Service Bulletin

Bulletin No.: 23-NA-221
Date: January, 2024

TECHNICAL

Subject: A/C Inoperative and/or Only Blows Warm Air Due to Faulty Solar Sensor

Brand:	Model:	Model Year:		VIN Breakpoint:		Engine:	Transmission:
		from	to	from	to		
Buick	Electra E5	2024	2024	—	—	—	—
Cadillac	LYRIQ	2023					
Chevrolet	Blazer EV	2024					
	Equinox EV						

Involved Region or Country	North America, Europe, China, GM Korea Company, Cadillac Korea (South Korea)
Condition	Some customers may comment that their A/C system is inoperative and/or only blows warm to hot air.
Cause	The condition may be caused by an internal circuit fault within the upward-facing light (solar) sensor. This circuit fault provides a high voltage signal consistent with an extremely low cabin air/surface temperature reading and this causes HVAC system to respond by delivering full heat.
Correction	Replacement of the solar sensor on vehicles with sensors that display voltages in scan tool outside normal operating parameters (>4.5V).

Important: This technical service bulletin (TSB) can only be completed by certified repair facilities who have met all specific training, tool and equipment requirements pertaining to the vehicle Brand and Model serviced. Repairs must be performed by a technician who has successfully completed the required training.

Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Service Procedure

Note: Conduct this procedure **PRIOR** to performing standard A/C diagnostics methods, including checking system pressures.

1. Place the vehicle in Service Mode.
2. Connect the scan tool and navigate to the Passenger Compartment Air Temperature Sensor voltage value, using the following path: Module Diagnostics, [K9] Body Control Module, Data Display, HVAC Sensor Data.
3. Verify Passenger Compartment Air Temperature Sensor voltage reading is <4.5V, and the Left Front Passenger Compartment Air Temperature reading is within +/-10°C (50°F) of current shop temperature.
   - 3.1. If the voltage reading is >4.5V, it is necessary to replace the sensor.
   - 3.2. If the voltage reading is <4.5V, the sensor is operating correctly. Continue with the standard HVAC diagnostics in SI.

Note: Refer to table below for a reference of expected voltages for a particular temperature.

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Solar Sensor Thermistor (REFERENCE)		
Temperature		Output (Volts)
°C	°F	Voltage
-40	-40	4.68
-35	-31	4.57
-30	-22	4.42
-25	-13	4.24
-20	-4	4.02
-15	5	3.77
-10	14	3.49
-5	23	3.19
0	32	2.88
5	41	2.56
10	50	2.25
15	59	1.96
20	68	1.70
25	77	1.45
30	86	1.24
35	95	1.05
40	104	0.89
45	113	0.76
50	122	0.64
55	131	0.54
60	140	0.46
65	149	0.39
70	158	0.33
75	167	0.28
80	176	0.24
85	185	0.21
90	194	0.21
95	203	0.21
100	212	0.21
105	221	0.21
110	230	0.21
115	239	0.21
120	248	0.21
125	257	0.21

Parts Information

* We believe this source and their products to be reliable. There may be additional manufacturers of such products/materials. General Motors does not endorse, indicate any preference for, or assume any responsibility for the products or material from this firm or for any such items that may be available from other sources.

Causal Part	Description	Part Number	Qty
X	SENSOR, SUN LOAD & AMB LGT & CHRG IND	84847757	1

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
4420370	Sun Load, Ambient Light, and Charge Indicator Sensor Replacement	Use Published Labor Operation Time

Version	2
Modified	Released December 15, 2023 Revised January 09, 2024 – Added a Note and Reference Table under Service Procedure.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.

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