Electrolux Distriparts

SERVICE MANUAL

COOKING

Steam oven with Avantgarde User Interface

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1. ESD=electrostatic discharge

As the single electronic interfaces are not protected internally against statical electricity and are partially open, you must pay attention to that, in case of a repair, there will be a potential compensation via the housing of the appliance (touch it) in order to neutralize a possible charging and to prevent a damaging of the affected electronic interface.

You also have to be careful with those electronics delivered as spare parts, which have to be put out of the ESD protective package only after a potential compensation (discharge of possible statical electricity).

If a potential compensation with an existing static electricity is not executed, it does not mean that the electronic is demaged directly. Consequential damages may result due to the damaging of internal structures which arise only in case of load through temperature and current.

Endangered are all assembly groups which are provided with control entries, wire paths lying open and free-accessible processors.

2. Software specifications, Functions

2.1 Illustration of the input electronics (UI) Avantgarde

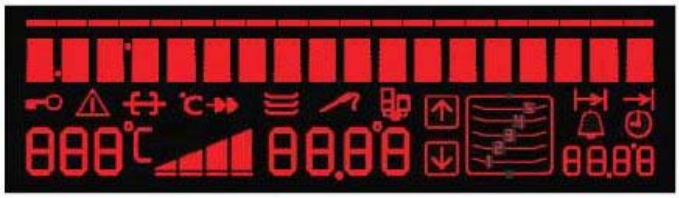
2.2 Button / and display layout

- Button layout (Example)

1 2 3 4 5 6 7 8 9

Button 1 and 2	-	Selection button Ovenfunction forward/backward
Button 3	-	Avantgarde menuebutton
Button 4	-	Confirmation button OK
Button 5	-	Main button
Button 6	-	Selection button - Quick Heating
Button 7	-	Selection button MODE (e.g., clock, meat thermometer, etc.)
Button 8 and 9	-	Minus/Plus (e.g., clock, meat thermometer, etc.)

- display layouts of all appliance groups, countries and brand



2.3 Main features of operation

2.3.1 Clock setting following network reset

Information: The oven only functions with set time!

When the appliance must be connected again with the mains e.g. after a repair, you have to set the clock anew. Proceed as follows:

a) Following connection or a power loss the symbol for the time of day blinks.
b) With the +/- buttons set the time of day.
c) If need be, confirm with the MODE button (=Timer button) The appliance is ready for operation.

2.3.2 Electronic child-safe function

Basic prerequisites:
- Power supply voltage is connected
- No oven function selected.
- If the appliance is equipped with a Main Switch, then this must be activated

To activate and deactivate the child-safety function, the MODE button (=Timer button) must be activated together with the „„Minus“ button.

Caution: the child-proof lock remains activated even when there is a voltage drop.

3. Functions of appliance

3.1 Oven functions, capacities and small consumer - appliance-specific

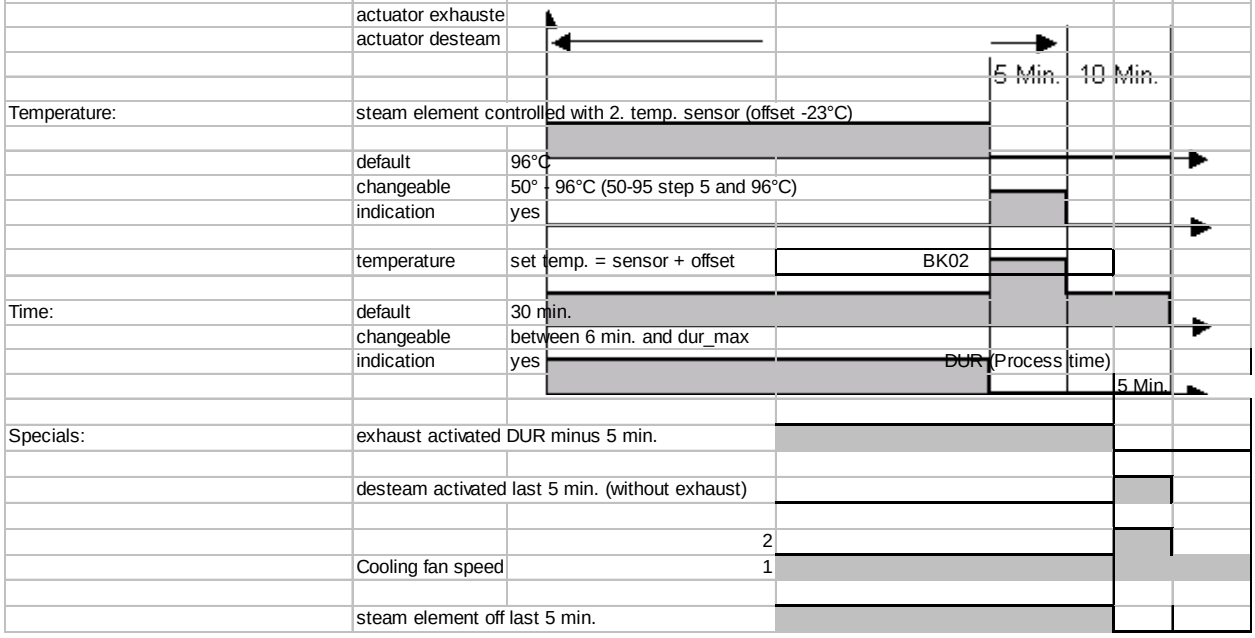
Brand / Market: AEG
Oven class AVANTGARDE - Steam
Electronic: OVC2000

			heating elements (W)					small loads (W)						
			grill element	top element	bottom element	rear element	Steam generator	cooking fan	cooling fan	oven lamp back wall	oven lamp lateral	Power (W)	current ampere (W)
oven function	suggested temperature	Boost											
Pos.0 (Appliance switched off)													
Pos.1 Steam cooking (wet)	96	C	-	-	X	-	X	X	X	X	X	2630	11,4
Pos.2 Steam cooking (intense)	110	D	-	-	X	X	X	X	X	X	X	2630	11,4
Pos.3 Steam cooking (hot)	180	E	-	-	X	X	X	X	X	X	X	2630	11,4
Pos.4	150	B	-	X	X	X	-	X	X	X	X	3030	13,2
Pos.5	200	A	-	-	X	X	-	X	X	X	X	3030	13,2
Pos.6 (Upper/Lower heat)	200	B	-	X	X	-	-	-	X	X	X	2090	9,1
Pos.7	180	A	X	X	-	-	-	X	X	X	X	3030	13,2
Pos.8	230	-	X	X	-	-	-	-	X	X	X	2990	13,0
Pos.9	230	-	X	-	-	-	-	-	X	X	X	1990	8,7
Pos.10 (keep warm)	80	-	-	X	X	-	-	-	X	X	X	2090	9,1
Pos.11	30	-	-	-	-	-	-	X	-	X	X	105	0,5
Pos.12	150	-	-	-	X	-	-	-	X	X	X	1090	4,7
Pos.13	120/80	-	-	X	X	X	-	X	X	X	X	3030	13,2

High-speed heating (Boost) manuell	A		X		X		X	
	B	X		X			X	
	C			X		X		
	D			X	X	X		
	E			X	X	X		

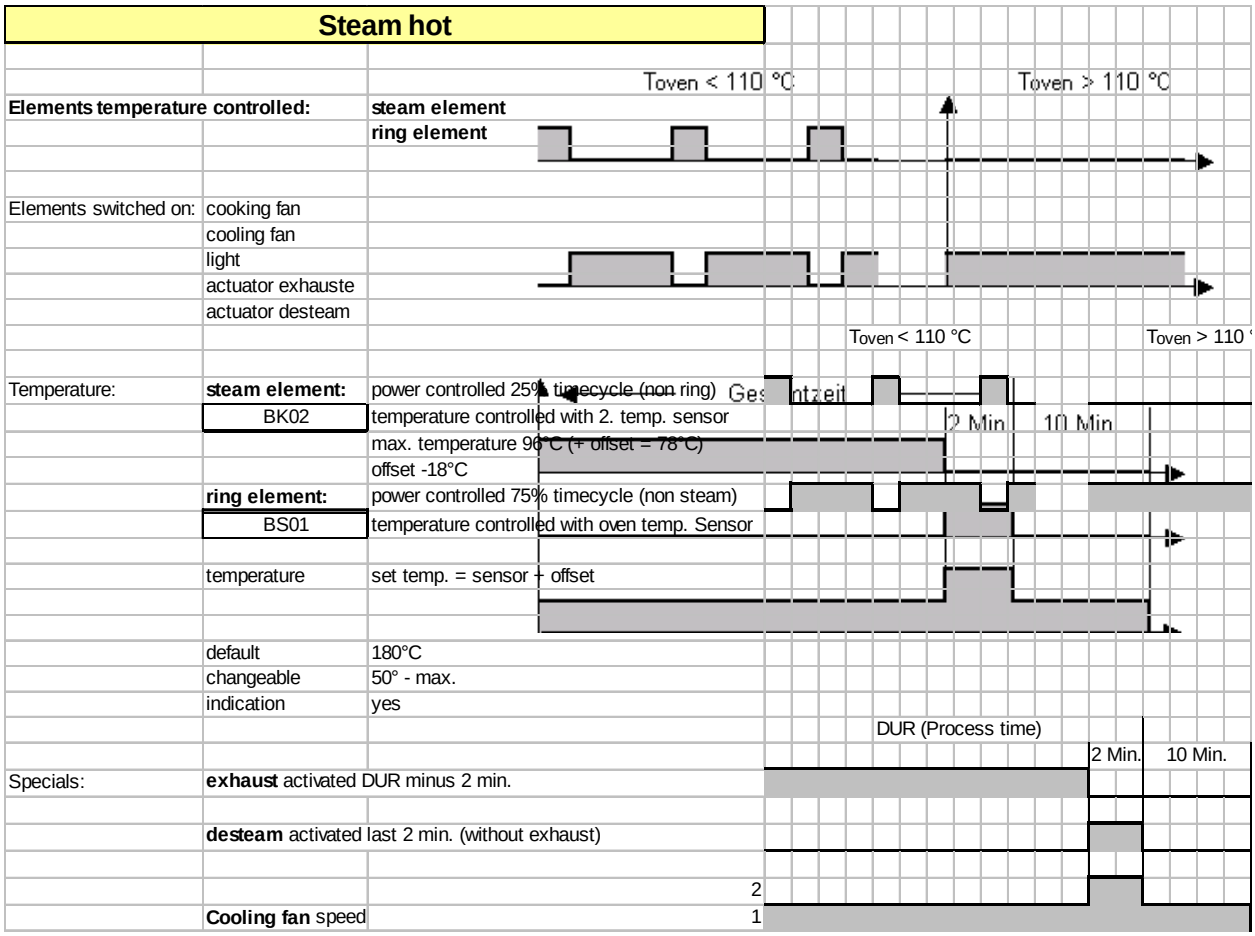
3.2 Steam wet

Steam wet		
Elements temperature controlled:	**steam element**	
Elements switched on:	cooking fan	
	cooling fan	
	light	
	actuator exhauste	
	actuator desteam	
Temperature:	steam element controlled with 2. temp. sensor (offset -23°C)	
	default	96°C
	changeable	50° - 96°C (50-95 step 5 and 96°C)
	indication	yes
	temperature	set temp. = sensor + offset
Time:	default	30 min.
	changeable	between 6 min. and dur_max
	indication	yes
Specials:	exhaust activated DUR minus 5 min.	
	desteam activated last 5 min. (without exhaust)	
	Cooling fan speed	2 / 1
	steam element off last 5 min.	



3.3 Steam hot

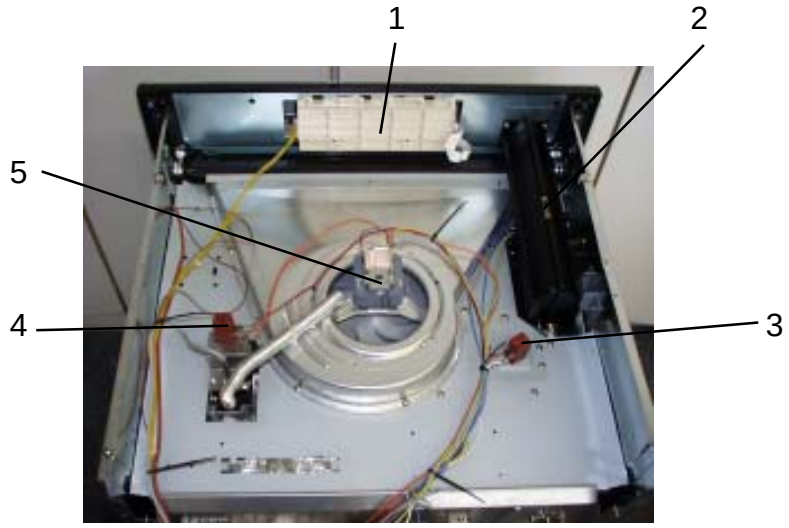
Steam hot		
Elements temperature controlled:	**steam element**	
	ring element	
Elements switched on:	cooking fan	
	cooling fan	
	light	
	actuator exhauste	
	actuator desteam	
Temperature:	**steam element:**	power controlled 25% timecycle (non ring)
	BK02	temperature controlled with 2. temp. sensor
		max. temperature 96°C (+ offset = 78°C)
		offset -18°C
	ring element:	power controlled 75% timecycle (non steam)
	BS01	temperature controlled with oven temp. Sensor
	temperature	set temp. = sensor + offset
	default	180°C
	changeable	50° - max.
	indication	yes
Specials:	**exhaust** activated DUR minus 2 min.	
	desteam activated last 2 min. (without exhaust)	
	Cooling fan speed	2 / 1



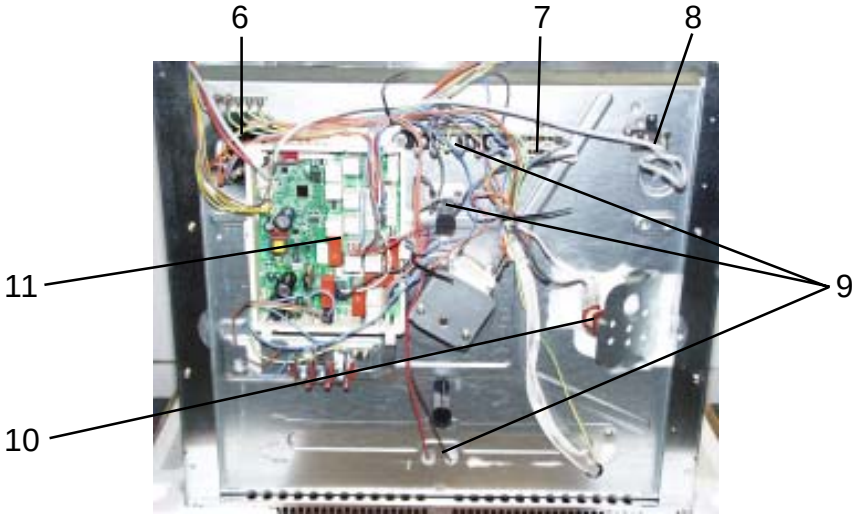
4. Component data, installation situation, dismantling

4.1 View of the open appliance

Top view



Rear view



4.2 The Avantgarde input electronics

In addition to diverse semi-conductor modules, the Avantgarde input electronics mainly includes a LCD display and a microprocessor. This controls the electronic control unit via a personalised program. The required oven functions are entered via a so-called touchboard.

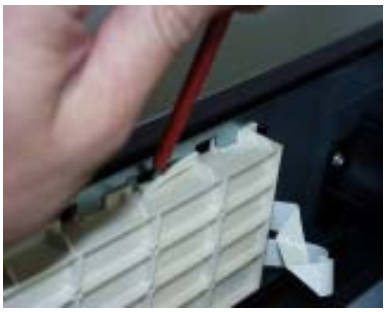


Fig. 1

Fig. 2

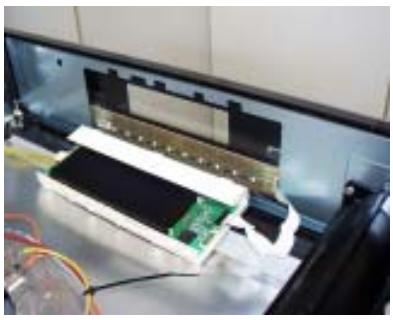
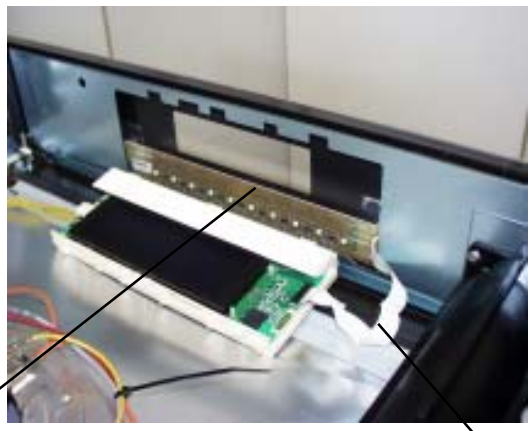


Fig. 3

Electric data:
- 5V supply voltage
- Operating current 50mA for the electronic
- max. 110mA for LCD
- max. 150mA for touch incl. Lighting

The user interface is positioned firmly in a plastic housing (E-box). The whole unit is locked in the panel support. After pressing in the notch (Fig. 1) and drawing it afterwards to the right side of the appliance (Fig. 2), the user interface can be removed backward, in direction of the appliance's interior (Fig. 3).



Touch board stuck with switch panel

Foil conductor

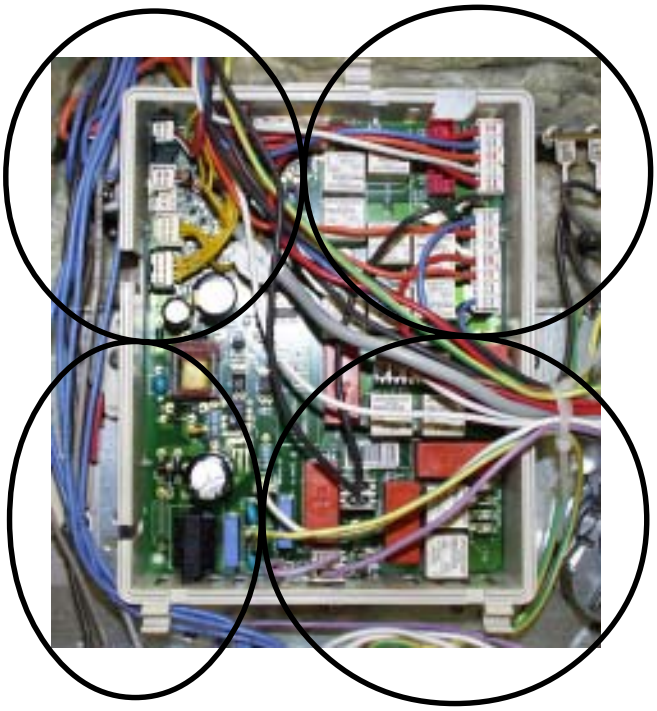
At works the touch board is stuck directly onto the switch panel. Even in the need of replacement the switch panel and the touch board form one unit. It is provided with nine sensors which transmit the received impulses to the user interface. This happens via a data link in form of a foil conductor.

4.3 Power electronic OVC2000

Connections for

- meat thermometer
- Temperature sensor
- door lock
- telescopic bars
- data link

Power supply
50....60Hz
230V AC



Relay for

- door lock
- lighting
- fan, moto

Relay for

- all-pole cutoff

Fig.: Powerboard OVC2000 wired in the appliance

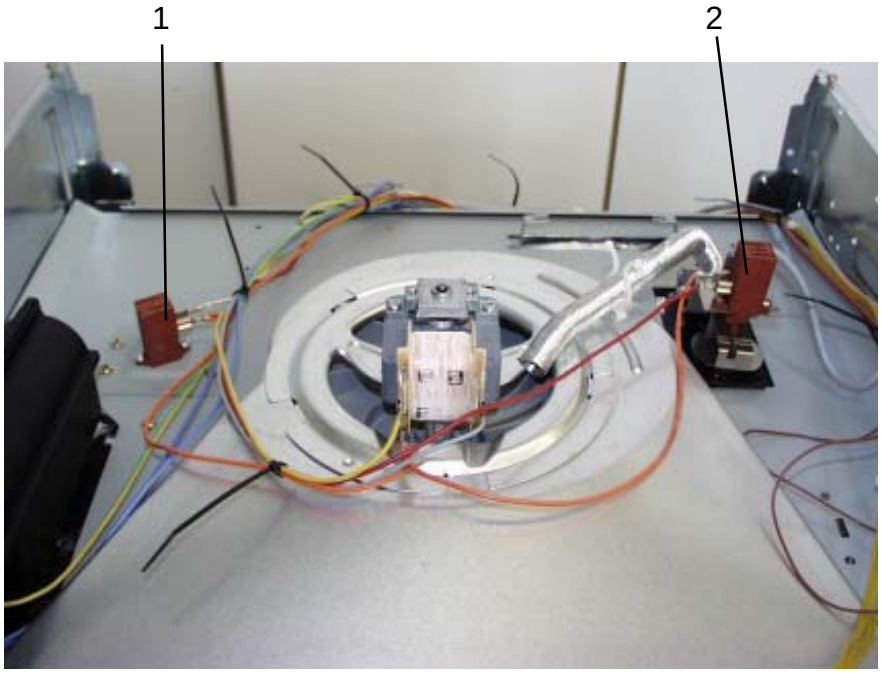
Fig.: assembly situation

Fig.: Spare part OVC2000

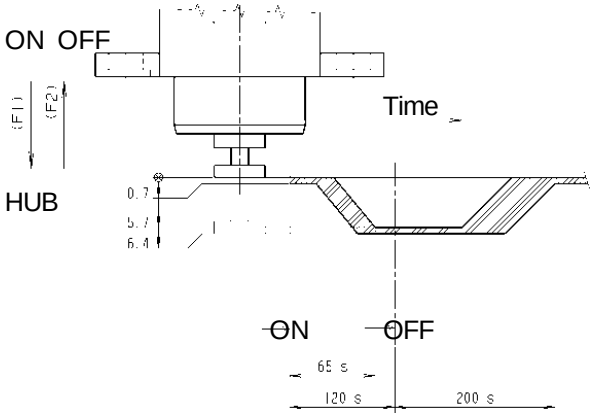
The power electronics are located on the rear side of the appliance and are accessible after removing the housing rear panel. The power board is installed in a so-called „functions box“ made of plastic. These two components, power electronics and plastic box, are also a replacement part unit (see Ill.)

Please refer to Chapter 7 for connection designations and possible measuring points.

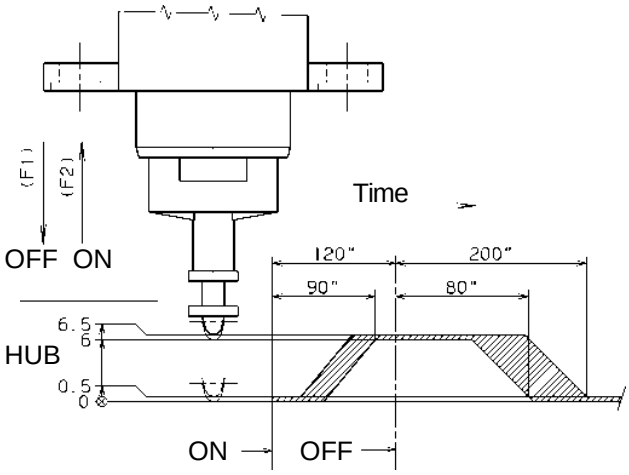
4.4 The thermal cutouts (actuators)



Thermal trigger cooking steams (1)



Thermal trigger Devaporizing (2)



The nominal lifting distance is 6 mm for both of the actuators. Chapter 3 describes which actuator is active when.

4.5 Temperature sensor PT500

The temperature in the baking oven is measured by a temperature sensor (type PT 500) for appliances with control board. The sensor is provided at the rear of the appliance. It is used to transmit to the electronic systems the values for:

- cyclic heating the radiators until the selected temperature is reached;
- switch off the radiators in case of overheating of defective sensor;
- switching ON/OFF the cooling fan.

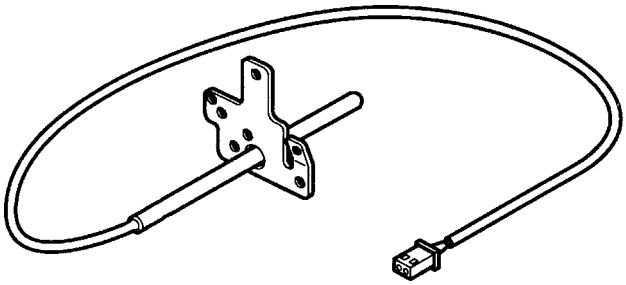


Fig. Temperature sensor

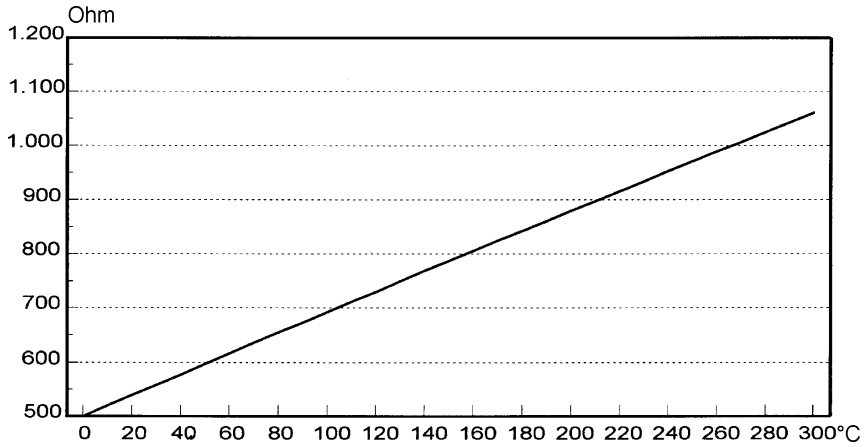


Fig. Electrical resistance of sensor depending on the ambient temperature

4.6 The steam generator

Fig. 1

Fig. 2

The steam generator is siutated in the centre of the oven floor (fig. 1). To remove the steam generator, the appliance must be laid onto the side panel. There is a cover on the housing floor (service opening, fig. 2), which is screwed in position with six screws. These screws must be loosened in order to access the steam generator and the two temperature sensors.

Fig. 3

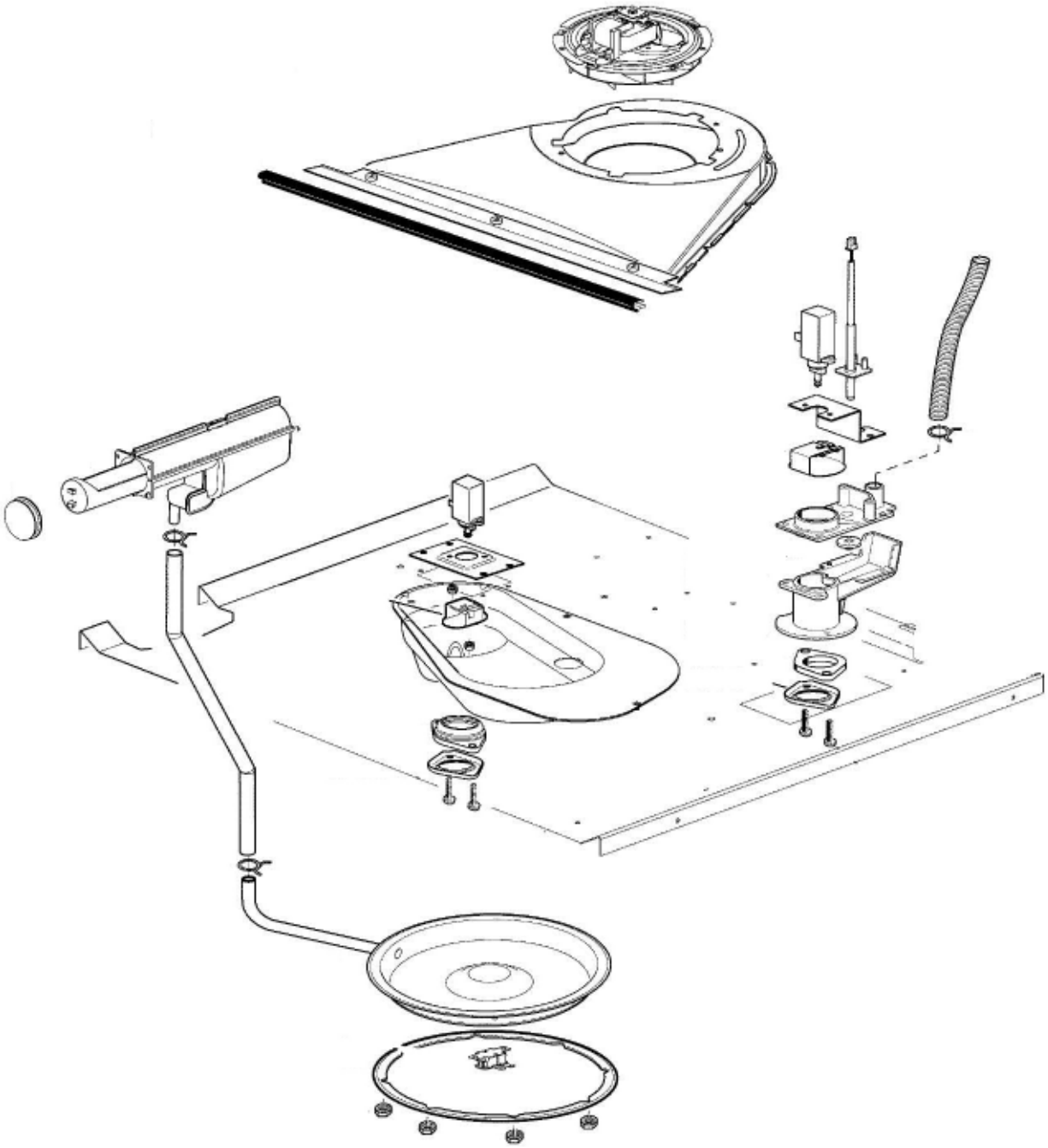
Fig. 4

Fig. 5

The steam generator/temperature controller 120/170°C unit (figs. 3/4) is held with eight hexagon nuts (fig. 5) which must be loosened before the component can be removed in the direction of the appliance interior.

Temperature controller 120°C -	Signal tone lack of water (f3.2 in the circuit diagram)
Temperature controller 170°C -	Deactivation steam generator (f3.1 in the circuit digram)
Heating element performance	1500W
Water capacity	0,7l

4.7 Detailed presentation of the steam system



5. Technical equipment

5.1 Fan after-running

The cooling fan switches on automatically when putting the appliance into operation. First it is in operation to keep cool the appliance surfaces. After the oven was switched off, the fan continues running to cool the appliance and then switches off automatically at a centre of gravity temperature of the muffle of approx. 120°C-130°C. The post-operative ventilation is controlled via the electronics.

Note: - for wiring diagram see chapter 7

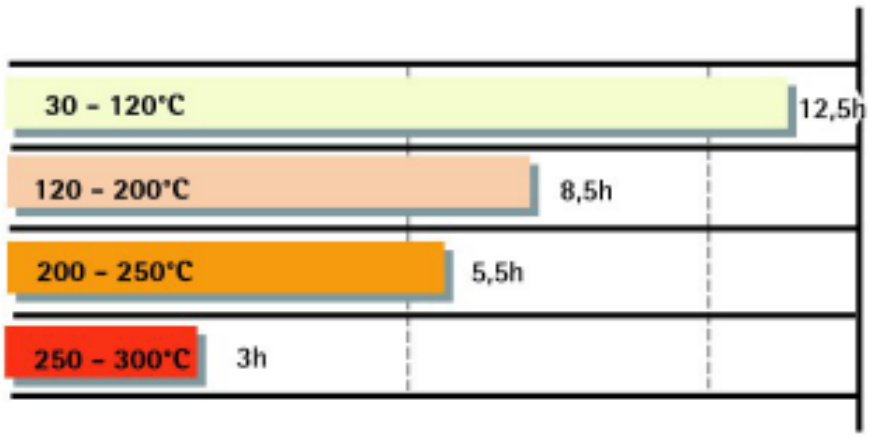
5.2 Measure against wrong electrical connection

Not provided.

5.3 Safety function safety cutoff of oven

If the oven is not switched off after a specific period of time or if the temperature is not changed, then it switches off automatically.

The oven switches off at an oven temperature of:



Putting into operation after a safety cutoff: Press any button

Note: The safety cutoff is cancelled, when the clock function „duration“ or „end“ has been set. Furthermore, it is not active with the functions, low-temperature cooking (bio cooking).

5.4 Temperature safety device

The double temperature fuse which deactivates all of the pols in case of overheating is situated next to the OVC2000 powerboard. The measured temperature value upon deactivation amounts to 220°C (f2.1 and f2.2 in the circuit diagram).

6. Fault diagnosis/ What to do if ...?

6.1 Alarmmanagement (Faultcodes)

Alarmmanagement Powerboards	OVC2000

Display	Description of fault	Fault repair
F0	Internal error	replace power electronics
F1	door cannot be locked	Test door locking system
F2	door cannot be unlocked	Test door locking system and unlocking thermostat f11
F3	software error	Execute network reset by disconnecting the appliance from the electricity supply and restarting
F94	Temperature sensor alarm - resulting in F4	Test temperature sensor, replace if necessary
F4	Temperature sensor without contact or short circuit	Test temperature sensor, replace if necessary
F5	Clotted heating element relay contacts on the power electronics	Replace power electronics
F95	Temperature alarm at power electronics - resulting in F6	Test built-in situation of the ventilation channel and the function of the cooling fan
F96	Temperature alarm at power electronics - resulting in F6	Test built-in situation of the ventilation channel and the function of the cooling fan
F6	Power electronics temperature too high	Test built-in situation of the ventilation channel and the function of the cooling fan
F7	Faulty electrical connection (only in appliances with Prisma power electronics)	Correctly connect the appliance and re-start
F8	No connection between power electronics and input electronics	Check connection line - replace electronic systems if necessary
F9	Micro processor resets itself independently (= Reset)	Execute network reset by disconnecting the appliance from the electricity supply and restarting
F10	Triac on power electronics defect	Activate Main Button, select an operation modus with hot air, wait for cooling ventilation start, replace power electronics again in the event of an error report following approximately 20 seconds
F11	Meat skewer sensor without contact or short-circuited	Check meat thermometer, also check bushing and wiring if necessary; if all this OK replace power electronics
F91	Temperature sensor alarm for steam generator - resulting in F12	Test temperature sensor, replace if necessary
F12	Temperature sensor of steam generator without contact or short-circuited	Test temperature sensor, replace if necessary
F13	Internal electronics error	Replace power electronics
F14	software error	Replace input electronics
F15	Internal electronics error	Replace input electronics
F16	Combined alarm Pyrolytic cleaning/cooking zone	Replace input electronics

6.2 Demo Mode input electronic Avantgarde

6.2.1 Activating/deactivating Version a

Disconnect appliance approx. 10 sec from the supply mains. After the renewed connection „time of day“ is lit, the display indicates „12.00“ . Now actuate the „selection“ key, afterwards activate the demo mode by pressing together with the „selection“ and „minus“ key simultaneously within 2 sec.

For deactivating the demo mode please proceed in the same order.

The active demo Mode is confirmed by the time symbol in the display. When activating the Demo Mode, please make a mental note of the positions of the „Selection“ and „Minus“ keys as these have to be pressed once more in order to deactivate the Demo Mode but it is possible that these arte not visible, depending on the date of manufacture and software version.

6.2 Demo Mode input electronic Avantgarde

6.2.1 Activating/deactivating Version a

Fig. 1

Fig. 2

Fig. 3

Fig. 4

6.2.2 Activating / deactivating Version b

Start position: The appliance must be switched off.

Display: "Time" (fig. 1).

Fig. 1

Operating step 1: Press the main switch for 5 seconds (fig. 1), the appliance switches itself "ON" and then "OFF" again.

Display: "Standby" (fig. 2) ---> "Time" (fig. 3).
Background illumination for 10 seconds after releasing the main switch.

Acoustic signal: 1x "Beep" as confirmation.

Fig. 2

Fig. 3

Operating step 2: Simultaneous pressing of the two buttons "Timer" and "Minus" for 2 seconds (fig. 4).

Acoustic signal: 3 x "Beep" as confirmation.

Fig. 4

Operating step 3: Switching the appliance on with the main switch

Display: active Demo Mode ---> "Time" (fig. 5), even if the appliance is switched off.

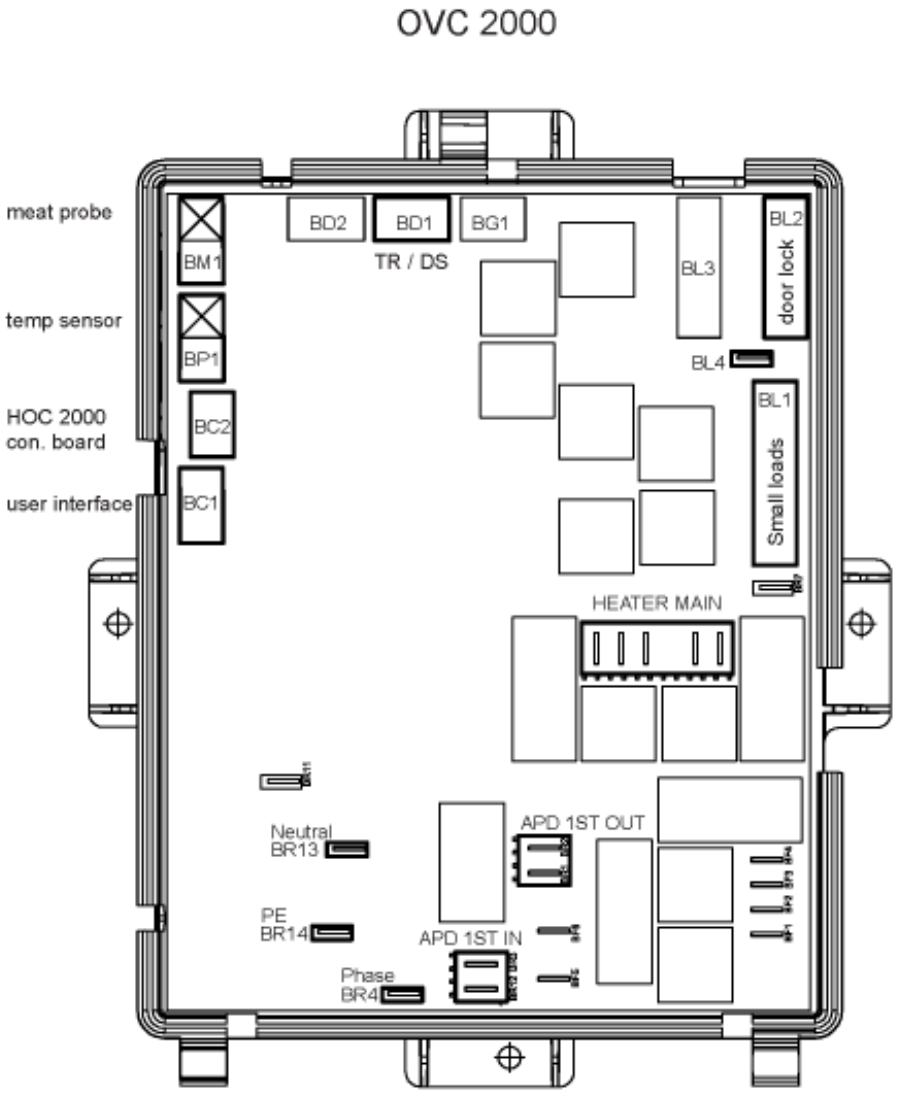
deactivated Demo Mode ---> none (fig. 6)

Fig. 5

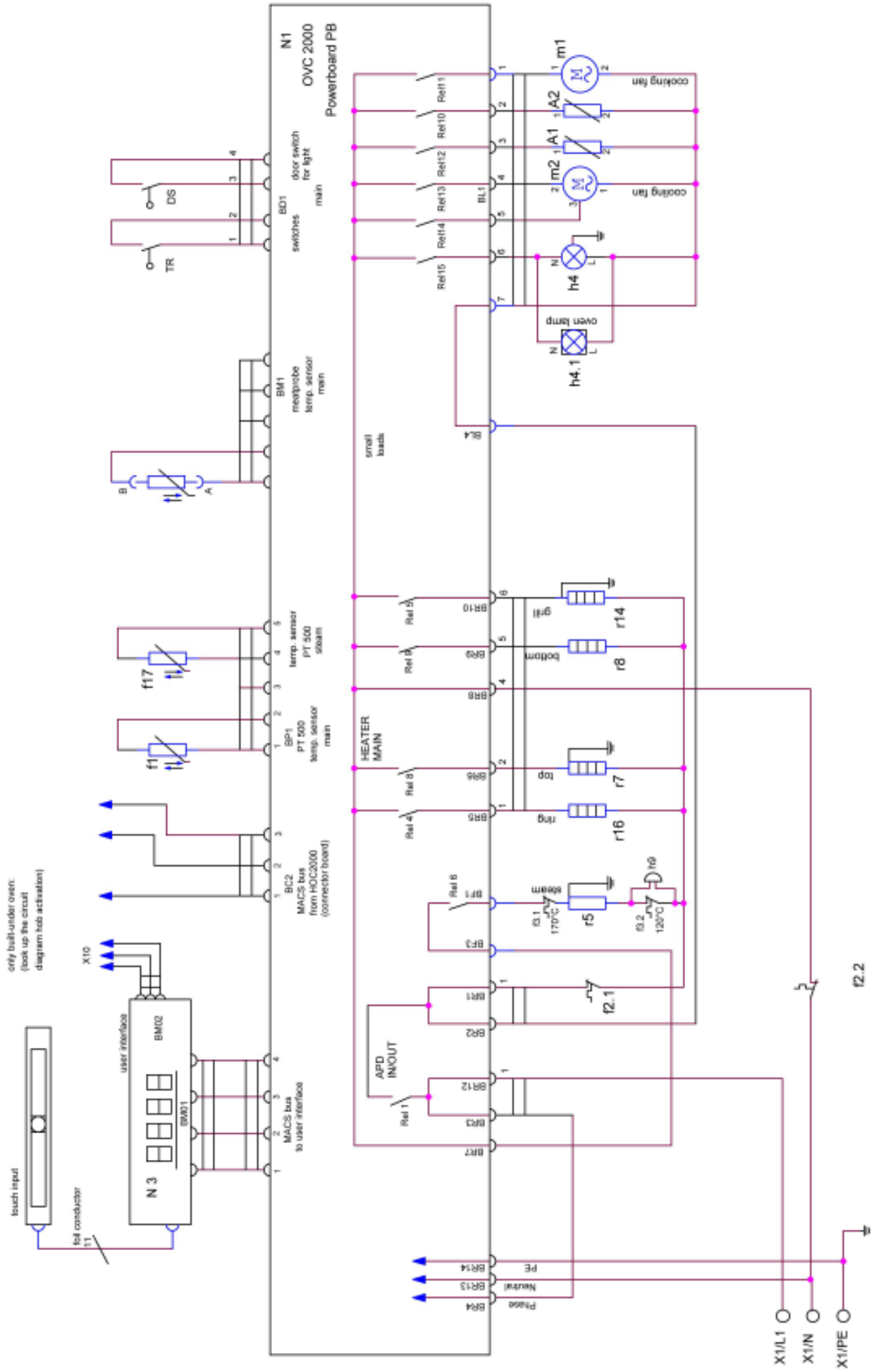
Fig. 6

7. Wiring diagram / measuring points

7.1 Connection Point Overview



7.2 Example circuit diagram steam oven with Avantgarde UI (B9820-4)



Kenn-zeichen	Beschreibung	Description
a1	Schalter 7-Takt VL	switch 7-step front left
a2	Schalter 7-Takt HL	switch 7-step rear left
a3	Schalter 7-Takt HR	switch 7-step rear right
a4	Schalter 7-Takt VR	switch 7-step front right
a7	BO Schalter Hauptbratofen	Heating mode selector main oven
a7.1	BO Schalter Kleinbratofen	Heating mode selector top oven
a8	LTC(Niedrig Temp. Garen) Schalter	LTC(Low Temp. Cooking) switch
a15	Touchschalter elektron. Warmhalteplatte	touch electronic switch warming zone
a31	Energieregler VL	energy regulator front left
a32	Energieregler HL	energy regulator rear left
a33	Energieregler HR	energy regulator rear right
a34	Energieregler VR	energy regulator front right
a61	Touchschalter elektron. VL	touch electronic switch front left
a62	Touchschalter elektron. HL	touch electronic switch rear left
a73	Touchschalter elektron. HR	touch electronic switch rear right
a84	Touchschalter elektron. VR	touch electronic switch front right
A1	Ventil Abluft	actuator exhaust
A2	Ventil Entdampfen	actuator desteam
b3	Buchse Fleischthermometer	Socket meatprobe
BOF	BO Schalter Funktion	mode selector function
BOT	BO Schalter Temperatur	mode selector temperature
c4	Netzfilter	interference filter
D	MNL-Stiftgehäuse 1x12-polig	hob connector 12-pol.
DS	Türschalter	door switch
e1	Türverriegelung Pyro	Door lock pyro
e11	Verteilerplatine TE	Distributor plate pot detection
E	MNL-Stiftgehäuse 1x8-polig	hob connector 8-pol.
F	Stiftgehäuse 21 polig	hob connector 21pol
f1	Regler Temperatur Hauptbratofen	Main oven thermostat
f1.1	Regler Temperatur Kleinbratofen	Top oven thermostat
f2	Sicherheitstemperaturbegrenzer Hauptbratofen	safety temp. limiter main oven
f2.1	Sicherheitstemperaturbegrenzer Kleinbratofen	safety temp. limiter top oven
f5	Klixon Lüftemachlauf Bratofen	Thermostat cooling fan delay
f6	Klixon Lüfterschnellauf Pyro	Thermostat fast run cooling fan pyro
f7	Magnetronsensor	sensor to magnetron
f8	LTC(Niedrig Temp. Garen) Thermostat	LTC(Low Temp. Cooking) termostat
f11	Klixon Entriegelung Pyro	Thermostat unlock pyro
f12	Fremdbeheizter Klixon Lüftemachlauf	Thermostat cooling fan delay
f15	2. Sicherheitstemperaturbegrenzer Bratofen	2. safety temp. limiter oven
f16	Klixon Anzeige Übertemperatur	thermostat overheating warning
f19	Regler Temperatur Schublade	rack thermostat
f21	Sicherheitstemperaturbegrenzer Grill	saftey temp. limiter grill
f22	Sicherheitstemperaturbegrenzer Friteuse	saftey temp. limiter fryer
f31	Restwärmekontakt VL	residual contact front left
f32	Restwärmekontakt HL	residual contact rear left
f33	Restwärmekontakt HR	residual contact rear right
f34	Restwärmekontakt VR	residual contact front right
G5	Magnetron	magnetron
h1	Glimmleuchte Betrieb Hauptbratofen	lamp working main oven
h1.1	Glimmleuchte Betrieb Kleinbratofen	lamp working top oven
h1.4	Glimmleuchte Betrieb Kochzone VL	lamp working hot plate front left
h1.5	Glimmleuchte Betrieb Kochzone HL	lamp working hot plate rear left
h1.6	Glimmleuchte Betrieb Kochzone HR	lamp working hot plate rear right
h1.7	Glimmleuchte Betrieb Kochzone VR	lamp working hot plate front right
h3	Glimmleuchte Temperaturreglung Hauptbratofen	lamp heating main oven
h3.1	Glimmleuchte Temperaturreglung Kleinbratofen	lamp heating top oven
h4	Bratofenlampe Hauptbratofen	oven lamp main oven
h4.1	Bratofenlampe seitlich Hauptbratofen	oven lamp side main oven
h4.6	Halogenlampe	lamp halogen
h5	Bratofenlampe Kleinbratofen	oven lamp top oven
h5.1	Bratofenlampe seitlich Kleinbratofen	oven lamp side top oven
h7	Fleischtemperaturanzeige	meatprobe display
h9	Anzeigeleuchte Übertemperatur	lamp overheating
h10	Analoguhr	analog timer
h11	Elektronikuhr	electronic timer
h12	6-Tasten Elektronikuhr	6-push electronic timer
h20	timer Vorwahl VR/HR Mulde	timer primary code hob
h30	Restwärmeanzeige	residual lamp
h40	Anzeigeplatine	display board
h52	Anzeige Herd	display oven
K	Kupplung	clutch
k1	LTC(Niedrig Temp. Garen) Relais	LTC(Low Temp. Cooking) relay
KS	Schalter Kindersicherung	switch child safety
KS1	Kochplattensteller VL	rotary hot plate front left
KS2	Kochplattensteller HL	rotary hot plate rear left
KS3	Kochplattensteller HR	rotary hot plate rear right
KS4	Kochplattensteller VR	rotary hot plate front right

Kenn-zeichen	Beschreibung	Description
M1	Muldenanschlußgehäuse 14-polig 1+2	hob connector 14-pol. 1+2
M2	Muldenanschlußgehäuse 14-polig 3+4	hob connector 14-pol. 3+4
m1	Lüfter Heißluftgebläse	fan hot air
m2	Querstromlüfter Bratofen	fan cooling
m3	Trafo Halogenlampe	transformer halogen lamp
m4	Trafo für Uhr	transformer timer
m5	Trafo Elektronik	transformer electronic
m6	Stirrer Motor	motor stirrer
m8	Hochspannungstransformator	transformer high voltage
m12	Grillmotor	turnspit motor
m20	Kühlgebläse, L3	cooling fan, L3
N1	Elektronikplatine Leistung	electronic powerboard
N2	Induktionsmodul	modul of induction
N3	Elektronikplatine Rhea	electronic board Rhea
N4	Steckerplatine	connector board
PE3	Erdungsstützpunkt Frontrahmen links	ground point front frame left
PE4	Erdungsstützpunkt Frontrahmen rechts	ground point front frame right
PE/1b	Erdungsstützpunkt Komponentenplatte	ground point component plate
Q1	Schnellaufheizen Kleinbratofen	quick start module top oven
r6	Oberhitze/Grill Kombination	top heating/grill combination
r7	Oberhitze Hauptbratofen	main oven top heating element
r7.1	Oberhitze Kleinbratofen	top oven top heating element
r8	Unterhitze Hauptbratofen	main oven bottom heating element
r8.1	Unterhitze Kleinbratofen	top oven bottom heating element
r12	Limiter Lüftemachlauf	thermal switch
r14	Grill Hauptbratofen	main oven grill heating element
r14.1	Grill Kleinbratofen	top oven grill heating element
r15	Warmhalteplatte	warming zone
r18	Ringheizkörper	rear
r19	Heizkörper Schublade	rack heating
r20	Vorwiderstand Kühlgebläse	preresistor cooling fan
r21	Heizkörper Grill	heater grill
r22	Heizkörper Friteuse	heater fryer
r27	Vorwiderstand BO-Lampe	preresistor oven lamp
r27.1	Vorwiderstand BO-Lampe seitlich	preresistor oven lamp side
r31	Kochplatte VL	cooking plate front left
r32	Kochplatte HL	cooking plate rear left
r33	Kochplatte HR	cooking plate rear right
r34	Kochplatte VR	cooking plate front right
r35	Kochplatte mitte	cooking plate middle
s1	Sensor TE VL	sensor pot detection front left
s2	Sensor TE HL	sensor pot detection rear left
s3	Sensor TE HR	sensor pot detection rear right
s4	Sensor TE VR	sensor pot detection front right
s11	Mikroschalter Umschaltung Gas/Elektro	micro switch gas to electro
s12	Mikroschalter Umschaltung Grill/Friteuse	micro switch grill to fryer
s13	Mikroschalter Buchse Grill	micro switch grill socket
s14	Mikroschalter Sensor	micro switch sensor
s19	Schalter für Schublade	rack switch
s21	Sensor Grill	sensor grill
s22	Sensor Friteuse	sensor fryer
TR	Teleskopschalter	telesopic runner switch
X1	Netzanschlussklemme	main terminal
X10	Stiftdoppelwanne 6-polig	tandem pin shells 6-pol.
X11	Stiftdoppelwanne 8-polig	tandem pin shells 8-pol.
x20	Steckerleiste, L3	frame connector, L3

Changes

Pages 17, Chapter 6.1 changed