User Manual

MIC 900 / MIC 1100 / MIC 3000

Process controller

V00.21

Issue 18.06.2024_02

Contents

Symbols used in this user manual

The following symbols are used in this user manual to emphasize important information:

Symbol	Description
	This is a **Please note** or a **tip**.
	Be aware! This symbol points out potential problems and what to do to avoid them.
	Shows a sequence of actions that should be executed one after the other.

1 Introduction

1.1 Overview

Processors **MIC 900, MIC 1100** and **MIC 3000**,
with user-friendly touch panel, 7" TFT display with resistive touch technology, several interfaces and a housing of standard industrial quality, are designed for use in **universal cooking and smoking chambers as well as climatic smoke and maturing chambers**.

In its standard version the controller is equipped with
4 Pt100 temperature inputs and
2 inputs which can be converted to Pt100 and current 4-20mA / voltage 0-10V or thermocouples (compliant with DIN EN 60584).

The following interfaces allow communication: LAN/Ethernet and USB Serial Port.

In order to adapt the controller for specific purposes each control loop can be used as a 2-point controller, XP controller or with PID behaviour.

MIC 900:
The standard version has 16 relay outputs
(12 normally open contacts and 4 changeover contacts).

MIC 1100:
In its standard version the controller is equipped with 18 relay outputs
(14 normally open contacts and 4 changeover contacts).

MIC 3000:
The standard version has 24 relay outputs
(16 normally open contacts and 8 changeover contacts).

1.2 Display and operating area

The controller is sub-divided into an input/display panel and a control button panel.

1.2.1 Input and display touch panel

The upper half is a 5" (MIC 1100) or 7" (MIC 900 + MIC 3000) touch display. Here you can change the different settings and information on program data and the input screens are shown.

1.2.2 Control buttons

The control buttons allow you to navigate through the operating elements of the touch display with the help of the cursor buttons. Use the "Enter" button to confirm the entries you have made.
Controllers MIC 1100 and MIC 3000 had short-cut buttons that allow you to select operating elements directly.
Some control buttons have LEDs. The LEDs give a visual indication of various aggregate conditions.

| MIC 900 | MIC 1100 | MIC 3000 |

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CONTROLS for
FOODTECHNOLOGY

MIC 900, MIC 1100 and MIC 3000

Пауза Pause	Only MIC 900 + MIC 3000	Pause	Pausing program runs and resuming a paused program run. LED flashes – program in hold mode/start time runs
Start Stop		**Start / Stop**	Starting and stopping programs. LED lights – control in operation LED flashes – end of the program
(cursor pad)		Cursor left - Cursor right + Cursor up Cursor down Cursor ENTER	Moving horizontally to the next operating element on the left. Moving horizontally to the next operating element on the right. Moving vertically up to the next operating element. Entering number values (incremented). Moving vertically down to the next operating element. Entering number values (decremented). Confirm the selected button/box

Only MIC 1100 + MIC 3000

F1 F2 F3 F4 F5	Control buttons 1-5	Depending on the page that is currently displayed, the functions of the buttons change. The current function/description of the button corresponds to the buttons on the task bar. On the menu display you can see the following descriptions: F1 – Configuration F2 – Service F3 – Start page F4 – Profiles F5 – Programs
(thermometer icon)	Chamber temperature	Short-cut button for entering nominal chamber temperature value (min, max) LED shines – heating is active
(clock icon)	Step time	Short-cut button for entering the nominal step time LED shines – control in operation
(circle arrow icon)	Repetition	The function button can be allocated freely (in preparation)
max (only MIC 3000)	Humidity max	Short-cut button for entering the nominal humidity value max LED shines – dehumidification is active
(thermometer icon)	Core temperature	Short-cut button for entering the nominal core temperature value LED shines – cooling is active

		Air circulation level	Short-cut button for changing the circulation level on a multi-level motor (if it has been configured that way) LED shines – air circulation level 1 is active (low) LED flashes slowly – air circulation level 2 is active (intermediate) LED flashes quickly – air circulation level 3 is active (high)
	(only MIC 3000)	Delta	Short-cut button for entering the Delta value
		Humidity min	Short-cut button entering the nominal humidity value, min LED shines – humidification is active
MIC 3000 Прог. Prog.	**MIC 1100** Prog.	Program number	Program number entry
Шаг Step	Step	Step	Switching into the next step, selecting a step
Строка Line	Line	Line	Confirming an entry and highlighting the next object.
Тест Test	Test	Test mode (only MIC 3000)	Calling up test mode / Changing the key board mode (numbers / capital letters/ lower case letters) LED off – number LED shines – lower case letters LED flashes – capital letters
*\/# 0 ЭЮЯ A B C 1 АБВГ ... YZ■ 9 ЪЫЬ■		Numerical pad	Number or signs entry
+/-	(only MIC 3000)	Plus/Minus	Switching from positive to negative values
	(only MIC 3000)	Manual program	**Button is without function at the moment**

i	**Please note** Short-cut buttons allow you to access specific nominal values directly (and actual values during operation) in order to check or change values.

1.3 Functions of the on-screen key pad
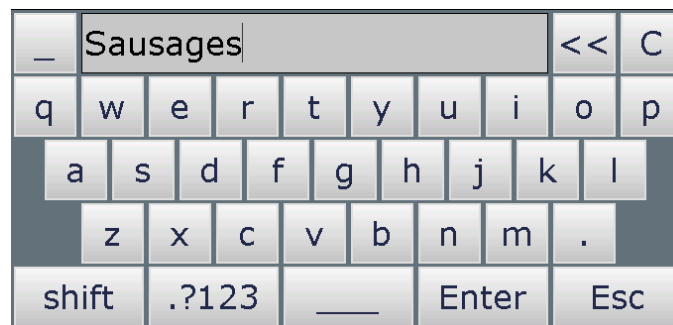
Key pad

 - Insert/replace mode

 - Deleting individual symbols

 - Deleting an entire text passage

 - Capital /Lower case letters

 - Numbers and special symbols

 - Confirm entry
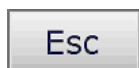
 - Leaving the operation without changing the original settings

 - More special symbols

1.3.1 MIC 1100 / MIC 3000 Operating buttons (number and letter buttons)
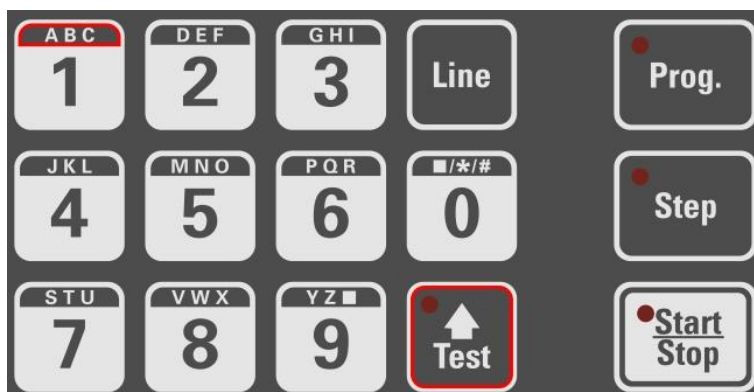
Numerical pad text entry MIC 1100

Numerical pad text entry MIC 3000

Text can also be entered via the operation buttons 0 – 9. Select which value you want to enter via the cursor buttons and then change into entry mode by pressing the Return button. Now use the operat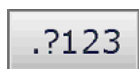ion buttons on the numerical pad to enter your value and confirm your entry by pressing Return. The cursor can be moved via the arrow buttons.

⚠️	**Be aware**
	You can skip between keypad modes by pressing the „Test" button. While you are entering text, the LED in the „Test" button will show the selected keypad mode.
	LED off – number
	LED lit – lower case letters
	LED flashing – capital letters

If you want to **delete** a symbol, take the cursor to the position you want to delete and overwrite it with a blank space. Press button „9" 3 times or button „0" once and a blank space will appear.

Entering special symbols
Special symbols can be entered via the „0" button. The following symbols are available:

leer	.	,	!	?	%	/	_	-	+	=	#	*	(	)

1.4   Entering numerical values
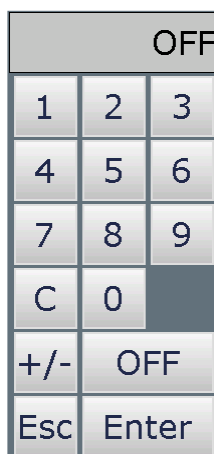
Numerical pad

A numerical pad is used to enter numerical values. It will be displayed when you have to enter values.

C   -   Deleting the value in an entry box

+/-   -   Changing the leading sign of a value

Esc   -   Closing the keypad. Changes made to the nominal value are not saved.

OFF   -   De-activating a nominal value

Enter   -   Saving an entered value

⚠	**Be aware**
	The controller also allows you to enter negative temperature values:
	- In order to pre-program negative nominal values in a step, the installation manufacturer has to pre-program negative nominal value limits for chamber and core.
	- „0" can be entered as a nominal value. The nominal value „Off" is shown for chamber and core when a new program step is pre-programmed. . This means: the nominal value is deactivated. As soon as a value is entered (even if it is „0") the nominal value counts as activated. If you want to deactivate the nominal value later in the step, press the „Off" button.

1.4.1 MIC3000 Control buttons (number buttons)

Number pad MIC 1100   **Number pad MIC 3000**

Text can also be entered via the operation buttons 0 – 9. Select which value you want to enter via the cursor buttons and then change into entry mode by pressing the Return button. Now use the operation buttons on the numerical pad to enter your value and confirm your entry by pressing Return.

1.4.2 Screen lock

When you press the „Enter" button for 3 seconds, all buttons and touch function on the display will be locked. On the bottom edge of the display you will see the lock symbol.
In order to de-activate the lock, press the „Enter" button for about 5 seconds.

ℹ	**For your information**
	A program run is not affected by a button/keypad lock. This means that the program will continue as normal, even if the keypad lock is activated while a program is in operation.
	Neither the communication with VisuNet nor the service program are affected when a keypad lock is activated. Programs can be started and stopped via VisuNet even if the keypad is locked.
	The function is mainly needed while the installation and the controller are being cleaned.

2 Standby

As soon as the controller has been connected to a power supply, it will automatically boot up and will display the message „Loading please wait...". This process can take up to 1 minute. Then you will get to the standby screen.

⚠️	**Be aware**
	Please do not operate the touch screen with sharp implements i.e. pointed fingernails, pens/pencils, screwdrivers etc. Only use blunt, soft implements i.e. fingers, rubber pens.

Current   Program bar   Current   Optional
Pr.group   Step bar   Pr.image   displays
                                                                                          (menu of favourites)

Actual value display   Symbols | Scale   Select program group

Status bar   System time

In standby none of the programs has been selected, this means that nominal values are not displayed. The current operating status of the installation is shown on the information bar.

2.1 Program groups and program images in standby

ℹ️	**Hint**
	Program images/program groups are only displayed when the option is enabled. Ask your service technician.

- **Current program image:** The current program is displayed (display only).

- **Current program proup:**
  The current program group (related to the current program) is displayed. By touching the field, all programs belonging to this program group are displayed and can be selected.

- **Program group selection:**
  All 12 program groups are displayed. By touching the program group, all programs belonging to this group are displayed and can be selected.

	Hint
i	**Display of all programs which are not assigned to a program group:** Select program 00 → Touch the field current program group → all programs are displayed which are not assigned to a program group

2.2   Selecting a program

Starting from standby mode, you have 3 options of how to select a program:

2.2.1   Program number:

program   01   Sausages

Use the numerical pad to enter the program number
and confirm with „Enter".

2.2.2   Program name

program   01   Sausages

A menu list of all available programs will open. Select
the program you want and confirm with „Enter".
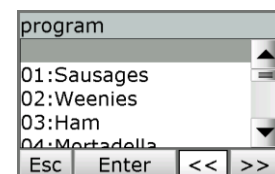
2.2.3   Favourites list

Press on the program you want on the favourites list.

You can find information on how to set up a favourites list,
item 4.2

Setting up a favourites list, page 22.
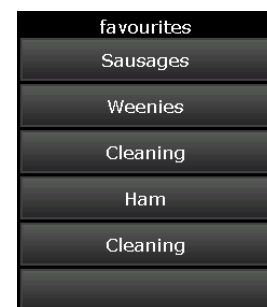
2.3   Selecting a step

In standby you can select steps. This allows you to skip steps during operation or to repeat a step that has already run. You can also select a step while in standby mode in order to e.g. check on the entered nominal values or to start a program with the second or third step.
Starting from standby mode, there are 3 options of how to change steps:

2.3.1 Selection via the process name

| program | 01 | Sausages |
| Step | 01 | Warming |

Chamber · C · process · 0
Core · C · 0.0
Feu.min · % · 01:Warming · 1
Feu.max · % · 02:Evacuation
Time · h/ · 03:Redden 1
04:Redden 2

Esc Enter << >>

on 11:51:14

back < > Menu Start

Selecting a process name

Press the box with the process name and a list of all the processes will open. From this list you can now assign the required process to the step. Please press „Enter" to confirm your choice.

2.3.2 Selection via the step number

Press the step number box and the on-screen numerical pad will open. Enter the required step number via the pad and confirm with „Enter".

| Step | 01 | Warming |

i	**Please note**
	In the step box you can also see current alarm messages (e.g. sensor fault).

2.3.3 Using the task bar to switch into the next step

| Menu | < | > | Program | Start |

Task bar

Use the arrow buttons to change into the previous or next step respectively.

2.4 Actual and nominal values

Act val.	Symbol	Scale	Nom.val	
value act			value nom	
26.0	🌡	C	50	Chamber temp.
26.0	🌡	C	OFF	Core temp.
99.9	☁	%	min. 0	Humidity
00:00	🕐	h/m	00:20	Step time

Actual and nominal values

Actual value:
Currently measured sensor value or current step time

Symbol/Scale (combined button):
Shows the measured variable and the measuring scale.

If the nominal value for chamber max. or humidity max. has been enabled, the „Symbol" button allows you to change the display from min. nominal value to max. nominal value. Which nominal values is currently shown, can be seen in the nominal value box (min./max.).

min. 25	max. 75

Nominal value:
Only the entry boxes for nominal values that have been enabled in the current process will be shown. In standby nominal values are not shown, because neither a program nor a process has been selected. Press the „nominal value" box during operation and an entry box will open up to allow you to change the nominal value. This is, however, a transient change that only applies while this step is running and will not be saved.

Display of the actual step time during operation
(from version V00.08 onwards)

00:00   Colon in the actual time display is flashing – Step time is counted.
Colon in the actual time display is **not** flashing – Step time is **not** counted.

ℹ	**Hint**
	When the step time counter has been paused, the step time is not counted. However, all other control processes are taking place. All outputs (relays, analogue outputs, etc.) continue to be actuated.
	Normally the colon in the actual/current step time display will be flashing in operating mode. When the step time counter has been paused, the colon is not flashing. The time is shown in red.

2.5 Program run times

Press the (clock symbol) symbol to show the program runtime or the remaining program runtime.

Actual/current step time	`00:03` (clock) h/m `00:10`
Program runtime: Duration of the current program (including all steps)	`00:06` (clock) h/m `00:10`
Remaining program runtime: Time that remains until the program ends (including all steps). Only the steps that have a pre-programmed step time are taken into account.	`00:30` (clock) h/m `00:10`
Time paused The time count is paused, the colon between the minute and second (00:05) display is not flashing. The display is shown in red.	`00:05` (clock) h/m `00:05`

i	**Hint** The remaining program runtime is also calculated if steps without step time have been pre-programmed. When a step without step time is in operation, the remaining program runtime cannot be counted backwards. During these steps the colon in the remaining program runtime display will not be flashing.

2.6 Optional displays

Depending on the configuration settings, different optional displays are available for the various values. In some cases, settings can be changed via these displays.

Use the arrow button to browse through the enabled displays.

>
<

Browsing through the optional displays

2.6.1 Optional nominal values

Delta	△ C	0
FcVal	**F/C**	0.0
air circul.	🌀	1
Light 1		on
Light 2		off

If additional nominal values *(e.g. FC value, Delta temperature, air circulation)* or aggregate buttons have been enabled, they are all shown on the „Optional nominal value" list.

Press the current nominal value to change it during operation. (Changeover ON/OFF or changing the values via the numerical pad)

If the intelligent air circulation is programmed the active level appears in green colour.

⚠️	**Be aware** **The new nominal values are only valid in the current step. They are not saved and are only valid until the end of the step. If you want to make permanent changes to the nominal values you need to go to „Programming mode", item 4, page 21 and make the changes there.**

	Please note
ℹ️	Aggregate modules, unlike aggregate buttons, can be programmed permanently and saved. Also see „ Editing program steps", item 4.3.1, page 22 The current status of the aggregates are shown under „Aggregate and relay display", item 2.6.3, page 17

2.6.2 Process display

No	Step
01	Warming
02	Evacuation
03	Redden 1
04	Redden 2
05	Drying 1
06	Drying 2
07	Smoking 1
08	
09	
10	
11	
12	

In the process display all the steps and the corresponding processes are shown. The currently selected or currently running step is highlighted in blue. This shows you clearly which processes have already run and which are still to come.

2.6.3 Aggregate and relay display

No	Aggregates	an
01	Heating	1
02	Cooling	0
03	Humidification	0
04	Dehumidificat.	1
05	Operation	1
06	Alarm	0
07	Air circul. 1	1
10	Light 1	0
11	Light 2	1
12	Electrical heating	0
13	Smoke flap	0
14	Smoke interval	0

Aggregate which have been configured for the selected process

Aggregate buttons

Aggregate modules

All the aggregates which have been configured for the current process, together with their operating status, are shown In this list

0 – Aggregate off
1 – Aggregate on

2.6.4 Messages (system status messages)

No	message list	an
01	door1 open	0
02	door2 open	0

All digital inputs which have been configured as messages in a process or program and their operating status are shown here.

0 – Contact open
1 – Contact closed

	Please note
ℹ️	Messages are for information only and are **not** sent to the recording program „VisuNet".

2.6.5 Alarm messages

No	alarm list	an
03	Convect. motor	0
04	Emergency Stop	0

All digital inputs which have been configured as alarms in a process or program and their operating status are shown here.

0 – Contact open
1 – Contact closed

2.6.6 Optional control loops / measured values

act.value	value ac	
Flap cooling	25.3	C
Flap drying	25.5	C

The installation manufacturer can enable additional control loops in every individual process. This list shows you the optional control loops which have been enabled in the current process together with their actual values.

2.6.7 Favourites

favourites
Sausages
Weenies
Cleaning
Ham
Cleaning

The programs that have been put on the favourites list are shown in this display. Here you can select a program from the list.

How you can set up your own favourites list is described under„

Setting up a favourites list" p.22.

2.6.8 Notices

Lentil stew	40706
Broth	300g
Lentil, dried	125kg
Potato cubes, fresh	120kg
Leek, finely cut	80kg
Diced onions, fresh	80kg
Diced bacon, fried	80kg

This view shows notes that can be stored for the programmes.

2.6.9 Aggregate buttons

| Light 1 | off |
| Light 2 | off |

In this display a list of the aggregate buttons and their switching status is shown. Certain relays can be switched on/off by the user via these aggregate buttons.

2.6.10 Aggregate modules

Electrical heating	on	0
Smoke flap	ON	
Smoke interval	on 0	off 0

In this display a list of the aggregate modules is shown. Certain relays can be switched on/off by the user via these aggregate buttons.

There are 3 different types of buttons for aggregates and aggregate modules:

- On/Off buttons
- Buttons with interval time. The „On" time interval is fixed and is pre-configured by the installation manufacturer. The „Off" time interval in seconds can be entered for each program by the end user.
- Buttons with pulse interval. The base time is fixed and pre-configured by the installation manufacturer. The end user can enter the length of the pulse interval in percent (in relation to the base time) in each program.

2.6.11 Switching into the next step

| Step | GO |

| Step | STOP |

If single step control has been enabled in the configuration, you can set it to automatic (GO) or manual (STOP). Setting „GO" will disable single step control.

2.6.12 Analogue outputs

| FreshAir1 | % | 25 |
| FreshAir2 | % | 32 |

In this display the analogue outputs and their setting value are listed. This display is only available if the configuration has been set up accordingly.

2.7 Task bar

2.7.1 Start page / profiles:

| Menu | < | > | Program | Start |

The task bar is sub-divided into 5 task buttons. If you leave the start page/standby by pressing a button, you can get back to standby by pressing the „Start page" button on any page you may be on.

Menu: Press the „Menu" button to get to the menu page
(see „Menu page", item 3, page 20)
Arrow buttons(<, >): Press the arrow buttons right/left to skip forward or backwards from step to step within a program.
Program: Press the „Program" button to get to programming mode. For more information see: item 4, page 21
Start: Starting a program. *(„Program start", item 5, page 28)*

2.7.2 Programs:

Home	<<	>>	edit	Start
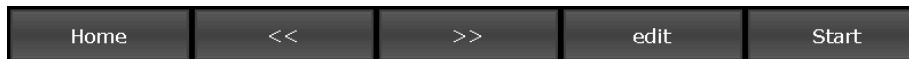
Start page: Calling up standby
Arrow buttons(<<, >>): Skipping through the program list in blocks of 10
Edit: Editing programs
Start: Starting programs. *(„Program start", item 5, page 28)*

2.7.3 Editing a program step:

back	<	>	Menu	Start

Back: Calling up the start page / standby
Arrow buttons(<, >): Press the arrow buttons right/left to skip forward or backwards from step to step within a program.
Menü: Press the „Menu" button to get to the menu page
  (see „Menu page", item 3, page 20)
Start: Starts programs. *(„Program start", item 5, page 28)*

2.8 Information bar

On the information bar you can see messages, operating status, alarm messages and the system time.

installation not in operation	11:52:43

Sensor error: Chamber temperature	11:57:03

3 Menu page

The „Menu" page of the touch panel is arranged as follows:

configuration		
service		documentation
profiles	programs	info
	home	
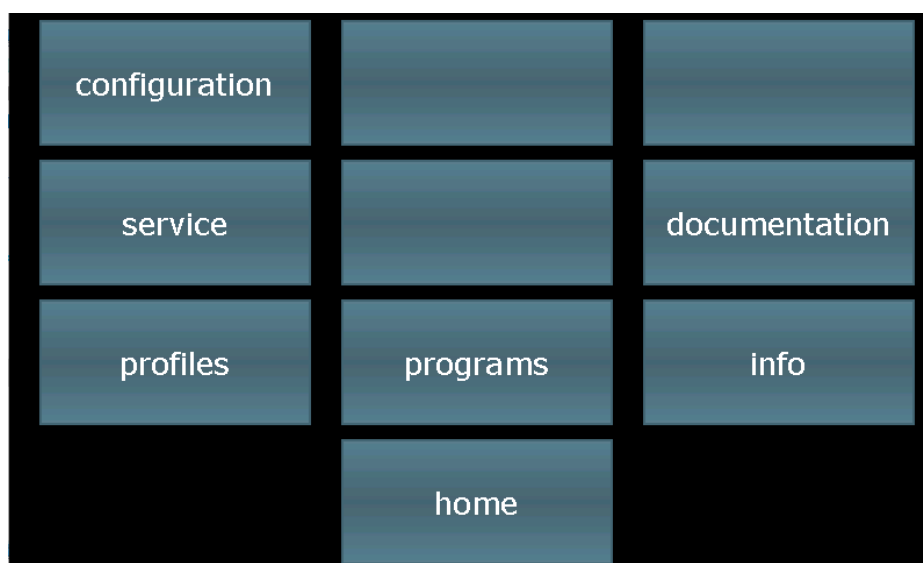
Menu

- **Configuration:**
  System specific controller settings.

The settings are protected by a password and can only be set up by a service technician.

- **Service:**
  Settings for the maintenance personnel on-site: Initial start-up, maintenance work etc.
  The settings are protected by a password and can only be set up by a service technician.

- **Profiles:**
  Settings for the operator/end user.
  These settings are not password protected.

- **Programs:**
  Opens the program selection page.

- **Documentation**
  Various information can be stored (e.g. operating instructions, company address, email addresses)

- **Information:**
  Display of the information about the controller version and settings.

- **Start page:**
  Back to the start page/standby

4 Programming mode

> **Please note**
> If you are asked to enter a PIN number here, the function "Administrators (from V00.07)" , *item 8.7, page 41,* is enabled. This means that changes can only be made by autorised personnel.

4.1 Selecting a program

There are two options of how to get to the „Program selection" menu.

1. Starting on the menu display: press the „Programs" box
2. Starting from standby: press the „Programs" button in the task bar at the bottom.

Press a program to select it. Use the arrow buttons to navigate within the display. Alternatively, you can use the cursor button to navigation through the "program selection" list.

Program selection programming mode

Home	Back to the start page/standby
<<	Skipping backwards in the program list by blocks of 9 programs
<	Skipping to the previous program
>	Skipping to the next program
>>	Skipping backwards in the program list by blocks of 9 programs
edit	Editing, copying or deleting programs

4.2   Setting up a favourites list

Select a program form the program list on the left side *(see figure "Program selection programming mode").* Press on one of the lines in the favourites list and the program will be transferred to that position. Now you have the option of selecting a program from the favourites list on the standby page and then start it by pressing „Start".

⚠️ **Be aware**

A program on the favourites list cannot be simply deleted, it can only be overwritten. If you want to create a blank line in the favourites list, you can overwrite an existing program with an empty program without program name. Now a blank line will appear on the favourites list on the standby page.

4.3   Editing program steps

Start on the „Program selection" display and highlight the program you want to edit by pressing on it. Now press the „Edit" button on the task bar. In the next options display also press „Edit".

⚠️ **Be aware: Changes in operating mode**

If the currently running step is changed1 in operating mode, the change is only effective after the step has been completed.

4.3.1   Display for editing program steps

Program bar (note: program selection, copying programs)

program	01	Sausages
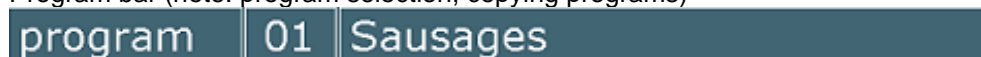
Step bar (note: process selection, copying steps, adding repetitive steps)

Step	01	Warming

Nominal values
(aggregates, step time)

Chamber	🌡 C	70
Core	C	65
Hum.min	%	20
Hum.max	%	70
Time	h/m	00:20

Nominal values (addition: aggregate modules, analogue outputs…)

Delta	△ C	0
FcVal	F/C	0.0
air circul.level		1
Air circulation		1
Cleaning		OFF
FreshAir1	%	25

1 Changes can be made on the controller or by sending the current program from VisuNet or from the service program

Information bar (display: status, repetitive steps)   Time of day

installation not in operation   12:19:55

Task bar (back, one step back, one step forward, menu, start)

| back | < | > | Menu | Start |

Editing programs

	Please note
i	Program and steps can also be added, copied or deleted on the „Edit" page. You can get to the relevant sub-menu by pressing on the „Program" or „Step" box, respectively. *See „Copying, deleting and adding programs/steps", item4.3.6, page 25*

4.3.2   Assign program images

	Hint
i	Program images/program groups are only displayed when the option is enabled. Ask your service technician.

program	01	Cleaning		>
step	01	Cleaning		<

edit
delete
exit

edit
delete
exit

Programimage

1	2	3	4	5	6
7	8	9	10	11	12

| Esc | Enter | << | >> |
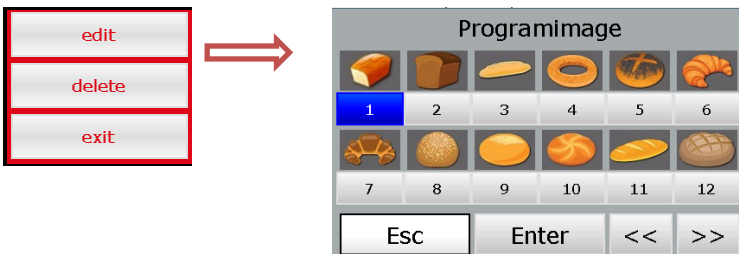
Edit: By touching the "Edit" box, a series of images will be displayed for selection. Select the desired program image and confirm with "Enter".

Delete: Touching the "Delete" box will remove the program image for the selected program. The program picture is still available when you select it again.

Exit: By touching the "Exit" field, the programme picture selection is closed.

4.3.2.1 Program group

program	01	Cleaning		>
step	01	Cleaning		<

Program groups

1	2	3	4	5	6

| Esc | Enter | << | >> |

Program groups

7	8	9	10	11	12

| Esc | Enter | << | >> |
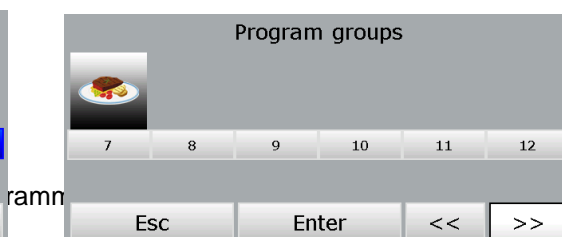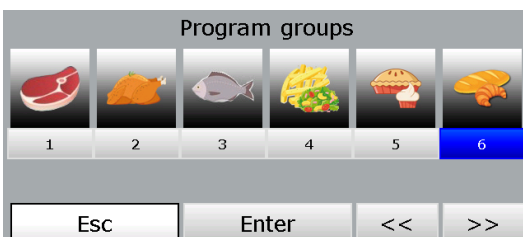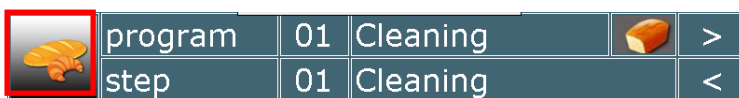
The currently selected programme group is displayed in blue Select a new program proup or change a existing program group and confirm your selection with Enter.

If no program group image is found in the controller, only the programme group is displayed.

	Hint
ℹ️	Program group images can be copied from a USB stick to the controller. Please contact your service technician.

	Be aware
⚠️	If you copy programs to USB or load programs from a USB memory stick, the program groups and program images are not transferred.

4.3.3   Entering nominal values

Press a nominal value box and a keypad will appear. Enter the relevant value and confirm it by pressing „Enter".

Also see 1.3 Entering numerical values, page 10

Nominal values that only have an ON and OFF option, can be changed over by clicking on the status box.

4.3.4   Entering a Delta value

Cooking with the Delta-T process *(Delta temperature control)* allows you to heat the product gently and evenly. When using this process the chamber temperature is always kept higher, by the nominal Delta value, than the actual core temperature of the product. This means the temperature difference between the surface and the core of the product always remains constant. The pre-set nominal chamber value is used as upper limit value for chamber temperature control. A lower nominal Delta value will prolong the duration of the cooking process and the heating process is gentler, a higher nominal Delta value will speed up the cooking process.

	Please note
ℹ️	- Entries for the Delta value can be between 0 and 99°C. An entry of 0 means that the function is disabled. - While a program is running the nominal value for the chamber temperature is calculated by adding the actual core temperature to the entered Delta temperature. **Example:** *Actual core value (sensor temperature)= 50°C* *Delta temperature (entered value) = 5°C* *50°C + 5°C = 55°C* *If the chamber temperature exceeds 55°C, the heating will be switched off.*

4.3.5 Setting up repetitive steps

If this function has been enabled, you can enter repetitions for individual steps or step combinations.
Go to the „Program selection" display. Select the relevant program and press „Edit" on the task bar.
Now press „Edit" on the selection menu. Press the „Step" box and select „Sequence". Now you can
enter which steps/step sequence you want to repeat (from step.. to step..) and the number of
repetitions. Confirm your entry with „Enter". The changes you have made will be shown on the
information bar.

Setting up repetitive steps

Please enter which step(s) should be repeated and how
often. Confirm with „Enter".

Example 1:
If you want steps 3 to 5 to be repeated twice , you enter:
from step   : 3
to step   : 5
repetitions   : 2

Example 2:
If you want steps 3 to 5 to be repeated 4 times , you enter:
from step   : 3
to step   : 5
repetitions   : 4

step 2-3 (1. run out of 50)   13:19:15

i	**Please note** If you enter „99" as the number of repetitions, it means endless repetitions.

⚠	**Be aware** If the controller1 is in operation and the repeat sequence of the step currently being processed is changed2, the change is only effective after this repeat sequence has ended.

4.3.6 Copying, deleting and adding programs/steps

Select the program you want to copy.

Change to the „Program selection" display.
Press the "Edit" box on the task bar. A selection window will
open. Press „Copy".

You can copy the selected program into another program.
Enter the relevant program number and confirm with „Enter".

---

1 Possible from version V00.18.
2 Changes can be made on the controller or by sending the current program from VisuNet or from the service program

⚠	**Be aware**
	A program is automatically copied when you press „Enter". **The program that originally occupied that position is overwritten!**

„Step number" box
Double click the „Step number" box and a menu window will open.
This allows you to add, copy or delete steps.

insert

Sequence

copy

delete

exit

Adding
If you want to add e.g. a new 2. step, the pervious step 2 becomes step 3 . This means all steps are moved backwards by one position. Step 20 is deleted.

insert

New step will be inserted! Last step will be deleted and all the other steps will move by 1 position. Do you want to proceed?

yes   no
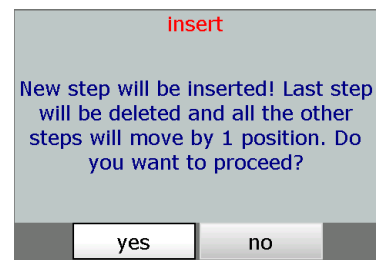
Copying
Copying a selected step into another program or into another position within the same program.

copy steps
step 04   program 01
copy as
step   program 01
enter   exit

Deleting
Deleting a selected step. All subsequent steps move forward by one position.

delete

Step and all its values will be lost. Do you want to proceed?

yes   no

⚠	**Be aware**
	A step is automatically copied when you press „Enter". **The step that originally occupied that position is overwritten!** **When you delete or add a step, you may unintentionally cause two program to link or break up an existing program link!** *(„Linking programs", item 4.4, page 26)*

4.4   Linking programs

You can program several program step in each program.
If the last program step has been pre-programmed and step 1 of the following program is also pre-programmed, the two programs will automatically be linked. If the last program step is not pre-programmed, the controller will end the program with the last pre-programmed step.

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ℹ️	**Please note**
	The number of programs and steps can be individually pre-set by the service technician (Service / number of programs , steps)

4.5 Create/change cleaning times in programming mode

Cleaning options are available for certain processes.

ℹ️	Hint
	To set a cleaning option in the program steps, it must be configured and activated by a service technician.

If the cleaning option is activated in a process, a "Cleaning sequence" field is displayed in the programme step.

When the "Cleaning" field is clicked, the cleaning times of the individual sections / lines are displayed and can be changed.
By pressing the number "1", a different cleaning sequence can be set.

Selection of sequence

Section times:
- Section is activated in current process (change possible)
- Section is not activated in the current process (change is not possible).

Calculated total time of all sections

Leave cleaning mask

⚠️	**Be aware**
	If automatic step time calculation is activated1 for the cleaning processes, no time can be entered in the step.
	Time: 🕐 h/m 00:02

4.6 Setting up a program with VisuNet

VisuNet is a visualisation program for programming, automatic controlling, monitoring, logging, backing-up, telecontrolling/telemonitoring of installations and processes.

---

1 For automatic step time calculation, the step time is the sum of all section times activated in the process (plus the overlap time)
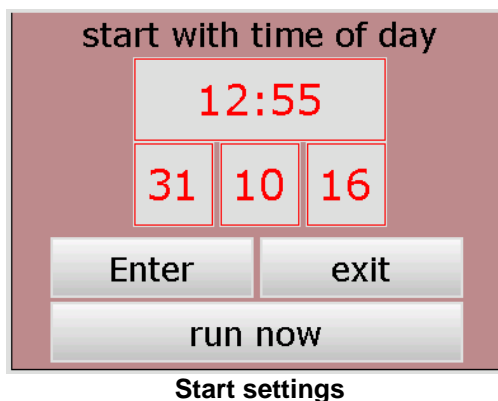
4.6.1 Enabling VisuNet

When you want to set up or edit programs you need the COMFORT version of VisuNet. The controller has to be enabled for this service. For further information contact your installation manufacturer or aditec.

4.6.2 Editing programs with VisuNet

For how to edit programs with VisuNet please see the user manual „VisuNet Base / Comfort / Premium" – Chapter 5 „Entering, changing, copying and starting programs".

5 Program start

After you have selected a program as described under *„Selecting a* program*", item 2.2, page 13*, you can start the program. At least one program step has to be pre-programmed.

Start settings

⚠	Be aware
	If administrators have been assigned in the controller, a password will be required before a program can be started. Only users with the authority to start a program, can do so.

5.1.1 Instant start

With „Instant start " the installation will immediately start operating.

5.1.2 Start with time of day

Press the date or the time box and enter the desired start time and the start date. Then confirm with „Enter".
If the entered start date and time have already passed, the controller will start immediately. If the entered start date and time are in the future, the waiting time interval will start. On the info bar you can see the pre-set start time and the „Stop" button is flashing. Once the start time arrives, the program will start and the display on the info bar will change to **„Installation in operation"**.
Press the „Exit" to cancel the start sequence and return to standby*.*

ℹ	Please note
	While the waiting time is running the „Stop" button on the task bar will be flashing. If you press the „Stop" button, waiting mode will be terminated and the controller will return to standby mode.

5.1.3 Starting a program with batch number

If the Batch no function is enabled, the controller will ask you to enter a batch number description.
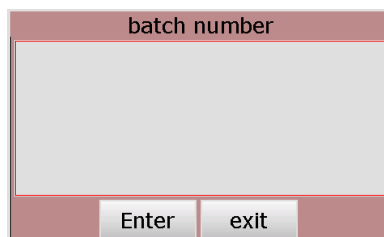
Entering a batch number

Press the top line in the batch no. box. An on-screen keypad will appear and you can enter the batch description. Then press "Enter" to confirm your entry and to apply the description to the current program.

> **Please note**
>
> A batch no. has to be entered when this function was enabled. Without a batch number the program **cannot** be started.

After you have entered and confirmed the batch number you can choose between: **„Start with time "** or **„Instant start "**.

5.1.4 Sensor log on or off (Sensor registration)

> **Option**
>
> This option is only available when at least one sensor exists, which can be logged on at the start of a program.

Logging on at the start of a program
Every time a program is started, a window is shown with sensors that can be activated. Click on the relevant box in front of the sensor name to activated the sensor („Box is filled") or to deactivated it („Box is empty").

Log on manually
This window for sensor registration is not only shown at the start of a program, it can also be called up by pressing „Opt. control loops" (at any time) and the window „Sensor registration" will appear.
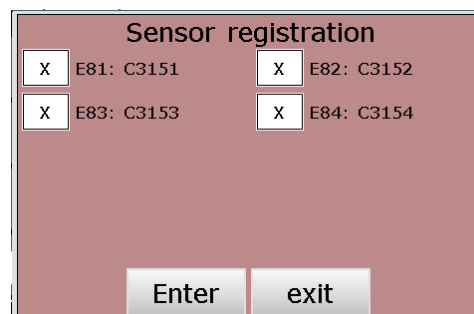
Sensor display
The „**de-activated" sensors are „highlighted"** (grey background)

> ⚠ **[-] – Error „No feedback"**
>
> If no sensor has been activated for a measured variable, the sensor error „No feedback" is shown for this measured variable.

act.value	Value	
E2:Core temperat	25 5	°C
E81:Core tempera	25.0	°C
E82:Core tempera	25.2	°C
Cooling flap	22.0	°C
Drying flap	22.2	°C

5.1.5 Operating hours messages on the user pages

When the operating hours counter has overrun (limit value reached or the scheduled time has passed), the name of the counter ① will be shown in the status display.
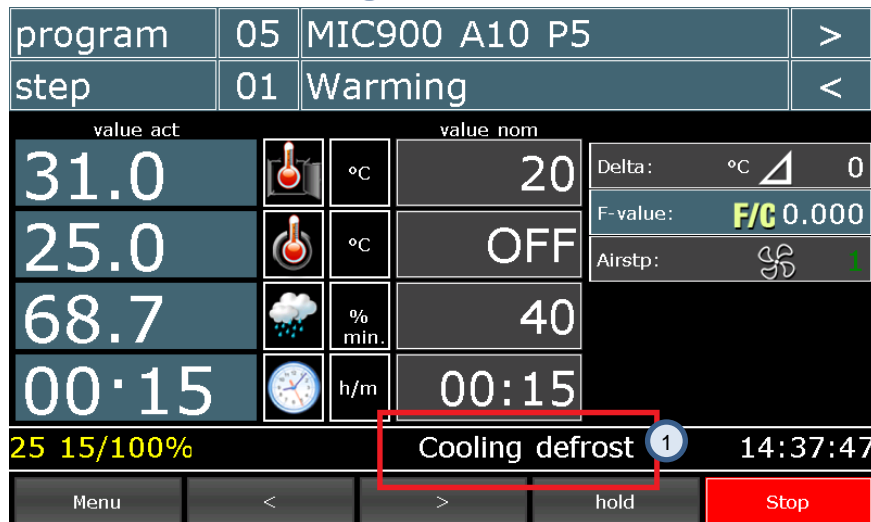
Operating hours display on the status bar

⚠️	**Be aware: Status bar display**
	Messages from the operating hours counter have the lowest priority and are only shown on the status bar when no other status messages are active (*even messages without text!*)

Before the start of a program an additional window is shown with the counter information *(see figure 24 left).* If the counter has the configured option "Reset = PIN", the PIN number has to be entered*.*

Operating hours – Message before the start of a program

6 Operating mode

The controller is in operation, this means a program is running.
Once a program has been started the button „Stop" on the task bar will be highlighted in red. On the info bar the scrolling text „Installation in operation" will be shown.

Operating mode

⚠	**Be aware**
	If administrators have been nominated for the controller, you will be asked for a password before a program start. Only operators who are authorised to start a program can do so.

6.1 Shut-down conditions

When at least one of the shut-down conditions has been met, the program step will be terminated. If a particular nominal value has not been pre-programmed *(zero or OFF),* then the attached shut-down condition is disabled.

Shut-down conditions are:
▪ The nominal step time has run out and is 00.00
▪ The nominal core temperature has been reached
▪ The nominal core temperature has been undercut, with negative core shut-down *(cooling , e.g. showering)*
▪ The nominal FC value has been reached
▪ Configuration-dependent settings (e.g. limit value alarms, digital inputs)

Unscheduled shut-down:
▪ Skipping into the next step or the previous step
▪ Pressing the „Stop" button will terminate a program
▪ Chamber sensor defect generally terminates a program
▪ A core or humidity sensor defect will lead to a termination of the program if the relevant nominal value has been pre-programmed

⚠	**Be aware**
	An empty *(invalid)* program step will be terminated immediately or not even started. A program step is considered valid when at least on process has been pre-programmed.

6.1.1 Negative core shut-down *(Showering/cooling)*

In order to pre-program cooling/showering *(negative core shut-down)* the nominal value for the chamber temperature which you enter, has to be lower than the entered nominal value for the core temperature.

The program step ends when the nominal core temperature value has been undercut. If an additional operating time has been entered the program step will end when the operating time has run out **or** when the core temperature value has been undercut. This means the step ends when at least one of the two shut down conditions has been met.

6.1.2 FC value

The F value is a measure of the kill rate for germs and bacteria through thermal impact within a fixed time interval. A mathematical formula can be applied to this kill rate process. Depending on the specific area of use, the installation manufacturer can configure different F value processes/calculation methods.
For example:

- „FC70-10" for pasteurising
- „FC121-10" for sterilising
- User-defined

Please ask your installation manufacturer which F value has been pre-set in your installation!

The kill rate for germs also depends on the acidity. With acidic cans, fruit juices, pickled gherkins etc. a higher kill rate is achieved and therefore a different FC value table applies than for normal meat cans with a pH-value between 5 and 7.
In order to avoid mix-ups two further indicators can be added to the FC value, i.e. FC 70-10, this means that the FC-Wert = 1 at a core temperature of 70 °C maintained for one minute. If the temperature is increased by 10°C the FC value increases ten-fold.

	Please note
i	Every 60 seconds the Fc value is calculated from the actual core temperature and added up. Since temperatures below 55 degrees lead to an Fc value of zero, the adding up only starts from this temperature threshold.

Example for FC value 70:

$$FC70 = 10^{\left(\frac{T(coretemperature) - 70°C}{10}\right)}$$

Example for FC value 121:

$$FC121 = 10^{\left(\frac{T(coretemperature) - 121.1°C}{10}\right)}$$

6.2 Transient changes to the nominal values

In operating mode the nominal values can be transiently changed. This means the new nominal values are only valid for the current step and are not saved.
Press the relevant nominal value box and use the numerical pad that will appear to enter the new value. Confirm with „Enter".

	Please note
i	If a PIN entry is requested, the „Administrators (from V00.07)" function*, item 8.7, page 41* has been enabled. This means that changes can only be made by specific operators.

6.3 Batch number during operation

When the installation is in operation you can check on the batch number or change it. Press on the „Program" box at the top on the left on the standby page.

program	01	Sausages

⬇

batch no.	01	AD20161031 002
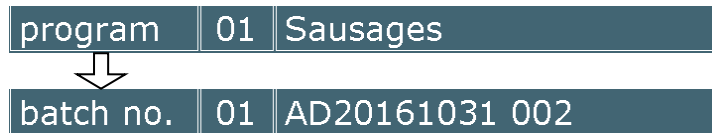
The batch description will be shown in the „Program name" box. If you want to change the description, press this box. A keypad in the pre-set system language will appear and you can now rename the batch. Confirm with „Enter".
Press the „Program" box again and the batch number will be hidden and the program name will appear instead.

i	**Please note**
	If a PIN entry is requested the „Administrators (from V00.07)" function, *item 8.7, page 41* has been enabled. This means that changes can only be made by specific operators.

6.4 Switching into the next step or previous step

Switching into the next or previous step works exactly the same as described in item *„Selecting a step", item 2.3, page .*

i	**Please note**
	If a PIN entry is requested the „Administrators (from V00.07)" function, *item 8.7, page 41* has been enabled. This means that changes can only be made by specific operators.

6.5 Pausing a program

With the „Hold" button in the lower task bar you can pause a program which is in operation.

Menu	<	>	hold	Stop

Push the button „Hold ":
- the description of control button 4 will change from „Hold" to „Start"
- „Hold" and „Stop" buttons will be flashing
- on the info bar the message „Program manually paused" will be shown
- all relays are de-energised
- the operating time will be paused

Push the „Start" button:
- the buttons stop flashing
- The relays are re-energised
- Operating time continues to run

i	**Please note**
	If a PIN entry is requested the „Administrators (from V00.07)" function, *item 8.7, page 41* has been enabled. This means that changes can only be made by specific operators.

6.6 Single step control

As soon as a program step has finished the controller will automatically switch into the next step. If the nominal value „Single step" has been enabled in a process *(it has been configured by the service*
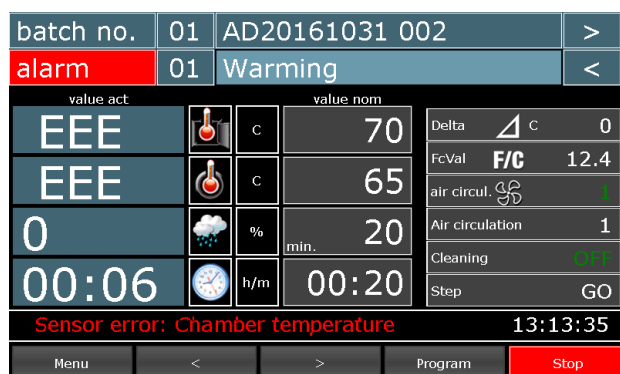
technician) you can decide in programming mode what you want to happen at the end of the program step:

- "Step = **Stop**" function: the controller switches into pause mode and the message *„Hold: single step control"* will appear on the status bar, the "Start" and „Stop" button are flashing.
  If you want the current process to continue, raise the nominal value that led to the termination of the process. Confirm with the „Start" button.
  - If you want the program to continue with the next process, either switch into the next process manually or change the nominal value „Process" to „Go". Then confirm with the „Start" button
  - If you want to terminate the program, press the „Stop" button.
- "Step = **Go**" function: Controller will automatically switch into the next step.

| Step | GO |
| Step | STOP |

6.7 Alarm signal

If an alarm incident has occurred, for example through digital inputs, limit value alarms or sensor failure, the „Step" box will be flashing with the word „Alarm". On the info bar you can see the alarm and the cause *(e.g. chamber sensor break).* Press the „Step" box to acknowledge the alarm and to stop the horn. The message will remain on the info bar.

batch no.	01	AD20161031 002	>
alarm	01	Warming	<

value act			value nom			
EEE	🌡	C	70	Delta	△ C	0
EEE	🌡	C	65	FcVal F/C		12.4
0	🌧	%	20	air circul.		1
00:06	🕐	h/m	00:20	Air circulation		1
				Cleaning		OFF
				Step		GO

Sensor error: Chamber temperature   13:13:35

| Menu | < | > | Program | Stop |

Alarm

⚠	**Be aware**
	Chamber sensor defect generally leads to program termination. Core- or humidity sensor defect will lead to a termination of the program if the relevant nominal value has been pre-programmed.

When an alarm event has occurred, for example at a digital input, limit value alarm or sensor break, the „Step" box and a loudspeaker symbol will be flashing alternately *(Alarm, horn).*

On the status bar the alarm and the reason for the alarm will be shown *(e.g. sensor break, chamber temperature).* Click on the box to acknowledge the alarm and to de-activate the horn.

6.8 Fast dehumidifying

The activation of the fast dehumidifying function is indicated by the symbols shown below.

ℹ	**Hint**
	If the temperature is within the fast-dehumidifying range and the dehumidifying aggregate is switched on, then "**On**" in the button is shown in red. This means the fast dehumidifying function is active.

Operating mode: fast dehumidifying not active

Fast dehumidifyii   on

Operating mode: fast dehumidifying active:
Heating and dehumidifying switched on

Fast dehumidifyii   on

6.9 Maximum step time display

(from V00.18)
The maximum step time count ends at 99 h : 59 min. This means that in continuous operation the time until then is counted. If this time is exceeded, 99 h : 50 min is still displayed.

6.10 Checking cleaning times in the operating mode

During operation, neither the current cleaning sequence nor the individual section times can be changed. The current cleaning status can be checked.

Operating mode view (values are for information only and cannot be changed)

- Currently active string (line is shown in red)
- Relay assigned in the cleaning string is switched on "1"

Calculated total time of all sections

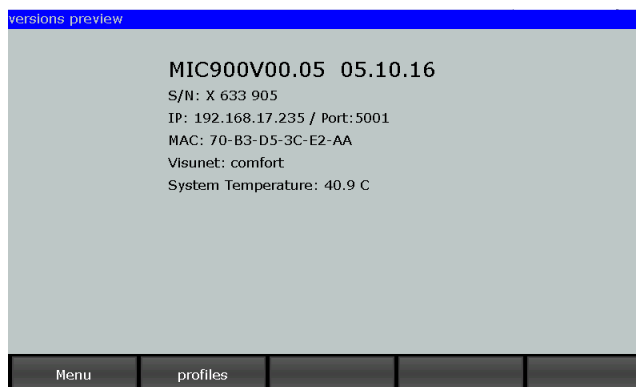Leave cleaning mask

7 Information page

On the info page the following information is shown: which type of device you have got, the software version, device number, IP number with port, MAC address, VisuNet if enabled and the system temperature.

versions preview

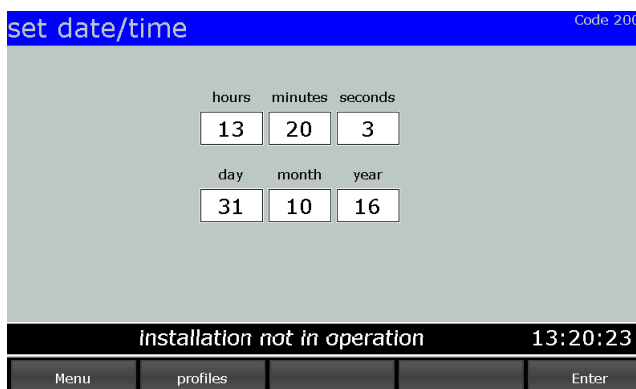**MIC900V00.05 05.10.16**
S/N: X 633 905
IP: 192.168.17.235 / Port: 5001
MAC: 70-B3-D5-3C-E2-AA
Visunet: comfort
System Temperature: 40.9 C

| Menu | profiles | | | |

Information

8 Profiles

Standby > Menu > Profiles

Under „Profiles" all the functions are shown in the selected system language.

8.1 Date and time

Standby > Menu > Profiles > set date/time

If you want to make changes to the date and/or time, press the relevant box and use the on-screen keypad to enter the new date or time. Confirm with „Enter" on the numerical pad.
In order to apply this change, also press the „Enter" button on the task bar. The amended time will now appear on the info bar.

set date/time   Code 2001

hours	minutes	seconds
13	20	3

day	month	year
31	10	16

installation not in operation   13:20:23

| Menu | profiles | | | Enter |

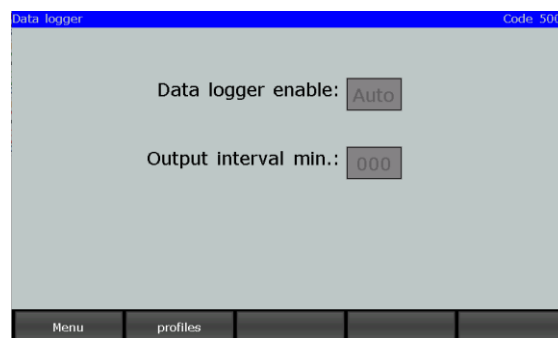**Setting date and time**

ℹ	**Please note**
	The current date and Central European Time are pre-set.

8.2   Data logger functions

During operation the controller can send all the current program data to a data logger *(µSD card – Files\\ProgLog).* Requirement: VisuNet has to be enabled.

Here you can only check on the data logger setting, changes can however not be made! (boxes with options are maked in grey)

	Hint
i	With an interval time of 0 min, data will be logged every 30 seconds. If the data logger is active (Active = Yes), there can be a delay of up to 3 seconds at the start of a program.

	Hint
i	The data logger can only be used if VisuNet is enabled and a µSD card with enough free memory has been inserted into the relevant slot.

If the option „Data logger" is enabled, but there is not enough memory on the SD card, the controller will realise this before the start of a program and it will show a corresponding message on the display.
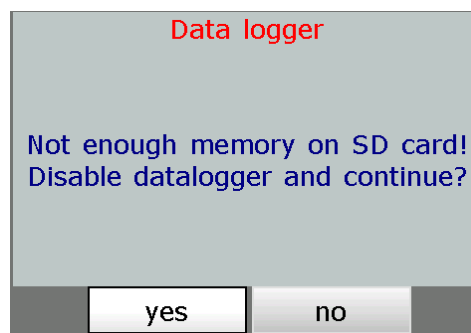
Data logger memory

If this message is acknowledged with **„No"** the program start will be terminated.
If the message is acknowledged with **„Yes"** the data logger will temporarily be switched off and the program will be started.

⚠	**Be aware**
	Temporarily switched off means until the next reboot of the controller. If there is not enough memory on the SD card, you can save the data from the SD card onto a USB stick and free some memory (*see "copy data onto USB stick ").*

About 80000 data entries can be logged per program. Depending on the program runtime, the interval times should be adjusted.

Example:

Interval time	Calculation
1 minutes	80000 / (60min/1min) = about **1333 hours**/ 24 **hours** = ca. **55 days**
2 minutes	80000 / (60mn/2min) = about **2666 hours** / 24 **hours** = ca. **110 days**
10 minutes	80000 / (60min/10min) = about **13333 hours** / 24 **hours** = ca. **555 days**
60 minutes	80000 / (60min/60min) = about **80000 hours** / 24 **hours** = ca. **3333 days**

8.3   Enabling and disabling a signal

Standby > Menu > Profiles > enable signal

This function allows you to switch off the „Signal" aggregate at specific times during the day or night. Select „Enabling signal" from the „Profiles list" and a button „ON" or „OFF" will appear.
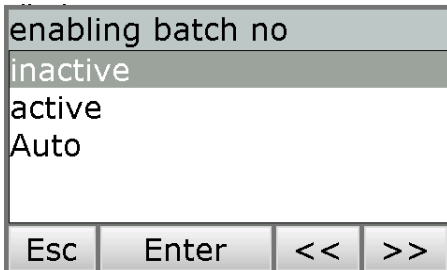
„OFF" = Signal is completely disabled.
„ON" = Signal function is enabled. This means that if the corresponding event happens, the relay „Signal" will switch. You can enter two additional times (from – to), putting a time limit on the signal function.

ℹ	**Please note**
	With setting „00.00" to „00.00" the signal will be active all day.

⚠	**Be aware**
	If a signal event transgresses a pre-programmed time lock interval, its state remains unchanged. **For example: the alarm signal in enabled from 7 a.m. to 5 p.m. Let's assume the signal comes on at 4.50 p.m., then it will remain on even beyond the time lock set for 5 p.m. The same is true vice versa. If an alarm happens before 7 a.m. the signal will not come on and will remain off even after 7a.m.**

8.4 Enabling batch number

| Standby | Menu | Profiles | enable batch no. |

enabling batch no
inactive
active
Auto

| Esc | Enter | << | >> |

Before every program start you can either enable or disable batch number entry.
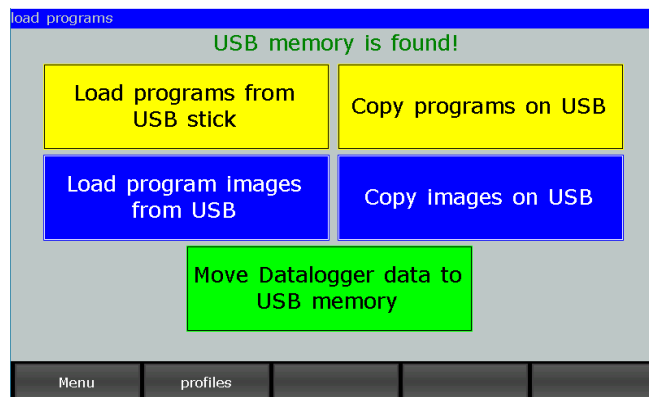You can choose between the settings active, inactive and auto.
"Auto" means: The batch number that was used for the most recent program + „1"   will be used as a template for the new program.
Example: Last batch number: „ABC 123"
Template for the new program start: „ABC 12__4__"

8.5 Loading programs

| Standby | Menu | Profiles | data alignment |

load programs

USB memory is found!

Load programs from USB stick	Copy programs on USB
Load program images from USB	Copy images on USB
Move Datalogger data to USB memory	

| Menu | profiles | | | |

Loading programs

⚠	**Be aware: Supporting the USB**
	The USB interface is only meant to be used to read out/retrieve data logger data and copy programs from one controller to another via a USB.
	Please do not connect any USB periphery devices (key board, mouse, printer) **at this interface.**
	All common USB mass storage devices in FAT16 and FAT32 format are supported. NTFS formatted USB mass storage devices and external hard disks are not supported!

ℹ	**For your information**
	If no USB storage device is inserted in the controller, the message „No USB storage connnected!" will be shown.
	If a USB stick is detected, the message „USB storage device found!" will be shown.

8.5.1   Loading progams

The controller can read out all program from USB:\ProgUSB\Program.adp. Existing programs are overwritten with new ones.

⚠	**Be aware**
	In order to read out program from a USB the file name and path must be exactly: USB:\ProgUSB\Program.adp.

ℹ	**Administrator rights**
	This setting is protected by a PIN when administrators are registered. Only users with the authority to „Set up programs" have access to this feature.

ℹ	**Restrictions (controller version 00.16)**
	At this time the following features cannot be read out from program data: • Air circulation sequence • Cleaning sequence, time intervals • Repetitive step sequences

8.5.2   Copying programs onto a USB

The controller saves all programs onto a USB under \ProgUSB\Program.adp.
The programs can then be read by another MIC900 device.

ℹ	**Administrator rights**
	This setting is protected by a PIN when administrators are registered. Only users with the authority to „Set up programs" have access to this feature.

8.5.3   Saving data logger data onto a USB

The data of programs that have already run are saved onto a USB. The data can then be imported into VisuNet *(see manual VisuNet 6.1.4 Wireless data transfer).*

ℹ	**Hint**
	Copying data onto a USB mass storage can take several minutes, please do **not** remove the USB stick or SD card during this process until you get a message to do so.

⚠	**Be aware**
	After the data has been **successfully** copied, it is deleted from the SD card.

8.6   Show versions

Standby ⟩ Menu ⟩ Profiles ⟩ version preview

The version number, device number, IP number, port, MAC address, VisuNet if enabled and the current system temperature are shown here.

ℹ	**Please note**
	Please include the **device number** and the **version number** with the date if you send us an enquiry!

```
versions preview

                    MIC900V00.05  05.10.16
            S/N: X 633 905
            IP: 192.168.17.235 / Port:5001
            MAC: 70-B3-D5-3C-E2-AA
            Visunet: comfort
            System Temperature: 40.9 C




        Menu          profiles
```
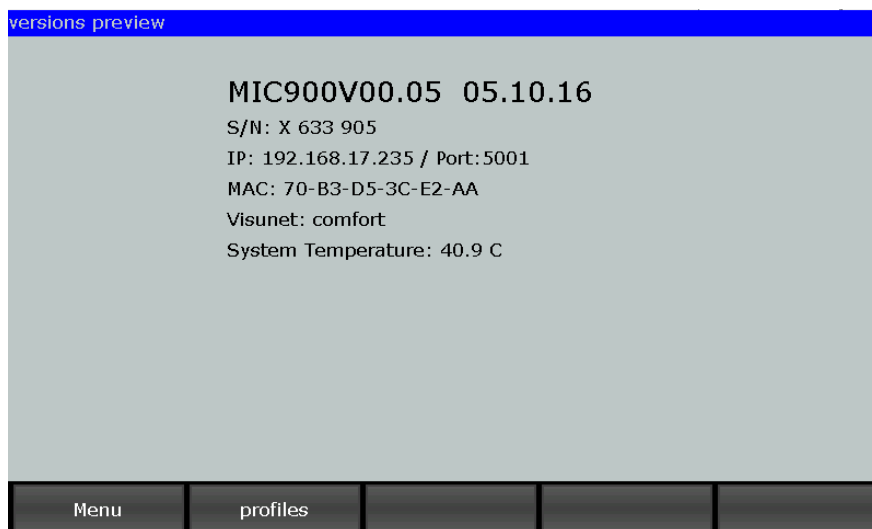
Versions

8.7   Administrators (from V00.07)

Standby ➤ Menu ➤ Profiles ➤ administrators

Up to 50 users (administrators) can be registered with the controller. They are authorised to operate the controller. The following settings are available for each user:
▪ Name: maximum length 10 characters
▪ PIN: 4 digit number
   A user needs his/her PIN to log on with the controller.

⚠	**Be aware**
	PIN stipulations - PIN = 0000 means that the user is disabled. - Every user has to have his/her own individual PIN. No identical PINs allowed.

ℹ	**Hint**

	Overview of the tasks you can execute when you have access rights
	▪ Start / Stop / Pause / Batch no.
	   - Starting and stopping programs,
	   - Entering and changing a batch number,
	▪ Manual pausing and/or resuming of a running program
	▪ Changes to the nominal values / Switching into another step
	   - Transient changes to the nominal values during operation
	   - Manual switching into another step during operation
	▪ Setting up /changing programs
	Setting up and changing programs in programming mode (permanent change to the programs)

Security of the administrator settings
The administrator settings are password-protected

	Hint

ℹ	**Passwords for displaying or changing the administrator settings**
	▪ Password 6800 :
	  All users and their access rights are shown. Changes to the settings are not possible.
	▪ Password 7890:
	  All users and their access rights are shown. Changes to the settings are possible, subject to the following conditions:
	  User PIN: Changes can only be made if a valid user PIN1 is entered
	User name, access rights, global administrator settings: Changes can only be made when a valid administrator password has been entered.

8.7.1 Configuration/changes to the administrator settings

⚠	Be aware
	Administrator settings: Password 7890 is required Call up page: Menu/ Profiles/ Administrators / Password "7890"

8.7.1.1 Changing user names, access rights, global administrator settings

Administrator password:

You will need to enter a password in order to configure or change the following user settings. This password can be individually changed for each installation. Factory setting is „7890".
For security reasons, administrator passwords should be changed.

Enter the administrator password in order to enable the user settings.

Once a correct password was entered, the headings (except for the PIN) are shown in green. The settings can now be changed.
Also see „Changing the user PIN" Item 8.7.1.2, Page 43

Administrator password

---

1 Changes to the user PIN „0000" are always possible.

Settings:

- ① **Administrators**
  Enabling or disabling administrators (ON/OFF)

- ② **Automatic log-off**
- Settings for operating mode

  - **Time interval is pre-programmed:** (Range of entries: 0 to 254 sec.)
    If none of the keypad buttons are pressed, the controller will automatically log-off the current user after this time interval has elapsed. This means the user will have to re-register with the controller if she/he would like to make further changes.(e.g. to switch into the next step, to make changes to the nominal values etc.)

  - **No interval is pre-programmed:**
    If you have not entered a time interval, the current user will not be logged off automatically. This means that further tasks of the latest user can be performed until he manually logs off him/herself.

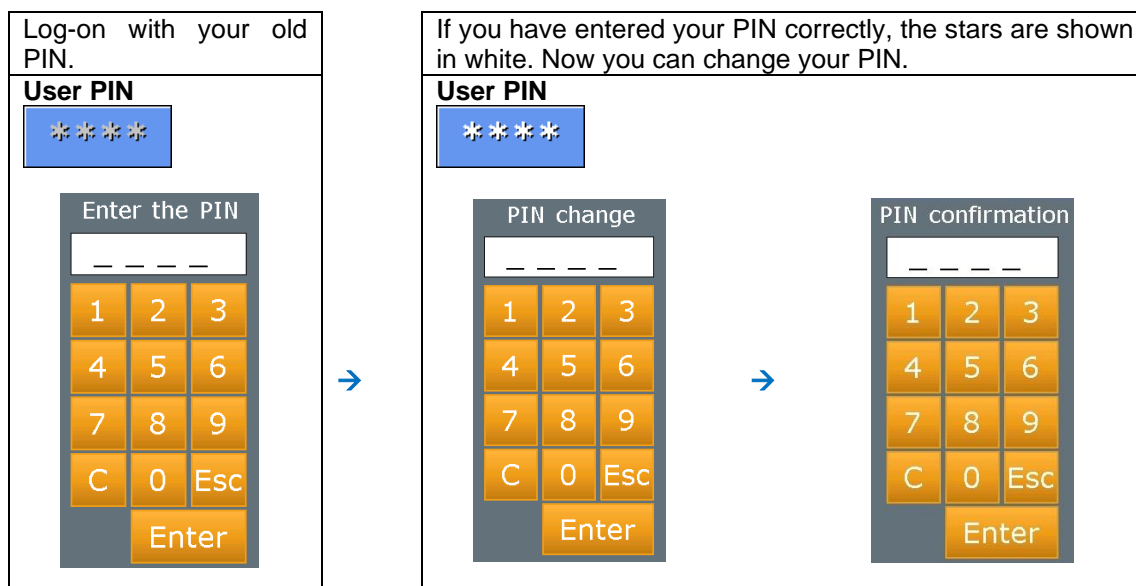| ℹ	**Hint**
	Manual log-off in operating mode Menu / Profiles/ „Admin." **button** **See** Display of , page 44

Changing /deleting users: ③

After you have entered the administrator password, a selection menu will appear when you press the user name button.
Select „Edit", to change the user name or to add a new user.
Select „Delete" if you want to remove the user

edit
delete
exit

8.7.1.2 Changing the user PIN

This is how you enter or change a user PIN:

Log-on with your old PIN.	If you have entered your PIN correctly, the stars are shown in white. Now you can change your PIN.
User PIN ✱ ✱ ✱ ✱	**User PIN** ✱✱✱✱
Enter the PIN _ _ _ _ 1 2 3 4 5 6 7 8 9 C 0 Esc Enter	→ PIN change _ _ _ _ 1 2 3 4 5 6 7 8 9 C 0 Esc Enter → PIN confirmation _ _ _ _ 1 2 3 4 5 6 7 8 9 C 0 Esc Enter

8.7.2   Display of the current user in operating mode

You can display the current (or the most recently logged on) user.

Logged-on user display

8.8   Operating hour counter reading

Under this setting you can display and re-set the current counter readings of all operating hour counters (*actual and nominal status*).

Operating hour current reading

Description of further settings for the operating hour counter:

▪ **Nominal value**: *(Nominal value is the time that was entered as limit value)*
Here you can change the pre-set nominal value.

▪ **Actual value**: *(Display of the current counter reading)*
Here the current counter reading can be changed.

▪ **Interval / next scheduled time**:
Here you can check, if interval behaviour has been pre-programmed for the counter. If time intervals have been pre-programmed, you can enter the date for the next counter interval/ action here.

> ⚠️ **Be aware**
>
> If interval behaviour has been pre-programmed for a counter, the date/time for the next action/interval has to be entered here.

8.9 Screensaver

A screensaver is supposed to prevent a constantly lit image from burning into the display during longer work breaks. The decrease in brightness after many hours of use is improved, but it can also be used for data protection reasons. It is terminated as soon as an input is made (e.g. by pressing a button or touching the touchscreen).

Menü ⟩ Profile ⟩ Bildschirmschoner ⟩ Enter

- Screensaver: aktivate/deactivate
- Screensaver selection: what should be displayed when the screensaver is activated

OFF	Analogue clock with date	Digital clock
Black screen	MIC980 30.01.2019	15:55:42

- Waiting time: Time after which the screen saver displayed if no input is made.

> ℹ️ **Hint**
>
> When the screen saver is activated, it can be previewed by pressing the F5 "Test" key.

> ⚠️ **Be aware**
>
> When an alarm happens, the screensaver is closed and remains inactive until the alarm is cancelled.

🛠️ **Factory setting[1]:**
Screensaver: on
Screensaver selection: Analogue clock
Waiting time: 5 min

9 Power failure

If a program, which is currently in operation, is interrupted due to a power failure or because the device is switched off, the controller will resume the program as soon as power is restored

> ⚠️ **Be aware**
>
> **The behaviour of the device in case of a power failure (depending on a pre-set temperature difference, „always"or „never") can be configured by your service engineer under configuration/various settings!**

---

1 Settings are loaded only during the total deletion. When executing the code 9993, the settings are not changed.

10 List of errors (possible problems)

| Problem that has arisen	Possible causes	Possible solutions
Program does not start	Program is empty	Set up a program and assign at least one process to the first step *(See „* Programming mode*", item 0, page 21).*
	Enter a waiting time („Start" button is flashing)	Press the „Start" button.
Program is terminated immediately after the start	Possible defect of the chamber, core or humidity sensor, display shows „EEE" for sensor break or „---" for sensor short circuit	Replace the broken sensor or call your service technician. After it has been replaced the temperatures have to be checked and the controller may have to be re-calibrated by the **service technician.**
Program runs quickly through all the steps and then ends	- the pre-set core temperature values was reached - FC value was reached	Check the pre-set values in this program.
	- nominal humidity value has been reached (humidity min.), - Nominal de-humidification value has been reached (humidity max.)	If it has been configured that way , ask your service technician
	Nominal core value is higher than the pre-set nominal chamber value (negative core shut-down, core temperature is below the nominal chamber temperature)	*See See „Negative core shut-down (Showering/cooling)", item 6.1.1, page 32*
Program does not switch not the next step	Single step control is active	Manually switch into the next step, if you want to go onto the next step or increase the nominal values if you want to continue with the current process. *(See „*Single step control*", item 6.6, page 33)*
Program steps are repeated	Step repetition sequence is active	Push the „Stop" button (See „Setting up repetitive steps", item 4.3.5, page 25)
A program that has just finished automatically switches into the next program	Program link active	Confirm with „Stop" *(See „Linking programs", item 4.4, page 26)*
Controller cannot be started	Power lead disruption	Disconnect the controller from the power supply for at least one minute, then reconnect it and try operating it again.
CAN BUS error CAN BUS will be blocked, Error message: „Error at CAN-BUS (No.: 0x1007). Modules cannot be used" The message will remain on the display until the controller is rebooted.	Modules of the same type have the same CAN addresses (see switch settings (DIP switch) for CAN modules).	Change the module addresses (DIP switch).

11 Connection diagram

11.1 MIC 900
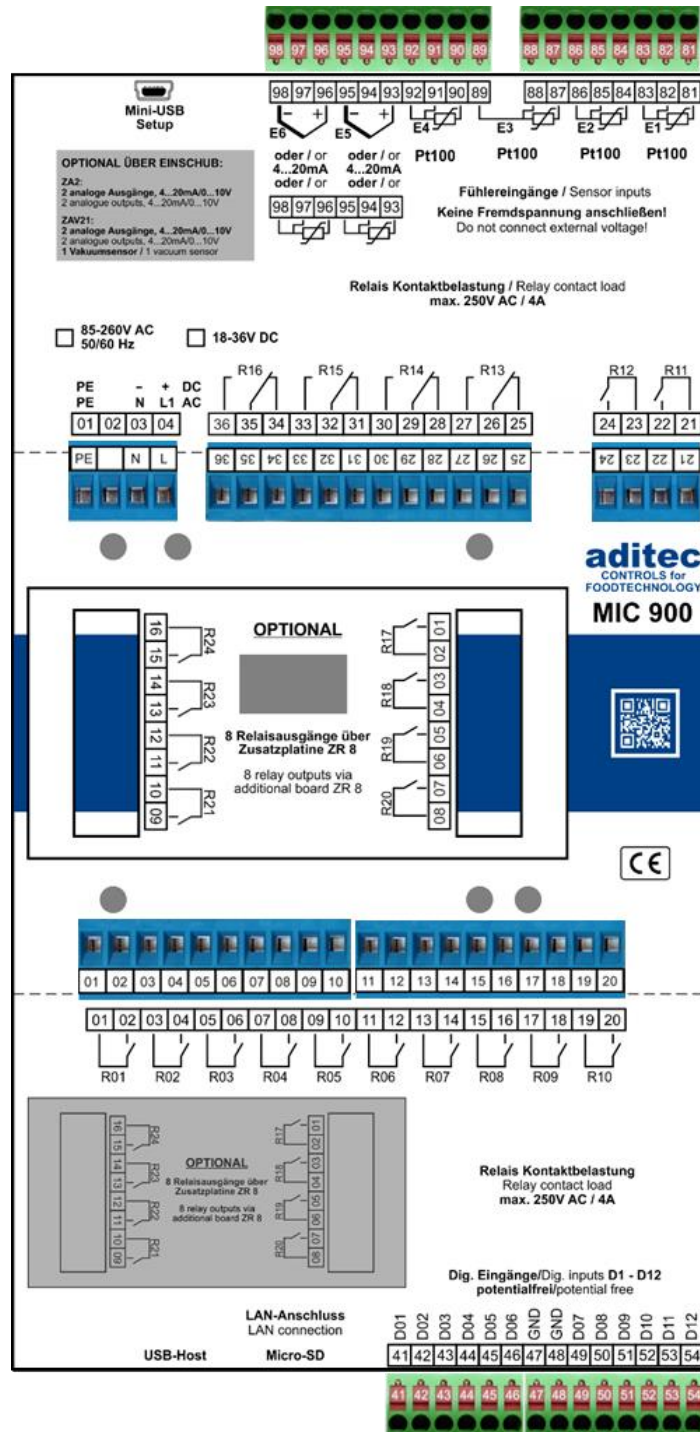
Connection diagram MIC 900

11.2 MIC 1100
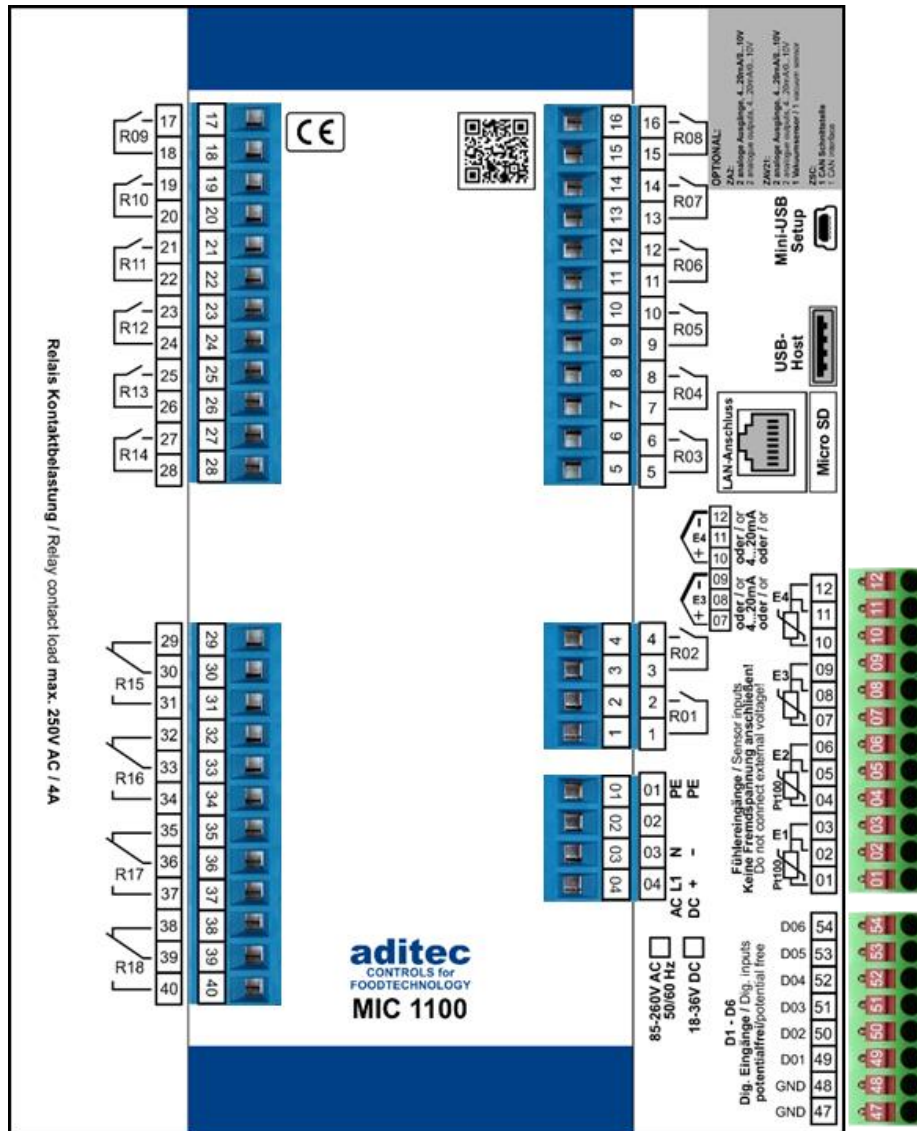
Connection diagram MIC 1100

11.3 MIC 3000
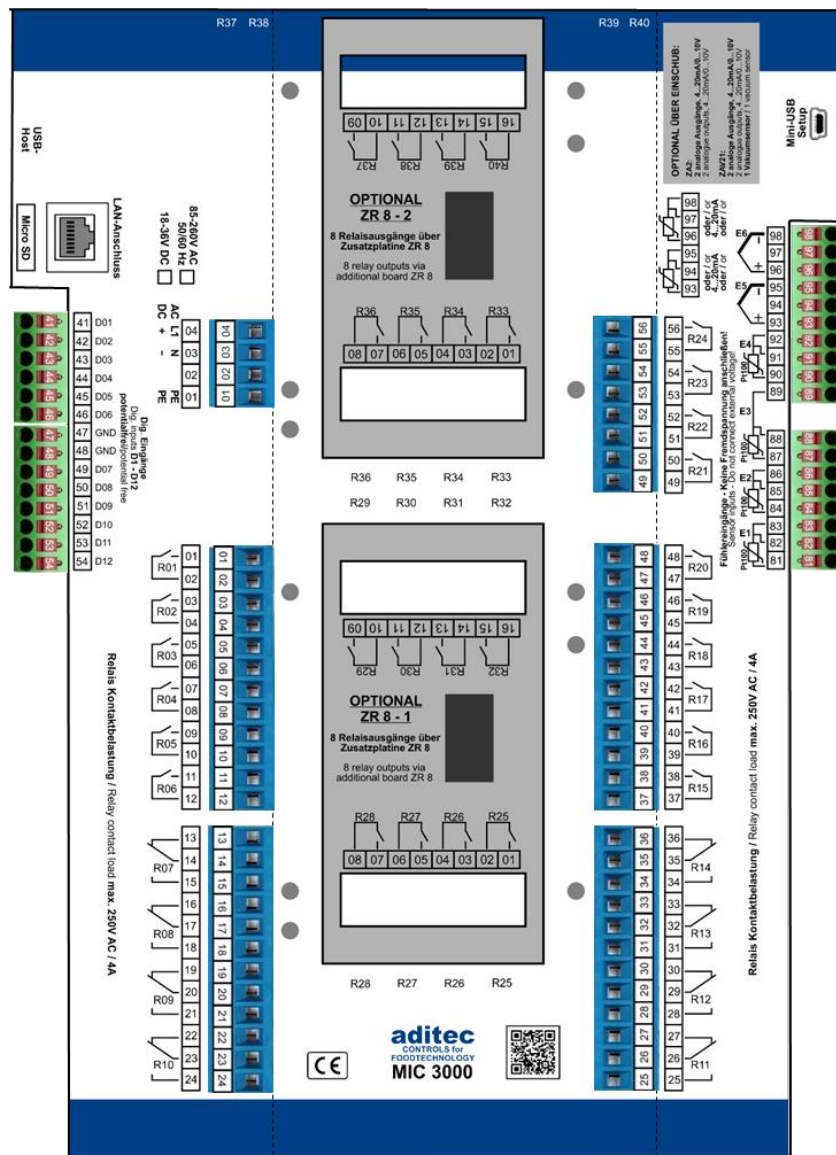
Connection diagram MIC 3000

12 Technical data

12.1 MIC 900

See data sheet: Process controller MIC 900 » **universal cooking and smoking chambers as well as climatic and maturing chambers**.
http://www.aditec.net/MIC900_data-sheet_en.pdf

12.2 MIC 1100

See data sheet: Process controller MIC 1100 » for universal, smoking, climatic and maturing installations
http://www.aditec.net/MIC1100_data-sheet_en.pdf

12.3 MIC 3000

See data sheet: Process controller MIC 3000 » universal cooking and smoking chambers as well as climatic smoke and maturing chambers.
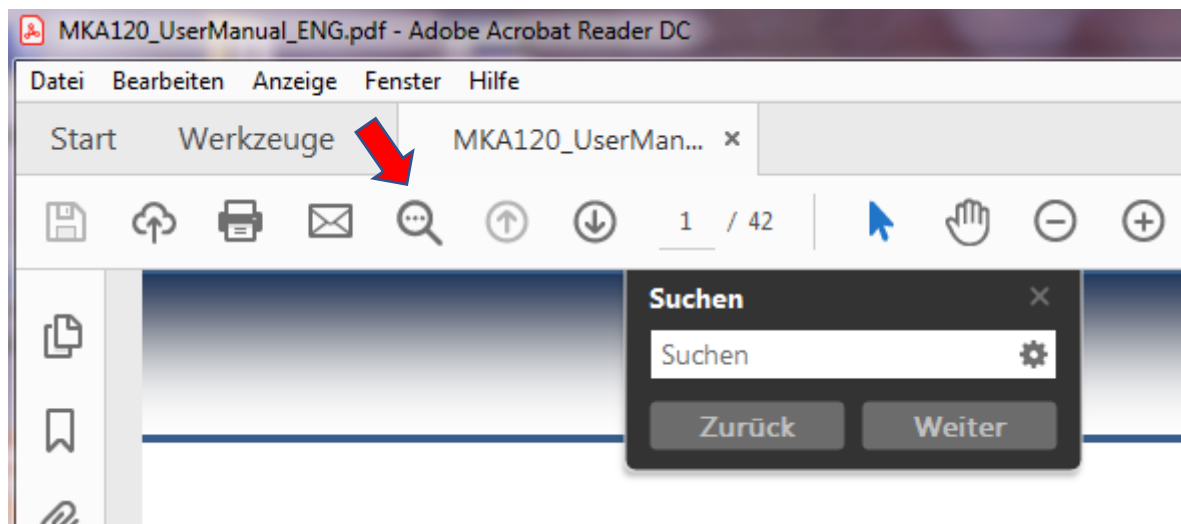http://www.aditec.net/MIC3000_data-sheet_en.pdf

13 Index

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i	**Hint**
	For further search terms not included in the index directory, please use the search function in Adobe Acrobat Reader.

14 Safety instructions

To avoid any danger of electrocution, the housing must never be removed nor opened at the back. There are no parts inside that can be serviced by the user himself. Leave the servicing to the experts! To avoid any risk of fire or electrocution the appliance must not get wet nor be exposed to rain.

1. **Advice:** Read all safety instructions and all items in the user manual, before using the controller for the first time! Keep the safety instructions and the user manual in a safe place in case you need to refer back to them at a later date!

2. **Installation instructions:** Always make sure that the appliance is installed by an authorized and experienced specialist. Please follow the specific safety instructions as well as the VDE guidelines during installation. The appliance should only be fitted in an approved and specifically designed waterproof switching cabinet (metal housing) and should only be used for the purpose it was designed for and within the limits of its technical data.

   We recommend that any down-stream inductors (relays, contactors, signal transmitters, valves etc.) with RC elements should be checked for interference. These are available on the retail market (e.g. Siemens 3 RT1916, Klöckner-Moeller, etc.).

   With for 230V/AC devices (e.g. MIC900, MIC1100, MIC3000) particular attention must be paid to functional-equipotential bonding which must be checked and guaranteed when converting old devices.

3. **Analogue in- and outputs:** Do not apply separate source voltage to the in- and outputs (4-20mA / 0-10V and Pt100).

   Sensor leads: The leads for the sensors should be run separately from any voltage carrying leads, this also includes control wires carrying separate source voltage. It is vitally important that the sensor leads have a metal shielding and that this shielding is connected to the sensor housing itself.

4. **Relay outputs:** The relay outputs are potential free and the maximal load of 250V AC and 4A must not be overshot.

5. **Water and humidity:** Never use the unprotected appliance near water, e.g. near a bath tub, water basin, sink, washing machine, in damp cellar or near a swimming pool. The appliance is only waterproof on the front (according to the control IP65 or IP67). The back and side panels must not come into contact with water.

6. **Ventilation:** The appliance must have sufficient ventilation, the ventilation slits in the housing must never be covered up, or blocked by objects that may have been inserted into the slits.

7. **The effects of heat:** Keep the appliance away from heat sources, like radiators, heating conduits, ovens, and other elements that may radiate heat.

8. **Energy sources:** The appliance should only be connected to the power sources that are specified in the user manual or on the appliance housing itself.

9. **Cleaning:** Clean the display and the operator interface only with a damp, soft and clean cloth without any chemical and mechanical substances. Do not use sharp-edged tools or pointed objects or other mechanical aids.

10. **Appliance not in use:** When you know the appliance is not going to be used for a longer period of time, it should be disconnected from the mains.

11. **Contaminants:** You have to be extremely careful that neither liquids nor foreign objects can get into the appliance through the openings in the housing. If objects or liquids have contaminated the inside of the appliance, it has to be disconnected and sent in to the manufacturer immediately.

12. **Servicing after damage:** The appliance may only be serviced by a qualified specialist. The user should only do the servicing tasks he is meant to do according to the user manual. For servicing that exceed his authority, he should always contract a specialist.

13. **Please note: Never make any technical alterations to the appliances,** unless they were specifically approved by aditec GmbH. **Unauthorized alterations will invalidate your warranty.**

For enquiries, orders and repair enquiries, please contact us at the following address:

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