




# Troubleshooting

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<b>Fault code</b> <b>Fault Description</b>	<b>Cause</b> <b>• Remedial measures</b>
000 No fault	-----
010 Overvoltage --> disconnection	Overvoltage (>30 V) exists for a minimum of 20 seconds without interruption at the control unit - <i>HYDRONIC</i> not working. <ul style="list-style-type: none"><li>• Unplug 18-pin connector on the control unit and start up vehicle engine. Measure the voltage between PIN 15 (red 2.5 mm<sup>2</sup> cable) and PIN 16 (brown 2.5 mm<sup>2</sup> cable) if the voltage &gt;30 V --&gt; check alternator controller.</li></ul>
011 Undervoltage --> disconnection	Undervoltage (<19 V) exists for a minimum of 20 seconds without interruption at the control unit - <i>HYDRONIC</i> not working. <ul style="list-style-type: none"><li>• Pull out the 18-pin connector on the control unit, start up the vehicle engine, measure the voltage between PIN 15 (red 2.5 mm<sup>2</sup> cable) and PIN 16 (brown 2.5 mm<sup>2</sup> cable). The measured value and the voltage at the battery should not deviate. In the event of a voltage drop, check the fuses, the supply lines, the chassis earth connections and the positive terminal connection point of the battery for correct contact</li></ul>
012 Overheating	Safety thermal cutout sensor temperature >130°C <ul style="list-style-type: none"><li>• Check water circulation system:<ul style="list-style-type: none"><li>- Check all hose connections for leaks</li><li>- Bleed water circulation system</li><li>- Check valves in water circulation system and, if necessary, replace</li><li>- Temperature difference between water inlet and water outlet must &lt;10 K; if not, --&gt; check minimum throughput of the heating medium, see values in the Technical Data.</li></ul></li><li>• Check water pump and if necessary replace</li><li>• Check safety thermal cutout sensor and if necessary replace (see diagram on page 45)</li></ul>
014 Temperature difference between temperature sensor and safety thermal cutout sensor too big	Difference between measured values of temperature sensor and safety thermal cut-out sensor above permitted limits for an extended period. <ul style="list-style-type: none"><li>• Check mounting of both sensors, if necessary, tighten up sensors, tightening torque on both sensors 2.5 +0.5 Nm.</li><li>• Check temperature sensors and safety thermal cutout sensor (see diagrams, pages 44 and 45).</li><li>• Check minimum throughput of the heating medium. See values in the Technical Data.</li></ul>
015 Operation disable - control unit is locked	Fault code 012 "Overheating" has been displayed three times in succession --> fault code 015 displayed. Control unit unlocked by clearing the fault memory (see pages 26 to 29). <ul style="list-style-type: none"><li>• For remedial measures, see fault code 012.</li></ul>
016 Operation disable - control unit is locked	Fault code 058 "Flame during delayed shutoff" has been displayed three times in succession --> fault code 016 displayed. Control unit unlocked by clearing the fault memory (see pages 26 to 29). <ul style="list-style-type: none"><li>• For remedial measures, see fault code 058.</li></ul>

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020 Ignition spark generator - open circuit   <b>High voltage</b>	Control line from ignition spark generator to the control unit has open circuit or short circuit. <ul style="list-style-type: none"> <li>• Check cable section from the ignition spark generator to the control unit and, if necessary, eliminate open circuit or short circuit.</li> <li>• Check functioning of the ignition spark generator <b>only</b> with the test unit for burner head; if necessary, replace the ignition spark generator.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, --&gt; replace control unit.</li> </ul>
021 Ignition spark generator - ground leakage   <b>High voltage</b>	Control line from the ignition spark generator to the control unit has ground leakage. <ul style="list-style-type: none"> <li>• Check cable section from the ignition spark generator to the control unit and, if necessary, eliminate ground leakage.</li> <li>• Check functioning of the ignition spark generator <b>only</b> with the test unit for burner head; if necessary, replace the ignition spark generator.</li> <li>• If the fault could not be resolved by taking the remedial measures listed above, --&gt; replace control unit.</li> </ul>
025 Diagnostic output - short circuit	Blue / white 1 mm <sup>2</sup> cable from the 18-pin control unit connector, compartment 12 to the 8-pin cable harness connector, compartment 2 has short-circuit against +U <sub>B</sub> <ul style="list-style-type: none"> <li>• Check lead and connections and, if necessary, eliminate short circuit.</li> </ul>
032 Burner motor does not turn - on start-up 033 Burner motor does not turn - during operation   <b>Apply max. 12 V at burner motor</b>	Fan wheel is chafing or is blocked. Burner motor faulty. Generator voltage too low. <ul style="list-style-type: none"> <li>• Check that fan wheel is running freely.</li> <li>• Check lines and connections to the burner motor.</li> <li>• Check functioning of the installed burner motor <b>only</b> with the test unit for burner head; if necessary, replace the burner motor.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, --&gt; replace control unit.</li> </ul> Fuel pump is blocked. <ul style="list-style-type: none"> <li>• Check that fuel pump is running freely. If necessary, replace the burner.</li> </ul>
037 Water pump - fault	Check in advance: <ul style="list-style-type: none"> <li>• Is Bus 2000 water pump installed?</li> <li>• Is Bus 2000 water pump cable section "Diagnosis" connected?</li> <li>• Does the Bus 2000 water pump have any power?               <ul style="list-style-type: none"> <li>If yes - detach plug connection from the "Diagnosis" cable section. <i>Start HYDRONIC</i> - if fault code 037 is no longer displayed, then check the Bus 2000 water pump for dry running and / or for blockages.</li> <li>- If fault code 037 continues to be displayed, then apply the remedial measures described for the water pump (standard model).</li> </ul> </li> <li>• Water pump (normal model) is installed?               <ul style="list-style-type: none"> <li>If yes - detach plug connection from the "Water pump" cable section, apply power to the 2-pin connector on the "Water pump" cable section and check for correct functioning. If the water pump is functioning OK, then check fuse (15A), cable section and water pump connections --&gt; if fault code 037 continues to be displayed, then replace the control unit.</li> </ul> </li> </ul>

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Fault Description	• Remedial measures
039 Vehicle blower control - short circuit	Black 1 mm <sup>2</sup> cable from the 18-pin control unit connector, compartment 6 to the 8-pin cable harness connector, compartment 7, and from there to the blower relay has short-circuit. <ul style="list-style-type: none"> <li>• Check lead and connections and, if necessary, eliminate short circuit.</li> <li>• Check mounting of the relay.</li> <li>• Replace relay.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
044 Water pump - relay coil open circuit	<ul style="list-style-type: none"> <li>• Check mounting of the relay on the control unit.</li> </ul>
045 Water pump - relay coil short circuit	<ul style="list-style-type: none"> <li>• Replace relay.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
046 Solenoid valve - open circuit	"Solenoid valve" cable section from the control unit (connector position "D") to the solenoid valve has open circuit or ground leakage. <ul style="list-style-type: none"> <li>• Check leads and connections to solenoid valve, if necessary eliminate ground leakage.</li> <li>• Replace solenoid valve coil.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
047 Solenoid valve - short circuit	"Solenoid valve" cable section from the control unit (connector position "D") to the solenoid valve has short-circuit. <ul style="list-style-type: none"> <li>• Check leads and connections to solenoid valve, if necessary eliminate short circuit.</li> <li>• Replace solenoid valve coil.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
048 Nozzle holder heater - relay coil open circuit	<ul style="list-style-type: none"> <li>• Check mounting of the relay on the control unit.</li> </ul>
049 Nozzle holder heater - relay coil short circuit	<ul style="list-style-type: none"> <li>• Replace relay.</li> </ul>
050 Operation disable - control unit is locked	The control unit remains locked through 10 attempts at start-up without flame detection. Control unit unlocked by clearing the fault memory with modular timer, diagnostic unit or KD 2000 (see pages 26 to 29). <ul style="list-style-type: none"> <li>• For remedial measures, see fault code 052.</li> </ul>
051 Flame monitor reports "Flamme vor Brennstoff" [Flame without fuel]	<ul style="list-style-type: none"> <li>• Replace burner.</li> </ul>
052 No start or safety time overshoot	No flame was detected within the ignition phase. <ul style="list-style-type: none"> <li>• Check combustion air inlet and exhaust gas piping.</li> <li>• Check fuel supply (supply and return).</li> <li>• Check flame pipe to make sure it is correctly mounted in the heat exchanger.</li> <li>• Check functioning of the ignition spark generator <b>only</b> with the test unit for burner head; if necessary, replace the ignition spark generator.</li> <li>• Check ignition electrode, adjust and, if necessary, replace.</li> <li>• Check electric leads and connections.</li> <li>• Check flame monitor for dirt accumulation and, if necessary, clean.</li> <li>• Replace fuel atomizer nozzle.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>



**High voltage**  
**Take care when checking the**  
**ignition spark generator!**

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054 Flame loss during operation	<p><i>HYDRONIC</i> has ignited, detected the flame and reports flame loss twice within an operating period of 60 minutes.</p> <ul style="list-style-type: none"> <li>• Check fuel supply (supply and return).</li> <li>• Measure the amount of CO<sub>2</sub>.</li> <li>• Replace fuel atomizer nozzle.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
058 Flame not extinguished during delayed shutoff	<p>Flame monitor reports 30 seconds after delayed shutoff "ON" that the flame has not gone out.</p> <ul style="list-style-type: none"> <li>• Check heat exchanger and clean as necessary, then measure the amount of CO<sub>2</sub>.</li> <li>• Check solenoid valve with the test unit for burner head and, if necessary, replace.</li> <li>• If fuel continues to be delivered during the delayed shutoff --&gt; replace fuel pump.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
060 Temperature sensor - open circuit 061 Temperature sensor - short circuit	<p>Temperature outside operating range.</p> <ul style="list-style-type: none"> <li>• Check plug connection for temperature sensor and line to the control unit.</li> <li>• Check temperature sensor (see diagram on page 44).</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
071 Safety thermal cutout sensor - open circuit 072 Safety thermal cutout sensor - short circuit	<p>Temperature outside operating range.</p> <ul style="list-style-type: none"> <li>• Check plug connection for safety thermal cutout sensor and line to the control unit.</li> <li>• Check safety thermal cutout sensor (see diagram on page 45).</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>
081 Combustion indicator light - short circuit	<p>Yellow/white 1 mm<sup>2</sup> cable from the 18-pin control unit connector, compartment 8 to the 8-pin cable harness connector, compartment 3, and from there to the combustion indicator light has short-circuit.</p> <ul style="list-style-type: none"> <li>• Check lead and connections and, if necessary, eliminate short circuit.</li> <li>• Check combustion indicator light and, if necessary, replace.</li> </ul>
083 Fault indicator light - short circuit	<p>Green 1 mm<sup>2</sup> cable from the 18-pin control unit connector, compartment 5 to the 8-pin cable harness connector, compartment 6, and from there to the fault indicator light has short-circuit.</p> <ul style="list-style-type: none"> <li>• Check lead and connections and, if necessary, eliminate short circuit.</li> <li>• Check fault indicator light and, if necessary, replace.</li> </ul>
090, 092 Control unit faulty 093, 094 097	<ul style="list-style-type: none"> <li>• Replace control unit.</li> </ul>
091 External interference voltage	<p>Possible causes:</p> <ul style="list-style-type: none"> <li>• Incorrect setting of the ignition electrodes - adjust ignition electrodes. Remove battery charger or other source of interference voltage.</li> <li>• If the fault could not be eliminated by taking the remedial measures listed above, then replace control unit.</li> </ul>