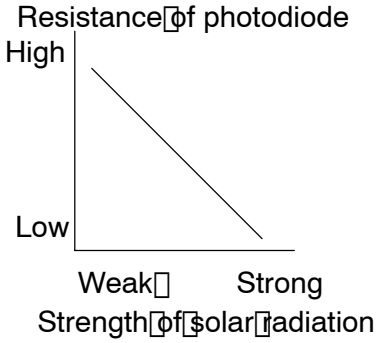
DTC	B1421	SOLAR SENSOR CIRCUIT (PASSENGER SIDE)

CIRCUIT DESCRIPTION

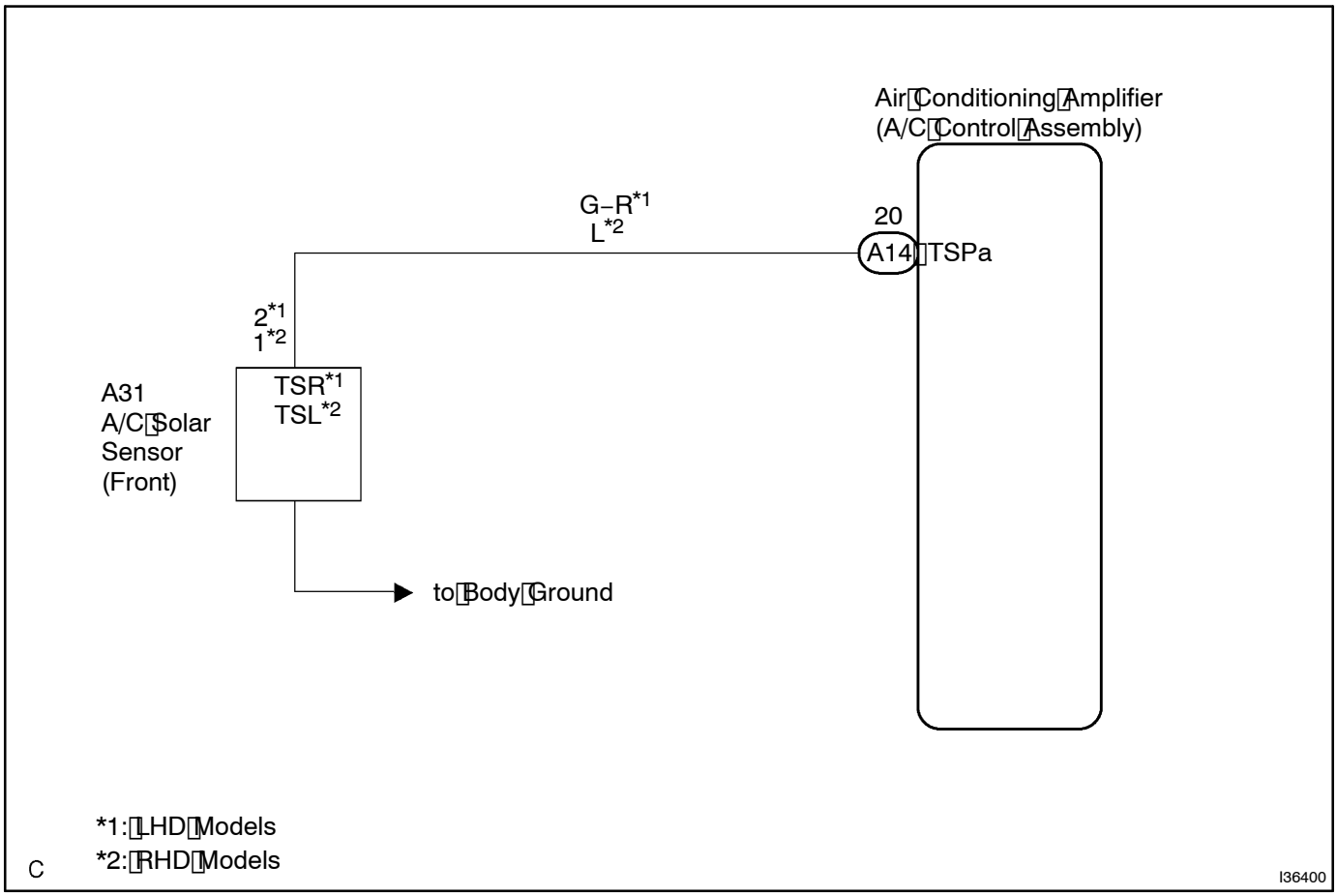


A photodiode in the A/C solar sensor detects solar radiation and sends signals to the A/C amplifier.

DTC No.	Detection Item	Trouble Area
B1421	Solar sensor circuit (Passenger side) (Open or short)	• A/C solar sensor • Harness or connector between A/C solar sensor and A/C amplifier • A/C amplifier

HINT:
If DTC B1244 is output at the same time, troubleshoot DTC B1244 first (see page 05-1405).

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE ON INTELLIGENT TESTER II

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

DATA LIST / AIR CONDITIONER:

Item	Measure Item/Display (Range)	Normal Condition	Diagnostic Note
Solar sensor (P side) (Solar Sens–P)	Solar sensor (Passenger side) / min.: 0 max.: 255	Increases as brightness increases (Passenger side)	–

OK:

The display is as specified in the normal condition.

Result:

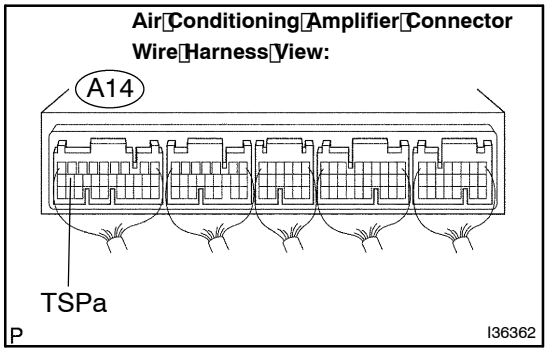
NG	A
OK (Checking from the PROBLEM SYMPTOM TABLE)	B
OK (Checking from the DTC)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–778)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–15)**

A

2 INSPECT AIR CONDITIONING AMPLIFIER(TSPa)



(a) Remove the A/C amplifier with connector 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:

Tester connection	Condition	Specified condition
A14–20 (TSPa) – Body ground	Sensor is subjected to electric light	4.0 to 4.6 V
A14–20 (TSPa) – Body ground	Sensor is covered by a cloth	Below 0.8 V

HINT:

- As the inspection light is moved away from the sensor, the voltage increases.
- Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the A/C solar sensor.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

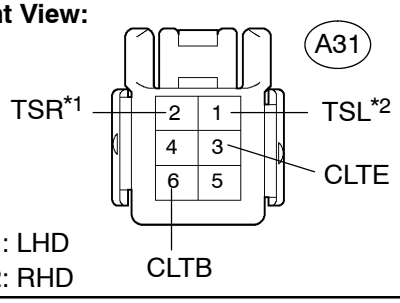
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–778)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–15)**

A

3 INSPECT A/C SOLAR SENSOR

A/C Solar Sensor Connector
Front View:



(a) Remove the A/C solar sensor.
(b) Apply battery voltage between terminals A31–6 (CLTB) and A31–3 (CLTE) of the A/C solar sensor.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A31–2 (TSR) – A31–3 (CLTE) *1	Sensor is subjected to electric light	4.0 to 4.6 V
A31–2 (TSR) – A31–3 (CLTE) *1	Sensor is covered by a cloth	Below 0.8 V
A31–1 (TSL) – A31–3 (CLTE) *2	Sensor is subjected to electric light	4.0 to 4.6 V
A31–1 (TSL) – A31–3 (CLTE) *2	Sensor is covered by a cloth	Below 0.8 V

HINT:
*1: LHD
*2: RHD

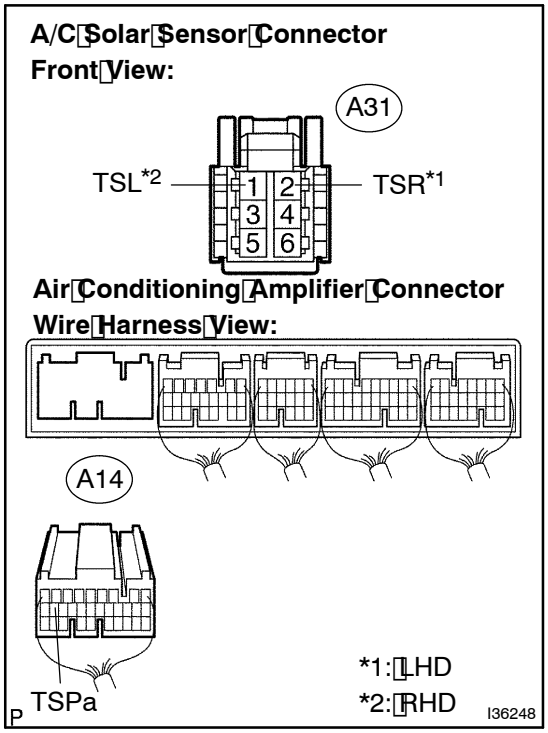
NOTICE:
The connection procedure for using a digital tester such as a TOYOTA electrical tester is shown above. When using an analog tester, connect the positive (+) lead to terminal 2 and negative (–) lead to terminal 1 of the solar sensor.

HINT:
- As the inspection light is moved away from the sensor, the voltage increases.
- Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the solar sensor.

NG → **REPLACE A/C SOLAR SENSOR**

OK

4	CHECK HARNESS AND CONNECTOR(A/C SOLAR SENSOR – AIR CONDITONING AMPLIFIER) (SEE PAGE 01–44)



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

Standard:

Tester connection	Condition	Specified condition
A14–20 (TSPa) – A31–2 *1	Always	Below 1 Ω
A14–20 (TSPa) – A31–1 *2	Always	Below 1 Ω
A14–20 (TSPa) – Body ground	Always	10 kΩ or higher

HINT:

*1: LHD

*2: RHD

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

OK →

REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–16)