

MCScontrol

Operator Manual



Content

1	General	4
1.1	Safety attention	4
1.2	Start	4
1.2.1	Online – Offline	4
1.3	Operation elements	4
1.3.1	Operation of the controller	4
1.4	Description of features	4
2	Operation of the connected MCS-controllers	5
2.1	Password	5
2.2	Snapper	6
2.3	Headline	6
2.4	Indication	6
2.4.1	Total	6
2.4.2	Detail	7
2.4.3	Groups assortment	7
2.4.4	Help	8
2.5	Tool	9
2.6	Trends	9
2.6.1	Filter	10
2.6.2	History / Live	10
2.6.3	Power and energy	10
2.6.4	Scaling	11
2.7	Alarms and reports	11
2.7.1	System reports	11
2.7.2	Fault statistics	12
2.8	Settings for the zones	12
2.8.1	MCSR series	12
2.8.2	Zone-parameters	13
2.8.3	Global Parameters	13
2.8.4	Recipes	13
2.9	Groups	14
2.9.1	Rename zone	15
2.10	Wiring Check	15
2.10.1	Protocols	15
3	Commissioning	16
3.1	Mount the monitor	16
3.2	Connection	16
3.3	Settings	16
3.3.1	Clock	17
3.3.2	Program settings – MCS Control	17
3.3.3	RS485 – Interface input	18
3.3.4	RS485 – Interface- output	18
3.3.5	RS485 – Interface-transmission	18
3.3.6	RS485 – Online / Offline	18
3.3.7	Tool-Selection	19
3.3.8	Groups-Settings	20
3.3.9	Diagnosis-Settings	20
3.3.10	Boost-Settings	20
3.3.11	Printer-Settings	21
3.3.12	Login	21
3.3.13	Diagram-Settings	22

3.3.14	Memory	22
4	Tool Setup	23
4.1	End of setup	24
4.2	View	24
4.3	New Touch-section	24
4.4	New value: actual, setpoint, output rate or current	24
4.4.1	Indicate title	24
4.4.2	Move	24
4.4.3	Change	24
4.4.4	Copy size	24
4.4.5	Alignment	25
4.5	Delete	25
5	Technical data	26
5.1	User level	26
5.1.1	Service	26
5.1.2	Configuration	26
5.1.3	Tuning	27
5.1.4	Operation	27
5.1.5	Indication	27
5.2	Index	28

1 General

The monitor **MCScontrol** is designed for comfortable operator interface with data storage and diagnosis for all **MCS** and **MCS+** control units from version 1.21 and upper.

1.1 Safety attention

The monitor **MCScontrol** will be powered by the low voltage net. The local and general instructions have to be observed for the installation and operation.

The supply voltage and frequency must correspond to the data on the label!

The maker and seller of the units are not responsible for direct or indirect damages due to incorrect operation.

Disconnect the **MCScontrol from the supply net before open the cover!**

<p style="text-align: center;">Assembly, connections and basic settings will be described in the chapter commissioning.</p>
--

1.2 Start

The ON/OFF-switch is to reach from the rear side on the bottom beside the entry of the power cable.

1.2.1 Online – Offline

The linked controllers are indicated after the start. As far as these are not equal to the last operation or the addresses do not begin with No.1, a newly search or the offline mode may be selected.

(see Commissioning / Connection and Interface)

1.3 Operation elements

The monitor is fit with a touch-screen. All available keys on the screen are able to react after touch.

Activated functions are labelled with bold fonts or shown by “pressed” buttons. Lightly shown buttons are not available.

1.3.1 Operation of the controller

All **MCS** controllers may be operated, even when the monitor is connected. The respectively last operation is valid.

1.4 Description of features

This manual bases on the complete manual for **MCS** hotrunner controllers. These functions and terms will not be explained in the following.

2 Operation of the connected MCS-controllers

The operation of the controllers happens by the different zones. These may be collected in groups or operated separately. The control units itself will not appear in the structure of **MCScontrol**.

Different functions are available at the right hand side or directly by additional menus.

A selection referring to the indications is available on the left hand side.

Settings have to be done by adapted keyboards, which will be presented when required.

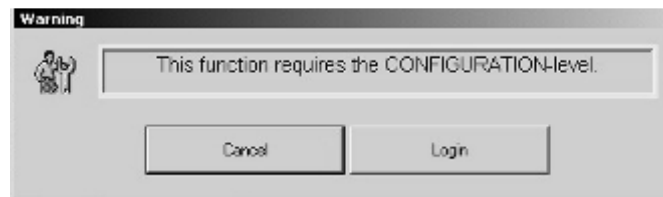
Numeric keyboard



Complete keyboard

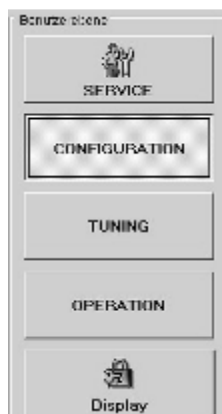


Opened hints indicate warnings or operator actions with required decisions.



2.1 Password

The user levels correspond to 0..3 of the **MCS** controllers. (for functions see Technical Data)



MCS		
		Default -locking / Default-password "Service"
Level 3		Password "22"
Level 2		Password "22"
Level 1		Without password, not locked
Level 0		Without password, not locked

The password may be changed during commissioning in the menu Login.

2.2 Snapper

This button takes screenshots / hardcopies.



Saves the actual picture in an external memory.

Prints the actual picture by a connected printer.

Escape

2.3 Headline

The headline represents the name of the actual tool and recipes with current relevance.



2.4 Indication

The control zones may be indicated by Total, Detail or the single zone.

2.4.1 Total

The screenshot shows a 'Total' overview screen with a grid of 48 zones (12 rows by 4 columns). The grid displays data for 'Supplies and activators [°C]' and 'Temperature difference [°C]'. The sidebar on the left has buttons for 'Total Assorted', 'Detailed Assorted', and 'Help'. The sidebar on the right has icons for 'Zones', 'Tool-Image', 'Trends', 'Alarms Reports', 'Input', 'Groups', 'Diagnosis', and 'Commissioning'. At the bottom, there are buttons for 'Screenshot', 'Report', 'Status', and 'Level'.

The total overview allows an indication of actual value, setpoint, difference, output rate or current. This may be selected on the left hand side.

Alarms will be flashing with the referring zone.

The touch on a zone opens the screen of a single zone.

2.4.2 Detail

The screenshot displays a multi-tiered data grid. The 'Total' section shows data for zones 112 to 115. The 'Zones Detailed' section shows data for zones 112 to 115. The 'Total Assorted' section shows data for zones 112 to 115. The 'Detailed Assorted' section shows data for zones 112 to 115. The 'Help' section shows data for zones 112 to 115. The vertical toolbar on the right includes icons for Zones, Tool-Image, Trends, Alarms Reports, Input, Groups, Diagnosis, and Commissioning. The bottom of the screen features buttons for Screenshot, Report, Status, and Level.

The shifter on the left hand side chooses the selection.
 The touch on a zone opens the screen of a single zone.
 The touch on the colour of a group opens the screen of the zones of this group.

2.4.3 Groups assortment

The screenshot displays a multi-tiered data grid. The 'Total' section shows data for groups 112 to 115. The 'Zones Detailed' section shows data for groups 112 to 115. The 'Total Assorted' section shows data for groups 112 to 115. The 'Detailed Assorted' section shows data for groups 112 to 115. The 'Help' section shows data for groups 112 to 115. The vertical toolbar on the right includes icons for Zones, Tool-Image, Trends, Alarms Reports, Input, Groups, Diagnosis, and Commissioning. The bottom of the screen features buttons for Screenshot, Report, Status, and Level.

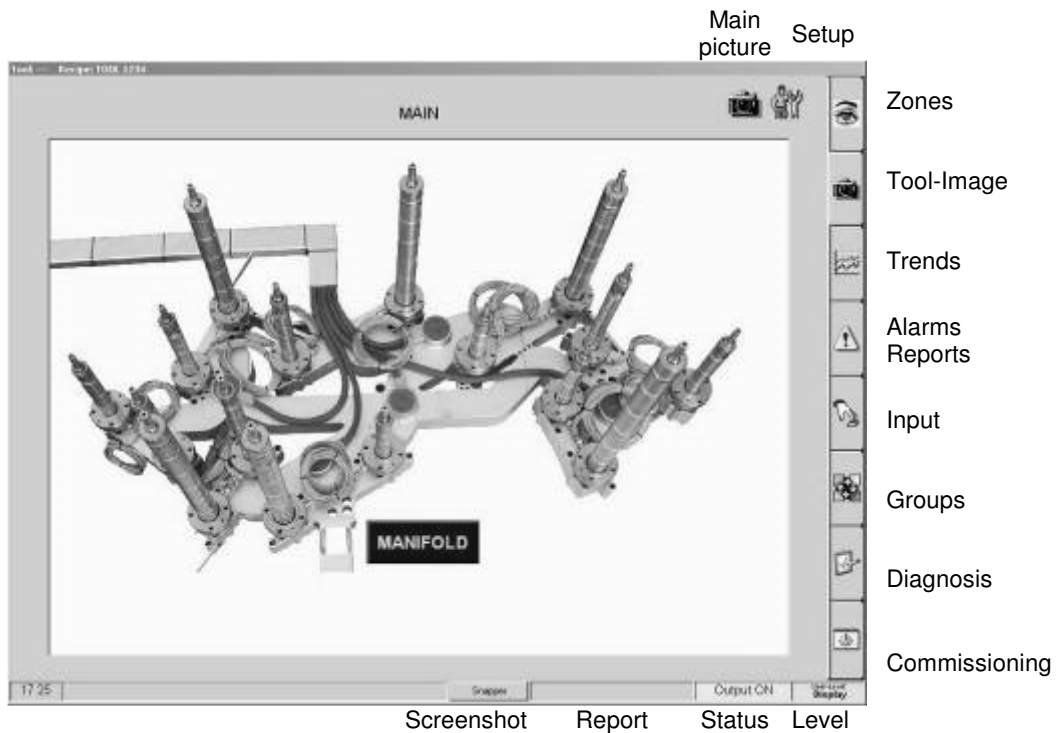
The buttons on the left side also enable an assortment of the groups. The sequence refers to the setting of the groups.
 The touch on a zone opens the screen of a single zone.
 The touch on the colour of a group opens the screen of the zones of this group.

2.4.4 Help



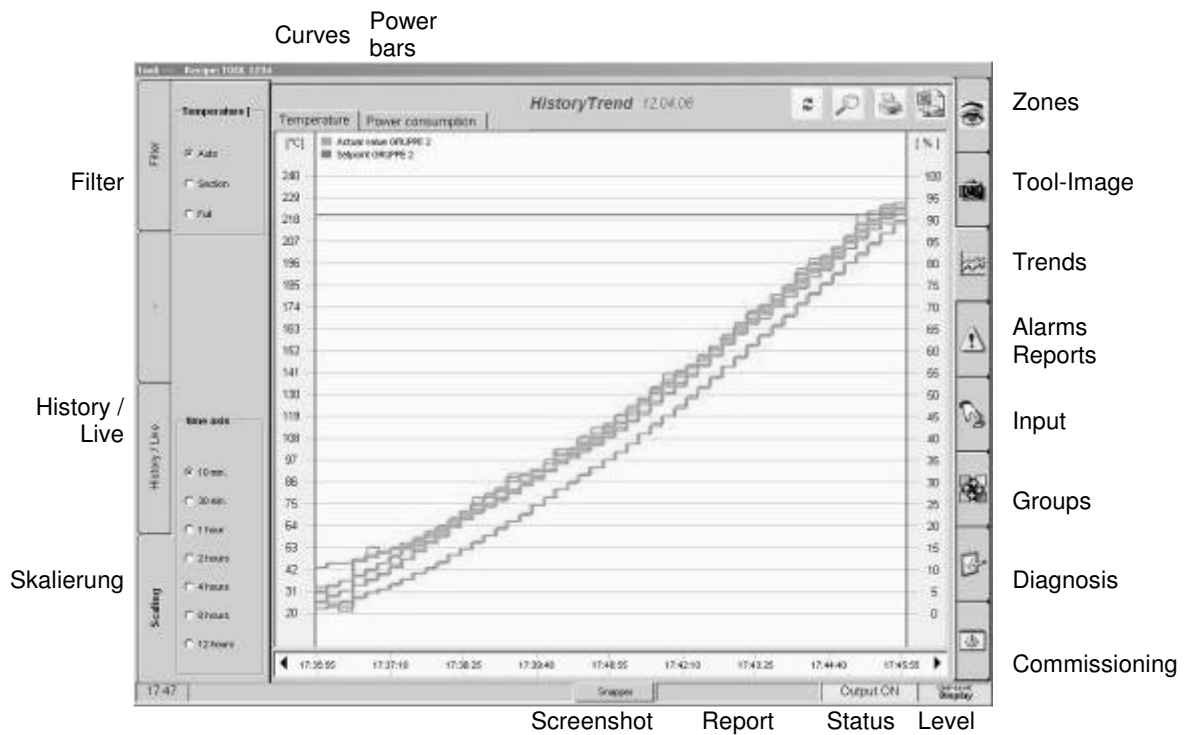
The integrated **MCS** manuals refer to the actual series of MCS. Former versions are only available by paper size or pdf file.

2.5 Tool



The assembly of a tool will be described in the chapter Tool Setup. The functions of the tool illustration depend on the referring design.

2.6 Trends



The signification of the curves may be indicated by a touch and the moving of the magnifier.

2.6.1 Filter

The filter enables a collection of zones for the trend-curves. Different groups, an individual selection of zones and zones without group are available. Actual values, setpoints and output rates are available for this collection by a touch. The colours refer to the legend in the upper section.

2.6.2 History / Live

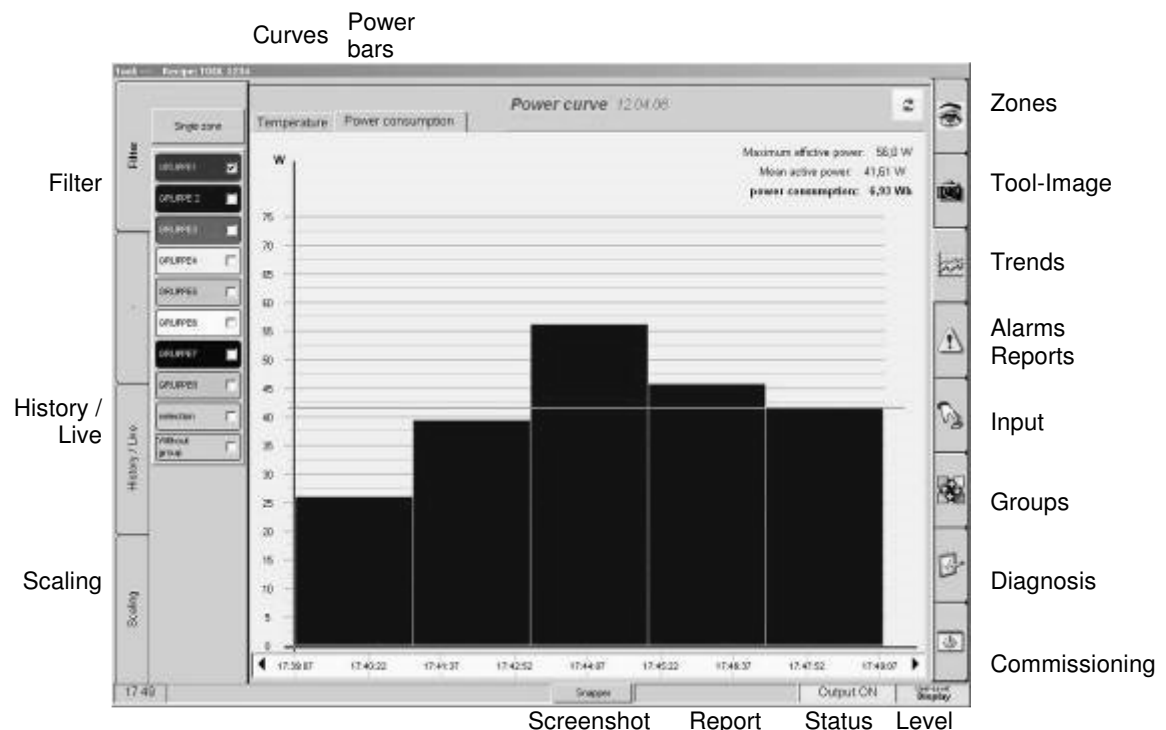
The illustration of actual or historical data may be selected by this screen or in the headline. The referring date has to be selected for historical curves.



- The magnifier may be moved to identify the curves.
- The data of the selected historical diagram may be exported to an Excel file. The referring file name will be indicated.
- The actual diagram may be printed by an installed printer.

2.6.3 Power and energy

The setting **History** enables a selection of the 2 diagrams with temperatures and output rates or the effective power. The power diagram presents the zones, that had been selected before by the filter. A red line marks the arithmetic mean value.



The time scale and the net voltage have to be set by a tip in the scaling screen. Maximum value, mean value and the used energy refer always to the actual diagram.

2.6.4 Scaling

The scale may be selected for temperature and output rate.

- Automatic = optimised illustration for the actual timebase
- Section = selected on the scale by sweeping over the scale after order
- Total = total dimension

Different sections are offered for the scale of the timebase.

2.7 Alarms and reports

2.7.1 System reports

The screenshot shows a software interface with a table of system messages. On the left, there are labels for 'System Messages' and 'Fault Statistic'. On the right, there is a vertical toolbar with icons for 'Zones', 'Tool-Image', 'Trends', 'Alarms Reports', 'Input', 'Groups', 'Diagnosis', and 'Commissioning'. The table contains the following data:

source	message	date	pass off	received
Zone 001	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 002	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 003	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 004	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 005	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 006	Negative temp.-deviation	10.09.2012 18:54:35		
Zone 007	Negative temp.-deviation	10.09.2012 18:54:35		

At the bottom of the screenshot, there are labels: 'Screenshot', 'Report', 'Status', and 'Level'. The status bar also shows 'Negative temp.-deviation', 'Outputs OFF', and 'Not Locked'.

The confirmation refers only to the actual selection.
The padlock disables the automatic scrolling of the list.

The screenshot shows a settings panel with the following options:

- Indications:
 - Alarms
 - Messages
 - Events
- Of that:
 - only actual
 - acknowledged too

All activities and alarms are listed here referring to date and time. A selection of groups or kind of alarm enables a detailed overview.

2.7.2 Fault statistics

The screenshot displays a 'Fault-time histogram' for 10 zones. The zones are listed on the left with their respective failure times and bar lengths. The longest failure times are for Zone 04 (100:05:20), Zone 05 (100:05:14), and Zone 06 (100:05:14). A 'Reset' button is located at the bottom right of the histogram area.

Zone	Failure Time
04	100:05:20
05	100:05:14
06	100:05:14
03	100:05:14
15	100:05:14
45	100:05:14
26	100:05:07
20	100:05:07
Vendor	100:05:07
49	100:05:07

System Messages: System messages

Fault Statistics: Fault statistics

Navigation icons: Zones, Tool-Image, Trends, Alarms Reports, Input, Groups, Diagnosis, Commissioning

Bottom status bar: 17.51 | Snapper | Negative temp -dewation | Output ON | Alarm display

Buttons: Screenshot, Report, Status, Level

The fault statistics indicate the longest failure times of 10 zones by bar graph.

2.8 Settings for the zones

The screenshot shows the 'Input' settings for Zone 001. The parameters are as follows:

Parameter	Value
Actual value	82 °F
Setpoint	140 °F
Output rate	0 %
Hyster current	0,0 A

Operation-mode: PID, MAN, OFF

Navigation icons: Zones, Tool-Image, Trends, Alarms Reports, Input, Groups

Left sidebar: Input, Zone parameters, Global parameters

The direct operation of single zones or groups referring to the selection will be done here. The same three control modes PID (controlled), MAN (manual) and OFF (disabled) are available as on the **MCS** controller.

All outputs may be switched off and the controller may be restarted.

2.8.1 MCSr series

For Boost and Standby the required buttons will appear in this menu. The function will run according to the pre-settings on the monitor (see chapter Group settings).

2.8.2 Zone-parameters

The screenshot displays the 'Parameter of zone' table with columns for Zone 001 through Zone 007. A numeric keypad is overlaid on the screen, showing a 'High-Alarm 31 zones in GROUP1' dialog box with a 'Scale Value: 0.000' and a numeric keypad with buttons for digits 1-9, 0, +, -, ESC, DEL, and SET.

Parameter of zone	Zone 001	Zone 002	Zone 003	Zone 004	Zone 005	Zone 006	Zone 007
1 Low-Alarm	0	0	0	0	0	0	0
2 High-Alarm	-400	-400	-400	-400	-400	-400	-400
3 DEV-Alarm (temperature)	15	15	15	15	15	15	15
4 P-Part (head)				2	15	0	
5 I-Part (head)				0	0	0	0
6 D-Part (head)				0	105	20	35
7 Setpoint temp (Lp)				0	0	0	0
8 Cycle time (test)				1	1	1	1
9 max. output rate (H)				100	100	100	100
10 Diagnosis time				0	0	0	0
11 Zone supervision t				0	0	0	0
12 Softstart (On-Off 1=C)				1	1	1	1
13 Combined heating				1	1	1	1
15 Setpoint min-out				0	0	0	0
16 Monitoring Zone				0	0	0	0
17 Alternative Zone				0	0	0	0
18 Setpoint current				0	0	0	0
19 output rate max. Value	-40	30	0	-44	50	-40	-40
20 output rate Setpoint	0	0	0	0	0	0	0
21 Current measuring (On-Off 1=On)	1	0	0	0	0	0	0

Labels on the left side of the screenshot: Input, Zone Parameters, Global Parameters, Default Parameters.

Labels on the right side of the screenshot: Zones, Tool-Image, Trends, Alarms Reports, Input, Groups, Diagnosis, Commissioning.

Bottom navigation: Screenshot Report Status Level

The individual parameters of the selected zones may be set according to the manual of **MCS**-controllers.

2.8.3 Global Parameters

The screenshot displays the 'Global parameters' table with columns for cabinet 1 through cabinet 6. The table lists various parameters such as Slowest channel (Sc), Alarm delay (AL), On-Parameter (On), Auto Power (AP), HI-Value (H), SSR-supervision (S) 1 and 2, Classification (CL) 1, 2, 3, 4, 5, 6, Setpoint program (P1-P4), Lo-Value (L), Outputs (OU) 1, 2, 3, 4, 5, 6, dy-Parameter (dy), Py-Parameter (Py), Limit-Value-temperature (L1-L5), Serial number, Version of protocol, DIP-switch A, and Status of development.

Global parameters	cabinet 1	cabinet 2	cabinet 3	cabinet 4	cabinet 5	cabinet 6
Slowest channel (Sc)	0	0	0	0	0	0
Alarm delay (AL)	0	0	0	0	0	0
On-Parameter (On)	25	25	25	25	25	25
Auto Power (AP)	0	0	0	0	0	0
HI-Value (H)	500	500	500	500	500	500
SSR-supervision (S) 1 and 2	0	0	0	0	0	0
Classification (CL) 1, 2, 3, 4, 5, 6	1	1	1	1	1	1
Setpoint program (P1-P4)	1	1	1	1	1	1
Lo-Value (L)	-20	-20	-20	-20	-20	-20
Outputs (OU) 1, 2, 3, 4, 5, 6	1	1	1	1	1	1
dy-Parameter (dy)	0	0	0	0	0	0
Py-Parameter (Py)	10	10	10	10	10	10
Limit-Value-temperature (L1)	0	0	0	0	0	0
Limit-Value-temperature (L2)	0	0	0	0	0	0
Limit-Value-temperature (L3)	0	0	0	0	0	0
Limit-Value-temperature (L4)	0	0	0	0	0	0
Serial number					0000	
Version of protocol					3.50	
DIP-switch A					00000	
Status of development					10.10.08	

Labels on the left side of the screenshot: Input, Zone Parameters, Global Parameters, Default Parameters.

Labels on the right side of the screenshot: Zones, Tool-Image, Trends, Alarms Reports, Input, Groups, Diagnosis, Commissioning.

Bottom navigation: Screenshot Report Status Level

The global parameters of the controller may be set according to the manual of **MCS**-controllers.

The reset of default parameters corresponds to the **MCS** manual.

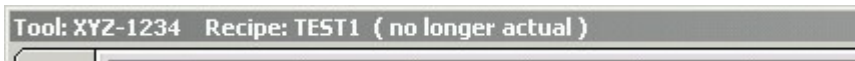
2.8.4 Recipes

Different recipes may be stored or loaded with the actual tool.

The recipes include all parameters and setpoints. The indicated zones have to be selected.

The parameters may be transferred from and to the controllers.

The lost of relevance in case of changed settings will be indicated in the headline.



2.9 Groups

The desired group has to be selected by touch. To collect different zones they have to be touched or swept.

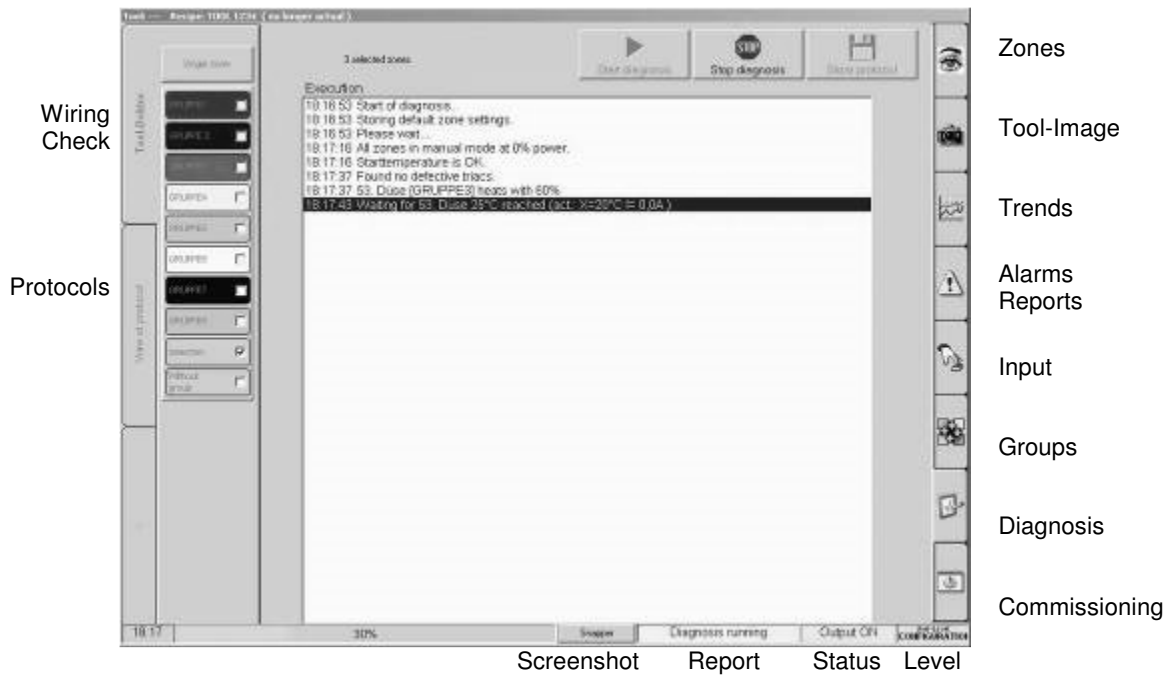
An independent collection is available by the selection button. All groups may be used on other screens, like diagnosis, settings, boost or for the Wiring Check.

2.9.1 Rename zone

The zones may get typical names that do not correspond to the numbers of **MCS**. The referring button opens a menu to rename a marked zone. A number within the name will be set for the 1st zone of this selection and increased for all the following. The selection of name is valid for all screens.

2.10 Wiring Check

The program **Wiring Check** may check the correct wiring of sensors and heaters. The function of the sensors and heaters will be tested by a short heat up.



A selection of zones or groups has to be done before start. If this selection should include tones with broken sensors, the sequence will stop and indicate the failure. Such zones have to be excluded from the selection. During these routines all steps are kept in a protocol. The sequences follow the presettings of the commissioning.

MCScontrol sets the connected controllers to an other operation mode and resets in case of cancelling by “STOP” or at the end.

An external interruption of the power supply or a disconnection of the interface will inhibit the reset.

At the end the protocol may be stored with a file name.

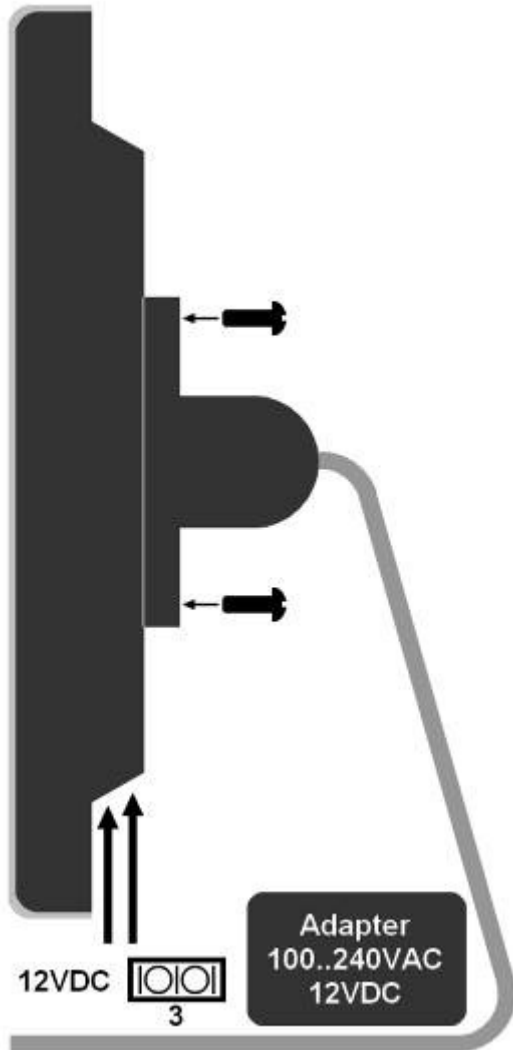
2.10.1 Protocols

This screen allows to manage the stored protocols by storing, writing comments, deleting or printing.

Comments may be added at any time. New comments will overwrite previous. Extensions are not possible.

The settings for the printer have to be done at the commissioning.

3 Commissioning



POWER – RS485

3.1 Mount the monitor

The monitor has to be fastened to the VESA flange of the stand.

The stand has to be fastened with a screw M8 on top of the **MCS** cabinet.

3.2 Connection

There is a separate AC/DC adapter for the power supply. The DC cable has to be connected to the bottom of the monitor. The AC supply is available at the rear side of MCS.

The interface RS485 has to link to the port **COM3** below the monitor and the connector at the rear side of MCS. The referring data cable **AU110** (belongs to the scope of supply).

For special solutions an interface adapter **SI13U** may be used for the USB-port.

The USB-port may be used for an USB memory stick for data storage and transfer.

The computer of the **MCScontrol** indicates the number of zones from the linked controllers. If no zone will be found, the serial link to the controller and the setting of the address have to be checked.

A selection of multiple controllers **MCS** for a PLUS unit have to be checked regarding the CAN addresses.

3.3 Settings

Level Password	Connections	Diagnosis Boost	Tool-selection	
Language Restart	Memory	Printer settings	Diagram settings	
Login	RS485	Groups	Tools	-
MCS Control	Data base	Printer	Trend	-

All the required settings for the operation may be entered with these menus.

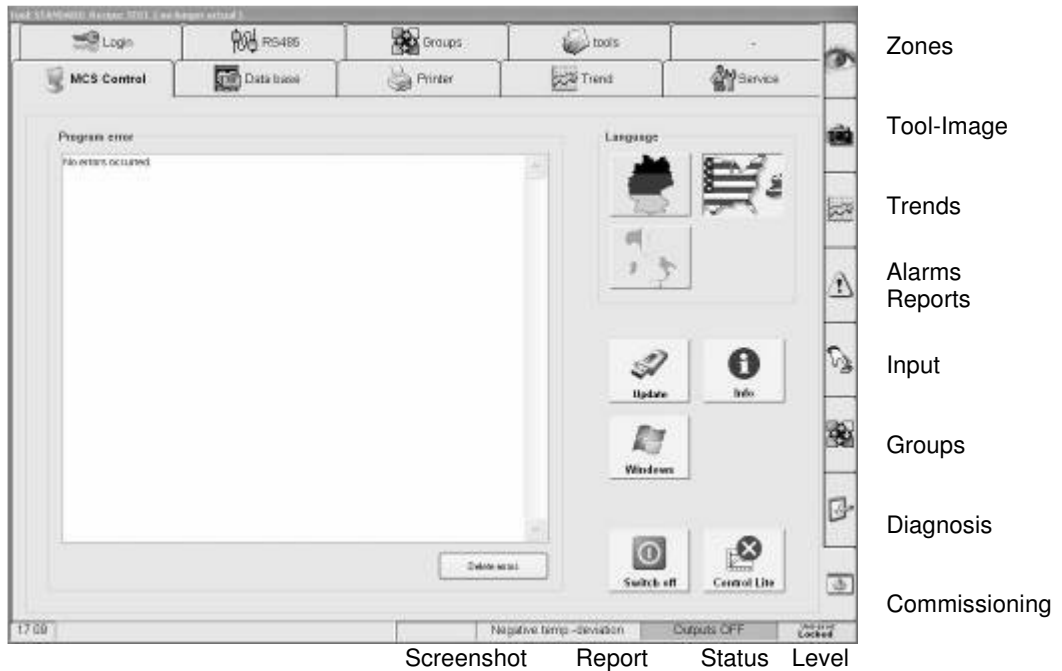
3.3.1 Clock

A double click to the real time opens the setting of the time.



Operator level Service is required for the referring Windows® menu.

3.3.2 Program settings – MCS Control



- This menu enables to
- select the language
 - install an update from the root folder of an USB-stick
 - open the info
 - enter Windows
 - shut the operation system down by **Switch Off**
 - change to the program **MCScontrol lite** with differing menus.

The button **Control Lite** finishes the program **MCScontrol** and stops the recording of trends.

The indicated protocol shows failure-messages of the system.

3.3.3 RS485 – Interface input

The screenshot displays the 'RS485' configuration window in the MCS Control software. The window is divided into several sections:

- Configuration:** Includes fields for 'Transfer mode' (set to 'S116 / S116'), 'COM-Interface' (set to 'Caterpillar-Data Port (COM)'), and 'Baudrate (bps)' (set to '19200'). A 'Change' button is located below these fields.
- Online mode:** Contains two buttons: 'Opening a new' (with the description 'Run a new identification of the units') and 'Offline' (with the description 'Finishes the cyclic check of the units and starts MCScontrol for 200 disabled zones').
- Transmission quality:** A table showing data for four addresses. Below the table is a 'Reset counter' button.

The table in the 'Transmission quality' section contains the following data:

Address	OK	ERR	S
Address 1	2896	17	0.95 %
Address 2	2896	17	0.95 %
Address 3	2893	16	0.95 %
Address 4	2894	16	0.95 %

On the right side of the screenshot, a vertical toolbar contains icons for various functions, which are labeled as follows:

- Zones
- Tool-Image
- Trends
- Alarms Reports
- Input
- Groups
- Diagnosis
- Commissioning

At the bottom of the screenshot, there is a status bar with the following text: '17:15 Negative temp.-deviation Outputs OFF Monitor Locked'. Below the screenshot, the words 'Screenshot', 'Report', 'Status', and 'Level' are written.

The transmission rate may differ from the default settings

- RS485 driver
- 9600Baud,

if it is required by the installation.

With the MCS series 2008 the baud rate will be set by itself to the optimal value.

3.3.4 RS485 – Interface- output

The USB-port offers a further slave connection. This enables the operation by a further monitor or the PC software **Fecan** and **Paracon**.

3.3.5 RS485 – Interface-transmission

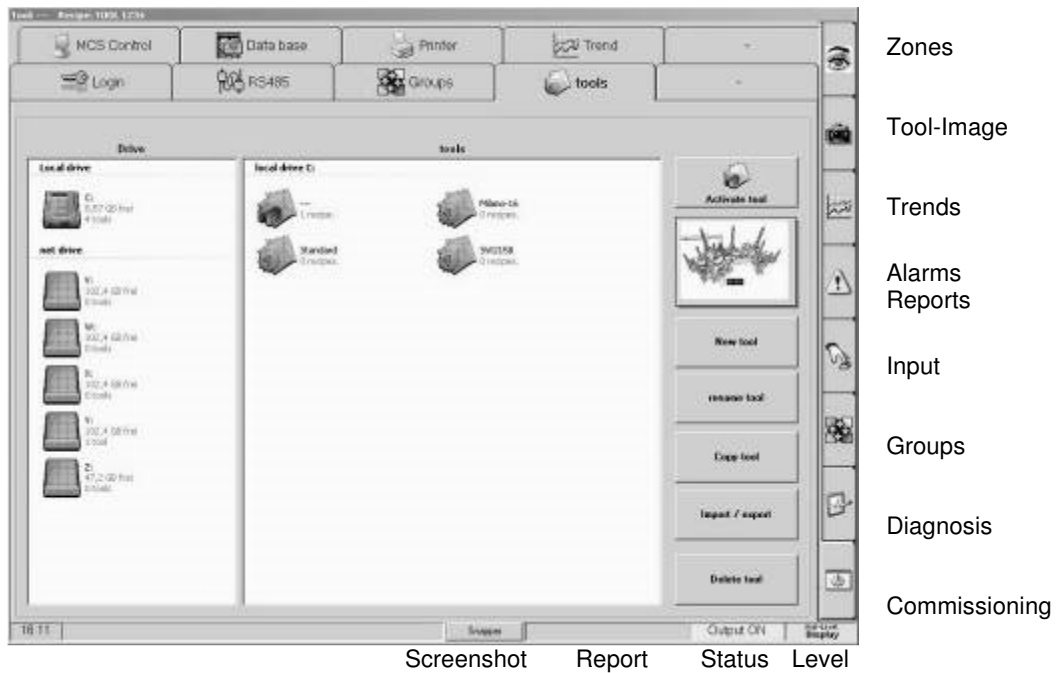
The transmission quality indicates the number of failures for all addresses.

3.3.6 RS485 – Online / Offline

The operation mode of the monitor will change by restart searching for connected controllers or by interrupt (Offline).

The Offline mode enables to change and read recipes, tools, curves or protocols.

3.3.7 Tool-Selection



- A new tool has to be opened and activated for each application, that shall be stored with its settings. This includes a copy, that was renamed.
- To change a tool, the desired tool has to be imported or copied to the local drive.
- The activation of this tool restarts the program.
- The window presents a preview only when pictures are available.
- Tools have to be kept in folders `:\MCScntrl 2 \ Tools \...`. These will be created with the copies, if not yet available.

The following menus are fit with basic settings, which have to be adapted individually.

3.3.8 Groups-Settings

name of group	color	activated	setpoint	start temp	diagnosis time	power
Zones without group		Yes	free	4 300 °F	60 sec	60 %
Gruppe 1		Yes	free	4 300 °F	60 sec	60 %
Gruppe 2		Yes	free	4 300 °F	60 sec	60 %
Gruppe 3		Yes	free	4 300 °F	60 sec	60 %
Gruppe 4		Yes	free	4 300 °F	60 sec	60 %
Gruppe 5		Yes	free	4 300 °F	120 sec	60 %
Gruppe 6		Yes	free	4 300 °F	120 sec	60 %
Gruppe 7		Yes	free	4 300 °F	120 sec	60 %
Gruppe 8		Yes	free	4 300 °F	180 sec	60 %

Screenshot Report Status Level

This menu enables to select the quantity, the names and the colour of groups. For selectable groups the change of setpoints is lockable.

MCSR series

For Boost and Standby the required settings will appear in this table. The function will be activated only by the monitor (see chapter Settings for the Zones).

3.3.9 Diagnosis-Settings

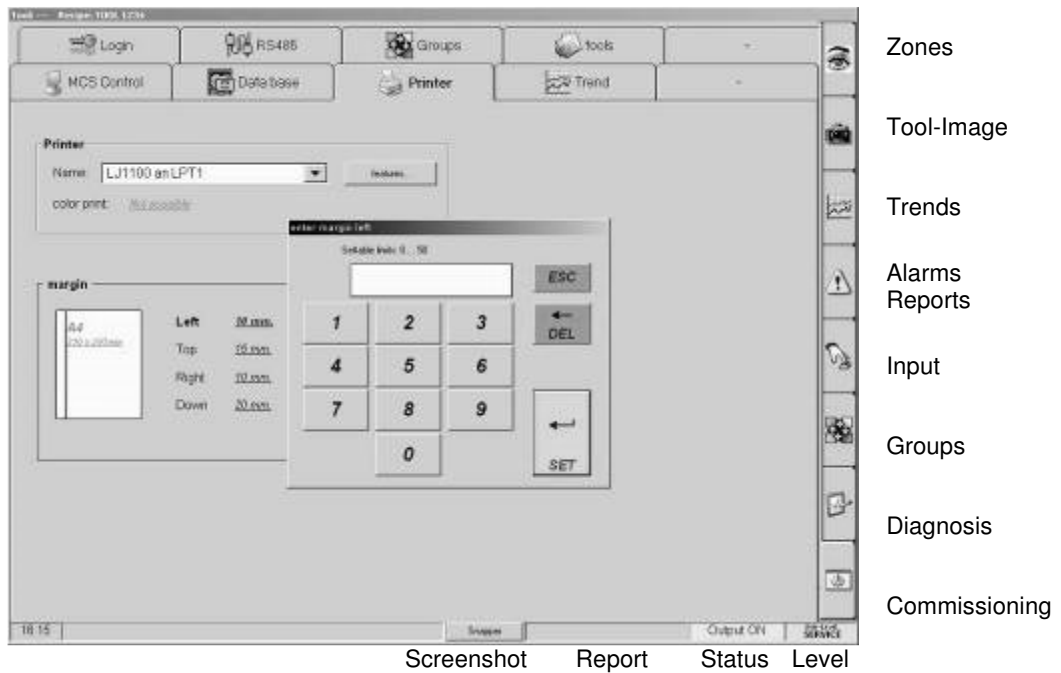
The maximum diagnosis times and the output rate for the different groups have to be set here, before start of the diagnosis program Wiring Check. An increase of 5K must be reached within this time.

The start-temperature is the maximum temperature to enable the start of the Wiring Check. The settings have to consider, that heated zones need a longer time for temperature increase.

3.3.10 Boost-Settings

To enable the boost function for the zone operation, all settings have to be entered here. The increase of temperature as well as the boost time have to be fixed.

3.3.11 Printer-Settings



The selection of a printer enables to enter the required settings.
The direction of the print changes with a touch on the empty section.

The desired printer and settings may be selected from the different installed types. The settings for the frame will open after touch.
For printer settings the service level is required.

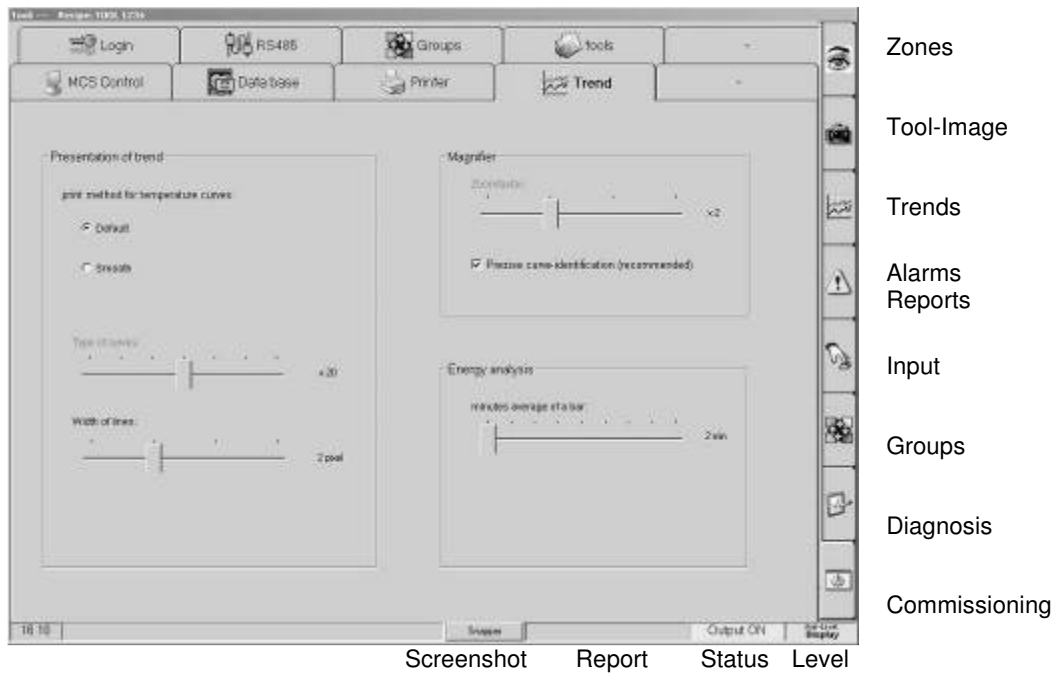
3.3.12 Login

See chapter **2.1 Password**.

The pass word for Service should change, if necessary.

3.3.13 Diagram-Settings

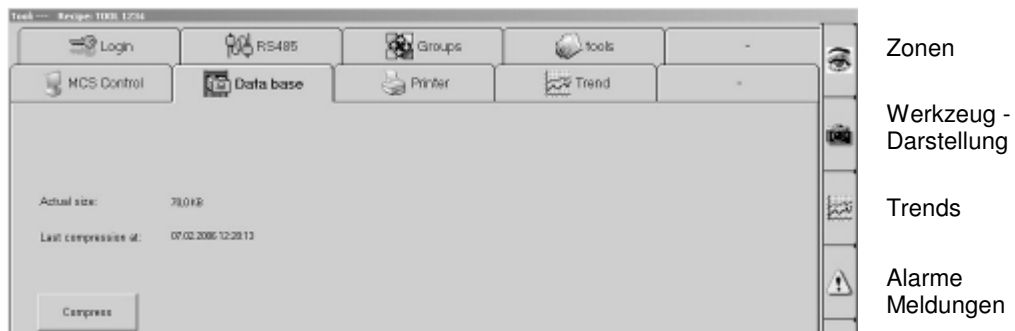
The representation of curves and bars may be set individually.



- An alignment of the curves depends on the zoom-factor.
- The rate of alignment can smooth the curves.
- The width of the lines can be set considering the number of curves.
- The magnifier can be set considering the number of curves.
- The time range for the power diagram.

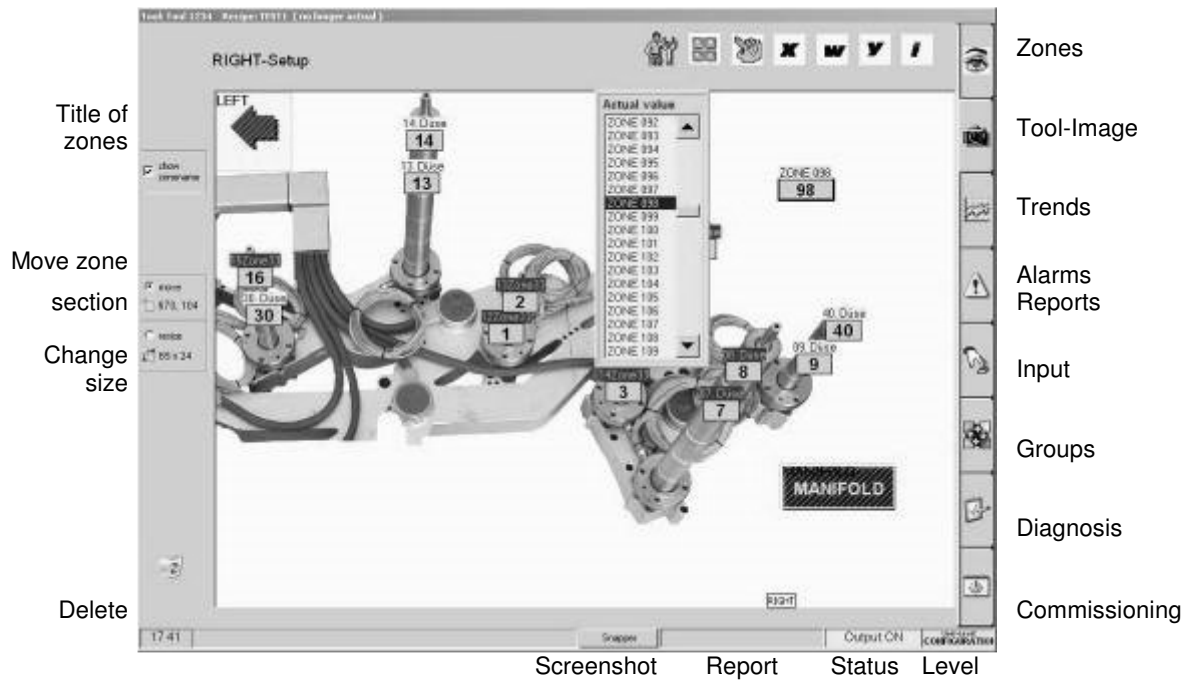
3.3.14 Memory

This screen opens an overview of the occupied memory. A compression can provide space of memory, if required. This effects slower opening of history trends.



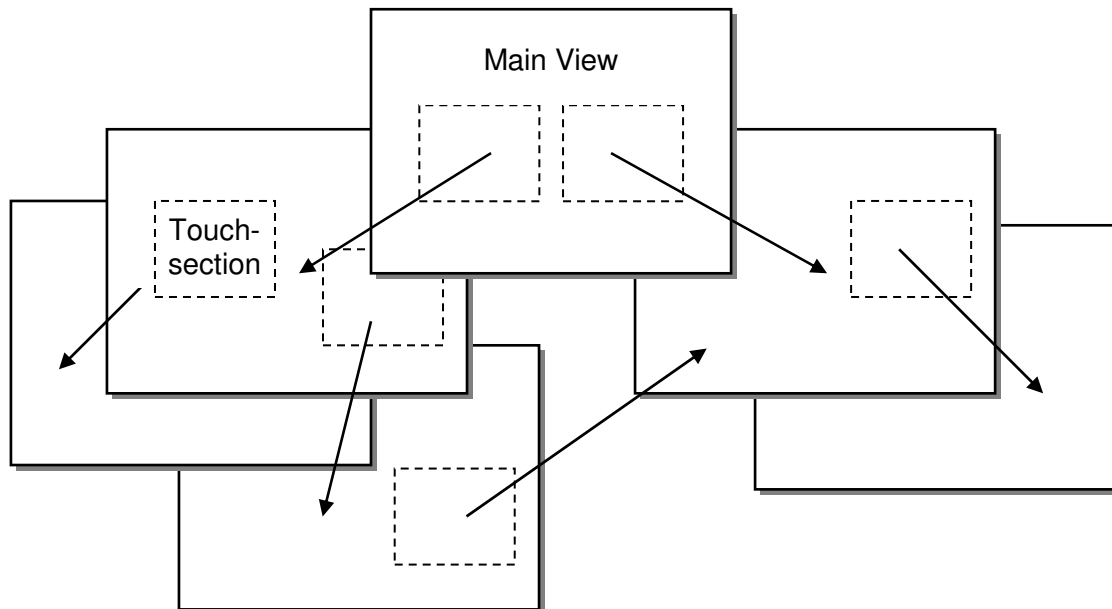
4 Tool Setup

The illustration of the tool has to be prepared in the setup.



The following example shows the structure of the tool operation. The survey and zoom-effects may be created this way.

The different pictures from photos or drawings must be available in bmp-files.



These views are to open from touch sections, that are located individually. Each view allows to insert zones with values.



New components for the tool representation have to be selected from here to be pulled in the desired position.

End of Setup
View
Touch-section
Actual value
Setpoint
Output rate
Current

4.1 End of setup

This button ends the setup and offers the storage.

4.2 View

This button opens the selection of loaded pictures.



The selected picture may be arranged.



The right buttons loads new **.bmp** pictures from the root of an external memory.
The max. size of the pictures is **879x612 pixels**.

4.3 New Touch-section

This button puts a new touch section into the actual picture. It has to be placed by shifting and may be extended by pulling the frame.

A touch on the section turns it to a blue marked status, which enables to select the desired destination-picture.

4.4 New value: actual, setpoint, output rate or current

This button puts a new section for a measured value into the actual picture. It has to be placed by shifting and may be extended by pulling the frame.

The desired zone number of value has to be selected by the local menu.

4.4.1 Indicate title

The title resp. the name of the zones may be selected for indication by the referring mark.

4.4.2 Move

The referring mark on the left side has to be set to move the touch-sections or values. The location is indicated as well.

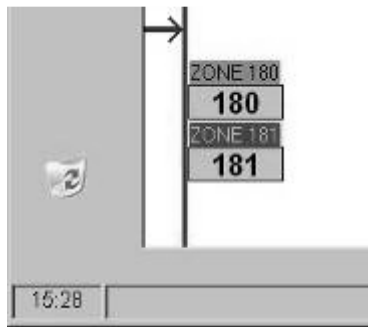
4.4.3 Change

The referring mark on the left side has to be set to adapt the size of the touch-sections or values. The dimensions are indicated as well.

4.4.4 Copy size

With the mark Change size a section with master-size may be shifted above an other one to copy the size. The master-section will not leave the position.

4.4.5 Alignment



An assistance line may be pulled out of the top and the left side of the frame. It helps to align the measured value sections. When the top or left edge of a section will be moved or touched close to this line, it will align itself.

4.5 Delete

To delete a section, it has to be shifted to the waste-basket and confirmed after.

5 Technical data

Monitor:

<u>Control voltage:</u>	Via AC/DC adapter	100..240VAC/1,5A / 50/60Hz 12VDC
<u>Power consumption:</u>		80 W
<u>Interface</u>	Serial at COM3	RS485
	USB 2.0	4-fold
	VGA	
<u>Protocol</u>		FE3-Bus Version 3.03
<u>Ambient conditions</u>	Operation temperature	5..45°C / 40..122°F
	Storage temperature	0..60°C / 32..°F
	Humidity	< 95% rel. humidity at 40°C / 105 °F
		no dew drop
<u>Dimensions:</u>	WxHxD	395x310x60 mm
	With foot WxHxD	395x375x170 mm
<u>Weight:</u>	Monitor	6 kg
	Total with foot	7 kg
<u>Operation system:</u>		Windows® XP
<u>Tool pictures:</u>	Size	879x612 Pixel
	Format	*.BMP (Bitmap)

5.1 User level

Entry to the different functions of a user level after unlock by password:

Marked functions are equal to **MCS** controller **>MCS<**.

5.1.1 Service

- Change date and time
- Change password including the Service level
- **MCScontrol** – Software-update
- Operation of the integrated **MCS**-Terminals for failure investigation
- Windows® entry
- Installation and settings of printers
- Change COM-interface parameters

5.1.2 Configuration

- Rename zones
- Change zone parameters **>MCS<**
- Load and store recipes
- Settings for Wiring Check
- Start Wiring Check
- Delete diagnosis-protocol files
- Settings time and temperature for boost
- Setup and change tools

5.1.3 Tuning

- Change HI-value **>MCS<**
- Reset to default parameters **>MCS<**
- Confirm error messages of the alarm data-base
- Delete collected failure-times
- Change colour of groups
- Rename groups
- Enable/disable groups
- Enable/disable setpoint-lock for groups
- Load default settings of groups

5.1.4 Operation

- Change operation mode (control / manual / Off.) **>MCS<**
- Change setpoint or output rate **>MCS<**
- Change program **>MCS<**
- Enable/disable **MCS** outputs (OU-parameter) **>MCS<**
- Restart **>MCS<**
- Boost / Standby **>MCSr<**

5.1.5 Indication

MCScontrol is locked. No settings are possible without password.

5.2 Index

Boost	12, 15, 20, 26
Groups	5, 7, 10, 12, 15, 20, 27
Password	5, 26, 27
Recipes	6, 13, 14, 18, 26
Tool	6, 9, 13, 19, 23, 24
Wiring Check	15, 20, 26