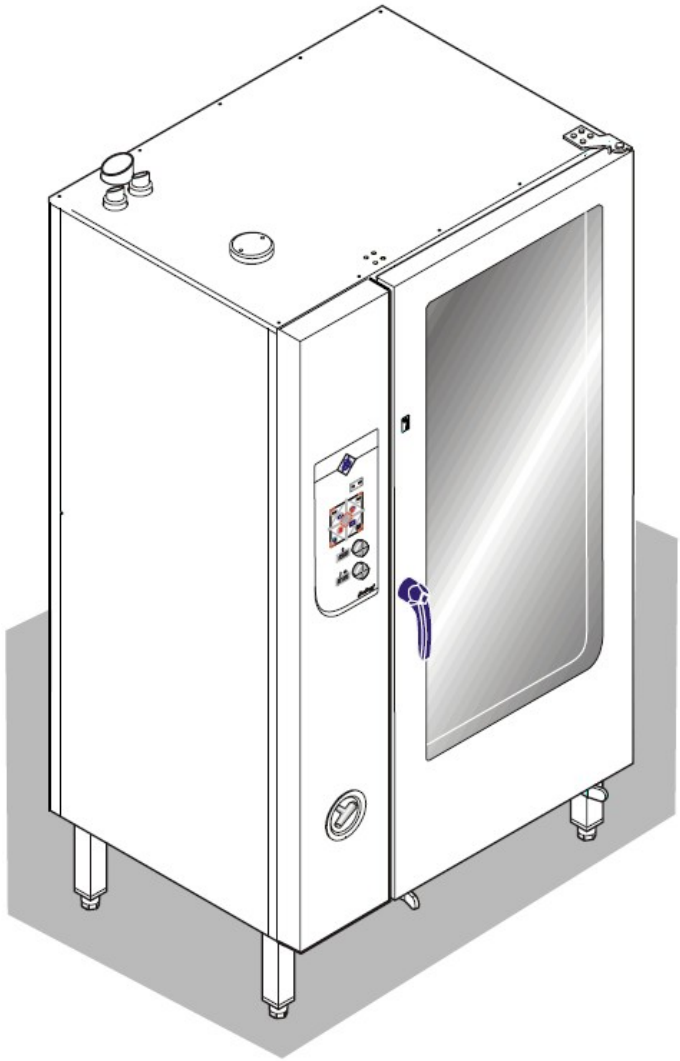
Troubleshooting & Error messages
Electric & Gas *Classic*Combi™



Model	Serial-No. / date	
	From	Up to
*Classic**Combi***™ 615	07020766 / June 2007	
*Classic**Combi***™ 620	07020584 / June 2007	
*Classic**Combi***™ 115	07020584 / June 2007	
*Classic**Combi***™ 120	07020584 / June 2007	
*Classic**Combi***™ 215	07020584 / June 2007	
*Classic**Combi***™ 220	07020584 / June 2007	

2010/02/23 SEV/KA

Overview of the error messages

Error message	Description
Err 1	Error core temperature probe
Err 2	Error chamber probe 1
Err 3	Error chamber probe 2
Err 4	Core temperature probe not calibrated
Err 5	Error drain probe
Err 7	Error reference probe on board defect
Err 8	Risk of ice
Err 9	Overtemperature cooking chamber
Err 10	Overtemperature electronic
Err 11	Electronic too hot
Err 20	Core temp. replace not possible
Err 30*	No fan 1
Err 31*	Fan runs
Err 32*	No fan 2
Err 33*	Fan direction wrong
Err 36*	Jumper setting at frequency controller wrong
Err 40	Not authorized access
Err 66**	No water
Err 71*	No gas 1
Err 710*	No gas 2
Err 72*	No gas fan 1
Err 720*	No gas fan 1
Err 73*	General gas fault 1
Err 730*	General gas fault 2
Err 74*	No flame 1
Err 740*	No flame 2
Err 101***	Battery empty
Err 120	12 Volt ground error
Err 121	UREF0. Ground error at probe or pcb
SHO	Demo mode
-n-	Emergency program
-c-	Carry out unit configuration in the service area

*= Only at Gas units
**= Only at units with WaveClean
***= Only at units with gas and communication pcb

Contents

Overview of the emergency programs

In case of an error the electronic switches in an emergency mode automatically This ensures enabled restricted operating with the Combisteamer.
After the unit has switched on, the corresponding error message appears on the display.
This has to be confirmed by pressing the Step- button -n- (emergency program) appears in the upper display.

Overview

Error message	Description	Consequence
Err 4	Core temperature probe broken	The core temperature probe function is not available.
Err 2 Err 3	Chamber probe 1 broken Chamber probe 2 broken *(only at 20.x)*	6.x & 10.x: The core temp. probe is used as a chamber probe now. The core temperature probe function is not available 20.x: The second chamber probe is used for both chamber areas now. Due the position of the core temp. probe, temperature differences of the chamber temperature measurement are possible.
Err 5	Drain temperature probe broken.	The drain cooling regulation changes in an emergency program (Controlled by the pcb). An increased water consumption arises from it.

The diagnosis memory (error memory)

The diagnosis memory offers a very easy possibility to demand current and former error messages. These are listed historically.
The diagnosis memory can accessed as follows:

1.		Switch unit on.
2.		Push FLEXI button.. Select d 1A (diagnosis) with the upper knob. 
3.		Press the Start/ Stop button. The last error appears on the lower display (e.g. 66 (Error „no water“). 
4.		The fault counting appears on the upper display. Turn the upper knob to change to the next error message. (No. 001 = last error; No. 002 = second to the last error; ...) 
5.		Leave area by pressing the FLEXI button.

Error messages and troubleshooting

Err 2 Temperature probe chamber 1 defect

Err 3 Temperature probe chamber 2 defect

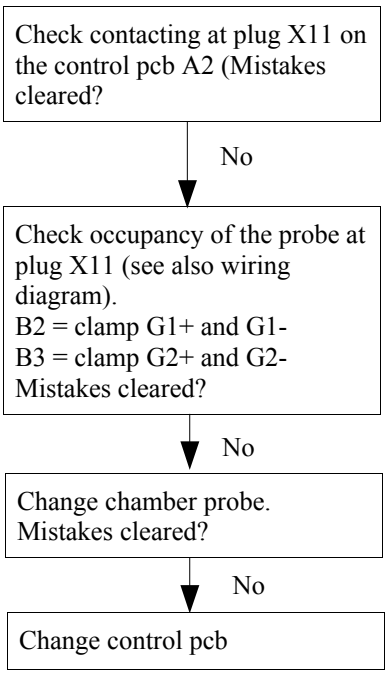
The error Err 3 (temperature probe chamber 2 defect) concerns only unit size 20.x , because these unit has two chamber probes. Chamber probe 1 = upper chamber, chamber probe 2 = lower chamber.

Consequence:
The electronic changes in an emergency program automatically.

Position of the chamber probe(s):
On the right chamber side

Designation of the component(s) in the wiring diagram:
B2 (Chamber 1) or rather B3 (Chamber 2, *only 20.x*)

Troubleshooting:



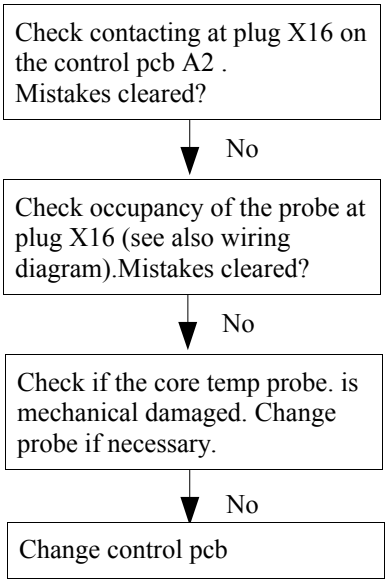
Err 1 Core temperature probe defect

Consequence:
The electronic changes in an emergency program automatically. The function of the probe is deactivated.

Position of the core temp. probe:
In the front of the chamber.

Designation of the component in the wiring diagram:
B1

Troubleshooting:



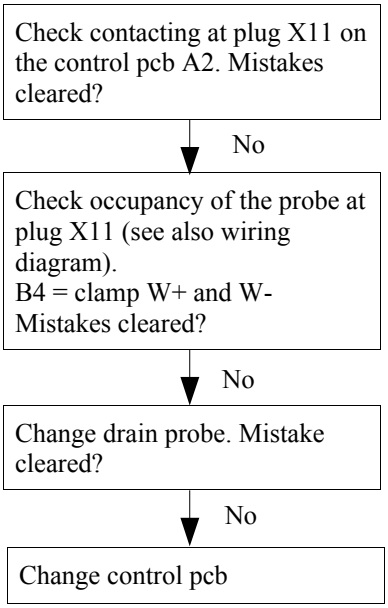
Err 5 Error drain temperature probe

Consequence:
The electronic changes automatically in an emergency program. The drain cooling switches on and off controlled by the electronic (During operation).

Position of the drain temperature probe:
The probe is located at the trap.

Designation of the component in the wiring diagram:
B4

Troubleshooting:



Functional test:
Enter the service menu and select drA (drain test).

Err 9 Over temperature cooking chamber

Consequence:
The unit is not ready for operating until the unit has cooled down.

Error description:
A temperature of >310°C (590°F) electric units or > 270°C (518°F) gas units were measured in the chamber by the Core temp. probe, camber probe or the humidity probe.
Troubleshooting:

Open the left side wall. Maybe th solid state relay switches power permanently (short-circuit). Switch the unit on (standby) and check current consumption / voltage at the load side of the SSR. Is there a current flow / would voltage put through and the green LED on the SSR´s are off?

→ Yes: Replace broken solid state relay. Check if the fan wheel is out of balance.

↓ No

Switch the unit on (standby) and check current consumption / voltage at the load side of the SSR. Is there a current flow / would voltage put through and one of the green LED on the SSR´s is on?

→ Yes: There is an error on the control pcb. LED P1 or P2 is permanently on. (control of the SSR´s). Replace control pcb.

↓ No

Check contacts of the probes at the plug X11 at control pcb A2. Reset the electronic. Mistakes cleared?

↓ No

Change chamber probe. Maybe one probe has broken.

↓ No

Is -n- (emergency program) shown on the display? After switching on the unit?

→ Yes: Enter the diagnosis memory The core temp. probe has placed into the product during the unit was into the emergency program.. See also error „CT-probe defect“.

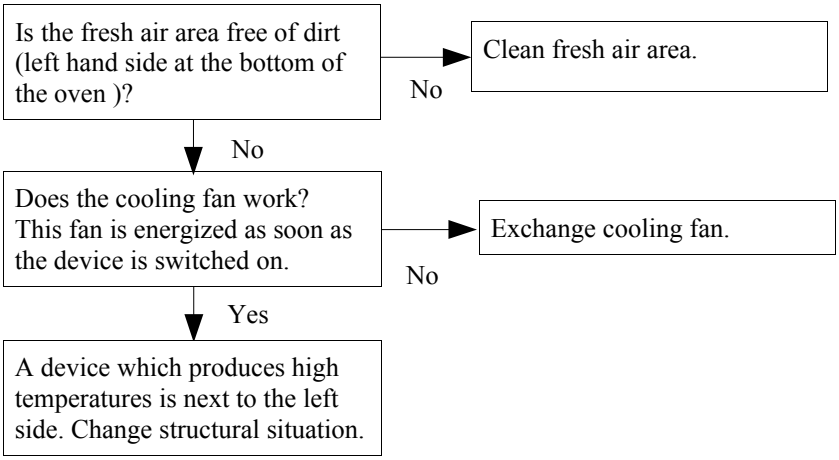
Err 10 Electronic to hot

Err 11 Electronic overheated

Consequence / description:
Error: "Electronic to hot:
The measured temperature of electronics amounts to at least 70°C (158°F). The cooked program is stopped.
Error "Electronic overheated":
The measured temperature of electronics amounts to at least 80°C (176°F). The oven switches off itself. After cooling down the device is operational again.

Position of the temperature probe:
The probe is located on the control pcb. This cannot be exchanged one by one.

Troubleshooting:



Err 7 Reference temperature probe defect

Consequence:
The unit is out of order. The reference temp. probe on the control pcb has broken.
Troubleshooting:
Change control pcb.

Err 8 Ice damage risk

Consequence:
The unit is out of order. A temperature of < 0°C (32°F) has measured on the control pcb.
Position of the temperature probe:
The probe is located on the control pcb (on board probe)
Troubleshooting:
Ensure that the temperature next to the unit is not less than < 0°C (32°F). Perhaps change oven location.
Caution! There is a high risk that water pressurized components were damaged.

Err 120 12 Volt ground error

Error description:
The error means, that the there´s a ground shortcut at the control pcb. The error appears after switching the unit on and is not ready to operate.

Troubleshooting:
Disconnect the following components one by one to identify the faulty component:
- Core temperature probe B1
- Pressure switch B10 at the steaming unit (only at units with WaveClean)

If the error still apears after disconnecting the mentioned parts, the control pcb #202676 is faulty.

Err 121 HW-Fail Temp UREF0 to high

Error description:
The error signalled, that the supply line is disturbed on the circuit board and/or from sensors. A sensor has a very low resistor or direct chassis ground contact with the frame.

The first possibility is likely if the fault occurs during WaveClean or in steaming mode. Explanation: The water gets into the probe and builds up an electric connection between the probe itself and the chassis. Through this connection a voltage potential from the chassis reaches the temperature inputs of the keyboard pcb and causes the malfunction.

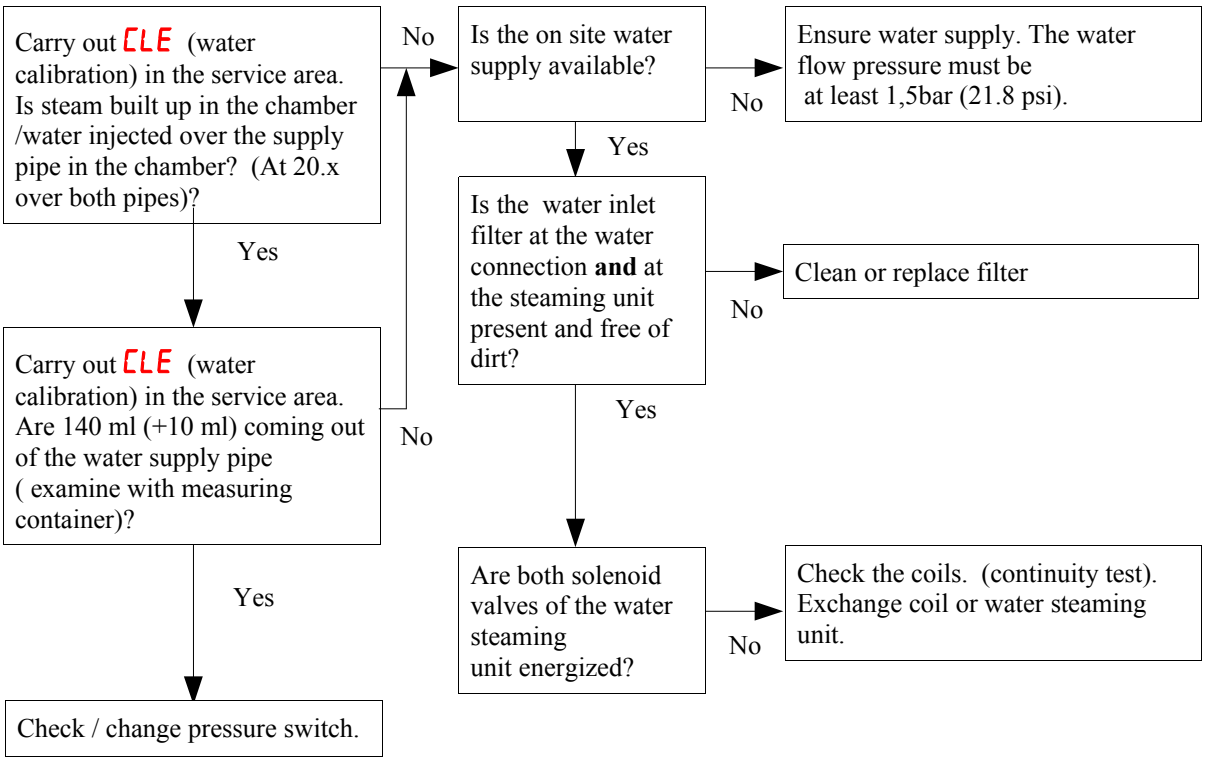
Troubleshooting:
Disconnect the following components one by one to identify the faulty component:
- Pressure switch B10 at the steaming unit
- Core temperature probe B1
- Drain probe B4
- Chamber probe B2
- Chamber probe B3 (only at floor unit 20.x)

If the fault appears only at the automatic cleaning WaveClean, the drain probe B4 is probably the cause.

Err 66 No water (Only at units with WaveClean)

Description:
The error message appears only during steaming and WaveClean mode. The error only appears if the the pressure switch realised a water pressure less than 1bar (14.5 psi). The contact opens and the message appears on display.
Consequence:
„Steaming“ mode: After confirmation of the error message the program can be continued.
„WaveClean“ mode: Cleaning process is stopped and „WaveClean interrupted“ is displayed.. An cancellation program starts automatically.

Troubleshooting:



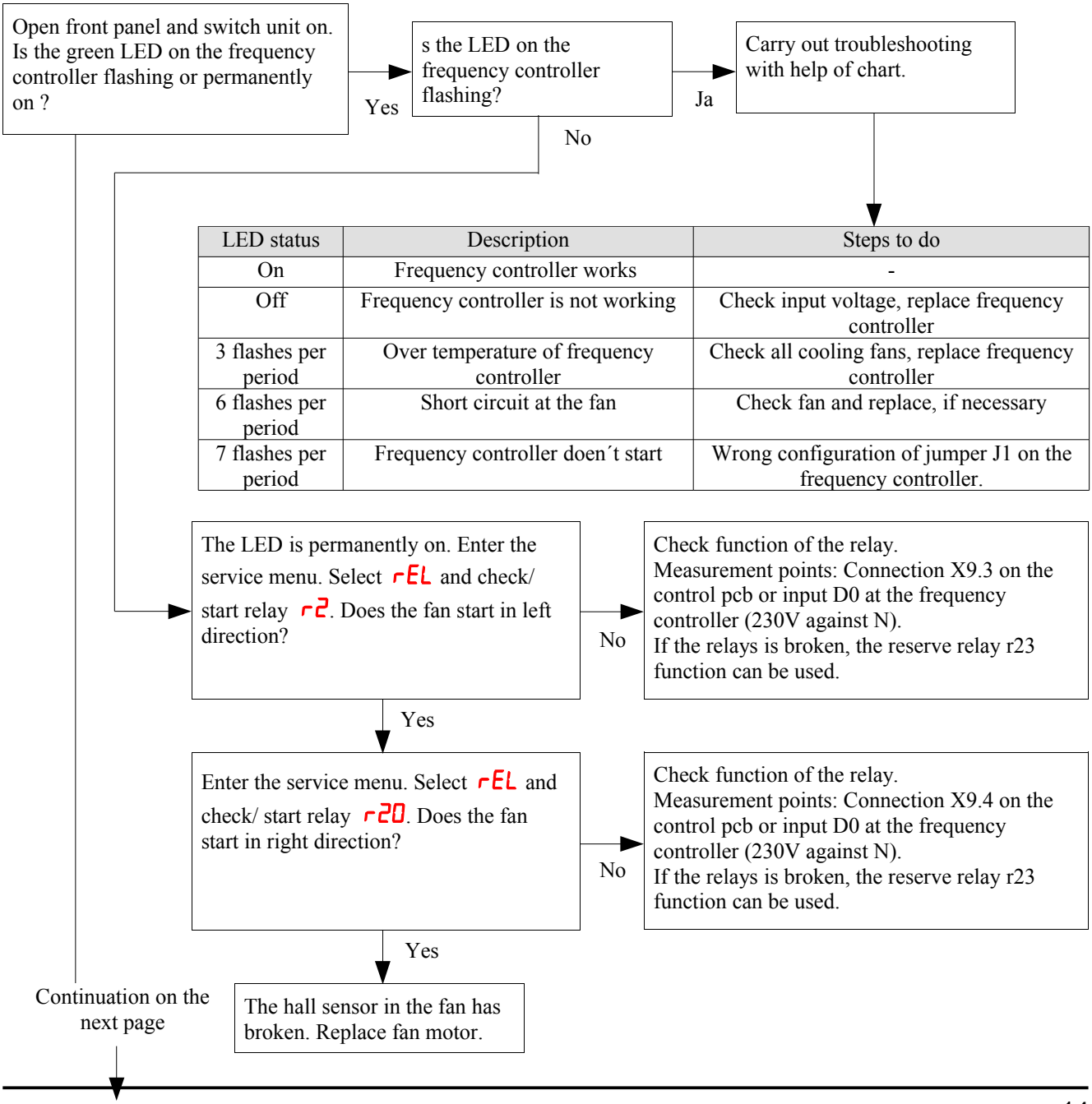
Err 30 No fan 1 (only at gas units)

Err 32 No fan 2 (only at gas units)

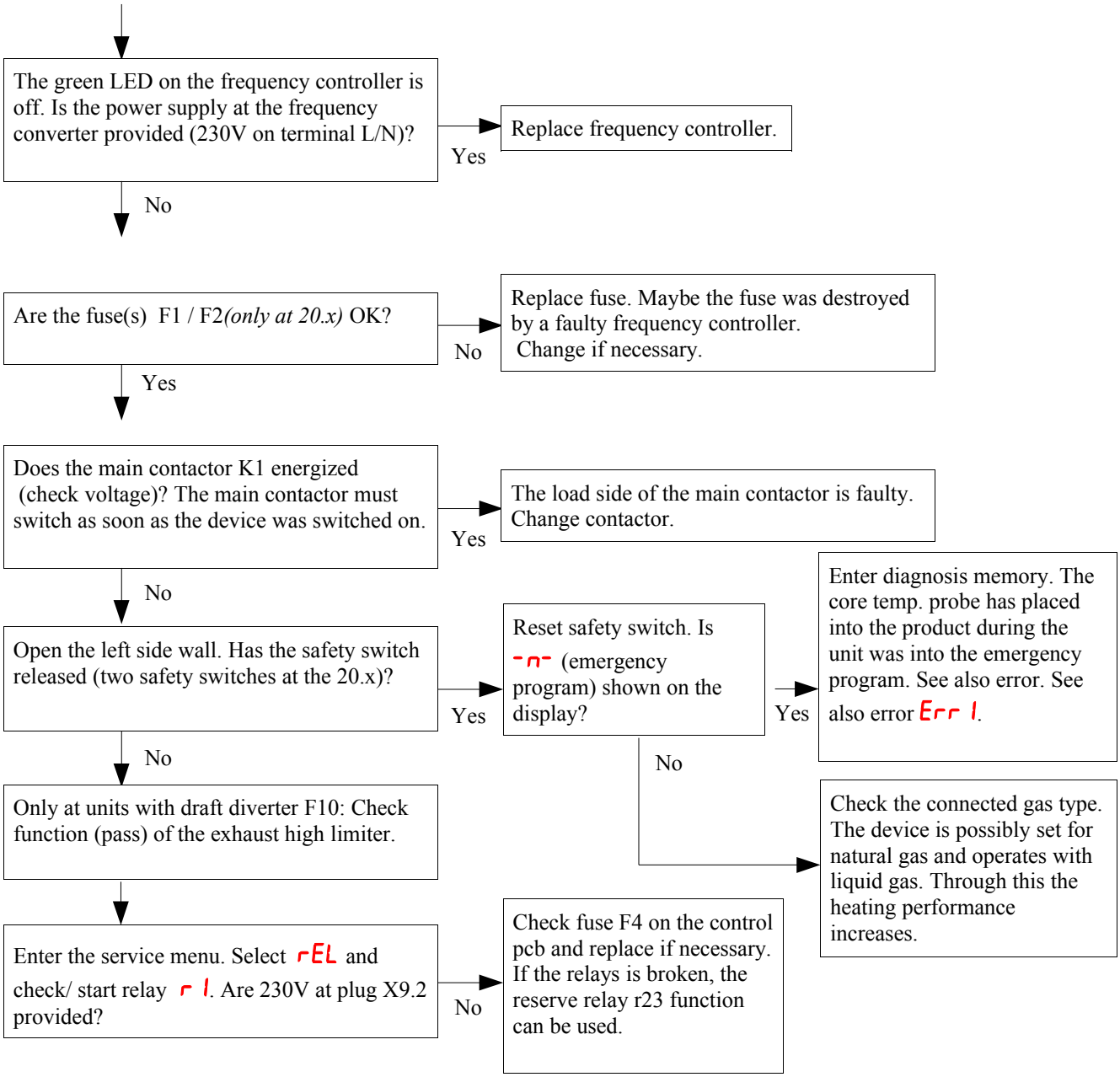
Designation of the component(s) in the wiring diagram:
Fan M1, frequency controller V10 (upper chamber at the 20.x)
Fan M2, frequency controller V20 (lower chamber at the 20.x)

Description:
The electronic waits for a confirmation signal from the hall sensor (fan speed control) after the fan has started. If this does not take place within 2 minutes, the error message appears. A released safety limit switch would also generate this error message!

Troubleshooting:



LED status	Description	Steps to do
On	Frequency controller works	-
Off	Frequency controller is not working	Check input voltage, replace frequency controller
3 flashes per period	Over temperature of frequency controller	Check all cooling fans, replace frequency controller
6 flashes per period	Short circuit at the fan	Check fan and replace, if necessary
7 flashes per period	Frequency controller doen´t start	Wrong configuration of jumper J1 on the frequency controller.



Further information:

Relay K2 energizes D0
Relay K20 energizes D1

	Input	
Fan mode	D0	D1
Right	0	1
Left	1	0

1 = 230V measured against N
0 = no voltage

Err 33 Error Fan direction (only at gas units)

Error description:
The fan runs in the wrong direction.

Troubleshooting:

Enter the service menu, select FAn and check both fan modes.
Attention! The front panel and the door must be closed. Otherwise the door contact switch is open.
If the error message comes up, there can be the following causes:
- D0 and D1 at the frequency converter are wrong connected (crossed)
- The frequency converter is faulty

Further information:

Relay K2 energizes D0
Relay K20 energizes D1

	Input	
Fan mode	D0	D1
Right	0	1
Left	1	0

1 = 230V measured against N
0 = no voltage

Err 31 Fan runs(only at gas units)

Error description:
The fan runs after the end from a program or during the unit is on (standby).
After 20 seconds the error message appears on the display.

Troubleshooting:

Enter the service menu and select rEL and check relay r2 (Voltage measurement at the respective output). If one of the relays is broken, the „reserve relay“ function can be used. Exchange control pcb, if necessary

↓

Enter the service menu and select rEL and check relay r20 (Voltage measurement at the respective output). If one of the relays is broken, the „reserve relay“ function can be used. Exchange control pcb, if necessary

↓

Replace frequency controller.

Err 11 No gas 1 **Err 110 No gas 2**

Err 14 Error flame 1 **Err 140 Error flame 2**

Error message "Error flame" available from Software V4.01 (S/N 10020294, 02/2010)

Error description "No Gas":
Error "No Gas 1" (Upper burner at 20.x floor units) and error "No Gas 2" (Only at 20.x floor units; lower burner) means, that no flame has been detected after start-up by the ionisation electrode / ignition box.
Error description "Error flame" detection:
After starting the unit, the ignition box detected the flame by the ionisation electrode. Afterwards the flame signal got lost. (Error flame 1 = Upper burner at 20.x floor units; Error flame 2 = Only at 20.x floor units; lower burner).

The difference between both errors is, that error "No Gas" is a start-up gas performance fault and "Error flame" is a an error within the burning sequence.

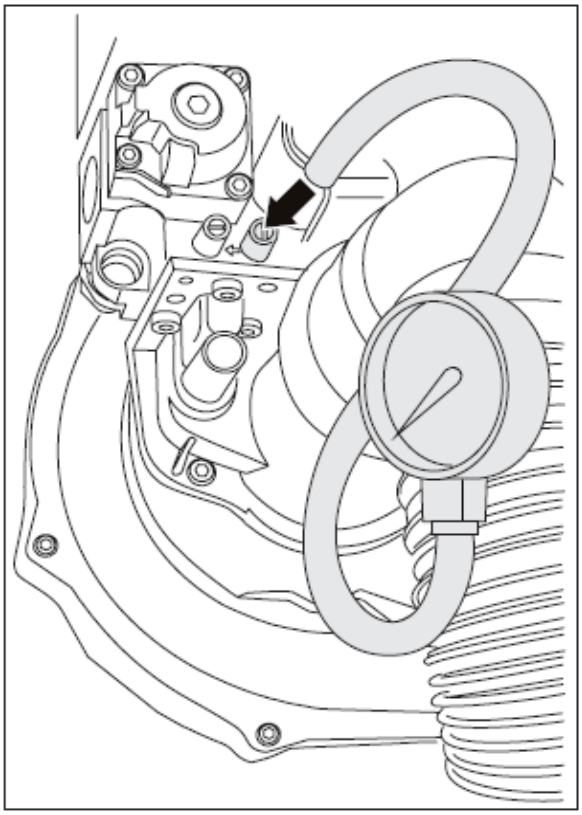
Units up to S/N 10020294 can only display the error "No Gas" without number "1" and "2". This means, that at 20.x floor unit the technician has to find out which area doesn't work (upper or lower burner system)

The causes subdivides into four possible categories:
- No or too less gas pressure at the gas valve → ***Check gas supply and gas valve***
- The unit gets out of order sporadically → ***Check gas valve, carry out CO^2 calibration according to the installation manual (if necessary check gas orifice***), ***ignition box ((glow electrode) and ionisation electrode.***
- There´s no ignition process of the glow electrode (because the electrode doesn't glow). → ***Check glow electrode and ignition box***
- There´s no flame detection, but burning process works(glow electrode glows up). → ***Check ionisation electrode***

Troubleshooting

Note:
The ignition box should be replaced for (service) tests before replacing any electrodes or the gas valve! If the error still appears, the ignition box can swapped again.

Gas supply check:
Check gas pressure (flow pressure)



Preparations:
Disconnect power supply, close gas tap, remove left side panel.

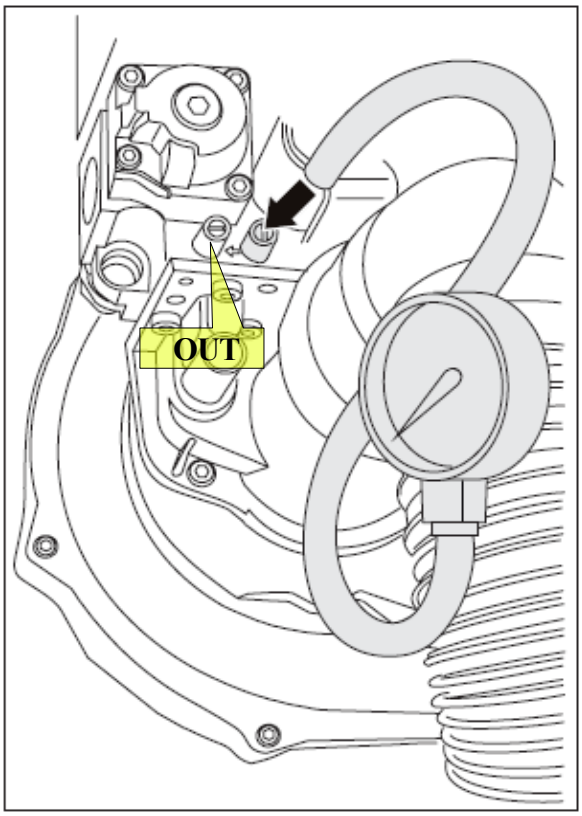
- Unscrew (open) the right sealing **screw (IN)** at the gas valve. That area is connected with the gas supply directly.
- Connect gas pressure meter.
- Open gas tap again.
- Switch unit on and select any operation program. Start-up unit.
- Check and compare gas pressure according to the following values:

Gas type	Gas flow-pressure
Natural Gas E/H – G20	15 – 25 mbar (6 - 10 In. W.C.)
Natural Gas LL/l – G25	15 – 30 mbar (6 – 12 In. W.C.)
LPG B/P – G30 / G31	15 – 57,5 mbar (6 – 23 In. W.C)

Note:

- Carry out gas pressure check while all units at the gas line are switched on max. power. (properly the dimensions of the gas pipe are too small).
- The connected gas pipe must be at least ¾“ diameter.

Gas valve check:



Preparations:
Disconnect power supply, close gas tap, remove left side panel.

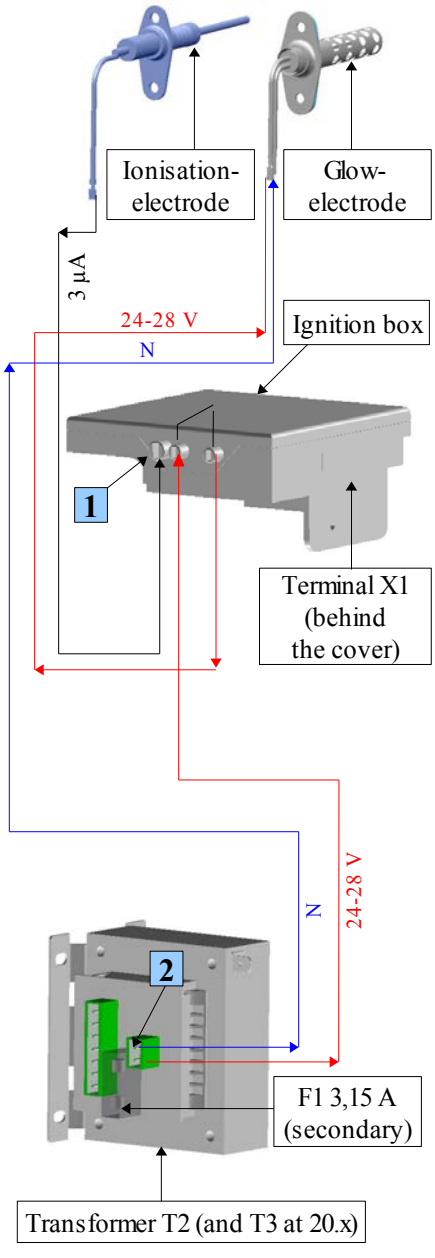
- Unscrew (open) the **left** sealing **screw (OUT)** at the gas valve. That area is connected with the gas blower area.
- Connect gas pressure meter. The reading of the manometer should be at least 0.1 mbar (0,04 In. W.C.).
- Open gas tap again.
- Switch unit on and select any operation program. Start-up unit.
- If the gas blower is on start speed and the gas valve is still closed, a negative pressure of approx. 3 mbar (1,2 In. W.C.) must adapt. This means that the gas blower promotes air and a negative pressure adapts at the Venturi.
- This negative pressure breaks in, if the gas valve is opened in the further course and a little negative pressure of < 0.5 mbar (< 0.2 In. W.C.) lasts (nearly pressure less).
- If the negative pressure at gas valve orifice lasts, the ignition box or the gas valve are faulty

Note:
In some countries the an on-site gas valve breaks down the gas supply when the hood over the unit is not powered on. In that case check valve on site as well as the general function.
Also ensure, that not to many gas units are connected at one line.

Gas heat exchanger leakage check:
If the gas heat exchanger is not tighten to the cabinet (such as a cracked heat exchanger), the error „no gas“ or “error flame detection” appears too.
Check procedure:
Place the CO^2 probe in the cabinet (in the left area, if possible) and switch the unit on repeatedly in any operation mode. If the gas meter detects Gas in the cabinet, the gas heat exchanger is not tighten any more.

Glow electrode check:

With relay K14 „Gas On 1“ and relay K15 „Gas On 2“(only at 20 grid units) in the relay test at relay test in the service area the glow electrode can be energized manually and the corresponding glowing electrode must come on yellow color through the observing window. Please note that relay shuts off after a while to protect the electrode. Also follow the troubleshooting:



Activate relay K14 or K15 (only 20.x). Check voltage between point 1 and 2. Are 24–28 V available and the electrode doesn't glow ? Caution! The ignition box can block the energizing voltage for the electrode after that test!. Use Relay K22 or K21 (at 20.x units) to enable box by a gas reset signal

Yes → Replace glow electrode

No

Check output voltage from transformer T2 / T3(only at 20.x). Are 24-28V present?

No → Check fuse F1 and supply voltage of the transformer. Replace transformer, if necessary.

Yes

Check gas reset signal for the ignition box. Activate relay K22 / K21(only at 20.x) in the relay test. A relay must switch in the igniting box. Check voltage (230V when relay is energized) at igniting box clamp X1.11 against N if necessary. Is the relay working?

No → Replace ignition box

Yes

230 V are on X1.11 available if the rest relay is activated and the voltage is put through the glow electrode. Check current (A) of the glow electrode which must be at least 1,4A. If the current is too low, the electrode reaches not the requires power.

If the current is more than 1,4A the ignition box or the glow electrode may the reason of failure. Start troubleshooting with replacing the ignition box first.

Ionisation electrode check (flame detection)

The ignition box (N10 / N20) detected no flame within the safety ignition time even though the flame is there. The ionisation electrode can be checked by measuring the current (A)while the burning process (flame available). The current must be at least 3µA.

General troubleshooting:

- Air is in the gas pipe. Remedy: Restart unit until gas is present at the gas valve.
- Low voltage. The supply voltage is lower than 15% of the nominal voltage (name plate declaration). If there is a **permanently** under voltage, a lower input voltage can be switch over at glowing transformer T2/T3 and control transformer T1.
- Burner is contaminated. The burner gauze can block by the promoted air in the course of the operating time. At first the equipment power only declines. At a higher blockage the igniting process is no longer possible. Replace or clean the burner.

Err 72 Gas fan 1 Err 720 Gas fan 2

Description:
The speed of the gas fan is faster than 7000 rpm. or lower than 500 rpm.

Error “Gas fan 1”: Upper burner at 20.x floor units
Error “Gas fan 2”: Lower burner at 20.x floor units

Units up to S/N 10020294 can only display the error “Gas fan” without number “1” and “2”. This means, that at 20.x floor unit the technician has to find out which blower doesn't work (upper or lower burner system)

Troubleshooting:

Remedy	Function o.k. ?	
	Yes	No
Enter the service menu and select CO2 (CO2 calibration) to check the fan speed of the gas fan. *See also service menu of the electronic.* The gas fan does not start. The speed of the gas fan does not appear on the display. – Check power supply. – Check fuse F3. – Check main contactor K1. – Check PWM output at the electronic. – Change gas blower		
Enter the service menu and select CO2 (CO2 calibration) to check the fan speed of the gas fan. *See also service menu of the electronic.* The gas fan does not start. The speed of the gas fan does not appear on the display. – Checking speed output of the gas blower. – Check plugs and wires – Change gas blower		

A speed fluctuation of 50 rpm is normal.

Err 73 generic gas fault 1 Err 730 generic gas fault 2

Description:
This error message appears if F1 has changed to F0 (flame detection from the electronic) 5 times during a cooked process, without demand from the software temperature controller (i.e. during the heat demand). In this case the igniting box has independently ignited a lapsed flame again. This is not normal and the possibility passes that the gas burner or other gas/air components are blocked. A high CO eduction is possible. If the "flame OK signal (F0)" would never recognized, this error is suppressed. There can be an electrical problem if there is no blockage of the gas pipe. This means that the“ flame OK“ signal conducted reliably to the control. The reason could be the ignition box, the flame-signal board into the harness or wrong wiring at the ignition box

Error “Generic gas fault 1”: Upper burner at 20.x floor units
Error “ Generic gas fault 2”: Lower burner at 20.x floor units

Units up to S/N 10020294 can only display the error “Gas fan” without number “1” and “2”. This means, that at 20.x floor unit the technician has to find out which blower doesn't work (upper or lower burner system)

Troubleshooting:

Remedy	Function o.k. ?	
	Yes	No
Check gas pressure at the gas vavle („IN“ screw“) and make sure that the pressure drows not below the allowed pressure range.		
Carry out CO2 calibration and make sure that the values are according to the calibration spreadsheet.		
Check ignition box N10 / N20 (N20 only at 20.x).		
Check ionisation electrode		
Change gas and communication pcb		

Err 75 Error Gas reset 1 Err 750 Error Gas reset 2

Error message available from Software V4.01 (S/N 10020294, 02/2010)

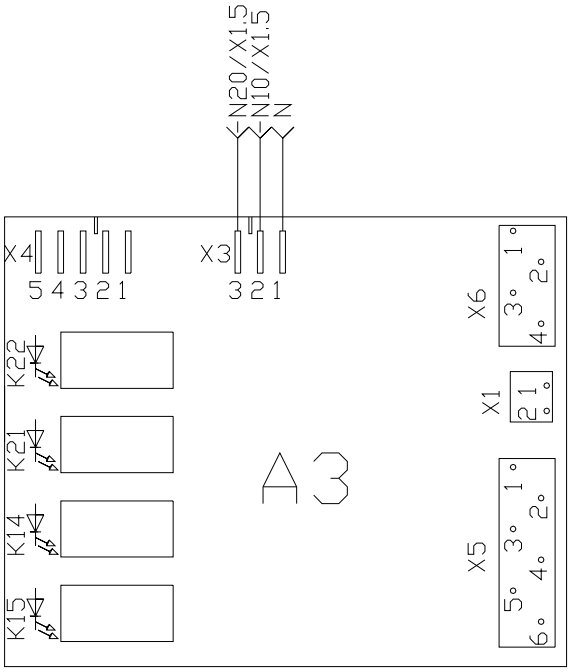
Ionisation box reset signal check

After an error at the igniting box by the error message "No gas" or “Error flame”, a reset through the 230V signal is needed. This happens automatically after a delay of 15 seconds by confirming the error message "no gas" or “Error flame detection” and also after switching the unit off / on.

If this reset signal is not available, the error remains at the ignition box.

The functionality can be also checked with help of the green LED´s after switching on the unit:

Schematic view from the gas and communication pcb



Explanation:
X3.1 = Neutral (N)
X3.2 = Gas Reset 1 (Upper area at 20.x units)
X3.3 = Gas Reset 2 (only at 20.x units; lower area))

Troubleshooting

- Check function of relay K22 (Gas Reset 1 via X4.2) and K21 (Gas Reset 2 via X4.3 (only at 20.x unit; lower area) with the help of the relay test in the service area.
- Replace ignition box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