Last Modified: 5-3-2010	6.4 C	**From:** 200904
Model Year: 2010	**Model:** Prius	**Doc ID:** RM000000Y6P00TX
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM: B1498/98: Communication Malfunction (A/C Inverter Local) (2010 Prius)		

DTC	**B1498/98**	**Communication Malfunction (A/C Inverter Local)**

DESCRIPTION

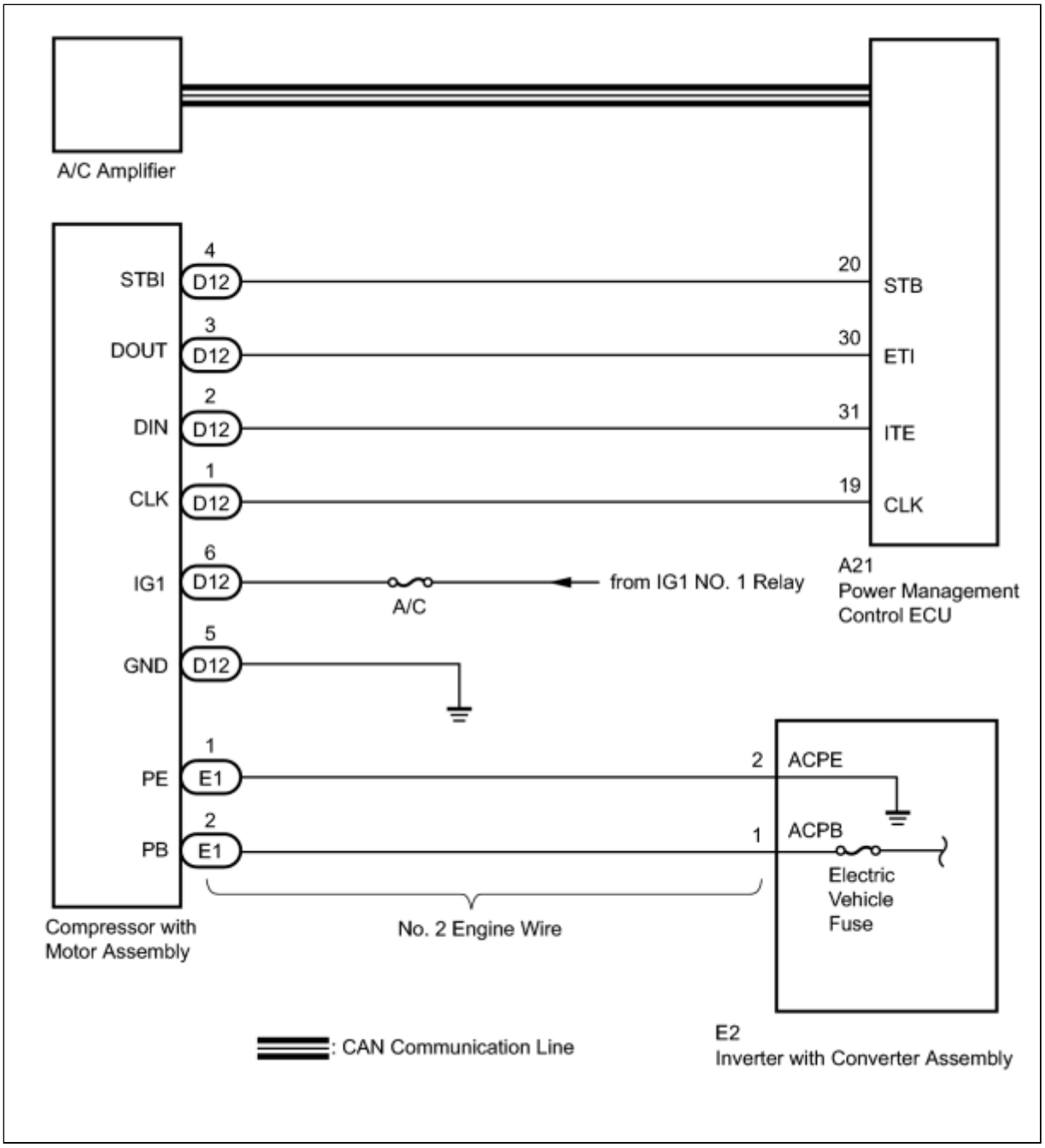
The power management control ECU and compressor with motor assembly transmit information to one another via a communication line. Compressor control is stopped and the DTC is stored if communication information is cut off or abnormal information occurs.

The DTC is also detected if high-voltage power supplied from the inverter with converter assembly to the compressor control circuit is shut off.

The output DTC is memorized as previous trouble.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1498/98	• Communication line error or open between the power management control ECU and compressor with motor assembly. • High-voltage power source is shut off.	• Harness or connector between power management control ECU, compressor with motor assembly and body ground • Power management control ECU • Compressor with motor assembly • No. 2 engine wire (harness or connector between compressor with motor assembly and inverter with converter assembly) • Electric vehicle fuse • CAN communication system • Hybrid control system

WIRING DIAGRAM



INSPECTION PROCEDURE

CAUTION:

- Wear electrically insulated gloves and pull out the service plug grip before inspection as procedures may require disconnecting high-voltage connectors. Be sure to carry the removed service plug grip because other workers may install it by mistake.
- Do not touch the high-voltage connectors or terminals for 10 minutes after the service plug grip is removed.

NOTICE:

- The hybrid control system and air conditioning system output DTCs separately. Inspect DTCs following the flow chart for the hybrid control system first if any DTCs from those systems are output simultaneously.
- Depending on the timing of the power supply to the 12 V power supply circuit and high-voltage circuit when the power switch is turned on (READY), an abnormal information signal may be output, causing this DTC to be stored. If the output DTC is a code that was memorized in the past, check the fuses and wire harnesses. If there is no malfunction, clear the DTC.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	**CHECK CAN COMMUNICATION SYSTEM**

(a) Using the Techstream to check if the CAN communication system is functioning normally.

Result:

RESULT	PROCEED TO
CAN DTC is not output	A
CAN DTC is output	B

B ▶ **GO TO CAN COMMUNICATION SYSTEM**

A ▼

2.	**CHECK DIAGNOSTIC TROUBLE CODE**

(a) Check if DTCs for the hybrid control system are output using the Techstream.

Result:

RESULT	PROCEED TO
DTC is not output	A
Only DTC P3108 is output	A
DTCs other than P3108 are output	B

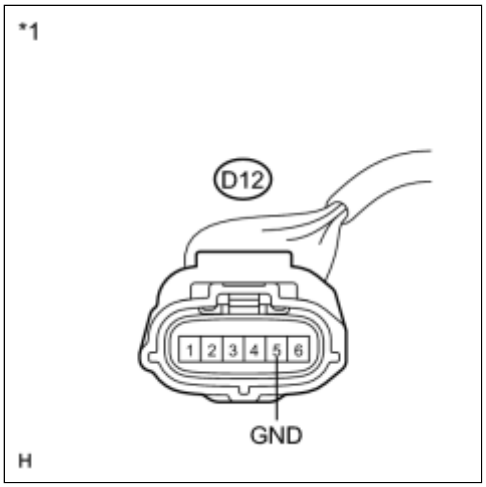
B ▶ **GO TO HYBRID CONTROL SYSTEM**

A ▼

3.	**CHECK HARNESS AND CONNECTOR (COMPRESSOR WITH MOTOR ASSEMBLY - BODY GROUND)**

CAUTION:

Do not disconnect the connector on the high-voltage side.



(a) Disconnect the connector from the compressor with motor assembly.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D12-5 (GND) - Body ground	Always	Below 1 Ω

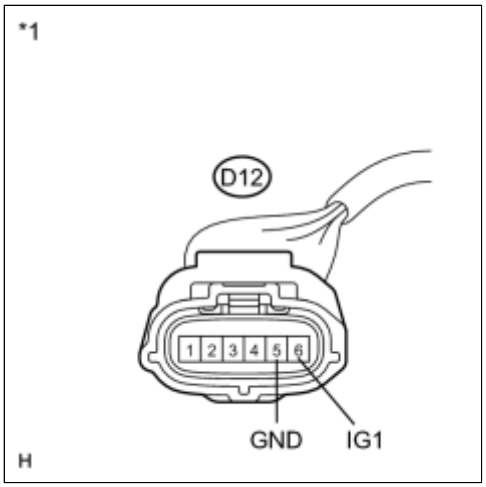
Text in Illustration

*1	Front view of wire harness connector (to Compressor with Motor Assembly)

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**CHECK HARNESS AND CONNECTOR (COMPRESSOR WITH MOTOR ASSEMBLY - BATTERY, GROUND)**



(a) Turn the power switch on (IG).

(b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D12-6 (IG1) - D12-5 (GND)	Power switch on (IG)	11 to 14 V
D12-6 (IG1) - D12-5 (GND)	Power switch off	Below 1 V

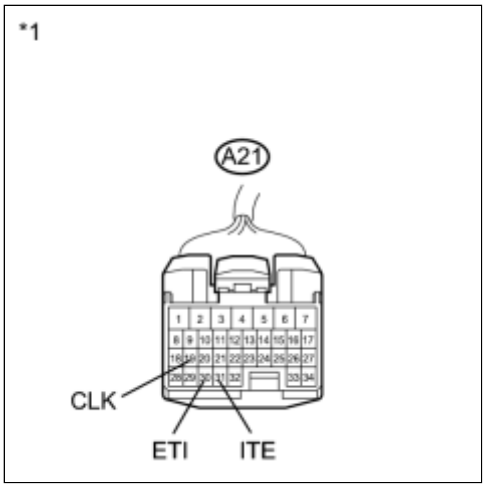
Text in Illustration

*1	Front view of wire harness connector (to Compressor with Motor Assembly)

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

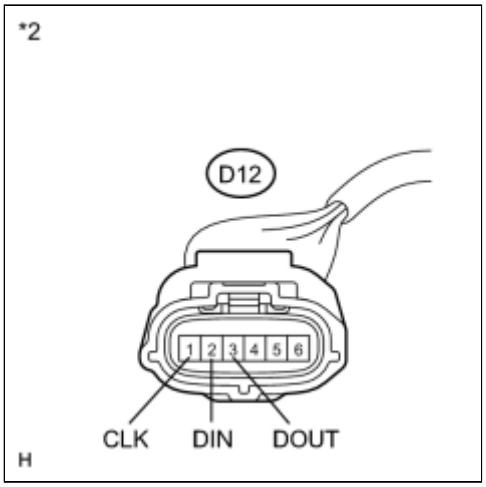
5.	**CHECK HARNESS AND CONNECTOR (POWER MANAGEMENT CONTROL ECU - COMPRESSOR WITH MOTOR)**



(a) Disconnect the connector from the power management control ECU.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D12-1 (CLK) - A21-19 (CLK)	Always	Below 1 Ω
D12-2 (DIN) - A21-31 (ITE)	Always	Below 1 Ω
D12-3 (DOUT) - A21-30 (ETI)	Always	Below 1 Ω
D12-1 (CLK) - Body ground	Always	10 kΩ or higher
D12-2 (DIN) - Body ground	Always	10 kΩ or higher
D12-3 (DOUT) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Power Management Control ECU)
*2	Front view of wire harness connector (to Compressor with Motor Assembly)

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

6.	**INSPECT ELECTRIC VEHICLE FUSE**

CAUTION:

Be sure to wear insulated gloves.

(a) Turn the power switch off.

(b) Remove the service plug grip.

CAUTION:

Do not touch the high-voltage connectors or terminals for 10 minutes after the service plug grip is removed.

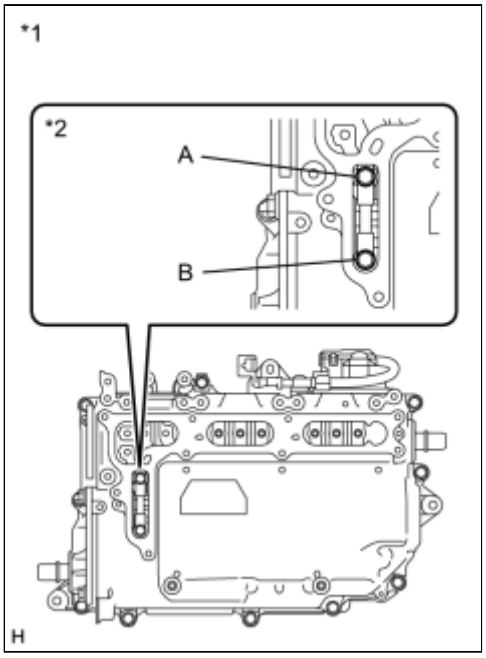
NOTICE:

Do not start the engine with the service plug grip removed because it may cause a malfunction.

(c) Remove the inverter terminal cover.

NOTICE:

Be sure to prevent foreign objects or water from entering the inverter with converter assembly.



(d) Check that bolts A and B are tightened securely.

(e) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER ITEM (TESTER CONNECTION)	CONDITION	SPECIFIED CONDITION
ELECTRIC VEHICLE fuse (A - B)	Always	Below 1 Ω

Text in Illustration

*1	Inverter with Converter Assembly
*2	Electric Vehicle Fuse

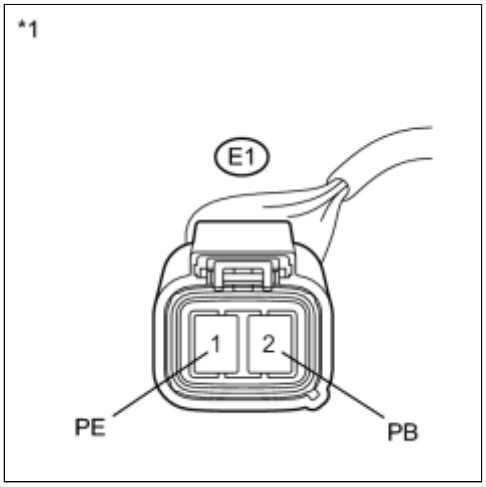
NG ▶ **REPLACE ELECTRIC VEHICLE FUSE**

OK ▼

7.	**INSPECT NO. 2 ENGINE WIRE**

CAUTION:

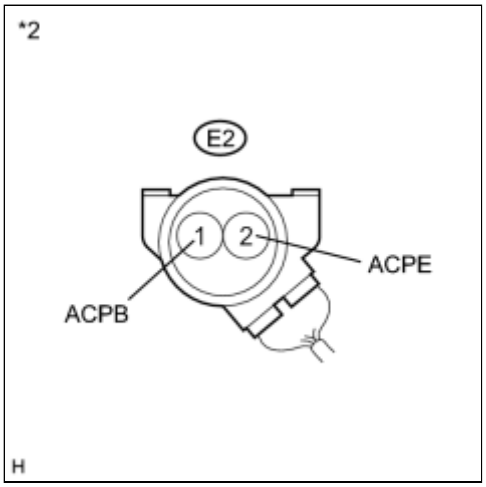
Be sure to wear insulated gloves.



(a) Disconnect the No. 2 engine wire connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
E1-1 (PE) - E2-2 (ACPE)	Always	Below 1 Ω
E1-2 (PB) - E2-1 (ACPB)	Always	Below 1 Ω
E1-1 (PE) - Body ground	Always	10 kΩ or higher
E1-2 (PB) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Compressor with Motor Assembly)
*2	Front view of wire harness connector (to Inverter with Converter Assembly)

NG ▶ **REPLACE NO. 2 ENGINE WIRE**

OK ▼

8.	**REPLACE COMPRESSOR WITH MOTOR ASSEMBLY**

(a) Replace the compressor with motor assembly INFO .

HINT:

Since the compressor with motor assembly cannot be inspected while it is removed from the vehicle, replace the compressor with motor assembly with a new or a known good one and check that the condition returns to normal.

(b) Check for the DTC.

Result:

RESULT	PROCEED TO
DTC B1498/98 is not output	A
DTC B1498/98 is output	B

B ▶ **REPLACE POWER MANAGEMENT CONTROL ECU**

A ▶ **END (COMPRESSOR WITH MOTOR ASSEMBLY WAS DEFECTIVE)**