

MCScontrol-lite **Manual**



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1 Applikation

MCScontrol-lite offers the cost-efficient touch screen operation for the series of hotrunner controllers MCS. The 7"-size monitor does not only extend the default operation display of all MCS controllers, it may even replace these with the series MCSr. **MCScontrol-lite** is able to indicate and operate a PLUS-unit with up to 270 zones from several connected controllers.

The placement may be located on top of the controllers or on site in distance to the controllers. The VESA75 socket enables the fixing at different carrier systems. USB plugs for external memory or data transfer for update are integrated. The VNC-port allows the supervision or remote control by any PC of the connected network.

2 Installation and commissioning

The underneath of the monitor carries the port *COM2*: to get connected to the controller via interface cable (type AU110). Thereafter the unit has to be plugged to the delivered power supply and started by the rocker switch.



Just some seconds after start the monitor is operational. The referring program recognizes the connected MCS controllers by itself. The program changes to the status menu ready for operation.

3 Interlock by password


Certain functions are locked by password against non authorized operation. Therefore there are defined user levels, which enable increasing rights from user level 1 to user level 3. Each of these 3 levels is locked by its own individual password. The demand of the password will be asked in case of requirement (e.g. a certain value shall be changed) or by a click to the referring button with the key in the baseline of the display.



After successful enter of the password the referring activated user level will be indicated beside the key-symbol.

Passwords must consist of 4 numbers. To lock the unlocked system there has to be set a wrong password or the key button for password has to be clicked.

Please enter Password

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1	2	3	
4	5	6	
7	8	9	
	0	ESC	

4 Different zone views at **MCScontrol-lite**

4.1 Actual values [Overview / Act]

This is the default view that will be opened after recognition of the connected MCS controllers. The actual values of all zones will be indicated in a single screen. Up to 270 zones are possible with reduced sizes for increasing numbers of zones.

There is an indication for each zone in the array:

- The name of the zone („Zone 1“ ... „Zone 270“)

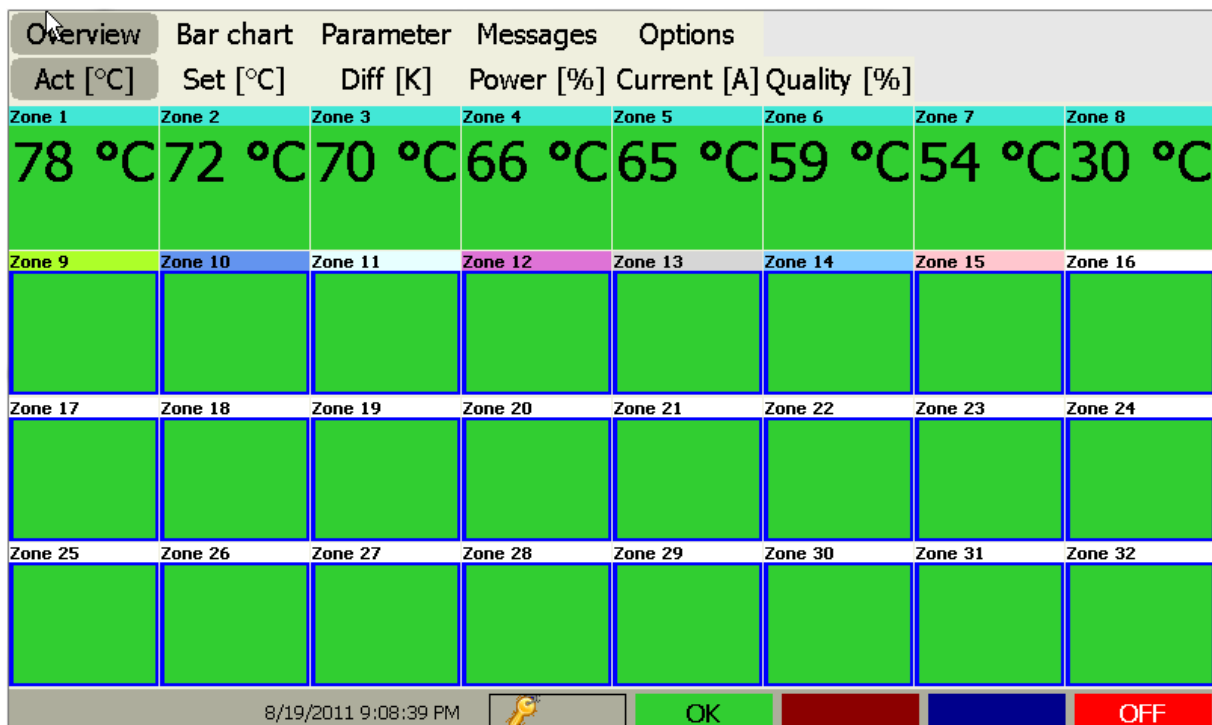
The name of the zone will be marked by colour, if the zone was defined as the member of a certain group. All zones of one group will be marked by the same colour. The example below shows the zones 1..8 as member of group 1.

- The process value

Depending on the sub-menu the actual value (*Act*), the setpoint (*Set*), the difference set-act (*Diff*), the output rate (*Power*), the current (*Current*) or the control quality (*Quality*) will be indicated.

The colour of the background of the process value changes in case of a warning to yellow or orange, in case of an alarm to red. The shortened form of the failure will alternate with the indication of the actual value.

The zone section may be framed by different colours. In case of manual mode the frame will be blue. The example below shows the zones 9..32 in manual mode. For standby mode the frame will be coloured in pink. In case of boost mode the frame will be red.

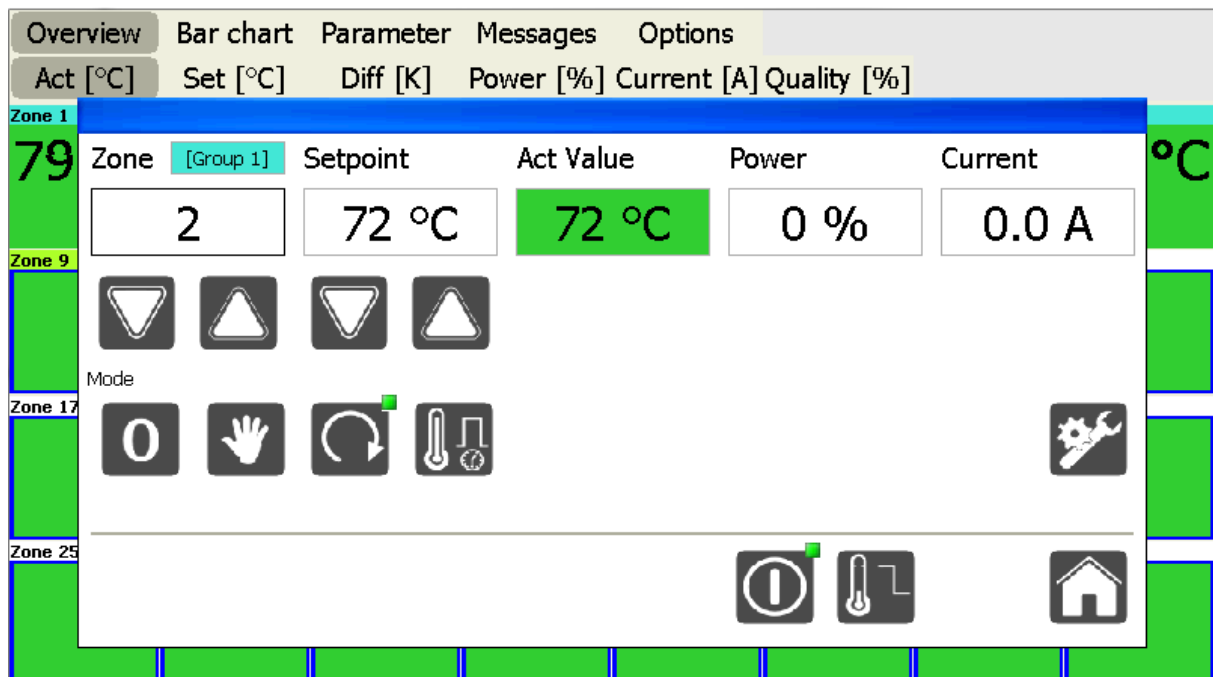


4.2 Faceplate

A click to a zone section opens the referring faceplate to operate the details of this zone.

This screen offers all relevant process values of the referring zone side by side. Below the zone number the zone may be selected by the up and down keys ▾ ▴.

The up and down keys ▾ ▴ below the setpoint enable the stepwise increase or decrease of the setpoint. The change of values requires the previous input of the referring password. For greater changes the value may be clicked to open a numerical input of the complete value. The „Mode“ keys 0 ▾ ▴ enable the change of the operation mode to „OFF“, „HAND“, „AUTO“ and „BOOST“. A small green indication with the referring key indicates the selected operation mode.



The „Tool“ button opens a list of all parameters of the referring zone.



This button turns all outputs of the connected MCS controller ON or OFF. It works synchronously to the identical key at the controller.



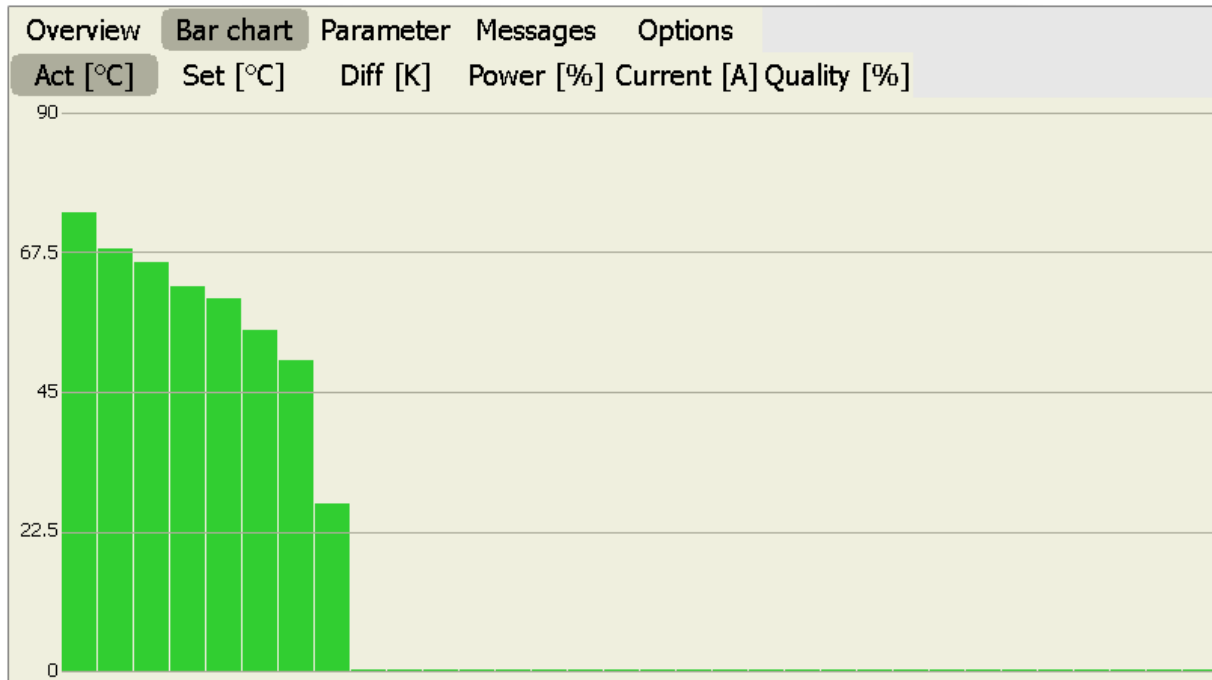
The „Home“ button closes the faceplate to return to the total overview of all zones.

4.3 Bar graph

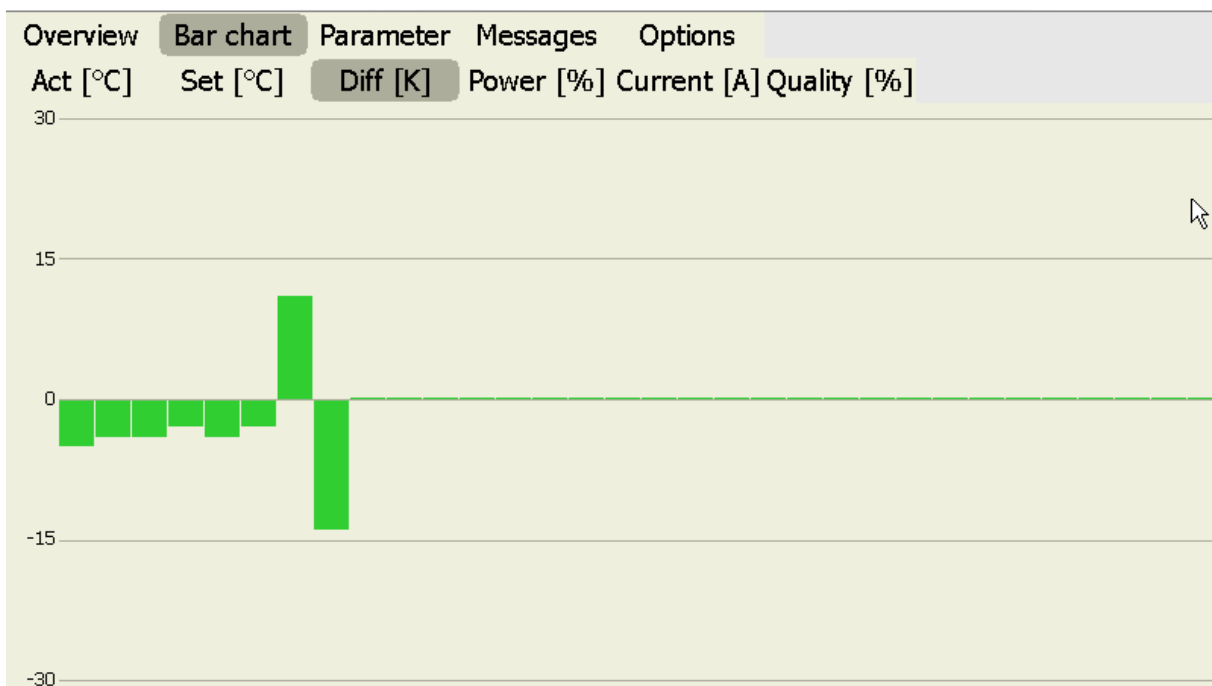
The menu „Bar chart“ indicates all zones via bar graph. The diagram scales automatically to optimise the display. Referring to the activated sub-menu the actual value (*Act*), the setpoint (*Set*), the difference set-act (*Diff*), the output rate (*Power*), the current (*Current*) or the control quality (*Quality*) will be indicated. The colour of the bar of a zone will change from green to yellow, orange or red in case of failure.

MCScontrol-lite

The click on a bar will open the referring faceplate of this zone. It enables the detailed operation of the zone.



The representation for the differences places the zero line in the mid of the screen to indicate positive as well as negative deviations.



4.4 Parameters

4.4.1 System parameters

Among Parameter / System all unit relevant settings are available. Grey marked values cannot get changed (ReadOnly).

The description of the indicated parameter refers to the actual manual of the controller.

Parameter	Value
AZ#	1102
Protokollversion	380
DIP-Schalter	0
Stand	26.07
Version	133
AZ-Nummer	1102
Zonenanzahl	32
Langsamste Zone	0
Programm-Nr	1
Boostzeit [sek]	60
Alarm-Verzoegerung [sek]	0
Adresse R5485	1
Baudrate R5485	2
Adresse CAN	1
CT-Band Verbund	25
Auto-Power	0
HH-Alarm	250
Klassifizierung	1
LC Grenzwert	120
LC Ueberwachung	3
TRIAC Ueberwachung	2
Einheit Temperatur	0
Bremse	2

A click on a parameter value opens a menu to set the referring value within its limits.

4.4.2 Parameters of the zones

Among Parameter / Zones all zone relevant settings are available. Grey marked values cannot get changed (ReadOnly). A click on a parameter value opens a menu to set the referring value within its limits.

The description of the indicated parameter refers to the actual manual of the controller.

Parameter	ZON 1	ZON 2	ZON 3	ZON 4	ZON 5	ZON 6	ZON 7	ZON 8	ZON 9	ZON 10	ZON 11	ZON 12	ZON 13	ZON 14
Setpoint	79	72	70	65	65	59	40	41	0	0	0	0	0	0
P01: L-Alarm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P02: H-Alarm	400	400	400	400	400	400	400	400	400	400	400	400	400	400
P03: DEV-Alarm Temperatur	15	15	15	15	15	15	15	15	15	15	15	15	15	15
P04: P-Band	5	5	5	5	5	5	5	5	5	5	5	5	5	5
P05: I-Anteil	800	800	800	800	800	800	800	800	800	800	800	800	800	800
P06: D-Anteil	160	160	160	160	160	160	160	160	160	160	160	160	160	160
P07: Klassifizierung	1	1	1	1	1	1	1	1	0	0	0	0	0	0
P08: Betriebsart	2	2	2	2	2	2	2	2	0	0	0	0	0	0
P09: Monitoring Zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P10: Alternative Zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P11: Softstart	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P12: Verbundaufheizung	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P13: Rampe Auf	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P14: Rampe Ab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P15: Stellgrad Maximum	100	100	100	100	100	100	100	100	100	100	100	100	100	100
P16: Stellgrad Nennwert	1	0	0	0	0	0	0	0	0	0	0	0	0	0
P17: Stellgrad Mittelwert	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P18: Stellgr.-Mittelw. Nenn.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P19: Stellgr.-Mittelw. Tol.	100	100	100	100	100	100	100	100	100	100	100	100	100	100
P20: Strom Nennwert	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P21: Strom Toleranz	0	0	0	0	0	0	0	0	5	5	5	5	5	5
P22: Diagnosezeit	0	0	0	0	0	0	0	0	0	0	0	0	0	0

A click on a parameter value opens a menu to set the referring value within its limits. The cursor keys enable to change the selected zone as well as the parameter. "OK" enters the changed values for transfer to the controller.

The screenshot shows the 'Parameter' tab selected in the interface. A pop-up menu is displayed for 'Zone 1', specifically for parameter 'P05: I-Anteil'. The current value is '800'. The menu includes a numeric keypad (0-9), 'ESC', 'DEL', and '+' keys. The 'OK' key is highlighted in green. The background shows the parameter table with 'P05: I-Anteil' highlighted in blue. At the bottom, there are 'Transmit' and 'Receive' buttons, a date '8/22/20', and a red 'OFF' button.

4.4.3 Load and store parameters on an USB-stick

From program version 1.0.4463 it is possible to load and store all settings and parameters on an external USB memory-stick. This way enables a great tool management. The functions are available by two new buttons „SAVE“ and „LOAD“ above the table view:

Overview	Bar chart	Parameter	Messages	Options	Groups									
System	Zones											Save	Load	
Parameter	ZON 1	ZON 2	ZON 3	ZON 4	ZON 5	ZON 6	ZON 7	ZON 8	ZON 9	ZON 10	ZON 11	ZON 12	ZON 13	ZON 14
Setpoint	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P01: L-Alarm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P02: H-Alarm	400	400	400	400	400	400	400	400	400	400	400	400	400	400
P03: DEV-Alarm Temperatur	15	15	15	15	15	15	15	15	15	15	15	15	15	15

The button „SAVE“ activates the storage. A filename has to be entered before the parameter values will be transferred to the plugged USB-stick.

The button „LOAD“ will only transfer the parameters from the USB-stick for indication in the table. These values can be checked before activation in the connected MCS controller.

The button „TRANSMIT“ on the left hand side of the foot line will transmit the parameters finally to the MCS controller. The button „RECEIVE“ refreshes the table referring to the actual parameters, if the values from the USB-stick might not be transmitted. Also the direct selection of another recipe from the USB-stick overwrites the table.

P18: Stellgr.-Mittelw. Nenn.	0	
P19: Stellgr.-Mittelw. Tol.	100	
P20: Strom Nennwert	0	
P21: Strom Toleranz	5	
P22: Diagnosezeit	0	
Transmit	Receive	18.04

4.5 Messages

Among „Messages“ the last 100 status messages are listed with date and time. The list may be deleted via user level 3.

The screenshot shows the 'Messages' tab in the MCScontrol-lite interface. The window has a menu bar with 'Overview', 'Bar chart', 'Parameter', 'Messages', and 'Options'. The main area contains a list of messages with a vertical scrollbar on the right. The messages are as follows:

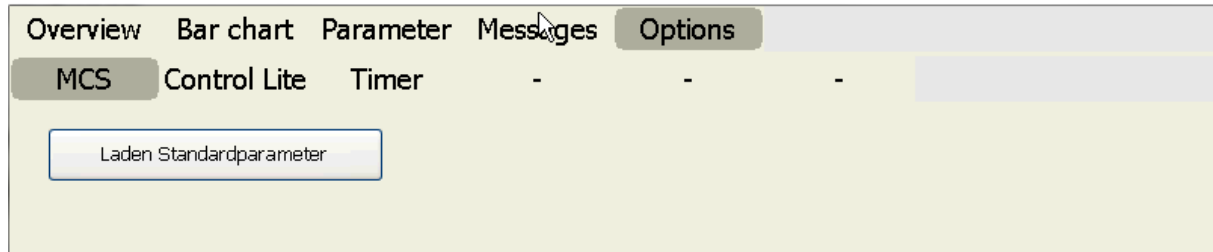
8/22/2011 5:51:11 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:12 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:14 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:15 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:17 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:19 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:22 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:23 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:30 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:31 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:33 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:35 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:37 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:38 PM :	Zone 8: DEV- --> OK
8/22/2011 5:51:41 PM :	Zone 8: OK --> DEV-
8/22/2011 5:51:42 PM :	Zone 8: DEV- --> OK
8/22/2011 5:55:29 PM :	COM Error
8/22/2011 7:13:19 PM :	COM O.K.

At the bottom of the window, there is a status bar showing the time '8/22/2011 8:05:51 PM', a key icon, and four colored buttons: 'OK' (green), a red button, a blue button, and 'OFF' (red).

5 Options

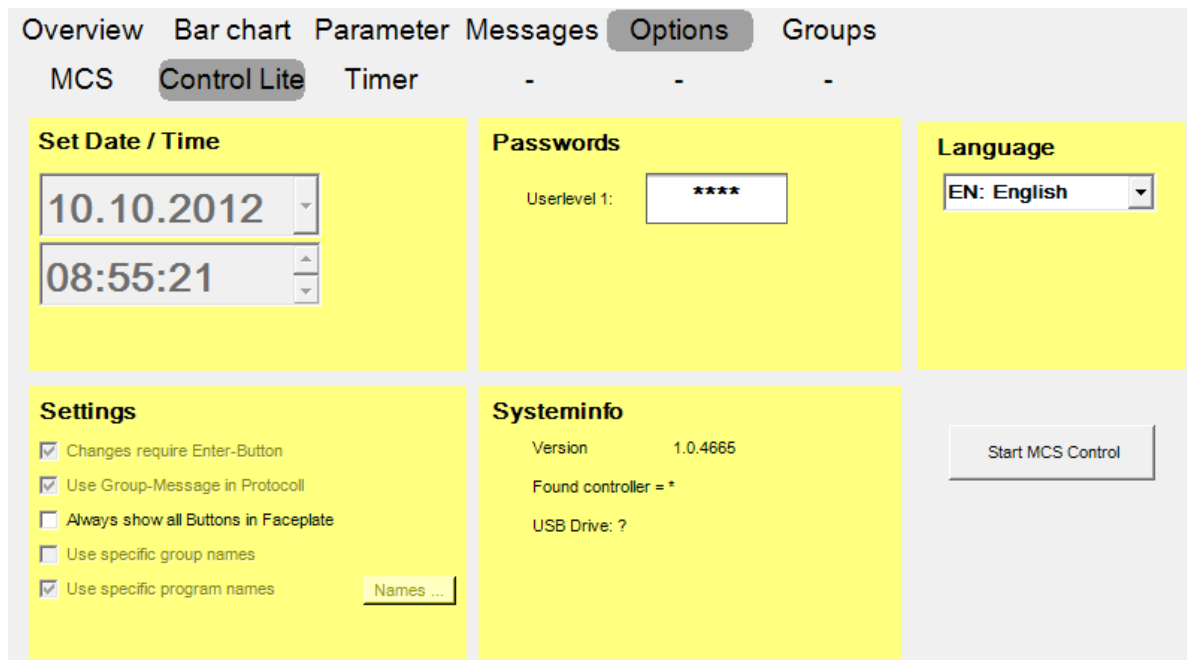
5.1 Options / MCS

The menu „Options / MCS“ enables optional settings of the connected MCS controller. Depending on the user level there are different options available. For description see manual of MCS.

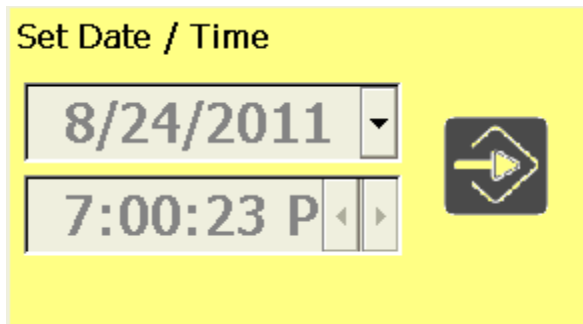



5.2 Options / **MCScontrol-lite**



This menu enables different settings for the display configuration:






5.2.1 Date / Time setting (from User level 3)



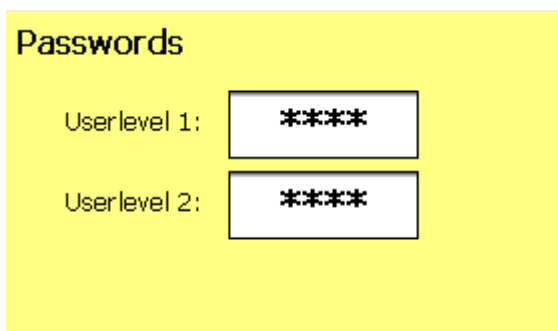
To change date and time press the button .

This enables the change. To change the date press the button . After the change of the date press the button  again.

To adjust the time select the required number by click (hour, minute or second) and change by the buttons  . The new setting has to be confirmed by the button .

5.2.2 Definition of passwords

The passwords are to define here. With these passwords the referring user level will get unlocked. The default passwords of **MCScontrol-lite** are „0000“ (no password) for level 1, „0022“ for level 2 and „2222“ for level 3. A higher level includes more rights for operation.

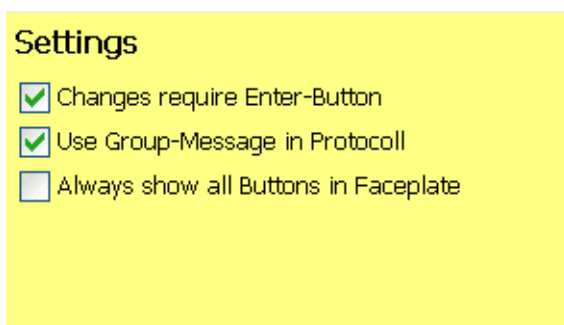


Passwords may only get changed, if a certain user level was unlocked before.


The example by the side shows, that there are no settings available in user level 2 to change the password of level 3.

New from version 1.0.4491: When password was set to 0000, there is no request of password further on (similar to an unlocked level). This setting should be well reasoned.

5.2.3 Settings



„Changes require Enter-Button“ (unlocked from user level 3)

This option activates the requirement to confirm all settings via faceplate by the  key. Otherwise the new value will be send after a short moment directly to the controller. This option is activated with the default settings.

„Use Group-Message in Protocol“(unlocked from user level 3)

This option may speed up the operation of complete groups of zones. The software version >=1.33 in MCS is the presupposition.

„Always show all Buttons in Faceplate“ The default settings suppress not required operation elements. So there are no setpoint buttons available in manual mode, as only the output rate should be operated. The activation of this option opens all buttons for operation. This is not activated under default settings.

5.2.4 Systeminfo

Systeminfo

Version 1.0.4248

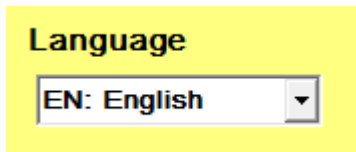
The actual version of software will be indicated here.

5.2.5 Language



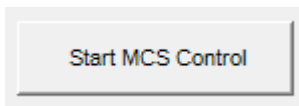
The display will be delivered in English language. There are up to three (from version 1.0.4611 up to four) different languages available.

The user language will be selected by a click to the referring option. A restart may follow automatically.



From version 1.0.4665 there are more than 4 languages available to select by a pulldown menu.

5.2.6 Start MCS Control Software (Option)




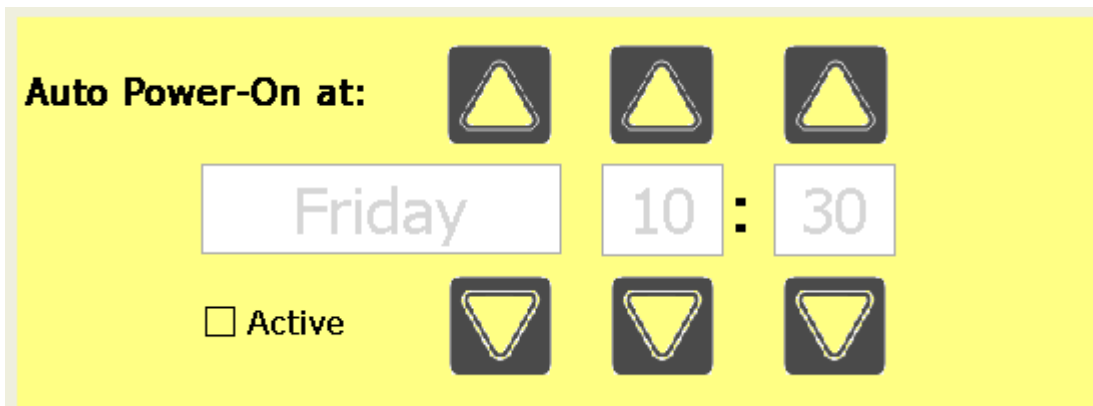
(from version 1.0.4633) This button will be available, if the program was installed to the 15" touch screen with the more extensive program "MCScontrol". The activation of this button changes from the operation via „MCS Control lite“ to „MCS Control“.

5.3 Timer

The menu "Options / Timer" opens the settings for the time switch, which may start the controller at a certain time. This shall enable the preparation of a heated tool for the next shift.

The Up- and Down-buttons enable the start-presetting for day and time. A click to the "Active" option starts the countdown.

The controller must be turned ON via  button in the faceplate to start the MCS controller with the required time.



6 Groups (graphic assembly of zones in groups of zones)

From program version 1.0.4463 the menu „GROUPS“ enables to assemble different zones in one of the 8 available groups of zones.

Changes of the group assembly leads to changes of the referring parameters and storage in the MCS controller. Default settings do not include selections of groups. The **MCScontrol-lite** presents the following picture.

Overview Bar chart Parameter Messages Options Groups											
No Group Group 1 Group 2 Group 3 Group 4 Group 5 Group 6 Group 7 Group 8											
Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 11	Zone 12
0	0	0	0	0	0	0	0	0	0	0	0
Zone 13	Zone 14	Zone 15	Zone 16	Zone 17	Zone 18	Zone 19	Zone 20	Zone 21	Zone 22	Zone 23	Zone 24
0	0	0	0	0	0	0	0	0	0	0	0
Zone 25	Zone 26	Zone 27	Zone 28	Zone 29	Zone 30	Zone 31	Zone 32	Zone 33	Zone 34	Zone 35	Zone 36
0	0	0	0	0	0	0	0	0	0	0	0

The No. of the referring group will be indicated below each zone (0=without group). The requested group has to be selected via sub-menu before assembling the zones (here group 1).

Overview Bar chart Parameter			
No Group Group 1 Group 2			
Zone 1	Zone 2	Zone 3	Zone 4
0	0	0	0

Thereafter the referring zones must be clicked to select these for this group. According to the request and installation there are 8 groups available to distribute the zones

Overview Bar chart Parameter Messages Options							
No Group Group 1 Group 2 Group 3 Group 4 Group 5							
Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
2	1	1	1	1	0	0	0
Zone 13	Zone 14	Zone 15	Zone 16	Zone 17	Zone 18	Zone 19	Zone 20
2	2	2	0	0	0	0	0
Zone 25	Zone 26	Zone 27	Zone 28	Zone 29	Zone 30	Zone 31	Zone 32
0	4	4	4	0	0	0	0
Zone 37	Zone 38	Zone 39	Zone 40	Zone 41	Zone 42	Zone 43	Zone 44
0	0	0	0	0	0	0	0

7 Failure messages

The failures, listed below, may be indicated zone wise in the faceplates, the total view or in the failure list. Reasons and hints are to find in the MCS manual.

Message	Colour	Signification
OK	Green	Zone is OK.
-L-	Red	Zone with low temperature
-H-	Red	Zone with high temperature
-E-	Red	Zone with broken sensor
-S-	Red	Zone with shorted sensor
DEV-	Yellow	Zone with negative deviation from setpoint
DEV+	Orange	Zone with positive deviation from setpoint
dI	Yellow	Heater current supervision
HiHi	Red	Zone with high temperature
SSR	Red	Zone with triac-alarm
LC	Red	Zone with leakage current alarm
IFu	Red	Zone with blasted fuse
dY	Yellow	Zone with deviation of output supervision
-U-	Red	Zone without control voltage
COM	Yellow	Disturbance on interface

The base line of the display shows the failure of highest priority in a coloured section beside the key symbol.

8 Software updates

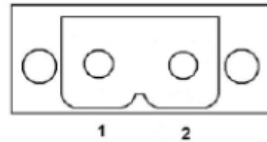
Update for the program are available via USB-stick. The display has to be restarted thereafter. Further information, how to prepare the stick, will be defined with the publication of the update.

9 Installation

9.1 Supply voltage



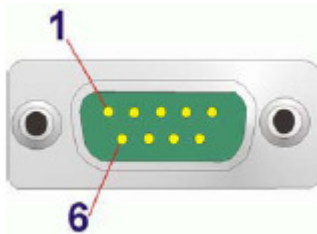
The display has to be supplied by 6..30V DC, either by the 2-pole terminal connector or by the circular connector 5,5 x 2,5 mm, to find underneath.



terminal 1 : + 6..30V DC
terminal 2 : GND

9.2 RS485 Bus-interface

COM2:



For the interface connection to the controllers there is a 9-pin D-SUB plug underneath, labelled **COM2**. The signals Rx/Tx- (at **PIN1**) and Rx/Tx+ (at **PIN2**) are required.

To connect a controller of Feller Engineering use Pin 1 at the display → Pin 3 at the controller and Pin 2 at the display → Pin 2 at the controller for wiring.

The wiring to the controllers requires a 2-wire screened cable. Matching cables with connectors are available in different length via accessory item **AU 110**.

9.3 Mounting in a cabinet



The cabinet mount requires a breakout of 214 mm x 126 mm . An optional set of clamps (item PC-000473) is available for fixing. These are to fit at the arrow marks on both the sides for comfortable mounting.

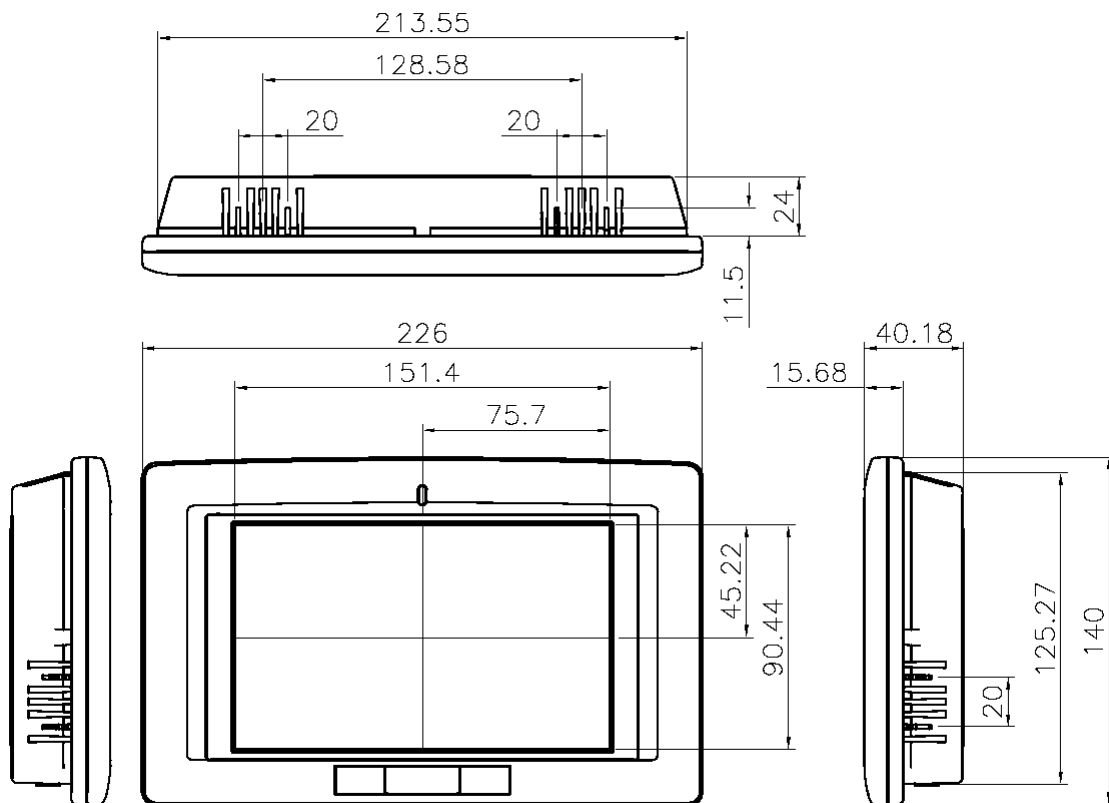
9.4 Mounting on the stand



Item PC-000471 is an available stand. The display has to be fixed by 4 added screws. It may be tilt within an horizontal angle of 50°.

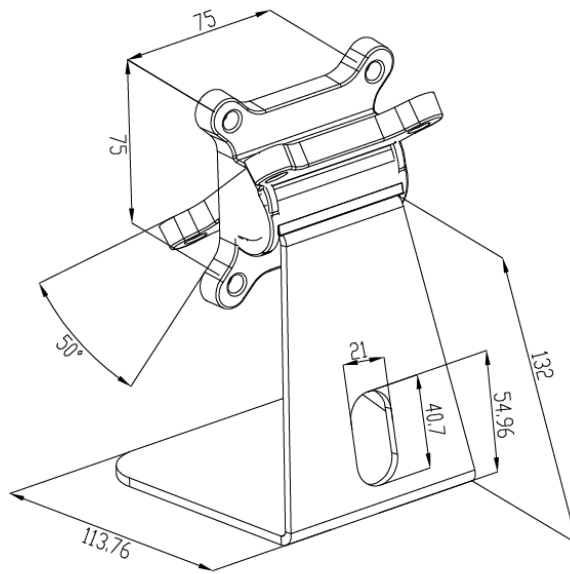
9.5 Dimensions

9.5.1 Display



All units in *mm*

9.5.2 Stand



All units in *mm*

10 Technical data

Display size	7"
Brightness	400 cd/m ²
Touch Screen	resistive 4-wire
Background light MTBF	50.000 hrs
Interfaces	2 x USB, 2 x LAN, RS232, RS485
Supply voltage	6..30 Volts DC; 8,5 Watts
Dimensions (B x H x T)	226 x 140 x 40
Operation temperature	-20 °C ... +60 °C
Protection class	IP64 (front side)
Weight	0,8 kg
Mounting	- VESA75-socket - with stand *) - with fixing clamps *) for cabinet breakout 214x126mm *) accessories in option
Operation system	WINDOWS CE5
Specials	Robust design without fan and harddrive