

Body Electrical

Body Electrical

Special Tools	22-2
General Troubleshooting Information .	22-3

Relay and Control Unit Locations

Engine Compartment	22-7
Dashboard	22-8
Seat	22-11
Door	22-12

Connectors and Harnesses

Connector Index	22-13
Connector to Harness Index	22-14

Fuse/Relay Boxes

Connector to Fuse/Relay Box Index	22-53
--	-------

Power Distribution

Fuse to Components Index	22-57
--------------------------------	-------

Ground Distribution

Ground to Components Index	22-62
----------------------------------	-------

Under-dash Fuse/Relay Box

* Removal and Installation	22-63
----------------------------------	-------

Battery

Battery Test	22-65
Battery Terminal Disconnection and Reconnection	22-66
Battery Removal and Installation	22-67

Relays

Power Relay Test	22-68
------------------------	-------

Ignition Switch

Component Location Index	22-70
Circuit Diagram	22-71
* Key Interlock System Circuit Troubleshooting	22-72
* Key Interlock Solenoid Test	22-73
Park Pin Switch Test	22-74
* Ignition Switch Test	22-75
* Ignition Switch Replacement	22-75

Multiplex Integrated Control System

Component Location Index	22-76
General Troubleshooting Information .	22-77
DTC Troubleshooting Index	22-80
System Description	22-82
Troubleshooting	
B-CAN System Diagnosis Test Mode A	22-95
B-CAN System Diagnosis Test Mode B	22-96
B-CAN System Diagnosis Test Mode C	22-97

B-CAN System Diagnosis Test Mode D	22-98
B-CAN System Diagnosis Test Mode 1 and Test Mode 2 (without the HDS)	22-99
Sleep and Wake-up Mode Test	22-102
Circuit Diagram	22-103
DTC Troubleshooting	22-104
MICU Input Test	22-109

Keyless/Power Door

Locks/Security System

Component Location Index	22-111
System Description	22-113
Circuit Diagram	22-114
DTC Troubleshooting	22-118
Symptom Troubleshooting Index	22-122
Symptom Troubleshooting	22-123
MICU Input Test	22-125
Door Lock Actuator Test	22-131
Tailgate Lock Actuator Test	22-133
Door Lock Knob Switch Test	22-133
Door Key Cylinder Switch Test	22-135
Security Horn Test/Replacement	22-135
Security Hood Switch Test	22-136
Transmitter Test	22-136
Tripped Sensor History	22-139

Horns

Component Location Index	22-140
Circuit Diagram - With Security System	22-141
Without Security System	22-142
Horn Test/Replacement	22-143
Horn Switch Test	22-143

Exterior Lights

Component Location Index	22-145
System Description	22-148
Circuit Diagram	22-150
Back-up Lights	22-152
Brake Lights	22-153
Fog Lights	22-154
DTC Troubleshooting	22-155
MICU Input Test	22-162
Combination Light Switch Test/Replacement	22-166
Headlight Adjustment	22-168
Headlight Replacement	22-169
Bulb Replacement	22-169
Fog Light Replacement	22-172
Fog Light Adjustment	22-172
Taillight Replacement	22-173
License Plate Light Replacement	22-173
High Mount Brake Light Replacement .	22-174
Brake Pedal Position Switch Test	22-174

Turn Signal/Hazard Warning Lights

Component Location Index	22-175
Circuit Diagram	22-176
DTC Troubleshooting	22-178
MICU Input Test	22-180
Hazard Warning Switch Test/Replacement	22-183

Interior Lights

Component Location Index	22-184
Circuit Diagram	22-185
Front Individual Map Light Test/Replacement	22-186
Ceiling Light Test/Replacement	22-187
Cargo Area Light Test/Replacement ...	22-187
Tailgate Latch Switch Test	22-188

Entry Lights Control System

Component Location Index	22-189
Circuit Diagram	22-190
MICU Input Test	22-191
Ignition Key Switch Test	22-196

Power Windows

Component Location Index	22-197
System Description	22-198
Resetting the Power Window Control Unit	22-199
Circuit Diagram	22-200
Power Window Master Switch Input Test	22-202
Driver's Power Window Motor Test ...	22-205
Front Passenger's Power Window Motor Test	22-206
Rear Power Window Motor Test	22-207
Power Window Master Switch Test ...	22-208
Passenger's Power Window Switch Test	22-209
Power Window Master Switch Replacement	22-210
Passenger's Power Window Switch Replacement	22-211

Wipers/Washers

Component Location Index	22-212
Circuit Diagram - Windshield	22-214
Rear Window	22-215
DTC Troubleshooting	22-216
MICU Input Test	22-222
Wiper/Washer Switch Test/Replacement	22-226
Wiper Motor Test	22-227
Washer Motor Test	22-228
Washer Fluid Level Switch Test	22-228
Wiper Motor Replacement	22-229
Wiper Arm Replacement	22-231
Washer Reservoir Replacement	22-231
Wiper Blade Replacement	22-232
Wiper Arm/Nozzle Adjustment	22-234

Washer Tube Replacement	22-235
-------------------------------	--------

Gauges

Component Location Index	22-237
Self-diagnostic Function	22-239
Circuit Diagram	22-242
DTC Troubleshooting	22-247
Gauge Control Module Input Test	22-254
Rewriting the ODO Data and Transferring the Maintenance Minder Data to a New Gauge Control Module	22-257
Gauge Control Module Replacement ..	22-258

Reminder Systems

Component Location Index	22-259
Circuit Diagram	22-260
Control Unit Input Test	22-262

Accessory Power Sockets

Component Location Index	22-266
Circuit Diagram	22-267
Accessory Power Socket Test/Replacement	22-268

Power Mirrors

Component Location Index	22-269
Circuit Diagram	22-270
Function Test	22-272
Power Mirror Switch Test/Replacement	22-273
Power Mirror Actuator Test	22-274
Power Mirror Actuator Replacement ...	22-274

Rear Window Defogger

Component Location Index	22-277
Circuit Diagram	22-278
Switch Test/Replacement	22-279
Function Test	22-279
Defogger Wire Repair	22-280

Immobilizer System

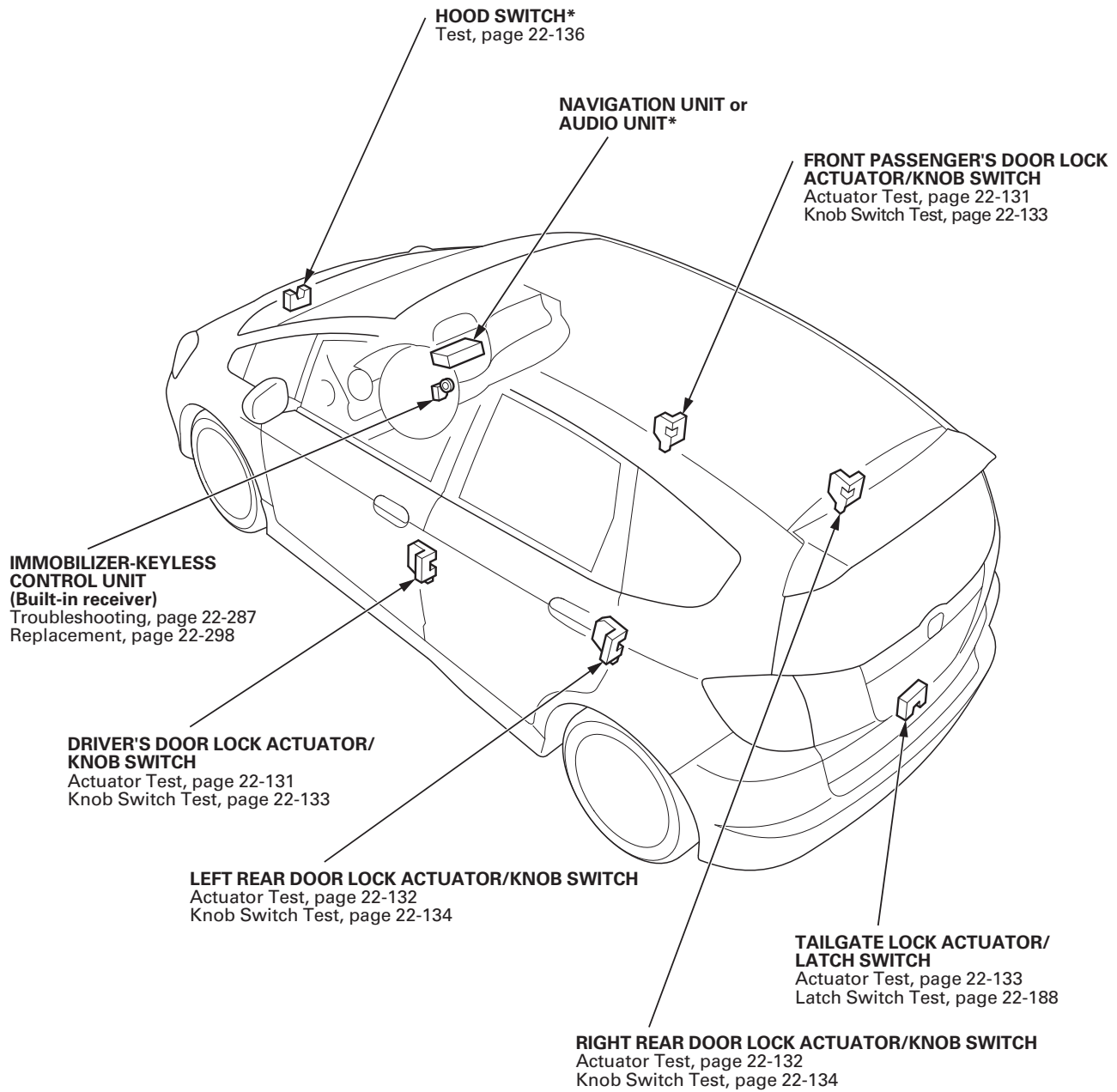
Component Location Index	22-281
System Description	22-283
Circuit Diagram	22-284
DTC Troubleshooting	22-285
Symptom Troubleshooting Information	22-287
Symptom Troubleshooting Index	22-289
Symptom Troubleshooting	22-290
System Check	22-292
Status Log	22-294
Immobilizer-Keyless Control Unit Input Test	22-295
Immobilizer Key Registration	22-297
Immobilizer-Keyless Control Unit Replacement	22-298



Keyless/Power Door Locks/Security System



Component Location Index

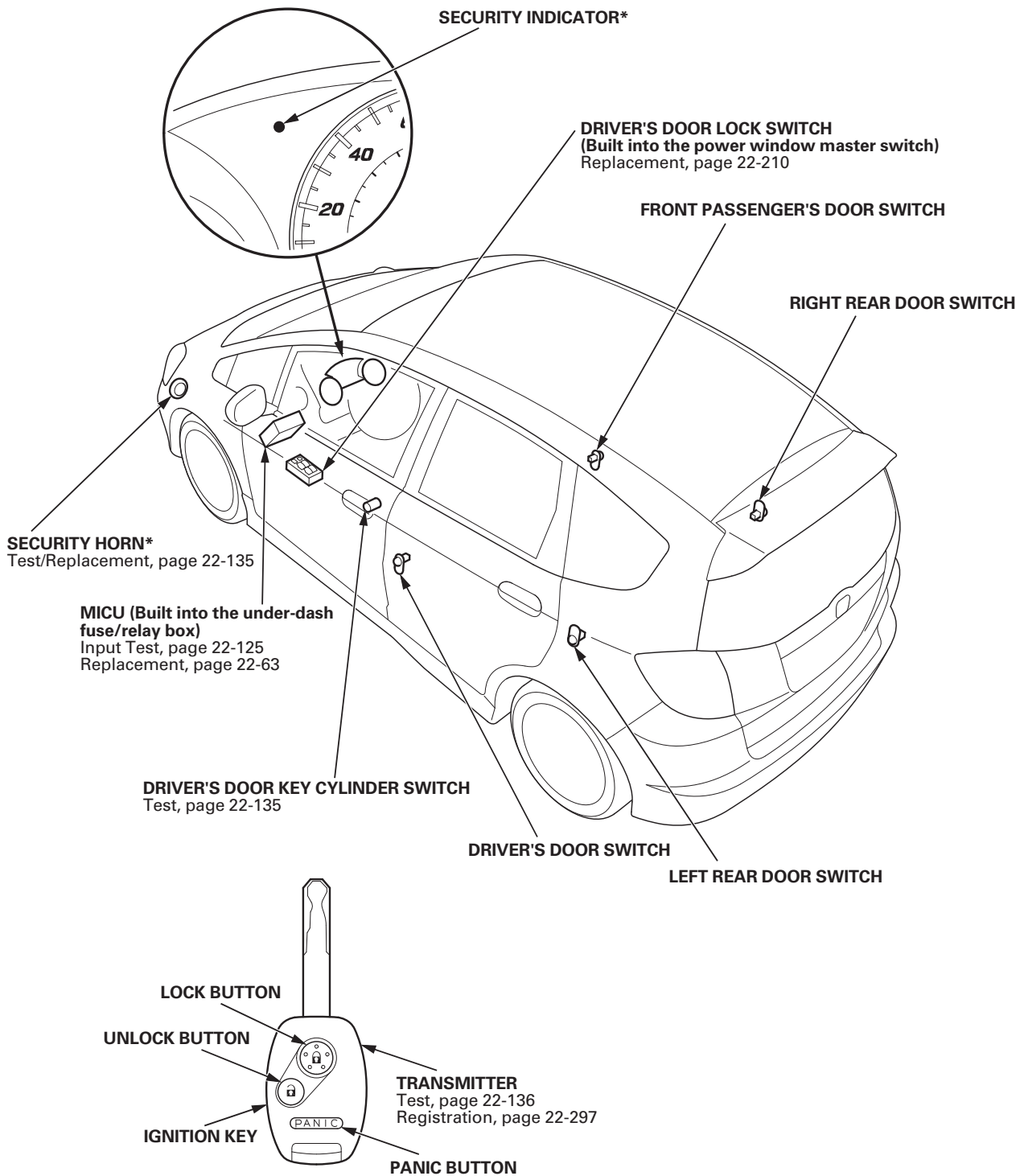


*: With security

(cont'd)

Keyless/Power Door Locks/Security System

Component Location Index (cont'd)



*: With security



System Description

Security Alarm

The security alarm system is armed automatically after the doors, hood, and tailgate are closed and locked. For the system to arm, the ignition switch must be in the LOCK (0) position, the key must be removed from the ignition switch, and the MICU must receive signals that the doors, hood, and tailgate are closed and locked. The alarm can be disarmed at any time by unlocking the driver's door with the key or pressing the UNLOCK button on the transmitter.

When everything is closed and locked, the only inputs that are grounded, and have 0 V, are the driver's door lock knob switch (LOCK position) input and the audio unit or audio-navigation unit (if equipped) security input. In other words, all of the other switches are open, and have about 10 to 12 V, including the key cylinder switches. The horn sounds and the parking lights, taillights and license plate lights flash to confirm the security alarm system is armed if the LOCK button is pressed a second time within 5 seconds. The security indicator in the gauge control module begins to flash immediately after the vehicle is completely closed and locked, and 15 seconds later, the security system arms. If the security indicator does not flash after the doors are locked, the system is not arming.

If one of the switches is misadjusted or shorted internally, or there is a short in the circuit, the security system will not arm. As long as the control unit continues to receive a ground signal (0 V), it senses that the vehicle is not closed and locked, and the system will not arm. A switch that is slightly misadjusted can cause the alarm to sound for no apparent reason. In this case, a significant change in outside air temperature, the vibration of a passing truck, or someone bumping into the vehicle could cause the alarm to sound. There is no glass breakage or motion detection feature.

If anything is opened or improperly unlocked after the system is armed, the control unit receives a ground signal from that switch, and the 10 to 12 V reference drops to 0 V. If the audio unit or navigation unit (if equipped) is disconnected, the input loses its ground, and the input voltage goes to 10 to 12 V. The system sounds the alarm when any of these occur:

- A door or the tailgate is forced open.
- A door is unlocked without using the key or the transmitter.
- The hood is opened.
- The audio unit or navigation unit (if equipped) is disconnected.
- The transmitter PANIC button is pressed.

When the system sounds the alarm, the horn sounds and the exterior lights flash for 2 minutes. The alarm can be stopped at any time by unlocking the driver's door by pressing any button on the transmitter.

Keyless Entry System

The keyless entry system is integrated with the multiplex integrated control system. The multiplex integrated control unit (MICU) receives LOCK, UNLOCK, and PANIC signals from the immobilizer-keyless control unit (keyless receiver).

The keyless entry system allows you to lock and unlock the vehicle with the transmitter. When you press the LOCK button, all doors lock. When you press the UNLOCK button once, only the driver's door unlocks. The other doors will unlock when you press the button a second time. The doors will not lock with the transmitter if a door is not fully closed, or if the key is in the ignition switch.

When the switch for the ceiling light is in the middle (DOOR) position, it will come on when the UNLOCK button is pressed. If a door is not opened, the light will go off and the doors will relock in about 30 seconds. If the doors are locked with the transmitter within 30 seconds, the light will go off immediately.

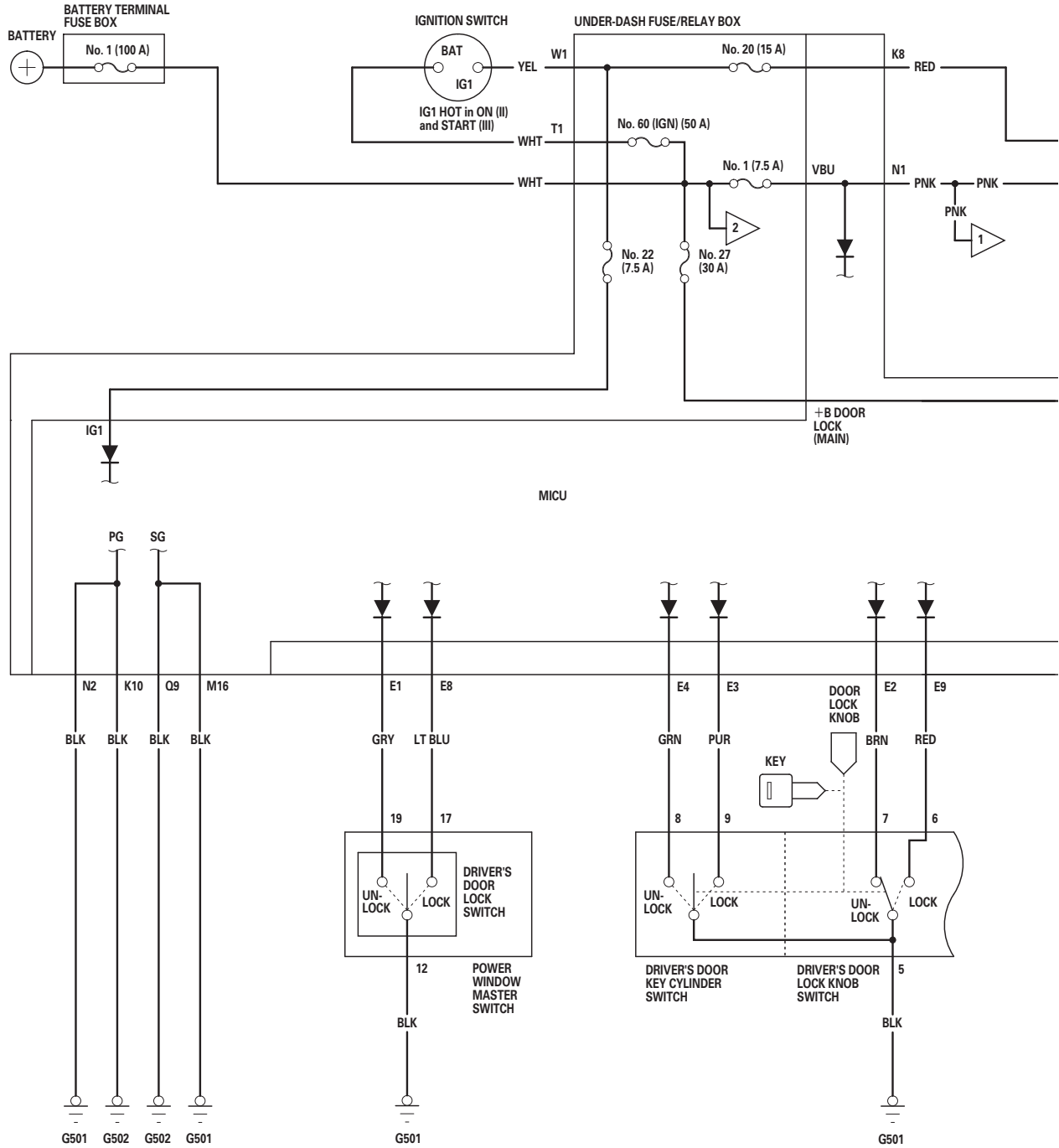
Panic Mode

The panic mode sounds the alarm in order to attract attention. When the PANIC button on the transmitter is pressed and held for 2 seconds, the horns sound and the exterior lights flash for about 20 seconds.

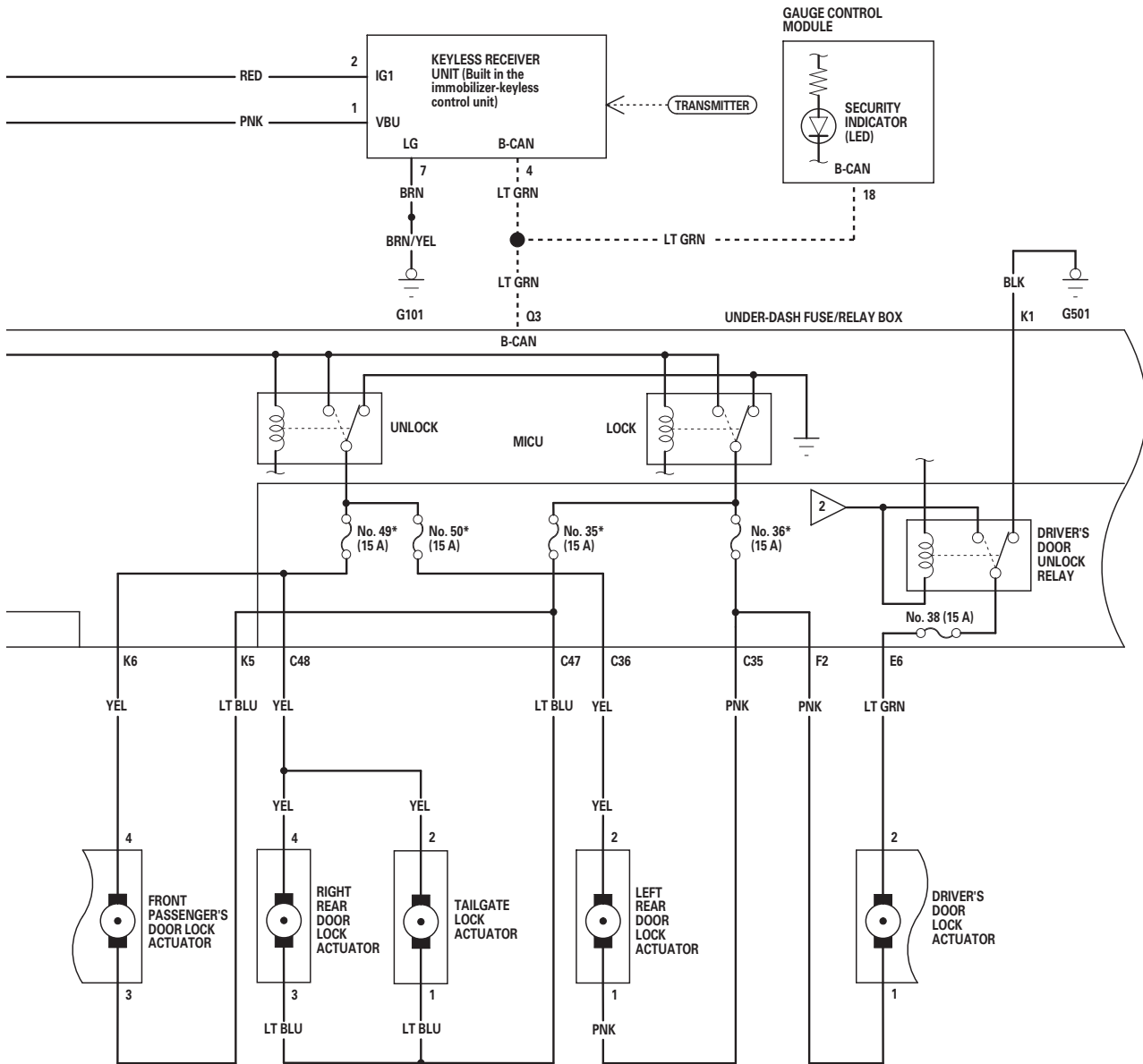
The panic mode can be cancelled at anytime by pressing any button on the transmitter or by turning the ignition switch to ON (II). The panic mode will not function if the ignition switch is in ON (II).

Keyless/Power Door Locks/Security System

Circuit Diagram



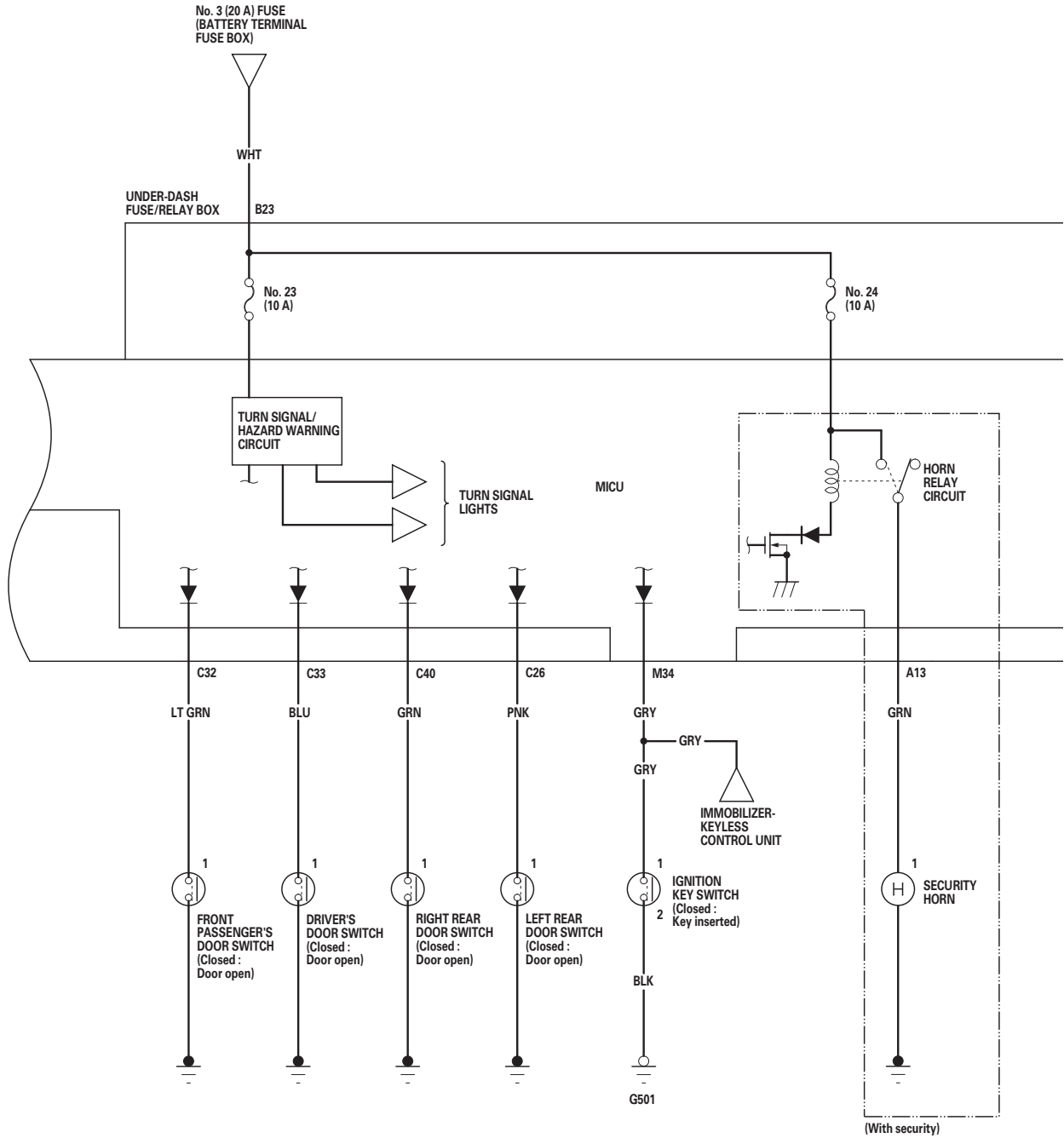
* : If one of fuses brown, check another fuse in the same circuit.
 : CAN line



(cont'd)

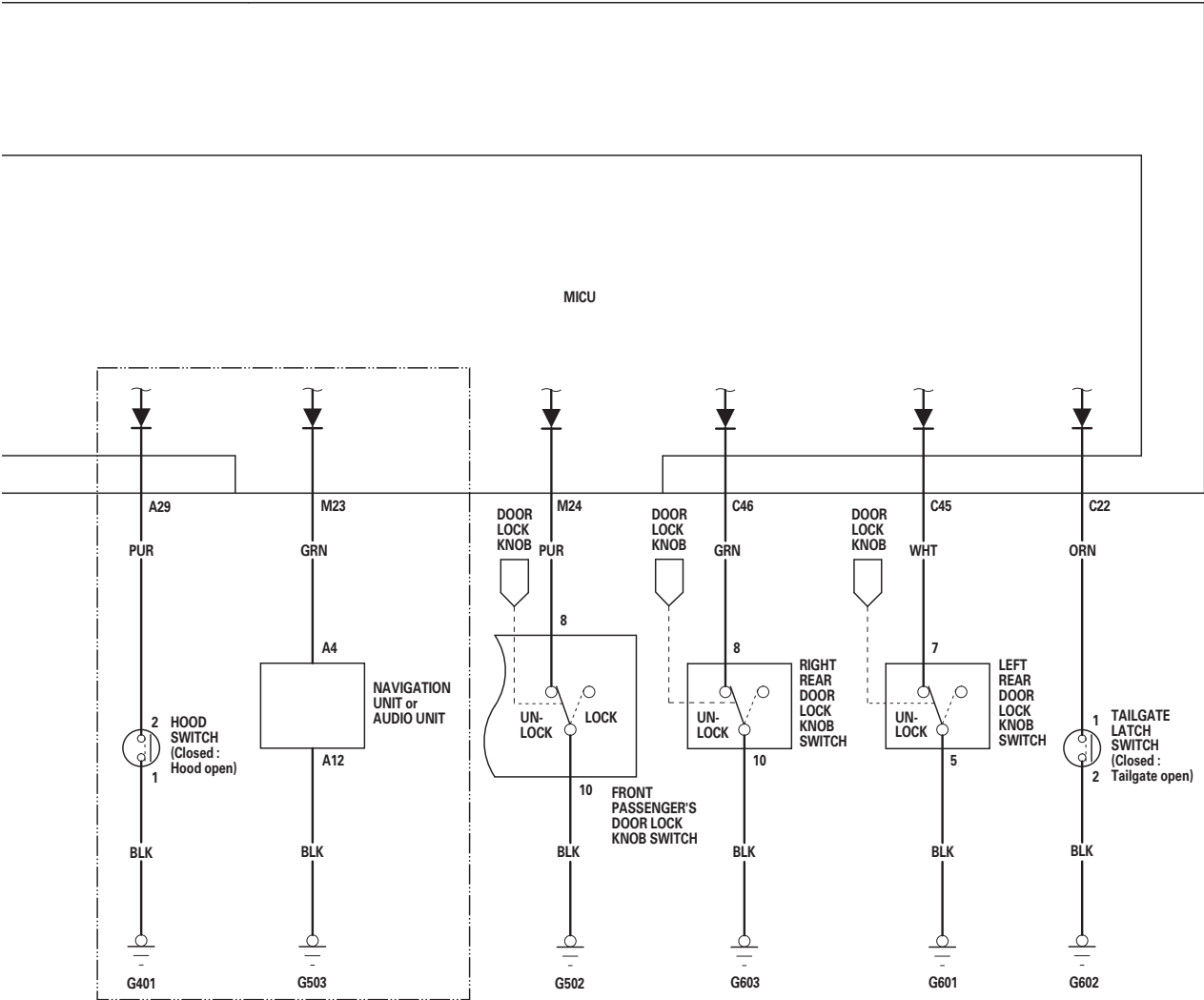
Keyless/Power Door Locks/Security System

Circuit Diagram (cont'd)





UNDER-DASH
FUSE/RELAY BOX



(With security)

Keyless/Power Door Locks/Security System

DTC Troubleshooting

DTC B1127: Driver's Door Key Cylinder Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE: If you are troubleshooting multiple DTC's, be sure to follow the instruction in B-CAN System Diagnosis Test Mode A. (see page 22-95)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Insert the ignition key into the driver's door key cylinder, and turn the key to the LOCK and UNLOCK positions at least 10 times.
4. Check for DTCs with the HDS.

Is DTC B1127 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections.■

5. With the driver's door key cylinder in the neutral position, select KEYLESS with the HDS, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

Are both information indicators OFF?

YES—Go to step 12.

NO—Go to step 7.

7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

Are both information indicators OFF?

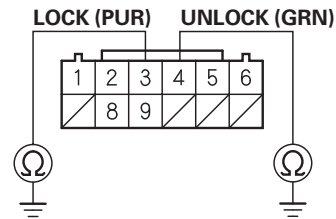
YES—Faulty driver's door key cylinder switch; replace the driver's door lock actuator.■

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector E (12P).

11. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 4 (UNLOCK) and No. 3 (LOCK) and body ground individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

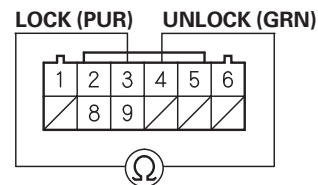
Is there continuity?

YES—Repair short to ground in the LOCK or UNLOCK wire.■

NO—Go to step 15.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the driver's door lock actuator 10P connector.
14. Disconnect under-dash fuse/relay box connector E (12P).
15. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 4 (UNLOCK) and No. 3 (LOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

Is there continuity?

YES—Repair short in the wire between the LOCK and UNLOCK wires.■

NO—Faulty MICU, replace the under-dash fuse/relay box (see page 22-63).■



DTC B1128: Driver's Door Remote Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE: If you are troubleshooting multiple DTC's, be sure to follow the instruction in B-CAN System Diagnosis Test Mode A. (see page 22-95)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Lock and unlock the driver's door several times with the driver's door lock switch.
4. Check for DTCs with the HDS.

Is DTC B1128 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. With the driver's door lock switch in the neutral position, select KEYLESS from the HDS and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

Are both information indicators OFF?

YES—Go to step 12.

NO—Go to step 7.

7. Disconnect the power window master switch connector.
8. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

Are both information indicators OFF?

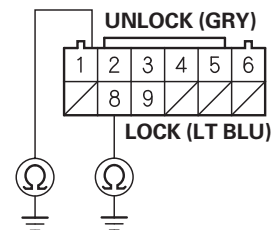
YES—Faulty door lock switch; replace the power window master switch. ■

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector E (12P).

11. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 8 (LOCK) and No. 1 (UNLOCK) and body ground individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

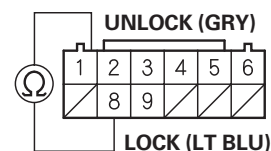
Is there continuity?

YES—Repair short to ground in the LOCK or UNLOCK wire. ■

NO—Go to step 15.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the power window master switch connector.
14. Disconnect under-dash fuse/relay box connector E (12P).
15. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 8 (LOCK) and No. 1 (UNLOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

Is there continuity?

YES—Repair short in the wire between the LOCK and UNLOCK wires. ■

NO—Faulty MICU, replace the under-dash fuse/relay box (see page 22-63). ■

Keyless/Power Door Locks/Security System

DTC Troubleshooting (cont'd)

DTC B1129: Driver's Door Lock Knob Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE: If you are troubleshooting multiple DTC's, be sure to follow the instruction in B-CAN System Diagnosis Test Mode A. (see page 22-95)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (III).
3. Operate the driver's door lock knob switch several times.
4. Check for DTCs with the HDS.

Is DTC B1129 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Select KEYLESS from the BODY ELECTRICAL menu, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK).

Are the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator ON and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator OFF with the driver's door lock knob switch in LOCK position, and are the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator OFF and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator ON with the driver's door lock knob switch in UNLOCK position?

YES—Faulty MICU, replace the under-dash fuse/relay box (see page 22-63). ■

NO—Go to step 7.

7. Disconnect the driver's door lock actuator 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

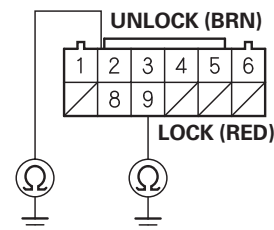
Are both information indicators OFF?

YES—Check for an open in the driver's door lock knob switch (LOCK) wire or the driver's door lock knob switch (UNLOCK) wire between the MICU and the driver's door lock knob switch. If OK, replace the driver's door lock actuator. ■

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector E (12P).
11. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 2 (UNLOCK) and No. 9 (LOCK) and body ground individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

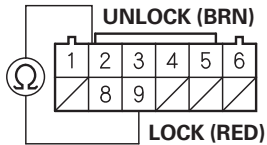
Is there continuity?

YES—Repair short to ground in the LOCK or UNLOCK wire. ■

NO—Go to step 12.

12. Check for continuity between under-dash fuse/relay box connector E (12P) terminals No. 2 (UNLOCK) and No. 9 (LOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR E (12P)



Wire side of female terminals

Is there continuity?

YES—Repair short in the wire between the LOCK wire and UNLOCK wire.■

NO—Faulty MICU, replace the under-dash fuse/relay box (see page 22-63).■

Keyless/Power Door Locks/Security System

Symptom Troubleshooting Index

Power Door Locks/Keyless

1. Check for B-CAN DTCs. If any B-CAN DTCs are indicated, refer to the B-CAN system diagnosis troubleshooting (see page 22-77), and troubleshoot the indicated DTC(s) first.
2. If the door lock system and the keyless operation do not work, troubleshoot the door locks first.

NOTE: The system does not function when the ignition switch is ON (II).

Symptom	Check Items	Also check for
The security system sounds randomly while the doors are locked.	Tripped sensor history (see page 22-139)	
All the doors will not lock or unlock.*	<ul style="list-style-type: none"> • Poor ground (G501, G502, G602) • Driver's door key cylinder switch test (see page 22-135) • Door switch test (check the door switch ON/OFF information with the HDS) • Door lock switch test (check the door switch ON/OFF information with the HDS) 	
Driver's and left rear doors will not lock or unlock.	<ul style="list-style-type: none"> • Poor ground (G501, G502) • Blown No. 27 (30 A) fuse in the under-dash fuse/relay box • Blown No. 36 (15 A) and/or No. 50 (15A) fuse in the under-dash fuse/relay box • MICU input test (see page 22-125) 	
Front passenger's and right rear doors, and tailgate will not lock or unlock.	<ul style="list-style-type: none"> • Poor ground (G501, G502) • Blown No. 27 (30 A) fuse in the under-dash fuse/relay box • Blown No. 35 (15 A) and/or No. 49 (15 A) fuse in the under-dash fuse/relay box • MICU input test (see page 22-125) 	
Keyless operation does not work (LOCK, UNLOCK, PANIC).	Symptom troubleshooting (see page 22-123)	
Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened.	Symptom troubleshooting (see page 22-123)	
Only driver's door will unlock or door locks relock immediately after unlocking with the remote.	Driver's door lock knob switch test (see page 22-133)	
Keyless operation will work even though the ignition key is in the ignition switch.	Ignition key switch test (see page 22-196)	
The horn does not sound when PANIC button on the transmitter pressed.	Symptom troubleshooting (see page 22-124)	

*: If only one door is not working properly, check that door's lock actuator first, then check the other items listed in this table.



Symptom Troubleshooting

Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-95), and troubleshoot the indicated DTC(s) first.

1. Move the ceiling light switch in the DOOR position.
2. Turn the ignition switch to ON (II).
3. Watch the ceiling light and the door indicators on the gauge control module.

Do the ceiling light and door indicators come on when the door is open, and go off when the door is closed?

YES—Substitute a known-good under-dash fuse/relay box (see page 22-63) and recheck. If the symptom goes away, replace the original under-dash fuse/relay box. ■

NO—Check for an open or high resistance in the wire between the MICU and each door switch. If the wire is OK, replace the door switch. ■

Keyless operation does not work (LOCK, UNLOCK, PANIC)

NOTE:

- If the LOCK and UNLOCK buttons work OK, but the PANIC button does not, see the troubleshooting for The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed (see page 22-124).
- Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-95), and troubleshoot the indicated DTC(s) first.

1. Insert the key into the ignition switch, but leave the switch in LOCK (0).

2. Open the driver's door, and listen for the key-in reminder beeper.

Does the beeper sound?

YES—Go to step 3.

NO—Test the ignition key-in reminder circuit, and recheck.

3. Turn the ignition switch to ON (II).

4. Try to start the engine.

Does the engine start?

YES—The immobilizer system is OK, Go to step 5.

NO—Go to the immobilizer symptom troubleshooting. ■ (see page 22-289)

5. Turn the ignition switch to LOCK (0).

6. Do the transmitter test (see page 22-136).

Is the transmitter OK?

YES—Replace the immobilizer-keyless control unit (see page 22-298). ■

NO—Replace the transmitter. ■

Keyless/Power Door Locks/Security System

Symptom Troubleshooting (cont'd)

The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-95), and troubleshoot the indicated DTC(s) first.

1. Press the PANIC button.

Do the horns sound?

YES—Go to step 3.

NO—Go to step 2.

2. Press the horn button.

Do the horns sound?

YES—Go to step 3.

NO—Do the horn switch test (see page 22-143).■

3. Turn the headlight switch ON.

Do the headlights come on?

YES—Go to step 4.

NO—Check the lighting circuit.■

4. Do the transmitter test (see page 22-136).

Is the transmitter OK?

YES—Substitute a known-good immobilizer-keyless control unit (see page 22-298) and recheck. If there is still a problem, substitute a known-good under-dash fuse/relay box (see page 22-63) and recheck. If the problem goes away, replace the original immobilizer-keyless control unit (see page 22-298) or MICU (see page 22-63).■

NO—Replace the transmitter.■



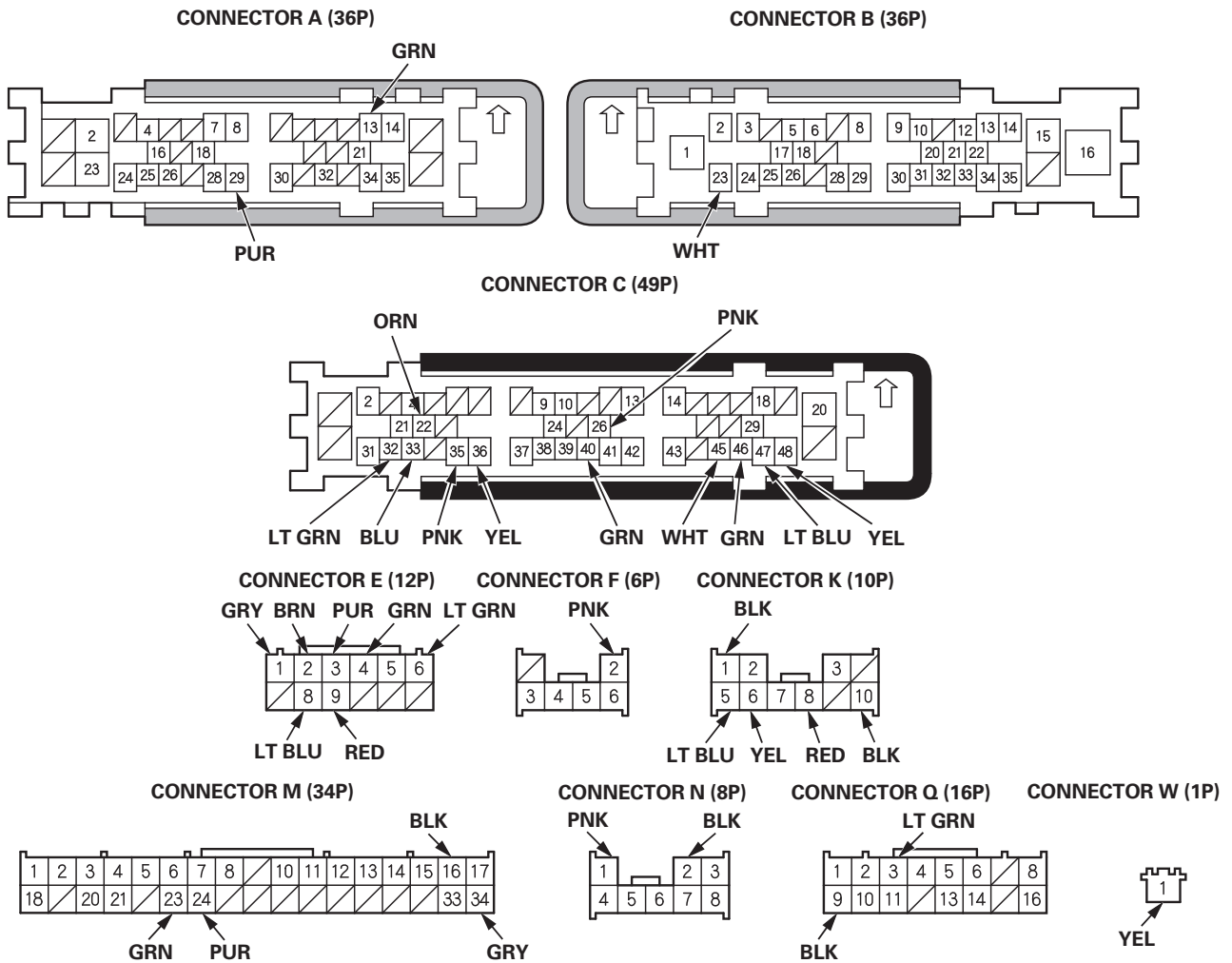
MICU Input Test

NOTE:

- Before testing, check the No. 1 (7.5 A), No. 20 (15 A), No. 22 (7.5 A), No. 27 (30 A), No. 35 (10 A), No. 36 (15 A), No. 49 (15 A), No. 50 (15 A), and No. 60 (50 A) fuses in the under-dash fuse/relay box.
- There are two pairs of fuses in the same circuit (No. 35 and No. 49 fuses, No. 36 and No. 50 fuses). If one of the fuses is blown, check the another fuse in the same circuit. If necessary, replace the damaged fuse(s).

1. Turn the ignition switch to LOCK (0).
2. Remove the fuse access panel (see page 20-92).
3. Disconnect under-dash fuse/relay box connectors A, B, C, E, F, K, M, N, Q, and W.

NOTE: All connector views are shown from wire side of female terminals.



(cont'd)

Keyless/Power Door Locks/Security System

MICU Input Test (cont'd)

4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do these input tests at the following connectors.
 - If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E6	LT GRN	Connect the battery positive terminal to terminal E6 (F2), and terminal F2 (E6) to body ground	Check actuator operation: The driver's door lock actuator should unlock (or lock).	<ul style="list-style-type: none"> • Faulty driver's door lock actuator • An open or high resistance in the wire
F2	PNK			
K5	LT BLU	Connect the battery positive terminal to terminal K5 (K6), and terminal K6 (K5) to body ground	Check actuator operation: The front passenger's door lock actuator should lock (or unlock).	<ul style="list-style-type: none"> • Faulty front passenger's door lock actuator • An open or high resistance in the wire
K6	YEL			
C35	PNK	Connect the battery positive terminal to terminal C35 (C36), and terminal C36 (C35) to body ground	Check actuator operation: The left rear door lock actuator should lock (or unlock).	<ul style="list-style-type: none"> • Faulty left rear door lock actuator • An open or high resistance in the wire
C36	YEL			
C47	LT BLU	Connect the battery positive terminal to terminal C47 (C48), and terminal C48 (C47) to body ground	Check actuator operation: The right rear door lock actuator and the tailgate lock actuator should lock (or unlock).	<ul style="list-style-type: none"> • Faulty right rear door lock actuator • Faulty tailgate lock actuator • An open or high resistance in the wire
C48	YEL			
A13*	GRN	Under all conditions	Connect terminal A13 and terminal B23 with a jumper wire: The horn should sound	<ul style="list-style-type: none"> • Faulty security horn • An open or high resistance in the wire • Poor ground

*: With security



6. Reconnect the connectors to the under-dash fuse/relay box, and do these input tests at the following connectors.
- If any test indicates a problem, find and correct the cause, then recheck the system.
 - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box. (see page 22-63)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
K10	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> • Poor ground (G502) or an open in the ground wire • An open or high resistance in the wire
Q9	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> • Poor ground (G502) or an open in the ground wire • An open or high resistance in the wire
M16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> • Poor ground (G501) or an open in the ground wire • An open or high resistance in the wire
N2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> • Poor ground (G501) or an open in the ground wire • An open or high resistance in the wire
M23*	GRN	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> • Poor ground (G503) or an open in the ground wire • Faulty audio unit • An open or high resistance in the wire
B23	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	<ul style="list-style-type: none"> • Blown No. 3 (20 A) fuse in the battery terminal fuse box • An open or high resistance in the wire
W1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	<ul style="list-style-type: none"> • Blown No. 1 (100 A) fuse in the battery terminal fuse box • Blown No. 60 (IGN) (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire

*: With security

(cont'd)

Keyless/Power Door Locks/Security System

MICU Input Test (cont'd)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
C33	BLU	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty driver's door switch An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty driver's door switch A short to ground in the wire
C32	LT GRN	Front passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty front passenger's door switch An open or high resistance in the wire
		Front passenger's door closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty front passenger's door switch A short to ground in the wire
C26	PNK	Left rear door open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty left rear door switch An open or high resistance in the wire
		Left rear door closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty left rear door switch A short to ground in the wire
C40	GRN	Right rear door open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty right rear door switch An open or high resistance in the wire
		Right rear door closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty right rear door switch A short to ground in the wire
C22	ORN	Tailgate open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty tailgate latch switch Poor ground (G602) or an open in the ground wire An open or high resistance in the wire
		Tailgate closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty tailgate latch switch A short to ground in the wire
A29*	PUR	Hood open	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Faulty hood switch Poor ground (G401) or an open in the ground wire An open or high resistance in the wire
		Hood closed	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty hood switch A short to ground in the wire

*: With security



Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
E9	RED	Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty driver's door lock knob switch An open or high resistance in the wire
		Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty driver's door lock knob switch A short to ground in the wire
E2	BRN	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty driver's door lock knob switch An open or high resistance in the wire
		Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty driver's door lock knob switch A short to ground in the wire
M24*	PUR	Front passenger's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G502) or an open in the ground wire Faulty front passenger's door lock knob switch An open or high resistance in the wire
		Front passenger's door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty front passenger's door lock knob switch A short to ground in the wire
C45*	WHT	Left rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G601) or an open in the ground wire Faulty left rear door lock knob switch An open or high resistance in the wire
		Left rear door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty left rear door lock knob switch A short to ground in the wire
C46*	GRN	Right rear door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G603) or an open in the ground wire Faulty right rear door lock knob switch An open or high resistance in the wire
		Right rear door lock knob switch in LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty right rear door lock knob switch A short to ground in the wire

*: With security

(cont'd)

Keyless/Power Door Locks/Security System

MICU Input Test (cont'd)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
M34	GRY	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty ignition key switch An open or high resistance in the wire
		Ignition switch LOCK (0), and the ignition key removed from the ignition switch	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty ignition key switch A short to ground in the wire
E3*1	PUR	Driver's door key cylinder switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty driver's door key cylinder switch An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or UNLOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty driver's door key cylinder switch A short to ground in the wire
E4*1	GRN	Driver's door key cylinder switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty driver's door key cylinder switch An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty driver's door key cylinder switch A short to ground in the wire
E8*2	LT BLU	Driver's door lock switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty door lock switch An open or high resistance in the wire
		Driver's door lock switch in neutral or UNLOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty door lock switch A short to ground in the wire
E1*2	GRY	Driver's door lock switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	<ul style="list-style-type: none"> Poor ground (G501) or an open in the ground wire Faulty door lock switch An open or high resistance in the wire
		Driver's door lock switch in neutral or LOCK	Measure the voltage to ground: There should be about 5 V or more.	<ul style="list-style-type: none"> Faulty door lock switch A short to ground in the wire

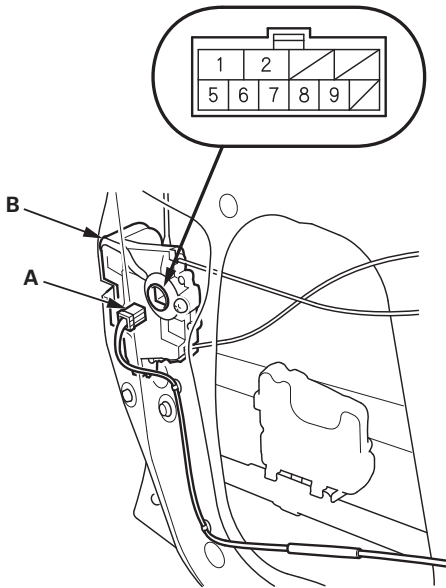
*1: With security

*2: With driver's door lock switch

Door Lock Actuator Test

Driver's Door

1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the actuator (B).



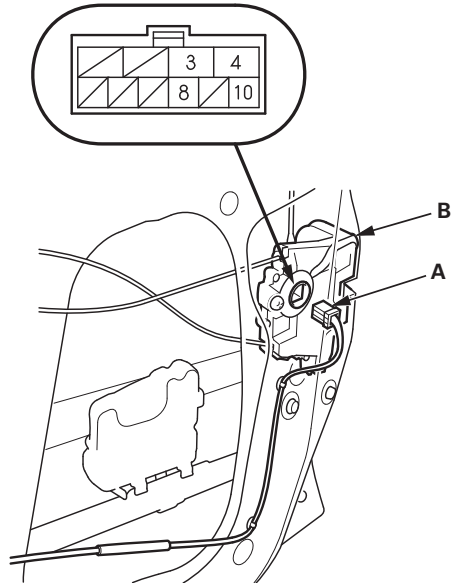
3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

Front Passenger's Door

1. Remove the front passenger's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the actuator (B).



3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal	3	4
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

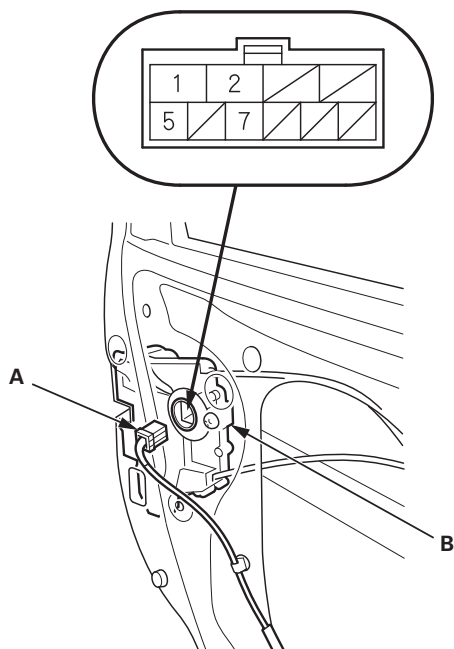
(cont'd)

Keyless/Power Door Locks/Security System

Door Lock Actuator Test (cont'd)

Left Rear Door

1. Remove the left rear door panel (see page 20-18).
2. Disconnect the 10P connector (A) from the actuator (B).



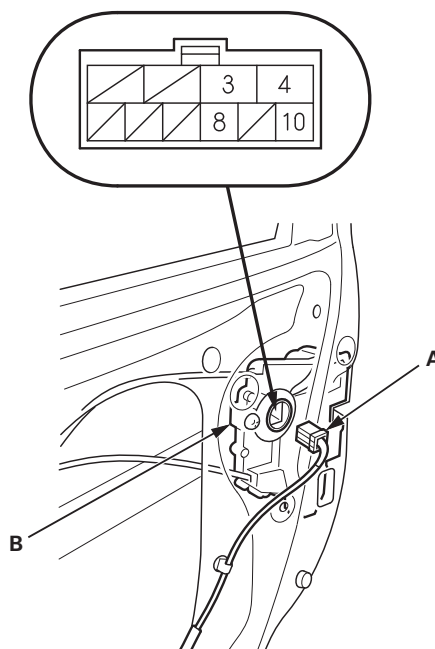
3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal	1	2
Position		
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

Right Rear Door

1. Remove the right rear door panel (see page 20-18).
2. Disconnect the 10P connector (A) from the actuator (B).



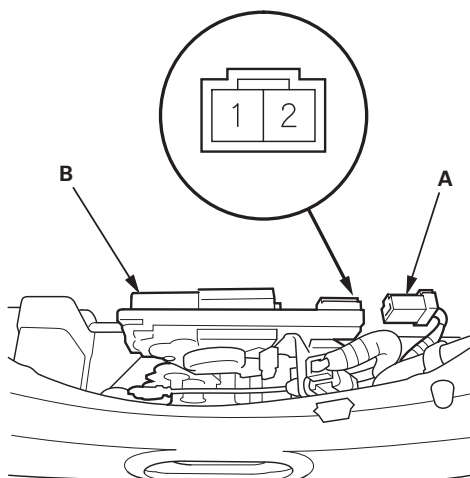
3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal	3	4
Position		
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, replace it.

Tailgate Lock Actuator Test

1. Open the tailgate.
2. Remove the tailgate lower trim panel (see page 20-76).
3. Disconnect the 2P connector (A) from the tailgate lock actuator (B).



4. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

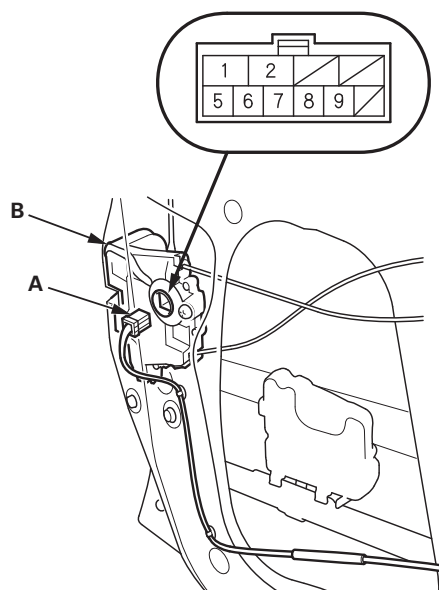
Terminal	1	2
Position		
LOCK	⊕	⊖
UNLOCK	⊖	⊕

5. If the actuator does not operate as specified, replace it.

Door Lock Knob Switch Test

Driver's Door

1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the actuator (B).



3. Check for continuity between the terminals.

- There should be continuity between terminals No. 6 and No. 5 when the door lock knob switch is in the LOCK position and no continuity when the switch is in the UNLOCK position.
- There should be continuity between terminals No. 7 and No. 5 when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.

4. If the continuity is not as specified, replace the door lock actuator.

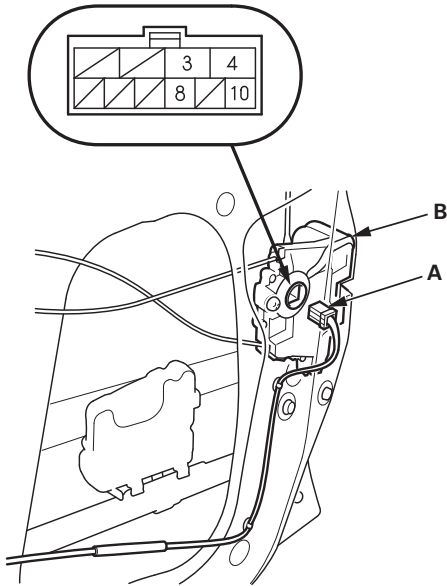
(cont'd)

Keyless/Power Door Locks/Security System

Door Lock Knob Switch Test (cont'd)

Front Passenger's Door

1. Remove the passenger's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the actuator (B).



3. Check for continuity between the terminals.

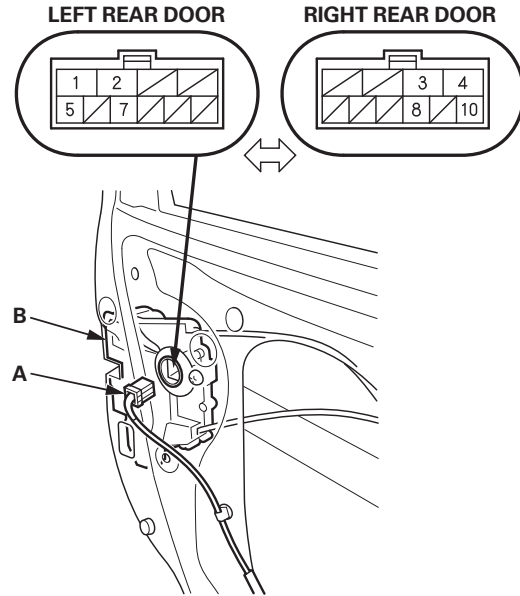
There should be continuity between terminals No. 8 and No. 10 when the door lock knob switch is in the UNLOCK position and no continuity when the switch is in the LOCK position.

4. If the continuity is not specified, replace the door lock actuator.

Rear Door

1. Remove the left or right rear door panel (see page 20-18).
2. Disconnect the 10P connector (A) from the actuator (B).

NOTE: The illustration shows the left rear door.



3. Check for continuity between the terminals.

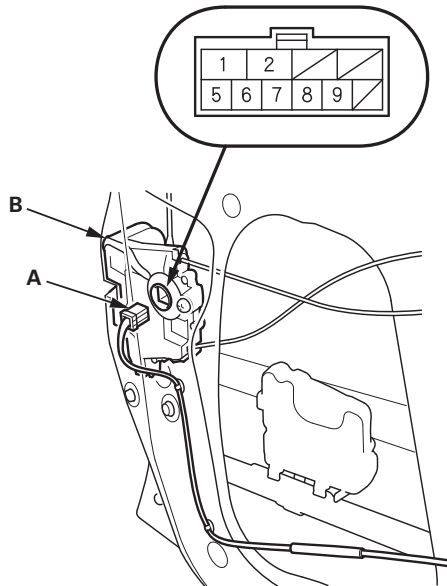
There should be continuity between terminals No. 7 [No. 8] and No. 5 [No. 10] when the door lock knob switch is UNLOCK position and no continuity when the switch is in the LOCK position.

[] : Right rear door

4. If the continuity is not as specified, replace the door lock actuator.

Door Key Cylinder Switch Test

1. Remove the driver's door panel (see page 20-6).
2. Disconnect the 10P connector (A) from the key cylinder switch (B).

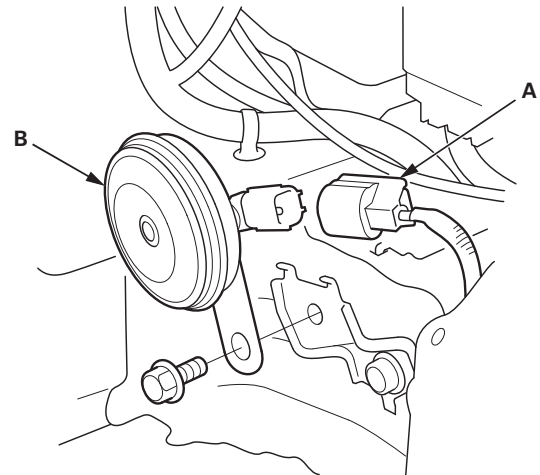


3. Check for continuity between the terminals.
 - There should be continuity between terminals No. 7 and No. 5 when the door key cylinder switch is in UNLOCK position.
 - There should be no continuity between terminals No. 7 and No. 5 when the door key cylinder switch is in the neutral or LOCK position.
 - There should be continuity between terminals No. 6 and No. 5 when the door key cylinder switch is in LOCK position.
 - There should be no continuity between terminals No. 6 and No. 5 when the door key cylinder switch is in the neutral or UNLOCK position.
4. If the continuity is not as specified, replace the door lock actuator assembly (see page 20-11).

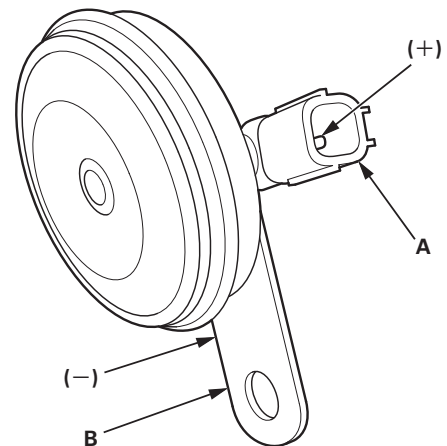
Security Horn Test/Replacement

With security

1. Remove the front bumper (see page 20-138).
2. Disconnect the 1P connector (A) from horn (B).



3. Test the horn by connecting battery power to the terminal (A) and grounding the bracket (B). The horn should sound.



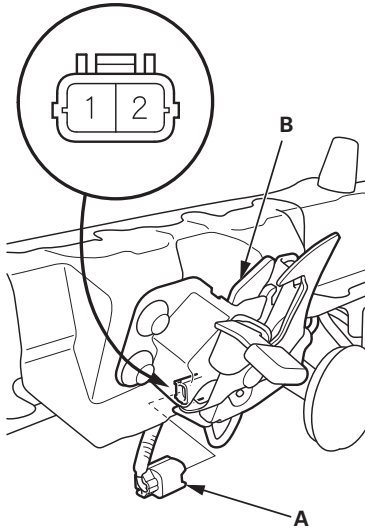
4. If it fails to sound, replace it.

Keyless/Power Door Locks/Security System

Security Hood Switch Test

With security

1. Open the hood.
2. Remove the front grille cover (see page 20-159).
3. Disconnect the 2P connector (A) from the hood switch (B).



4. Check for continuity between the terminals.
 - There should be continuity between terminals No. 1 and No. 2 when the hood is opened (lever released).
 - There should be no continuity between terminals No. 1 and No. 2 when the hood is closed (lever pushed down).
5. If the continuity is not as specified, replace the hood latch assembly (see page 20-149).

Transmitter Test

NOTE:

- If the doors unlock or lock with the transmitter, but the LED on the transmitter does not come on, the LED is faulty; replace the transmitter.
- If any door or the tailgate is open, you cannot lock the doors with the transmitter.
- If you unlocked the doors or the tailgate with the transmitter, but do not open any of the doors within 30 seconds, the doors relock automatically.
- The doors do not lock or unlock with the transmitter if the ignition key is inserted in the ignition switch.

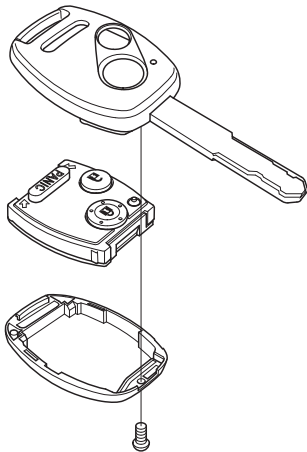
With HDS

1. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
 - If the locks work, the transmitter is OK.
 - If any of the transmitter buttons do not work, replace the transmitter, then do the transmitter programming (see page 22-297).
 - If the locks don't work, go to step 2.
2. Connect the HDS to the data link connector.
3. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL menu, next select INSPECTION then enter the KEYLESS CHECK.
4. Follow the screen prompts to check each button operation.

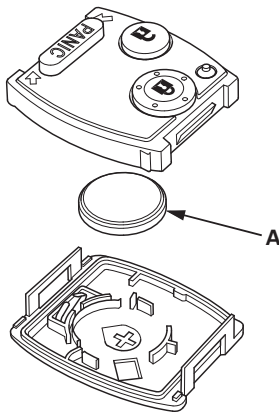
NOTE: The door lock actuators may or may not cycle when receiving input from the transmitter.

- If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
- If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is working but not registered to the vehicle. If necessary, reprogram and register the transmitter (see page 22-297).
- If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 5.

5. Open the transmitter and check for water damage.
- If you find any water damage, replace the transmitter, then register the new transmitter (see page 22-297).
 - If there is no water damage, go to step 6.



6. Replace the transmitter battery (A) with a new one, and press the lock or unlock button and check the response on the screen of the HDS.
- If KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, the transmitter is OK.
 - If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, go to step 7.



7. Use a known-good keyless transmitter assembly and repeat steps 3 and 4.

NOTE: The keyless transmitter does not need to be programmed to the vehicle for this test.

- If (DIFFERENT) KEYLESS ENTRY TRANSMITTER CODE IS RECEIVED is indicated, replace the keyless transmitter and do the immobilizer system registration (see page 22-297).
- If KEYLESS ENTRY TRANSMITTER CODE IS NOT RECEIVED is indicated, the immobilizer-keyless control unit is faulty, replace it and do the immobilizer system registration (see page 22-297).

NOTE: The keyless transmitter is combined with the immobilizer transponder, so when the transponder is registered by the HDS, the keyless transmitter programming is completed automatically.

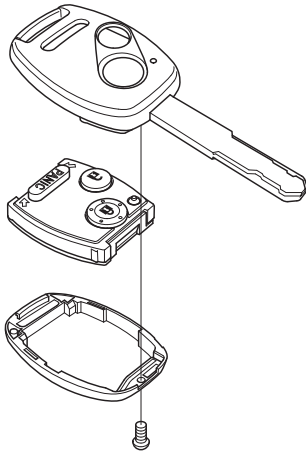
(cont'd)

Keyless/Power Door Locks/Security System

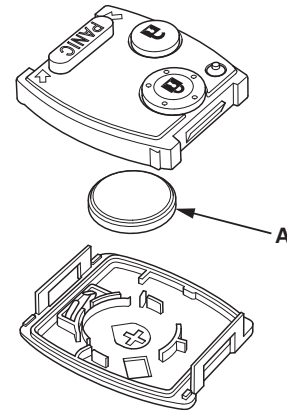
Transmitter Test (cont'd)

Without HDS

1. Start the engine.
 - If the engine does not start, go to the immobilizer system troubleshooting (see page 22-290).
 - If the engine starts, go to step 2.
2. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
 - If the locks work, the transmitter is OK.
 - If the locks don't work, go to step 3.
3. Open the transmitter and check for water damage.
 - If you find any water damage, replace the transmitter and register the new transmitter.
 - If there is no water damage, go to step 4.



4. Replace the transmitter battery (A) with a new one, and try to lock and unlock the doors with the transmitter by pressing the lock or unlock button at least 10 times.
 - If the doors lock and unlock, the transmitter is OK.
 - If the doors don't lock and unlock, go to step 5.



5. Reprogram and register the transmitter (see page 22-297), then try to lock and unlock the doors.
 - If the doors lock and unlock, the transmitter is OK.
 - If the doors don't lock and unlock, substitute a known-good transmitter and recheck (see page 22-297). If still not operating, replace the immobilizer-keyless control unit.



Tripped Sensor History

The security system stores information on the last tripped sensor if the security system has been violated. The information can be retrieved using the HDS.

To retrieve the last tripped sensor data:

1. Select HISTORY DATA from the security system test mode menu.
2. Scroll through the data list.
 - Sensors that were violated will indicate ON.
 - Sensors that were not violated will indicate NONE.
3. Inspect the ON circuit for these problems:
 - Misadjusted or damaged switch.
 - Loose or corroded connections.
 - Intermittent short to ground.

NOTE: If PANIC Frame Reception is indicated ON, inform the customer that it could have been set by something pressing the panic button of one of the registered remotes (in a pocket or purse, under a stack of papers, etc).