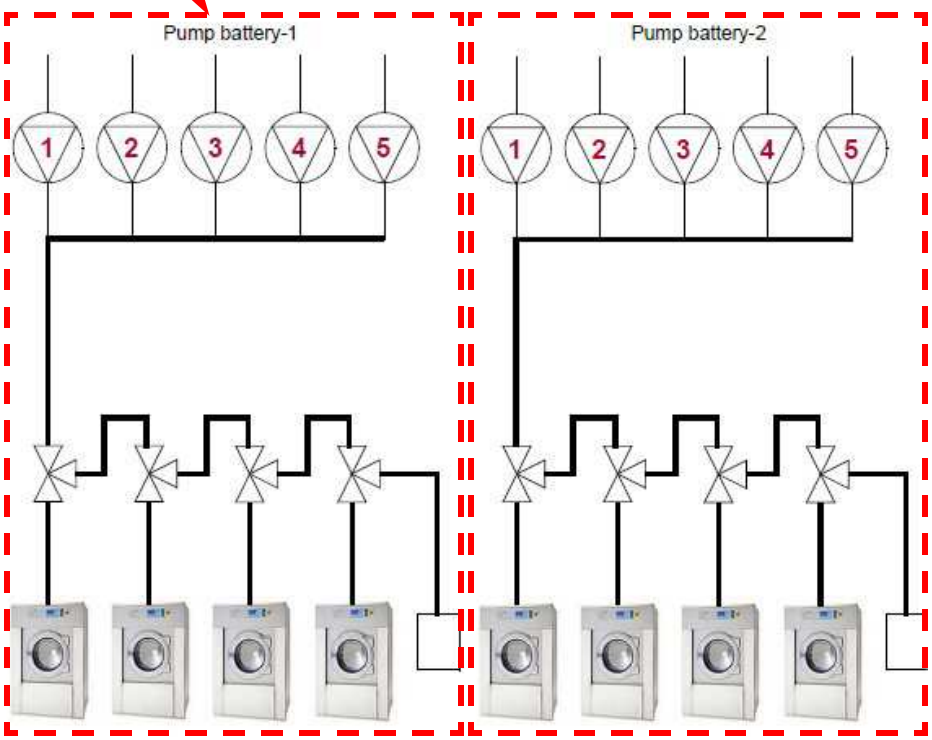
Washers setup



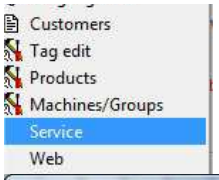


Line 1 to 21 described in Chapter: “Extractor-Setup’s.” on page 89.

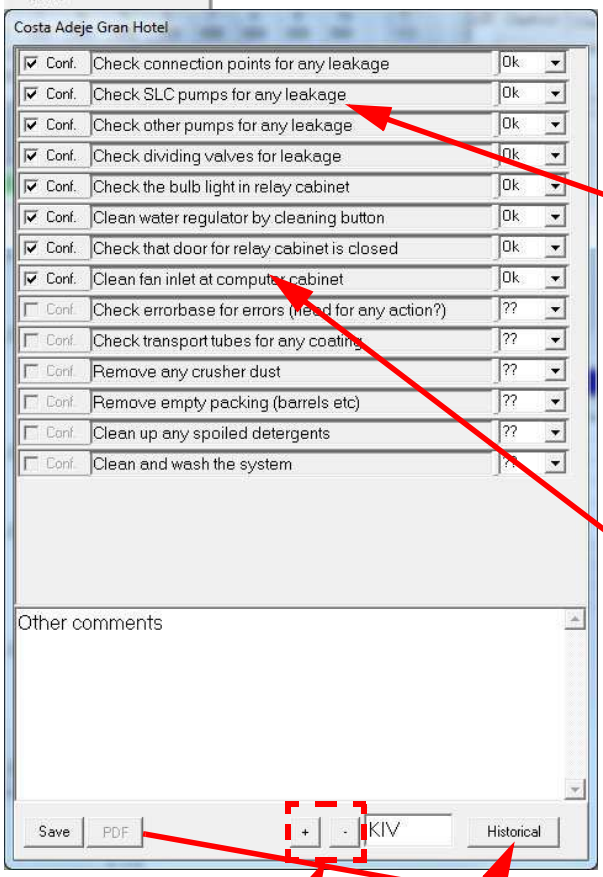
Line 22:
Use this to divide the dosing table for washes into groups. In this configuration washers 1 to 4 use configuration 1. Washers 5 to 8 use configuration 2. As a result of this setup the software will automatically copy common variables for washers within a group, also for the calibration procedure the counter charts will be saved to all other washers belonging to equal group number.
To better understand use of groups see: Chapter 30 “Group of Washers and pump batteries” on page 227.

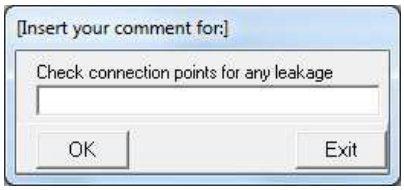


Service:

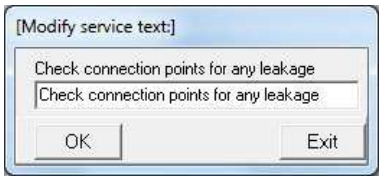


Maintenance of the KIV System needs to be done on regular intervals. Use this menu for documentation of service. When all checkboxes are completed press button <PDF> and a PDF file will be created.

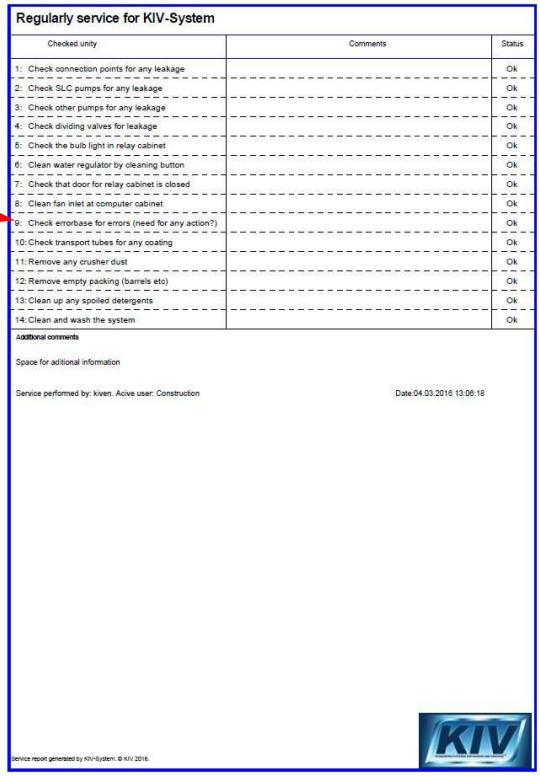




Extra comment text.
Mouse click on actual service text.
A text edit box will appear. Now enter your additional text.

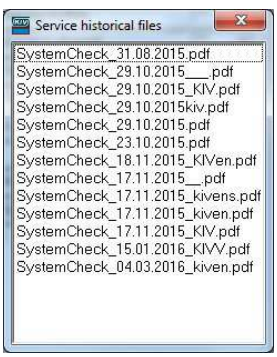


Modify service text.
Press and hold <Ctrl> while mouse click on actual service text.
A text edit box then appear for modifying actual text.

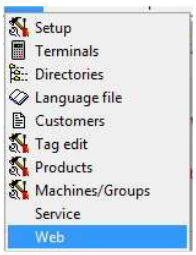


Buttons:
+ / - to add or remove service lines.

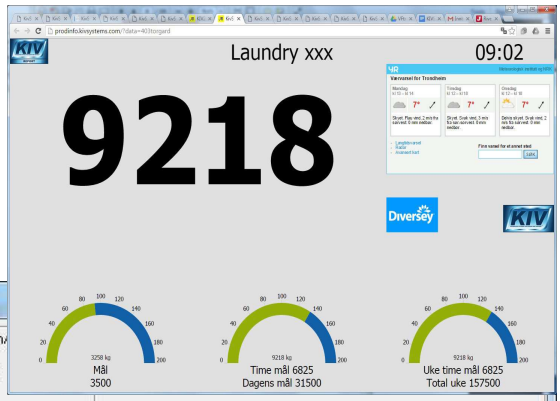
Button <Historical> used to open historical service PDF sheets.

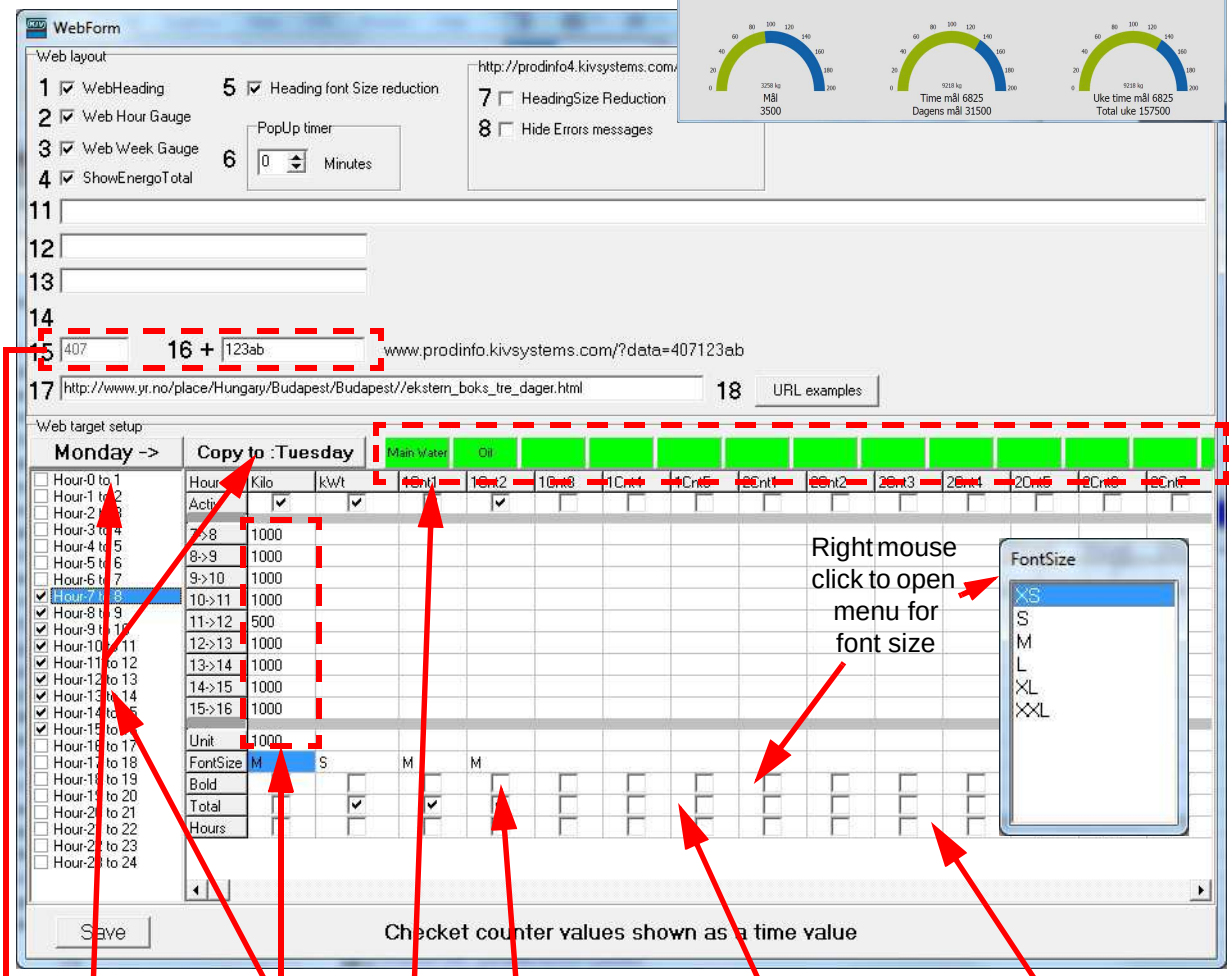


Web setup:



Menu for configuration of the KIV web page.





Day of week button. Copy to next day button

Hour kilo production target.

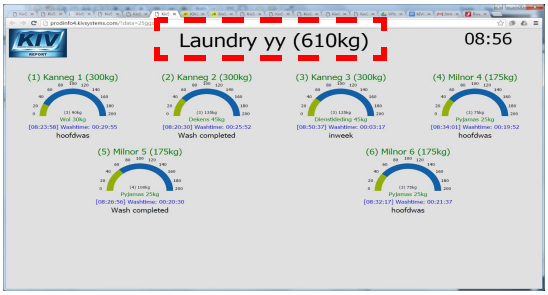
Counters

Bold heading of the counter name

Checked percentage performance by total value, else hour performance

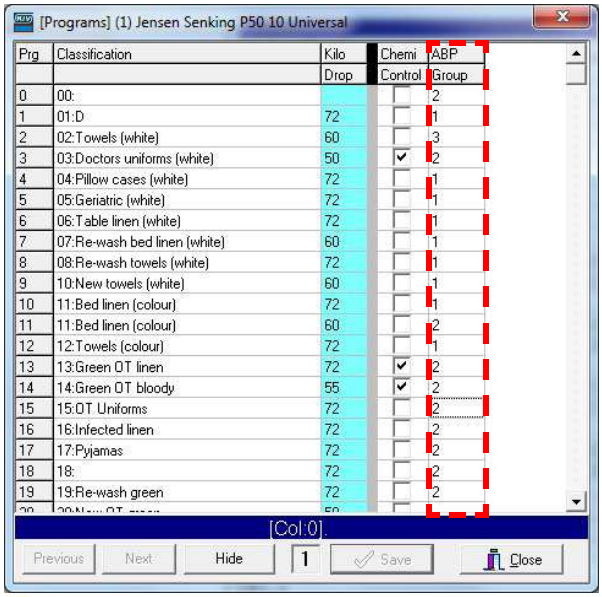
Counter values shown as a time value

http://prodinfo.kivsystems.com/?data=pos15+pos16

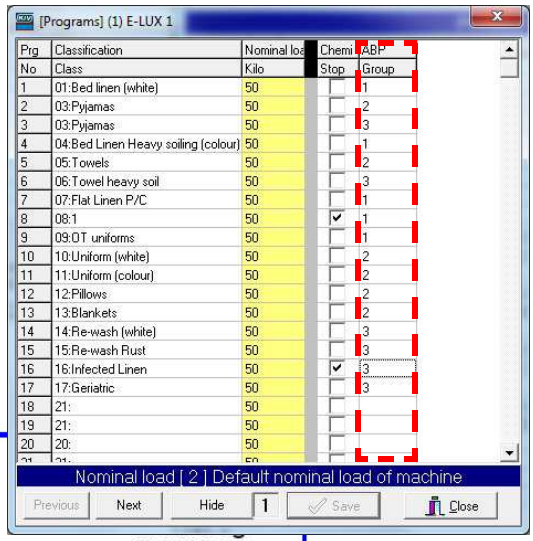
Pos	Descriptions
1	Checked for customer name as Web heading.
2	Checked for Web hour performance gauge.
3	Checked for Web week performance gauge.
4	Checked for Web KIV Ernergo hour performance gauge.
5	Checked to reduce font size of customer name
6	Timer for Pop Up message
7	For prondinfo4 url only. Checked to reduce font size of customer name. 
8	For prindinfo4 web only. Checked to remove error messages. (If a error message occur in the KIV error base)
11	Pop Up message.
12	Checked for extra message 1.
13	Checked for extra message 2.
14	Checked for extra message 3.
15	System number.
16	Extra characters added for url string.
17	Url for local weather forecast.
18	Url Examples.

ABP SETUP

Setup ABP cost group is done by the program menus. For tunnels use column 12 for washers use column 15 as pictured below. Sum up of each cost group added as extra lines in the monthly production report see below. Max number of cost groups 3.



Remark!
All washers need to be updated by enter a valid ABP group, then click button <Save>



Customer: Costa Adeje Gran Hotel.

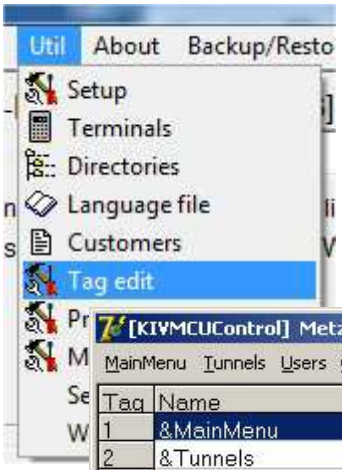
Production report for : April-2016

Pos	Date		Kilo
1	01.04		15699
2	04.04		17828
3	05.04		18823
4	06.04		21473
5	07.04		19145
6	08.04		16384
7	11.04		19518
8	12.04		19050
9	13.04		18250
10	14.04		18032
11	15.04		14903
12	18.04		18322
13	19.04		20271
14	20.04		17828
15	21.04		16427
16	22.04		15810
17	25.04		18497
18	26.04		18494
19	27.04		18279
20	28.04		17752
21	29.04		15698

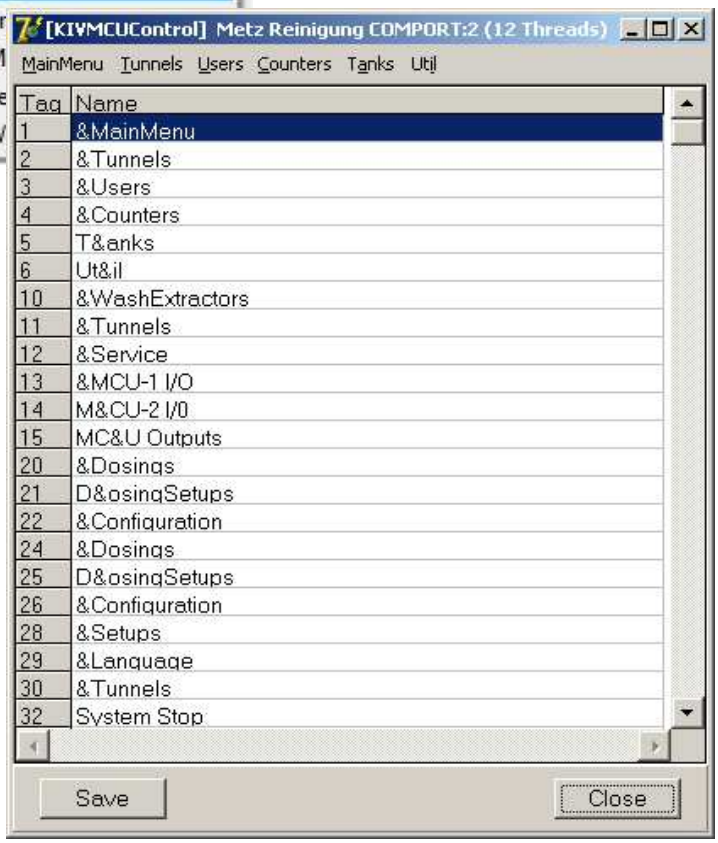
This report was done by hand.

Washers. CostGroup:1 = 12278 kg. CostGroup:2 = 22278 kg. CostGroup:3 = 32539 kg.
Tunnels-1. CostGroup:1 = 52848 kg. CostGroup:2 = 233786 kg. CostGroup:3 = 22754 kg.

Chapter 3: Language Translation.

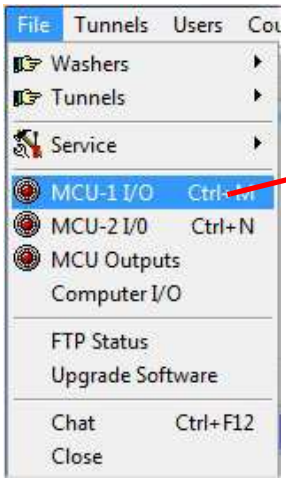


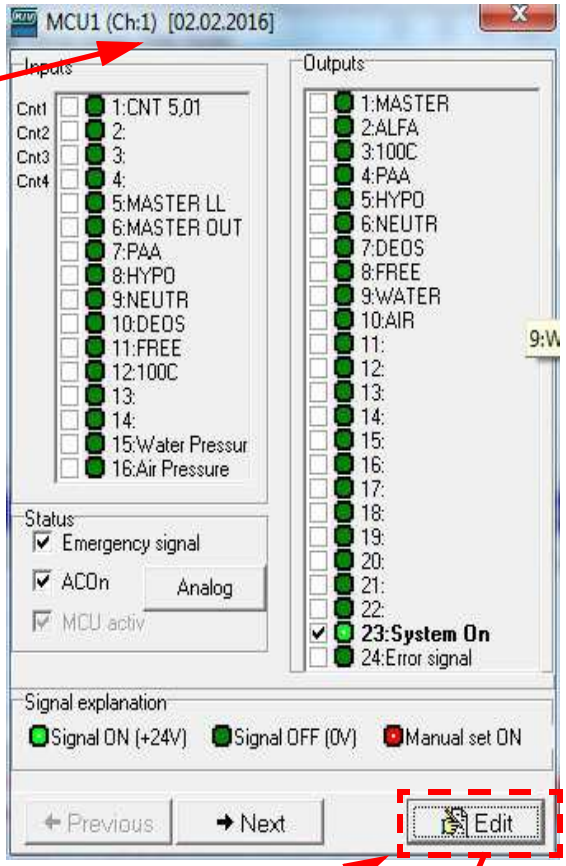
The language translation can be divided into two parts:
a: The language belonging to the software itself.
b: The language belonging to actual project.
Example of a:
All the menus in the top of the program. (Title Bar).
These texts are translated with above command.
Example of b:



All names for inputs and outputs.
These are translated in the MCU menu itself by button named “Edit”.
See “Logging of digital and analogue signals.” on page 156 as an example.

Texts of type a: translated by short key when text belong to any form.
Short key command <SHIFT> + Right Mouse Button. See examples next page.



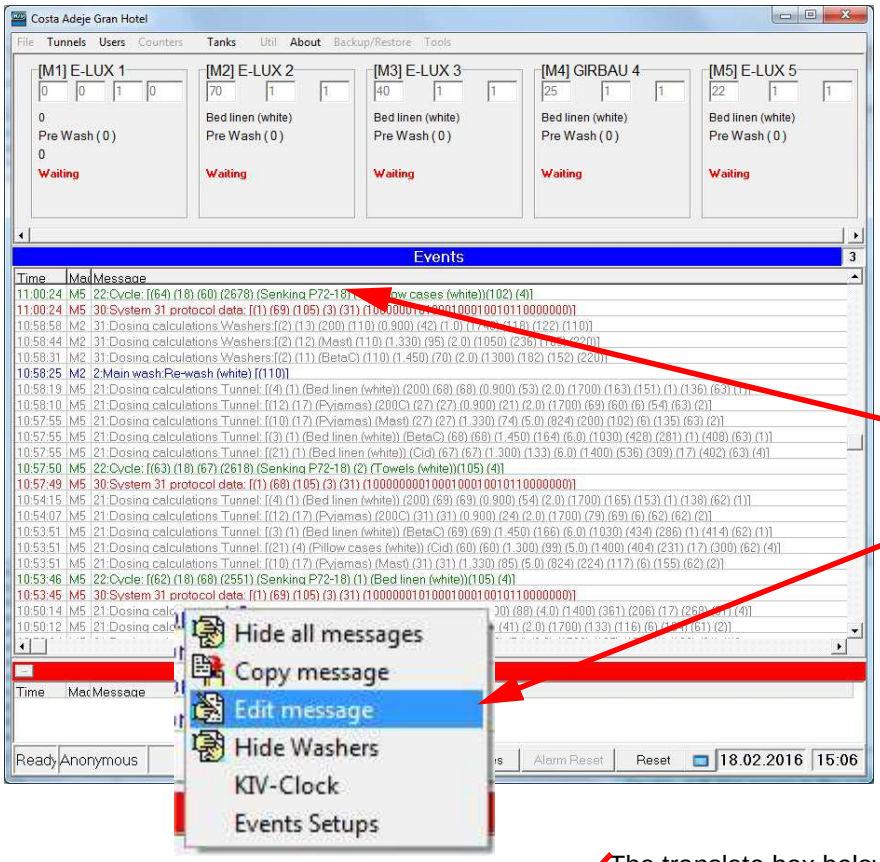


Language translate:
The translated texts are stored in INI files. This is described under setup of the system.
See Chapter 2 “KIV System config.” on page 12.

Tag:
Each text object is identified in the software with a tag number.

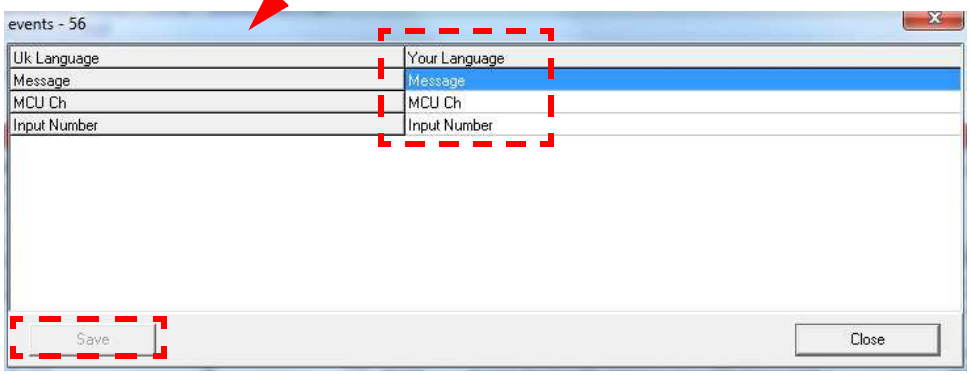
Name:
The english name to be overwritten (replaced) under translation to actual language.

Tag Edit, example-1:
Log on as Administrator.
Open the menu for Outputs (Ctrl+n).
Move the mouse pointer to the button <Edit>. Press down shift key while right click with the mouse. Translate box as below then appear. Do your translation and press the <Ok> button.
Remark!
Use short names for any button. If not the translated text may not fit inside the button.



Tag Edit, example-2:
Move the pointer to the text for translating. Right click on the mouse, select <Edit>.

The translate box below will appear. Do your translation and press the <Save> button.



Chapter 4: User Identification.

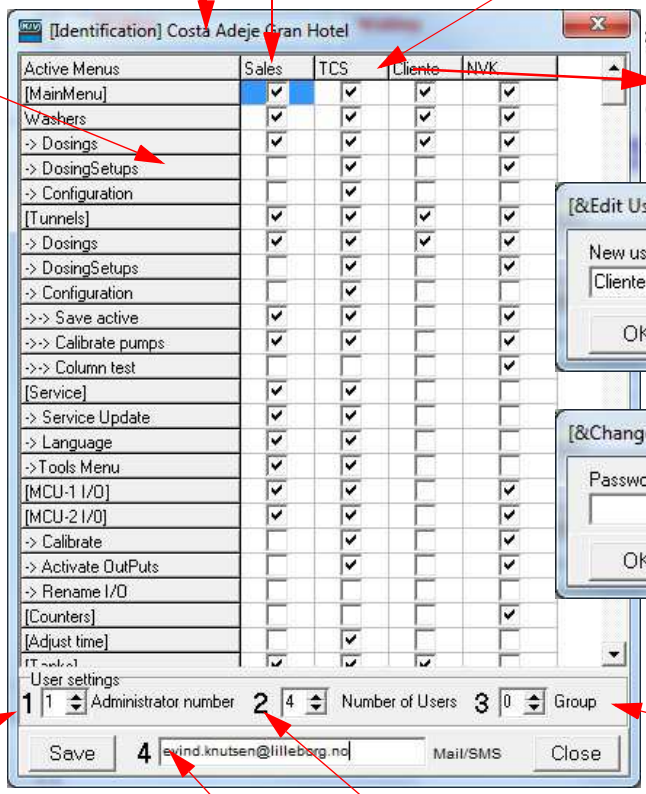
Users identified.
Short name of the 4 identified users.

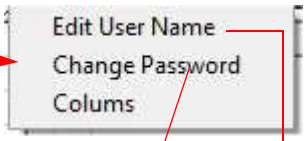
User Name and Password.
Setting up a user.
Right click on the heading for actual user and the popup menu below appear.

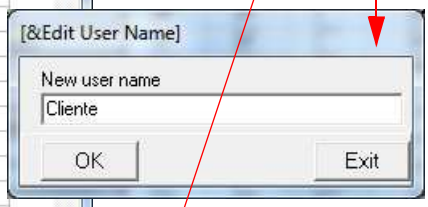
Menu identification.
Each menu name is listed in this menu.

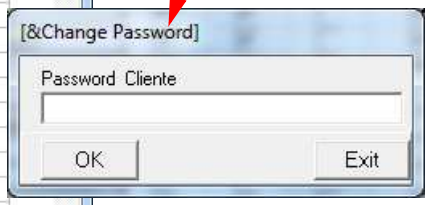
Mainmenus by [ ]
Submenu by ->

Menu rows:
Checked = Access
UnChecked = No access









1. Administrator number:
Actual administrator number, up to ten master password are hard coded in the software.Only authorized personnel will know all the master passwords.
With the master password it is possible to create up to 10 new standard users. None of these standard users is given access to modify a standard users.

2. Number of users:
Up to 10 users with different access can be defined in the system.

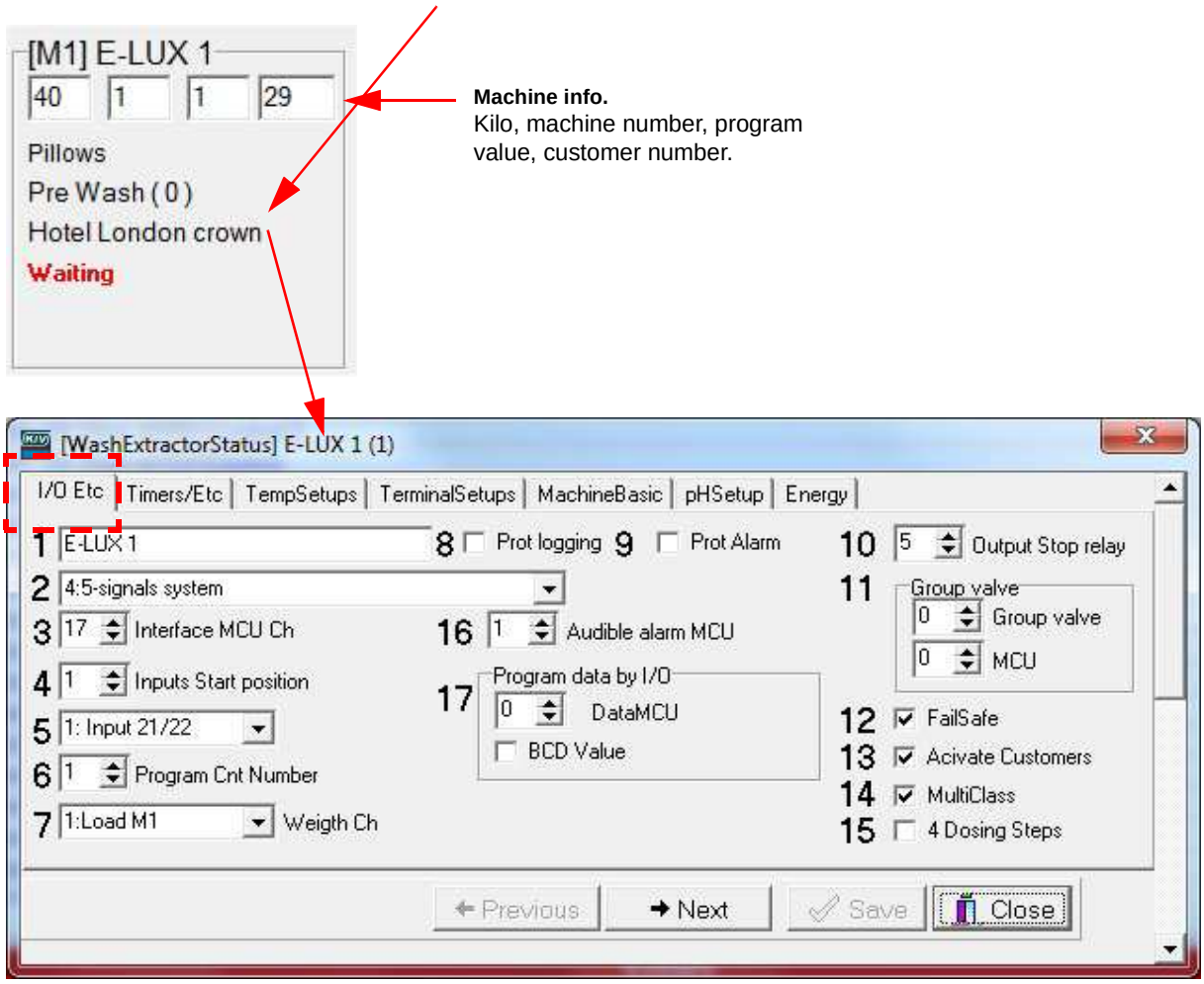
3. Groups:
Five administrator groups hard coded in the software.
Contact a system administrator for actual group settings prior modifications the active group.

4. Mail/SMS:
If mail address or SMS number inserted the software will forward a message alert by any administrator logon.

Chapter 5: Washer-Setup.

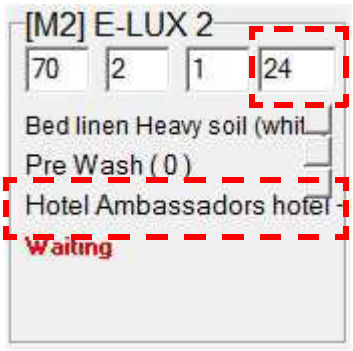
IO-Etc

The menu below will appear by double clicking on the washer from main window.



Pos	Washer setup
1	Name of the washer, max 15 characters.

Pos	Washer setup
2	**Washer type:** Protocols washers: Type-0: Machine not in use. Type-1: 4 signal system. Type-2: 2 signal system + terminal for program / kilo /customer. Type-3: RS-485 DMIS protocol. Type-4: 5 signal system and possibility for multi BCD function. Type-5: 4 signal system + terminal for program / kilo /customer. Type-6: Protocol 31 system. Type-7: Small machines. Type-8: Protocol 31 system + 3 bit (Pharmag). See step dosing Type-9: TCPIP not ready. Type-10: Time-based program transfer. Type-11: 5 signal system and special reset. Type-12: 5 signal and Protocol 31 system. Type-13: Primus protocol RS485. Type-14: Girbau protocol RS485. Type-15:5 signal. See also: “Protocol description:” on page 46 (UM).
3	**Signal MCU Ch:** Input MCU number for actual washer.
4	**Inputs Start position:** The start input number for actual washer. Example: Washer 2 use 5 inputs (Input 6,7,8,9,10), set the variable to 6. ***Remark!*** ***The system will start up dosing a few sec. after the input signals from one of the washers are set to on. Recommend on time for signals 10 sec.***
5	**ProtoCol Position:** When “Protocol 31” in use, the software needs to know where the protocol signals are connected for actual machine. On the MCU2 card there are four protocols connections points available (grouped as input) 21/22, 23/24, 25/26, 27/28.
6	**Prg Cnt number:** Counter for read of program (only visible for washer type 10), see table above.
7	**Weight Ch:** Automatic wash load, select analogue number for analogue weight value.
8	**Prot logging:** Checked, data string/train from 31 bit protocol is present in event base. (Check box only visible for machine type 6, 8 and 12).
9	**Prot alarm:** Checked, message and audible alarm given if protocol 31 data not accepted by the soft-ware.
10	**Output Stop- relay:** The output STOP relay used to put the washer on hold.

Pos	Washer setup
11	**Group valve:** It is possible to divide the detergent valves to washers into groups. A valve named “group valve” will reroute the products to one group if it’s active or to next group when inactive. See illustration: Chapter 25 “Group valve” on page 198. **Group valve MCU** MCU number for the group valve.
12	**Fail Safe:** Unchecked, output relay for hold function is normally OFF and then forced to ON to put washer on hold. Checked, output relay for hold function is normally ON and forced to OFF to put the washer on hold (Fail Safe).
13	**Activate Customers:** Checked, will activate customer for actual machine.  Remark! Customers needs to be activated. See: Chapter 2 “Customer database:” on page 12.

Pos	Washer setup
14	**Multi Class:** When need of more than 15 programs a Binary multiplication system is available. Unchecked =Programs 1-15 Checked =Programs 1-127 After the normal "Start new program transfer" procedure the washer need to transmit one extra "Start new program transfer", the first Binary value will then be added with the new binary value and multiplied by 10. Example of program 65: 1-2-4-8-R First: Start new program transfer 1-0-1-0-1 Result 5. Second: Start new program transfer 0-1-1-0-1 Result 6*10 = 60 (60+5 = 65). Program from 1 to 15 are performed with normal binary one step signal. Program 16 = First 6 + Reset then 1 + Reset Program 20 = First 10 then 1. (10+1*10) Program 30 = First 10 then 2. (10 +2*10) Number of programs 150, and only possible in combination by washer type 4.
15	**4 Dosing Steps:** Only in use when washer type 1 and 2 is selected. By setting this position Checked/Unchecked, dosings to Washers may be controlled by 3 or 4 signals (steps). Checked=4 steps: (Prewash (1), Main-wash (2), Rinse (8) and Multi (9). UnChecked=5 steps: (Prewash (1), Main-wash (2), Bleach (4), Rinse (8) and Multi (9). In addition Auto-bleach (7) may be used as extra dosing after the Main-wash step.
16	**Audible alarm MCU:** The Output MCU for audible alarm used by the system when a dosing error occur.
17	**Data MCU (Program/Kilo/Customer):** MCU number where data are found (only visible for washer type 5). See table below how I/O are used. As long as Input 1..8 are high the fields in the washer window will be updated. **BCD value:** Set to on for BCD values (1,2,4,8,10,20) else binary values (1,2,4,8,16). *Remark!* *Customer only read if "Activate Customers:" on page 44 is set to on.*

Protocol description:

Washer signals out	No	Signal in and washer type's in KIV Control
Signal step Signal reset + Program box	1	Binary value = 15):Reset process end. (All bits ON) Binary value < 15):Activate a dosing step and select dosing program on the first input signal. Binary value < 15 = Program + Prewash Next signal will dose next step (Main-wash).
Signal step Signal reset + Terminal	2	Binary value 1):Activate a dosing step. Binary value 2 or 3):Reset process start or end. See also:"Signal pattern for washer type 2" on page 206.
S.W. Output	3	RS485 protocol): DMIS protocol for Electrolux washers See also:"Type-3, RS-485 signal system. (E-lux DMIS/CMIS protocol)." on page 222.
5 Signals	4	Binary value > 16):Select a new program. Binary value < 16):Activate a dosing group. Binary value = 16):Reset process end. (Bit 5 ON). For "Multi-class" see:page 45. See also:"Signal pattern for washer type 4" on page 207.
4 Signals +terminal	5	Select the actual program on the terminal. Binary value < 15=Activate a dosing group. Binary value = 15):Reset process end. (All bits ON). See also:"Signal pattern for washer type 5" on page 208.
Protocol +5 dosing signals	6	Binary value = 15):Reset process end. Binary value < 15):Activate a dosing group. Binary value = 16):Start new wash process. Before value 16 is given the 31 bit pulse train has to be completed. The 31 bit pulse train use two bits. (CLOCK + DATA). See also:"Signal pattern for washer protocol type 6" on page 209. ***Remark!*** ***When changing to protocol 6 or 8, the software needs to be restarted before it is able to read protocol data from the MCU.***
3 Signals + program box	7	Binary value < 15):Activate dosing prewash and select dosingprogram. Binary value = 15):Activate dosing main-wash. Binary value > 15):Activate dosing rinse and reset end. See also:"Signal pattern for washer protocol type 7" on page 210.

Washer signals out	No	Signal in and washer type's in KIV Control
Protocol +3 dosing signals	8	Bit 1 = Binary value 1):Activate a dosing step. Bit 2 = Binary value 2):Upload new dosing information from MCU. Bit 3 = Binary value 4):Reset process end. Bit 4 = CLOCK Bit 5 = DATA Before Upload (Bit 2) goes ON the 31 bit pulse train has to be completed. The 31 bit pulse train use two bits. (CLOCK + DATA). See also:"Signal pattern for washer protocol type 8" on page 211. ***Remark!*** ***When changing to protocol 6 or 8, the software need to restarted before it is able to read protocol data from the MCU.***
Ethernet	9	TCPIP Not ready
5 signals (But possible for 2 signals on at the same time) A counter detect the number of seconds the input is on. This value in sec is the same as classification. Example: 10 sec ON equal to program 10.	10	Binary value =1..11+13..15):Activate a dosing group. Binary value = 16):Reset start and new program. Counter number is selected in machine setups. Binary value = 12):Reset end See also:"Signal pattern for washer protocol type 11" on page 213. ***Remark for old MCU2 cards!*** ***Only counter 1 and 2 are able to count seconds.***
5 Signals +terminal	11	Select the actual program on the terminal. Binary value < 15=Activate a dosing group. Binary value = 16):Reset process end. (bit 5 ON). See also:"Signal pattern for washer protocol type 11" on page 213.
5 signal and Protocol 31 system.	12	Select the actual program from terminal. Binary value < 15=Activate a dosing group. Binary value = 16):Transfer protocol or reset process end. See also:"Signal pattern for washer protocol type 12" on page 214
Primus protocol RS485	13	In developments
Girbau protocol RS485	14	In developments

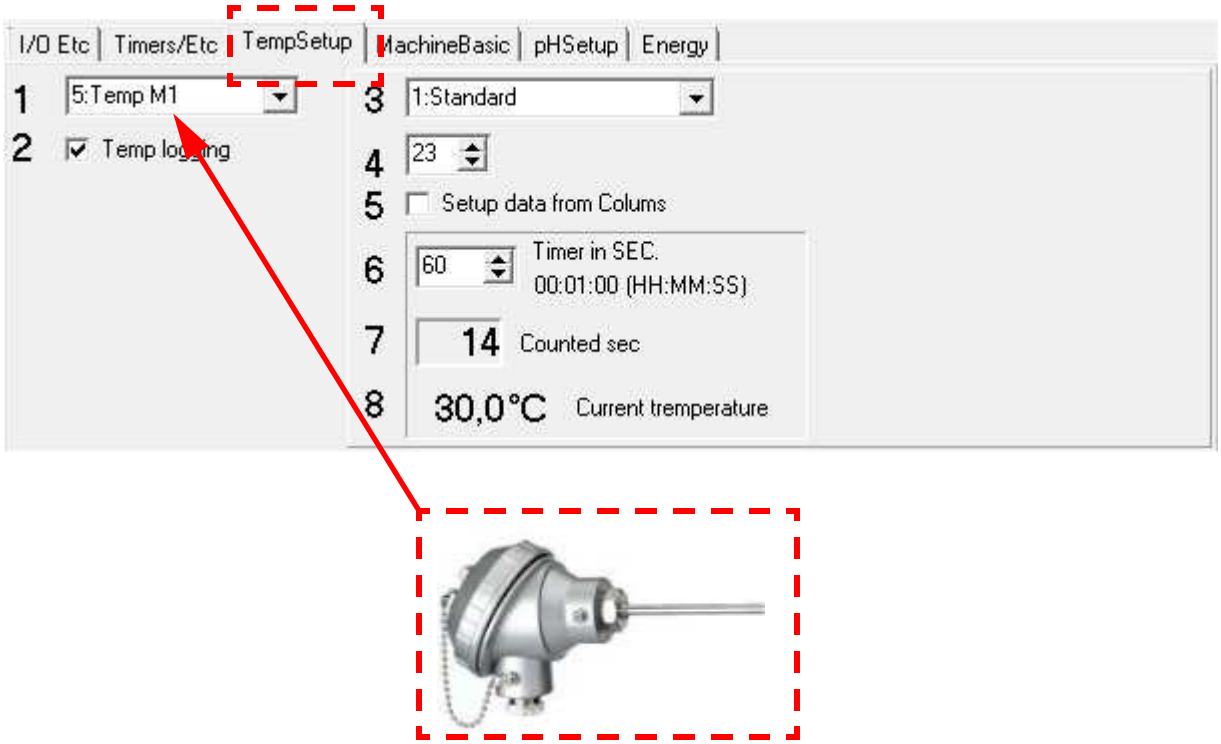
Timers/Etc

Pos	Washer setup
1	**How to read new program:** 0 Software read program (from “washer window”) after “reset end signal” or “reset start new program signal”. 1 Software read program data (from “washer window”) each time it receives a dosing signal. There is no need for programming a reset start signal from the washers. *Remark!* *When running without a reset start or end signal the KIV-Report will not be able to calculate the process-time for each wash cycle.* *This setup is only legal in combination with Washer type: 1 and 5.*
2	**How to read new kilo’s:** 0 Software read kilos after start new program transfer. Kilo transferred from the fixed “kilo” in Chapter 7 “Washer program.” on page 71. 1 Software take kilo from the “washer window”, kilo need to be inserted by a micro terminal, keyboard or by one of the protocols.
3	**Signal Control:** 0= Allow to repeat the dosing signal (equal value or higher value several times). 1= Not allowed to repeat the current input signal. 2= All kind of signals accepted (Texas).

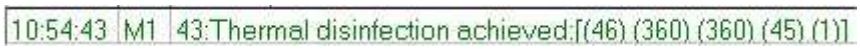
Pos	Washer setup
4	**Valve Close timer:** Delay timer in seconds after air flushing and before the routing valve closed. 
5	**Dosing priority Group:** Define a group number for high dosing priority. All kind of groups are legal. Example of groups: Group number with the highest dosing priority, default set to group 8 (rinse). All washers to receive dosing are placed in a waiting queue. This waiting queue functions according to the FIFO principle-first in first out, but a group defined as priority group are forced forward in the FIFO buffer.
6	**Signal Logging:** Checked start logging of actual product Dosing calculations Washers:[(1) (2) (100C) (40) (1,000) (80) (2,0) (600) (-) (80) (80)] Individual product logging see: Chapter 8 “Signal log:” on page 82.
11	**Signal On timer (Sec.):** Number of seconds the inputs need to stay active before accepted as a dosing signal.
12	**Signal Off timer (Sec.):** Number of seconds the inputs needs to stay off, before a new input signal will be accepted again.
13	**Starch Delay (sec.):** Timer-delay for Starch dosing (0-255 sec.). Time-delay is given in seconds, insert a value > 0 to activate this function. Starch Delay is dedicated with dosing Group 6, this group automatic execute after group 8 (rinse) is completed + actual inserted time-delay value. ***Remark1!*** ***Configure Starch pump in dosing group 6.*** When executing auto starch the message “AUTO STARCH” is found in events. ***Remark2!*** ***If need of more than one product in this group, those groups need to be neighbors. In other words: no other group number inserted in dosing group 6.***

Pos	Washer setup
14	**Bleach Delay (sec.):** Timer-delay for Bleach dosing. (0-999 sec.). Time-delay is given in seconds. Value > 0 to activate this function. Bleach Delay is dedicated with dosing Group 7. This group automatic execute when group 4 (bleach) is completed + inserted time-delay value. ***Remark1!*** ***Configure Bleach pump in dosing group 7.*** When execute auto bleach the message “AUTO BLEACH” is found in events. ***Remark2!*** ***If need for more than one product in this group, those groups need to be neighbors. In other words: no other group numbers inserted in dosing group 7.***
15	**Dosing Priority:** Checked give actual washer highest dosing priority. If Checked Dosing Priority group Pos 5 is disabled. ***Remark1!*** ***Do not activate Dosing Priority if multiple paragroups are in use.***
21	Checked only when a re-dosing washers procedure is active. See also Chapter 7 “Chemical dosing control:” on page 72.

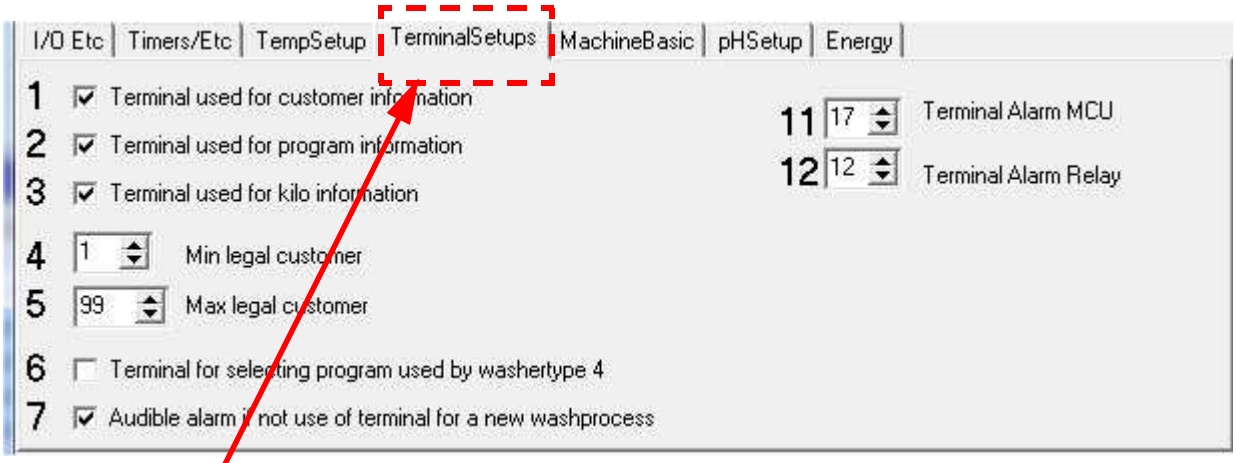
TempSetup



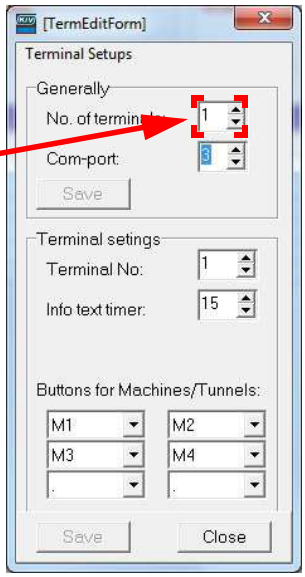
Pos	Descriptions
1	**Temperature selection:** Drop down menu for selecting one of eight analog channels. Ch 5-8 = Pt100.
2	**Temperature logging:** Checked will start logging of temperature and log timers values, log file saved to MCU logdir, filename=TempLogging_Machine_YYYYMMDD.Txt
3	**Validate:** A number of different ways to treat temperature logging. 1= Default. 2= to be decided. 3= to be decided.
4	**Hygiene Temp:** Temperature point for starting hygiene validation.
5	**Hygiene timer from table:** Checked, when need of individual “Temperature set-point” based on individual programs. See: Chapter 15 “Timer low, Timer high:” on page 151 (UM)

Pos	Descriptions
6	**Hygiene timer:** Number of seconds wash temperature need to exceed temperature set-point and before the thermal disinfection is approved. Actual number of seconds the wash temperature exceed set point for actual wash process, when this counter exceed set point value a message will be sent to event base.
7	The timer label will start counting after a “New program transfer signal” and as long actual temperature exceed “Temp Hygiene” (pos 4). The counter will stop counting by a “Reset signal” When counter exceeds set points this message occur:  If logging is active (pos 2) and by mouse click on this counter label the logfile will be opened in notepad.
8	Current temperature in the washer.

Terminal Setup



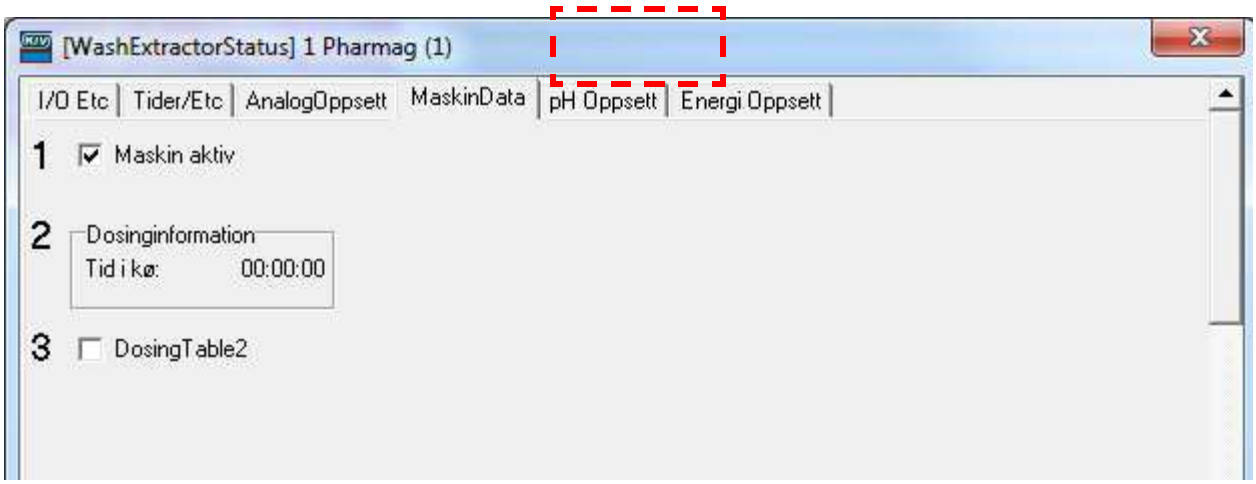
Tab only visible if terminals are activated. See: page 29 (UM).



Pos	Descriptions
1	**Terminal program:** Checked, Terminal used to enter wash program information.
2	**Terminal kilo:** Checked, Terminal used to enter kilo information.
3	**Terminal customer:** Checked, Terminal used to enter customer information.
4	**Terminal Customer Min:** Lowest legal customer number.

Pos	Descriptions
5	**Terminal Customer Max:** Highest legal customer number.
7	**Terminal Alarm:** Checked, system give a message and audible alarm if new program is missing (Forgotten by the operator) after reset end signal. Only valid for machine type 2 and 5).
11	**Terminal Alarm MCU:** MCU checked for audible alarm.
12	**Terminal Alarm Relay:** Output Relay for alarm.

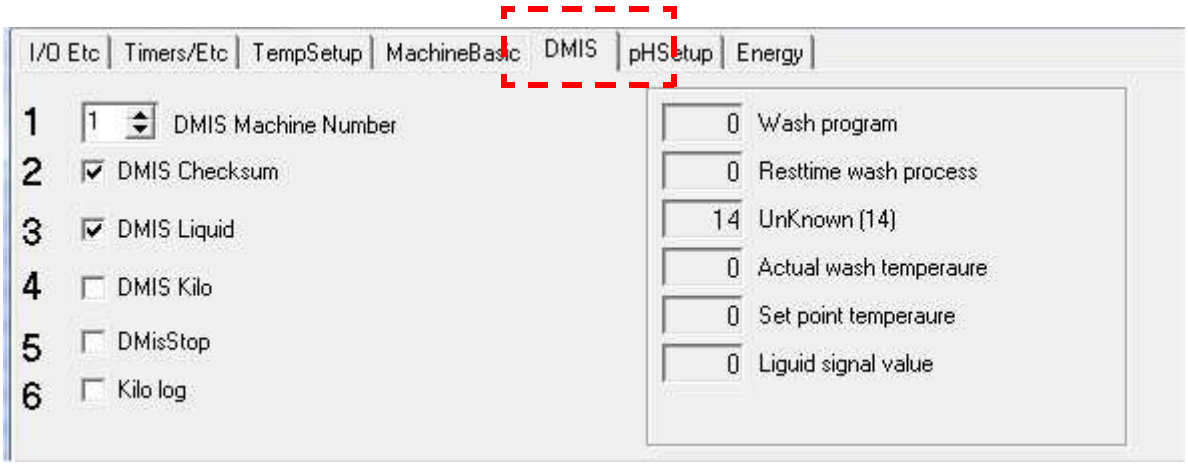
MachineBasic



Pos	Descriptions
1	**Machine Enabled:** Unchecked to put washer out of process. If done no dosage will be executed even if dosing signals are sent to the KIV Control.
2	**Time in queue:** Number of minutes the actual washer are forced on hold for current date by dosing system.
3	**Dosingtable2:** When checked the actual washer read dosing from dosing table 2. This is an independent table controlled by its own column setup, colours, and dosing values. See “Pos: 13” on page 27

ELux DMis

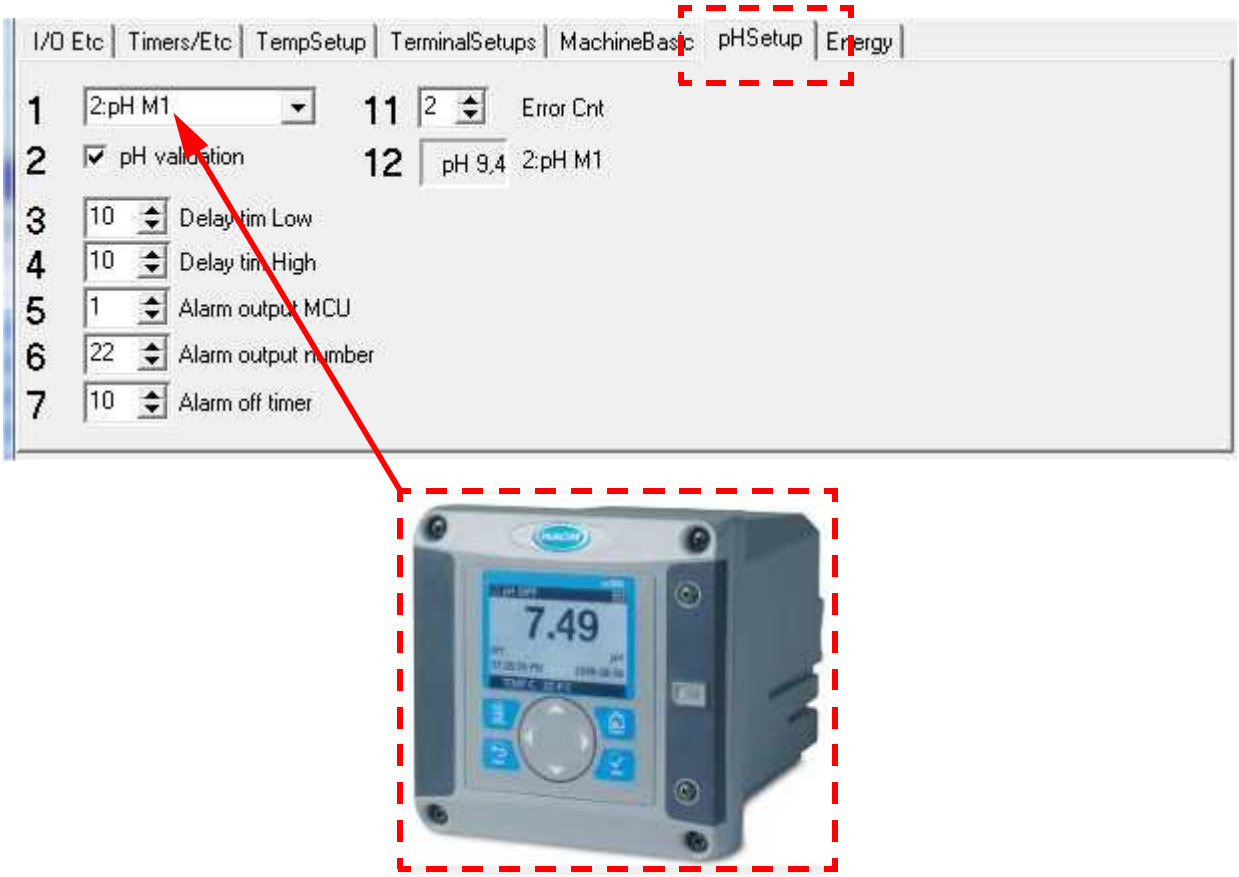
This tab is only visible if a DMIS protocol is activated. See: Chapter 2 “DMIS port:” on page 15.



Pos	Descriptions
1	**DMIS Machine number:** Wash machine number
2	**DMIS CheckSum:** Only set to ON, for the version of the DMIS machine type.
3	**DMIS Liquid:** Chapter 26 “Liquid dosing” on page 223 (UM) and Chapter 26 “Powder dosing” on page 223 (UM).
4	**DMIS Kilo:** If set to ON, dosing is calculated by Kilo from the washer.

Pos	Descriptions
5	**DMIS Stop:** Checked, will put the washer on hold while dosing.
6	**Kilo Log:** Not in use.

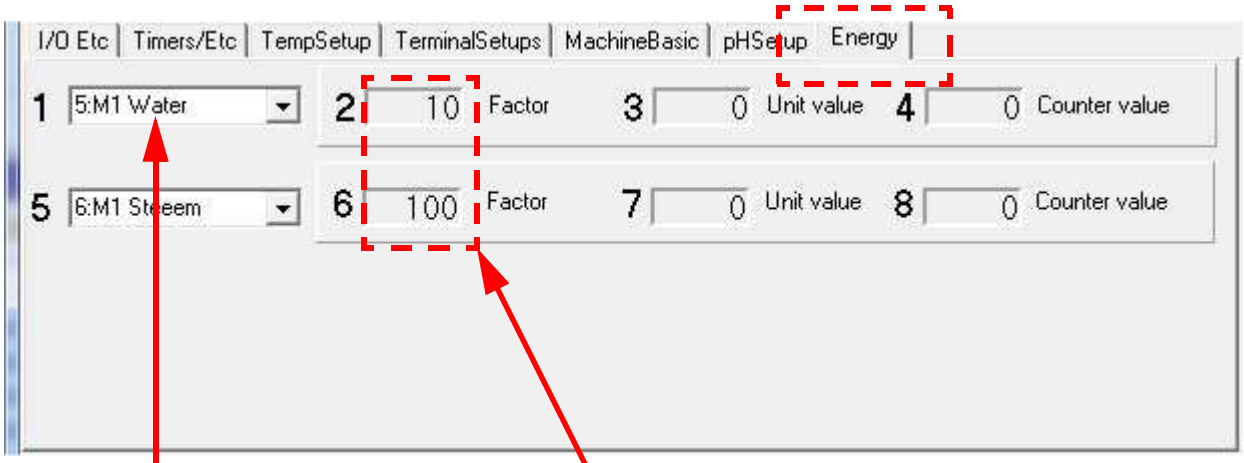
pH Setup washers

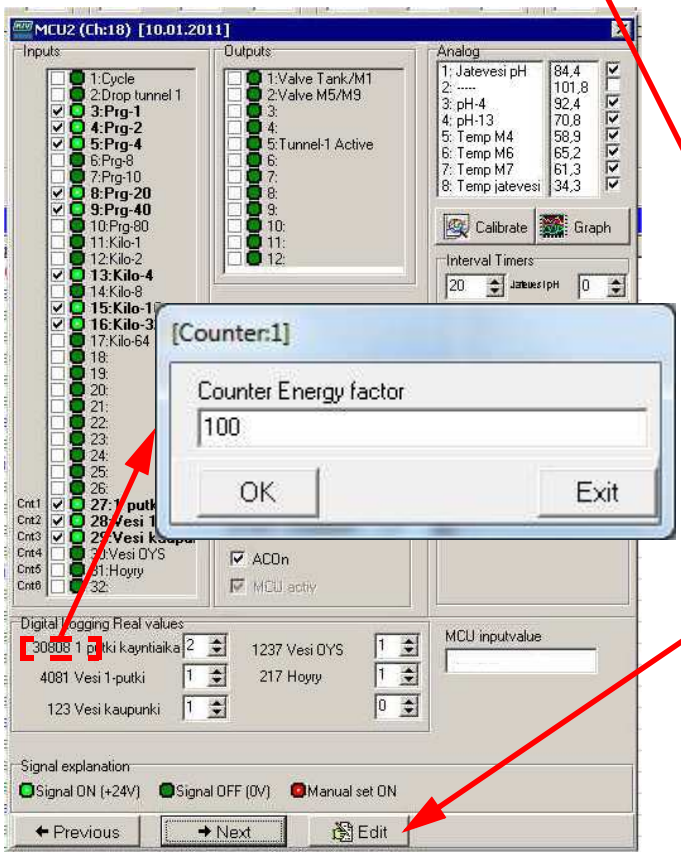


Pos	Descriptions
1	**pH selection:** Drop down menu for selecting one of eight analog channels. Channel 1-4 = 4-20mA
2	**pH validation:** Checked for pH validation See below. See also: Chapter 15 “pH Validate:” on page 151 (UM).

Pos	Descriptions
3	**DelayTimLow:** If actual pH value drop continue below pH low set-point, (exceed this timer) a message and audible alarm occur.
4	**DelayTimHigh:** If actual pH value exceed continues pH low set-point, (exceed this timer) a message audible alarm occur.
5	**AlarmOutPutMCU:** MCU (Ch) where the audible alarm is given.
6	**AlarmOutPutNumber:** Relay where the audible alarm is given.
7	**AlarmOffTimer:** Number of sec. before the audible alarm is set to off.
11	**Error Cnt:** Number of low or high pH errors before audible alarm.
12	Current pH value

Energy logging





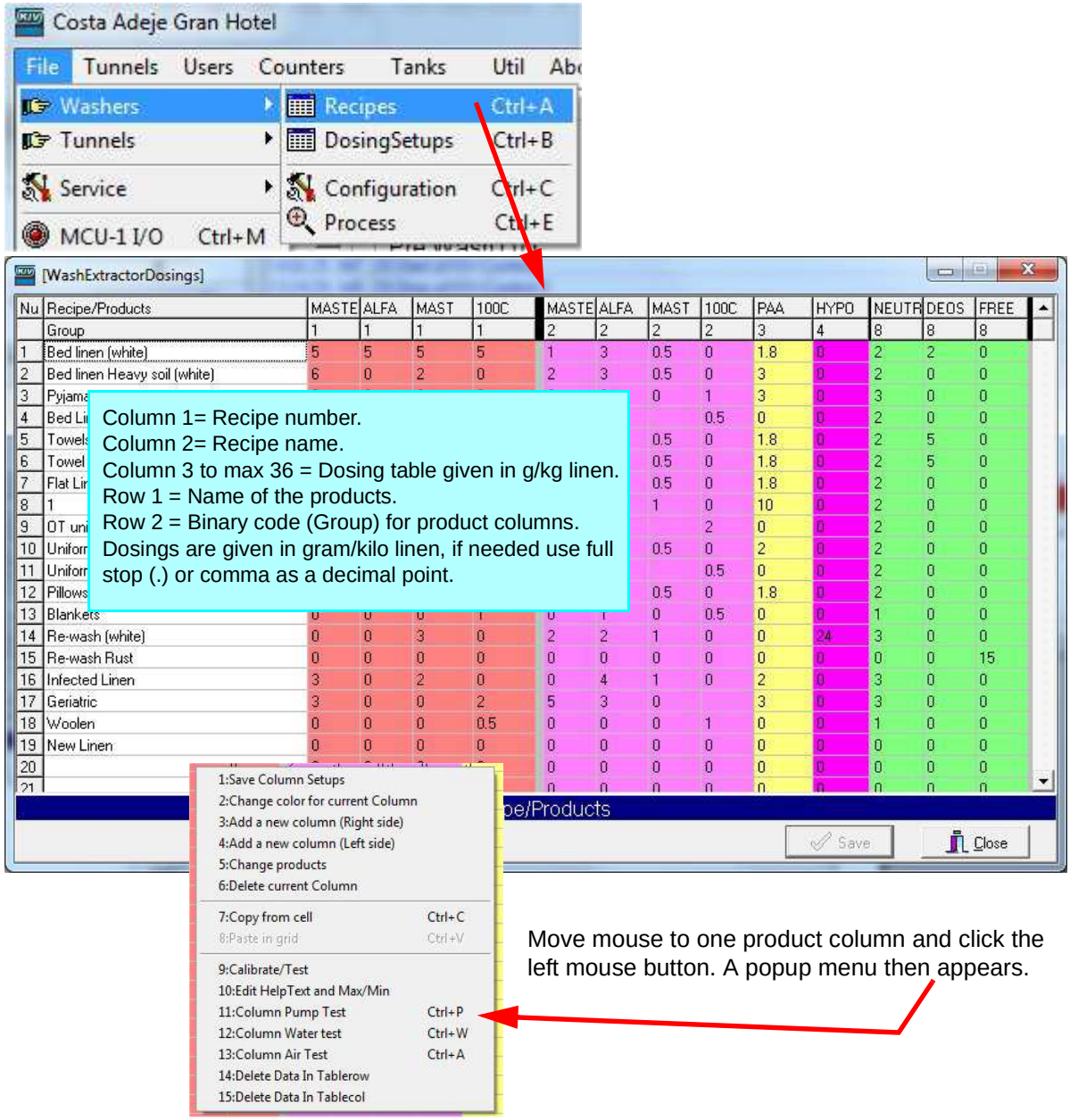
Adjustment of energy factor is done by the MCU IO menu.

A mouse click on the counter opens a menu where you insert actual factor.

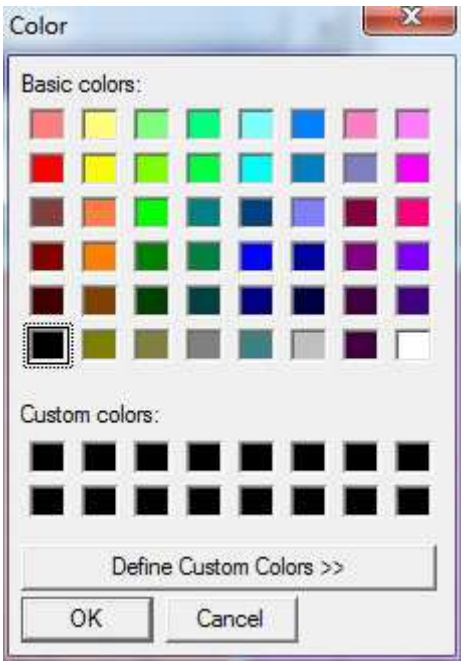
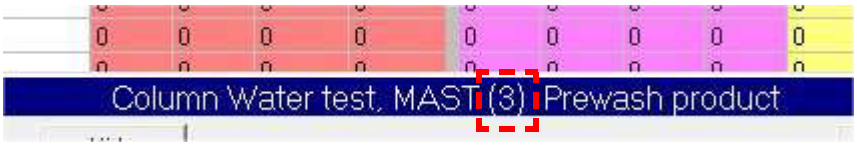
To rename counter names click button <Edit>.

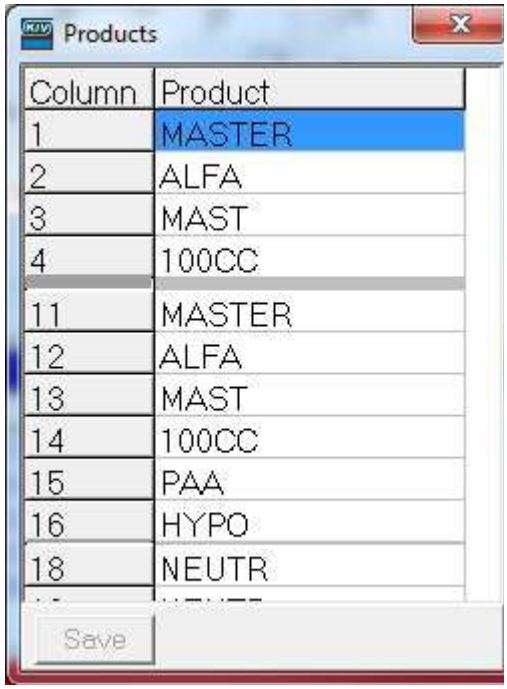
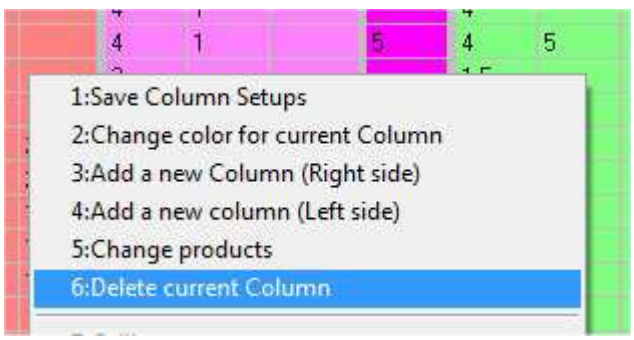
Pos	Descriptions
1	**Energy 1 Counter:** Drop down menu for selecting one of the 6 energy counters.
2	**Energy 1 Factor:** Factor used for unit value, modify value from MCU I/O menu.
3	**Energy 1 Unit value:** Consumption of energy 1 as units (current process).
4	**Energy 1 Counter value** Number of counter pulses for energy 1 (current process).
5..8	As pos 1 to 4.

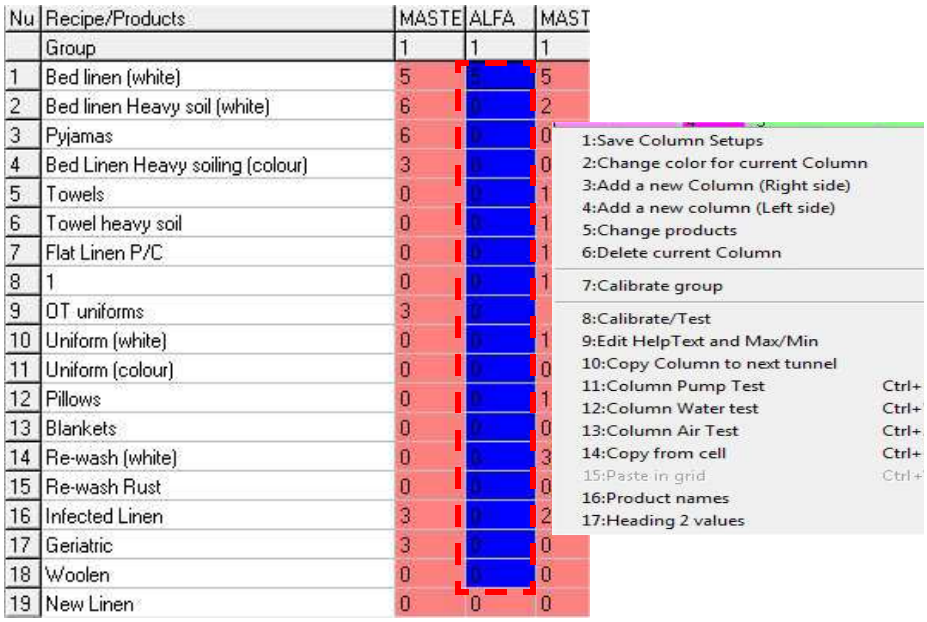
Chapter 6: Dosing table for washers.

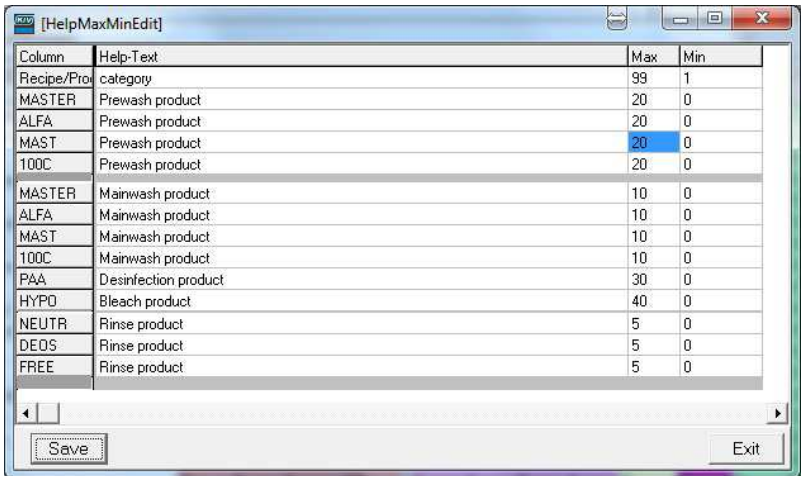
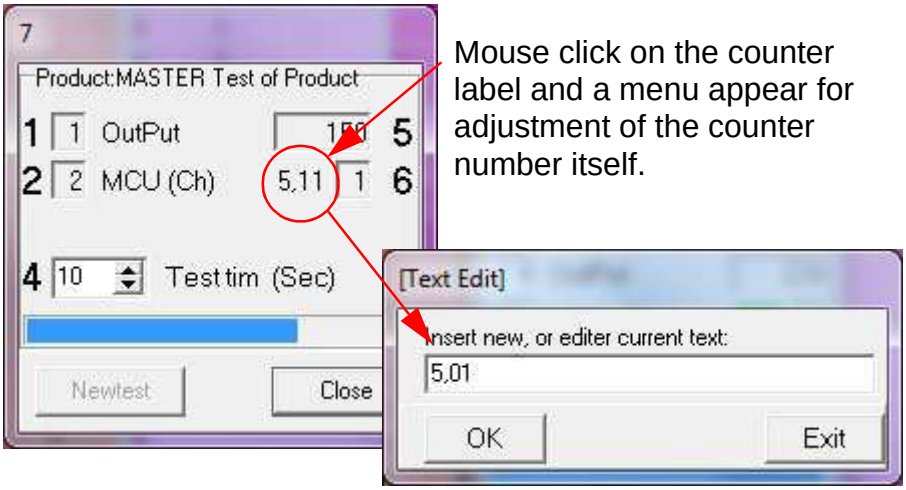


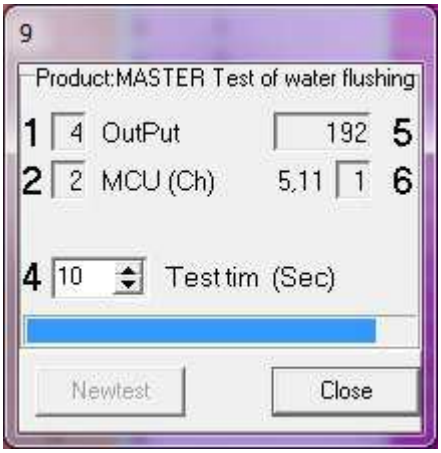
Move mouse to one product column and click the left mouse button. A popup menu then appears.

Menu-pos	Descriptions
1	**Save Column Setup:** Any changes for property of the grid will be saved by this menu. **Remark!** <Save> button in the bottom of this menu do **not** save grid properties.
2	**Change color for current column:** For all column the color can be modified to free definable colors. 
3,4	**Add a new column (Right side):** **Add a new column (Left side):** Insert a new column by moving the cursor and select menu <Add a new Column to left> or menu <Add a new Column to right> by doing that a new column will appear. ***Remark!*** ***Prior to adding a new column please check for free space by moving the mouse from column to column while checking the number counter that appear in blue dynamic help text line as below. Only when that value is higher than previous value+1 there is a free space for inserting a new column***. 

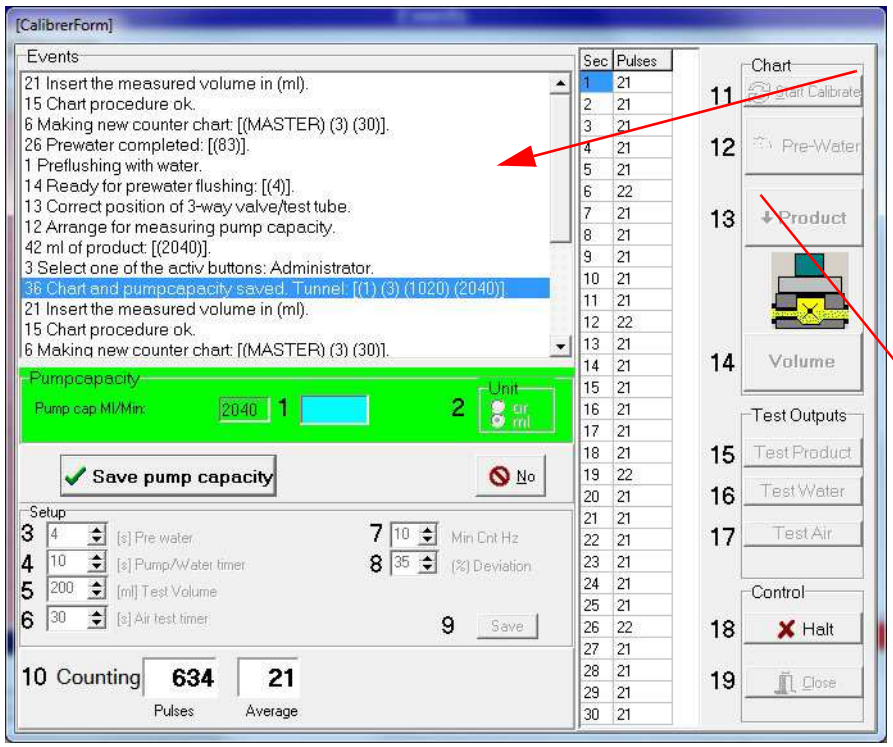
Menu-pos	Descriptions
5	**Change products:** Select actual products from the drop down box that appears. Products are modified by using Main Menu» Service» Setups» Product-Information. See Chapter 7 “Product information.” on page 50.  ***Remark!*** ***When a new product name inserted into this table the report system may also need an update. A new product will not be found in report software before next monday after product modification for current. Read more about how to manage new products in the user manual of KIV-Report.***
6	**Delete current column:** Delete (hide) a column (product), move the cursor and click in actual column prior to clicking this menu. 

Menu-pos	Descriptions
7	**Copy from grid:** Select a cell and right click the mouse. ***Remark!*** ***It is only possible to copy one cell at a time.***
8	**Paste in grid:** Select cells and right click mouse to paste data in selected area. 
9	**Calibrate/Test:** Select actual column (product) to calibrate and right click. Then select calibrate from the popup menu, See pages below.

Menu-pos	Descriptions
10	**Edit Help Text and Max/Min:** A new window appear for adjustments of help texts and min./max dosage values. 
11	**Column Pump Test:** 1:Actual output number. 2:MCU number 3:Analog output value. Only visible if the pump run speed is controlled. 4:Test timer in sec. 5:Actual number of pulses received. 6:Counter number.  Mouse click on the counter label and a menu appear for adjustment of the counter number itself.

Menu-pos	Descriptions
12	**Column Water test:**  Equal to pump test above but now as a test of solenoid valve for water.
13	**Column Air Test:**  Equal to water test above, but now as a test of the solenoid valve for compressed air.

Calibrate products:



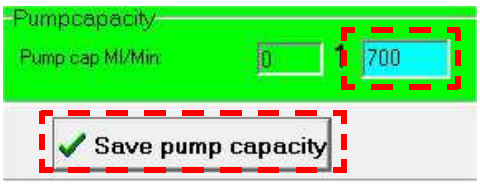
Event screen gives a notification or a warning. If a message is followed by value(s) a more info will appear by a double mouse click on the message itself. Remove all messages by right mouse and select menu <Clear Events>.

Sec	Pulses
1	21
2	21
3	21
4	21
5	21
6	22
7	21
8	21
9	21
10	21
11	21
12	22
13	21
14	21
15	21
16	21
17	21
18	21
19	22
20	21
21	21
22	21
23	21
24	21
25	21
26	22
27	21
28	21
29	21
30	21

Calibrate procedure:

Press the button <Start Calibrate> pos 11.
When ready, press the button <Pre-Water> pos 12, the system flush with some prewater controlled by pos 3.
When water executed press button <Product> pos 13, the product pump will now run in 30 seconds (fixed value).

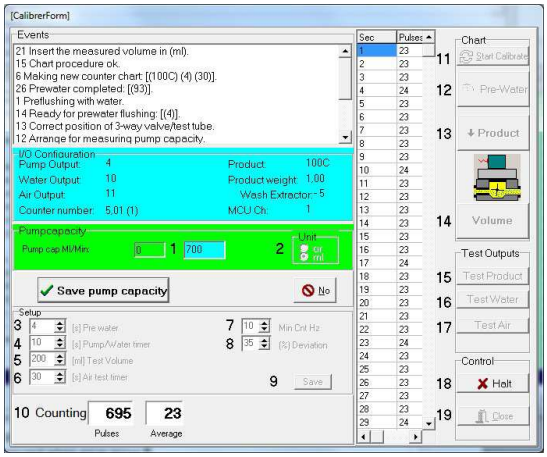
After calibration procedure executed measure actual weight or volume and insert the value in Pump capacity field pos 1, save pump capacity and product chart by the button <Save pump capacity>. Run this procedure for all products that needs to be calibrated.



Input values entered as milliliter or gram controlled by radio button pos 2.

Pos	Calibrate menu description
1	Field to insert measured pump capacity.
2	The pump capacity may be inserted as ml or gram. If inserted as gram the software will calculate pump capacity based on actual product weight.
3	Prewater timer in sec.
4	Water timer in sec. see pos 16 below.
5	Volume to test.
6	Air timer
7	Minimum pulses each calibrated second.
8	Maximum percentage deviation from sec to sec.
9	Save off settings.
10	**Counting:** Pulses: Total number of pulses received for actual calibration. Average: Average pulses pr. second, from calibration second 14 down to second 30.
11	Button <Start calibration> will prepare calibration procedures and open the next button.
12	Button <Prepare>, execute a prewater test. Timer value in pos 3.
13	Button <Product>, execute product calibration by running the pump in 30 sec.
14	**Volume measuring:** May used for validation of accurate, adjust pos 5 equal to a volume to validate. Press the button <Volume> to start execute dosing off actual a test volume. Verify result.
15	**Test product:** Press button <Test Product> and the pump run the pos 4 timer.
16	**Test water:** Press button <Test Water>, a water test run the pos 4 timer.
17	**Test air button:** Press the button <Test Air>, a compressed air test run pos 6 timer.
18	**Halt:** Press button <Halt> will stop active calibration.
19	**Close:** Press button <Close> will close calibration menu.

Validate of calibration:



After calibration the system evaluate the values by defined criteria listed below.

a= Minimum numbers of pulses pr. second, (checked from sec 6)
b= Deviation value from previous reading in% (checked from sec 6).
c= Occurrence of zero pulses from second 1 to 5.
Possible status/errors messages after calibration listed below:

Chart procedure ok

Enter the new pump capacity if changed, and press the <Save pump capacity button.

Remark:
*The software will automatically copy chart and modify pump capacity for other columns where calibrated product is used **AND** pump output number is equal, typical for products used in prewash and mainwash.*

To less pulses [(N1) (N2) (N3)]
N1= Actual second when error occur.
N2= Number of pulses in the second of error.
N3= Min. number of pulses each second.

Why this error:
N2 < Min. Cnt Hz.

What to do?
<Save pump capacity> button is not active.
Correct the cause of bad flow and recalibrate.
Reduce the Min. Cnt Hz pos 7.

Unstable flow. < > [(N1) (N2) (N3) (N4)]
N1= Actual second when error occur.
N2= Number of pulses received for the error second.
N3= Max. accepted value.
N4= Min. accepted value.

Why this error:
N3[Sec] > N3[Sec-1]+(%)Diviation.
N4[Sec] > N4[Sec-1]-(%)Deviation.
What to do?

<Save pump capacity> button is not active.
Correct the cause of bad flow and recalibrate.

Adjust the (%)Deviation.

To many pulses [s] [(N1) (N2)]
N1= Actual second when error occur.
N2= Number of pulses received for the error second.
Why this error:
N2 > N2+(%)Diviation).
What to do?
<Save pump capacity> button is not active.
Correct the cause of bad flow and recalibrate.

To less pulses totally [(N1) (N2)]
N1= Minimum number of pulses totally.
N2= Number of pulses totally.
Why this error:
Min.Cnt Hz*17 < Number of pulses totally.
What to do?
The <Save pump capacity> button is not active.
Correct the cause of bad flow and recalibrate.

Zero pulses [(N1)]
N1= The second when error occur.
Why this error:
Zero pulses received in second from 1 to 5.
What to do?
The <Save pump capacity> button is not active. Correct the cause of bad flow and recalibrate.

Right mouse click menu in the calibration menu:

<Clear Events>.
Will remove all messages in the event screen.

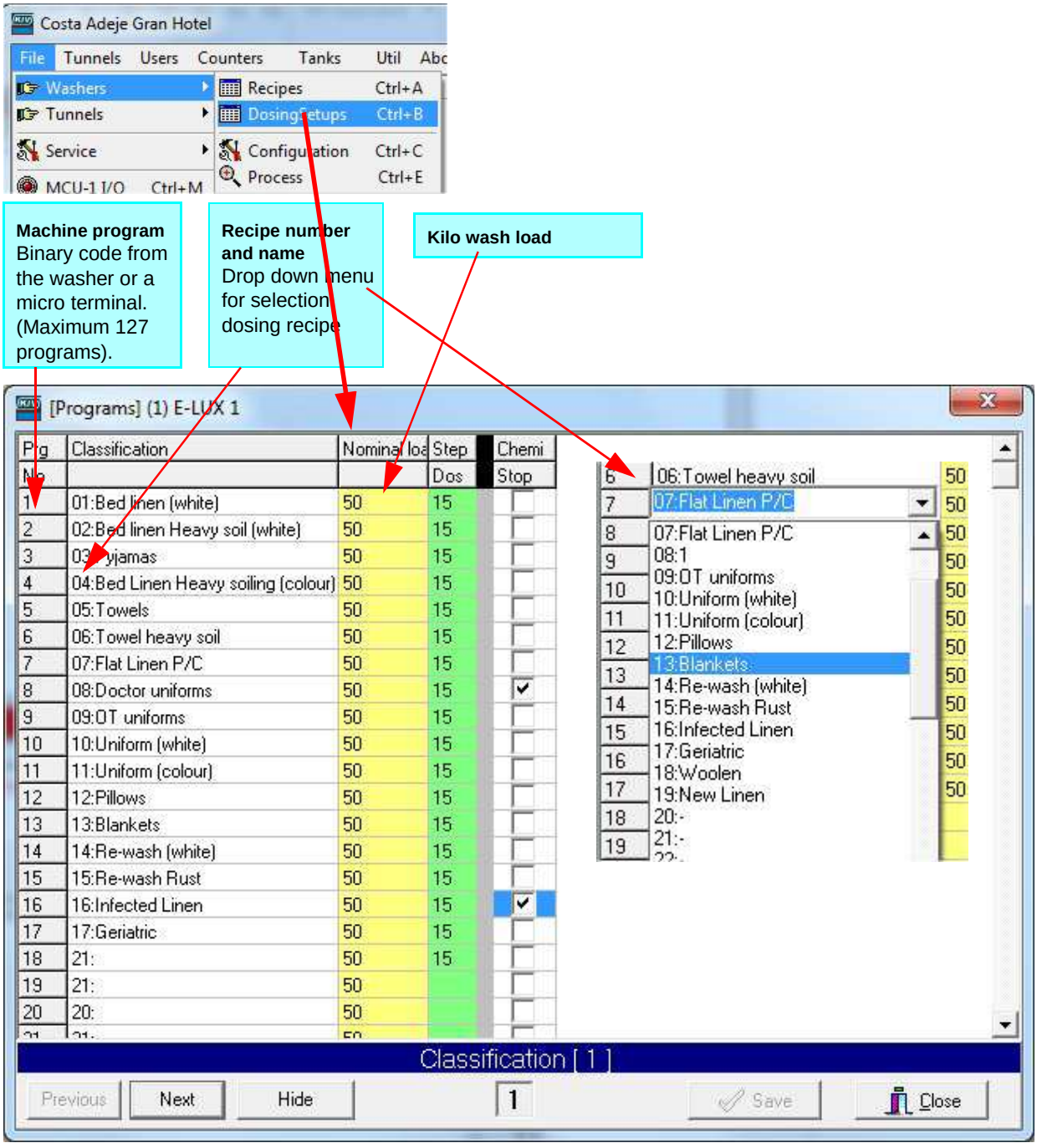
<Edit>.
To modify a text displayed in events just point on a text and click <Edit>, a translation menu will then appear.

<Water for flowtype 2,3 and 5>, checked will activate water valve while execute of a calibration, purpose of this function is to create equal conditions as execute a dosing for this flowtype.

<Show IO panel>.
Unhide or hide I/O panel (colored green).

<Open Dosing valve>
Checked will open routing valve to actual machine.

Chapter 7: Washer program.



Step dosing:

[Programs] (1) E-LUX 1

Prg No	Classification	Nominal loa	Step Dos
1	01:Bed linen (white)	50	15
2	02:Bed linen Heavy soil (white)	50	15
3	03:Pyjamas	50	15
4	04:Bed Linen Heavy soiling (colour)	50	15
5	05:Towels	50	15
6	06:Towel heavy soil	50	15
7	07:Flat Linen P/C	50	15
8	08:Doctor uniforms	50	15
9	09:OT uniforms	50	15
10	10:Uniform (white)	50	15
11	11:Uniform (colour)	50	15
12	12:Pillows	50	15
13	13:Blankets	50	15
14	14:Re-wash (white)	50	15
15	15:Re-wash Rust	50	15
16	16:Infected Linen	50	15
17	17:Geriatric	50	15

Step.Dosing:
Step Dosing. The method of selecting “step dosing” for a Washer
Type 8:Step system. See “Washer type” on page 43 (UM).
The input is the binary sum of all groups.
Example:
1: Pre Wash.
2: Main Wash.
4: Bleach.
8: Rinse.

Examples:
A step dosing with Prewash, Main Wash & Rinse = 11 (1+2+8).
A step dosing with Prewash, Main Wash, Bleach & Rinse = 15 (1+2+4+8).

Not legal steps (Not defined) will give an error message:
“Invalid step” +Step Number + Binary Code.
In this case the Group 9 will be dosed.

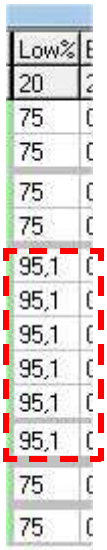
Remarks!
A new step will not be executed before the input signal is set off for the current step, and the dosage for this step is completed.
There is an exception for washer type 8, this washer send Upload new program by Bit 2, if Bit 1 is set to ON while still Bit2 still is active, in this case the dosing step is activated anyway.

Chemical dosing control:

Prg No	Classification	Nominal loa	Step Dos	Chemi Stop
1	01:Bed linen (white)	50	15	☐
2	02:Bed linen Heavy soil (white)	50	15	☐
3	03:Pyjamas	50	15	☐
4	04:Bed Linen Heavy soiling (colour)	50	15	☐
5	05:Towels	50	15	☐
6	06:Towel heavy soil	50	15	☐
7	07:Flat Linen P/C	50	15	☐
8	08:Doctor uniforms	50	15	☑
9	09:OT uniforms	50	15	☐
10	10:Uniform (white)	50	15	☐
11	11:Uniform (colour)	50	15	☐
12	12:Pillows	50	15	☐
13	13:Blankets	50	15	☐
14	14:Re-wash (white)	50	15	☐
15	15:Re-wash Rust	50	15	☐
16	16:Infected Linen	50	15	☑

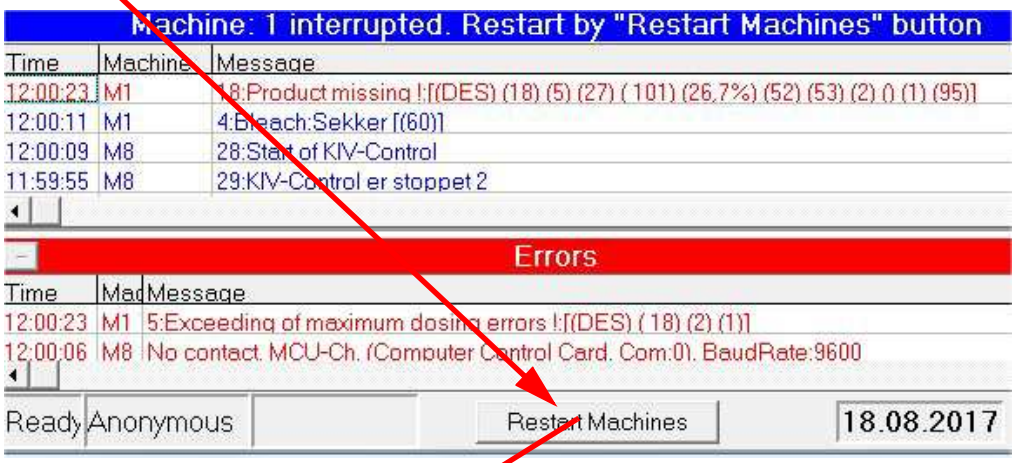
Chemical dosing and redosing control, the software is able to force washers that receive to less products in a dosing group on hold, and redose the missing amount of chemicals.

Select actual programs by a mouse click in column 14.

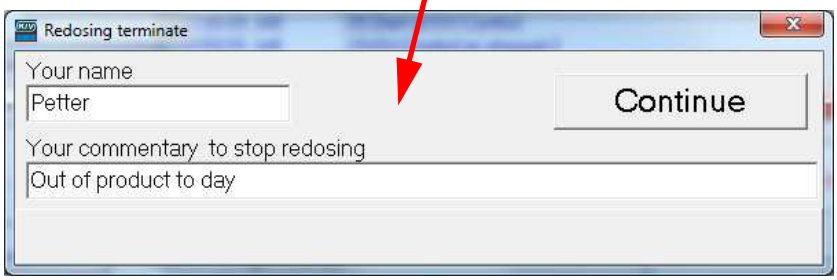


Redosing washers:

By adding a decimal value (,1) subsequent the lowest acceptable percentage result value, for just a single or several products inside a dosing group, the actual group will be forced to redose if any product (s) dosingvolume is less than lowest acceptable percentage value, in addition the actual washer will be forced on hold. (only the remaining part of actual dosage will be redosed). When a redosing situation occur the button <Restart Machines> will turn visible, and by a mouse click on this button the redosing menu appear, from that menu it is possible to execute or terminate redosing (s).

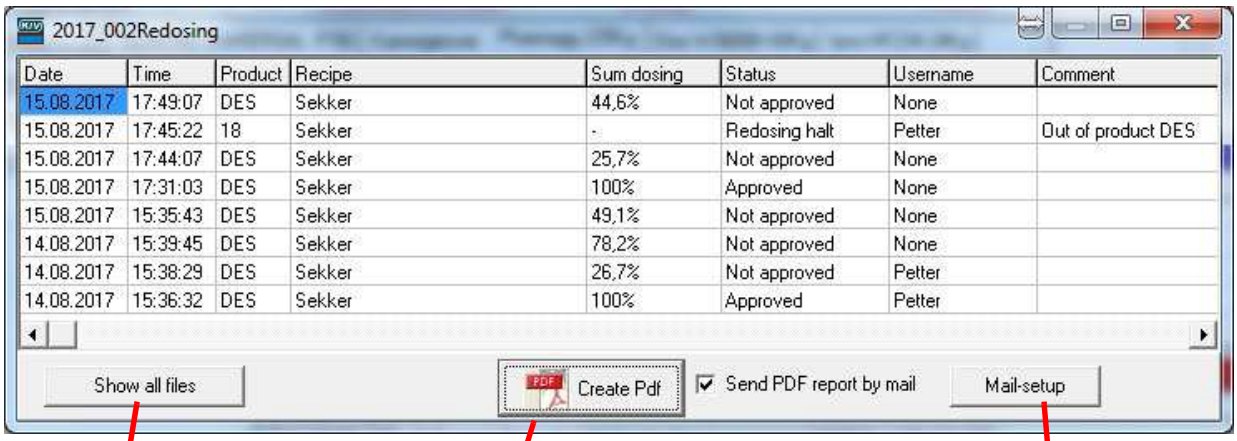


By a mouse click on the button <Redosing> the actual washer and missing products are forced to a new dosing queue, and redoing (s) will be executed when there is free dosing capacity.



Redosing terminate:

By a mouse click on button <Terminate>, a new menu will appear, enter your name and the reason to terminate redosing, then by a mouse click on the button <Continue> the actual washer is forced out off dosing queue.



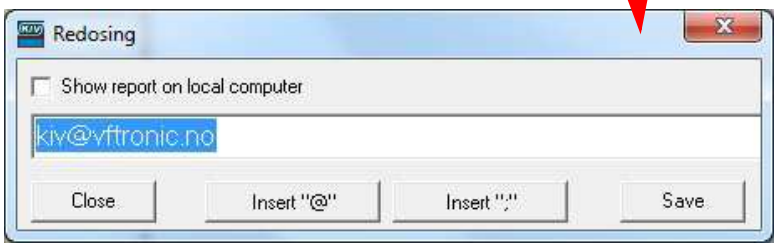
Redosing report:

By a mouse click on the button <Redosing reports> (previous page) a menu that show redosings appear. This menu display the following information:
Date and Time of the redosing, Product to redose, Name of actual recipe, Sum up in percentage of actual product, Status of actual dosing, active username or name if the dosing was terminated, a comment entered when terminating of redosing.

By a mouse click on the button <Show all files> a menu appear for selecting and display redosing results from a specific machine.

2017=Actual year.
00X=Actual machine number, CBW (s) start from values higher than 100, (number just after the year).

By a mouse click on the button <Create Pdf> the actual selected report will be saved as pdf file and sent by mail to the defined mail address, example of pdf redosing report is shown below.



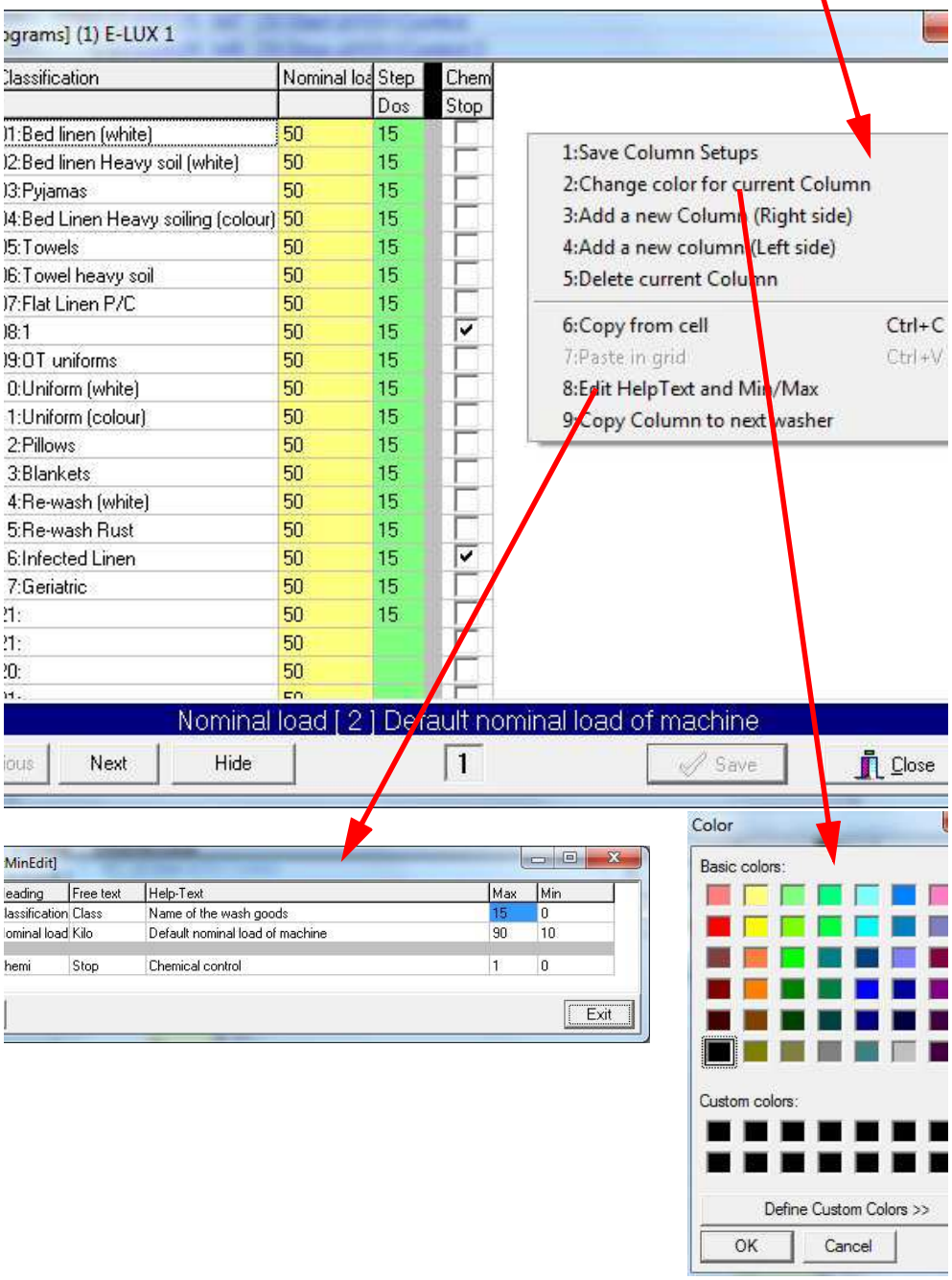
Tekstilvask innlandet A/S.

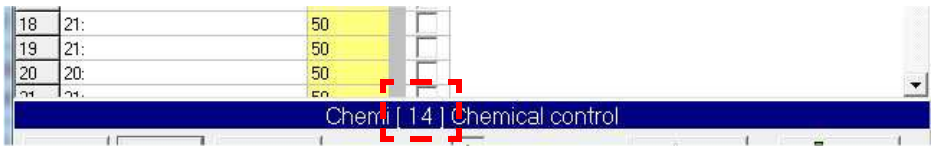
Redosing report :Elux W3600H 60Kg

Date	Time	Product	Recipe	Sum dosing	Status	Username	Comment
15.08.2017	17:49:07	DES	Sekker	44.6%	Not approved	None	
15.08.2017	17:45:22	18	Sekker	-	Redosing halt	Petter	Out of product DES
15.08.2017	17:44:07	DES	Sekker	25.7%	Not approved	None	
15.08.2017	17:31:03	DES	Sekker	100%	Approved	None	
15.08.2017	15:35:43	DES	Sekker	49.1%	Not approved	None	
14.08.2017	15:39:45	DES	Sekker	78.2%	Not approved	None	
14.08.2017	15:38:29	DES	Sekker	26.7%	Not approved	Petter	
14.08.2017	15:36:32	DES	Sekker	100%	Approved	Petter	

Machine Program table setup

Move the mouse to one column and then
left mouse button in the grid.
Then press the right mouse button and f
menu will appear.



Menu -pos	PopUp menu descriptions
1	**Save Column Setup:** Modification of grid will be saved by this menu. (Columns, Colors) ***Remark!*** ***The Save button in the bottom of the screen will <u>not</u> save grid properties.***
2	**Change color for current column:** See page above.
3,4	**Add a new column (Left or Right side):** Insert a new column by moving the cursor and click column left or right for the new column to be inserted. To be able to insert a new column, there has to be free space for it. Check for free space by moving mouse from column to column and check number that appear in blue dynamic help text. Only when value is higher than previous colum+1 there is free space to insert new column. 
5	**Delete current column:** Delete (hide) a column, move the cursor and click in actual column prior to clicking this menu.
6	**Copy from cell:** Select a cell and right click the mouse. ***Remark!*** ***It is only possible to copy one cell at a time.***
7	**Paste in grid:** Select cells and mouse right click to paste data in selected area.
8	**Edit Help Text and Max/Min.:** A menu appear for help texts and min./max values see page above.
9	**Copy column to next washer:** Click this menu will copy actual column to equal column for next washer.

Chapter 8: Properties products washers.

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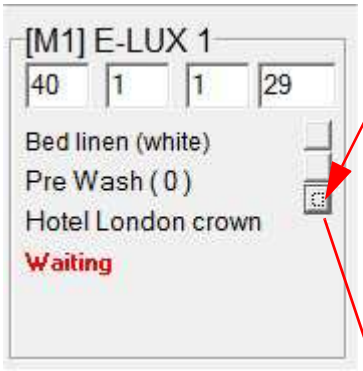
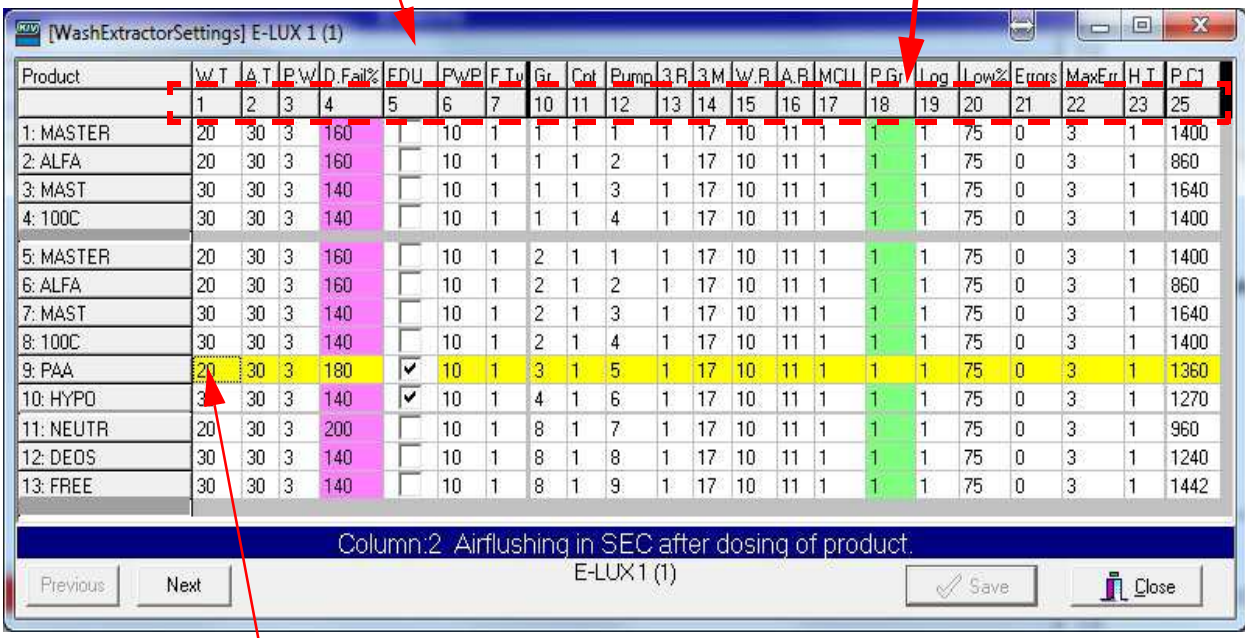
Menu found under <File>, <Washers>, <Configuration>.

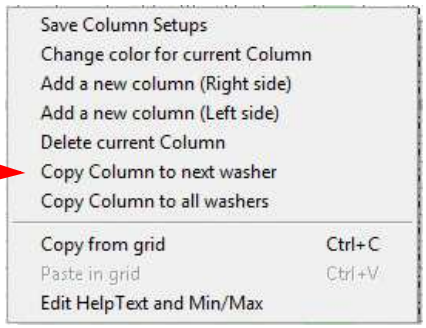


or just a mouse click on button number 3 at the machine frame.

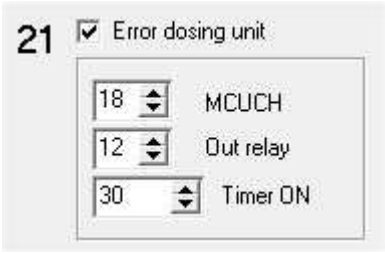
All columns described in table below



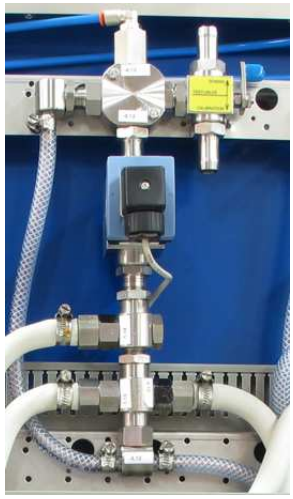
Highlight a row:
Press and hold <Ctrl> key and do a mouse click.
Popup menu appear by right mouse click.

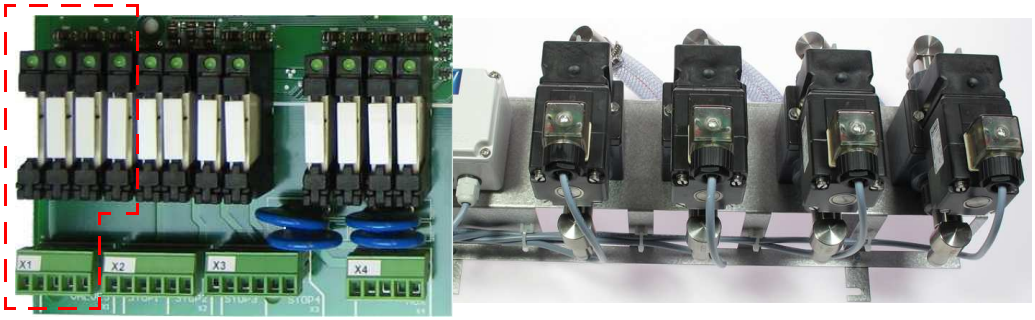


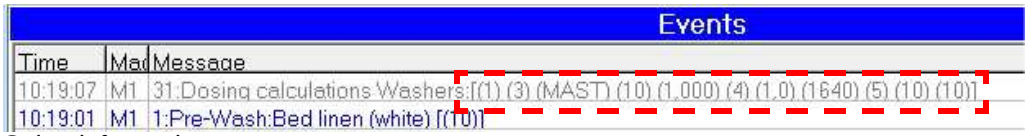
Individual users has access from column 1..4, 6..7 and 25. Administrator user has access to all columns.

Column	Description of each column number:
1	**Water flush timer:** Water flushing after last product in a group dosed, timer in seconds. All product's timers have to be filled in because the last dosing depends on the formula definition. *Remark!* *Lowest legal value is 10. Values less than 10 sec are forced to 11 sec by the system to avoid any damages by water flushing.*
2	**Air flush timer:** Air flushing in seconds that follow final water flush.
3	**Pre Water Timer:** Timer in seconds for water flushing prior to dosing a product. *Remark!* *IF **Water pulses** (Column 06) > 0, the number of pulses has to be received during this time-period **(Pre Water Timer)**. If NOT the following dosings are rejected.* *(this check is only performed prior to dosing of the first product. Water flushing between products do not have this check, (time based).*
4	**Dosing Failure in%:** Maximum overdosing in % before the pump stop. The overdosing calculation is based on theoretical calculated dosing time multiplied by percentage value and not by pulses from the counter. If the dosing stopped (time-out) next dosage(s) for this product is multiplied by the "Number of Errors:" on page 85 (UM). This continue until Number of errors > 4. The system will then don't multiply the time-out anymore to prevent overdosing (there is something wrong in the hardware). The purpose of this function is to automatic prime out air in the suction line when change of products.
5	**EDU:** Error Dosing Unit. If checked the output "Error dosing unit" will be activated when the product run into an fault dosing situation. See Chapter 2 "Error dosing unit:" on page 14 (UM). 

Column	Description of each column number:
6	**PreWater pulses:** Number of pulses to received prior start of the dosing pump. This variable depends (works together with) the Column 03 ***(Pre Water Timer).*** Case 1. If “03 ***Pre Water Timer*** set to 0 the dosing will start after the number of pulses defined in 06. Time-out period 30 second. Case 2. If “03 ***Pre Water Timer*** >0 the dosing will start after the timer defined in 03, provided that the number of pulses are achieved. Time-out period actual timer + 20%.
7	**Flow-Type:** See the Table 1 on page 87 (UM) for details.
8	**Spare column:** Hided for future use.
9	**Special Timer:** Timer in 1/10 second. Used in combination with flow type 18,19,20
10	**Group:** Purpose of group number is to connect each column (product) to a dosing group. Products in equal group are dosing in sequence. Limitations: 15 groups. Maximum 36 products. Example of groups: Group1. Binary signal 1 Prewash. Group2. Binary signal 2 Main wash. Group3. Binary signal 1+2 for extra dosing. (Main wash 2) Group4. Binary signal 4 Bleach. Group5. Binary signal 1+4 for extra dosing. Group6. See “Starch Delay (sec.):” on page 49. Group7. See “Bleach Delay (sec.):” on page 50. Group8. Binary signal 8 Rinse. Group9. Binary signal 8+1 Rinse-2. Group10..15 More binary signal Extra dosings.

Column	Description of each column number:
11	**Counter Channel:** Input channel number where the flow counter is wired, corresponding MCU number found in pos 17 below. *Remarks!* *When use products as SPIRIT which needs extra dilution of water.* *Insert two values in this column, the two values has to be separated by a decimal point ",".* *Example: 1,2. The first value define water counter, the second value counter for product.* 
12	**Output Relay:** Output Relay where the dosing pump is connected. The corresponding MCU is defined in "Washer-Setup." on page 42 (UM) If need of water in parallel with the pump, insert the water Output number after a decimal point. *Remarks! Multi Function Configuration.* First value define the pump output, the second value define the water valve. Example of multi function setup: See Position 17 and 18 on page 202. 

Column	Description of each column number:
13	**3 way valve Relay:** Output relays for routing valves. For final washer set to value to 0 if no routing valve used. *Tip for washer image screen!* *To visualize dosing to the last washer (without dosing valve) insert value 23.* 
14	**3 way valve MCU:** The MCU number for outputs in column 13 (pos 13 above).
15	**Water Relay:** Output Relay where the water flushing valve is wired. Set to 0 if not in use. *Remarks! Multi Function Configuration.* *Example: 4,9. The first, value (4) define the normal water valve,* *the second value (9) define the extra water valve, the timer for this water valve is controlled by the prewater timer (pos 3 in this chapter).*
16	**Air Relay:** Output Relay where the air flushing valve is connected. Set to 0 if not in use.
17	**MCU Ch:** MCU number for air flushing valve.
18	**Parallel Group:** Dosing of products 1 to 9 (Prewash/Main wash) are set to 1, dosing products 10, 11 (Bleach) is set to 2 and dosing products 12 to 15 (Rinse) are set to 3 this for wash extractors 1 to 5. Products (Pumps) inside equal group number are started sequential and all different groups are started in parallel. For better understanding see the schematic “Group of Washers and pump batteries” on page 199 for examples of groups. ***Max number of para groups 30.***

Column	Description of each column number:
19	**Signal log:** Insert value 0=No signal logging. Insert value 1=Signal logging active. This variable can be adjusted for each individual product. There is an overall possibility to have this logging active or not. This radio button is found in Chapter 5 “Signal Logging:” on page 49 (UM). Each element in the information string found in event base is separated with brackets ( )  String information: Group number = 1 Product number = 3 Product name = MAST Batch kilo = 10 Product specific weight = 1,000 Calculated dosing timer (1/10 sec) = 4 Gram detergent / kg linen = 1,0 Pump capacity in milliliter = 1640 Calculated pulses = 5 Calculated volume (ml) = 10 Calculated weight (g) = 10

Column	Description of each column number:
20	**Low dosage alarm and redosing:** Lowest acceptable dosing result in gram of the total dosage before audible alarm is given. The value in percent. *Remark1:* *If the dosage is less than this percent, an audible alarm is activated and error message is given.* *If the dosage more than this percent but less than 100% a event message is given, see also pos 22 below.* *Remark2:* *When using the redosing procedure insert two values in this column. The two values have to be separated by a decimal point ",". The redosing is activated when the last value is set to 1.* Example: 85,1=Dosages less than 85% are redosed. *Remark3:* *When redosing is set to on, the washer is put on hold by the dosing system until the dosage result exceeds 99%. Typically this situation occurs when a product is not properly dosed, due to missing products, pump failure etc.* **If the cause of failure is a poor working counter, the system can temporary be set to time based dosing. In that case set column 7 in this chapter to 0, see Chapter 8 "Flow-Type:" on page 79 (UM).** How does it work? All dosages less then the percent value will be redosed by the system (only the missing percent of product (s)). When a redosing situation occur the actual washer is put on hold, and an error message and restart button are visible on the KIVControl screen (see page below). By pressing "Restart Machines" button the washer is redosed. The redosing itself is indicated by a additional message "redosing procedure" in the Event base.

Chemical hygiene control:

If laundry use product for chemical disinfection the KIV-System is able to put washers that receive too low quantity of actual product on hold, and by that manage to dose remaining product quantity when empty product barrel is replaced.

Low%	Errors	MaxErr
30	31	32
75	0	3
75	0	3
75	0	3
75	0	3
75	0	3
75	0	3
85,1	0	1
75	0	1
75	0	3
75	0	3

When button <Restart Machines> is pressed the remaining product is injected.
Redosing indicated by a message in machine frame.

Low%
20
75
75
75
75
75
75
75
75
95,2
75
75
75
75

Setup of chemical dosing control from menu <File>, <Washers>, <Configuration> or by button 3.

Percentage lowest dosing result value in column 20, + add value 2 to tell the software about dosing control (95,2).

Column 22, just max number of dosing errors, in this case set to 1.

Prg No	Classification	Nominal loa	Step Dos	Chemi Stop
1	01:Bed linen (white)	50	15	☐
2	02:Bed linen Heavy soil (white)	50	15	☐
3	03:Pyjamas	50	15	☐
4	04:Bed Linen Heavy soiling (colour)	50	15	☐
5	05:Towels	50	15	☐
6	06:Towel heavy soil	50	15	☐
7	07:Flat Linen P/C	50	15	☐
8	08:Doctor uniforms	50	15	☑
9	09:OT uniforms	50	15	☐
10	10:Uniform (white)	50	15	☐
11	11:Uniform (colour)	50	15	☐
12	12:Pillows	50	15	☐
13	13:Blankets	50	15	☐
14	14:Re-wash (white)	50	15	☐
15	15:Re-wash Rust	50	15	☐
16	16:Infected Linen	50	15	☑

Check boxes to define wash program which is dosing controlled.

Column	Description of each column number:
21	**Number of Errors:** Column 21: Number of errors counted for actual machine and product. When a dosage is less than 100% this variable is increased by one. ***Remark!*** ***If the product is dosed 100%, this counter is set to 0.***
22	**Max. Errors:** Column 22: Max. Number of counted errors. Audible alarm and stop functions are validated against this variable. Act together with “Number of Errors” (Column 21) above. **Value =0:** “Max. Error” not in use. (Col. 21+22 are disabled). **Value 1..21:** Stop and Alarm outputs activated when “Max. Error” = > “Number of Errors” (Col 21). **Value 21..40:** Alarm output set active when (Figure Value minus 20) = > “Number of Errors” (Col 21). Stop NOT performed. ***Remark:*** *If number of pulse received are less than 1 (pump not running) the audible alarm is given independently from the “Low dosage alarm” and the stop is validated by setup of “Max Errors”.*

Column	Description of each column number:
23	**Hold Type:** 0=Activate the stop relay until “start up dosing” for actual washer. 1=Activate the stop relay when dosing products and flushing with water and air. 2=Activate the stop relay when dosing products. 3=Activate the stop relay when dosing products and flushing with water. When to use the wash extractor hold function: When a wash extractor is ready for dosing or is waiting in a dosing queue, an outputs (relay) is triggered or not triggered depending on Position 12 (Fail Safe) on page 44. This stop function is controlled by the stop relay in the Interface box. The wash extractor needs only to be stopped when the number of wash extractors connected to the KIV Control exceeds 5 to 6, or when the wash extractors are too numerous in relation to the capacity of the pumps. Normally the wash extractors use a long time to fill water and to increase the temperature of the wash water. For these reasons it is important to give dosing signals to the KIV Control as early as possible when the wash extractor should have detergents. All of the factors above must be taken into consideration before the wash extractors are connected to the stop function. The dosing queue is dealt with by the KIV Control system according to the FIFO principal; first in, first out. The shortest washing time is normally the last rinsing, where the wash extractor has to receive softener. For this reason it is possible to give a rinse dosing a higher priority than other dosings. This mean that when a wash extractor gives a rinse signal, it is placed into a dosing queue with other wash extractors, but it will be given higher priority in the dosing queue. High priority rinsing is adjusted at position 8 (Priority group) at page 49 UM and Priority machine at page 50 UM. **N.B. The Hold Type has to be equal within the same group(Column10).**
25	**Pump capacity:** Milliliter of product per minute. Value updated by the calibration procedure. SeeChapter 6 “Calibrate procedure:” on page 66 (UM).

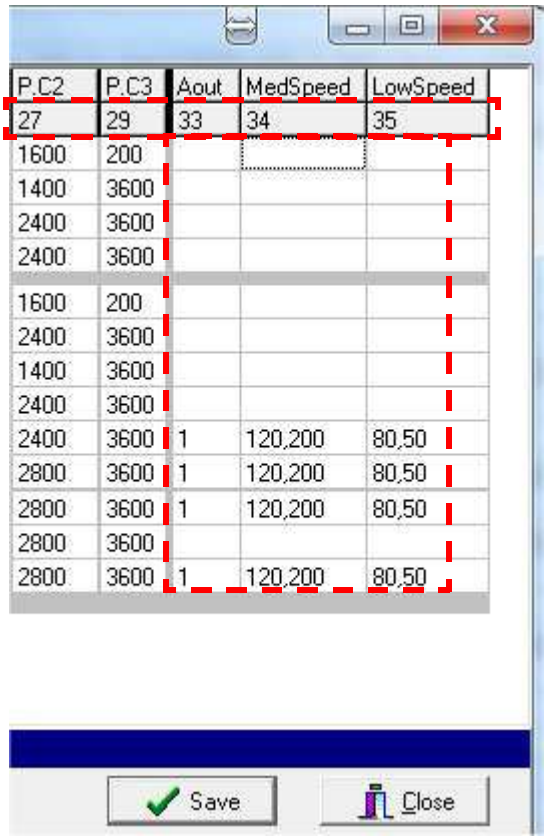
Table 1: Flow Types

Type	Principle	Notes
0	Time Based	No flow detection.
1	Counter Based	Flow detection by a flowcounter.
2	Counter Based	Flow detection by a flow counter and water-flushing in parallel with the product. (typical used for products as SPIRIT).
3	Powder	Powder dosing unit is used for actual column.
4	pH regulation	Analog pH regulation for actual column, only valid for tunnels.
5	pH regulation	Digital pH regulation for actual column, only valid for tunnels.
6	Counter Based	As flowtype 1, but the product is independent of the cycle signal. Typical used for a “bad exchanger” tunnel when there is need for an extra dosage that is controlled by its own signal.
7	Counter Based	As flowtype 1, but no water or air flushing is added after the product. Used for pure product dosage to washers.

Pump speed control

Speed control by analogue output from MCU1 card may be take in use when a combination off large and very small washers are supplied from a single pump battery. Setup to handle the pump speed is done by columns 27, 29, 33..35 as in menu below. Columns 27 and 29 only updated by calibration off actual product.

Column 33: Define what analogue output to use for actual pump (s), several pumps may take use of equal output number.

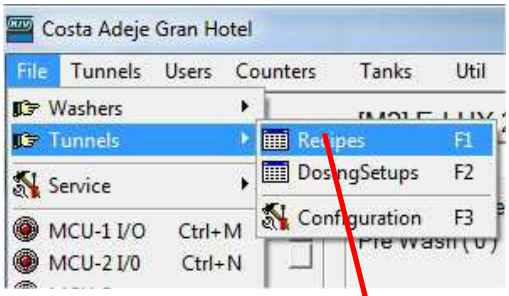


Column 34:
Medium pump speed values, separated by a decimal point, where the first value represent analogue output value and the next value represent the dosing volume threshold for actual pump speed analogue value.

Column 35:
Equal as column 34 but used for low pump speed
Set values to 0 if not used.

Any volume value higher than defined in column 34 is executed by high analog speed (255).

Chapter 9: Dosing table for tunnels.



Dosing Groups
Each group of dosing columns are separated by different colors. As example in menu below:
Group1=3 products for Module 1
Group2=3 products for Module 6
Group3=1 product for Module 7
Group4=3 products for Module 10

Product Name
Name of products and module number.

Recipes Name
The name of each recipe. Up to 127 recipes are free to use.

[CBWDosings] (1) Jensen Senking P50 10 Universal [Machine :5]

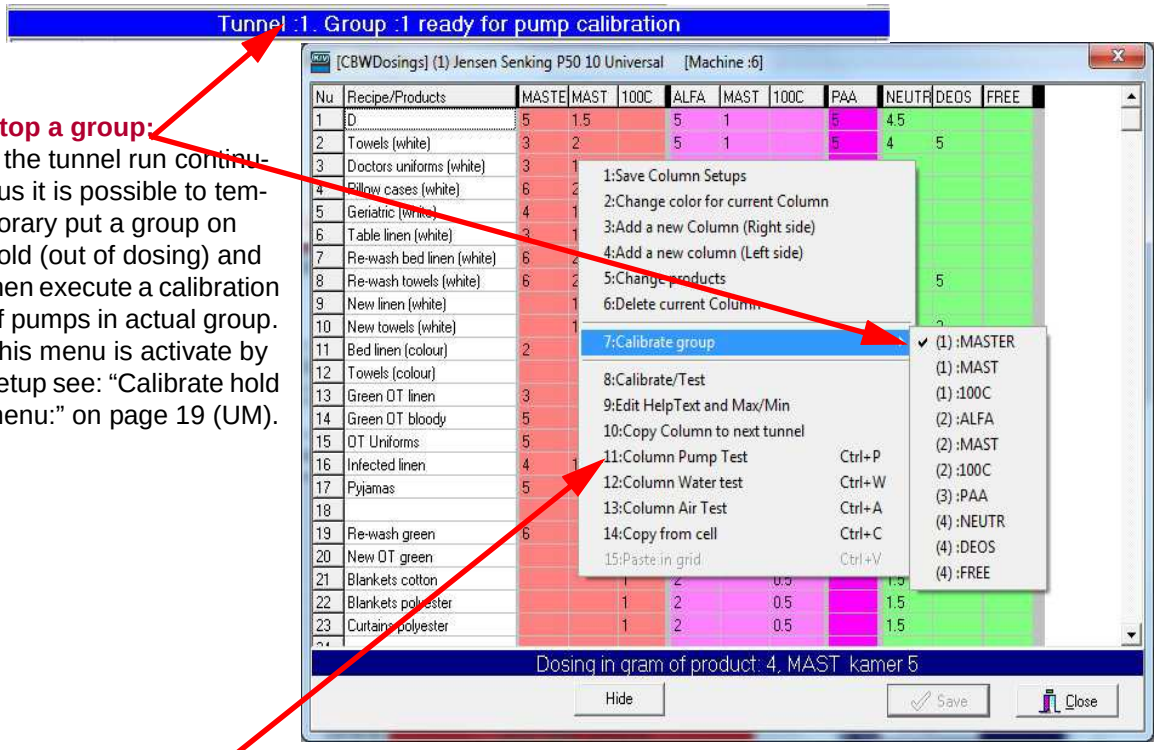
Nu	Recipe/Products	MASTE	MAST	100CC	ALFA	MAST	100CC	PAA	NEUTR	DEOS	ACID
	Module	1	1	1	6	6	6	7	10	10	10
1	1111	1	1.5	1	5	1		5	4.5	2	2
2	Towels (white)	3	2		5	1		5	4	5	
3	Doctors uniforms (white)	3	1.5		4	1		2	3		
4	Pillow cases (white)	6	2		5	2		5	4.5		
5	Geriatric (white)	4	1.5		3	0.5			3.5		
6	Table linen (white)	3	1		3	1		4	3		
7	Re-wash bed linen (white)	6	2		4	1			4		
8	Re-wash towels (white)	6	2		4	1		5	4	5	
9	New linen (white)		1		2				1.5		
10	New towels (white)		1		2				1.5	3	
11	Bed linen (colour)	2		2	3		0.5		2		
12	Towels (colour)			2	3		0.5		1.5	5	
13	Green OT linen	3		1.5	4		1		4.5		
14	Green OT bloody	5		1.5	4		1		4.5		
15	OT Uniforms	5		1.5	4		1		4.5		
16	Infected linen	4	1.5		3	0.5			2		
17	Pyjamas	5		2	5		2		3.5		
18											
19	Re-wash green	6		3	5				4		
20	New OT green			0.5	2		0.5		1.5		
21	Blankets cotton			1	2		0.5		1.5		
22	Blankets polyester			1	2		0.5		1.5		

Dosing in gram of product: 10, ALFA This is extra information

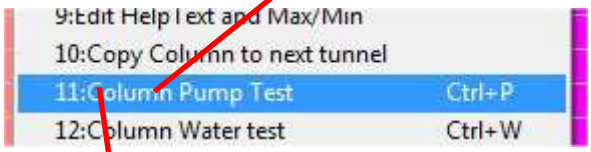
Hide Save Close

Recipe dosings
Dosings are given in gram/kilo linen.
Full stop (.) or comma used as decimal point.

Select a column by moving the mouse. Click left mouse button to select a cell, then by pressing the right mouse button the pop-up menu will appear.

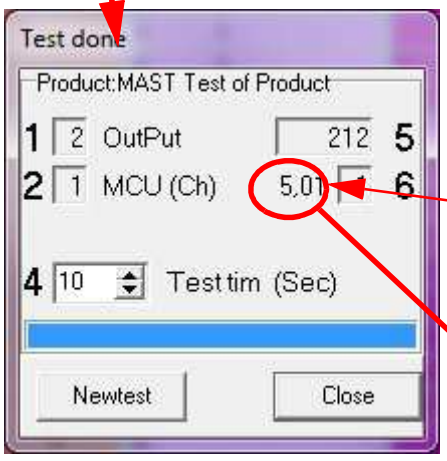


Stop a group:
If the tunnel run continuous it is possible to temporary put a group on hold (out of dosing) and then execute a calibration of pumps in actual group. This menu is activate by setup see: “Calibrate hold menu:” on page 19 (UM).

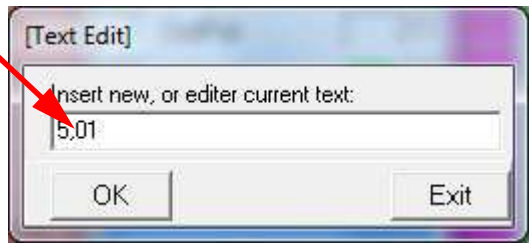


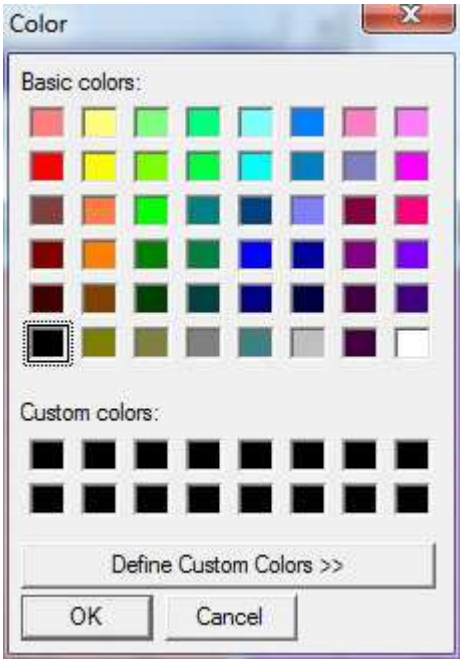
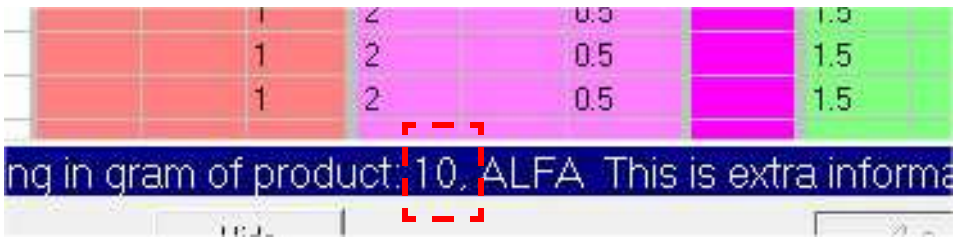
Test a pump or valve from menu pos 11..13. A pop-menu will appear from this menu. It is easy to operate and control a pump or valve

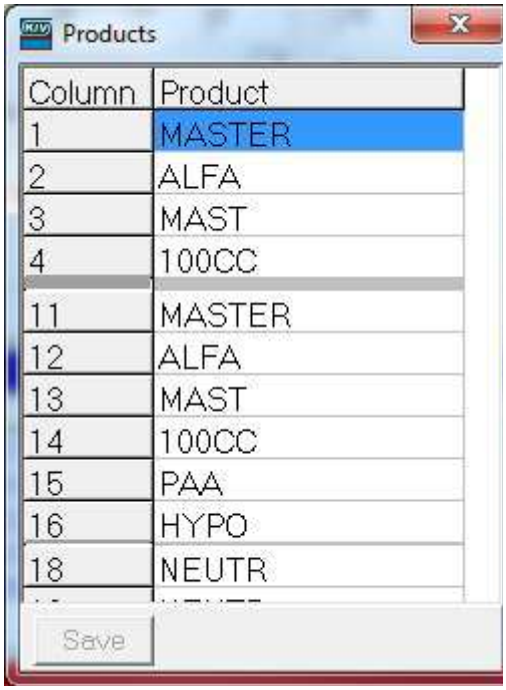
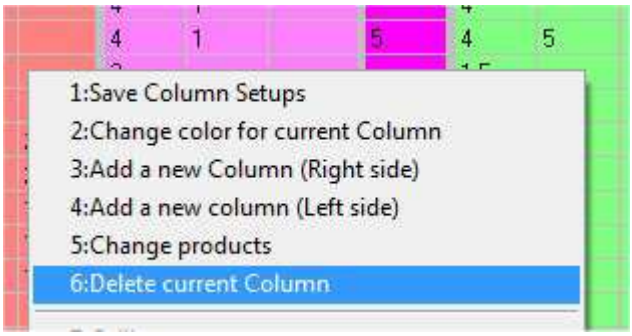
Description of pos in menu
1:Actual output number
2:MCU number
4:Timer
5:Actual number of pulses received.
6:Counter number.

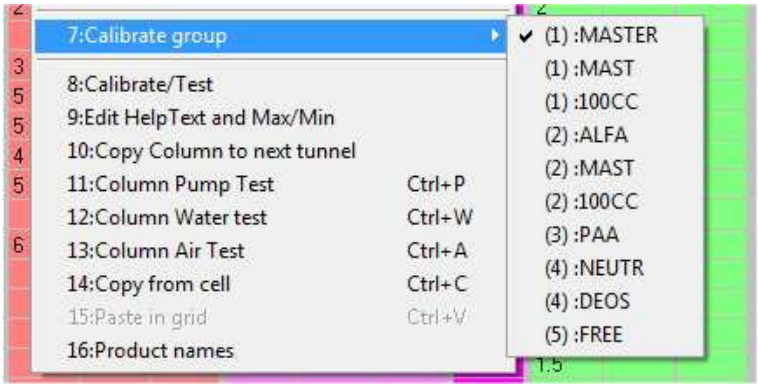
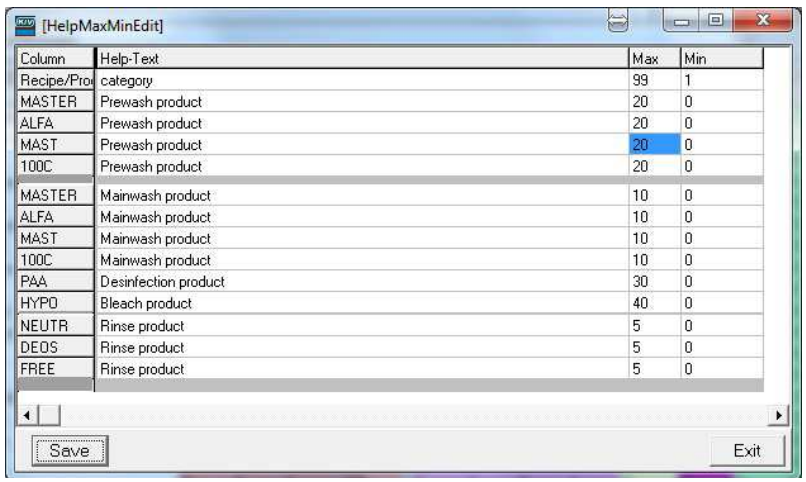


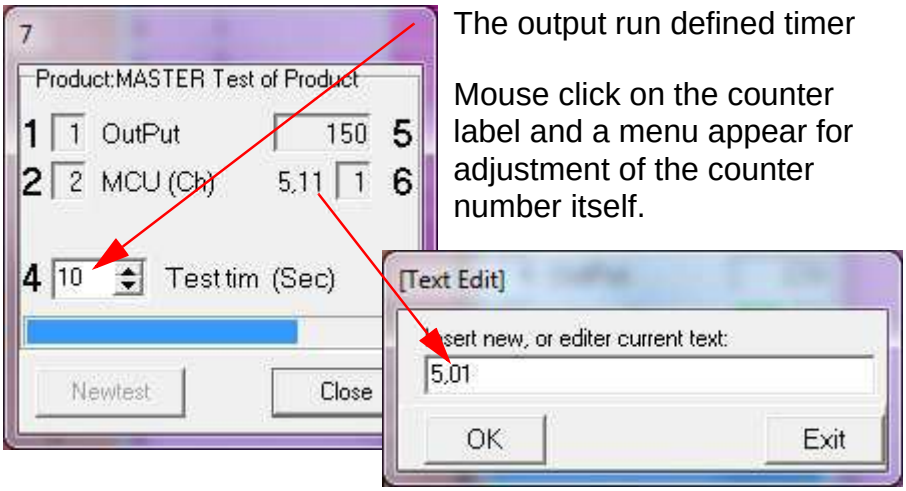
Mouse click on the counter label and menu for adjustment of the counter number appears.

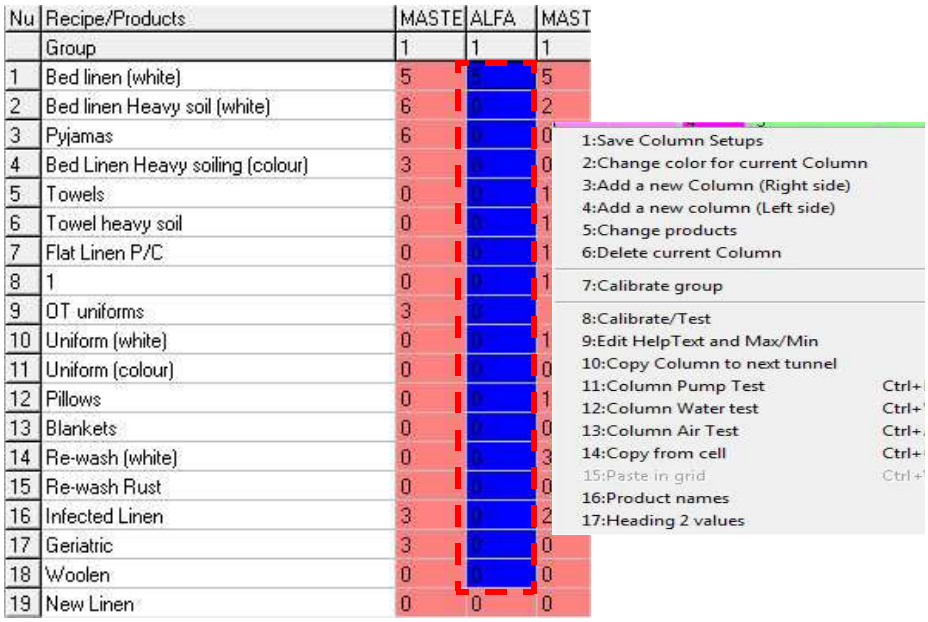


Pos	Tunnel setup
1	**Save Column Setup:** Property modifications of the grid layout will be saved by clicking this menu.
2	**Modify color for current column:** For all column the color can be modified to free definable colors by clicking a color from the color palette. 
3,4	**Add a new column (Right side):** **Add a new column (Left side):** Insert a new column by moving the cursor and select menu <Add a new Column to left> or menu <Add a new Column to right> by doing that a new column will appear. ***Remark!*** ***Prior to adding a new column please check for free space by moving the mouse from column to column while checking the number counter that appear in blue dynamic help text line as below. Only when the value is higher than previous value+1 there are a free space for inserting a new column***. 

Pos	Tunnel setup
5	**Change products:** Select products from the drop down box that appear. The products are modified by using Main Menu» Service» Setups» Product-Information. See Chapter 7 “Product information.” on page 50 (UM).  ***Remark!*** ***When a new product name is inserted into this table the report system may also need an update. A new product will not be found in report software before next monday after product modification for current. Read more about how to manage new products in the user manual of KIV-Report.***
6	**Delete current column:** Delete (hide) a column (product), move the cursor and click in actual column prior clicking this menu. 

Pos	Tunnel setup
7	**Calibrate products:** Use this menu to deactivate a group while pumps within actual group are calibrated.  Message shown in the blue event bar  ***Remarks!*** ***-Menu only visible when Util, Various, Calibrate hold menu checked.*** ***-When a group is set to deactivated also move functions are not working. Therefor always use separate groups for move of bags when this function is in use.***
8	**Calibrate/Test:** Move the cursor and activate a cell for product that needs calibration. The calibrate menu will appear, see Chapter 6 on page 66.
9	**Edit Help Text and Max/Min:** A new menu appear for adjustments of help texts and min./max dosage values. 

Pos	Tunnel setup
10	**Copy column to next tunnel:** Click this menu for copy data in actual column to equal column for next tunnel. ***Caution!*** ***Data will be copied based on the col number, setup of column numbers might be different from actual tunnel to next tunnel. That's why use of this function need some reflection.***
11	**Column pump test:** 1:Actual output number. 2:MCU number 3:Analog output value, only visible if the pump run speed controlled. 4:Testtimer in sec. 5:Actual number of pulses received. 6:Counter number.  The output run defined timer Mouse click on the counter label and a menu appear for adjustment of the counter number itself.
12	**Column water test:**  Equal to pump test above but now as a test of solenoid valve for water.

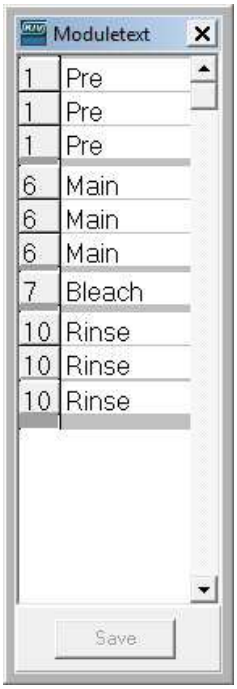
Pos	Tunnel setup
13	**Column air test:**  Equal to water test above, but now as a test of the solenoid valve for compressed air.
14,15	**Copy and Paste from grid:** Select a cell and right click the mouse. ***Remark!*** ***It is only possible to copy from one cell at a time.*** Paste in grid, select cells and mouse right click to paste data in selected area. 

Pos	Tunnel setup
16	**Adjustment of product names** 

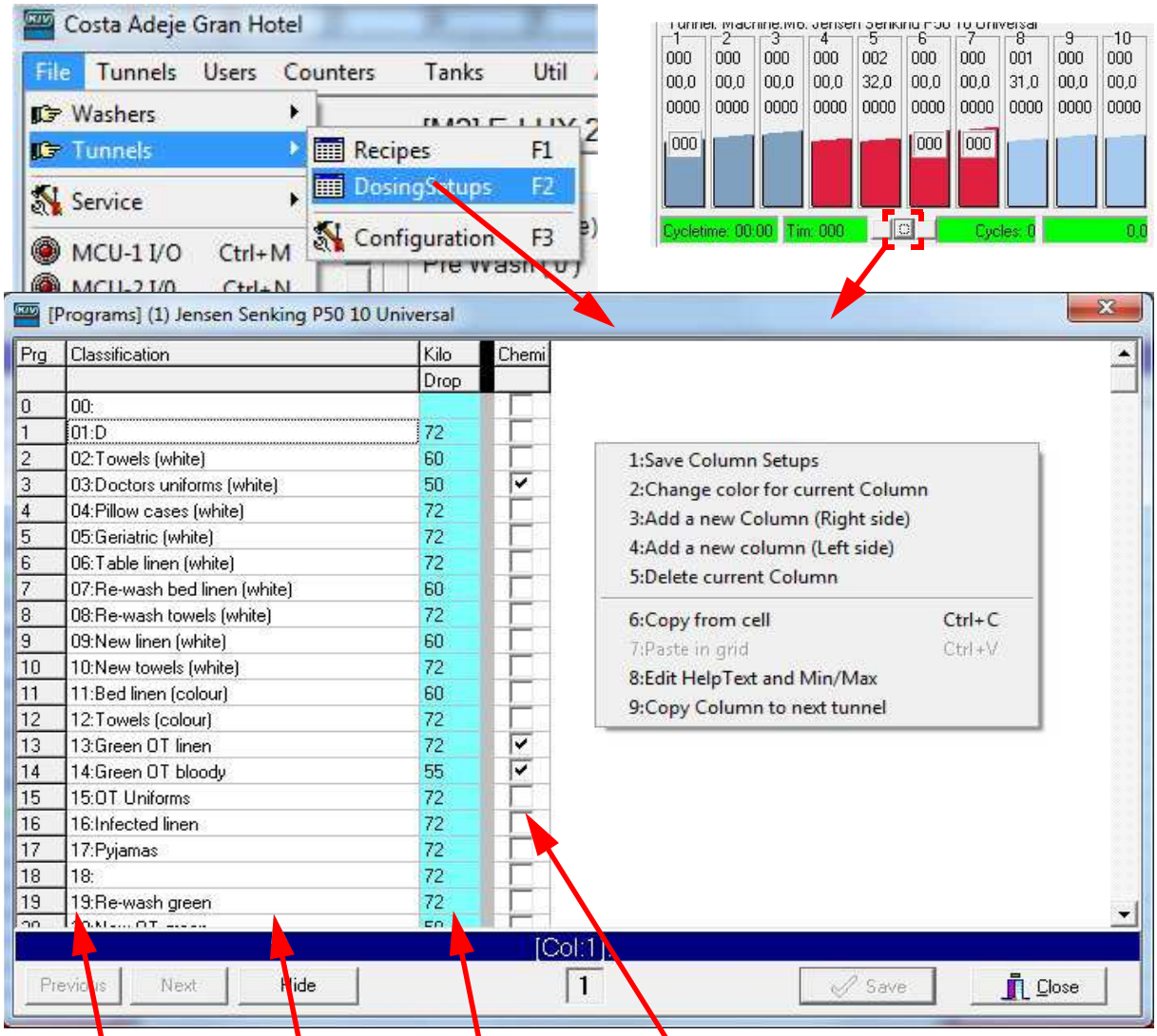
Pos	Tunnel setup
17	**Adjustment of column names for standard users**

Ju	Recipe/Products	MASTE	MAST	100CC	ALFA	MAST	100CC	PAA	NEUTR	DEOS	ACID
	Module	Pre	Pre	Pre	Main	Main	Main	Bleach	Rinse	Rinse	Rinse
	1111	1	1.5	1	5	1		5	4.5	2	2

When a user login line below products will display a name of the module the products are doses, adjustment of names are done in the menu that appear by clicking pos 17 from the drop down menu.



Chapter 10: Tunnel program.

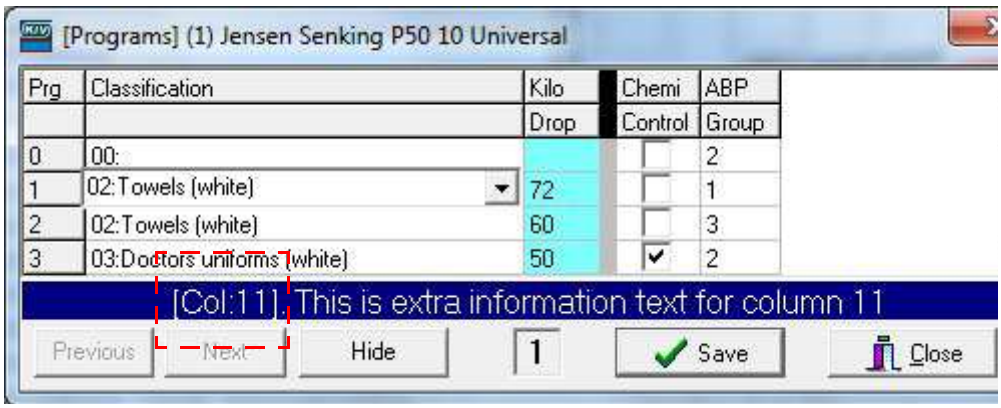
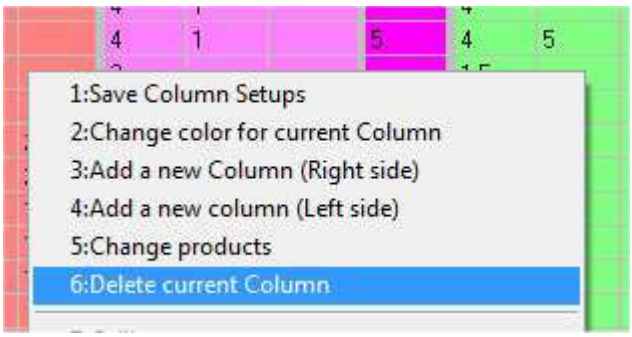


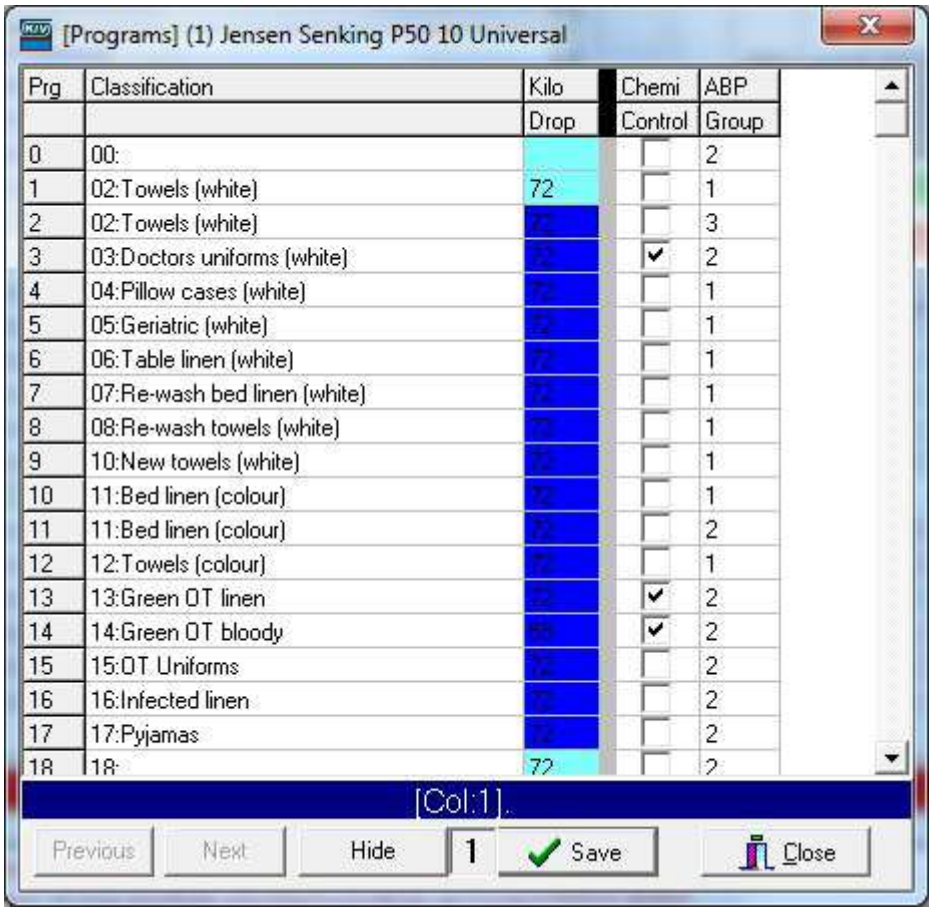
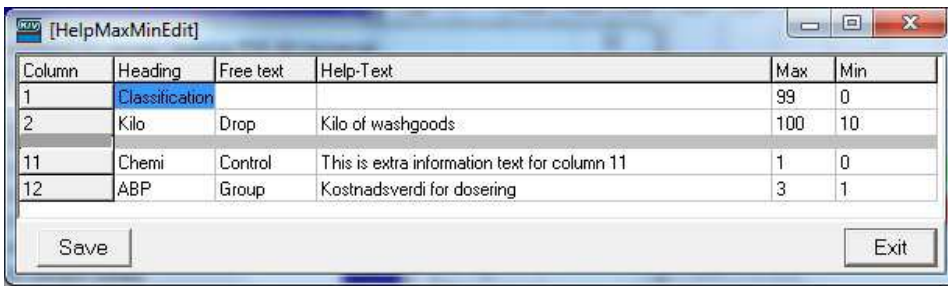
Machine program
Binary code from the tunnel or info from a terminal. (Maximum 100).

Recipe number and name
Drop down menu for selecting the receipt for this machine program

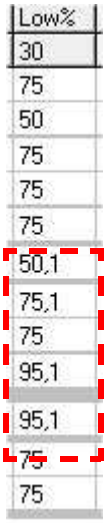
Kilo load

Column 11, checked for chemical dosing or Redosing control and stop of CBW.
See: “Low dosage alarm and stop of tunnel:” on page 113 (UM) and “Chemical hygiene product” on page 121 (UM).
Redosing setup see: page 102 (UM).

Pos	Pop up menu
1	**Save Column Setup:** Any changes in the property of the grid will be saved with this command. **Remark!** The Save button in the bottom of the screen will **not** save grid properties.
2	**Change color for current column:** For all column the color can be changed to a free definable color.
3,4	**Add a new column (Right side):** **Add a new column (Left side):** Insert a new column by moving the cursor and select menu <Add a new Column to left> or menu <Add a new Column to right> by doing that a new column will appear. ***Remark!*** ***Prior to adding a new column please check for free space by moving the mouse from column to column while checking the number counter that appear in blue dynamic help text line as below. Only when that value is higher than previous value+1 there are a free space for inserting a new column***. 
5	**Delete current column:** Delete (hide) a column, move the cursor and click in actual column prior clicking this menu. 
6	**Copy from grid:** Select a cell and right click the mouse. ***Remark! It is only possible to copy one cell at a time.***

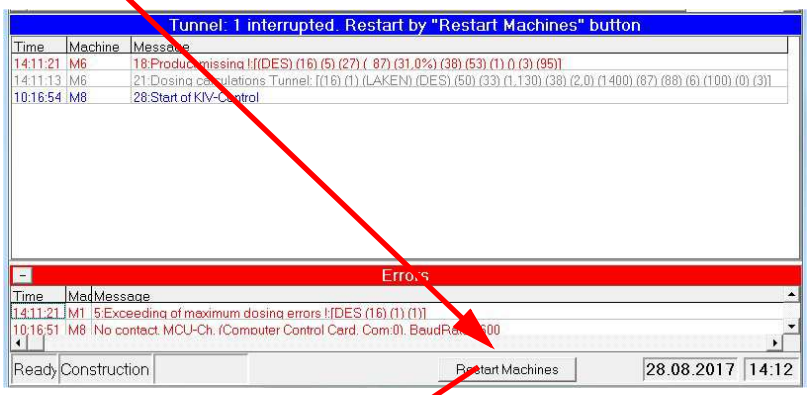
Pos	Pop up menu
7	**Paste in grid:** Select cells and mouse right click to paste data in selected area. 
8	**Edit HelpText and Max/Min:** A new menu appear for adjustments of help texts and min./max values. 

Pos	Pop up menu
9	**Copy column to next tunnel:** Click this menu for copy data in actual column to an equal column for next tunnel. ***Caution!*** ***Data will be copied based on the col number. Setup of column numbers might be different from actual tunnel to next tunnel. Therefore use of this function need some reflections.***



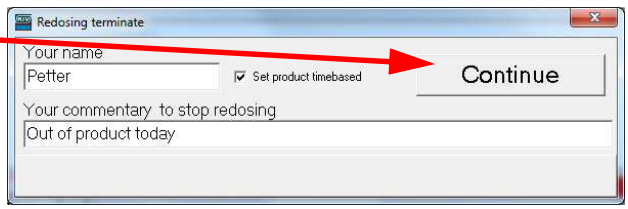
Redosing CBW (s):

By adding a decimal value (,1) subsequent the lowest acceptable percentage result value, for just a single or several products inside a dosing group, the actual group will be forced to redose if any product (s) dosingvolume is less than lowest acceptable percentage value, in addition the actual CWB will be forced on hold. (only the remaining part of actual dosage will be redosed). When a redosing situation occur the button <Restart Machines> will turn visible, and by a mouse click on this button the redosing menu appear, from that menu it is possible to execute or terminate redosing (s).

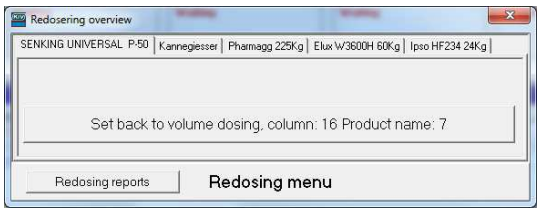


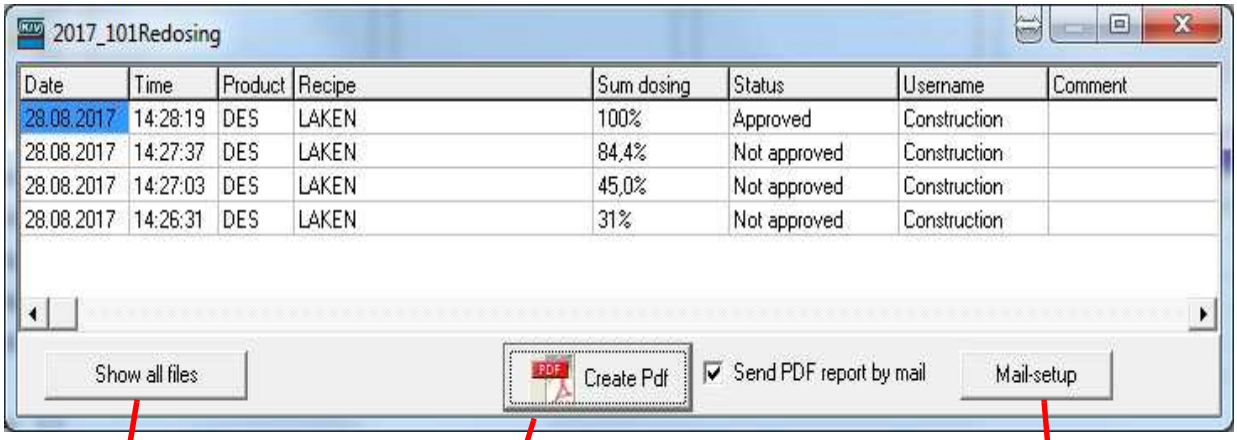
By a mouse click on the button <Redosing> the actual CBW and actual missing product is forced to redose, only when redosing executed successfully the hold relay will be released.

Redosing terminate:
By a mouse click on button <Terminate>, a new menu will appear, enter your name and the reason to terminate redosing, then by a mouse click on the button <Continue> the actual product will be forced out off dosing queue and put on time based dosing. Running on time based dosing will bee indicated by a green bar in the main screen of the software.



By open the redosing menu it will be possible to set the system back to volume dosing, do that by selecting actual tunnel tab and then press the button <Set back to...>





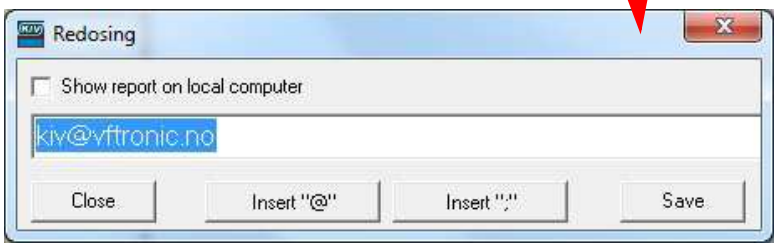
Redosing report:

By a mouse click on the button <Redosing reports> (previous page) a menu that show redosings appear. This menu display the following information:
Date and Time of the redosing, Product to redose, Name of actual recipe, Sum up in percentage of actual product, Status of actual dosing, active user name or name if the dosing was terminated, a comment entered when terminating of redosing.

By a mouse click on the button <Show all files> a menu appear for selecting and display redosing results from a specific machine.

2017=Actual year.
00X=Actual machine number, CBW (s) start from values higher than 100, (number just after the year).

By a mouse click on the button <Create Pdf> the actual selected report will be saved as pdf file and sent by mail to the defined mail address, example of pdf redosing report is shown below.

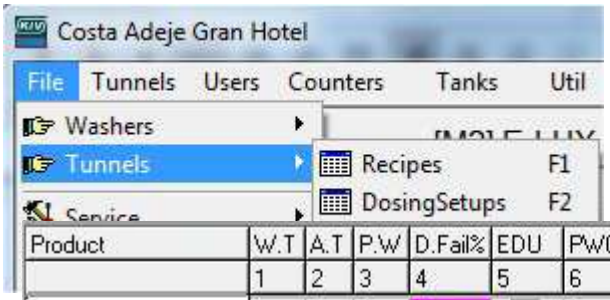


Tekstilvask innlandet A/S.

Redosing report :SENKING UNIVERSAL P-50

Date	Time	Product	Recipe	Sum dosing	Status	Username	Comment
28.08.2017	14:28:19	DES	LAKEN	100%	Approved	Construction	
28.08.2017	14:27:37	DES	LAKEN	84,4%	Not approved	Construction	
28.08.2017	14:27:03	DES	LAKEN	45,0%	Not approved	Construction	
28.08.2017	14:26:31	DES	LAKEN	31%	Not approved	Construction	

Chapter 11: Properties products tunnels.



Individual users has access from column 1-7.
Administration user have access to all columns.

Product	W.T	A.T	P.W	D.Fail%	EDU	PWC	F.Type	P.Cap	Delay	Move	Group	Module	Seq	InPut
	1	2	3	4	5	6	7	8	10	11	12	13	14	15
1:MASTER (3)			3	400	☐	10	1	2400			1	1	1	1
2:MAST (4)			3	250	☐	10	1	1670			1	1	2	1
3:100CC (5)	10	10	3	250	☐	10	1	1730			1	1	3	1
4:ALFA (10)			3	250	☐	10	1	1100			2	6	1	1
5:MAST (11)			3	250	☐	10	1	1402			2	6	2	1
6:100CC (12)	10	10	3	250	☐	10	1	1720			2	6	3	1
7:PAA (16)	10	10	3	250	☑	10	1	1680			3	7	1	1
8:NEUTR (21)			3	400	☐	10	1	1480			4	10	2	1
9:DEOS (22)			3	250	☐	10	1	1450			4	10	1	1
10:ACID (24)	10			250	☐	10	1	1400		12	5	10	3	1

MCU	CntNu	Pump	Water	MCU	Air	MCU	3Way	Close	CalcTy	Log	Low%	Errors	MaxErr
16	17	18	20	21	22	24	25	26	28	29	30	31	32
1	1	1	4	1	5	18			1	1	75	0	3
1	1	2	4	1	5	18			1	1	75	0	3
1	1	3	4	1	5	18			1	1	75	0	3
1	2	14	17	1	18	18			1	1	75	0	3
1	2	15	17	1	18	18			1	1	75	0	3
1	2	16	17	1	18	18			1	1	75	0	3
1	3	6	7	1	8	18			1	1	95	0	1
1	4	9	12	1	13	18			1	1	75	0	3
1	4	10	12	1	13	18			1	1	75	0	3
1	4	11	12	1	13	18			1	1	75	0	3

Column	Description of each column number
1	**Water Timer:** Water flushing (Sec.) after dosing of the last product for a group (in a module). Timer only added in for the last dosed product (*seq) prior to next module (if more than one module is dosed from the same group. *Remark!* *Lowest legal value is 10. Values less than 10 sec are forced to 10 sec during water flushing.* **** Last product controlled by sequence in column 14 (dosing sequence from low to high number).***
2	**Air Timer:** Air flushing (sec.) set to on when final water flushing (pos 1) is executed.
3	**Pre Water Timer:** Timer in seconds for water flushing prior to dosing a product. Set to 0, will disable pre-water flushing for actual dosage line. *Remark!* *If **Water pulses** (Column 06) >0, actual number of pulses has to be received during this time-period **(Pre Water Timer)**. If NOT all dosings are rejected.* *(this check is only performed prior to dosing of the first product in a group. Water flushing to separate products inside a group do not have this control, (just executed by time). The name (events) of water flushing are named: "Pre water" and "Intermediate water".*
4	**Dosing Failure in %:** Maximum overdosing in % until the pump is forced to stop. The overdosing calculation is based on the calculated theoretical time and multiplied by this value (not the pulses from the counter). If the dosing is stopped (run in time-out) the following dosing for this product is multiplied by the "Number of Errors:" on page 113 (UM). This continue until number of errors > 4. When exceeding value 4 the system stop multiplying time-out and set time out equal to 100% (no extra dosing time added because; There is something wrong in the system hardware). The purpose of time-out function is to automatic try to prime out air in the suction line.
5	**EDU:** Error Dosing Unit. Checked to activate the output "Error dosing unit" when a product run into an fault dosing situation. See "Error dosing unit:" on page 14 (UM).

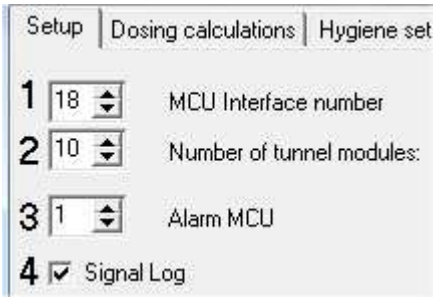
Column	Description of each column number
6	**Water pulses:** Number of pulses to be received prior to product dosing (pump start). This variable depends (work together with) the Column 03 ***(Pre Water Timer).*** Case 1. If “03 ***Pre Water Timer*** is 0 then the dosing will start after the number of pulses defined in 06. Time-out after 30 second. Case 2. If “03 ***Pre Water Timer*** is >0 then the dosing will start after the timer defined in 03, provided that the number of pulses are achieved. Time-out after the timer + 20%.
7	**Flow-Type:** See Table 1 on page 87 for details.
8	**Pump Capacity:** Milliliter of product per minute. Do not adjust this variable (automatically updated by calibration menu). See Chapter 6 “Calibrate products:” on page 66.
9	Free
10	**Delay to run:** Delay timer in seconds prior actual column will activate the output (pump). **Purpose:** Time delayed dosing. Start point to countdown “Delay to run“ signal from “InPut Pin:” on page 108 (UM).

Column	Description of each column number
11	**Move, Bag forward:** 1 Carbonell tunnel moving, Get bag from previous module. 9 Carbonell tunnel moving. Used only for last module. 10 Push all bags one position forward. 11 Drop bag to module 1 in tunnel. 12 Push all bags one position forward and drop bag to module 1 in tunnel. 13 Conveyer belt-1. Move bags one position forward in drop. 14 Conveyer belt-2. Move bags one position forward in drop and drop bag to module 1 in tunnel. See “Tank dosing” on page 201 (UM). 15 Independent dosing groups. 16 Read protocol 31 and start dosing. ***Remark1!*** ***If the Drop signal and Cycle signal are active simultaneously (or even some time simultaneous), use the “Push all bags one position forward and drop bag to module 1 in tunnel” (value 12). This will secure the bag always enter correct into, and then through the tunnel.*** ***Remark2!*** ***Do not use delay to run (column 10) for a product (inside a group), when this product also move bags.*** ***Remark3!*** ***Always use move 10 or 12 in the first product of the last module.*** ***Remark4!*** ***Move 15 only used for groups that use separate input signal to activate the dosing of product to actual module, typically used for bath exchanger tunnels.*** ***Remark4!*** ***Move 16 will read defined 31 bit protocol position and start up dosing, when this signal activated MOVE 16 is blocked until a move 11 is activated.***
12	**Group:** A group of products (pumps). Groups are executed in parallel order, products inside a group are executed in sequential order. Limitations: Max. 10 Products in each Group. Max. 20 Groups. Max. 36 Products totally. ***Remark!*** ***Max number of groups for time based dosing running in parallel are 15. Only take this into account when the system is used to run single pumps (One pump, one product and one transport line).***
13	**Dosing module:** The actual module number for reading program and kilo of wash gods. 0= Read bag-data from drop position. 1..21Read bag-data from module x. (as actual number)

Column	Description of each column number
14	**Sequence:** The sequence for a product within a group is executed. *Remarks! Multi Function Configuration.* First value define the sequence, the second value define the synchronization. Example of multi function setup: See “Col. 14:” on page 197.
15	**InPut Pin:** Column 15: Input pin for executing actual column, value 0 will force a column to not active When a column is active, (currently dosing or waiting to start dosing) the input signal has to go off. When off, it has to stay off until the column is ready dosed and flushed. If not the error base will display an error message. Example of the error message: SERIOUS ERROR, CYCLETIME/DOSINGTIME !; T:+"TunnelNr";I/O:+”MCU".+"Pin";C:+"Columnnumber". This error is saved to the files: MMDDYY_2.TXT and FAILYYMM.TXT. The corresponding MCU is the MCU used for actual tunnel. ***Remark 1!*** ***The system will start up dosing a few sec after the input signals from the tunnel are set to on. To secure that all signals are validated correctly by the software, the input signals (tunnel signals) recommended on time is 10 sec.*** ***Remark 2!*** ***If flow type 4 is used for the product (analogue pH regulation) the input value is used as the analogue input number (4-20mA signal).***
16	**MCU:** The corresponding MCU number for pump output used in column 18. This is also the corresponding MCU number for: -Counter in column 17 -Water Output in column 20
17	**Counter number:** input number (1 - 16) where the flow counter is connected. Max. 250 Hz. ***Remarks!*** ***When use a product as SPIRIT.*** ***In this case insert two values in this column. The two values has to be separated by a decimal point “,”.*** ***Example: 1,2. The first value define the counter for water, the second value the counter for the product (pump).*** ***Caution!*** ***Even if the system run time based an unique counter number for each group need to be defined.***

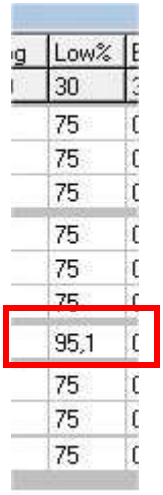
Column	Description of each column number
18	**Pump Output:** Output relay where the dosing pump is wired. If need of water in parallel with the pump insert the water output number after a decimal point for the first pump in sequence, and the equal output number for the last pump in the sequence (switch of the water valve again). *Remarks! Multi Function Configuration.* First value define the pump output, the second value define the water valve. Example of multi function setup: See Position 17 and 18 on page 202
19	**Spare-19:** Future usage?.
20	**Water OutPut:** Output relay where solenoid valve for water flushing valve is wired. Disable by value 0.
21	**MCU:** MCU number for compressed air output.
22	**Air OutPut:** Output relay where solenoid valve for compressed is wired Disable by insert value 0.
23	**Spare-23:** Spare future use
24	**MCU:** MCU number for 3 way valve.
25	**3 Way Output:** Output Relay where the 3-way dosing valve is connected. Disable by insert value 0. *Remarks! Multi Function Configuration.* First value define the output for the dividing valve, the second value define the water valve. Example of multi function setup: See “Col. 25:” on page 197. *Tip for tunnel image screen!* *To visualize dosing to the first module (dosing valve open) insert value 23.*
26	**Valve Close:** Delay timer in second after air flushing and before the 3 way dosing valve is closed.
27	**Pulses/second Hz/sec:** Numbers of pulses per second. These values are automatically updated during the calibration task. See Chapter 6 “Calibrate products:” on page 66 for more details.

Column	Description of each column number
28	**Calculation Type:** 0= Kilo is checked and validated between Min. kilo and Max. kilo. If kilo is lower or higher than Min. or Max. kilo, then the system use Standard kilo. 1= Kilo is checked and validated between Min. kilo and Max. kilo. If kilo is lower than Min. kilo, then kilo is set to Min. If kilo is higher than Max. kilo, then kilo is set to Max, 2= Kilo is checked and validated between Standard kilo and Max kilo. If kilo is lower than Standard kilo, kilo is set to Standard kilo. If kilo is higher than Max kilo then kilo is set to Max kilo. See also “pH Start value:” on page 124 (UM). Adjustment of Minimum, Maximum and Standard kilo is adjusted in page 118 (UM).

Column	Description of each column number
29	**Signal log:** 0= No signal logging. 1= Dosing calculation. 2= I/O signals active. 3= I/O signals and dosing calculations. By column 29 it is possible to select what products to sample. Set logging active by check box, see Chapter 12 “Signal Log:” on page 115.  Each element in the information string is separated with a brackets ( ) Dosing calculations string information: Element 1 = 21:Dosing calculations. Element 2 = Product number (1-36). Element 3 = Program number. Element 4 = Recipe. Element 5 = Product name. Element 6 = Dosed kilo (validated). Element 7 = Batch kilo. Element 8 = Product specific weight. Element 9 = Calculated dosing timer in 1/10 sec. Element 10 = Gram detergent / kg linen. Element 11 = Pump capacity in milliliter. Element 12 = Calculated pulses. Element 13 = Calibrated number of pulses per second. Element 14 = Module. 

Column	Description of each column number
30	**Low dosage alarm:** Lowest acceptable dosing result in gram of the total dosage before audible alarm is given. Inserted value is given as value in percentage. ***Remark1*** ***If the dosage is less than this percentage, an audible alarm is given.*** ***Remark2:*** *When using the redosing procedure insert two values in this column. The two values have to be separated by a decimal point ",". The redosing is activated when the last value is set to 1.*

Kilo Drop	Chemi Control	ABP Group
	☐	2
72	☐	1
72	☐	3
72	☑	2
72	☐	1
72	☐	1
72	☐	1
72	☐	1
72	☐	1
72	☐	1
72	☐	1
72	☐	1
72	☐	2
72	☐	1
72	☑	2
55	☑	2
72	☐	2



Low%
30
75
75
75
75
75
75
95,1
75
75
75

Example: 85,1=Dosages less than 85% are redosed.

Remark3:
When redosing is set to on, the tunnel is put on hold by the dosing system until the dosage result exceeds 99%. Typically this situation occurs when a product is not properly dosed, due to missing products, pump failure etc.

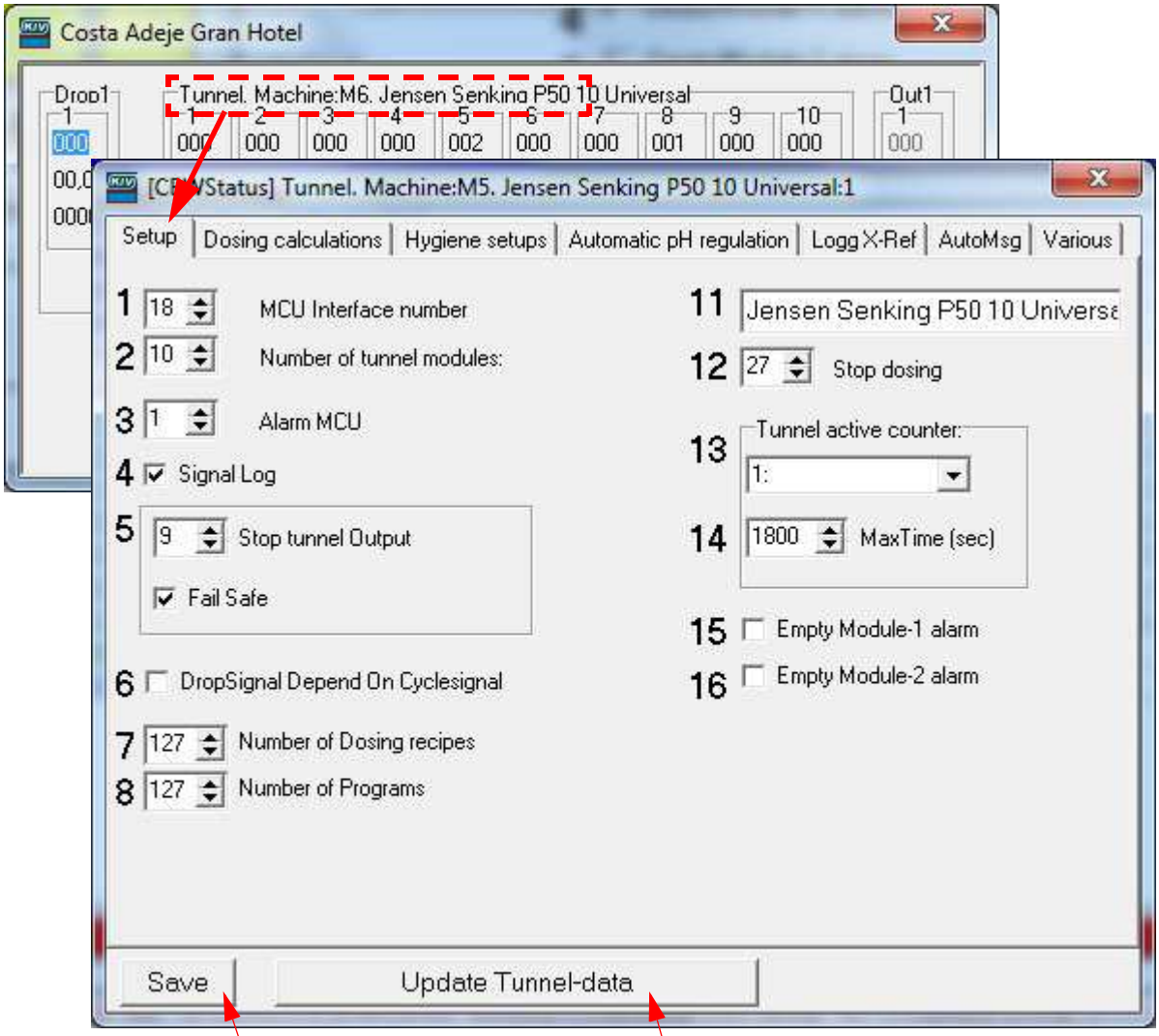
If the cause of failure is a poor working counter, the system can temporary be set to time based dosing. In that case set column 7 in this chapter to 0.

How does it work?
All dosages less then the percent value will be redosed by the system (only the missing percent of product (s)). When a redosing situation occur the actual tunnel is put on hold, and an error message and restart button are visible on the KIVControl screen (see page below). By pressing "Restart tunnel" button the tunnel is redosed. The redosing itself is indicated by a additional message "redosing procedure" in the Event base.

Column	Description of each column number
31	**Number of Errors:** Number of counter errors. Remark: If the dosage volume is less than 100% this variable will be increased by value 1.
32	**Max. Errors:** Max. number of counter errors. Alarm and stop functions are validated against this variable by comparing values from column 31 above. **Remark:** *If 0 pulses received (pump not running) the audible alarm is given* independent of the “Low dosage alarm”, but also in the case the stop procedure are controlled by setup of “Max Errors” pos 32 above. -Value set to 0 = “Max. Error” not in use. (Col. 31+32 disabled). -Value set between 1..20 = Stop and alarm outputs are activated when “Max. Error” = > “Number of Errors” (Col 31). -Value set between 21..40 = Alarm set to on when (Figure value minus 20) = > “Number of errors” (Col 31), but put tunnel on hold NOT performed.
33	**Free not in use:**
Additional settings for col 30 to 32 by using hygiene dosing control .  See: “Chemical hygiene product” on page 121 (UM).	
30	**Low dosage alarm and stop of tunnel:** Lowest acceptable dosing result in percentage of the total dosage before tunnel is forced on hold, and audible alarm is given. Value as percentage.
31	Error counter, only internal used by the software.
32	Max errors, recommended value 1. The tunnel is forced on hold by first dosage when result of dosing less than pos 30 above.

Chapter 12: Tunnel-Setup.

By shift mouse click on the tunnel frame the setup menu below appear.

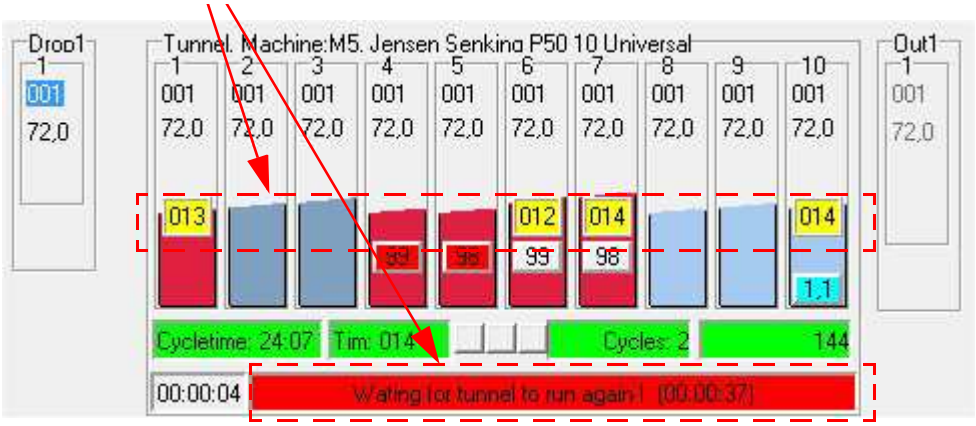
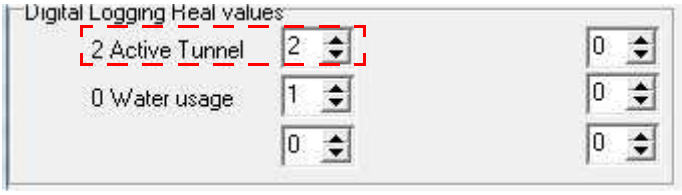


By pressing <Save> button new settings are saved to the config file.

Some modifications will need a tunnel restart. By pressing <Update Tunnel-data> button, software for actual Tunnel will restart and all new settings are activated.

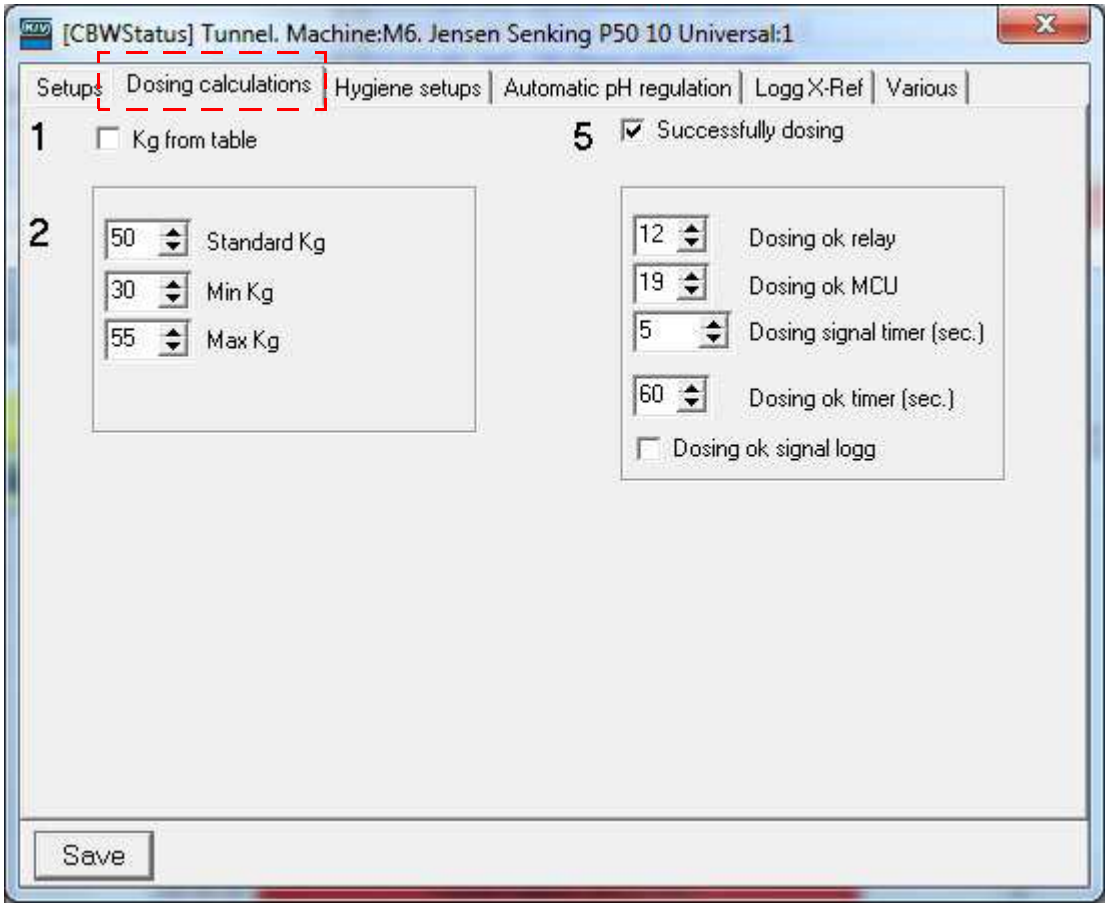
Warning!
If button pressed while tunnel is active (dosing) a part of the active dosings will be terminated and lost.

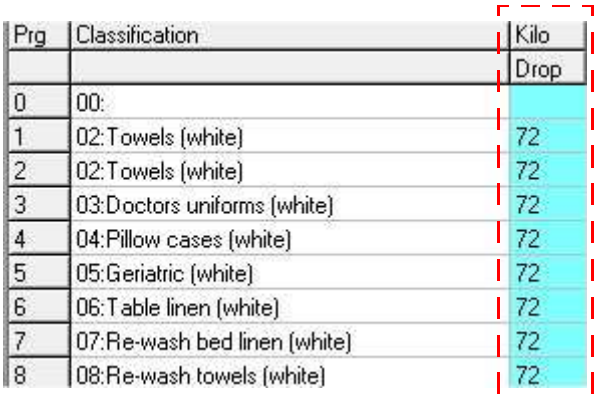
Pos	Tunnel setup
1	**MCU Interface number:** MCU number used for I/O reading.
2	**Number of tunnel modules** Number of modules in actual tunnel (max 21).
3	**Alarm MCU** MCU number for audible alarm.
4	**Signal Log:** Checked for dosing calculation logging to event database. Log of individual products setup see: Chapter 11 “Low dosage alarm:” on page 112.
5	**Stop tunnel Output:** Output relay to force tunnel on hold. This output uses the MCU number defined in position 1 above. **Fail Safe:** Checked for Fail safe = Force tunnel on hold when the relay turn OFF. Unchecked = Force tunnel on hold when relay turn ON.
6	**Drop signal depend on cycle signal:** Large tunnels (100kg) may be loaded by more than one bag per cycle. In this case the dosing system may also receive more than one drop signal per cycle. Checked will ignore reading more than one drop signal each cycle. Will be reset by the cycle signal and drop signal will then be processed again.
11	**Tunnel name:** Name of the actual tunnel, up to 15 characters.

Pos	Tunnel setup
12	**Stop Dosing** Input to interrupt active dosing columns. If this input is set to off, the software will not execute dosing columns or water flush or compressed air flushing. Also timers executing “Delay to run” See:“Delay to run:” on page 106 is forced to stop. If pH logging is in use, this input will also put the pH logging on hold. The stop dosing is indicated by a message shown in red color and by that the module timers are fixed 
13	**Active Timer:** The purpose of this feature is to log the active running time of the tunnel. The logged value is used by the software KIV-Report. Use drop down box to select actual counter. The counter need to be configured for time logging See: Chapter 16 “Logging of digital and analogue signals.” on page 156 (UM). Setup of counters is done by MCU menu. 
14	**MaxTim:** Max number of seconds waiting for a new cycle or move signal (10,12). With this timer the software continuously validate that the tunnel frequently ask for new dosings. In case of missing signals the software will give a warning message and set audible alarm active. Only to be used in combination with pos 13 above.
15	**Empty module1 alarm:** The purpose of this feature is to give a warning message and an audible alarm by a empty module in the module-1. No program found (binary code) when drop signal was active.

Pos	Tunnel setup
16	**Empty module2 alarm:** The purpose of this feature is to give a warning message and an audible alarm by a empty module in the module-2. No program found (binary code) when drop signal was active.
17	Only visible when KIV heat exchanger in use Maximum temperature of water from the KIV Heat exchanger system.

Dosing Calculations:

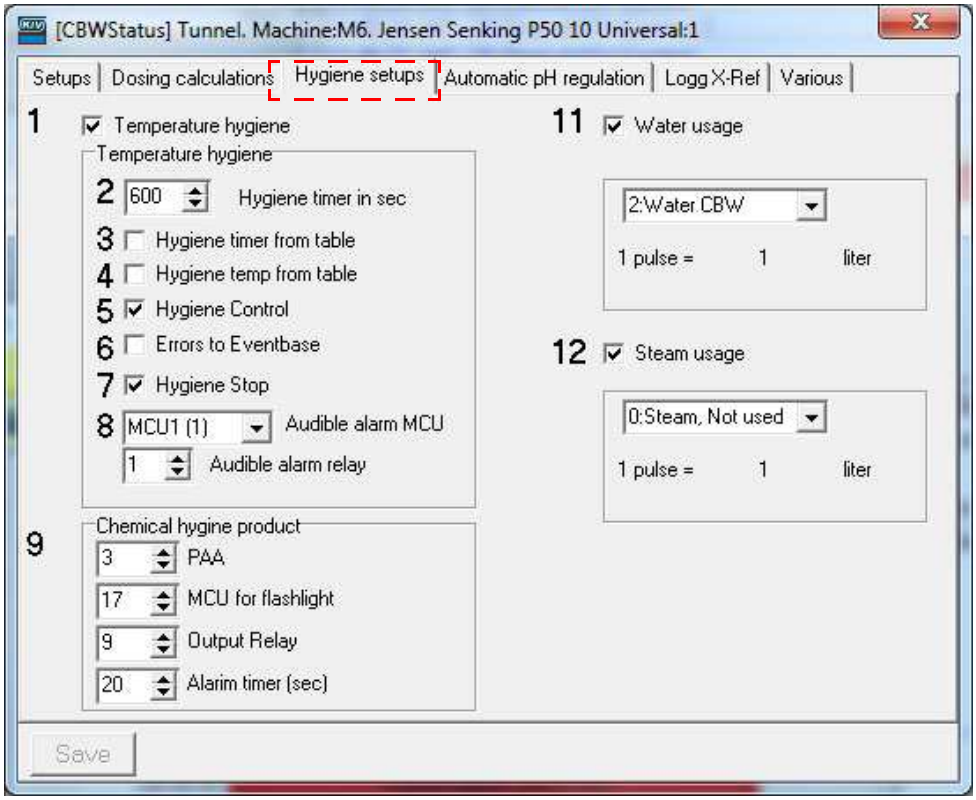


Pos	Tunnel setup
1	**Kilo from table:** Unchecked = See pos 2 below. Checked = Kilo for dosing calculations as fixed kilo values from the tunnel table (Position 2 below NOT in use). 
2	**Standard kilo:** For dosing volume calculations. Actual value (kilo) is used by the system to replace analogue weight, if this weight is lower than minimum kilo or above maximum kilo. **Minimum kilo:** The lowest accepted analogue value (kilo). **Maximum kilo:** The highest accepted analogue value (kilo). ***Remark:*** ***Max kilo also used to validate protocol 31 kilo. If kilo value is bigger than "maximum kilo" the protocol kilo is set to this value.***

Prg	Classification	Kilo Drop
0	00:	
1	02:Towels (white)	72
2	02:Towels (white)	72
3	03:Doctors uniforms (white)	72
4	04:Pillow cases (white)	72
5	05:Geriatric (white)	72
6	06:Table linen (white)	72
7	07:Re-wash bed linen (white)	72
8	08:Re-wash towels (white)	72

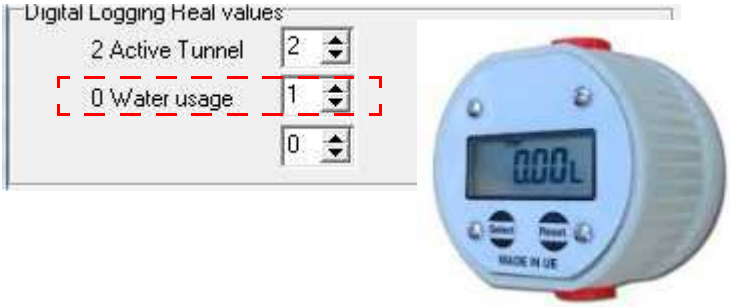
Pos	Tunnel setup
5	**Successfully dosing:** Checked for activate an output when a successful dosing was executed. **Output relay:** Output relay for the output signal “Successfully dosing”. **MCU Ch.:** The MCU number for the output signal. **Dosing signal timer:** The number of seconds delayed after cycle signal before activating the relay “Successfully dosing”. **Timer ON:** Number of seconds the output signal “Successfully dosing” will stay active. **Successfully dosing signal log:** Checked = For each new cycle a extra text line for successfully dosing will appear in event database.

Hygiene validation tunnels.

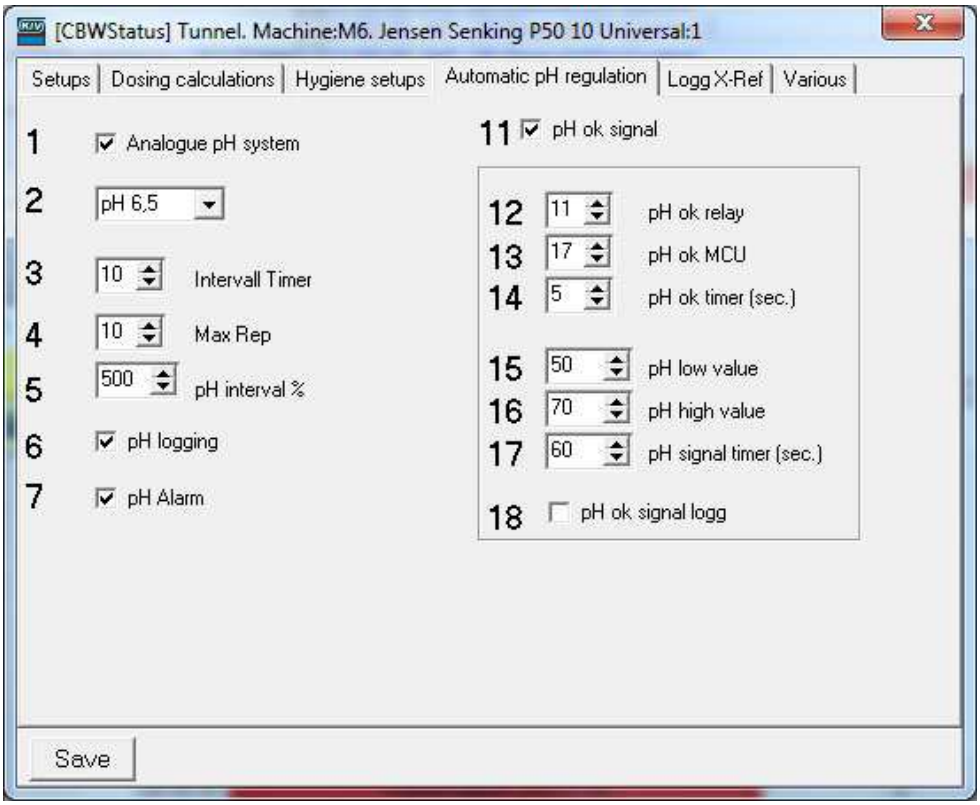


Pos	Tunnel setup
1	**Temperature hygiene:** Checked, to activate hygiene control of the tunnel wash gods.
2	**Hygiene timer:** Number of seconds the washing temperature needs to exceed the temperature set point and then before thermal disinfection approved for the wash goods in actual module. Temperature set point need to be adjusted for each tunnel module. See Chapter 14 “Hygiene temperature” on page 143.
3	**Hygiene timer from table:** Checked to activate Hygiene timer by individual programs. See: “Hygiene timer from table:” on page 120.
4	**Hygiene temperature from table:** Checked to activate Hygiene temperature by individual programs. See: “Automatic pH regulation.” on page 123
5	**Hygiene Control:** If checked the KIV-Control software validate defined Hygiene timer (see above) with the actual temperature timer from the modules (where temperature logging is active, see also “Hygiene temperature” on page 143. If timer is to short a message will appear and audible alarm activated. Esven the tunnel itself may be put on hold, depending on the settings below.

Pos	Tunnel setup
6	Checked, all errors will appear in event database.
7	**Hygiene Stop:** Checked, will force tunnel on hold if “Hygiene Control” failure occur.
8	**Audible Alarm MCU:** MCU number for the output signal “Hygiene Control” failure. Output relay for “Hygiene Control” failure.
9	**Chemical hygiene product** Select from drop down box actual product for dosing control. **MCU for flashlight** MCU number where the flashlight is wired. **Output relay** Relay number for flashlight. **Alarm off timer** Number of second the flashlight audible alarm is active. See also: “Low dosage alarm:” on page 112. 

Pos	Tunnel setup
11	**Water usage** Checked, to activate water consumption logging for the tunnel. **Water Counter** Drop down box to select digital logging channel. See “Logging of digital and analogue signals.” on page 156. **Water Pulse factor** Water usage counter factor. How to adjust see “Logging of digital and analogue signals.” on page 156. 
12	**Steam usage** Checked, to activate the steam consumption logging for the tunnel. **Steam Counter** Drop down box to select actual defined digital logging channel for steam. See “Logging of digital and analogue signals.” on page 156. **Steam Pulse factor** Steam usage counter facto. How to adjust see “Logging of digital and analogue signals.” on page 156. 
13	Redosing active see: “Redosing CBW (s):” on page 102

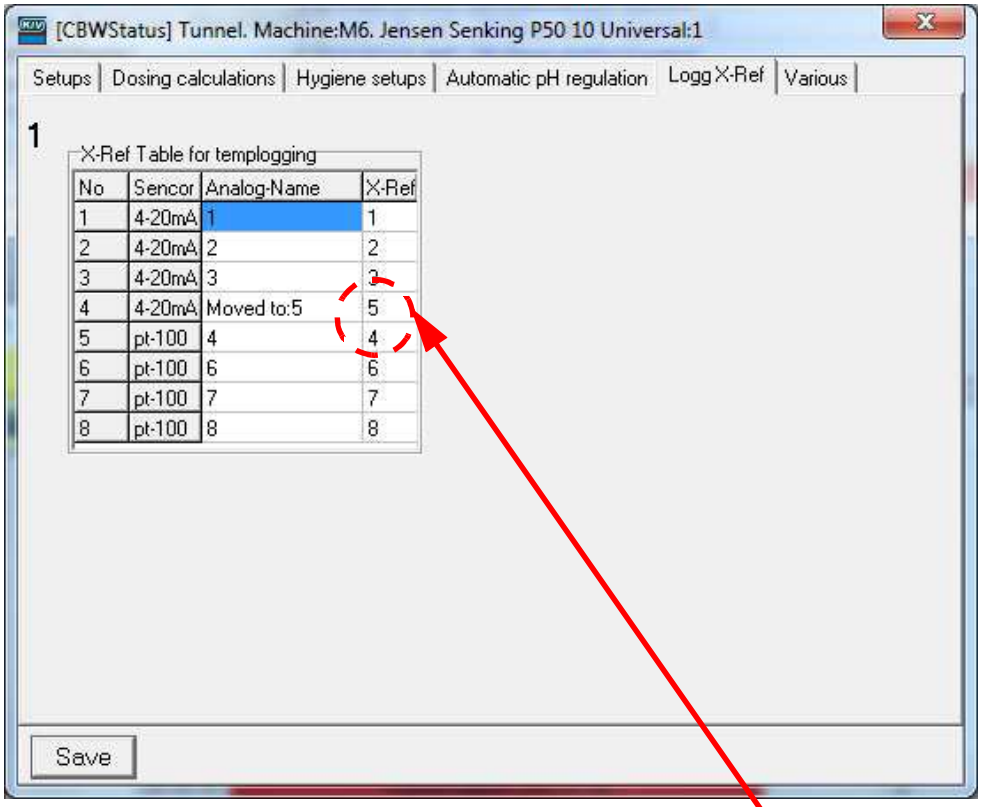
Automatic pH regulation.



Pos	Tunnel setup
1	**Analogue pH system:** Checked, activate the analogue pH dosing system.  *Input number for pH equal to the input number inserted in col 15, see "InPut Pin:" on page 108.* ***Remark !*** ***The input signal tunnel running (Stop dosing) need to be activated when pH control in use. See "Stop Dosing" on page 116.***
2	**pH Start value:** Set point (pH high point), a measured pH equal or higher than this point will start pH regulation.
3	**Interval Timer:** Interval timer in sec. (pH wait timer) intermediate repetitions of the pH regulations.
4	**Max. Repetition:** Max. number of pH repetitions during current cycle. If exceeded of this value the pH regulation will stop and an error message will appear.
5	**pH Extra %:** The initial pH regulation use gram from the dosing table and multiply actual value by the percent pH extra value. Following pH regulations for current cycle only take use of gram value found by initial regulation.
6	**pH Logging:** Checked, the system will insert a message for each pH regulation in the event base.
7	**pH Alarm:** If checked audible alarm is activated when number of pH regulations exceeds max. pH regulations (pos 4). Audible alarm is given by the alarm output for actual tunnel, See "Alarm MCU" on page 115.
11	**pH OK signal:** Checked to activate an output when pH OK.
12	**Output relay:** Output relay for output signal "pH OK".
13	**MCU Ch.:** MCU number for output signal "pH OK".

Pos	Tunnel setup
14	**Timer ON:** The output relay “pH OK” will stay active number of second defined.
15	**pH low value:** The lowest acceptable pH value (example value 67 equal to value pH 6,7).
16	**pH high value:** The highest acceptable pH value (example 79 equal to value pH 7,9).
17	**pH signal timer:** Delay timer (sec.) prior activate output relay pH OK.
18	**pH ok signal log:** If checked a pH OK message will appear in event database for each cycle.

X-Ref table for temperature log-ging

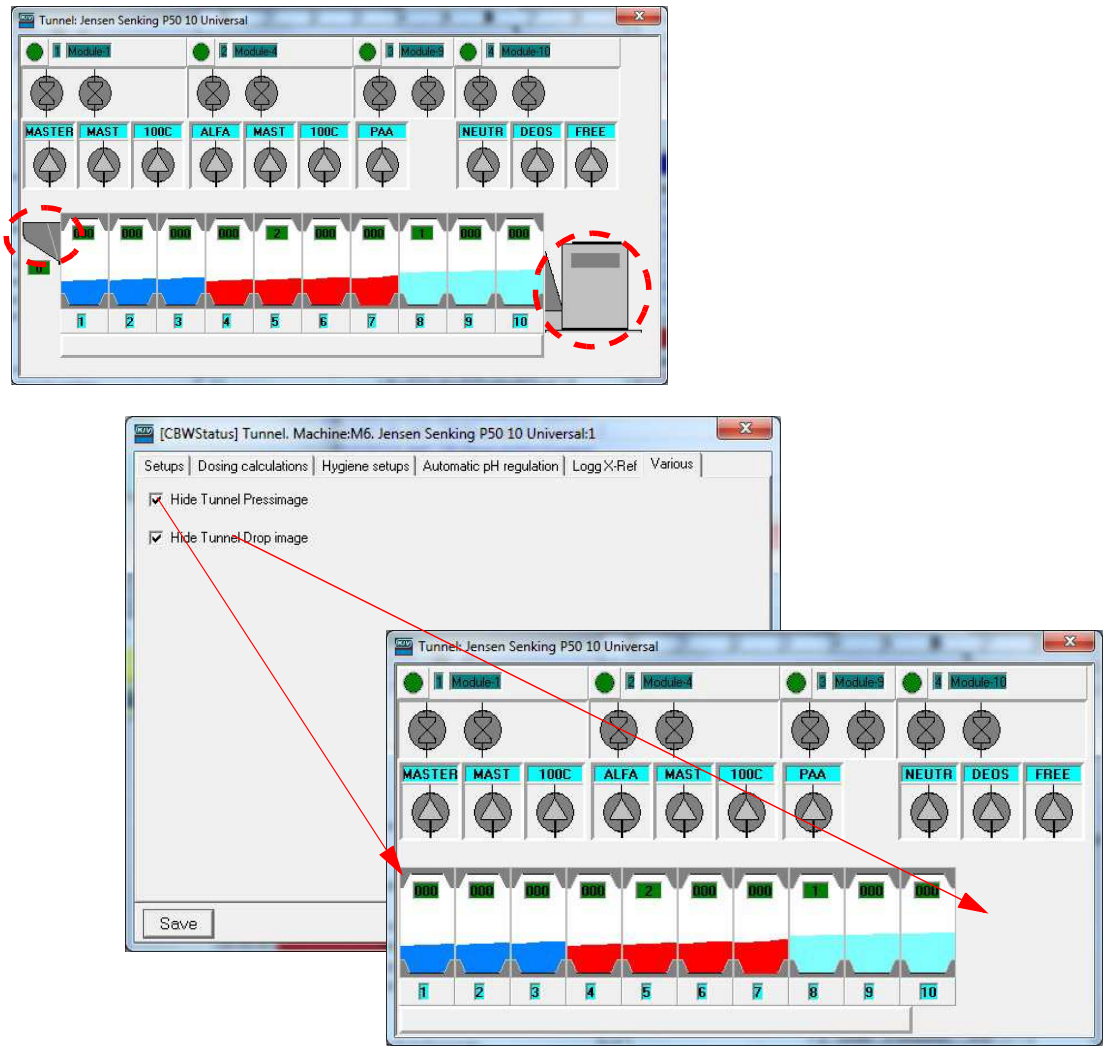


X-Ref table

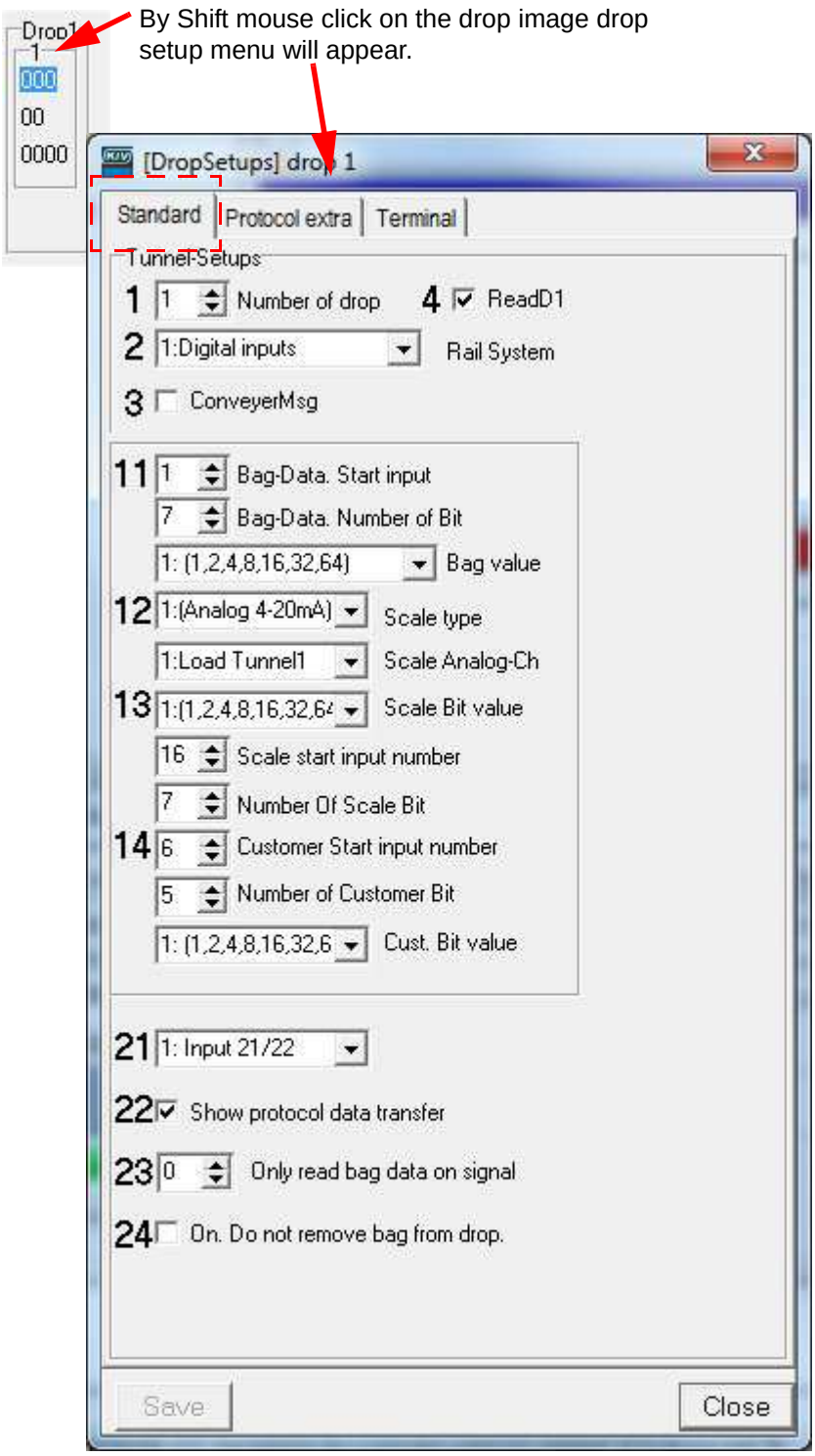
Analogue channels from 5 to 8 are standard used for temperature logging. Therefore if one of the 4-20 mA inputs used (Ch 1 to 4) to measure temperature, that signal needs to be moved to one of the pt-100 inputs (Ch 5 to 8).

To better understand see example in table above where input 4, (a 4-20mA sensor) is moved to input 5, (pt-100) by enter value 5 in the X-Ref.

Remove images



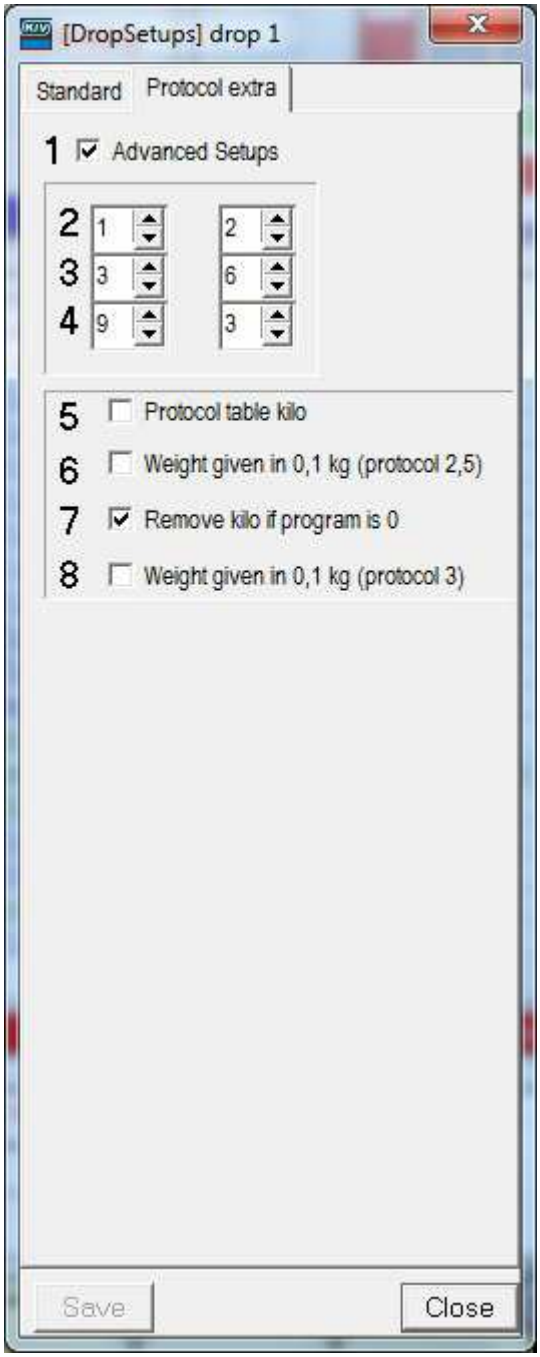
Drop setup:


By Shift mouse click on the drop image drop setup menu will appear.
Drop1
1
000
00
0000
[DropSetups] drop 1
Standard
Protocol extra
Terminal
Tunnel-Setups
1 Number of drop
4 ReadD1
2 1:Digital inputs
Rail System
3 ConveyerMsg
11 Bag-Data. Start input
Bag-Data. Number of Bit
1: (1,2,4,8,16,32,64)
Bag value
12 1:(Analog 4-20mA)
Scale type
1:Load Tunnel1
Scale Analog-Ch
13 1:(1,2,4,8,16,32,6
Scale Bit value
16 Scale start input number
Number Of Scale Bit
14 Customer Start input number
Number of Customer Bit
1: (1,2,4,8,16,32,6
Cust. Bit value
21 1: Input 21/22
22 Show protocol data transfer
23 Only read bag data on signal
24 On. Do not remove bag from drop.
Save
Close

Pos	Standard system
1	**Number of drop:** Number of bags in the drop system (max 10).
2	**Rail System:** Type 0 = Bag data values from a terminal or the keyboard. Type 1 = Digital inputs for program value and customer and weight values. Type 2 = Futural Protocol. There is only 1 Futural protocol available at each MCU2, and input signals needs to be wired starting from input 1. Input 1=Data in discharge position. Input 2=Datatransfer. Input 3=BCD1. Input 4=BCD2. Input 5=BCD4. Input 6=BCD8. See also: “Timing diagram for Futurail protocol” on page 218. Type 3 = Protocol 31 bit. See also:“Read the program, weight and customer are executed by means of Clk bit and a Data bit: (Outputs from the PLC). The Clk bit is a “flashing” signal, ON/OFF.” on page 217. 4= TCPIP Protocol (Not in use). 5= Kannegiesser data protocol. Equal to type 2, but input 2, data transfer signal is off when data signal still is high. *Remark!* *When changing to protocol 2, 3 or 4, the software needs a restart before reading of protocol data from the MCU’s.*
3	**Special setting for multiple drop positions** If checked customer number and kilo value update in last drop position, update of kilo value in the first drop position. If unchecked, all updates executed in the first drop position.
4	**Protect drop:** Checked will update customer and kilo value in last drop position, kilo load is updated in the first drop position. Unchecked: All updates done in the first drop position. ***Remark!*** ***Only take use of this setup when a conveyer belt system is used to transport bags forward to the tunnel, and when there is a deviation from where to read data from the conveyer belt system.***

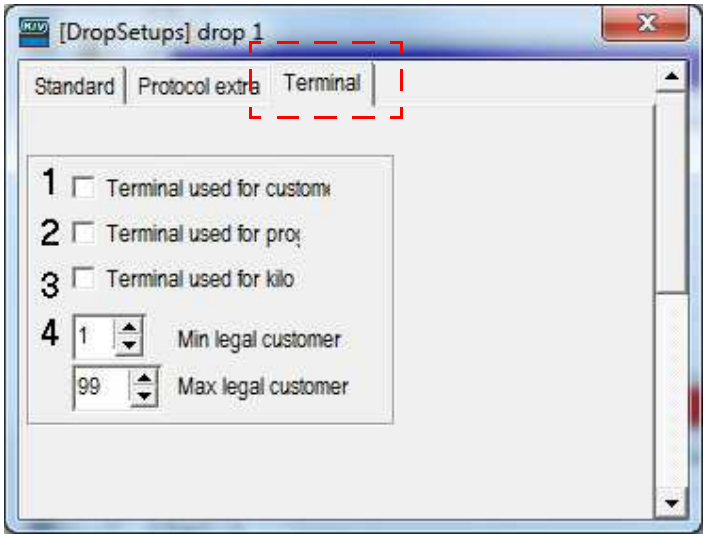
Pos	Standard system
11	**Bag-Data. Start input** Start input pin for reading the program. ***Remark-1:*** *If "Rail System Protocol 31" is active, the software need to know where signals from this protocol are wired. For this protocol 4 ports are available on the MCU2 card.* Set to 1, if the Protocol 31 system wired to input 21 and 22. Set to 2, if the Protocol 31 system wired to input 23 and 24. Set to 3, if the Protocol 31 system wired to input 25 and 26. Set to 4, if the Protocol 31 system wired to input 27 and 28. ***Remark-2:*** *After executing a new protocol, the following signal (column) for drop bag will update drop module 1. See "Move, Bag forward:" on page 107.* ***Remark-3:*** *Column signals (inputs) for Cycle, Drop bag and signal "Stop dosing" needs to be setup as well.* For *Cycle and Drop bag see:*"InPut Pin:" on page 108 *and* "Move, Bag forward:" on page 107 *and for* Stop dosing see:"Stop Dosing" on page 116. **Bag-Data. Number of Bit** Number of bit to identify program value Example: 6 bit will give binary values 1,2,4,8,16,32 = up to program 63 **Bag value:** 0= Not in use. 1= Code value 1,2,4,8,16,32,64. 2= Code value 1,2,4,8,10,20,40,80.
12	**Scale type:** 0= No weight system in use. 1= Analog (4-20mA) weight system in use. 2= Digital weight system in use (Max 8 bit). **Scale Analog Channel:** Analog input channel number where the weight (load cell) is connected.

Pos	Standard system
13	**Scale Bit value:** 0= Not in use. 1= Scale value 1,2,4,8,16,32,64,128. 2= Scale value 1,2,4,8,10,20,40,80. 3= Scale value 0.1,0.2,0.4,0.8,1.6,3.2,6.4,12.8,25.6,51.2. 4= Scale value 1,2,4,8,10,20,40 + 0.1,0.2,0.4,0.8. **Scale start input number:** Start input number for reading of digital weight value. **Number of Scale bit:** Number of bit used for the digital weight.
14	**Customer start input number:** Start input number for read of customer value. **Number of Customer Bit:** Number of customer bit in use. Binary coded. The binary code follow the same rules as for bag value. **Cust Bit value:** 0= Not in use. 1= Scale value 1,2,4,8,16,32,64,128. 2= Scale value1,2,4,8,10,20,40,80.
21	**ProtPos:** 1=Input 21 and 22. 1=Input 23 and 24. 3=Input 25 and 26. 6=Input 27 and 28.
22	**Show Protocol data transfer:** Checked, additional event message is given after data transfer (Cycle 12). For protocol 2 and 5, and for protocol 3 the event message is given after “upload new data” signal is set to on. (Drop of bag).
23	**Only read bagdata on signal:** Input signal to control reading of bag data, the system will only read new bag data from digital inputs when this input is set to On. Set to 0 if not in use.
24	**Protect drop:** Unchecked will remove bag value in the drop position when signals go low (system run with empty modules). Checked, Last value found will stay left even when signals go low.



Pos	
1	Advanced setup of protocol
2	*Start bit for program and number of bits in use*
3	*Start bit for kilo and number of bits in use*
4	*Start bit for customer and number of bits in use*

Pos	
5	**Protocol table kilo:** Checked will replace protocol 31 kilo by the kilo value from machine program table.
6	**Protocol 6 kilo:** Checked to divide kilo given by protocol 2 or 6 by 10 (decimal point).
7	**Remove kilo:** Checked will set kilo value to 0 if protocol 31 do not transfer a program number.
8	**Protocol 31 kilo:** Checked to divide kilo given by protocol 31 kilo by 10 (decimal point).

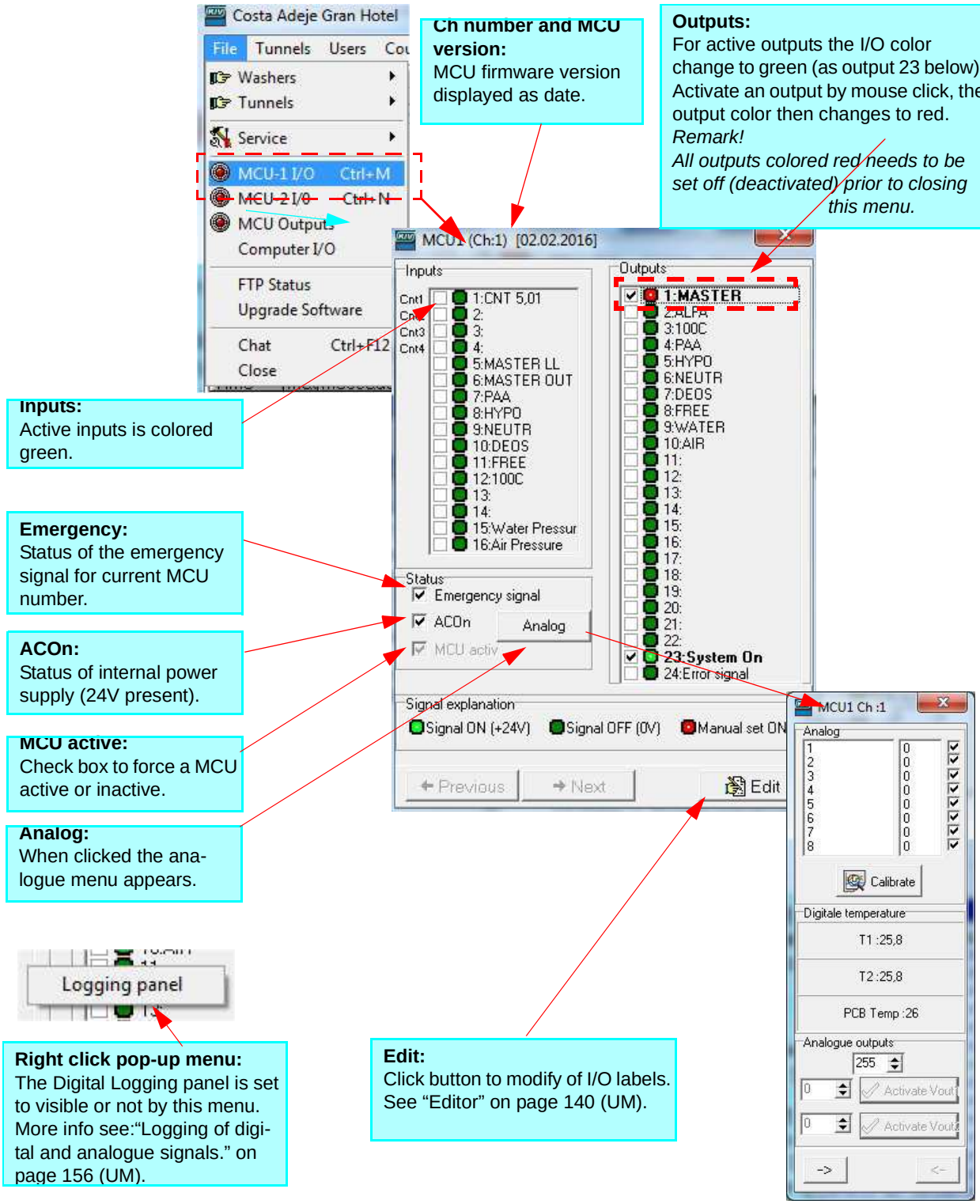


Pos	
1	**Terminal1:** Checked for Micro terminal in use to enter wash program information.
2	**Terminal2:** Checked for Terminal in use to enter kilo information.
3	**Terminal3:** Checked for Terminal in use o enter customer information.

Pos	
4	**Min Customer:** Lowest legal customer number. **Max Customer:** Highest legal customer number. ***Remark!*** ***Only visible when "Rail System" is set to 0.***

Chapter 13: MCU-I/O menus.

MCU1:



Ch number and MCU version:
MCU firmware version displayed as date.

Outputs:
For active outputs the I/O color change to green (as output 23 below). Activate an output by mouse click, the output color then changes to red.
Remark!
All outputs colored red needs to be set off (deactivated) prior to closing this menu.

Inputs:
Active inputs is colored green.

Emergency:
Status of the emergency signal for current MCU number.

ACOn:
Status of internal power supply (24V present).

MCU active:
Check box to force a MCU active or inactive.

Analog:
When clicked the analogue menu appears.

Right click pop-up menu:
The Digital Logging panel is set to visible or not by this menu. More info see:“Logging of digital and analogue signals.” on page 156 (UM).

Edit:
Click button to modify of I/O labels. See “Editor” on page 140 (UM).

MCU2:

Calibrate:
See:“Setup and calibrate analog inputs.” on page 169 (UM).

Graph:
See next page

Analog:
Labels (names) of the analog inputs.

Analog:
Analog unit input values.

Analog:
Check box to activate.

Ch number and MCU version:
MCU firmware version displayed as date.

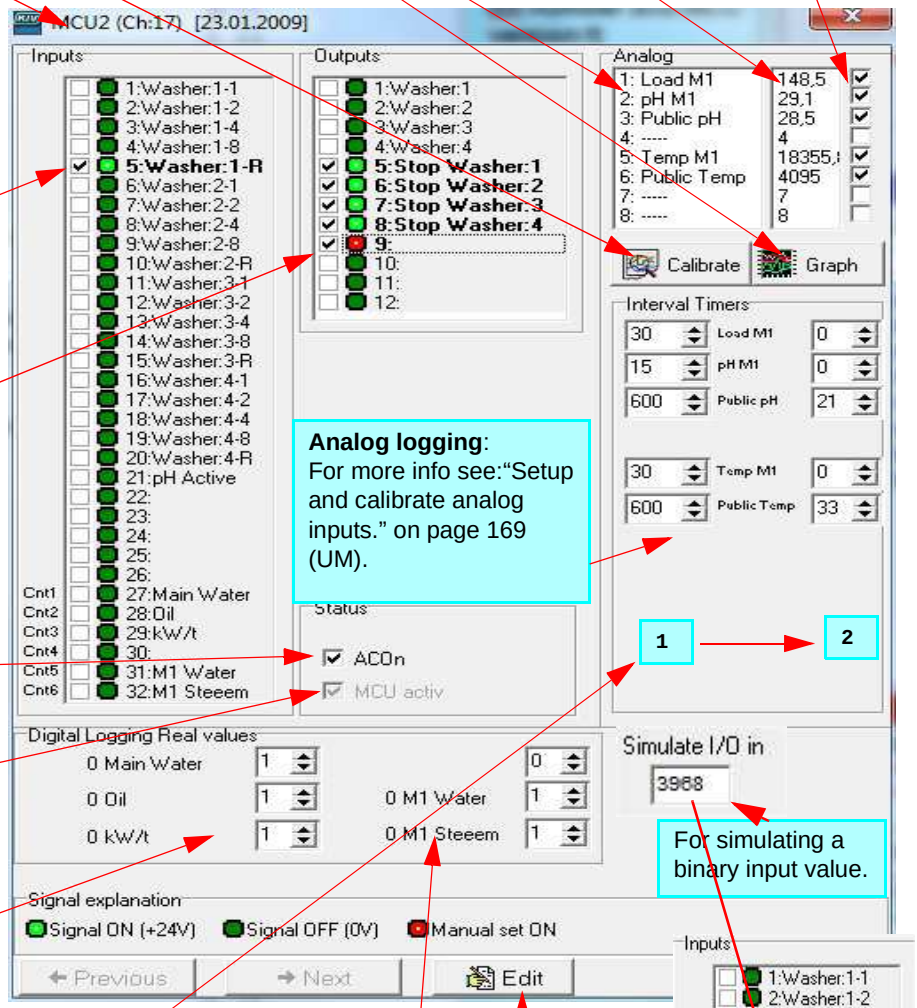
Inputs:
Active inputs forced to green color.

Outputs:
Colored green when active.
Activate a output by a mouse click, the color then change to red.
Remark!
All outputs colored red need to be set off (deactivated) prior to closing this menu.

ACOn:
Status of internal power supply (24V present).

MCU active:
Check box will force a MCU active or inactive.

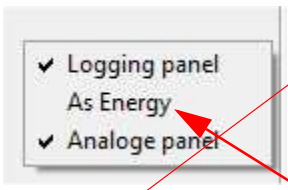
Digital logging:
More info see:“Logging of digital and analogue signals.” on page 156 (UM).



Analog logging:
For more info see:“Setup and calibrate analog inputs.” on page 169 (UM).

Edit:
Click for modify of I/O labels.
See “Editor” on page 140 (UM).

For simulating a binary input value.

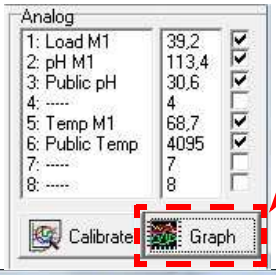


Right click pop-up menu:
Digital Logging and Analog Logging panels are set to visible by this menu.
<As Energy> checked recalculate values by using factors.

Pos.1 Analogue logtimer: (interval timer in sec for saving analog data to the log file).
Pos.2 Analogue logtype

Value 0	=	Log active when tunnels or washers are washing (active).
Value 1to 32	=	Log active when input identified by this number is active (set to on).
Value 33	=	Continuous logging of analogue values.

Graph menu:



Button <Graph> will open a analogue menu that displays current analogue unit values in real-time.

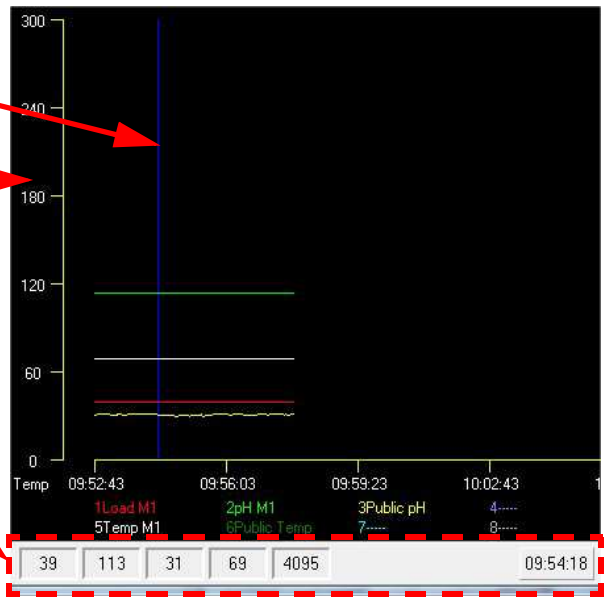
Number of steps for the Y, axis.

Value of the Y, axis

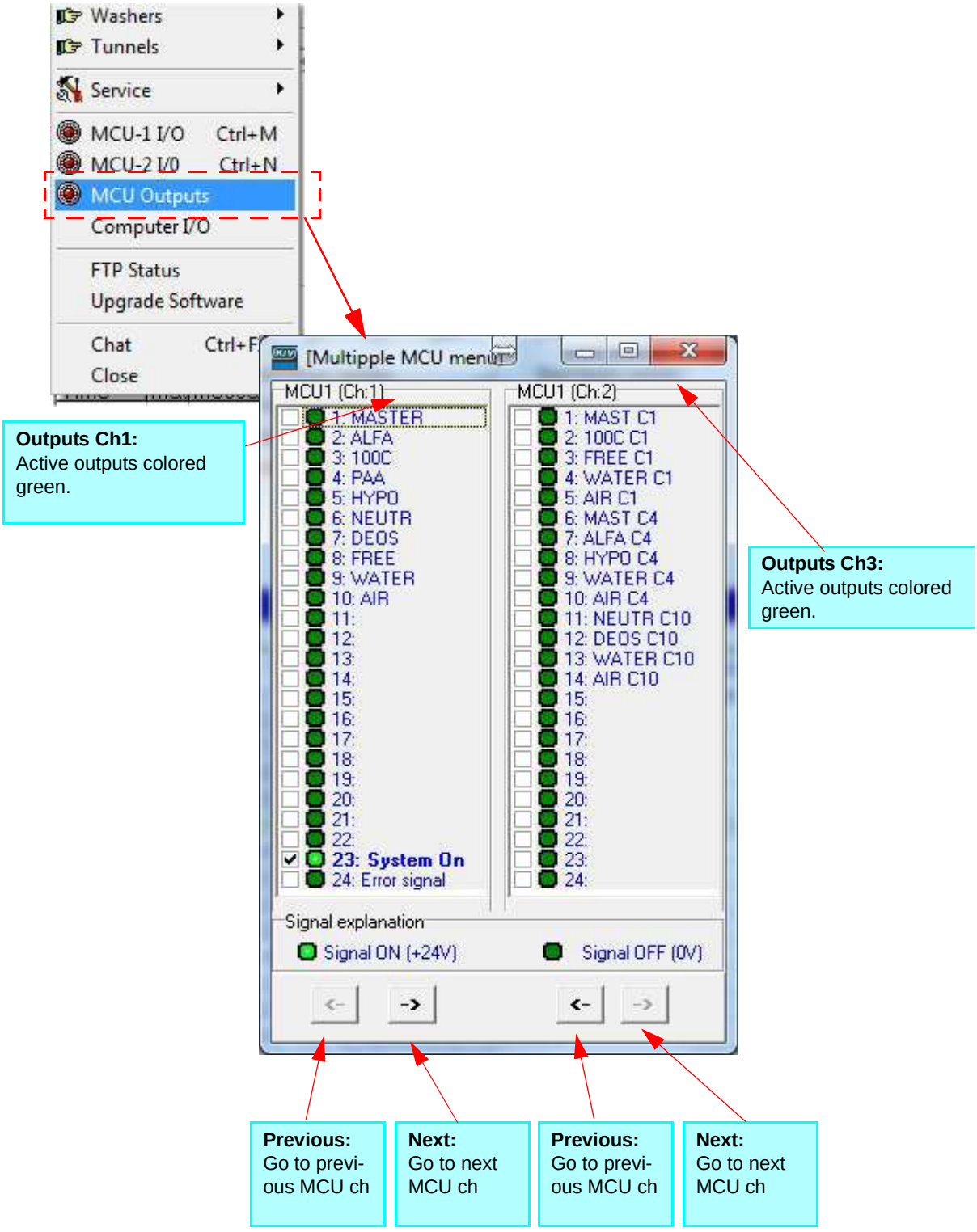
With a mouse click in the graphical menu blue colored ruler appear.

Ruler disappear with a mouse click at left side of the Y, axis.

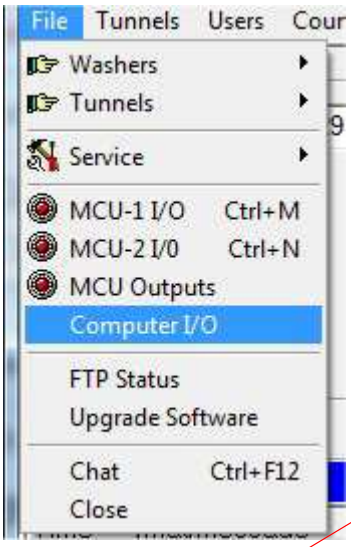
Analogue values and time stamp is taken from the position of the ruler.

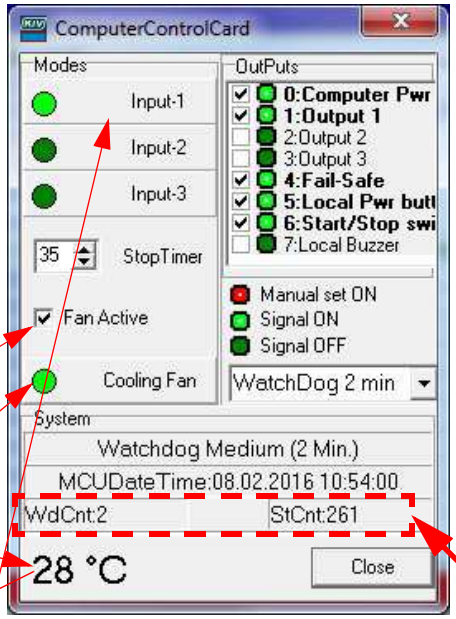


MCU Double outputs:



Computer Card





Fan:
Checked fan start to run.
Green button indicate active fan.
Cooling fan temperature start point by a mouse click on actual temperature label.

Outputs:
Active output green colored.

Watchdog:
No software actively will force a computer reboot.
Default value 2 min.

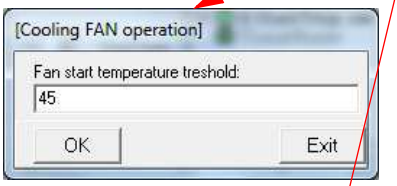
Watchdog:
No software actively and CCC card will force a computer reboot.
Default value 2 min.

MCUDateTime:
Microprocessor date and time.

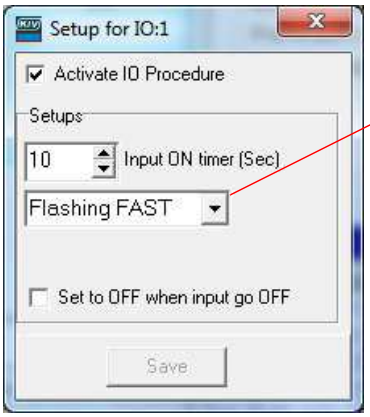
WdCnt:
Number of watchdog reset

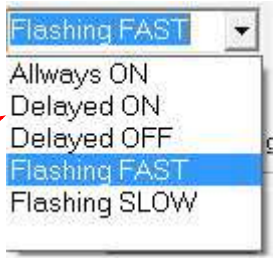
StCnt:
Number of power losses. (Computer restarted by suddenly power loss).

A mouse click on one of the fields will force a change.



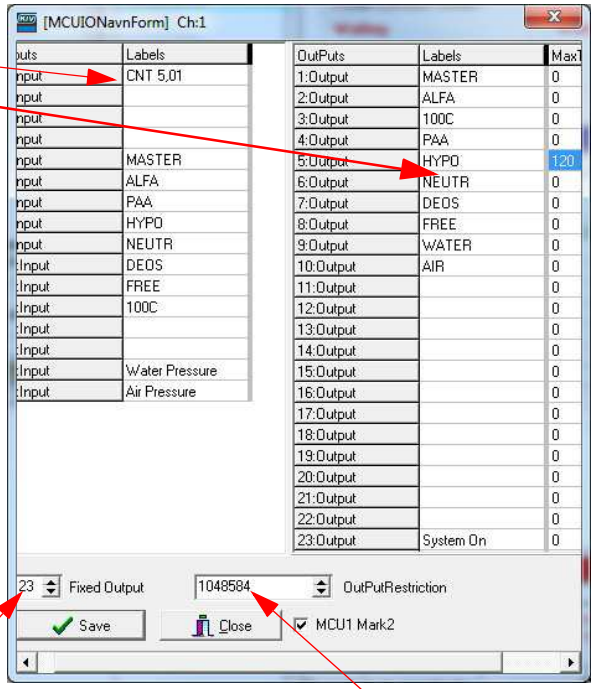
Special I/O functions:
With a mouse click at one of the input labels a setup menu appear. With the setup menu it is possible to activate procedures for each input.





Editor

I/O names:
Editor grids for input and output label names.

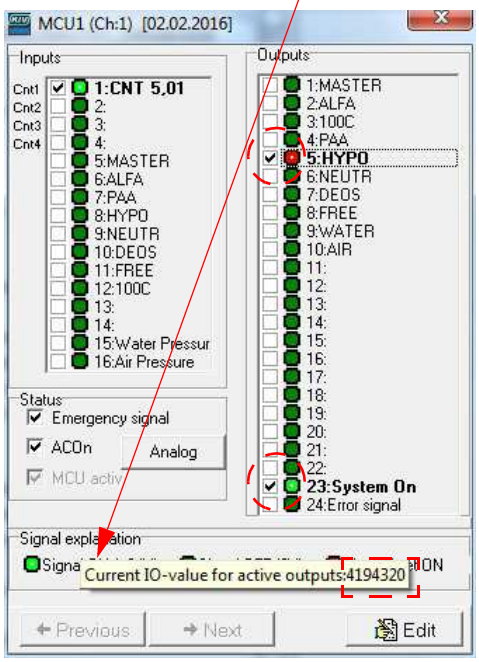


Max Timer:
Max number of 1/10 sec. output (s) will stay active before forced off by the system.

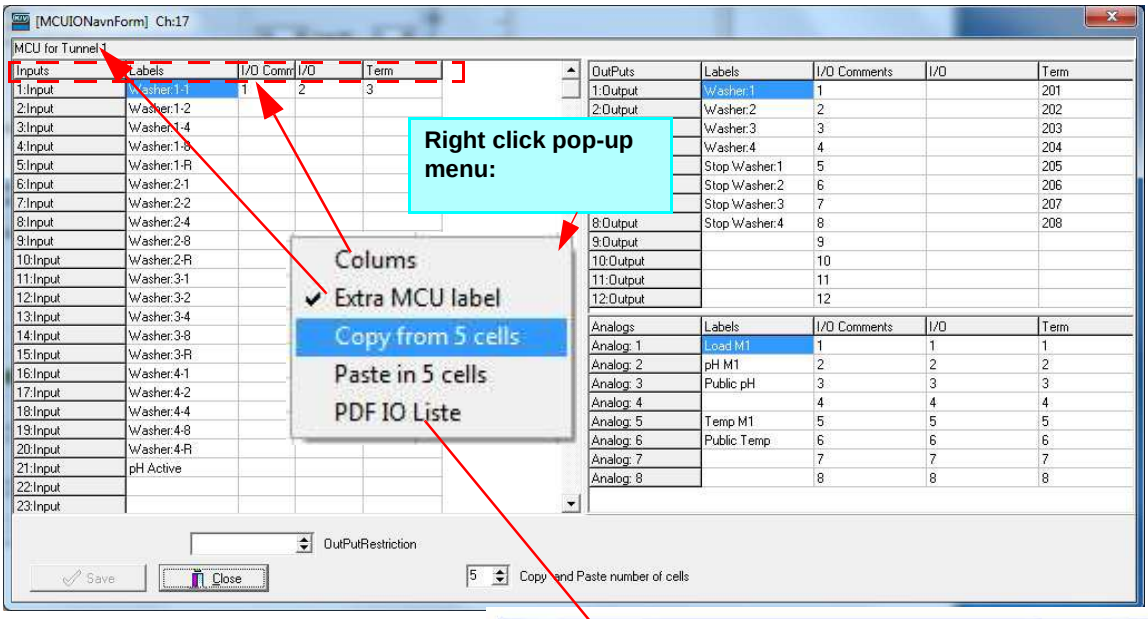
Fixed Output:
Activate by enter a value bigger than 0, This value (output number) always set active when start the software.
Only for MCU1.

Output Restriction:
To identify binary number open MCU1 menu and activate actual output (s) to protect, read the binary value from the yellow hint by a mouse “move over” on the “Signal explanation” frame then insert actual value in the output restrictions field.

Output restriction secures that only administrators or qualified users are able to activate outputs that may harm the system.



Editor menu:



<Columns>
Adjust column width.

<Extra MCU label>
Extra label on top of the menu.

<Copy from 5 cells>
Will copy 5 cells from cursor position.

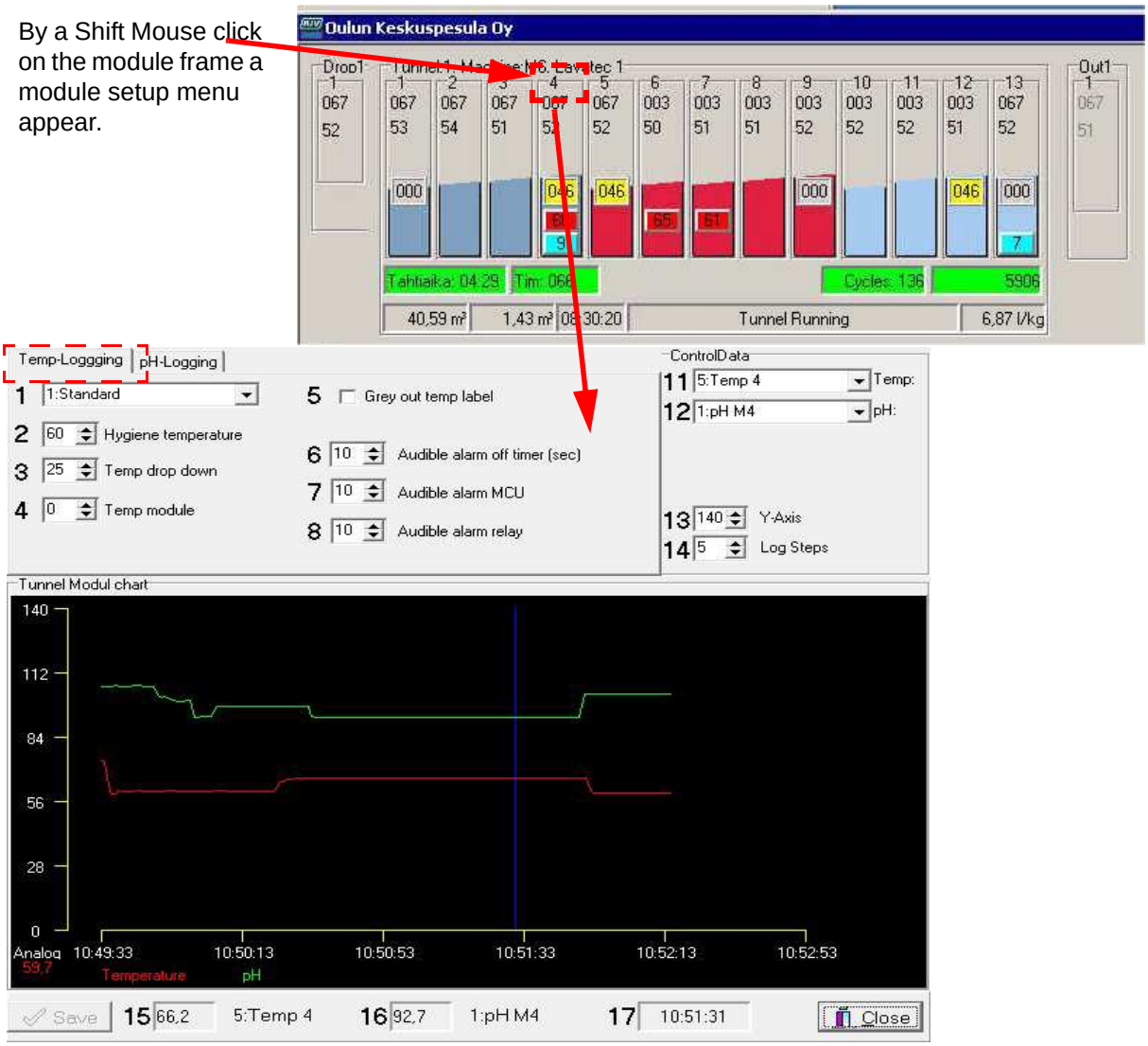
<Paste in 5 cells>'
Paste 5 cells for cursor position.

<PDF IO List>
PDF report of system I/O names for documentation.

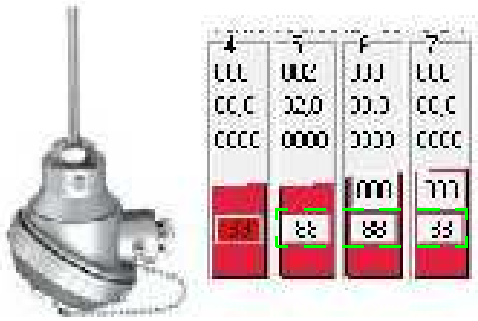
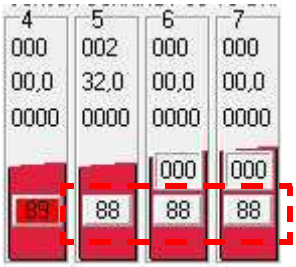
Chapter 14: Logging of analog values for tunnels.

General information:
For logging analog I/O capacity of 1 MCU2 card: 4 of 4-20mA and 4 of pt-100 input signals. Simple configuration setup validated of thermically disinfection and control of pH is possible. Logged data values are also stored in records and available for display by KIV-Report real-time software.

By a Shift Mouse click on the module frame a module setup menu appear.



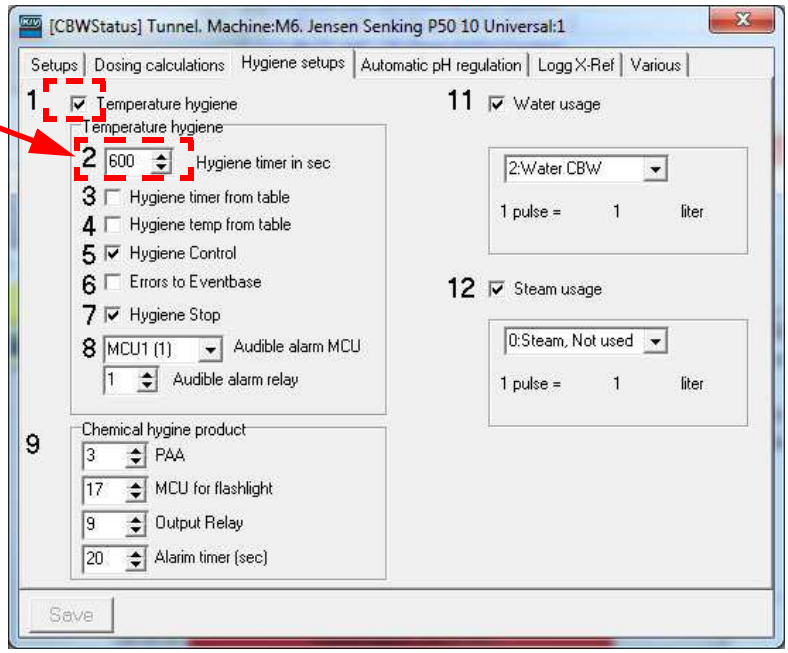
Pos	Temperature logging setup
1	**Validate:** There are 4 different modes of temperature logging and they are as follow: 1= Standard. 2= Dutch and Hypo (not ready). 3= Dutch no Hypo (not ready). 4= Module Temp. **How type 1 (Standard) work:** - Amount of seconds water in the module needs to exceed the hygiene temperature set point. For modify of set point see: Chapter 12 “Temperature hygiene:” on page 120 (UM) or see “Hygiene timer” in menu below, depending of what type of timers in use. One common temperature hygiene timer value, or a temperature hygiene timer value for individual wash programs. -The “temperature above time” will be added for each module (sec.) when thermal disinfection degree is above the defined hygiene set point (see pos 2 below). -By transferring washed goods out of the tunnel “temperature above time” will be evaluated against the “Thermal disinfection timer”. 2 and 3 not in use (needs to be defined). **How type 4 (Module Temp) work:** -Type 4 operate as type 1, but with following exception: The hygiene temperature is needed from the module where the physical probe is installed. At new transfers (new cycle) the probe temperature will be used as hygiene temperature through the next cycle (for actual module). The module temperature will only exchange once in a cycle period. Typical use of this type: Counter flow machine. No heating in actual module.
2	**Hygiene temperature** The temperature set-point. Measured temperature equal or higher than this set point will activate the “temperature above timer”. The “temperature above timer” will only execute when current hygiene temperature is higher than this value. Restart of “temperature above timer” is done by a new cycle signal. The “temperature above timer” will follow the bag through the tunnel and finally used for hygiene documentation by process reports (KIV-Report) by transfer of washed goods out of the tunnel. 

Pos	Temperature logging setup
3	**Temp Drop Down:** Number of degrees celsius the temperature is dropped in actual module. This function may only be used for modules where there are no physical sensor installed (only a temperature by temperature from previous module). In picture example below module 5, 6 and 7 gets actual temperature from module 4 and drop down value set to 1. 
4	**Temp module** See pos 1 “How type 4 (Module Temp) work”.
5	**Grey out temp label.** Checked will grey out the temperature label, may used to indicate that there are no physical temperature probe installed in actual module. 
6	**Delay timer (sec)** Number of seconds for temperature out of range prior to message or/and audible alarm.
7	**Number of errors before audible alarm.** Number of counted temperature errors prior to audible alarm.
8	**Audible alarm ON timer.** The audible alarm ON timer value in sec.
11,12	**Temperature input number:** 4 of pt-100 (position 5 to 8 in the drop-down menu) may be used as inputs for temperature logging. ***Remark!*** ***If 4-20mA (position 1 to 4 in the drop-down menu) used for temperature logging actual input-signal need to be crossed over to one of the pt-100 temperature inputs. See:“X-Ref table” on page 126.***

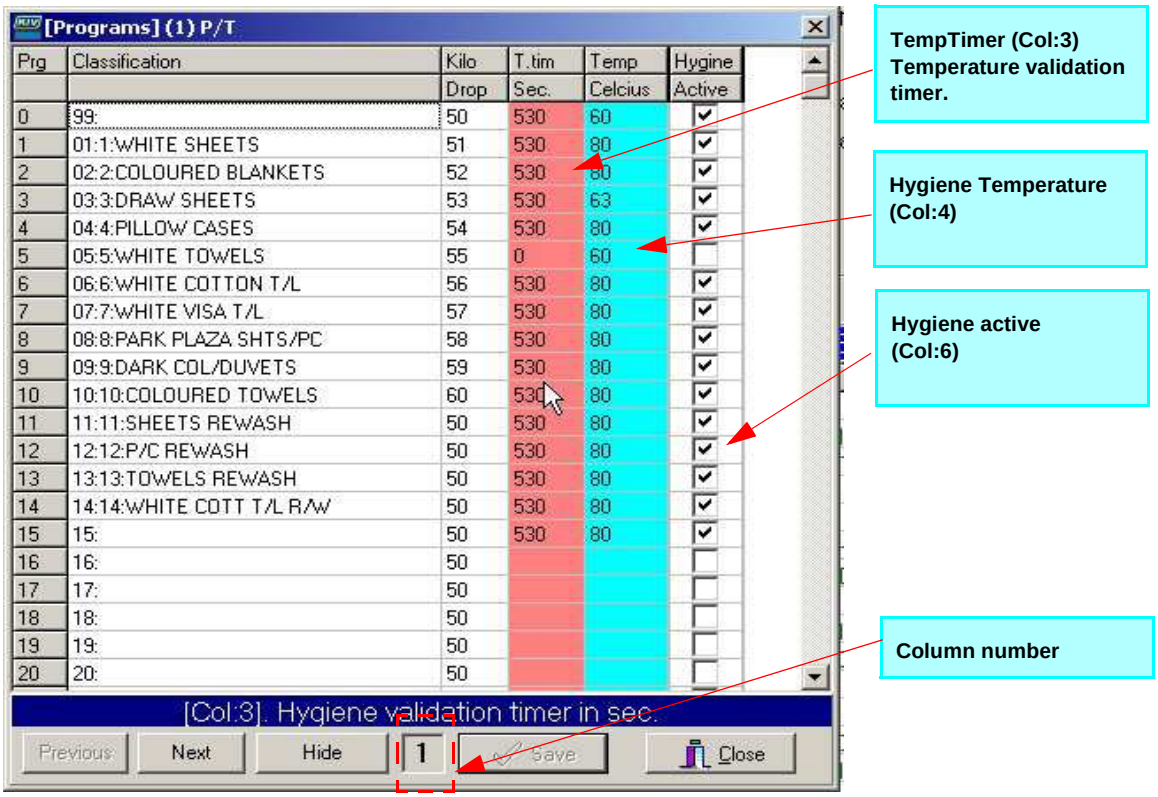
Pos	Temperature logging setup
13	**Log scale.** Y axis value of analogue chart.
14	**Log Steps.** Number of steps for X axis for analogue chart.

Temperature logging tunnel

Simple setup of temperature logging (one common hygiene timer).

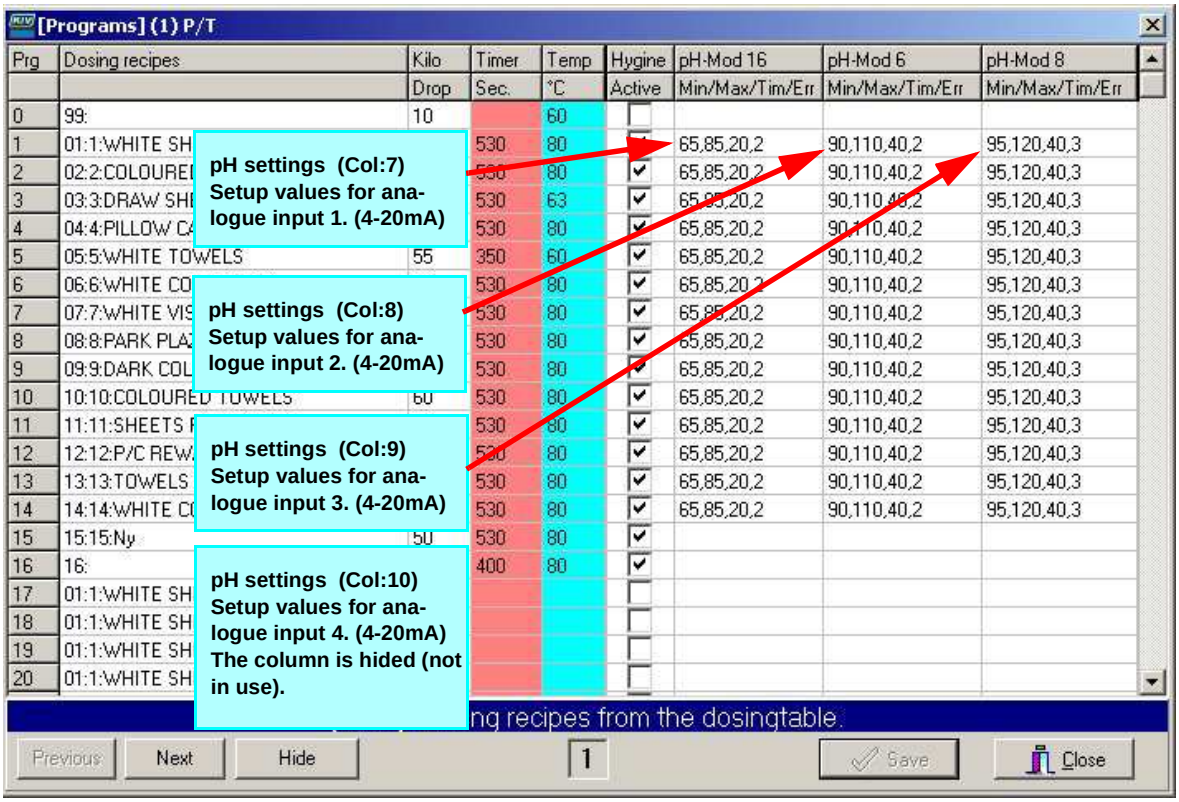


Advanced setup example of temperature hygiene logging.



Column	pH logging setup by machine programs
3	**HygieneTimer:** Column number 3 in the table above. Number of seconds to approve thermal disinfection (washing temperature needs to exceed temperature set point value) How to activate, See: “Hygiene timer from table:” on page 120 (UM).
4	**HygieneTimperature:** Column number 4 in the table above. Temperature Set-point for hygiene validation. Only when the module temperature exceed this value the hygiene timer start counting How to activate, See: “Automatic pH regulation.” on page 123 (UM).
6	**Temperature Hygiene active:** Column number 6 in the table above. Checked for temperature validation.

Advanced pH log-ging:



4 values needs to be inserted for each cell. The different setup values are separated by a comma. The cell string represent the following values:

Value-1

Minimum legal pH set point.
This value is also used by the software KIV-Report as validation highest legal value.

Value-2

Maximum legal pH set point.
This value is also used by the software KIV-Report as validation lowest legal value.

Value-3

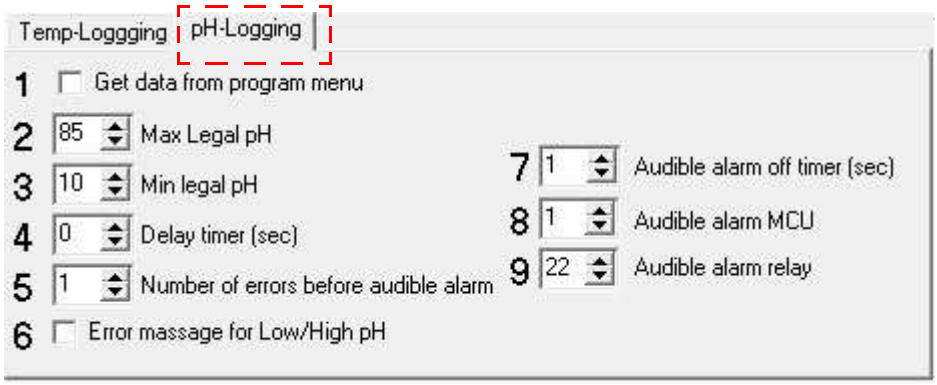
Number of seconds with pH out of range prior to message or audible alarm.

Value-4

Number of pH errors prior to audible alarm.

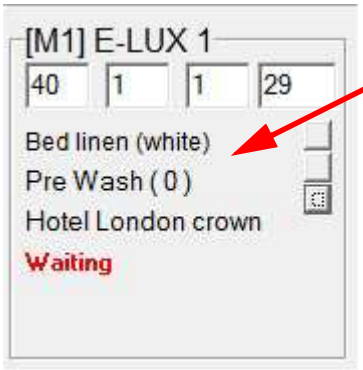
Remark1:
The pH logging forced to halt by "input Stop tunnel is set to off", see "Stop Dosing" on page 116. This will prevent false alarms when tunnel does not wash.

pH logging tunnel



Pos	pH logging setup
1	Checked for take use of pH validate data from program menu, See “Advanced pH logging:” on page 148 (UM). When checked pos 2..6 is not in use and is hided.
2	**Max legal pH** Maximum pH value set point. Also used by software KIV-Report as validation of high pH value.
3	**Min legal pH** Minimum pH value set point. Also used by software KIV-Report as validation of low pH value.
4	**Delay timer (sec)** Number of seconds with pH out of range prior to message and audible alarm.
5	**Number of errors before audible alarm.** Number of counted pH errors prior to audible alarm.
6	**Error message for Low/High pH.** Checked the pH error message will appear in “Event data Base”. Remark1: *The pH logging forced to halt by “input Stop tunnel is set to off”, see “Stop Dosing” on page 116. This will prevent false alarms when tunnel do not wash.*  Remark2: *KIV Report uses average analogue value during current cycle.* Remark3: *The visible analogue values in tunnel image is refreshed in 10 sec intervals.*
7	**Audible alarm OFF timer.** Off timer *in sec to force* audible alarm off.
8	MCU number for audible alarm.
9	Relay number for audible alarm.

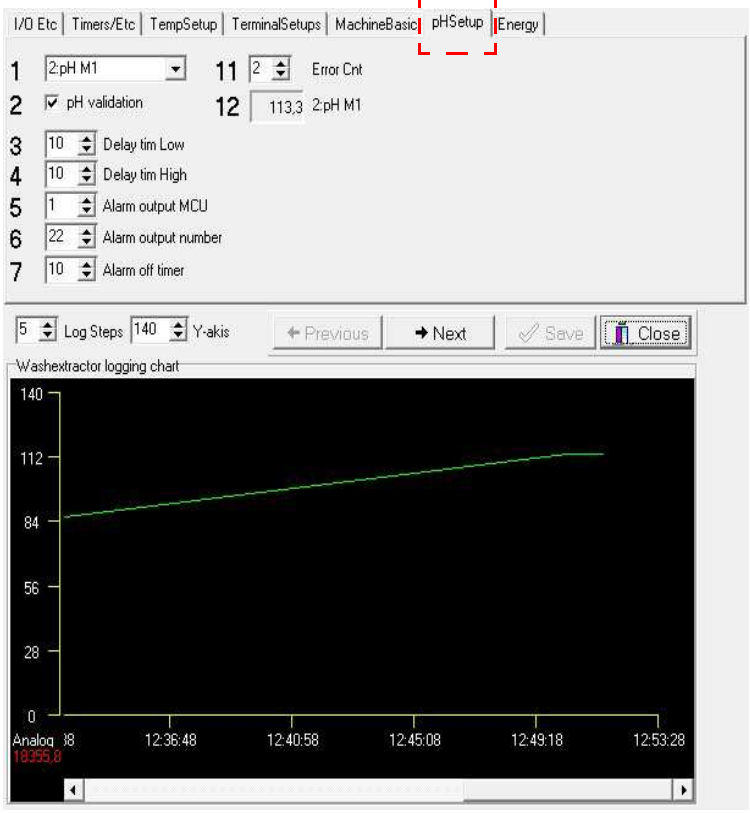
Chapter 15: Logging of analog values for washers.



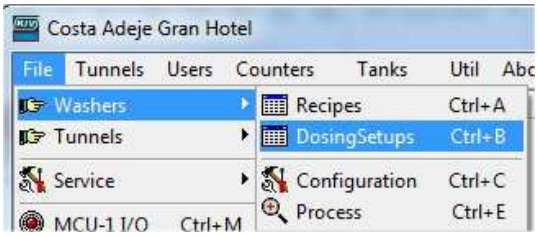
Double mouse click the washer frame in the main screen. Then click on the tab pHSetup, and menu below appears.

General information:
1 of 4-20mA and 1 of pt-100 analog inputs available used for each of the washers.
Set point values to control and validate the analog values. Logged data are stored into records used the KIV-Report real-time software. For an example of report, see page 154.

The following information in this chapter describes how to configure and setup pH and temperature logging.

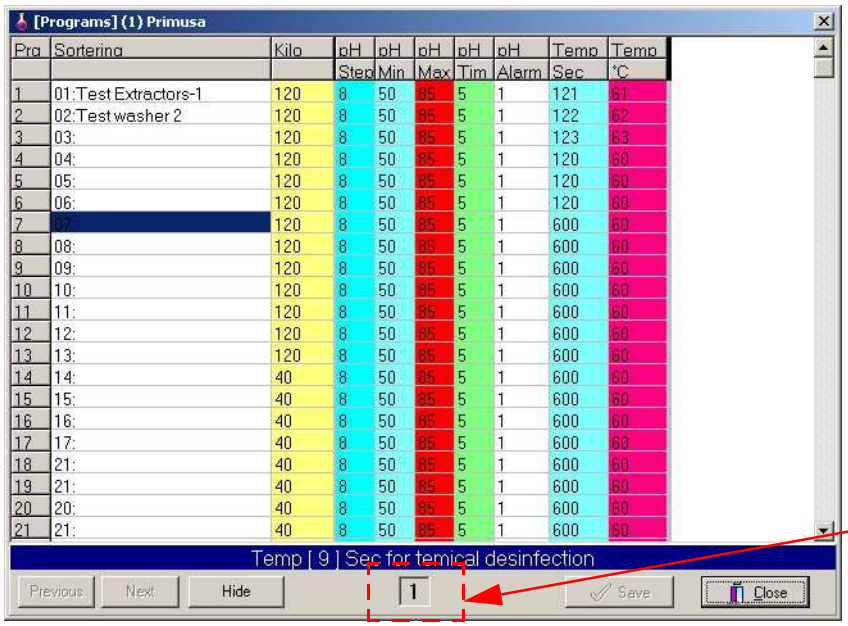


Pos	pH logging washers
1	Analogue input number (ch) for pH logging.
2	**pH Validate:** Checked for validation of pH by wash machine. If unchecked validation data is entered in Col. 4 to 8, see table on page 152.
3,4	**Timer low, Timer high:** When the pH value drops below or exceeds above set points more than timer for low / high values, a warning message appears in event base. If more than 3 errors occurs during the wash process the message appear in error base and an audible alarm activates (If checked).
5	**Alarm MCU:** MCU number for audible alarm output.
6	**Alarm OutPut relay:** Relay number for audible alarm output.
7	**Alarm Off Timer:** Number of sec prior to audible alarm is forced off. When multiple alarms error occur during the process this timer is multiplied by the number of errors counted.
11	**Error Counter:** Number of errors (pH out off range).
12	Actual current pH value.



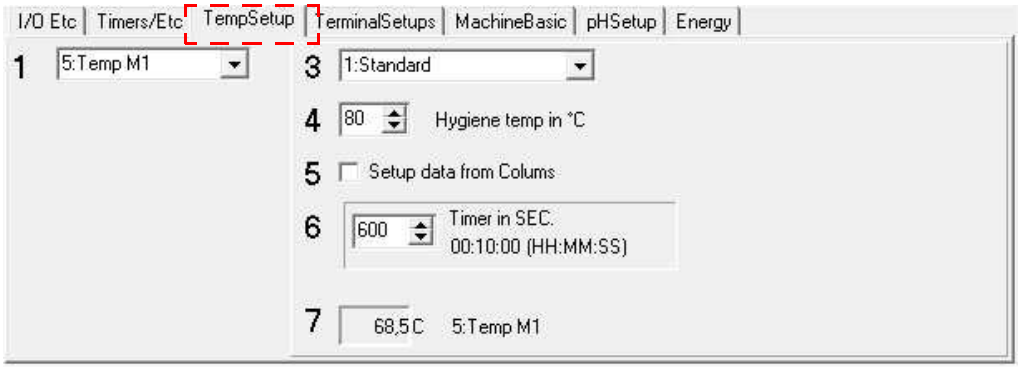
General information:

pH logging will continuously control and validate current pH value when the washer washes in defined dosing step.
If pH is to high or to low a message is given and an audible alarm is given (depending on setup).
End of wash process message will also include average pH value for current wash process.



Column	pH logging setup
4	**pH Group:** Dosing group number to activate pH validations. The pH validation will start when dosing group is equal to this value. The pH validation will stay active until a reset signal for the actual machine is given. Enter value 0 will disable pH validation.
5	**pH Min:** Min. pH value for actual wash process.
6	**pH Max:** Max. pH value for actual wash process.
7	**pH Tim:** Delay timer (sec) prior to start of pH validation in selected dosing group.
8	**pH Alarm:** Checked for audible alarm active.
9	**Temp Tim:** Number of sec for hygiene validation.
10	**Temp point:** Temperature point to be exceeded prior to start of hygiene validation counter.

**Hygiene valida-
tion washers:**

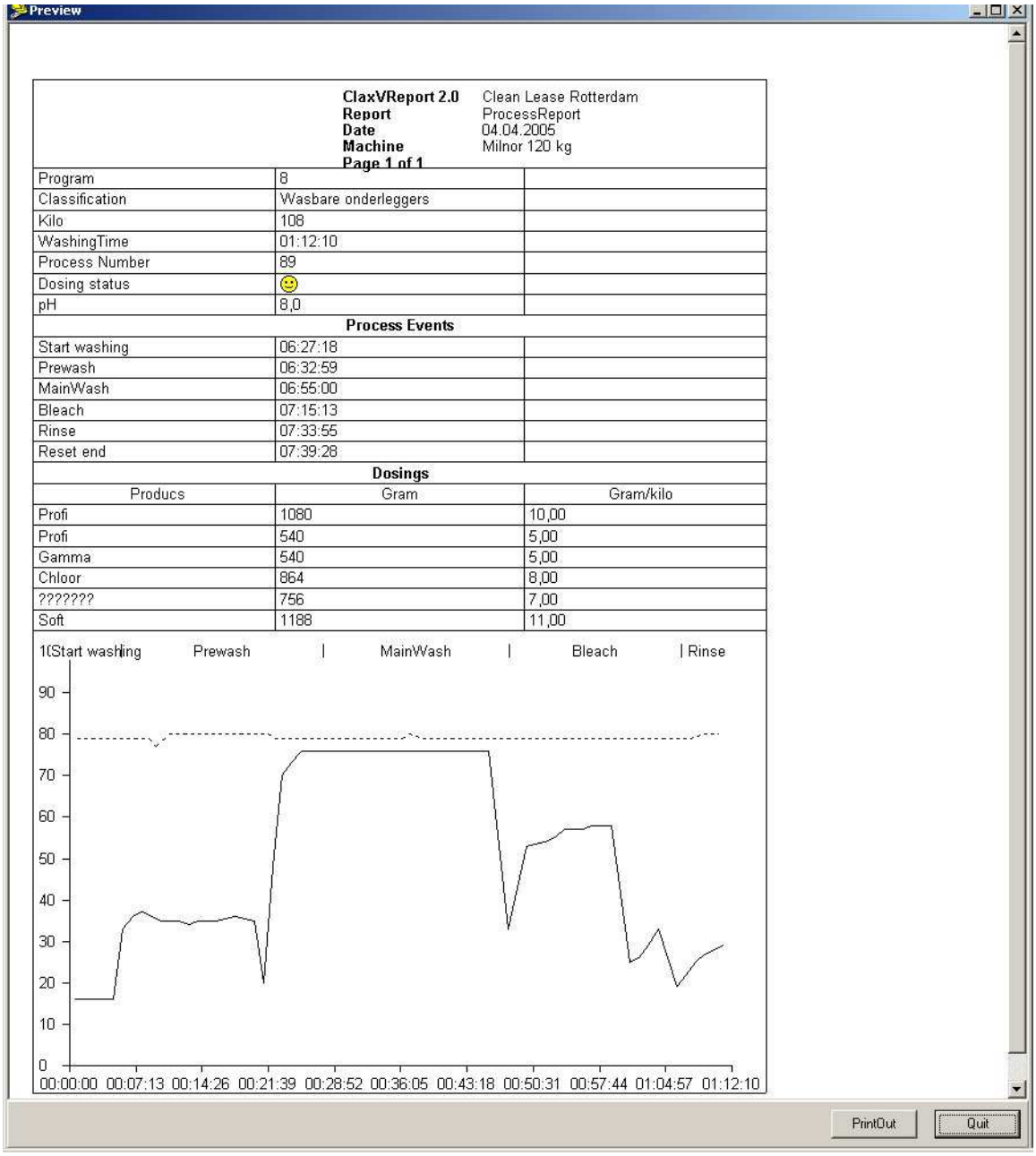


Temperature sensor:
Standard pt-100 sensor used for measure of temperature in the washer.

Column	Temperature logging setup
1	Analogue number from MCU2 card
3	Temp logging type: 1=Standard. 2 and 3 not in use. 4=High temperature see below.
4	**Hygiene Temp:** Temperature set point for terminal disinfection. When temperature in the wash process exceeds value, the system starts an internal “temperature ok counter”. When value of this internal counter exceeds “Hygiene Timer” the hygiene is approved for the washing process.
5	Checked for set points by columns and machine programs. If unchecked set points by pos 3, 4 and 6 in this table.
6	**Hygiene Timer:** Timer in sec to achieve terminal disinfection. See also “Hygiene Temp” above. (Or by enter a value in Col. 9). **Validation:** It is possible to adjust hygiene parameter based on programs. In this is the case, set validation to ON. “Hygiene time” is then entered in Col. 9 and “Hygiene temperature” in Col. 10, see picture above.
7	Label display actual current temperature.

Report example

Picture below is showing a process report from the software KIV-Report. In this report pH and temperature is shown graphically. In addition information about pH validation status is shown on line 7 (pH).



High temperature:

By clicking the mouse on the tab TempSetup, the menu below appears. Use drop down menu to select type 4 (High temp).

General information:

This logging feature will continuously check the temperature in the washing process. If temperature exceeds set point an audible alarm is given and the wash extractor will be forced on hold. In addition a “steam relay” is activated.

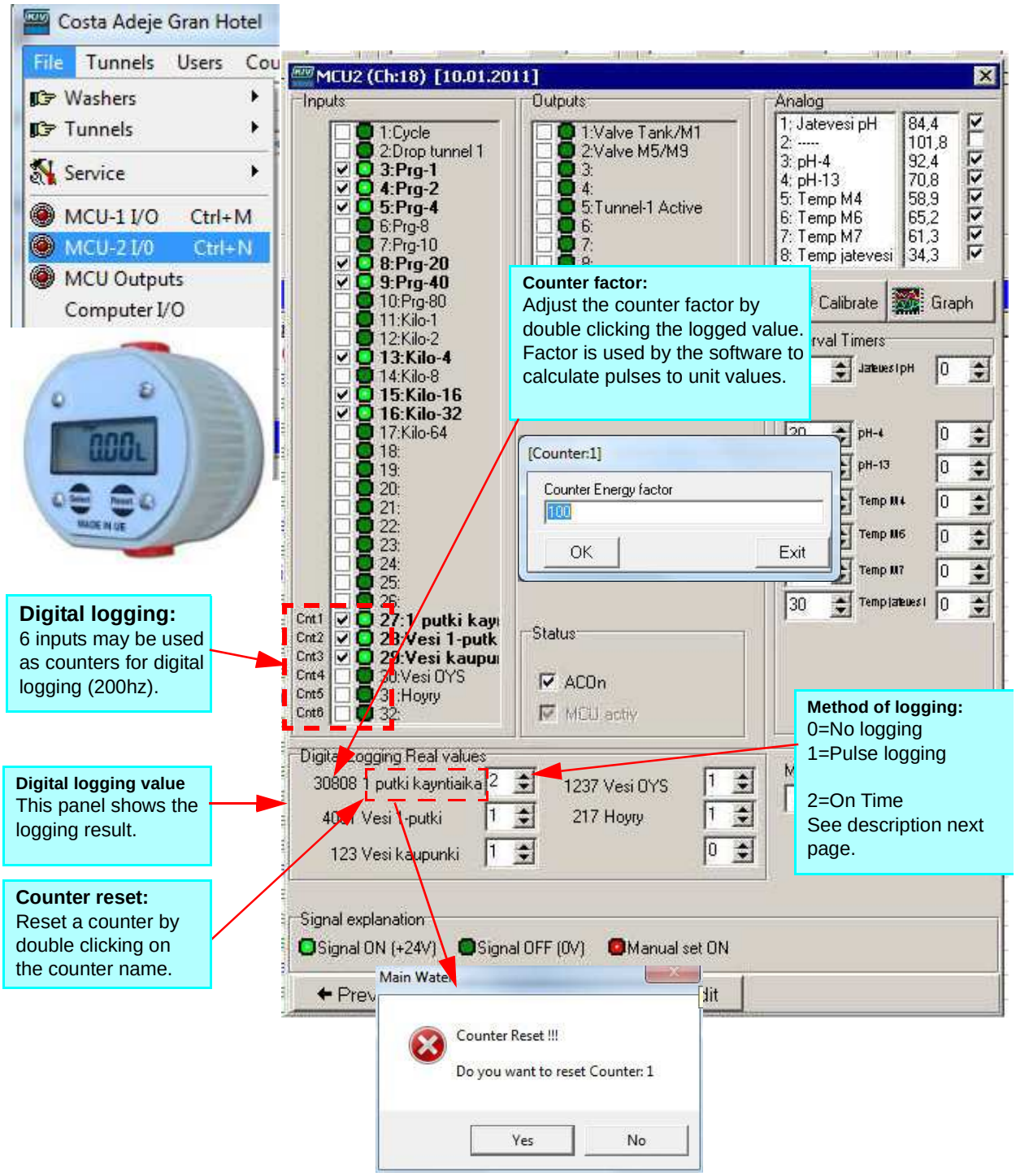
One common temperature set point, or temperature set point for each program.

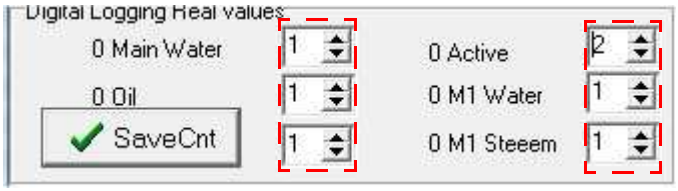
This feature will prevent washing temperatures rising too high and work in the following way:

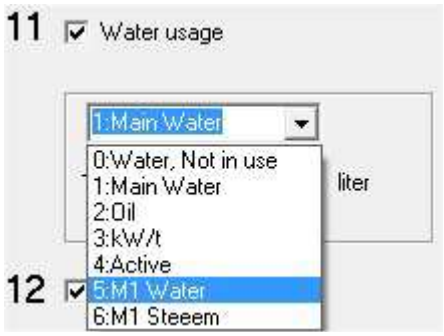
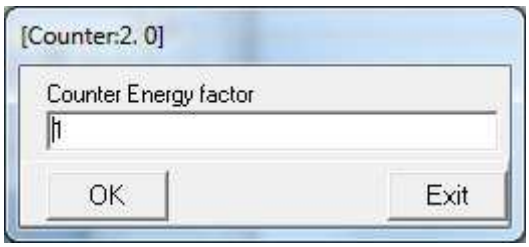
If actual temperature in the current wash process exceeds the “max temp set point” and the “Steam Timer” runs out, the “Steam Relay” will be activated and then stay active until the current wash temperature goes below the “max temp set point”. If the wash temperature do not drop down an additional audible alarm is activated and message are sent, which are controlled by the “Alarm Timer”.

Column	High temperature check setup
3	Drop down menu for selecting temperature type, select type 4.
4	Maximum temperature level in wash extractor.
5	If checked, temperature values from column 10 in program menu for washers.
6	Not used.
7	Actual temperature value.
8	**Steam MCU:** MCU number for the steam relay.
9	**Steam Relay:** Relay output for the steam valve.
10	**Alarm Timer:** Alarm repeat timer in min. If temperature still exceeds max set point, this timer will repeat an audible alarm and force the washer to stop.

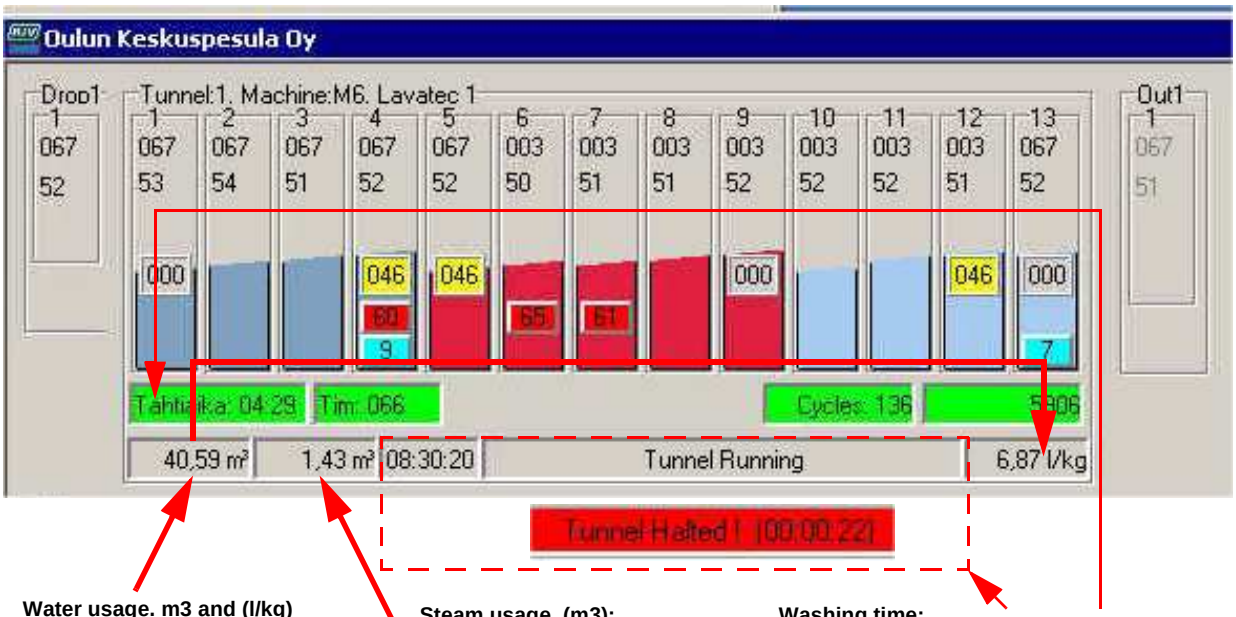
Chapter 16: Logging of digital and analogue signals.



Pos	Counter setup
Feature:	6 counters (inputs) are available for general digital logging. Kind of logging: -Record number of pulses from water, oil, kWt or any other kind of pulse sensors. -Record number of seconds any input stays active (ON) during a 24 hour period.
Timer / Pulse:	Menu below control properties of the digital logging system. Set to value 1 for pulse logging. Set to value 2 for seconds logging. By pressing button <Save Cnt> the MCU counters are activated in the actual mode.  **Remark!** **The counters will continue counting even if the computers are stopped (during evening time). The values are loaded into the computers memory when start up in the morning.**

Pos	Counter setup
Tunnel water usage:	Example of measuring water usage by digital input for a tunnel. Setup steps: **1.** Install a water meter. in the pipeline for the water supply.  **2.** Select one of the 6 inputs on MCU2 or MCU1 as a pulse counter (value 1). See: Chapter 16 “Digital logging:” on page 156 (UM) **3.** Set Check box for “water usage” in tunnel setup. TAB: Hygiene setup. From the drop down menu select counter for actual tunnel. If the counters are named in smart ways it will be easier to find which input to select.  4. If needed adjust the water meter factor: See “Water Pulse factor” on page 122. 

Tunnel image



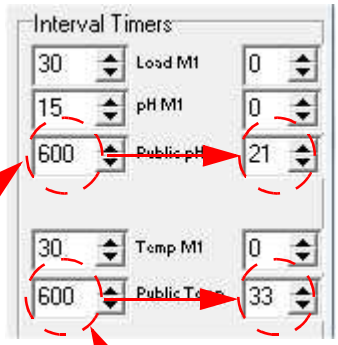
Water usage. m3 and (l/kg)
The water usage in cubic metres. Value updates each new cycle.

Steam usage. (m3):
The steam usage in cubic metres. Value updates each new cycle.

Washing time:
The green label show active washing time for the tunnel. Active signal is normally given by the PLC which runs the tunnel. The PLC signal ON for an active washing tunnel. When signal ON the text “Tunnel running” is displayed, if not (signal go off) the text “Tunnel Halted” +counted time will be displayed.

General analog logging

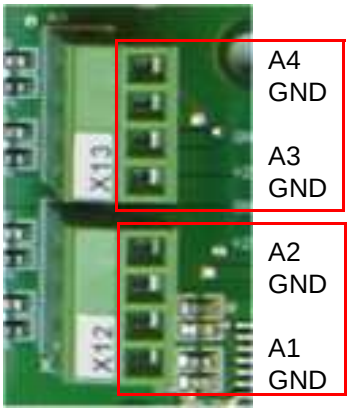
6 analogue 12 bit inputs are available for general analog logging for each MCU2 card.
The analogue inputs may used as:
-Logging of waste water temperature.
-pH logging of waste water



The pH value read by intervals of 600 sec, as long input 21 is active (ON).

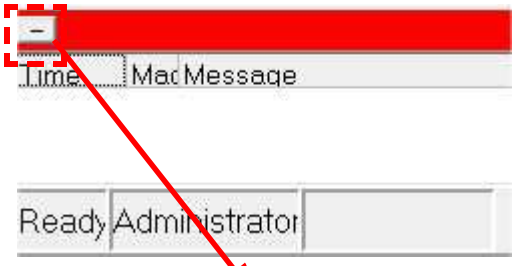
The temperature value read by intervals of 600 sec. and continuous because value 33

Analogue inputs wired to X12 or X13

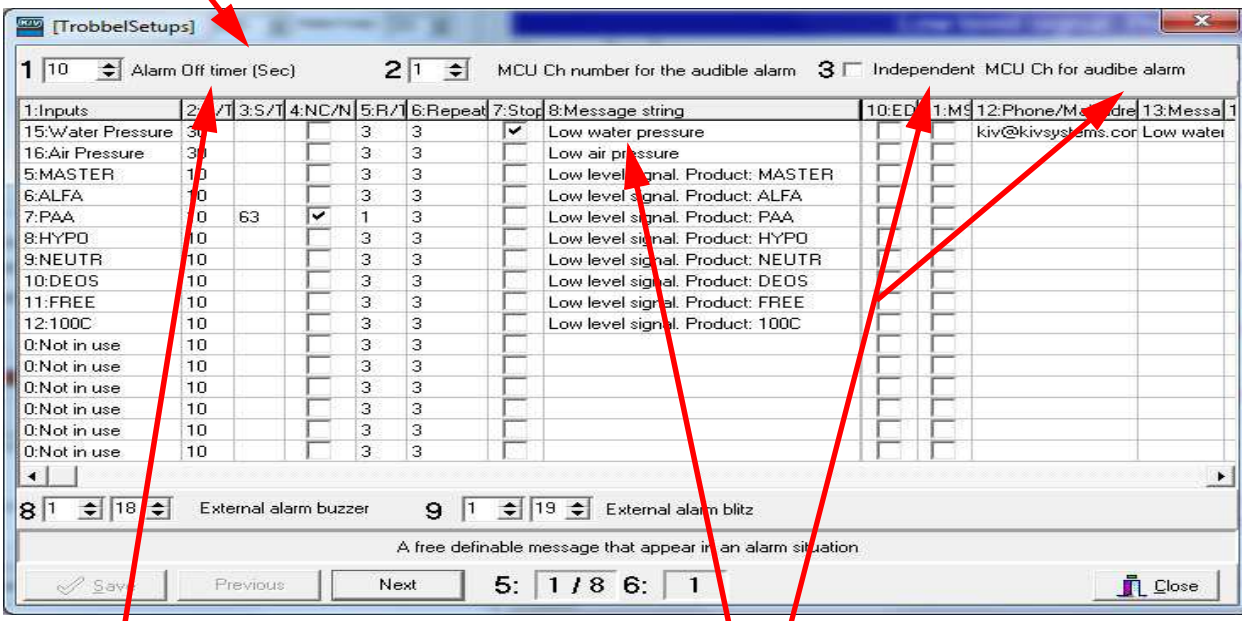


Chapter 17: Alarm Definitions.

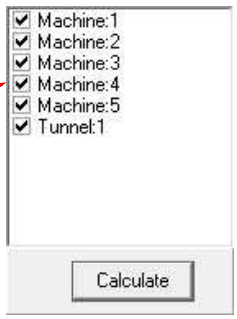
Alarm properties:



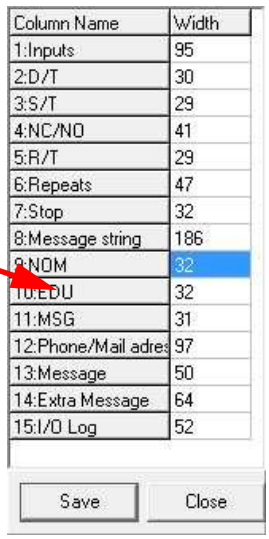
Alarm definition
By mouse clicking the square button found at left side of the red error beam you will get access to trouble setup menu. When this is done the menu below appears.



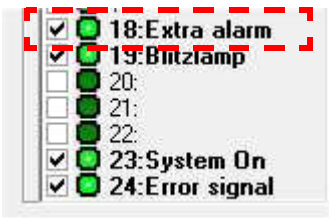
Right clicking in this column will make a setup menu appear. For more info see decryption of column 3 at next page.

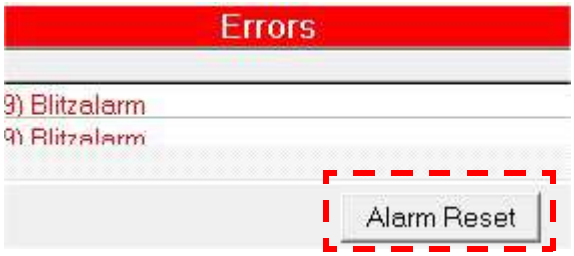
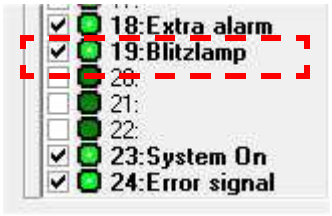


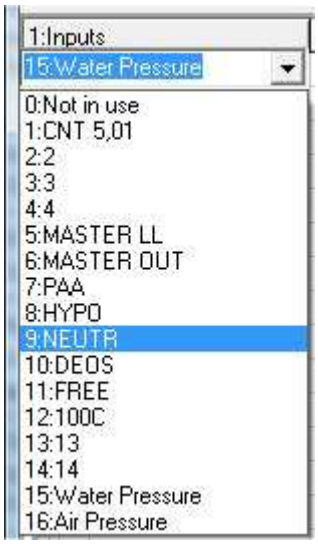
Click in column 12 or 13 and this menu appears.

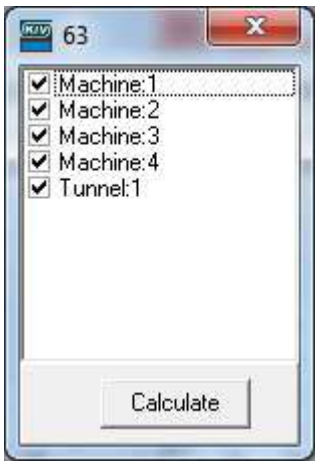


Right click in this column and a pop up menu appears. Click to select a column width menu.

Pos	**Description of main features in the menu above:**
1	Audible alarm Off timer (Sec). The audible alarm turns OFF after this timer value.
2	Audible alarm MCU number.
3	Independent MCU: The audible alarm is a fixed output (Output 23 on MCU1). By checking this box it is possible to select different MCU1's for each alarm group (8 alarm groups in total.)
4	Independent Alarm MCU number.
5	Active MCU number for current setup menu.
6,7	Active MCU Channel: It is possible to use inputs from all used MCU's in the project (both MCU1 and MCU2). (Totally 8 alarm groups available. Select a new alarm group with the button <Next> and then select MCU number for this group by clicking the label displaying current MCU number (Pos 6). A drop down box will now appear to select actual MCU number for this trouble group (Pos 7).  After selection of a new MCU number the menu need to be saved, closed and re-opened before it will display correct I/O texts from the selected MCU number. **Limitations:** 16 alarms in each MCU number, 8 groups of trouble setup, which will give totally 128 free definable trouble setups.
8	MCU number and relay number for External Buzzer. Activated only when value > 0, the system will force this output ON in parallel with the standard buzzer, defined at pos 2 in menu above. Timing diagram see:Chapter 25 "Timing diagram for buzzer and blitz lamp" on page 220. 

Pos	**Description of main features in the menu above:**
9	MCU number and relay number for External Flashlight. Activated only when value > 0, the system will force this output to continuously stay ON if audible alarm is set off by the internal alarm timer (automatic reset timer defined in pos 1 above) **and not by pressing** <alarm reset> button by the local operator.   Timing diagram see:Chapter 25 “Timing diagram for buzzer and blitz lamp” on page 220.

Column	Description of column properties
1	**Inputs:** A drop down menu to select actual alarm inputs. Inputs found from selected MCU number. 

Column	Description of column properties
2	**D/T:** Delay timer in sec prior to output for activating audible alarm and error messages. Set value to 0 for logging fault errors. When fault errors only are logged no audible alarm is given and no event message will be displayed at the blue event bar. This trouble logging setup feature may be useful for logging errors such as: tunnel fault, press fault etc. In such case the Stop and EDU function also will be disabled.
3	**S/T:** Right click and a popup menu appears. In this menu it is possible to access menu <Stop setups>. With that menu it is possibility to select which machine(s) that will act on the Stop function selected in column 7. Use “Blank” for stop of all machines or select which machine to stop by the check boxes With a click on the button <Calculate> a binary code value is calculated and inserted into the row. 
4	**NC/NO:** Unchecked = NO = Normally Open contact Checked = NC = Normally Closed contact.
5	**R/T:** Timer in minutes between each repetition of the audible alarm.
6	**Repeats:** The amount of repetitions from the audible alarm and events messages. It is also the number of repetitions before the system activates STOP and EDU outputs. STOP and EDU columns needs to be checked for effect.
7	**Stop:** Checked will activate the defined STOP outputs for all machines when number of repeats exceeds settings in Col 6. (STOP output needs to be defined for each machine).
8	**Message string:** A free definable message string which appears in the events and error base.

Column	Description of column properties
9	**NOM:** Max number of equal error messages.
10	**EDU (Error Dosing Unit):** Checked will activate the defined output of messages back to the tunnel software. Unchecked will not activate the defined output. The number of repeats has to be fulfilled before this takes effect. The defined output is found in menu Util > Setups > Tab:SystemSetups.
11	**MSG:** Checked will add the defined message (Pos 13 and 14) and send the message as a text message or a mail message.
12	**Phone/Mail:** Phone number or mail address for the message.
13	Message string.
14	Extra message string.
15	I/O logging see“Logging of inputs.” on page 168 (UM).

.

Table 1: Examples of alarm configuration

Case:	Repeat Timer (min.) (Col. 5)	Number of repeat (Col. 6)	STOP (Col. 7)	Comments
1	0	0	Off	The error is blinking at the top of event message window.
2	0 1	1 1	Off Off	The error is blinking at the top of event message window. The audible alarm will occur once. One message in event database.
3	0 1	1 1	On On	The error is blinking at the top of event message window. The audible alarm will occur once. STOP function will take effect at once. One message in event database. One message in error database.

Table 1: Examples of alarm configuration

Case:	Repeat Timer (min.) (Col. 5)	Number of repeat (Col. 6)	STOP (Col. 7)	Comments
4	1	2	On	The error is blinking at the top of event message window. The audible alarm will occur twice. STOP when the second audible alarm occurs. Two messages in the event database. One message in the error database.
5	1	3	Off	The error is blinking at the top of event message window. The audible alarm will occur three times. Three messages in event database.
6	1	3	On	The error is blinking at the top of event message window. The audible alarm will occur three times. STOP when the third audible alarm occurs. Three messages in event database. One message in error database.

Case	Examples
1	**Alarm.** Drum pipe alarm with one audible alarm message. Repeat timer (5) = 0 Number of repeat (6) = 1 Stop Active(7) =Off.
2	**Alarm / Repeat.** Drum pipe alarm and two audible alarm repetitions with 1 minute intervals. Repeat timer (5) = 1 Number of repeat (6) = 2 Stop Active(7) =Off.

Case	Examples
3	**Alarm / Repeat / Stop.** Drum pipe alarm and four audible alarm repetitions with 1 minute intervals. STOP output activated when the fourth audible alarm occur. Repeat timer (5) = 1 Number of repeat (6) = 4 Stop Active(7) =On.

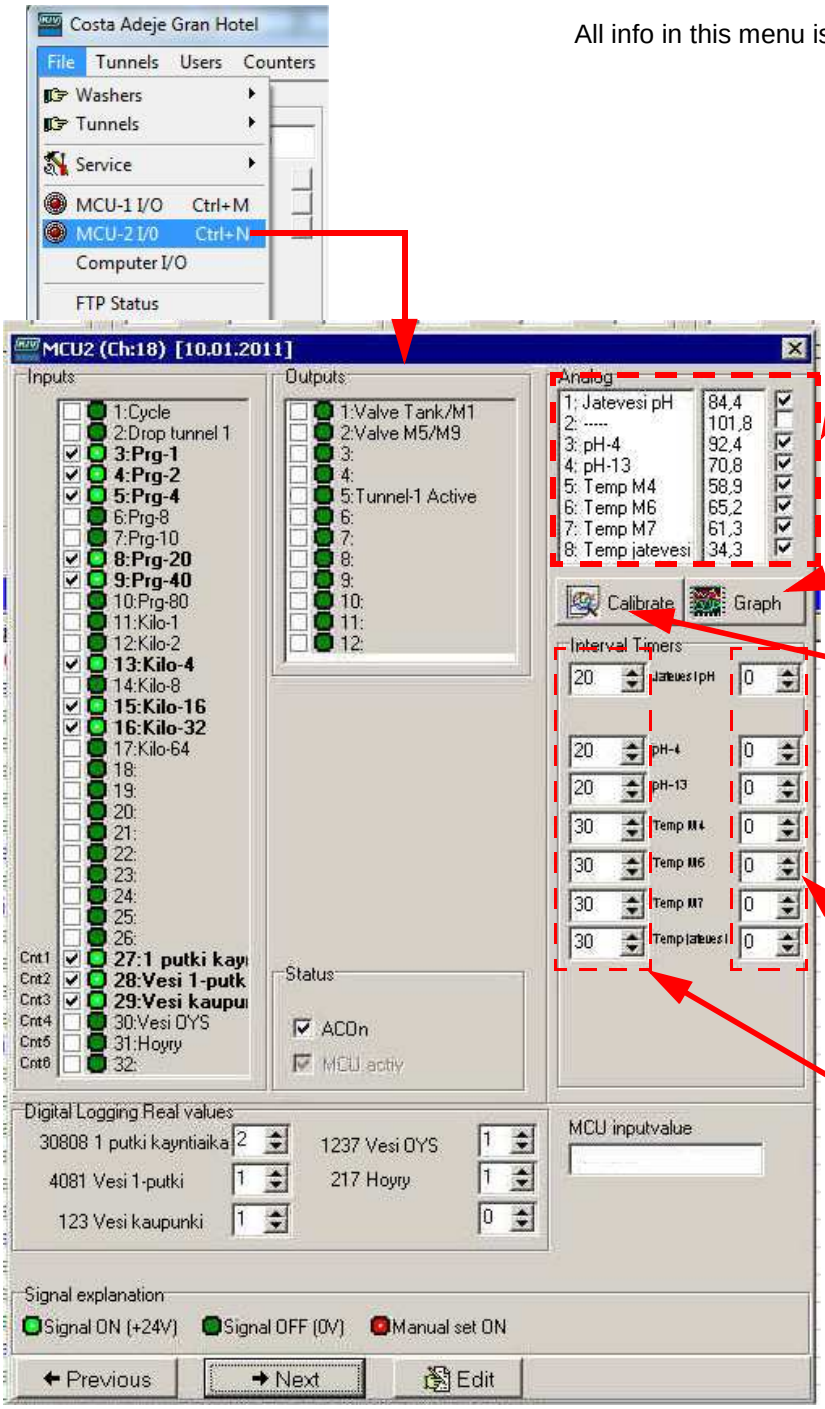
Logging of inputs.

Logging of digital inputs possible using column I/O log

Column	Description
I/O Log:	Checked will activate logging of the defined input. When this input is set to active (On), the message string (Pos 2) appears in the event-base. If the input is active for longer than the D/T (delay-timer) (Pos 1), the Extra Message will appear in the event-base. Both messages are only shown once.
Message string	A free definable message that appears in the events and error window. This is the first message.
Extra message string	A free definable extra message that appears in the events and error window. This is the last message.

Chapter 18: Setup and calibrate analog inputs.

All info in this menu is shown in real time.



Analog "Window".
Information about 8 Analog channels (text and analog value).
Checked = in use.

Button for Analog Graph.
Click and a new graphical "window" appears. See page 171 (UM).

Button for Calibration procedure.
Click and a new menu appears. see page 170 (UM).

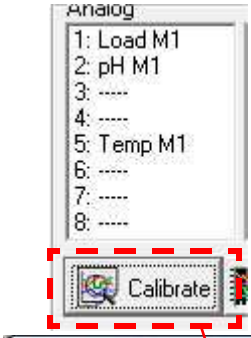
Input value:
1..32 Log ONLY when the input is active.

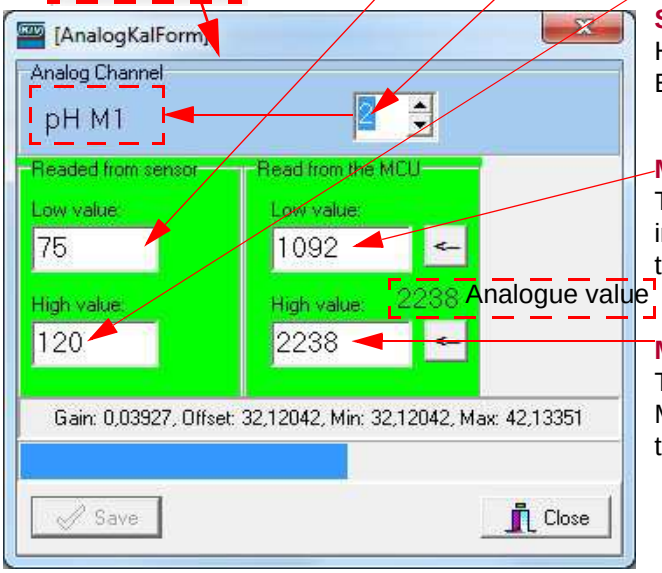
33: Continuous logging

Interval timers.
Interval in seconds for reading analogue data from MCU's.

Caution!
Don't log more than necessary to limit file size.

Analogue Calibrate





Sensor, Low unit value:
Low unit value from the sensor.
Example: pH 7,49, insert value 75. Do not enter decimal point.

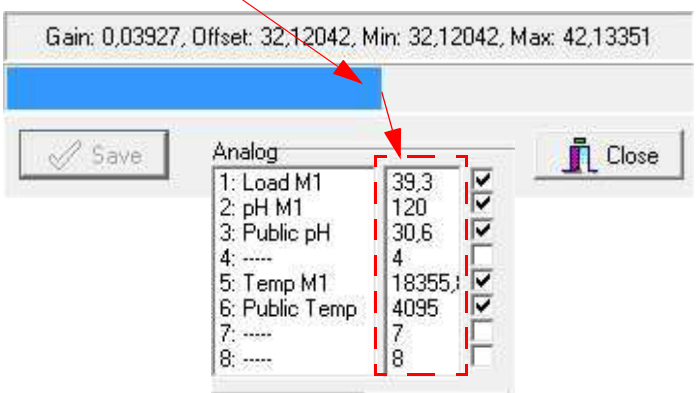
Channel:
The channel number and name for analog calibration.

Sensor, High unit value:
High unit value from the sensor.
Example: pH 12,0 insert value 120.

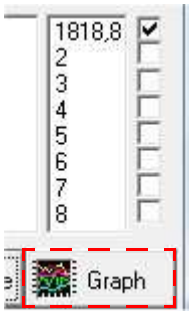
MCU, Low analog value:
The low analogue value from the MCU input. Insert the value by using the button. 

MCU, High analogue value:
The high analogue value from the MCU input. Insert the value by using the button. 

Start calibration procedure by entering the low unit value and press button <-. The software will now know which unit value represents the actual analog I/O value. Continue and enter High unit value, forcing the sensor to send the high analog value which represent this high unit value and press the button <-.
Finally press the button <Save>. tThe software will then do a calculation and the analogue value will be converted to a logic unit value.

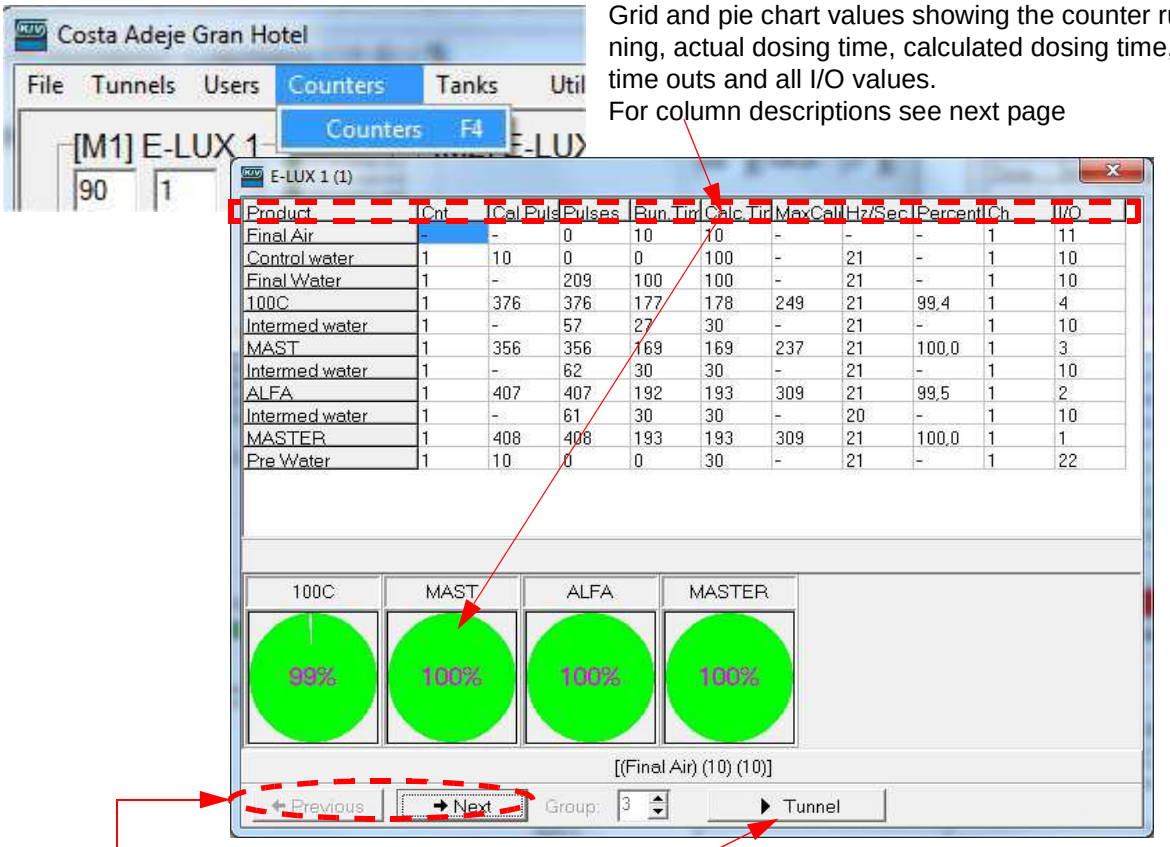


MCU, Analogue window:



By clicking the button <Graph> the menu below appears. This menu displays continuous updated analogue unit values in real-time.

Chapter 19: Dosing running.



Grid and pie chart values showing the counter running, actual dosing time, calculated dosing time, time outs and all I/O values.
For column descriptions see next page

Next/Previous:
With this button it is possible to change between different machines.
(Tunnel and Washers).

Tunnel:
By pressing this button the first tunnel is present. When checking dosings for a tunnel dosing, the group to check has to be selected. Select using the group selector box.

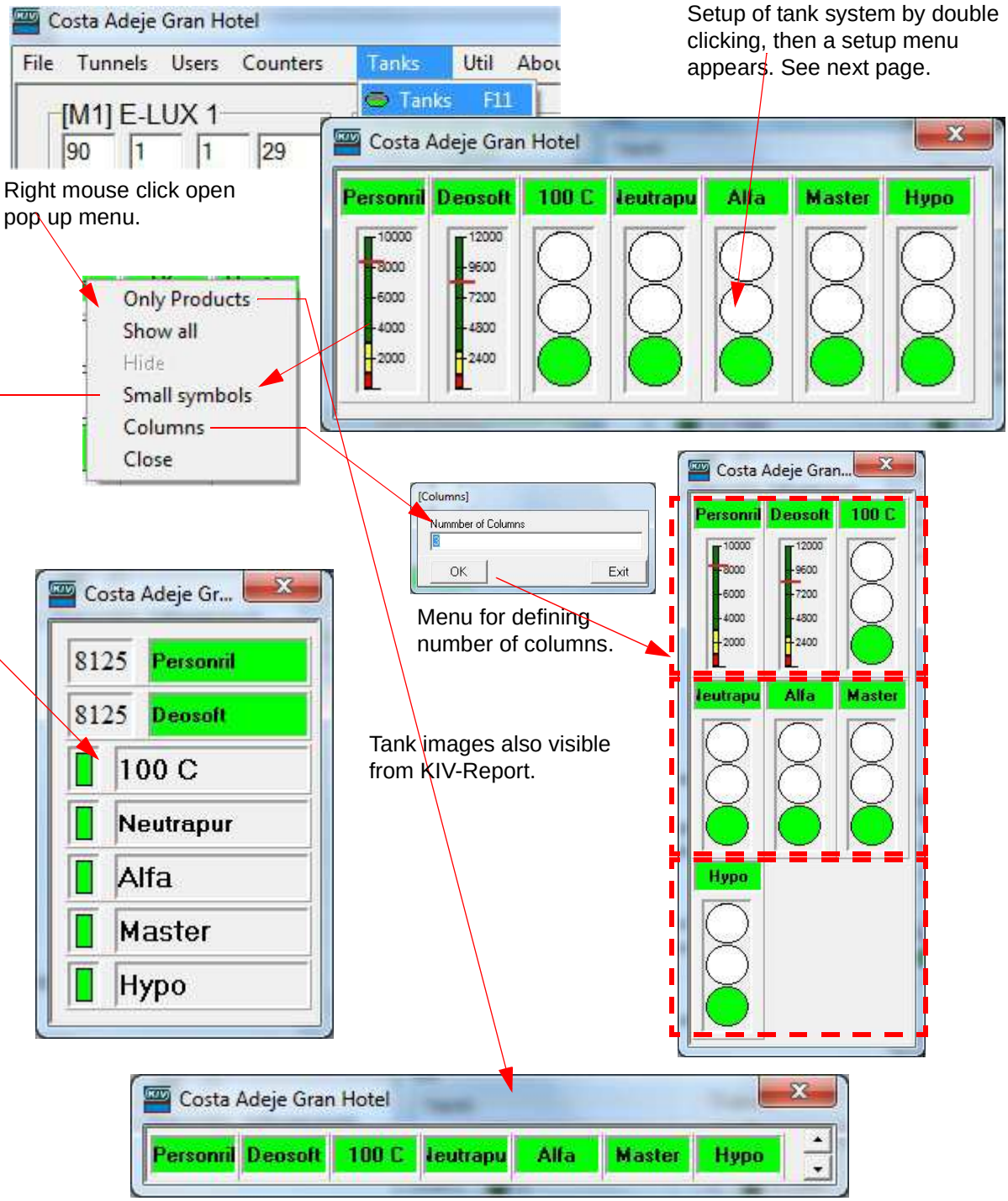
Remark 1!
The Group selector is only visible when monitoring tunnels.

Remark 2!
This menu inserts a new line for each product or flushing valve. Both calculated and actual pulses are shown in real-time. At the moment actual pulses from the counter are equal to calculated pulses the software normally inserts on a new line above current line. If actual pulses are achieved faster then expected (counter frequency is dramatically changed) the software starts waiting (new line delayed inserted). The reason being the software for each dosing also calculates the theoretical dosing time. This theoretical timer is calculated according to information saved during the last calibration procedure.

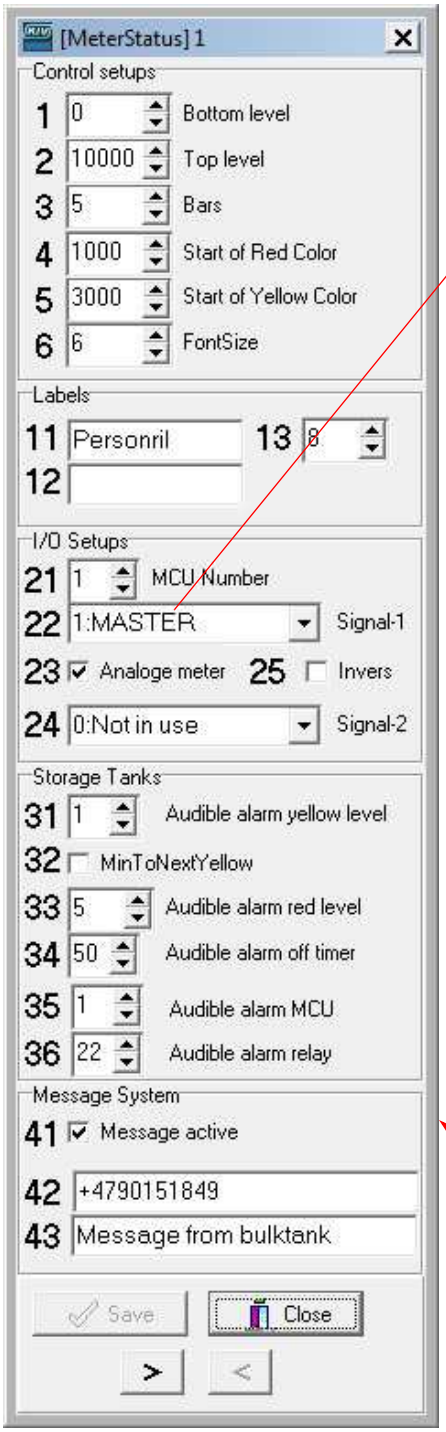
Column	Descriptions
1	**Product:** Actual product for current dosage. Water and Air are also shown in the grid.
2	**Cnt:** Counter number.
3	**Cal. Pulses:** Number of pulses calculated by the software.
4	**Pulses:** Actual pulses under running condition.
5	**Timer:** Timer in second under running condition. Products are shown in 1/10 second. Water and Air are shown in second.
6	**DosTime:** Software calculated timer. Product are shown in 1/10 second. Water and Air are shown in second.
7	**MaxDosTime:** Calculated time-out. Product are shown in 1/10 second. Water and Air are shown in second.
8	**Hz/Sek:** Average pulses/second during the running period.
9	**Percent:** Percent dosing time compare with calculated dosing time.
10	**Ch:** MCU number for actual product.
11	**I/O:** Relay number for actual product.

Chapter 20: Product Storage and Day tanks.

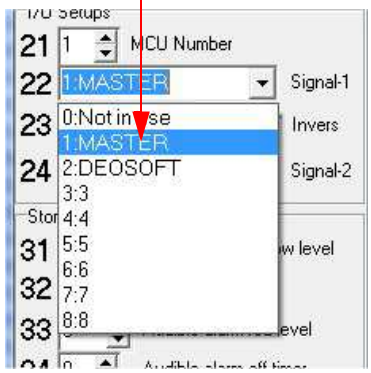
Product storage:



Tank Setup

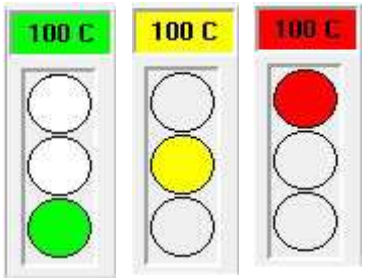


Select through a drop down menu analogue or digital inputs.



Some items my be visible or not, depending on what kind of tank system selected (Analog, Digital, small or big).

Pos	Setup properties
1	**Bottom level:** The defined bottom level in units of the tank graphical display.

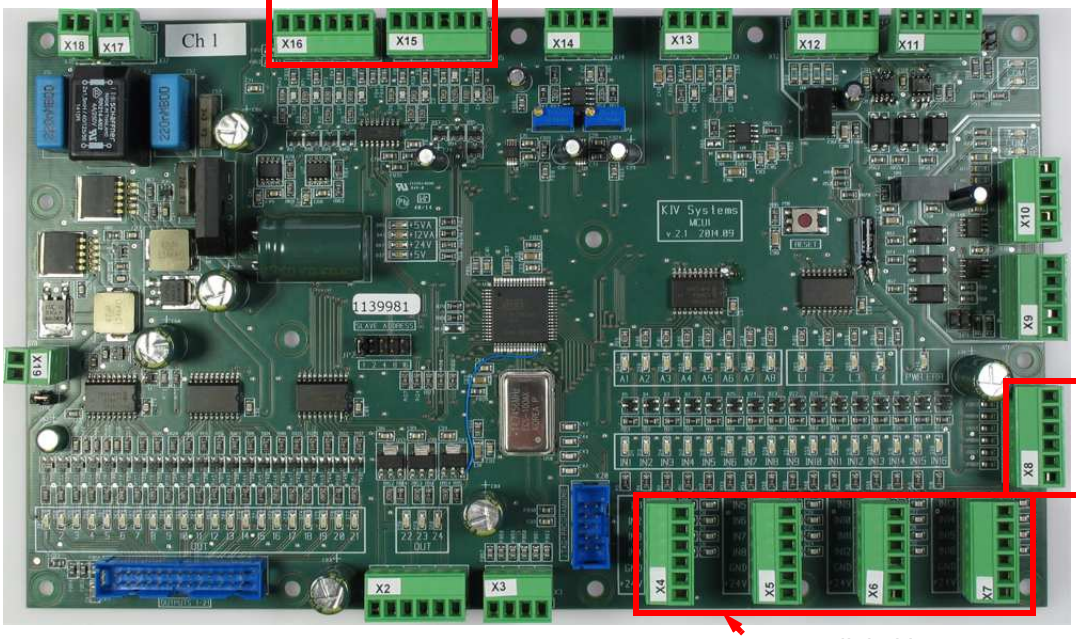
Pos	Setup properties
2	**Top level:** The defined top level in units of the tank graphical display.
3	**Bars:** Number of sections in analogue display.
4	**Start of Red Color:** Unit value threshold point which forces label to red.
5	**Start of Yellow Color:** Where in the graph to identify color changes to yellow.
6	**Font Size Level bars:** Tank graphical display font size.
11	Top label text for tank image.
12	Bottom label text for tank image.
13	Top and Bottom label font size.
21	MCU number for tank image.
22 and 24	**Product level:** Input (I/O) number where the level signal is wired. For analog tank system typically level-sensor uses 4-20mA signal to indicate the real level in the storage tank. For calibration of the level signal see: Chapter 18 “Analogue Calibrate” on page 170. For digital tank system the level is detected by on/off level switches. There are tree different ways to display the level: All signals off = Color is green, (everything ok). Signal-1 On = Color change to yellow, (empty level). Signal-2 On = Color change to red, (ordering level). Setup of alarms see: Chapter: 17 (UM). 
23	**Analog meter:** Checked, the tank system use analogue input signals.
25	**Invert Signal:** Only in use for digital signals. Set to ON for inverting signals to (NC).
31	**Audible alarm yellow level:** Number of days forward to next audible alarm and message. After the level inside the storage tank go below yellow level and above red level.
32	Checked, for minutes or hours until next yellow error message.
33	**Audible alarm red level timer:** Audible alarm and message repeat timer. Timer starts running if tank level go below red level.

Pos	Setup properties
34	**Audible alarm off timer:** Number of sec before audible alarm is forced to off.
35	**Audible alarm MCU:** MCU number for audible alarm output.
36	**Audible alarm relay:** Output (relay) for audible alarm.
41	**Message Active** Checked for sending SMS or mail message when yellow level occur. SMS is an option in the software.
42	**Phone number or mail address:** Insert the phone number or mail address ***Remark!*** ***Phone number always start with the country prefix. +47xxxxxxx***
43	**Message** Message string sent as SMS or by mail.

Wiring of signals

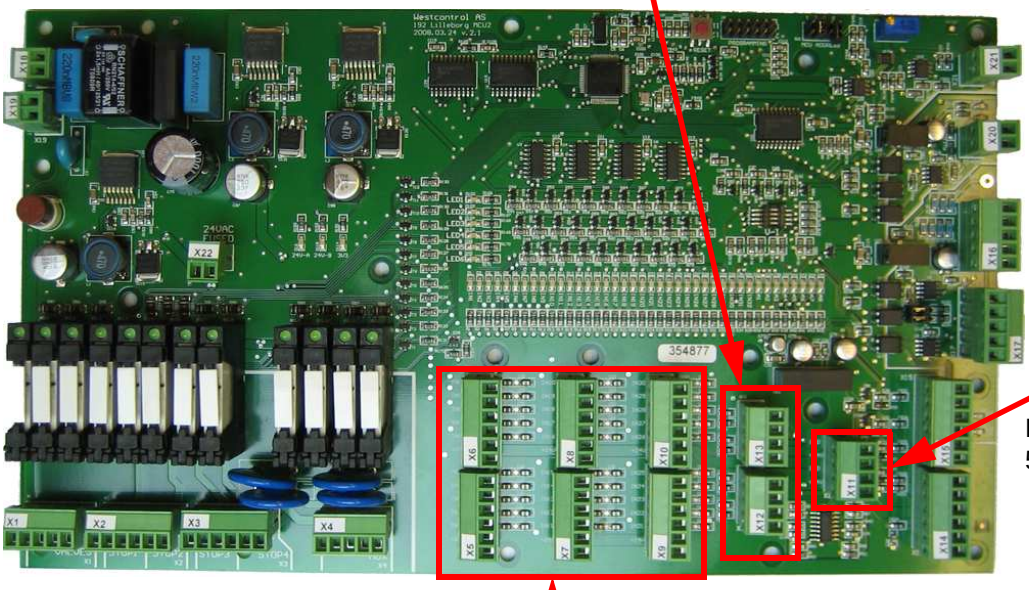
Wiring of signals if MCU1 in use.
X15 and X16 8 4-20mA Analogue inputs

X8 24VDC Power outlet 500mA



X4 to X7 16 digital inputs 24VDC

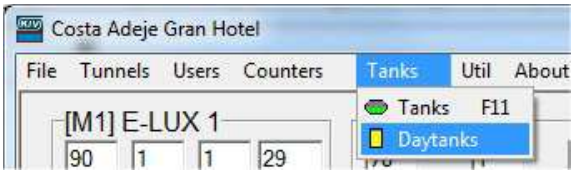
Wiring of signals if MCU2 in use.
X12 and X13 4-20mA

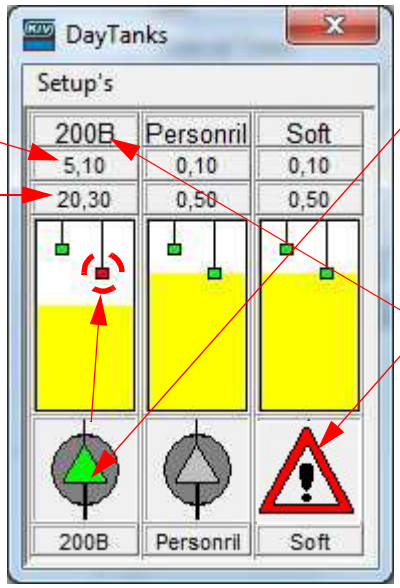


X11 24VDC
Power outlet
500mA

X5 to X10 digital inputs 24VDC

Day tanks:





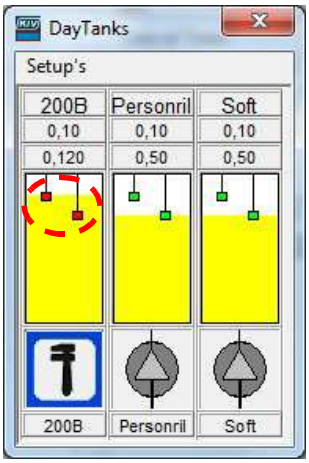
Interval timer
Actual and Max

Used time
Actual and Max

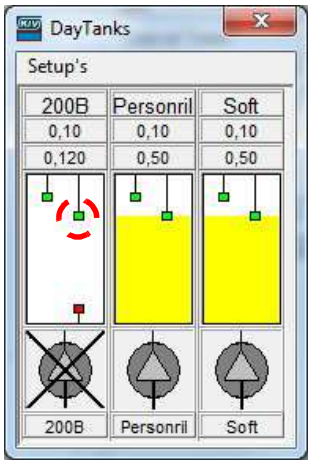
Refilling.
The pump image changes to green color, HL switch turn red.
Low level in day tank is indicated by yellow color.

Run Refilling pump.
Click on the pump image to force refilling pump to run (image change to warning). Next click the warning image which will force pump to stop.

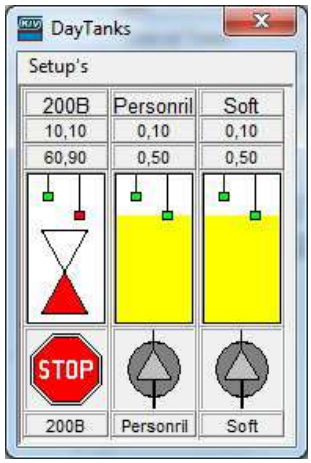
Free definable text.
Text for identification of the products.
Double mouse click to edit



Error HHL.
If the HHL level switch is set to on, the pump image is replaced by a tool (service is needed).

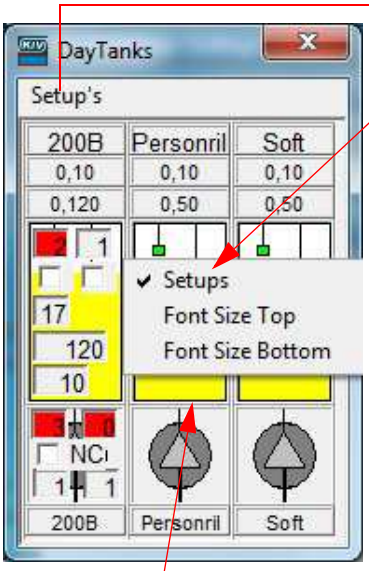


Error LL.
If the LL switch is set to on, the pump image is replaced by a “cut out” pump image. The refilling pump will not try to run before this signal is set to off again.



Error time-out.
If the refilling pump run continuously more than “max timer” a stop image is shown. Click image to restart the pump.

Day tank setup



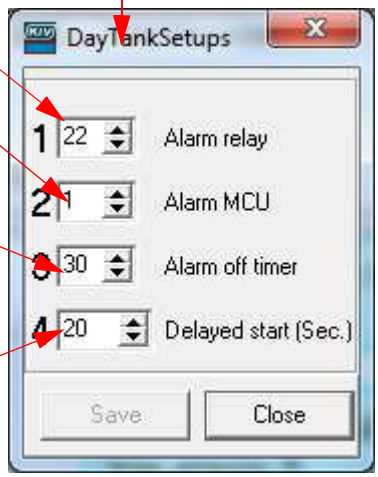
Right click to activate pop up menu.

AlarmRelay: Output relay for audible alarm.

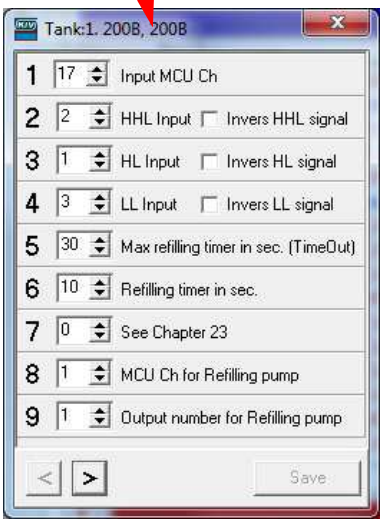
AlarmMCU: Output MCU Ch for audible alarm.

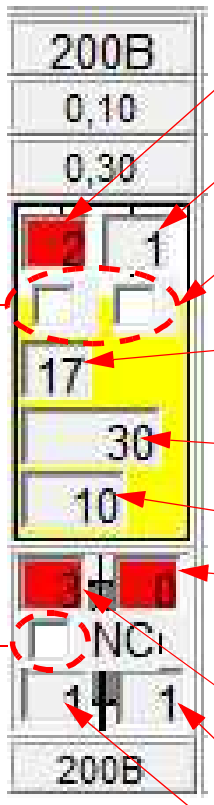
AlarmOffTimer: Off timer in sec before the audible alarm.

Delayed start: Number off seconds delayed start of the pump, from the moment HL switch turn active (ON).
Purpose of this timer:
Reduce number of pump intervals.



Tank setup
Mouse click in the tank frame and setup menu appear.
See description next page.





HHL Switch: Input signal for HHL switch.

HL Switch: Input signal for HL switch.

Check box checked: Signals active when tank is filled.

Level MCU: MCU Ch for HHL,HL and LL switches.

Max Timer, Refilling pump time-out in sec.

Refilling Timer, Refilling pump timer in sec (interval).

LL Alarm Type:
0=Low level (LL) Message in the event base.
1=Low level (LL) Message in the error base.
2=Low level (LL) Message in the error base and audible alarm.

LL Switch: Input signal for LL switch.

Output: Refilling pump.

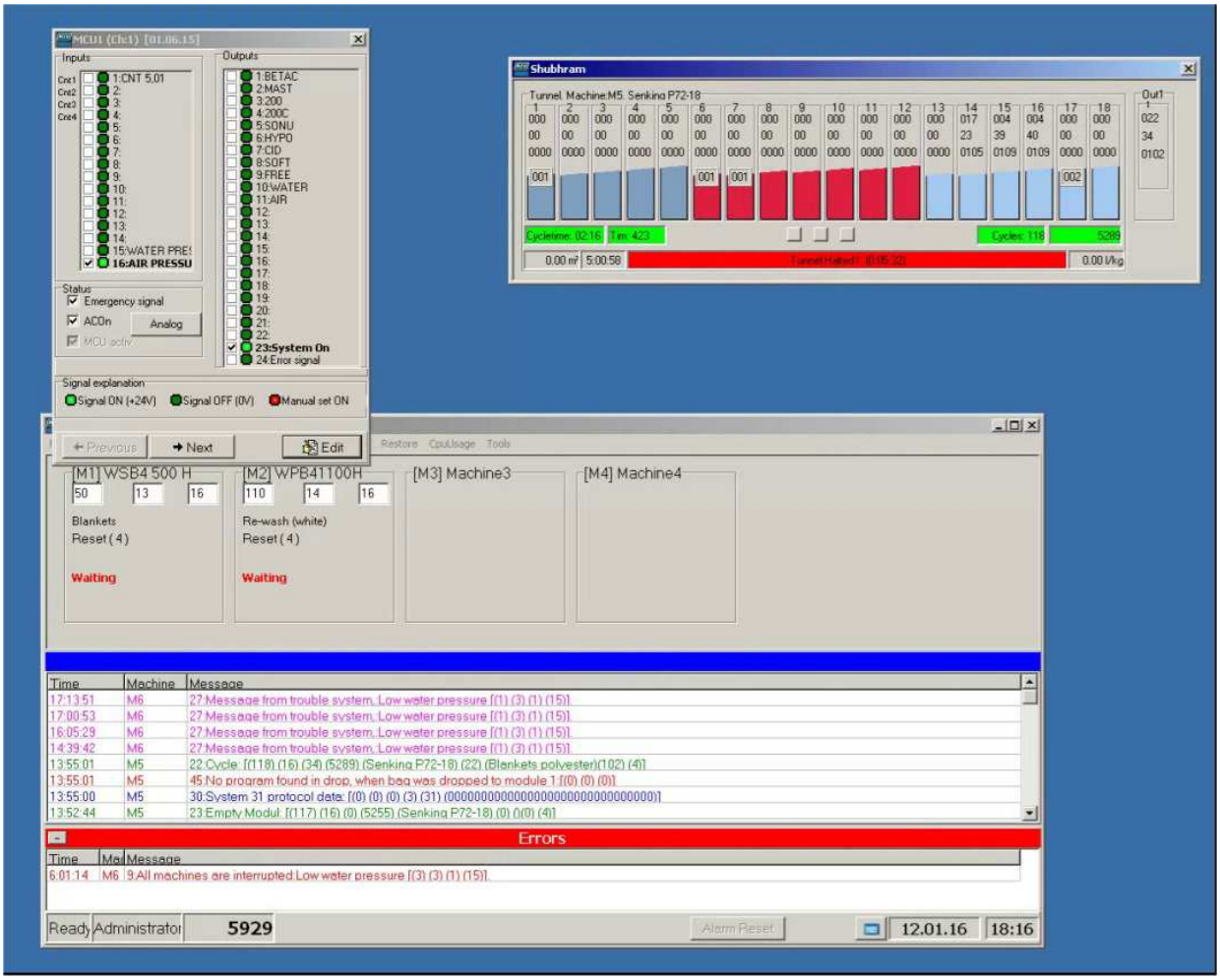
MCU Ch: Refilling pump.

Pos	Setup
1	**Level MCU:** The MCU number for level switches (inputs).
2	**HHL Switch:** Serious error. If this input turns active, the refilling pump will **not** start. An error message is also sent to the error base.
3	**HL Switch:** As long as this input is set to “on” the Refilling Pump will run the number of seconds defined by the “Refilling timer”. If the “Re filling timer” is set to 20, the pump will run in 20 sec. Then it will stop for 5 sec and the software will check status of HHL, HL and LL signals: If only HL signal is on the pump it will run a new lap of 20 sec. If LL or HHL level signal is on, the pump will stop running and an alarm is given.
4	**LL Switch:** Serious error. If this input turns active the filling pump will **not** start. An error message is also given to the error base or event base depending on the “LLAlarm type”.
5	**Max Timer:** The max number of second refilling pump may run (time-out). If time out occurs the pump is forced off, image is replaced by full stop image and error message is given. In such a case click full stop image to restart the pump and reset max timer.
6	**Refilling Timer:** Number of seconds refilling pump continuously stay active before forced to turn off by the software. In case of trouble check status of all level switches. Max value for timer 255 sec.
7	**LL Alarm type:** 0=Low level (LL) Message in the event base. 1=Low level (LL) Message in the error base. 2=Low level (LL) Message in the error base and audible alarm.
8	**MCU Ch:** The MCU number for refilling pump.
9	**Output:** The output number for Refilling pump. Set to 0 for disable of actual day tank.

Chapter 21: XP-Embedded

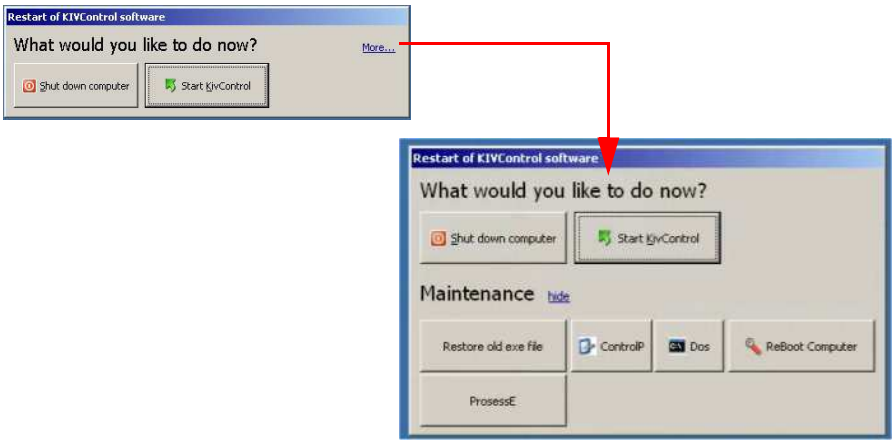
General:

Windows XPE is used to run KIV computer. The brand name of this software is XP-Embedded. In this chapter you will find some info regarding this XPE software. However, to fully understand how XPE is organized please study a user manual of the XPE software.



KIV-Kicker:

The KIV Kicker software is normally hidden by the running KIV-Control software. The software is only visible when KIV-Control software is stopped by an user.
When using this software the KIV-Control software may be restarted or the computer itself may be shut down.
In the software there is a label with the name “more....”. By clicking this label an identification menu asks for your password. When correct password is inserted the KIV Kicker software will expand and show additional buttons.



Shut down computer:
This button will shut down the computer and switch off the power supply.

Start KIV Control:
This button will start the KIV-Control software.

Restore files:
Go back to previous version of the KIV Control software.

ControlP:
Open windows control panel.

Dos:
Open CMD menu.

Reboot Computer:
This button will restart the computer.

ProcessE:
Open the software process explorer.

Chapter 22: Error Messages

Nu	Message	Why ? / What to do !
1		
2		
3	Machine interrupted. For restart click “Restart” button+ N N = Machine number	
4	Error in counter chart. Make new chart for Column+ [(N0) (N1) (N2)] N0=Column number N1=Number of pulses found in table. N2=The calculated dosing time.	
5	Exceeding of maximum dosing errors !+ [N0 (N1) (N2) (N3)]. N0=Name of the product. N1=Product number (column). N2=Number of errors counted. N3=Number of errors, set point.	If number of errors for a dosing column is equal or more than “Number of Errors:” on page 113. Or if dosing result is less than. “Dosing Failure in%:” on page 78
6	Error in product weight table. Position	
7	Error in pump capacity. Column	
8		
9	All machines are interrupted	If one of the problems defined in “Alarm Definitions.” on page 161 (UM) comes true, this message will occur.
10	Invalid step number	
11	Water for pre flushing is missing: [(N0) (N1) (N2) (N4) (N5)]. N0=Name of the product. N1=Dosing Column for the product. N2=Counter Number. N3=Used timer (sec). N5=Max timer (sec). N6=Received Pulses. N7=Calculated pulses. N8=Counter name (label on the counter).	If the software receives less than 50 pulses during the “Pre Water Timer:” on page 78. All following dosages will be rejected and washer put on hold.
12		

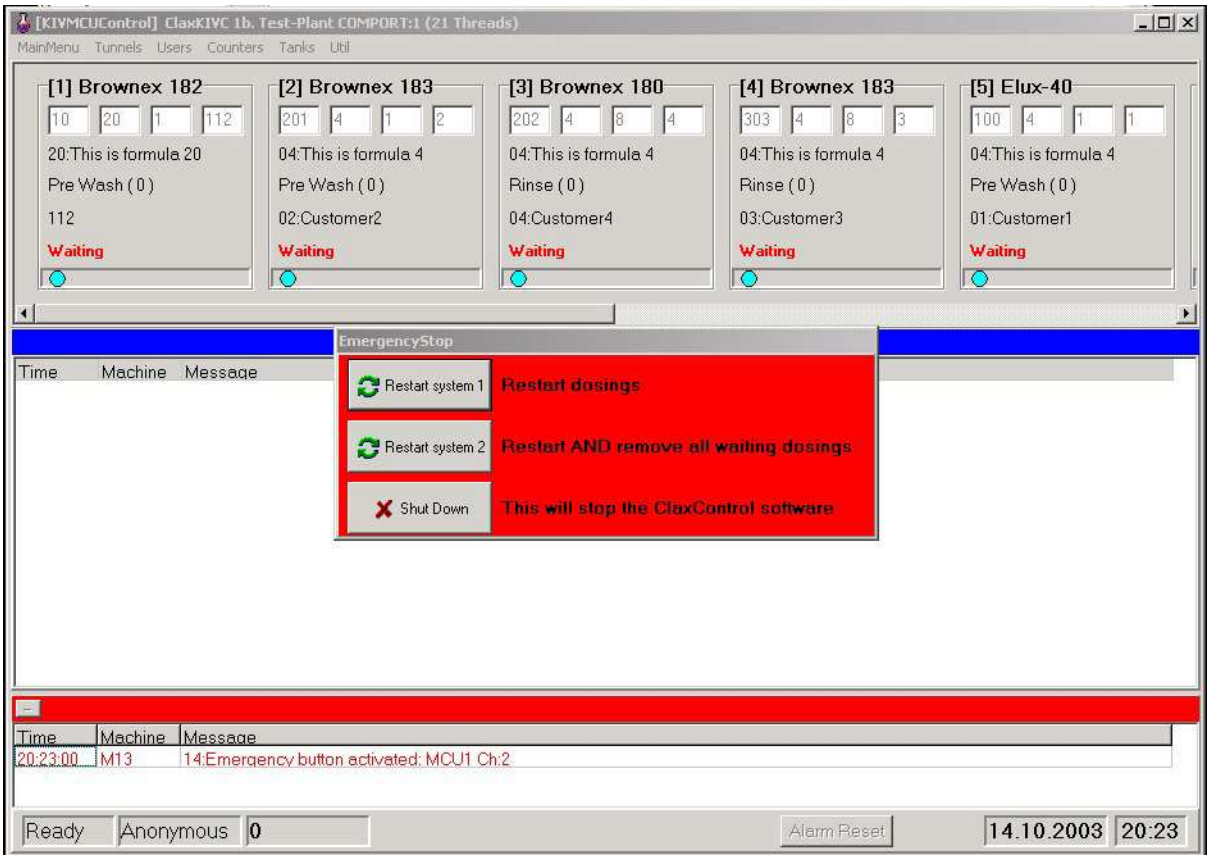
Nu	Message	Why ? / What to do !
13	Serious Error in dosing line: [(N0)(N1)(N2)(N3)(N4)(N5)(N6)]. N0=Name of the product. N1=Dosing Column for the product. N2=Counter Number. N3=Used tim (sec). N4=Max timer (sec). N5=Received Pulses. N6=Calculated pulses. N7=Counter name (label on the counter).	The last 10 sec of each water flushing is used as a control of the dosing line. This control is done by checking that water is transported easily trough the transport tube, dosing valve and entering the washer or tunnel itself. During this time period (10 sec) the number of pulses received from counter has to be more than 50. **Remark !** If the error message occur there will be no air-flushing after the water.
14	Emergency button activated	See: page 189.
15		
16	MCU parameter error: [(N0)(N1)(N2)(N3)(N4)]. N0=MCU number. N1=Counter number. N2=Output number. N3=Column. N4=Timer.	This message is given one of the I/O parameters is rejected by the MCU. This message occurs when software try to activate a pump or a valve. Check your column or machine settings.
17	Serious error pH value still to low	See: Chapter 15 “Logging of analog values for washers.” on page 150 (UM).
18	Serious error pH value still to high	See: Chapter 15 “Logging of analog values for washers.” on page 150 (UM).
19		
20	Overfilling of daytank+ [(N0)(N1)(N2)(N3)]. N0=Daytank name (label-1 and label-2). N1=DayTank number N1=MCU. N2=Input number. N3=Number of HHL errors.	Chapter 20 “Product Storage and Day tanks.” on page 174.
21	Serious Error. Signal from LL switch	Chapter 20 “Product Storage and Day tanks.” on page 174

Nu	Message	Why ? / What to do !
22	24DC Power Error ???????: [(N0)]. N0=Number of the actual MCU.	This message is given if 24VDC is down on the MCU. The 24VDC is protected by a automatic fuse (0,75A), there is also a green led to indicate that 24VDC is ok. Bout Fuse and led is placed on the circle board Fuse is labeled F2. Led is labeled V2 on MCU1 and V3 on MCU2.
23		
24	Max number of pH regulation exceeded	See: “Automatic pH regulation.” on page 123.
25	Error in pH values for tunnel	See: “Automatic pH regulation.” on page 123.
26	SERIOUS ERROR, CYCLETIME/DOSINGTIME	This message occurs if there is still active dosings, water of air flushing when a new cycle signal is given by the tunnel.
28	Low level signal from storage tank+ [(N0)(N1)]. N1=Product name. N2=Volum in litre.	This message occur when the level in a product tank is changed from Green to Yellow level. (Order level). See: “Product Storage and Day tanks.” on page 174.
29		
30	CAUTION !!!!!, storage tank empty	This message occur if when the level in a product tank is changed from Yellow to Red, or Green to Red level. (empty level). See: “Product Storage and Day tanks.” on page 174.
31	Serious error, to high wash temperature recorded	See:“Temperature selection:” on page 51. This feature needs a software code. The software will continuously check the temperature of actual washer. If the temperature exceeds the set point a defined output is set to ON.
32	Serious error, to low module wash temperature recorded	See: “Hygiene validation tunnels.” on page 120.
33	Possible water valve leakage !!! (PULSES received from counter when there is no active water flushing)+ [(N0)(N1)(N2)]. N0=MCU. N1=Counter Ch. N2=Output for water flush relay.	This message is given when the counter count pulses after air flushing. See “Flush Check:” on page 19.

Nu	Message	Why ? / What to do !
34	Lost communication to MCU(x)	The communication to a MCU is lost. Check if the MCU is powered and that the wires for RS422 is done well. *Comments !* *If MCU ch17 lost the power, the KIV Control computer will after a few seconds detect the missing MCU and will give a corresponding message on the screen. When the MCU is powered again KIV Control computer will automatically detect MCU ch17 again. If this MCU ch is used for fail-safe the KIV Control computer will even set actual fail-safe outputs automatically to on.*
35	SERIOUS ERROR!!!!!, Missing cycle signal from tunnel. NO DOSINGS DONE	If signal “Tunnel running” is set to ON and there is now new cycle signal. The timer is adjustable See:“MaxTim:” on page 116.
36	SERIOUS ERROR!!!!!, Program is missing in module [(N0)(N1)]. N0=Module. N1=Tunnel number.	If the is a empty module in module 1 or 2. See:“Empty module1 alarm:” on page 116.
37	CAUTION!!! SERIOUS ERROR no binary code present, empty module. [(N0)]. N0=I/O value.	If bag data is read based on a input signal and there is no data is present at this moment this error-message is given See: “Only read bagdata on signal:” on page 131.
38	CAUTION! Wash-program from terminal is missing.	“Terminal Alarm:” on page 54
39		

Nu	Message	Why ? / What to do !
40	Serious errors in system configuration (MOVE column 11 AND Inputs i column 15). [(N0)]. N0=Module number waiting for dosing signal.	This message will be given if dosage to a module less "than number of modules" and bigger than module-1 is activated before dosing to “number of modules” In this case bags are NOT moved forward and as an emergency handling actual dosings will start up with a 60 sec delay. All dosing calculations may be wrong (due to NO movement in the tunnel) (This is the only option for software to avoid blocking of products). This error message may also occur if cycle time is shorter than dosing time (a product is still active dosing, water or air when the system receive a new dosing signal. Mistakes in setups needs urgent correction.
84	84: MCU-Ch(2) 02.02.2016. MCU software and KIVControl software not kompatible. Upgrade your KIVControl software	Warning message which occurs if firmware is newer than software. In which case you just have to upgrade software.

Emergency-message: This screen picture is monitoring the emergency message.



Emergency-switch:
If the emergency switch is activated, the power supply of the relays will be shut off by the main-relay.
At the same moment the MCU processor will reset all active timers. All active dosing timers for washer and tunnels are put on hold by KIV Control. An emergency message will be present on the KIV Control screen (see picture above). This message have tree buttons (possibilities):

Restart system 1:
This button will reset the emergency alarm and continue with all active dosing timers.

Restart system 2:
This button will reset the emergency alarm and remove all dosing timers from the dosing queue.

Shut Down:
This button will remove all active dosing timers from the dosing queue and shut down KIV Control.

Watchdog:

If KIV Control loses contact with one or more of the MCU ch's it will give an audible alarm (internal buzzer inside KIV Control computer).

This audible alarm is controlled by a timer:
(Intervals of 5 x 1 sec. and a 20 sec. break).

If KIV Control loses contact with all MCU ch's (network broken) it will give an continuously audible alarm (internal buzzer in KIV Control computer).

Chapter 23: Event Messages

Nu	Message	When, Why ? / What to do !
18	Product missing !+ [(N0) (N1 (N2) (N3) (N4) (N5) (N6) (N7) (N8)] N0=Name of the product N1=Column number. N2=Counter number. N3=Received Pulses. N4=Calculated pulses. N5=Percent of total dosage. N6=Calculated dosing timer (0.1 sec). N7=Calculated time-out (0.1 sec). N8=Number of errors. N9=Counter name (label on the counter).	The message occurs when dosing is stopped due to time-out, and number of pulses received are more than 0 but less than 100%.
26	No pulses received from flow counter+ [(N0) (N1) (N2)] N0=Name of the product N1=Column number. N2=Counter number. N3=Counter name (label on the counter).	The message occurs when the counter receive 0 pulses during the dosing period (the pump is not running).
38	Timeout when refilling daytank+ [(N0) (N1) (N2) (N3) (N4) (N5)] N0=Product name (top label and botton label). N1=Daytank number. N2=MCU Ch. N3=Input number. N4=Max ReFilling timer. N5=TimeOutTimer	The message occurs when the pump timer exceeds the max refilling timer. The pump is restarted by clicking the stop image.
39	Signal from LL switch+ [(N0) (N1) (N2) (N3) (N4)] N0=Product name (top label and botton label). N1=Daytank number. N2=MCU Ch. N3=Input number. N4=Number of errors.	If the LL switch is set to on, the pump image is replaced by a “stopped” pump image. The refilling pump will not try to run before this signal is set to off again.

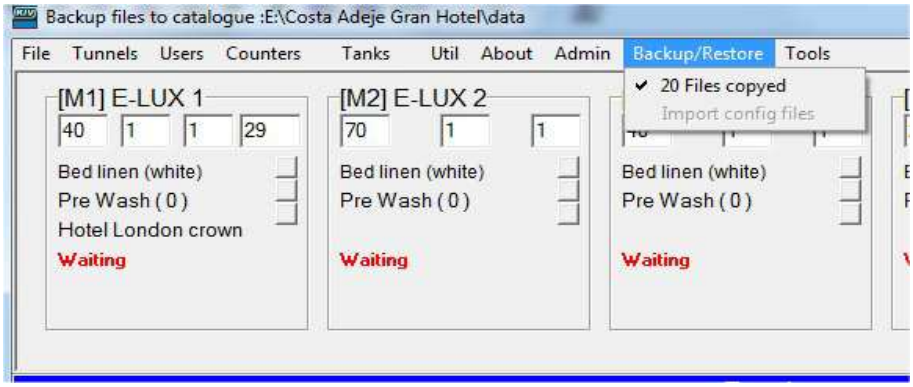
Nu	Message	When, Why ? / What to do !
45	No program found in drop, when bag was dropped to module 1+ [(N0) (N1) (N2)] N0=Program number. N1=Kilo Load. N2=Customer number.	This message occurs when the signal drop bag is given, and there is no program number present in drop position in that moment. In this case there is a need to modify the way the tunnel give those signals. Program signal needs to be on at the moment the drop signal (move 11) is given. A work around for this problem is to set “Do not remove bag from drop” to ON. See: See “Protect drop:” on page 129 (UM).
	User controlled Daytank Feed-Pump set to of by the software+ [(N0) (N1)] N0=Product name. N1=DayTank number.	This message occurs when the feed pump is activated by an user (click on the image) and both levels (HHL, HL) are off. This is to prevent overfilling the daytank.

Chapter 24: Backup & Restore.

Backup of files:

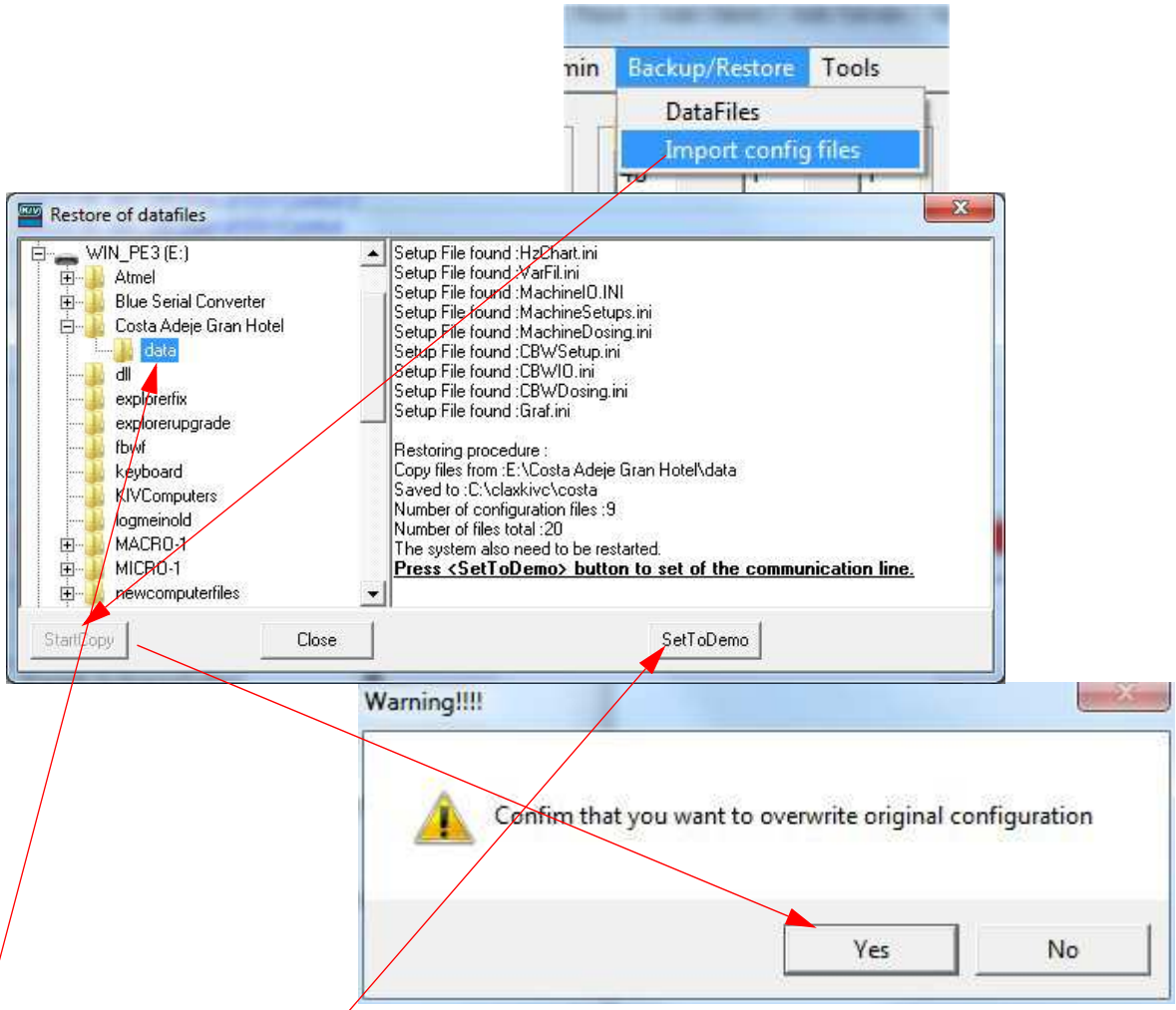
For executing backup of configuration files open the menu <Backup> and select menu <Data files>.

Remark!
Backup from this menu is only possible when a USB disc is inserted in the computers USB port.



During backup procedure a counter inside the Backup menu will indicate number of files which are saved to the USB removable disc. The backup procedure backup to a catalogue equal to name of actual project. If catalogue does not exist the software will create this catalog prior to executing backup.
From the backup menu it is also possible to backup the software itself. Copy production files to the USB disc, and Save and Get codes for additional software modules.

Restore of Files



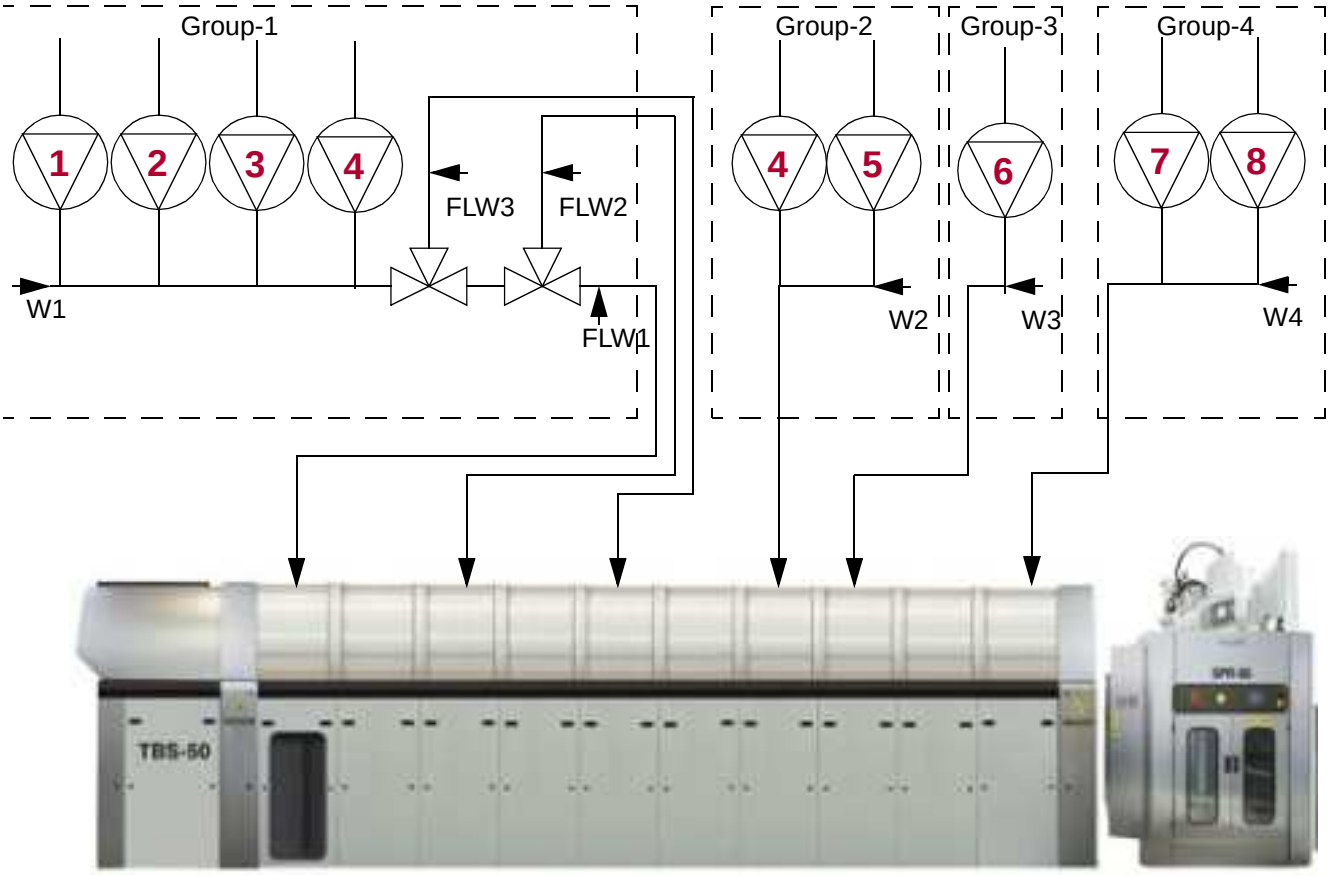
From menu <Backup/Restore> select <Import config files> and the menu “Restore of data files appear”. Select from which catalogue to restore files
Click the button <StartCopy> and all configuration files are then copied from the selected catalogue to the local data catalogue. Activate now the new configuration by restarting the software.

The button <SetToDemo> will force communication port for MCU’s to 0 and software will start in demo mode (no active communication)

Remark!
The menu “Restore” is only accessible when a USB disc is present.

Caution!
By using restore function files will be overwritten. It is therefore very important that you know exactly what you are doing. A restore mistake will result in chaos.

Chapter 25: Drawings



Tunnel dosing (Parallel and Sequence mode)

How do different Groups in the example behave:

Group-1: 4 pumps dosing in parallel mode.
Group-2: 2 pumps dosing in parallel mode.
Group-3: 1 pump.
Group-4: 3 pumps dosing in sequence mode.

Dosing in standard sequence mode are well described in this manual, and the way a KIV dosing system usually work. Dosing in parallel mode may be useful when feeding products are time critical (short cycle timer) or products feeded to several modules by only one battery of pumps.
In the KIV Control software both sequence and parallel dosings are available. The software is able to treat both parallel groups, or only sequence groups, or a combination of parallel and sequential.

When using the parallel mode, pumps within one group are able to feed products to next module as soon as the last pump in the actual group is stopped (+ a small amount of water). When the pumps restart feeding products to next module the “Feed Line Water valve” (FLW) will flush the previous dosed products
forward to the actual module.

For a better understanding of how this parallel mode operate, please study the Group-1 example above.
Operation mode for different groups:

Group-1:

This group of products (4 pumps) feed products to tree different modules.
During dosing to one of the modules all pumps run simultaneous, and the water valve W1 is set to on.
When all pumps are stopped, W1 still remain active during the “Pre Water Timer” (cleaning the manifold).
(V1 or V2 is only activated if products are feeded to either module 4 or 5).
When W1 close the valve, V[N] will change position, delayed by the timer “Valve Close”.
When V[N] change position the corresponding valve FLW[N] is set to on. This valve is controlled by the “Water Timer”.

Group-2:

This group of products (2 pumps) feed the products to a single module.
During dosing all pumps run simultaneous and the water valve W2 is set to on.
When pumps are stopped, W2 still remain active during the “Pre Water Timer” (flushing products forward into the module). The final water flushing is controlled by “Water Timer”.

Group-3:

This group (1 pump) feeds the product to a single module.
During dosing the pump run simultaneously with the water valve W3.
When the pump is stopped, W3 still remain active during the “Pre Water Timer” (flushing products forward into the module). The final water flushing is controlled by “Water Timer”.

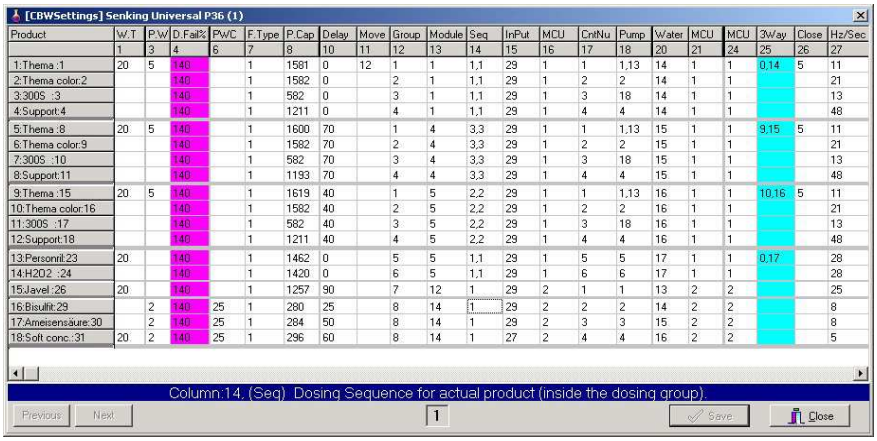
Group-4:

This group (3 pumps) feed the products to a single module.
During dosing the pump run in sequence. (one by one).
“Pre Water Timer” will only flush water before a pump start up (sequence mode).
When last pump is stopped, W4 will open and flush “Water Timer” (cleaning the line).

Abbreviations:

“Water Timer”	See: “Water Timer:” on page 105.
“Pre Water Timer”.	See: “Pre Water Timer:” on page 105.
“Valve Close”.	See: “Valve Close:” on page 109.

To better understand how to configure the tunnel dosings, study setups in picture below:



Product	W.T	P.W	D.Fail%	PWC	F.Type	P.Cap	Delay	Move	Group	Module	Seq	InPut	MCU	CntNu	Pump	Water	MCU	MCU	3Way	Close	Hz/Sec
	1	3	4	6	7	8	10	11	12	13	14	15	16	17	18	20	21	24	25	26	27
1:Thema :1	20	5	140		1	1581	0	12	1	1	1,1	29	1	1	1,13	14	1	1	0,14	5	11
2:Thema color:2			140		1	1582	0		2	1	1,1	29	1	2	2	14	1	1			21
3:300S :3			140		1	582	0		3	1	1,1	29	1	3	18	14	1	1			13
4:Support:4			140		1	1211	0		4	1	1,1	29	1	4	4	14	1	1			48
5:Thema :8	20	5	140		1	1600	70		1	4	3,3	29	1	1	1,13	15	1	1	9,15	5	11
6:Thema color:9			140		1	1582	70		2	4	3,3	29	1	2	2	15	1	1			21
7:300S :10			140		1	582	70		3	4	3,3	29	1	3	18	15	1	1			13
8:Support:11			140		1	1193	70		4	4	3,3	29	1	4	4	15	1	1			48
9:Thema :15	20	5	140		1	1619	40		1	5	2,2	29	1	1	1,13	16	1	1	10,16	5	11
10:Thema color:16			140		1	1582	40		2	5	2,2	29	1	2	2	16	1	1			21
11:300S :17			140		1	582	40		3	5	2,2	29	1	3	18	16	1	1			13
12:Support:18			140		1	1211	40		4	5	2,2	29	1	4	4	16	1	1			48
13:Personril:23	20		140		1	1462	0		5	5	1,1	29	1	5	5	17	1	1	0,17		28
14:H2O2 :24			140		1	1420	0		6	5	1,1	29	1	6	6	17	1	1			28
15:Javel :26	20		140		1	1257	90		7	12	1	29	2	1	1	13	2	2			25
16:Bisulfit:29		2	140	25	1	280	25		8	14	1	29	2	2	2	14	2	2			8
17:Ameisensäure:30		2	140	25	1	284	50		8	14	1	29	2	3	3	15	2	2			8
18:Soft conc.:31	20	2	140	25	1	296	60		8	14	1	27	2	4	4	16	2	2			5

Before KIV-Control is able to operate dosings in parallel mode, column 1,3,14,18 and 25 in Chapter 11 on page 104, needs to be configured in a special way.

How this special way is done/configured is described below.

Col. 1:
W.T (Water timer).
Used as a timer for “Feed Line Water valve” (FLW[N]).
The water valve is open in X sec. for flushing with water and transport the detergent to respective module.

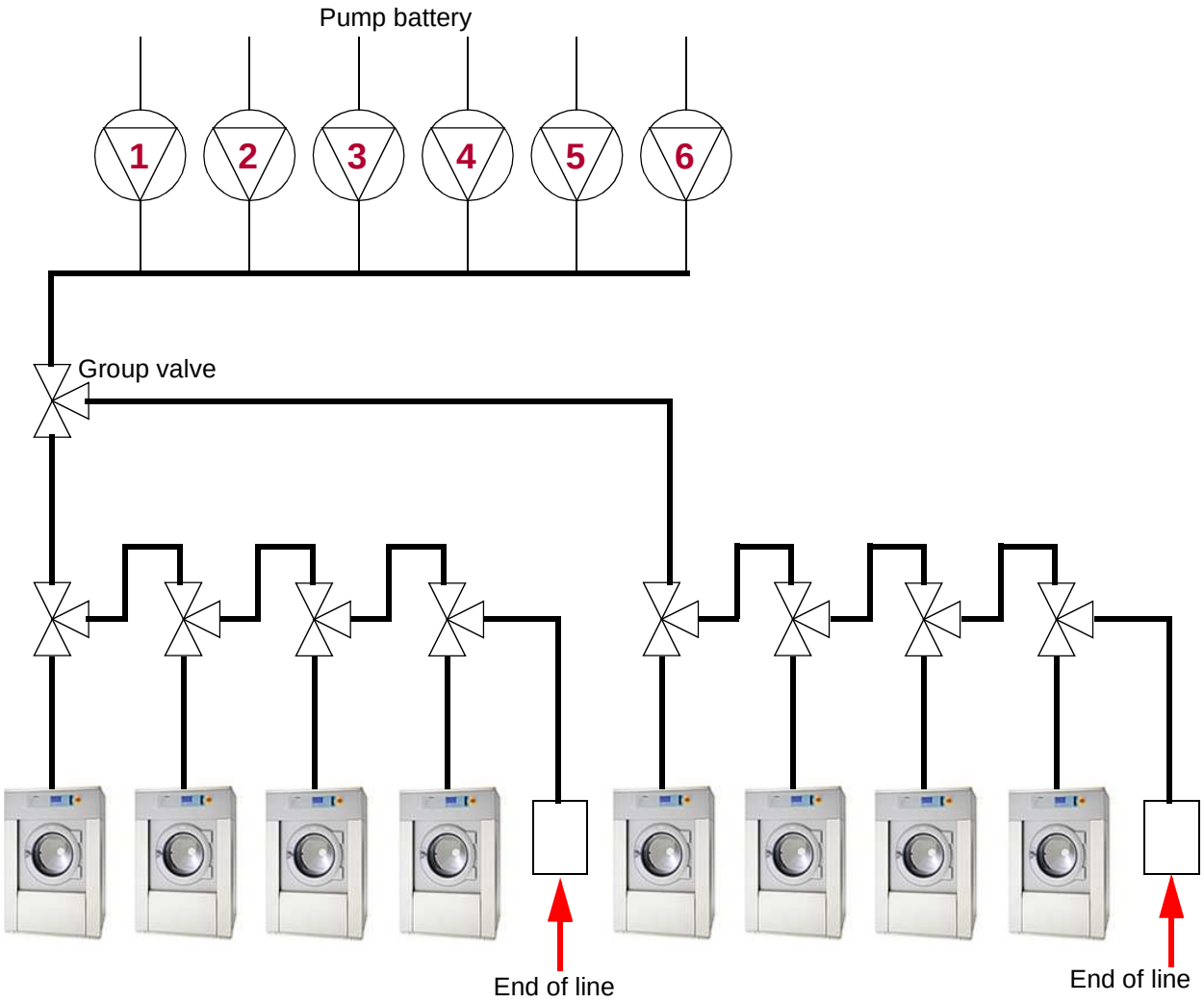
Col. 3:
P.W (Pre water timer).
Used as a timer for “water valve” (W[N]).
The water valve is open in x sec for flushing with water and transport the detergent out of the manifold area and into respective dividing valve V[N].

Col. 14:
Seq
The first value defines the sequence number. The following value (after decimal point) define the common synchronization points for the actual products (other groups but belong to the equal dosing sequence).
Remark !
Synchronization points are only used when pump configuration is as on page “Tunnel dosing (Parallel and Sequence mode)” on page 195 (UM). This way of running KIV Control is rather difficult and need do be set-up by a person with high knowledge about the system.

Col. 18:
The first value define the output for product (pump), the following value (after decimal point) define the output for “water valve” (W[N]) to operate in parallel.

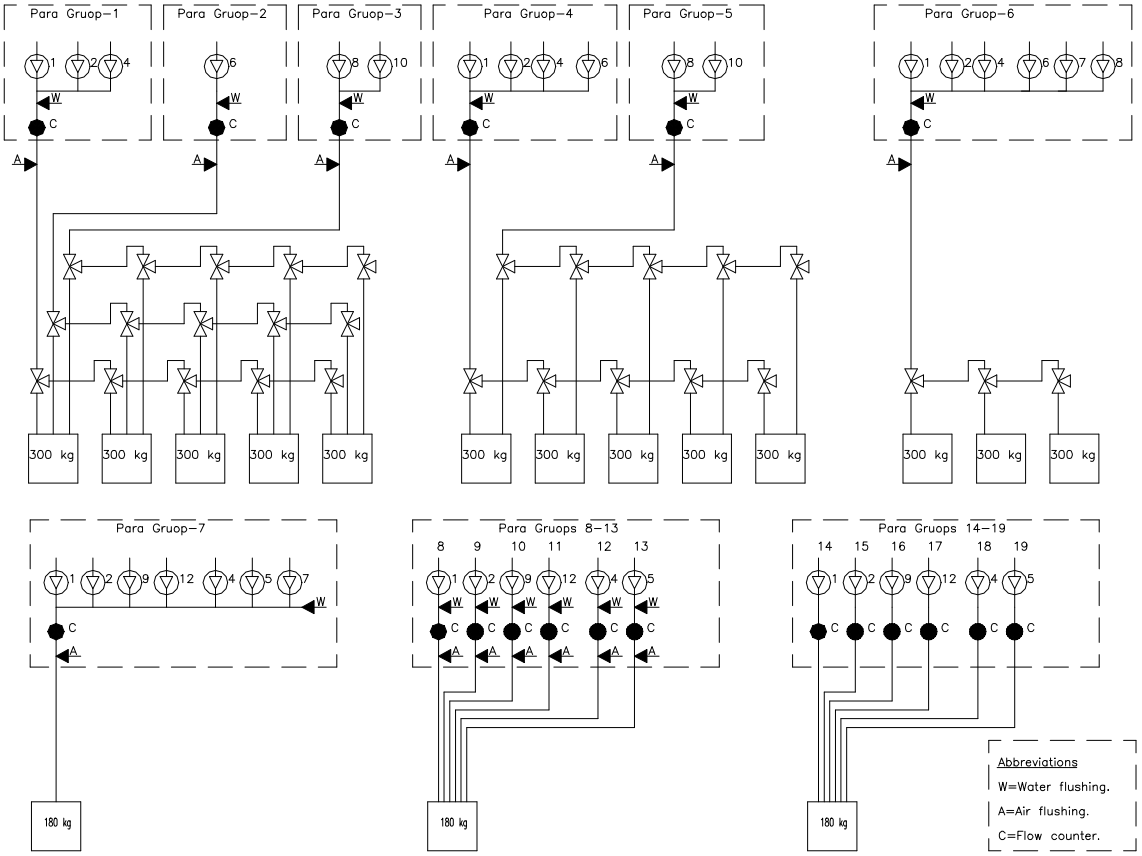
Col. 25:
The first value define the output for the dividing valve, the following value (after decimal point) define the output for water valve “Feed Line Water valve” (FLW[N]) to operate when the dividing valve close.
Remark!
For activating a water output valve “Feed Line Water valve” (FLW[N]) *a dividing valve, or at least a defined output for this purpose is needed. If no dividing valve is used, insert the value 0 before decimal point.*

Group valve



Use this configuration if:

1. Wash extractors are located in two different departments.
2. Long distance between groups of wash extractors.



Group of Washers and pump batteries

Products (pumps) within a Para Group will run in sequential order, Para Groups with different number will run in parallel. Use this configuration (or a part of it) if the KIV has to supply and control many large washer extractors.

Para Group 1,2,3:
Typical for washers which are feeded from different pump batteries with a high pump capacity.

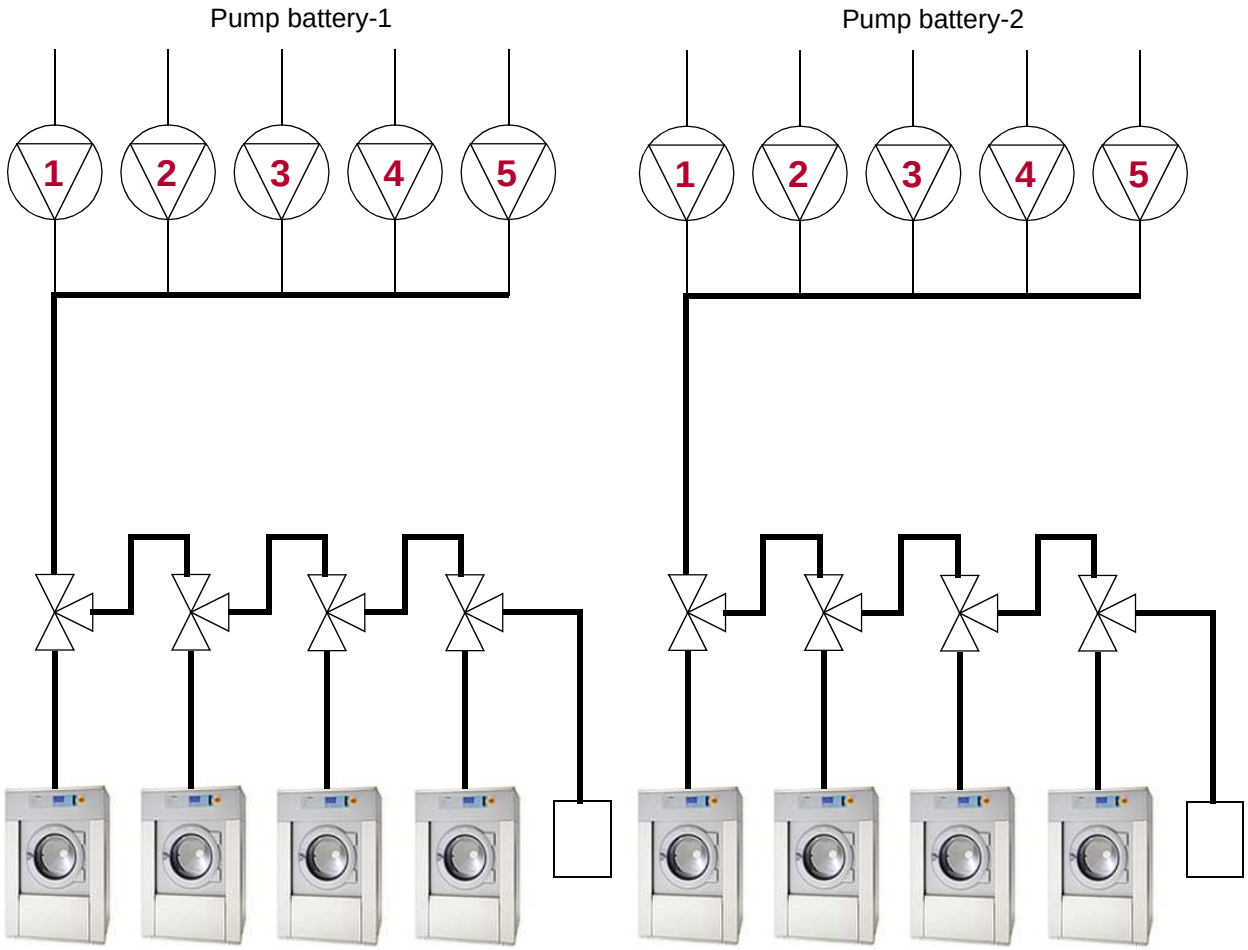
Para Group 4,5:
Equal to 1,2,3 but only two supply lines to the wash extractors.

Para Group 6:
One pump battery feeds several wash extractors.

Para Group 7:
One pump battery feeds only one wash extractor.

Para Group 8..13:
One pump on each product, for feeding one wash extractor. With water and air flushing.

Para Group 14..19:
One pump on each product, for feeding one wash extractor. Without water and air flushing.

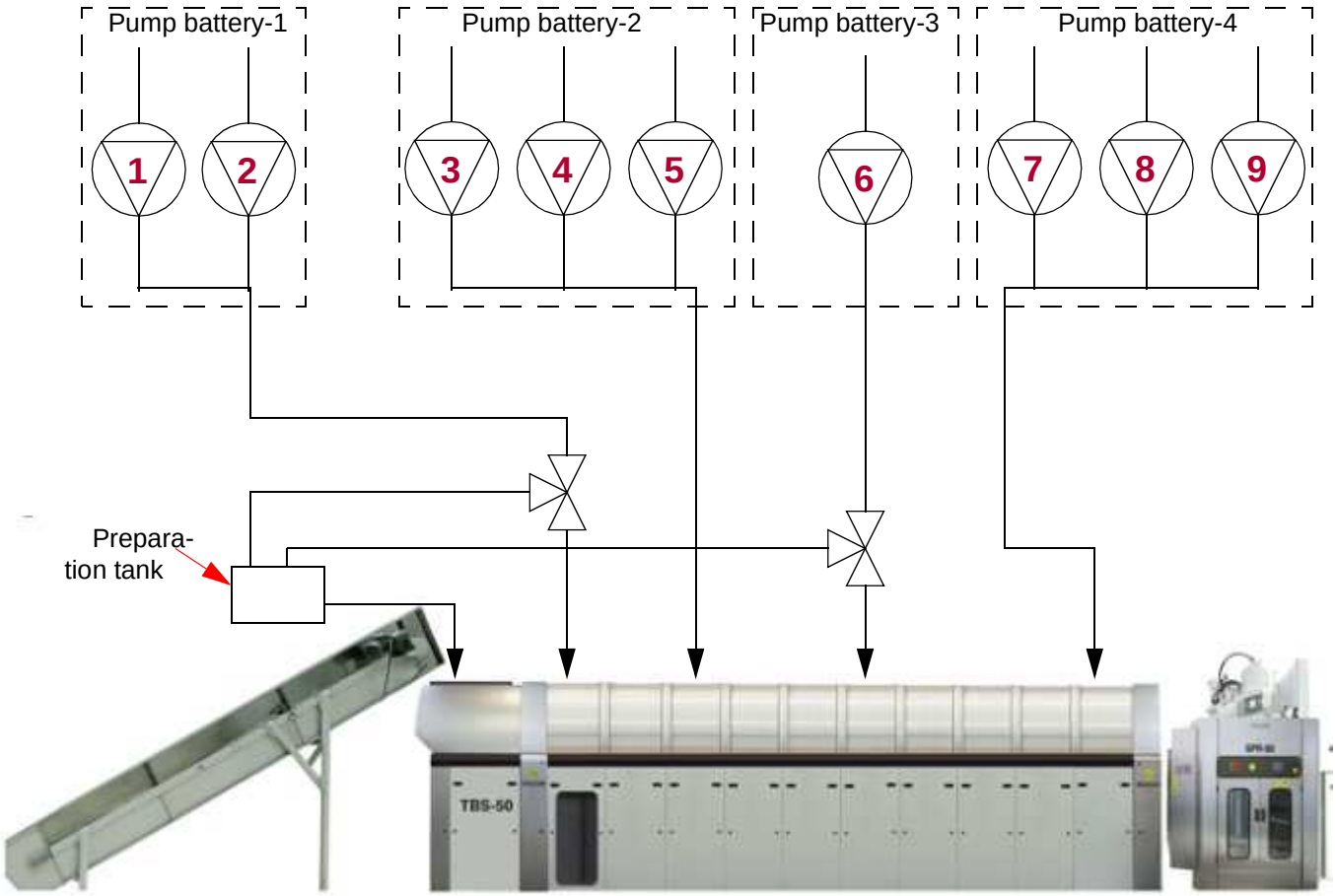


Twin pump groups

This drawing illustrates double pump batteries. Used when there is need for high pump capacity for several large wash extractors. Pump battery-1 and Pump battery-2 will supply the washers independently.

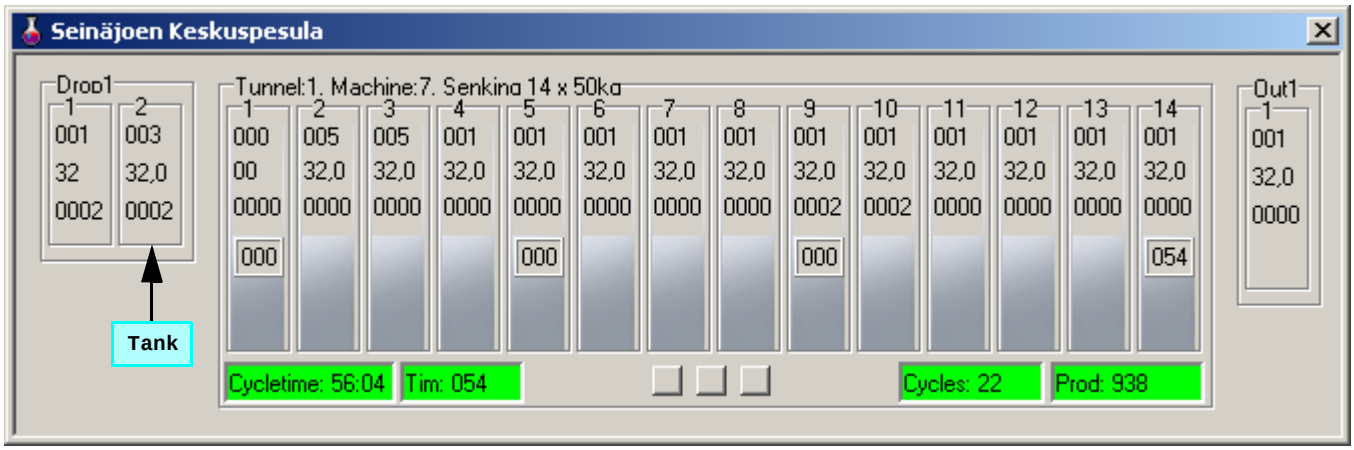
Tank dosing

It is possible to configure the software to dose in a module (Tank) prior the module 1 (Tank dosing).



The graphical picture below symbolize:
Drop 1 is the conveyer drop position.
Drop 2 is the tank position.

The tunnel has 2 signals for drop and cycle. One drop signal and one cycle (transport) signal.
On the drop signal following happens:
- Bag in Drop position 2 will move forward to Tunnel module 1 and dosing calculated by actual program in module-1.
- Bag in Drop position 1 will move forward to Drop position 2 and dosing calculated by actual program in drop position 2.

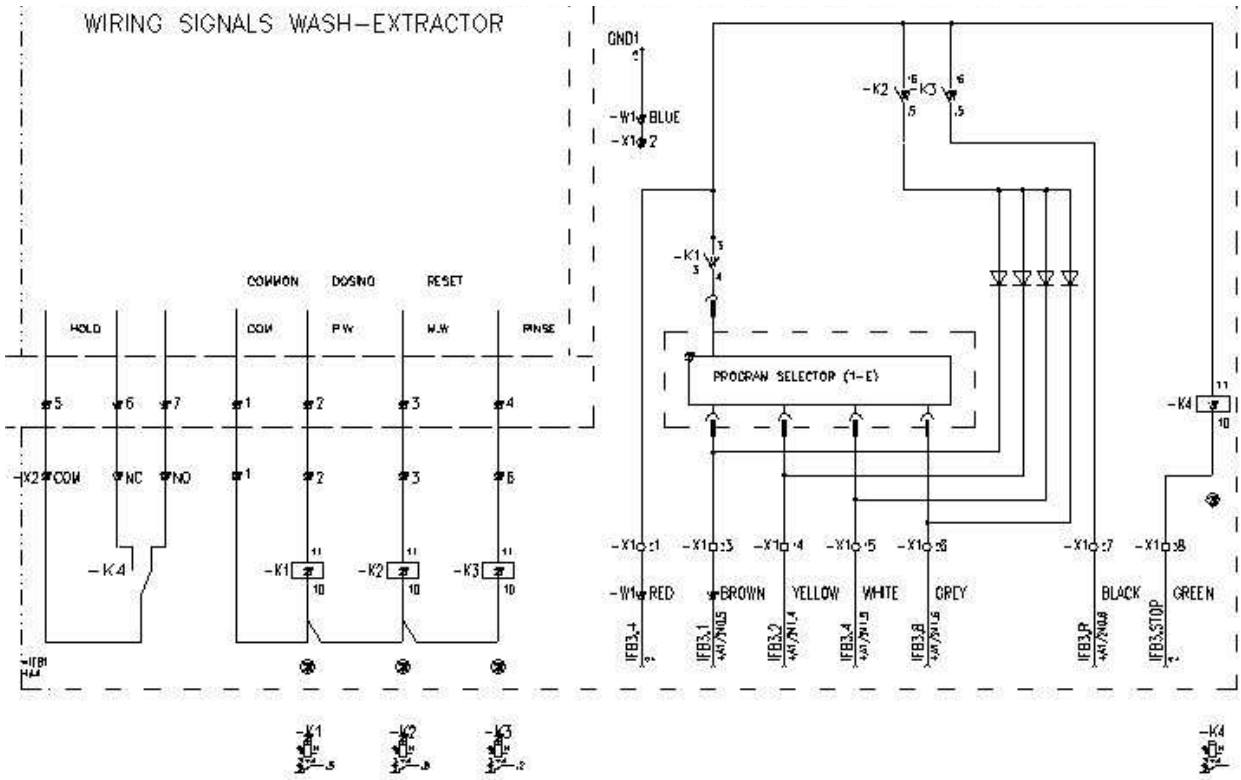


This is the setup adjustment for tank dosing.
Column 11 Move = 14 (This will move bags one position forward in drop and drop bag to module 1)
14 is placed in line 3:DELTA because this is the first module according to sequence adjustment.
Column 13 Module = -2. This means dosing in module -2 (Tank). Read -2 as position 2 in the Drop area.

[CBWSettings] Senking 14 x 50kg (1)

Product	W.T	A.T	P.W	D.Fail%	PWC	F.T	P.Cap	Move	Group	Module	Seq	InPut	MCU	CntNu	Pump	Water	MCU	Air	MCU	3Way	Close	CalcTy	Log	Low%	MaxErr
	1	2	3	4	6	7	8	11	12	13	14	15	16	17	18	20	21	22	24	25	26	28	29	30	32
1:DELTA			3	200	10	1	1401		1	-2	3	1	4	1	1	3	2	4	19	23		1	1	75	5
2:SPIRIT	10	10	3	200	10	2	1268		1	-2	4	1	4	1,2	2,3	3	2	4	19	23		1	1	75	5
3:DELTA			3	200	10	1	1400	14	1	1	1	1	4	1	1	3	2	4	19	1	2	1	1	75	5
4:SPIRIT	10	10	3	200	10	2	1268		1	1	2	1	4	1,2	2,3	3	2	4	19	1	2	1	1	75	5
5:DELTA			3	200	10	1	1406		2	5	1	2	4	3	5	8	2	9	19			1	1	75	5
6:PLUSS			3	200	10	1	1530		2	5	2	2	4	3	6	8	2	9	19			1	1	75	5
7:BRGHT	10	10	3	200	10	1	1128		2	5	3	2	4	3	7	8	2	9	19			1	1	75	5
8:HYPO	10	10	3	200	10	1	1418		3	-2	2	1	4	4	10	11	2	12	19	23		1	1	75	5
9:HYPO	10	10	3	200	10	1	1418		3	9	1	2	4	4	10	11	2	12	19	2	2	1	1	75	5
10:CID			3	200	10	1	1268		4	14	1	2	4	4	13	16	2	17	19			1	1	75	5
11:SOFT			3	200	10	1	1340		4	14	2	2	4	4	14	16	2	17	19			1	1	75	5
12:SPARE	10	10	3	200	10	1	1268	10	4	14	3	2	4	4	15	16	2	17	19			1	1	75	5

Interface box 2 signals:



Machine-type 1:
Signal dosing from the wash-machine: Connected to P.W
Activate selected program number, and start up a dosing for selected program. Dosing step is controlled by a internal step counter. (Controlled by the computer program).
Signal reset from the washing machine: Connected to M.W
Activate a wash-process ready message. (Reset)
Relay -K3 is not used (RINSE).

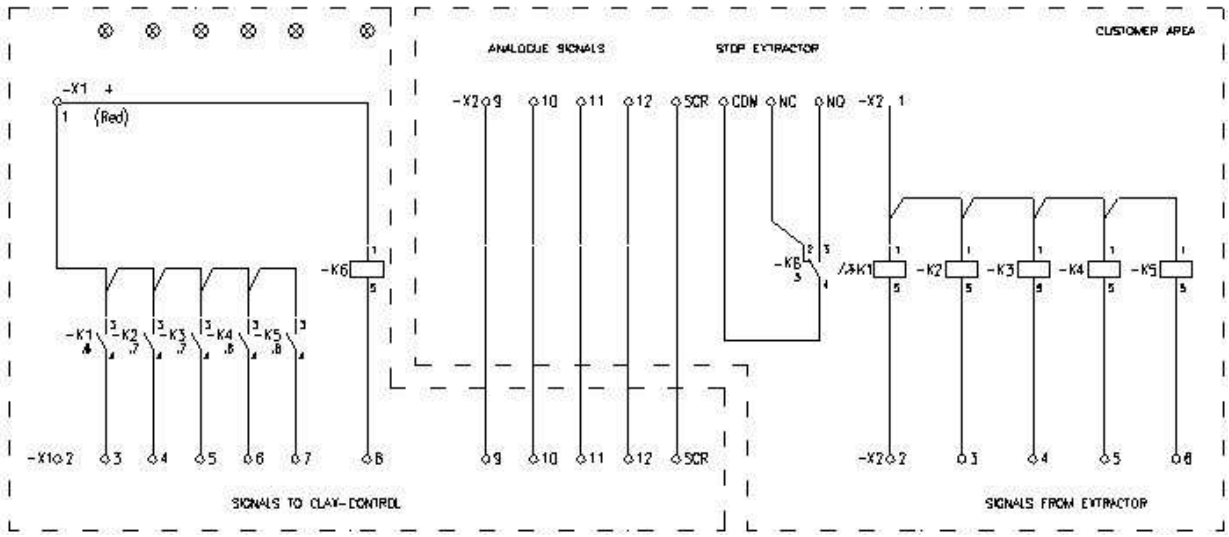
Machine-type 7:
Signal from the washing machine valve “Prewash”: Connected to P.W
Activate selected program number, and start prewash dosing(s).

Signal from the washing machine valve “main wash”: Connected to M.W
Start main-wash dosing (s).

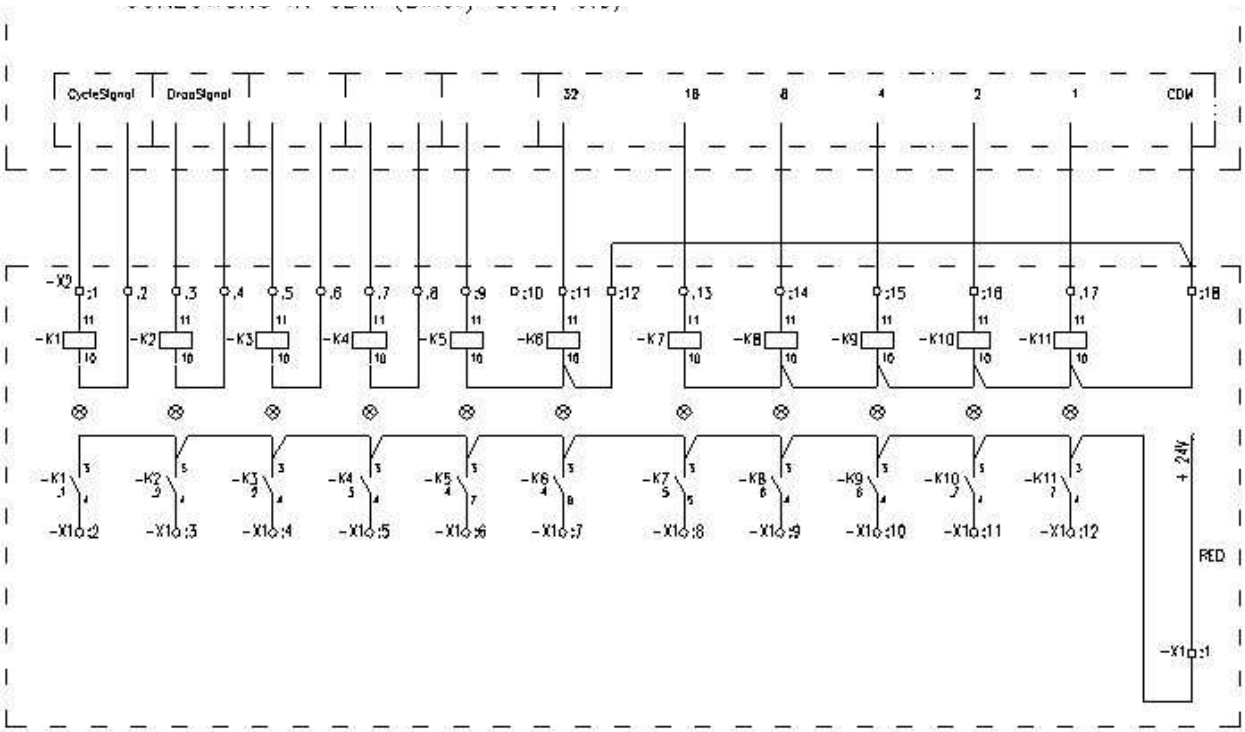
Signal from the washing machine valve “Rinse”: Connected to Rinse.
Start rinse dosing (s).

Signal control:
Repeat of equal signals are ignored.
Signals out of sequence are ignored.
(Signal control is reset by the rinse dosing).

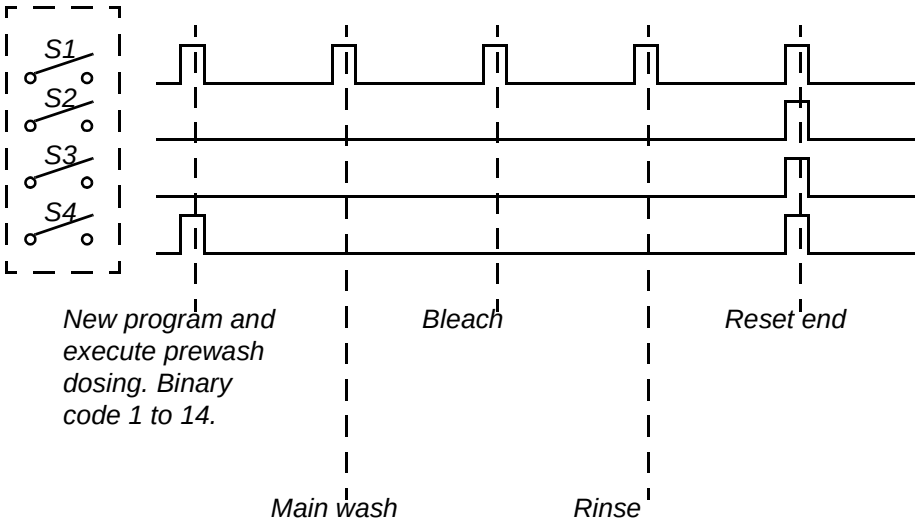
Interface box 5 signals



Interface box 11 signals

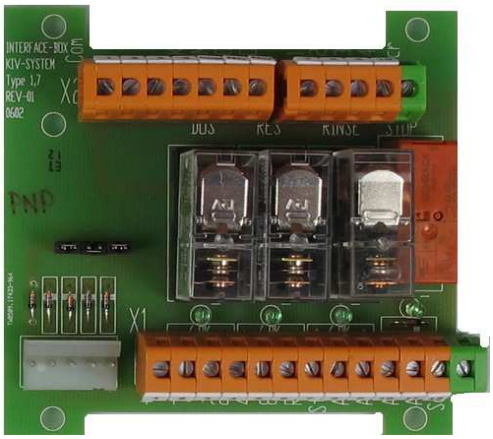


Signal pattern for washer type 1

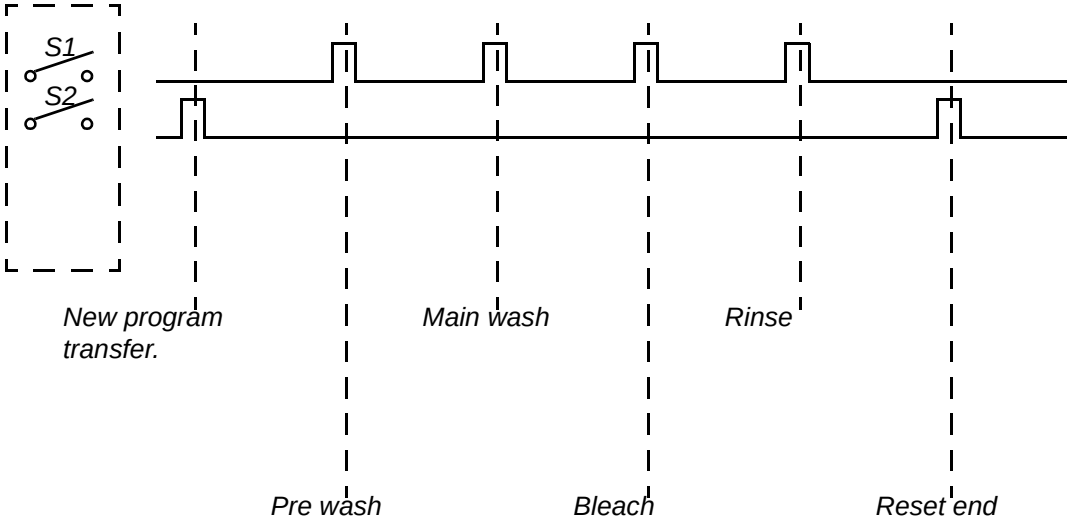


By using the program selector box only 2 signals need to be given from the washer:
A dosing signal and a reset signal.

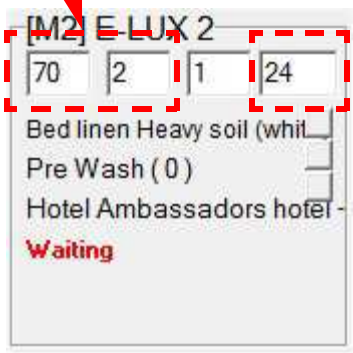
It is also possible to connect output signals directly to the inputs of the MCU card.
For wirings see page:



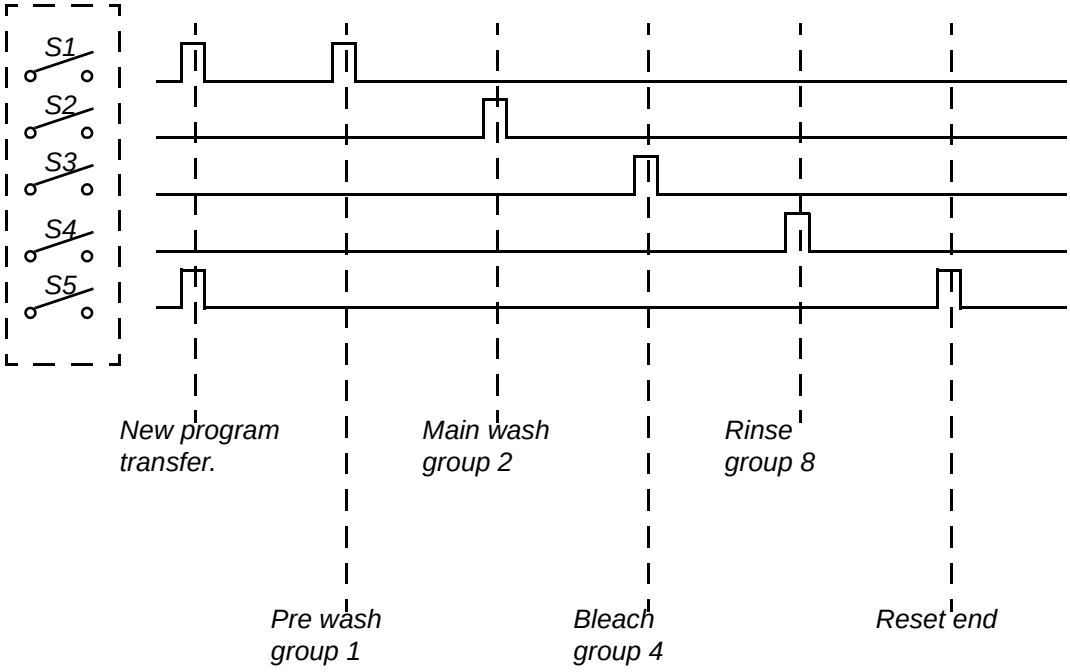
Signal pattern for washer type 2



Program and kilo by a micro terminal or just insert direct to washer screen

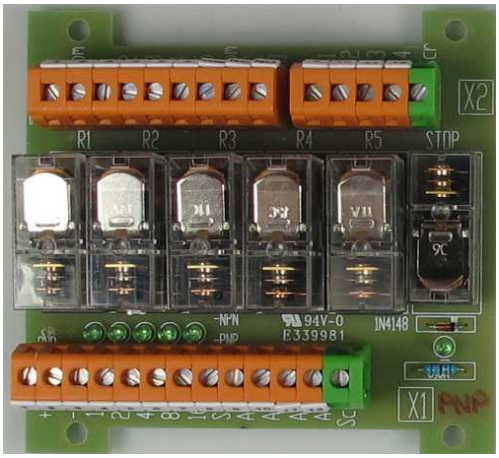


Signal pattern for washer type 4

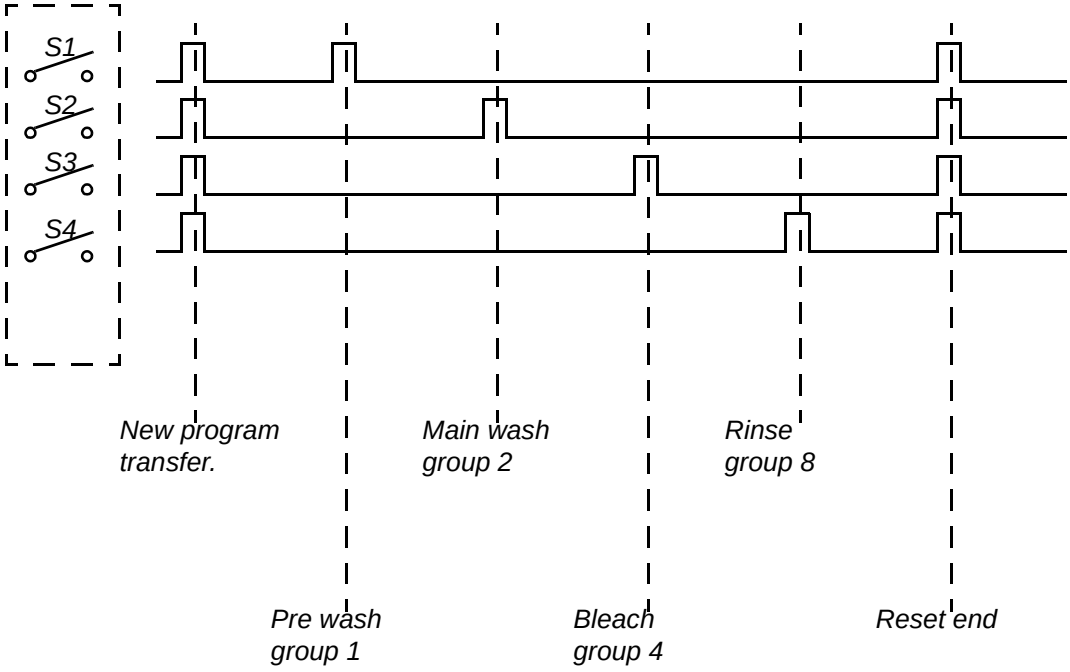


Remark1:
Start wash & new program.
All binary codes from 1 to 32 are legal.
The first 4 bits (S1 to S4) identifies the program number. Bit 5 (S5) in combination with one of the bit's 1 to 4 will transfer a new program to KIV Control.

Remark2:
Repetition of equal dosing groups is controlled by the "Signal Control" setup.
See also:"Washer type:" on page 43 (UM).



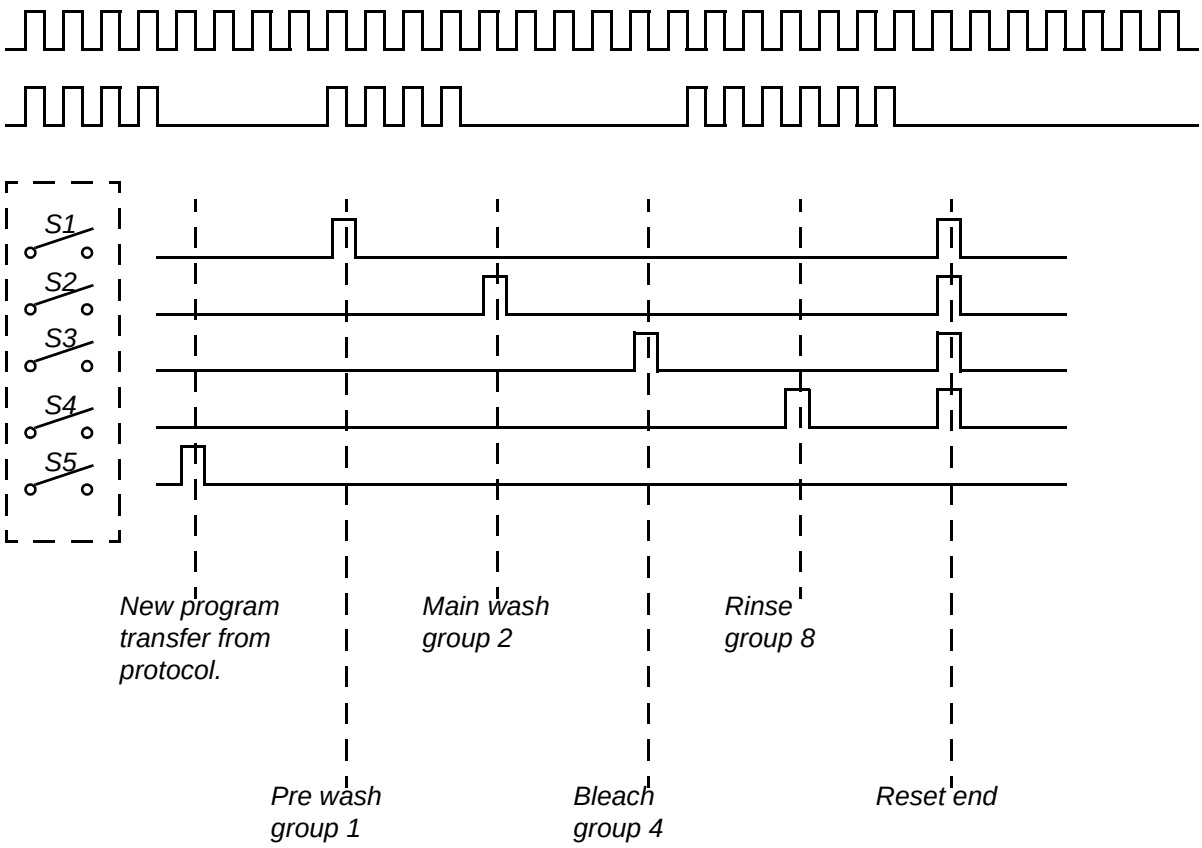
Signal pattern for washer type 5



Remark1:
Repetition of equal dosing groups is controlled by the "Signal Control" setup.
See also:"Washer type:" on page 43 (UM).

Signal pattern for washer protocol type 6

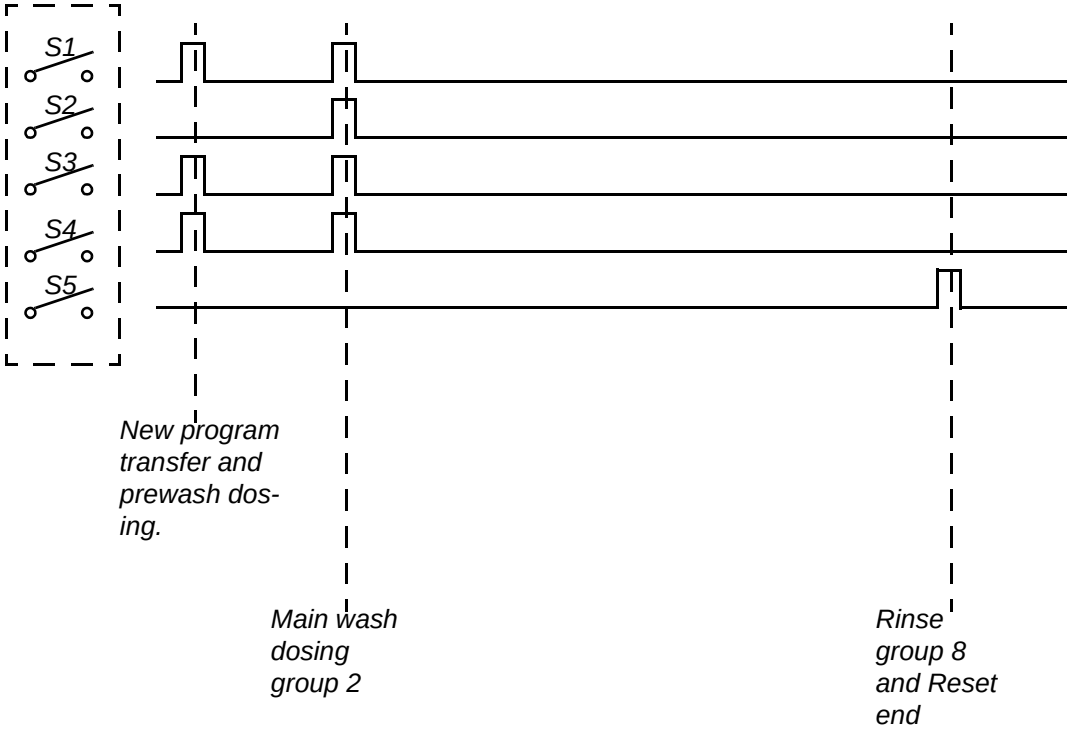
31bit pulse train for program, kilo, customer.



Remark1:
Data train needs to be ready before a new S5 signal is given.

Remark2:
For better understanding of Steps and Groups: See also Chapter 7 "Washer program." on page 71.
See also:"Washer type:" on page 43 (UM).

Signal pattern for washer protocol type 7

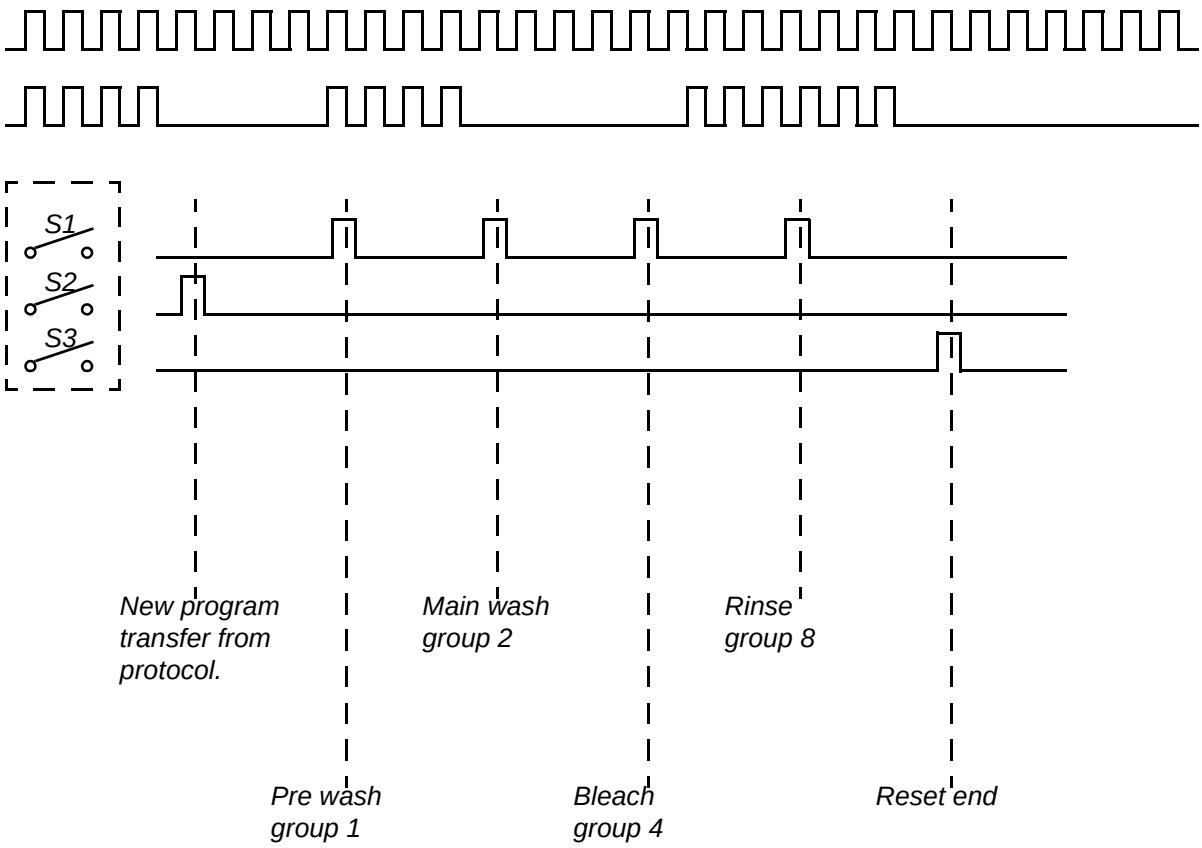


Remark1:
Start wash & new program.
All binary codes from 1 to 14 are legal.

Remark2:
Repetition of equal dosing groups is controlled by the "Signal Control" setup.
See also:"Washer type:" on page 43 (UM).

Signal pattern for washer protocol type 8

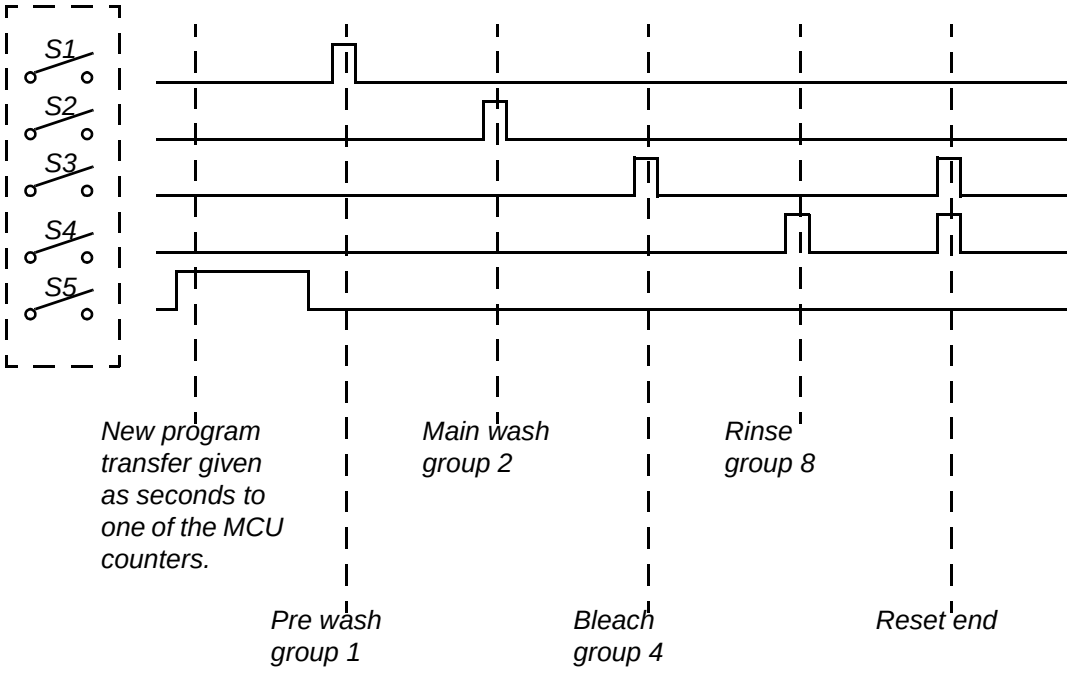
31bit pulse train for program, kilo, customer.



Remark1:
Data train needs to be ready before a new R5 signal is given.

Remark2:
For better understand of Steps and Groups: See also Chapter 7 “Washer program.” on page 71.
See also:“Washer type:” on page 43 (UM).

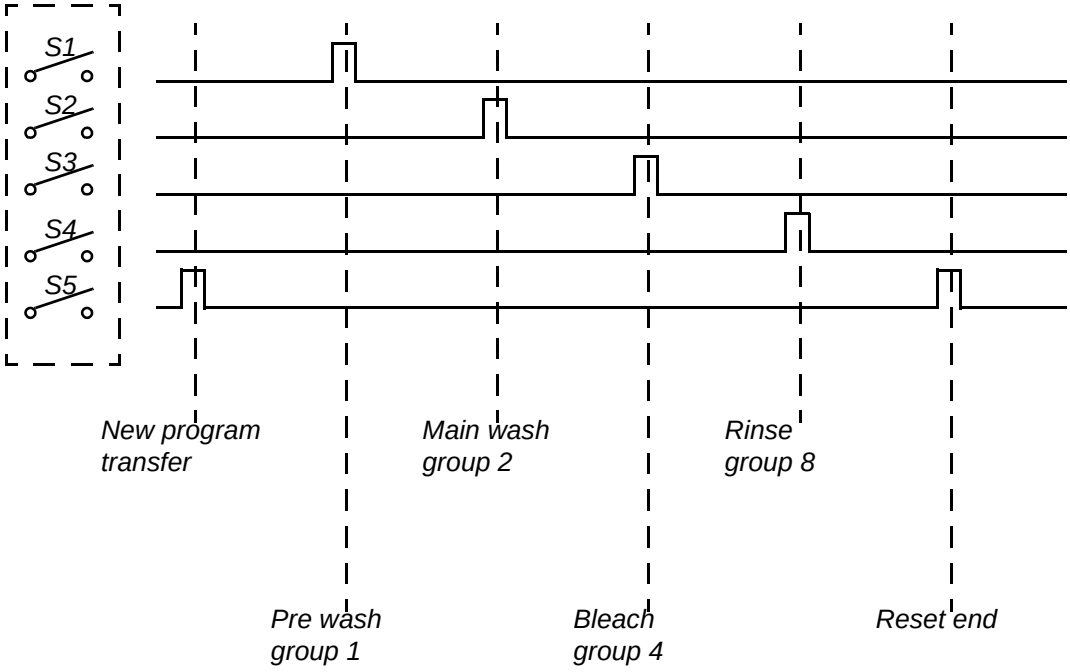
Signal pattern for washer protocol type 10



Remark1:
Program number given as seconds, use seconds from 1 to 15 or higher if needed. Signal S5 (binary code 16) also need to be wired to one of the counter inputs on the MCU card, found on: X10, input 27&28.
Input 27 = Counter 1.
Input 28 = Counter 2.

Remark2:
Also other dosing group numbers are legal:
Example:
For a second prewash (extra group), set R1 and R2 to on (group 3).

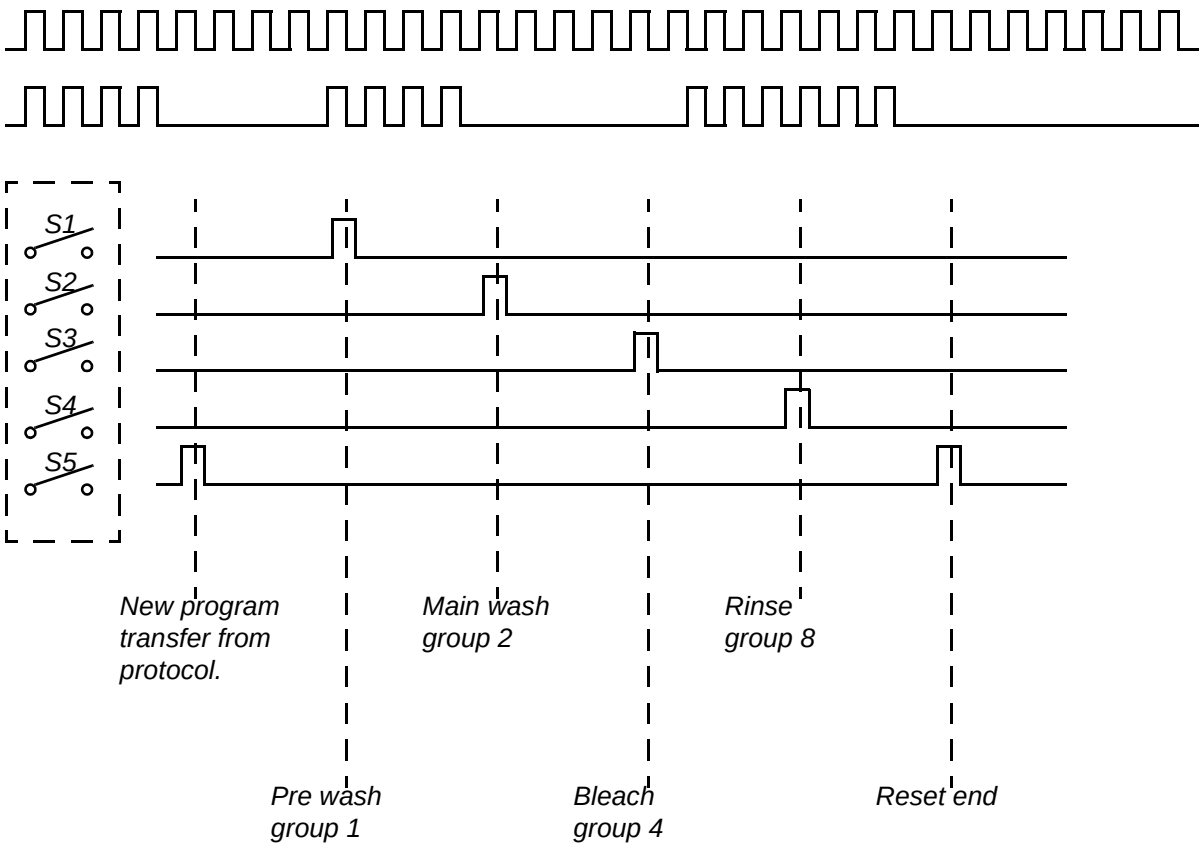
Signal pattern for washer protocol type 11



Remark1:
Repetition of equal dosing groups is controlled by the "Signal Control" setup.

Signal pattern for washer protocol type 12

31bit pulse train



Protocol may be used in combination with the terminal from Ecolab.

Remark1:
Data train need to be ready before a new S5 signal is given.

Remark2:
For better understanding of Steps and Groups: See also Chapter 7 “Washer program.” on page 71.

Signal pattern for washer protocol type 13 *Primus washers*

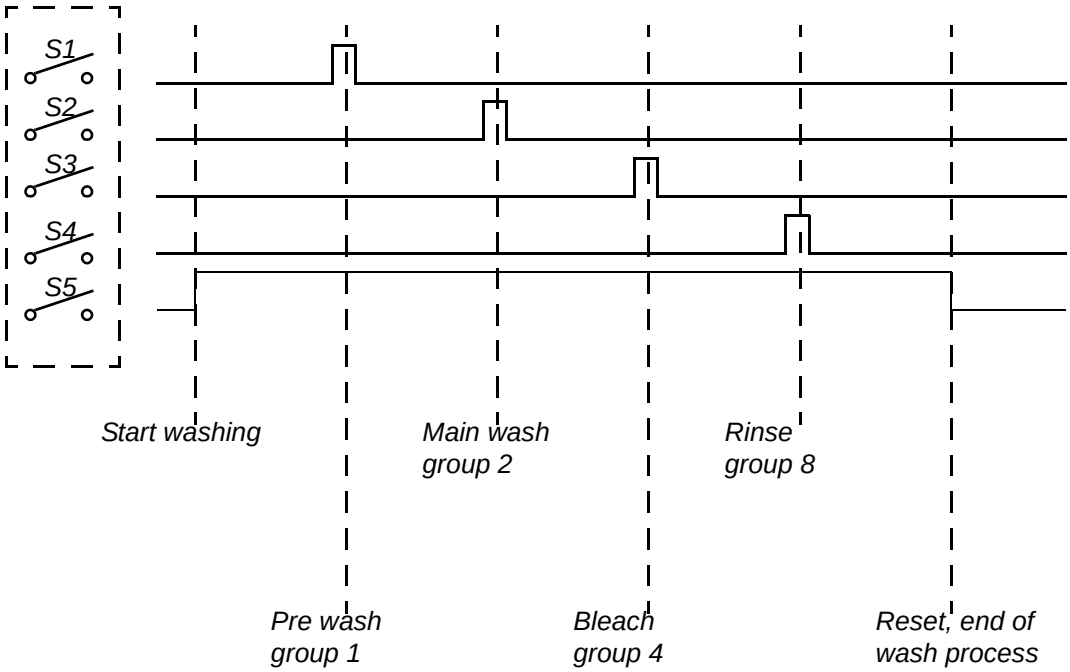
Venter på info fra Eivind

Protocol may be used in combination with the terminal from Ecolab.

Remark1:
Data train need to be ready before a new S5 signal is given.

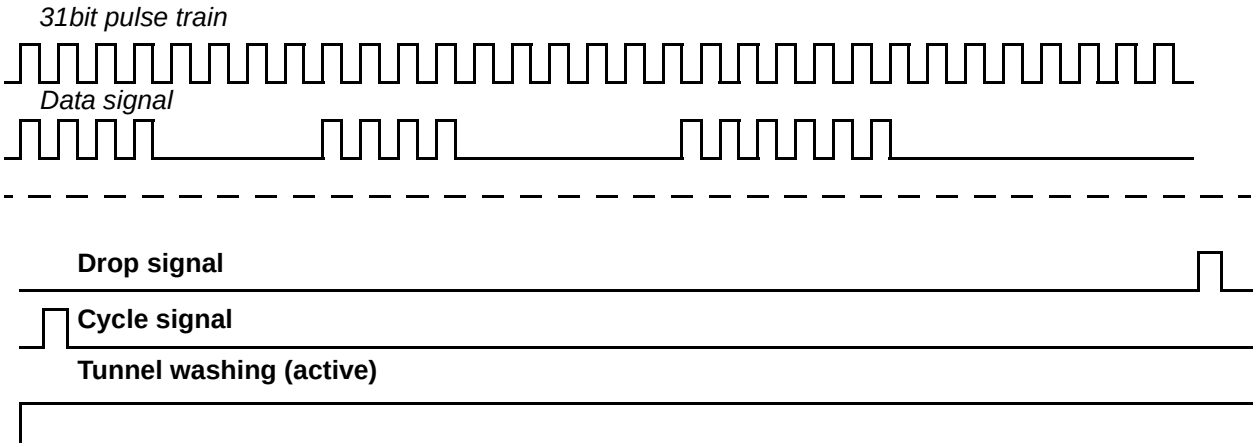
Remark2:
For better understanding of Steps and Groups: See also Chapter 7 “Washer program.” on page 71.

Signal pattern for washer protocol type 15



Remark1:
For better understanding of Steps and Groups: See also Chapter 7 “Washer program.” on page 71.

Timing diagram for 31 bit pulse train and dosing signals



Read the program, weight and customer are executed by means of Clk bit and a Data bit: (Outputs from the PLC). The Clk bit is a “flashing” signal, ON/OFF.
(31 cycles are used for exchange of program-code, weight value and customer number).
Program code is given by the first 7 cycles (7 bit).
Weight is given by the next 10 cycles (10 bit).
Finally the Customer number is given by the last 14 cycles (14 bit).

The above mention signals are given by the Tunnel PLC or a PLC of rail system prior “Drop signal”.

Caution 1!
Data signal must be present (go high) at the moment cycle signal go high (software read data bit 25 ms after the cycle input go high).

Caution 2!
There has to be at least 7 clk pulses before any data is accepted by the MCU software.

Caution 3!
If pulses are <> 31 clk pulses, an error message is given by the KIV Control software.

Clk:
See *31bit pulse train* above.

Data:
See *Data signal* above.

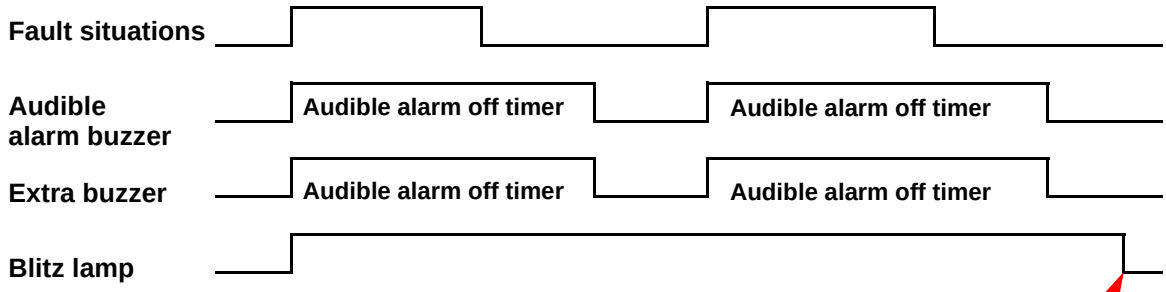
Drop signal:
I/O signal from the tunnel that drop a new bag into module 1.

Cycle signal:
I/O signal from tunnel which move all bags one position forward and activate dosings.

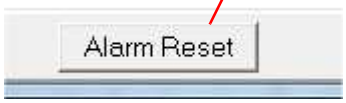
Tunnel Running:
See “Stop Dosing” on page 116 (UM).

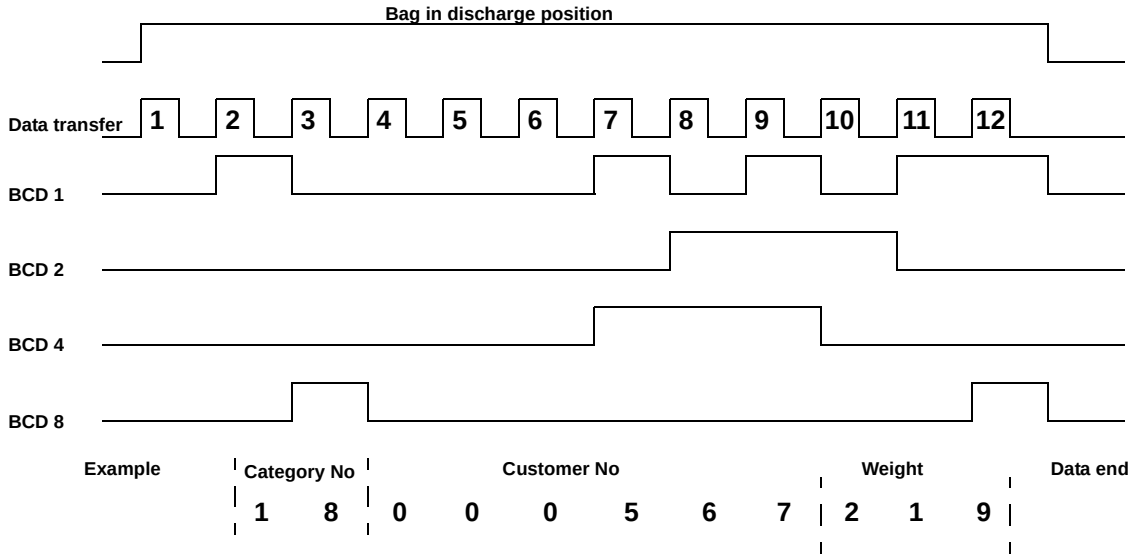
Hold Tunnel (Output from KIV):
See “Stop tunnel Output:” on page 115 (UM).

Timing diagram for Futurail protocol



Blitz lamp will only be forced off by pressing <Alarm Reset> button





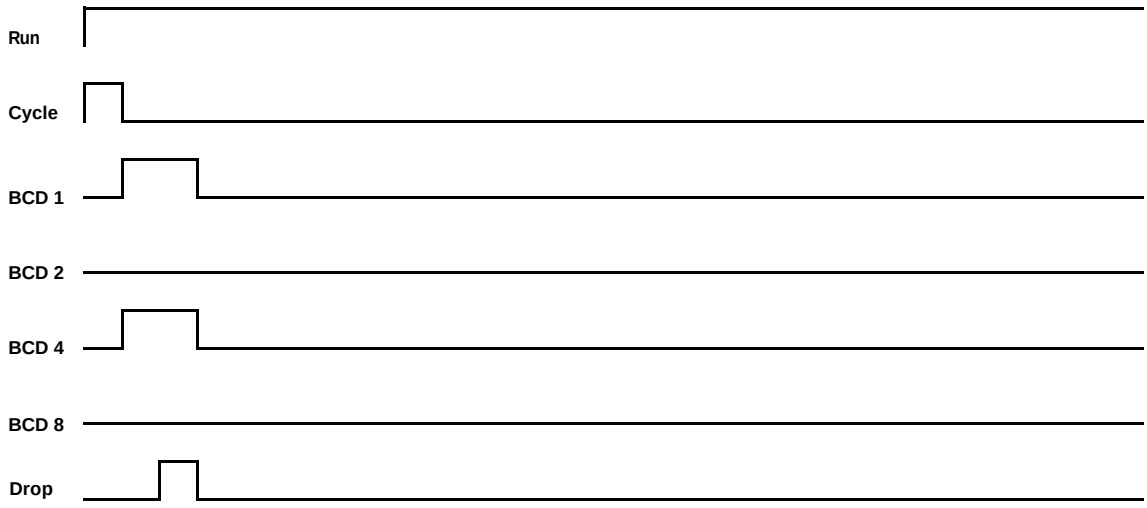
Read the classification, customer and weight controlled by 3 group of signals:
a) Bag in discharge position (1 bit)
b) Data transfer (1 bit)
c) Binary code signals BCD (4 bit)

Remarks:
Data transfer signal off, before BCD signals.

Values for Category, Customer No and Weight:
First BCD signal in each group is the leftmost value in that group and therefore represent the highest value.

Logging of protocol data is set to ON/OFF by a variable See: Chapter 12 on page 114.

Timing diagram for tunnel signals



Signal description:

Communication protocol for tunnel washer and the KIV system by using digital inputs for the program number.

Cycle:
This signal will move all bags one position forward in the tunnel image and start up actual dosings, this signal will also empty out module 1 in tunnel image.

BCD:
These signals will define a program code which is visible in the drop image (just in front of the tunnel image).

Drop:
Signal will push program from drop to module 1 and start up actual dosings.
Important!
At the moment the drop signal is given the actual BCD code needs to stay active, if not and empty module 1 and no dosing will be the result.

Run:
This signal will stop or deny new dosings or water flushing taking place. Already started dosings will be completed.
See Chapter 12 “Stop Dosing” on page 116

Timing diagram for buzzer and blitz lamp

Chapter 26: Appendix

Type-3, RS-485 signal system. (E-lux DMIS/CMIS protocol).

This way to talk (protocol) between KIV Control and the wash extractor (s) is developed in cooperation with Electrolux Wascator.
The protocol is based on the industrial RS485, 2 wire loop.
All needed information are updated each 10 sec. by the KIV Control (that by sending and receiving data).
Even hold (stop) of the wash extractor (s) is done by the same data exchange protocol.

Exchanged information between the wash extractor (s) to KIV Control:

-Wash program.
-Wash step.
-Remaining wash time. (Minutes).
-Weight.
-Set temperature point.
-Actual temperature point.
-Liquid value (Output binary code).
-Powder value (Output dosing valve (product(s) code).
-Stop signal.

New wash program information is only detected once for each wash cycle.
The wash ends with Wash step 9 (End of Program).
The Wash step 9 is detected as Reset End by the KIV Control.
The new wash program is transferred with Wash step 1 and KIVConrol software detect Reset Start.
Between the Wash step 9 and 1, the washextractor door has to be opened in at least 20 sec.

The dosing system are able to "talk" with the DMis protocol in two different ways:
1: Liquid dosing (Recommended)
2: Powder dosing.

If the system is configured as Liquid dosing, see table 1 below.
If the system is configured for Powder dosing, see table 2 below.

Table 1: Liquid dosing

Table line	Group Dosing table (KIV Control)	Liquid signal: Wash extractor (E-Lux)	KIV-CON-TROL Steps. (KIV Control)	Binary value
1	1	1=10sek	Prewash	1
2	2	2=10sek	Main wash	2
3	4	3=10sek	Bleach	4
4	8	4=10sek	Rins	8
5	3	1&2=10sek	Multi	3
6	5	1&3=10sek	Multi	5
7	6	2&3=10sek	Multi	6
8	7	1&2&3=10sek	Multi	7
9	9	1&4=10sek	Multi	9

The first four lines in the table are used for the normal 4 steps (Prewash, Mainwash, Rins and Bleach). It is possible to add more groups in KIV Control software and activate these groups according to the examples in Table lines 5 to 9.
In the table above the relationship between the dosing table (Group) and the wash extractors' dosing

Table 2: Powder dosing

Table line	Group Dosing table (KIV Control)	Valve (s) Nu. Wash extractor (E-Lux)	KIV-CON-TROL Steps. (KIV Control)	Binary value
1	1	1	Prewash	1
2	2	*2+4 or 4+5	Main wash	10 or 24
3	8	3	Rinse	4
4	3	2	Multi	2
5	4	4	Bleach	8
6	5	3+1	Multi	5
7	9+10	5	Multi Twin	16
8	11+12	1+5	Multi Twin	17

signals, is given. (Valve (s) Nu.)

Table line 1 to 3 (Group 1, 2 and 8) is activated by the standard program in the wash extractor.

By using the standard programs from the wash extractor there are no need for extra program signals (plug and play).
(Only adjust the dosing programs 1..10 in KIV Control for the wash extractor).
Table lines 4 to 8 are only used when more dosing groups are needed (Extra rinse, bleach etc.).

*Only use 2+4 when there is no prewash defined and 4+5 when a prewash is in use.

“Valve (s) Nu” which are not within limits of values in this table, will result in an alarm.

Wash extractors where this protocol is available:

Version 4.1:
FLE125, FLE175, FLE225, FLE400, FLE850MP, FLE335MP,EXSM230, EXSM350, W3400H.

Version 0.1:
FOM71CLS

Version 1.1:
W375N..W3330N.W385M..W3330M and W365H..W3310H.

Version 0.5:
W3850H and W31100H.

For more information about this protocol, read the tecnicial manual from
Electrolux Wascator.
There is also a copy of this manual on the web site:
http://www.claxkiv.com/kiv/dmis/DMIS_SETUP.pdf.