Autolamps

Refer to Wiring Diagrams Cell 58 , Lighting Control Module (LCM) for schematic and connector information.

Refer to Wiring Diagrams Cell 87 , Autolamps/Delay Exit for schematic and connector information.

Special Tool(s)

 ST1137-A	73III Automotive Meter or equivalent 105-R0057
 ST2332-A	Worldwide Diagnostic System (WDS) 418-F224, New Generation STAR (NGS) Tester 418-F052 (007-00500) or equivalent scan tool

Principles of Operation

Headlamp Delay System — Autolamp

The autolamp system:

- provides light sensitive on-off control of the lamps normally controlled by the headlamp switch (11654).
- provides for increased visibility for occupants when leaving the vehicle by keeping the lamps on for a preselected period of time after the ignition switch is turned OFF.
- uses a preselected time lapse that can be adjusted by the vehicle operator for up to three minutes delay.

The system consists of:

- a light-sensitive light sensor amplifier (13A018)
- an LCM (13C788)
- an autolamp time delay control (part of the headlamp switch and includes an OFF position)

For the autolamp system to be operational, the headlamp switch must be rotated counterclockwise from the OFF position.

In normal operation:

- The system will turn the exterior lamps on when the light available to the light sensor amplifier decreases below a predetermined level, such as at sunset.
- The lamps will automatically turn off when the level of outside light exceeds a predetermined level, such as during daylight hours.

The light sensor amplifier must always be exposed to outside light to function properly. Do not place any items on the defroster grille panel which may block light to the light sensor amplifier and cause erratic operation of the system.

The autolamp time delay control (part of the headlamp switch) operates as follows:

- The autolamp system is functional for automatic operation when the autolamp time delay control is moved from the OFF position.
- The autolamp time delay is controlled by rotating the headlamp switch in a counterclockwise direction (maximum three minutes).

Turning on the regular headlamp switch will override the autolamps operation. Automatic operation will not be possible until the regular headlamp switch is turned counterclockwise past the OFF position.

Inspection and Verification

1. Verify the customer concern by operating the system.

2. Visually inspect for obvious signs of mechanical and electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Damaged headlamp switch • Damaged autolamp switch (part of the headlamp switch) • Damaged or obstructed light sensor amplifier	• Blown central junction box (CJB) Fuse 4 (15A) • Damaged wiring harness • Loose or corroded connection • Damaged lighting control module (LCM) • Damaged headlamp switch • Damaged autolamp switch (part of the headlamp switch) • Damaged light sensor amplifier

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

4. If the concern remains after the inspection, connect the scan tool to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the scan tool menu. If the scan tool does not communicate with the vehicle:
   - check that the program card is correctly installed.
   - check the connections to the vehicle.
   - check the ignition switch position.

5. If the scan tool still does not communicate with the vehicle, refer to the scan tool manual.

6. Carry out the DATA LINK DIAGNOSTIC TEST. If the scan tool responds with:
   - CKT914, CKT915 or CKT70 = ALL ECUS NO RESP/NOT EQUIP, refer to Section 418-00 .
   - NO RESP/NOT EQUIP for lighting control module (LCM), go to Pinpoint Test A.
   - SYSTEM PASSED, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs and carry out self-test diagnostics for the LCM.

7. If the DTCs retrieved are related to the concern, go to the LCM Diagnostic Trouble Code (DTC) Index to continue diagnostics.

8. If no DTCs related to the concern are retrieved, proceed to the Symptom Chart to continue diagnostics.

LCM Diagnostic Trouble Code (DTC) Index

LCM Diagnostic Trouble Code (DTC) Index

DTC	Description	Source	Action

B1300	Power Door Lock Circuit Failure	LCM	REFER to Section 501-14B .
B1310	Power Door Unlock Circuit Failure	LCM	REFER to Section 501-14B .
B1312	Lamp Headlamp Input Circuit Short to Battery	LCM	GO to Pinpoint Test D .
B1317	Battery Voltage High	LCM	REFER to Section 414-00 .
B1318	Battery Voltage Low	LCM	REFER to Section 414-00 .
B1319	Driver Door Ajar Circuit Failure	LCM	REFER to Section 501-14B .
B1322	Driver Door Ajar Circuit Short to Ground	LCM	REFER to Section 501-14B .
B1331	Decklid Ajar Rear Door Circuit Failure	LCM	REFER to Section 413-09 .
B1334	Decklid Ajar Rear Door Circuit Short to Ground	LCM	REFER to Section 501-14B .
B1340	Chime Input Request Circuit Short to Ground	LCM	REFER to Section 413-09 .
B1342	ECU - Defective	LCM	REFER to Section 419-10 .
B1343	Heated Backlight Input Circuit Failure	LCM	REFER to Section 501-11 .
B1345	Heated Backlight Input Circuit Short to Ground	LCM	REFER to Section 501-11 .
B1352	Ignition Key-In Circuit Failure	LCM	REFER to Section 413-09 .
B1354	Ignition Key-In Circuit Short to Ground	LCM	REFER to Section 413-09 .
B1359	Ignition Run/Acc Circuit Failure	LCM	REFER to Section 211-05 .
B1361	Ignition Run/Acc Circuit Short to Battery	LCM	REFER to Section 211-05 .
B1396	Power Door Lock Circuit Short to Battery	LCM	REFER to Section 501-14B .
B1397	Power Door Unlock Circuit Short to Battery	LCM	REFER to Section 501-14B .
B1442	Door Handle Switch Circuit Failure	LCM	REFER to Section 417-02 .
B1445	Door Handle Switch Circuit Short to Ground	LCM	REFER to Section 417-02 .
B1462	Safety Belt Switch Circuit Failure	LCM	REFER to Section 413-09 .
B1464	Safety Belt Switch Circuit Short to Battery	LCM	REFER to Section 413-09 .
B1468	Chime Input Request Circuit Failure	LCM	REFER to Section 413-09 .
B1470	Lamp Headlamp Input Circuit Failure	LCM	GO to Pinpoint Test C .
B1555	Ignition Run/Start Circuit Failure	LCM	REFER to Section 211-05 .
B1557	Ignition Run/Start Circuit Short to Battery	LCM	REFER to Section 211-05 .
B1563	Door Ajar Circuit Failure	LCM	REFER to Section 417-02 .
B1566	Door Ajar Circuit Short to Ground	LCM	REFER to Section 417-02 .
B1575	Lamp Park Input Circuit Failure	LCM	GO to Pinpoint Test V .
B1577	Lamp Park Input Circuit Short to Battery	LCM	GO to Pinpoint Test V .
B1579	Dim Panel Increase Input Circuit Failure	LCM	REFER to Section 413-00 .
B1581	Dim Panel Increase Input Circuit Short to Battery	LCM	REFER to Section 413-00 .
B1583	Dim Panel Decrease Input Circuit Failure	LCM	REFER to Section 413-00 .
B1585	Dim Panel Decrease Input Circuit Short to Battery	LCM	REFER to Section 413-00 .
B1677	Alarm Panic Input Circuit Failure	LCM	REFER to Section 501-14B .
B1679	Alarm Panic Input Circuit Short to Battery	LCM	REFER to Section 501-14B .
B1685	Lamp Dome Input Circuit Failure	LCM	REFER to Section 417-02 .
B1687	Lamp Dome Input Circuit Short to Battery	LCM	REFER to Section 417-02 .
B1689	Autolamp Delay Circuit Failure	LCM	GO to Pinpoint Test J .
B1692	Autolamp Delay Circuit Short to Ground	LCM	GO to Pinpoint Test J .
B1693	Autolamp On Circuit Failure	LCM	GO to Pinpoint Test I .
B1695	Autolamp On Circuit Short to Battery	LCM	GO to Pinpoint Test I .
B1790	Autolamp Sensor Input Circuit Failure	LCM	GO to Pinpoint Test I .

	Autolamp Sensor Input Circuit Short to Battery	LCM	GO to Pinpoint Test I .
B1872	Turn Signal/Hazard Power Feed Circuit Short to Battery	LCM	GO to Pinpoint Test N .
B1873	Turn Signal/Hazard Power Feed Circuit Short to Ground	LCM	GO to Pinpoint Test O .

LCM Parameter Identification (PID) Index

LCM Parameter Identification (PID) Index

PID	Description	Expected Value
ALARMSW	Security Input	OFF, ON
ALP_INP	Autolamp Analog Input	Number %
AUTOLMP	Autolamp Switch	OFF, ON
CCNT_LC	Number Of Continuous DTCs In Module	one count per bit
CHIMERQ	Chime Request	OFF, ON
D_DR_LC	Left Front Door Ajar Switch	CLOSED, AJAR
D_SBELT	Drivers Seat Belt	OUT, IN
DECKLID	Decklid/Hatch Ajar Switch	CLOSED, AJAR
DOMESW	Dome Lamp Switch	OFF, ON
DD_LOCK	Drivers Door Lock	OFF, LOCK
DR_UNLK	All Doors Unlock Output State	NO, YES
FLSHPWR	Turn Signal Power	notACT, ACTIVE
HDLMPSW	Low Beam Switch	OFF, ON
IGN_A	Ignition Switch - Accy Position	NO, YES
IGN_KEY	Ignition Key In/Out	OUT, IN
IGN_R	Ignition Switch - Run Position	NO, YES
IGN_S	Ignition Switch - Start Position	NO, YES
INST_LT	Instrumentation Variable Vol Output	Number %
LATCHIO	Latch Mode Transitions	one count per bit
LIGHTSN	Ambient Light	NO, YES
LR_LOCK	Left Rear Lock	NOTLOC, LOCK
LRDR_SW	Left Rear Door Ajar Switch	CLOSED, AJAR
P_DR_LC	Passengers Door Ajar Switch	CLOSED, AJAR
PARK_SW	Parking Sw	OFF, ON
PD_LOCK	Passengers Door Lock	NOTLOC, LOCK
DIM_DEC	Panel Dim Intensity Switch	OFF, ON
DIM_INC	Panel Dim Intensity Switch	OFF, ON
INTR_LT	Interior Lighting	%
PWM_DC1	PWM Duty Cycle #1	%
RDEF_SW	Rear Defrost Switch	OFF, ON
RR_LOCK	Right Rear Lock	NOTLOC, LOCK
RRDR_SW	Right Rear Door Ajar Switch	CLOSED, AJAR
VBAT_LC	Battery Voltage	# in Volts

LCM Active Command Index

LCM Active Command Index

Active Command	Display	Action
BATTERY SAVER & COURTESY ENTRY	BATT SAVR	OFF, ON
D/A OUTPUT COMMAND 1	D/A OUTPT	OFF, ON
HEAD/CORNERING LAMP CONTROL	LOW BEAM	OFF, ON
HEATED WINDOW & MIRROR	RLY CNTRL	OFF, ON
HORN CONTROL	HORN	OFF, ON
MODULE SLEEP COMMAND	MODULE SLEEP COMMAND	OFF, ON
PID LATCH	PID LATCH	OFF, ON
PWM OUTPUT COMMAND 1	PWM OUT 1	XXX%
PWM OUTPUT COMMAND 2	PWM OUT 2	XXX%
TURN SIGNAL AND MARKER LAMPS	HAZARD	OFF, ON
TURN SIGNAL AND MARKER LAMPS	PARKLAMPS	OFF, ON
WARNING LAMPS AND CHIME	AUTOLAMP	OFF, ON
WARNING LAMPS AND CHIME	CHIME	OFF, ON
WARNING LAMPS AND CHIME	HAZARD	OFF, ON
WARNING LAMPS AND CHIME	SBLT LAMP	OFF, ON

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action

• No communication with the lighting control module	• CJB fuses:
	  ▪ Fuse 4 (15A)
	  ▪ Fuse 8 (15A)
	• Circuitry.
	• J1850 communication network.
	• LCM.
		• GO to Pinpoint Test A.

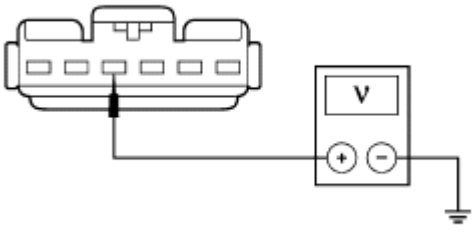
• No communication with the lighting control module — unable to enter self-test	• CJB fuses:
	  ▪ Fuse 6 (15A)
	  ▪ Fuse 13 (15A)
	• Circuitry.
	• LCM.
		• GO to Pinpoint Test B.

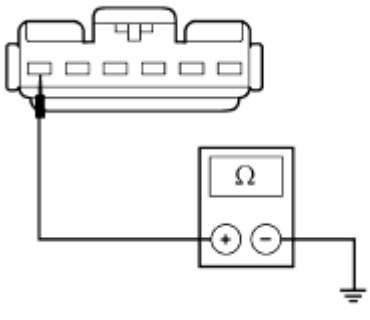
• The autolamps are inoperative — the autolamps are always on	• CJB Fuse 4 (15A). • Circuitry. • Autolamp switch (part of 11654). • Light sensor amplifier. • LCM.	• GO to Pinpoint Test I.
• The autolamp time delay is inoperative	• Circuitry. • Autolamp switch (part of 11654). • LCM.	• GO to Pinpoint Test J.

Pinpoint Tests

PINPOINT TEST I: THE AUTOLAMPS ARE INOPERATIVE — THE AUTOLAMPS ARE ALWAYS ON

CONDITIONS	DETAILS/RESULTS/ACTIONS
I1 RETRIEVING DIAGNOSTIC TROUBLE CODES (DTCS) FROM LCM	
	1 Use the recorded results from the LCM self-test. • **Are any DTCs retrieved?** → **Yes** If DTC B1312, GO to Pinpoint Test D . If DTC B1470, GO to Pinpoint Test C . If DTC B1693, GO to I10 . If DTC B1695, GO to I12 . If DTC B1790, GO to I14 . If DTC B1792, GO to I15 . If DTC B1342 is retrieved, CLEAR DTC and CARRY OUT LCM On-Demand Self-Test. INSTALL a new LCM if DTC B1342 is retrieved again. REFER to Section 419-10 . TEST the system for normal operation. → **No** If the autolamps are inoperative,GO to I2 . If the autolamps are always on, GO to I7 .
I2 CHECK AUTOLAMP SWITCH INPUT — MONITOR THE LCM PID AUTOLAMP	
1 	1 Monitor the PID AUTOLMP while turning the autolamp switch to the ON and OFF positions. • **Does the PID value agree with the switch positions?** → **Yes** GO to I4 . → **No** GO to I3 .
I3 CHECK THE HEADLAMP SWITCH	
1 	2 Check the headlamp switch; refer to the Wiring Diagrams Cell 149. • **Is the headlamp switch OK?** → **Yes**

	INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.
I4 CHECK LIGHT SENSOR AMPLIFIER INPUT — MONITOR LCM PID LIGHTSN	
1 	1 Monitor the LCM PID LIGHTSN while illuminating the light sensor amplifier, then remove the light source. • **Does the PID indicate NO with the light applied and YES with the light removed?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** GO to I5 .
I5 CHECK POWER SUPPLY TO THE LIGHT SENSOR AMPLIFIER	
1  2  Light Sensor Amplifier C286 3  GK8865-A	3 Measure the voltage between light sensor amplifier C286 pin 3, circuit 195 (TN/WH), harness side and ground. • **Is the voltage greater than 10 volts?** → **Yes** GO to I6 . → **No** REPAIR the circuit. TEST the system for normal operation.
I6 CHECK LIGHT SENSOR AMPLIFIER GROUND — CIRCUIT 676 (PK/OG)	
1	1 Measure the resistance between light sensor amplifier C286 pin 1, circuit 676 (PK/OG), harness

	side and ground. • **Is the resistance less than 5 ohms?** → **Yes** INSTALL a new light sensor amplifier. REFER to Photocell and Amplifier—Light Sensor Amplifier in this section. TEST the system for normal operation. → **No** REPAIR the circuit. TEST the system for normal operation.
I7 CHECK AUTOLAMP SWITCH INPUT — MONITOR THE LCM PID AUTOLAMP	
1 	1 Monitor the PID AUTOLMP while turning the autolamp switch to the ON and OFF positions. • **Does the PID value agree with the switch positions?** → **Yes** GO to I9 . → **No** GO to I8 .
I8 CHECK THE HEADLAMP SWITCH	
1 	2 Check the headlamp switch; refer to the Wiring Diagrams Cell 149. • **Is the headlamp switch OK?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.
I9 CHECK LIGHT SENSOR AMPLIFIER INPUT — MONITOR LCM PID LIGHTSN	
1	1 Monitor the LCM PID LIGHTSN while illuminating

the light sensor amplifier, then remove the light source.

- **Does the PID indicate NO with the light applied and YES with the light removed?**

→ **Yes**
INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation.

→ **No**
INSTALL a new light sensor amplifier. REFER to Photocell and Amplifier—Light Sensor Amplifier in this section. TEST the system for normal operation.

I10 CHECK CIRCUIT 220 (VT/OG) FOR OPEN AND SHORT TO GROUND

1

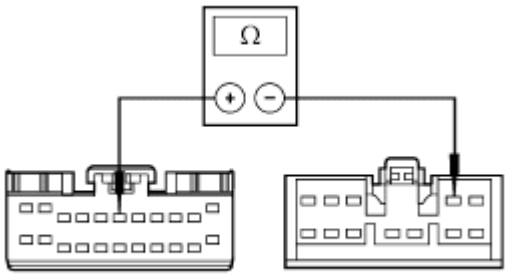
2

LCM C2026

3

Headlamp Switch C262

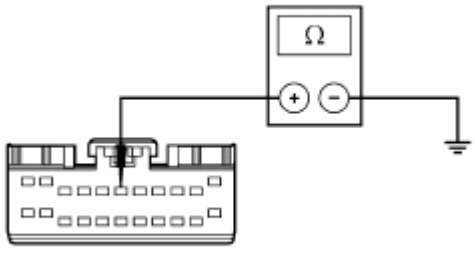
4



GK8861-A

4 Measure the resistance between the LCM C2026 pin 6, circuit 220 (VT/OG), harness side and headlamp switch C262 pin 4, circuit 220 (VT/OG), harness side.

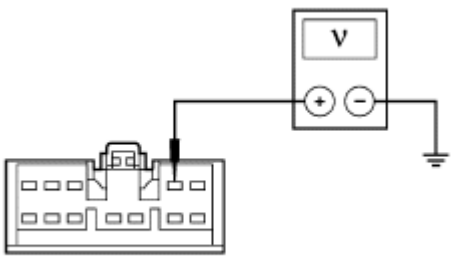
5

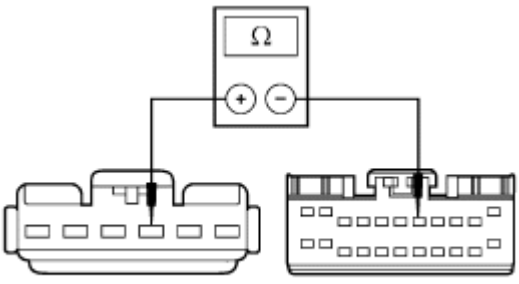
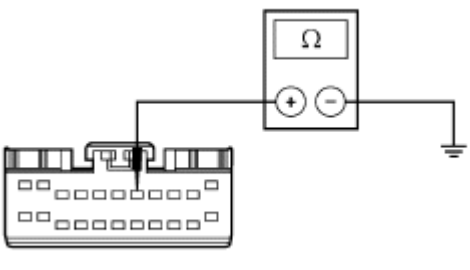


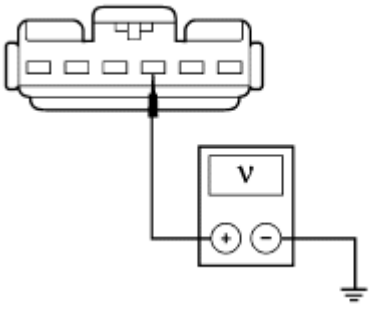
GK8862-A

5 Measure the resistance between LCM C2026 pin 6, circuit 220 (VT/OG), harness side and ground.

- **Is the resistance less than 5 ohms between the LCM and headlamp switch; and greater**

	than 10,000 ohms between the LCM and ground? → **Yes** GO to I11 . → **No** REPAIR the circuit. TEST the system for normal operation.
I11 CHECK THE HEADLAMP SWITCH	
	1 Check the headlamp switch; refer to the Wiring Diagrams Cell 149. • **Is the headlamp switch OK?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.
I12 CHECK CIRCUIT 220 (VT/OG) FOR SHORT TO BATTERY	
1  2  LCM C2026 3  Headlamp Switch C262 4  GK8860-A	4 Measure the voltage between headlamp switch C262 pin 4, circuit 220 (VT/OG), harness side and ground. • **Is voltage present?** → **Yes** REPAIR the circuit. TEST the system for normal operation.

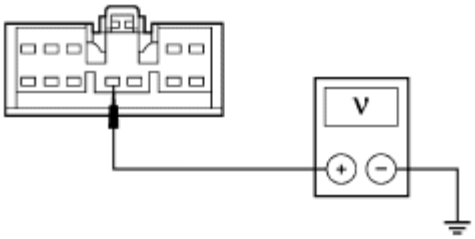
	→ **No** GO to I13 .
I13 CHECK THE HEADLAMP SWITCH	
	1 Check the headlamp switch; refer to the Wiring Diagrams Cell 149. • **Is the headlamp switch OK?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.
I14 CHECK CIRCUIT 218 (WH/VT) FOR OPEN AND SHORT TO GROUND	
1  2  LCM C2026 3  Light Sensor Amplifier C286	
4  GK8863-A	4 Measure the resistance between LCM C2026 pin 7, circuit 218 (WH/VT), harness side and light sensor amplifier C286 pin 4, circuit 218 (WH/VT), harness side.
5  GK8864-A	5 Measure the resistance between LCM C2026 pin 7, circuit 218 (WH/VT), harness side and ground.

	• **Is the resistance less than 5 ohms between the LCM and light sensor amplifier; and greater than 10,000 ohms between the LCM and ground?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** REPAIR the circuit. CLEAR the DTCs. TEST the system for normal operation.
I15 CHECK CIRCUIT 218 (WH/VT) FOR SHORT TO BATTERY	
1  2  LCM C2026 3  Light Sensor Amplifier C286 4  GK8882-A	4 Measure the voltage between light sensor amplifier C286 pin 4, circuit 218 (WH/VT), harness side and ground. • **Is voltage present?** → **Yes** REPAIR the circuit. CLEAR the DTCs. TEST the system for normal operation. → **No** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation.

PINPOINT TEST J: THE AUTOLAMP TIME DELAY IS INOPERATIVE

CONDITIONS	DETAILS/RESULTS/ACTIONS
J1 RETRIEVING DIAGNOSTIC TROUBLE CODES (DTCS) FROM LCM	

	1 Use the recorded results from the LCM self-test. • **Are any DTCs retrieved?** → **Yes** If DTC B1689, GO to J3 . If DTC B1692, GO to J3 . If DTC B1342 is retrieved, CLEAR DTC and CARRY OUT LCM On-Demand Self-Test. INSTALL a new LCM if DTC B1342 is retrieved again. REFER to Section 419-10 . TEST the system for normal operation. → **No** GO to J2 .
J2 CHECK THE HEADLAMP SWITCH	
1 	2 Check the headlamp switch; refer to the Wiring Diagrams Cell 149. • **Is the headlamp switch OK?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.
J3 CHECK CIRCUIT 217 (DB/OG) FOR SHORT TO BATTERY	
1  2  LCM C2026 3	3 Measure the voltage between headlamp switch C262 pin 9, circuit 217 (DB/OG), harness side and ground.



GK8866-A

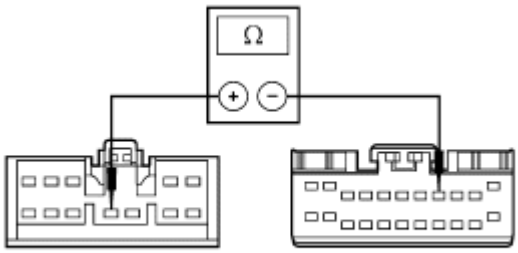
- **Is voltage present?**

→ **Yes**
REPAIR the circuit. TEST the system for normal operation.

→ **No**
GO to J4 .

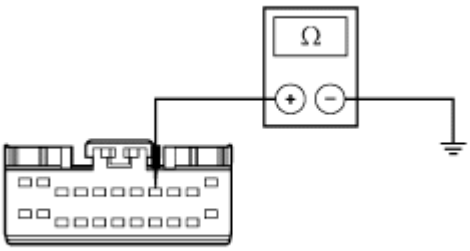
J4 CHECK CIRCUIT 217 (DB/OG) FOR OPEN AND SHORT TO GROUND

1



GK8867-A

2



GK8868-A

1 Measure the resistance between the LCM C2026 pin 8, circuit 217 (DB/OG), harness side and headlamp switch C262 pin 9, circuit 217 (DB/OG), harness side.

2 Measure the resistance between LCM C2026 pin 8, circuit 217 (DB/OG), harness side and ground.

- **Is the resistance less than 5 ohms between the LCM and headlamp switch; and greater than 10,000 ohms between the LCM and ground?**

→ **Yes**
GO to J5 .

→ **No**
REPAIR the circuit. TEST the system for normal operation.

J5 CHECK THE HEADLAMP SWITCH

1 Check the headlamp switch; refer to the Wiring Diagrams Cell 149.

	• **Is the headlamp switch OK?** → **Yes** INSTALL a new LCM. REFER to Section 419-10 . TEST the system for normal operation. → **No** INSTALL a new headlamp switch. REFER to Lamp Switch—Headlamp in this section. TEST the system for normal operation.