| DTC | B1428 | REAR SOLAR SENSOR CIRCUIT |

## CIRCUIT DESCRIPTION

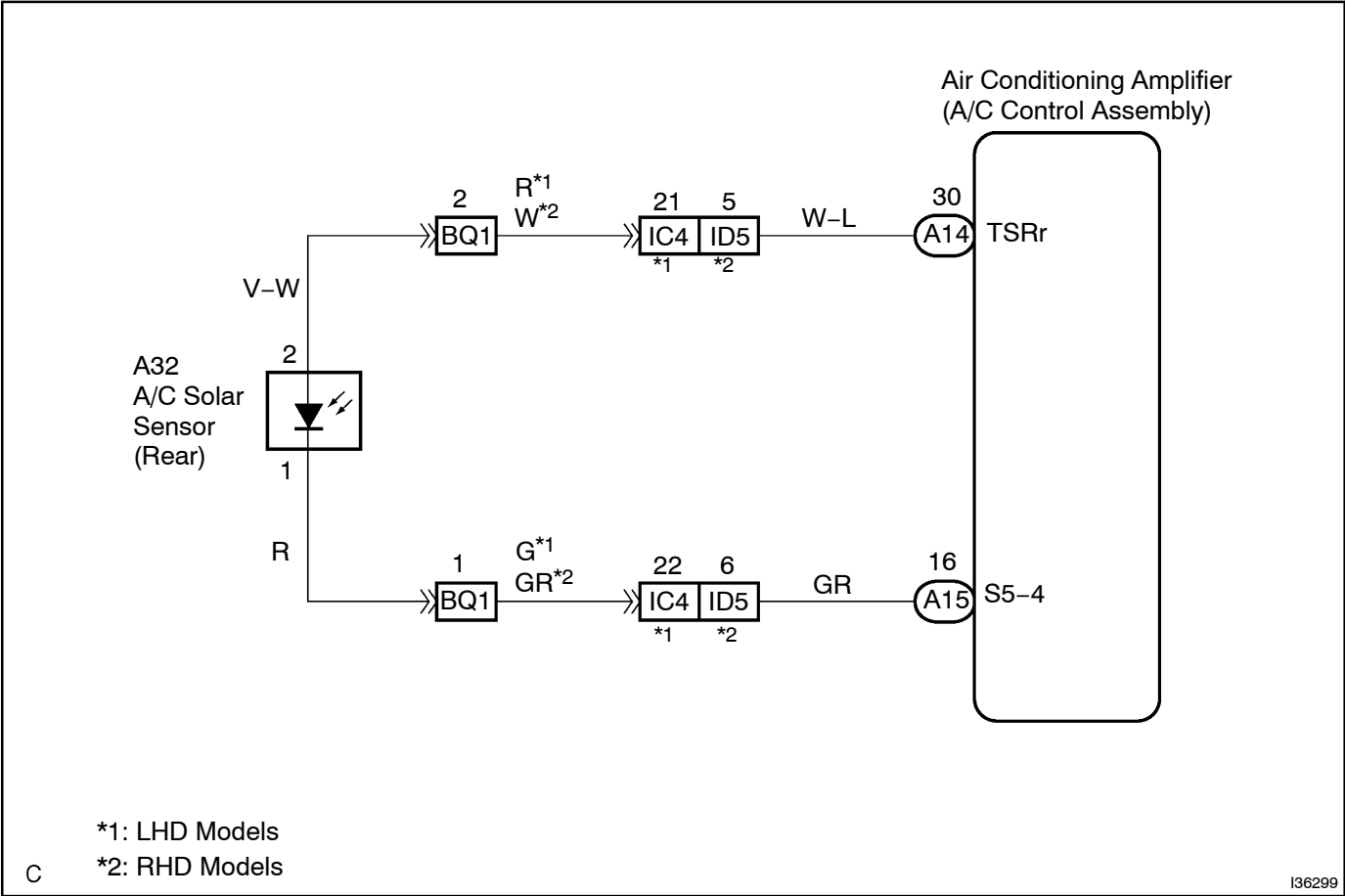Resistance of photodiode

High

Low

Weak    Strong

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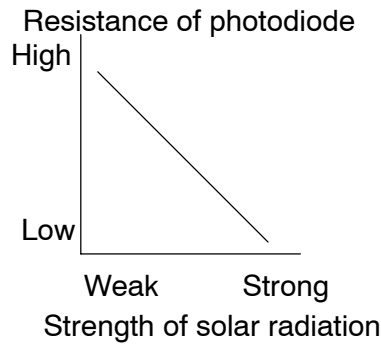
A photodiode in the A/C solar sensor detects solar radiation and sends signals to the A/C amplifier.

| DTC No. | Detection Item | Trouble Area |
|---|---|---|
| B1428 | Rear solar sensor circuit (Rear side) (Open or short) | • A/C solar sensor (Rear solar sensor)<br>• Harness or connector between A/C solar sensor (Rear solar sensor) and A/C amplifier<br>• A/C amplifier |

## WIRING DIAGRAM



Air Conditioning Amplifier
(A/C Control Assembly)

2    R*1    21    5    W–L    30
BQ1   W*2   IC4  ID5        A14   TSRr
            *1   *2

V–W

A32
A/C Solar
Sensor
(Rear)

2

1

R    1    G*1    22    6    GR    16
     BQ1  GR*2   IC4  ID5         A15   S5–4
                 *1   *2

*1: LHD Models
*2: RHD Models

C

I36299

# 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 |
|---|---|---|---|
| Rear solar sensor (Rear Solar Sens) | Rear solar sensor / min.: 0 max.: 255 | Changes depending on brightness | – |

**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 55–16**) |
|---|---|

| A |
|---|

## 2 INSPECT AIR CONDITIONING AMPLIFIER(TSRr − GND)

ON **Air Conditioning Amplifier Connector**
**Wire Harness View:**

A14 A15

TSRr (+) V S5−4 (−)

P · I20888
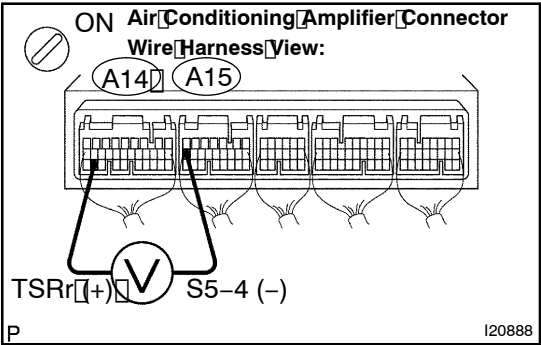
(a) Remove the A/C amplifier with connector still connected.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

**Standard:**

| Tester connection | Condition | Specified condition |
|---|---|---|
| A14−30 (TSRr) − A15−16 (S5−4) | Sensor is subjected to electric light | 0.8 to 4.3 V |
| A14−30 (TSRr) − A15−16 (S5−4) | Sensor is covered by a cloth | Below 0.8 V |

HINT:
• As the temperature increases, the voltage decreases.
• Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the solar sensor.

**Result:**

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

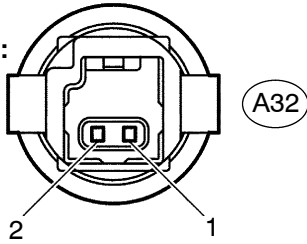**B** ⟩ **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05−778)**

**C** ⟩ **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55−16)**

**A**

| 3 | INSPECT A/C SOLAR SENSOR |
|---|---|

**A/C Solar Sensor Connector Front View:**



E50667                                    E72857

(a) Remove the A/C solar sensor.

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

(c) Connect the positive (+) lead from the ohmmeter to terminal 1 and negative (–) lead to terminal 2 of the A/C solar sensor.

**Standard:**

| Tester connection | Condition | Specified condition |
|---|---|---|
| A32–1 – A32–2 | Sensor is subjected to electric light | Except ∞ Ω |
| A32–1 – A32–2 | Sensor is covered by a cloth | ∞ Ω (No continuity) |

**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.

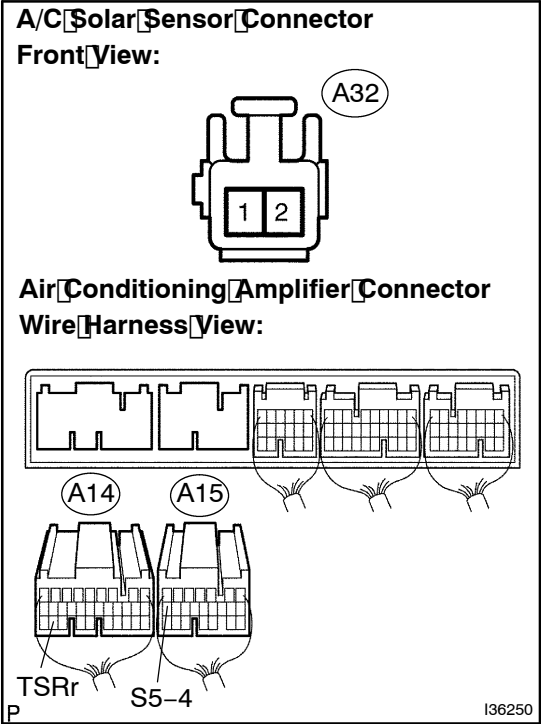• Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the solar sensor.

| NG ⟩ | REPLACE A/C SOLAR SENSOR |
|---|---|

OK

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

**A/C Solar Sensor Connector Front View:**

**Air Conditioning Amplifier Connector Wire Harness View:**

I36250

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

**Standard:**

| Tester connection | Condition | Specified condition |
|---|---|---|
| A14–30 (TSRr) – A32–2 | Always | Below 1 Ω |
| A15–16 (S5–4) – A32–1 | Always | Below 1 Ω |
| A14–30 (TSRr) – Body ground | Always | 10 kΩ or higher |
| A15–16 (S5–4) – Body ground | Always | 10 kΩ or higher |

NG ▷ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

**REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–16)**