

**HYUNDAI**NEW THINKING.  
NEW POSSIBILITIES.**Technical Service Bulletin**

GROUP	NUMBER
<b>AUTOMATIC TRANSMISSION</b>	<b>13-AT-017</b>
DATE	MODEL
<b>NOVEMBER 2013</b>	<b>Sonata YF HEV</b>

**SUBJECT: EV MOTOR TEMPERATURE SENSOR DTC P0A2B, P0A2C, P0A2D, P0A2F****Description:** If you are servicing a Sonata Hybrid with the DTC listed below, follow the Service Procedure on Page 2.**Applicable Vehicles:** 2011~ Sonata Hybrid (YF HEV)**DTC LIST:**

DTC	DESCRIPTION
P0A2B	Drive motor A temperature sensor circuit range/performance
P0A2C	Drive motor A temperature sensor circuit low
P0A2D	Drive motor A temperature sensor circuit high
P0A2F	Drive motor A temperature sensor circuit over temperature

**PARTS INFORMATION:**

MODEL	PART	SECTION	PNC	PART NUMBER
2011~ Sonata Hybrid (YF HEV)	Automatic transaxle (includes EV motor)	43-450	45000A	45000-3D*** 00268-3D***
	Control wiring	91-914	91400D	91400-4R***
	Extension motor wire	39-361A	36595	36595-3D000

**WARRANTY INFORMATION: Normal warranty applies**

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	OP QTY	NATURE CODE	CAUSE CODE
2011~ Sonata Hybrid (YF HEV)	45000R6M	Automatic transaxle	3.7	45000-3D*** (See Parts Catalog)	1	N69	C15
	45000RH1	Additional	0.9				
	45000RQ0	GDS operation	0.3				
	91401R00	Control wiring assembly	0.8	91400-4R*** (See Parts Catalog)	1	N69	C15
	91401RQ0	GDS operation	0.3				
	37561R1H	Wiring harness-volt & temp sensor	1.1	36595-3D000	1	N69	C15
	37561RQ0	GDS operation	0.3				

**NOTE:** The Op Code for GDS operation can be claimed only one time per repair.

Circulate To: Service Manager, Warranty Manager, Service Advisors, Technicians, Fleet Repair



**SERVICE PROCEDURE:**

1. Depress the brake pedal and press the Start button two times to activate “EV Ready” mode. Attach a GDS, check for DTC in the “MCU” menu. **Record the DTC and description.** Delete the DTC.
2. Check for “Current Data” in the MCU menu and select Drive Motor, MCU, HSG and MCU (GCU) temperatures. Confirm the drive motor temperature is within specification according to the chart below. Turn “EV ready” off. Go to Step 3 to continue the diagnosis.

Transmission Condition	Drive motor temperature
Cold (Parked more than 8 hours)	Same as outside temperature
Operating temperature	<ul style="list-style-type: none"> <li>• Less than 365°F (185°C)</li> <li>• More than 36°F (20°C) above MCU, HSG and MCU (GCU) temperatures</li> </ul>

The screenshot shows the GDS software interface with the 'Diagnosis' tab selected. The vehicle is identified as 'SONATA HYBRID(YF HEV)/2012/G 2.4 HEV'. The 'Current Data' window is open, displaying a list of sensors and their values. The 'Drive Motor Temperature' is highlighted in blue and shows a value of 198°F. Other selected sensors include MCU Temperature (100°F), Generator(HSG) Temperature (108°F), and MCU(GCU) Temperature (97°F). The interface also shows various other sensors like Auxiliary Battery Voltage (11.4 V), Electric Water Pump(EWP) Operation Status (ON), and Actual Driver Motor Speed (0 RPM).

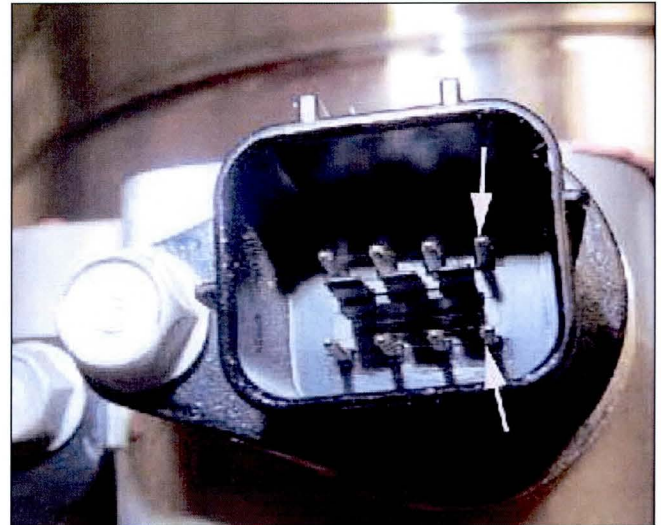


3. Disconnect the harness connector to the temperature sensor at the transaxle.
4. Measure the resistance between the two pins shown.

EV motor temperature	Resistance
68°F (20°C)	105~133 kΩ
Normal operating temp	5~36 kΩ

If the resistance is:

- Within specification, go to Step 5.
- Not within specification, replace the automatic transaxle and go to Step 6.



5. Visually check the control wiring harness and extension wire between the PCM and transaxle for a damaged wire or short circuit to ground. Check for a damaged pin or pin not fully inserted into the connector.
  - If damage is found, repair or replace the control wiring and/or extension wire.
  - If no visual damage is found, use an ohmmeter to check the resistance in the control harness and extension wire between the PCM and the transaxle. If the resistance is more than 1Ω, repair or replace the control wiring or extension wire.

After repairs are completed, go to Step 7.

6. If transaxle was replaced, remove the fill plug.

Use a funnel to add approximately 5~6 quarts of SP-4-M ATF through the fill plug opening. Reinstall the fill plug.

Attach the GDS to the DLC and select vehicle, A/T menu, Current Data and "Oil Temperature Sensor".

Start the engine and shift to Park. When the ATF is 122°F~140°F (50~60°C), remove the level checking plug. The level is correct when oil flows from the level checking plug in a thin steady stream.

Collect and dispose of any excess fluid in accordance with local regulations.

7. Clear the DTC in the BlueLink system according to instructions in TSB 12-BE-005-2.
8. Drive the vehicle for two key-on/key-off cycles to confirm the DTC do not return.

