Checking additional coolant heating system, manual transmission only, engine code AHH

Function:

The additional coolant heater is an electrical heater in the engine coolant circuit. It's function is to additionally heat the coolant after a cold start, during the warm up phase and in heavy city traffic or traffic jams.

The additional coolant heating system is controlled by the Diesel Direct Fuel Injection (DFI) Engine Control Module (ECM) / (J248).

The driver has no influence on the activation or deactivation of the coolant heating system.

The switching conditions and heater output are dependant on the outside temperature, coolant temperature and electrical load of the generator.

Required for troubleshooting:

- ♦ Multimeter Fluke 83
- ♦ Connector Test Kit VW 1594
- ♦ Test Box 1598 A
- Valid wiring diagram

Before starting troubleshooting, battery negative terminal must be securely tighted.

Test conditions:

- ♦ Battery voltage **OK**
- ♦ S102 Fuse (15A) **OK**
- ♦ S109 Fuse (25A) **OK**
- ♦ S143 Fuse (50A) OK
- ◆ Diagnostic Trouble Code (DTC) memory of Diesel Direct Fuel Injection (DFI) Engine Control Module (ECM) / (J248) checked, all malfunctions eleminated, DTC memory checked again ⇒ Repair Group 01.

CAUTION!

DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Always use connector test kit VW 1594 to make the necessary electrical connections.

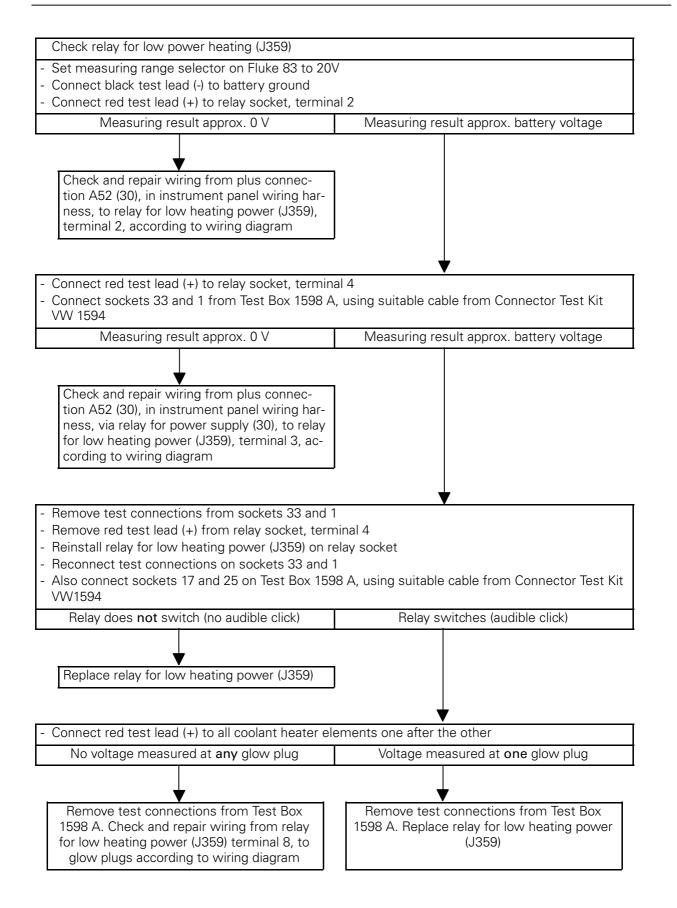
Preparation:

- Switch ignition OFF
- Disconnect connector, 80-point, from Diesel Direct Injection Control Module (DFI) Engine Control Module (ECM) / (J248), in protective housing for control module and connect to Test Box 1598/22
- Remove relay for low heating power (J359) and relay for high heating power (J360) from their relay locations in protective housing for control module

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Troubleshooting starts on next page.

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Rectify any wiring malfunctions determined above and continue test \Rightarrow next page

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Check relay for high power heating (J360)	
Connect red test lead (+) to relay socket, termin	al 1
Measuring result approx. 0 V	Measuring result approx. battery voltage
Check and repair wiring from battery positive	1
terminal (A/+) to relay for high heating power	
(J360), terminal 1, according to wiring dia-	
gram	
	\perp
- Connect red test lead (+) to relay socket, termin	al 3
- Connect sockets 33 and 1 from Test Box 1598 A	
VW 1594	
Measuring result approx. 0 V	Measuring result approx. battery voltage
	,
Check and repair wiring from plus connec- tion A52 (30), in instrument panel	
wiring harness, via relay for power supply	
(30), to relay for high heating power (J360), terminal 3, according to wiring diagram	
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