



Operating manual

for the web-based user interface **WEB**Season[®] for shock operation





Imprint

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1 SAFETY

- Carefully read this operating manual first to avoid malfunctions and any associated consequential damage!
- ► Retain this operating manual for later reference.
- Read other associated manuals and safety regulations prior to use.
- ► If you access Webseason via an external terminal device (e.g. tablet), the values on the external terminal device may be displayed delayed or corrupted. Check the values on the permanently installed web panel before you open the door.

1.1 Definitions

Web panel

The term "web panel" refers to the hardware for Webseason exclusively, which is included in the scope of delivery. Webseason can of course be used with various suitable hardware, but this is not referred to as "web panel" \rightarrow "Control unit" (page 7). The web panel is a multi-touch display that is permanently installed in the associated system.

Control unit

In this operating manual any hardware on which the Webseason user interface can be used is referred to as a control unit. This can be the permanently installed web panel, a mobile terminal device, or a desktop computer.

System

The term "system" is used in this operating manual to describe the product that you control using Webseason, e.g. a climatic test chamber, an industrial furnace or an engine test chamber. Every system has a separate operating manual.

Program

The term "program" indicates an automatic sequence of various operating specifications (nominal values, control values, digital channels). Manual operation stands in contrast to this.

Test specimen / chamber load

In this operating manual the term "test specimen / chamber load" refers to all on-site products, apparata and equipment that are situated within the system during the course of operation \rightarrow operating manual for the corresponding system.

Button

A button is an area on the user interface that triggers a function by touch.

Field

Unlike a button a field does not trigger a function by touch, but rather serves only to structure or to indicate information.

1.2 Symbols and notes

The symbols used in this operating manual have the following meanings:

- Items in a list are indicated by a dash.
- Instructions are indicated by a triangle.
- ✓ Consequences of an instruction are indicated with a check mark.
- → References are indicated by an arrow.

Symbol of gesture	Explanation	
£	Swiping to the left and right.	
إقيا	Swiping up and down.	
	Pulling index finger and thumb together or apart.	

Table 1-1 Explanation of gestures

This operating manual contains, commensurate to the risk, the following safety instructions and help information:



DANGER

Failure to comply with the directions results in death or severe injury.



WARNING

Failure to comply with the directions can result in severe injury.



CAUTION

Failure to comply with the directions can result in minor injury.

NOTICE

Failure to comply with the directions results in property damage.

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1.3 Correct use

Webseason is a web-based user interface for controlling the corresponding systems. Webseason is used with standard web browsers.

The hardware - a web panel - is installed in the associated system as standard. You operate the web panel by slightly touching, wiping, tapping or moving your finger. You can also use a compatible touch pen or gloves that are compatible with a multi-touch screen.

You can also use Webseason via a desktop computer or via mobile terminal equipment like a smartphone and tablet PC as an alternative to the integrated web panel.

You can execute the following actions with Webseason:

- Control, operation and monitoring of the corresponding system
- Recording of operating data
- Display of system and software information
- Maintenance tracking
- Management of users and user rights

1.4 Incorrect use

The following applications are incorrect and can result in personal injury and physical damage:

- Modifying or manipulating the system's software or hardware;
- operating the multi-touch screen with a glove that is not compatible with a multi-touch screen;
- operating the multi-touch screen with a pointed or sharp-edged object.

1.5 User qualification

Every user, including maintenance personnel, must be familiar with the operator's procedural instructions and operating instructions. Moreover, users must be familiar with the information from the corresponding user's guide and operating manual.

1.6 Screenshots

The screenshots in this manual show by way of example how Webseason is used on an integrated multi-touch web panel. The application is responsive, i.e. the user interface display can vary on other terminal equipment.

1.7 Service hotline

Should you have questions for which there are no answers in this operating manual, you can get support at the telephone number +491805666556.

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2 INITIAL OPERATION

To put the web panel into operation for the first time make sure to start with that the system you want to control the web panel is ready for use \rightarrow operating manual for the system.

2.1 Activating the web panel for the first time

The web panel does not have a separate On/Off switch.

- ► To activate the web panel set the system's master switch to »I«.
- ✓ The controller boots for a few minutes.
- ✓ An LED on the web panel flashes green while booting.
- ✓ Immediately the LED goes out the system is ready for operation.
- √ The Basic configuration menu appears.

2.2 Basic configuration of [] menu



Fig. 2-1 Basic configuration of [] menu

The menu **Basic configuration** is opened for initial operation. In this menu, you configure the following:

- the language,
- the time and the date,
- system specific settings,
- the serial interface,
- the network connection for external communication.

You execute standard actions in the **Basic configuration** menu using the following buttons:

Button	Designation	Explanation
Restore default settings	Restore default settings ¹⁾	Resets the values to the factory setting provided the factory settings are programmed.
0	Back	Switches to the previous dialog.
0	Next	Switches to the next dialog.

Table 2-1 Buttons for standard actions

2.2.1 Selecting the language

- Tap on the language required → Fig. 2-1 »Basic configuration of [] menu« (page 12).
- ► Tap on Next.
- ✓ The Date and time submenu appears.

2.2.2 Setting the date and time

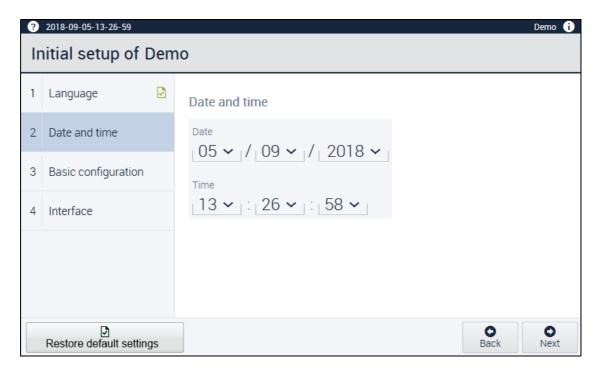


Fig. 2-2 Menu Basic configuration of - Date and time

- ► Set the current time and date:
 - ► Tap on the value that you want to change.
 - ✓ A dropdown menu opens up.
 - Select the value required.
- ► Set the current time:
 - ► Tap on the value that you want to change.
 - ✓ A dropdown menu opens up.
 - Select the value required.
- ► Once the entry is completed, tap on **Next**.
- √ The Basic configuration submenu appears.

2.2.3 Setting the basic configuration

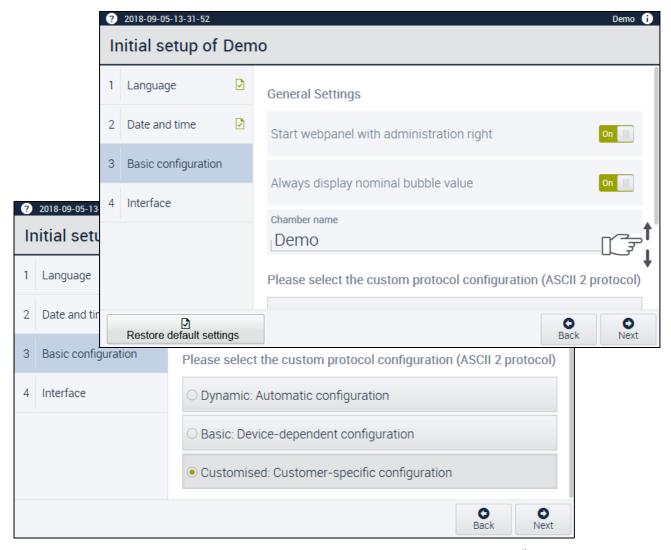


Fig. 2-3 Menu Basic configuration of - Basic configuration 1)

- ► Activate Start WebPanel with administration rights.
- ✓ All rights are activated on the local web panel. Anyone can use the Webseason functions on the integrated web panel absent login without restrictions as a user observer → "User groups' rights" (page 19).
- ✓ When you deactivate the function, the panel similarly starts absent login as an observer. But
 in that case the user observer cannot change any values.

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- ► Activate Always display nominal bubble value.
- ✓ In the control variables display the nominal value is displayed on an ongoing basis → Fig. 2-4 »Display with nominal bubble value« (page 15).
- ✓ When you deactivate the function, the nominal value is displayed subsequently only if it is
 outside the tolerance levels set.



Fig. 2-4 Display with nominal bubble value



Fig. 2-5 Display without nominal bubble value

► Under **Chamber name** enter an unambiguous designation for the system, e.g. the unit number → *rating plate for the system*.

Values view in shock program

By default a shock program is edited in the **Shock** view (shock program editor). You can set whether the classic views for systems without shock operation are additionally available for editing a shock program as well:

- On: Shock programs can be edited in the Table, Chart, Shock and Values view. This
 function involves additional settings and is appropriate for very experienced users only.
- Off: Shock programs can be edited in the Chart and Shock view.

2.2.4 Configuring the interfaces

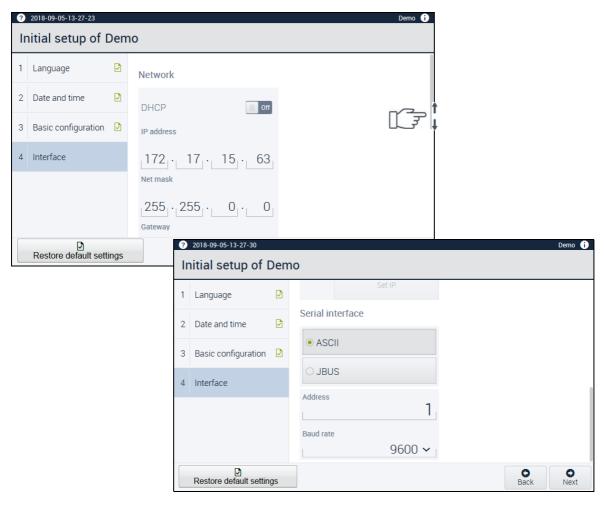


Fig. 2-6 Basic configuration of menu - interface



NOTICE

Impairment of network operation due to improper configuration

If networking on the LAN conflicts with other network users may occur when applying the communication paths and addresses (e.g. double connections).

- Have networking configured by your network administrator.
- ► Have the interfaces configured by the user group administrator only.

ASCII / JBUS1)

► Select the interface protocol corresponding to the external PC.

Address¹⁾

If, for example, you use several external PCs, you have to assign unique addresses (in the **Address** field) so that the data are not overwritten or disturbed.

► Have an address input by your network administrator.

Baud rate¹⁾

With baud rate the so-called modulation rate on the telecommunication equipment is involved.

► Have the baud rate input by your network administrator.

Entering the IP address manually

- ► Have the IP address for the system with which Webseason is to communicate input by the network administrator.
- ► Have the subnet mask and the standard gateway input by the network administrator.
- ► Tap on Set IP.

Assigning the IP address automatically

- ► If the network supports this, you can assign the IP address automatically
 - → consult the network administrator.
- ► Activate the **DHCP** button for this purpose.

2.3 Creating the first user

Prerequisite:

- Every configuration for initial operation is completed.
- You are logged in as administrator.
- ► Create the employees who are supposed to operate **WEB**Season[®]:
 - ► In the **SETTINGS** menu tap on **User administration** → *Fig. 3-19* »**SETTINGS User** administration menu« (page 47).
 - ► Tap on **New user**.
 - ✓ The Add new user dialog appears.
 - ► Enter the user's full name in the **Name** field. The full name is visible to the administrator only.
 - ► Enter a user name. The **User name** is displayed on login and is visible to others.
 - Specify a temporary password and notify the employee. He or she must set his or her own secret password.
 - ✓ Immediately the new user logs in for the first time, Webseason prompts him/her to change his/her password.
 - ► Enter further specifications according to → Fig. 3-20 »Dialog Add new user« (page 48) and → Fig. 3-21 »Dialog Edit user« (page 48).

Factory-set user settings

There are factory-set user groups.

User group	User name	Password
Administrator	admin	admin
UserHigh	userhigh	userhigh
UserLow	userlow	userlow
Observer	N	o login

Table 2-2 Factory-set user names and passwords

User groups' rights

Function	UserLow	UserHigh	Administrator	ServiceGuest	ReadOnlyUser	Observer ^a
Reading actual values	х	х	х	х	х	х
Starting manual mode	х	х	х	х		(x)
Stopping manual mode	x	x	х	х		(x)
Starting program	х	х	х	х		(x)
Stopping program	х	х	х	х		(x)
Creating / editing programs		х	х	х		(x)
Acknowledging error messages		х	х	х		(x)
Specifying nominal values for control variables		х	х	х		(x)
Changing language of the user interface	x	x	х	х		(x)
Setting limit values		х	х	х		(x)
Setting external communication with controller		х	х	х		(x)
Setting user administration		x	х	х		(x)
Setting interfaces		х	х	х		(x)
Setting date and time		х	х	х		(x)
Manage users			х	х		(x)
Using Service menu				x		

Table 2-3 User groups' rights

a. Whether the Observer user group receives every right that is in brackets absent login, set one in the **Basic configuration - Start WebPanel with administration rights** menu.

2.4 Showing the basic configuration on the next start

To set that the **Basic configuration** menu appears on every start, proceed as follows:

- ► Select **SETTINGS** menu.
- ► Select **Basic configuration** in the side bar.
- ► Activate Show basic configuration on next start.

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3 DESCRIPTION OF THE USER INTERFACE

3.1 LED status display on the web panel

An LED on the web panel indicates varied statuses. The status display can only be read on the web panel.

LED status	Meaning		
0#	The web panel and the system are disabled.		
Off	The web panel and the system are in stand-by mode.		
Flashing green	The system's controller (PLC) and the web panel are booting.		
Green	The operation is running without problems.		
Flashing red	There is no communication between the web panel and the system.		
Red	An error has occurred.		

Table 3-1 LED status display

3.2 Navigation panes overview

3.2.1 User interface on the web panel



Fig. 3-1 Navigation on the web panel overview

- 1 Header bar
- 2 Menu bar
- 3 Side bar
- 4 Working area
- 5 Footer bar

3.2.2 User interface on the smartphone

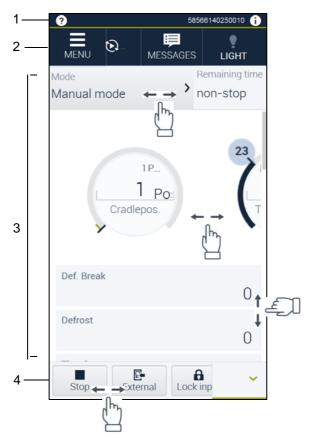


Fig. 3-2 Navigation on the smartphone overview

- 1 Header bar
- 2 Menu bar
- 3 Working area
- 4 Footer bar

The main differences to the user interface on the web panel are the following:

- Menu items are displayed via a menu button as a dropdown menu.
- Scrolling and swiping are required in virtually every section in order to view and to use every section and function.
- The various views in the footer bar are displayed via a button as a dropdown menu.

3.2.3 Header bar

The header bar displays general system and software information.

Field	Description		
19.12.2016 - 16:18:2	ndicates date and time.		
Test 🚺	The name of the system is on the left. The name is freely selectable.		
	The icon opens the System information dialog with information about the system and the software.		
0	Access to the operating manual		

Table 3-2 Header bar

3.2.4 Menu bar

The menu bar is the highest navigation level. Further navigation levels are located in the menus on the menu bar. The following buttons are located on the menu bar:

Button		Designation	Fordersking		
passive	active	Designation	Explanation		
©	●	STATUS/ RUNNING	Opens the STATUS/RUNNING start menu. In this menu you have a live overview of the status of the process values available. The button changes according to whether the system is in ongoing operation or in standby mode \rightarrow 3.4 »Menu STATUS/RUNNING « (page 26).		
ŤĮ.	<u> </u>	MODE	Opens the MODE menu. In this menu you control the operation. → 3.5 » MODE menu« (page 34)		
貝		MESSAGES	Opens the MESSAGES menu. The following messages are displayed in this dialog: information (grey), warnings (yellow) und errors (red) → 3.6 » MESSAGES menu« (page 40).		
•	•	SETTINGS	Opens the SETTINGS menu. In this menu you specify general and also operation-specific settings → 3.7 » SETTINGS menu« (page 42).		
X	*	MAINTENANCE	Opens the MAINTENANCE menu. The operating hours counted and the maintenance requirements are displayed in this dialog → 3.8 » MAINTENANCE menu« (page 61).		
==	=	CAMERA	Opens the menu for image transmission from the cameras connected		
2	-	USER	Opens a dropdown menu for changing the password and for logging off.		
•	*	LIGHT	Turns the light on and off. The icon indicates whether the light is turned on or off.		

Table 3-3 Menu bar

3.2.5 Side bar

Further submenus are displayed in the side bar subject to the menu selected.

3.2.6 Footer bar

The footer bar is not available in every menu. Depending on the menu, various buttons are displayed in the footer bar. The buttons are described in the respective segments for the menus.

3.3 Control elements overview

The functions and elements that you operate the software with are described in this chapter.

Control element				
passive	active	Designation	Explanation	
		Switch	Switches the function on or off.	
	~	Dropdown menu	Opens a dropdown menu.	
0	• I	Options button	Activates one of several options.	
		Input box	Opens an input box or a dialog.	
	x _	Delete entry	Deletes the content of an input box.	
-	•	Digital channel On/Off	Activates or deactivates a customer channel or a function.	
	✓	Checkbox	Selects or deselects a setting.	
	<u>+</u>	Minimum Maximum	Opens a dialog for entering a minimum or maximum value.	
	O	Edit	Clears the edit mode.	
	±	Sign	Changes the sign.	
	2	Chamber change	Changes the chamber position in Webseason or the position of the cradle (in manual mode only).	

Table 3-4 Control elements

3.4 Menu STATUS/RUNNING

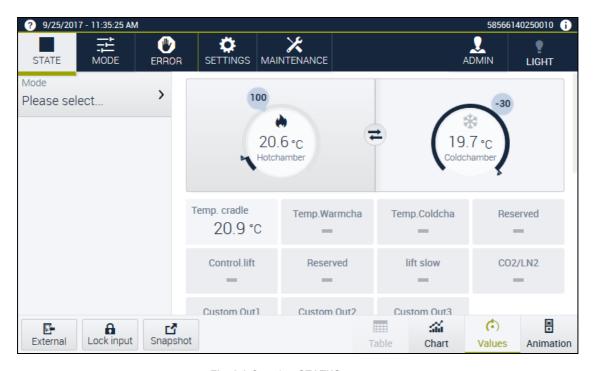


Fig. 3-3 Overview STATUS menu



Fig. 3-4 Overview RUNNING menu - Manual mode and Program mode

In the **STATUS**/**RUNNING** menu you have a live overview of the status of the process values available. For this menu select between the following working area views;

- → »Values view« (page 29)
- → »Chart view« (page 30)
- → »Table view« (page 32)
- → »Animation view« (page 33)

3.4.1 STATUS/RUNNING menu - side bar

The side bar differs according to whether the operation is running (**RUNNING**) or not (**STATUS**). In the **STATUS/RUNNING** menu the following buttons and fields are displayed in the side bar.

Button/field designation	Explanation			
In the STATUS menu only				
Please select	Opens the MODE menu. You start the operation there → 3.5 » MODE menu« (page 34).			
Disabled by	The user who locked the input mode for other users.			
In the RUNNING menu only				
MODE	The name of the program running and information about the operation running.			
	The energy saving mode is active.			
Remaining time	The remaining runtime of the test running.			
Program run-throughs:	In program mode only: The number of the profile runs already executed / total number of profile runs.			
Step	In program mode only: The current program step.			
Loop	In program mode only: The number of the loops in the program already executed / total number of loops in the program.			
Step remaining time	In program mode only: The remaining runtime of the current program step.			
Start time	In program mode only: The time at which the program was started.			
End time	In program mode only: The time at which the program is finished.			
Started by	The user who started the program.			
Disabled by	The user who locked the input mode for other users.			

Table 3-5 Menu STATUS/RUNNING - side bar

3.4.2 STATUS/RUNNING menu - footer bar

In the STATUS/RUNNING menu you execute the following standard actions in the footer bar:

Button	Designation	Explanation
E=	External	Switches from the Internal access type to the External access type. With the External access type external operating systems, e.g. the Simpati software, can communicate with the system. Operation via Webseason is locked. The External icon is shown in the header bar and the button switches to the Internal designation.
₽	Internal	Switches from the External access type to the Internal access type. Following this, the system is operated via Webseason. No other icon is shown in the header bar because the internal mode is commensurate with the normal state. The switch-over can only be made via Webseason.
ď	Snapshot	Opens the printer menu. This function is only available in the desktop browser version.
Ъ	Enable input	Unlocks the input mode for other users.
A	Block input	Locks the input mode for other users.
	Table	Displays the information in the working area as a table. The view is only available while a program is running.
áú	Chart	Displays the information in the working area as a chart.
(c)	Values	Displays the information in the working area as values.
B	Animation	Displays the information in the working area as animation.

Table 3-6 STATUS/RUNNING menu - footer bar

3.4.3 STATUS/RUNNING menu - working area

Values view

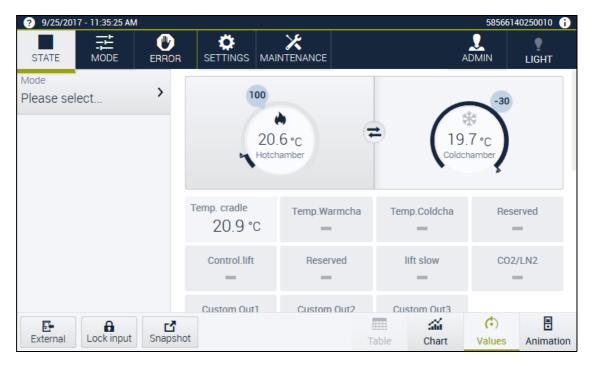


Fig. 3-5 STATUS menu - view Values

In this view you get a quick visual overview of the current operation's actual values and parameters.



Fig. 3-6 Actual value and nominal value display

- 1 Nominal value
- 2 Actual value

Show or hide the nominal bubble value via the **SETTINGS** – **Basic configuration** – **Always display nominal bubble value** menu.

Chart view



Fig. 3-7 RUNNING menu - Chart in program mode view

- 1 Nominal temperature value
- 2 Actual temperature value

In the **Chart** view the nominal values and actual values are displayed in a line chart. You can configure the display and monitor and analyse the value trend with the following buttons.

Button	Designation	Explanation
•	Sliding handle	Shifts the ruler assistant along the time axis to read the values of a particular point in time.
•	Settings	Opens the Trend chart settings dialog.
53	Full screen	Switches to the full screen mode and back.
Î	Pause display	Pauses the display of the chronological trend.
•	Resume display	Resumes the display of the chronological trend. With this the current state, plus the values recorded in the interim, are redisplayed.

Table 3-7 Control elements of the Chart view

Zooming with the scroll wheel

If you are operating Webseason with the aid of a mouse, zoom to the axes as follows:

- Y axis (vertical): scroll wheel
- X axis (horizontal): shift key û and scroll wheel

Adjusting the Chart view

Prerequisite: The Chart view is active.

- ► To adjust the **Chart** view display tap 🌣 .
- √ The Trend chart settings dialog opens.

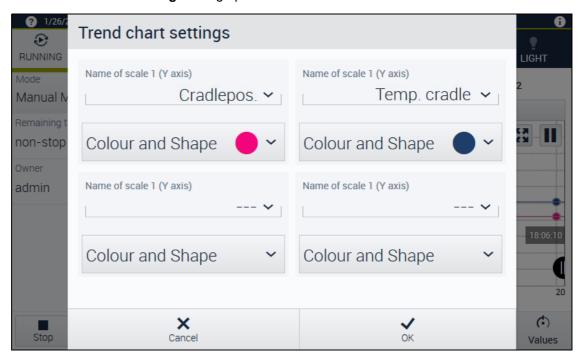


Fig. 3-8 RUNNING menu - Chart view - Trend chart settings

You can specify the display, the colour and the shape of the process variables displayed in this dialog.

Table view

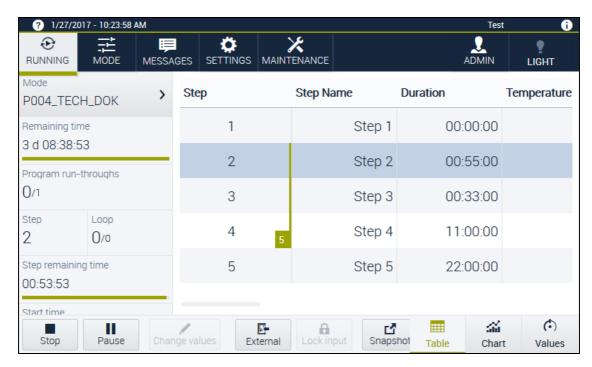


Fig. 3-9 STATUS menu - Table view

The view is only available in the **STATUS/RUNNING** menu while a program is running. In this view the nominal values and actual values of the program currently running are displayed in table form.

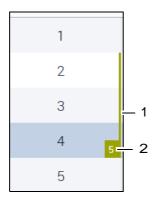


Fig. 3-10 Loops display

- 1 Loop
- 2 Number of loop repeats

Animation view

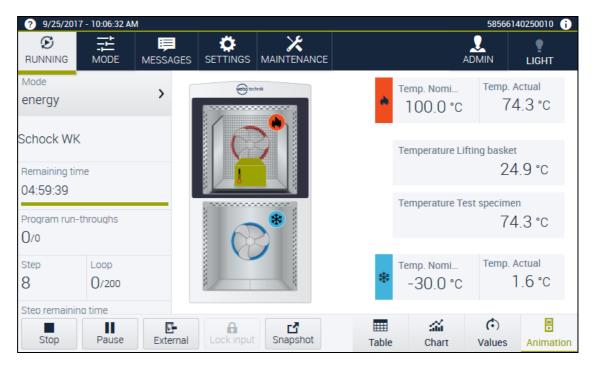


Fig. 3-11 STATUS menu - Animation view

3.5 MODE menu

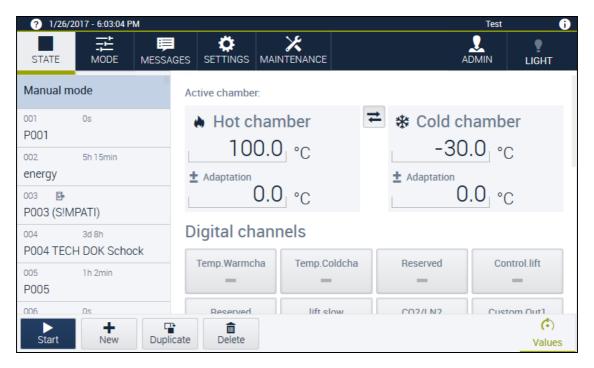


Fig. 3-12 MODE menu

In this menu you start, stop and edit the operation. You get to the **MODE** menu either via the menu bar or via the **STATUS/RUNNING** menu's side bar. In the working area you can set the control variables and control values and activate extra functions and digital channels. You can select between manual mode and programs via the side bar.

3.5.1 MODE menu - side bar

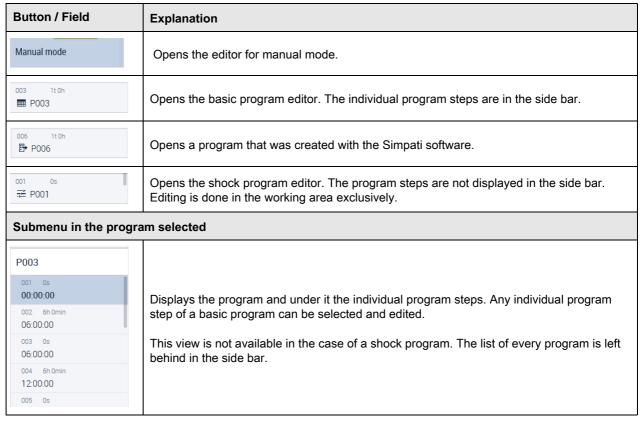


Table 3-8 MODE menu - side bar

3.5.2 MODE menu - footer bar

You execute standard actions in the **MODE** menu using the following buttons:

Button	Designation	Explanation		
Manual mode				
+	New	The button is displayed only if manual mode is selected. Create a new program. The new program is displayed in the working area in the next free program slot.		
	Сору	The button is displayed only if manual mode is selected. Opens the Copy program dialog.		
Î	Delete	The button is displayed only if manual mode is selected. Opens the Delete program dialog.		
•	Start	Starts manual mode and opens a reminder about the temperature limit controller. To protect the test specimen / chamber load a minimum and maximum limit for temperature has to be set on the temperature limit controller. OK confirms the start of the operation.		
Program submenu				
	Editing a program	The button is displayed only if a program is selected. It opens the program editor → »« (page 38).		
•	Start	Starts program mode and opens the Start dialog. To protect the test specimen / chamber load a minimum and maximum limit for temperature has to be set on the temperature limit controller. OK confirms the start.		
	Convert program	Converts a shock program into a basic program.		

Table 3-9 MODE menu - footer bar

3.5.3 Program editor for New shock program

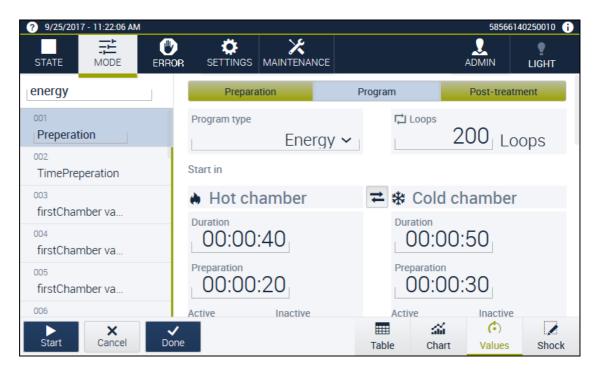


Fig. 3-13 MODE menu – Program editor for New shock program

Button	Designation	Explanation	
Preparation	Preparation inactive	Opens the register for the Preparation phase. This phase is used to pretemper the start chamber in order to prevent the loss of temperature and time	
Preparation	Preparation active	during the first program cycle with test specimen → 6.2.1 »Editing the »Preparation « register « (page 74).	
Program	Program	Opens the register for shock operation → 6.2.2 »Editing the »Program « register « (page 75).	
Post-treatment	Aftertreatment inactive	Opens the register for the Aftertreatment phase. Subsequent to a program, you can as an option aftertreat the test specimen with a temperature needed	
Post-treatment	Aftertreatment active	to bring it to room temperature, for example, and remove it more easily as a result → 6.2.3 »Editing the »Aftertreatment « register « (page 76).	
1	Chamber change	Changes the chamber position in the user interface. The chamber on the left side of the start chamber.	
¢)	Values	This view is deactivated by default → 3.7.6 »Basic configuration « (page 52). In the Values view experienced users can edit any individual program step of a shock program in detail. Very good knowledge of the functionality the shock operation and of WEBSeason® is required for this purpose.	

Table 3-10 Program editor for New shock program

3.5 MODE menu

Button	Designation	Explanation
	Shock	By default a shock program is edited in the Shock view. A new shock program includes 20 program steps by default, which are already named and categorised according to the phases of the shock operation. The program steps cannot be renamed or edited. The program steps are populated instead with values and settings from the working area.
	Table	This view is deactivated by default → 3.7.6 »Basic configuration « (page 52). Displays the information in the working area as a table.
áú	Chart	Displays the information in the working area as a chart.

Table 3-10 Program editor for New shock program

3.5.4 Program editor for New basic program

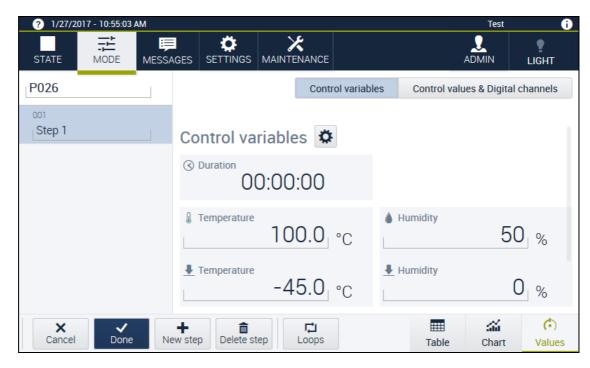


Fig. 3-14 MODE menu – editing program - view Values

In this view you can edit a basic program.

Button	Designation	Explanation
×	Cancel	Quits the edit mode without saving.
~	Done	Saves and closes the entry.
+	New step	Adds a new step after the step selected.
â	Delete step	Deletes the highlighted step.
Ţ	Loops	Opens the Generate loops dialog. → 6.3.9 »Creating a loop« (page 84).
	Table	Opens the tabular view of the program.
áú	Chart	Shows the program as a line chart.

Table 3-11 Program editor for New basic program

3.6 MESSAGES menu

Button	Designation	Explanation	
(*)	Values	Opens the program in the values view. You switch between the Control variables and Control values & digital channels parameters using the tabs on the right above the working area.	
	Control variables	Opens the register for editing the nominal values for the particular control variables.	
	Control values & digital channels	Opens the register for editing the control values and activating or deactivating the digital channels.	

Table 3-11 Program editor for New basic program

3.6 MESSAGES menu

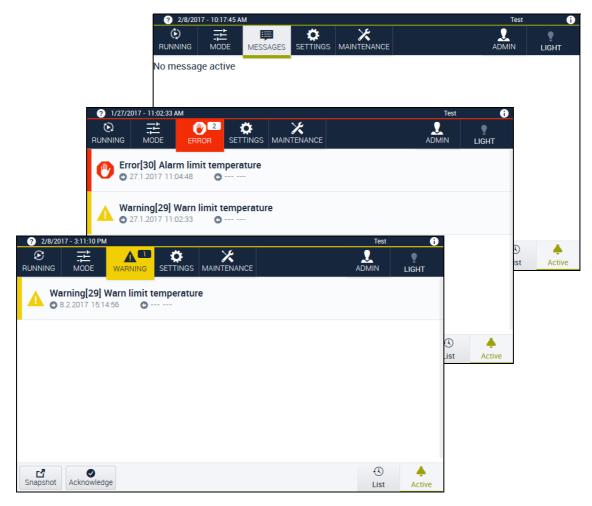


Fig. 3-15 MESSAGES/Error/Warning/Information menu

The following messages are displayed in this menu: errors (red), warnings (yellow) and information (grey). In the menu bar, the colour and the designation of the interface changes subject to the type of message. The number of messages is in the menu bar as well. The effects of the particular classification differ subject to the system. The causes and implications of the messages that are possible are, therefore, described in the \rightarrow operating manual for the system.

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3.6.1 MESSAGES menu - footer bar

Button	Designation	Explanation		
ď	Snapshot	Button is available in the desktop application only. Opens the printer menu for generating a hard copy printout of the screen.		
•	Acknowledge	Acknowledges the active messages, provided the error was corrected.		
•	Active	Displays the active messages.		
•	List	Displays message history. You can constrain this view with the following filter criteria: - Type of message: All, Error, Warning, Information. - Period of time displayed: Hour, Day, Week, Month.		

Table 3-12 MESSAGES menu - footer bar

3.7 SETTINGS menu

In this menu you specify general and also operation-specific settings.

3.7.1 Language

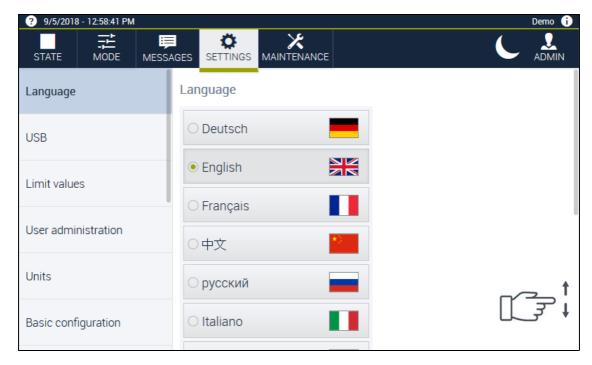


Fig. 3-16 SETTINGS – Language menu

In this dialog you select the system language.

3.7.2 USB

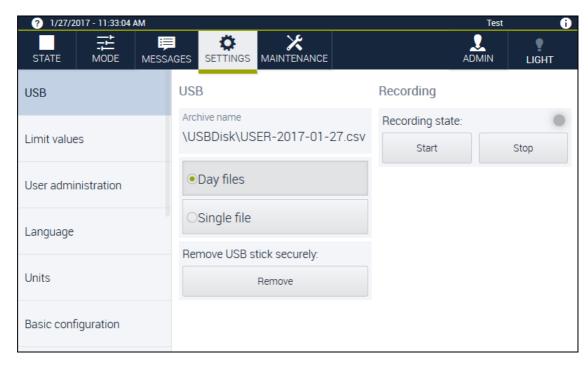


Fig. 3-17 SETTINGS - USB menu

In this dialog you configure data recording to a USB stick that is connected, start and stop the recording and remove the USB stick securely.

Prerequisites:

- The USB stick must have at least 1 megabyte of free memory.
- The USB stick must be formatted with the FAT16 or FAT32 file system.
- The USB stick must be formatted as a hard drive and must not be bootable.



NOTICE

Security risk and data loss due to malware

USB sticks may contain malware (e.g. viruses). Malware can damage the controller or cause data loss or data theft.

Only use USB sticks that have been checked for viruses.



NOTICE

Failure due to USB sticks

Improper handling of a USB stick can cause data loss or the USB stick to fail.

- ► Before you remove the USB stick tap on the **Remove USB stick securely**: button.
- Only use USB sticks that are non-bootable.

The following fields are displayed in the working area:

Range	Field	Explanation
	Archive name	Displays the archive name under which the file recorded is stored on the USB stick (format: USER-YYYY-MM-DD.csv).
USB	Options: - Day files - Single file	Day files: A new file is generated daily from 0 hour.Single file: The record is saved in a file in its entirety.
	Remove USB stick securely:	Remove the USB stick without data loss.
Recording	Recording status:	Indicator light: - Green: Active. The recording process was started successfully. The process values configured are saved 1x per minute. - Red: Not active. The recording was finished, or an error has occurred.
	- Start - Stop	Starts and stops the data recording.

Table 3-13 Working area in the SETTINGS - USB menu

a. If the USB stick is not recognised, is not writeable or is full when the recording begins, the indicator light does not turn green. The cause is displayed under MESSAGES. If less than 1 megabyte of memory is available on the USB stick, the indicator light lights up red. The message »Out of USB memory« is displayed in the message list. The recording process is stopped.

3.7.3 Limit values

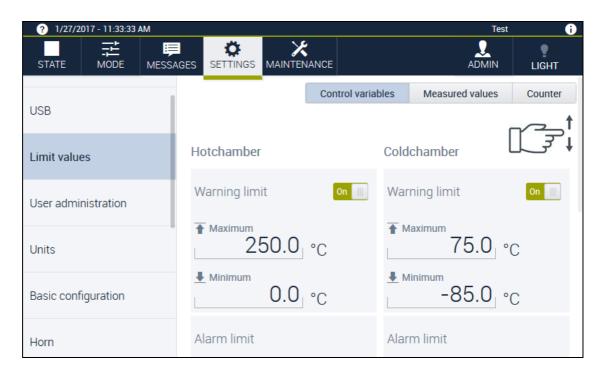


Fig. 3-18 SETTINGS menu - Limit values - Control variables

You set the limit values in this dialog. The system's controller is equipped with a software-based limiter for the **Control variables**, **Measured values** and **Counter** parameters. There are warning limits and alarm limits for every parameter. The display of warning limits, alarm limits and their tolerances is configuration dependent. Set the limit values individually subject to the test specimen / chamber load or other operation requirements. The limiter triggers warning messages and alarm messages when the respective warning limits and alarm limits are exceeded.

NOTICE

Overriding the warning limits

You can specify warning limits in the **SETTINGS** menu and in the basic program editor. You specify the alarm limits in the **SETTINGS** menu only. The settings for warning limits in the **MODE** menu override the settings for the warning limits from the **SETTINGS** menu.

You switch between the **Control variables**, **Measured values** and **Counter** parameters using the tabs on the right above the working area. The following fields are displayed in the working area:

Range	Field	Explanation	
	On/Off	On: Activates monitoring of warning limits by the software.	
Warning limit	Minimum	Opens the dialog for setting the control variable's minimum warning limit. On exceeding the minimum warning limits, a warning message is displayed. Example: Limit value: 0°C Exceeding the limit value: -5°C	
	Maximum	Opens the dialog for setting the control variable's maximum warning limit. On exceeding the maximum warning limits, a warning message is displayed. Example: Limit value: 100°C Exceeding the limit value: 110°C	
Alarm limit	Minimum	Opens the dialog for setting the control variable's minimum alarm limit. On exceeding the alarm limits, the operation is stopped. An error message is displayed. Limit value: 0°C Exceeding the limit value: -5°C	
	Maximum	Opens the dialog for setting the control variable's maximum alarm limit. On exceeding the alarm limits, the operation is stopped. An error message is displayed. Example: Limit value: 100°C Exceeding the limit value: 110°C	
Tolerance	On/Off	The tolerance band specifies a permitted deviation of the actual value from the nominal value. On: If the actual value exceeds or falls below the tolerances, an message appears on the control unit. Off: Deviation of the actual values from the nominal values is not monitored.	
	Minimum	Opens the dialog for setting the lower tolerance for the particular control variable. On exceeding the tolerance, the operation is stopped. A message is displayed. Example of exceeding the lower tolerance: Tolerance: 2°C Nominal value: 20°C Actual value: 17°C	
	Maximum	Opens the dialog for setting the upper tolerance for the particular control variable. On exceeding the tolerance, the operation is stopped. A message is displayed. Example of exceeding the upper tolerance: Tolerance: 2°C Nominal value: 20°C Actual value: 23°C	

Table 3-14 Working area in the SETTINGS – Limit values menu

3.7.4 User administration

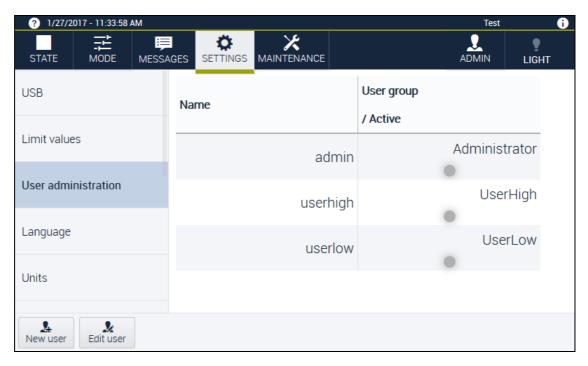


Fig. 3-19 SETTINGS - User administration menu

The user administration is visible to the user group **administrator** only. In this dialog the user group **administrator** can add users, edit, activate users and manage user rights.

User administration - Footer

You execute standard actions in the **User administration** dialog using the following buttons:

Button	Designation	Explanation	
<u>.</u>	New user	Opens the Add new user dialog for creating additional users for the user groups. → <i>»Adding or editing new user«</i> (page 48)	
2 2	Edit user	Opens the Edit user dialog for changing SETTINGS for individual users. → <i>»Adding or editing new user«</i> (page 48)	

Table 3-15 User administration - footer

Adding or editing new user

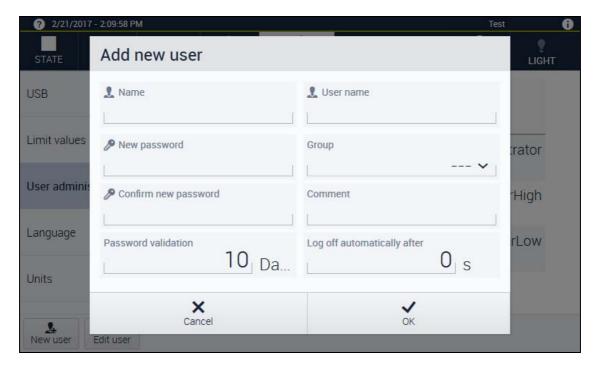


Fig. 3-20 Dialog Add new user

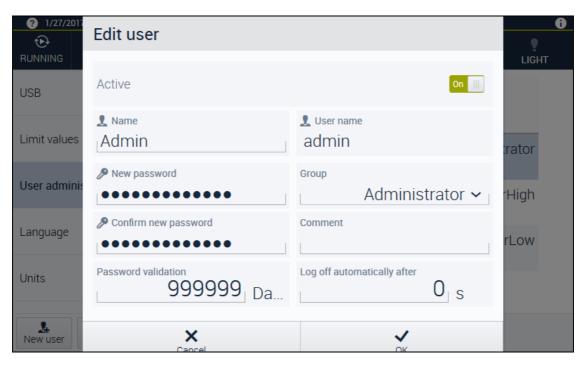


Fig. 3-21 Dialog Edit user

3.7 SETTINGS menu

Dialog	Field	Explanation	
Edit user	Active	Activates or deactivates the user. - On: The user is permitted access. - Off: The user is denied access; he cannot log himself in.	
	Name	The user's real name, e.g. John Doe. The name is visible in user administration only to the administrator and to the user him/ herself.	
	New password Confirm new password	Entry of a new secure password.	
	User name	The name with which the user logs in and which is also visible to other users, e.g. in the event of a stoppage.	
Add new user/ Edit user	Group	The selection of one of the three user groups → "User groups' rights" (page 50).	
	Comment	An optional comment for the user. It is visible to the administrator only.	
	Password validity	The password validity duration in days. Once the time has elapsed, the user needs to specify a new password in order to be able to log in.	
	Log off automatically after	The time after which the user logged in is automatically logged out. 0 = No automatic logout	

Table 3-16 Dialog Add new user

NOTICE

Misuse of data due to insecure password

In case of insecure passwords there is a risk that other persons may learn your password and misuse your data.

- Create a password from at least 4 characters.
- ► For greater password security use combinations consisting of lower case letters, upper case letters, special characters and numbers.
- Make sure you remember the passwords for the respective users. Only the administrator can reset a password.

User groups' rights

There are three predefined user groups. The following functions can be executed by the user groups:

Function	UserLow	UserHigh	Administrator	ServiceGuest	ReadOnlyUser	Observer ^a
Reading actual values	х	х	х	х	х	х
Starting manual mode	x	x	х	х		(x)
Stopping manual mode	x	x	х	х		(x)
Starting program	x	x	х	х		(x)
Stopping program	x	x	х	х		(x)
Creating / editing programs		х	х	х		(x)
Acknowledging error messages		x	х	х		(x)
Specifying nominal values for control variables		х	х	х		(x)
Changing language of the user interface	х	х	х	х		(x)
Setting limit values		х	х	х		(x)
Setting external communication with controller		х	х	х		(x)
Setting user administration		х	х	х		(x)
Setting interfaces		х	х	х		(x)
Setting date and time		х	х	х		(x)
Manage users			х	х		(x)
Using Service menu				x		

a. Whether the Observer user group receives every right that is in brackets absent login, set one in the Basic configuration - Start WebPanel with administration rights menu.

3.7.5 Units

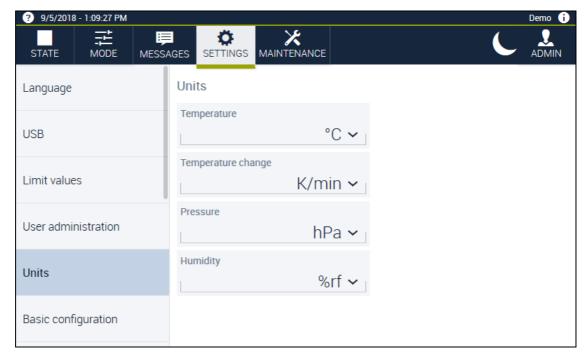


Fig. 3-22 SETTINGS - Units menu

In this dialog you specify which units the process values are displayed in. Depending on the programming, the units may differ from the units described here.

Range	Variable (examples)	Explanation
	Temperature ¹⁾	Set unit in which the temperature is to be displayed.
Units	Temperature change ¹⁾	Set unit in which the temperature change is to be displayed.
	Pressure ¹⁾	Set unit in which the pressure is to be displayed.
	Moisture ¹⁾	Set unit in which the humidity is to be displayed.

Table 3-17 Working area in the SETTINGS – Units menu

3.7.6 Basic configuration

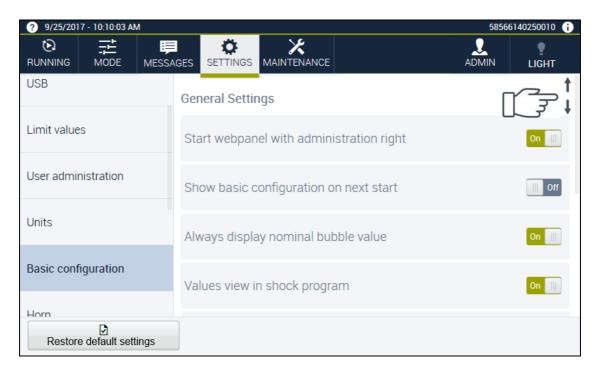


Fig. 3-23 SETTINGS - Basic configuration menu

In this dialog you configure the settings specific to the system. The dialog display is configuration dependent.

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Range	Field	Explanation
Show basic configuration start General settings Always dis	Start WebPanel with administration rights	 On: Each user has every access right and can use the Webseason functions on the integrated web panel absent login without restrictions → "User groups' rights" (page 50). Off: Webseason similarly starts absent login. But users cannot change any values. To change values, log in → 4.1 "Logging in on the web panel" (page 67).
	Show basic configuration on next start	Activates on next start the wizard for basic configuration during startup → 2 »Initial operation« (page 11).
	Always display nominal bubble value	Activates / deactivates the nominal bubble value in the STATUS / RUNNING menu. - On: Nominal bubble value is displayed on a ongoing basis. - Off: Nominal bubble value is displayed only if the actual value deviates from the nominal value.
	Chamber name	Enter a name for the associated system.
	Values view in shock program	 On: Shock programs can be edited in the Table, Chart, Shock and Values view. This function involves additional settings, and is appropriate for very experienced users only. Off: Shock programs can be edited in the Chart and Shock view.
Configuration ¹⁾	Fields vary subject to configuration → operating manual for the system	
Restore default settings	Restore default settings ¹⁾	Resets the values to the factory setting provided the factory settings are programmed.

Table 3-18 Working area in the SETTINGS – Basic configuration menu

3.7.7 Horn

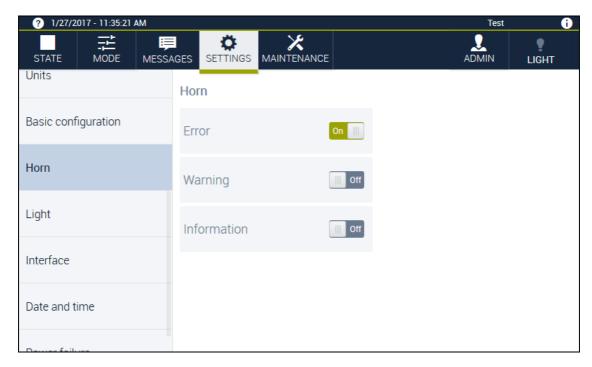


Fig. 3-24 SETTINGS - Horn menu

In this dialog you set the audible signal in the event of **MESSAGES** \rightarrow 3.6 »**MESSAGES** menu« (page 40).

Range	Field	Explanation
Horn	Error	On: An audible signal sounds in the event of an error message.
	Warning	On: An audible signal sounds in the event of a warning message.
	Information	On: An audible signal sounds in the event of a information message.

Table 3-19 Working area in the SETTINGS – Horn menu

3.7.8 Light

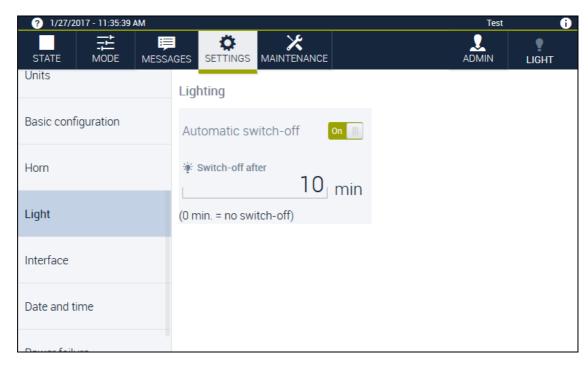


Fig. 3-25 SETTINGS – Light menu

In this dialog you set the lighting to switch off automatically.

Range	Field	Explanation
Lighting	Automatic switch-off	On: Clears the Switch-off after field and enables the the lighting to switch off automatically.
	Switch-off after	Opens a dialog for entering the interval of time after which the lighting switches off automatically.

Table 3-20 Working area in the SETTINGS - Light menu

3.7.9 Interface

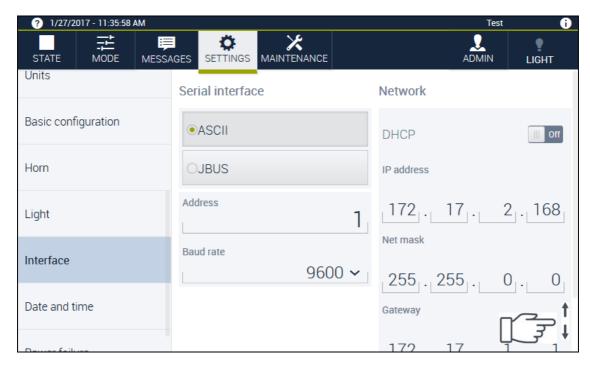


Fig. 3-26 SETTINGS - Interface menu

In this dialog you specify the settings for the serial interface and the network connection for external communication with the device's controller

→ 2.2.4 »Configuring the interfaces« (page 16).



NOTICE

Impairment of network operation due to improper configuration

If networking on the LAN conflicts with other network users may occur when applying the communication paths and addresses (e.g. double connections).

The interfaces can be configured by the user group **administrator** only.

- Have your network administrator set up your network.
- ► In order that Webseason in a network can communicate with the system controller, have the network administrator enter the system's IP-address.
- ► If the device is controlled via RS 232, an IP address does not have to be assigned.

3.7 SETTINGS menu

Range	Field	Explanation
Serial interface	Options: - ASCII - JBUS	Selection of the interface protocol.
	Address	Opens a dialog for entering the BUS address.
	Baud rate	Selection of the baud rate (possible values: 9600 - 115200).
IP Network	DHCP	DHCP service (Dynamic Host Configuration Protocol). On: Activates the automatic assignment of the IP address.
	IP address	Manual entry of the IP address if DHCP is not active. An IP address of the 192.168.121.xxx range is not permitted.
	Net mask	Manual entry of the subnetwork mask if DHCP is not active.
	Gateway	Manual entry of the standard gateway if DHCP is not active.
	Set IP	Confirms the entry.

Table 3-21 Working area in the SETTINGS – Interface menu

3.7.10 Date and time

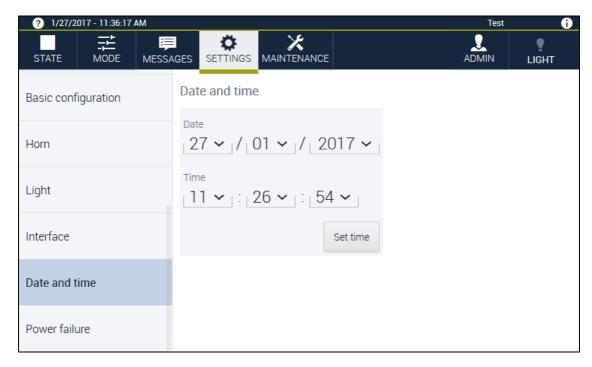


Fig. 3-27 SETTINGS - Date and time menu

You set the time and the date in this dialog. The following fields are displayed in the working area:

Range	Field	Explanation
Date and time	Date	Selection of day, month, year.
	Time	Selection of hour, minutes, seconds.
	Set time	Confirms the entry.

Table 3-22 Working area in the SETTINGS – Date and time menu

3.7.11 Power failure

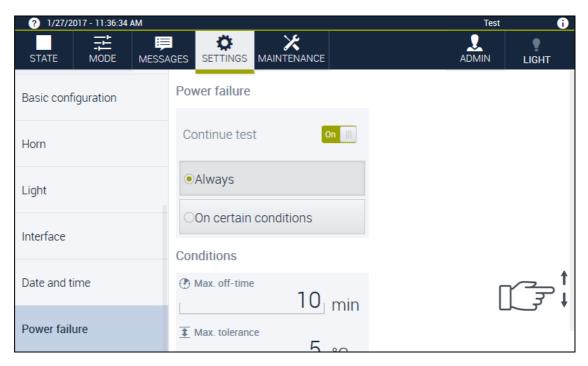


Fig. 3-28 SETTINGS - Power failure menu

In this dialog you specify whether and under which prerequisites operation is resumed after a power failure.

Range	Field	Explanation
Power failure	Continue test	On: Clears the following options: - Always: The operation is always resumed after a power failure. - Under following conditions: Clears the input fields for the conditions for resumption after a power failure.
Conditions	Max. off-time	Opens the dialog for entering the maximum mains failure time once the operation is resumed. If power is restored within the defined maximum mains failure time following a power failure, operation is resumed at the point where it was interrupted.
	Max. tolerance	Opens a dialog for entering the maximum difference between actual value and nominal value of the temperature after the power failure. On exceeding the maximum difference permitted, the operation is stopped. If the difference is within the tolerance defined, the operation is resumed.

Table 3-23 Working area in the SETTINGS – Power failure menu

3.7.12 Camera

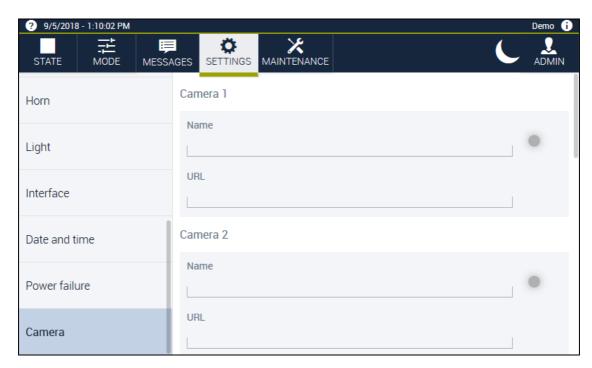


Fig. 3-29 SETTINGS menu – camera

In this dialog you link a camera to Webseason.

Range	Field	Explanation
CAMERA 1	Name	Enter a name for the camera.
	URL	Enter the URL for the camera.

Table 3-24 Working area in the SETTINGS menu – camera

3.8 MAINTENANCE menu

3.8.1 Maintenance

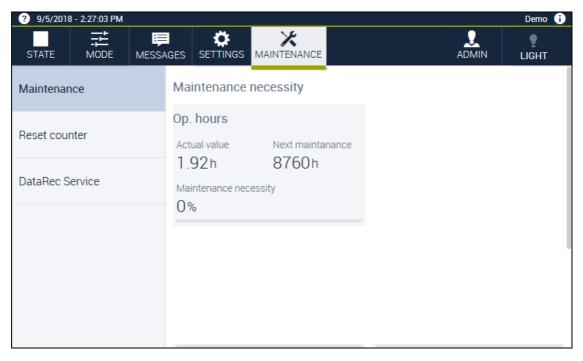


Fig. 3-30 MAINTENANCE menu

The maintenance information is shown in this dialog. The green bar shows the maintenance requirement in terms of colour.

Range	Field	Explanation
Maintenance requirement	Operating hrs	Actual value of the operating hours counted.
	Maintenance requirement	Maintenance requirement in %. If the maintenance requirement is in the range from 60% - 80%, we recommend that you arrange a maintenance appointment with our service center.
	Next maintenance	Time until the next maintenance.

Table 3-25 Working area in the MAINTENANCE menu

3.8.2 Reset counter

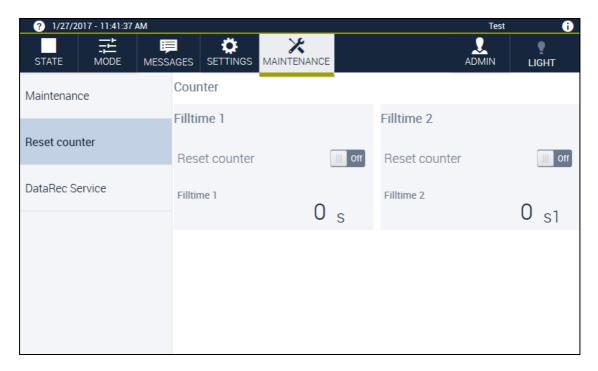


Fig. 3-31 MAINTENANCE - Reset counter menu

Range	Field	Explanation
Running-in time 1 ¹⁾ (example)	Reset counter	Reset the counter value to 0, if available.
	Running-in time 1 ¹⁾	Current value of the counter

Table 3-26 Working area in the MAINTENANCE - Reset counter menu

3.8.3 DataRec SERVICE

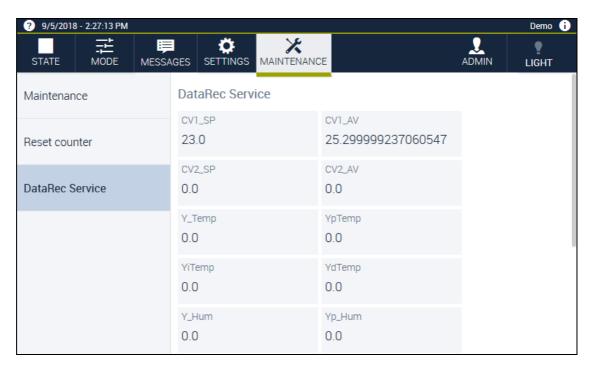


Fig. 3-32 MAINTENANCE menu – DataRec SERVICE

The field shows the status information of the system variables. The field is intended for the service center and trained maintenance personnel.

3.9 CAMERA menu

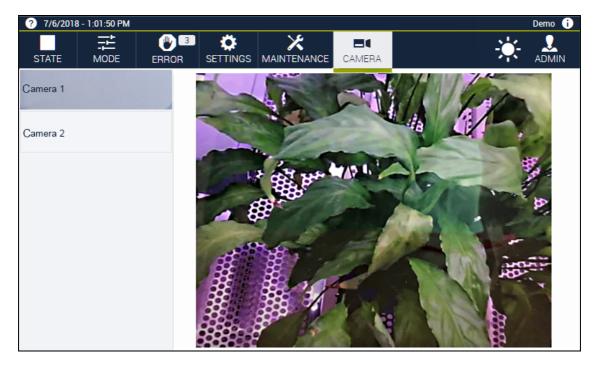


Fig. 3-33 CAMERA menu

In this menu you view the image transmission from the cameras connected. In the side bar you select the camera required.

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3.10 Service menu

3.10.1 Setup

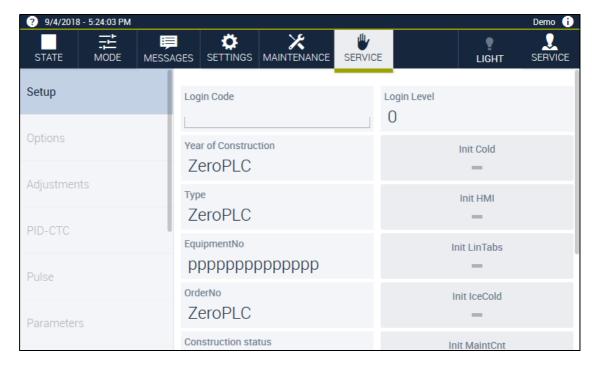


Fig. 3-34 Service menu

The field may only be used under the service center's guidance.

3.10.2 IO test

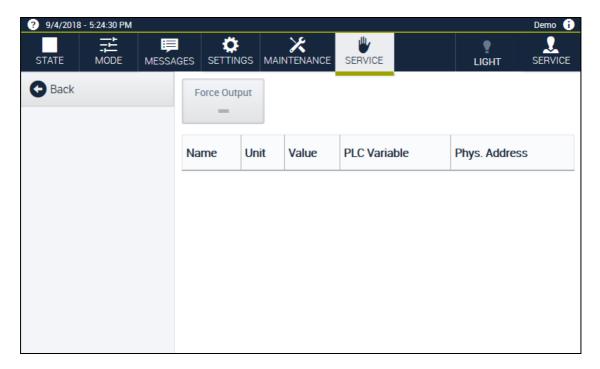


Fig. 3-35 Service - IO test menu

You see an overview of every input / output value. The field may only be used under the service center's guidance.

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4 STARTUP

To start up the web panel, proceed as follows:

- ► Take every action to start up the associated system → operating manual for the system.
- ► Set the master switch of the associated system to »I«.
- ✓ The controller and the web panel boot for a few minutes.
- ✓ The LED on the web panel flashes green while booting.
- ✓ Immediately the LED goes out the web panel is ready for operation.
- ✓ The web panel opens in the STATUS menu without the user having logged in.

4.1 Logging in on the web panel

During startup, Webseason opens at the web panel in the **STATUS** menu. A login is not required. Depending on the settings, the logged-in user has either administrator rights, or he can only read and not change any values. You can make the setting under \rightarrow *Fig. 3-23 »* **SETTINGS – Basic configuration menu«** (page 52) in the **Start WebPanel with administration rights** field.

If you would still like to log in at the web panel, proceed as follows:

- Select the Login button.
- ✓ The Login dialog opens.
- ► Enter your own access data.
- ► Confirm with **OK**.

4.2 Access to Webseason via external browser

Prerequisite:

- Your network is connected to the system's Ethernet interface.
- To use a mobile terminal device (e.g. a smartphone), the terminal device must be connected to the WLAN.
- Your system's IP address is entered on the web panel → Fig. 3-26 »SETTINGS Interface menu« (page 56).
- ► Start the Internet browser at the terminal device and enter the IP address of the system which you would like to access via Webseason in the address bar.

If you log in via a browser other than the integrated web panel, it is necessary to log in every time.

- ► Enter your **User name** → *Table 2-2 »Factory-set user names and passwords«* (page 18).
- ► Enter your password.



CAUTION

Risk of injury

If you access Webseason via a browser, the operating states may be displayed delayed by the browser. As a result, unexpected heat / cold may escape when the door is opened, which might injure you.

► Check the current operating state on the integrated web panel before you open the door.

4.3 Changing users

If a user is already logged in on the system, log the user out and log in with you own access data:

- ► Select the _____ button in the menu bar.
- ✓ A dropdown menu opens up.
- Select the Logout button.
- ✓ The Login dialog opens.
- ✓ No user is logged in.
- ► Enter your own access data.
- ► Confirm with **OK**.

5 MANUAL MODE

Webseason distinguishes between two operating modes (**MODE**): manual mode and program mode.

In manual mode specify just one value each per control variable and also just one state for all other parameters for the duration required. If you want to change the values, you have to overwrite the old values in each case.

In program mode you create a program consisting of as may program steps as you like. Specify one value per control variable for every program step.

5.1 Specifying software limit values

The controller is equipped with a software-based limiter for control variables. The limiter triggers warning messages and alarm messages when the respective warning limits and alarm limits are exceeded.

Specify warning limits and alarm limits for you control variables prior to every operation.

- Select the SETTINGS menu.
- ► Select the **Limit values** button in the side bar.
- Specify alarm and warning limits for every control variable, measured value and counter available and if necessary define tolerances.

5.2 Setting the temperature limit controller

To protect the test specimen / chamber load against thermal overstressing, the system is equipped with a temperature limit controller independent of the software. ¹⁾ The operation is stopped when the temperature exceeds or drops below a temperature limit.

- ► Take the position of the temperature limit controller from the → operating manual for the system.
- Adjust the limit values on the temperature limit controller to the test specimen/chamber load, prior to every operation.

5.3 Setting up manual mode

Prerequisite:

- The temperature limit controller is set.
- The software temperature limits are set.

Procedure:

- ► Select the **MODE** button in the menu bar.
- ► Select the **Manual mode** button in the side bar.
- ✓ The nominal values of the previous manual operation are displayed in the working area.

5.3.1 Specifying nominal values for the cold chamber and the hot chamber

- ► Select the Cold chamber button.
- ✓ The Cold chamber dialog opens.
- ► Enter a nominal temperature value.
- Confirm with OK.
- ✓ The dialog is closed.
- Repeat the procedure for the Hot chamber.
- ✓ The temperatures for the respective chambers are defined.

5.3.2 Specifying a value for adjustment

You can specify a nominal adjustment value in order to accelerate the change in tempering when the chamber is changed. To do so, enter a desired value in the **Adaptation** field. The values entered here are added to the nominal values in the active and inactive shock phase, which accelerates the heating or cooling. This adjusted nominal value is maintained until the temperature on the lifting basket temperature sensor has reached a definable tolerance range (relative to the active nominal value). The nominal values themselves are not changed.

- Select the Adaptation button.
- Enter a desired value.
- ► Confirm with **OK**.
- ✓ The dialog is closed.
- ► Repeat the procedure for the **Hot chamber**.
- ✓ The values for the relative nominal adjustment value for the respective chambers are defined.

5.3.3 Specify start chamber

Prerequisite:

→ 5.3.1 »Specifying nominal values for the cold chamber and the hot chamber« (page 70)

Procedure:

The chamber on the left side is the start chamber.

- ► To change the position of the chambers select **=**.
- ✓ The cradle moves to the new position.
- ✓ After approx. 10 sec. the position of the start chamber changes on the screen.

5.3.4 Setting control values

Prerequisite:

- The MODE menu is selected.
- Manual mode is selected.

Procedure:

- Select a control value, e.g. fan¹⁾.
- ✓ The Fan¹⁾ dialog opens.
- ► Enter new value.
- ► Confirm with **OK**.
- ► Repeat the steps from this example for the other control values.

5.3.5 Activating digital channels

Prerequisite:

- The MODE menu is selected.
- Manual mode is selected.

Procedure:

- ► In the **Digital channels** section, select the button for the respective digital channel.
- ✓ The digital channel is activated. The display changes from inactive
 to active
 ...

5.4 Starting operation

Prerequisite:

- The software limiter's limit values are set.
- The temperature limit controller is set.
- Manual mode is selected.
- Nominal values, control values, digital channels are set.
- The MODE menu is selected.

Procedure:

- ► Select the **Start** button.
- Confirm the temperature limit controller reminder with OK.
- ✓ The operation is started. The RUNNING state is shown in the menu bar.

5.5 Changing values while an operation is running

In manual mode the values can also be changed while an operation is running.

- ► Select the MODE menu.
- ► Change values.
- ✓ The values changed are immediately saved.

5.6 Stopping operation

- ► Select the **RUNNING** menu.
- ► Select the **Stop** button.
- ► Confirm prompt with **OK**.
- ✓ The operation is stopped. The **STATUS** state is shown in the menu bar.

5.7 "Configuring and starting a manual operation" checklist

- → 5.1 »Specifying software limit values« (page 69)
- → 5.2 »Setting the temperature limit controller« (page 69)
- → 5.3.1 »Specifying nominal values for the cold chamber and the hot chamber« (page 70)
- → 5.3.3 »Specify start chamber« (page 71)
- → 5.3.4 »Setting control values« (page 71)
- → 5.3.5 »Activating digital channels« (page 71)
- → 5.4 »Starting operation« (page 72)

6 PROGRAM MODE

Webseason distinguishes between two operating modes (**MODE**): manual mode and program mode.

In manual mode specify just one value each per control variable for the duration required $\rightarrow 5$ »Manual mode« (page 69).

In program mode you create a program consisting of as may program steps as you like. Specify one value each per process variable (control variable, control value, digital channel) for every program step. The program steps, each with different values, proceed in sequence one after the other.

You can create and store up to 100 programs. Up to 120 programs can be displayed. The programs in program slots 100 and 120 are write-protected factory-fixed programs.

Program variants	Meaning	
	Create a new program for the shock operation. By default a shock program is edited in the Shock view → 3.5.3 »Program editor for New shock program « (page 37). A new shock program includes 20 program steps by default, which are already named and categorised according to the phases of the shock operation. The program steps cannot be renamed or edited individually. The program steps are populated automatically instead with values and settings from the working area → 3.2 »Übersicht Navigationsbereiche« (page 20).	
	A shock program consists of 3 phases:	
	- Preparation	
New shock program → 6.2 »Create and edit a shock program« (page 74)	- Program (Is composed of any number of chamber changes.)	
	- Aftertreatment	
	Enabling Values view	
	In the Values view experienced users can edit any individual program step of a shock program in detail. Very good knowledge of the functionality of shock operation and Webseason is required for this purpose. If you want to edit a shock program in Values view, you have to enable the view specifically:	
	► Set SETTINGS > Basic configuration > Values view in shock program to On.	
	A description of the Values view in shock operation is not addressed in this operating manual. If there are questions about this function, contact our service center.	
New basic program → 6.3 »Creating and editing a new basic program« (page 77)	Create a new program from any number of program steps desired. The user interface corresponds → »« (page 38). The first program step 1 is already created first by default. You can add, edit and delete other program steps as your discretion.	

6.1 Setting the temperature limit controller

To protect the test specimen / chamber load against thermal overstressing, the system is equipped with a temperature limit controller independent of the software.¹⁾ The operation is stopped when the temperature exceeds or drops below a temperature limit.

- ► Take the position of the temperature limit controller from the → *operating manual for the* system .
- ► On the temperature limit controller adjust the limit values to the test specimen / chamber load prior to every operation.

6.2 Create and edit a shock program

- ► Select the **MODE** menu.
- ► In the footer bar select the button



- ► Select the **New shock program** button.
- ✓ A new shock program is created in the next free slot.
- ► Select the **Shock** button in the footer bar.
- ✓ The individual values and names can now be edited in the **Shock** view.
- ► To rename a program select the program name in the side bar and rename it.
- You can save a program and quit editing at any time by selecting the **Done** button in the footer bar. Then in order to be able to re-edit the program, select the **Editing a program** button in the footer bar.

6.2.1 Editing the »Preparation« register

Preparation is an optional phase with a constant temperature prior to the start of the program. This phase is used to pre-temper the chambers in order to prevent the loss of temperature and time during the first program cycle with test specimen.

- Select the Preparation register.
- ► To activate the preparation set the **Preparation** button to **On**.
- ► Under **Start in** select the chamber in which the cradle is to be located during the **Preparation** phase.
- ► Below both chambers enter the respective nominal temperature value for the **Preparation** phase.
- ► Under **Duration** enter the duration of the **Preparation** phase:
 - ► Set the program step's duration; in order to do this, in the ✓ dropdown menu first select the unit of time, e.g. hours, and then enter the time value, e.g. 8.
- ► Under **Digital channels** activate / deactivate the digital channels required for the **Preparation** phase.

6.2.2 Editing the »Program« register

Prerequisite:

- The **Preparation** register is edited.

- Select the Program register.
- ► Select a **Program type**:

Program type	Effects
Normal	The inactive chamber is pre-tempered to a nominal Inactive value required. Once the cradle reaches the pre-tempered chamber, the pre-tempering ends and the active tempering begins commensurate with the nominal value in the Active field.
Time	As in the Normal program type the inactive chamber is pre-tempered to the nominal Inactive value. In the Time program type you can, however, accelerate the change of the test specimen tempering by defining in addition to the Active nominal value a relative nominal adjustment value (Adaptation field). The value adjustment is added to the active nominal value. The nominal Adaptation value is maintained until the temperature has reached a tolerance range (Tolerance field). The value in the Tolerance field refers here to the nominal Active value. Then the nominal Active value is automatically set. In this mode make sure that the test specimen is tempered only at the nominal value required.
Energy	The Energy program type is suited to programs with long dwell times in one particular chamber. To save energy the inactive chamber switches off automatically. Only within a definable Preparation preparation time does the inactive chamber get pre-tempered to the nominal value required (Inactive) prior to the cradle change.

Table 6-1 Program types for shock operation

- ► Under **Loops** enter how many times the current program should loop.
- ► Under **Start in** specify the chamber in which the program should start.
 - ► To change the start chamber press the

 button.
 - ✓ The chamber on the left side is the start chamber.
- ► Enter duration and nominal values for both chambers respectively.
 - ► Select the field required in order to do so, e.g. Duration.
 - ✓ The dialog for entering the value opens.
 - ► In the ✓ dropdown menu first select the unit, e.g. h (hours), and then enter the value, e.g. 8.
- ► Activate / deactivate the digital channels for both chambers.
 - ► In the **Digital channels** section, select the button for the respective digital channel.
- ✓ The digital channel is activated. The display changes from inactive
 to active
 —.

Defrosting after

You can set after how many loops the cold chamber is to be automatically defrosted.

- ► To activate automatic defrosting set the **Freigabe abtauen** button to **On**.
- Enter in the **Defrosting after** field the number of loops after which the cold chamber is to be defrosted.

6.2.3 Editing the »Aftertreatment« register

Subsequent to a program, you can as an option aftertreat the test specimen with a temperature needed to bring it to room temperature, for example, and remove it more easily as a result.

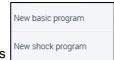
Prerequisites:

- Program register is edited.

- ► To activate the optional **Aftertreatment** phase set the **Aftertreatment** button to **On**.
- Under End in select on the chamber in which the cradle is to be located during the Aftertreatment phase.
- Below both chambers enter the respective nominal temperature value for the Aftertreatment phase.
- ► Under **Duration** enter the duration of the **Aftertreatment** phase.
- Under Digital channels activate / deactivate the digital channels required for the Aftertreatment phase.
- ✓ You have now made every setting in the Shock view.

6.3 Creating and editing a new basic program

- ► Select the **MODE** menu.
- ► In the footer bar select the button



- ✓ A selection menu opens
- Select the New basic program button.
- ✓ A new basic program is created in the next free slot and is editable.
- ► To rename the program select the program name in the side bar and rename it.
- Create program steps one after another:
 - ► To edit a program step select the program step (Step 1).
 - ► To rename a program step select it and enter a new name.
 - ► To add another program step select the **New step** button.
 - ✓ The new program step is added after the program step currently selected.
- ► To delete a step select the step and the **Delete step** button.
- You can save a program and quit editing at any time by selecting the **Done** button in the footer bar. Then in order to be able to re-edit the program, select the **Editing a program** button in the footer bar.

6.3.1 Selecting a control variable for a program step

Prerequisite:

- The program is being edited.
- ► In the side bar select the program step required.
- ► In the Control variables register select the 🌣 button.
- √ The Select control variables dialog opens.

In this dialog you can hide the individual control variables or show warning limits for editing.

- ► To show a control variable put a check in the checkbox.
- ► To show warning limits set the button to **On**.
- ► Confirm with **OK**.
- ✓ The dialog is closed.

6.3.2 Specifying nominal values for control variables

Prerequisite:

- The program is being edited.
- Control variables and warning limits are shown.

Procedure:

- Select a control variable, e.g. Temperature.
- ✓ The Temperature dialog opens.
- Enter nominal temperature value for step selected.

Step 1 is the program's starting point. A duration cannot be specified.

»Waiting for« function

- ► When you activate the **Waiting for** function, the following occurs:
 - The nominal value is approached.
 - The duration set for the particular step is paused in the process.
 - Only when the nominal value is reached does the cycle for the duration set or the next step begin.

When you activate **Waiting for** in step 1, step 2 cannot be approached until the nominal value from step 1 has been reached. The program time only starts with step 2.

If you deactivate Waiting for in step 1, the following occurs:

- The nominal value is steadily approached over the duration set.
- A nominal value ramp occurs between steps 1 and 2. The controller moves toward the nominal value ramp as fast as possible.
- The program time starts with step 1.
- In the course of this the actual values at the start, depending on the initial temperature, can differ from the nominal values over a variably long period of time.

Programming a ramp

If you want to program a ramp, such as between steps 2 and 3 in → Fig. 6-1 »Example of a program« (page 80), proceed as follows:

- Program a step with a desired temperature.
- Program another step with a desired duration and a desired temperature that is above or below the previous temperature.
- ✓ The nominal value is steadily approached over the duration set. A nominal value ramp occurs.

If you deactivate **Waiting for** in step 1, the controller moves toward the nominal value ramp as fast as possible. In the course of this the actual values at the start, depending on the initial temperature, can differ from the nominal values over a variably long period of time.

Programming a constant

If you want to keep a constant temperature for a desired period of time, proceed as follows:

- Program a step with the desired temperature. In this step do not define the duration of the constant yet, but rather just the way in which the temperature is to be reached (e.g. ramp or jump).
- ✓ The temperature is reached in the way that you defined.
- Program another step. In doing so, copy the nominal temperature value from the previous step, but this time define the duration required for the constant, cf. steps 3 and 4, as well as steps 5 and 6 in → Fig. 6-1 »Example of a program« (page 80).
- ✓ The temperature is kept constant for the duration entered.

Programming a jump

If you want to program a jump, such as between steps 4 and 5 in \rightarrow Fig. 6-1 »Example of a program« (page 80), proceed as follows:

- Program a step as a starting point for the jump.
- ► Program a subsequent step with the duration 0:00:00 and the desired temperature.
- ✓ The temperature is approached as fast as possible.

Example of a program

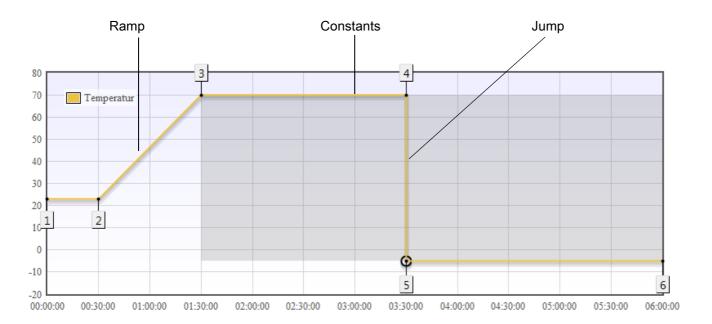


Fig. 6-1 Example of a program

Step	Duration	Temperature (°C)	Wait for
1	00:00:00	23	0
2	00:30:00	23	0
3	1:00:00	70	0
4	2:00:00	70	0
5	00:00:00	-5	1
6	2:30:00	-5	0

Table 6-2 Values for sample program

6.3.3 Specifying limit values for control variables

- ► Under the control variable required select the **Warning limit maximum** button.
- ✓ The Warning limit maximum dialog opens.
- ► Enter new upper limit value for the warning limit.
- ► Confirm with OK.
- ✓ The dialog is closed.
- ► Repeat the steps under **Warning limit minimum** for the lower limit value.
- ► Repeat the steps from this example for the other control variables.

NOTICE

Overriding the warning limits

You can specify warning limits in the **SETTINGS** menu and in the basic program editor. You specify the alarm limits in the **SETTINGS** menu only. The settings for warning limits in the **MODE** menu override the settings for the warning limits from the **SETTINGS** menu.

6.3.4 Specifying the duration if the step

Prerequisite:

- The MODE menu is active.
- A program step is selected and being edited.

- Select the Control variables register.
- ► Select the **Duration** button.
- ✓ The dialog for entering the value opens.
- ► Set the program step's duration; in order to do this, in the ✓ dropdown menu first select the unit of time, e.g. hours, and then enter the time value, e.g. 8.
 - When you activate the Waiting for function, the following occurs:
 - The duration set pauses or "waits" until the nominal value is reached.
 - Immediately the nominal value is reached the cycle for the duration set or the next step starts → »» Waiting for« function« (page 78).
 - When you deactivate the Waiting for function, the following occurs:
 - The program or the duration continues to rum, regardless of whether the nominal value was reached → »Programming a ramp« (page 79).
- Confirm with OK.
- ✓ The dialog is closed and the setting saved.

6.3.5 Configuring the display for the control values

Prerequisite:

- The MODE menu is selected.
- A program step is selected and being edited.

Procedure:

- ► Select the Control values & digital channels register.
- ► In the **Control values** field, select the **Description** button.
- ✓ The Select control values dialog opens.

In this dialog you can show and hide the individual control values.

- To show a control value put a check in the checkbox.
- ► Confirm with **OK**.
- ✓ The dialog is closed.

6.3.6 Setting control values

Prerequisite:

- The MODE menu is selected.
- A program step is selected and being edited.
- The Control values & digital channels register is selected.

- ► Select a control value, e.g. **fan**¹⁾.
- ✓ The Fan¹⁾ dialog opens.
- ► Enter a new value.
- ► Confirm with **OK**.
- Repeat the steps from this example for the other control values.
- ✓ The current control values are displayed in the working area.

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6.3.7 Configuring the display for the digital channels

Prerequisite:

- The MODE menu is selected.
- A program step is selected and being edited.
- The Control values & digital channels register is selected.

Procedure:

- ► In the **Digital channels** field, select the **Digital channels** button.
- ✓ The Select digital channel dialog opens.
- ► To hide a digital channel remove a check from the checkbox.
- ► Confirm with **OK**.
- ✓ The dialog is closed.
- ✓ The digital channels selected are displayed in the working area.

6.3.8 Activating digital channels

Prerequisite:

- The **MODE** menu is selected.
- A program step is selected and being edited.
- The Control values & digital channels register is selected.

- ► In the **Digital channels** section, select the button for the respective digital channel.
- ✓ The digital channel is activated. The display changes from inactive to active ●.

6.3.9 Creating a loop

A loop is a repetition of one or more program steps.

Prerequisite:

- The **MODE** menu is selected.
- A program step is selected and being edited.
- Control variables, nominal values and digital channels are already set.

Procedure:

- ► In the footer bar select the button.
- ✓ The **Generate loops** dialog opens → *Fig. 6-2 »Generate loops«* (page 84).
- ► In this dialog select the steps that you want to connect in a loop:
 - Select first step, e.g. Step 2.
 - ► Select last step, e.g. Step 4.



Fig. 6-2 Generate loops

- ✓ The steps that are between the first and last steps of the loop are selected automatically.
- ✓ The loop is distinguished by a green bar.
- Specify the number of repeats for the steps selected (here for example 5). Take into account in doing so that the steps will already run through once before the repeat starts.

Example: If you want steps 2 to 4 to be run through a total of 6 times, enter the number 5.

- ► To complete the generation of the active loop select the **Done** button.
- ✓ The loop is distinguished by a green bar. The number of repeats is in the box at the bottom end of the green bar.
- ✓ Step 2 to 4 are repeated 5 times, i.e. the steps are run through a total of 6 times.

- ► To generate another loop tap again on the first and last steps of the loop desired. In doing so you can integrate loops already generated if the new loop ends at least one step beyond the existing loop → Fig. 6-3 »Nesting multiple loops« (page 85).
- ► To complete the editing of the superordinate loop select the **Done** button.



Fig. 6-3 Nesting multiple loops

- ✓ The loops nested and their count are indicated by green icons.
- ► To save and to close the **Generate loops** dialog select the **OK** button.

6.3.10 Editing loops

► To edit the loops already generated select the box with the number of repeats.

6.4 Saving a program

- ► To quit editing the program select the button in the footer bar.
- ✓ The program is saved and editing mode quit.
- If during the course of creating the program you select another menu, a prompt, whether you really do want to quit editing, opens.
- ✓ In that case the program is not saved.



Fig. 6-4 Program editing - Quitting editing

6.5 Copying a program

If you want to create a program that corresponds to a program already on hand, you can copy and modify the existing program. The programs in program slots 100 and 120 are write-protected factory-fixed programs. To edit you can copy a fixed program to a program slot < 100.

Prerequisite:

- The MODE menu is selected.

- ► Select the button.
- √ The Copy program dialog opens.
- Select the program that is to be copied.
- ► In the ∨ dropdown menu select program slot in which the copy is to be kept.
- ► Select the **OK** button.
- ✓ If a program is already stored in the program slot selected, this generates a prompt whether the existing program should be overwritten.
- ✓ The program is added in the side bar in the program slot specified.

6.6 Starting program

Prerequisite:

- The software limiter's limit values are set.
- The temperature limit controller is set.
- Nominal values, control values and digital channels are set.
- The MODE menu is selected.

Procedure:

- ► In the side bar select the program required.
- In the footer bar select the button
- ✓ The Start [program name] dialog is opened.

In this dialog you are reminded to set the temperature limit controller. You can also change the start time, the number of run-throughs and the program's pre-run time.

- In order that the program does not start immediately, but rather at a later point in time, press the **Change start time** button to **On** and enter the start date and start time required.
- If the program is to start immediately, set the button to Off. Ignore time and date specification.
- ► In the **Program run-throughs**: input field enter the number of program run-throughs required.
- ► In order that the program is running in synch with the actual time, set the **Real-time** synchronous button to **On**. Otherwise th program starts at 0:00.
- ► In the **Pre-run time** input field enter the time interval and the unit of time that you want to skip over. Using the **Pre-run time** function you can start the program from any point of time within the program time. Example: If the program lasts for a total of 10h, you can skip over the first 3h of the program, for instance, by entering the **Pre-run time**.
- ► When the settings are completed, select the **OK** button.
- ✓ The program is started. The **RUNNING** state is shown in the menu bar.

6.7 Changing a view

Using the and buttons you can change the corresponding view:

- In the Chart view you can monitor and analyse the behaviour of the new program's nominal values and actual values.
- In the **Table** view you can review the nominal values and actual values and also the control values and digital channels set.

6.8 Pausing a program

A program can be paused in two ways: Pause and Pause + room temperature.

- ► To pause a program select the button.
- ✓ A menu with the options Pause and Pause + room temperature is opened.



Select one of the options as required:

Pause

Only the program time is stopped. The control variable controller, the digital channels and the control values remain enabled. The temperature is retained.

- ✓ The state immediately prior to the pause is maintained.
- ✓ The program time is stopped.
- ✓ The recording of the actual values is continued.

Pause + room temperature¹⁾

- ✓ The program time is stopped.
- ✓ The conditions are rendered safe as quickly as possible. Operating conditions that pose a risk to people (e.g. gases or rays) are deactivated.
- ✓ It is possible to safely open, load or also enter the system if necessary → operating manual for the respective system.

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6.9 Continuing a program¹⁾

You can resume the program after a pause at any time.

- ► To resume a program select the button.
- ✓ The effects differ as follows:

Pause

✓ Since the operating conditions were maintained during the pause, the program is continued absent changes in the conditions.

Pause + room temperature

✓ Resuming is contingent on the system's programming.

6.10 Stopping a program

If you stop a program, you stop the entire operation. The program cannot be resumed again.

- ► To stop a program select the button.
- ✓ A dialog opens for confirmation.
- ► Confirm the dialog with **OK**.
- ✓ The program is stopped.

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Heat Technology

Experienced engineers and designers develop, plan and produce high-quality, reliable heat technology systems for a broad range of applications from heating and drying cabinets to microwave systems and industrial furnaces.



Climate Technology, Air Dehumidification, Clean Rooms

As the leading provider of clean rooms, climate technology and air dehumidification, we consistently ensure optimal climatic conditions for people and machines. For industrial production processes, in hospitals, mobile operation tents or in the field of information and telecommunications technology. From project planning to implementation.



Clean Air and Containment Systems

With decades of experience and know-how, we guarantee the most sophisticated clean air and containment solutions. Our comprehensive and innovative range of products includes barrier systems, laminar flow systems, safety workbenches, isolators and airlocks.

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