

# HYDRONIC B5 W SC FAULT CODES

ERROR CODES AND REMEDIES

Eberspächer

EN

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The troubleshooting and repair instructions are valid for the following engine-independent water heaters:

## Heaters for petrol

	Order No.
B 4 W SC – 12 volt	20 1821 01 00 00
B 5 W SC – 12 volt	20 1820 01 00 00








## 4 Troubleshooting


Error code Display	Fault description	Explanations • Remedies
010	Overvoltage – shutdown	<p>Overvoltage at controller min. 20 seconds without interruption --&gt; <i>HYDRONIC</i> does not function.</p> <ul style="list-style-type: none"> <li>• Disconnect connection B1/S1, start vehicle engine, measure voltage in connector B1 between chamber 1 (cable 2.5<sup>2</sup> red) and chamber 2 (cable 2.5<sup>2</sup> brown). If the voltage &gt; 15 volt, then check the dynamo regulator or battery.</li> </ul>
011	Undervoltage – shutdown	<p>Undervoltage at controller min. 20 seconds without interruption --&gt; <i>HYDRONIC</i> does not function.</p> <ul style="list-style-type: none"> <li>• Disconnect connection B1/S1, vehicle engine is off, measure voltage in connector B1 between chamber 1 (cable 2.5<sup>2</sup> red) and chamber 2 (cable 2.5<sup>2</sup> brown). If voltage &lt; 10 volt, then check fuses, supply lines, ground connections and plus points on battery for loss of voltage (corrosion).</li> </ul>
012	Overheating (software – threshold value)	<p>Temperature at overheating sensor &gt; 125°C.</p> <ul style="list-style-type: none"> <li>• Check water circuit;                             <ul style="list-style-type: none"> <li>– Check all hoses for any leaks</li> <li>– Is there a throttle in the water circuit?</li> <li>– Has the direction of flow been observed when installing thermostat and non-return valve?</li> <li>– Is the water circuit properly vented?</li> <li>– Check functions of water pump</li> </ul> </li> <li>• Check temperature sensor and overheating sensor, replace if necessary – control values see page 38.</li> </ul>
014	Possible overheating detected (differential evaluation)	<p>Difference in temperature values of overheating sensor and temperature sensor &gt; 25 K. Prerequisite for this error code is that <i>HYDRONIC</i> is operating and the water temperature at the overheating sensor has reached min. 80°C.</p> <ul style="list-style-type: none"> <li>• Check water circuit:                             <ul style="list-style-type: none"> <li>– Check all hoses for any leaks</li> <li>– Is there a throttle in the water circuit?</li> <li>– Has the direction of flow been observed when installing thermostat and non-return valve?</li> <li>– Is the water circuit properly vented?</li> <li>– Check functions of water pump</li> </ul> </li> <li>• Check temperature sensor and overheating sensor, replace if necessary – control values see page 38.</li> </ul>
015	Operation lock – heater has overheated more than 10 times	<p>Controller is locked</p> <ul style="list-style-type: none"> <li>• Unlock controller by deleting fault memory (see page 18 to 21).</li> <li>• Check water circuit                             <ul style="list-style-type: none"> <li>– Check all hoses for any leaks</li> <li>– Is there a throttle in the water circuit?</li> <li>– Has the direction of flow been observed when installing thermostat and non-return valve?</li> <li>– Is the water circuit properly vented?</li> <li>– Check functions of water pump.</li> </ul> </li> </ul>

## 4 Troubleshooting

Error code Display	Fault description	Explanations • Remedies
017	Overheating detected – EMERGENCY OFF (hardware limit value)	Temperature at overheating sensor > 130°C. <ul style="list-style-type: none"> <li>• Check water circuit:                             <ul style="list-style-type: none"> <li>– Check all hoses for any leaks.</li> <li>– Is there a throttle in the water circuit?</li> <li>– Has the direction of flow been observed when installing thermostat and non-return valve?</li> <li>– Is the water circuit properly vented?</li> <li>– Check functions of water pump.</li> </ul> </li> <li>• Check temperature sensor and overheating sensor, replace if necessary – control values see page 38.</li> </ul>
020	Glow plug – interruption	<ul style="list-style-type: none"> <li>• Perform function test of glow plug in installed condition. To do so, unclip cable 1.5<sup>2</sup> white from chamber 9 of the 14-pole connector and cable 1.5<sup>2</sup> brown from chamber 12. Apply voltage of 8 V ± 0.1 V to the glow plug and measure current after 25 sec. The glow plug is OK with the following values; if the values differ, replace the glow plug. Glow plug 8 volt – current = 8.5 A <sup>+1A</sup> <sub>-1.5A</sub></li> <li>• If glow plus is OK, check glow plug lead for any signs of damage, check for current passage.</li> </ul>
021	Glow plug output: short circuit, overload or accidental ground   <b>Caution</b> In <i>HYDRONIC</i> 12 volt, perform the function test with max. 8 volt. Glow plug destroyed if voltage values exceeded. → Ensure mains adapter is short-circuit proof.	
030	Speed of combustion fan motor outside tolerance range.   <b>Caution</b> In <i>HYDRONIC</i> 12 volt, perform the function test with max. 8.2 volt + 0.2 volt. Check that plus an minus leads are connected correctly. → Ensure mains adapter is short-circuit proof.	Fan impeller of combustion air fan motor blocked (frozen, dirty, stiff, lead chafes at end of shaft ...). <ul style="list-style-type: none"> <li>• Remove blockage.</li> <li>• Measure speed of combustion air fan motor with max. 8.2 volt + 0.2 volt. To do so, unclip cable 0.75<sup>2</sup> brown from chamber 14 of 14-pole connector and cable 0.75<sup>2</sup> black from chamber 13. Affix a marking to the shaft end of the combustion air fan motor and measure the speed with a contact-free speed counter (see page 38). If the measured speed &lt; 10 000 rpm, then replace the combustion air fan. If the measured speed &gt; 10 000 rpm, then replace the controller.</li> </ul>
031	Combustion air motor – interruption   <b>Caution</b> In <i>HYDRONIC</i> 12 volt, perform the function test with max. 8.2 volt + 0.2 volt. Check that plus an minus leads are connected correctly. → Ensure mains adapter is short-circuit proof.	<ul style="list-style-type: none"> <li>• Check that the cable harness of the combustion air fan motor is properly routed and check for any signs of damage.</li> <li>• Measure speed of combustion air fan motor with max. 8.2 volt + 0.2 volt. To do so, unclip cable 0.75<sup>2</sup> brown from chamber 14 of 14-pole connector and cable 0.75<sup>2</sup> black from chamber 13. Affix a marking to the shaft end of the combustion air fan motor and measure the speed with a contact-free speed counter (see page 38). If the measured speed &lt; 10 000 rpm, then replace the combustion air fan. If the measured speed &gt; 10 000 rpm, then replace the controller.</li> </ul>



## 4 Troubleshooting

Error code Display	Fault description	Explanations • Remedies
032	<p>Combustion air motor – short circuit, overload or accidental ground</p> <p> <b>Caution</b> In <i>HYDRONIC</i> 12 volt, perform the function test with max. 8.2 volt + 0.2 volt. Check that plus an minus leads are connected correctly. → Ensure mains adapter is short-circuit proof.</p>	<p>Fan impeller of combustion air fan motor blocked (frozen, dirty, stiff, lead chafes at end of shaft ...).</p> <ul style="list-style-type: none"> <li>• Remove blockage.</li> <li>• Before checking the functions of the combustion air fan motor, perform a resistance measurement between housing and lead. If the measured resistance &lt; 2 kΩ, then there is accidental ground. Replace the combustion air fan. If the measured value is &gt; 2 kΩ, then measure the speed of the combustion air fan motor.</li> <li>• Measure speed of combustion air fan motor with max. 8.2 volt + 0.2 volt. To do so, unclip cable 0.75<sup>2</sup> brown from chamber 14 of 14-pole connector and cable 0.75<sup>2</sup> black# from chamber 13. Affix a marking to the shaft end of the combustion air fan# motor and measure the speed with a contact-free speed# counter (see page 36). If the measured speed &lt; 10 000 rpm, then replace the combustion air fan. If the measured speed &gt; 10 000 rpm, then replace the controller.</li> </ul>
038	<p>Relay trigger of vehicle fan – interruption</p> <p><b>Please note</b> This fault code is not displayed by all types of heaters.</p>	<ul style="list-style-type: none"> <li>• Check electric lead to relay, rectify interruption, replace relay if necessary.</li> </ul>
039	<p>Relay trigger of vehicle fan – short circuit, overload or accidental ground</p>	<ul style="list-style-type: none"> <li>• Pull relay off; if error code 038 is then shown, the relay is defect – replace relay.</li> </ul>
041	<p>Water pump – interruption</p>	<ul style="list-style-type: none"> <li>• Check lead to water pump for current passage. To do so, unclip cable 0.5<sup>2</sup> brown from chamber 10 of 14-pole connector and cable 0.5<sup>2</sup> from cable 11. Rectify interruption, replace water pump if necessary.</li> </ul>
042	<p>Water pump – short circuit, overload or accidental ground</p>	<ul style="list-style-type: none"> <li>• Disconnect connection in water pump cable harness. If error code 041 is then shown, the water pump is defect – replace water pump.</li> </ul>
047	<p>Dosing pump – short circuit, overload or accidental ground</p>	<ul style="list-style-type: none"> <li>• Disconnect connection in dosing pump cable harness. If error code 048 is then shown, the dosing pump is defect – replace dosing pump.</li> </ul>
048	<p>Dosing pump – interruption</p>	<ul style="list-style-type: none"> <li>• Check dosing pump cable harness for current passage. Rectify interruption, replace dosing pump if necessary.</li> </ul>
050	<p>Operation lock because of too many failed starting attempts (10 starting attempts, also start repetition for every starting attempt)</p>	<p>Too many starting attempts, controller locked.</p> <ul style="list-style-type: none"> <li>• Unlock controller by deleting fault memory (see page 18 to 21).</li> <li>• Check fuel quantity and fuel supply, see page 41.</li> </ul>

## 4 Troubleshooting

Error code Display	Fault description	Explanations • Remedies
051	Time exceeded – blowing cold	At start, flame sensor reports temperature > 70°C for longer than 240°C. <ul style="list-style-type: none"> <li>• Check exhaust and combustion air guidance.</li> <li>• Check flame sensor – control values see page 34.</li> </ul>
052	Safety time exceeded	<ul style="list-style-type: none"> <li>• Check exhaust and combustion air guidance.</li> <li>• Check fuel quantity and fuel supply, see page 41.</li> <li>• Clean or replace filter in dosing pump connection.</li> </ul>
053	Flame aborted from control stage “large”	<p><b>Warning</b></p> After flame aborted from control stage “large” or “small” and after starting attempt within allowed number, <i>HYDRONIC</i> proceeds with a new start, where applicable with subsequent start repeat.                     If the new start or start repeat is successful, the error code is deleted. <p><b>Error</b> (because no more starting attempts allowed)</p> <ul style="list-style-type: none"> <li>• Check exhaust and combustion air guidance.</li> <li>• Check fuel quantity and fuel supply, see page 41.</li> <li>• Check flame sensor, see error code 064 and 065.</li> </ul>
056	Flame aborted from control stage “small”	
060	Temperature sensor – interruption  <div data-bbox="229 1122 411 1158" style="border: 1px solid black; padding: 2px; width: fit-content;"> <b>Please note</b> </div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of temperature sensor for any signs of damage. If the lead is OK, then short the temperature sensor: route the cable in the 14-pole connector from chamber 3 to chamber 4.</li> </ul> Switch <i>HYDRONIC</i> on: <ul style="list-style-type: none"> <li>– If error code 061 appears, then remove and check temperature sensor, see page 38.</li> <li>– If error code 060 still appears, then check and if necessary replace controller.</li> </ul>
061	Temperature sensor – short-circuit, overload or accidental ground  <div data-bbox="229 1464 411 1500" style="border: 1px solid black; padding: 2px; width: fit-content;"> <b>Please note</b> </div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of temperature sensor for any signs of damage. If the lead is OK, then remove the 14-pole connector from controller, unclip cable 0.5<sup>2</sup> blue from chamber 3 and cable 0.5<sup>2</sup> blue from chamber 4.</li> </ul> Connect 14-pole connector to controller and switch <i>HYDRONIC</i> on. <ul style="list-style-type: none"> <li>– If error code 061 appears, then remove and check temperature sensor, see page 38.</li> <li>– If error code 061 appears, then check and if necessary replace controller.</li> </ul>



## 4 Troubleshooting

Error code Display	Fault description	Explanations • Remedies
064	Flame sensor – interruption  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;"><b>Please note</b></div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of flame sensor for any signs of damage. If the lead is OK, then short the flame sensor: route the cable in the 14-pole connector from chamber 1 to chamber 2. Switch <i>HYDRONIC</i> on:                             <ul style="list-style-type: none"> <li>– If error code 065 appears, then remove and check flame sensor, see page 34.</li> <li>– If error code 064 still appears, then check and if necessary replace controller.</li> </ul> </li> </ul>
065	Flame sensor – short-circuit, overload or accidental ground  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;"><b>Please note</b></div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of flame sensor for any signs of damage. If the lead is OK, then remove the 14-pole connector from controller, unclip cable 0.5<sup>2</sup> blue from chamber 1 and cable 0.5<sup>2</sup> brown from chamber 2. Connect 14-pole connector to controller and switch <i>HYDRONIC</i> on.                             <ul style="list-style-type: none"> <li>– If error code 064 appears, then remove and check flame sensor, see page 34.</li> <li>– If error code 065 appears, then check and if necessary replace controller.</li> </ul> </li> </ul>
071	Overheating sensor – interruption  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;"><b>Please note</b></div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of overheating sensor for any signs of damage. If the lead is OK, then short the overheating sensor: route the cable in the 14-pole connector from chamber 5 to chamber 6. Switch <i>HYDRONIC</i> on:                             <ul style="list-style-type: none"> <li>– If error code 072 appears, then remove and check overheating sensor, see page 38.</li> <li>– If error code 071 still appears, then check and if necessary replace controller.</li> </ul> </li> </ul>
072	Overheating sensor – short-circuit, overload or accidental ground  <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;"><b>Please note</b></div> The test with a bridge in the 14-pole connector can only be performed if <i>HYDRONIC</i> is still installed in the vehicle or if a test facility is available.	<ul style="list-style-type: none"> <li>• Remove controller and check connection lead of overheating sensor for any signs of damage. If the lead is OK, then remove the 14-pole connector from controller, unclip cable 0.5<sup>2</sup> red from chamber 5 and cable 0.5<sup>2</sup> red from chamber 6. Connect 14-pole connector to controller and switch <i>HYDRONIC</i> on.                             <ul style="list-style-type: none"> <li>– If error code 071 appears, then remove and check overheating sensor, see page 38.</li> <li>– If error code 072 appears, then check and if necessary replace controller.</li> </ul> </li> </ul>
090 092–103	Controller defect	Replace controller.
091	External interference voltage	Error in controller from interference voltage from vehicle network, possible causes: poor batteries, poor battery chargers, other interference sources; eliminate interference voltages.

## 4 Troubleshooting

### Faults not shown by the diagnosis system

Fault description	Explanations • Remedies
<i>HYDRONIC</i> won't start	<p>After switching <i>HYDRONIC</i> on, the water pump and vehicle fan start immediately.</p> <ul style="list-style-type: none"><li>• Remove and check temperature sensor, see page 38.</li></ul> <p>After switching <i>HYDRONIC</i> on, the vehicle fan starts, function "pre-venting" is activated.</p> <ul style="list-style-type: none"><li>• Changeover venting to heating at "heating / venting" changeover switch.</li></ul>