



4 Troubleshooting


Fault code table

Fault code display	Fault description	Cause • Remedial action
000	No fault	--
010	Overvoltage cut-off	Overvoltage (> 30 volt) applied to control box for at least 20 seconds without interruption – heater not working. • Disconnect 18-pin connector at control box, start the vehicle's engine. Measure the voltage between PIN 15 (cable 2.5 ² rt) and PIN 16 (cable 2.5 ² br), if voltage > 30 volt → check generator controller.
011	Undervoltage cut-off	Under voltage (< 19 volt) applied to control box for at least 20 seconds without interruption – heater not working. • Disconnect 18-pin connector at control box, start the vehicle's engine. Measure the voltage between PIN 15 (cable 2.5 ² rt) and PIN 16 (cable 2.5 ² br). The measured value and the voltage at the battery should be the same. In case of a voltage drop, check the fuses, the supply cables, the negative connections and the positive support point on the battery for correct contact.
012	Overheating	Temperature at overheating sensor >130 °C. • Check water circuit: – Check all hose connections for leaks – Vent water circuit – Check valves in water circuit, replace if necessary – Temperature difference between water inlet and water outlet must be <10 K, if not → check minimum flow rate of the heating medium, see Technical Data for values. • Check water pump, replace if necessary. • Check overheating sensor, replace if necessary, see diagram on page 38.
014	Difference between the overheating and temperature sensor is too large	Difference between measured values of the temperature sensor and overheating sensor impermissibly high for a lengthy time. • Check installation of both sensors, tighten sensor if necessary, tightening torque for both sensors 2.5 Nm + 0.5 Nm. • Check temperature sensor and overheating sensor, see diagram on pages 37 and 38. • Check minimum throughput of the heating medium, see Technical Data for values.
015	Operating lock-out – control box is locked	Fault code 012 “Overheating” three times in succession → fault code 015 is displayed. Unlock the control box by deleting the fault memory, see pages 17 to 21. • For remedial action see fault code 012.
016	Operating lock-out – control box is locked	Fault code 058 “flame in after-run” three times in succession → fault code 016 is displayed. Unlock the control box by deleting the fault memory, see pages 17 to 21. • For remedial action see fault code 058.
020	Ignition spark generator interruption  Danger! High voltage!	Control lead from ignition spark generator to control box is interrupted or short-circuited. • Check cable loom from ignition spark generator to control box, if necessary remove interruption or short circuit. • Check function of the ignition spark generator only using the burner tester, replace ignition spark generator if necessary. • If faults are not corrected by the remedial action listed above → replace control box.
021	Ignition spark generator earth short  Danger! High voltage!	Earth short in control lead from ignition spark generator to control box. • Check cable loom from ignition spark generator to the control box, if necessary remove earth short. • Check function of the ignition spark generator only using the burner tester, replace ignition spark generator if necessary. • If faults are not corrected by the remedial action listed above → replace control box.




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025	Diagnosis output short circuit	Cable 1 ² bl/ws from 18-pin control box connector, chamber 12 to 8-pin cable harness connector, chamber 2 has short circuit with + U _B . • Check cable and connections, if necessary remove short circuit.
032	Burner motor does not rotate at start	Impeller chafes or is blocked. Burner motor is defective.
033	Burner motor does not rotate during operation  Apply max. 12 volt to burner motor	Generator voltage is too low. • Check impeller for free running. • Check cables and connections to burner motor. • Check function of the burner motor only using the burner tester, replace burner motor if necessary. • If faults are not corrected by the remedial action listed above → replace control box. Fuel pump is blocked. • Check fuel pump for free running, replace burner if necessary.
037	Water pump fault	Check first: • Water pump Bus 2000 / Flowtronic 6000 S is installed? • “Diagnosis” cable loom from the water pump Bus 2000 is connected? • Voltage applied to the Bus 2000 water pump? If yes – Disconnect plug-in connector from “diagnosis” cable loom. Start heater – If fault code 037 is no longer displayed, then check Bus 2000 water pump for dry running or blocking. – If fault code 037 is still displayed, then use remedial action as described for the water pump (standard design). • Water pump (standard design / Flowtronic 5000 / 5000 S) is installed? If yes – Disconnect plug-in connector from “water pump” cable loom, apply voltage to 2-pin connector of the “water pump” cable loom and check function. If the water pump is functioning ok, then check fuse (15 A), cable loom and connections of the water pump → if fault code 037 still displayed, then replace the control box.
039	Vehicle blower control short circuit	Cable 1 ² sw from 18-pin control box connector, chamber 6 to 8-pin cable harness connector, chamber 7, on to blower relay has short circuit. • Check cable and connections, if necessary remove short circuit. • Check installation of the relay. • Replace relay. • If faults are not corrected by the remedial action listed above, then replace control box.
044	Water pump Relay coil interruption	• Check installation of the relay at the control box. • Replace relay.
045	Water pump Relay coil short circuit	• If faults are not corrected by the remedial action listed above, then replace control box.
046	Solenoid valve interruption	“Solenoid valve” cable loom from control box (connector position “D”) to solenoid valve is interrupted or has earth short. • Check cables and connections from solenoid valve, remove earth short if necessary. • Replace solenoid valve coil. • If faults are not corrected by the remedial action listed above, then replace control box.
047	Solenoid valve short circuit	“Solenoid valve” cable loom from control box (connector position “D”) to solenoid valve has earth short. • Check cables and connections from solenoid valve, remove earth short if necessary. • Replace solenoid valve coil. • If faults are not corrected by the remedial action listed above, then replace control box.

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048	Nozzle block heating Relay coil interruption	<ul style="list-style-type: none"> • Check installation of the relay at the control box. • Replace relay.
049	Nozzle block heating Relay coil short circuit	
050	Operating lock-out Control box is locked	Control box locked by 10 start attempts without flame detection. Unlock the control box by deleting the fault memory, see pages 17 to 21. <ul style="list-style-type: none"> • For remedial action see fault code 052.
051	Flame monitor signals "Flame before fuel"	<ul style="list-style-type: none"> • Replace burner.
052	Safety time exceeded, no start  Danger! High voltage! Note when checking the ignition spark generator	No flame detected within the ignition phase. <ul style="list-style-type: none"> • Check combustion air inlet and exhaust system. • Check fuel supply (flow and return). • Check flame tube for correct installation in heat exchanger. • Check function of the ignition spark generator only using the burner tester, replace ignition spark generator if necessary. • Check distance between ignition electrodes, if necessary renew ignition electrodes. • Check electric cables and connections. • Check flame monitor for dirt, clean if necessary. • Replace fuel nozzle. • If faults are not corrected by the remedial action listed above, then replace control box.
054	Flame cutout during operation	Heater has ignited, the flame is detected and signals flame cutout twice within an operating time of 60 minutes. <ul style="list-style-type: none"> • Check fuel supply (flow and return). • Carry out CO₂ measurement. • Replace fuel nozzle. • If faults are not corrected by the remedial action listed above, then replace control box.
058	Flame does not extinguish during after-run	Flame monitor signals that flame has not extinguished 30 seconds after after-run "ON". <ul style="list-style-type: none"> • Check heat exchanger, clean if necessary, then take a CO₂ measurement. • Test the solenoid valve using the burner tester, replace if necessary. • If fuel continues to be pumped during after-run → replace fuel pump. • If faults are not corrected by the remedial action listed above, then replace control box.
060	Temperature sensor interruption	Temperature value outside operating range. <ul style="list-style-type: none"> • Check plug-in connection to the temperature sensor and cable to the control box. • Check temperature sensor, see diagram on page 37. • If faults are not corrected by the remedial action listed above, then replace control box.
061	Temperature sensor short circuit	
071	Overheating sensor interruption	Temperature value outside operating range. <ul style="list-style-type: none"> • Check plug-in connection to the overheating sensor and cable to the control box. • Check overheating sensor, see diagram on page 38. • If faults are not corrected by the remedial action listed above, then replace control box.
072	Overheating sensor short circuit	
081	Combustion indicator light short-circuit	Cable 1 ² ge/ws from 18-pin control box connector, chamber 8 to 8-pin cable harness connector, chamber 3, on up to combustion indicator light is short-circuited. <ul style="list-style-type: none"> • Check cable and connections, if necessary remove short circuit. • Check combustion indicator light, replace if necessary.



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083	Fault indicator light short circuit	Cable 1 ² gr from 18-pin control box connector, chamber 5 to 8-pin cable harness connector, chamber 6, on to fault indicator light is short-circuited. <ul style="list-style-type: none">• Check cable and connections, if necessary remove short circuit.• Check fault indicator light, replace if necessary.
090	Control box defective	<ul style="list-style-type: none">• Replace control box.
091	External interference voltages	Possible causes: <ul style="list-style-type: none">• Distance between ignition electrodes not ok → check distance between ignition electrodes, if necessary renew ignition electrodes.• Interference voltages from charger or other sources of interference → Remove interference voltages.• If faults are not corrected by the remedial action listed above, then replace control box.
092	Control box defective	<ul style="list-style-type: none">• Replace control box.
093		
094		
097		