

DTC B1D22:11, B1D22:13 [FULL-AUTO AIR CONDITIONER]

id0702c1731600

System malfunction location	<ul style="list-style-type: none"> • B1D22:11: Heater core temperature sensor circuit short to ground • B1D22:13: Heater core temperature sensor circuit open
Detection condition	<ul style="list-style-type: none"> • Malfunction in wiring harness between heater core temperature sensor and climate control unit
Fail-safe	<ul style="list-style-type: none"> • Heater core temperature sensor input value is fixed at 50 °C {122 °F}.
Possible cause	<ul style="list-style-type: none"> • Connector or terminal malfunction • Heater core temperature sensor malfunction • Open circuit in wiring harness between climate control unit and heater core temperature sensor • Short to ground in wiring harness between climate control unit and heater core temperature sensor • Climate control unit malfunction
<div> <div> </div> <div> </div> <div> </div> </div>	

Diagnostic Procedure

STEP	INSPECTION	ACTION	
1	INSPECT HEATER CORE TEMPERATURE SENSOR CONNECTOR <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) • Disconnect the heater core temperature sensor connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal? 	Yes	Go to the next step.
		No	Repair/replace the connector or terminal. After repair procedure, go to the next step.
2	INSPECT HEATER CORE TEMPERATURE SENSOR <ul style="list-style-type: none"> • Inspect the heater core temperature sensor. (See HEATER CORE TEMPERATURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) • Is it normal? 	Yes	Go to the next step.
		No	Replace the heater core temperature sensor. (See HEATER CORE TEMPERATURE SENSOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.

STEP	INSPECTION	ACTION	
3	INSPECT HEATER CORE TEMPERATURE SENSOR CIRCUIT FOR OPEN CIRCUIT <ul style="list-style-type: none"> • Disconnect the climate control unit connector and the heater core temperature sensor connector. • Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> — Climate control unit terminal 1L—heater core temperature sensor terminal B — Climate control unit terminal 1X—heater core temperature sensor terminal A • Is there continuity? 	Yes	Go to the next step.
		No	Repair the wiring harness. Go to the next step.
4	INSPECT HEATER CORE TEMPERATURE SENSOR CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> • Inspect for continuity between the following terminals (wiring harness-side) and body ground: <ul style="list-style-type: none"> — Climate control unit 1L • Is there continuity? 	Yes	Repair the wiring harness. Go to the next step.
		No	Connect the climate control unit connector, then go to the next step.
5	VERIFY CLIMATE CONTROL UNIT CONNECTOR CONDITION <ul style="list-style-type: none"> • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal? 	Yes	Go to the next step.
		No	Repair/replace the malfunctioning vehicle wiring harness, connector, or terminal. After repair procedure, go to the next step.
6	INSPECT HEATER CORE TEMPERATURE SENSOR CIRCUIT <ul style="list-style-type: none"> • Connect the climate control unit connector. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off or on). • Inspect the voltage at the following climate control unit terminal (wiring harness-side): <ul style="list-style-type: none"> — Terminal 1L (heater core temperature sensor input signal) • Is the voltage normal? (Approx. 5 V) 	Yes	The system is normal at present. Go to the next step.
		No	Go to the next step.
7	VERIFY THAT SAME DTC IS NOT OUTPUT AGAIN <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery cable. • Reconnect the disconnected connectors. • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Clear the past malfunction from memory. • Verify DTCs. • Is DTC B1D22:11 or B1D22:13 output? 	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> • If the malfunction does not recur, go to the next step. • If the malfunction recurs, replace the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/ INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.
		No	Go to the next step.
8	VERIFY THAT NO OTHER DTCs ARE PRESENT <ul style="list-style-type: none"> • Verify other DTCs displayed. • Are any other DTCs output? 	Yes	Perform the corresponding DTC inspection.
		No	DTC troubleshooting completed.