Service Manual
GB/09.00 72.6285.04 (1)

COMPACT INDUCTION COOKERS
VARIO INDUC VI
VARIO WOK VW
Version 2000

DCE  CE
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# ADDITIONAL DOKUMENTS

<table>
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<th>72.6254</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare parts list</td>
<td>72.6286</td>
</tr>
</tbody>
</table>

# SERIAL NUMBER of the appliance  YWWXXXXX

The serial number is marked on the type plate. The 8 digits give following information:

- Y  last digit of the year of production
- WW week of production
- XXXXX running number
1. SAFETY MEASURES

- Maintenance work, adjustments, conversions and repairs may only be carried out by an authorized technician. These technicians must be instructed by the manufacturer and carry out the work in accordance with specific national and local regulations. Parts requiring replacement are only to be replaced by original spares.
- Follow strictly the attention and warning label indications on the appliances.
- Cleaning and maintenance may only be carried out when the appliance is cold.
- Before beginning any servicing, all appliances must be disconnected from the power supply. Disconnection from the power supply is effected by switching off at the main switch, pulling out the plug or removing the fuses fitted to the power supply.
- The internal wiring in the appliance as well as the earth connections must be carried out in accordance with the complete electrical schematic. Basically, all metal parts on which electrical connections are located must be earthed.
- Parts requiring replacement are only to be replaced by original spares.
- After the appliance has been connected up, the service agent must carry out a test of all functions in the course of which all the programs and operating states of all operating elements as laid down in the operating instructions are checked.
- The conclusion of a maintenance agreement should be recommended to the user.

2. MAINTENANCE INTERVAL

Recommendation approx. 1 year

3. FUNCTIONS

3.1. INDUCTION COOKING

With induction cooking, the cooking pot is heated up with electro-magnetic waves. The induction coil is fed with a high-frequency alternating current which generates a powerful magnetic field. If metallic objects are placed in this area of the magnetic field, an eddy current is initiated in them. This current penetrates the metallic objects, that is, the bottom and wall of metal pots, and thus heats up their content.

Components

- Mains connection
- Frequency changer
- Operating panel
- Parallel condenser
- Induction coil
- Ferritic shield
- Glass ceramic plate
- Magnetic field

3.2. OPERATION

The required heating levels can be set in 9 steps by turning the control knob. The induction cooker's performance is depending on the position of the control knob and of the size and material of the pan.

The appliance is switched off when the control knob is in position 0. When the control knob is switched on the green lamp lights. The setting positions correspond to following heating capacities:

<table>
<thead>
<tr>
<th>Position of knob</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity %</td>
<td>off</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>50</td>
<td>65</td>
<td>85</td>
<td>100</td>
</tr>
</tbody>
</table>
3.3. TECHNICAL PROPERTIES
- high performance and immediate readiness for operation
- high efficiency
- electric energy is directly transformed into heat in the pot bottom
- high energy saving
- stepless power regulation by the operation of a rotary regulator
- pot recognition system
- minimal loss of energy when on standby

3.4. COOKING POTS
With induction cooking it is very important to use suitable pots. The pot bottom is the element that closes the magnetic field generated by the induction coil. The following requirements must be met. They apply to pots with level bottoms as well as to WOK pans.

The pots and pans must be made of a magnetic metal, such as iron, enamelled iron, carbon steel, cast iron, multilayered metal with a ferromagnetic layer on the bottom, iron-containing stainless steel, etc. Pots made of copper or aluminium must be equipped with a bottom made of steel or stainless steel with iron. Check the magnetic permeability with a permanent magnet. A pot is suitable for induction cooking when it has a bottom that strongly attracts a permanent magnet. We recommend the use of cooking pots that were specially designed for induction cooking. However, it is possible to use some of the traditional pots, too, such as the Lyon pan, pots and pans made of ferromagnetic stainless metals, enamelled pots, pots made of cast iron. You may also heat up certain magnetic, non-conductive pot materials on the induction range. However, this is not recommended, as those pots do not transmit the heat properly.

Pans made of multi-layered metals with open aluminium core should not be used.

The maximum power generated by the induction coil depends on the quality of the pot and the size of its bottom. The larger the pot bottom, the more heat is generated in the pot and released to the food.

3.5. FUNCTIONS IN THE GENERATOR

Fan control
The fan is controlled by a thermostat and does only switch on if the temperature in the heat sink reaches 55°C. The fan switches off once the temperature in the heat sink has reached the lower level of the thermostat. When the appliance is switched off the fan stops.

Induction coil
The connections of the coil must be wrenched and protected by an isolating hose. Each coil has a built-in temperature sensor.

Power switch
On position "0" the power switch is turned off and the output signal has the resistance value 0. On positions 1 to 9 the power switch is turned on and the output signal has the corresponding resistance value (max. 9 kΩ).

Setting the power rating
The power rating is set with the potentiometer. The force of the inductive power depends on the position of the potentiometer and on the size and metal of the pot. The inductive power can also be diminished by removing the pot from the center of the cooking zone. The power control is sequential for the lower and progressive for the higher position numbers.

Sequential positions
Within these positions there are power impulses emitted. It takes about 1.4 s to complete a cycle. The duration of an impulse varies according to the set levels.

Progressive positions
Within these positions the power rating augments steadily with increasing position numbers.

Pot recognition system
The generator has an automatic pot recognition system. A control impulse of the induction coil checks about every 1.4 s whether there is a pot on the cooking zone and if this pot is suitable or not. If a suitable pot is placed on the cooking zone, the inductive heating goes on automatically. If the pot is removed, the inductive heating goes off automatically. The inductive heating must only switch on when the pot placed on the cooking zone is of the required minimal size (approx. 12 cm). This prevents small, misplaced metallic objects from being heated up on the cooking zone.

Temperature control

a) Induction coil
The temperature of the induction coil is controlled by a temperature sensor. If a coil is heated up to more than the tolerated maximum level, this generator will switch off and get blocked. After the coil has cooled down and resetting the cooking zone is ready for operation again.

b) Power module
The temperature of the power module is controlled by a thermostat (safety thermostat). If the heat of the power module on the heat sink increases 55°C, the fan is switched on. At temperatures over 70°C, the power will be reduced by 1/3. If the temperature still increases, this generator will switch off. After the temperature around the heat sink has dropped, the generator will switch on automatically (no reset necessary).

c) Temperature inside the appliance
On each control print there is a temperature sensor which controls the temperature inside the appliance. If the heat exceeds the tolerated level on the control print, the generator will switch off. If the temperature on the control print drops, the same generator switches on automatically (no reset necessary).

Over current protection
If non-ferromagnetic metallic objects (e.g. aluminium, copper, brass, chrome nickel steel, etc.) are placed on the cooking zone, the current in the induction coil can considerably increase. To protect the power module from destruction due to too fast a temperature rise within this module, there is a current control in the coil. If the current surpasses the tolerated level, the concerned generator gets blocked. To release this blockage of the generator, switch off the concerned cooking zone (reset) for a moment. With the usual induction pots normally the maximum coil current will not be exceeded.

Voltage control
A supervision of excessive or low-tension voltage of the mains is integrated in the power board. When the tension limits are reached the appliance is switched off.

Radio interference suppression
A mains filter for the radio interference suppression is integrated in the power board.
3.6. VENTILATION / COOLING

Generator
The generator is force-cooled with a fan. The thermostat control prevents the interior part of the appliance from being severely soiled. The fan operates at high power levels only during cooking. If small pots are used, or if the temperature is set to a low level, the fan operates not or just periodically. There is an air filter underneath the appliance.

Induction coil
The coil is cooled only naturally.

Recommendation
Do not disconnect the plug of the appliance from the mains socket while the fan is running.

4. TECHNICAL DATA

<table>
<thead>
<tr>
<th>Type: VARIO INDUC VI</th>
<th>VI 230</th>
<th>VI 400</th>
<th>VI 440</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wattage kW</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Voltage</td>
<td>230V/1-N</td>
<td>400V/3-N</td>
<td>440V/3-(N)</td>
</tr>
<tr>
<td>Current A</td>
<td>15.2</td>
<td>7.2</td>
<td>6.5</td>
</tr>
<tr>
<td>Ceramic hob mm</td>
<td>340 x 340</td>
<td>340 x 340</td>
<td>340 x 340</td>
</tr>
<tr>
<td>Appliance dimensions B/T/H mm</td>
<td>400 x 475 x 120</td>
<td>400 x 475 x 120</td>
<td>400 x 475 x 120</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: VARIO WOK VW</th>
<th>VW 230</th>
<th>VW 400</th>
<th>VW 440</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wattage kW</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
</tr>
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<td>Voltage</td>
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<td>440V/3-(N)</td>
</tr>
<tr>
<td>Current A</td>
<td>15.2</td>
<td>7.2</td>
<td>6.5</td>
</tr>
<tr>
<td>Ceramic bowl diameter mm</td>
<td>290</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>Appliance dimensions B/T/H mm</td>
<td>400 x 475 x 180</td>
<td>400 x 475 x 180</td>
<td>400 x 475 x 180</td>
</tr>
<tr>
<td>Net weight kg</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

For all types:
- Power factor cosφ: >0.90; typical 0.95
- Leakage current: 4 mA

Safety elements
- 1 Protection switch per induction coil (temperature sensor 180°C).
- 1 Protection switch per power unit (power reduction of 1/3 at 70°C, cut off at 80°C).
- 1 Protection switch per mains logic board (temperature sensor 65°C).
- 1 Overcurrent protection per power unit
- 1 Electric fuse per control circuit

Miscellaneous
- Maximum tolerance of the mains: nominal voltage +6/-10%
- Supply frequency: 50 / 60 Hz
- Protection class: IP X2

Minimal diameter of the pot bottom: about 12 cm
Maximum ambient temperature
- storage room: -20.÷.+70°C
- during operation: +5.÷.+42°C
Maximum humidity of air
- storage room: 10.÷.90%
- during operation: 30.÷.90%

Tests/certificates
All electric appliances are tested by VDE. They fulfill following standards and EC Directives. The appliances are marked with the CE marking on the specification plate.
- EN 60335 Safety
- EN 55014 Interference emission
- EN 55104 Disturbance immunity
- EMV Directives 89/336/EEC Electro-magnetic compatibility

C E
Electric diagram (VARIO INDUC VI, VARIO WOK VW) 400V (230V)

A1  Mains control / power unit
A2  Logic board
B1  Temperature sensor of the coil
H1  Control lamp green
L1  Induction coil

M1  Fan
S1  Power switch
L1, L2, L3  Phases
N  Earth
K  Connection cable
5. MAINTENANCE CHECK LIST

<table>
<thead>
<tr>
<th>Check</th>
<th>Fault ⇒ Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections for protective conductors</td>
<td>If contacts are loose ⇒ tighten contacts.</td>
</tr>
<tr>
<td>Check that all electric connections and contacts to terminals, coils, switches and junctions are tight.</td>
<td>Identify defective consumers (heating systems) by carefully measuring the individual currents. If major deviations are discovered ⇒ replace.</td>
</tr>
<tr>
<td>Measure the individual phase currents with a clamp-on ammeter on the power supply immediately before the connection terminals with the appliance switched on full and compare the currents with the 'Technical data'.</td>
<td>Identify defective consumers (heating systems) by carefully measuring the individual currents. If major deviations are discovered ⇒ replace.</td>
</tr>
<tr>
<td>Inspect internal wiring.</td>
<td>If cables are faulty ⇒ replace cables.</td>
</tr>
<tr>
<td>Check the cooking zones for continuous operation. Check power consumption with the largest possible pan filled with water.</td>
<td>If heavily soiled with grease and dust ⇒ clean with a brush or a cloth and a spray cleaner intended for electronic components and blow out with compressed air.</td>
</tr>
<tr>
<td>Check the generator and cooling block for internal contamination.</td>
<td>If the fan is dirty ⇒ clean with a brush or with compressed air.</td>
</tr>
<tr>
<td>Check the power switch steps.</td>
<td>If the switch is hard to turn or makes a noise ⇒ replace.</td>
</tr>
<tr>
<td>Check the green operating lamp located on the control panel. The lamp must be on at all switch settings from 1 to 10.</td>
<td>If the lens is damaged or the lamp fails to come on: ⇒ replace the complete lamp.</td>
</tr>
<tr>
<td>Check the pan detection system by turning the switch to 9 and placing a metal pan containing water onto the cooking zone.</td>
<td>If the heating fails to come on or fails to go off when the pan is removed ⇒ replace the control print in the drawer.</td>
</tr>
<tr>
<td>Check the ceramic plate and wok bowl for any splits, cracks or wear and tear.</td>
<td>If the damage is likely to affect safety ⇒ replace the part.</td>
</tr>
<tr>
<td>Check the mechanical fixation of the induction coil and ferrite parts.</td>
<td>In case of changes ⇒ correct position and renew the fixation.</td>
</tr>
<tr>
<td>Check the seal between the ceramic plate / bowl and the cover.</td>
<td>If damage is only slight ⇒ repair with silicone. If damage is severe ⇒ remove the plate / bowl and fit a new one.</td>
</tr>
</tbody>
</table>

MAINTENANCE

Ventilation
A proper function of the cooker can only be guaranteed, if the electronics can be kept at normal operating temperatures.
- The air inlet and air outlet may not be obstructed
- Air channels must be free of dirt
- The heat sink lets the air flow through, no obstructions
- The fan is mechanically well fixed
- Air channeling panels are properly mounted
- Filter is cleaned

Induction coil
Control:
- Mechanical fixation (screws fixed?)
- Coil adhesive (fixation ok?)
- Parts of ferrite (well fixed?)

In general
Control:
- Protective ground connections
- Screw connections
- Cable insulation
- Any kind of liquid spilled into the cooker'
- Dirt inside the cooker
6. **COMPONENTS / REMOVAL AND INSTALLATION**

**Casing (1)**
Removal: Remove the 6 screws (10) underneath the appliance. These security screws can only be handled with a special key (see ‘Spare parts list’ 72.6286 / pos 10a). The interior of the appliance can now be accessed.
Installation: Proceed as described under “Removal” but in the reverse order.

**Ceramic hob (3)**
If the ceramic plate is damaged replace the entire cover (casing with ceramic plate built in) or only the ceramic plate.
Procedure for changing the plate:
Break up and remove the ceramic plate. Clean off all silicone residues and inserts. Clean and degrease the frame parts. Bond the 2.6 mm-thick silicone inserts (4) to the frame at a spacing of approx. 10 cm. Apply the silicone sealant (5) (Novasil S 76 black) to the frame from a tube. Insert the ceramic plate and press it down well. The cover and the ceramic plate should be flush. Apply silicone sealant to the joints. Smooth off the silicone using soapy water and rubber gloves. Remove any excess silicone. Allow the sealant to dry for 24 hours. Clean any sealant residues off the cover and the ceramic plate with detergent, fine steel wool and paper.

**Wok pan (130)**
If the bowl is damaged replace the entire cover (casing with bowl and coil built in).

**Operating foil (2) exchange**
Removal:
Operating foils (FO) and base plates (GR) are bonded to the sheetmetal surfaces (cover plates) with self-adhesive coatings. They are removed with a spatula, a screwdriver or a knife.
Cleaning:
The surfaces to which the foil is to be applied must be clean and dry, i.e. free from dust, grease, rust, paint, etc. Suitable for cleaning: toluol or 3M article S-152 stick remover.
Procedure: shake the can thoroughly and spray evenly on the surface to be cleaned. (Distance about 15 - 20 cm.) Rub over with a clean lint-free cloth. If surfaces are heavily soiled, repeat the process.
Sticking on the foil:
Remove the protective backing, taking care not to touch the adhesive. After positioning, press down well. It is important to apply firm, even pressure. The ideal working temperature is approximately 25°C. Temperatures below 10°C should be avoided since the adhesive becomes too hard and instantaneous adhesion is reduced. Following application, the foil has a working temperature range from -40° to +120°C continuous temperature load and 180°C short-time temperature load.

**Filter (7)**
A filter drawer is located underneath the appliance which can be pulled out from the front side.

**INDUC coil (30)**
Removal: Unscrew the 4 screws (31) and disconnect the leads from the power- and logic boards.
Installation: Proceed as described under “Removal” but in the reverse order.
Switch (15)
Removal: Pull the knob (40) off its spindle. Remove the two screws (30, 31). Extract the switch from the inside. Take off the wiring connections.
Installation: Proceed as described under “Removal” but in the reverse order.

Logic board (1)
Removal: Disconnect the leads. Take off the plastic clips (14) and nuts respectively.
Installation: Proceed as described under “Removal” but in the reverse order.

Power board (5)
The power circuit board is constructed as a unit with the heat sink and may only be replaced as a complete unit.
Removal: First remove the INDUC coil. Remove the deflector (26) fitted to the fan (16). Remove the sheet (40) by unscrew the nuts (21). Disconnect the leads from the power board. Take off the all nuts and screws. Pull the board out.
Installation: Proceed as described under “Removal” but in the reverse order.

Fan (16)
Removal: Undo the screws (45) from underneath the appliance. Disconnect the leads.
Installation: Proceed as described under “Removal” but in the reverse order.

Lamp (13)
Removal: Disconnect the leads. Remove the nut (50) from the inside of the appliance. The lamp can be pulled out of the front panel.
Installation: Proceed as described under “Removal” but in the reverse order.

Cable (45)
If the exchange of the cable is necessary, the wires of the supply (3P resp. P+N) must be wound around the ringshaped core (50).
7. FUNCTION CHECKS

7.1. In general
- After the maintenance of the appliance the serviceman must carry out a function check.
- To do that, pots should be used that are suitable and that were specially designed for induction cooking.
- To carry out a precise function test it is advisable to measure the current of a phase with an ampere-meter.
- The following two methods are used to check whether the cooking zone is operating:
  - measuring the phase current
  - checking how much the pot has been heated up
- For the function check the pots must contain some water.
- The level cooking zone and the WOK zone are tested with the same tests.

7.2. Pot recognition test
This test shows whether the generator operates properly with pots of a small diameter, and whether small metallic objects are heated up on the cooking zone. To carry out the test the following material is needed:
- induction pot with a bottom diameter of 12 cm or the smallest pot available for the level cooking zone or
- round steel disk with \( \varnothing \) 12 and 7 cm

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place pot or 12 cm disk on center of cooking zone</td>
<td>1 ... 9</td>
<td>Heating on, lamp lights</td>
</tr>
<tr>
<td>2</td>
<td>Move the pot away till its edge is on the center of the cooking zone or place 7 cm disc in the center</td>
<td>1 ... 9</td>
<td>Heating off, lamp off</td>
</tr>
</tbody>
</table>

7.3. Power control test
This test shows whether the power can be set throughout the whole range levels. For this test you need a pot with a bottom diameter of > 12 cm for the level cooking zone and a WOK pan for the WOK zone.

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place pot on cooking zone, wait till water boils</td>
<td>9</td>
<td>Heating on; water boils</td>
</tr>
<tr>
<td>2</td>
<td>Turn knob slowly to lower levels</td>
<td>9 ... 1</td>
<td>Heating power and phase current decreases continuously; water is not any more boiling</td>
</tr>
</tbody>
</table>

7.4. Test of maximum power rating
For this test you need a pot with a bottom diameter of > 28 cm for the level cooking zone and a WOK pan for the WOK zone. Two different tests are possible.

**Testing the cooking time**

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place pot filled with several liters of water (~20°C) on cooking zone</td>
<td>9</td>
<td>Heating on</td>
</tr>
<tr>
<td>2</td>
<td>Measure the time needed for the water to boil</td>
<td>9</td>
<td>The heating up time must be: 3.5 kW: approx. 150 sec./lit. 5.0 kW: approx. 120 sec./lit.</td>
</tr>
</tbody>
</table>

**Testing the current**

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place pot with water on cooking zone</td>
<td>9</td>
<td>Heating on</td>
</tr>
<tr>
<td>2</td>
<td>Measure the phase current</td>
<td>9</td>
<td>The phase current must be: 230/1N<del>V 3.5 kW: approx. 15.2 A 400/3N</del>V 5.0 kW approx. 7.2 A</td>
</tr>
</tbody>
</table>

7.5. Ventilation test
This test is used to check the fan, the fan control, and the degree of soiling. Before starting with the test, the generator must have cooled down. You need a pot with a bottom diameter > 28 cm for the level cooking zone or a WOK pan for the Wok bowl.

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place pot with water on cooking zone</td>
<td>9</td>
<td>Heating on</td>
</tr>
<tr>
<td>2</td>
<td>Measure the time needed for the fan to switch on</td>
<td>9</td>
<td>Time = approx. 6 - 8 min.</td>
</tr>
<tr>
<td>3</td>
<td>Continue cooking for about 30 min.</td>
<td>9</td>
<td>The heating must not be interrupted. The fan may switch off in between times.</td>
</tr>
<tr>
<td>4</td>
<td>Switched off the appliance</td>
<td>0</td>
<td>The fan stops operating immediately. The fan is without time delayed control.</td>
</tr>
</tbody>
</table>
8. FAULTS / RECTIFYING FAULTS

Attention: Before dismantling the appliance, the mains supply must be switched off by pulling out the plug.

When rectifying faults, the following must be observed:
Reparis must be carried out by authorised servicemen only. Always check the wiring before replacing a part of the appliance. Watch especially for the following faults:
- broken cables
- crushed cables
- damaged cable insulation

- poor solderings
No repairs must be carried out on the print plate. After each repair it is necessary to carry out maintenance work according to chapter 5 and a function test according to chapter 7.

The following is a list of the main faults, their possible causes, and the corresponding remedial measures.

8.1. TROUBLESHOOTING CHECK LIST
A suitable pan 1) with known characteristics should be used for the following tests.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary fuse blows during switching ON</td>
<td>Cooker wrong connected</td>
<td>Control connections</td>
</tr>
<tr>
<td></td>
<td>Short circuit on the power board</td>
<td>Control power board AP1</td>
</tr>
<tr>
<td></td>
<td>Short circuit in the wiring</td>
<td>Control the wiring</td>
</tr>
<tr>
<td>No heating indicator lamp is OFF (dark)</td>
<td>Control knob in OFF-position</td>
<td>Turn control knob ON (power switch ON)</td>
</tr>
<tr>
<td></td>
<td>Main switch defective</td>
<td>Control the voltage at clamps 5 and 6 (single phase supply) or 4, 5 and 6 (three phase supply) on the power board</td>
</tr>
<tr>
<td></td>
<td>No mains supply</td>
<td>Check preliminary fuses</td>
</tr>
<tr>
<td></td>
<td>Supply voltage too low</td>
<td>Check mains connection</td>
</tr>
<tr>
<td></td>
<td>Fuse(s) «logic supply» on the power board defective</td>
<td>Control fuses S1 and S2, replace (type 1AT)</td>
</tr>
<tr>
<td></td>
<td>Pan too small (bottom diameter less than 12 cm)</td>
<td>Use a suitable pan</td>
</tr>
<tr>
<td></td>
<td>Pan is not placed in the center of the heating area (the cooker can't detect the pan)</td>
<td>Move the pan to the center of the heating area</td>
</tr>
<tr>
<td></td>
<td>Unsuitable pan</td>
<td>Choose a pan which is recommended for induction cooking 1)</td>
</tr>
<tr>
<td></td>
<td>Power board defective</td>
<td>Control the power board AP2</td>
</tr>
<tr>
<td></td>
<td>Logic board defective</td>
<td>Control the logic board AL1</td>
</tr>
<tr>
<td></td>
<td>Power switch defective</td>
<td>Control power switch AO1</td>
</tr>
<tr>
<td></td>
<td>Temperature sensor coil defective</td>
<td>Control temperature sensor coil AT1</td>
</tr>
<tr>
<td>No heating with small pans</td>
<td>Pan detection wrong tuned</td>
<td>Control the logic board AL2</td>
</tr>
<tr>
<td>Poor heating, indicator lamp is ON (lights)</td>
<td>Used pan is not ideal</td>
<td>Use a pan which is recommended for induction cooking 1). Compare results with known pan</td>
</tr>
<tr>
<td></td>
<td>Power switch defective</td>
<td>Control power switch AO2</td>
</tr>
<tr>
<td></td>
<td>Air-cooling system obstructed</td>
<td>Verify, that air inlet and air outlet are not obstructed with objects</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature is too high (the cooling system is not able to keep the cooker in normal operating conditions 2)</td>
<td>Verify, that no hot air is sucked in by the fan. Reduce the ambient temperature. The temperature of the inlet air must not exceed 40°C.</td>
</tr>
<tr>
<td></td>
<td>One phase is missing (only with three phase supply)</td>
<td>Check preliminary fuses</td>
</tr>
<tr>
<td></td>
<td>Power board defective</td>
<td>Control the power board AP3</td>
</tr>
<tr>
<td></td>
<td>Logic board defective</td>
<td>Control the logic board AL3</td>
</tr>
<tr>
<td>No reaction to control knob positions</td>
<td>Power switch defective</td>
<td>Control power switch AO3</td>
</tr>
<tr>
<td>Heating switches off and on within minutes, fan is active</td>
<td>Air inlet or outlet obstructed</td>
<td>Remove objects from air inlet and air outlet slots, clean the slots</td>
</tr>
<tr>
<td></td>
<td>Fan dirty</td>
<td>Clean fan AF1</td>
</tr>
<tr>
<td>Fault</td>
<td>Possible Cause</td>
<td>Action</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Heating switches off and on within minutes, fan is never active</td>
<td>Fan defective fan control defective</td>
<td>Control fan</td>
</tr>
<tr>
<td>After a longer permanent operating time, the heating switches off and on within minutes</td>
<td>Coil overheated, cooking area too hot empty pan pan with overheated oil</td>
<td>Switch cooker off, remove pan and wait until the cooking area has cooled off.</td>
</tr>
<tr>
<td>Small metallic objects (e.g. spoon) are heated up within the cooking area</td>
<td>Pan detection wrong tuned</td>
<td>Control logic board</td>
</tr>
</tbody>
</table>

1) To verify, if the pan is suitable, use a permanent magnet and find out if it slightly sticks on the bottom of the pan. If not, your pan is not suitable for induction cooking.

2) The cooling-system (fan) starts to operate when the heat sink temperature exceeds 55°C. At heat sink temperatures higher than 70°C, the controller automatically reduces the power to keep the power unit in normal operating conditions. The cooker runs in a non continuous mode which can be heard.
8.2. RECTIFICATION
Detailed description of the actions to take (according to «Troubleshooting check list»)

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP1</td>
<td>Unplug the cooker from the mains supply. Check with an Ohmmeter for short circuit. Do the check with the power switch in ON- and OFF-position. Locate the short circuit. If it is on the power board, replace the power unit. Check the power switch.</td>
</tr>
<tr>
<td>AP2</td>
<td>Control the supply +24VDC. ST1/1: +24 VDC, ST1/4: GND (on power board and on logic board). If wrong, replace power unit. Control the signals &quot;enable&quot; (ST1/2) and &quot;low&quot; (ST1/3) **. If wrong, replace logic board. Test components (see «Component test»).</td>
</tr>
<tr>
<td>AP3</td>
<td>Control the signals 'low' (ST1/3) and 'high0' (ST1/5) **. If wrong, replace logic board, else test components on the power unit (see «Component test»).</td>
</tr>
<tr>
<td>AL1</td>
<td>Control the signals 'enable' (ST1/2) and 'low' (ST1/3) **. If wrong, replace logic board.</td>
</tr>
<tr>
<td>AL2</td>
<td>Replace logic board.</td>
</tr>
<tr>
<td>AL3</td>
<td>Control the signals 'low' (ST1/3) and 'high0' (ST1/5) **. If wrong, replace logic board, else replace power unit (see also AP3)</td>
</tr>
<tr>
<td>AL4</td>
<td>See AL2</td>
</tr>
</tbody>
</table>
| AO1 | Unplug the cooker from the mains supply. Disconnect ST4 on the logic board. Control the resistance (ST4/1 - ST4/2) with an Ohmmeter:  
control knob position | R (kOhm) |
| 0 | 0 ± 5% |
| 4 | 4 ± 5% |
| 9 | 9 ± 5% |
If wrong, replace the complete power switch. |
| AO2 | See AO1 |
| AO3 | See AO1 |
| AT1 | Unplug the cooker from the mains supply. Disconnect ST7 on the logic board. Control the resistance (ST7/1 - ST7/2) with an Ohmmeter:  
temp. Ceran plate | R (Ohm) |
| 25ºC / 80ºF | 980 ... 1000 |
| 100ºC / 210ºF | 1240 ... 1280 |
| 150ºC / 300ºF | 1410 ... 1450 |
| 200ºC / 390ºF | 1570 ... 1610 |
If out of range, replace the coil including temperature sensor. |
| AF1 | Disconnect and dismount the fan, clean it. |
| AF2 | Connect the signal 'venti0' (ST1/10) with GND (ST1/4): the fan must run. If no, fan defective, replace it, otherwise logic board defective, replace it. |

ST1/1 = plug 1, connection 1 on logic board  
GND = ground  
K016/K018 = designation of power and logic boards  
a) see «Signals connector ST1»

8.3. COMPONENT TEST

Power unit
Control of the functioning of the transistormodule and the rectifier.

Rectifier (S = view solder side of power board)  
Diode forward voltage \( U_r = \approx 0.5V \): if all forward voltages are about 0.5 V, the rectifier is functioning.  
A short circuit between '+' and '-' is a hint, that the transistormodule is defective.

Transistormodule (S = view solder side of power board)  
Diode forward voltage \( U_r = \approx 0.4V \): if all forward voltages are about 0.4 V, the transistormodule is functioning.  
A short circuit between C2-E2, C1-E1 and C1-E2 says that the transistormodule is defective.  
If the rectifier and/or the transistormodule seems to be defective, separate the power board K016 from the heat sink and test the rectifier and transistormodule without any connections.
Rectifier
The rectifier is disconnected from the power board, still mounted on the heat sink. How to disconnect, see «Replace power board».
Diode forward voltage $U_d = \text{approx. } 0.5V$: if all forward voltages are about 0.5 V, the rectifier is functioning.
Short circuit across individual diodes: Rectifier is defective

Transistor module
The transistor module is disconnected from the power board, still mounted on the heat sink. How to disconnect, see «Replace power board».
Diode forward voltage $U_d = \text{approx. } 0.4V$: if all forward voltages are about 0.4 V, the transistor module is functioning.
A short circuit between C2-E2, C1-E1 and C1-E2 says that the transistor module is defective. If the module is defective, check the diodes D7, D8, D9, and D10 against short circuit. Replace the power board, if you detect any short circuit.

9. EXCHANGE OF PARTS

Power board K016
(single phase, three phase)
Removal
- disconnect all plug connections on the power board: ST1
- disconnect all clamp connections on the power board:
  - single phase: L1, N, PE, 1, 2, 3, 4, 5, 6, 7, 8
  - three phase: L1, L2, L3, PE, 1, 2, 3, 4, 5, 6, 7, 8
- disconnect ST5 on logic board K018
- loose the soldered connections J16, J17, J18, J19 with the soldering iron
- loose the bolt M4 and the screw M4 in the corners of the board
- loose the connections to the transistor module, 3 screws M5x12
- loose the connections to the rectifier, 5 screws M4x16 (three phase) or 4 screws M4x16 (single phase). Watch for the spacers and washers: screw head - spring washer - spring washer - washer - spacer (place the two spring washers against one another).
- remove the power board

Installation
- place the board onto the bolts. Watch for the connections J16, J17, J18, J19: The four wires from the transistor module have to pass through the holes in the circuit board
- apply the screws to fix the rectifier, 5 screws M4x16 (three phase) or 4 screws M4x16 (single phase). Watch for the spacers and washers: screw head - spring washer - spring washer - washer - spacer (place the two spring washers against one another)
- do not yet fix the screws
- apply the screws to fix the transistor module, 3 screws M5x12. Don’t yet fix the screws
- fix the rectifier screws
- fix the transistor module screws. Fix them well, but not too strong
- fix the bolt M4 and the screw M4 in the corners of the board
- solder the connections J16, J17, J18, J19 with the solder plating
- connect all clamp connections on the power board:
  - single phase: L1, N, PE, 1, 2, 4, 5, 7, 8
  - three phase: L1, L2, L3, PE, 1, 2, 3, 4, 5, 6, 7, 8
- connect all plug connections on the power board: ST1
- connect ST5 on logic board K018
- connect the coil to A1 and A2 (screws)

Logic board
Removal
- disconnect all plug connections on the logic board: ST1, ST4, ST5, ST6, ST7, ST8
- loose the nut M3 and the 3 plastic bolts
- remove the logic board

Installation: Proceed as described under “Removal” but in the reverse order.

Transistor Module
First dismantle the power board K016
- loose the socket head cap screws
- remove the module from the heat sink
- clean the heat sink surface: remove the heat conduction paste, for example with methylated spirit
- apply a coat of heat conducting paste to the new transistor module. Make sure, that the whole bottom side of the module is well covered
- fix the module with the socket head cap screws on the heat sink.
- fit the power board K016

Recitifier
First dismantle the power board K016
- loose the screws
- remove the rectifier from the heat sink
- clean the heat sink surface: remove the heat conduction paste, for example with methylated spirit
- apply a coat of heat conducting paste to the new rectifier. Make sure, that the whole bottom side of the module is well covered
- fix the rectifier with the screws on the heat sink
- fit the power board K016

Fan
- remove cables from terminals K7/K8
- remove 4 screws from the bottom sheet
- remove the fan
Installation: Proceed as described under “Removal” but in the reverse order.

Temperature sensor heat sink
The sensor is mounted in the cable terminal which is fixed at the transistor module. Just replace the whole unit (cable terminal with sensor, cable and connector). First dismantle the power board K016
- loose the socket head cap screw on the transistor module
- remove the whole unit (cable terminal with sensor, cable and connector)
- remove the heat conduction paste, for example with methylated spirit
- apply a coat of heat conducting paste to the new cable terminal
- fix the cable terminal with the socket head cap screw on the transistor module.
- fit the power board K016
### 10. APPENDIX

#### 10.1. CONNECTIONS

**Components power board K016, 1 phase**

<table>
<thead>
<tr>
<th>clamp</th>
<th>signal/function</th>
<th>clamp</th>
<th>signal/function</th>
<th>connector</th>
<th>signal/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1, N, PE</td>
<td>mains 230VAC</td>
<td>1, 2</td>
<td>230VAC to circuit breaker</td>
<td>J14, J15</td>
<td>coil current</td>
</tr>
<tr>
<td>7, 8</td>
<td>supply fan, 230VAC</td>
<td>3, 4</td>
<td>230VAC from circuit breaker</td>
<td>ST1</td>
<td>signals to/from K018</td>
</tr>
</tbody>
</table>

**Components power board K016, 3 phase**

<table>
<thead>
<tr>
<th>clamp</th>
<th>signal/function</th>
<th>clamp</th>
<th>signal/function</th>
<th>connector</th>
<th>signal/function</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1, L2, L3, PE</td>
<td>mains 400VAC</td>
<td>1, 2, 3</td>
<td>400VAC to circuit breaker</td>
<td>J14, J15</td>
<td>coil current</td>
</tr>
<tr>
<td>7, 8</td>
<td>supply fan, 230VAC (via relay)</td>
<td>4, 5, 6</td>
<td>400VAC from circuit breaker</td>
<td>ST1</td>
<td>signals to/from K018</td>
</tr>
</tbody>
</table>

**Connection to/from powerboard K016**

![Diagram of connections](image-url)
Signals connector ST1

ST1 on power board K016 and ST1 on logic board K018 are directly connected (pin 1 to pin 1, pin 2 to pin 2 etc.). Thus the signals are identical.

<table>
<thead>
<tr>
<th>pin</th>
<th>signal name</th>
<th>short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+24 VDC</td>
<td>supply +24V for logic board</td>
</tr>
<tr>
<td>2</td>
<td>enable</td>
<td>control transistormodules: 0V, 5V</td>
</tr>
<tr>
<td>3</td>
<td>low</td>
<td>control transistormodules: 0V, 5V</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>logic-signal (High speed CMOS), frequency about 20 kHz</td>
</tr>
<tr>
<td>5</td>
<td>high0</td>
<td>logic-signal (High speed CMOS), frequency about 20 kHz</td>
</tr>
<tr>
<td>6</td>
<td>high1</td>
<td>not used</td>
</tr>
<tr>
<td>7</td>
<td>high2</td>
<td>not used</td>
</tr>
<tr>
<td>8</td>
<td>high3</td>
<td>not used</td>
</tr>
<tr>
<td>9</td>
<td>iph</td>
<td>signal, proportional to phase current, range -5V to +5V</td>
</tr>
<tr>
<td>10</td>
<td>venti0</td>
<td>activates the relay to start the cooling fan. active low, max. current 20mA</td>
</tr>
</tbody>
</table>

Connections to logic board C018
10.2. FURTHER DEVELOPMENT OF THERMA COMPACT INDUCTION COOKERS

10.2.1. MODIFICATIONS

Cycle time
The cycle time for power control, overcurrent and pan sensor has been substantially reduced. The power unit is thus better protected and operation is more stable.

Trim potentiometer on the power unit
Any tolerances on the power unit and the coil can be equalized.
- Coil power is adjusted with a trimmer. (Nominal value ILC)
- Maximum power is adjusted with a trimmer. (Nominal value IPH)

Trim potentiometer on the CPU pcb
3 parameters can be adjusted on the CPU pcb. Each relevant trim potentiometer can be activated with a jumper. If the jumper is set, the relevant parameter is adjusted with the trim potentiometer. The value set can be read off via the status display (q.v. “DIP switch settings, Display mode). If the jumper is not set, the parameter is set to the standard value. The appliance can be safely used with the standard values.

The following parameters can be adjusted:
- Basic frequency  1)
- Pan sensor
- Overcurrent  1)

1) The parameter setting of basic frequency and overcurrent is optional. In addition, it may only be carried out by trained personnel using special equipment.

Power limiter
Power is limited to 105% of the rated power.
This prevents the connected load from being exceeded.

Operating lamp
The green lamp (previously only “Operating lamp”) displays the different operating states such as: searching, power reduction and error messages with flashing code for all possible errors.

Status display on the CPU pcb
The 8 LEDs on the CPU pcb have a display function. A DIP switch is used to select the desired display mode. Display modes:
- Normal display with display of errors
- Actual value display of all sensors and currents

Same CPU pcb for a large number of appliances
The same CPU pcb can be used for various appliances. The type of appliance concerned is set with a DIP switch. If the trim potentiometers on the CPU pcb are activated, they must be set or deactivated by removing the jumpers.

10.2.2. COMPATIBILITY

Power print
1-phase appliances: C031a...
3-phase appliances: C016c...
The power pcb is not interchangeable with previous versions.

CPU pcb
c018d...
The CPU pcb is not interchangeable with previous versions.

Induction coil
The previous coil can no longer be used.
10.2.3. OPERATION, SETTINGS

3.1. DIP switch settings
The DIP switch on the CPU pcb is used to select the appliance and the display mode.

**SW1 - SW4: Display mode**
These switches are used to set what is shown on the status display (LED1 - LED8 on the CPU pcb). (Please refer to: “Status display on the CPU pcb”)

**NB:** The external operating lamp is coupled to LED1. For normal cooking operations, the display mode should always be set at the operating display (mode 0).

<table>
<thead>
<tr>
<th>SW-4</th>
<th>SW-3</th>
<th>SW-2</th>
<th>SW-1</th>
<th>Mode</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>Operating display (normal operation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Temperature, external, in [°C]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>on</td>
<td>2</td>
<td>Temperature, cooking zone, in [bit]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on</td>
<td></td>
<td>3</td>
<td>Temperature, cooling sheet, in [bit]</td>
</tr>
<tr>
<td></td>
<td>on</td>
<td></td>
<td></td>
<td>4</td>
<td>Temperature, interior, in [bit]</td>
</tr>
<tr>
<td></td>
<td>on</td>
<td>on</td>
<td></td>
<td>5</td>
<td>Value of the rotary power knob in [bit]</td>
</tr>
<tr>
<td></td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>6</td>
<td>Trim potentiometer pot1 setting in [bit]</td>
</tr>
<tr>
<td></td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>7</td>
<td>Trim potentiometer pot2 setting in [bit]</td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>8</td>
<td>Trim potentiometer pot3 setting in [bit]</td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>--</td>
<td>on</td>
<td>9</td>
<td>Coil current in [0.1A]</td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>on</td>
<td>--</td>
<td>10</td>
<td>Primary current in [bit]</td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>11</td>
<td>Nominal value of temperature, external, in [°C]</td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>--</td>
<td>on</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>--</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>15</td>
<td>Type of appliance</td>
</tr>
</tbody>
</table>

1) The [bit] values can be converted using tables into [°C] values.
2) The type of appliance is set using DIP switches SW5 - SW8. As this setting is the most important of all, it can be checked here.

**SW5 - SW8: Type of appliance**

<table>
<thead>
<tr>
<th>SW-8</th>
<th>SW-7</th>
<th>SW-6</th>
<th>SW-5</th>
<th>Nr.</th>
<th>Type of appliance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>IGL1AC230/3.5 – Vario Induc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>IGL3AC400/5.0 – Vario Induc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>IGL1AC230/3.5 – Vario Wok</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>IGL3AC400/5.0 – Vario Wok</td>
</tr>
<tr>
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<td></td>
<td>4</td>
<td></td>
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<td>5</td>
<td></td>
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<td>6</td>
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<td>10</td>
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<td>11</td>
<td></td>
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<td></td>
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<td>12</td>
<td></td>
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<td>13</td>
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<td>14</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Additional types of appliances are also being implemented.
3.2. Jumpers
9 jumpers are available on the CPU pcb.
The normal status of a jumper is off.
off = jumper not set
on = jumper set

JP-1 = On: trim potentiometer 3 (POT3) is active. Overcurrent can be adjusted with POT3. Turn CW = worse pans are accepted. 1)
JP-2 = On: trim potentiometer 2 (POT2) is active. The pan sensor can be adjusted with POT2. Turn CW = smaller pans are not recognized.
JP-3 = On: trim potentiometer 1 (POT1) is active. The basic frequency can be adjusted with POT1. Turn CW = basic frequency is increased. 1)
JP-4 = On: primary current measurement for 60Hz mains voltage.
JP-4 = Off: primary current measurement for 50Hz mains voltage.
JP-5 = On: switch off pan sensor. 1)
JP-6 = On: switch off current control. 1)
JP-7 = On: switch off power limiter. 1)
JP-8 = On: switch off overcurrent and undercurrent monitoring. 1)
JP-9 = Off: operation via rotary switch
JP-9 = On: operation via 9K rotary switch

1) These functions may only be activated by trained personnel and only for test purposes. They can damage the appliance if incorrectly implemented.

3.3. Operating lamp (external green lamp)
NB: The operating lamp is coupled to the CPU pcb with LED 1 on the status display. The operating lamp will only be meaningful when the display mode is set to “operating display” (q.v. “DIP switch settings”)

The following statuses are displayed:

Appliance is off
Lamp is OFF.
The appliance has no power or the rotary power knob is at 0.

Normal operation
Lamp is permanently ON.
Rotary power knob is at 1-10, pan is on the cooking zone

Search operation
Lamp flashes every second. (50ms ON, 950ms OFF)
Rotary power knob is at 1-10, there is no pan on the cooking zone

Power reduction
Lamp flashes every second (Lamp is ON in step with power output)
Rotary power knob is at 1-10, pan is on the cooking zone.
The appliance is only operating in clock mode with reduced power.

Error message
Lamp ON for 0.6 secs. A code sequence will then flash (1 flash means: 300ms OFF, then 200ms ON).
Rotary power knob is at 1-10
The error code can be read off the error messages table (q.v. “Status display”).
3.4. Status display on the CPU pcb

The 8 LEDs on the CPU pcb are used as a status display. The display mode is set using the DIP switches (q.v. “DIP switch settings”).

The display is binary.

Display modes 1 - 15

A value from 0 - 255 is shown in binary form. LED1 - LED8 have the following values:

<table>
<thead>
<tr>
<th>LED</th>
<th>Bit</th>
<th>Value</th>
<th>Colour</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED1</td>
<td>0</td>
<td>1</td>
<td>green</td>
<td>LSB</td>
</tr>
<tr>
<td>LED2</td>
<td>1</td>
<td>2</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td>LED3</td>
<td>2</td>
<td>4</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td>LED4</td>
<td>3</td>
<td>8</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td>LED5</td>
<td>4</td>
<td>16</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td>LED6</td>
<td>5</td>
<td>32</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td>LED7</td>
<td>6</td>
<td>64</td>
<td>red</td>
<td></td>
</tr>
<tr>
<td>LED8</td>
<td>7</td>
<td>128</td>
<td>red</td>
<td>MSB</td>
</tr>
</tbody>
</table>

Example: LED1, LED3, LED6, LED8 lights = 1 + 4 + 32 + 128 = 165

Display mode 0 (normal operation)

The 4 red LEDs (LEDs 5 - 8) are used to display errors in binary form. The lower number always has priority if several errors are displayed simultaneously.

ERROR MESSAGES

<table>
<thead>
<tr>
<th>LED 8</th>
<th>LED7</th>
<th>LED6</th>
<th>LED5</th>
<th>Code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td><strong>No errors, normal operation</strong></td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td>--</td>
<td>on</td>
<td>01</td>
<td><strong>No coil current, hardware overcurrent</strong></td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td>on</td>
<td>--</td>
<td>02</td>
<td><strong>High coil current, software overcurrent</strong></td>
</tr>
<tr>
<td>--</td>
<td>on</td>
<td>--</td>
<td>on</td>
<td>03</td>
<td><strong>Temperature of cooling sheet</strong></td>
</tr>
<tr>
<td>--</td>
<td>on</td>
<td>--</td>
<td>--</td>
<td>04</td>
<td><strong>Temperature of cooking zone</strong></td>
</tr>
<tr>
<td>--</td>
<td>on</td>
<td>on</td>
<td>--</td>
<td>05</td>
<td><strong>Rotary power knob, power cable breakage</strong></td>
</tr>
<tr>
<td>--</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>06</td>
<td><strong>Internal temperature</strong></td>
</tr>
<tr>
<td>--</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>07</td>
<td><strong>Cooking zone sensor short circuit</strong></td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>08</td>
<td><strong>External temperature sensor unplugged or faulty</strong></td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>--</td>
<td>on</td>
<td>09</td>
<td><strong>Error in operation with external temperature sensor</strong></td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>on</td>
<td>--</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>--</td>
<td>on</td>
<td>on</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>--</td>
<td>--</td>
<td>12</td>
<td><strong>Power reduction, cooling sheet temperature</strong></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>--</td>
<td>on</td>
<td>13</td>
<td><strong>Power reduction, cooking zone temperature</strong></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>--</td>
<td>14</td>
<td><strong>Power reduction due to bad pan</strong></td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>on</td>
<td>on</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

1) The appliance will not switch on again before the error has been acknowledged (turn the power potentiometer to the 0 position).
2) The appliance will continue to function normally but the cooking zone temperature is no longer being monitored.
3) The appliance continues to work at reduced power in clock mode. The error code is not sent serially to the operating lamp. The operating lamp flashes in step with the power output.