

SERVICE MANUAL

COOKING



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ΕN

Built-in ovens and Cookers

OVC3000 POWER BOARD

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1 - INTRODUCTION

1.1 - PURPOSE OF THIS MANUAL

The purpose of this Manual is to provide information of new Ovens Power board OVC3000.

1.2 - WARNINGS



- All work with open appliances must be done with the mains supply disconnected.
- The intervention on electrical equipment should only be performed by qualified personnel.
- Before an operation in a device, check the efficiency of the system housing through means of appropriate equipment. As an example, refer to the indications described / illustrated in the portal Electrolux Learning Gateway (http://electrolux.edvantage.net).

After intervention, verify that the conditions have been restored to the safety switch apparatus, as just leaving the assembly line.

 In the case of manipulation / replacement of the PCB, use the ESD kit (Code 405 50 63-95/4) to prevent electrostatic discharge damage the circuit board see SB No. 599 72 08-09

1.3 - ABBREVIATIONS, ACRONYMS, DEFINITIONS

AD	Analogical Digital			
APD	All Pole Disconnection relay			
FP Food Probe				
FPM	Food Probe Module			
HC	Hob controller power board			
HUI	Hob User Interface			
HXOUI				
HXPM Hexagon Power module				
OC	Oven controller power board			
OVF				
OUI Oven User Interface				
PWM Pulse width modulation				
SB Smart Board				
SPD Single pole disconnection relay				
SPI Serial Peripheral Interface				
ToD Time of day (or OFF_STATE, depends on OUI)				
VCU "Vision Control Updated" (OUI type)				

2 - OVERVIEW

The electronic board OVC3000 introduces new concepts of power board to the ovens.

New electronic concept for common cavity appliances (Apollo, Ariane, Sputnik, GV)

- Optional replacement of OVC1000/OVC2000 in the current range of Access appliances (*)
- OVC2000 replacement for single cavity appliances with food probe functionality (*)
- MACS Communication
- According EN60335-1: Amendment 2
- According standby requirements from 2010 (0.460 W, POB stand alone)
- Reinforced isolation for Food Probe Module (Class II)

(*) NOTE: Only from the standpoint of new production, in service you cannot replace the old cards with the new.

2.1 - RANGE OF APPLICATION

OVC3000 is a power board for single oven, and in the models with microwave and steamer with limited functions. The unit can control 4 heating elements, 5 small loads. The food probe functionality and 3 extra relays are covered by an optional board (FPM).

The power board OVC3000 was designed to be used in the Apollo, Ariane, Sputnik, Global Vision, Century, Access, FS Access and Matrix platforms to control the Non Pyro, Pyro, Microwave and Steam single ovens.

3 - BLOCK DIAGRAM

In Figure 1 shows the general block diagram of the use of the power board OVC3000.

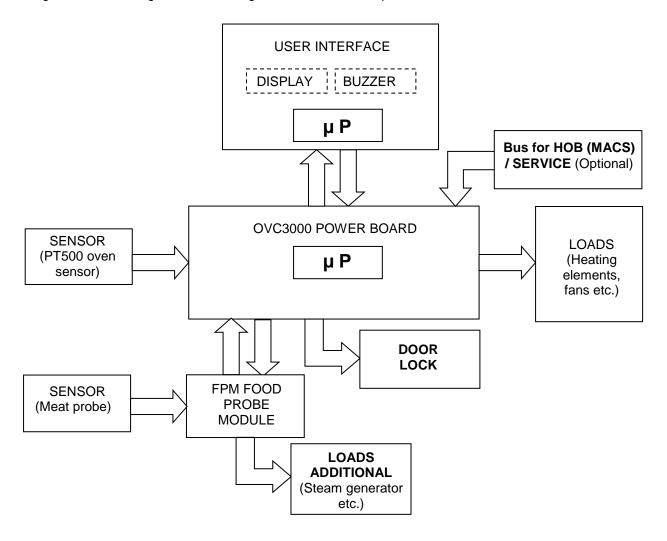


Fig. 1

4 - TECHNICAL FEATURES

4.1 - MAIN FEATURES (*)

- Modular system: Power board OVC3000 + Food Probe Module FPM:
 - Pollution degree 2
 - Ambient temperature: max. 105°C
 - With extension board (FPM)
 - Supported appliances
 - Non Pyro
 - Pyro
 - Microwave
 - Steam

4.2 - FUNCTIONALITY(*)

- Max 4 heating elements (eg. Grill, ring, top, bottom)
- 5 small loads
- Isolated MACS communication with UI
- 1 sensor for oven cavity (PT500)
- Analog inputs for door switch, telescopic runners detection
- Pyrolytic (door lock)
- Microwave function

4.3 - FPM (FOOD PROBE MODULE) EXTENTION FUNCTIONALITY (*)

In the appliances where was applied the Food Probe or more other functions (e. g. steamer or Magnetron), in order to cover all the functions it was necessary to add one of the following three FPM.

- Food Probe Module basic
 - control of the external food probe
- Food Probe Module expanded
 - control of the external food probe
 - additional relays (2 additional loads) -> e.g. applicable for steamer
- · Food Probe Module full
 - control of the external food probe
 - additional relays (3 additional loads) -> e.g. applicable for models combined with microwave

(*) NOTE: Depends on the type of appliance, refer to the wiring diagram specific.

4.4 - OVC3000 BOARD FIXING SYSTEM

OVC3000 is fixed with spacers directly placed on the chassis of the oven.

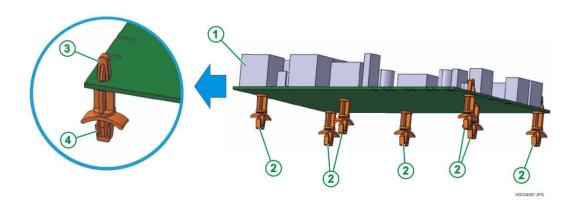


Fig. 2

- 1 OVC3000 POWER BOARD
- 2 PLASTIC SPACERS 3 ELASTIC HOOK FIXING SIDE PCB
- 4 ELASTIC HOOK FIXING SIDE PLATE SUPPORT

4.5 - AUTO SWITCH OFF

If, for a certain period of time are not set command, the oven will shut off automatically as shown in the table below:

SET TEMPERATURE RANGE	AUTO SWITCH OFF TIME-OUT
Less than 120 °C	After 12.5 hours
From 120 °C to 200 °C	After 8.5 hours
From 200 °C to 250 °C	After 5.5 hours
Higher of 250 °C	After 1.5 hours
Pyrolytic cleaning	After 4.5 hours

5 - CONNECTIONS TO THE POWER BOARD

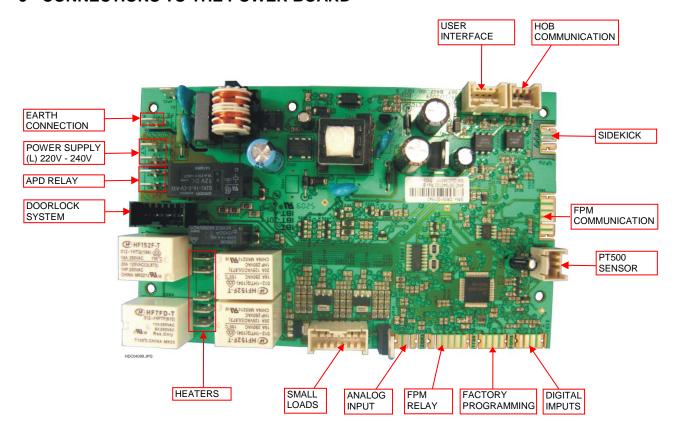


Fig. 3

5.1 - POSITIONS OF THE BOARD FUNCTION AND DETAILS ON APOLLO APPLICATION

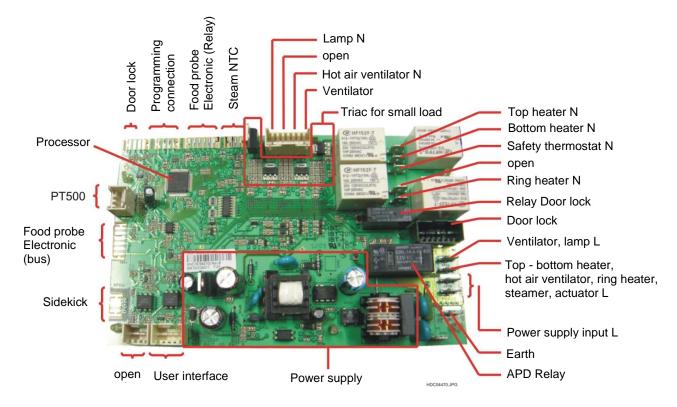


Fig. 4

5.2 - POSITIONS OF CONNECTORS

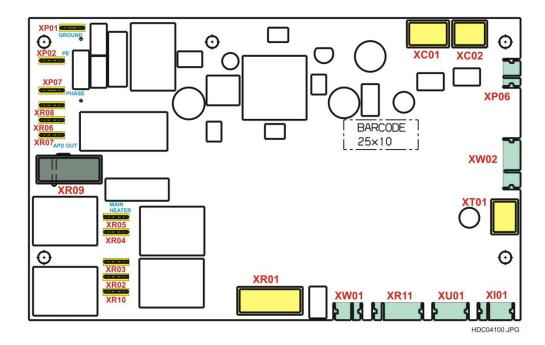


Fig. 5

REFERENCE	DESCRIPTION	PTION CONNECTOR	
XC01	USER INTERFACE	WHITE	
XC02	HOB COMMUNICATION	WHITE	
XI01	DIGITAL IMPUTS (PIN 1 & 2 DOOR SWITCH, PIN 3 & 4 TELESCOPIC RUNNER SWITCH)	ON PCB	
XP01	GROUND	FASTON	
XP02	POWER SUPPLY (NEUTRAL)	FASTON	
XP06	SIDEKLICK	ON PCB	
XP07	POWER SUPPLY (PHASE)	FASTON	
XR01	SMALL LOADS	WHITE	
XR02	TOP/	FASTON	
XR03	MAIN RELAY (IN)	FASTON	
XR04	OPEN (*)	FASTON	
XR05	RING HEATER	FASTON	
XR06	MAIN RELAY KR01 (OUT)	FASTON	
XR07	MAIN RELAY KR01 (OUT)	FASTON	
XR08	MAIN RELAY KR01 (IN)	FASTON	
XR09	DOORLOCK SYSTEM	BLACK	
XR10	BOTTOM HEATER	FASTON	
XR11	FPM RELAY	ON PCB	
XT01	PT500 SENSOR	WHITE	
XU01	FACTORY PROGRAMMING	ON PCB	
XW01	ANALOG IMPUT (EXTERNAL NTC SENSOR)	ON PCB	
XW02	FPM COMMUNICATION	ON PCB	

(*) NOTE : Depends on the type of appliance, refer to the wiring diagram specific.

5.3 - FUNCTION OF RELAY AND TRIAC

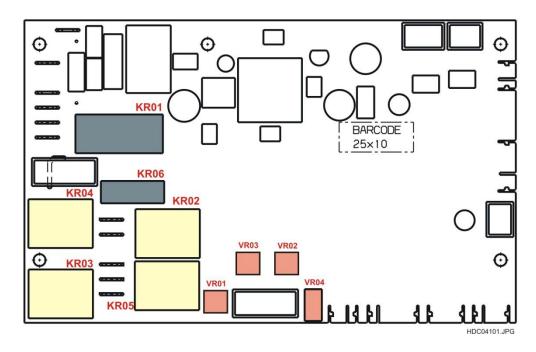


Fig. 6

REFERENCE	DESCRIPTION	COLOR
KR01	MAIN RELAY (IN XR03 & XR04, OUT XR05 & XR06)	BLACK
KR02	TOP / SMELL RELAY(XR02)	WHITE
KR03	GRILL RELAY (XR04)	WHITE
KR04	REAR RELAY (XR05)	WHITE
KR05	BOTTOM RELAY(XR10)	WHITE
KR06	DOOR LOCK RELAY (XR09 PIN 2)	BLACK
VR01	TRIAC (XR01 PIN 4) FOR COOLING FAN LOW SPEED	
VR02	TRIAC (XR01 PIN 2) FOR HOT AIR FAN	
VR03	TRIAC (XR01 PIN 3) FOR COOLING FAN HIGH SPEED	
VR04	TRIAC (XR01 PIN 1) FOR OVEN LAMP	

6 - DIFFERENCES WITH PREVIOUS POWER BOARDS

The new power board OVC3000 with user interfaces and software can replace (at project level) different electronic cards currently in use:

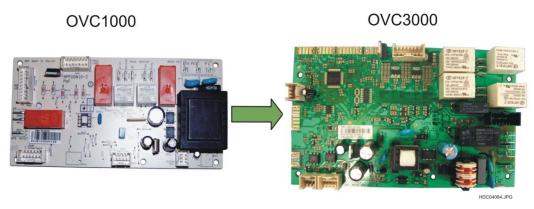


Fig. 7

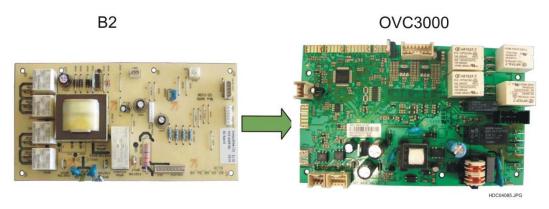


Fig. 8

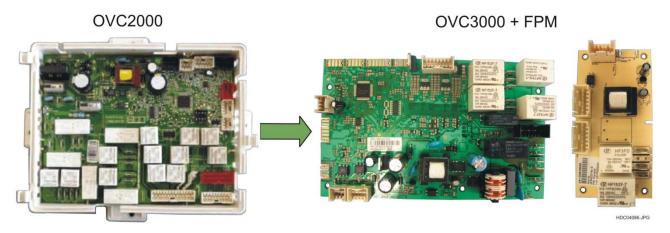


Fig. 9

NOTE: In the appliances where was applied the power board OVC2000 in order to cover all the functions it was necessary to add an additional FPM board.

NOTE 1 : The replacement is possible only from the standpoint of new production, in service you can not replace the old cards with the new.

7 - USER INTERFACE USED

The power board OVC3000 can be controlled by different user interfaces summarized below (see Figure 10).

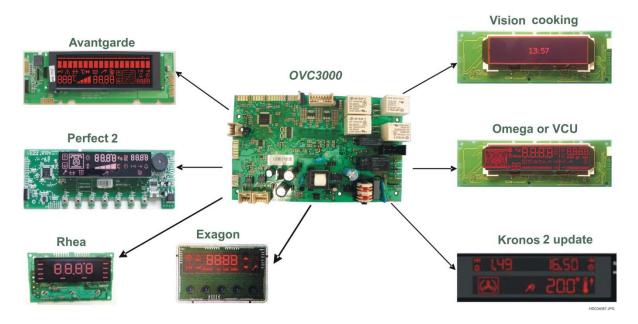


Fig. 10

8 - OVEN TEMPERATURE SENSOR (PT500)

To control oven temperature, the OVC3000 system uses a temperature sensor mounted on a bracket which is screwed onto the oven muffle.

A PT500 resistance-type platinum sensor provides the control board with the information that is required for the following functions:

- Cycling the heating elements until they reach the desired temperature
- Shutting down heating elements in case of overheating or sensor malfunction
- Delaying cooling fan start-up and shutdown
- Recognizing relay malfunctions

The temperature sensor is hermetically sealed in a metal sheath, which must be connected to earth.

3

Fig. 11

- 1 PT500 SENSOR
- 2 MOUNTING BRACKET WITH EARTH CONNECTION
- 3 CONNECTING CABLE

8.1 - DIAGRAM TEMPERATURE / RESISTANCE SENSOR

RESISTANCE Ω 1.200 1.100 1.000 900 800 700 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 TEMPERATURE °C

HDC02357.JPG

9 - HIGH POWER LOADS

The high power loads are controlled by relay of the power board.

9.1 - TOP HEATER

9.1.1 - NORMAL TOP HEATER

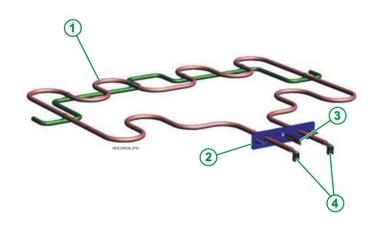
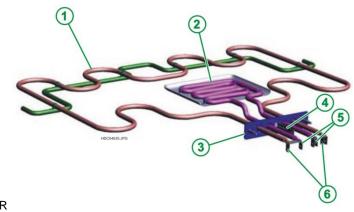


Fig. 13

- 1 TOP HEATER
- 2 FIXING BRACKET
- 3 EARTH ELECTRICAL CONNECTION
- 4 TOP HEATER ELECTRICAL CONNECTION

9.1.2 - TOP HEATER WIT SMEL FILTER



- Fig. 14
- 1 TOP HEATER
- 2 SMEL FILTER HEATER
- 3 FIXING BRACKET
- 4 EARTH ELECTRICAL CONNECTION
- 5 FILTER HEATER ELECTRICAL CONNECTION
- 6 TOP HEATER ELECTRICAL CONNECTION

9.2 - BOTTOM HEATER

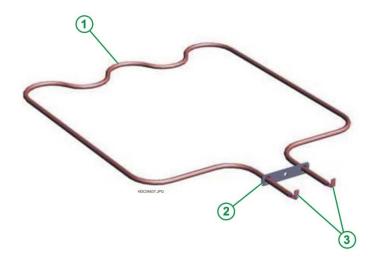


Fig. 15

- 1 BOTTOM HEATER
- 2 FIXING BRACKET 5 ELECTRICAL CONNECTION

9.3 - RING HEATER

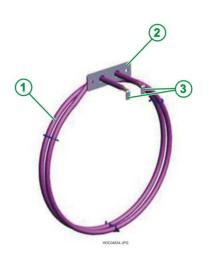


Fig. 16

- 1 RING HEATER
- 2 FIXING BRACKET 3 ELECTRICAL CONNECTION

9.4 - STEAM GENERATOR FOR STEAM OVEN

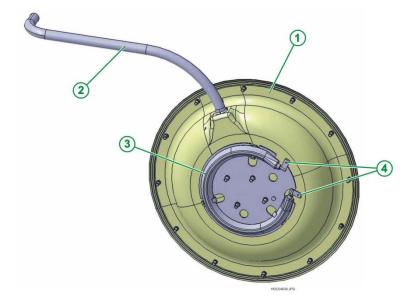


Fig. 17

- 1 STEAM GENERATOR ASSEMBLY
- 2 WATER LOAD PIPE
- 3 HEATER GENERATOR
- 4 HEATER ELECTRICAL CONNECTION

10 - LOW POWER LOADS

10.1 - OVEN LAMP

The oven light is done by one or two lights depending on the structure and the type of models.

10.1.1 - TOP LAMP

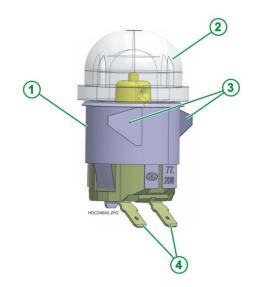


Fig. 18

- 1 HOLDER LAMP
- 2 GLASS COVER
- 3 MOUNTING TABS
- 4 ELECTRICAL CONNECTION

10.1.2 - LATERAL LAMP

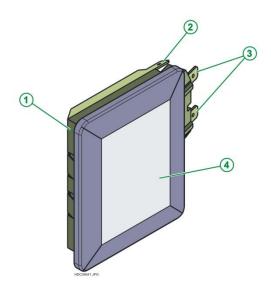


Fig. 19

- 1 HOLDER LAMP
- 2 EARTH ELECTRICAL CONNECTION
- 3 LAMP ELECTRICAL CONNECTION
- 4 GLASS COVER

10.2 - COOLING FAN

The cooling system of the oven is made by fans, single or double speed depending on the type of oven.

10.2.1 - COOLING FAN FOR NON PYRO OVENS

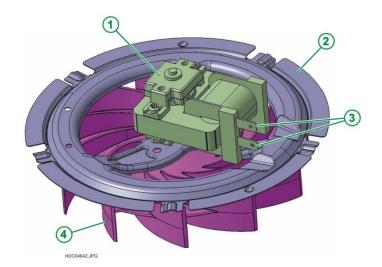


Fig. 20

- 1 COOLING FAN MOTOR
- 2 BRACKET MOTOR 3 ELECTRICAL CONNECTION
- 4 FAN

10.2.2 - DUAL SPEED COOLING FAN FOR PYRO OVENS

The low speed is used during normal operation while the high speed during the pyro functions where there are higher temperatures.

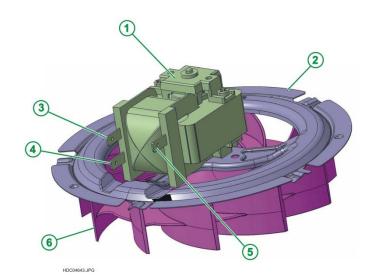


Fig. 21

- 1 HOT AIR MOTOR
- 2 BRACKET MOTOR 3 ELECTRICAL CONNECTION PIN 2
- 4 ELECTRICAL CONNECTION PIN 1
- 5 ELECTRICAL CONNECTION PIN 3
- 6 FAN

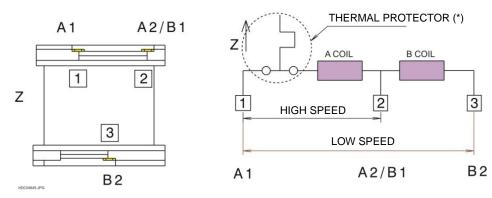


Fig. 22

(*) NOTE: THIS ONLY ON SOME MODELS

10.3 - HOT AIR FAN

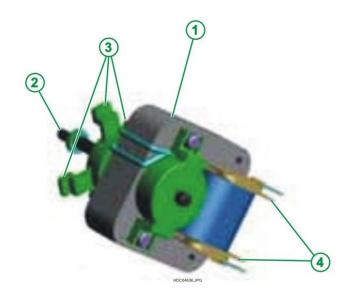


Fig. 23

- 1 HOT AIR MOTOR
- 2 MOTOR SHAFT
- 3 MOUNTING BRACKETS
- 4 ELECTRICAL CONNECTION

11 - MICRO SWITCHES AND SENSORS

11.1 - DOOR SWITCH FOR ILLUMINATION

The lighting of the oven when you open the oven door is made through the micro for illumination.

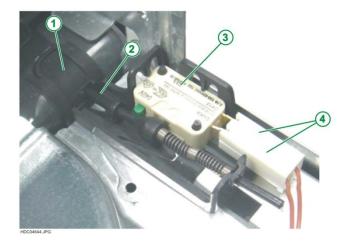


Fig. 24

- 1 OVEN DOOR
- 2 CONTROL PISTON OF THE MICRO
- 3 MICRO LIGHTING CONTROL
- 4 ELECTRICAL CONNECTION

11.2 - DOOR LOCK

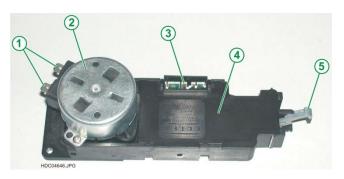


Fig. 25

- 1 MOTOR ELECTRICAL CONNECTION
- 2 MOTOR
- 3 CONNECTOR CONNECTION MICRO
- 4 COVER DOOR LOCK
- 5 METAL HOOK LOCK DOOR

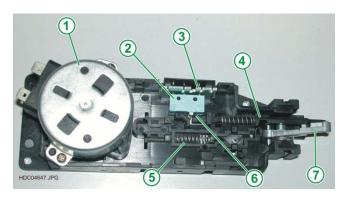


Fig. 26

- 1 MOTOR
- 2 MICROSWITCH PRESENCE DOOR (TOP POSITION)
- 3 CONNECTOR CONNECTION MICRO
- 4 MECHANISM FOR CONTROL OF PRESENCE DOOR
- 5 DOOR LOCK MECHANISM
- 6 DOOR LOCK MICROSWITCH (LOWER POSITION)
- 7 METAL HOOK LOCK DOOR

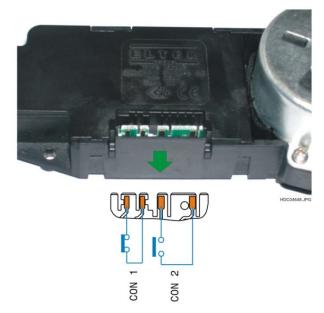


Fig. 27

CON 1 - MICROSWITCH PRESENCE DOOR CON 2 - DOOR LOCK MICROSWITCH

11.3 - MICROSWITCH SUPPORT GRIDS FOR PYRO

To avoid damage to the grid supports, while the cleaning function by pyrolysis these supports must be removed.

The presence of the grid supports is detected by the system through the micro of grid supports.

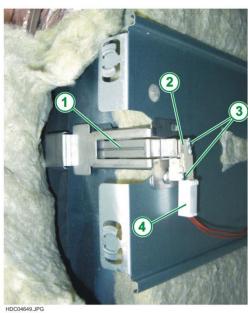


Fig. 28

- 1 BRACKET MICRO DRIVE
- 2 MICRO SUPPORT GRIDS
- 3 SCREWS MICRO
- 4 ELECTRICAL CONNECTION

11.4 - NTC SENSOR FOR STEAM OVEN

In steam ovens, the power board OVC3000 acknowledges the lack of water in the steam generator through a NTC sensor that detects the temperature rise.



- 1 LUG FIXED TO THE STEAM GENERATOR
- 2 NTC SENSOR
- 3 INSULATION SHEATH
- 4 WIRING CONNECTION
- 5 CONNECTOR

12 - FOOD PROBE MODULE (FPM)

12.1 - FPM BASIC

The Food Probe Basic is used in the models where there are only the function meat probe.

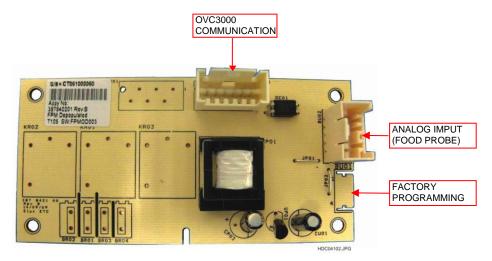


Fig. 30

12.1.1 - POSITIONS OF CONNECTORS

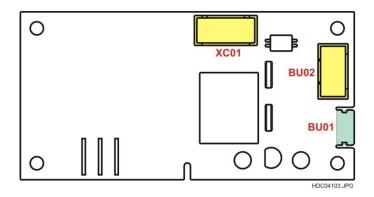


Fig. 31

REFERENCE	DESCRIPTION	CONNECTOR
BU01	FACTORY PROGRAMMING	ON PCB
BU02	ANALOG IMPUT (FOOD PROBE)	WHITE
XC01	OVC3000 POWER BOARD COMMUNICATION	WHITE

12.2 - FPM EXPANDED (2 RELAY)

The Food Probe Full (2 relay) is used in models where it is necessary to operate two additional loads (e.g. steam generator, steam actuator)

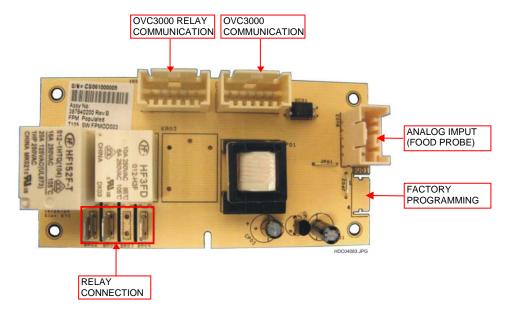


Fig. 32

12.2.1 - POSITIONS OF CONNECTORS

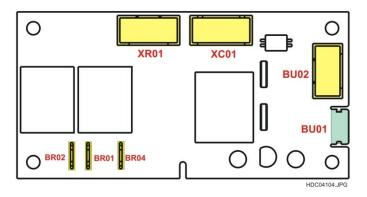


Fig. 33

REFERENCE DESCRIPTION		CONNECTOR
BR01 CONTACT OF RELAY KR01		FASTON
BR02	CONTACT OF RELAY KR02	FASTON
BR04	COMMON CONTACT OF RELAY	FASTON
BU01	FACTORY PROGRAMMING	ON PCB
BU02	ANALOG IMPUT (FOOD PROBE)	WHITE
XC01	OVC3000 COMMUNICATION	WHITE
XR01	OVC3000 RELAY COMMUNICATION	WHITE

12.2.2 - FUNCTION OF RELAY

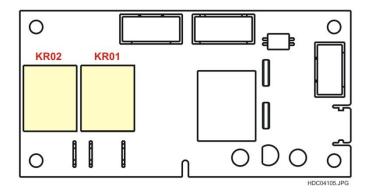


Fig. 34

REFERENCE	DESCRIPTION	COLOR
KR01	STEAM HEATER RELAY (*)	WHITE
KR02	STEAM ACTUATOR RELAY (*)	WHITE

(*) The function depends on the configuration of individual appliance (see specific wiring diagram).

12.3 - FPM FULL (3 RELAY)

The Food Probe Full (3 relay) is used in models where it is necessary to operate three additional loads (e.g. steam generator, steam actuator etc.).

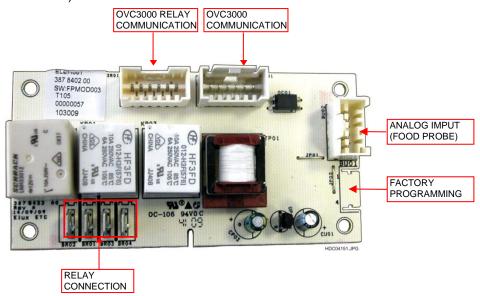


Fig. 35

12.3.1 - POSITIONS OF CONNECTORS

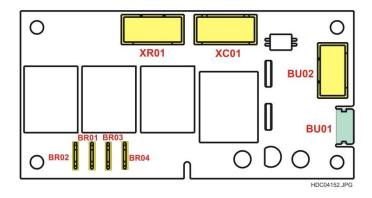


Fig. 36

REFERENCE	DESCRIPTION	CONNECTOR
BR01	CONTACT OF RELAY KR01	FASTON
BR02	CONTACT OF RELAY KR02	FASTON
BR03	CONTACT OF RELAY KR03	FASTON
BR04	COMMON CONTACT OF RELAY	FASTON
BU01	FACTORY PROGRAMMING	ON PCB
BU02	ANALOG IMPUT (FOOD PROBE)	WHITE
XC01	OVC3000 COMMUNICATION	WHITE
XR01	OVC3000 RELAY COMMUNICATION	WHITE

12.3.2 - FUNCTION OF RELAY

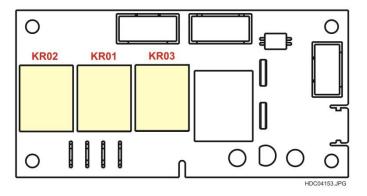


Fig. 37

REFERENCE	DESCRIPTION	COLOR
KR01	STEAM HEATER RELAY (*)	WHITE
KR02	STEAM ACTUATOR RELAY (*)	WHITE
KR03	AUXILIARY RELAY (*)	WHITE

(*) The function depends on the configuration of individual appliance (see specific wiring diagram).

12.4 - FPM FIXING SYSTEM

FPM board is fixed with spacers directly placed on the chassis of the oven.

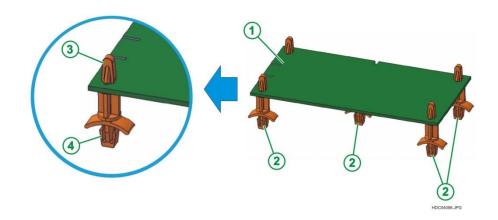


Fig. 38

- 1 FPM BOARD
- 2 PLASTIC SPACERS
- 3 ELASTIC HOOK FIXING SIDE PCB
- 4 ELASTIC HOOK FIXING SIDE PLATE SUPPORT

12.5 - FOOD PROBE

Some models are equipped with a function of cooking temperature effected through a temperature probe. The probe consists of an NTC sensor placed in a metal casing with an insulated and temperature resistant cable.

This probe is inserted into food to be cooked (or immersed in the liquid container to be heated). By varying the temperature of the food there will be a change in resistance of the probe (see Fig. 39), this information is used by the electronics by comparing the temperature value set with that detected by the probe and blocking the cooking when the temperature reading is equal to the set.

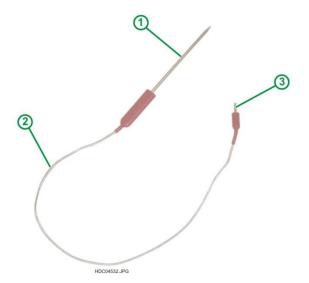


Fig. 39

- 1 TIP OF THE PROBE TO BE INCLUDED IN FOOD
- 2 SMALL WIRE
- 3 SMALL PLUG

12.5.1 - DIAGRAM TEMPERATURE / RESISTANCE SENSOR

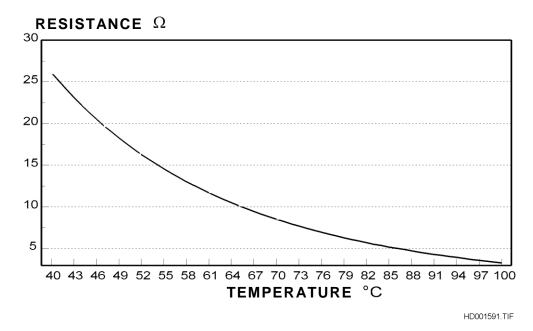
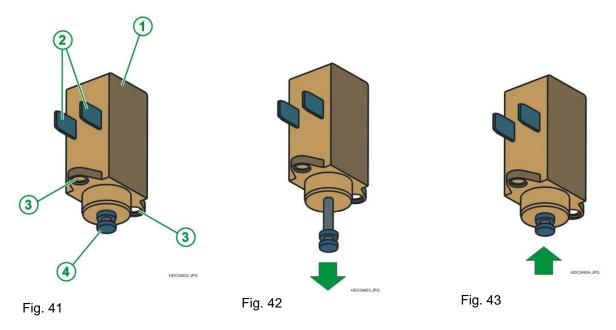


Fig. 40

12.6 - STEAM ACTUATOR

In steam ovens meat probe card also controls the thermal actuator for closing or opening of the steam channel.



- 1 THERMAL ACTUATOR
- 2 ELECTRICAL CONNECTION
- 3 FIXING HOLES
- 4 PIN FIXING CLOSURE ACTUATOR

13 - FAILURE TREE ANALYSIS

13.1 - ALARM CODE

To identify on which place a failure occurred, the first value shows the failure place, described at following schematic:

Fxxx

F	=	Х	Х	Х	
			Fa	ilure co	ode
1 = Oven PB failure					
		2 =	Over	User	Interface failure
		3 =			
4 =					
5 =		5 =			
6 =		6 =			
		7 =	Hob 1	failure	
		8 =			
		9 =	Gene	eral fail	ure
		0 =			•
F=		Failu	re		•
$Cx \rightarrow 1$		for cu	ıstome	er error	s / failures

EXAMPLE:

In the case of PT500 sensor, temperature too high detected from the card the system indicates the error code F5 but is displayed on the user interface with F105 where the number "1" indicates the place where the error occurred, in this case "1" is on the Power board Oven.

NOTE: Some user interfaces (e.g. Avantgarde) indicate the alarms or the warnings during the factory test.

13.2 - ALARM CODE LIST

FAILURE CODE	DISPLAY	ISPLAY DESCRIPTION		SEE PAGE
F1	F101	Door lock sensor alarm	ON CAVITY Dependent	31
F2	F102	Door lock actuator	Dependent	31
F3	F203	Configuration checksum alarm OUI (*)	Independent	31
F94	F194	PT500 out of range warning	Dependent	31
F4	F104	PT500 out of range alarm	Independent	31
F5	F105	PT500 too high temperature alarm	Independent	31
F95	F195	NTC too high temperature alarm	Independent	32
F96	F196	NTC out of range warning	Independent	32
F6	F106	NTC out of range alarm	Independent	32
F8	F908	Communication alarm	Independent	32
F9	F109	Software compatibility code alarm	Independent	32
F92	F192	Meat probe humidity alarm	Dependent	32
F11	F111	Meat probe out of range alarm	Dependent	32
F14	F214	Configuration compatibility alarm OUI (*)	Independent	33
F15	F215	Configuration coherent alarm OUI (*)	Independent	33
F16	F716	Pyro hob alarm OUI (*)	Dependent	33
F17	F917	Hob-Oven power management alarm OUI (*)	Independent	33
F18	F718	Hob-Oven communication alarm OUI (*)	Independent	34
F21	F321	High start temperature (Smart Board) (*)	Dependent	34
F22	F322	No start temperature (Smart Board) (*)	Dependent	34
F23	F323	Invalid configuration error (Smart Board) (*)	Dependent	34
F24	F324	Unknown state Error (Smart Board) (*)	Dependent	34
F25	F325	Read flash memory error (Smart Board) (*)	Dependent	35
F26	F326	Ad calibration running error (Smart Board) (*)	Dependent	35
F27	F327	Error Unknown (Smart Board) (*)	Dependent	35
F28	F928	Smart communication alarm (Smart Board) (*)	Dependent	35
F29	F329	ADC Board error (Smart Board) (*)	Dependent	35
F30	F130	Triac alarm		36
F31	F131	Steamer/Magnetron NTC Temperature sensor alarm		36
F32	F132/ F232	Door lock configuration alarm OC / OUI		36
F33	F133/ F233	Data flash alarm		36
F34	F134	AD converter Reference alarm		36
F35	F135	Electronic clixon alarm		36
F36	F136	Food probe configuration alarm		37
F37	F137	Food probe communication alarm		37
F38				37
	F239 Quantum Touch Controller alarm OUI (*)			37
	F241	Function selector not connected alarm OUI Hexagon (*)		37
C1	(***)			38
C2	(***)	Meat probe at pyro function (**)	Dependent	38
C3	(***)	Opened door at pyro function (**)	Dependent	38

^(*) Alarm codes concerning the user interface

^(**) Warnings for the Customer

^(***) This code is dependent from the user interfaces in some the indication is textual (see documentation for the interface).

13.3 - ALARM DISPLAY AND TROUBLESHOOTING

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING
F101	Door lock sensor alarm: - if the door has to be locked but the feedback is unlocked and temperature is lower 350°C - or if door has to be locked and door is opened and sensor temperature is above 300°C by pyro or 350°C by normal oven function. At temperature above 380°C a F5 alarm will follow.	Wiring connection Door lock Door lock fault
F102	Door lock actuator: Voltage of the feedback signal does not change during un/locking> 40sec lock - 80sec break 40sec lock - 80sec break 40sec lock.	Wiring connection Door lock Door lock fault
F203	Configuration checksum alarm OUI Wrong checksum of OUI flash memory or bad SPI-bus communication. Not detectable on the OC. The OUI switches off the oven and displays error code F3 permanently.	Wiring connection User Interface User Interface fault
F194	PT500 out of range warning: If the PT500 value is out of range [4001607.5 Ohm] for more than 5 sec the alarm code appears.	PT500 temperature sensor fault
F104	PT500 out of range alarm: After 5min with PT500 warning (F94/F194) the OC switches off the APD and the PWM and the alarm code appears.	PT500 temperature sensor fault
F105	PT500 too high temperature alarm: If the sensor temperature is - over 380°C and unlocked door - over 520°C and locked door - if temperature is >370°C, F105 is set directly also if door is locked but opened (Door lock with hook on).	
F195	NTC (Board temperature) too high temperature alarm: If the board temperature is over 105°C [<1KOhm] the OC sends the alarm message. Oven operate normal only cooling fan runs with max. speed. If NTC value is inside defined range the failure is automatically reset.	Difficulty of cooling: 1. Installation problems 2. Fan operation 3. Power board (OC) fault

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING	
F196	NTC (Board temperature) out of range warning: If the NTC is out of range [400Ohm 16kOhm] the OC switches off the heating elements and send the alarm code message. The cooling fan runs with max. speed for 20/5 minutes or until failure is reset. If NTC value is inside defined range the failure is automatically reset.	Power board (OC) fault	
F106	NTC (Board temperature) out of range alarm: After 20/5 minutes with NTC warning (code F196) the OC switches off APD relay and send the alarm code message. If NTC value is inside defined range the failure is automatically reset. F106 is only shown if oven is switches on.	Power board (OC) fault.	
F908	Communication alarm: If there is a problem of communication between OUI and OC after 10 attempts to connect the message of alarm appears. If communication is ok again the failure is automatically reset. F908 is only shown if oven is switches on.	1. Wiring connection between user interface (OUI) and the power board (OC). 2. Wiring connection between Sidekick connector and Power board (OC) (*). 3. User Interface (OUI) fault. 4. Power board (OC) fault.	
F109	Software compatibility code alarm: After the OC has received the configuration message it checks the SW compatibility. If the compatibility is wrong the OC switches off the APD and the PWM and the alarm code appears.	Check the compatibility of the user interface (OUI), user interface probably wrong.	
F192	Meat probe humidity alarm: If meat probe is in humidity range >166kOhm the bit meat probe plug-in is not set and the alarm code is send. Oven operated normal. Failure is automatically reset if meat probe value is inside defined range.	Presence of humidity, determine the cause: 1. Cooking with high water content. 2. Incorrect ventilation.	
F111	Meat probe out of range alarm: If meat probe sensor is short-circuited for more than 15sec the alarm code is send and all loads are switched off except cooling fan and door lock. Failure is automatically reset if meat probe value is inside defined range.	Check the contacts of the socket meat probe. Meat probe fault.	

(*) NOTE: Make sure that the harness wires are not stuck (and thus short circuit) between them.

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING
F214	Configuration compatibility alarm (OUI): Compatibility of firmware and EEPROM does not match. OUI shows error message F214 (F14) permanently.	User Interface (OUI)fault.
F215	Configuration coherent alarm (OUI): If an entry of the configuration is out of normal range the system goes to alarm. The OUI display an error code F215 (F15).	Check the compatibility of the user interface. User interface probably wrong. User Interface (OUI) fault.
F716	Pyro hob alarm (OUI): It is necessary to ensure that a maximum temperature is not exceeded during a pyrolytic cleaning of a freestanding cooker M2. Therefore, it is necessary to shut down the hob when a pyrolytic cleaning is running.	In the freestanding cooker with electronic control in the hob, it is necessary to shut down the hob when a pyrolytic cleaning is running.
F917	Hob-Oven power management alarm (OUI): This alarm is only possible in systems where a power management between oven and hob is implemented. By power management the oven user interface (OUI) has to receive the Hob interface Power Status message from the hob user interface (HUI) before switching on an oven function (OVF). If the HUI Power Status message is wrong or missing for 20sec. the oven user interface (OUI) doesn't start the oven function (OVF), goes into Standby state and shows F917 (F17). If an oven function (OVF) is running the oven user interface (OUI) sends the available power for the hob (with AVAILABLE HUI_POWER message) every 10sec. If the answer from the hob user interface (HUI), Power Status message is wrong the oven user interface (OUI) sends immediately an Oven function (OVF) without heating elements to the power board (OC) and wait 20sec. After that the oven user interface (OUI) goes into Standby state and shows F917 (F17). If the hob user interface (HUI) Power Status message is missing for 20sec. the oven user interface (OUI) has to switch off the oven function (OVF), goes into Standby state and shows F917 (F17). The code F917 is reset by the main switch.	1. Wiring connection between Hob user interface (HUI) and Oven user interface (OUI). 2. Hob User Interface (HUI) fault. 3. Oven User Interface (OUI) fault. 4. Power board (OC) fault.

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING	
F718	Hob-Oven communication alarm (OUI): This alarm is required for appliances where communication between oven user interface (OUI) and hob user interface (HUI) has to be observed. The oven user interface (OUI) has to listen to the Hob User Interface Level Cooking Control message and the Hob User Interface Power Cooking Control message. If the message is missing for more than 1 minute the oven user interface (OUI) has to switch off the power board (OC) and display an error code F718 (F18). The code F718 (F18) is also displayed if the acknowledge of an Oven Cooking Status message is missing for more than 1 minute. The code F718 (F18) is only indicated, if oven is switched on. The alarm is reset automatically with by next incoming Hob User Interface Level Cooking Control message / Hob User Interface Power Cooking Control message or acknowledge of Oven Cooking Status message. Then the OUI goes into Standby state.	b user interface In to the Hob User and the Hob User and the Hob User Is. If the message is isser interface (OUI) and Oven user interface (OUI). If the message is isser interface (OUI) and User Interface (HUI) fault. In to the Hob User and Oven user interface (OUI). If the message is isser interface (OUI) fault. In eacknowledge of ing for more than 1 In eacknowledge of ing for more than 1	
F321	High start temperature: If the filtered sensor temperature of the OC is above 40°C. OUI sends a SYST_OFF command to OC and indicates error message F21 or a pop up information. Error message will be set until the OUI is switched off by user. No error indication again.	Smart board (SB) fault.	
F322	No start temperature: No temperature messages from the OC are received. Communication or compatibility issue. OUI sends a SYST_OFF command to OC and indicates error message F22. Error message will be set until the OUI is switched off by user. No error indication again.	1. Wiring connection between Smart Board (SB) to the power board (OC) 2. Smart board (SB) fault. Wrong software configuration. Check the compatibility of the Smart board (SB), Smart board probably wrong.	
F323	Invalid configuration error: Configuration for a smart program is sent with one or more parameters out of valid range. OUI sends a SYST_OFF command to power board and indicates error message F23. Error message will be set until the OUI is switched off by user. No error indication again.	Smart board (SB) fault. Wrong software configuration. Check the compatibility of the Smart board (SB), Smart board probably wrong.	
F324	Unknown state error: OUI sends a SYST_OFF command to power board and indicates error message F24. Error message will be set until the OUI is switched off by user. No error indication again.	Smart board (SB) fault. Wrong software configuration. Check the compatibility of the Smart board (SB), Smart board probably wrong.	

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING	
F325	Read flash memory error: Calibration data stored in data flash is corrupted. OUI sends a SYST_OFF command to power board and indicates error message F25. Error message will be set until the OUI is switched off by user. No error indication again.	nmand to power board and Error message will be set until	
F326	Ad calibration running error: OUI tries to start a smart program while the calibration of the SB measurement device (ADE7753) is running which is not allowed. OUI sends a SYST_OFF command to power board and indicates error message F26. Error message will be set until the OUI is switched off by user. No error indication again.	Smart board (SB) fault.	
F327	Error Unknown: UI sends a SYST_OFF command to power board and indicates error message F27. Error message will be set as long as the UI is switched off by user. No error indication again.	Smart board (SB) fault.	
F928	Smart communication alarm: When a smart function is running, OUI receives periodically messages from the SB. The OUI has to create an F28-alarm if it doesn't receive such a message for longer than 2 minutes. This alarm is created by the OUI itself. Error indication F28 after 2 min. Error information is indicated as long as the OUI is switched off by user. The error information can be reset from OUI if the communication is ok again. F28 is only shown by running Smart Function, Smart_Status (Checking, Ambient, Heat-up1, Heat-up2).	Smart board (SB) fault.	
F329	ADC Board error: This failure cannot occur during OFF_STATE or STAND_BY (because APD relay disconnects SB from mains). It occurred only if a Smart Function is running until Smart_Status (Baking) message. If SB recognizes hang-on of ADC unit (no changes of measured values), then SB sends alarm massage to OUI (ERROR_ADC_UNIT). Error indication F29 immediate. OUI sends a SYST_OFF command to OC and indicates error message F29 or a pop up information. Error information is indicated as long as the OUI is switched off by user. F29 is only shown by running Smart Function, Smart_Status (Checking, Ambient, Heat-up1, Heat-up2).	ADC Board (ADC) fault. Smart board (SB) fault.	

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING
F130(*)	Triac alarm: If the power board (OC) is off and a failure at the triac fault detection circuit is detected the alarm is set. The alarm can only reset if the oven is plugged out/in.	Check the resistance of the motor convection fan. Power board (OC) fault.
F131	Steamer/Magnetron NTC Temperature sensor alarm: If the NTC is for more than 5sec out of range [5°C – 295°C] the NTC temperature is fixed on 140°C and the alarm is set. The alarm is reset automatically immediately if the sensor is in range again. This alarm can only happens if the oven is configured as steamer or microwave oven. At streamer ovens all heater elements are off. At microwave ovens only the microwave loads(magnetron, stirrer magnetron) are off.	NTC Temperature sensor fault.
F132/ F232	Door lock configuration alarm: This alarm is only possible at factory because the wrong configuration is sent to the Power board OC. At pyro ovens or ovens with door lock system the door lock activator has to be configured on relay 6. If not configured on relay 6 then an alarm is set. To reset this alarm a new configuration has to send to the OC. If no door lock is configuration this alarm cannot be occurred.	Wrong software configuration. Check the compatibility of the Power board (OC), Power board probably wrong.
F133/ F233	Data flash alarm: If the initial or write or read process on the flash failed the alarm is set. If the failure happens turning start-up so only a Restart can clear the failure. If it is a write or read failure the failure will be reset with the next correct write or read process. This alarm has no impact on the loads.	If the code F133 Power board (OC) fault. If the code F233 User interface (OUI) fault.
F134	AD converter Reference alarm: For safety reasons it is necessary to check the multiplexer of the analog- digital converter. This is done with a resistor. If the value is not within the range [0.25V0.65V] an alarm is set and the pwm is switched off. If the value is within the range again the alarm is reset.	Power board (OC) fault.
F135	Electronic clixon alarm: The OC has a protected relay that at temperature over 380°C is disabled. The supply voltage of the relay is checked. If the voltage is too high(>2.5V) for off state an alarm is set immediately and the pwm is switched off. The alarm is only reset if the voltage is in range again and the temperature is lower than 380°C.	 Check that the mains voltage is correct. Installation problems. Fan operation. Power board (OC) fault.

(*) **NOTE**: The code F130 also appears in case of convection fan motor failure resulting in failure to the PWB.

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING
F136	Food probe configuration alarm: If food probe is configured and not detected after start-up an alarm is set. The alarm has no impact on the loads. Food probe temperature is not valid (not updated)! This alarm can only be reset with restart.	Food Probe Module fault. Food probe wrong. Wiring connection Food probe.
F236	Alarm due to the software bug: This alarm occurs due to the bug in the software. Which is fixed in the software update	Follow the instruction of the F136
F137	Food probe communication alarm: Food probe module was detected and the oven is on but communication is lost for more than 15sec. an alarm is set. This alarm is reset automatically if the communication is there again or if the oven is switched off. The alarm has no impact on the loads. Only food probe temperature is old or zero (short circuit).	Food probe wrong.
F138	Fix sensor detection alarm: For safety reasons it is necessary to check the oven sensor that it's working. If the oven sensor does not change, if the oven is on, alarm is sent and the PWM signal is switched off. This alarm is reset automatically after 4 minute if the oven is off (switching on/off is refreshing the 4min).	Check the fixing of the PT500 oven temperature sensor.
F239	Quantum Touch Controller alarm: 1. If the communication over the bus SPI with the Quantum touch is after 50 trials unsuccessful than alarm is set. The alarm is reset if the communication is okay again.	Connections Board Touch. Board Touch fault.
	If an incorrect ELC is used for a configuration of the naked electronics or a configured spare part: This error occurs due to different electronic software between User Interface and touch electronics	It's important to use the ELC code while ordering the spares during service *ELC (Engineering Level Code)
F241	Function selector not connected alarm OUI Hexagon: If the function selector is not connected for a time longer than 10 sec. the failure will be displayed and system off command will be sent to power board. The failure will be detected if +5V is on the micro input for function selector. Failure indication is independent of oven state. This means the failure code F241 will be displayed as long as failure is active. After the re-establishment of the connection the OUI displays "°C" timeout if function selector is not in zero position else ToD. If timeout symbol is in display user has to switch first to zero position before selection of an OVF.	Connections of selector. Selector fault.

DISPLAY CODE	DESCRIPTION	TROUBLESHOOTING
C1 (*)	Tele run at pyro function: If telescopic runner is insert no pyro function possible. Power board OC goes in PYRO_SAFE_STATE and send this state in the oven control status message and no heating elements are on. User interface OUI has to display C1 or a text information in text line or in a pop up window. If the error is reset, the OUI goes in standby and set the OC in standby too.	Before you activate the pyro function remove the telescopic runners from oven.
C2 (*)	Meat probe at pyro function: If Meat probe is insert no pyro function possible. Power board OC goes in PYRO_SAFE_STATE and send this state in the oven control status message and no heating elements are on. User interface OUI has to display C2 or a text information in text line or in a pop up window. If the error is reset, the OUI goes in standby and set the OC in standby too.	Before you activate the pyro function remove the Meat probe from oven.
C3 (*)	Opened door at pyro function: If door is open no pyro function possible. Power board OC goes in PYRO_SAFE_STATE and send this state in the oven control status message and no heating elements are on. User interface OUI has to display C3 or a text information in text line or in a pop up window. If the error is reset, the OUI goes in standby and set the OC in standby too.	Before you activate the pyro function close the oven door.

^(*) This code is dependent from the user interfaces in some the indication is textual (see documentation for the interface).

14 - EXAMPLE OF CIRCUIT DIAGRAM FOR DIFFERENT APPLICATIONS

NOTE: The following are some examples of wiring diagram, in any case, refer to the wiring diagrams related to various models (linked to PNC in TDS).

14.1 - EXAMPLE OF CIRCUIT DIAGRAM FOR OVENS NOT PYRO

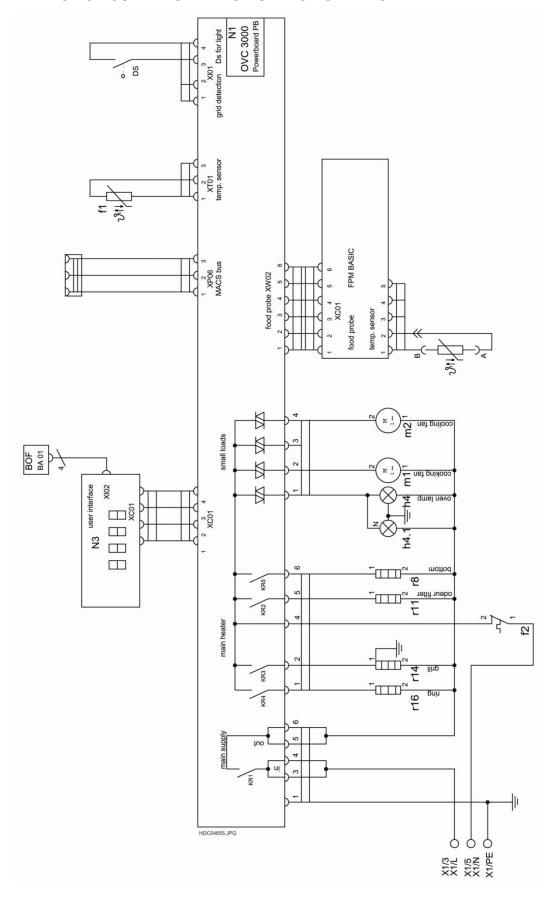
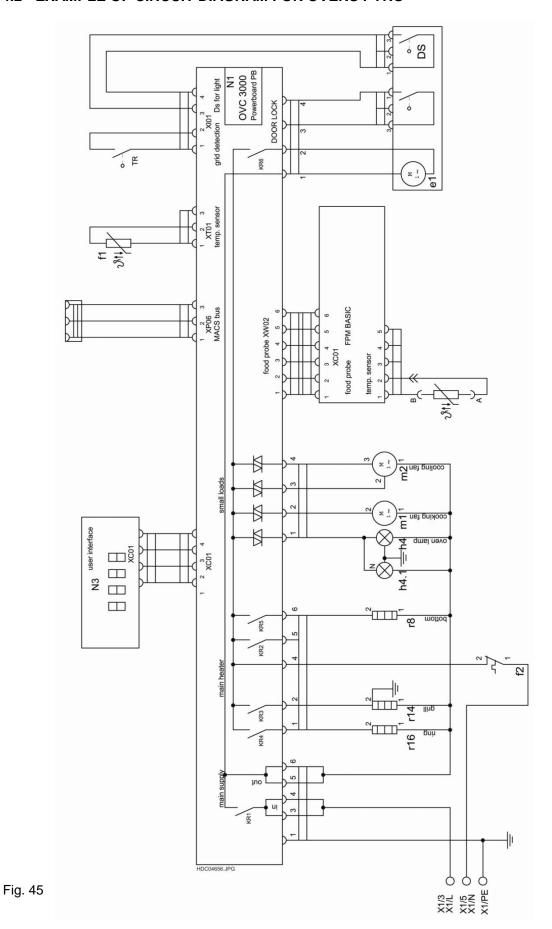


Fig. 44

14.2 - EXAMPLE OF CIRCUIT DIAGRAM FOR OVENS PYRO



14.3 - EXAMPLE OF CIRCUIT DIAGRAM FOR STEAM OVENS

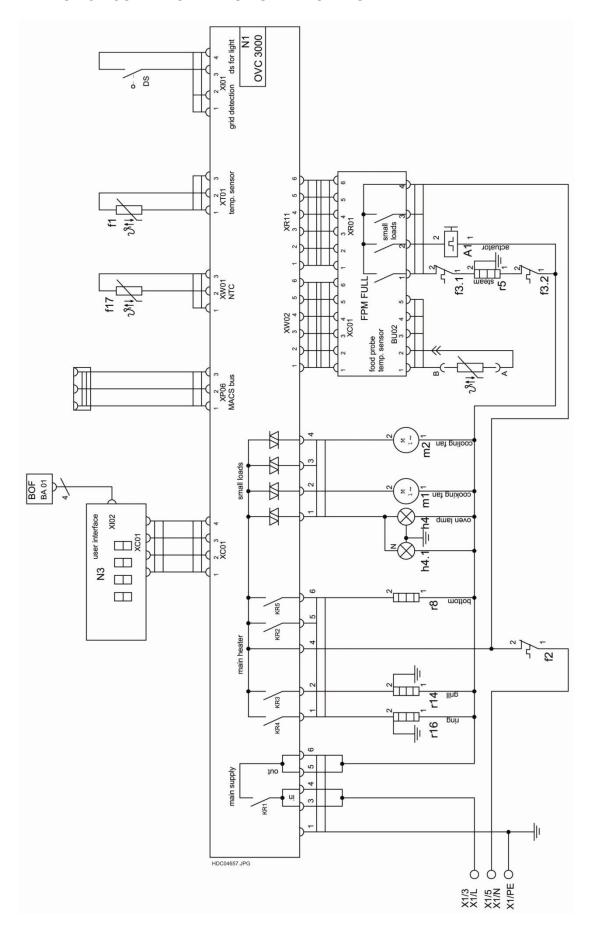


Fig. 46

14.4 - LEGEND OF CIRCUIT DIAGRAM

Doforo	Description	Deference	Description
Reference	Description	Reference	Description long every series
a1 a2	switch 7-step front left switch 7-step rear left	h9 h10	lamp overheating analog timer
a3	switch 7-step rear right	h11	electronic timer
a4	switch 7-step front right	h12	6-push electronic timer
a7	heating mode selector main oven	h20	timer primary code hob
a7t (a7.1)	heating mode selector top oven	h30	residual lamp
a8	LTC (Low Temp. Cooking) switch	h40	display board
a15	touch electronic switch warning zone	h52	display oven
a31	energy regulator front left	K	clutch
a32	energy regulator rear left	K1	relay
a33	energy regulator rear right	k1	LTC (Low Temp. Cooking) relay
a34	energy regulator front right touch electronic switch front left	KS	switch child safety
a61 a62	touch electronic switch front left	KS1 KS2	rotary hob plate front left rotary hob plate rear left
a73	touch electronic switch rear right	KS3	rotary hob plate rear right
a84	touch electronic switch front right	KS4	rotary hob plate front right
A1	actuator exhaust	M1	hob connector 14-pole 1+2
A2	actuator desteam	M2	hob connector 14-pole 3+4
b3	socket meat probe	M3	connector 11-pole
BOF	mode selector function	M4	connector 7-pole
BOT	mode selector temperature	M5	connector 3-pole
c1	capacitor 1,5 μF for oven lamp 40W	m1	fan hot air main oven
c2	capacitor 1,5 µF for oven lamp 25W	m1t	fan hot air top oven
c4	interference filter	m2	fan cooling
D DS	hob connector 12-pole door switch	m3 m4	transformer halogen lamp transformer timer
e1	door lock pyro	m4 m5	transformer timer
e11	distributor plate pot detection	m6	motor stirrer
E	hob connector 8-pole	m8	transformer high voltage
F	hob connector 21-pole	m12	turnspit motor
f1	thermostat temp -regulator main oven	m13	ignition coil gas
f1t (f1.1)	thermostat temp -regulator top oven	m20	cooling fan, L3
f2	safety term. limiter main oven	N1	electronic power board
f2t (f2.1)	safety term. limiter top oven	N2	module of induction
f3.1	thermostat steam generator 170°	N3	User interface
f3.2	thermostat steam generator 120°	N4	connector board
f5 f5t	thermostat cooling fan delay main oven thermostat cooling fan delay top oven	N5 N6	PSU light bar (power supply unit)
f6	thermostat cooling ran delay top oven thermostat fast run cooling fan pyro	N7	electronic Smart
f7	sensor to magnetron	N8	touch input
f8	safety temp limiter bottom main oven	PE2	ground point bottom sheet f-oven
f9	LTC (Low Temp. Cooking) thermostat	PE3	ground point front frame left
f11	thermostat unlock pyro main oven	PE4	ground point front frame right
f11t	thermostat unlock pyro top oven	PE5	ground point bowl support front
f12	thermal switch cooling fan delay off (contact)	PE6	ground point bowl support rear
f15	2. safety temp. limiter oven	PE7	ground point hob frame
f16	thermostat overheating warning	PE8	ground point cavity main (only gas cooker)
f17	temperature sensor steam	PE1/b	ground point component plate main
f19	rack thermostat	PE1/bt	ground point component plate top quick start module top oven
f21 f22	safety temp. limiter grill safety temp. limiter fryer	Q1 r5	heating element steam generator
f31	residual contact front left	r6	top heating/grill combination
f32	residual contact front left	r7	top heating element main oven
f33	residual contact rear right	r7 (r7.1)	top heating element top oven
f34	residual contact front right	r8	bottom heating element main oven
G1, G2	spark generator	r8t (r8.1)	bottom heating element top oven
G5	magnetron	r11	fat and smell filter
h1	lamp working	r12	thermal switch cooling fan delay off (heating)
h1t (h1.1)	lamp working top oven	r14	grill heating element main oven
h1.4	lamp working cooking zone front left	r14t (r14.1)	grill heating element top oven
h1.5	lamp working cooking zone rear left	r15	warming zone
h1.6	lamp working cooking zone rear right	r16	ring heating element main oven
h1.7 h3	lamp working cooking zone front right lamp heating main oven	r16t r19	ring heating element top oven heating drawer
h3t (h3.1)	lamp heating main oven lamp heating top oven	r20	resistor cooling fan
h4	oven lamp main oven	r21	heater grill
h4t	oven lamp top oven	r22	heater fryer
h4.1	oven lamp side main oven	r27	resistor oven lamp
h4.6	lamp halogen	r27.1	resistor oven lamp side
h5	oven lamp top oven	r31	cooking zone front left
113			
h5.1 h7	oven lamp side top oven meat probe display	r32 r33	cooking zone rear left cooking zone rear right

Reference	Description	Reference	Description	
r34	cooking zone front right	s23	sensor wok (middle)	
r35	cooking zone middle	s31	ignition switch gas front left	
s1	sensor pot detection front left	s32	ignition switch gas rear left	
s2	sensor pot detection rear left	s33	ignition switch gas rear right	
s3	sensor pot detection rear right	s34	ignition switch gas front right	
s4	sensor pot detection front right	TR	telescopic runner switch main oven	
s11	micro switch gas / electric	TRt	telescopic runner switch top oven	
s12	micro switch grill / fryer	X1	main terminal	
s13	micro switch grill socket	X10	tandem pin shells 6-pol.	
s14	micro switch sensor	X11	tandem pin shells 8-pol.	
s19	switch drawer	X12	connector hob	
s21	sensor grill	x20	frame connector, L3	
s22	sensor fryer			

15 - DEMO MODE

The Demo mode function is used for show rooms or shops. The user can find out the complete functionality of the UI but for security reason the loads stay off.

15.1 - DEMO MODE IN THE UI "VISION VCU"

Activate / deactivate the demo mode:

- From OFF state keep the main switch pressed for at least 5 seconds.
 The user interface enters stand-by for 5 seconds (buzzer sounds).
- 2. Release main switch and press the combination
 - key mode + key favourite for two seconds .
- 3. Buzzer sounds (3 x signal) and
 - The demo mode is active if the indication appears in the upper left side of frame.
 - The demo mode is not active if there is no indication in the upper left side of frame. (see Fig. 47).



Fig. 47

15.2 - DEMO MODE IN THE OMEGA UI

Activate / deactivate the demo mode:

1. From **Off state** keep the **key main** pressed for at least 5 seconds (see Fig. 48).



PRESS AND HOLD

Fig. 48

2. The user interface enters standby mode for 5 seconds and jumps back to **Off state**. Buzzer sounds (see Fig. 49).



HOLL

Fig. 49



Fig. 50

4. After release the main switch keep the combination key mode + key down

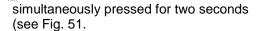




Fig. 51

- If the demo mode is active: Indication of Demo Mode with icon "**Demo**" if the oven is switched on Demo function (see Fig. 49).
- If the demo mode is deactivated:
 No indication of "Demo" icon if the oven is switched on.

15.3 - DEMO MODE IN THE EXAGON UI

Activate / deactivate the demo mode:

In the OFF state the key "+" (STEP 1) has
to be pressed until a beep is audible then
turn the program selector to the 1st oven
function (STEP 2) (see Fig. 52).



Fig. 52

 The indicator "DEMO" starts flashing and the rotary function has to be set back to "0" (STEP 3) (see Fig. 53).



3. Release **key "+"** and turn temperature selector right until beep is audible (step 4). Buzzer sounds (3 x Beep) and



Fig. 54

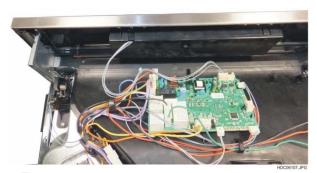
- If the demo mode is active: Indication of Demo Mode with icon "Demo" if the oven is switched on Demo function (see Fig. 53 and 54).
- If the demo mode is deactivated:
 No indication of "**Demo**" icon if the oven is switched on.

16 - POWER BOARD OVC3000 AND OVC3000EOS

From the beginning of 2012 so progressive in the various factories began to use the new power board OVC3000EOS instead of OVC3000. The new power board has a low power consumption in stand-by to return to the regulations on the reduction of energy consumption and has a new spare part code (see spare parts catalogs for the various models) instead do not change the characteristics and functions.

17 - OVC3000 VERSION FOR MICROWAVE OVENS (EMC SHIELDED)

The power boards OVC3000 used in microwave ovens, in order to avoid electromagnetic interference that could block the card was added a screen to eliminate these electromagnetic interference (see Fig. 55 and 56).



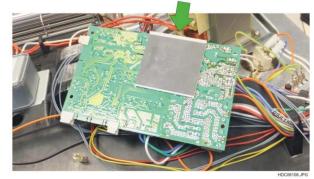


Fig. 55

Fig. 56

18 - REVISIONS

Revision	Date	Description	Author	Approved by - on
00	02/2011	Document Creation	FV	
01	08/2013	 Modified the Index on page 4 Modified Chapter 13.2 - ALARM CODE LIST (added codes and references pages) on page 30. Modified Chapter 13.3 - ALARM DISPLAY AND TROUBLESHOOTING in reference to the code F908 and add Note on page 32; in reference to the code F321, F322, F323 and F324 on page 34; in reference to the code F325, F326, F327, F928 and F329 on page 35; in reference to the code F130 and F232 on page 36; in reference to the code F241 on page 37. Modified Chapter 14 - EXAMPLE OF CIRCUIT DIAGRAM FOR DIFFERENT APPLICATIONS added Note on page 39. Modified Chapter 15.1 - DEMO MODE IN THE UI "VISION VCU" on page 44; Added Chapter 16 - POWER BOARD OVC3000 AND OVC3000EOS on page 46. Added Chapter 17 - OVC3000 VERSION FOR MICROWAVE OVENS (EMC SHIELDED) on page 46. Modified Chapter 18 - REVISIONS on page 46. 	FV	

02 10/2015 - F236 & F239	BSP
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