User Manual

MIC 980

Stikkenoven

V80.01

Stand 21.01.2019_01

Contents

Symbols used in this user manual

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

Symbol	Description
ℹ	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

Processor **MIC 980**, 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 rack ovens.

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 980:
The standard version has 16 relay outputs
(12 normally open contact and 4 changeover contacts).

1.2 Different operating modes of the controller

An operating mode is the current state of the controller. The controller has 6 different operating modes. The following overview gives you a short explanation of the different operating modes. A more detailed description can be found below.

1.2.1 Standby mode (also see item 1.7.1)

The controller is idling. There is no temperature control and all outputs of the controller (relays, analogue outputs) are inactive.

i	**Hint**
	Changes to the configuration settings and to some of the service and profile settings are only possible when the controller is in standby mode
	Certain aggregates can be switched on manually (for a more detailed description see item 1.4)

1.2.2 Pre-heating mode (also see items 5 and 6)

The controller is in operating mode. The temperature is controlled according to the pre-programmed nominal temperature value. Air circulation is running as pre-programmed.

1.2.3 Waiting mode (also see item 5)

The controller is in waiting mode. There is no temperature control and all outputs of the controller (relays, analogue outputs) are inactive. When the pre-programmed start time has arrived the pre-heating modes are started automatically.

1.2.4 Readiness mode (also see item 7)

The controller is in operating mode. The temperature is controlled according to the pre-programmed nominal temperature value. Air circulation is running as pre-programmed (as in pre-heating mode). You have the option of selecting a program to start the baking program.

i	**Hint**
	Programs can only be stared when the controller is in readiness mode.

1.2.5 Operating mode (also see item 8)

The controller is in operating mode. A program is currently in operation. All aspects of the program are being controlled. All the control outputs are actuated according to the programming (*configuration / nominal step values*).

1.2.6 Pause mode (also see item 9)

A program that is running is interrupted. There is no temperature control. The reason for pause mode is shown on the status bar (see 1.5, e.g. „Door open"). All regular[1] outputs of the controller are switched off (relays, analogue outputs).

1.3 Display and operating panel

⚠	**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.

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

1.3.1 Input and display touch panel

The upper half is a 7" touch display. Here you can change the different settings and information on program data and the input screens are shown.

1.3.2 Control buttons

The control buttons allow you to navigate through the operating elements with the help of the cursor buttons. Use the "Cursor-Enter" button to confirm the entries you have made.

Figure 1: MIC 980

---

[1] An exception can be outputs that have been configured as event–related outputs, e.g. the light when the door is open.

aditec
CONTROLS for
FOODTECHNOLOGY

MIC 980

Start Stop (with LED)	Start / Stop	Starting and stopping controller LED lights – control in operation LED flashes – end of the program / Waiting mode LED off – Controller Standby-Mode

(cursor pad)	Cursor left - Cursor right + Cursor up	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).
	Cursor down	Moving vertically down to the next operating element. Entering number values (decremented).
	Cursor ENTER	Confirm the selected button/box

1.4 Shortcuts

The task bar is sub-divided into 4 shortcut 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.

Air circ.	Steam flap	Turntable	Baking

Menu	Light	Extractor (exhaust fan)	Start/Stop

Air circulation: Air circulation distributes warm air evenly throughout the oven, so that the heat can reach the bakeware everywhere in the oven.
Press the button: switch into a different level.
The current level is shown:
- 0 – air circulation is inactive
- I to III – display shows the current level

Symbol: The air circulation motor is on *(at least on level)*

Steam flap: The steam flap is used to vent steam from the oven *(usually at the end of the baking process)*.
Press the button: Steam flap is switch on or off
Symbol: Flap is on
„M" – Flap was switched on manually

Turntable: The turntable allows for an even heating process.
Press the button: The turntable is switched on (*also see item 2*)

Symbol: Turntable is on

Baking: Function of this button depends on the current operating modus of the controller.

Menu:	Press the „Menu" button to get to the menu page
Light:	Here you can switch-on and switch-off the light in the oven

Light: Here you can switch-on and switch-off the light in the oven
Press the button: Light is switched on/off (*also see item ?*)
    Symbol: Light is on
    „M" – Light was switched on manually

Extractor: **The e**xtractor (exhaust fan) sucks up and filters the steam from the baking process.
Press the button: The extractor (exhaust fan) is switched on/off (*also see item*)
    Symbol: Extractor (exhaust fan) is on
   **„M"** – Extractor was switched on manually

top: Function of this button depends on the current operating modus of the controller.

1.5   Information bar/ Status bar

On the information bar you can see different messages about the current status of the controller
Below you can see some examples of messages.

1.5.1   Display – Operating mode

On the bar you can see the current mode of the controller, e.g.. „System not in operation", „readiness mode", „Night-time pre-heating".

Readinessmode
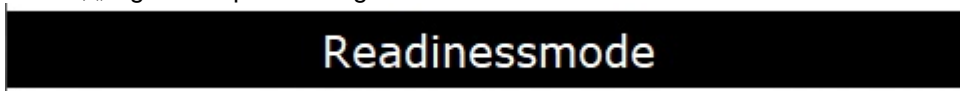
If a running program was interrupted or terminated, the operating mode display will be red and will be flashing!

Process stopped

1.5.2   Display – System status messages

If the system status changes a message is shown. A system status message and the current operating mode will be shown alternately.

Temperature reached!

1.5.3   Display – Remaining runtime of a program[1]

In **operating mode** this display of the remaining runtime of a program will be shown.
- **Program runtime**: Sum of all the baking times and all steps of a baking programme.
- **Remaining program runtime**: The remaining baking time until the end of a program.

i	**Display in percent**
	The remaining program runtime can be shown as a progression bar and as a percentage value of the total runtime: *Total runtime in relation to remaining runtime.* Total runtime = is the time that has already elapsed since the progam was started + the remaining runtime of the program.

---

[1] Display can be de-activated under Menu/Service/Optional displays/ 09 progression

aditec
CONTROLS for
FOODTECHNOLOGY

1.6   Functions of the on-screen key pad

Figure 2: Key pad

Insert/replace mode	
<<	Deleting individual symbols
C	Deleting an entire text passage
shift	Capital /Lower case letters
.?123	Numbers and special symbols
Enter	Confirm entry
Esc	Leaving the operation without changing the original settings
more	More special symbols
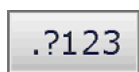
aditec
CONTROLS for
FOODTECHNOLOGY

1.7 Entering numerical values

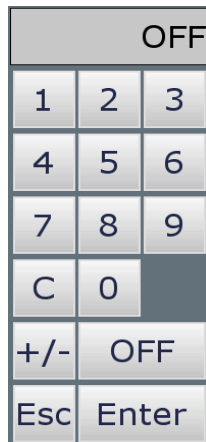|			
			OFF
1	2	3	
4	5	6	
7	8	9	
C	0		
+/-	OFF		
Esc	Enter		

**Figure 3:
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

1.7.1 Screen lock

All display functions are blocked when you press the „Enter" button during 3 sec. On the lower margin of the display appears "Lock". To deactivate the look, press the "Enter" button for 5 sec.

	Please note
i	The program processing is independent of screen lock. If the screen lock is activated in operating mode the program will continue.
	The activated screen lock has no influence on the communication with VisuNet or Service program. If the screen lock is activated you can start and stop programs via VisuNet.
	This function is helpful when the unit is cleaned up.

2 Standby mode / Start page

As soon as the controller has been connected to a power supply, it will automatically boot up. This process can take up to 1 minute. Then you will get to the standby screen.

On the status bar on the stand-by page you can see the current date, the current actual values, the nominal value for pre-heating, the selected day and time for night-time pre-heating and the operating status of the controller.

Date display

Monday, 11.02.2019   09:08:55

Logo

MIC 980

Temperature values

ue act   °C   value nom

1 52.0   2 125

1. Currently measured temperature

2. Nominal temperature for pre-heating or readiness mode, respectively

Day and time for night-time preheating

| 1 Monday 05:00 | 2 Tuesday 04:45 | 3 Wednesday 06:00 | 4 Thursday 05:30 |
| 5 Friday 12:00 | 6 Saturday 10:00 | 7 Sunday 04:50 | 8 (moon) |

Buttons for pre-selecting and starting night time pre-heating (see item 5)

Shortcuts and standby mode

| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |

1. Pre-selecting the air circulation level for pre-heating and readiness mode.
   Air circulation remains switched off
2. Steam flap (Item 1.4)
3. Approaching the next end position.
4. Starting readiness mode (see item 7)
5. Menu (item 3)
6. Light (item 1.4)
7. Extractor (exhaust fan) (item 1.4)
8. Starting pre-heating (see item 6)

Status bar

installation not in operation

Status bar display

Figure 4: Start page (Standby)

3 Menu page

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

▪ **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 (item 4)

▪ **Information:**
Display of the information about the controller version and settings.
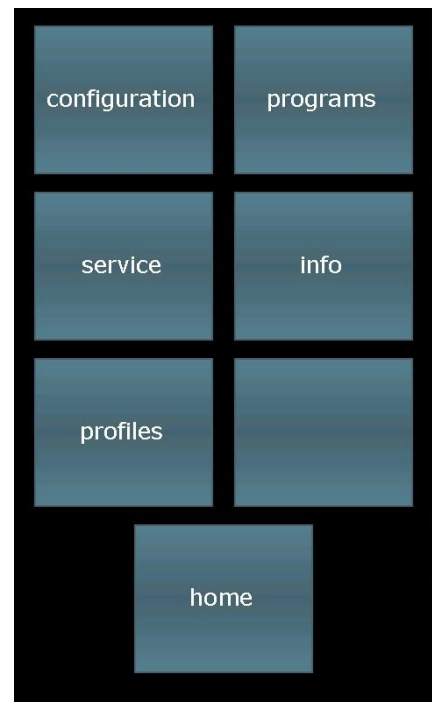
▪ **Start page:**
Back to the start page/standby

Figure 5: Menu

4 Programming mode

Up to 99 baking programs consisting of several program steps can be configured and changed in programming mode. When you have entered and tried out all the baking programs, the administration of the controller is limited to selecting and starting a program.

⚠	**Be aware: Administrators**
	If administrators have been assigned in the controller, a password will be required before a program can be started. Only administrators with the user right „Program set-up /change" can start programming mode.

4.1 Program overview / favourites

On the left-hand side all programs are shown on a list. On the left side, the so-called favourites are shown. Favourites: Programs that are started most frequently.

In readiness mode the favourites are offered first for a program start.

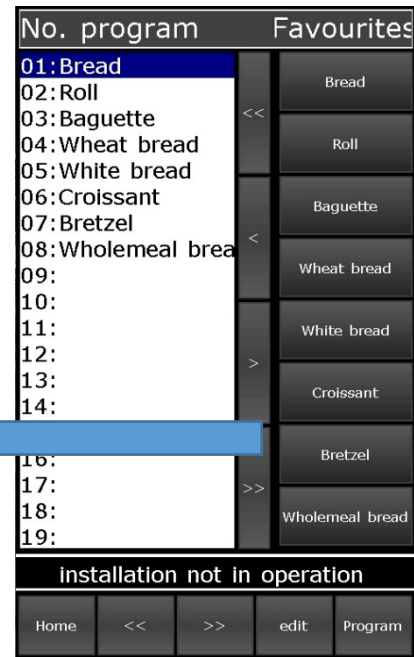**Figure 7:** Favourites readiness mode

Figure 6: Choice of programs

Function of the buttons

Home	Back to the start page/standby
«	Skipping backwards in the program list by blocks of 10 programs
<	Skipping to the previous program
>	Skipping to the next program
»	Skipping forwards in the program list by blocks of 10 programs
edit	Editing, copying or deleting programs
Program	Edit program (see edit program step)

aditec
CONTROLS for
FOODTECHNOLOGY

	Hint: Program change
i	Programs can be compiled or changed whenever you want, even while a program is running. **Please note:** If changes are made to the nominal values of the currently running program, they will only take effect when this program step is restarted**.**

4.1.1   Compiling a list of favourites

Highlight a program on the program list on the left *(see* Figure 7*).* Now click on a position on the favourites list and the program will be copied into this position.

	Please note
⚠	A program name cannot just be deleted You can only overwrite a program name in the favourites' list. If you would like a blank line in the favourites' list, you have to overwrite a program with an empty program without program name.

4.2   Editing program steps

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

Date display

Monday, 11.02.2019   09:08:55

Program line

[1] [2] [3]   [4]
Prg 01 Bread

1. Program: Copying / deleting (item 4.2.5)
2. Entering a program number (see item 1.7)
3. Program name (Item 0)
4. Add a program picture/symbol (item 4.2.2.)

Step line

[1] [2] [3]
Stp 01 Heating up

1. Step: Insert/ copy / delete
2. Entering a step number (see item 1.7)
3. Allocating processes

Process „Pre-heating" – nominal values

Chamb.:   °C   120
Airstp: 1

Nominal values for process „pre-heating"
For an explanation of the nominal values and how to enter them see item 4.2.4

Process „Baking" – nominal values

aditec
CONTROLS for
FOODTECHNOLOGY

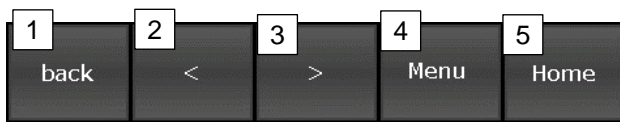| Chamb.:	°C	120
Bakingtime	h/m	00:00
Steamtime	sec	0
Flap time	min	0
ventilator hood		off
Airstp:		1

Nominal values for process „Baking"
For an explanation of the nominal values and how to enter them see item 4.2.4

Information bar

installation not in operation

Status bar disiplay

Function of buttons

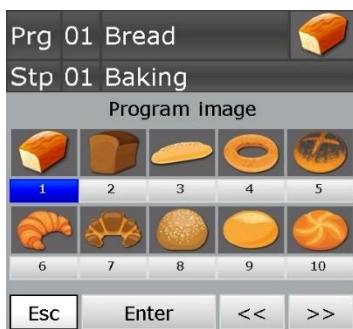| 1	2	3	4	5
back	<	>	Menu	Home

1. Back to the program overview (item 4.1)
2. Skip back to the previous step
3. Skip forward to the next step
4. Menu page (item 3)
5. Return to the start page *(depends on the operating status of the controller)*

4.2.1 Program name

Click on the box with the program name. The on-screen keypad will appear. Enter name and confirm with „Enter".
(see item 1.6).

Prg 01 Bread

_	Bread	<<	C
q w e r t y u i o p
a s d f g h j k l
z x c v b n m .
shift	.?123	___	Enter	Esc

4.2.2 Select program image

Prg 01 Bread
Stp 01 Baking
Program image

| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |

| Esc | Enter | << | >> |

By touching the „Picture" box separate images will appear. Please select your program image and press „Enter".

aditec
CONTROLS for
FOODTECHNOLOGY

	Please note
ℹ️	The program images located on the SD-card in the folder ProgImage. So they can easily be replaced. The pictures have a resolution of 90 x 64 pixel and have the JPG-format. Creation of new images: - Resolution of 90x64 (BxH) should not be exceeded. - The image must have JPG-Format - The image must have the following name: Image_xxx.jpg (xxx = image number has to start with 001) - Max. 999 images can be stored

4.2.3 Program steps

With all baking programs the steps are pre-configured as follows: Step 1 = „Pre-heat", Steps 2 to 10 „Baking". If you want to change the allocation, click on the process name and then select another process.

	Please note: Step validity
⚠️	During an automatic program run only valid steps are started and run. Invalid steps are skipped. A baking step is only a „**valid step**", when the pre-set **nominal temperature is higher** than „0". If a baking time exists in a step (e.g. for process „Baking") this pre-set **baking time** also has to be **greater than „0"**. *Therefore a step is counted as valid if:* • *Process „Pre-heat": Nominal temperature has been entered.* • *Process „Baking: Nominal temperature and baking time has been entered.*

4.2.4 Nominal step values

4.2.4.1 Nominal value entry

Click the box with the nominal value to enter /change a nominal value. Now use the number pad to change the nominal value and confirm with „**Enter**" (see item 1.7).

4.2.4.2 Description of the nominal values

In the following overview the significance of every nominal value is explained[1].

Symbol	Standard name	Entry range / description
🌡️	Chamber	Entry range: 0 to 400°C Nominal value for temperature control If the measured temperature value is lower than the entered nominal value, the heating will be switched on..
🕐	Baking time	Entry range: up to 99:59 (hours/minutes) Step duration – Nominal step time
☁️	Steam time interval	Entry range: up to 999 seconds Time interval for feeding steam into the oven via the steam nozzle *(e.g. to humidify the goods = steaming).*
	Flap time interval	Entry range: up to 999 minutes Time interval for venting steam at the end of a step. The time count starts before the end of the baking time interval. While the flap time interval is counted, the steam flap is open.
	Extractor (exhaust fan)	• **Off:** When the door is opened, the extractor is switched off.

---

[1] Only nominal values that are active (Code 1009)and pre-configured (Code 0180) in the basic configuration are described here.

		• **Auto:** When the door is opened, the extractor is switched on for the pre-configured time interval[1].
	Air circulation	Speed levels of the air circulation motors 0: off 1: level 1 2: level 2

4.2.5 Copying, deleting and adding programs/steps

Click on „Prg" box and select the action you want
(*in this case: copying*).

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

---

[1] Settings Code 1004, parameter 1 for the extractor (exhaust fan)

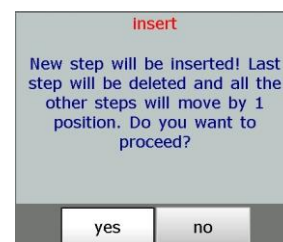| ⚠	**Be aware**
	A program is automatically copied when you press „Enter".
	The program that originally occupied that position is overwritten!

„Step number" box

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

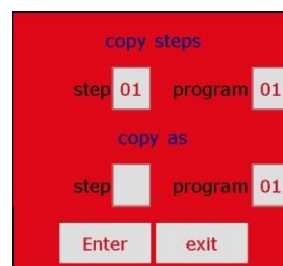| edit |
|------|
| copy |
| delete |
| exit |

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.
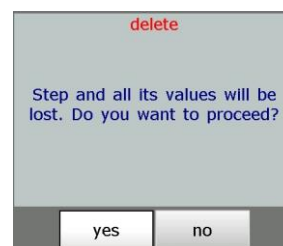
insert

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 01   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!

4.3   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.

4.3.1   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.

4.3.2   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 Night-time pre-heating / Waiting mode

Waiting mode for the pre-heating feature (night-time pre-heating) can only be started from standby mode (see item 1.7.1).

⚠	**Please note**
	In order to start night-time pre-heating, you have to pre-program a nominal temperature value that is higher than 0!

ℹ	**Hint**
	The air circulation level has to be pre-programmed as 1 or 2, so that the heating can be actuated during the night-time pre-heating interval[1].

⚠	**Be aware: Administrators**
	If administrators have been assigned in the controller, a password will be required before a program can be started. Only administrators with the user right „Program start" can start waiting mode.

Day and time for night-time pre-heating

Buttons 1 to 7: pre-select day
Button 8 starts pre-heating mode.

If necessary, the time of day and days of the week can be adjusted
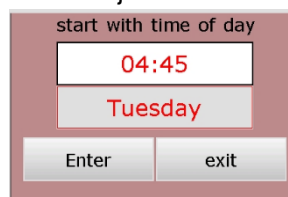
Waiting mode for pre-heating active

Controller is in waiting mode. When the preset time has arrived, pre-heating mode will automatically be started. (see item 6)

Shortcut buttons / Waiting mode

1. Pre-select the air circulation level for pre-heating and readiness mode. **Air circulation remains switched off.**
2. Steam flap (item 1.4)
3. Turntable– remains switched off
4. Starting readiness mode (see item7)
5. Menu (item 3)
6. Light (item 1.4)
7. Extractor (exhaust fan) (item 1.4)
8. Terminate waiting mode. Back to standby (see item 2)

Status bar

start time: Thuesday, 04:45
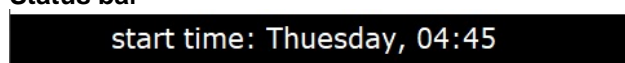
System status display

---

[1] Configuration setting in the basic configuration: no heating without air circulation *(Code 5052, Alarm 2. Setting can be changed)*

6 Heating mode

In this operating mode the temperature is controlled according to the pre-programmed nominal temperature value. Air circulation is running with the pre-set air circulation level.

⚠️	**Be aware**
	In order to start pre-heating mode the pre-programmed nominal temperature has to be higher than 0!

ℹ️	**Hint**
	The air circulation level has to be pre-programmed as 1 or 2, so that the heating can be actuated during the night-time pre-heating interval[1].

⚠️	**Be aware: Administrators**
	If administrators have been assigned in the controller, a password will be required before a program can be started. Only administrators with the user right „Program start" can start pre-heating mode.

Temperature values

1. Currently measured temperature
2. Nominal temperature for the control process *(can be changed)*

3. Symbol when burner is active (Heating level 1)

Additional display for pre-heating

Display for the pre-heating time interval that has elapsed since pre-heating was started.

Display for when the pre-programmed nominal temperature has been reached. *When the temperature has been reached **the horn will be switched on for 5 seconds**[2].*

Shortcut buttons/ Heating mode

1. Changing air circulation level.
2. Steam flap (item 1.4)
3. Turntable– is switched on
4. Starting readiness mode (see item 7)
5. Menu (item 3)
6. Light remains swichted on[3]
7. Extractor (exhaust fan) (item 1.4)
8. Terminate pre-heating mode. Back to standby (see item 2)

Information bar

System status bar

When the nominal temperature has been reached, an additional status message „Temperature reached" will be shown.

---

[1] Configuration setting in the basic configuration: no heating without air circulation *(Code 5052, Alarm 2. Setting can be changed)*

[2] Configuration setting in the basic configuration *(Code 5052, Alarm 1. Setting can be changed)*

[3] Configuration setting in the basic configuration: Light always on during „Pre-heating " *(Code 1008). When you switch on the light manually „M" , it will stay on until it is manually switched off .*

---

7 Readiness mode

In this operating mode the temperature is controlled according to the pre-programmed nominal temperature value. Air circulation is running with the pre-set air circulation level.

⚠	**Be aware**
	In order to start readiness mode the pre-programmed nominal temperature has to be higher than 0!!

ℹ	**Hint**
	The air circulation level has to be pre-programmed as 1 or 2, so that the heating can be actuated during the night-time pre-heating interval[1].

⚠	**Be aware: Administrators**
	If administrators have been assigned in the controller, a password will be required before a program can be started. Only administrators with the user right „Program start" can start readiness mode.

Program line

Step line

Temperature value

Optional displays[3]

Selecting a start program
1. Direct program number entry (see item 1.7)
2. Selecting a program from the list

Selecting a start program step[2]
3. Direct step number entry (see item 1.7)
Selecting a step from the list *(only „valid" steps are shown on the list, see item 4.2.3)*

1. Currently measured temperature
2. Nominal temperature for the control process *(can be changed)*
3. Symbol when burner is active (Heating level 1)

Use buttons 1 and 2 to change the optional display to your requirements.
For an explanation of the individual displays see item 7.1
1. Previous display
2. Next display

---

[1]Configuration setting in the basic configuration: no heating without air circulation *(Code 5052, Alarm 2. Setting can be changed)*

[2] It may be necessary to change steps in order to check the nominal step values.

[3] Settings for the optional displays can be customised to your needs under Menu/Service/Optional displays.

Shortcut buttons/ readiness mode

1. Change air circulation level.
2. Steam flap (item 1.4)
3. Turntable– is switched on
4. **Starting a baking progam**
   (see item 0)
5. Menu Light remains switched on[1]
6. Extractor (exhaust fan) (item 1.4)
7. Terminate readiness mode. Back to standby (see item 2)
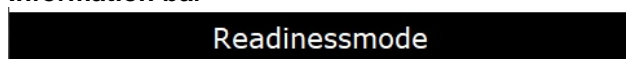
Information bar

Readinessmode

Temperature reached!

System status bar

When the nominal temperature has been reached, an additional status message „Temperature reached" will be shown. *The horn will be switched on for 5 seconds[2].*
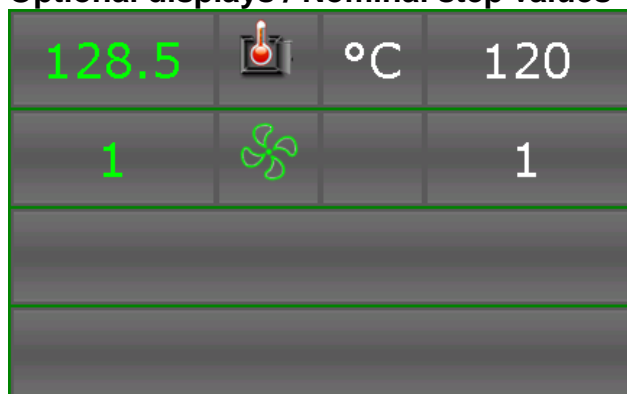
7.1 Optional displays
7.1.1 Favourites
Optional displays/ Favourites

Click on a program symbol or a program name and the program is pre-selected and will then be started. (see item 0).

7.1.2 Nominal step values
Optional displays / Nominal step values

Overview of the entered nominal values for the program step. The entered nominal values[3] are only shown in readiness mode they can however not be changed (exception: manual program)

---

[1] Configuration setting in the basic configuration: Light always on during „Pre-heating " *(Code 1008). When you switch on the light manually „M" , it will stay on until it is manually switched off.*

[2] Configuration setting in the basic configuration *(Code 5052, Alarm 1. Setting can be changed)*

[3] Nominal values can be changed in programming mode or in operating mode (transient nominal value change)

Hint:
If you want to try out a new line of pastry or for on-off baking processes or for your specific needs, you can start a so-called manual program in the controller (Program number „00"). A manual program consist of one step. The nominal values for the manual program can be entered and changed directly in readiness mode.

Optional displays / Nominal step values

Manual program

Prg 00 manual progra

Stp 00 Baking

value act   °C   value nom

52.0   120

52.0	🌡 °C	150	<
00:00	🕐 h/m	00:20	
0	sec	10	
0	min	2	>

With a manual program the step is always pre-set as process 2 „Baking".

The nominal values for the manual program can be entered and adjusted directly in readiness mode.

The entered nominal values of the manual program only remain in readiness mode until the next manual change to the nominal values is made in readiness mode.

7.1.3   Overview list of steps
Optional displays / Step overview

No	Stp
01	Heating up
02	Baking
03	
04	
05	
06	
07	

Overview of all valid[1] steps in a baking program

7.1.4   Aggregates
Optional displays / Aggregates

No	Aggregates	an
01	Air circul. 1	0
02	Air circul. 2	1
03	Turntable	1
04	Heating 2	1
05	Heating	1
06	Steam flap	0
07	Signal	0
08	steam nozzle	0
09	Light	1
10	ventilator hood	0
11	Operation	1

Overview of the status of the relays in the controller
1 – Relay switched on
0 – Relay switched off

---

[1] Steps with pre-programmed nominal temperature and baking time , also see item 4.2.3

7.1.5 Alarm list
Optional displays / Alarm list

No	alarm list	an
01	Door	1
03	Th.security	1
05	Air circulat.	0
06	Rotate plate	0
07	Heating	0

Overview of the controller's digital inputs
(which are defined as alarms)
1 – Input closed
0 – Input open

> **Hint:**
> If you click on the list you can alternate between two pages „all digital inputs[1]" and „Alarm list[2]"

7.1.6 Notes
Optional Displays / Step overview

Brot	Menge
Hafer	50g
Leinsamen	50g
Sonnenblumenkerne	100g
Hirse	50
Buchweizen	50g
Wasser, kochend	500ml
Mehl (Weizenmehl Typ 405)	250g
Mehl (Weizenvollkornmehl)	250g
Hefe	1 Würfel
Honig, flüssig	2TL
Meersalz	2TL

Program notes for each program
(you cannot set up a list of notes for a manual program).

> **Hint:**
> A so-called entry can be made for each program (e.g. the recipe for a product.). For a detailed description see service manual – Service settings / Optional displays / Notes.

---

[1] Overview of the status of the digital inputs which are connected to the controller.

[2] Overview of the digital inputs that are configured as alarms and can influence the program run.

7.2 Starting a baking program

Be aware
A program can only be started from readiness mode.
A program can only be started with a valid step. *(With a pre-programmed nominal temperature and baking time, respectively, see 4.2.3).*

Program selection

Prg 01 Brot

Selecting a program: with direct program number entry (1), or selecting a program from the list (2), or from the favourites' list (see item 7.1.1)

Click on the baking button.

Hint:
An automatic baking program[1] always starts with the first step[2]. A manual program starts with step „0".

8 Operating mode

Be aware: Administrators
If administrators have been assigned in the controller, a password will be required before a program can be started. Only administrators with the user right „Program start" can start a program.

The controller is in operating mode. A program is currently in operation. All aspects of the program are being controlled. All the control outputs are actuated according to the programming (*configuration / nominal step values).*

Program line

Prg 01 Bread

Step line

Stp 01 Heating up

Temperature values

value act   °C   value nom
52.5   120

Display of the current program: number, name and program, program symbol.
1. If the batch number feature is enabled, you can skip between the batch number and the program name when you press the button.

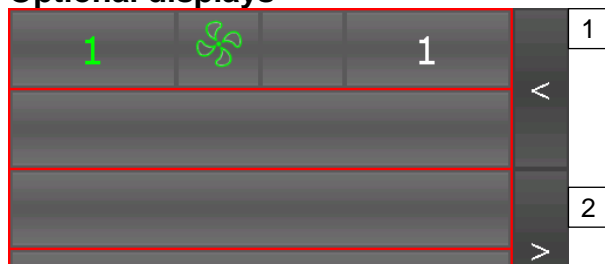Display of the current program step: number, process name

1. Currently measured temperature
2. Nominal temperature for the control process
   (can be changed)
3. Symbol when burner is active (Heating level 1)

---

[1] Automatic programs: Programs 1 to 99
[2] Configuration setting in the basic configuration *(Code 3003, Settings can be changed)*

Optional displays

Use buttons 1 and 2 to skip between optional displays.
For an explanation of the individual displays see item 8.3
3. Previous display
4. Next display

Shortcut buttons / operating mode

1. Change air circulation level.
2. Steam flap (item 1.4)
3. Turntable – is switched on
4. **Depending on the operating status**
   - Pausing / resuming program (see item 9)
   - Skip into step 2 „Baking" (see item 8.1)
5. Menu (item 3)
6. Light remains switched on[1]
7. Extractor (exhaust fan) (item 1.4)
8. Terminate program Back to readiness mode (see item 7)

Information bar

installation in operation
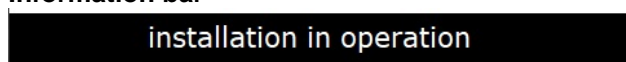
System status display

8.1 Skipping from pre-heating to baking

> **Hint: applies to automatic baking programs[2]**
>
> An automatic baking program consist of 2 or more steps and the first step is usually „Pre-heat". The „Pre-heat" step has no baking time. This means the heating process continues until the pre-programmed nominal temperature has been reached.

Program / Temperature display

Prg 01 Bread
Stp 01 Heating up
value act   °C   value nom
120   120

When the nominal temperature has been reached a horn will be activated for 5 seconds[3].
A baking symbol will appear in position 4.
When you click on the baking symbol, you will skip into the next step.

Shortcut / operation / Temperature reached

4. Skip into step 2 „Baking"

Information bar

Temperature reached!

When the nominal temperature has been reached and the additional system status message "Temperature reached" will be shown.

---

[1] Configuration setting in the basic configuration: Light always on during „Pre-heating " *(Code 1008). When you switch on the light manually „M" , it will stay on until it is manually switched off..*

[2] Automatic programs: Programs 1 to 99

[3] Configuration setting in the basic configuration: *(Code 5052, Alarm 1. Setting can be changed)*

⚠	**Be aware: Administrators**
	If administrators have been assigned in the controller, a password will be required before you press the "baking" button. Only administrators with the user right „Nominal value change/ skip into next step" can skip into step „Baking".

## 8.2 Terminating a baking program

ℹ	**Hint:**
	At the end of a program a signal will be given (*see item 10*). The controller will go into „Program end" status. It will remain in this state until you have acknowledged the end of the program.

Shortcut / program end
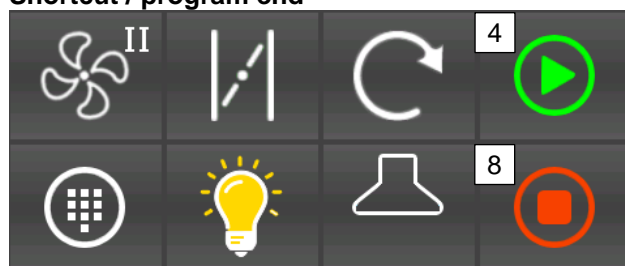
Acknowledging the end of a program.
4. Back to readiness mode
(see item 7)
8. (Button is flashing) Terminate all operations. Back to standby (see item 2)

Information bar

End of program
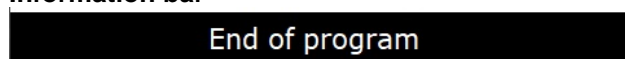
System status bar

8.3 Optional displays

8.3.1 Nominal step values
Optional displays / Nominal step values

Display for all the nominal values in a program and their associated actual values. All nominal values can be changed transiently (Change only applies until the end of the step see item 8.5)

🕐 Click on the button: the pre-programmed baking time is reset.

Click on the button: Steam nozzle is switched on for the pre-programmed time interval.

ℹ	**Hint: Intelligent actual time display**
	When an actual time is shown on the display it is shown accurately, to within a second. *Example 1: Baking time* *Nom. value „Baking time" = 01:20 h/m. The actual time is counted backwards. From 01:20 to 01:00 hour the display is accurate to the minute. From 00:59 the dsiplay is acurate to within a second 00:59 h/m => 59:00 m/s* *Example 2: Flap time* *Nom.value „Flap time" = 2 min. The actual time is counted backwards. Once the remaining time is under 1 minute, the display is accurate to within a second 1 Min => 59 Sec*

⚠️ **Be aware: Administrators**

If administrators have been assigned in the controller, a password will be required before you can change a nominal value. Only an administrator with the user right „Nominal value change/ skip into next step" can change nominal values.

8.3.2 Optional displays during operation

All other optional displays are identical to the displays in readiness mode, see items 7.1.3 to 7.1.6

8.4 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

Unscheduled shut-down:
▪ Pressing the „Stop" button will terminate a program
▪ Chamber sensor defect generally terminates a program

⚠️ **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.

8.5 Transient changes to the nominal values

In standby 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".

9 Pause mode

A program can be pause by a disruption or a manual change made by a user. There is no temperature control in pause mode. The baking time, steam time and flap time are not counted. The reason for pause mode is shown on the info bar/status bar. All regular[1] controller outputs (Relays, analogue outputs) are switched off.

Shortcut buttons / Operating mode

Informationsleiste

1. Air circulation level off[2]
2. Steam flap off[2]
3. Turntable off[3]
4. Resume program
5. Menu (item 3)
6. Light off[2]
7. Extractor (exhaust fan) off[2]
8. Terminate all operations. Back to readiness mode (see item 7)

Operating mode display (is flashing)

In pause mode the reason for pausing the program will also be shown.

---

[1] An exception can be outputs that have been configured as event–related outputs, e.g. light when the door is opened.
[2] Manual switch-on possible. Manual activation is shown by the „M" in the button.
[3] Manual approach of the end position is possible.

9.1 Pause mode - reasons

The following events can lead to pause mode[1]:

- Manual pausing by user (pressing the „pause" button)
- Opening the door (see item 9.2)
- Thermal fuse failure
- Air circulation malfunction
- Turntable malfunction
- Heating malfunction

⚠	**Be aware**
	While the underlying cause of the malfunction has not been corrected, you cannot leave pause mode.

9.2 Pausing when the door is opened

When the door is opened, the light will automatically come on and the extractor (exhaust fan) will be switched on for 60 seconds[2], providing that the extractor is set up as „auto".
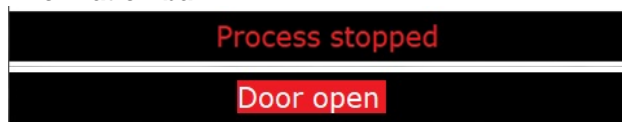
Optional displays / Extractor (exhaust fan)

Exhaust fan switch-on for 60 secunds , if the nominal value is set to "auto".

Shortcut buttons/ Operating mode

9. Air circulation off[3]
10. Steam flap off[2]
11. Turntable – off[4]
12. Resume program
13. Menu (item 3)
14. Light off[2]
15. Extractor (exhaust fan) off[2]
16. Terminate all operations. Back to readiness mode (see item 7)

Information bar

System status display (flashing)

In pause mode the reason for pausing the program will also be shown.

10 Alarm signal

If an alarm incident has occurred, for example through digital inputs, limit value alarms or sensor failure, instead of chamber symbol the alarm symbol will displayed.

On the status bar you can see the alarm and the cause *(e.g. chamber sensor break).* Press the alarm symbol to acknowledge the alarm and to stop the horn. The message will remain on the status bar.

Alarm signal

---

[1] If required, further events can be configured for pause mode

[2] Configuration setting in the basic configuration: Code 4552/ Input 1 „Door"; 1004/ Relay 10, Par.1 = 60s

[3] Manual switch-on possible. Manual activation is shown by the „M" in the button.
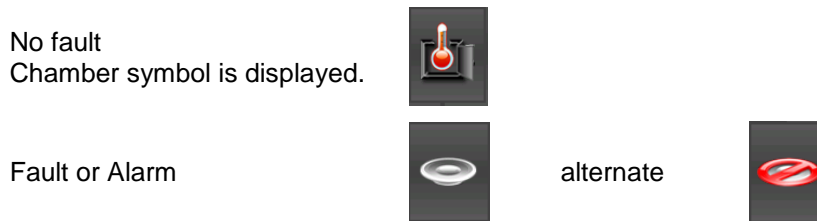
[4] Manual approach of the end position is possible.

No fault
Chamber symbol is displayed.

Fault or Alarm   alternate

Figure 8: Alarm

⚠	**Be aware**
	Chamber sensor defect generally leads to program termination.

11 Information page

Standby	Menü	Information

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.
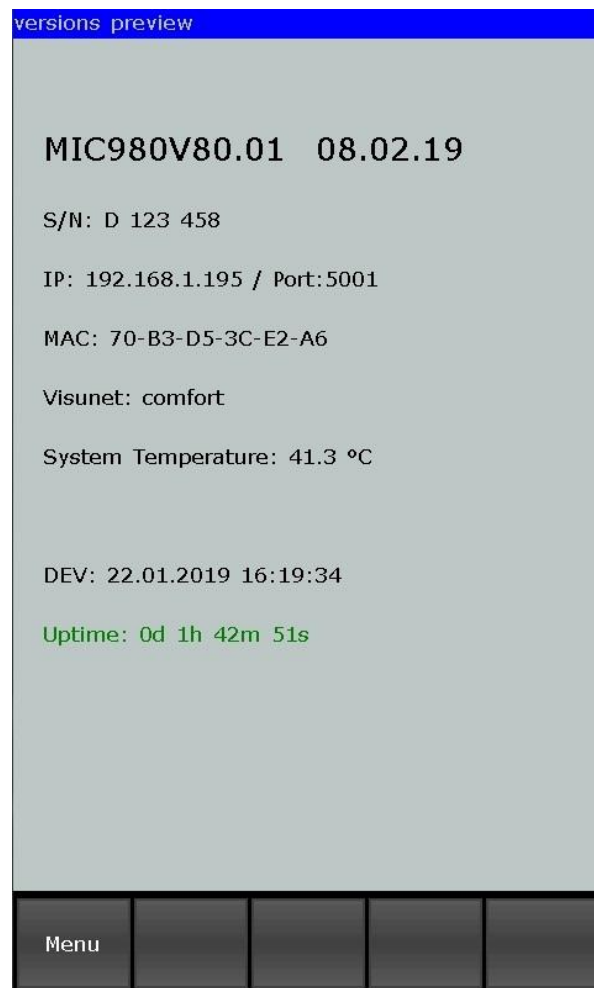

versions preview

MIC980V80.01   08.02.19

S/N: D 123 458

IP: 192.168.1.195 / Port:5001

MAC: 70-B3-D5-3C-E2-A6

Visunet: comfort

System Temperature: 41.3 °C

DEV: 22.01.2019 16:19:34

Uptime: 0d 1h 42m 51s

Menu

Figure 9: Information page

12 Profiles

Standby > Menu > Profiles

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

12.1 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.
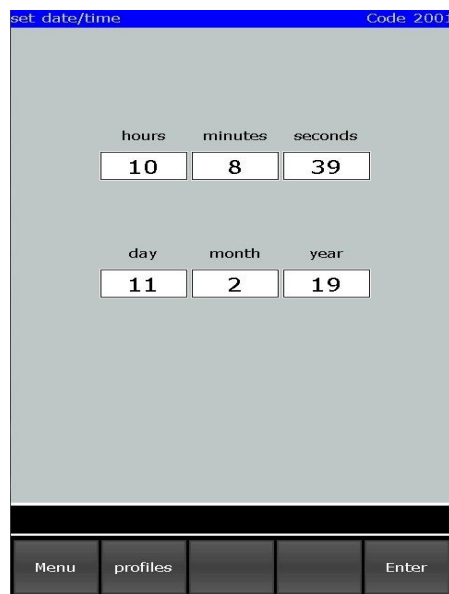

Figure 10: Set date/time

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

12.2 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.

ℹ️	**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.

12.1 Programming of start times

Menü	Profile	Enter	Programmierung der Startzeiten	Enter

Here you can program start times referring to day of the week.
The programmed start times are displayed in standby mod and serve for the simply enter the night time preheating.

13 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!**

14 List of errors (possible problems)

Problem that has arisen	Possible causes	Possible solutions
Program does not start	Program is empty	
	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.**
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.

aditec
CONTROLS for
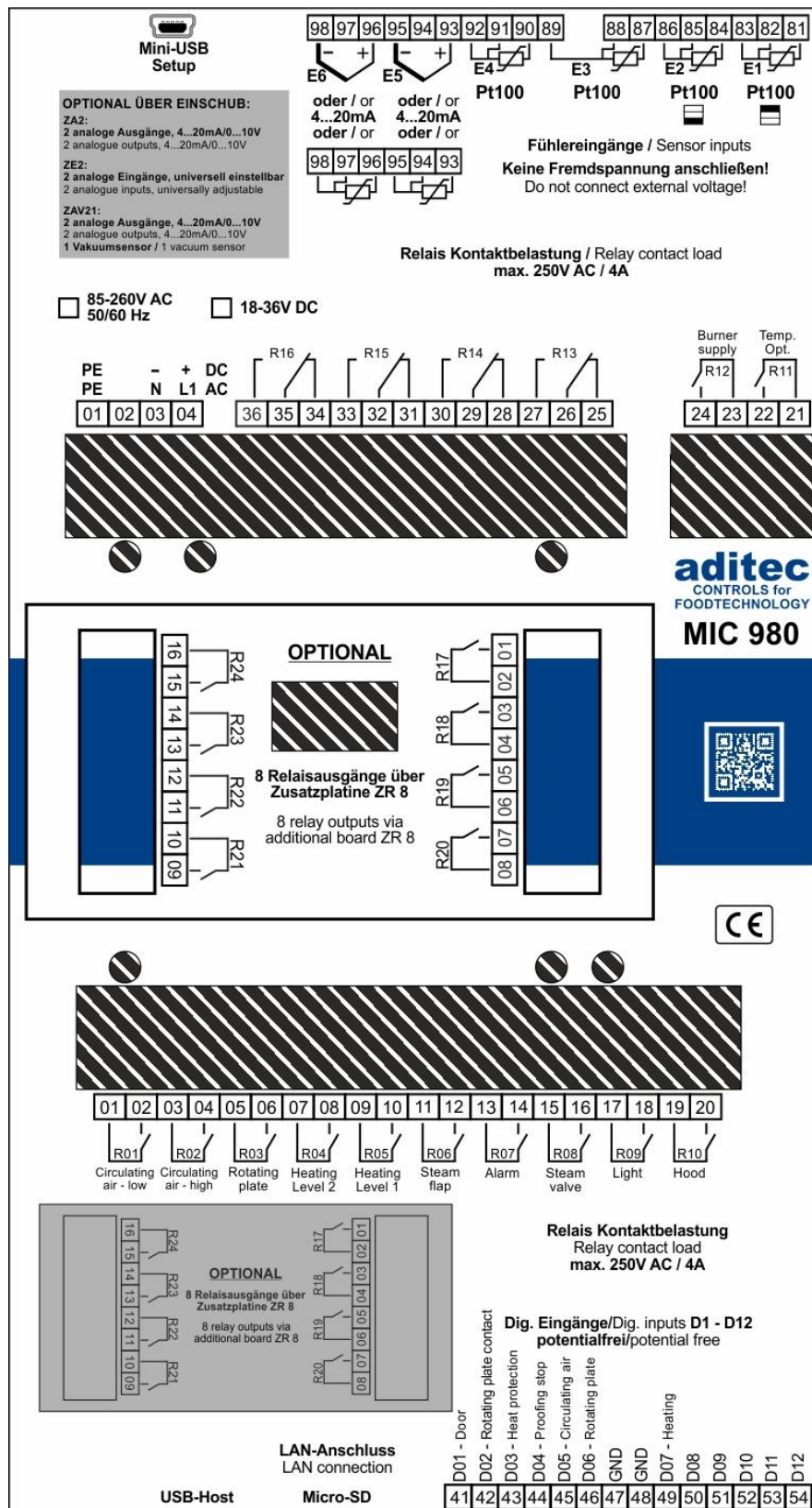FOODTECHNOLOGY

15 Connection diagram MIC 980

Figure 11: Connection diagram MIC 980

16 Technical data

See data sheet

17 List of figures

aditec
CONTROLS for
FOODTECHNOLOGY

18 Index

19 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.

Manual: Read all safety instructions and all the 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 it at a later date!

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-streamed 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.).

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.

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

Water and humidity: Never use the unprotected appliance near water, e.g. near a bath tub, water basin, sink, washing machine, a 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.

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.

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

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.

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

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.

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.

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 exceeds his authority, he should always contract a specialist.

⚠️	**Be aware**
	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:

| Measurement and Control technology Hardware development Software development Specialised electronics Food technology Process visualisation | **aditec**
CONTROLS for
FOODTECHNOLOGY | aditec gmbh Talweg 17 D-74254 Offenau Tel.:+49(0)7136 96122-0 Fax:+49(0)7136 96122-20 www.aditec.net eMail: info@aditec.net |