

THEFT DETERRENT SYSTEM

PRECAUTION

1. GENERAL PRECAUTION

- (a) While using the battery during inspection, do not bring the positive and negative tester probes too close to each other as a short circuit may occur.

2. PRECAUTION FOR DISCONNECTING THE BATTERY CABLE

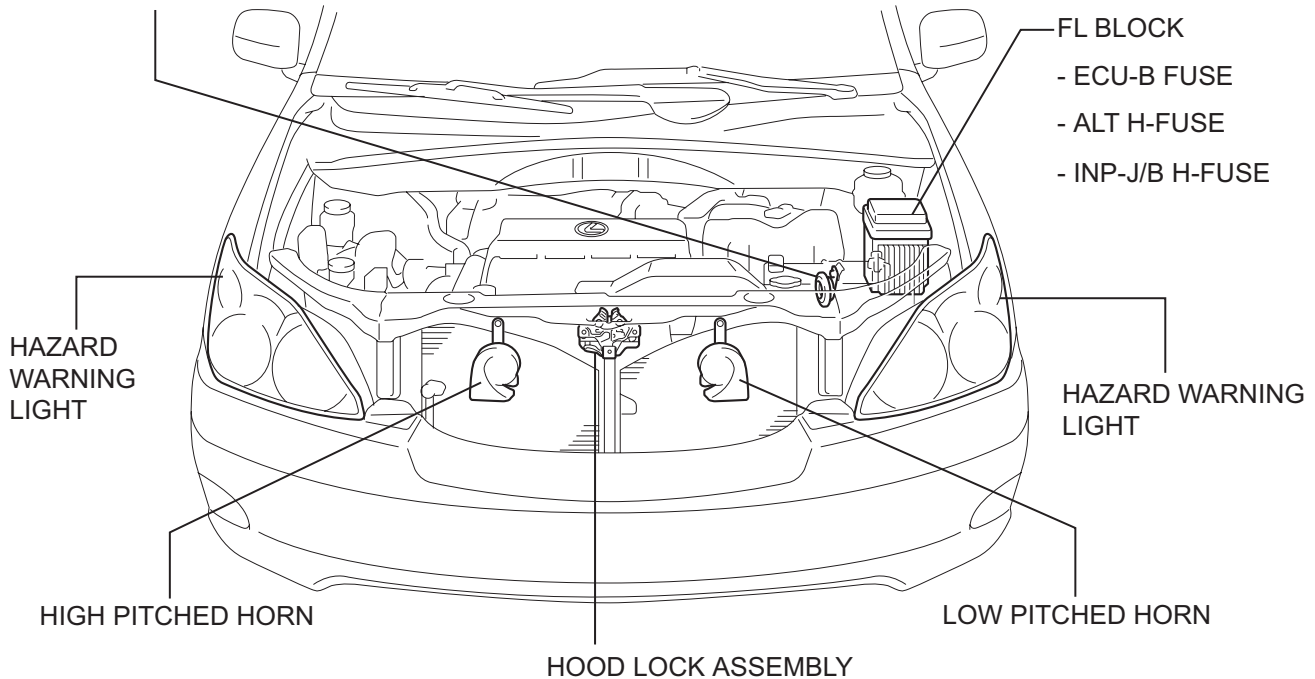
NOTICE:

When disconnecting the negative (-) battery terminal, initialize the following systems after the terminal is reconnected.

System Name	See Procedure
Lighting System (Adapt Front-Lighting System)	LI-17
Sliding Roof System	RF-4 RF-22
Power Window Control System	WS-12
Power Back Door System	ED-33

PARTS LOCATION

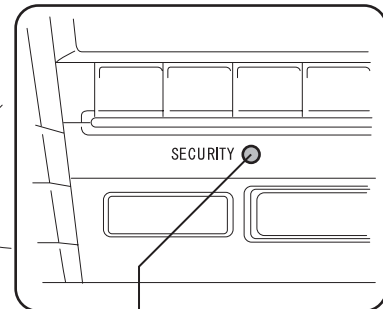
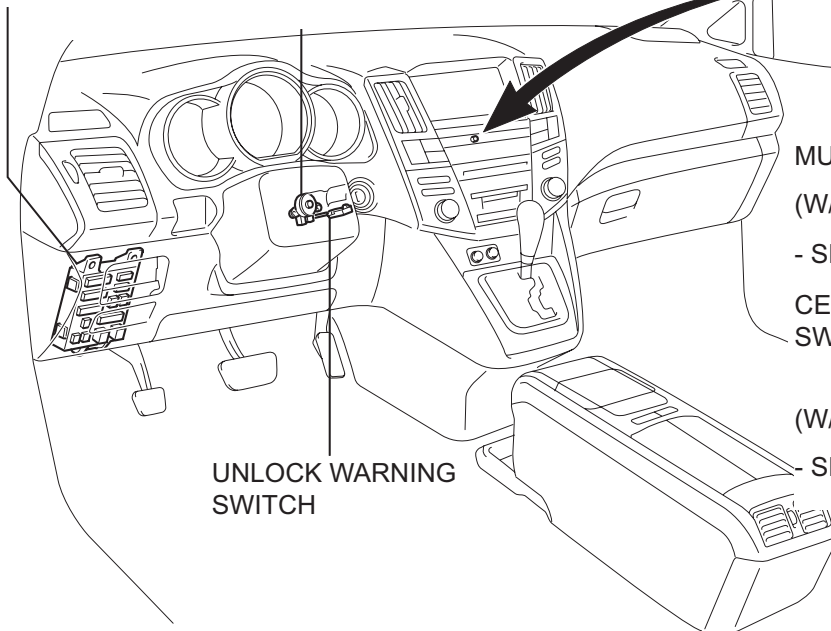
SECURITY HORN ASSEMBLY

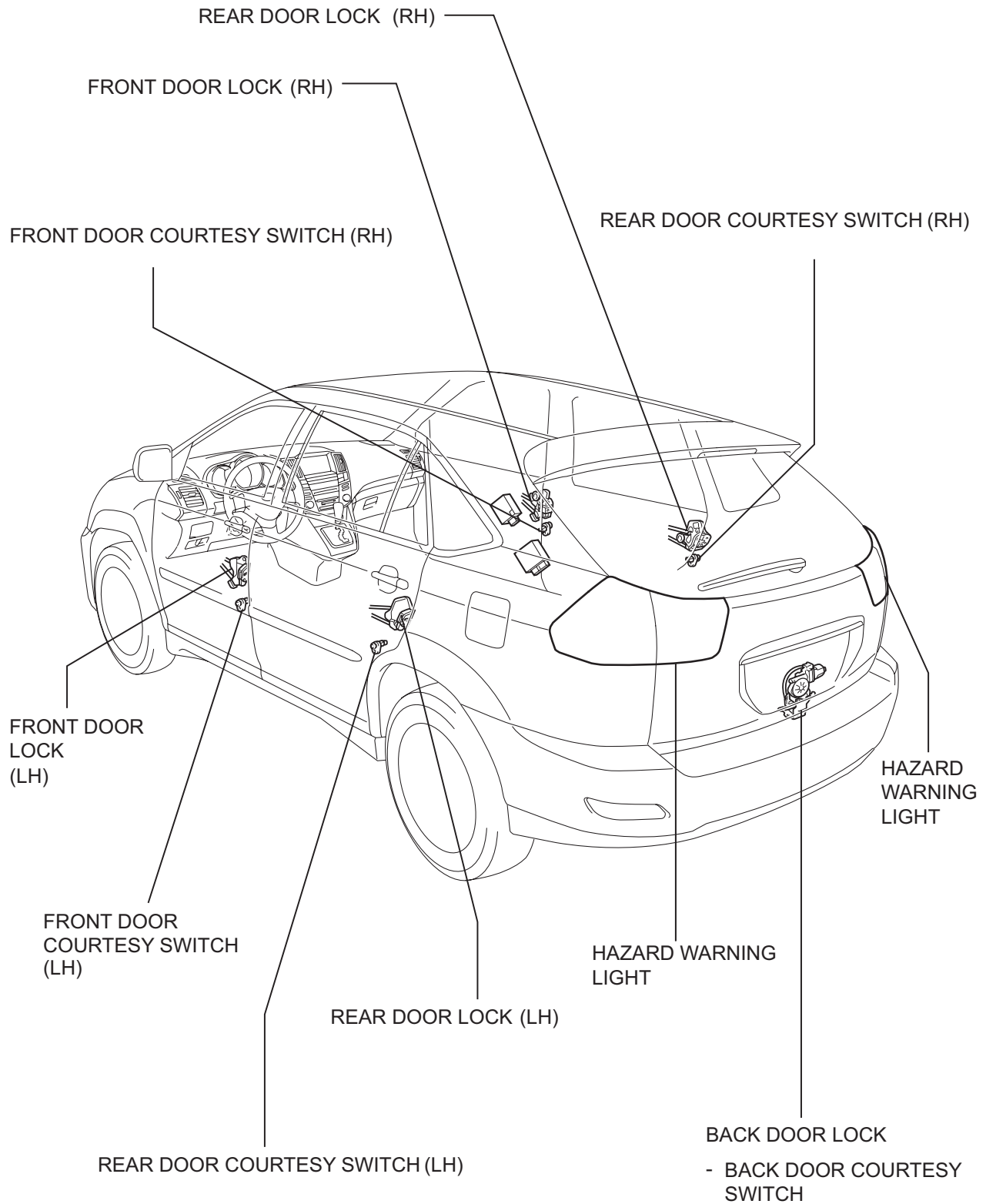


INSTRUMENT PANEL J/B ASSEMBLY

- MULTIPLEX NETWORK BODY ECU
- IG1 RELAY
- ECU-IG NO. 1 FUSE
- AM1 FUSE

IGNITION SWITCH ASSEMBLY





TD

SYSTEM DESCRIPTION

When any attempt is made to forcibly enter the vehicle, open the engine hood or unlock any door without using a key, or when the battery terminals are disconnected and then reconnected, this system causes the vehicle horn and security horn to sound, the interior light to light up, and hazard warning lights, taillights and headlights to flash in order to deter break-in and theft.

In addition, the system locks all doors if any door is unlocked during the time that the alarm is activated.

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use this procedure to troubleshoot the theft deterrent system.
- The intelligent tester should be used in step 3.

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 CUSTOMER PROBLEM ANALYSIS

- (a) Interview the customer to confirm the trouble (See page [IN-36](#)).

NEXT

3 INSPECT COMMUNICATION FUNCTION OF MULTIPLEX COMMUNICATION SYSTEM (BEAN)

- (a) Use the intelligent tester to check for normal function of the multiplex communication system.
- (1) (ECU unconnected, communication line malfunctioning) Without code output, proceed to A.
 - (2) (ECU unconnected, communication line malfunctioning) With code output, proceed to B.

B

Go To MULTIPLEX COMMUNICATION SECTION

A

4 SYMPTOM SIMULATION

NEXT

5 PROBLEM SYMPTOMS TABLE

- (a) If the fault is not listed on the problem symptoms table, proceed to A.
- (b) If the fault is listed on the problem symptoms table, proceed to B.

B

Go to step 6

A

TD

6	PERFORM TROUBLESHOOTING ACCORDING TO MALFUNCTION SYMPTOM
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- (a) Terminals of ECU (See page [TD-8](#))
- (b) On-vehicle inspection (See page [TD-10](#))

7	ADJUST, REPAIR OR REPLACE
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NEXT

8	CONFIRMATION TEST
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NEXT

END

CUSTOMIZE PARAMETERS

HINT:

The following items can be customized.

NOTICE:

- After confirming whether the items requested by the customer are applicable or not for customization, perform customizing operations.
- Be sure to record the current settings before customization.
- When troubleshooting, make sure that the item in question is not set to "OFF" as a result of customization (Example: For the system, "the wireless function does not operate", first check that the wireless function is not set to "OFF", then perform troubleshooting).

THEFT DETERRENT SYSTEM

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
PASSIVE MODE (Passive Arming Mode)	OFF	PASSIVE MODE is a function that switches theft deterrent system from arming preparation state to armed state 30 seconds after key is removed from ignition key cylinder and driver side door is closed, even if doors are not locked by wireless or door key lock operation In PASSIVE MODE, if you do not perform following operations within 14 seconds after door is opened during armed state, theft deterrent system will judge that condition as a theft and switch to alarm sounding state – Unlock any door by wireless operation – Reconnect battery – Insert key into ignition key cylinder and turn ignition switch from OFF to ON – Unlock any door by key operation	ON/OFF
WARN BY HORN (Warning by horn)	ON	Function that makes vehicle horn and theft deterrent horn be able to be used as a warning device	ON/OFF
ENTRY DELAY (Entry delay time)	14 s	Function that changes entry delay time (time before warning starts) for PASSIVE MODE	0 s/14 s/30 s

TD

PROBLEM SYMPTOMS TABLE

Proceed to the reference page shown in the table below for each malfunction symptom and troubleshoot each circuit.

HINT:

Troubleshooting of the theft deterrent system is based on the premise that the door lock control system and the wireless door lock control system are operating normally. Accordingly, before troubleshooting the theft deterrent system, first make certain that the door lock control system and the wireless door lock control system are operating normally.

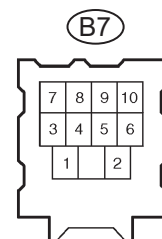
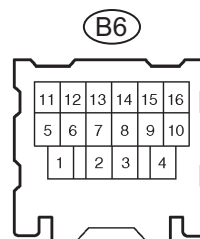
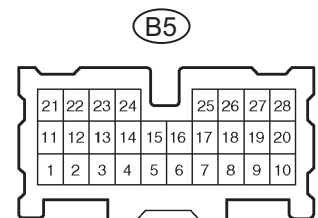
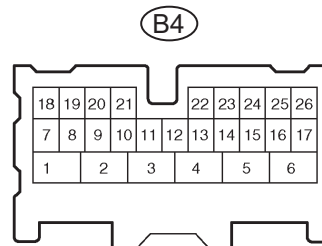
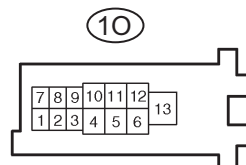
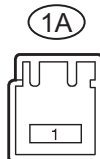
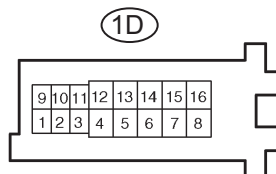
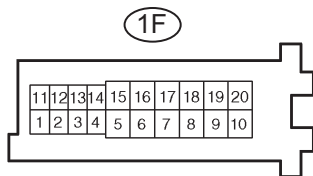
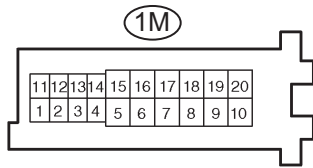
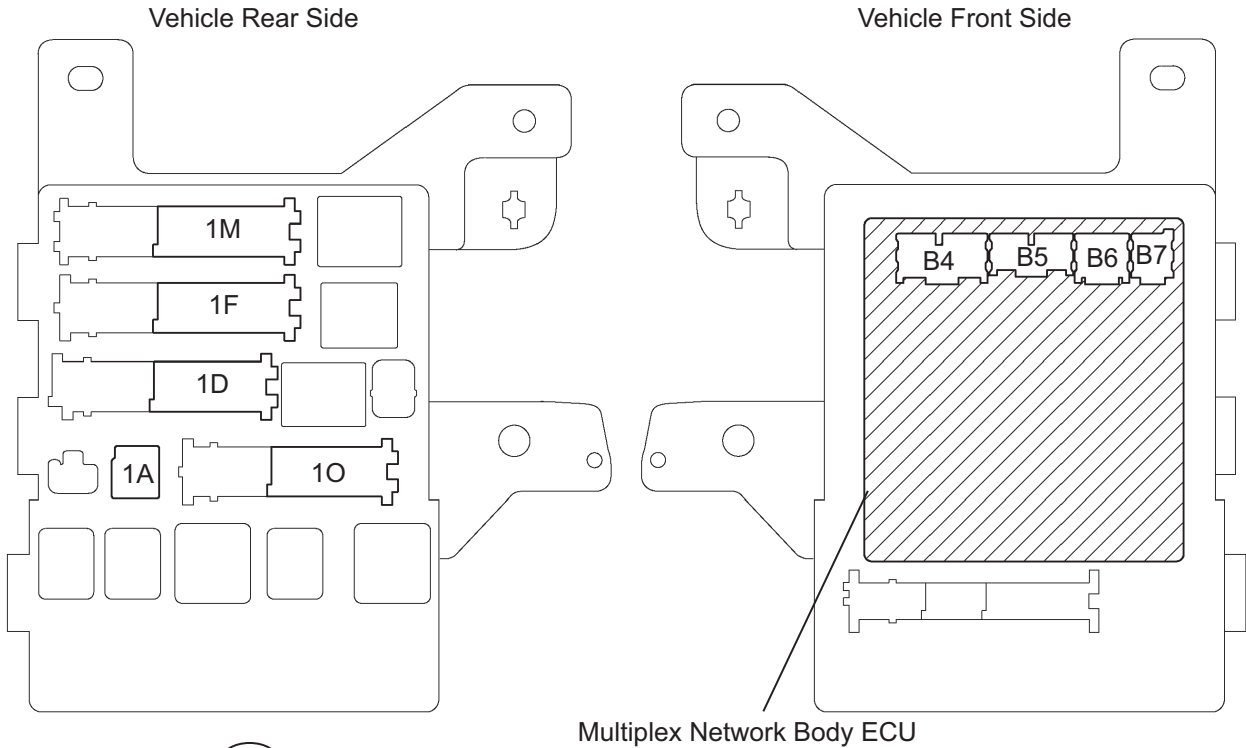
Theft deterrent system

Symptom	Suspected area	See page
Theft deterrent system cannot be set	1. Security indicator light circuit	TD-25
	2. ECU power source circuit	TD-29
	3. Unlock warning switch circuit	EI-18
	4. Door key lock and unlock switch	DL-51
	5. Door courtesy switch circuit	LI-130
	6. Engine hood courtesy switch circuit	TD-18
	7. Multiplex network body ECU	-
Security indicator does not blink when theft deterrent system is set	1. Security indicator light circuit	TD-25
	2. Multiplex network body ECU	-
Alarm sounding state cannot be canceled	1. Ignition switch circuit	TD-22
	2. Unlock warning switch circuit	EI-18
	3. Multiplex network body ECU	-
Theft deterrent system can be set even when a door is open	1. Door courtesy switch circuit	LI-130
	2. Multiplex network body ECU	-
Vehicle horns (low pitched, high pitched) do not sound while theft deterrent system is in warning operation	1. Horn circuit	-
	2. Multiplex network body ECU	-
Headlights do not flash while theft deterrent system is in warning operation	1. Headlight circuit	LI-85
	2. Multiplex network body ECU	-
Taillights do not flash while theft deterrent system is in warning operation	1. Taillight circuit	LI-153
	2. Multiplex network body ECU	-
Hazard warning lights do not flash while theft deterrent system is in warning operation	1. Hazard warning circuit	LI-233
	2. Multiplex network body ECU	-
Interior light does not light up while theft deterrent system is in warning operation	1. Interior light circuit	LI-146
	2. Multiplex network body ECU	-
Security horn does not sound while theft deterrent system is in warning operation	1. Security horn circuit	TD-20
	2. Multiplex network body ECU	-
Headlights flash even when theft deterrent system is not set	1. Headlight circuit	LI-85
	2. Multiplex network body ECU	-
Taillights flash even when theft deterrent system is not set	1. Taillight circuit	LI-153
	2. Multiplex network body ECU	-
Hazard warning lights flash even when theft deterrent system is not set	1. Hazard warning circuit	LI-233
	2. Multiplex network body ECU	-
Interior light comes on even when theft deterrent system is not set	1. Interior light circuit	LI-146
	2. Multiplex network body ECU	-

TERMINALS OF ECU

1. CHECK INSTRUMENT PANEL J/B ASSEMBLY (MULTIPLEX NETWORK BODY ECU)

(a) Disconnect the B4, B5, B6 and B7 ECU connectors.



- (b) Disconnect the 1A, 1D, 1F and 1O J/B connectors.
 (c) Measure the voltage and resistance between each terminal of the wire harness side connectors and body ground.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
IG (1A-1) - Body ground	*1W - Body ground	Ignition power supply	Always	10 to 14 V
IG (1A-1) - Body ground	*2B - Body ground	Ignition power supply	Always	10 to 14 V
BECU (1D-10) - Body ground	L-B - Body ground	+B (BECU) power supply	Always	10 to 14 V
GND1 (1F-10) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND2 (1M-9) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
LCTY (1O-7) - Body ground	B - Body ground	Rear LH courtesy switch	Rear door LH CLOSED → OPEN	10 k Ω or higher → Below 1 Ω
KSW (B4-21) - Body ground	B - Body ground	Key unlock warning switch input	No key in ignition key cylinder (OFF) → Key inserted (ON)	10 k Ω or higher → Below 1 Ω
PCTY (B5-23) - Body ground	L - Body ground	Passenger side courtesy switch	Passenger side door CLOSED (OFF) → OPEN (ON)	10 k Ω or higher → Below 1 Ω
BCTY (B5-25) - Body ground	P - Body ground	Back door courtesy switch	Back door CLOSED (OFF) → OPEN (ON)	10 k Ω or higher → Below 1 Ω
DCTY (B6-14) - Body ground	L - Body ground	Driver side courtesy switch	Driver side door CLOSED (OFF) → OPEN (ON)	10 k Ω or higher → Below 1 Ω
RCTY (B6-16) - Body ground	GR - Body ground	Rear RH courtesy switch	Rear door RH CLOSED (OFF) → OPEN (ON)	10 k Ω or higher → Below 1 Ω
HCTY (B7-10) - Body ground	R - Body ground	Engine hood courtesy switch	Engine hood CLOSED (OFF) → OPEN (ON)	10 k Ω or higher → Below 1 Ω

HINT:

*1: w/ Air suspension system

*2: w/o Air suspension system

If the result is not as specified, there may be a malfunction on the wire harness side.

- (d) Reconnect the B4, B5, B6 and B7 ECU connectors.
 (e) Reconnect the 1A, 1D, 1F, 1M and 1O J/B connectors.
 (f) Measure the voltage between each terminal of the connectors and the body ground.

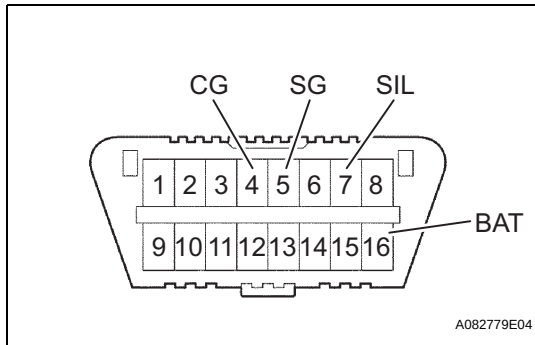
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HAZ (B4-2) - Body ground	Y - Body ground	Hazard warning light drive	Hazard warning lights are blinking (Theft deterrent system is in alarm sounding state)	Pulse generation
IND (B4-24) - Body ground	W - Body ground	Security indicator output	Security indicator lights up (It lights up only for 30 sec. in alarm sounding state. It flashes when immobiliser system is operating.)	3 to 6 V
SH (B7-1) - Body ground	G - Body ground	Security horn drive	Security horn is sounding (Theft deterrent system is in alarm sounding state)	Pulse generation → 0 V

If the result is not as specified, the J/B assy (body ECU) may have a malfunction.

DIAGNOSIS SYSTEM

1. DESCRIPTION

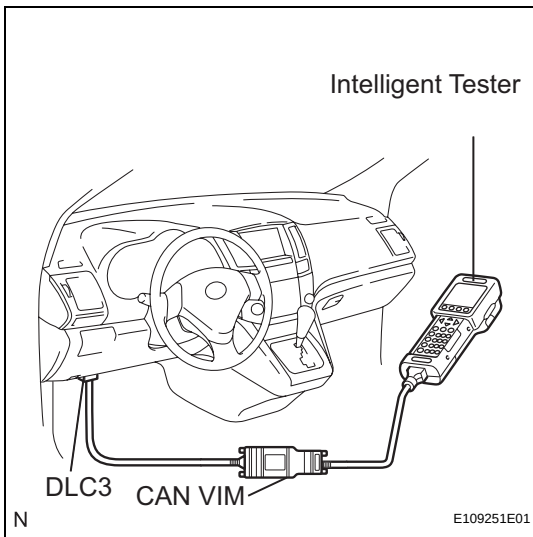
- (a) The multiplex network body ECU controls the functions of the theft deterrent system on the vehicle. Theft deterrent system data can be read in the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the intelligent tester to check for a malfunction and perform repairs.



2. DLC3 CHECK

- (a) The multiplex network body ECU uses ISO 9141-2 BEAN for its communication protocol. The terminal arrangement of the DLC3 complies with SAEJ1962 and matches the ISO 9141-2 format.

Symbol	Terminal No.	Name	Reference terminal	Result	Condition
SIL	7	Bus" + line	5-Signal ground	Pulse generation	During transmission
CG	4	Chassis ground	Body ground	1 Ω or less	Always
SG	5	Signal ground	Body ground	1 Ω or less	Always
BAT	16	Battery positive	Body ground	9 to 14 V	Always



- (b) Connect the cable of the intelligent tester (with CAN VIM) to the DLC3, turn the ignition switch ON and attempt to use the intelligent tester. If the screen displays a communication error message, a problem exists in the vehicle side or with the tester side.
- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
 - If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.

3. CHECK BATTERY VOLTAGE

Voltage:

11 to 14 V

If voltage is below 11 V, replace the battery before proceeding.

TD

ON-VEHICLE INSPECTION

1. OUTLINE OF THEFT DETERRENT SYSTEM

- (a) When the theft deterrent system detects that the vehicle is being tampered with, the system sets off the alarm, causing the horns to sound and the lights to light up or blink in order to alert people around the vehicle to the theft.
- (b) The theft deterrent system has 2 modes; one is the active arming mode (see ACTIVE ARMING MODE) and the other is passive arming mode (see PASSIVE ARMING MODE). The passive arming mode can be switched ON/OFF using the specified method.
- (c) Each mode has 4 states; a disarmed state, an arming preparation state, an armed state and an alarm sounding state.
 - (1) Disarmed state:
 - The alarm function is not operating.
 - The theft deterrent system is not operating.
 - (2) Arming preparation state:
 - The time until the system goes into the armed state.
 - The theft deterrent system is not operating.
 - (3) Armed state:
 - The theft deterrent system is operating.
 - (4) Alarm sounding state:
 - Alarm function is operating.

Alarm time:
Approx. 57 sec.

Refer to table below for alarm method and time:

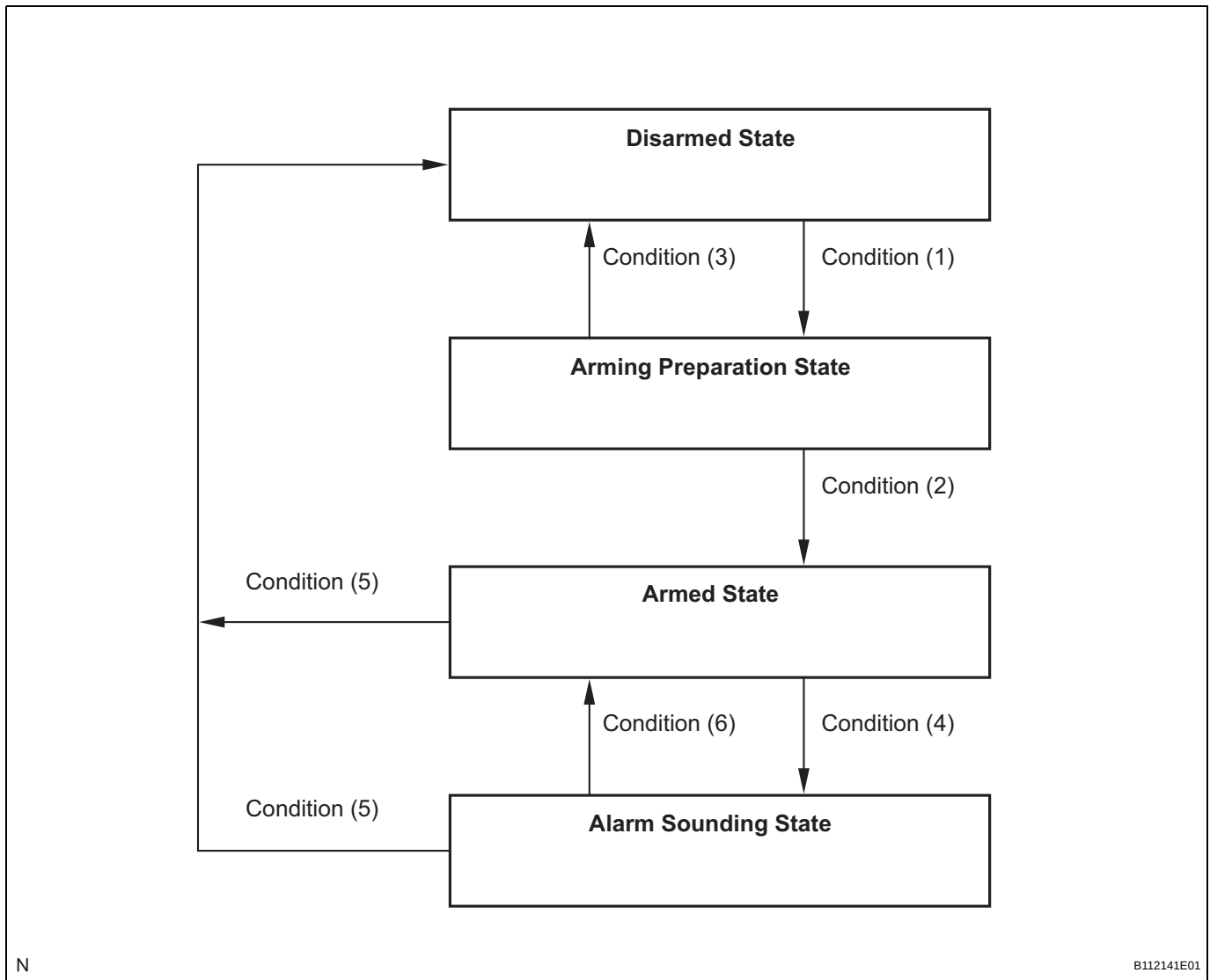
Alarm Method	Headlight	Blinking (approx. 0.4 second cycles)
	Taillight	Blinking (approx. 0.4 second cycles)
	Hazard Warning Light	Blinking (cycle of flasher relay)
	Interior Light	Illuminating
	Vehicle Horn	Sounding (approx. 0.4 second cycles)
	Security Horn	Sounding (approx. 0.4 second cycles)
Alarm Time	Approx. 57 sec.	

HINT:
If any of the doors are unlocked with no key in the ignition key cylinder during the armed state, a forced door lock signal will be output (see FORCED DOOR LOCK CONTROL).

2. ACTIVE ARMING MODE

- HINT:
- Active arming mode starts the alarm control immediately after the doors are locked.
 - This system activates as described in the diagram below when one of items for each condition is met.

(a) Active arming mode



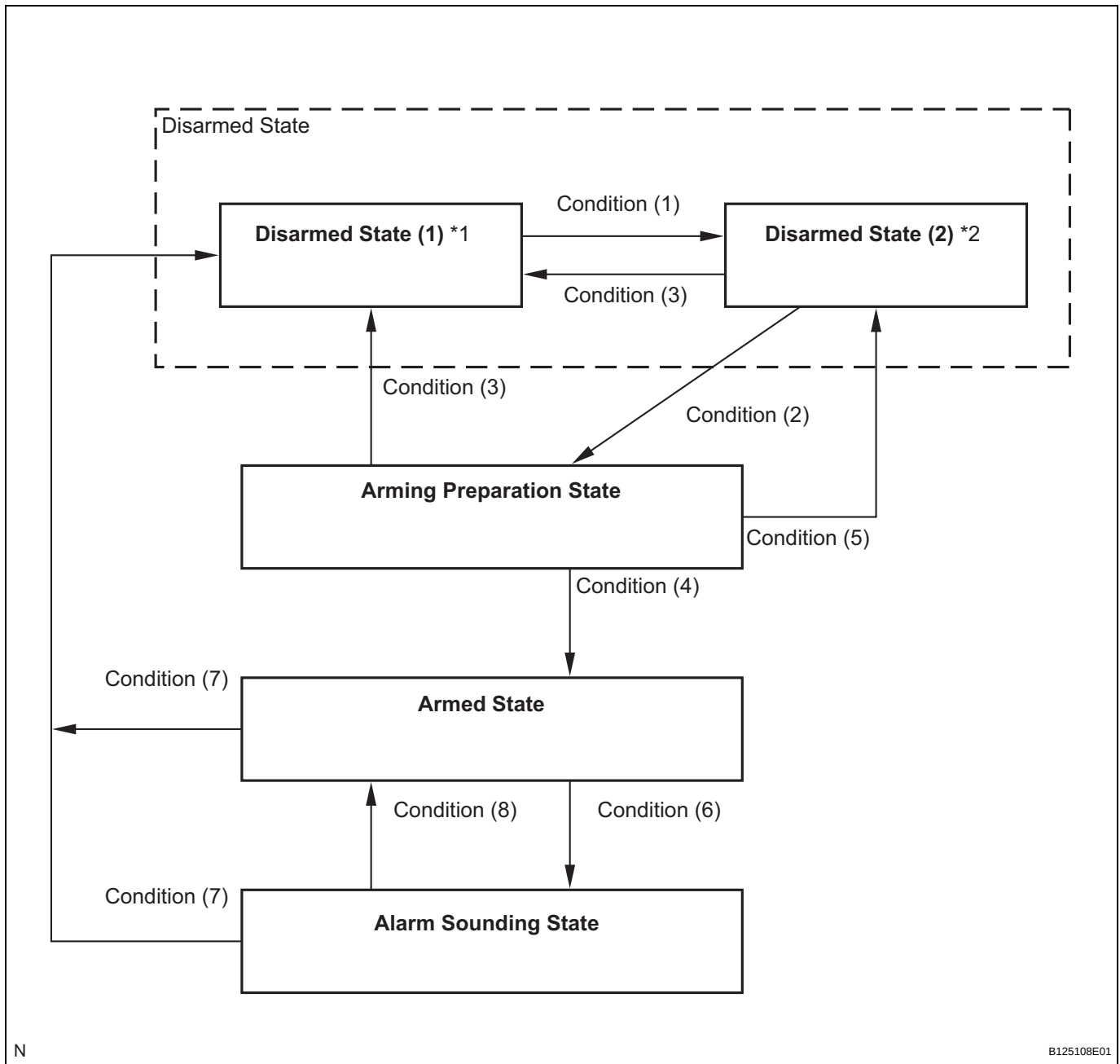
Condition	Item
Condition (1)	(No key in ignition key cylinder) 1. With all doors and engine hood closed, lock all doors by key operation. 2. With all doors and engine hood closed, lock all doors by wireless operation. 3. With any door or the engine hood open, lock all doors and close all doors and engine hood.
Condition (2)	1. Allow approx. 30 sec. to elapse.
Condition (3)	1. Unlock any door by wireless operation. 2. Unlock any door by key operation. 3. Unlock any door. 4. Open any door. 5. Open engine hood. 6. Insert key into ignition key cylinder. 7. Reconnect battery. 8. Turn ignition switch from OFF to ON.
Condition (4)	1. Open engine hood. 2. Reconnect battery. 3. Open any door. 4. Unlock any door without key and wireless operation. 5. Directly connect ignition switch without key (or turn ignition switch ON without key).
Condition (5)	1. Unlock any door by wireless operation. 2. Unlock any door by key operation. 3. Insert key into ignition key cylinder and turn ignition switch from OFF to ON.
Condition (6)	1. After approx. 57 sec., alarm stops and system returns to armed state.

3. PASSIVE ARMING MODE

HINT:

- Passive arming mode starts the alarm control after the key is removed from the ignition key cylinder and doors are closed.
- Passive arming mode can be switched ON/OFF by the specified method.
- The alarm is initially set (when shipped from factory) to active arming mode (not passive arming mode).
- During passive arming mode, the theft deterrent system goes into the armed state even if the doors are not locked.
- Detecting that the doors are unlocked does not set off the alarm during passive arming mode.
- A forced door lock signal is not output during passive arming mode (see FORCED DOOR LOCK CONTROL).
- Although the theft deterrent system detects that the doors are opened during passive arming mode, the alarm will not go off immediately because an entry delay time is set.
- If any of the following conditions is met during passive arming mode, the theft deterrent system will switch to active arming mode.
 - With all doors and engine hood closed, lock all doors by key operation.
 - With all doors and engine hood closed, lock all doors by wireless operation.
 - With any door or the engine hood open, lock all doors and close all doors and engine hood.
- This system activates as described in the diagram below when one of items for each condition is met.

(a) Passive arming mode



HINT:

- *1: Disarmed state (1) is the normal disarmed state.
- *2: Disarmed state (2) is set from either the disarmed state (1) or the arming preparation state.

Condition	Item
Condition (1)	1. With ignition switch OFF, open any door or the engine hood, and pull key out of ignition key cylinder. 2. With ignition switch OFF, pull key out of ignition key cylinder, and open any door or the engine hood.
Condition (2)	1. All doors and engine hood are closed.

Condition	Item
Condition (3)	1. Unlock any door by wireless operation. 2. Insert key into ignition key cylinder. 3. Reconnect battery. 4. Turn ignition switch from OFF to ON. 5. Unlock any door by key operation.
Condition (4)	1. With all doors and engine hood closed, allow approx. 27.5 sec. to elapse.
Condition (5)	1. Open any door or the engine hood.
Condition (6)	1. Open any door and allow entry delay time*¹ to elapse. 2. Open engine hood. 3. Reconnect battery. 4. Directly connect ignition switch without key (or turn ignition switch ON without key).
Condition (7)	1. Unlock any door by wireless operation. 2. Unlock any door by key operation. 3. Insert key into ignition key cylinder and turn ignition switch from OFF to ON.
Condition (8)	1. After approx. 57 sec., alarm stops and system returns to armed state.

HINT:

*1: When any door is opened while all the doors are closed during passive arming mode, the entry delay time starts. If the switch condition (armed state → disarmed state (1) or (2)) is met during the entry delay time, the theft deterrent system will return to disarmed state (1) or (2). However, if the switch condition for disarmed state (1) or (2) is not met, the theft deterrent system will recognize it as a theft and set off the alarm. Entry delay time of 0, 14 or 30 sec. can be selected by the customizing function.

4. FORCED DOOR LOCK CONTROL

- (a) The forced door lock control prevents the vehicle from being tampered with. Immediately after a door is unlocked (alarm starts), the door is forced to lock by a forced door lock signal.
- (1) Conditions that force the doors to lock:
No key is in the ignition key cylinder and both of the following conditions are met.
- The theft deterrent system is in the alarm sounding state of active arming mode.
 - Any door is unlocked.

5. ALARM MEMORY FUNCTION

- (a) If the alarm is set off (tampering is detected) while the theft deterrent system is armed, it will be recorded by the alarm memory function. Whenever you cancel the theft deterrent system, the alarm memory function causes the taillights to light up for 2 seconds in order to inform you that the alarm has been set off.
- (1) Conditions of the alarm memory function that cause the taillights to light up:
When the theft deterrent system has entered into the alarm sounding state (tampering has been detected) even once, the taillights will light up for 2 seconds if any of the following conditions is met.

- Switched to the disarmed state from the armed state during active arming mode.
- Switched to the disarmed state (1) from the armed state during passive arming mode.

HINT:

Active arming mode: See ACTIVE ARMING MODE.

Passive arming mode: See PASSIVE ARMING MODE.

6. PANIC ALARM CONTROL

(a) The panic alarm control makes it possible to voluntarily set off the panic alarm by pressing the PANIC switch on the wireless transmitter.

(1) Conditions that cause the panic alarm control to set off the panic alarm:

The panic alarm control sets off the panic alarm by pressing the PANIC switch on the wireless transmitter for over 2.4 seconds under the following conditions:

- The ignition switch is off.
- The theft deterrent system is not in the alarm sounding state. (This condition is common both to active arming mode and to passive arming mode.)

(2) Conditions that cause the panic alarm control to shut off the alarm:

The panic alarm control shuts off the panic alarm when any of the following conditions is met during panic alarm operation:

- The ignition switch is turned ON.
- Either of the switches on the wireless transmitter (LOCK/UNLOCK) is pressed.
- The panic alarm ends (57 sec. have passed).
- The theft deterrent system switches to the alarm sounding state. Under this condition, the theft deterrent system is controlling the alarm rather than the panic alarm control. In order to cancel this alarm, refer to the theft deterrent system alarm sounding state cancellation procedure. (This condition is common both to active arming mode to passive arming mode.)

HINT:

Active arming mode: See ACTIVE ARMING MODE.

Passive arming mode: See PASSIVE ARMING MODE.

7. SECURITY INDICATOR OUTPUT

- (a) The multiplex network body ECU outputs a signal to light up the security indicator, according to the state of the theft deterrent system. However, some of the actual lighting conditions of the security indicator are different from the output signals of the multiplex network body ECU.

Output:

State of Theft Deterrent System*	Security Indicator	
	Output Signals from Body ECU	Actual Lighting Condition
Disarmed state (1), (2)	OFF	OFF (Immobiliser system unset) BLINKING (Immobiliser system set)
Arming preparation state	ON	ON
Armed state	OFF	BLINKING
Alarm sounding state	ON	ON

Blinking cycle:

Time	Security Indicator
0.2 sec.	ON
1.8 sec.	OFF

HINT:

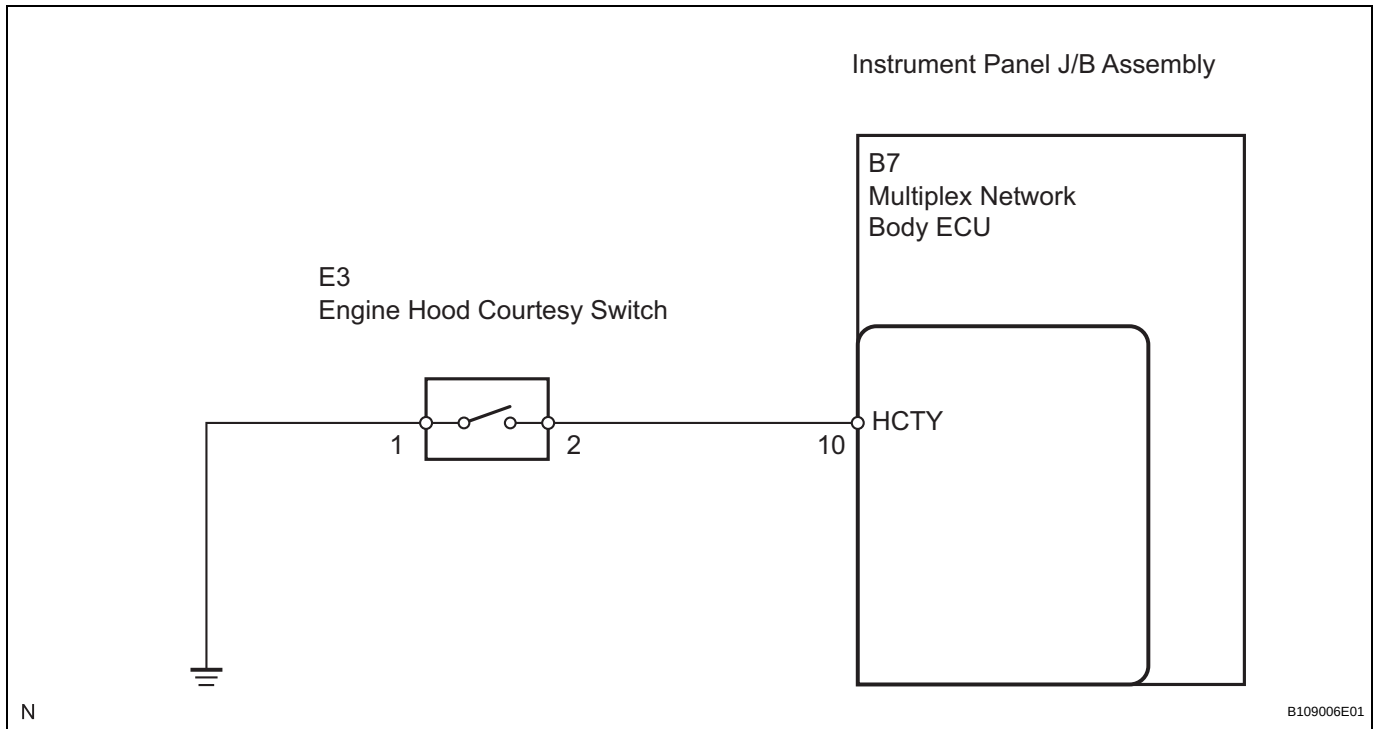
- *: The above condition is common both to active arming mode and to passive arming mode.
- When the immobiliser system is set, the security indicator blinks during both the disarmed state and the armed state, due to the output signals from the immobiliser system.

Engine Hood Courtesy Switch Circuit

DESCRIPTION

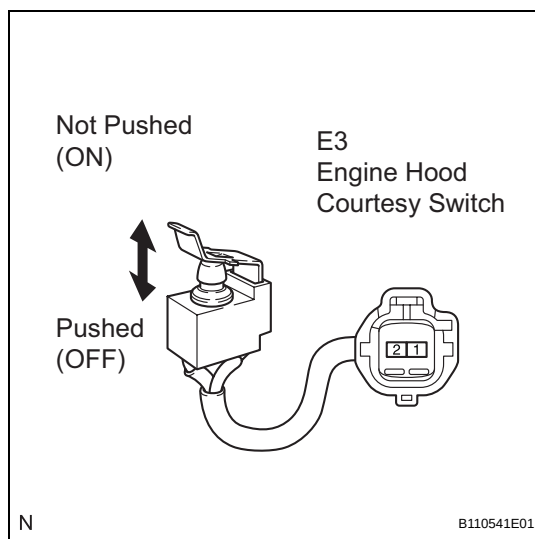
The engine hood courtesy switch is installed together with the hood lock. This switch turns on when the engine hood is opened and turns off when the engine hood is closed.

WIRING DIAGRAM



1

INSPECT ENGINE HOOD COURTESY SWITCH



- Remove the courtesy switch from the hood lock.
- Measure the resistance according to the value(s) in the table below.

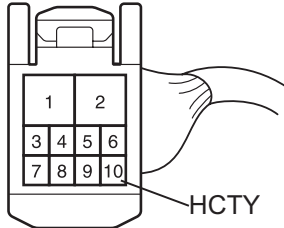
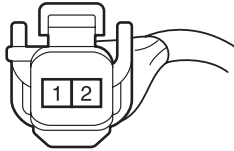
Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Pushed (OFF)	10 k Ω higher
	Free (ON)	Below 1 Ω

NG

REPLACE ENGINE HOOD COURTESY SWITCH

OK

2**CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK BODY ECU - ENGINE HOOD COURTESY SWITCH)****Wire Harness Side Connector Front View:**B7
Multiplex Network Body ECUE3
Engine Hood Courtesy Switch

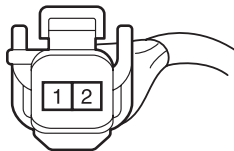
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- (a) Disconnect the B7 ECU and E3 switch connectors.
 (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
HCTY (B7-10) - (E3-2)	Below 1 Ω
HCTY (B7-10) or (E3-2) - Body ground	10 k Ω higher

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****3****CHECK HARNESS AND CONNECTOR (ENGINE HOOD COURTESY SWITCH - BODY GROUND)****Wire Harness Side Connector Front View:**E3
Engine Hood Courtesy Switch

N

B110524E01

- (a) Disconnect the E3 switch connector.
 (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
E3-1 - Body ground	Below 1 Ω

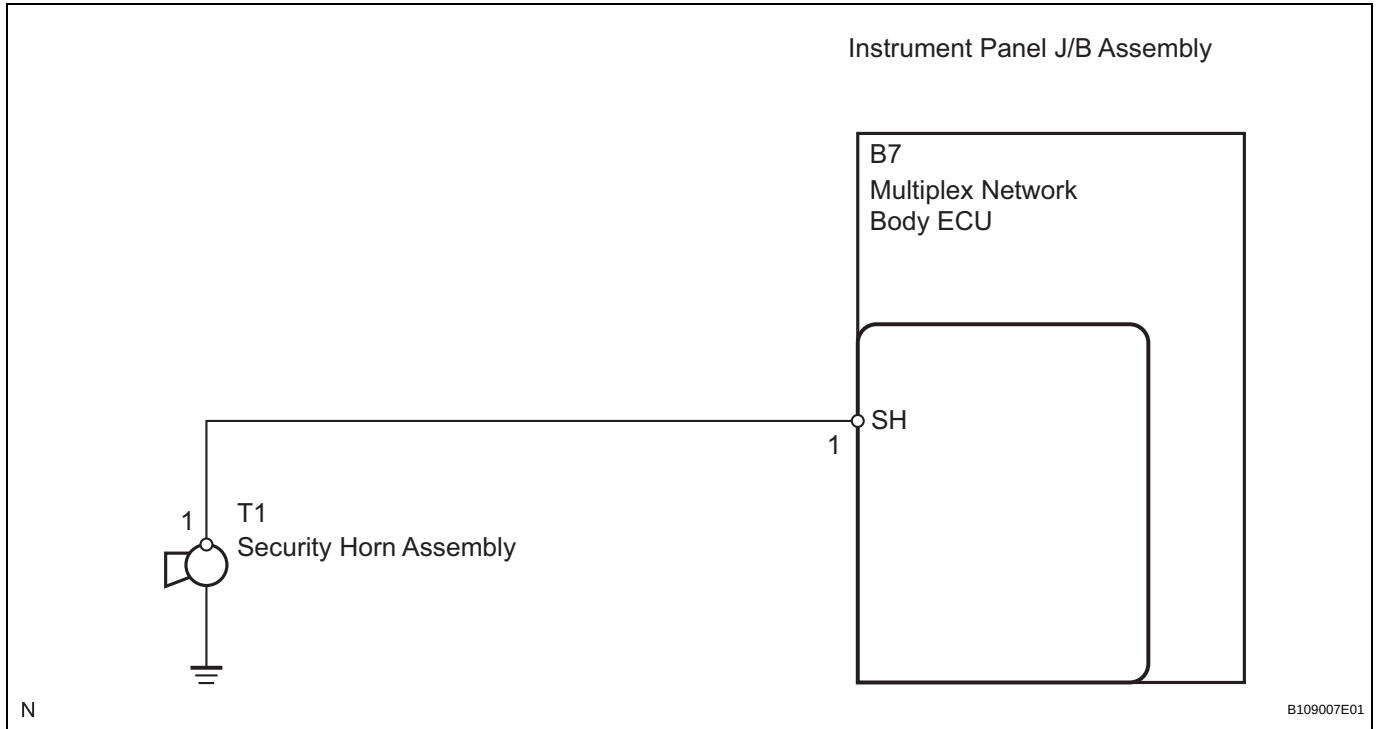
NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

Security Horn Circuit

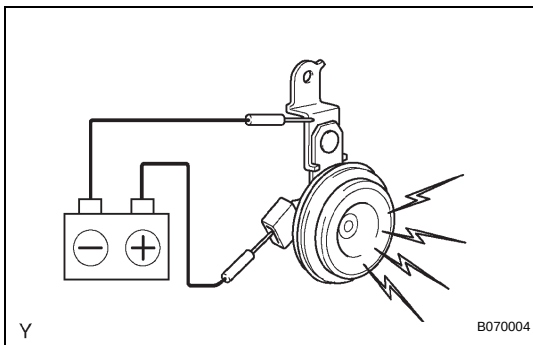
DESCRIPTION

When the theft deterrent system is operating, the relay in the multiplex network body ECU turns on and off, causing the security horn to sound.

WIRING DIAGRAM


1

INSPECT SECURITY HORN ASSEMBLY



- Remove the security horn assembly.
- Check operation of the horn.

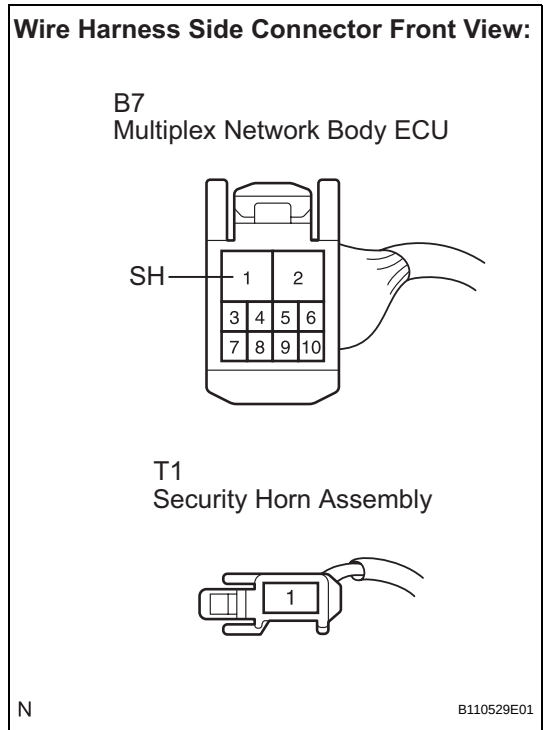
Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Horn sounds
Battery positive (-) → Horn body	

NG
REPLACE SECURITY HORN ASSEMBLY
OK

2

CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK BODY ECU - SECURITY HORN ASSEMBLY)



- (a) Disconnect the B7 ECU connector and T1 horn connector.
- (b) Measure the resistance according to the value(s) in the table below.

Resistance

Symbol (Terminal No.)	Specified Condition
SH (B7-1) - (T1-1)	Below 1 Ω
SH (B7-1) or (T1-1) - Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

- (a) Remove the ECU-IG NO.1 and AM1 fuses from the instrument panel J/B.
- (b) Measure the resistance.

Standard resistance:
Below 1 Ω

NG

REPLACE FUSE

OK

2 INSPECT RELAY (IG1)

- (a) Install the ECU-IG NO.1 and AM1 fuses to the instrument panel J/B.
(b) Remove the IG1 relay from the instrument panel J/B.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Condition	Specified Condition
3 - 5	10 k Ω or higher
	Below 1 Ω
	(When battery voltage is applied to terminals 1 and 2)

NG

REPLACE RELAY

OK

3 INSPECT IGNITION OR STARTER SWITCH ASSEMBLY

- (a) Install the IG1 relay to the instrument panel J/B.
(b) Disconnect the I14 switch connector.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

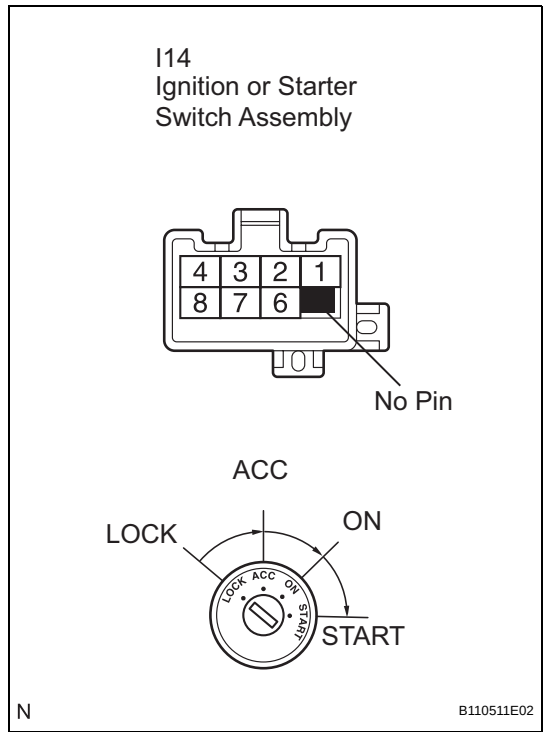
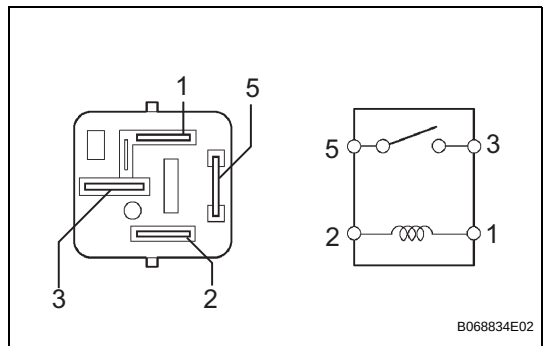
Tester Connection	Switch Position	Specified Condition
2 - 4	ON	Below 1 Ω

NG

REPLACE IGNITION OR STARTER SWITCH ASSEMBLY

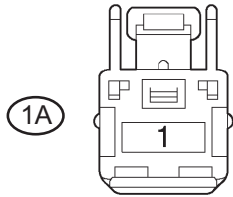
OK

TD



4 CHECK HARNESS AND CONNECTOR (BATTERY - INSTRUMENT PANEL J/B)**Wire Harness Side Connector Front View:**

Instrument Panel J/B Assembly



Y

B067853E05

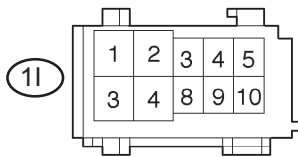
- (a) Connect the I14 switch connector.
- (b) Disconnect the 1A J/B connector.
- (c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Switch Position	Specified Condition
1A-1 - Body ground	Ignition switch ON	10 to 14 V

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****TD****5 CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - INSTRUMENT PANEL J/B)****Wire Harness Side Connector Front View:**

Instrument Panel J/B Assembly



B069996E03

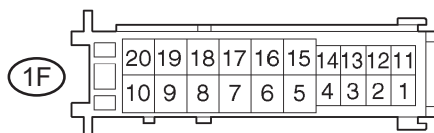
- (a) Disconnect the 1I J/B connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Position	Specified Condition
1I-4 - 1I-9	Ignition switch ON	Below 1 Ω

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****6 CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B (BODY ECU) - BODY GROUND)****Wire Harness Side Connector Front View:**

Instrument Panel J/B Assembly



B069992E06

- (a) Disconnect the 1F J/B connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
1F-10 - Body ground	Below 1 Ω

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

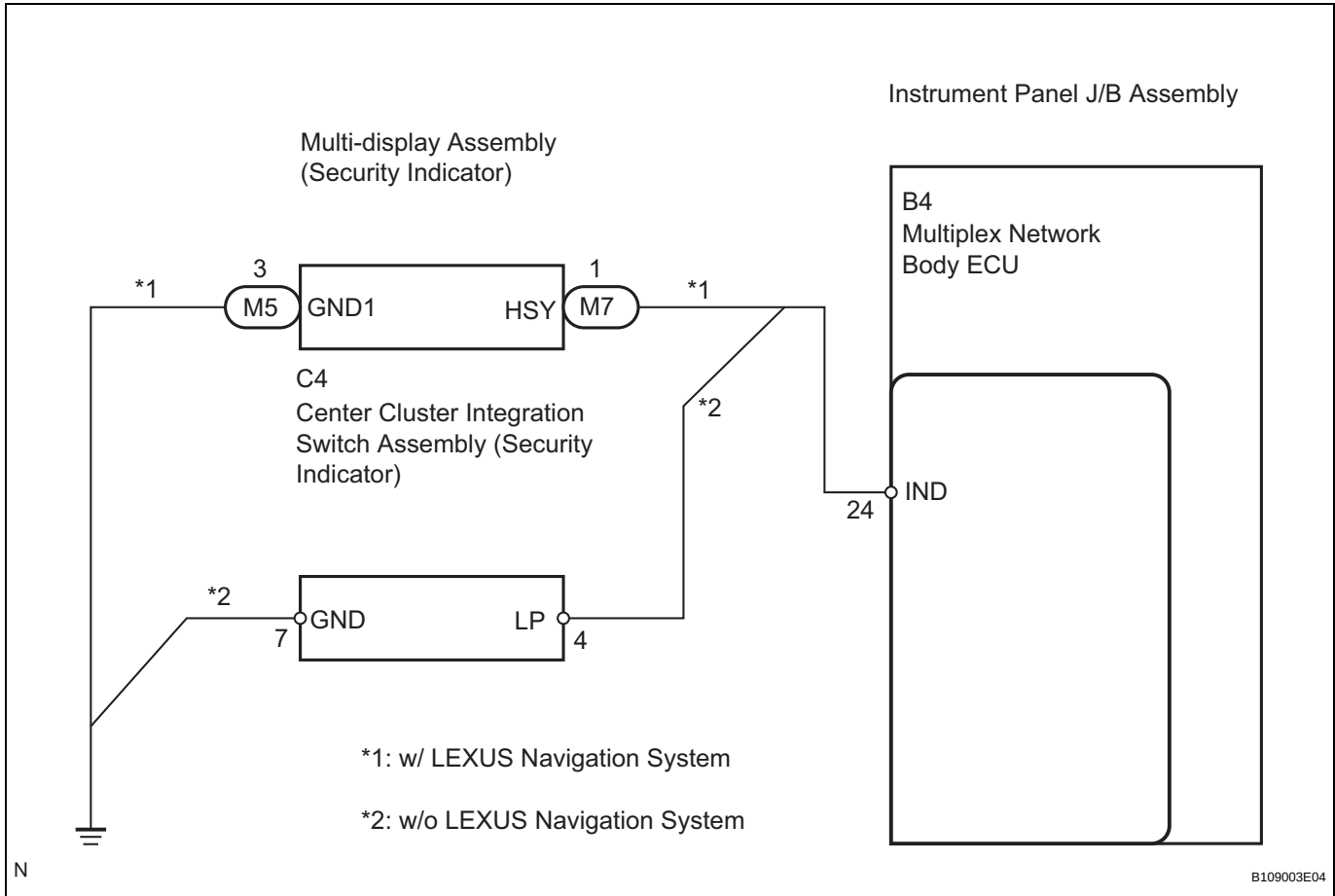
Security Indicator Light Circuit

DESCRIPTION

Even when the theft deterrent system is in the disarmed state, the security indicator blinks due to a signal output from the immobiliser system. The security indicator blinks continuously due to a continuous signal received from the immobiliser system while in the armed state.

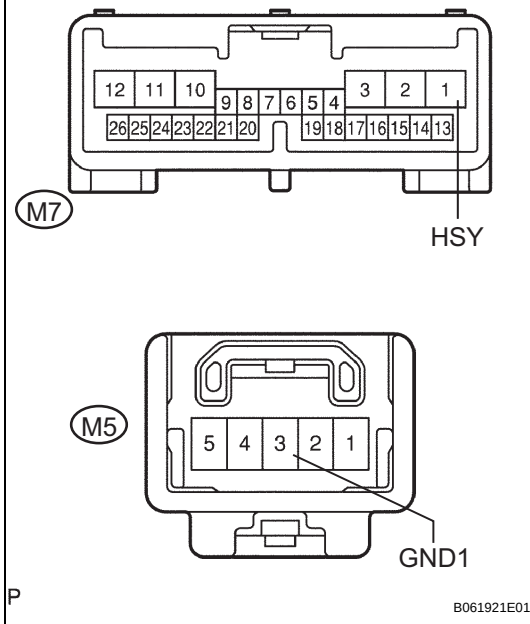
The multiplex network body ECU causes the security indicator to light up or blink only during the arming preparation state and alarm sounding state.

WIRING DIAGRAM



1**INSPECT MULTI-DISPLAY ASSEMBLY OR CENTER CLUSTER INTEGRATION SWITCH ASSEMBLY (SECURITY INDICATOR)**

Multi-display Assembly



(a) w/ LEXUS navigation system:

Check the security indicator.

- (1) Remove the multi-display.
- (2) Apply battery voltage to the terminals of the multi-display and check the lighting condition of the security indicator.

Standard

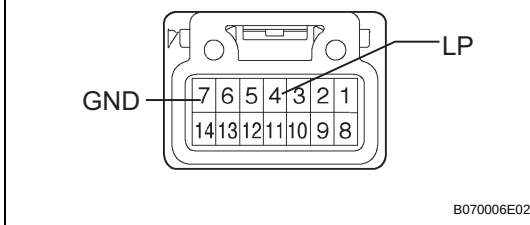
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 (HSY) (M7 side)	Lights up
Battery negative (-) → Terminal 3 (GND) (M5 side)	

NOTICE:

- If the positive (+) lead and the negative (-) lead are incorrectly connected, the security indicator will not light up.
- Voltage of more than 12 V will damage the security indicator.
- If the voltage is too low, the security indicator will not light up.

TD

Center Cluster Integration Switch Assembly



(b) w/o LEXUS navigation system:

Check the security indicator.

- (1) Remove the center cluster integration switch.
- (2) Apply battery voltage to the terminals of the center cluster integration switch and check the lighting condition of the security indicator.

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 (LP)	Lights up
Battery negative (-) → Terminal 7 (GND)	

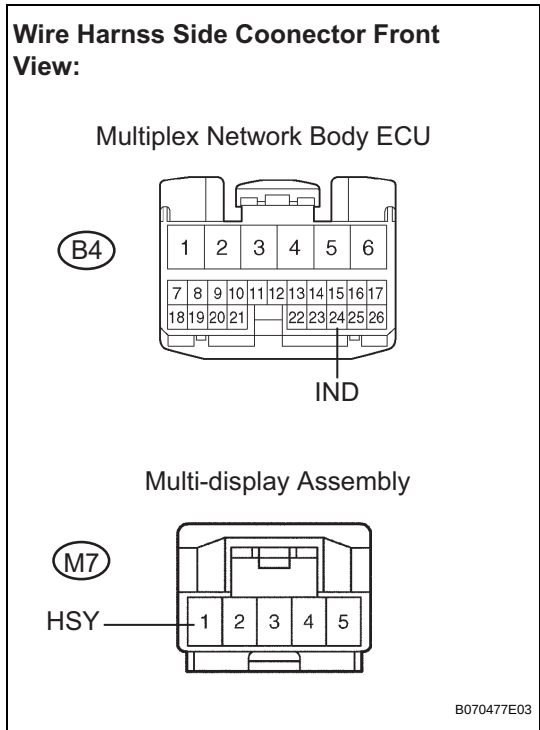
NOTICE:

- If the positive (+) lead and the negative (-) lead are incorrectly connected, the security indicator will not light up.
- Voltage of more than 12 V will damage the security indicator.
- If the voltage is too low, the security indicator will not light up.

NG
**REPLACE MULTI-DISPLAY ASSEMBLY OR
CENTER CLUSTER INTEGRATION SWITCH
ASSEMBLY**
OK

2

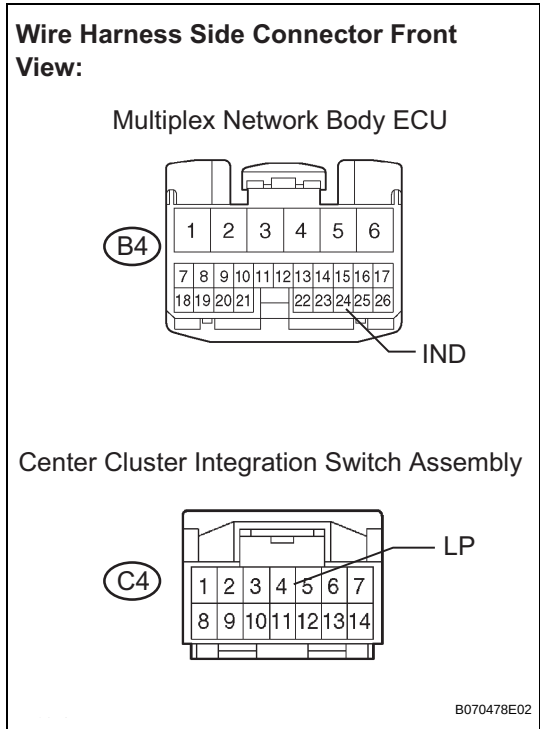
CHECK HARNESS AND CONNECTOR (BODY ECU - MULTI-DISPLAY OR CENTER CLUSTER INTEGRATION SW)



- (a) w/ LEXUS navigation system:
- Check the wire harness between the ECU and multi-display.
- (1) Disconnect the B4 ECU connector and M7 multi-display connector.
 - (2) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
IND (B4-24) - HSY (M7-1)	Below 1 Ω
IND (B4-24) - Body ground	10 k Ω or higher



- (b) w/o LEXUS navigation system:
- Check the wire harness between the ECU and integration switch.
- (1) Disconnect the C4 switch connector.
 - (2) Measure the resistance according to the value(s) in the table below.

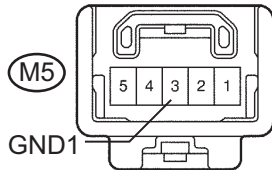
Standard resistance

Symbol (Tester Connection)	Specified Condition
IND (B4-24) - LP (C4-4)	Below 1 Ω
IND (B4-24) - Body ground	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3**CHECK HARNESS AND CONNECTOR (MULTI-DISPLAY OR CENTER CLUSTER INTEGRATION SW - BODY GROUND)****Wire Harness Side Connector Front View:**Multi-display Assembly
(w/ LEXUS Navigation System)

P

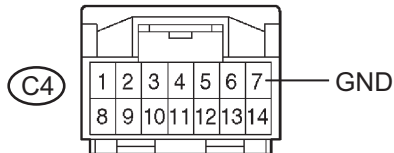
B061920E01

- (a) w/ LEXUS navigation system:
Check the wire harness between the multi-display and the body ground.

- (1) Disconnect the M5 multi-display connector.
- (2) Measure the resistance according to the value(s) in the table below.

Standard resistance

Symbol (Tester Connection)	Specified Condition
GND1 (M5-3) - Body ground	Below 1 Ω

Wire Harness Side Connector Front View:Center Cluster Integration Switch Assembly
(w/o LEXUS Navigation System)

B070480E01

- (b) w/o LEXUS navigation system:
Check the wire harness between the integration switch and the body ground.

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

Standard resistance

Symbol (Tester Connection)	Specified Condition
GND (C4-7) - Body ground	Below 1 Ω

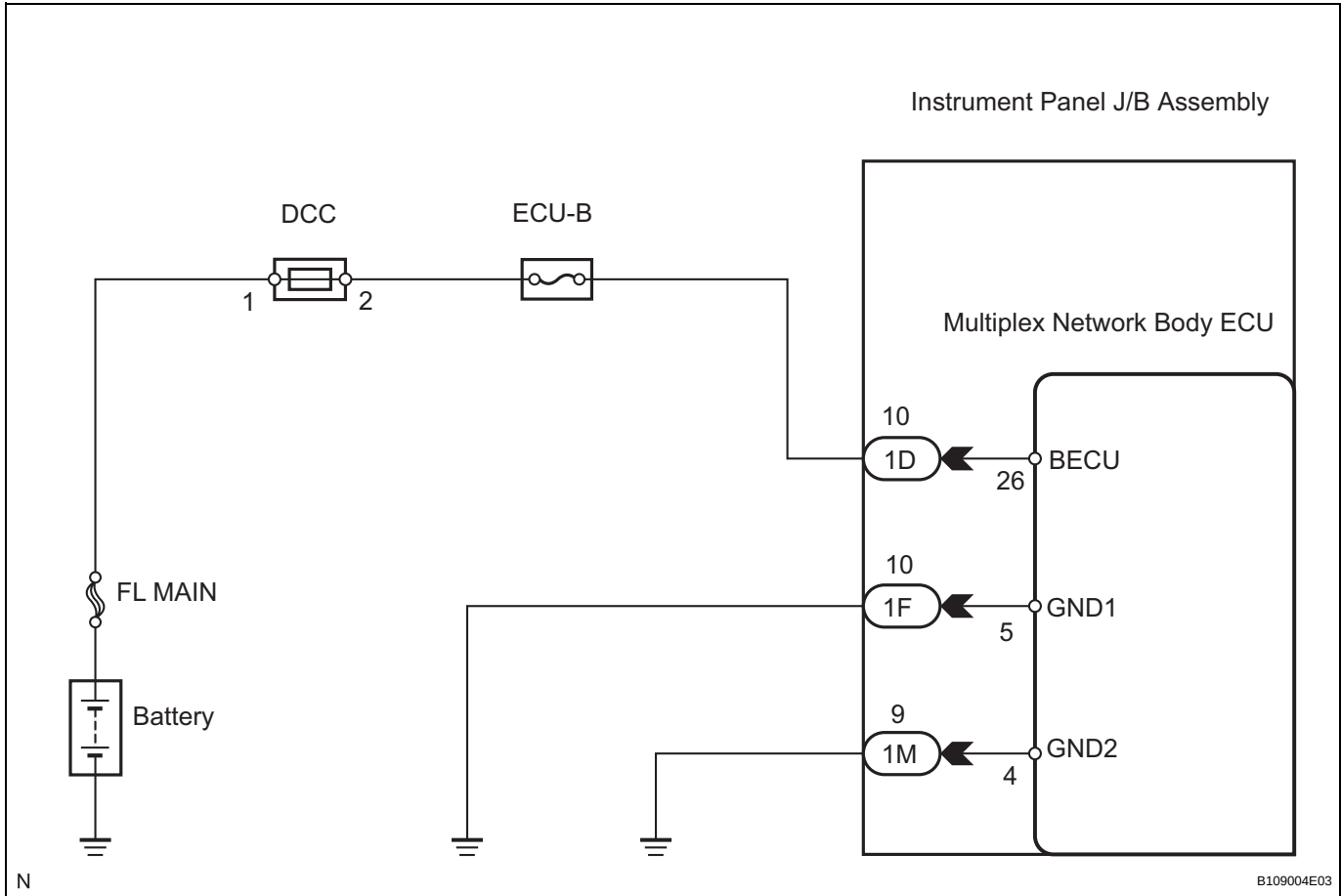
NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE****TD**

ECU Power Source Circuit

DESCRIPTION

This circuit provides power for multiplex network body ECU operation.

WIRING DIAGRAM



1

INSPECT FUSE (ECU-B)

- (a) Remove the ECU-B fuse from the fusible link block.
- (b) Measure the resistance.

Standard resistance:

Below 1 Ω

NG

REPLACE FUSE

OK

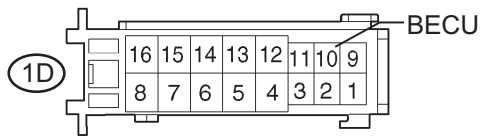
2

CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (MULTIPLEX NETWORK BODY ECU) (POWER SOURCE)

- (a) Install the ECU-B fuse to the fusible link block.

Wire Harness Side Connector Front View:

Instrument Panel J/B Assembly



B069990E05

OK

- (b) Disconnect the 1D J/B connector.
 (c) Measure the voltage according to the value(s) in the table below.

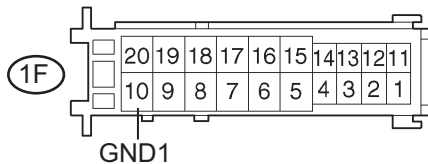
Standard voltage

Symbol (Tester Connection)	Specified Condition
BECU (1D-10) - Body ground	10 to 14 V

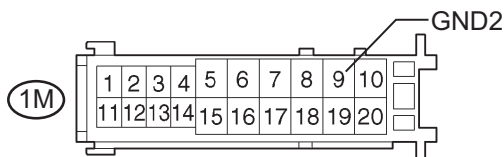
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR**3****CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B (BODY ECU) - BODY GROUND)****Wire Harness Side Connector Front View:**

Instrument Panel J/B Assembly



Instrument Panel J/B Assembly



B069986E03

OK

- (a) Disconnect the 1F and 1M J/B connectors.
 (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

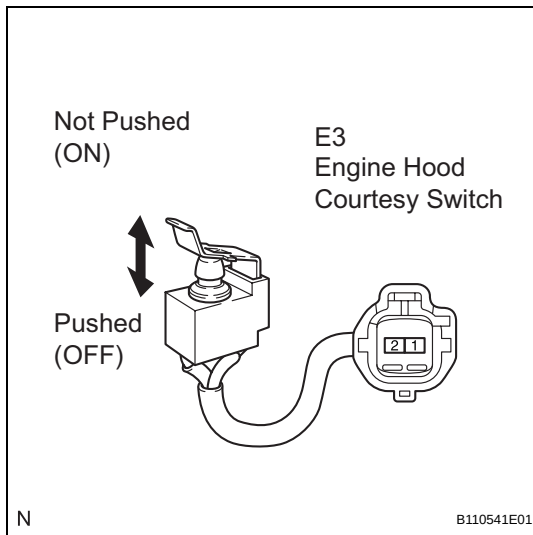
Symbol (Tester Connection)	Specified Condition
GND1 (1F-10) - Body ground	Below 1 Ω
GND2 (1M-9) - Body ground	

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

TD

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE



ENGINE HOOD COURTESY SWITCH

INSPECTION

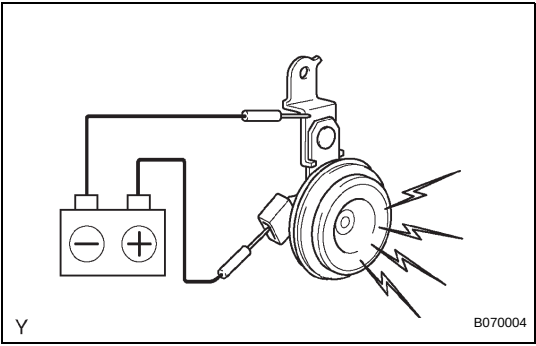
1. INSPECT ENGINE HOOD COURTESY SWITCH

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

Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Pushed (OFF)	10 k Ω or higher
	Free (ON)	Below 1 Ω

If the result is not as specified, replace the hood lock assembly.



SECURITY HORN ASSEMBLY

INSPECTION

1. INSPECT SECURITY HORN ASSEMBLY

- (a) Check operation of the horn.

Standard

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Horn sounds
Battery negative (-) → Horn body	

If the result is not as specified, replace the security horn assembly.