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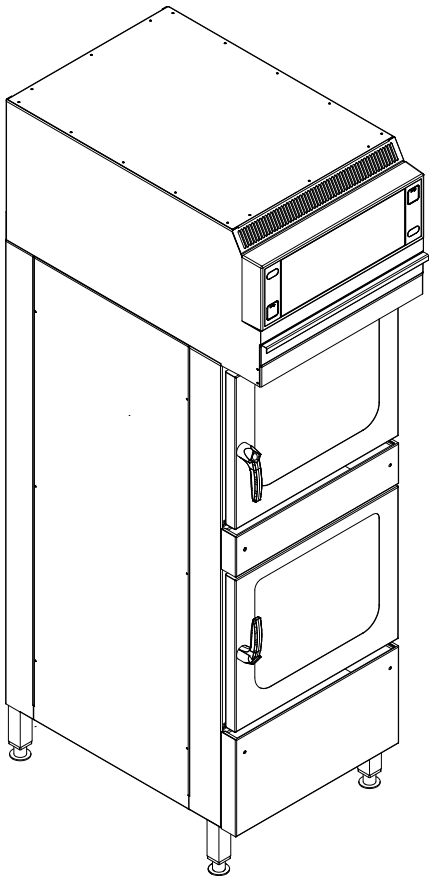
# Service instructions

# Space$aver Plus Team



**Model**

FSDE **610.610**

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FM06-078A en-US

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# 1 Password overview

| Range | Password | Description | Described in |
|---|---|---|---|
| Installation / commissioning | 2100 | Setting all basic parameters (for example time / date). | Installation instructions |
| Network settings | 2000 | Input network addressing. Only for units with touchscreen control. | Installation instructions |
| Basic settings / user | 111 | Setting of basic values for the user, functions, software update. | Operating instructions |
| Lockscreen | 369 | Deactivating the lockscreen in cooking mode. Only for units with touchscreen control. | Operating instructions |
| Trade show mode | 888 | Activation / deactivation for exhibition mode. | Service instructions |
| Service menu | 1967 | Service range for authorized service technicians. | Service instructions |

# 2 Introduction

## 2.1 About this manual

This service manual contains information needed by the service technician for professional and correct fault isolation, repair and maintenance of the unit. The service technician must also observe the contents of the installation instructions and the user manual.

**Target group** Target group for this service manual is qualified personnel who are familiar with the technical functioning and operation of the unit.

**Figures** All figures in this service manual are intended as examples. Discrepancies can arise between this and the actual unit.

**Spare parts** To ensure the reliability of the unit and the individual components, it is essential that only genuine OEM parts be used.
Spare parts can be identified exactly with the aid of the online database.

## 2.2 Warranty

The warranty is void and safety is no longer assured in the event of:

- Modifications or technical changes to the unit,
- Improper use,
- Incorrect startup, operation or maintenance of the unit,
- Problems resulting from failure to observe these instructions.

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# 3 Safety instructions

For servicing tasks, the service technician must be familiar with and observe regional regulations.
In addition, the notes in the service manual must be observed.

**Organizational measures**

**Risk of property damage and personal injury from lack of organizational measures**

- Prior to starting the service work, notify any operator present about the procedure.
- Discuss how to respond to an emergency prior to starting the service work.
- Use equipment and protective gear suitable for the activity.
- Brace housing components to prevent them from falling over and dropping.

**Electrical connection**

**Danger of electric shock from live components.**

- Prior to working on the electrical system, switch off the unit, disconnect the electrical system from the mains and prevent power from being switched on again. Check to ensure the system is dead.
- Use only insulated tools.

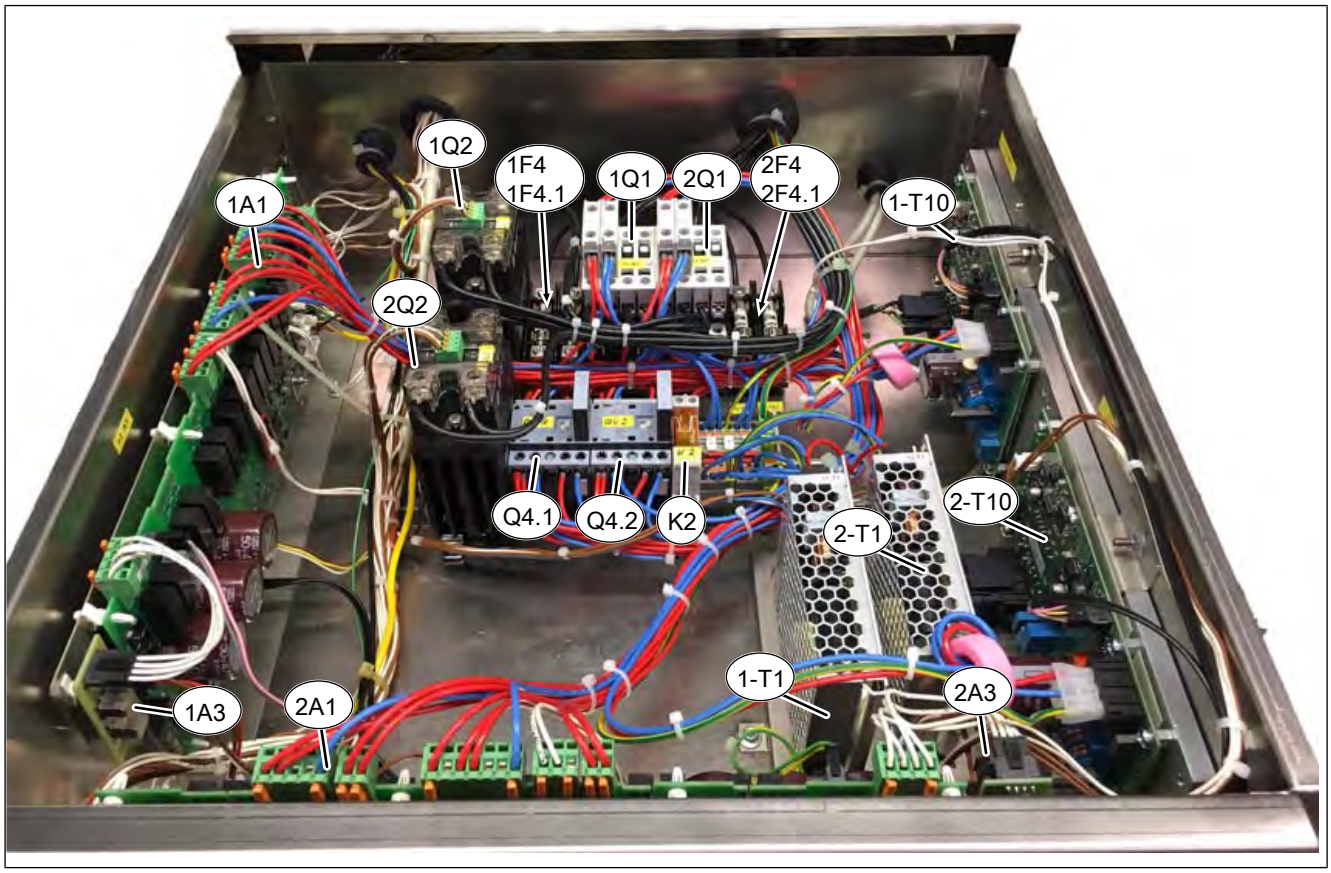
**Concluding activities**

**Risk of damage to property and personal injury from improper connections**

- Reactivate all safety devices and check that they function properly.

# 4 Component overview

## 4.1 Installation compartment




1- = Upper unit. 2-Lower = unit

| | | | |
|---|---|---|---|
| A1 | Control board | A3 | Lighting circuit board |
| F4 | Fuse 6.25 A, slow-blow | F4.1 | Fuse 6.25 A, slow-blow |
| K2 | Relay; 8 A; 230 V | Q1 | Main contactor 32 A, 230 V |
| Q2 | Solid-state relay (SSR), 50 A | Q4.1 | Reversing contactor 18 A, 230 V |
| Q4.2 | See Q.4.1 | R1 | Line filter |
| T1 | Power pack | T10 | Power board for motor |

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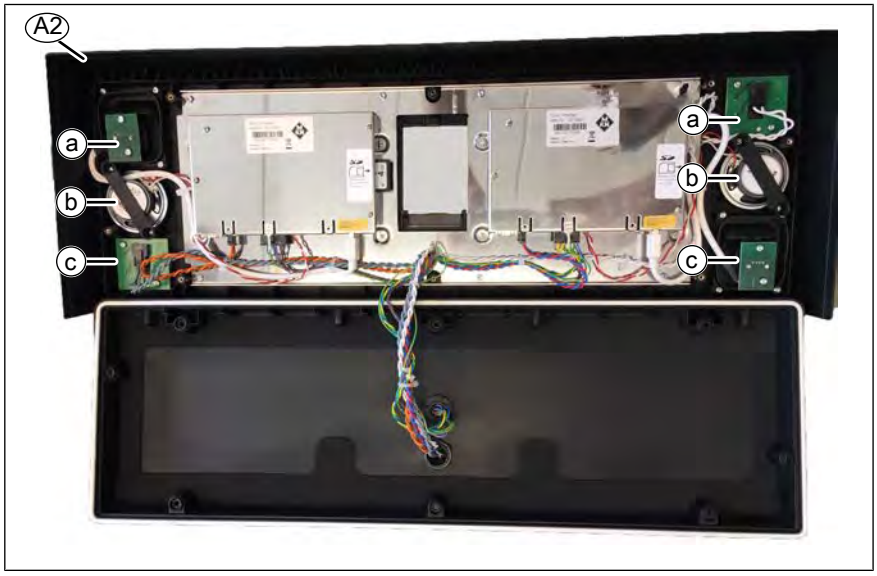
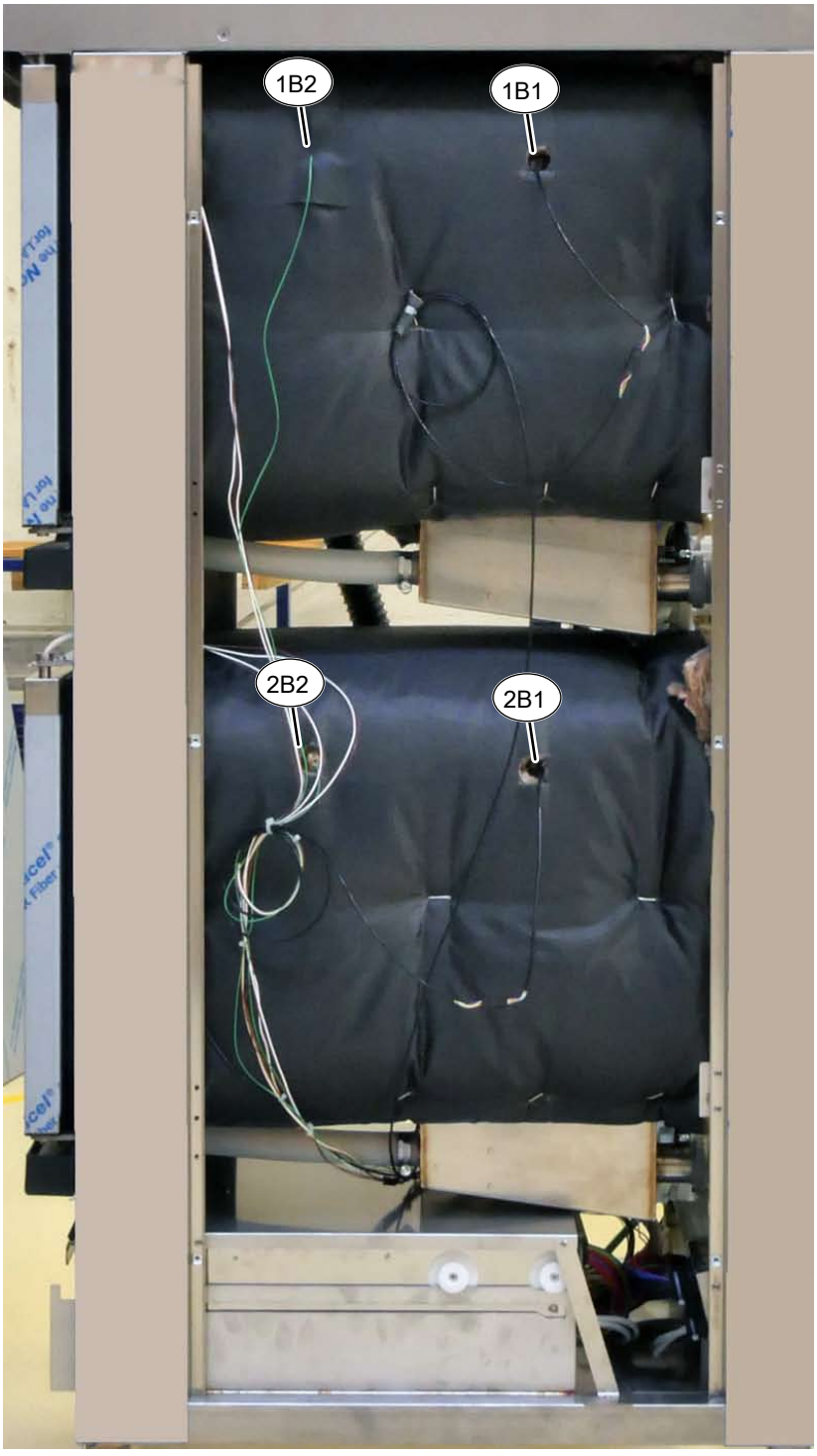
## 4.2 Operating panel




| | | | |
|---|---|---|---|
| A2 | Operating panel, complete with housing | a | On/Off switch (10020346) |
| b | Loudspeaker (10016690) | c | USB interface (10020348) |

## 4.3 Right view




1- = Upper unit. 2-Lower = unit

B1 Core temperature sensor

B2 Cooking chamber sensors

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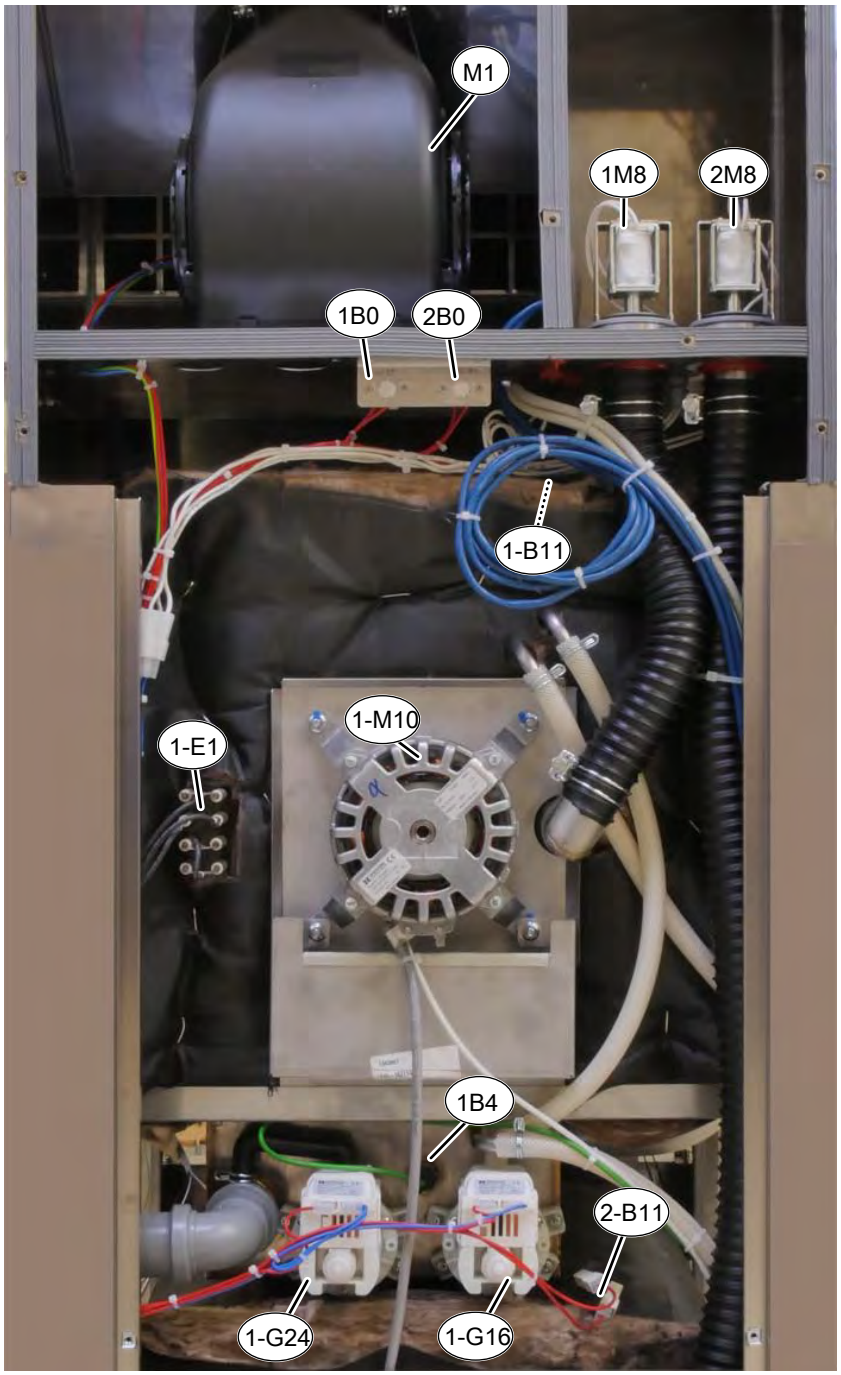
## 4.4 Rear side

### 4.4.1 Upper unit




1- = Upper unit. 2-Lower = unit

| | | | |
|---|---|---|---|
| B0 | Thermal switch 85°C | B4 | Vapor sensor |
| B11 | Safety temperature limiter 330°C | E1 | Heating element |
| G16 | Circulation pump | G24 | Drain pump |
| M1 | Fan | M8 | Solenoid |
| M10 | Fan motor | | |

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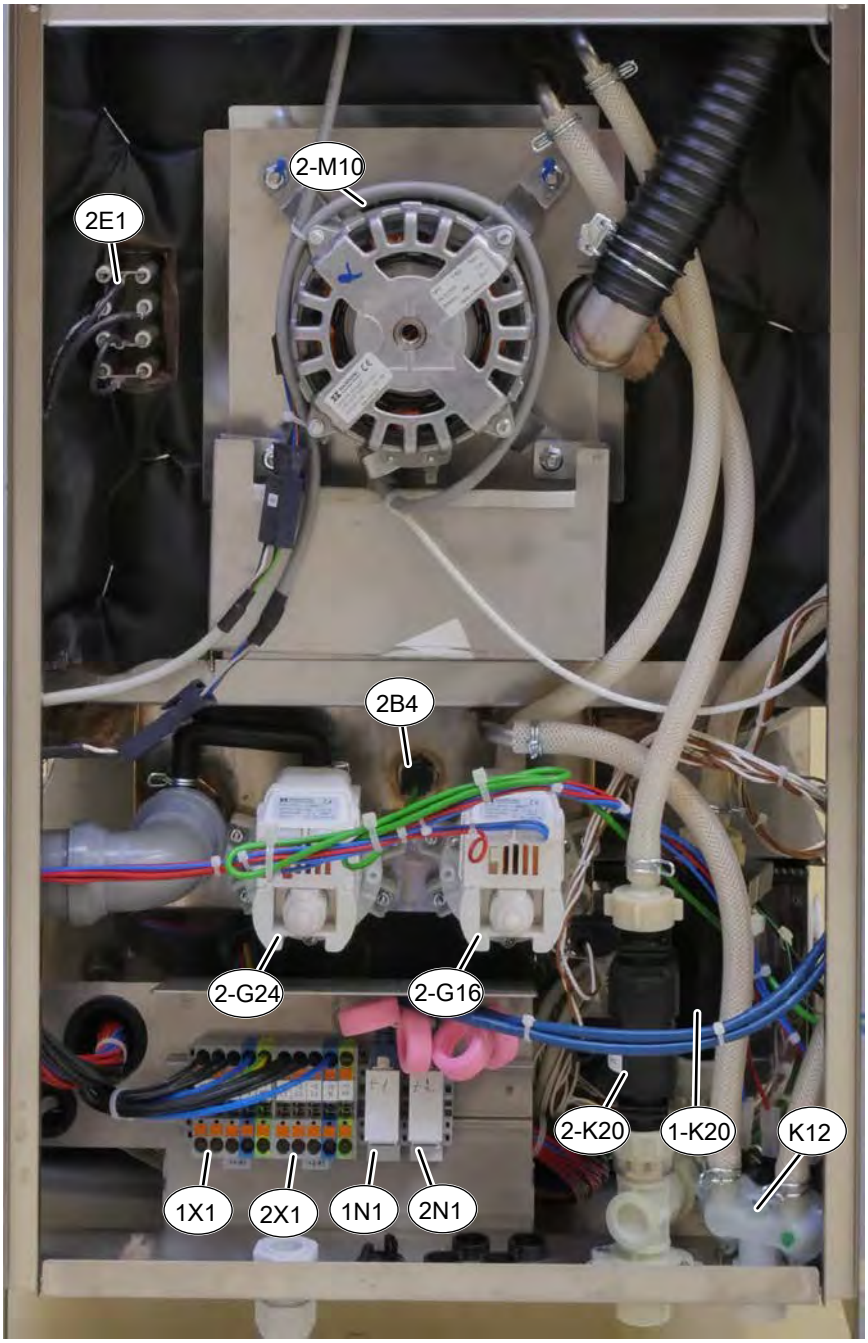
## 4.4.2 Lower unit




1- = Upper unit. 2-Lower = unit

| | | | |
|---|---|---|---|
| B4 | Vapor sensor | E1 | Heating element |
| G16 | Circulation pump | G24 | Drain pump |
| K12 | Magnetic valve water vapor elimination | K20 | Steaming unit |
| M10 | Fan motor | N1 | Ethernet interface |
| X1 | Power connection | | |

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# 5 Service menu - appliance test

## 5.1 Service menu

**Description**

- Functional testing of individual components
- Error analysis
- Maintenance
- Change basic settings
- Software update

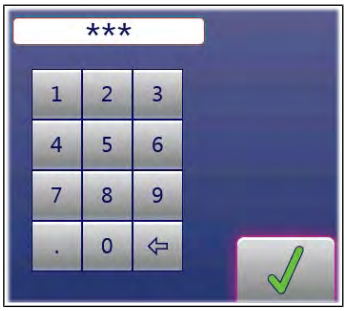
The graphics shown may deviate due to changes and different software versions.

### 5.1.1 Calling up the service level

**Calling up the Service menu**

→ Switch the appliance on.
→ Touch the "Appliance functions" field.
↳ Display of *Appliance functions* menu.

→ Touch "Settings" field.
↳ Display of *PIN* window.




→ Enter password and touch *Confirmation* field.
↳ Display of menu *Appliance test (Service menu)*.

**INFORMATION**

The password for the service menu is 1967

### 5.1.2 Service menu overview

**Selecting a menu element**

→ Display of the menu elements in the left area.
→ Page change by swiping upward/downward.
→ Select menu element by touching.

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## 5.2 Appliance information

**Description** Display of the appliance-specific information
→ Software version
→ Cookbook version
→ Unit configuration
→ Serial number
→ Date of last CombiDoctor diagnosis.
→ Contact data

**Overview**


**Exiting the appliance information** Touch the *Back* field.

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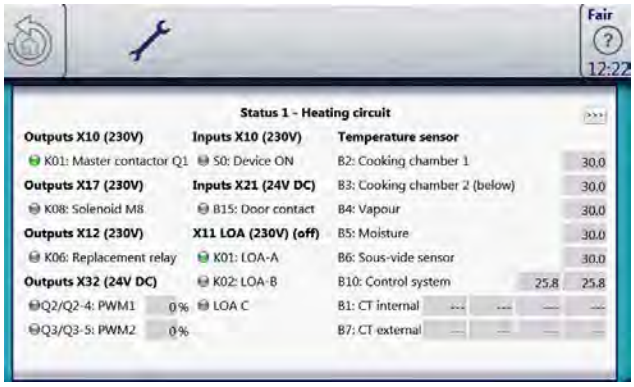
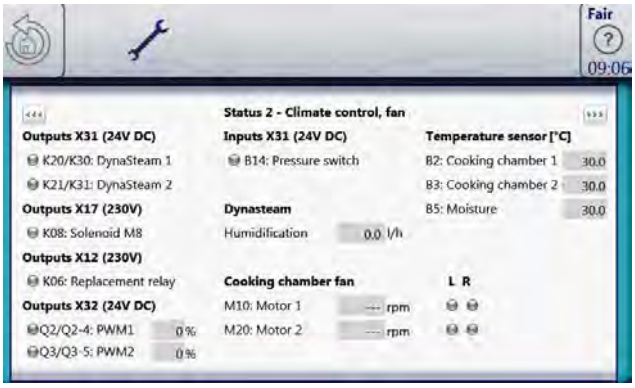
## 5.3 Status overview

### Status 1
### Heating circuit



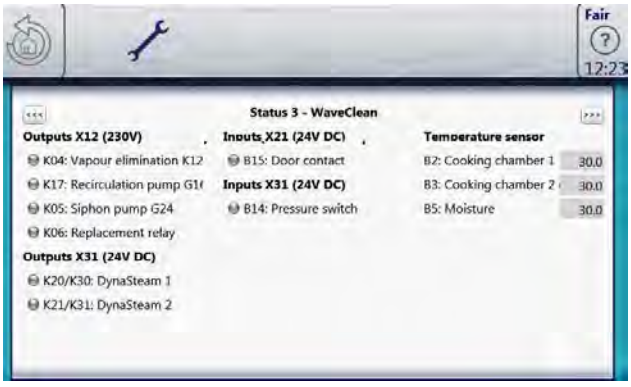

PWM: heat requirement in %.
POS: power optimization system (option).
Temperature sensors B1, B3, B5, B6, B7 are not present.

### Status 2
### Climate control system, fan




B14: Pressure switch on the DynaSteam unit
PWM: heat requirement in %.
Temperature sensors B3, B5 are not present.

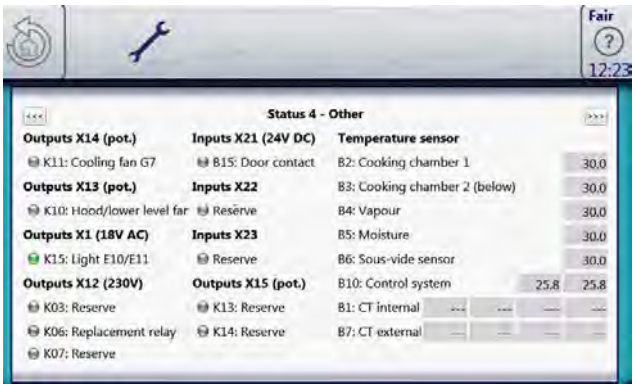
### Status 3
### WaveClean (option)




K04: Magnetic valve for water vapor elimination & siphon filling
B15: Reed contact switch
B14: Pressure switch on the DynaSteam unit
Temperature sensors B3, B5 are not present.

**Status 4**

**Miscellaneous**




K3: Not in use
K10: Activation of the exhaust hood at high speed (option)
B15: Reed contact switch
K07, K13, K14: Not used
Temperature sensors B1, B3, B5, B6, B7 are not present.

## 5.4 CombiDoctor

**Description** The CombiDoctor offers an automatic check of the climate control and the WaveClean automatic cleaning. The tests are possible individually or as overall test. For instructions on performing, see the touchscreen.

**Overview**


**Selecting a program** → Select a program by adjusting the roller.

**Starting the program** → Touch the "START" field.

**Evaluation** → The test result appears on the touchscreen.

↳ Entry in HACCP memory.

**Description of the test steps**

**Step 1 (test door contact)**

1. Open cooking chamber door and close again.

   ↳ If test successful, proceed with the next test step.

   ↳ If the door is not recognized as having been opened and closed again within the specified time (60 seconds), the test is not passed.

**Step 2 (prepare for WaveClean)**

1. Preparation for WaveClean test.
   Automatic water exchange via the siphon pump and the solenoid valve for steam elimination.

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**Step 3 (heat output)**

1. Check of heat output.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Check of on-site voltage supply.

↳ Check of heating element

↳ Check of solid-state relay

↳ Check of internal fuse for load circuit (depends on unit version).

**Step 4 (steam generation)**

1. Check of DynaSteam² steam generation.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Ensure that water is being supplied on-site.

↳ Check of DynaSteam² steaming unit.

↳ Check of water supply pipe for calcification.

**Step 5 (steam reduction)**

1. Check of steam reduction (solenoid).
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Check of solenoid via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

**Step 6 (WaveClean circulation pump)**

1. Check of WaveClean circulation pump.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful. Test 7 and 8 are not evaluated.

↳ Check of circulation pump via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

**Step 7 (water supply to WaveClean)**

1. Check of solenoid valve for steam elimination.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Ensure that water is being supplied on-site.

↳ Check of solenoid valve via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

**Step 8 (WaveClean siphon pump)**

1. Check of WaveClean siphon pump.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Check of siphon pump via relay test. A fault is present on the component or the control board. Check the fuse on the control board.

**Step 9 (temperature control)**

1. Check of temperature control.
   ↳ The temperature in the cooking chamber must reach 140°C within the time specified.
   ↳ Display switches to green = test successful.
   ↳ Display switches to red = test not successful.

↳ Check region around cooking chamber sensor for soiling.

↳ Check temperatures via calibration in the service menu.

↳ If necessary, replace cooking chamber sensor or control board.

## 5.5 Relay test

**Description**

→ Separate control of the relay.

↳ Testing the relay.

↳ Testing the connected components.

**INFORMATION**

Relays K1 and K16 are switched on permanently.

A plurality of relays are switched on simultaneously.

**Overview**

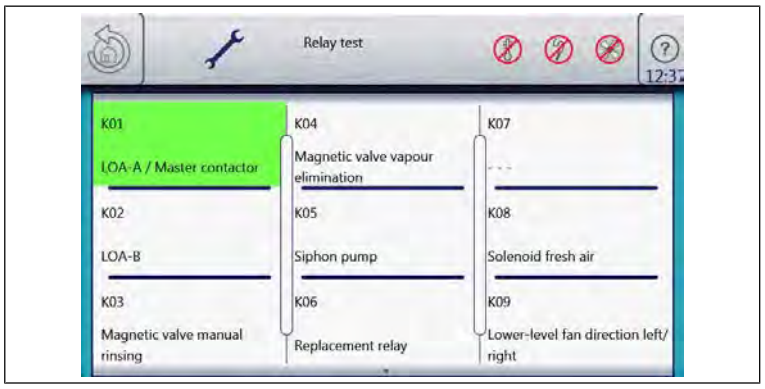


Image: Relay test page 1

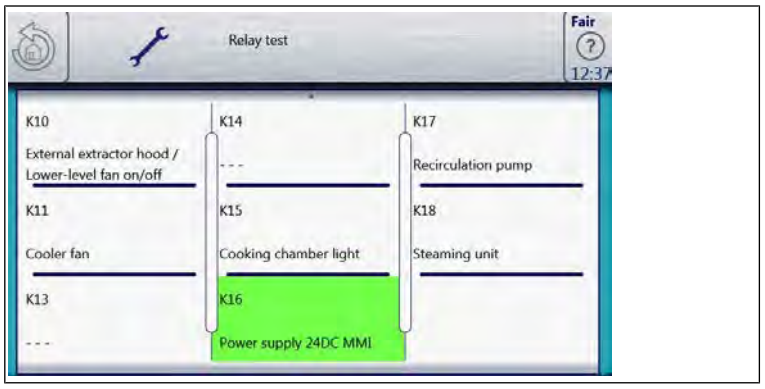


Image: Relay test page 2

**Activating relay test**

→ Touch field of relay to be tested.

↳ The relay is active.

↳ Field of the active relay is highlighted in green.

**Deactivating relay**

→ Touch field to be deactivated that is highlighted in green.

↳ The relay is inactive.

↳ Field is highlighted in gray.

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## Relay overview

| Relay | Connector | No. | Description | Info |
|---|---|---|---|---|
| K1 | X10 | 2 | Main contactor Q1 | 208V AC |
| K1 | X11 | 1 | POS A | 208V AC |
| K2 | X11 | 2 | POS B | 208V AC |
| K3 | | 2 | *Not in use* | 208V AC |
| K4 | X12 | 3 | Magnetic valve for water vapor elimination K12 | 208V AC |
| K5 | X12 | 4 | Siphon pump G24 | 208V AC |
| K6 | X12 | 5 | Backup relay K6 | 208V AC |
| K7 | | | *Not in use* | |
| K8 | X17 | 1 | Solenoid fresh air M8 | 208V AC |
| K9 | X16 | 1-3 | Siphon pump "ON" message on upper or lower unit | +24V DC |
| K10 | X13 | 1/2 | Switching the exhaust hood to high speed (if available) | Potential-free |
| K11 | | | *Not in use* | |
| K13 | | | *Not in use* | |
| K14 | | | *Not in use* | |
| K15 | X1 | 2 | Cooking chamber light | 24V DC |
| K16 | X9 | 1/2 | Supply for control panel (MMI) | 24V DC |
| K17 | X12 | 1 | Circulating pump G16 | 208V AC |
| K18 | X31 | 1 -4 | Steaming unit (switched directly, not via relay) | 24V DC |

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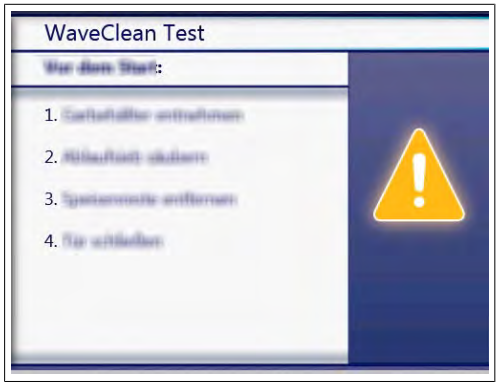
## 5.6 WaveClean test

**Overview**




**Description**

→ WaveClean test program for function check.
↳ Circulation pump
↳ Siphon pump
↳ Magnetic valve for water filling
↳ Door seal / leak tightness in door area

**INFORMATION**

Follow the instructions on the touch screen.
The test is used exclusively for functional testing and not to clean the cooking chamber.

**Starting the test**

→ Touch the "START" field.
↳ Checking of the cooking chamber temperature.
↳ Automatic cooling off of the cooking chamber if > 70°C.
→ Rinse and fill up siphon.
↳ Draining by pump G24.
↳ Filling by magnetic valve K12.
→ Circulation and heating.
↳ The circulation pump G16 is switched on.
↳ Heating of the cooking chamber to 55°C.
→ Rinse DynaSteam and siphon
↳ DynaSteam steaming unit is switched on.
↳ Another water change from the siphon.

After 30 minutes, the WaveCleanTest ends.

**Canceling the test**

An abortion is possible at any time.
→ Touch the "STOPP" field.
↳ Automatic rinsing of the siphon and test cancellation.

## 5.7 100°C + core temperature calibration

**Description**

→ Calibration for cooking chamber sensor and core temperature sensor.

↳ Testing the calibration.

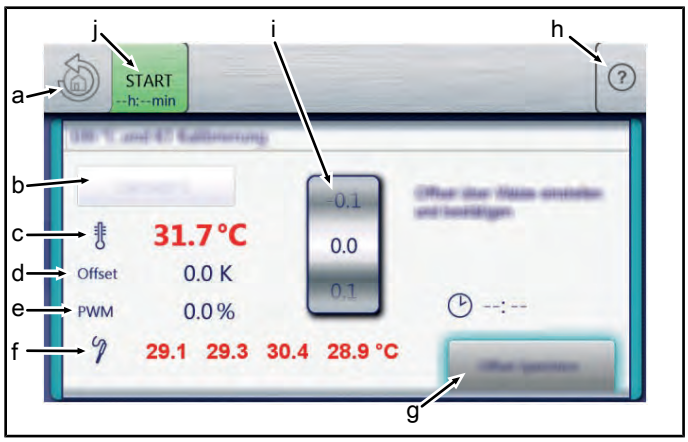
↳ Performing the calibration.

The cooking chamber sensor and core temperature sensor calibration is performed in one step.

**INFORMATION**

The units are factory calibrated. Recalibration is required only in exceptional cases.

**Overview**




a Back to the unit test
b Not used
c Cooking chamber temperature
d Saved offset
e Average heat requirement
f Core temperature measurement values
g Save changed offset
h Help function (not used)
i Offset setting
j "Start/Stopp" field

**Color detection of the temperature values**

**INFORMATION**

During calibration, the temperatures are displayed in color:

Red = temperature in invalid calibration range

Green = temperature in valid calibration range

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### 5.7.1 Check calibration

**Prerequisite**

Calibrated digital temperature measurement device.

The temperature in the cooking chamber is < 100°C.

→ Fix internal core temperature sensor and temperature sensor of external measurement device in the cooking chamber.

↳ Use a grill rack for this.

↳ Point the sensor tips upward in order to prevent measurement errors.

**Checking the calibration**

→ Touch the "START" field.

↳ The cooking chamber is heated up to 100°C.

↳ Display of the current temperature on the touch screen.

→ Wait until the cooking chamber temperature on the touch screen indicates 100°C (± 1°C).

↳ Compare displayed cooking chamber temperature with temperature of external measurement device.

↳ The external measurement device must display a temperature between 99°C – 99.5°C.

→ If the value is within the range, end checking.

↳ Touch the "STOP" field.

→ If the value is outside of the range, calibration must be done.

↳ Continue with calibration (see „5.7.2 Calibrate cooking chamber sensor“, Page 26).

### 5.7.2 Calibrate cooking chamber sensor

**Prerequisite** Execute *Check calibration* and do not switch appliance off.

→ (see „5.7.1 Check calibration“, Page 25)

↳ Temperature display on the touch screen indicates 100°C.

**Calibration**

→ Adjust offset value by adjusting the roller.

↳ Let 10 minutes adjustment time elapse.

↳ The external measurement device must display a temperature between 99°C – 99.5°C.

→ If necessary, adjust offset value again.

↳ Let 10 minutes adjustment time elapse.

→ If the value is within the range, save calibration.

**Saving the calibration**

→ Touch "Save offset" field.

↳ Saving of set value.

↳ Automatic calibration of core temperature sensor.

**Canceling the calibration**

→ Touch the "STOP" field.

↳ The calibration ends.

**Exiting the calibration** Touch the *Back* field.

**Storing the calibration on SD card**

→ Also save data on internal SD card (see „5.18 Backing up data“, Page 32).

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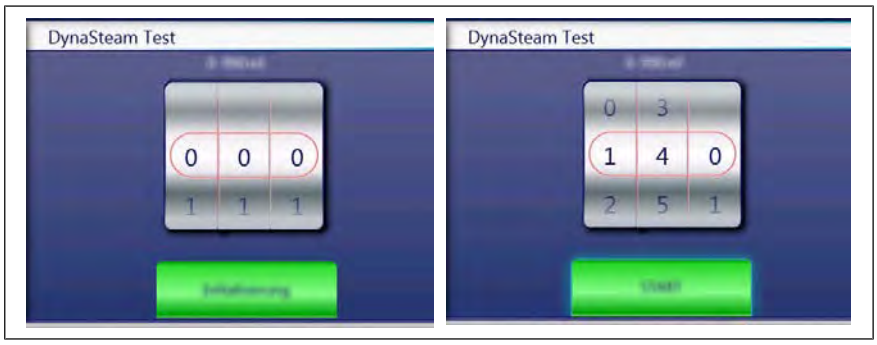
## 5.8 DynaSteam test

**Description** The DynaSteam test allows the function test of the DynaSteam steaming unit.
Calibration of the steaming unit is not possible / necessary.

**Prerequisite** Access to the water supply pipe in the cooking chamber.

→ Remove both hook-in points.
→ Dismount water supply pipe.
→ Dismount air diverter.
→ Replace water supply pipe.

**Overview**




**Starting the test**

→ Touch "Initialization" field.
↳ Automatic pre-rinse.
↳ Field changes to "START".
→ Set water quantity using the rollers.
→ Touch the "START" field.
↳ Activation of the DynaSteam steaming unit.
↳ The water comes runs from the water supply pipe into the cooking chamber.

**Check the water quantity** Collect the water from the supply pipe with a measuring container.

→ Starting water test.
↳ After the predetermined amount of water has gone through, the steaming unit stops automatically.
↳ Compare amount of water with the set value. A deviation of +- 10% is within tolerance.

## 5.9 Emptying the water

**Description** Water drainage removes water residue from the unit to prevent frost damage during transport and idle period.

**Requirement**
→ Both water connections are connected to compressed air.
↳ The pressure may not exceed 6 bar.
→ The cooking chamber temperature is < 130°C.

**Overview**


**Starting to drain the water**
→ Touch the "START" field.
↳ Start of the automatic water drainage.
↳ Display of the cooking chamber temperature and remaining time.

**Canceling the water drainage**
→ Touch the "STOP" field.

## 5.10 Setting the set-up height

**Overview**


**Setting the set-up height**
→ Set the set-up height by adjusting the rollers.
→ Touch the "OK" field.
↳ Changes saved.

**Canceling the selection**
→ Touch the "Back" field.

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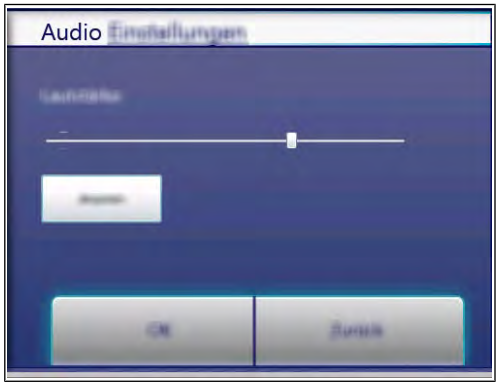
## 5.11 Audio settings

**Overview**




**Setting the volume**

→ Set the desired volume using the sliders.
→ Touch the "OK" field.
↳ Changes saved.

**Canceling the selection**

→ Touch the "Back" field.

## 5.12 Select signal tones

**Set signal tones**
→ Set the profile by adjusting the rollers.
→ Tap the "OK" field.
↳ Changes saved.

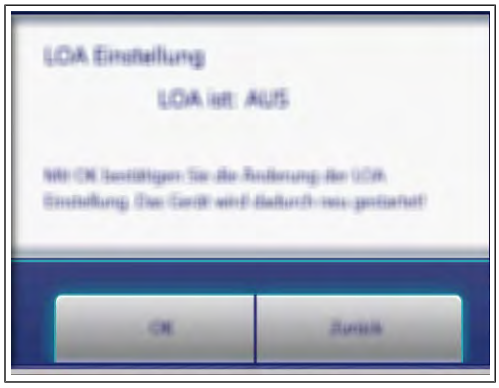
**Canceling the selection**
→ Tap the "Back" field.

## 5.13 POS activation

**Description** Software activation for the optional connection to a customer-supplied performance optimization system.

**INFORMATION** An additional modification of the appliance is required. With activation without retrofitting, the heating circuit will not be activated.

**Overview**




**Changing the setting**
→ Touch the "OK" field.
↳ Change saved.
↳ Automatic restart of the software.

**Canceling the selection**
→ Touch the "Back" field.

## 5.14 Log data export

**Description** Log data export to an external USB flash drive. The function is only required after consultation.

**Exporting log data**
→ Perform according to instructions on the touchscreen.
→ Touch the *Confirmation* field.
↳ Log data export begins.

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## 5.15 Software update

**Description** → Update of the software via the USB interface.

**INFORMATION**

Sounds, cookbooks, help texts and videos are not part of the software update.

These require importing via "Importing additional content".

**Performing the update**

→ Perform according to instructions on the touch screen and description .

→ Tap the "OK" field.

↳ Update begins.

→ A confirmation then appears on the touchscreen.

## 5.16 Importing additional content

**Description** Import of additional content (sounds, videos, graphics, help texts).

**INFORMATION**

Import is absolutely essential after the operating panel has been replaced.

**Importing content** Perform according to instructions on the touchscreen.

→ Touch the *Confirmation* field.

↳ Import the content.

↳ A confirmation then appears on the touchscreen.

→ Tap the "OK" field.

## 5.17 Restoring data

**Description** Import function of parameters stored on the SD card.

| **INFORMATION** | Importing is required after the operating panel or control board have been replaced. |
|---|---|

**Restoring data** Perform according to instructions on the touchscreen.

→ Touch the *Confirmation* field.

↳ Restoring of the data from the SD card.

→ Tap the "OK" field.

↳ Automatic restart of the software.

## 5.18 Backing up data

**Description** Export function of the parameters (for example, calibration values). Storage of the data on the internal SD card or USB stick (if present).

**Backing up data** Perform according to instructions on the touchscreen.

→ Touch the *Confirmation* field.

↳ Back-up of the data.

↳ Then a confirmation appears on the touchscreen.

→ Tap the "OK" field.

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## 5.19 Water filter maintenance

**Description** This function is available, but cannot be used on this unit.

## 5.20 Importing contact data

**Description** Import of service contact data. This data can be accessed by the operator under "Equipment information".

**Preparing the data** Perform according to instructions on the touchscreen.

→ Create the file "ContactData.txt" with favorite text editor on the computer.

→ Open the file on the computer.

→ Enter contact data distributed over 6 text lines.

→ Save file on a USB flash drive.

↳ The file must be stored in the folder "FCImport".

**Importing data**

→ Perform according to instructions on the touchscreen.

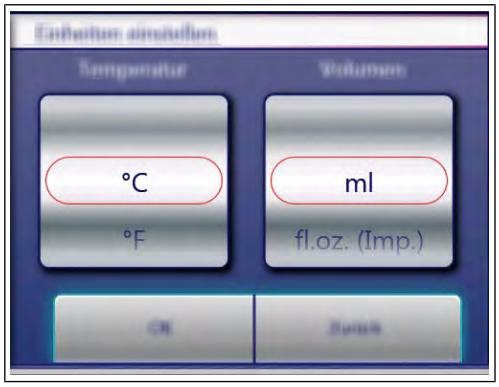
→ Touch the *Confirmation* field.

↳ Import the created contact data.

↳ Then a confirmation appears on the touchscreen.

## 5.21 Setting units

**Overview**




**To convert the units**

1. Select the desired temperature and volume.
2. Touch the "OK" field.

## 5.22 Backup relay

**Description** The control board has a spare relay, which allows alternative use in case of a relay failure. This is only possible with the listed relays.

**Locate defective relay**

→ Call relay test in the service menu.

↳ Perform relay test. Locate defective relay by examining the output voltage at the corresponding outputs on the control circuit board.

**Occupying the spare relay**

→ Do rewiring according to the table.

Example: When using it for K8 (solenoid M8), rewire line from connector X17.1 to X12.5.

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## INFORMATION

In case of changes to the wiring, label or deposit note in the unit.

**Overview**


**Assigning the backup relay**

→ Select the defective relay by means of the roller.
→ Touch the "OK" field.
↳ Changes saved.

**Canceling the selection**

Touch the "Back" field.

**Relay overview**

| Relay | Connector | No. | Description | Instruction |
|---|---|---|---|---|
| K1 | X10 | 2 | Main contactor Q1 | Reconnect the line from X10.2 to X12.5 and to assign a reserve relay to it. |
| K1 | X11 | 1 | POS A | Reconnect the line from X11.1 to X12.5 and to assign a reserve relay to it. |
| K2 | X11 | 2 | POS B | Reconnect the line from X11.2 to X12.5 and to assign a reserve relay to it. |
| K4 | X12 | 3 | Magnetic valve for water vapor elimination K12 | Reconnect the line from X12.3 to X12.5 and to assign a reserve relay to it. |
| K5 | X12 | 4 | Siphon pump G24 | Reconnect the line from X12.4 to X12.5 and to assign a reserve relay to it. |
| K6 | X12 | 5 | Backup relay K6 | Reconnect the line from X12.5 to X12.5 and to assign a reserve relay to it. |
| K8 | X17 | 1 | Solenoid fresh air M8 | Reconnect the line from X17.1 to X12.5 and to assign a reserve relay to it. |
| K17 | X12 | 1 | Circulating pump G16 | Reconnect the line from X12.1 to X12.5 and to assign a reserve relay to it. |

**Dismantling and re-programming**

After changing the control board the original state is restored. Thus, the backup relay is not used unnecessarily.

→ Establish the original condition of the wiring (from X12. 5 to Xx).
→ Calling up the "Backup relay" in the Service menu.
→ Select "OFF" using the roller.
↳ The backup relay is deactivated.
→ Touch the "OK" field.
↳ Changes saved.

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# 5.23 Settings parameters

## 5.23.1 Selecting and changing parameters

**Description** → Querying and setting additional parameters.

**Overview**


**Selecting parameters**

→ Selecting parameters by adjusting the roller.
→ Tap the "Read" field.
↳ Display of set parameters.

**Changing parameters**

→ Use the number block to set the desired values by tapping.
→ Tap the "Write" field.
↳ Changes saved.

## 5.23.2 Parameter overview

| No. | Basic setting | Standard value | Range of adjustment | Explanation |
|---|---|---|---|---|
| 7 | User menu password | 111 | 0 - 300 | Password for the user menu (basic settings) |
| 16 | Cooking chamber temperature offset | | -9.9 - +9.9°K | Ability to retrieve the saved temperature offset values. The can also be changed and saved. The calibration function in the Service menu is used for calibration! |
| 21 | Core temperature offset, sensor 1 | | -9.9 - +9.9°K | |
| 22 | Core temperature offset, sensor 2 | | -9.9 - +9.9°K | |
| 23 | Core temperature offset, sensor 3 | | -9.9 - +9.9°K | |
| 24 | Core temperature offset, sensor 4 | | -9.9 - +9.9°K | |
| 45 | Generator mode | 0 | 0 = Off<br>1 = On | Only when using generators on ships. |
| 48 | Steam elimination mode | 1 | 0 = Low<br>1 = Normal<br>2 = High | "Low" setting: Minimum water consumption, but higher condensate temperature and greater steam volume. "High" setting: Maximum water consumption, but lower condensate temperature and smaller steam volume. |
| 49 | Controls the cooking chamber lamp when opening the cooking chamber door | 0 | 0-60 seconds | |

| No. | Basic setting | Standard value | Range of adjustment | Explanation |
|---|---|---|---|---|
| 50 | Controls the cooking chamber lamp when closing the cooking chamber door | 0 | 0-60 seconds | |
| 602 | Maximum power outage duration for a warm start | 100 s | 90 – 600 seconds | Time within which the cooking program will continue after interruption of the power supply. |
| 607 | Ready to Cook active | 1 | 0 = Off<br>1 = On | When the value is "0", Ready2Cook is permanently deactivated. |
| 609 | Interval for saving the temperatures in the HACCP log | 120 s | 1 – 180 seconds | |
| 618 | Ready to Cook – Finished message interval | 60 s | 0 – 300 seconds | Reminder interval after the Ready2Cook temperature is reached |
| 624 | SES status | 1 | 0 = Off<br>1 = On | When the value is "0", the SES function is permanently deactivated. |
| 625 | Minimum duration of cooking program for SES | 6 min. | 4-6 minutes | If the overall duration of a cooking program is less than this value, the SES does not run. |
| 655 | Limitations for Arabic | 0 | 0 = Off<br>1 = On | When the value is "1", no cooking programs for pork are displayed |
| 662 | Lock screen active | 0 | 0 = Off<br>1 = On | Display of Lock Screen menu item |
| 674 | Auto-start | 0 | 0 = No auto-start<br>1= Direct favorites<br>2=Always | Automatic start of a cooking program after selection from AutoChef / Favorite |
| 678 | Scanner button available | 1 | 0 = Hidden<br>1= Visible | Display of scanner function in the title bar. |
| 695 | PIN for operation lock | 369 | 0 – 99999 | |

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## 5.24 Backing up the SD card

**Description** Export the data from the internal SD card and external USB stick.

**Backing up the SD card** Perform according to instructions on the touchscreen.

→ Touch the *Confirmation* field.

↳ Back-up of the data.

↳ A confirmation then appears on the touchscreen.

→ Tap the "OK" field.

## 5.25 Restoring the SD card

**Description** Import the data from a backup of the SD card from a USB stick. Required after replacing the SD card.

**Restoring the SD card** Perform according to instructions on the touchscreen.

→ Touch the *Confirmation* field.

↳ Restoring of the data from the SD card.

→ Tap the "OK" field.

↳ Automatic restart of the software.

## 5.26 Background lighting

**Changing the brightness of the touchscreen**

1. Select the desired brightness.
2. Tap the "OK" field.

## 5.27 Hour meter

**Description** Display of hour meters, service life, cleaning use and consumption. The arrow keys in the upper region are used to switch between the pages.

This region is currently undergoing further development. At the moment, data backup is not yet possible.

# 6 Status overview direct access

**Description**

→ Direct access in the status overview.

↳ Display of all processes and temperature in ongoing operation.

**Overview**


**Calling up status overview**

→ Touch the invisible field three times quickly.

↳ Change of the display to the multi-page status overview .

**Exiting the status overview**

→ Touch the *Back* field.

↳ Change to the display of the cooking process.

**INFORMATION**

The status overview is intended only for the service technician.

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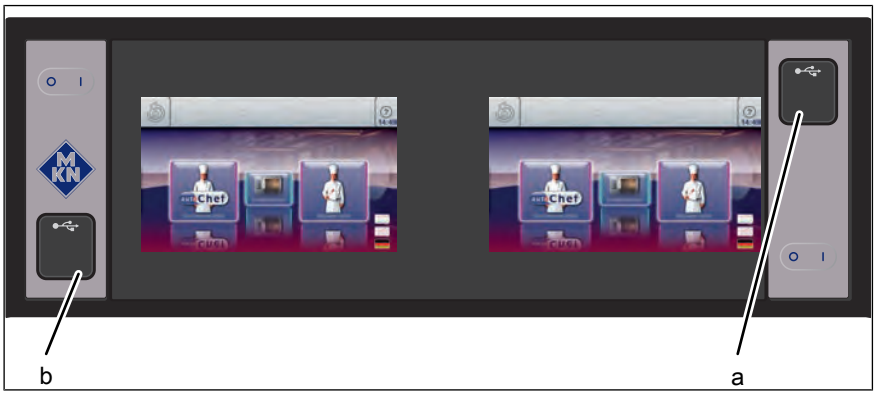
# 7 Software

## 7.1 Overview




a USB port for top unit

b USB port for bottom unit

## 7.2 Software update

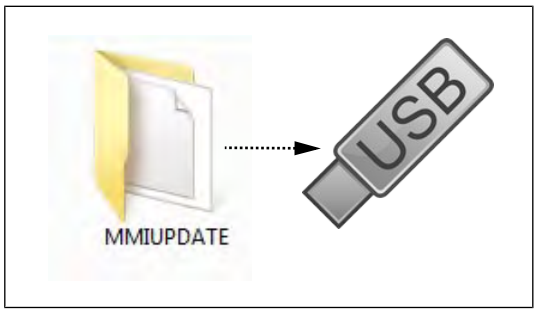
**INFORMATION**

Update each of the two units separately. Two independent controls are involved.

### 7.2.1 Preparing the USB stick

**Prerequisite** USB stick.
Maximum size 32 GB. FAT formatting (default).
The disk should be empty if possible.
Current software update. The update is provided as packed ZIP file.

→ Open and download Zip file and unzip. In general, the unzipped folder is in the same directory as the previously compressed one.
→ Copy unzipped folder "MMIUpdate" to the USB stick.
↳ The update file is in the folder.
↳ The file has the extension ".ugl".
↳ For instance "017100.ugl" (software update V1.71).

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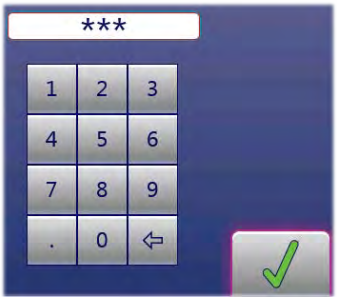
### 7.2.2 Performing the update

**INFORMATION**

The update can take up to 15 minutes. The software is restarted several times. Do not switch unit off.

→ Insert the USB stick
→ Switching on the unit
→ Tap the "Unit functions" field.
↳ Display of *Appliance functions* menu.

→ Tap the "Settings" field.
↳ Display of window "*PIN*".




→ Enter password and touch *Confirmation* field.
↳ The password for the Settings menu is **111**.
→ Select the "Software update" field on the left area of the menu by swiping.
→ Tap the "Software update" field.
→ Tap the "OK" field.
↳ The update begins.
↳ A confirmation then appears on the touchscreen.
→ Tap the "OK" field.
↳ The software restarts automatically.

**INFORMATION**

After the update, a blue screen may appear and the software does not start. In this case, switch the unit off and then back on. In rare cases, this may happen again.

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## 7.3 Importing additional content

Import function for manufacturer contents:

- Cookbook graphics
- Help information
- Sound files

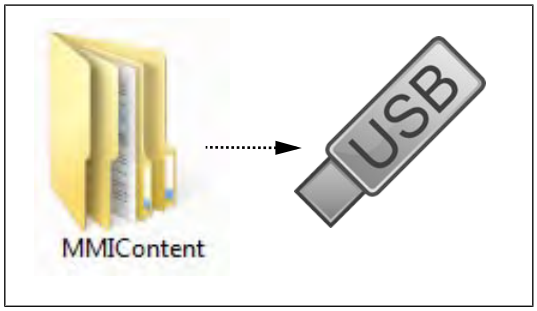
**INFORMATION**

Update each of the two units separately. Two independent controls are involved.

### 7.3.1 Preparing the USB stick

**Prerequisite** USB stick.
Maximum size 32 GB. FAT formatting (default).
The disk should be empty if possible.
Current software update. The update is provided as packed ZIP file.

→ Open and download Zip file and unzip. In general, the unzipped folder is in the same directory as the previously compressed one.
→ Copy the unzipped folder "MMIContent" to the USB stick.
↳ In the folder there are other subfolders. This may not be changed.




### 7.3.2 Importing

**Importing additional content**

→ Insert the USB flash drive.
→ Switch on the unit.
→ Tap the "Unit functions" field.
↳ Display of *Appliance functions* menu.

→ Tap the "Settings" field.
↳ Display of window "*PIN*".

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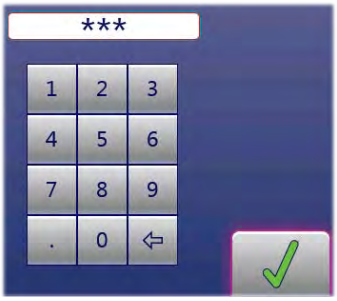



→ Enter password and touch *Confirmation* field.

↳ The password for the Settings menu is **111**.

→ Select the field "Import additional contents" on the left area of the menu by swiping.

→ Tap the "Import additional contents" field.

→ Tap the "OK" field.

↳ The data is imported.

→ A confirmation then appears on the touchscreen.

→ Tap the "OK" field.

→ Restart the unit.

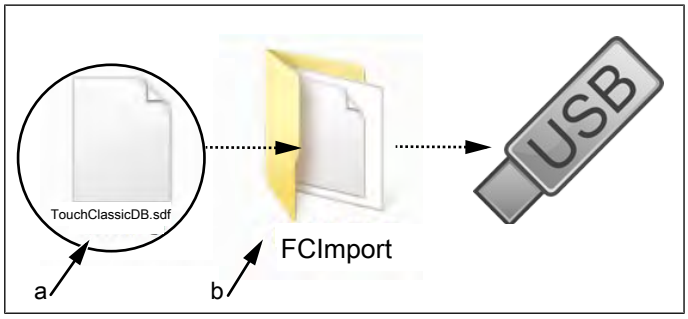
## 7.4 Importing the manufacturer's cookbook

**INFORMATION** Update each of the two units separately. Two independent controls are involved.

### 7.4.1 Preparing the USB stick

**Prerequisite** USB stick.
Maximum size 32 GB. FAT formatting (default).
The disk should be empty if possible.

→ Create "FCImport" folder on the USB stick.
→ Copy update file to the "FCImport" folder.
↳ The update consists of one file.
↳ The file has the wording "TouchClassicDB.sdf."




a Update file b FCImport folder

### 7.4.2 Importing

→ Inserting the USB stick
→ Switch unit on "I."
→ Tap the "Unit functions" field.
↳ Display of *Appliance functions* menu.
→ Tap the "Settings" field.
↳ Display of *PIN* window.
→ With the keyboard, enter password "111".
↳ Display of menu "*Settings*".
→ Select the field "Import manufacturer's cookbook" on the left area of the menu by swiping.
→ Tap the "Import manufacturer's cookbook" field.
→ Touch the *Confirmation* field.
↳ Import begins.
↳ A confirmation then appears on the touchscreen.
→ Tap the "OK" field.
→ Restart the unit.

# 8 Trade show mode

**Description** Trade show mode allows appliance operation for demonstration purposes.

**Prerequisite** A single-phase power supply is required for operation.

→ Unit is connected to L3 and N.

↳ See also installation instructions.

**Calling up the selection**

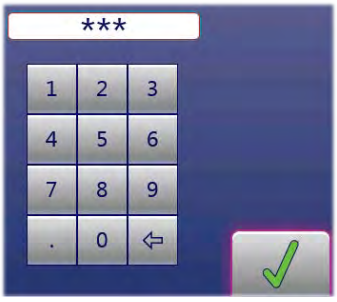
→ Switch unit to "I"

→ Tap the "Unit functions" field.

↳ Display of *Unit functions* menu.

→ Tap the "Settings" field.

↳ Display of *PIN* window.




→ Enter password **888** and tap the *Confirm* field.

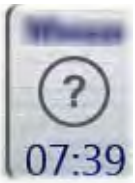
↳ Display of *Trade show* menu.

**Switching trade show mode on**

→ Tap the "Trade show mode is off" field.

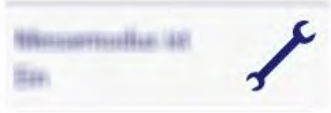
↳ Automatic restart of the software.

↳ Unit is in trade show mode




↳ The active trade show mode is indicated on the screen.

**Switching off trade show mode**



→ Call up the *Trade show mode* menu.

→ Tap the "Trade show mode is on" field.

↳ Automatic restart of the software.

↳ Unit is in normal operation.

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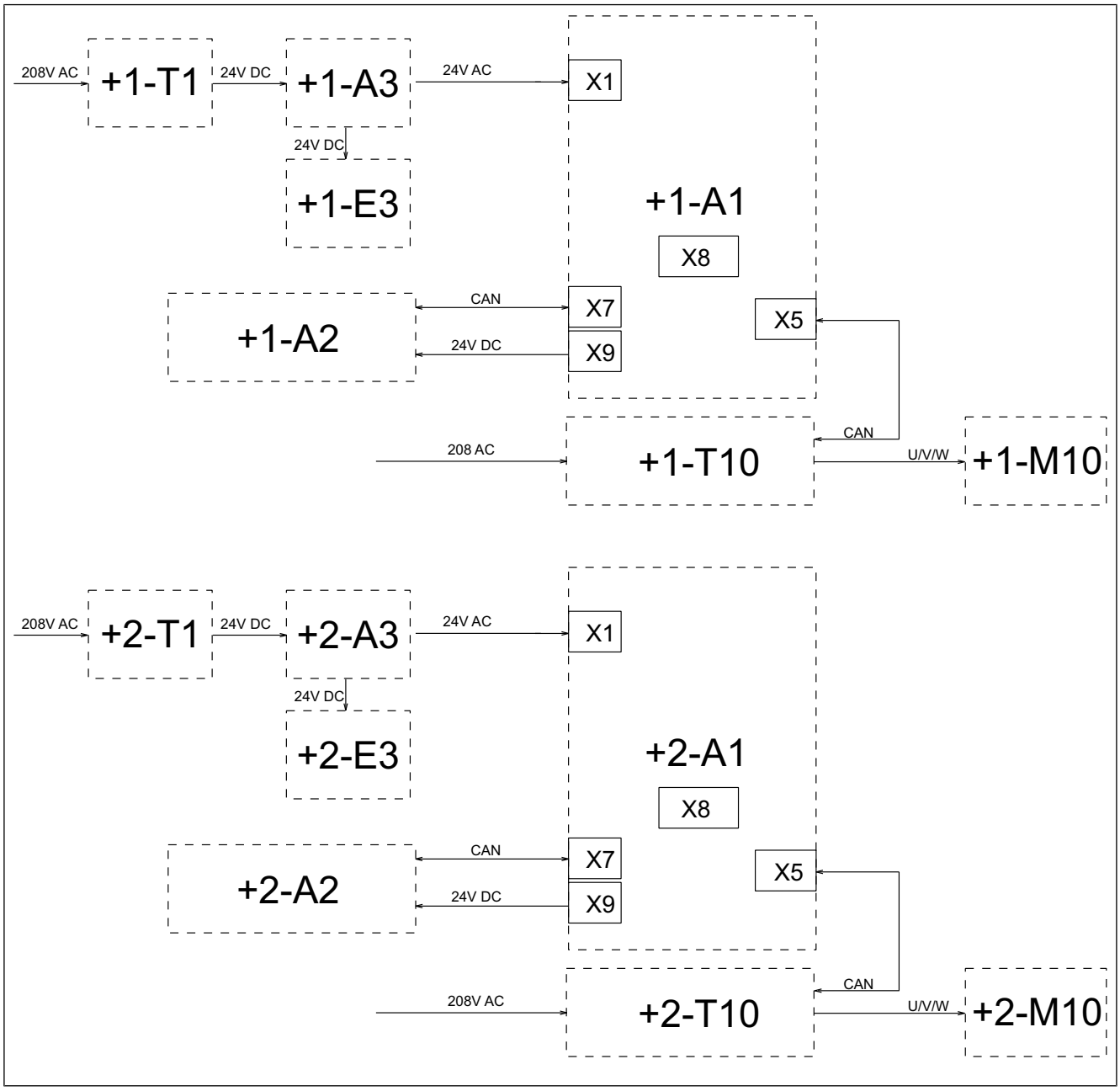
# 9 Electronics

## 9.1 Block diagram for the control




**Legend**

| | | | |
|---|---|---|---|
| A1 | Control board | A2 | Operating panel |
| A3 | Lighting circuit board | E3 | LED illumination |
| M10 | Fan motor | T1 | Power pack |
| T10 | Power board for motor | | |

"+1" = Upper unit
"+2" = Lower unit

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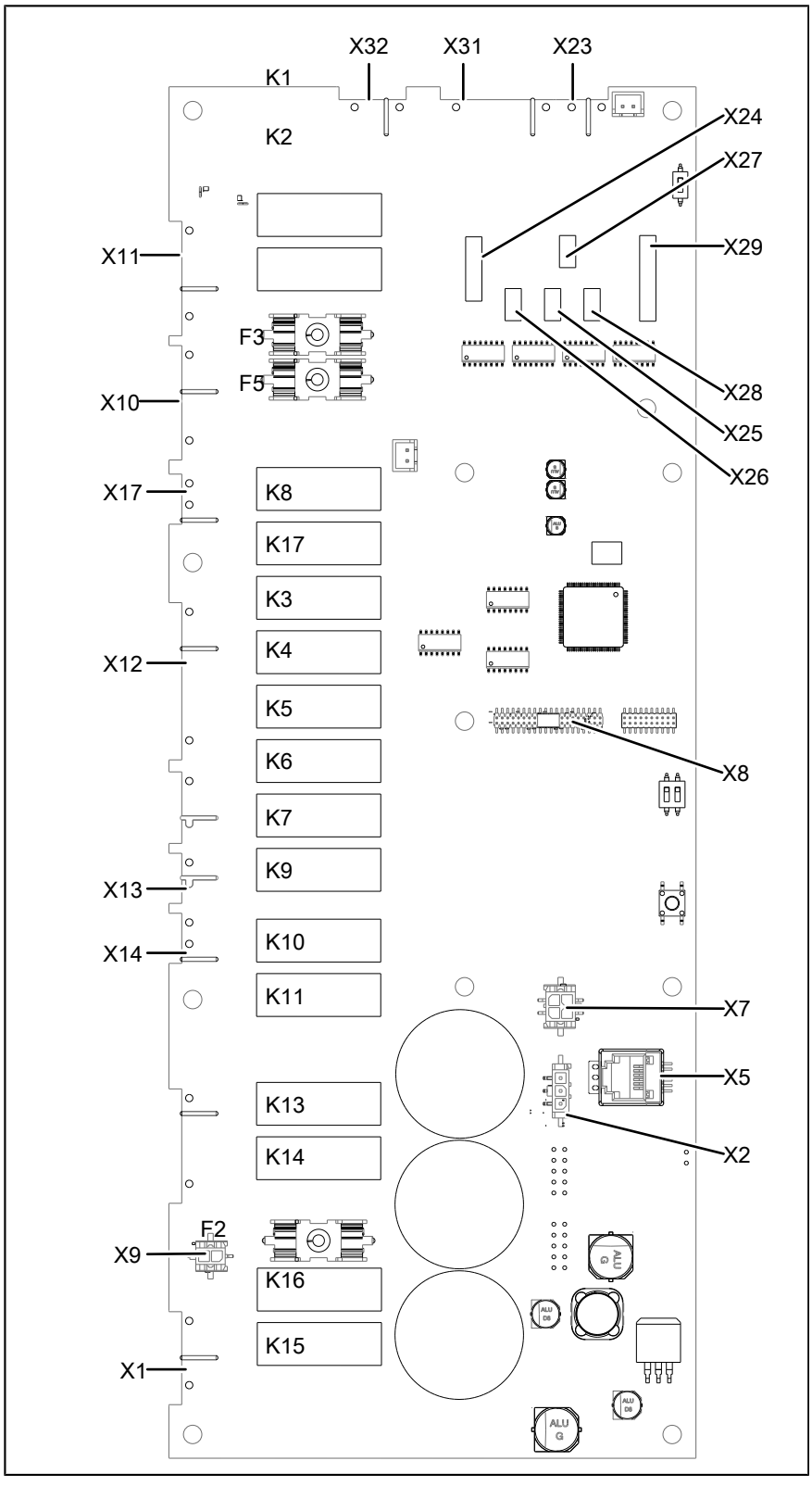
## 9.2 Control board

### 9.2.1 Layout

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## 9.2.2 Configuration

**Connector X1**

| No. | Description |
|---|---|
| 1 | Input 24 V DC for lighting |
| 2 | Output 24 V DC for lighting |
| 3/4 | Control board I/O voltage supply (24 V AC) |

**Connector X5** CAN bus line to the motor M10

**Connector X7** MMI communication

**Connector X8** Digital key contains device-specific information.

**Connector X9 (24V DC)**

| No. | Description |
|---|---|
| 1/2 | 24 V DC supply for operating panel (MMI) |

**Connector X10 (208V AC)**

| No. | Description |
|---|---|
| 1 | 208 V input voltage for components |
| 2 | Output K1, main contactor Q1 (via thermal switch and safety temperature limiter) |
| 3/4 | - |
| 5 | N |

**Connector X11 (208V AC) optional**

| No. | Description |
|---|---|
| 1 | Output K1, POS A |
| 2 | Output K2, POS B |
| 3 | Input 208V, POS C |
| 4 | - |
| 5 | N |

**Connector X12 (208V AC)**

| No. | Description |
|---|---|
| 1 | Output K17, WaveClean pump G16 |
| 2 | - |
| 3 | Output K4, solenoid valve K12 |
| 4 | Output K5, siphon pump G24 |
| 5 | Output K6, backup relay |
| 6 | - |
| 7 | N |

**Connector X13 (potential-free)**

| No. | Description |
|---|---|
| 1 | Input K10, 208 V AC |
| 2 | Output K10, 208 V AC (switching hood to high-speed) |

**Connector X14** Not assigned

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**Connector X17 (208V AC)**

| No. | Description |
|---|---|
| 1 | Output K8, solenoid M8 |
| 2 | N for solenoid M8 |

**Connector X23**

| No. | Description |
|---|---|
| 1 | Output to upper or lower unit. "Unit On" message , 24 V DC |
| 2 | Input from upper or lower unit. "Unit On" feedback, 24 V DC |

**Connector X24** B1 core temperature sensor

**Connector X25** B2 cooking chamber sensor

**Connector X26** Not assigned

**Connector X27** B4 Vapor sensor

**Connector X28** Not assigned

**Connector X29** Not assigned

**Connector X31 (24V DC)**

| No. | Description |
|---|---|
| 1 | Output +, steaming unit valve 1 |
| 2 | Output -, steaming unit valve 1 |
| 3 | Output +, steaming unit valve 2 |
| 4 | Output -, steaming unit valve 2 |
| 5 | Output +, pressure switch B14 |
| 6 | Input +, from pressure switch B14 |
| 7 | 0 V |

**Connector X32 (24V DC)**

| No. | Description |
|---|---|
| 1/2 | Output, SSR Q2 |

**Connector X35** Not assigned

**Button** The buttons have no function and are intended for internal use.

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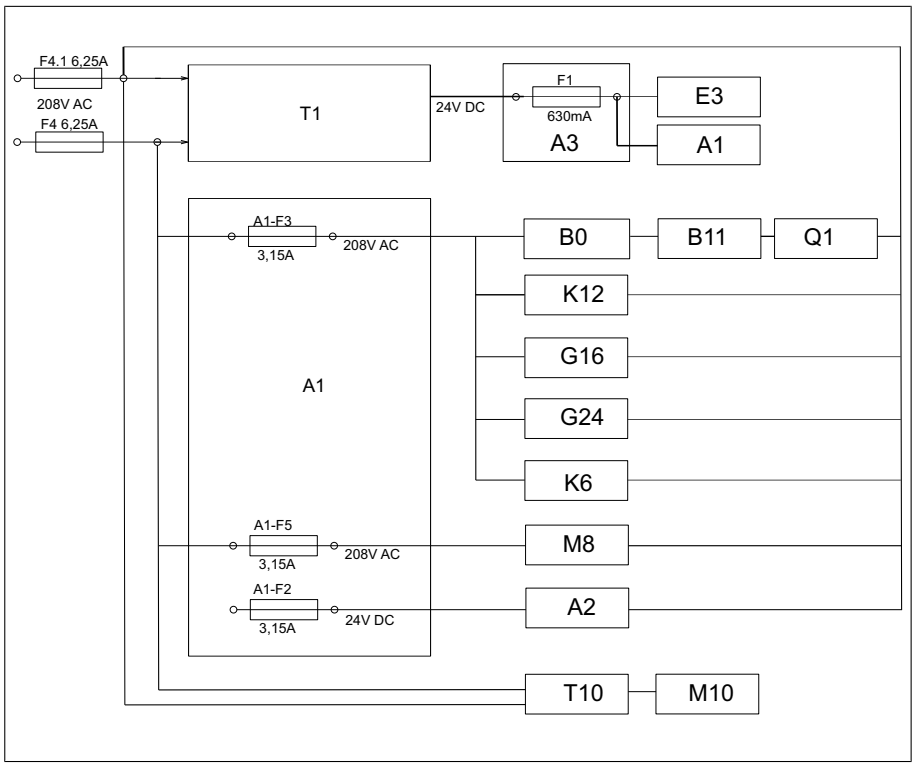
## 9.3 Safety overview




**Legend**

| | | | |
|---|---|---|---|
| A1 | Control board | A2 | Operating panel |
| A3 | Lighting circuit board | B0 | Thermal switch 85°C |
| B11 | Cooking chamber STL | E3 | LED illumination |
| G16 | WaveClean pump | G24 | Siphon pump |
| K6 | Backup relay | K12 | Magnetic valve extinguishing |
| M8 | Solenoid | M10 | Fan motor |
| Q1 | Main contactor | T1 | Transformer |
| T10 | Power board | | |

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# 10 Error messages

## 10.1 Emergency operation

**Description** In order to allows limited use in case of error, the appliance has various emergency programs. Emergency operation is activated automatically and displayed. After elimination of the error indicated, the controller switches back into regular operation automatically. A reset is not necessary.

**INFORMATION** Emergency programs handle the limited further operation of the appliance until servicing. Deviating cooking results and temperature deviations are possible.

**Overview**

| Fault message displayed | Description |
|---|---|
| Cooking sensor defective. | The core temperature sensor takes over the function of the cooking chamber sensor. |
| Water vapor sensor defective | The software controls the water vapor elimination. This results in higher water consumption. |
| Core temperature sensor defective. Cooking program was canceled. | Function no longer available. |

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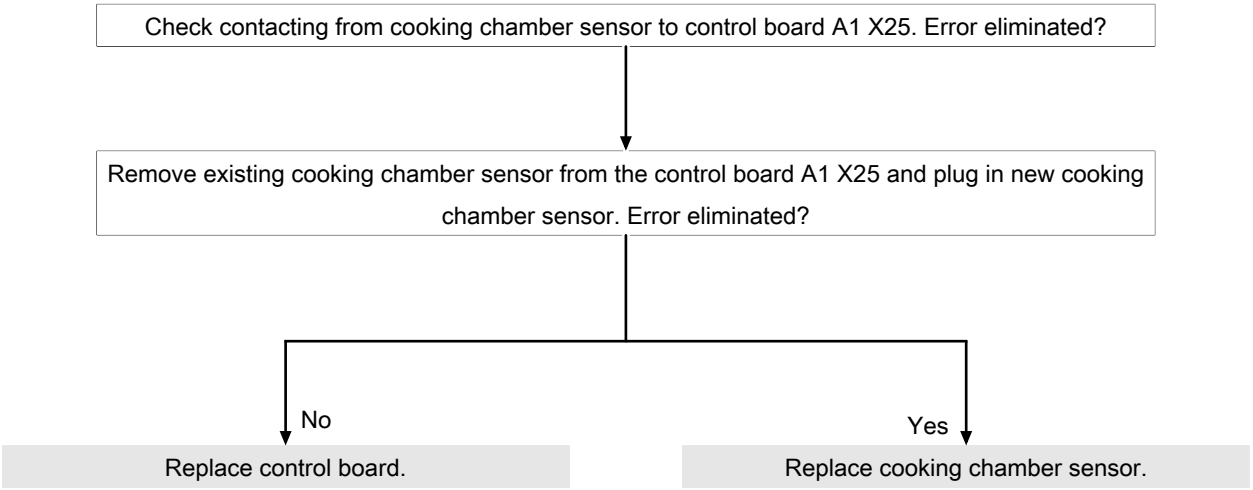
## 10.2 Cooking chamber sensor defective (694, 695)

**Description** Emergency operation is activated automatically and displayed. The core temperature sensor takes over the function of the cooking chamber sensor. Cooking program with core temperature sensor is no longer available.

**Naming on the circuit diagram** B2

**Troubleshooting**




**Function check** The measurement values can be called up in the status overview.

## 10.3 Core temperature sensor defective (699, 700)

**Description** The core temperature sensor in the cooking chamber is deactivated.

**Location** The core temperature sensor is in the front area of the cooking chamber.

**Naming on the circuit diagram** B1

**Troubleshooting** Dismount unit cover.

→ Check contacting on control board A X24.

→ Remove existing core temperature sensor from the control board A1 X24 and plug in new core temperature sensor.

↳ The fault message disappears. Replace core temperature sensor.

↳ The fault message is still displayed. Replace control board.

**Function check** The measurement values can be called up in the status overview.

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## 10.4 Water vapor sensor defective (710)

**Description** Emergency operation is activated automatically and displayed. The software controls the water vapor elimination.

**Location** The water vapor sensor is on the rear side of the siphon.

**Naming on the circuit diagram** B4

**Troubleshooting** Unlatch and open the operating panel.

→ Check contacting on control board A1, X27.

→ Remove existing water vapor sensor from the control board A1, X27 and plug in new water vapor sensor.

↳ The fault message disappears. Replace water vapor sensor. To do this, remove the left side wall.

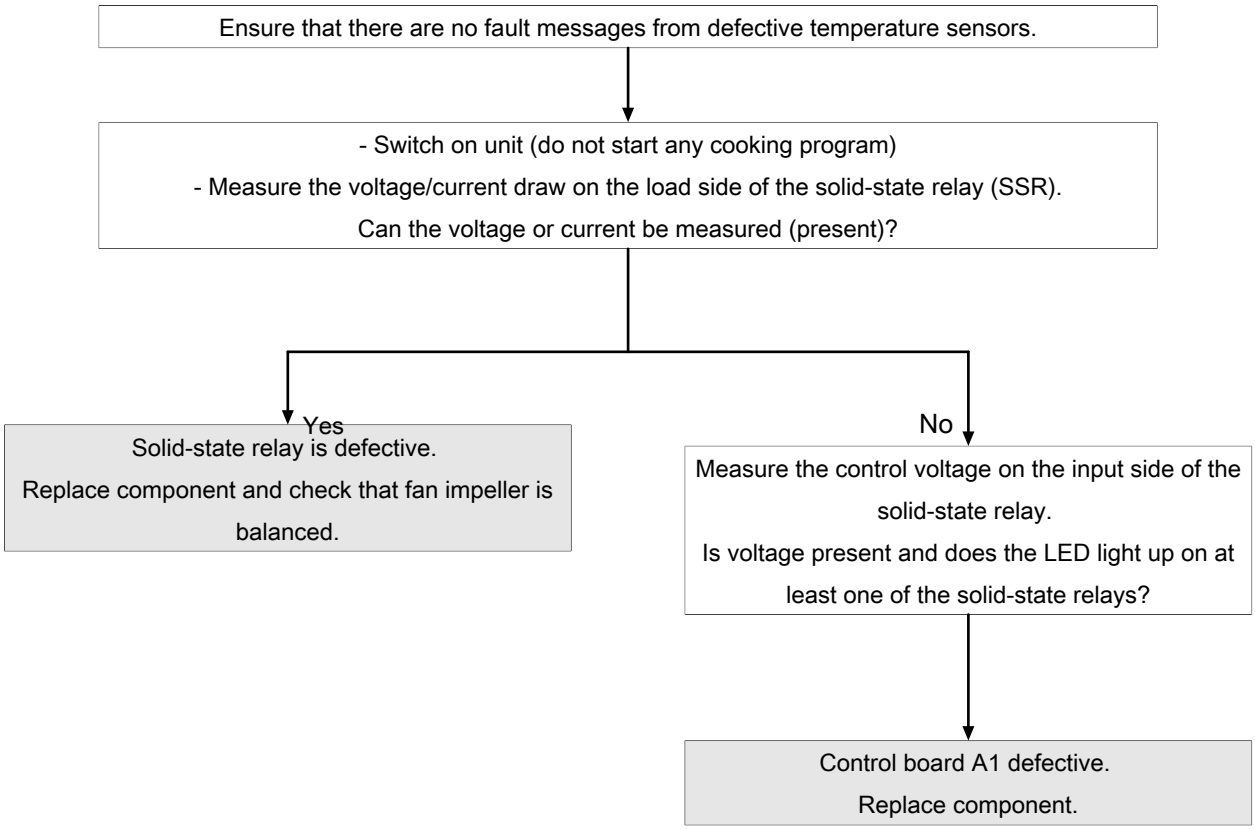
↳ The fault message is still displayed. Replace control board.

## 10.5 Excess temperature in the cooking chamber (ID18, ID73)

**Description** The measured temperature in the cooking chamber is outside the allowable range of more than 320°C. The unit is no longer operational until the cooking chamber cools down. The measurement is taken by the cooking chamber sensor, core temperature sensor and the moisture sensor.

**Prerequisite Troubleshooting**

- No display of fault messages from the temperature sensor.




**Function check** The measurement values can be called up in the status overview.

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## 10.6 Overtemperature control (TMP_ID2)

**Description** The temperature sensor on the control board is measuring a temperature of >75°C. The unit is no longer operational until it cools down.

**Troubleshooting** Contact manufacturer.

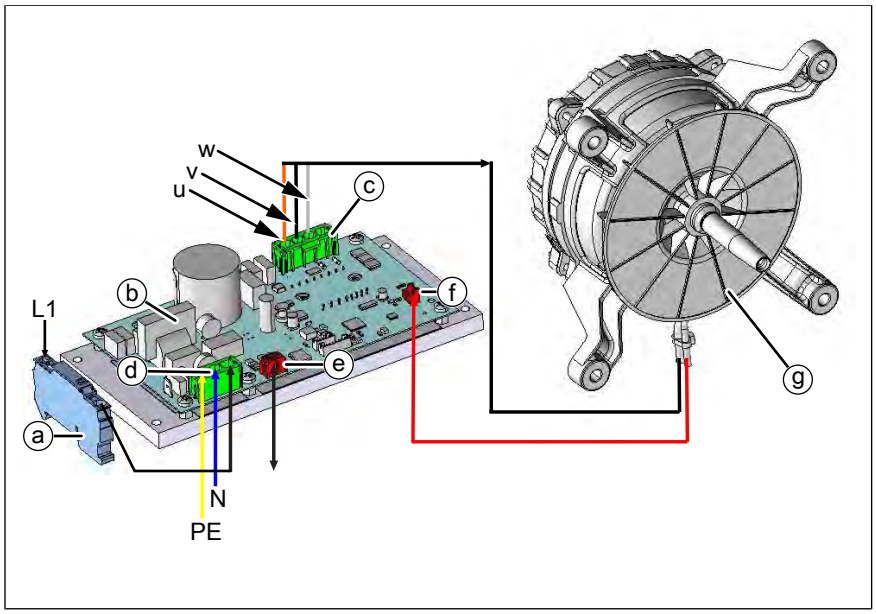
## 10.7 Risk of frost (TMP_ID72)

**Description** The unit is not ready for use. The temperature sensor on the control board is measuring a temperature of <0°C.

**Troubleshooting**
→ Increase the room temperature and switch on unit again.
→ Change location of the unit.

## 10.8 Fan defective or temperature limiter triggered (702)

### 10.8.1 Overview




a Fuse F1 6.3 A
b Power board
c Connector S300. Motor power supply
d Connector S100. Power supply circuit board
e Connector S500. CAN connection to control circuit board
f Connector S501. Input for temperature switch from motor

### 10.8.2 Troubleshooting

**⚠ DANGER**

**Warning: electric shock! Danger of death!**

When working on the power board, make sure that energized parts are exposed. Work on these components during operation and up to 3 minutes after enabling is not allows. Even if the motor is stopped and the appliance is de-energized, the connection terminals and components can conducted dangerous voltage!

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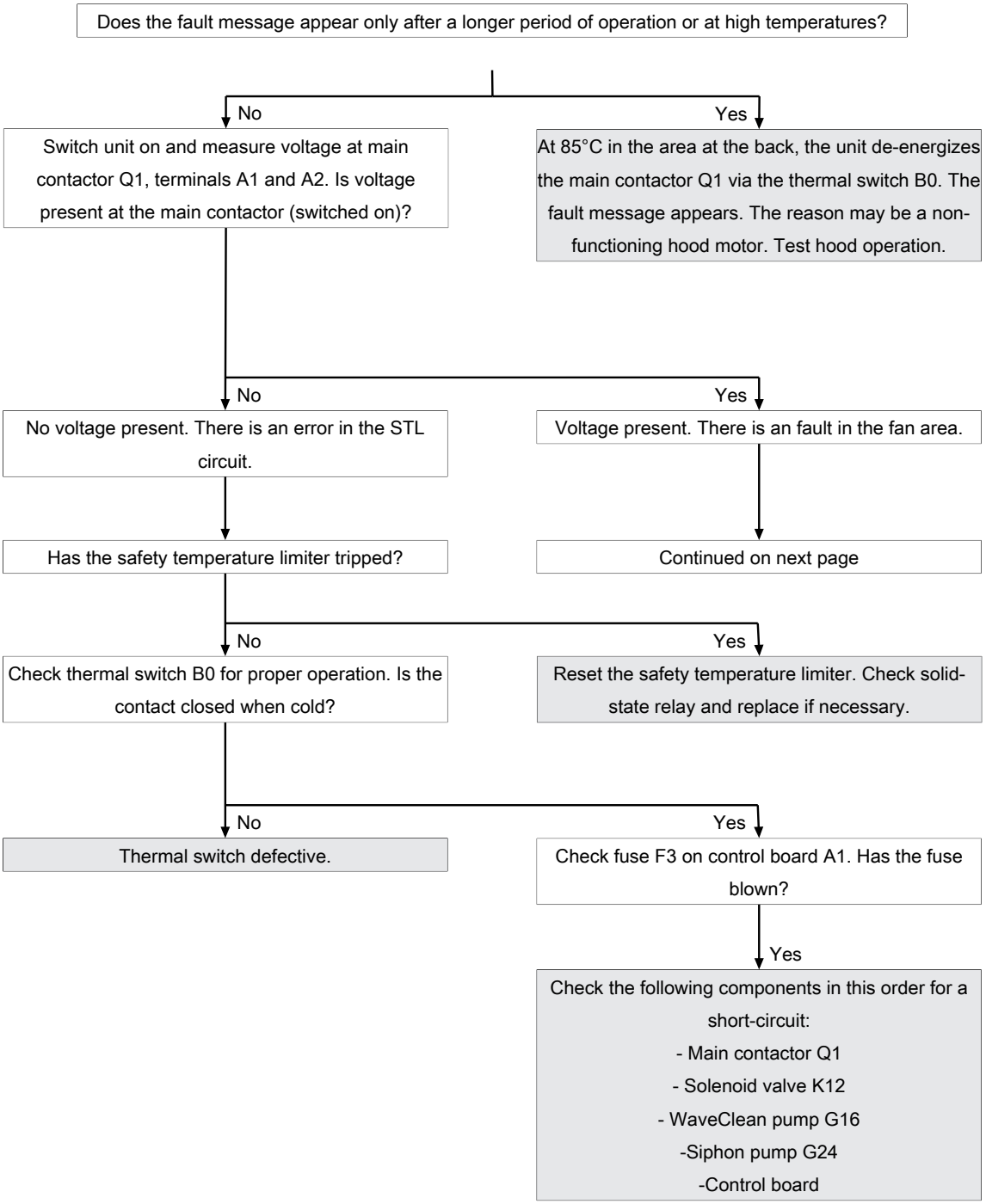
Does the fault message appear only after a longer period of operation or at high temperatures?
No
Yes
Switch unit on and measure voltage at main contactor Q1, terminals A1 and A2. Is voltage present at the main contactor (switched on)?
At 85°C in the area at the back, the unit de-energizes the main contactor Q1 via the thermal switch B0. The fault message appears. The reason may be a non-functioning hood motor. Test hood operation.
No
Yes
No voltage present. There is an error in the STL circuit.
Voltage present. There is an fault in the fan area.
Has the safety temperature limiter tripped?
Continued on next page
No
Yes
Check thermal switch B0 for proper operation. Is the contact closed when cold?
Reset the safety temperature limiter. Check solid-state relay and replace if necessary.
No
Yes
Thermal switch defective.
Check fuse F3 on control board A1. Has the fuse blown?
Yes
Check the following components in this order for a short-circuit:
- Main contactor Q1
- Solenoid valve K12
- WaveClean pump G16
-Siphon pump G24
-Control board

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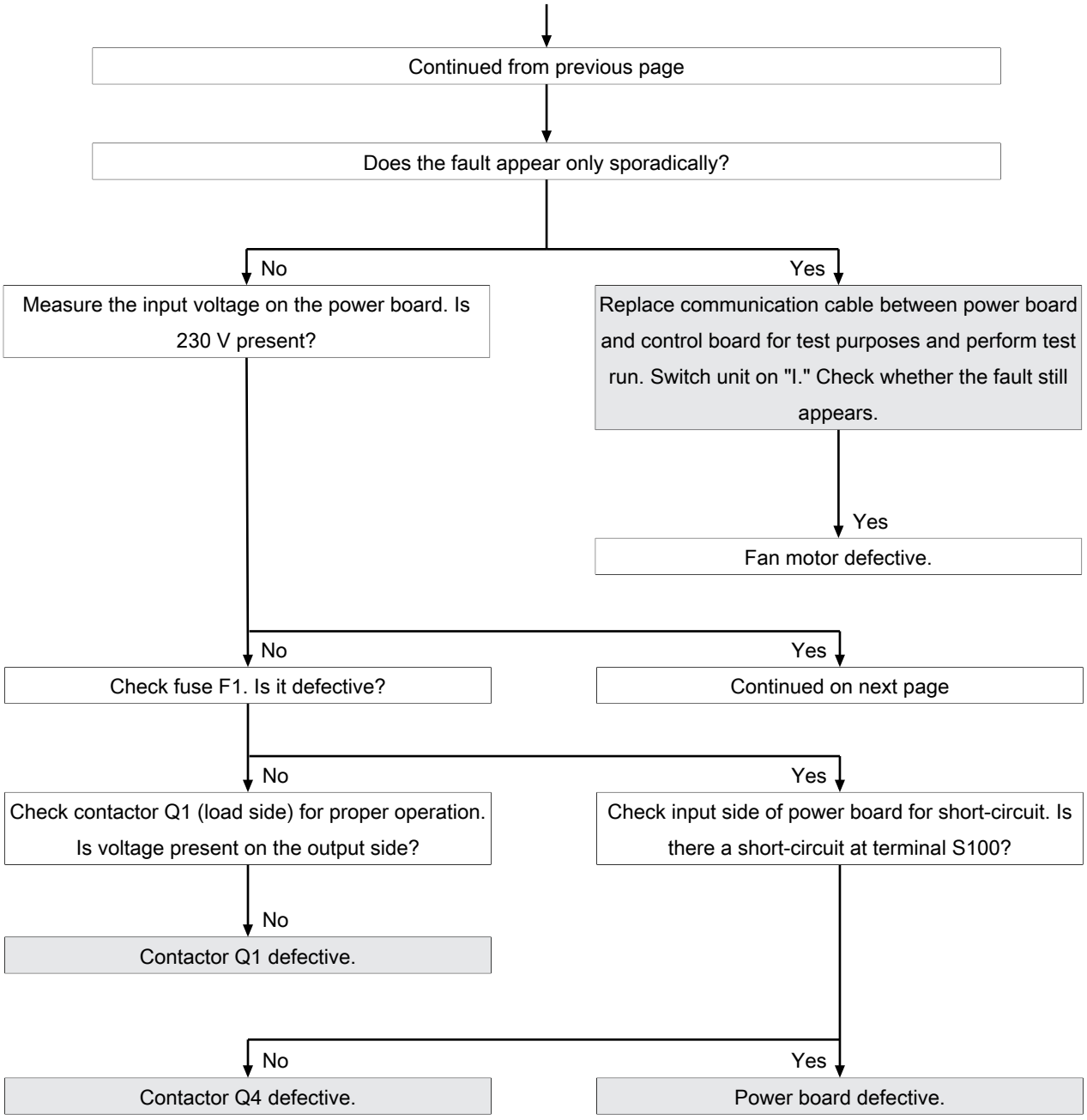
Continued from previous page
Does the fault appear only sporadically?
No
Yes
Measure the input voltage on the power board. Is 230 V present?
Replace communication cable between power board and control board for test purposes and perform test run. Switch unit on "I." Check whether the fault still appears.
Yes
Fan motor defective.
No
Yes
Check fuse F1. Is it defective?
Continued on next page
No
Yes
Check contactor Q1 (load side) for proper operation. Is voltage present on the output side?
Check input side of power board for short-circuit. Is there a short-circuit at terminal S100?
No
Contactor Q1 defective.
No
Yes
Contactor Q4 defective.
Power board defective.

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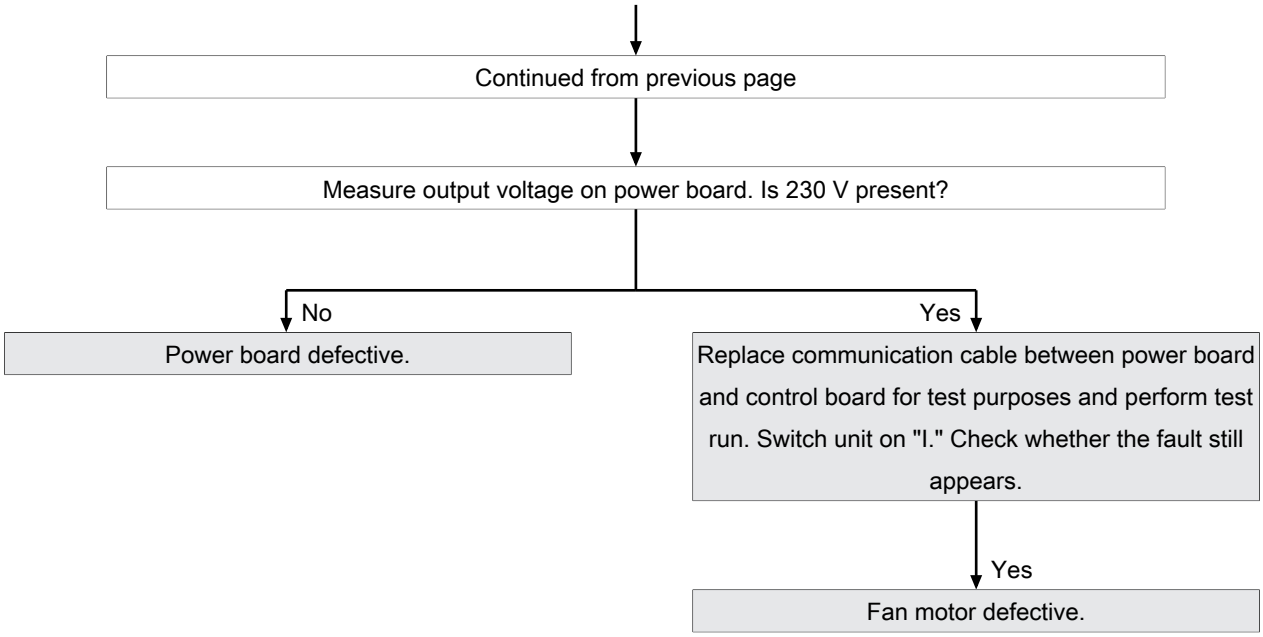
Continued from previous page
Measure output voltage on power board. Is 230 V present?
No
Yes
Power board defective.
Replace communication cable between power board and control board for test purposes and perform test run. Switch unit on "I." Check whether the fault still appears.
Yes
Fan motor defective.

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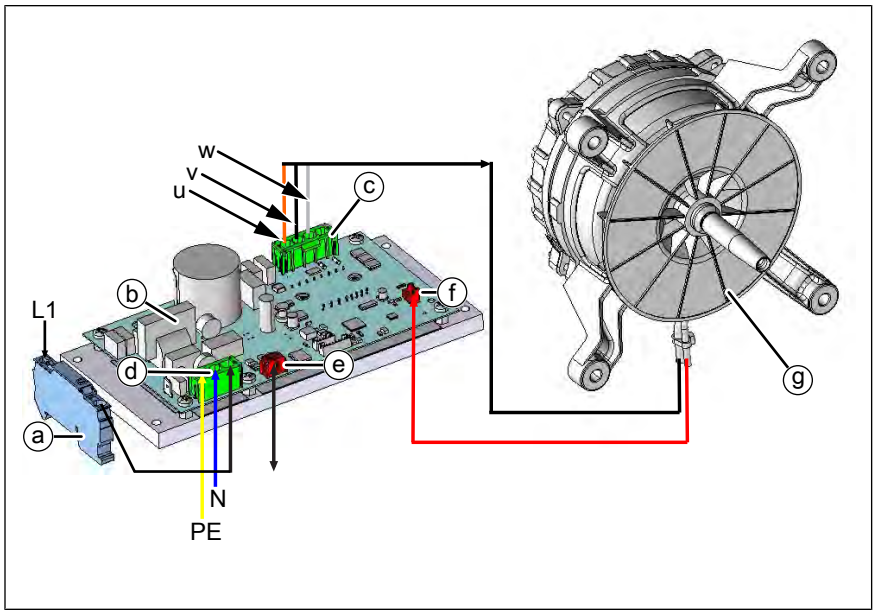
## 10.9 Fan defective. Cooking program was cancelled (701)

**Description** The control board A1 does not receive any response via the CAN bus cable from power board T10.

**Troubleshooting**

## 10.10 FAN_ID23: Fan error: Attempt to restart

### 10.10.1 Overview




a Fuse F1 6.3 A
b Power board
c Connector S300. Motor power supply
d Connector S100. Power supply circuit board
e Connector S500. CAN connection to control circuit board
f Connector S501. Input for temperature switch from motor

### 10.10.2 Troubleshooting

**⚠ DANGER**

**Warning: electric shock! Danger of death!**

When working on the power board, make sure that energized parts are exposed. Work on these components during operation and up to 3 minutes after enabling is not allows. Even if the motor is stopped and the appliance is de-energized, the connection terminals and components can conducted dangerous voltage!

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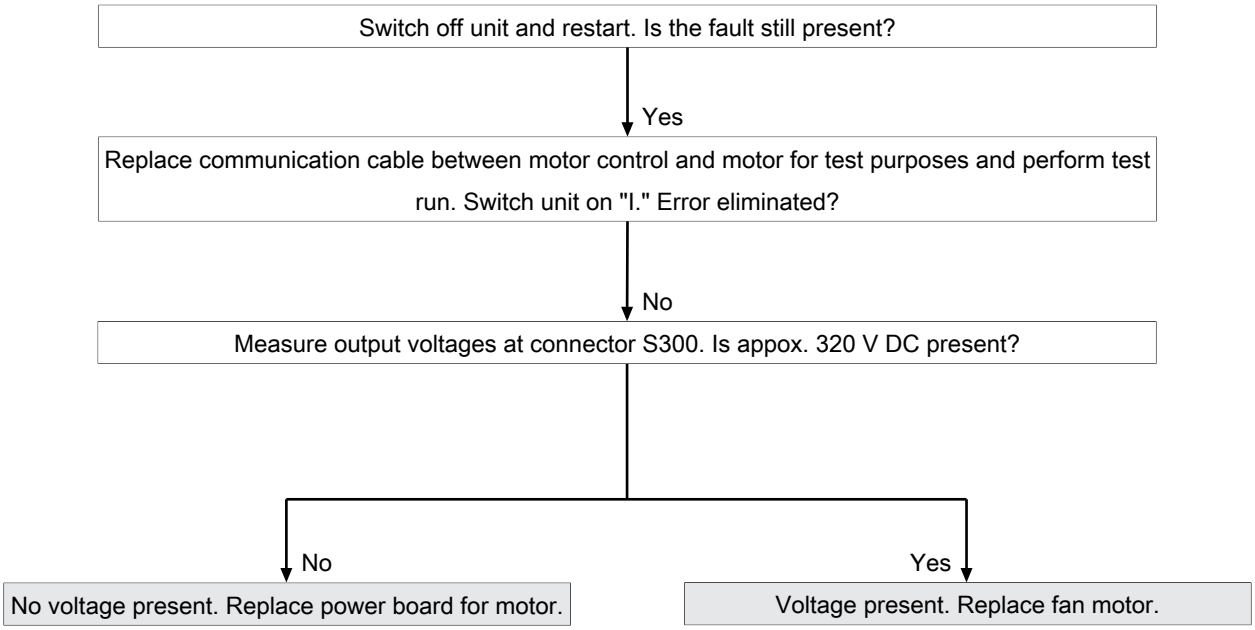
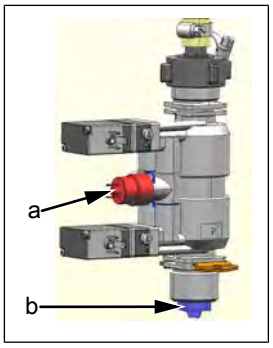
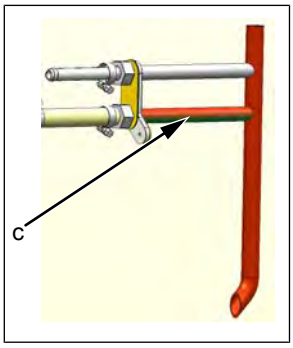



## 10.11 Water pressure too low (709)

### 10.11.1 Overview



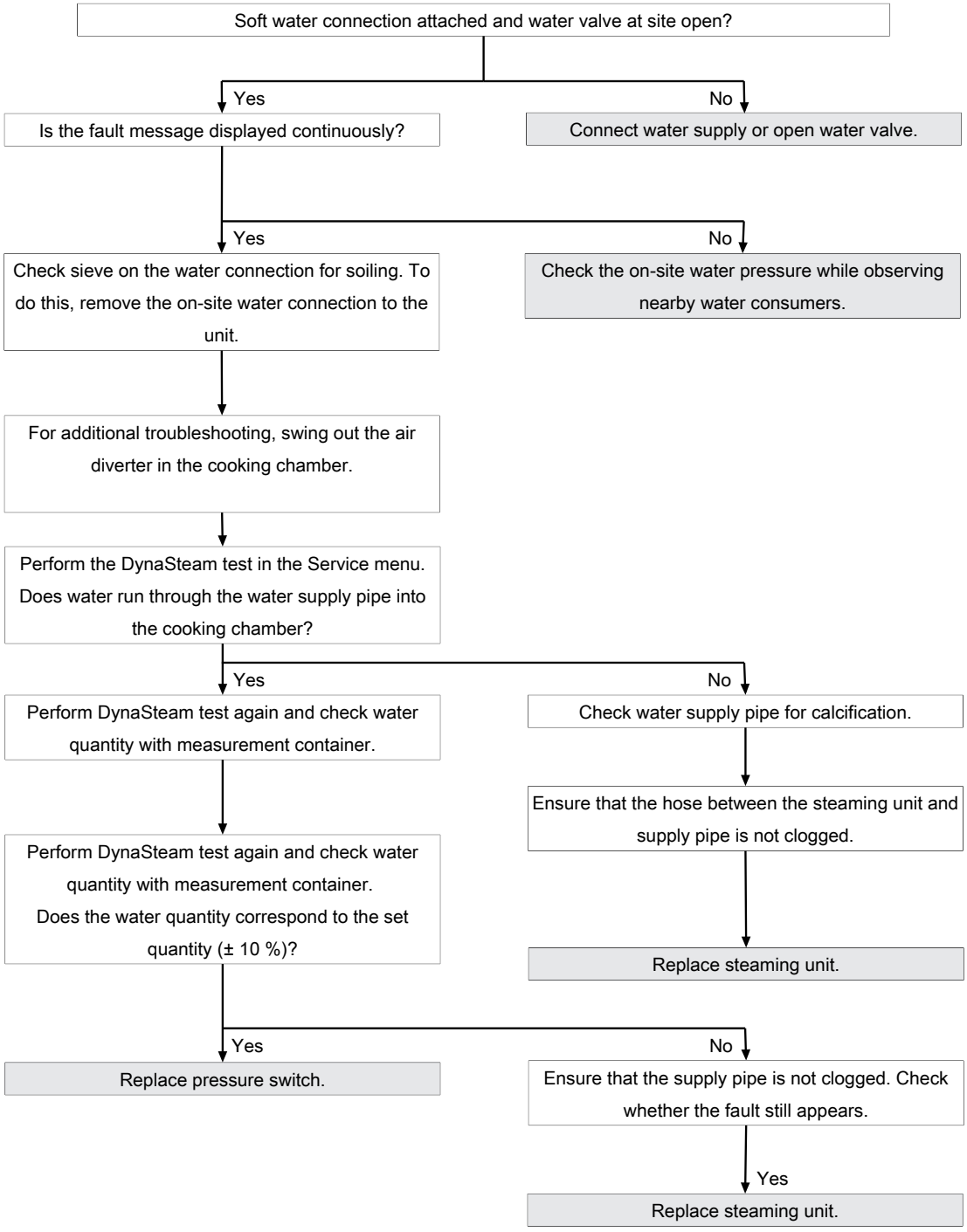




a Pressure switch

b Sieve

c Water supply pipe in the cooking chamber

### 10.11.2 Troubleshooting




## 10.12 Water pressure during WaveClean too low

### 10.12.1 Description

**Description** This fault message is displayed if the pressure switch registered a water pressure that is too low during WaveClean. The program is stopped until the water pressure is sufficiently high again.

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### 10.12.2 Troubleshooting

Ensure customer-supplied water supply on the soft water connection of unit. The supply pressure on the water connection must be at least 2 bar. If the fault occurs sporadically, check the on-site water pressure while observing nearby water consumers.

## 10.13 Failure to access external EEPROM (SOF_ID12)

### 10.13.1 Description

It is not possible to access the digital key (EEPROM).

### 10.13.2 Troubleshooting

→ Make sure that the digital key is oriented correctly and inserted fully. The side with the hole must point to the sensor connections.
→ Control board defective.
→ Digital key defective.

## 10.14 Faulty CAN connection

### 10.14.1 Description

There is a communication fault between the operating panel and control panel. In addition, temperature sensor and fan fault messages appear on the touchscreen.

### 10.14.2 Troubleshooting

→ Replace communication cable between operating panel and control panel circuit board.
→ Replace control board.
→ Replace operating panel.

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