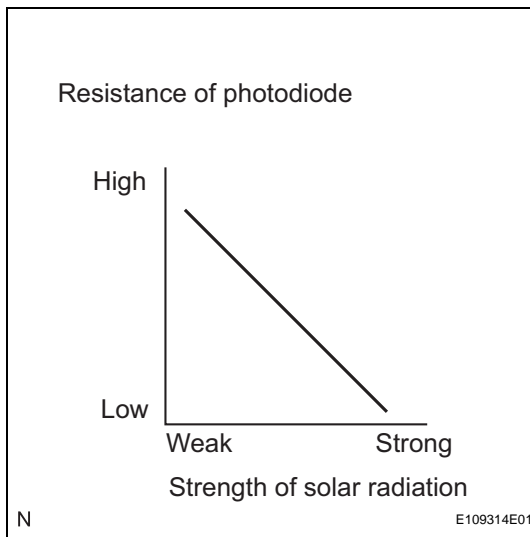


|            |                 |  |
|------------|-----------------|--|
| <b>DTC</b> | <b>B1421/21</b> | <b>Solar Sensor Circuit (Passenger Side)</b> |
|------------|-----------------|--|

**DESCRIPTION**



AC

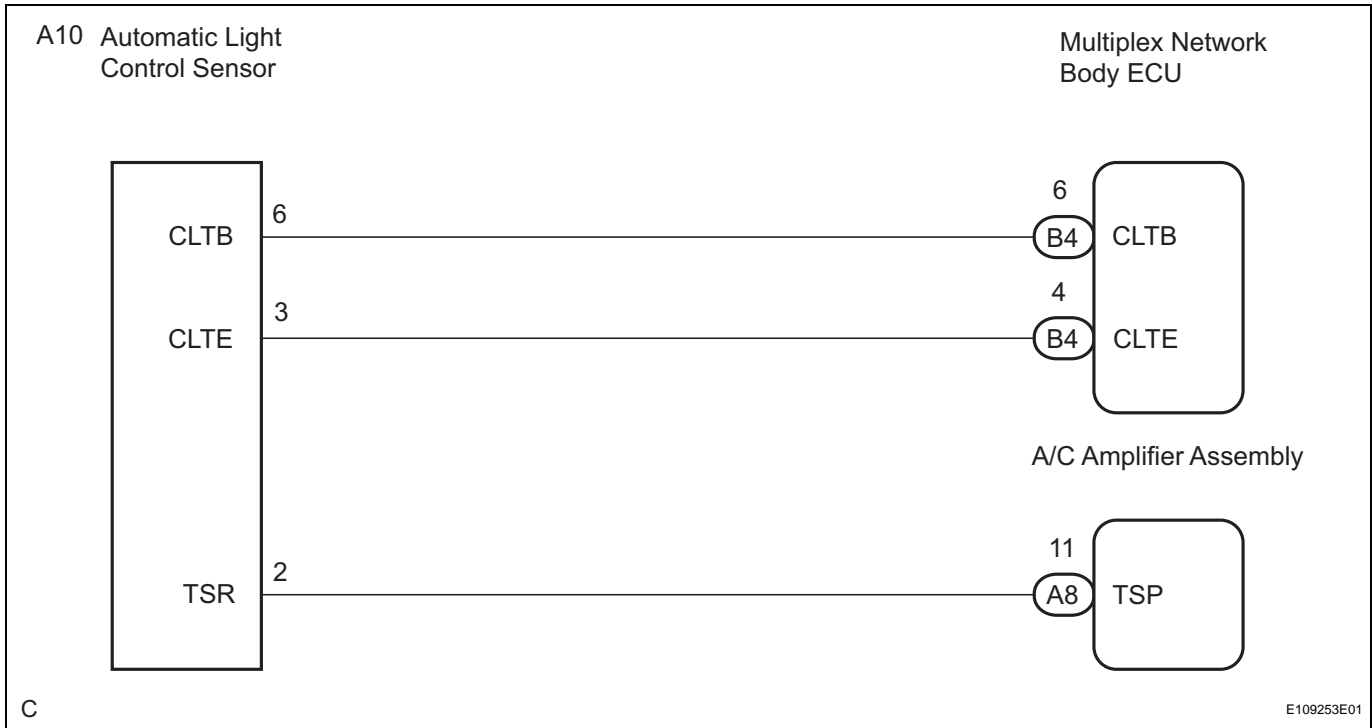
The automatic light control sensor is installed in the upper part of the instrument panel to detect the amount of solar sensor radiation with photo diode to control the heater and air conditioner "AUTO" function. It sends appropriate signals to the A/C amplifier assembly. The output voltage of the automatic light control sensor changes in accordance with the amount of solar radiation. As the amount increases, the voltage increases. As the amount decreases, the voltage decreases. The A/C amplifier assembly reads voltage output from the automatic light control sensor.

| DTC No.  | DTC Detecting Condition  | Trouble Area  |
|----------|--|---|
| B1421/21 | Open or short in solar sensor circuit<br>(If the check is performed in a dark place, DTC B1421/21 may be displayed.) | <ul style="list-style-type: none"> <li>Automatic light control sensor</li> <li>Harness or connector between automatic light control sensor and A/C amplifier assembly and multiplex network body ECU</li> <li>A/C amplifier assembly</li> </ul> |

**HINT:**

If DTC B1244 is output at the same time, troubleshoot DTC B1244 first.

**WIRING DIAGRAM**



**AC**

**1 READ VALUE OF INTELLIGENT TESTER**

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON and push the intelligent tester main switch on.
- (c) Select the item below in the DATA LIST, and read the display on the intelligent tester.

**DATA LIST / AIR CONDITIONER**

| Item         | Measurement Item / Display (Symbols)              | Normal Condition                  | Diagnostic Note                                     |
|--------------|---|-----------------------------------|---|
| SOLAR SENS-P | Solar sensor (Passenger side) / min.: 0 max.: 255 | Increases as brightness increases | Open in the circuit: 0<br>Short in the circuit: 255 |

**OK:**  
The display is as specified in the normal condition.

**Result**

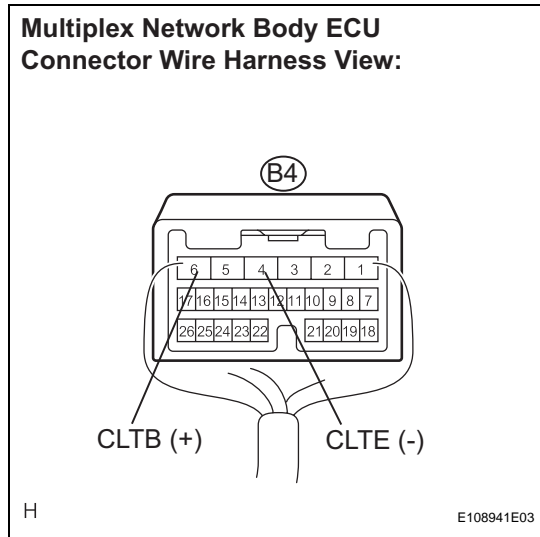
| Result  | Proceed to |
|---|------------|
| NG  | A          |
| OK (Checking from the PROBLEM SYMPTOMS TABLE) | B          |
| OK (Checking from the DTC)                    | C          |

**B** → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

**C** → REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

**A**

**2 INSPECT MULTIPLEX NETWORK BODY ECU**



- (a) Remove the multiplex network body ECU with the connectors still connected.
- (b) Turn the ignition switch to the ON position.
- (c) Measure the voltage according to the value(s) in the table below.

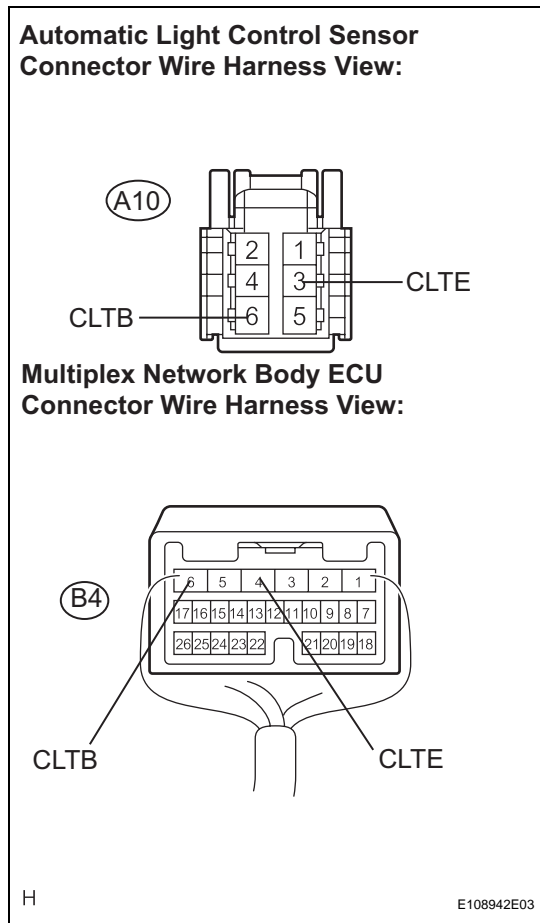
**Standard voltage**

| Tester connection (Symbols) | Condition          | Specified condition |
|-----------------------------|--------------------|---------------------|
| B4-6 (CLTB) - B4-4 (CLTE)   | Ignition switch ON | 10 to 14 V          |

**OK** → **Go to step 4**

**NG**

**3 CHECK HARNESS AND CONNECTOR (AUTOMATIC LIGHT CONTROL SENSOR - MULTIPLEX NETWORK BODY ECU)**



- (a) Disconnect the connector from the automatic light control sensor and multiplex network body ECU.
- (b) Measure the resistance according to the value(s) in the table below.

**Standard resistance**

| Tester connection (Symbols) | Condition | Specified condition |
|-----------------------------|-----------|---------------------|
| A10-6 (CLTB) - B4-6 (CLTB)  | Always    | Below 1 Ω           |
| A10-3 (CLTE) - B4-4 (CLTE)  | Always    | Below 1 Ω           |
| A10-6 (CLTB) - Body ground  | Always    | 10 kΩ or higher     |
| A10-3 (CLTE) - Body ground  | Always    | 10 kΩ or higher     |

**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

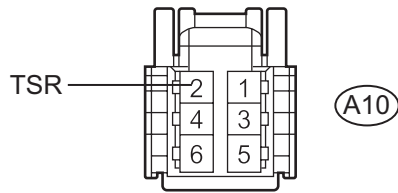
OK

**REPLACE MULTIPLEX NETWORK BODY ECU**

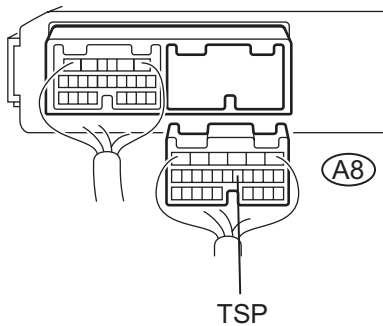
**4 CHECK HARNESS AND CONNECTOR (AUTOMATIC LIGHT CONTROL SENSOR - A/C AMPLIFIER ASSEMBLY)**

AC

**Automatic Light Control Sensor Connector Wire Harness View:**



**A/C Amplifier Assembly Connector Wire Harness View:**



H

E108943E03

- (a) Disconnect the connector from the A/C amplifier assembly.
- (b) Measure the resistance according to the value(s) in the table below.

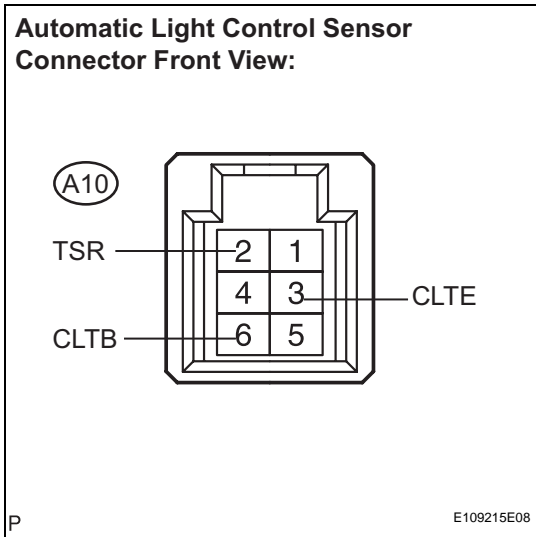
**Standard resistance**

| Tester connection (Symbols) | Condition | Specified condition |
|-----------------------------|-----------|---------------------|
| A8-11 (TSP) - A10-2 (TSR)   | Always    | Below 1 Ω           |
| A8-11 (TSP) - Body ground   | Always    | 10 kΩ or higher     |

**NG** → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

**5 INSPECT AUTOMATIC LIGHT CONTROL SENSOR**



- (a) Remove the automatic light control sensor.
- (b) Apply battery voltage between terminals A10-6 (CLTB) and A10-3 (CLTE) of the automatic light control sensor.
- (c) Measure the voltage according to the value(s) in the table below.

**Standard voltage**

| Tester connection (Symbols) | Condition                           | Specified condition |
|-----------------------------|-------------------------------------|---------------------|
| A10-2 (TSR) - A10-3 (CLTE)  | Sensor is subject to electric light | 0.8 to 4.3 V        |
| A10-2 (TSR) - A10-3 (CLTE)  | Sensor is covered with a cloth      | Below 0.8 V         |

AC

**NOTICE:**

The connection procedure for using a digital tester such as a TOYOTA electrical tester is shown above. When using an analog tester, connect the positive (+) lead to terminal 2 and negative (-) lead to terminal 1 of the automatic light control sensor.

**HINT:**

- As the inspection light moved away from the sensor, the voltage increases.
- Use an incandescent light for inspection. Bring it about 30 cm (11.8 in.) from the automatic light control sensor.

NG

**REPLACE AUTOMATIC LIGHT CONTROL SENSOR**

OK

**REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**