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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: LIGHTING (EXT): LIGHTING SYSTEM: B124400; Light Sensor Circuit Malfunction; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

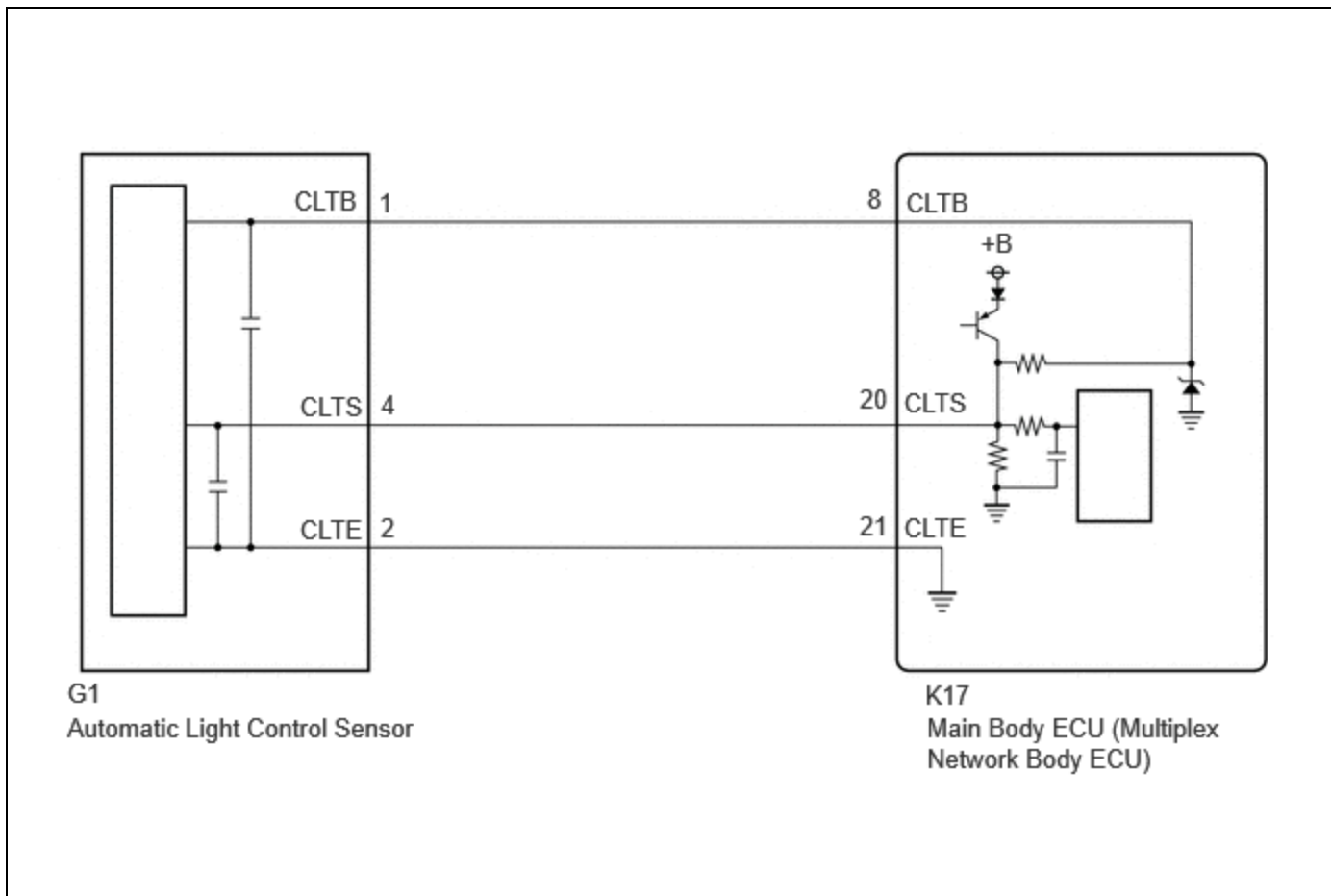
DTC	B124400	Light Sensor Circuit Malfunction
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DESCRIPTION

The automatic light control sensor detects ambient light. The sensor creates an electrical signal based on the amount of light detected, and sends the signal to the main body ECU (multiplex network body ECU). The main body ECU (multiplex network body ECU) turns on or off the headlights and taillights according to the signal.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	DTC OUTPUT FROM	PRIORITY
B124400	Light Sensor Circuit Malfunction	<p>Detection condition:</p> <p>The ignition switch is ON.</p> <p>Malfunction status:</p> <p>Either of the following conditions is met:</p> <ul style="list-style-type: none"> ◦ Malfunction in automatic light control sensor ◦ Open or short in automatic light control sensor circuit <p>Malfunction duration:</p> <p>5 seconds or more</p>	<ul style="list-style-type: none"> • Automatic light control sensor • Harness or connector • Main body ECU (multiplex network body ECU) 	Main Body	A

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

Before replacing the main body ECU (multiplex network body ECU), refer to Registration.

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PROCEDURE

1. CLEAR DTC

(a) Clear the DTCs.

Body Electrical > Main Body > Clear DTCs

NEXT



2. CHECK FOR DTC

Pre-procedure1

- (a) Turn the ignition switch to ON.
- (b) Wait 10 seconds or more.

Procedure1

- (c) Check for DTCs.

Body Electrical > Main Body > Trouble Codes

RESULT	PROCEED TO
B124400 is not output	A
B124400 is output	B

Post-procedure1

- (d) None

A  **USE SIMULATION METHOD TO CHECK**

B



3.	READ VALUE USING GTS
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Pre-procedure1

- (a) Cover the automatic light control sensor with an opaque object.

Procedure1

- (b) According to the display on the GTS, read the Data List and check that the value of Light Sensor Illuminance changes while performing the following:

- (1) Slowly move the opaque object to uncover and then cover the automatic light control sensor.

Body Electrical > Main Body > Data List

TESTER DISPLAY	MEASUREMENT ITEM	NORMAL CONDITION	REFERENCE VALUE	DIAGNOSTIC NOTE
Light Sensor Illuminance	Automatic light control sensor illuminance	0 to 8191 lx or SensorFail	Value is output according to ambient light level	The displayed value is "0" when no light is detected.

Body Electrical > Main Body > Data List

TESTER DISPLAY
Light Sensor Illuminance

OK:

The value changes according to the amount the automatic light control sensor is covered.

Post-procedure1

(c) None

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

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NG



4.	CHECK HARNESS AND CONNECTOR (AUTOMATIC LIGHT CONTROL SENSOR - MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))
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Pre-procedure1

(a) Disconnect the G1 automatic light control sensor connector.

(b) Disconnect the K17 main body ECU (multiplex network body ECU) connector.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(G1,K17\).](#)

[Click Connector\(G1\).](#)

[Click Connector\(K17\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
G1-1 (CLTB) - K17-8 (CLTB)	Always	Below 1 Ω	Ω
G1-4 (CLTS) - K17-20 (CLTS)	Always	Below 1 Ω	Ω
G1-2 (CLTE) - K17-21 (CLTE)	Always	Below 1 Ω	Ω
G1-1 (CLTB) or K17-8 (CLTB) - Body ground	Always	10 k Ω or higher	k Ω
G1-4 (CLTS) or K17-20 (CLTS) - Body ground	Always	10 k Ω or higher	k Ω
G1-2 (CLTE) or K17-21 (CLTE) - Body ground	Always	10 k Ω or higher	k Ω

Post-procedure1

(d) None

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



5. INSPECT MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)

Pre-procedure1

(a) Connect the K17 main body ECU (multiplex network body ECU) connector.

Procedure1

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

Standard Voltage:



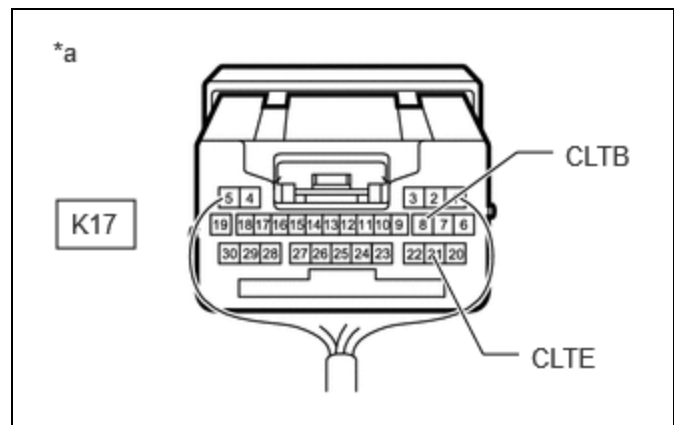
[Click Location & Routing\(K17\)](#)

[Click Connector\(K17\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K17-8 (CLTB) - K17-21 (CLTE)	Ignition switch ON	11 to 14 V	V

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Main Body ECU (Multiplex Network Body ECU))
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Post-procedure1

(c) None

NG ▶ REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)

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OK
▼

6.	INSPECT AUTOMATIC LIGHT CONTROL SENSOR
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OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

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NG ▶ **REPLACE AUTOMATIC LIGHT CONTROL SENSOR**

