

FAULT CODE	FAULT DESCRIPTION	COMMENTS & REMEDIAL ACTION
000	No faults	
004	Warning: Short circuit in control box, fresh air output	<ul style="list-style-type: none"> • Disconnect connector S1 / B1 at the heater and at the connector B1, PIN 16. • Check the cable up to the fresh air fan relay for short circuit to negative, - if ok -> replace control box.
005	Warning: Short circuit in control box, car alarm output	<ul style="list-style-type: none"> • Disconnect connector S1 / B1 at the heater and at the connector B1, PIN 15. • Check the cable up to the relay isolating switch or the car alarm input for short circuit to negative, - if ok -> replace control box.
009	ADR shutdown	ADR shutdown due to signal change from (+) to (-) at connector S1, PIN 13 (D+) or plus signal at connector S1, PIN 14 (HA+).
010	Overvoltage cutout	<p>Overvoltage applied to control box for at least 20 seconds without interruption – heater not working.</p> <ul style="list-style-type: none"> • Disconnect connector S1 / B1 at the heater. • Start the vehicle's engine. • Measure the voltage at connector B1 between PIN 1 (cable 2.52 rt) and PIN 10 (cable 2.52 br), <ul style="list-style-type: none"> - AIRTRONIC L 12 volt – voltage >16 volt —> check generator regulator. - AIRTRONIC L 24 volt – voltage >32 volt —> check generator regulator.
011	Undervoltage cutout	<p>Undervoltage applied to control box for at least 20 seconds without interruption – heater not working.</p> <ul style="list-style-type: none"> • Disconnect connector S1 / B1 at the heater. • With the vehicle's engine switched off, measure the voltage at connector B1 between PIN 1 (cable 2.52 rt) and PIN 10 (cable 2.52 br). <p>The measured value and the voltage at the battery should be the same.</p> <ul style="list-style-type: none"> • In case of a voltage drop, check the fuses, the supply cables, the negative connections and the positive support point on the battery for corrosion and correct contact.
012	Overheating at the overheating sensor (combination sensor)	<p>Temperature of the overheating sensor too high.</p> <ul style="list-style-type: none"> • Check hot air pipes for blockage -> remove blockage. • Sum of the component ratings of air-conducting parts is too large -> check air system, if necessary re-lay – for component ratings, please refer to additional parts catalogue. • Check overheating sensor, - if ok -> measure fuel quantity.

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013	Overheating at the flame sensor (combination sensor)	<p>Flame sensor signals temperature at heat exchanger is too high.</p> <ul style="list-style-type: none"> • Check hot air pipes for blockage → remove blockage. • Sum of the component ratings of air-conducting parts is too large, → check air system, if necessary re-lay. <ul style="list-style-type: none"> – for component ratings, please refer to additional parts catalogue. • Check flame sensor, <ul style="list-style-type: none"> - if ok → check overheating sensor, - if overheating sensor defective → replace combination sensor, - if overheating sensor ok → measure.
014	Temperature difference between flame sensor and overheating sensor too large	<p>Temperature difference between flame sensor and overheating sensor too large.</p> <ul style="list-style-type: none"> • Check hot air pipes for blockage → remove blockage. • Sum of the component ratings of air-conducting parts is too large → check air system, if necessary re-lay. <ul style="list-style-type: none"> – for component ratings, please refer to additional parts catalogue. • Check flame sensor, <ul style="list-style-type: none"> - if ok → check overheating sensor, - if overheating sensor defective → replace combination sensor, - if overheating sensor ok → measure fuel quantity, - if fuel quantity ok → replace control box.
015	Operating lock-out	<p>The fault code 015 is displayed, if the heater was switched back on after the fault code display 017. The hardware threshold value for the overheating sensor has been exceeded → the control box is locked.</p> <ul style="list-style-type: none"> • Switch off control box.
017	Overheating	<p>The hardware threshold value for the overheating sensor has been exceeded, because the control box failed to recognise the fault code 012 or 013 → the control box is locked. If the heater is switched on again, the fault code 015 is displayed.</p> <ul style="list-style-type: none"> • Switch off control box.
020	Glow plug – interruption	<ul style="list-style-type: none"> • Check glow plug is working and for continuity, <ul style="list-style-type: none"> - 12 V heater – approx. $0.6 \Omega \pm 0.04 \Omega$ (heat resistance). - 24 V heater – approx. $2 \Omega \pm 0.2 \Omega$ (heat resistance). • If the values of the continuity test and functional test are ok → check the glow plug's lead harness for damage and continuity, <ul style="list-style-type: none"> - if ok → replace control box.

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021	Glow plug output (-), overload or earth short circuit	<ul style="list-style-type: none"> • Check glow plug is working and for continuity, <ul style="list-style-type: none"> - 12 V heater – approx. $0.6 \Omega \pm 0.04 \Omega$ (heat resistance). - 24 V heater – approx. $2 \Omega \pm 0.2 \Omega$ (heat resistance) . • If the values of the continuity test and functional test are ok <ul style="list-style-type: none"> -> check the glow plug's lead harness for damage and continuity, - if ok -> replace control box.
022	Glow plug, output (+), short circuit after UB (battery voltage)	<ul style="list-style-type: none"> • Check glow plug lead harness for correct laying and damage, <ul style="list-style-type: none"> - if ok —> check lead harness for continuity, - if ok —> replace control box.
025	Diagnostics cable bl/ws – short circuit – after UB (battery voltage)	<p>This fault code cannot be displayed as the diagnostics cable is probably defective.</p> <ul style="list-style-type: none"> • Check diagnostics cable for correct laying and possible damage.
030	EMK blower motor outside the permissible range	<p>Impeller or combustion air blower motor blocked (frozen, soiled, sluggish, lead harness grinds against shaft end ...)</p> <ul style="list-style-type: none"> • Remove blockage. • Check wiring for short circuit. • Speed measurement of the combustion air blower motor: <ul style="list-style-type: none"> - Dismantle combustion air fan, see page 31. Heater 12 V: carry out test - with $11.3 \text{ volt} \pm 0.1 \text{ volt}$. Heater 24 V: carry out test with $23.6 \text{ volt} \pm 0.1 \text{ volt}$. - Remove the connector from the control box and apply voltage. - Apply marking (white paint) to the impeller and measure the speed using a non-contact r.p.m. counter. - If the measured speed in the "high" heating level is outside the range – Heater 12 V: $n = 4650\text{--}7000 \text{ rpm}$, Heater 24 V: $n = 4650\text{--}6500 \text{ rpm}$, then replace the combustion air fan, see page 31. - If the measured speed is within the range, then replace the control box.
031	Blower motor interruption	<ul style="list-style-type: none"> • Check that the lead harness of the blower motor has been correctly laid and for damage, <ul style="list-style-type: none"> - if ok -> remove lead harness at control box and check for continuity, - if ok -> replace control box.

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032	<p>Blower motor – earth short circuit.</p> <p>In the 12 V heater, carry out the functional check with max. 11.3 volt.</p> <p>In the 24 V heater, carry out the functional check with max. 23.6 volt.</p> <p>The component is destroyed if the voltage values are exceeded.</p> <p>Ensure the power pack has adequate short-circuit resistance – min. 20 A.</p>	<ul style="list-style-type: none"> • Carry out functional test on the blower motor, <ul style="list-style-type: none"> - to do this remove the connector from the control box. - apply a voltage of 11.3 v or 23.6 V ± 0.1 v to the blower motor and after 40 sec measure the current intensity. <ul style="list-style-type: none"> - Heater 12 V: current intensity < 9 A - Heater 24 V: current intensity < 4 A - if blower motor ok \rightarrow replace control box, see page 28. - Heater 12 volt: current intensity > 9 A - Heater 24 volt: current intensity > 4 A \rightarrow replace combustion air fan. • Check wiring for short circuit.
034	Blower motor outlet (+), short circuit after UB (battery voltage)	<ul style="list-style-type: none"> • Check that the lead harness of the blower motor has been correctly laid and check for damage, <ul style="list-style-type: none"> - if ok \rightarrow remove lead harness at control box and check for continuity, - if ok \rightarrow replace control box.
047	Metering pump short circuit or overload	<ul style="list-style-type: none"> • Remove connector from the metering pump, if the fault code 048 (interruption) is displayed the metering pump is defective. <ul style="list-style-type: none"> \rightarrow replace metering pump. • If the fault code 047 continues to be displayed, disconnect connector S1 / B1 at the heater, and at the connector B1, PIN 5 check the cable 12 gn / rt up to the metering pump for short circuit to negative (PIN 10), <ul style="list-style-type: none"> - if ok \rightarrow replace control box.
048	Metering pump interruption	<ul style="list-style-type: none"> • Remove connector from the metering pump and measure the resistance value of the metering pump (12 V = 9,5 Ω ± 0.5 Ω / 24 V = 36 Ω ± 1.8 Ω), <ul style="list-style-type: none"> - if resistance value ok \rightarrow reconnect cable loom to the metering pump. • Disconnect connector S1 / B1 at the heater and measure the resistance value between PIN 5 and PIN 10, <ul style="list-style-type: none"> - if ok \rightarrow replace control box.
049	Metering pump outlet (+), short circuit after UB (battery voltage)	<ul style="list-style-type: none"> • Check that the lead harness of the metering pump has been correctly laid and check for damage, <ul style="list-style-type: none"> • if ok \rightarrow remove lead harness and check for continuity, • if ok \rightarrow replace control box.

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050	Too many failed start attempts (operating lock-out)	<p>The control box locks after too many failed start attempts (max. 255 start attempts).</p> <ul style="list-style-type: none"> • Unlock the control box by deleting the fault memory using the EDiTH customer service program, diagnostic unit or various control units.
051	Flame detected when switching on	<p>If, after being switched on, the resistance value of the flame sensor is 1274 Ω (> 70 °C) the heater's fan runs for approx. 15 min to cool down, if the resistance does not fall below the aforementioned value within 15 min the heater is switched off.</p> <ul style="list-style-type: none"> • Check the flame sensor.
052	Safety time exceeded	<p>No flame detected during the start phase.</p> <ul style="list-style-type: none"> • Check exhaust and combustion air system. • Check fuel supply / measure fuel quantity. • Check spark plug (see fault code 020 and 021). • Check flame sensor, - if ok → replace control box.
053 054 055 056	Flame cutout in the „POWER“ control stage „HIGH“ control stage „MEDIUM“ control stage „LOW“ control stage	<p>The heater has ignited (flame detected) and signals flame cutout during a power stage.</p> <ul style="list-style-type: none"> • Check exhaust and combustion air system. • Check fuel supply / measure fuel quantity, see page 33. • Check flame sensor, for diagram and table of values please refer to page 30, - if ok → replace control box.
060	External room temperature sensor – interruption	<ul style="list-style-type: none"> • Disconnect the plug-in connection of the external room temperature sensor and measure the resistance value, see page 9 for diagram and values table, - if temperature sensor ok → reconnect plug-in connection. • Disconnect connector S1 / B1 at the heater and measure the resistance value in connector housing B1 between PIN 6 and PIN 12. - If an interruption exists the ohmic value between PIN 6 and PIN 12 > 3000 Ω. - If resistance value ok → replace control box.
061	External room temperature sensor – short circuit	<ul style="list-style-type: none"> • Disconnect plug-in connection of the external room temperature sensor, - if error code 060 is displayed → check external room temperature sensor, see page 9 for diagram and values table. - if external room temperature sensor ok → check the connection cables - 0.52 gr and 0.52 br/ws for short circuit, - if ok → reconnect plug-in connection. • Disconnect connector S1 / B1 at the heater and measure the resistance value in connector housing B1 between PIN 6 and PIN 12. - if a short circuit exists the ohmic value between PIN 6 and PIN 12 < 800 Ω. - if the error 061 continues to be displayed → replace control box.

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062	Control unit – interruption	<ul style="list-style-type: none"> Remove connector at the control unit and measure the resistance value of the setpoint potentiometer, for connector pins. <ul style="list-style-type: none"> - if the resistance value is ok → reconnect connector at the control unit. Disconnect connector S1 / B1 at the heater and measure the resistance value between PIN 6 and PIN 7 in the connector housing B1, <ul style="list-style-type: none"> - if resistance value is ok → replace control box, - Resistance value in case of interruption between PIN 6 and PIN 7 > 3000 Ω. - Normal value: 1750 Ω ±30 Ω – 2180 Ω ±80 Ω.
063	Control unit – short circuit Fault recognition only works in heating mode. If, on the other hand, the short circuit has already occurred and then the heater is switched on, „Ventilation“ is active (not a fault code).	<ul style="list-style-type: none"> If „Ventilate“ switch is installed, disconnect it and check it is working. <ul style="list-style-type: none"> - if ok → disconnect the connector at the control unit, - if error code 062 is displayed, replace control unit. If control unit ok → check connection cables 0.52 gr / rt and 0.52 br / ws for short circuit, <ul style="list-style-type: none"> - if ok → reconnect connector at control unit. Disconnect connector S1 / B1 at the heater, <ul style="list-style-type: none"> - if the error 063 continues to be displayed → replace control box. - Resistance value in case of short circuit between PIN 6 and PIN 7 < 800 Ω. - Normal values: 1750 Ω ±30 Ω – 2180 Ω ±80 Ω.
064	Flame sensor (combination sensor) – interruption	<ul style="list-style-type: none"> Dismantle control box and disconnect green connector from control box. Check flame sensor, for diagram and table of values, <ul style="list-style-type: none"> - if flame sensor ok → replace control box. - Resistance value in case of interruption > 3000 Ω.
065	Flame sensor (combination sensor) – short circuit	<ul style="list-style-type: none"> Dismantle control box, remove green connector from control box, <ul style="list-style-type: none"> - if error 064 is displayed → replace combination sensor. - if error 065 continues to be displayed → replace control box, - Resistance value in case of short circuit < 500 Ω.
071	Overheating sensor – interruption	<ul style="list-style-type: none"> Dismantle control box, disconnect blue and green connectors from control box. Measure resistance value at the blue connector PIN 1 (cable 0.52 bl) and at the green connector PIN 2 (cable 0.52 br / ws), <ul style="list-style-type: none"> - if ok → replace control box, - Resistance value in case of interruption >700 kΩ.
072	Overheating sensor – short circuit	<ul style="list-style-type: none"> Dismantle control box, remove blue connector from control box, <ul style="list-style-type: none"> - if error 071 is displayed → replace combination sensor, see Page 27. - if error 072 continues to be displayed → replace control box. - Resistance value in case of short circuit < 120 Ω,
074	Control box defective	<ul style="list-style-type: none"> Overheating threshold value is not detected by control box → replace control box.

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090	Control box defective (internal fault)	Replace control box.
092	Control box defective (ROM error)	Replace control box.
093	Control box defective	Replace control box.
094	Control box defective (EEPROM error)	Replace control box.
095	Control box defective	Replace control box.
096	Internal temperature sensor defective	Replace control box or use external room temperature sensor.
097	Control box defective	Replace control box.
098	Control box defective	Replace control box.
099	Too many resets in sequence Transistor error in control box	<ul style="list-style-type: none"> • Voltage short-term < 5 – 6 volt (for 12 volt) or < 7 – 8 volt (for 24 volt). • In case of a voltage drop, check the fuses, the supply cables, the negative connections and the positive support point on the battery for corrosion and correct contact. • Test control box with testing device, <ul style="list-style-type: none"> - if ok —> check lead harness of the external components has been correctly laid and check for damage, - if ok —> check lead harness for continuity, - if ok —> replace control box.