

# **2013**

## **EMGRAND X7**

# **Wiring Diagram Manual**

This Wiring Diagram Manual Provides 2013 EMGRAND X7 Model  
(These models included EX720 and EX725) wiring information.

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Information as of the date of September 2013

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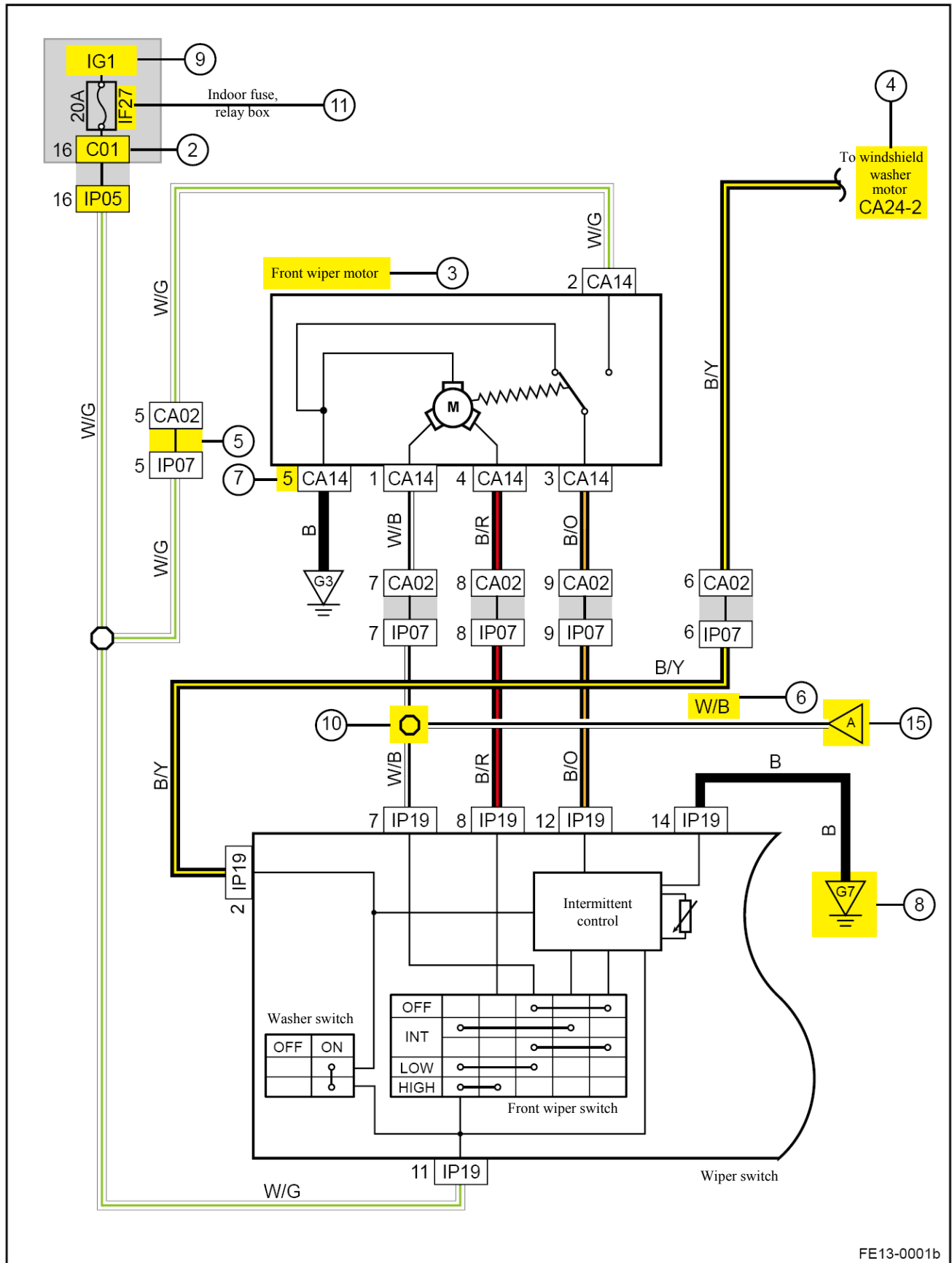
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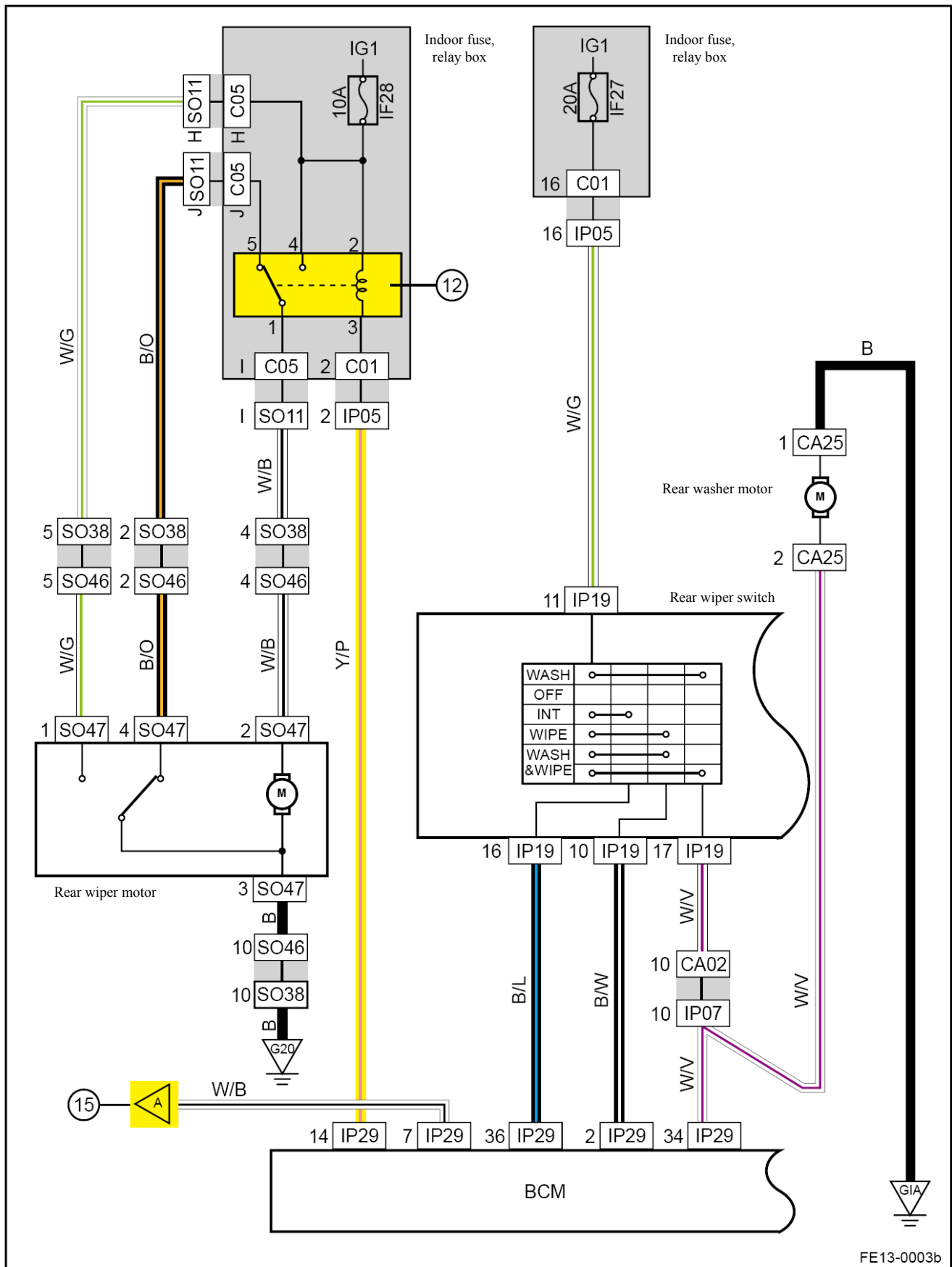
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Front wiper — ①







1 System name

2 Harness connector number;













The numbering rule of harness connectors in this circuit diagram manual is based on the harness, for example, the number of water temperature sensor harness in engine harness is EN23, in which EN refers to harness code and 23 refers to connector serial number.

Codes indicating harness are shown in the following table:

Definition	Harness name
CA	Engine compartment harness
EN	Engine harness (3G10A + UMC-US System)
ED	Engine harness (479 Engine + Delphi System)
EL	Engine harness (479 Engine + UMC-US System )
IP	Instrument panel harness
SO	Base plate harness
DR	Door harness
RF	Inside lamp (ceiling) harness

Notes:

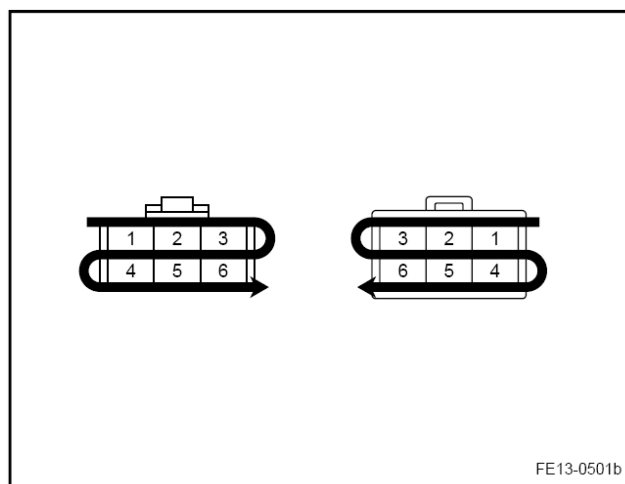
1. The definition of door harness includes four door harnesses.
2. Base plate harness includes back door and reversing radar harness.
3. The details of harness connector number refer to harness layout diagram.
3. Component name.
4. Display the system information related to the circuit connection.
5. The connection between plugs shall be indicated with fine solid line and covered with grey shade so as to differ from the physical harness. The physical harness shall be indicated with heavy solid line, of which the color is the same with that of actual wire.
6. Display the guide wire color. The color codes are shown in the following table:

Color code	Guide wire color	Illustration
B	Black	
Gr	Grey	
Br	Brown	
L	Blue	
G	Green	
R	Red	
Y	Yellow	
W	White	
V	Violet	
O	Orange	
P	Pink	
Lg	Grass green	

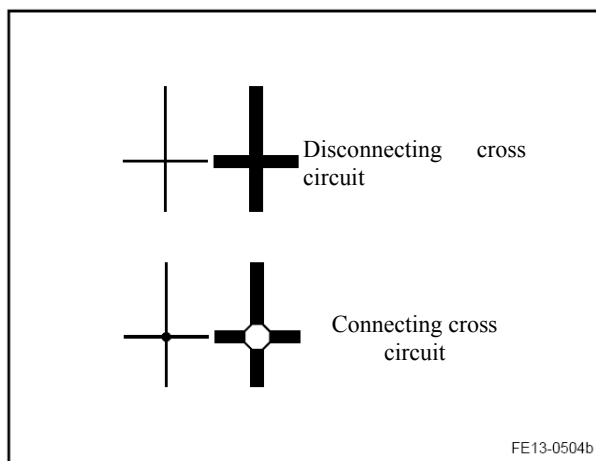
If the guide wire is of two color wire, the first letter indicates the base color of guide wire and the second letter indicates the stripe color, and they are separated with “/”.

For example, the guide wire marked as G/B refers to green base and black strip.

7. Display the terminal numbers of socket connectors. Note that the terminal sequences of harness connectors which are connected with each other are of mirror image as shown in the following figure:

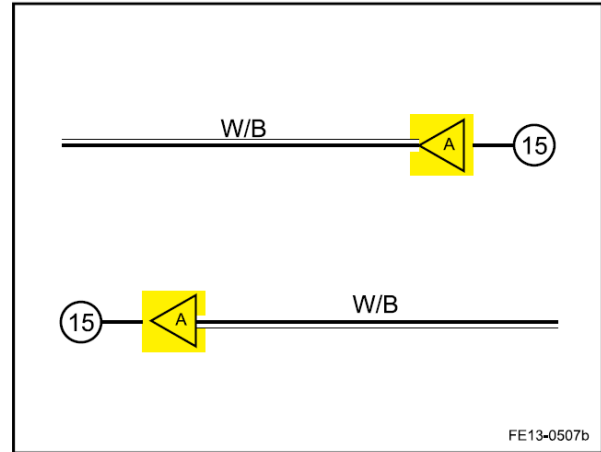
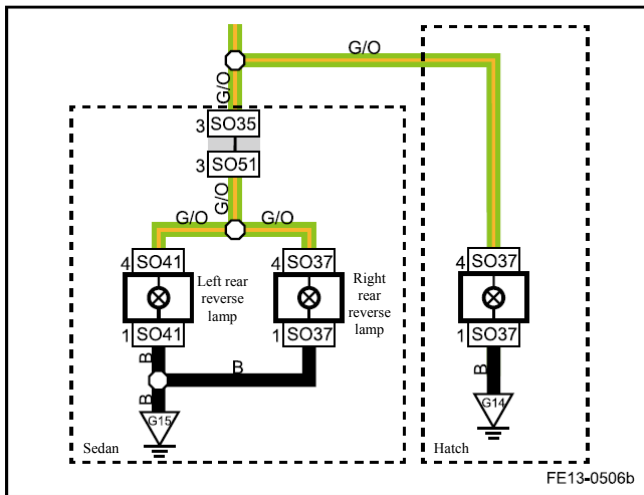


8. Number of grounding point. All the grounding points are indicated with the letter of G. The details of grounding point positions refer to grounding point layout.
9. Power type supplying on the fuse
10. Guide wire contact point:

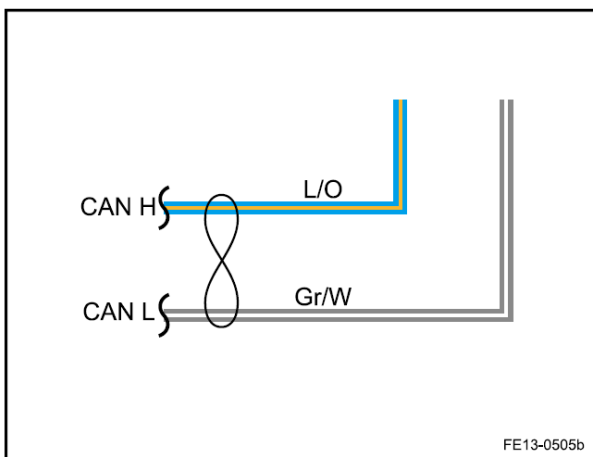




11. The fuse number consists of fuse code and serial number. The fuse code in engine compartment is EF, SF and PF, and indoor fuse code is IF. The fuse number details refer to fuse list.
12. The relay number is indicated with a single English letter. The details refer to relay list.

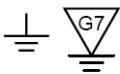
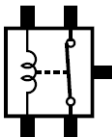
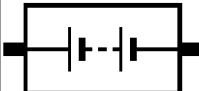

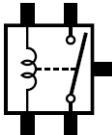

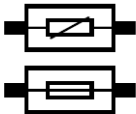
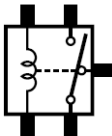
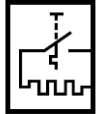



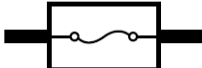
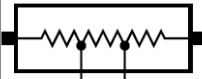

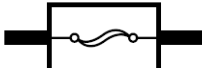
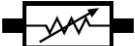





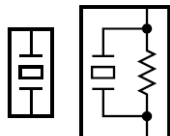
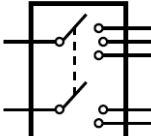
- 13 If the circuit diagram designs differ due to different vehicle model, engine type or configurations, indicate with dashed line in the circuit diagram and describe besides the line.








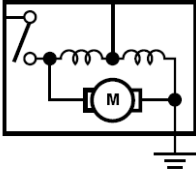


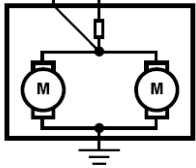


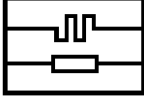

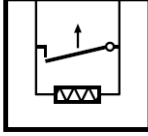
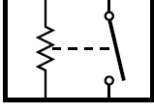
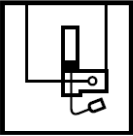
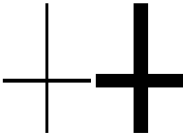
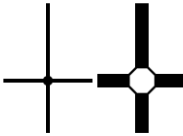
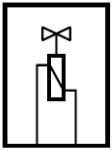
- 14 If “8” shape mark is used between circuit lines and lines, it indicates that this circuit is twisted pair wire which is mainly used for signal circuit of sensor or data communication circuit.



- 15 If the content of a system is so much that its circuit needs to be indicated in many pages. The start point of circuit is indicated with  and the arrival point with . If more than one circuits continue in next page, they will be indicated with letters B, C and so on. And the rest can be done in the same manner.

	Ground		Normally closed relay		Battery
	Temperature sensor		Normally opened relay		Electric capacity
	Short splicing		SPDT relays		Cigarette lighter
	Solenoid valve		Resistance		Antenna
	Small load fuse		Potentiometer		Common opened switch
	Middle load fuse		Variable resistance		Common closed switch
	Big load fuse		Ignition coil		Double SPDT relays
	Heater		Knock sensor		Ignition switch

FE13-0502b

	Diode		Bulb		Twisted pair
	Photodiode		Circuit direction		Starter
	LED		Horn		Fan assembly
	Motor		Clock spring		Oxygen sensor
	Limiting switch		Airbag		Low speed fan relay B
	Safety belt preloader		Disconnecting cross circuit		Connecting cross circuit
	Electromagnetic valve				

FE13-0503b

### Fault Diagnosis Process

For the electrical circuit fault, check it by following steps:

#### 1 Confirm the faults complained by the customer

In order to correctly repair the problem, confirm the fault phenomenon described by the customer. Carefully check the relevant components to confirm the fault phenomenon and then make a record. Disassembling of the parts is not allowed prior to non-confirmation of the fault scope or cause.

#### 2 Identification of the electrical circuit and cause analysis

Analyze and judge the whole circuit from the power supply to grounding of the faulty part based on the electrical circuit of subsystem, and confirm the scheme of maintenance and operation. If impossible to confirm the scheme of maintenance and operation, refer to the description and operation set forth in the maintenance manual, and understands the operating principle of the same system. Meanwhile, it is necessary to inspect other common electrical circuit together with the faulty circuit, such as the common electrical circuit for fuse, grounding and switch systems. Inspect the common electrical circuit that is not checked in step 1. If other parts in the common circuit operate normally, it indicates that the fault is in its own circuit; if the parts in the common circuit fail, it is possible that the fuse or grounding is faulty.

#### 3 Checkup of the electrical circuit and parts

The circuit diagram should be used together with the maintenance manual at any time, and making a reference to the checkup process of electrical circuit and parts described in the maintenance manual. For the module-controlled circuit, the parts should be tested by a diagnosis tester, and an effective fault diagnosis should be carried out by following a logic and reasonable operating process. By fully making a reference to the fault diagnosis process described in the maintenance manual, begin to check the parts from the most possible causes and the easiest- to-check parts.

#### 4 Fault maintenance

In case of any fault, refer to the circuit diagram and description of troubleshooting methods in the maintenance manual, for example: troubleshooting process in case of poor grounding and troubleshooting method for harness connector.

#### 5 Confirmation of operating condition of the electrical circuit

After the maintenance is finished, confirm that the fault is eliminated, and check whether all functions have been

Resumed normal operation. If the fuse is blown, check all the circuits that jointly use the fuse.

### Voltage Inspection

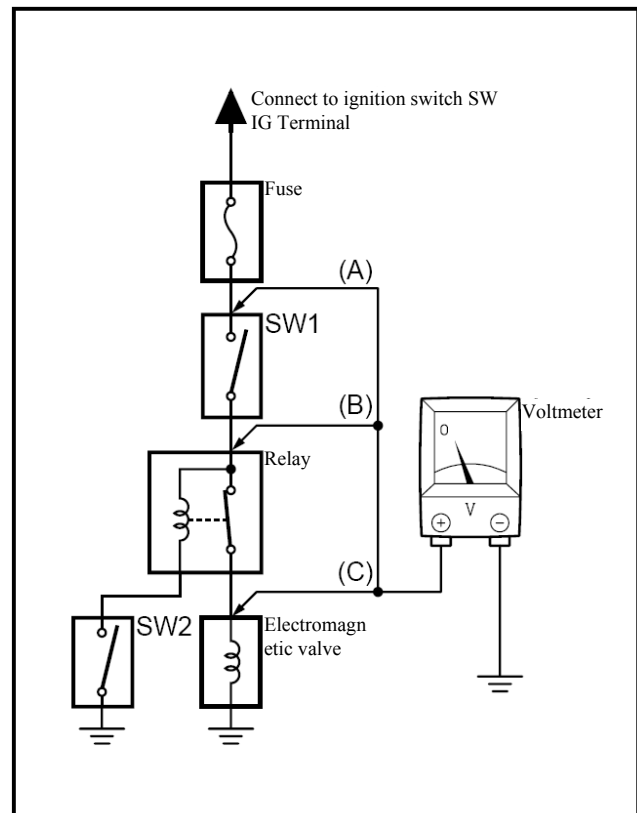
#### 1 Create measurement conditions at individual voltage measurement points.

For example:

- 1 The ignition switch is on.
- 2 The ignition switch is on, and the switch SW1 is closed.
- 3 The igniting switch is on, and the switch SW1 is closed and the relay is switched on. (Namely the switch SW2 is disconnected.)

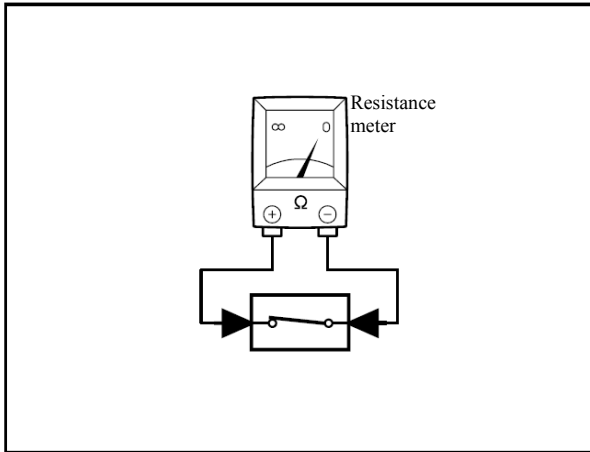
#### 2 Connect the cathode of voltmeter to a grounding point with good condition or the cathode terminal of battery, and then connect the anode of voltmeter to the connector terminal at the point to be measured.

The voltage can be detected by a test lamp instead of voltmeter.

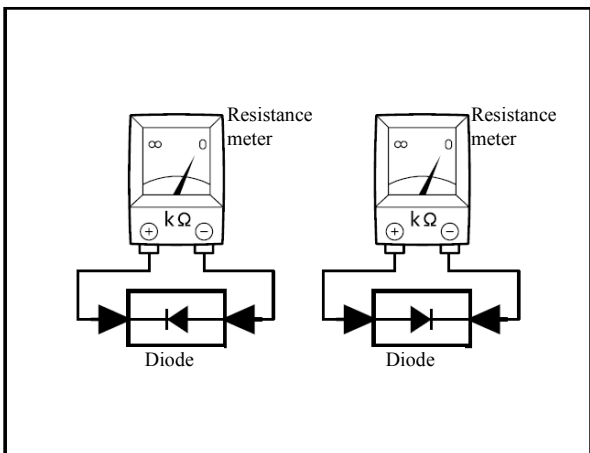


### Connectivity and Resistance Detection of the Electrical Circuit

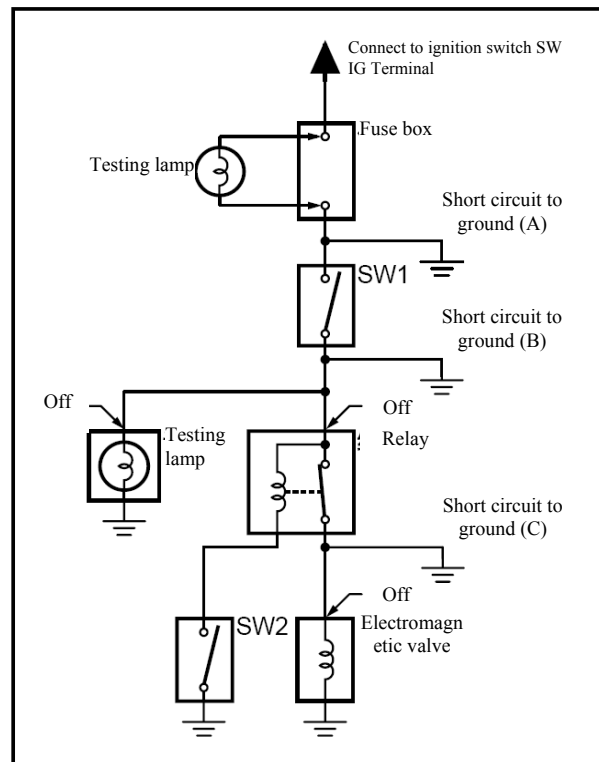
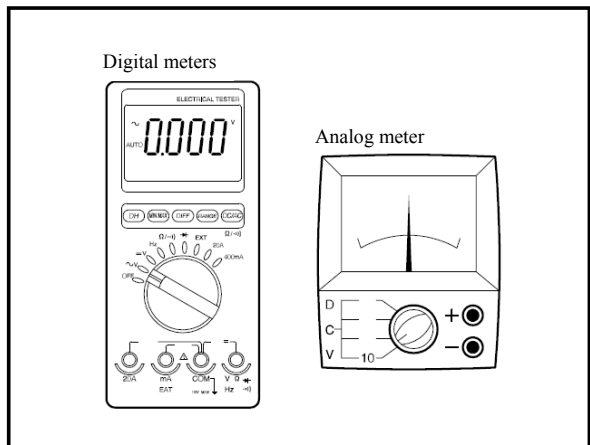
- 1 Disconnect the battery or electrical connection of the measurement point, ensuring no voltage in the circuit to be measured.
- 2 Connect the two probes of ohmmeter to both ends of the electrical circuit to be measured.



If a diode is contained in the electrical circuit, exchange the two probes and measure the resistance again. If the cathode probe of ohmmeter is connected to the anode of diode, and the anode probe is connected to the cathode of diode, the reading of ohmmeter should be close to 0. After exchanging the two probes to measure the resistance again, the reading of ohmmeter should be close to infinity. In case of meeting the two conditions above, it indicates that the diode can be operated normally.



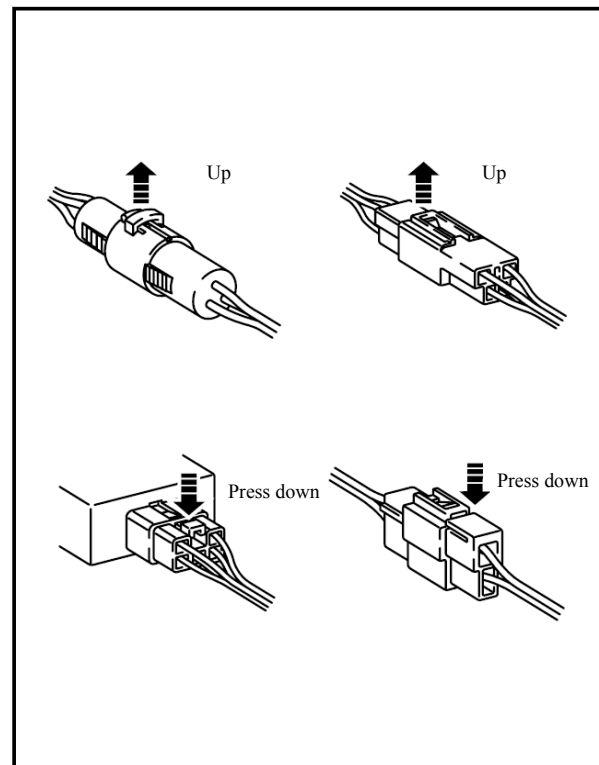
- 3 during electrical circuit inspection, it is necessary to use a voltmeter and ohmmeter with high internal resistance (above 10K $\Omega$ ).



### Disconnect Connector

When disconnecting, please press connector, do not pull out harness.

Tip: when disconnecting connector, please confirm to select connector.



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**Short Circuit Inspection**

- 1 Remove the blown fuse, and disconnect all loads of the fuse.
- 2 Connect a test lamp to both ends of the blown fuse box.
- 3 After setting up the following testing conditions, the test lamp should be lit.

For example:

1. The ignition switch is on.
2. The ignition switch is on, and the switch SW1 is closed.
3. The igniting switch is on, and the switch SW1 is closed and the relay is switched on. (Namely the switch SW2 is disconnected.)
- 4 Disconnect and connect both connectors of the test lamp, and observe whether the test lamp is lit. The short circuit point is located between the measurement point where the test lamp is lit and the measurement point where the test lamp is not lit.
- 5 Slightly rock the faulty circuit, and find the short circuit point.

Warning:

1. Unless necessary, do not open the ECU housing (in case of contacting with the integrated circuit pins on the ECU electrical circuit board, it is possible to damage the integrated electrical circuit due to static electricity. )
2. When changing the internal mechanism of digital instrument, ensure that any parts of your body or clothes do not contact with the pins of spare integrated electrical circuit.

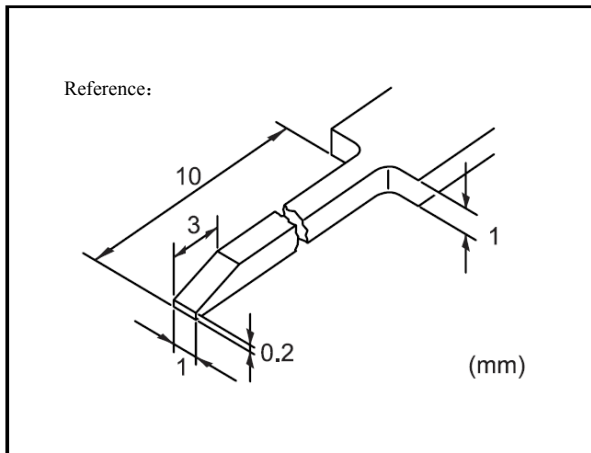


## Change the Terminal (with Terminal Retainer or Secondary Lock Device)

- 1 Prepare a special tool for repairing the harness terminal.

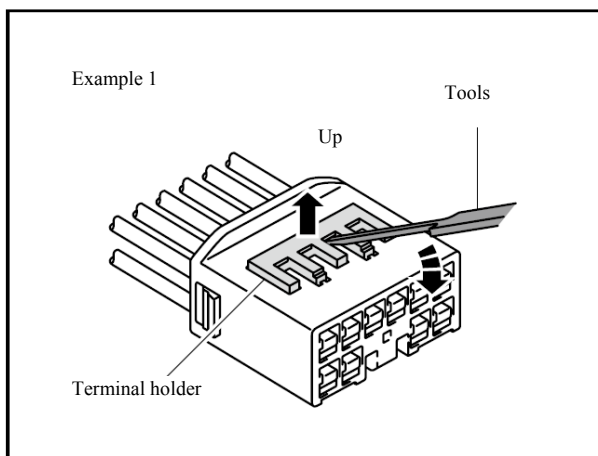
Tip: use a special tool for terminal repairing or similar object as shown in the left picture to remove harness terminal.

- 2 Disconnect the connector.



- 3 Release the secondary lock device of the terminal or terminal retainer.
1. Release the lock device before releasing the terminal locking plate and removing the terminal from the connector.
  2. Use a special tool to release the secondary lock device or terminal retainer.

Note: do not dismantle the terminal retainer from the connector.

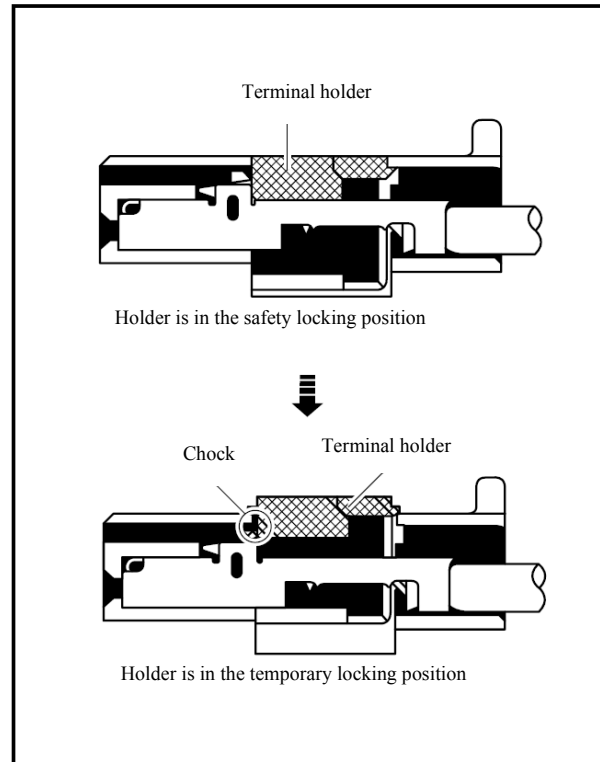


### A. Non-water proof connector

Tip: the position where the tool is inserted varies with the shape of connector, such as the number of the terminals. Check the position before inserting the tool.

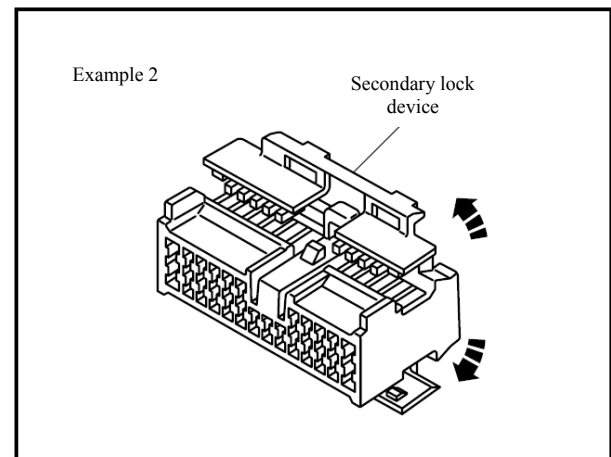
### Example 1

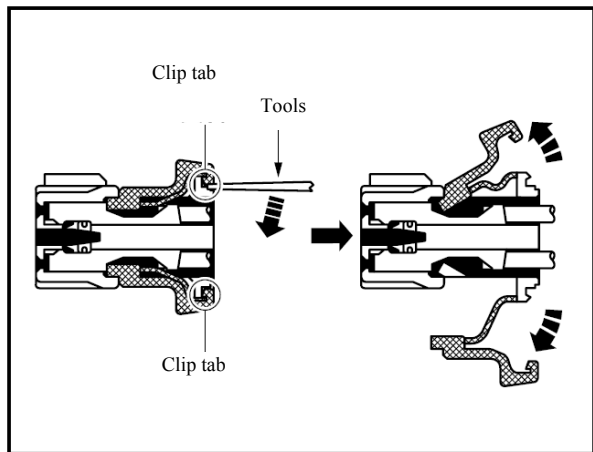
Pull upward the terminal retainer to temporary locking position



### Example 2

Open the secondary lock device.



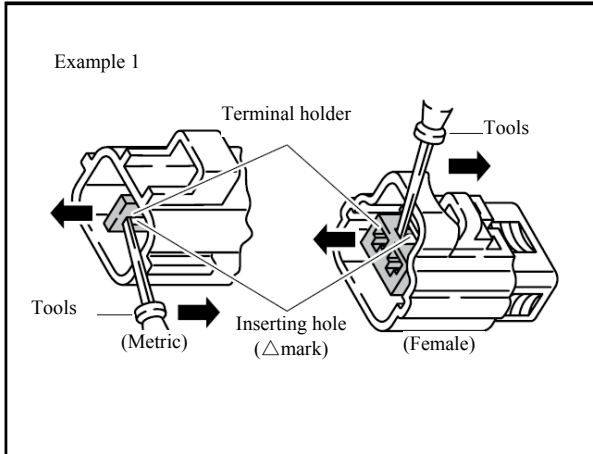


B. Water proof connector

Tip: the color of terminal retainer varies with different connectors.

For example:

Terminal holder	Connector
Black or white	Grey
Black or white	Dark grey
Grey or white	Black

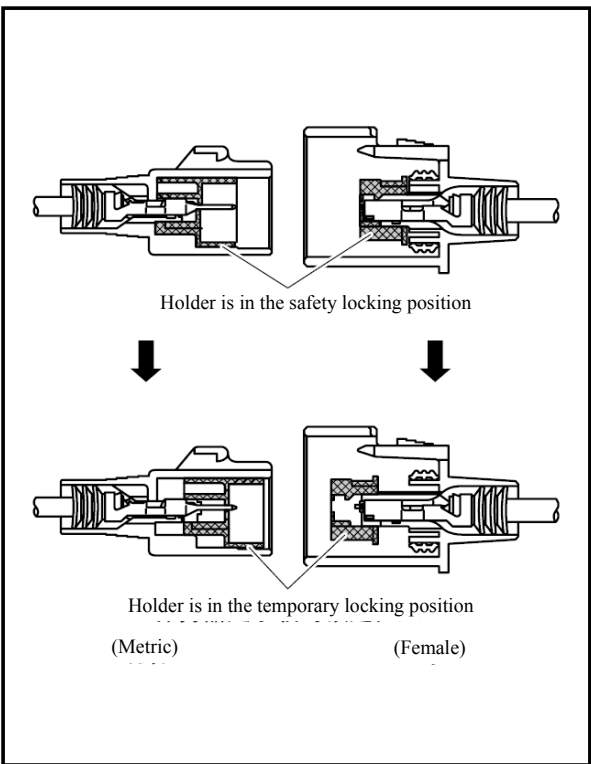


Example 1

The terminal retainer can be pulled upward to temporary locking position (upward pull type).

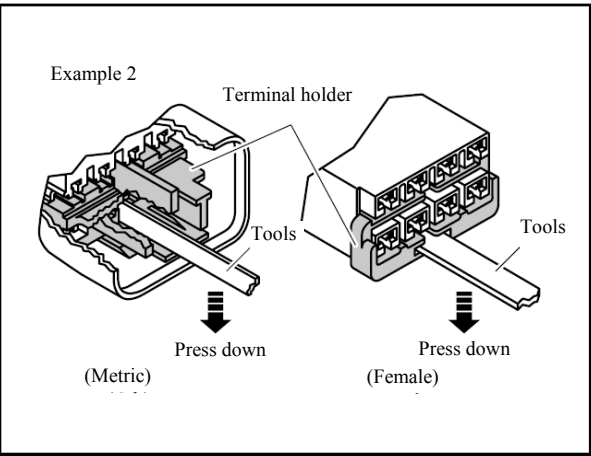
Insert the special tool into insertion hole (Y mark) of the terminal retainer, and pull upward the terminal retainer to temporary locking position.

Tip: the position where the tool is inserted varies with the shape of connector, such as the number of the terminals. Check the position before inserting the tool.

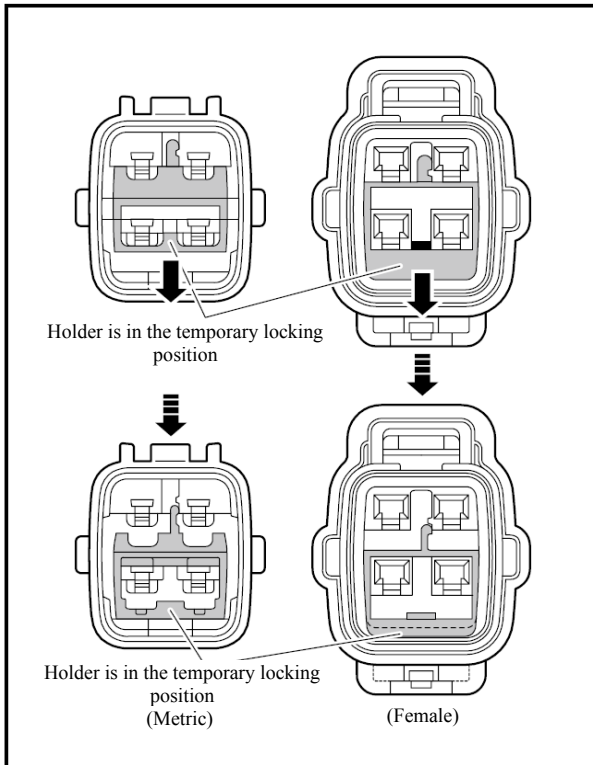


Example 2

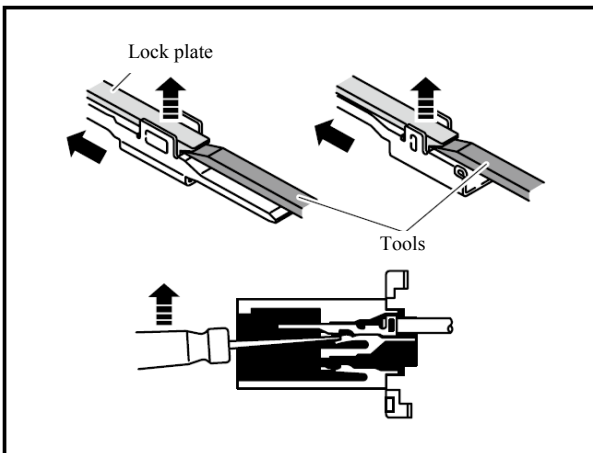
The terminal retainer cannot be pulled upward.



Press down the terminal retainer to temporary locking position.



- C. Release the terminal locking plate and pull out the terminal at backward direction.

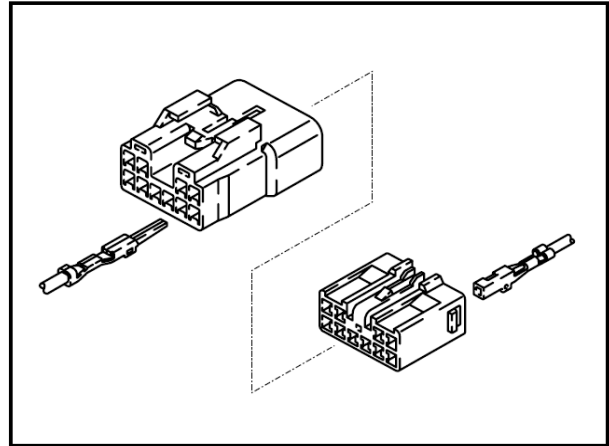


- 4 Install the terminal.

- A. Insert the terminal.

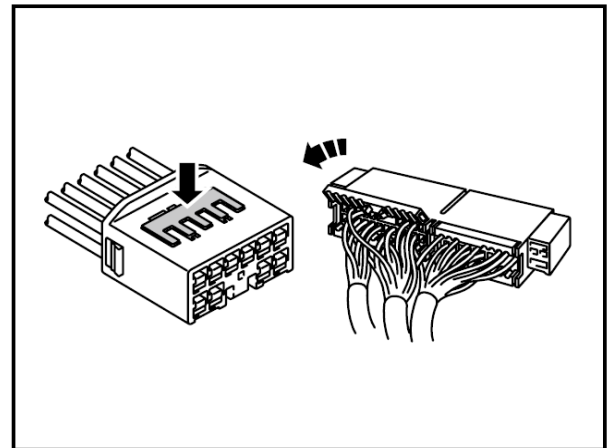
Tips:

1. Ensure the terminal is correctly aligned with the socket.
2. Insert the terminal into terminal retainer until the locking plate locks the terminal.
3. Insert the terminal retainer into temporary locking position of the connector.



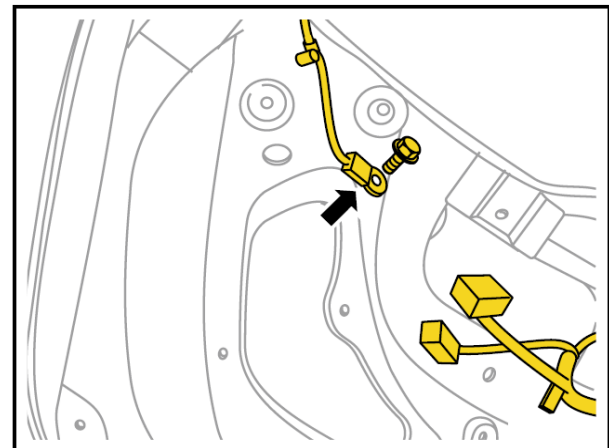
- B. Push the secondary lock device to full locking position.

- 5 Connect the harness connector.

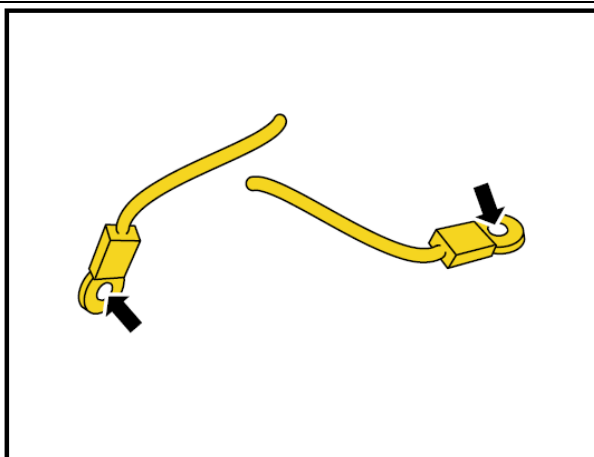


### Handling Process of Poor Grounding

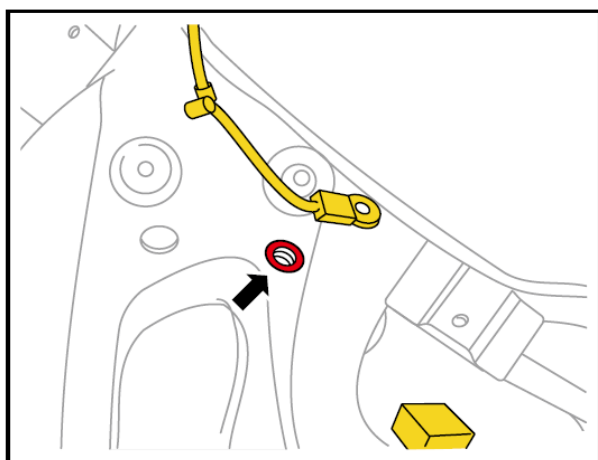
1. Dismantle the bolt at grounding point.



2. Clean both contact surfaces of grounding copper ring at harness side (including body side and bolt side) with a coarse abrasive cloth until the oxide is fully cleared.



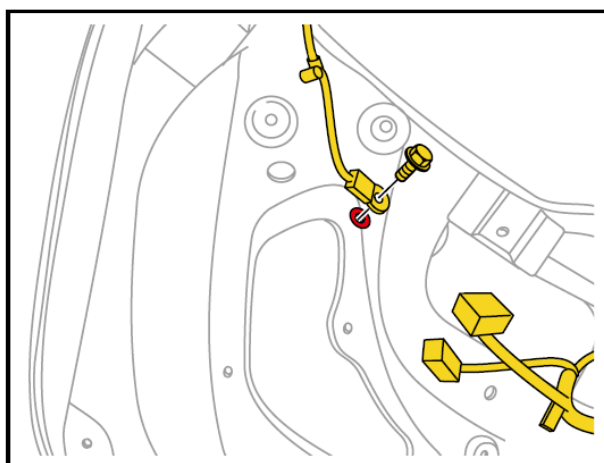
3. Clean body side grounding point by roving cloth, until clean out the surface.



4. Installed grounding point harness and fixing bolt, and tighten by specified torque

Torque: M6 bolt: 8 Nm

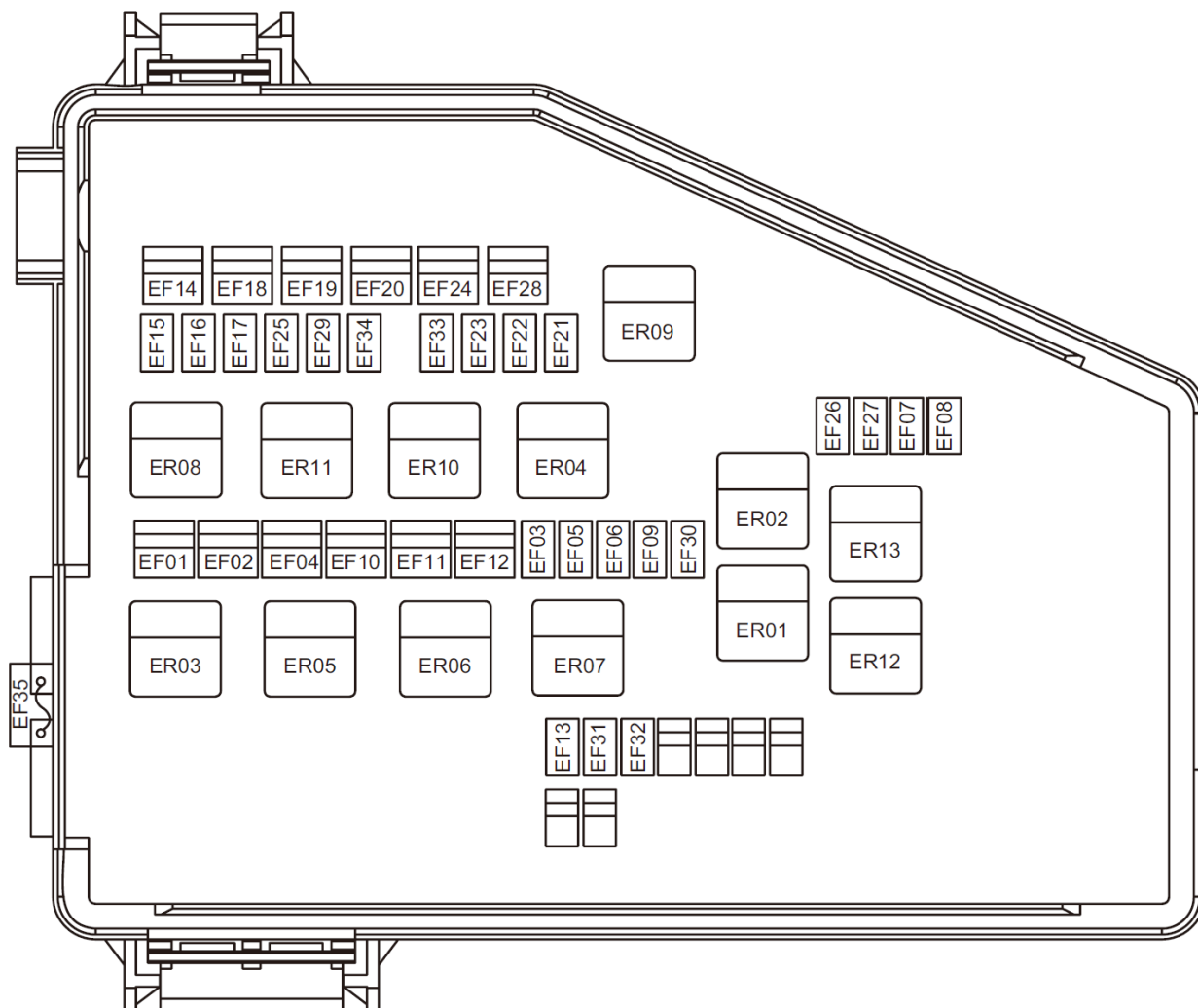
Bolt: 20Nm



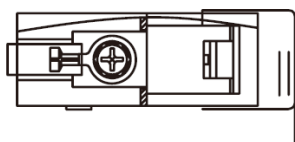
### 13.4 Fuse & Relay

#### 13.4.1. Engine Compartment Fuse & Relay

##### Engine Compartment Fuse and Relay Box



Main fuse **EF40**



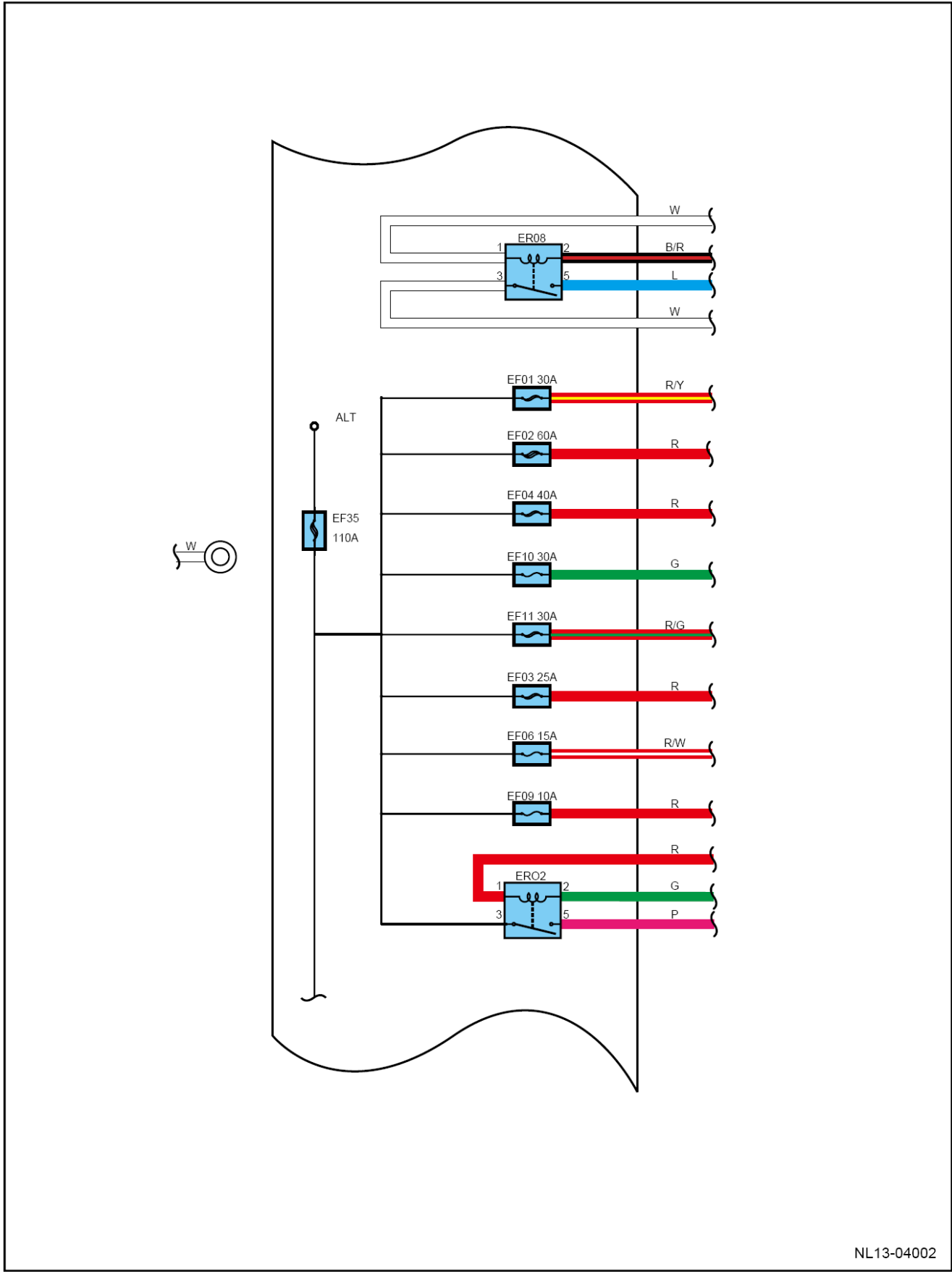
NL13-04006

# Internal Wiring Diagram of Engine Compartment Fuse, Relay Box

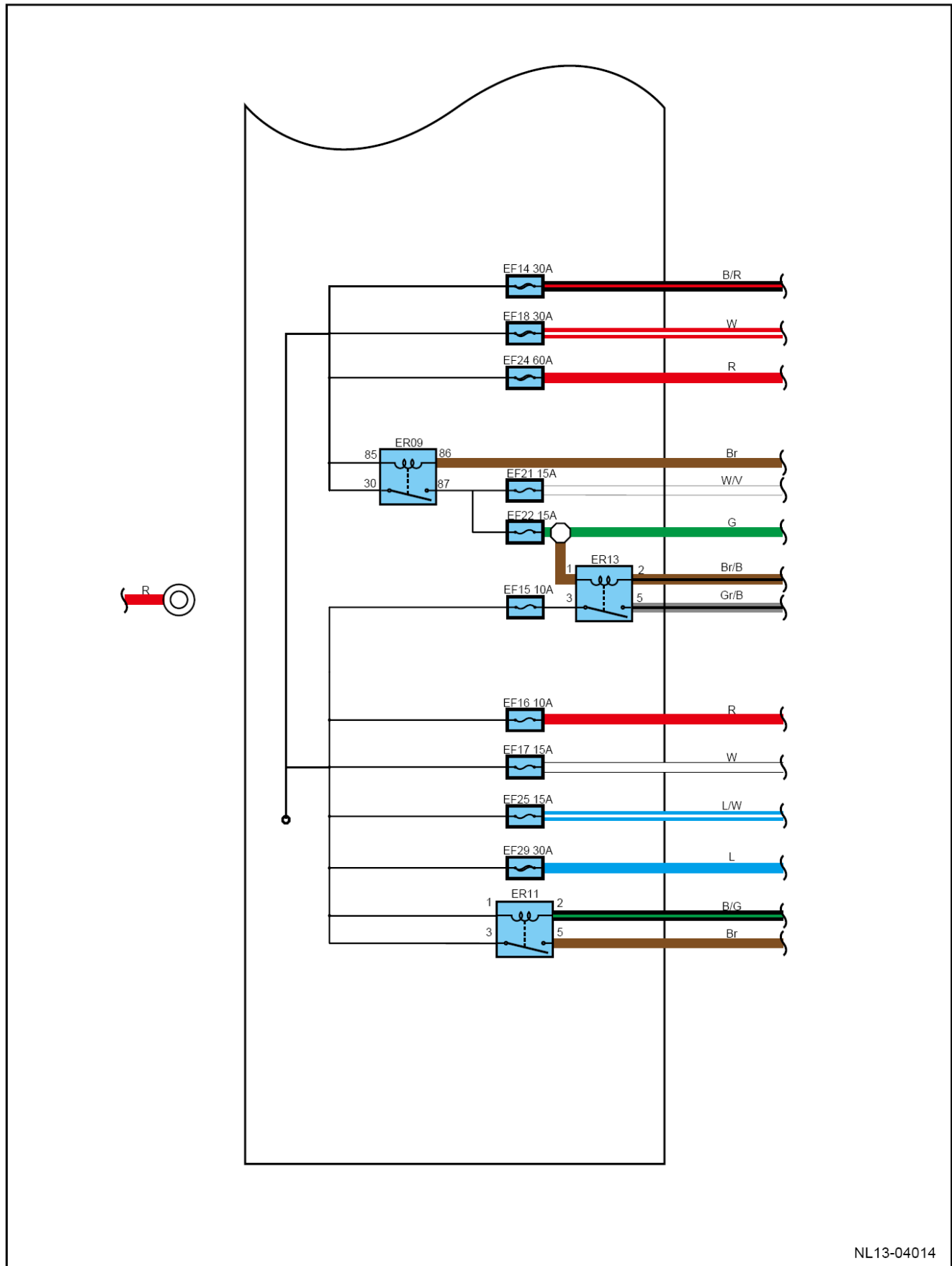


NL13-04001

Internal Wiring Diagram of Engine Compartment Fuse, Relay Box (Continued 1)



# Internal Wiring Diagram of Engine Compartment Fuse, Relay Box (Continued 2)



NL13-04014



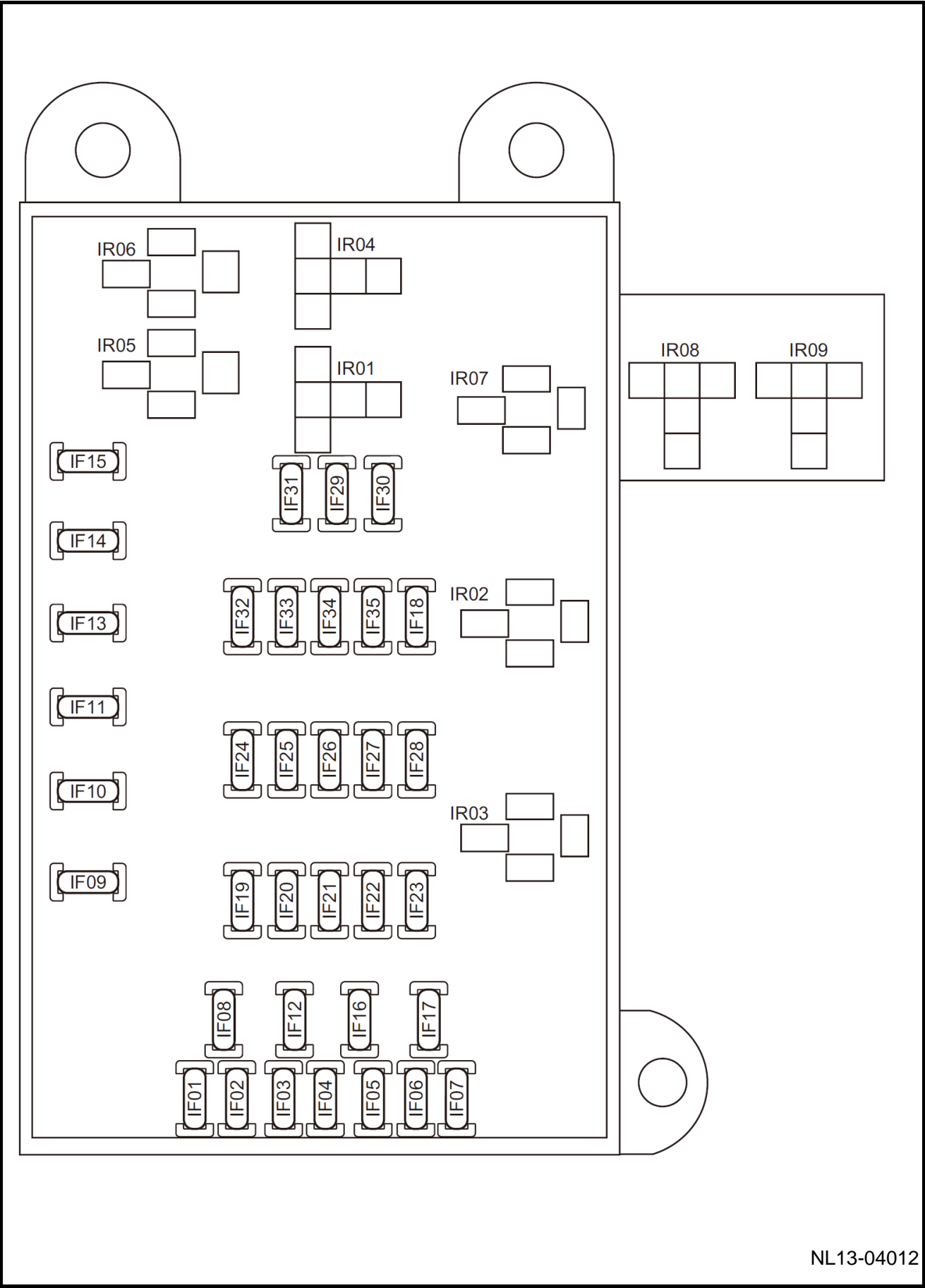
### Fuse List of Engine Compartment

NO.	Description	Rated current(A)	Descriptions
EF40	Main fuse of battery	100A	
EF01	Fuse of power seat	30A	
EF02	Fuse of alternator	60A	
EF03	ABS fuse	25A	
EF04	ABS fuse	40A	
EF06	Fuse of front fog lamp	15A	
EF07	Fuse of FL high beam lamp	10A	
EF08	Fuse of FR high beam lamp	10A	
EF09	Fuse of A/C	10A	
EF10	Fuse of cooling fan-high	30A	
EF11	Fuse of cooling fan-low	30A	
EF14	Ignition switch of AM2 fuse	30A	DSI model
EF15	Fuse of vacuum pump	10A	
EF16	ECM fuse	10A	
EF17	Fuse of horn	15A	
EF18	Ignition switch of AM1 fuse	30A	
EF21	Fuse of ignition coil	15A	
EF22	Fuse of engine injecting nozzle	15A	
EF24	Main fuse of battery	30A	
EF25	Fuse of oil pump	15A	
EF26	FR low beam lamp	10A	
EF27	FL low beam lamp	10A	
EF29	Fuse of starter	30A	
EF35	Main fuse	110A	

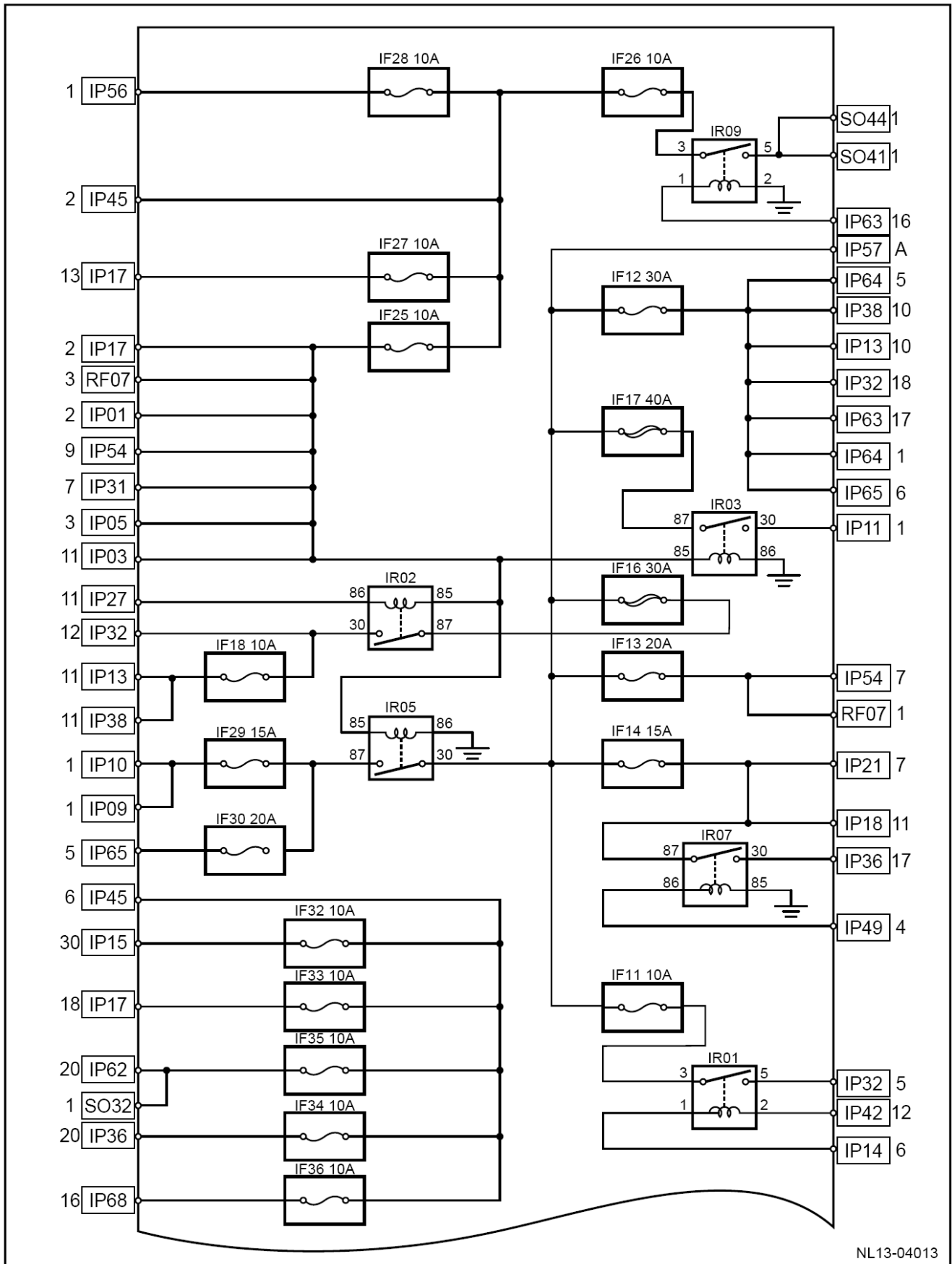
### Relay List of Engine Compartment

NO.	Description	Descriptions
ER01	Front fog lamp relay	/
ER02	High beam lamp relay	/
ER03	Start relay	/
ER04	A/C relay	/
ER05	Cooling fan relay-high speed	Cooling fan relay-high speed
ER06	Cooling fan relay-low speed	Cooling fan relay-low speed
ER07	Cooling fan relay-low speed 2	Cooling fan relay-low speed
ER08	Horn relay	/
ER09	Engine main relay	/
ER10	Fuel pump relay	/
ER11	Low beam lamp relay	/
ER13	Vacuum pump relay	DSI model
ER14	Rear wiper relay	It is under the interior panel of back door

Indoor fuse & relay box

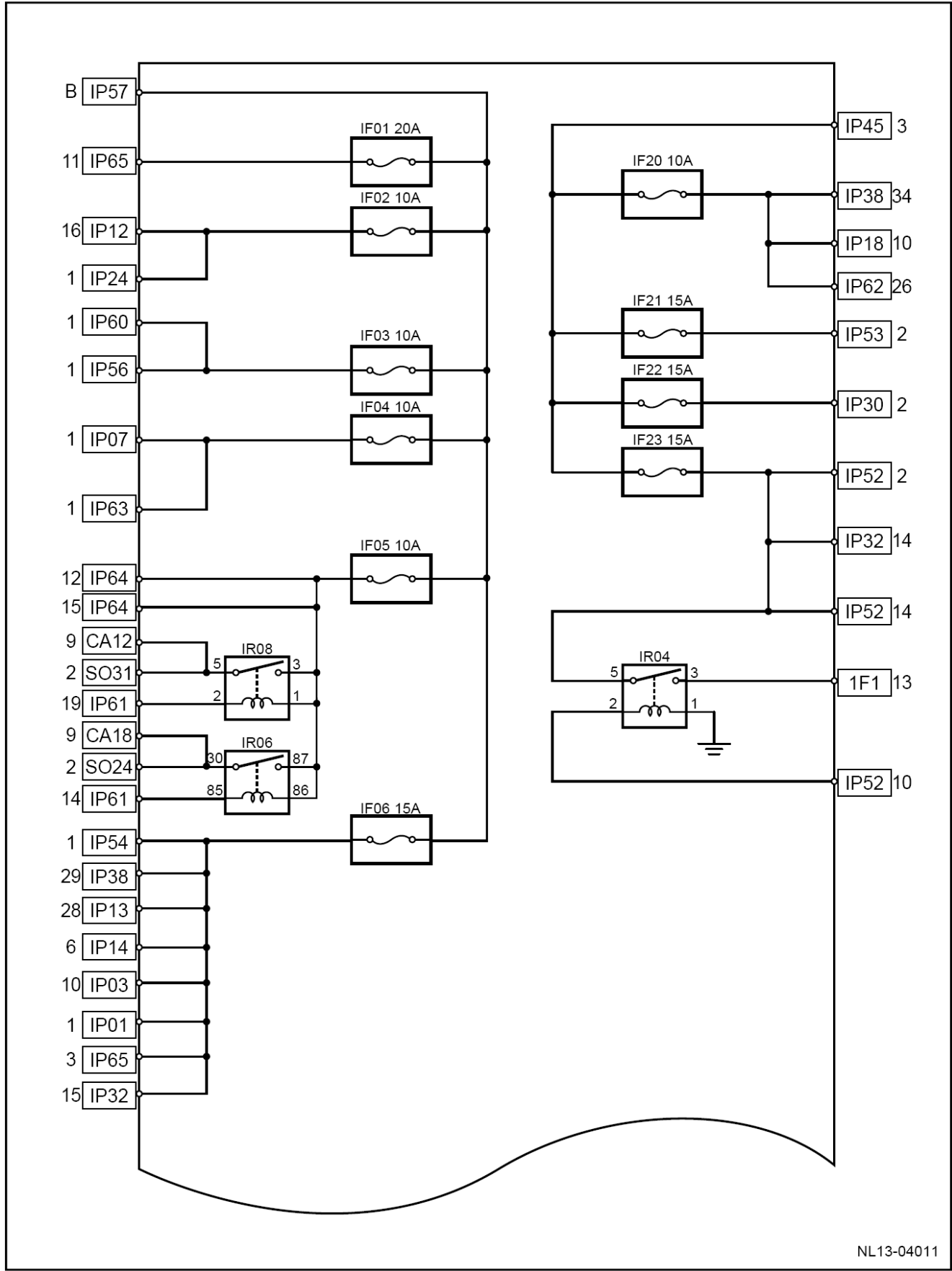


# Internal Wiring Diagram of Indoor Fuse, Relay Box



NL13-04013

Internal Wiring Diagram of Indoor Fuse, Relay Box (Continued)



NL13-04011

### List of Indoor Fuse

NO.	Description	Rated current(A)	Descriptions
IF01	Fuse of door lock	20	/
IF02	Diagnosis fuse	10	/
IF03	Fuse of brake lamp	10	/
IF04	Fuse of turning / hazard warning lamp	10	/
IF05	Fuse of position lamp	10	Tail lamp, instrument and switch backlight
IF06	Fuse of A/C and instrument	15	/
IF11	Fuse of rear fog lamp	10	/
IF12	Fuse of power window	30	/
IF13	Fuse of sunroof	20	/
IF14	Fuse of radio/CD player	15	/
IF16	Fuse of rear defrost	30	/
IF17	Fuse of blower	40	/
IF18	Rear view mirror heating fuse	10	/
IF20	Fuse of radio/CD player	10	/
IF21	Fuse of spare power supply	15	/
IF22	Fuse of cigarette lighter	15	/
IF23	Fuse of rear wiper	15	/
IF25	Fuse of combination instrument	10	/
IF26	Empty	Empty	/
IF27	Fuse of reverse lamp	10	/
IF28	Fuse of brake lamp	10	/
IF30	Fuse of front wiper	30	/
IF32	Fuse of airbag	10	/
IF33	ECM fuse	10	/
IF34	ABS fuse	10	/
IF35	Fuse of immobilizer	10	/
IF36	Fuse of DSI transmission	10	

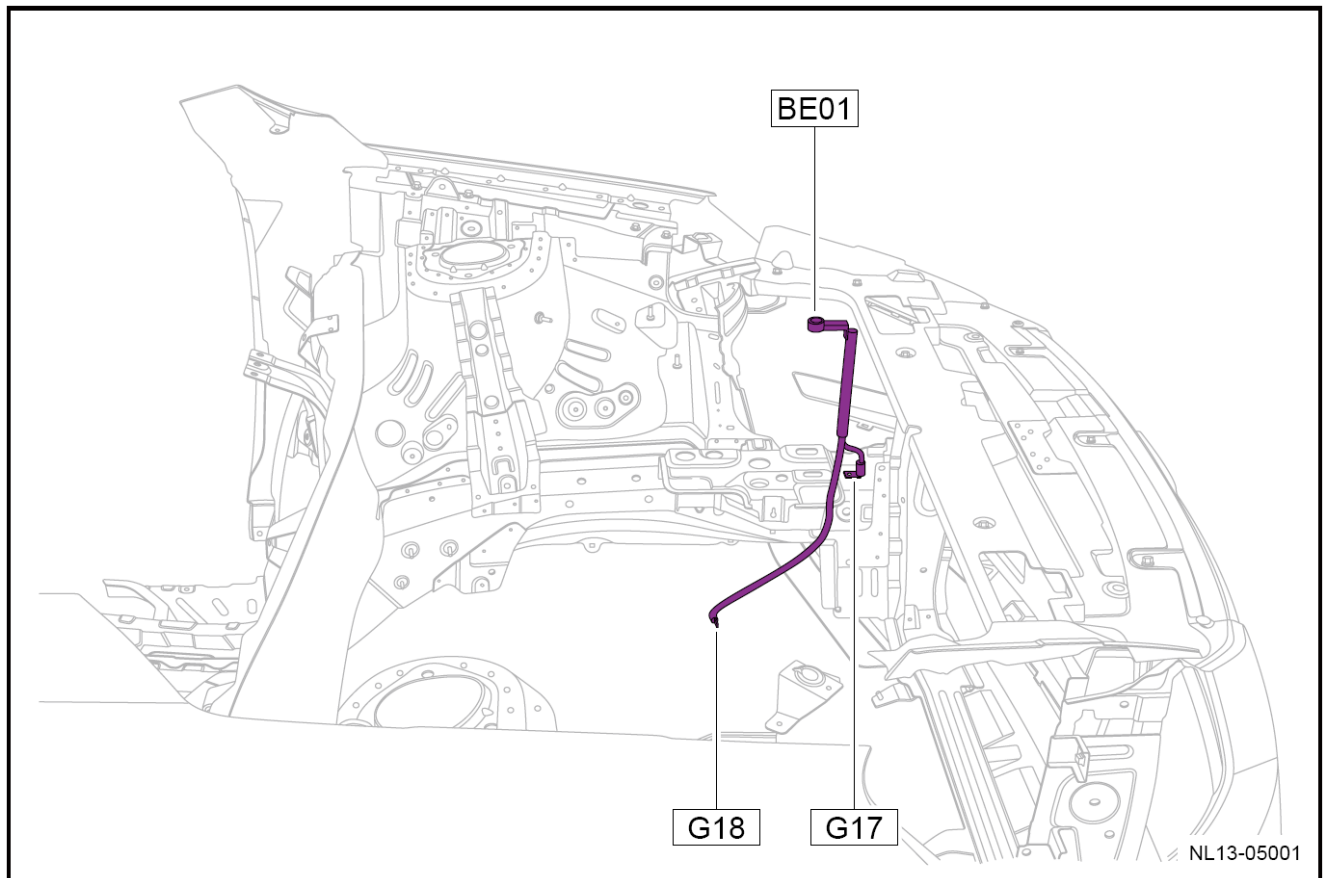
**List of Indoor Relay**

<b>NO.</b>	<b>Description</b>	<b>Descriptions</b>
IR01	Rear fog lamp relay	/
IR02	Rear defrost relay	/
IR03	Blower relay	/
IR05	IG1 relay	/
IR06	Right position lamp relay	/
IR08	Left position lamp relay	/
IR09	License lamp relay	/

## 13.5 Layout of Harness and the Connector

### 13.5.1 Battery Negative Harness

#### Battery Negative Harness





<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
BE01	To battery negative	G18	Battery grounding
G17	Battery grounding		

**Battery Negative Connector Terminal Diagram**

BE01 connect to battery negative



G17 battery grounding

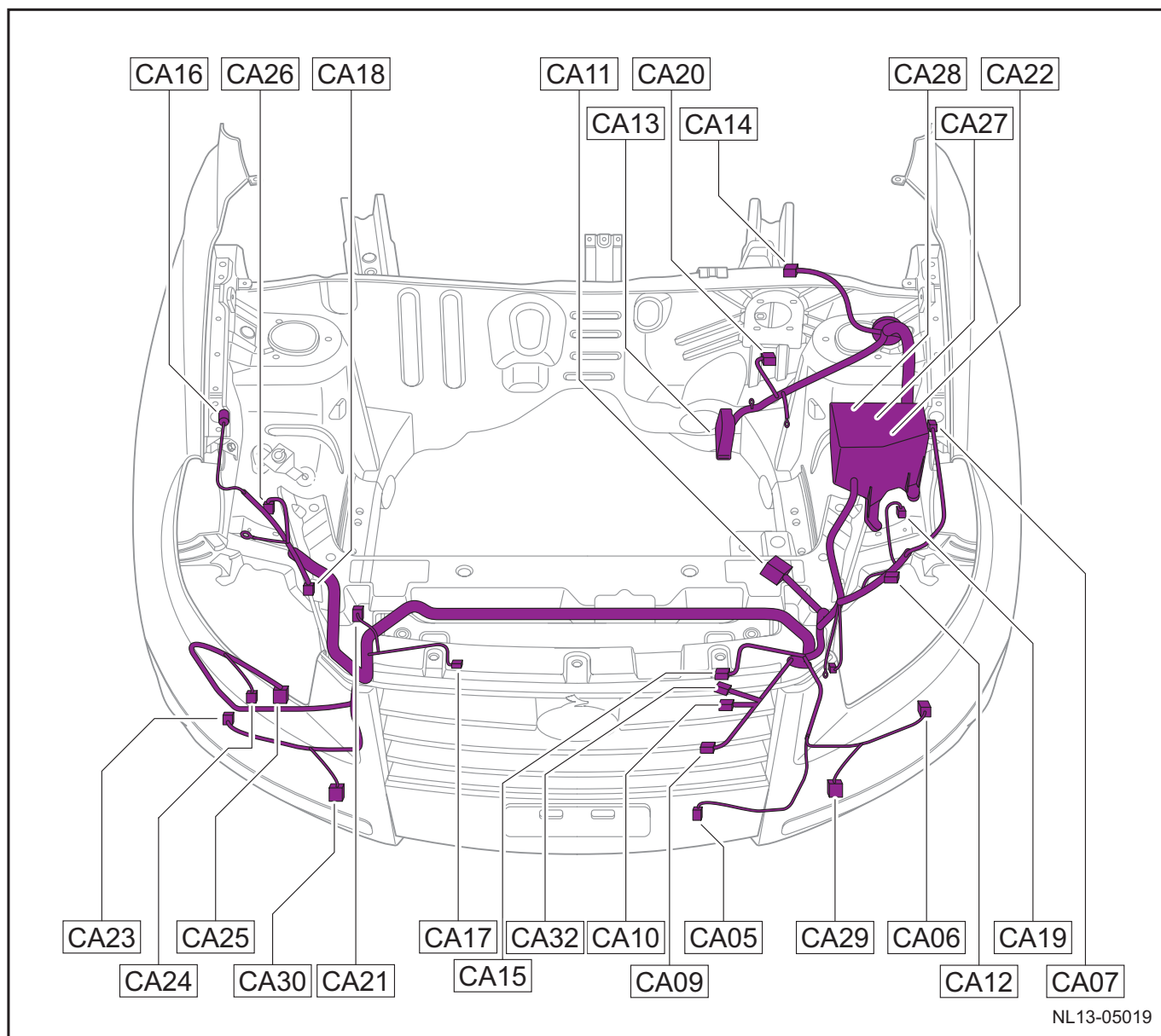


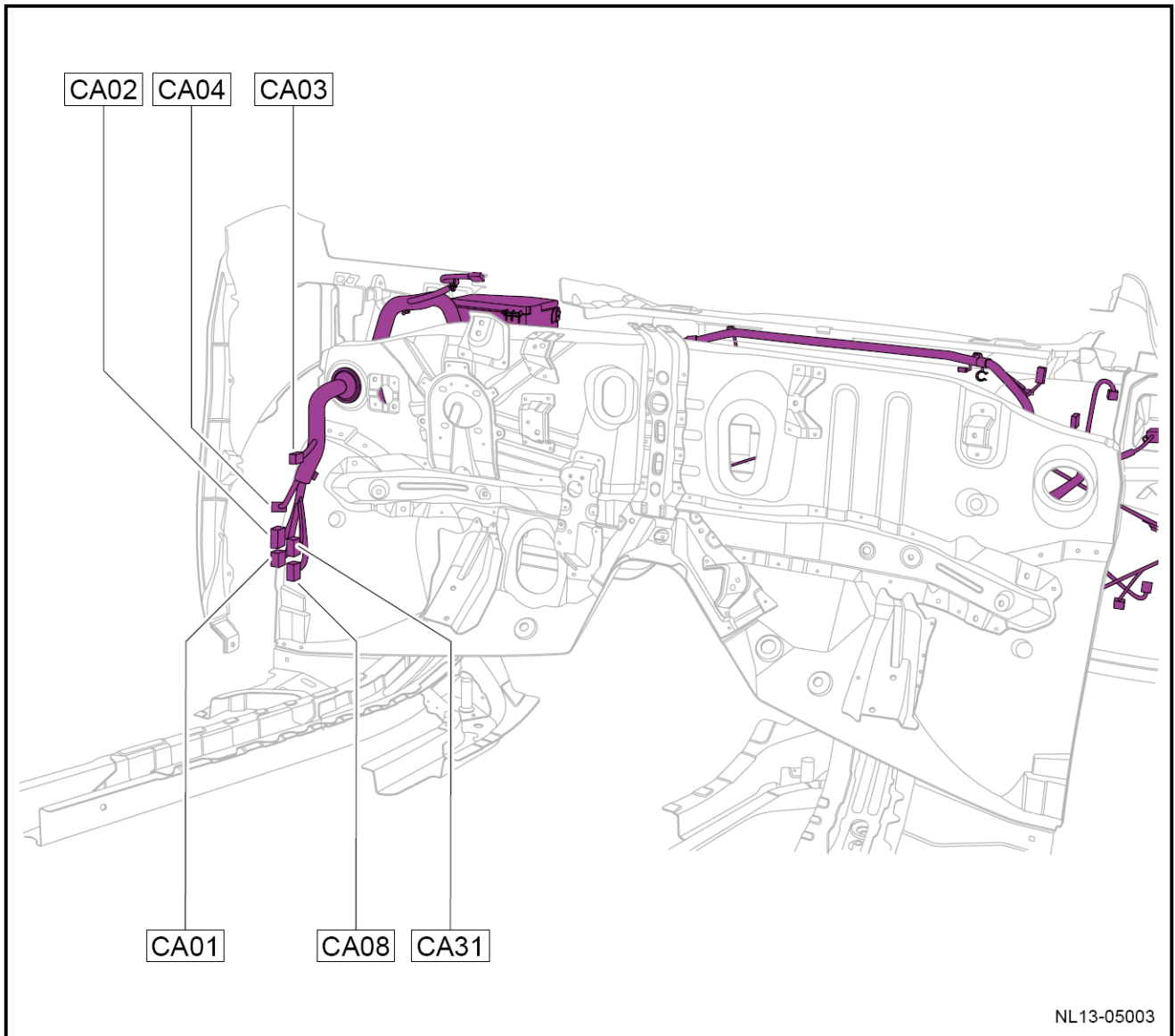
G18 battery grounding



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Engine Compartment Harness Layout Drawing

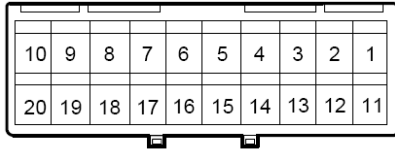


**Engine Compartment Harness Layout Drawing (Continued)**

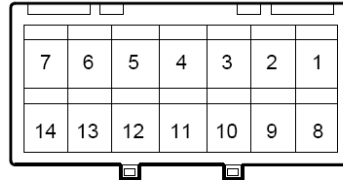
<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
CA01	To instrument harness connector 1	CA17	Harness connector of FR horn
CA02	To instrument harness connector 2	CA18	Harness connector of FR combination headlamp
CA03	To instrument harness connector 3	CA19	Harness connector of FL optical axis regulating motor
CA04	To instrument harness connector 4	CA20	Harness connector of brake fluid level sensor
CA05	Harness connector of environment temperature sensor	CA21	Harness connector of FR collision sensor
CA06	Harness connector of FL fog lamp	CA22	To engine harness connector
CA07	Harness connector of FL speed sensor	CA23	Harness connector of FR fog lamp
CA08	To base plate harness connector	CA24	Harness connector of front washer
CA09	Harness connector of cooling fan motor 1	CA25	Harness connector of rear washer
CA10	Harness connector of cooling fan motor 2	CA26	Harness connector of FR optical axis regulating motor
CA11	Harness connector of FL collision sensor	CA27	To engine harness connector (connecting wire plate 1)
CA12	Harness connector of FL combination headlamp	CA28	To engine harness connector (connecting wire plate 2)
CA13	Harness connector of ABS control module	CA29	Harness connector of FL radar sensor
CA14	Harness connector of front wiper motor	CA30	Harness connector of FR radar sensor
CA15	Harness connector of FL horn	CA31	To base plate harness connector 2
CA16	Harness connector of FR speed sensor	CA32	Harness connector of vacuum pump

## Terminal Diagram of Engine Compartment Harness Connector

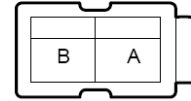
CA01 connect to instrument harness connector 1



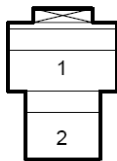
CA02 connect to instrument harness connector 2



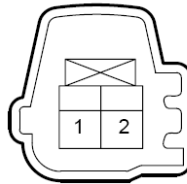
CA03 connect to instrument harness connector 3



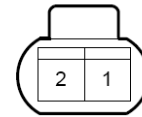
CA04 connect to instrument harness connector 4



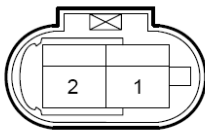
CA05 Environment temperature sensor harness connector



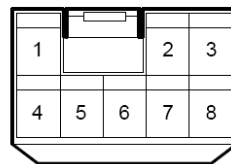
CA06 FL fog lamp harness connector



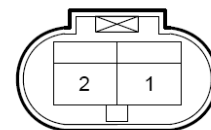
CA07 FL speed sensor harness connector



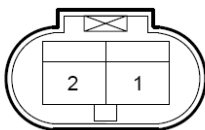
CA08 connect to base plate harness connector



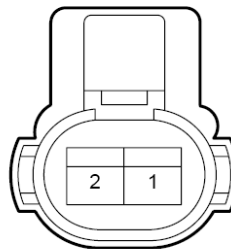
CA09 cooling fan motor 1 harness connector



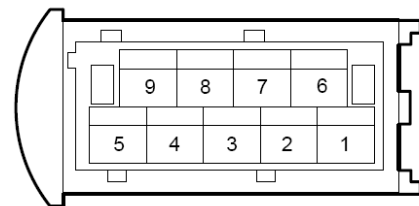
CA10 cooling fan motor 2 harness connector



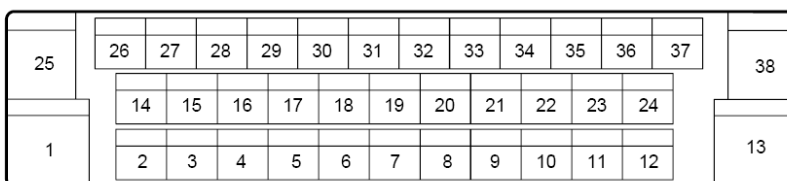
CA11 FL collision sensor harness connector



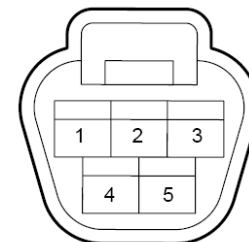
CA12 FL combination lamp harness connector



CA13 ABS control module harness connector



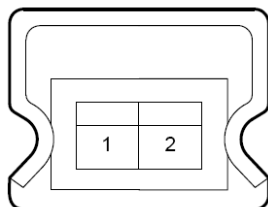
CA14 front wiper motor harness connector



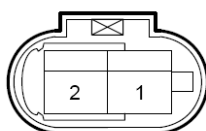
NL13-10002

# Terminal Diagram of Engine Compartment Harness Connector (Continued 1)

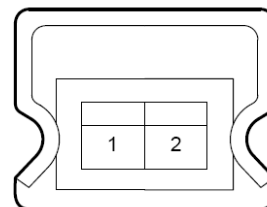
CA15 FL horn harness connector



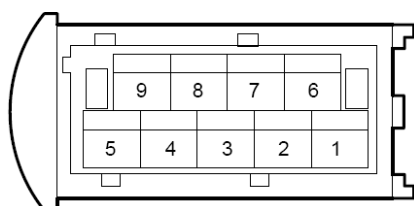
CA16 FR speed sensor harness connector



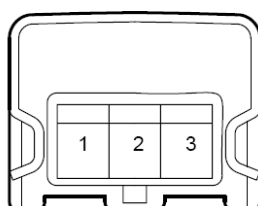
CA17 FR horn harness connector



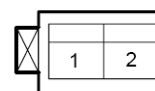
CA18 FR combination headlamp harness connector



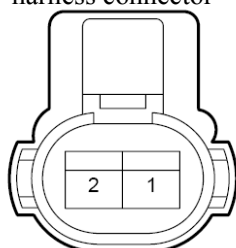
CA19 FL optical axis adjusting motor harness connector



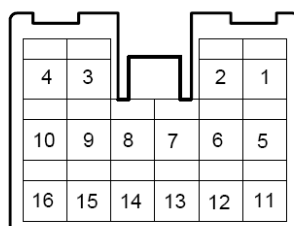
CA20 brake fluid level sensor harness connector



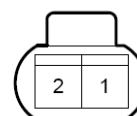
CA21 right front collision sensor harness connector



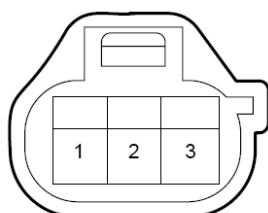
CA22 connect to engine harness connector



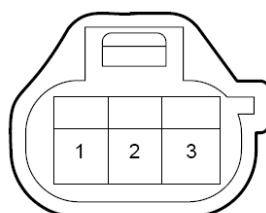
CA23 FR fog lamp harness connector



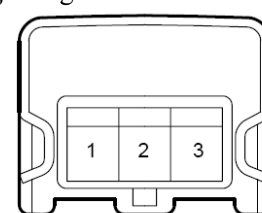
CA24 front washer harness connector



CA25 Rear washer harness connector



CA26 FR optical axis adjusting motor harness connector



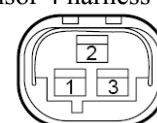
CA27 connect to engine harness connector (splicing1)



CA28 connect to engine harness connector (splicing2)



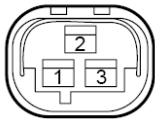
CA29 connect to reverse radar sensor 4 harness connector



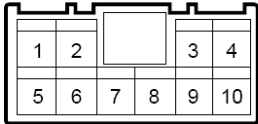
NL13-10003

Terminal Diagram of Engine Compartment Harness Connector (Continued 2)

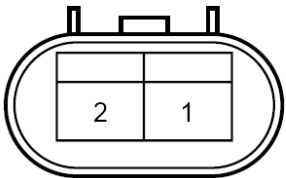
CA30 connect to reverse radar  
sensor 5 harness connector



CA31 connect to body harness  
connector 2

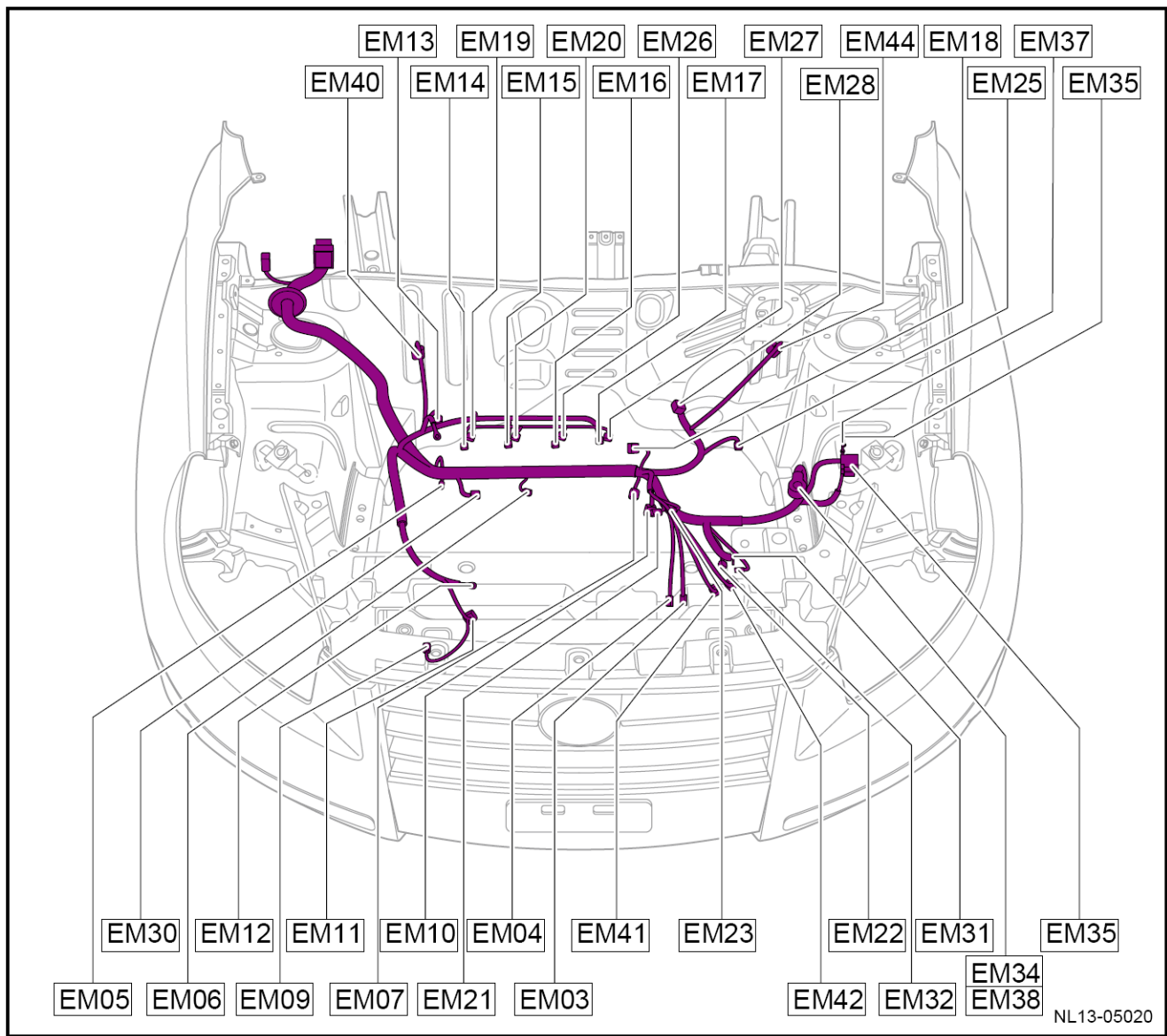


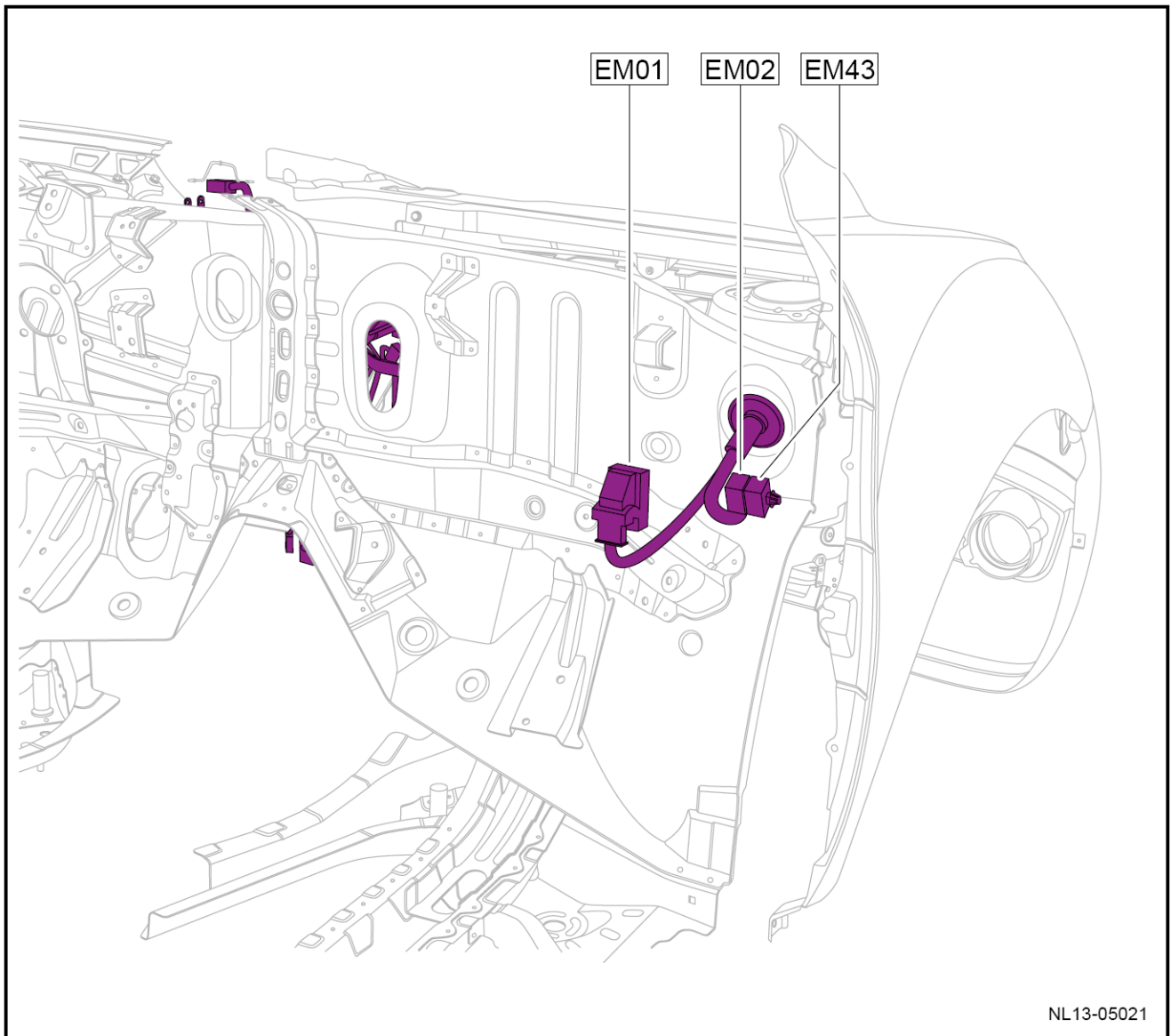
CA32 vacuum pump harness  
connector





Engine Harness Layout Drawing

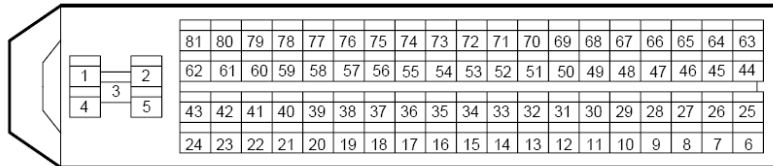


**Engine Harness Layout Drawing (Continued)**

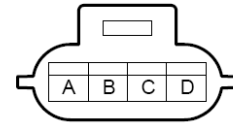
<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
EM01	Harness connector of engine control module	EM22	Harness connector of reverse lamp switch
EM02	To harness connector of instrument harness (1)	EM23	Harness connector of water temperature sensor
EM03	Harness connector of rear oxygen sensor	EM25	Harness connector of carbon canister solenoid valve
EM04	Harness connector of front oxygen sensor	EM26	Harness connector of cylinder No.3ignition coil
EM05	Harness connector of power steering switch	EM27	Harness connector of cylinder No.4ignition coil
EM06	Harness connector of knock sensor	EM28	Harness connector of electric throttle
EM07	Harness connector of speed sensor	EM30	Harness connector of air intake pressure temperature sensor
EM09	Harness connector of A/C compressor	EM31	Harness connector of starter motor
EM10	Harness connector of oil pressure switch	EM32	Harness connector of starter clutch
EM11	Alternator harness connector	EM33	Harness connector of battery (1)
EM12	Harness connector of alternator (2)	EM34	Harness connector of battery (2)
EM13	Harness connector of VVT solenoid valve	EM35	To harness connector of engine compartment fuse box (1)
EM14	Harness connector of cylinder No.1injecting nozzle	EM36	To harness connector of engine compartment fuse box (2)
EM15	Harness connector of cylinder No.2injecting nozzle	EM37	To harness connector of engine compartment fuse box (3)
EM16	Harness connector of cylinder No.3injecting nozzle	EM38	Harness connector of battery fuse box
EM17	Harness connector of cylinder No.4injecting nozzle	EM40	Harness connector of A/C pressure switch
EM18	Harness connector of camshaft position sensor	EM41	Harness connector of transmission gear status
EM19	Harness connector of cylinder No.1ignition coil	EM42	Harness connector of transmission actuator
EM20	Harness connector of cylinder No.2ignition coil	EM43	To harness connector of instrument harness (2)
EM21	Harness connector of speed sensor	EM44	Harness connector of vacuum sensor

## Terminal Diagram of Engine Harness Connector

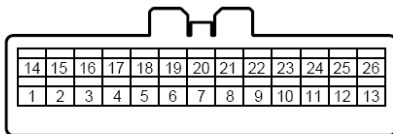
EM01 engine control module harness connector



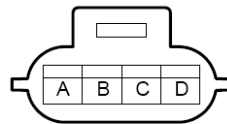
EM03 rear oxygen sensor harness connector



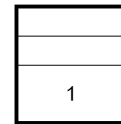
EM02 connect to instrument harness connector



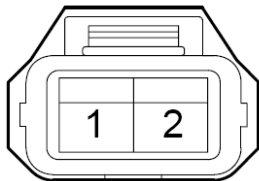
EM04 front oxygen sensor harness connector



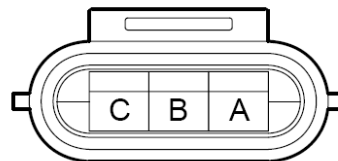
EM05 power steering switch harness connector



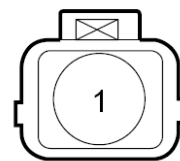
EM06 knock sensor harness connector



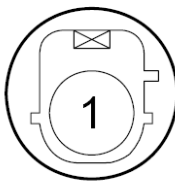
EM07 engine speed sensor harness connector



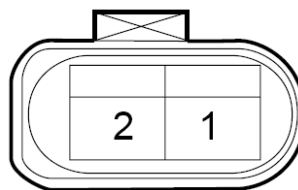
EM09 A/C compressor harness connector



EM10 oil pressure sensor harness connector



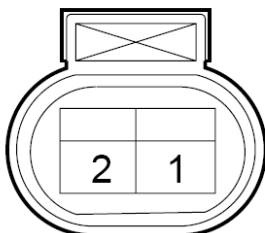
EM11 Alternator harness connector



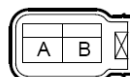
EM12 Alternator (2) harness connector



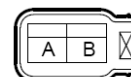
EM13 VVT solenoid valve harness connector



EM14 1Cylinder injector harness connector



EM15 2 cylinders injector harness connector



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# Terminal Diagram of Engine Harness Connector (Continued 1)

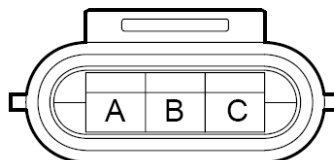
EM16 3cylinders injector harness connector



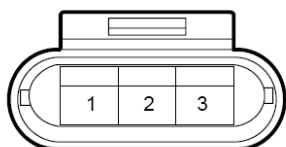
EM17 4 cylinders injector harness connector



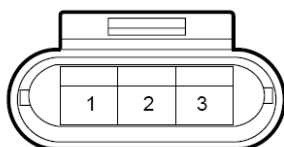
EM18 camshaft position sensor harness connector



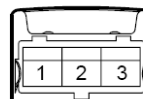
EM19 1cylinder ignition coil harness connector



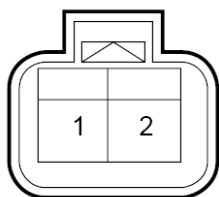
EM20 2cylinders ignition coil harness connector



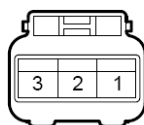
EM21 speed sensor harness connector



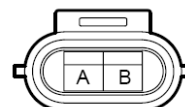
EM22 reverse switch harness connector



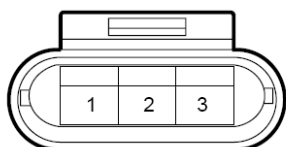
EM23 engine coolant sensor harness connector



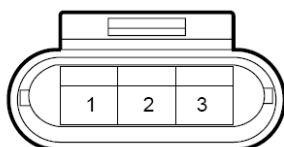
EM25 canister solenoid valve harness connector



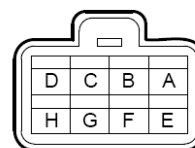
EM26 3 cylinders ignition coil harness connector



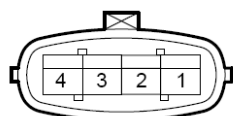
EM27 4 cylinders ignition coil harness connector



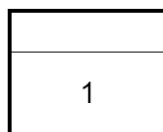
EM28 electric throttle valve harness connector



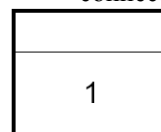
EM30 air intake pressure temperature sensor harness connector



EM31 start harness connector



EM32 starter solenoid switch harness connector



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## Terminal Diagram of Engine Harness Connector (Continued 2)

EM33 battery (splicing1)



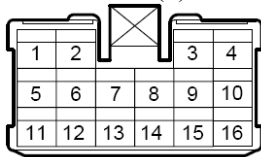
EM34 battery (splicing2)



EM35 connect to compartment fuse box(1)



EM36 connect to compartment fuse box(2)



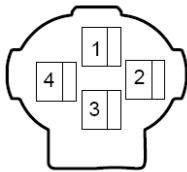
EM37 connect compartment fuse box(3)



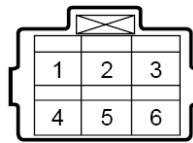
EM38 battery fuse box



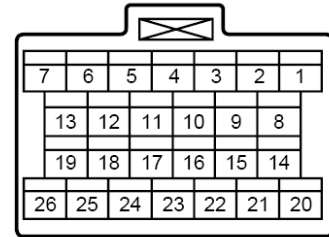
EM40 A/C pressure switch harness connector



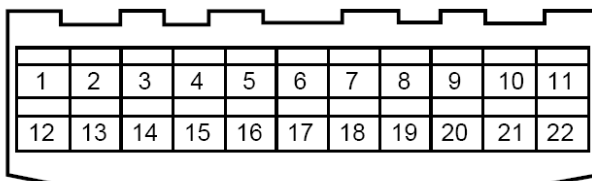
EM41 transmission gears status harness connector



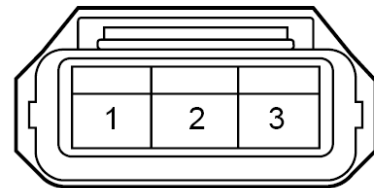
EM42 transmission actuator harness connector



EM43 connect to instrument harness (2)connector

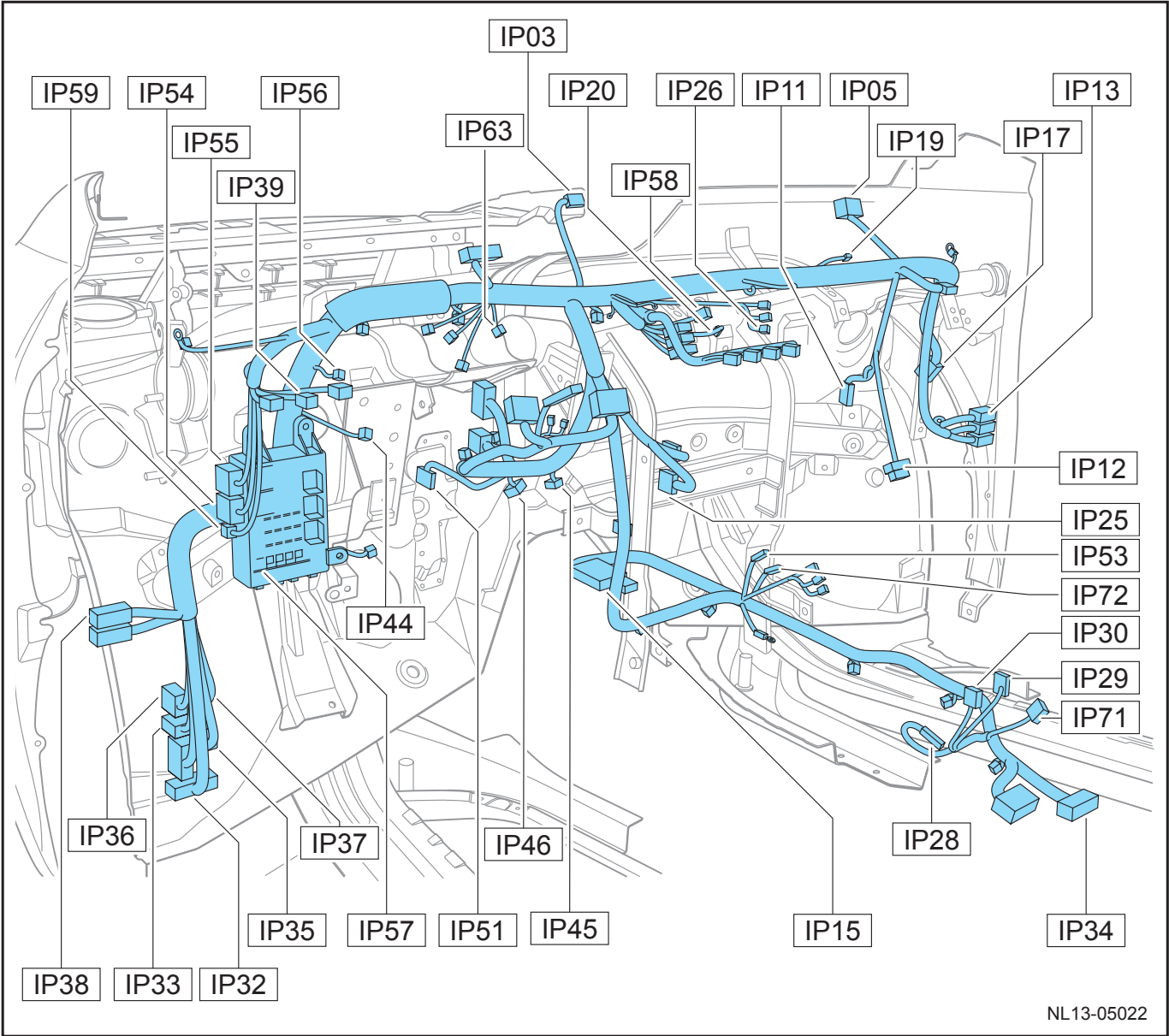


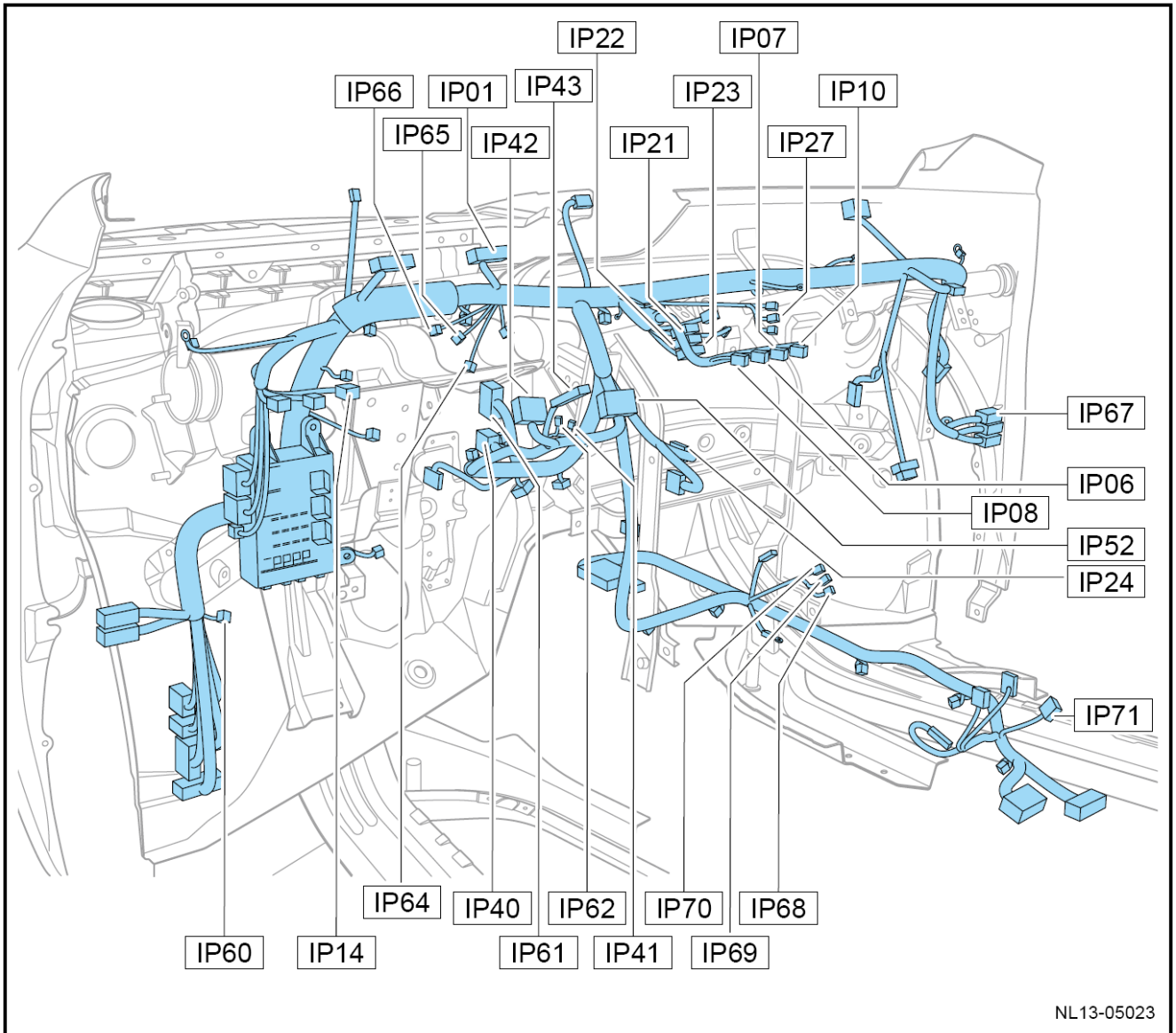
EM44 vacuum sensor harness connector



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Instrument Harness Layout Drawing



**Instrument Harness Layout Drawing (Continued)**



Harness connector	Name	Harness connector	Name
IP01	Instrument panel harness connector	IP42	Heambeam combination switch harness connector
IP03	Multi-functional instrument harness connector	IP43	Immobilizer antenna harness connector
IP04	Sunlight sensor harness connector	IP44	Knee airbag harness connector
IP05	Environment light sensor harness connector	IP45	Ignition switch harness connector
IP06	Rear defroster switch harness connector	IP46	Key removal prompt switch harness connector
IP07	Hazard warning lamp switch harness connector	IP51	Electronic accelerator pedal harness connector
IP08	Combination switch harness connector	IP52	Wiper washer combination switch harness connector
IP10	Reversing radar indicator lamp harness connector	IP53	Backup power source harness connector
IP11	Blower harness connector	IP54	To headlining harness connector 1
IP12	DLC harness connector	IP55	To headlining harness connector 2
IP13	To right front door harness connector	IP56	Brake lamp switch harness connector
IP14	Headlamp beam axis regulating switch & immobilizer warning lamp harness connector	IP57	To engine compartment harness connector
IP15	Airbag module harness connector	IP58	Camera harness connector
IP16	A/C control panel harness connector (automatic)	IP59	Antenna wire 1 harness connector
IP17	To engine harness connector	IP60	Clutch switch harness connector
IP19	Passenger side airbag harness connector	IP61	Body control module harness connector 1
IP20	Antenna wire 2 harness connector	IP62	Body control module harness connector 2
IP21	Radio & CD player harness connector 1	IP63	Body control module harness connector 3
IP22	Radio & CD player harness connector 2	IP64	Body control module harness connector 4
IP23	Radio & CD player harness connector 3	IP65	Body control module harness connector 5
IP24	Immobilizer connector 1	IP66	Body control module harness connector 6
IP25	Immobilizer connector 2	IP67	To engine (2) harness connector
IP26	Manual A/C control panel connector C	IP68	Shift controller 1 harness connector
IP27	Manual A/C control panel connector A	IP69	Shift controller 2 harness connector
IP28	Parking brake switch harness connector	IP70	Shift controller 3 harness connector
IP29	Central lock switch connector	IP71	Gear selector harness connector (AT)
IP30	Cigarette lighter harness connector	IP72	Gear selector protection module harness connector (AT)
IP32	To floor harness connector 1	IP74	To body harness connector 3
IP33	To body harness connector 5	IP75	Driver side seat-heating switch harness connector
IP34	To floor harness connector 2	IP76	Passenger side seat-heating switch harness connector
IP35	To engine compartment harness connector 1	IP77	To body harness connector 6
IP36	To engine compartment harness connector 2	IP78	To body harness connector 4
IP37	To engine compartment harness connector 3	IP79	Hazard flasher relay harness connector
IP38	To FL door harness connector	IP80	Radio & CD player harness connector 4
IP40	Clock spring coil harness connector	IP81	To USB harness connector
IP41	Driver seat airbag harness connector	IP82	Back door unlock switch harness connector

## Terminal Diagram of Instrument Harness Connector

IP01 combination instrument harness connector

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

IP03 multi-function instrument harness connector

1	2	3	4	5	6
7	8	9	10	11	12

IP04 solar sensor harness connector1

3	2	1	

IP05 Sunlight sensor harness connector 2

3	2	1	

IP06 rear defrost switch harness connector

2				1	
6	5	4	3		

IP07 hazard switch connector

2				1	
6	5	4	3		

IP08 combination adjusting switch connector

2				1	
6	5	4	3		

IP10 reverse radar indicator harness connector

1	2	3	4	5	6	7	8

IP11 blower connector

1	2	3	
6	5	4	

IP12 diagnostics interface

16	15	14	13	12	11	10	9
8	7	6	5	4	3	2	1

IP13 FR door harness connector

1	2			3	
4	5	6	7	8	
9	10	11	12	13	
14	15	16	17	18	19
20	21	22	23	24	25
26	27	28	29	30	31
32	33	34			

IP14 headlamp optical axis adjusting  
Anti-theft alarm lamp harness connector

2			1
6	5	4	3

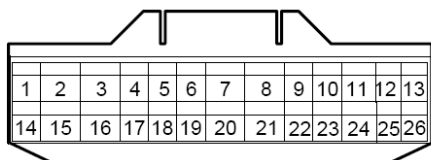
IP15 airbag module harness connector

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

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# Terminal Diagram of Instrument Harness Connector (Continued 1)

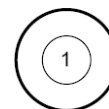
IP17 Connect to engine harness connector



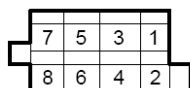
IP19 passenger side airbag harness connector



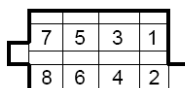
IP20 antenna wire 2 harness connector



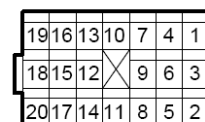
IP21 Radio/CD player harness connector 1



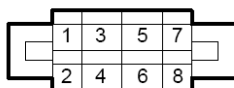
IP22 Radio/CD player harness connector 2



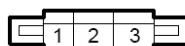
IP23 Radio/CD player harness connector 3



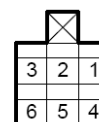
IP24 Immobilizer connector1



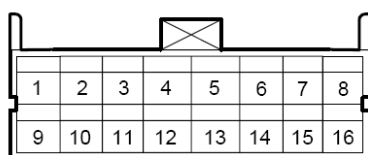
IP25 Immobilizer connector2



IP26 manual A/C control panel connector C



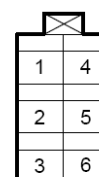
IP27 manual A/C control panel connector A



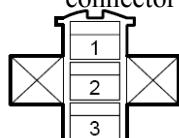
IP28 parking brake switch harness



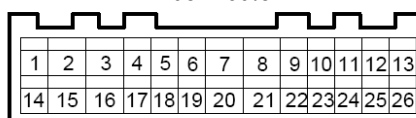
IP29 Central lock switch connector



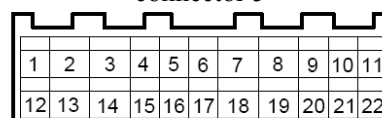
IP30 cigarette lighter harness connector



IP32 connect to body harness connector 1



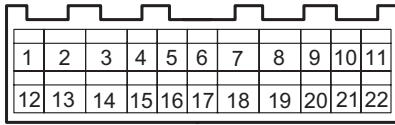
IP33 connect to body harness connector 5



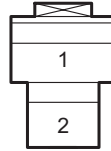
NL13-10008

## Terminal Diagram of Instrument Harness Connector (Continued 2)

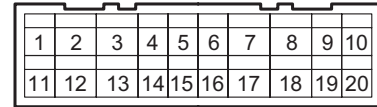
IP34 connect to body harness connector 3



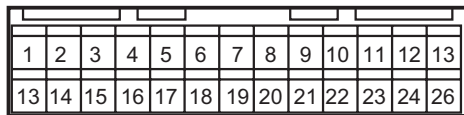
IP35 connect to engine compartment harness connector



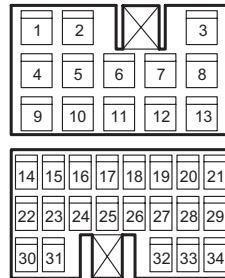
IP36 connect to engine compartment harness connector 2



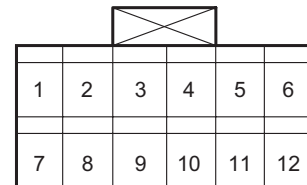
IP37 connect to engine compartment harness connector 3



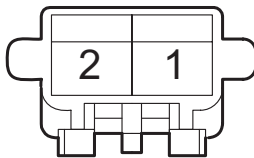
IP38 connect to FL door harness connector



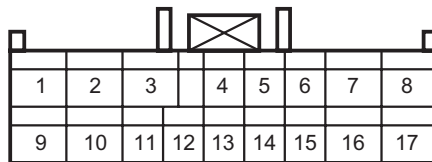
IP40 clock spring harness connector



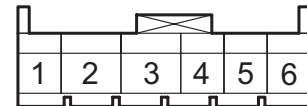
IP41 driver safety airbag harness connector



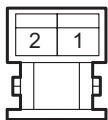
IP42 Headbeam combination switch harness connector



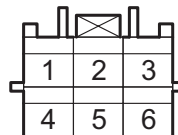
IP43 Anti-theft coil harness connector



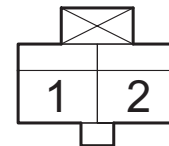
IP44 knee airbag harness connector



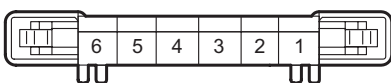
IP45 Ignition switch harness connector



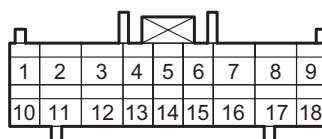
IP46 key forget reminding switch harness connector



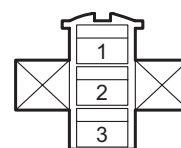
IP51 electric acceleration pedal harness connector



IP52 Wiper switch harness connector



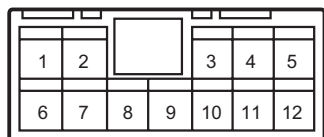
IP53 Spare power harness connector



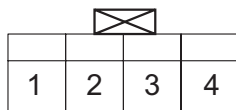
NL13-10021

### Terminal diagram of instrument harness connector (Continued 3)

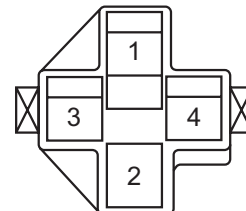
IP54 connect to roof harness connector 1



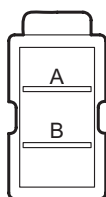
IP55 connect to body harness connector 2



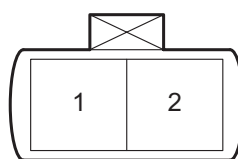
IP56 brake lamp switch harness connector



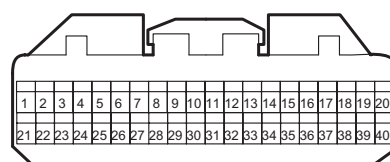
IP57 connect to engine compartment harness connector



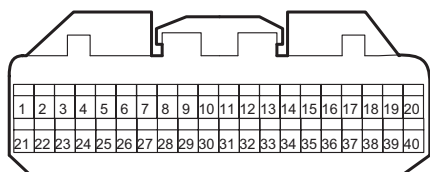
IP60 clutch switch harness connector



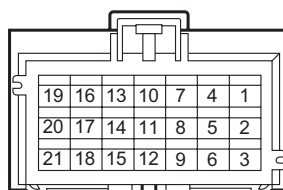
IP61 Body control module 1 harness connector



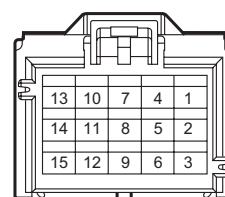
IP62 body control module 2 harness connector



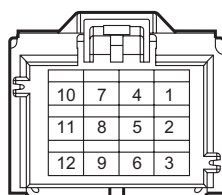
IP63 body control module 3 harness connector



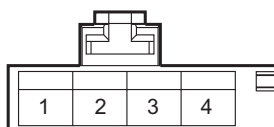
IP64 body control module 4 harness connector



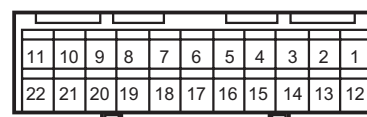
IP65 body control module 5 harness connector



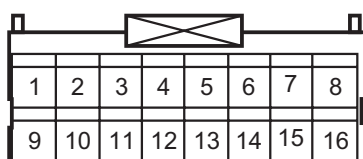
IP66 body control module 6 harness connector



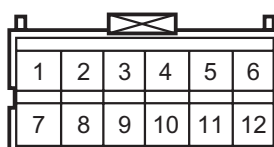
IP67 connect to engine(2) connector



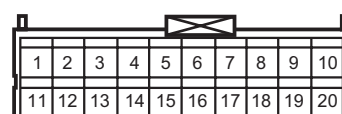
IP68 TCU1 harness connector



IP69 TCU2 harness connector

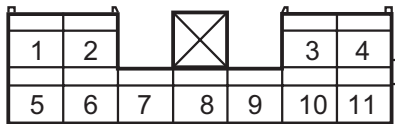


IP70 TCU3 harness connector

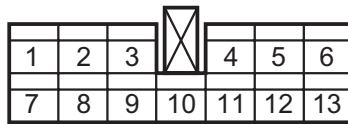


# Terminal diagram of instrument harness connector (cont. 4)

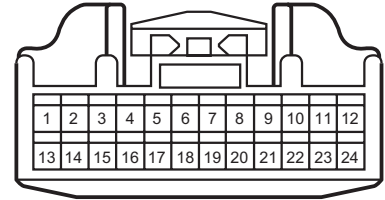
IP71 Gear shift harness connector (AT)



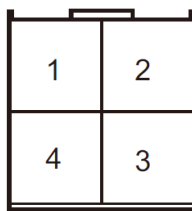
IP72 Gear shift protection module harness connector (AT)



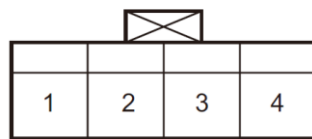
IP16 A/C control panel (Auto) harness connector



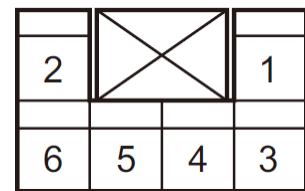
IP58 Camera harness connector



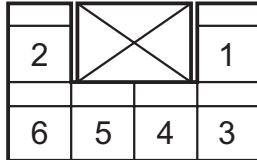
IP74 connect to body harness connector



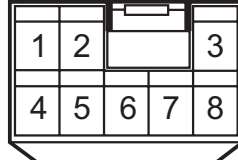
IP75 Driver side seat-heating switch harness connector



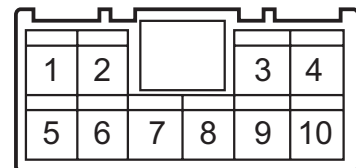
IP76 Passenger side seat-heating switch harness connector



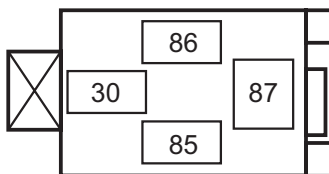
IP77 To right body harness connector 6



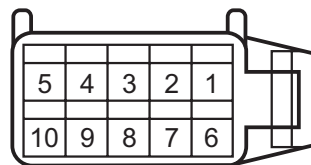
IP78 To body harness connector 4



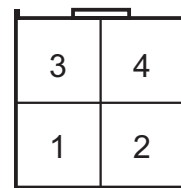
IP79 Hazard relay harness connector



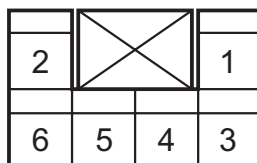
IP80 Radio & CD player harness connector



IP81 To USB harness connector

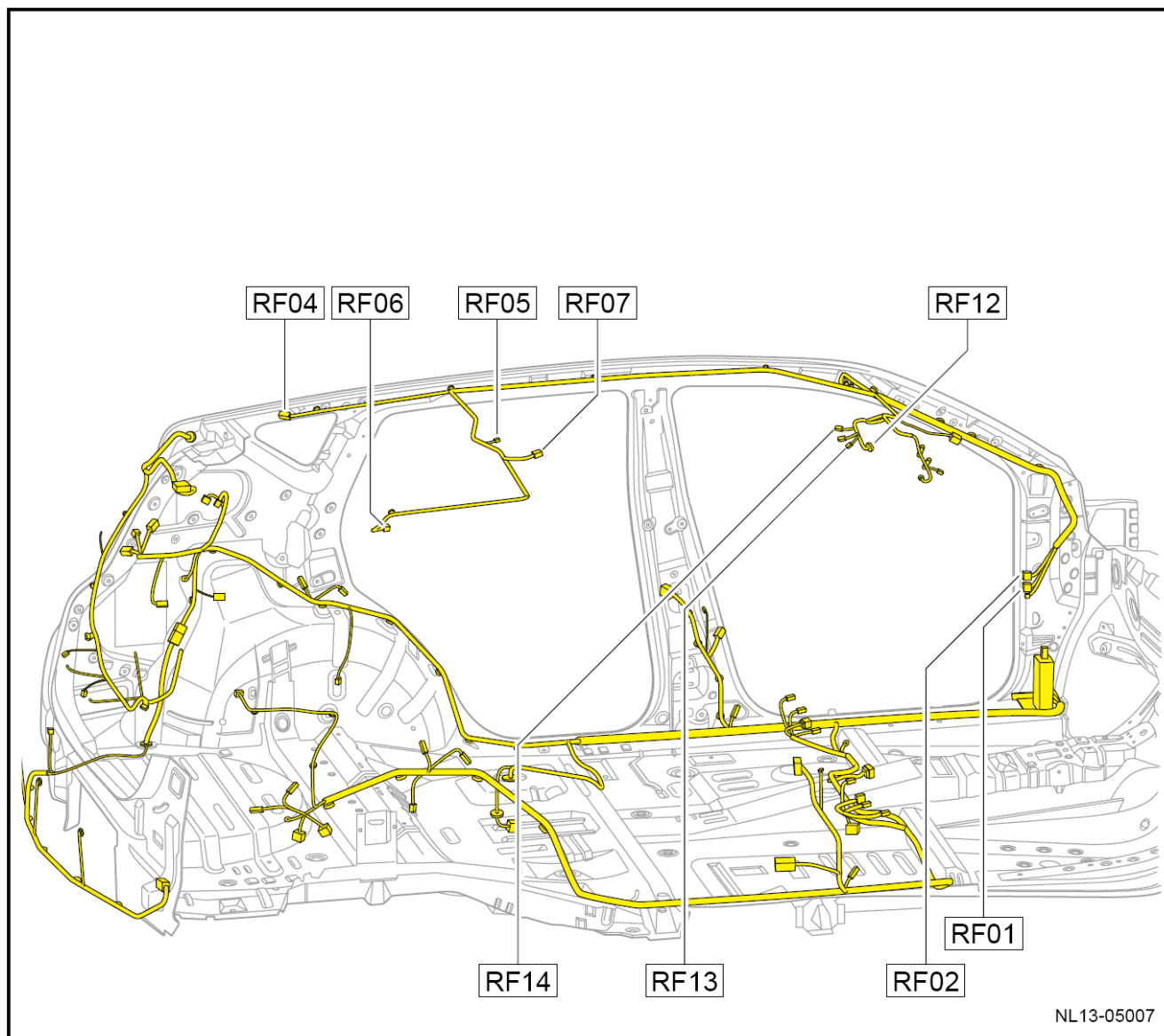


IP82 Backdoor switch harness connector



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### Roof Harness Layout Drawing



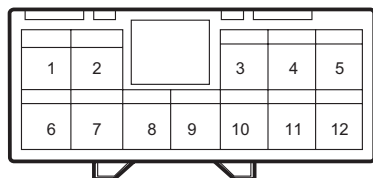
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<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
RF01	To instrument harness connector 1	RF07	Harness connector of sunroof module
RF02	To instrument harness connector 3	RF12	Harness connector of front reading lamp harness
RF04	Harness connector of driver curtain airbag	RF13	Harness connector of sunroof switch
RF05	Harness connector of rear reading lamp	RF14	Antenna connector
RF06	Harness connector of passenger air curtain		

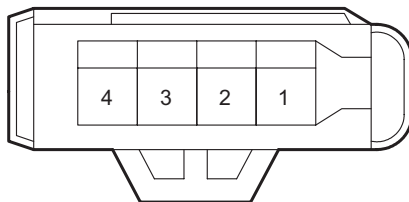


## Terminal Diagram of Ceiling Harness Connector

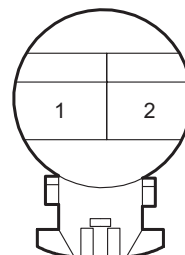
RF01 connect to instrument  
harness connector 1



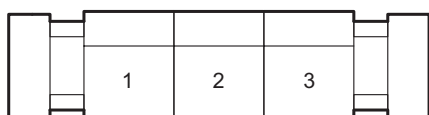
RF02 connect to instrument  
harness connector 2



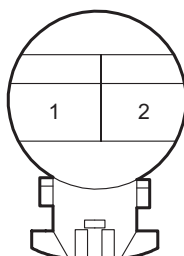
RFO4 driver curtain airbag  
harness connector



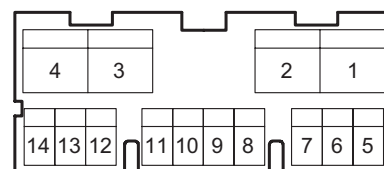
RF05 Rear reading lamp harness  
connector



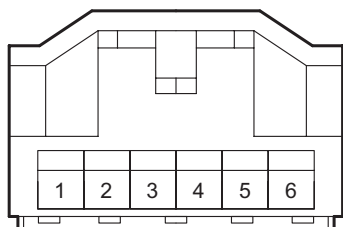
RF06 passenger side curtain airbag  
harness connector



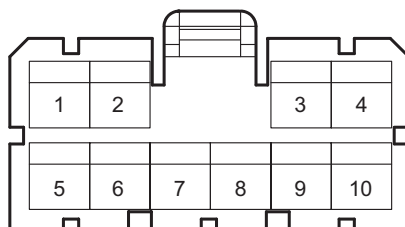
PF07 sunroof switch harness  
connector



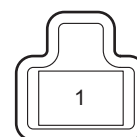
RF12 front reading lamp harness  
connector



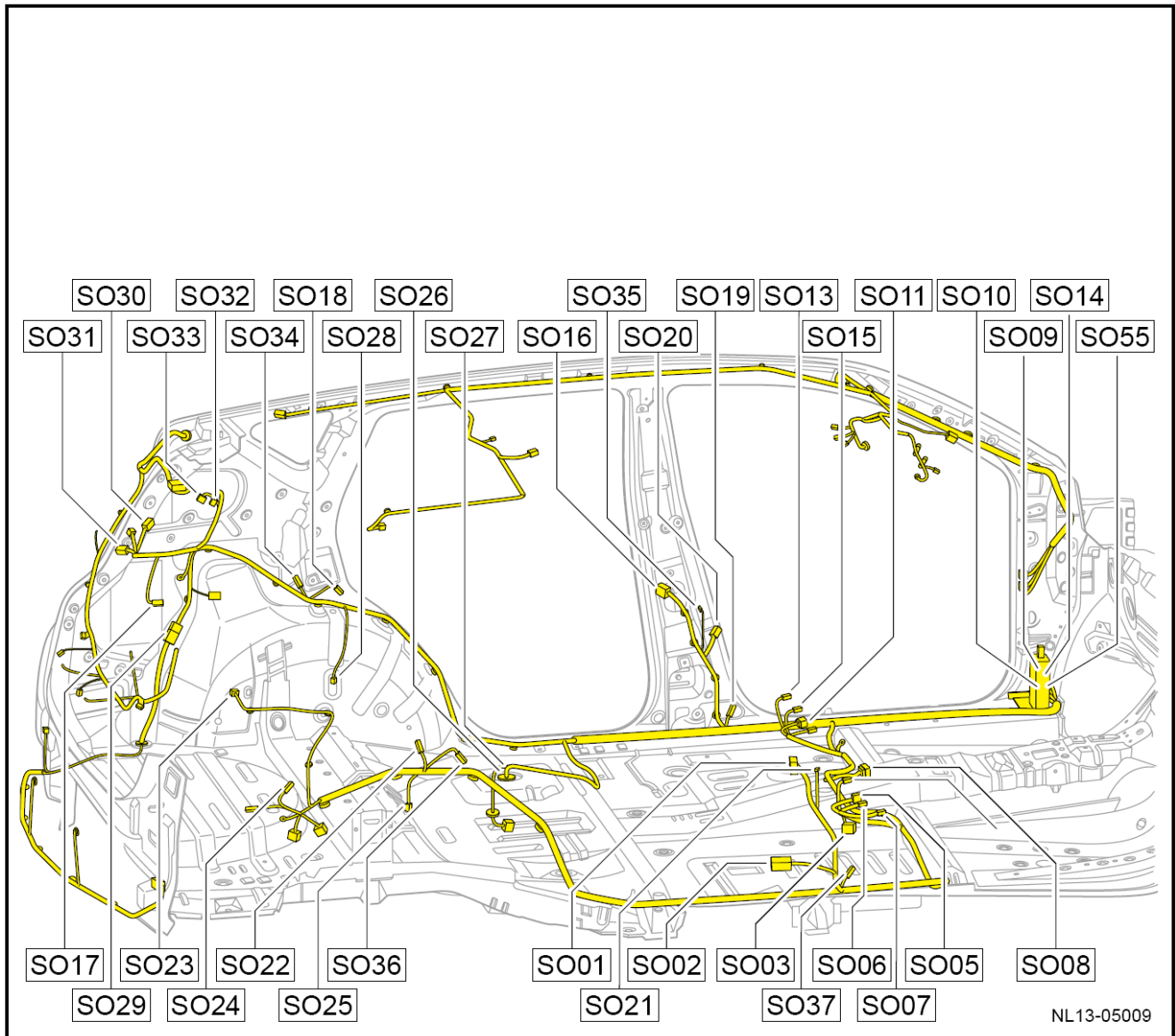
PF13 sunroof module harness  
connector



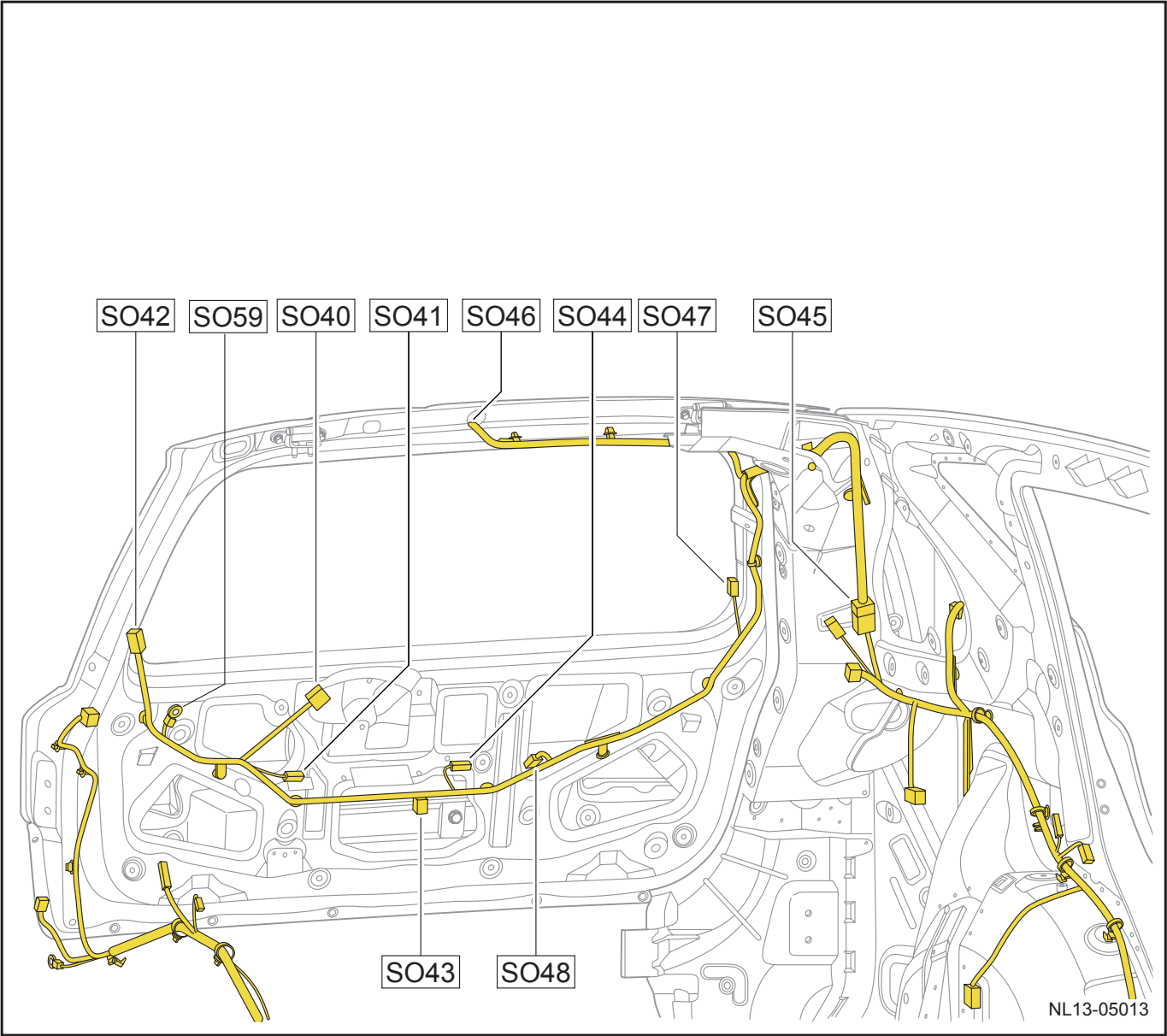
RF14 Antenna connector

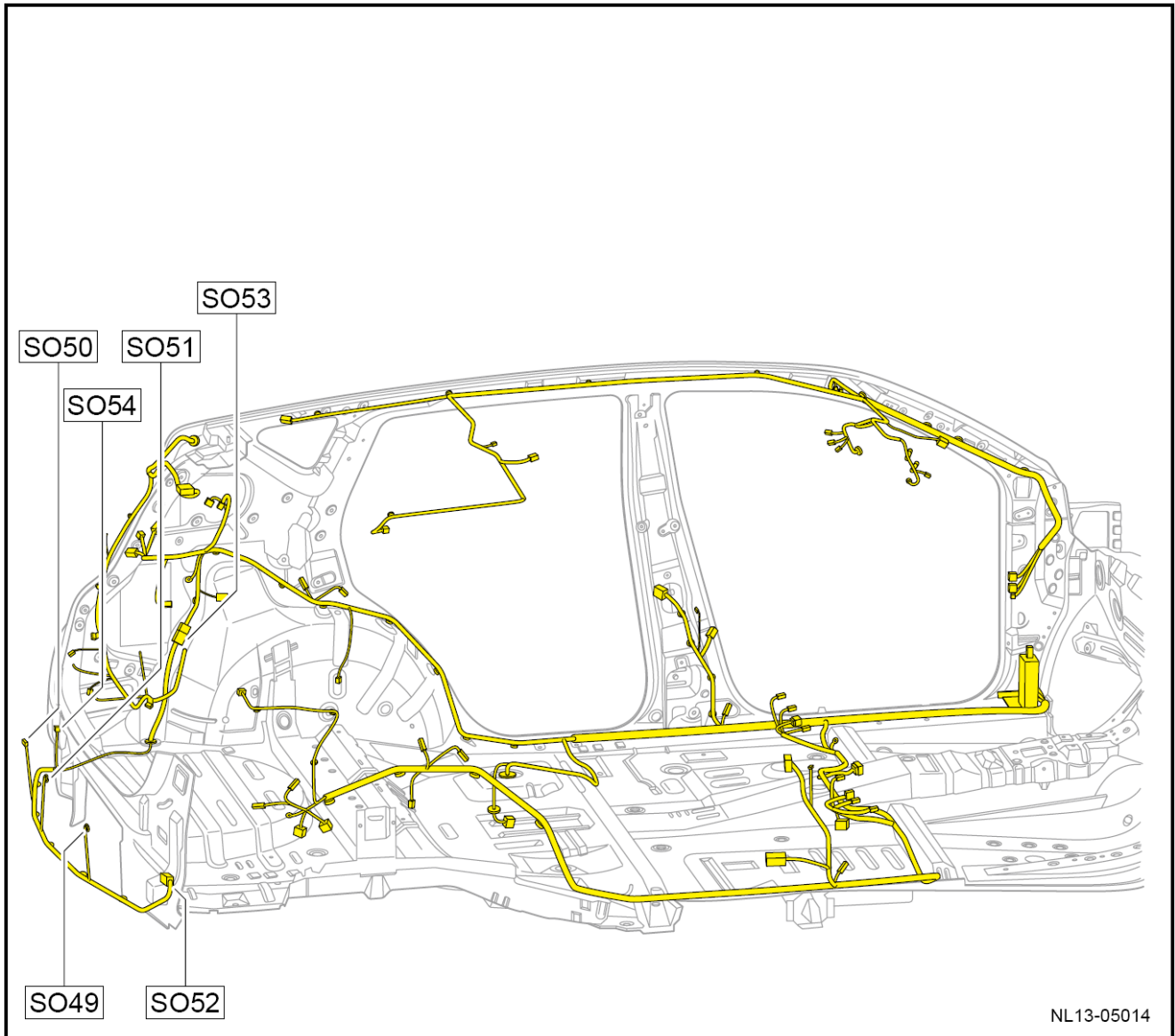


NL13-10011

**Body Harness Layout Drawing**

Body Harness Layout Drawing (Continued 1)

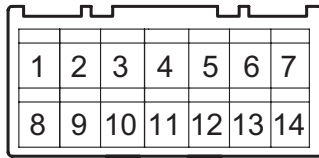


**Body Harness Layout Drawing (Continued 2)**

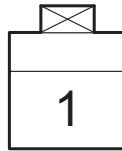
<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
SO01	To RR door harness connector	SO30	To back door harness connector
SO02	Harness connector of FR door control switch	SO31	Harness connector of RL combination lamp
SO04	Harness connector of passenger seat heating	SO32	Harness connector of Parking control module
SO05	Harness connector of passenger side power window	SO34	Harness connector of RL collision sensor
SO06	Harness connector of passenger seat airbag	SO35	Harness connector of left collision sensor
SO07	Harness connector of passenger seat belt	SO36	Harness connector of RR door control switch
SO08	To instrument panel harness connector 1	SO37	Harness connector of passenger safety belt pretensioner
SO09	To instrument panel harness connector 2	SO40	Harness connector of rear wiper motor
SO10	To instrument panel harness connector 3	SO41	Harness connector of right license lamp
SO11	Harness connector of driver power seat	SO42	Rear defrost negative harness connector
SO12	Harness connector of driver seat heating	SO43	Harness connector of back door lock motor
SO13	Driver safety belt switch	SO44	Harness connector of left license lamp
SO14	To engine compartment harness connector	SO45	To body harness connector
SO15	Harness connector of driver side seat airbag	SO46	Harness connector of high brake lamp
SO16	To left rear door harness connector	SO47	Rear defrost positive harness connector
SO17	Harness connector of luggage compartment lamp	SO48	Harness connector of camera
SO18	Harness connector of RL door control switch	SO49	Harness connector of parking sensor 1
SO19	Harness connector of driver safety belt pretensioner	SO50	Harness connector of parking sensor 2
SO20	Harness connector of FL door control switch	SO51	Harness connector of parking sensor 3
SO21	Harness connector of right collision sensor	SO52	Harness connector of RR fog lamp
SO22	Harness connector of RR collision sensor	SO53	To body harness connector
SO24	Harness connector of right rear combination lamp	SO54	Harness connector of RL fog lamp
SO25	Harness connector of RR wheel speed sensor	SO55	To engine compartment harness connector 2
SO26	Harness connector of fuel pump	SO56	To instrument panel harness connector
SO27	Harness connector of fuel level sensor	SO57	To instrument panel harness connector
SO28	Harness connector of RL speed sensor	SO58	To instrument panel harness connector
SO29	To rear bumper harness connector	SO59	Harness connector of rear wiper

## Terminal Diagram of Body Harness Connector

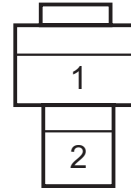
SO01 connect to RR door  
harness connector



SO02 FR door control  
switch harness connector



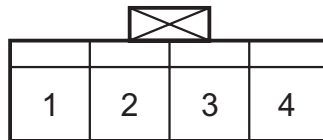
SO04 passenger seat-heating harness  
connector



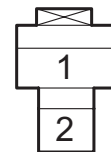
SO05 passenger power window  
harness connector



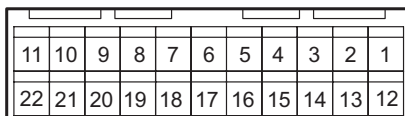
SO06 passenger seat airbag harness  
connector



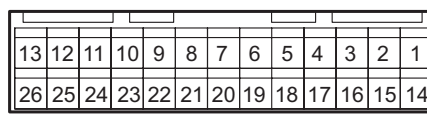
SO07 passenger safety belt harness  
connector



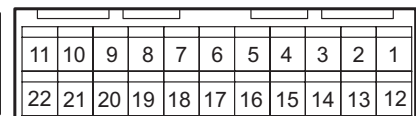
SO08 connect to instrument panel  
harness connector 1



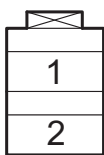
SO09 connect to instrument panel  
harness connector 2



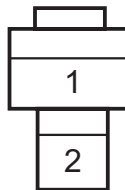
SO10 connect instrument panel  
harness connector 3



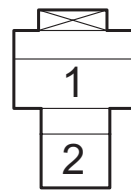
SO11 driver power seat harness  
connector



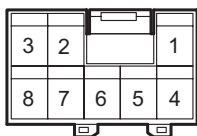
SO12 passenger seat-heating harness  
connector



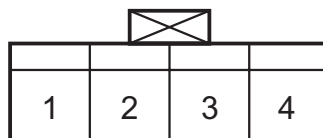
SO13 driver safety belt switch



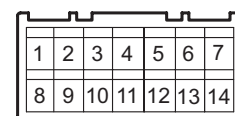
SO14 connect to engine  
compartment harness connector



SO15 driver seat side airbag  
harness connector

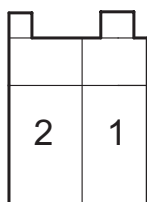
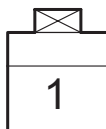
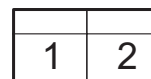
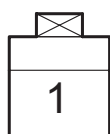
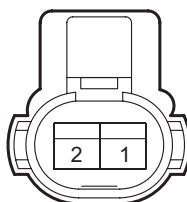
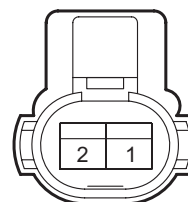
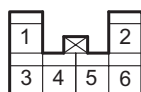
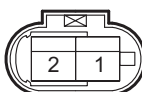


SO16 connect to RL door  
harness connector

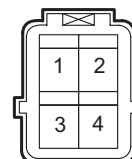
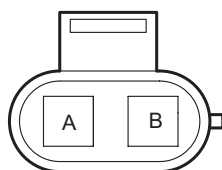
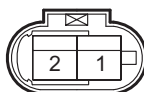
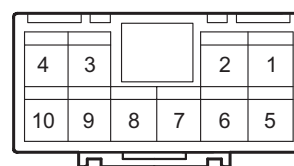
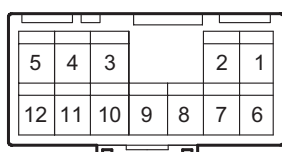
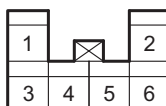
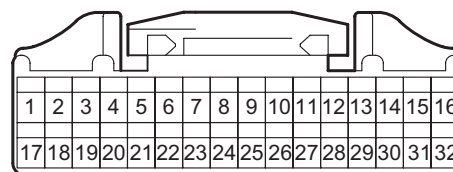


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## Terminal Diagram of Base Plate Harness Connector (Continued 1)

SO17 luggage compartment lamp  
harness connectorSO18 RL door control switch  
harness connectorSO19 driver safety belt pretensioner  
harness connectorSO20 FL door control switch  
harness connectorSO21 right side collision sensor  
harness connectorSO22 RR side collision  
sensor harness connectorSO24 RR combination lamp  
harness connectorSO25 RR wheel speed harness  
connector

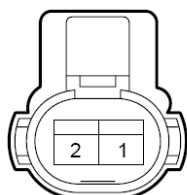
SO26 fuel pump harness connector

SO27 Fuel level sensor harness  
connectorSO28 RL wheel speed sensor  
harness sensorSO29 connect to bumper harness  
connectorSO30 connector back door  
harness connectorSO31 RL combination lamp  
harness connectorSO32 Parking controller  
module harness connector

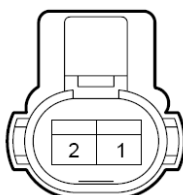
NL13-10013

## Terminal Diagram of Base Plate Harness Connector (Continued 2)

SO34 RL side collision sensor  
harness connector



SO35 Left side collision sensor  
harness connector



SO RR door control switch  
harness connector



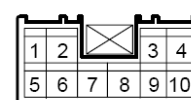
SO37 passenger safety belt with  
pretensioner harness connector



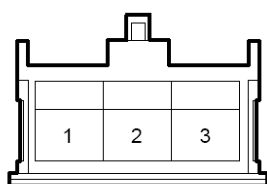
SO54 RL fog lamp harness  
connector



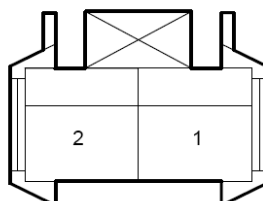
SO53 connect to body harness  
connector



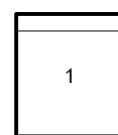
SO40 rear wiping motor harness



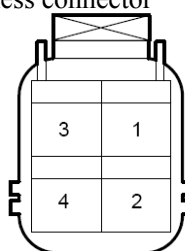
SO41 right license lamp harness  
connector



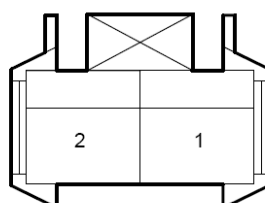
SO42 rear defrost negative harness  
connector



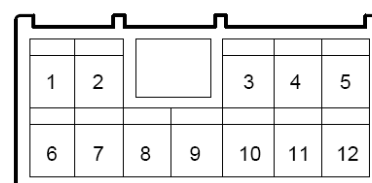
SO43 Back door lock motor  
harness connector



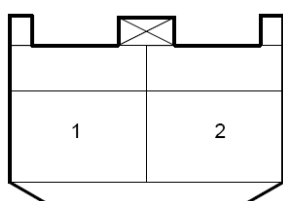
SO44 left license lamp harness  
connector



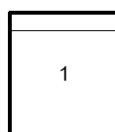
SO45 connect to body harness  
connector harness connector



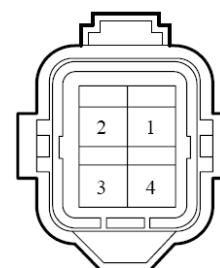
SO46 high mount brake lamp  
harness connector



SO47 Rear defrost positive harness  
connector



SO48 camera harness connector

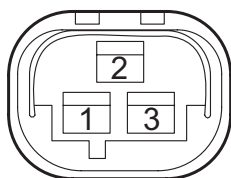


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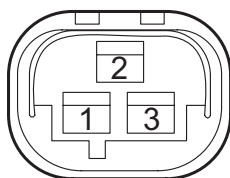


### Terminal diagram of floor harness connector (cont. 3)

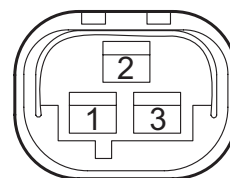
S049 To parking radar 1  
harness connector



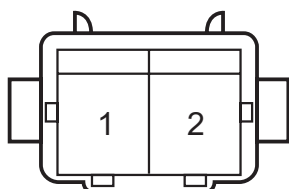
S050 To parking radar 2  
harness connector



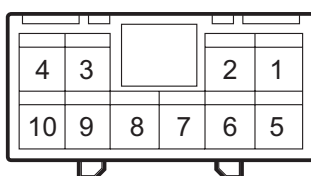
S051 To parking radar 3  
harness connector



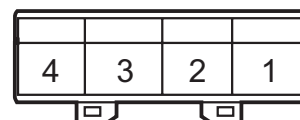
S052 RR fog lamp  
harness connector



S055 To engine compartment  
harness connector 2



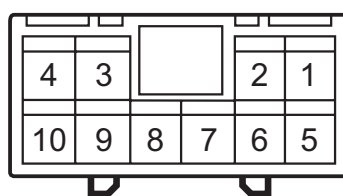
S056 To instrument panel  
harness connector



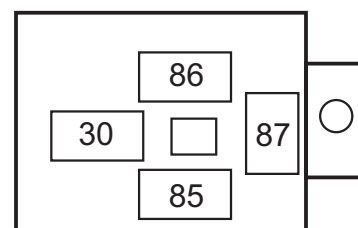
S057 To instrument panel  
harness connector



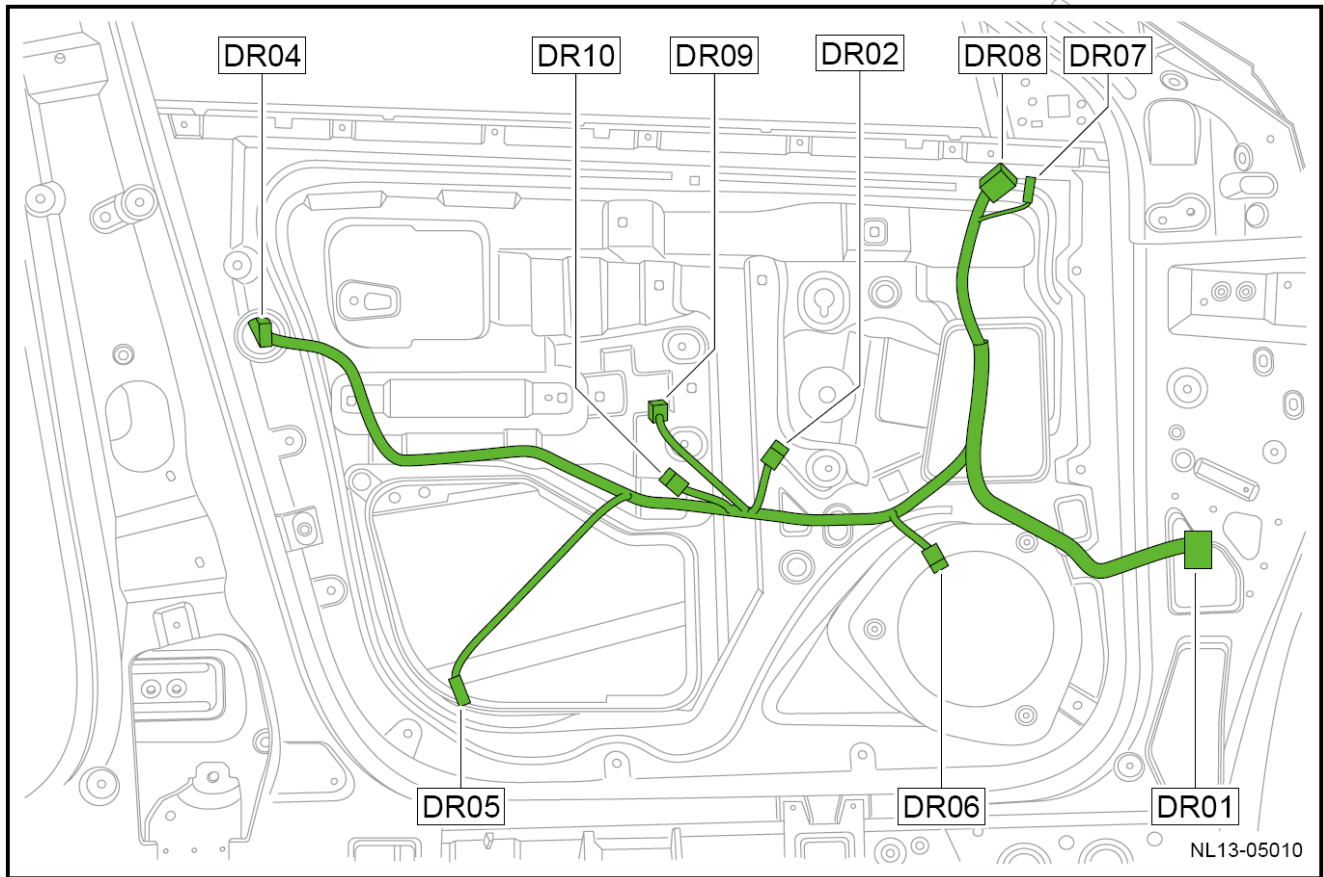
S058 To instrument panel  
harness connector



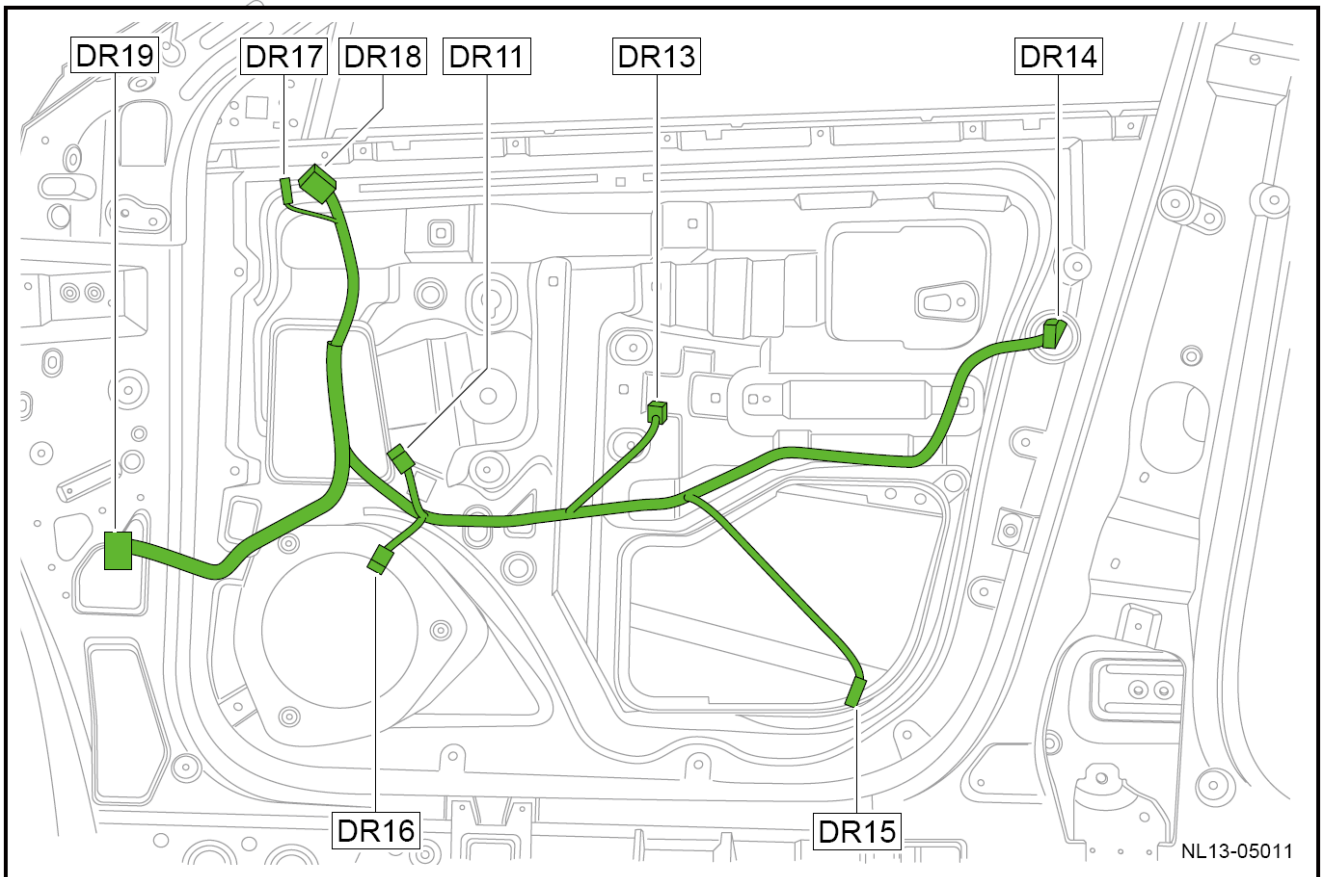
S059 Rear wiper relay harness  
connector



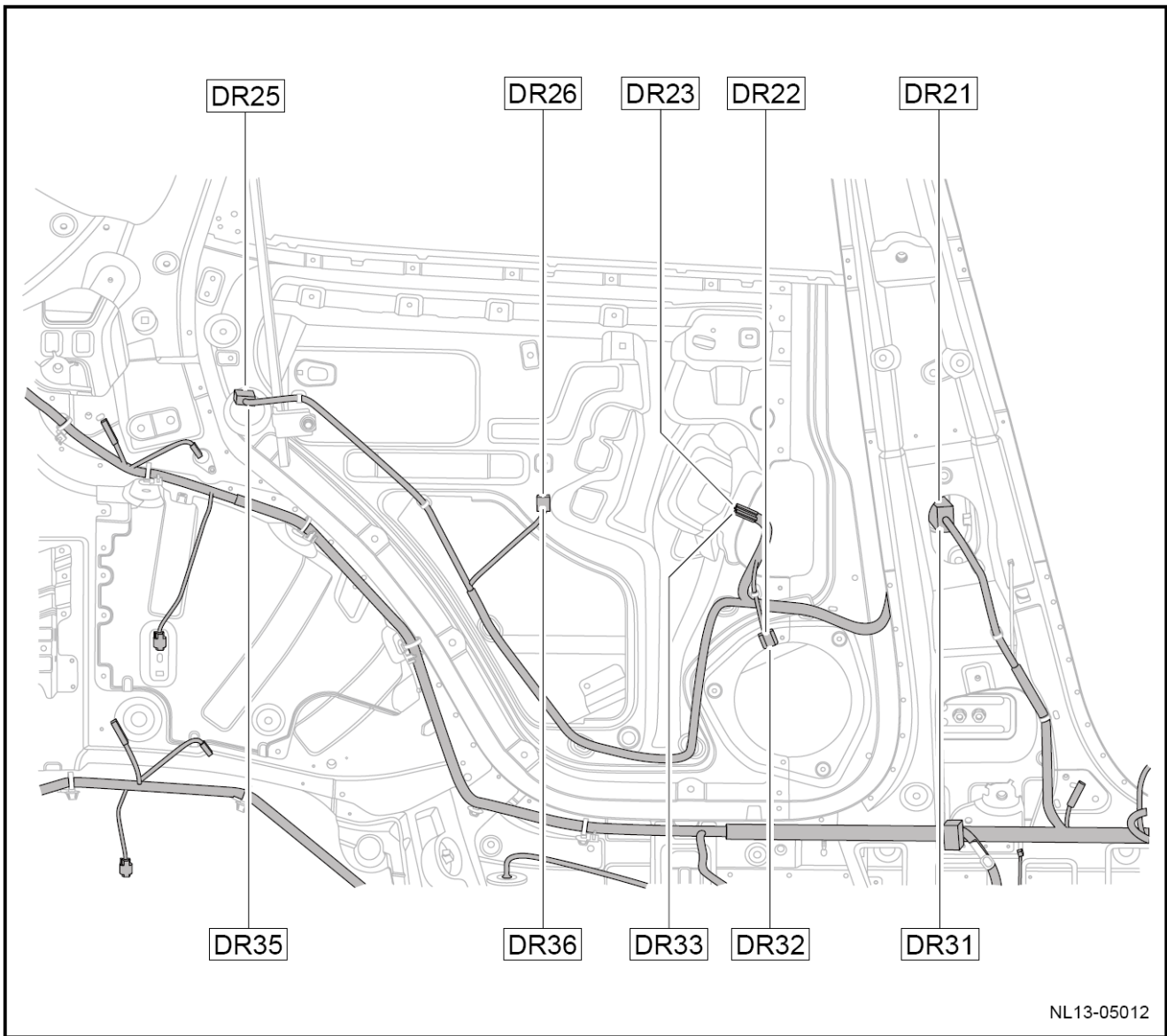
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**Front Left (FL) Door Harness Layout Drawing**

<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
DR01	To instrument panel harness connector	DR06	Harness connector of FL door front speaker
DR02	FL door power window motor connector	DR07	FL door tweeter harness
DR02	FL door power window motor connector	DR08	Harness connector of left exterior rearview mirror
DR04	Harness connector of FL door lock motor	DR09	Harness connector of power rearview mirror switch
DR05	FL door step lamp connector	DR10	Harness connector of FL door power window switch

**Right Front (FR) Door Harness Layout Drawing**

<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
DR11	Harness connector of FR power window motor	DR16	FR door speaker connector
DR13	Harness connector of FR door power window switch	DR17	FR door tweeter speaker
DR14	Harness connector of FR door lock motor	DR18	Right exterior rearview mirror connector
DR15	FR door step light connector	DR19	FR door connecting to instrument panel harness connector

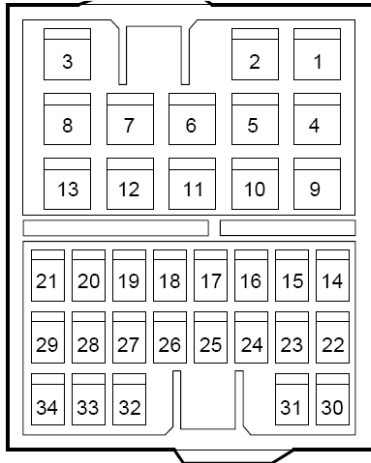
**Rear Door Harness Layout Drawing**

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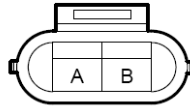
<b>Harness connector</b>	<b>Description</b>	<b>Harness connector</b>	<b>Description</b>
DR21	RL door connecting to body harness connector	DR31	RR door connecting to body harness connector
DR22	Harness connector of RL speaker	DR32	Harness connector of RR speaker
DR23	Harness connector of RL power window motor	DR33	Harness connector of RR power window motor
DR25	Harness connector of RL door lock motor	DR35	Harness connector of RR door lock motor
DR26	Harness connector of RL door power window switch	DR36	Harness connector of RR door power window switch

## Terminal Diagram of Door Harness

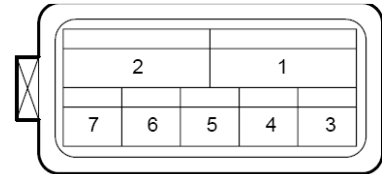
DR01 connect to instrument panel harness connector



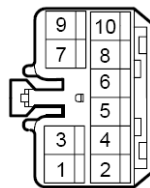
DR02 FL door power window motor connector (without anti-clamp)



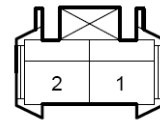
DR02 FL power window motor connector (with anti-clamp)



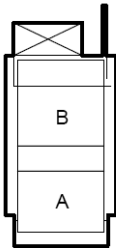
DR04 FL door lock motor harness connector



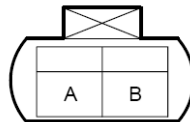
DR05 FL door step lamp connector



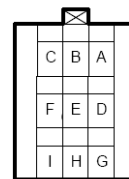
DR06 FL door front speaker harness connector



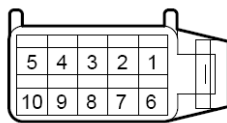
DR07 FL door tweeter harness



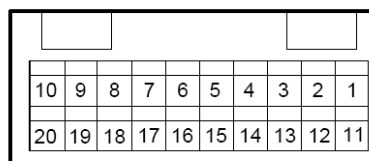
DR08 left exterior rearview mirror connector



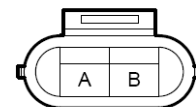
DR09 power rearview mirror switch harness connector



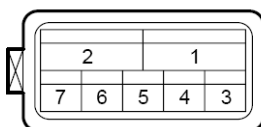
DR10 FL door power window switch harness connector



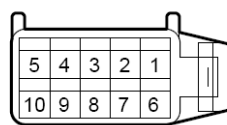
DR11 FR door power window motor harness connector (without anti-clamp)



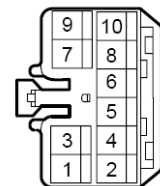
DR11 FR door power window motor harness connector (without anti-clamp)



DR13 FR door power window switch harness connector



DR14 FR door lock motor harness connector

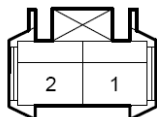


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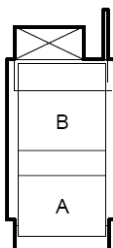


## Terminal Diagram of Door Harness (Continued 1)

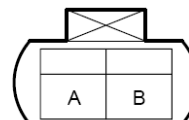
DR15 FR door step light connector



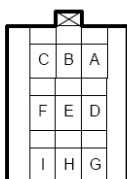
DR16 FR door speaker connector



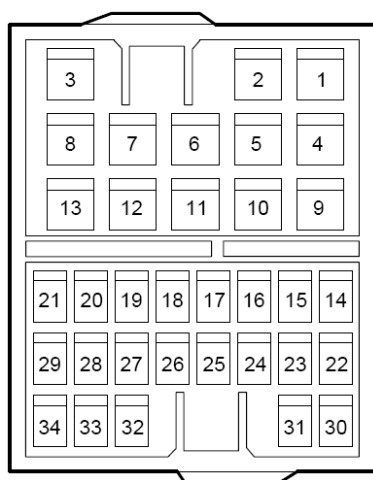
DR17 FR door tweeter connector



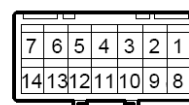
DR18 Right side door rearview mirror connector



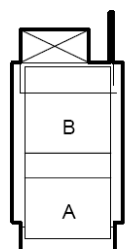
DR19 FR door connect to instrument panel harness connector



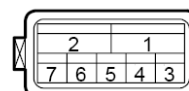
DR21 RL door connect to body harness connector



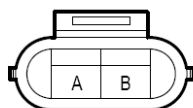
DR22 RL speaker harness connector



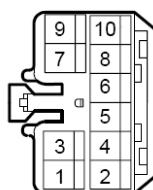
DR23 RL power window motor harness connector (anti-clamp)



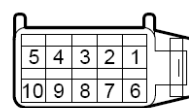
DR23 RL door power window motor harness connector (without anti-clamp)



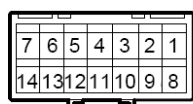
DR25 RL door lock motor harness connector



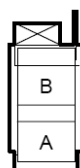
DR26 RL door power window switch harness connector



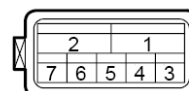
DR31 RR door to body harness connector



DR32 RR speaker harness connector



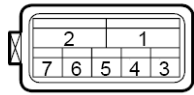
DR33 RR door power window motor harness connector (without anti-clamp)



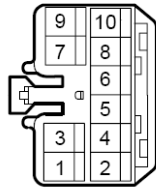
NL13-10017

Terminal Diagram of Door Harness (Continued 2)

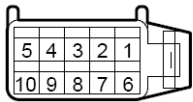
DR33 RR power window  
motor harness connector  
(with anti-clamp)



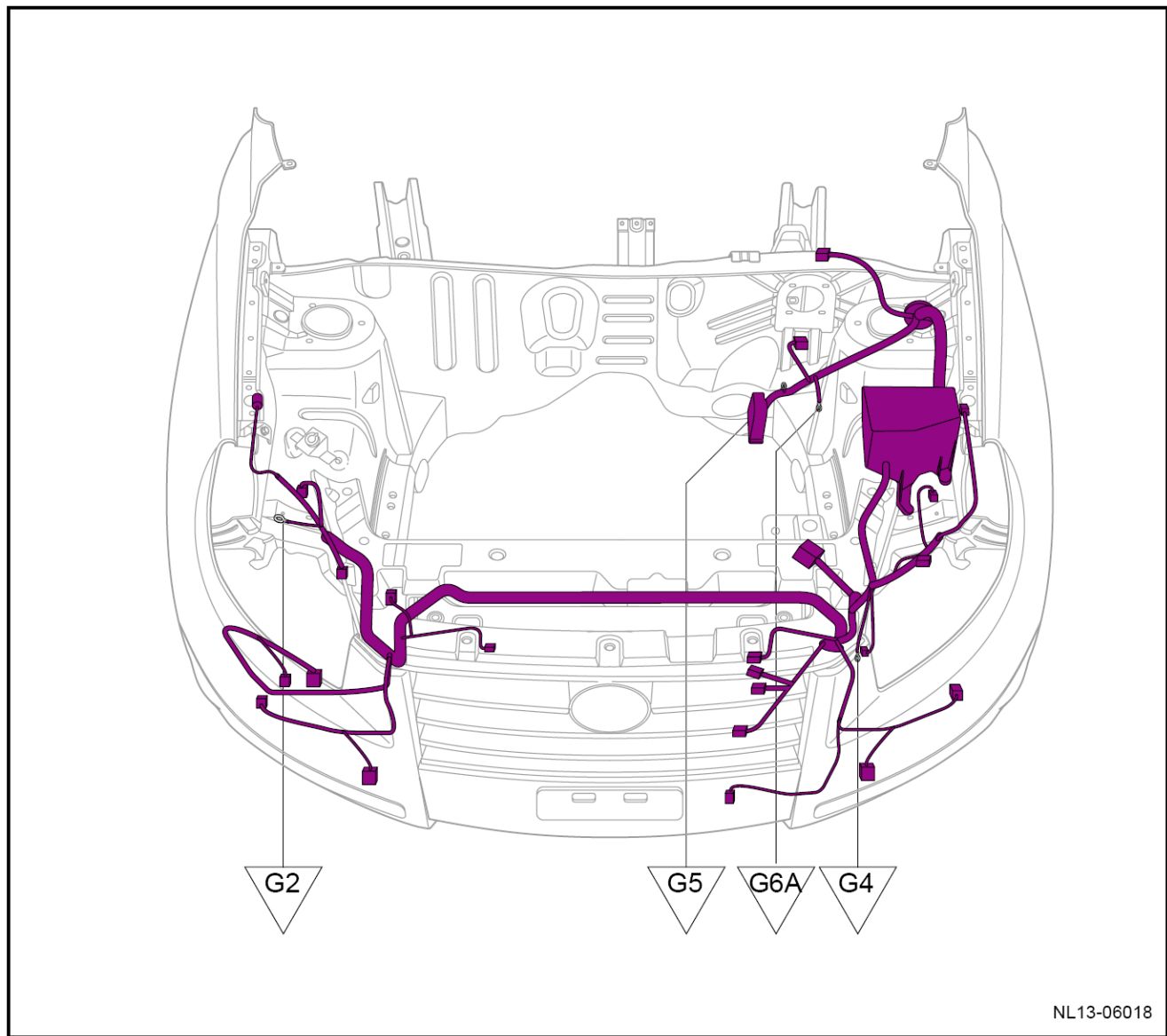
DR35 RR door lock  
motor harness connector



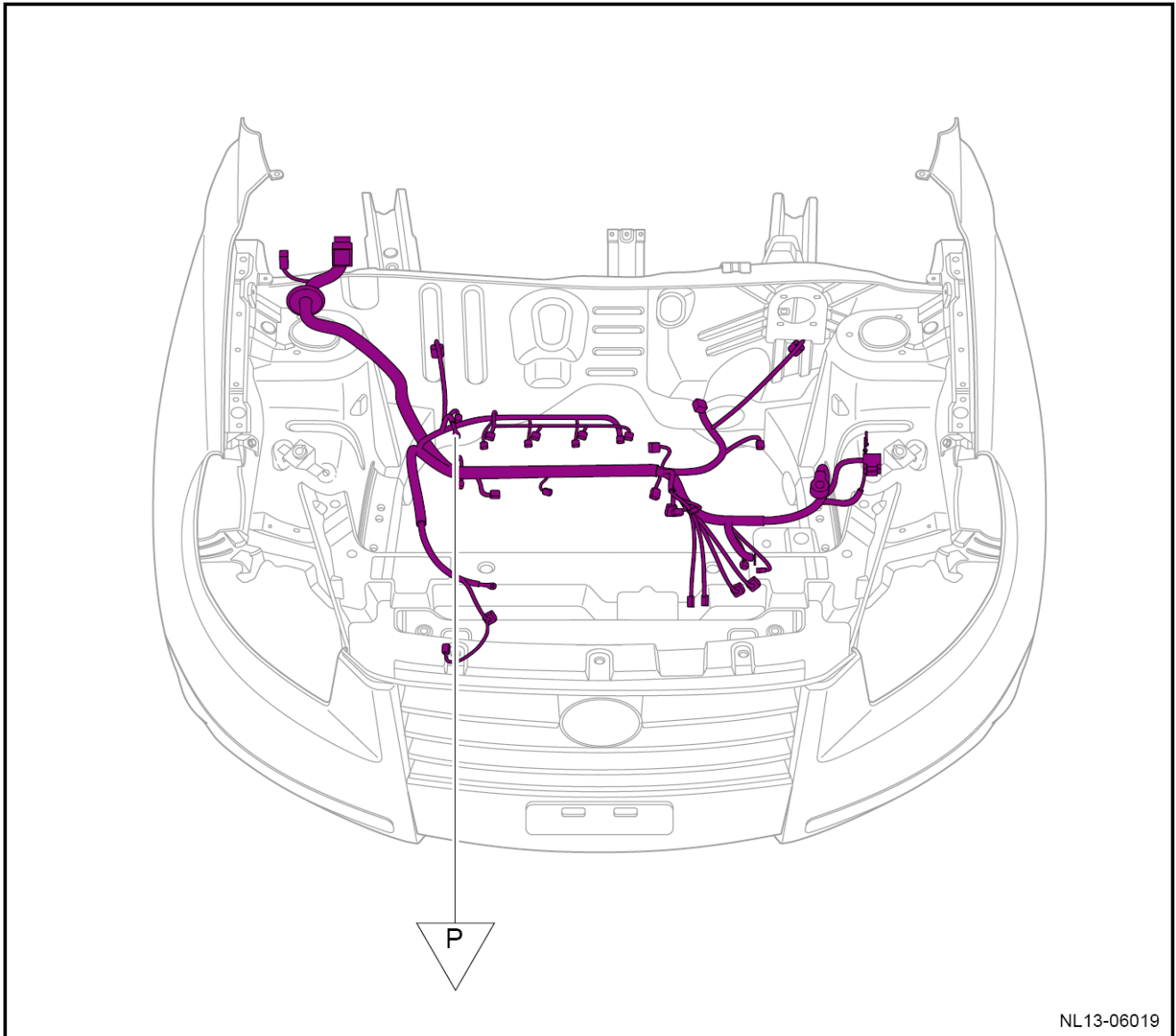
DR36 RR power window  
switch harness connector



Front Compartment Harness Grounding Layout Drawing

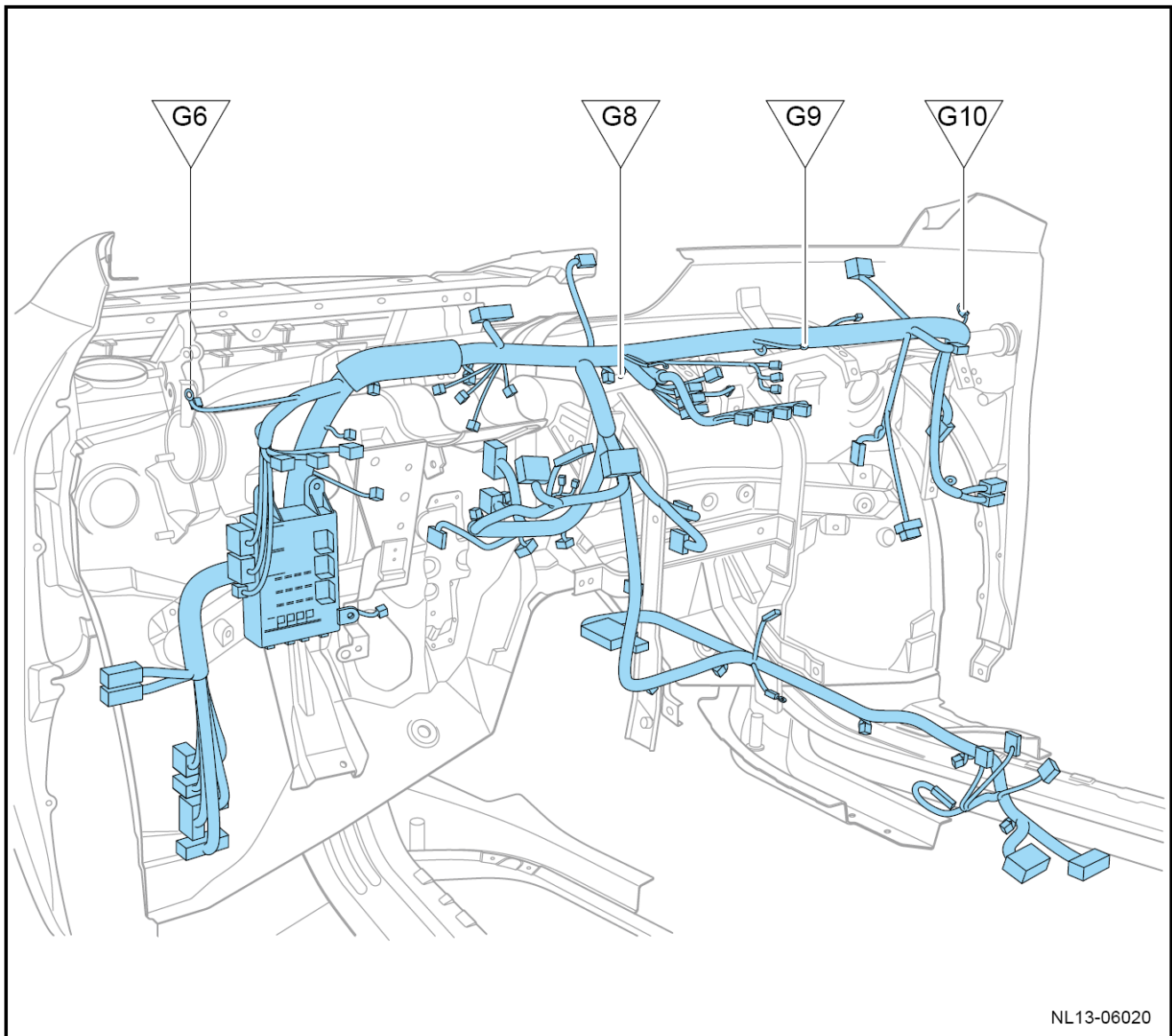


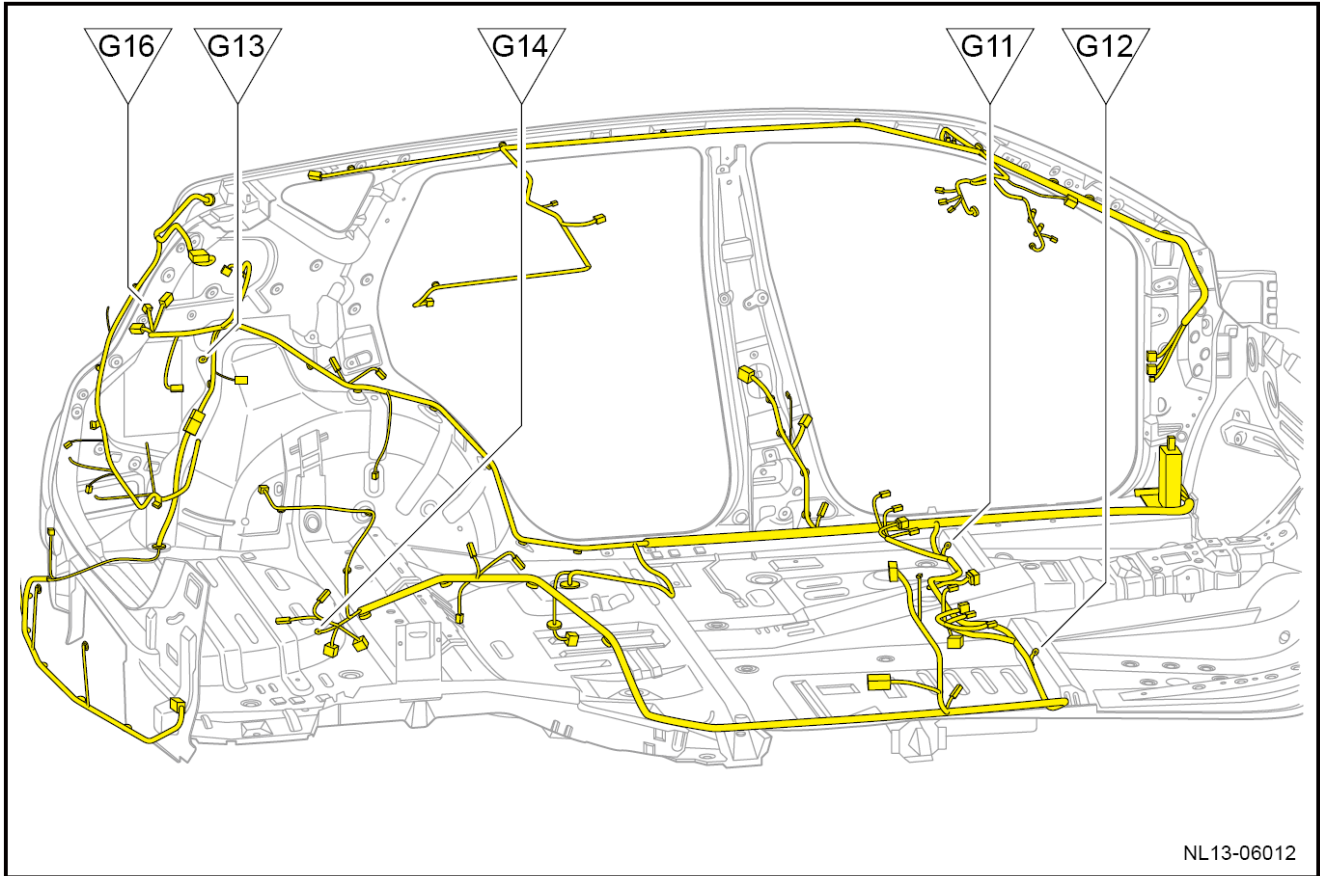
### Engine Harness Grounding Layout Drawing



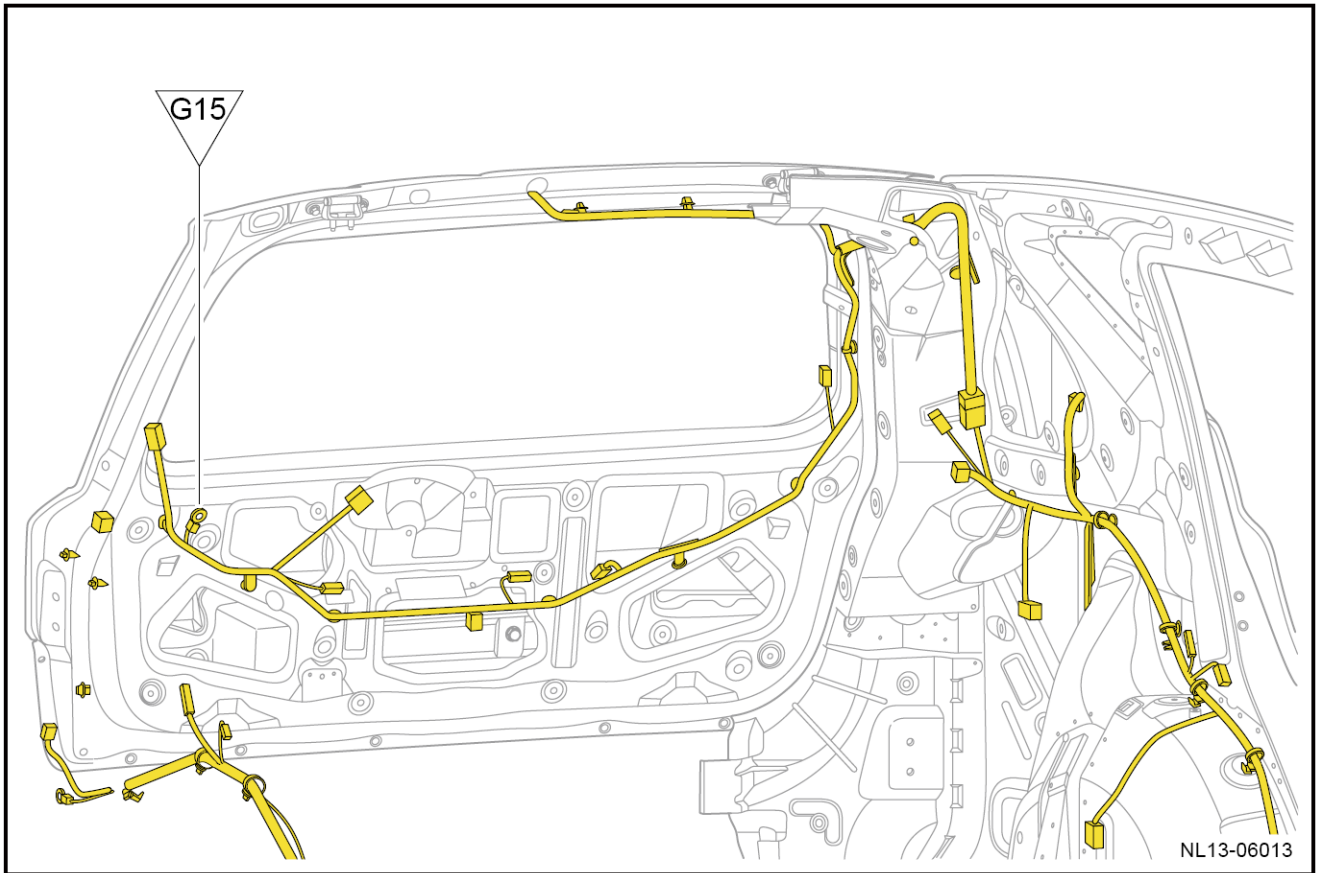
**Battery Negative Harness Grounding Layout Drawing**

### Instrument Harness Grounding Layout Drawing



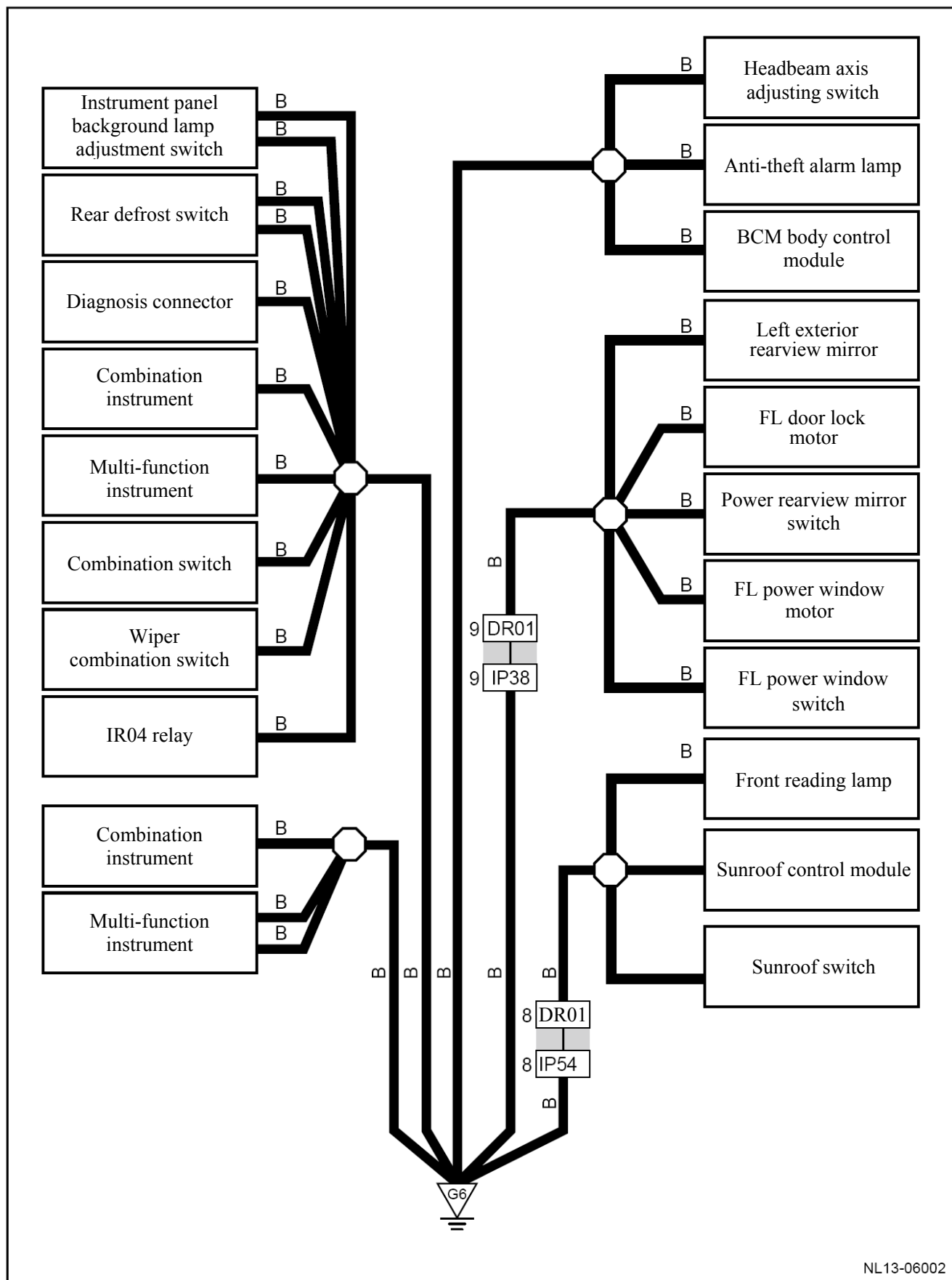
**Body harness Grounding Point Layout Drawing**

### Back Door Harness Grounding Layout Drawing

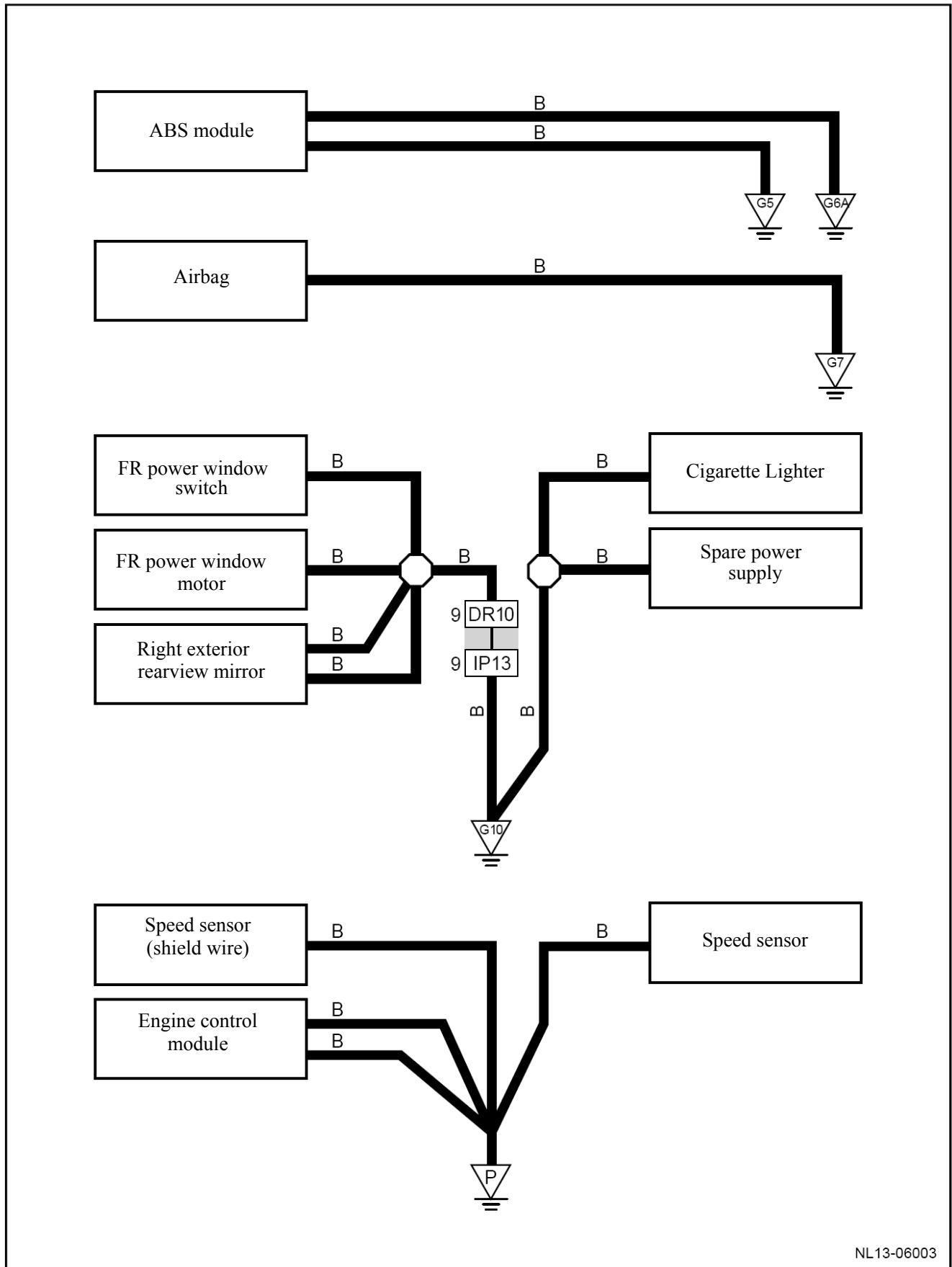




## Grounding Circuit Drawing 1 (G6)

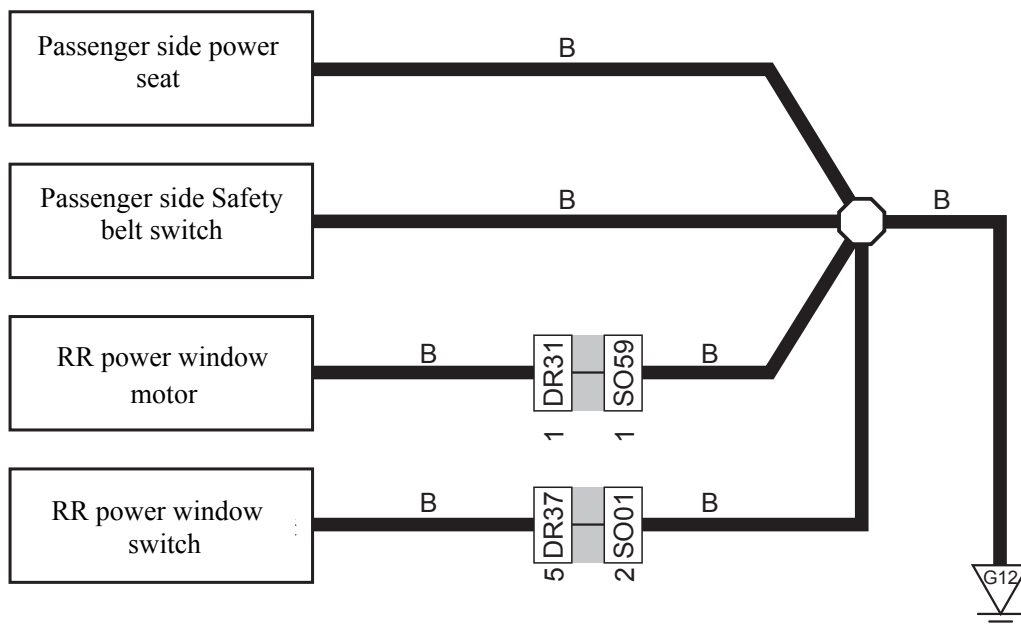
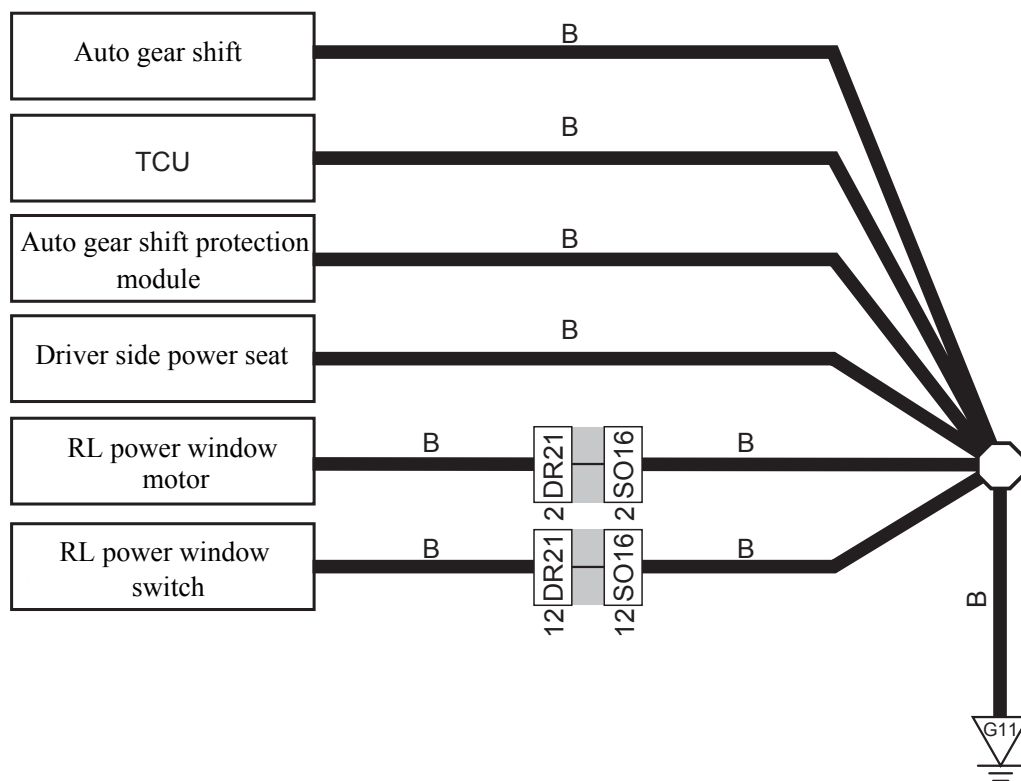


Grounding Circuit Drawing 2 (G5, G6A, G7, G10 and P)



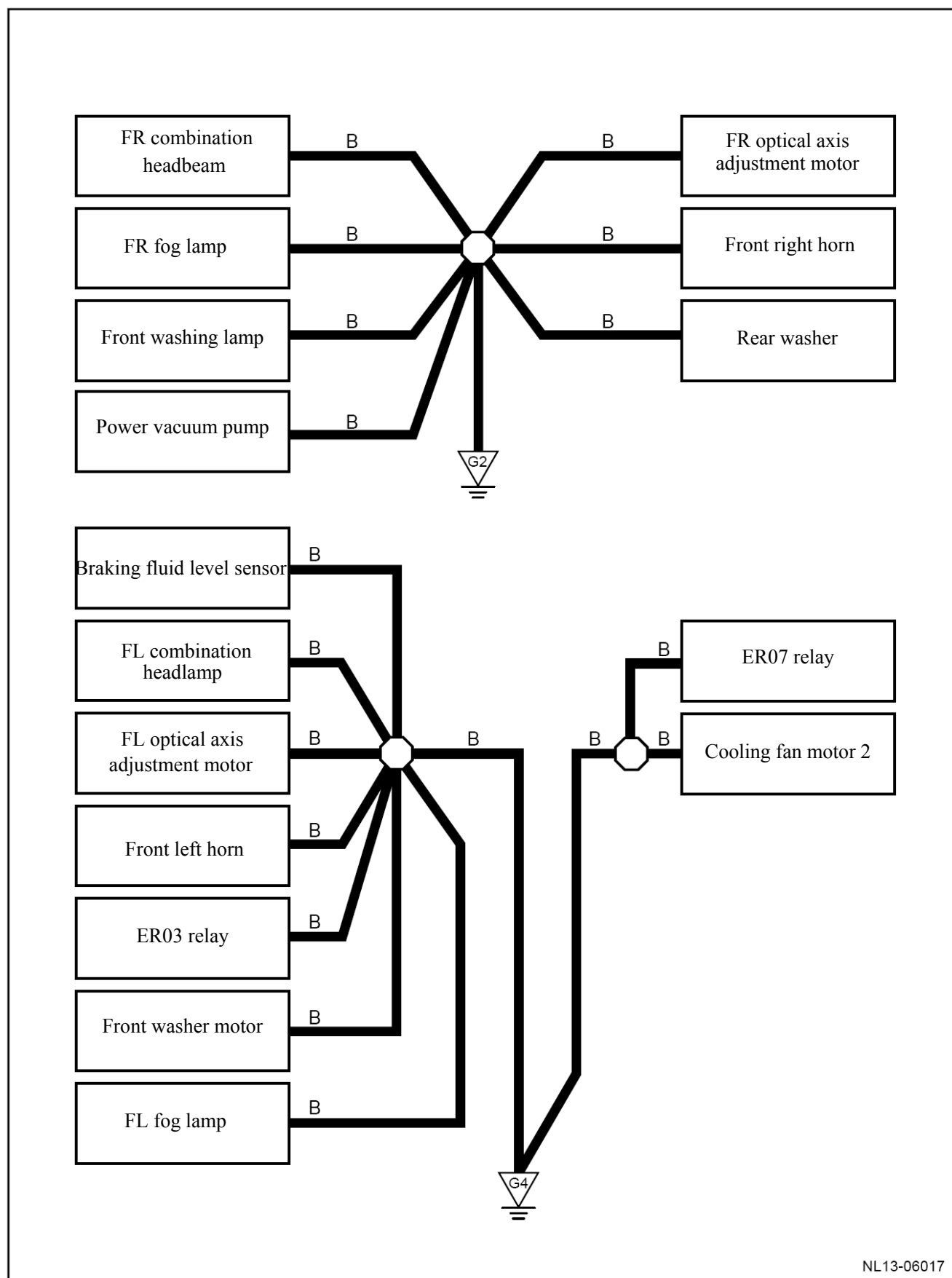
NL13-06003

## Grounding Circuit Drawing 3 (G11, G12)

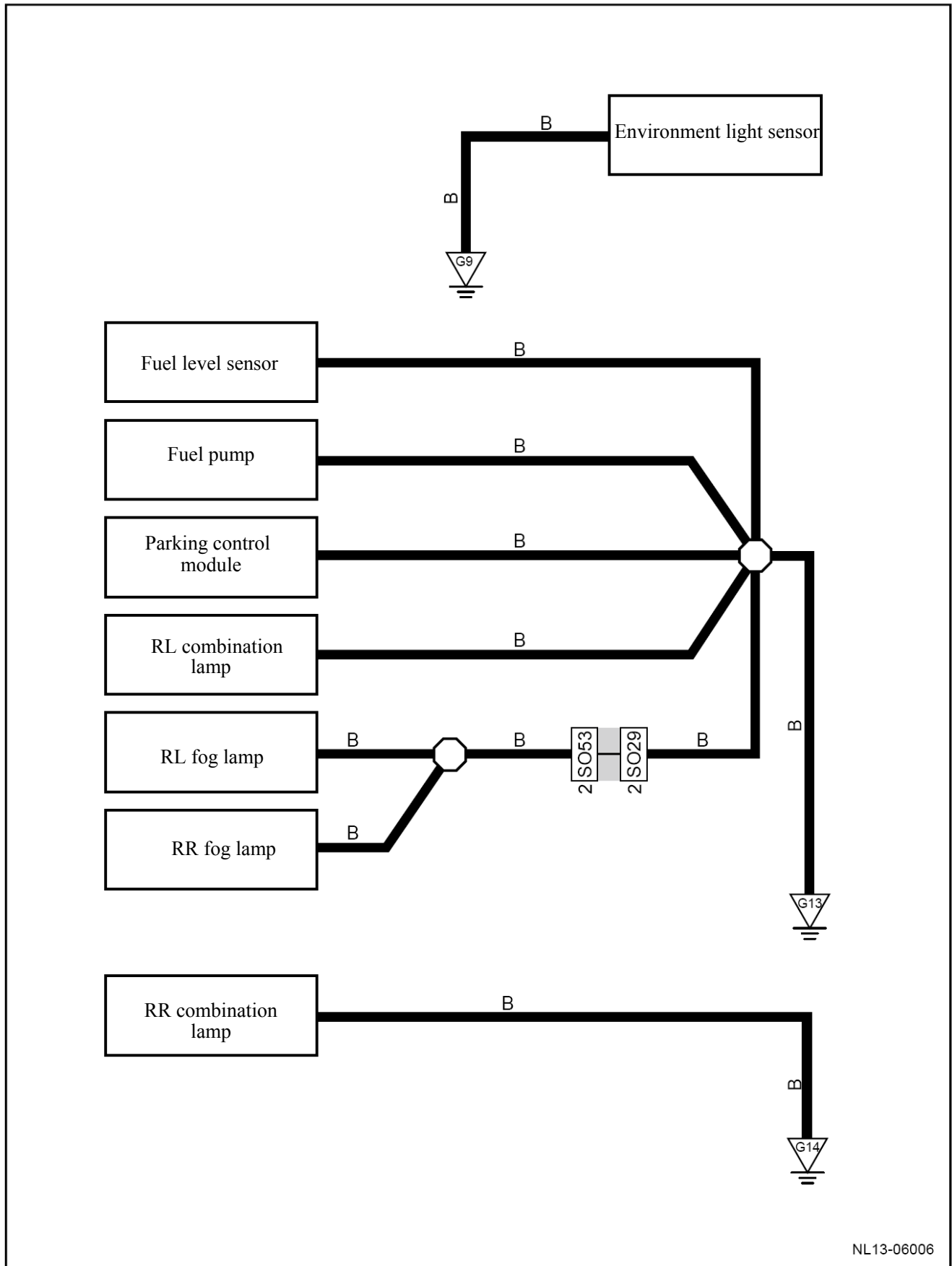


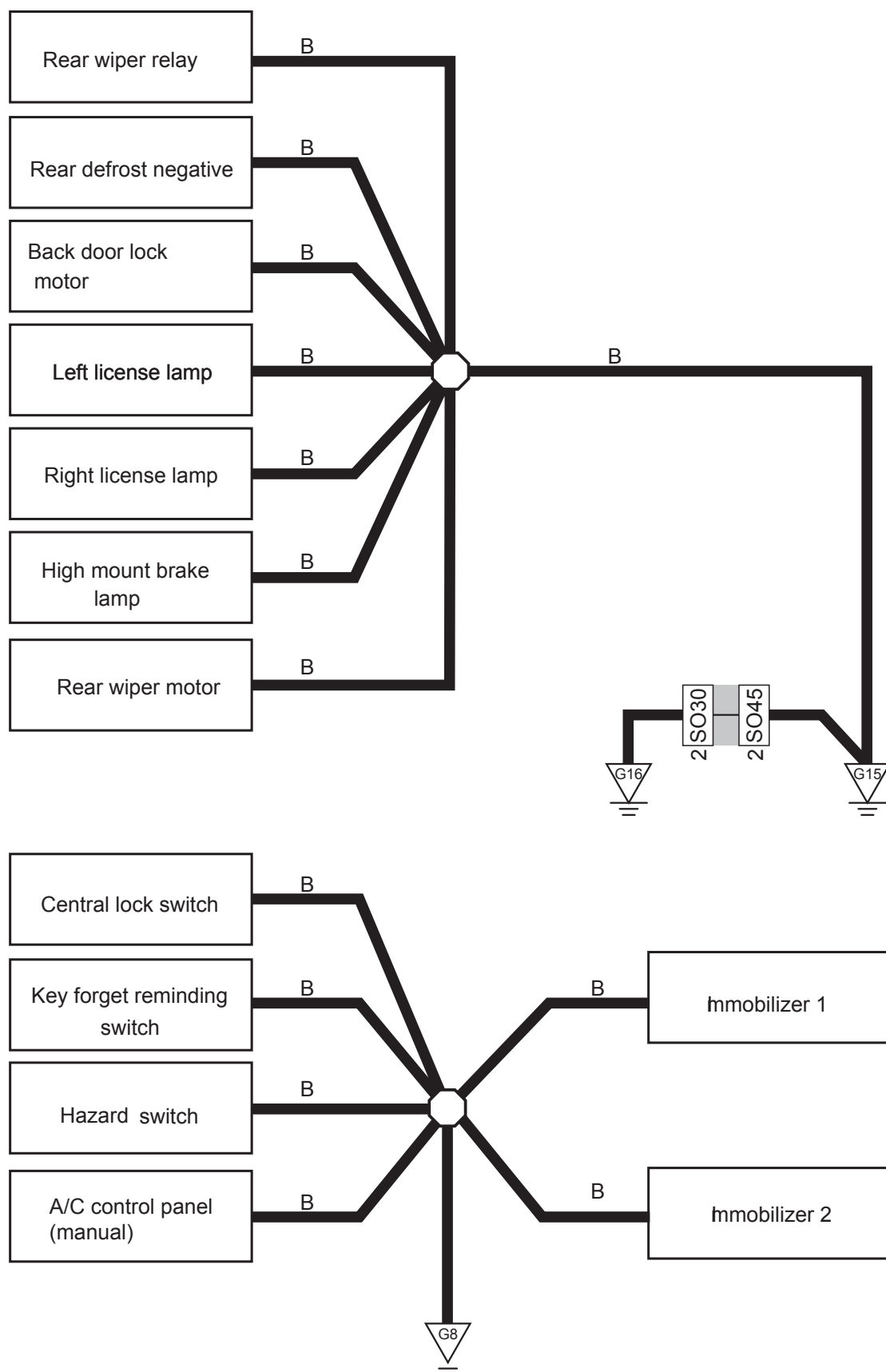
NL13-06016

Grounding Circuit Drawing 4 (G2, G4)



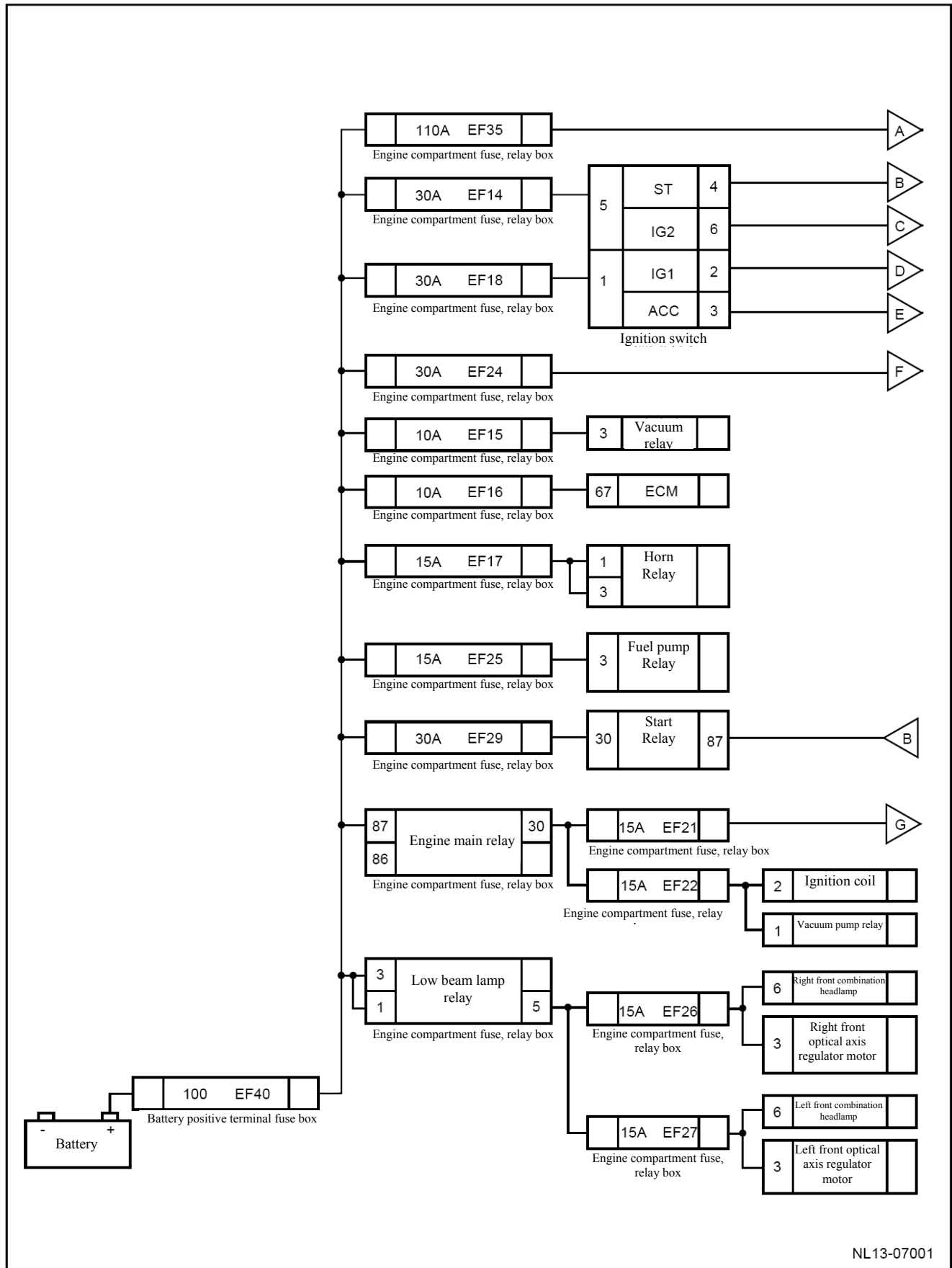
## Grounding Circuit Drawing 5 (G9, G13, G14)



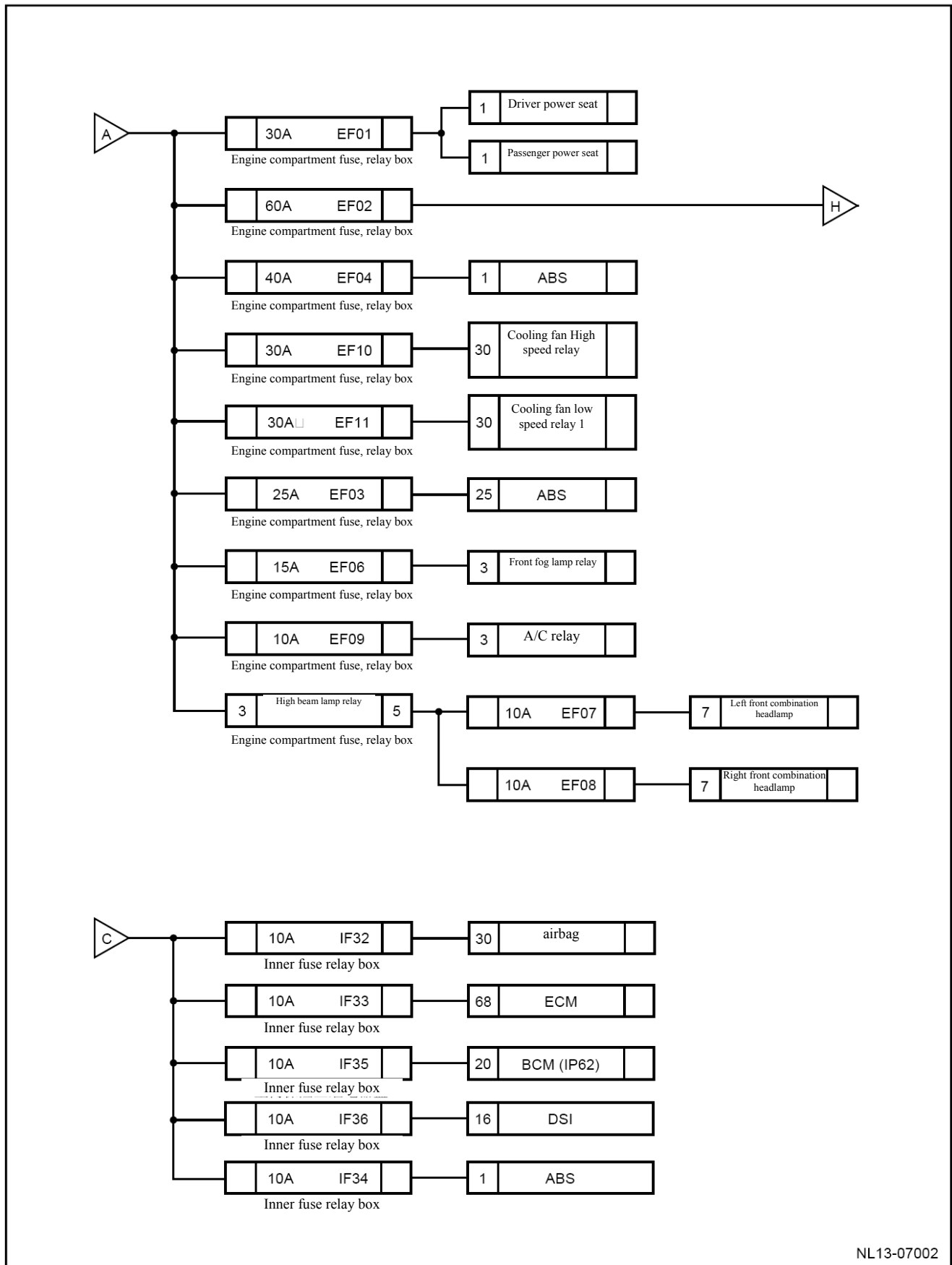
**Grounding Wiring Diagram 6 (G8, G15, G16)**

NL13-06005

## Power Configuration Circuit Diagram 1

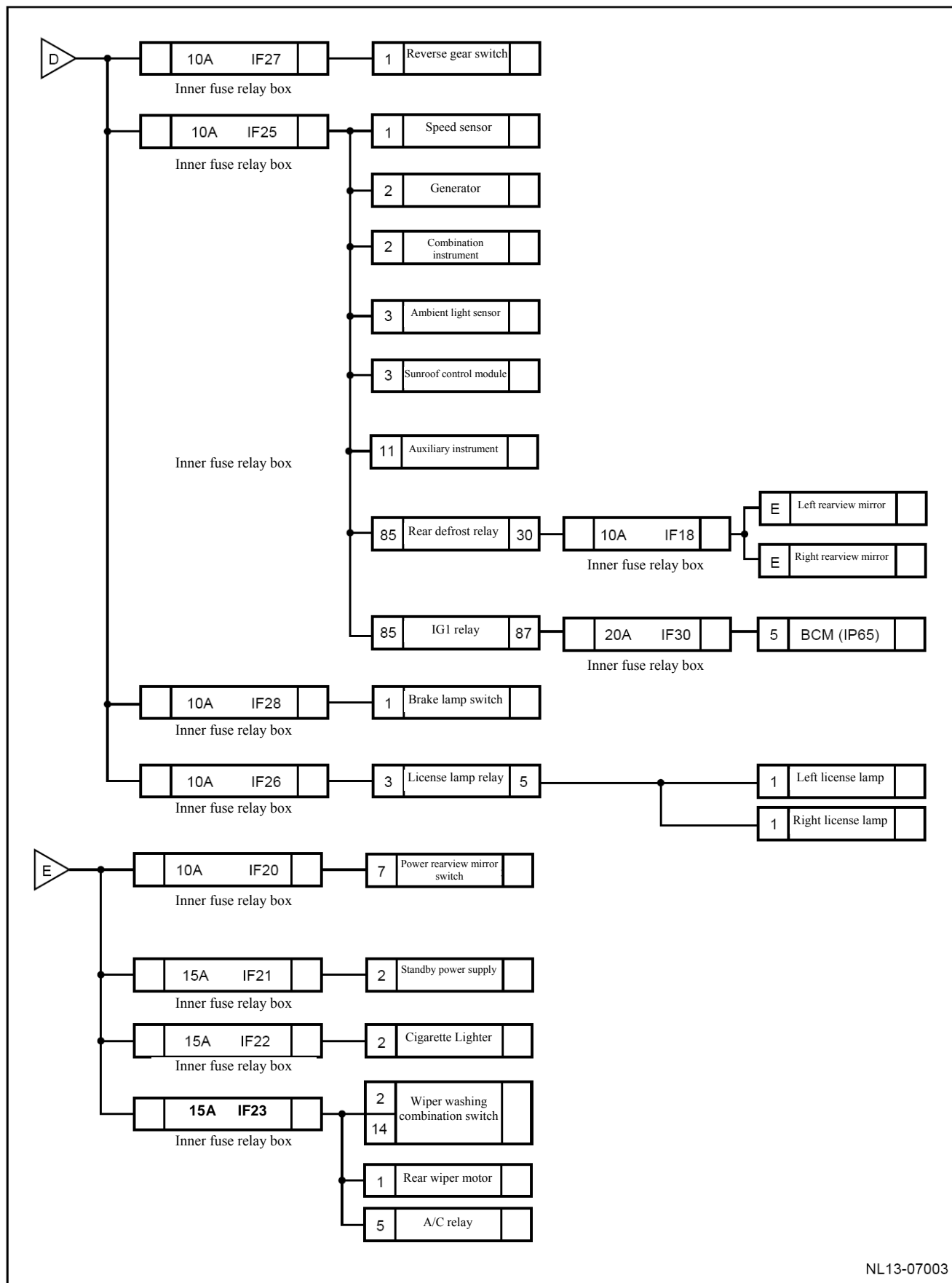


Power Configuration Circuit Diagram 2

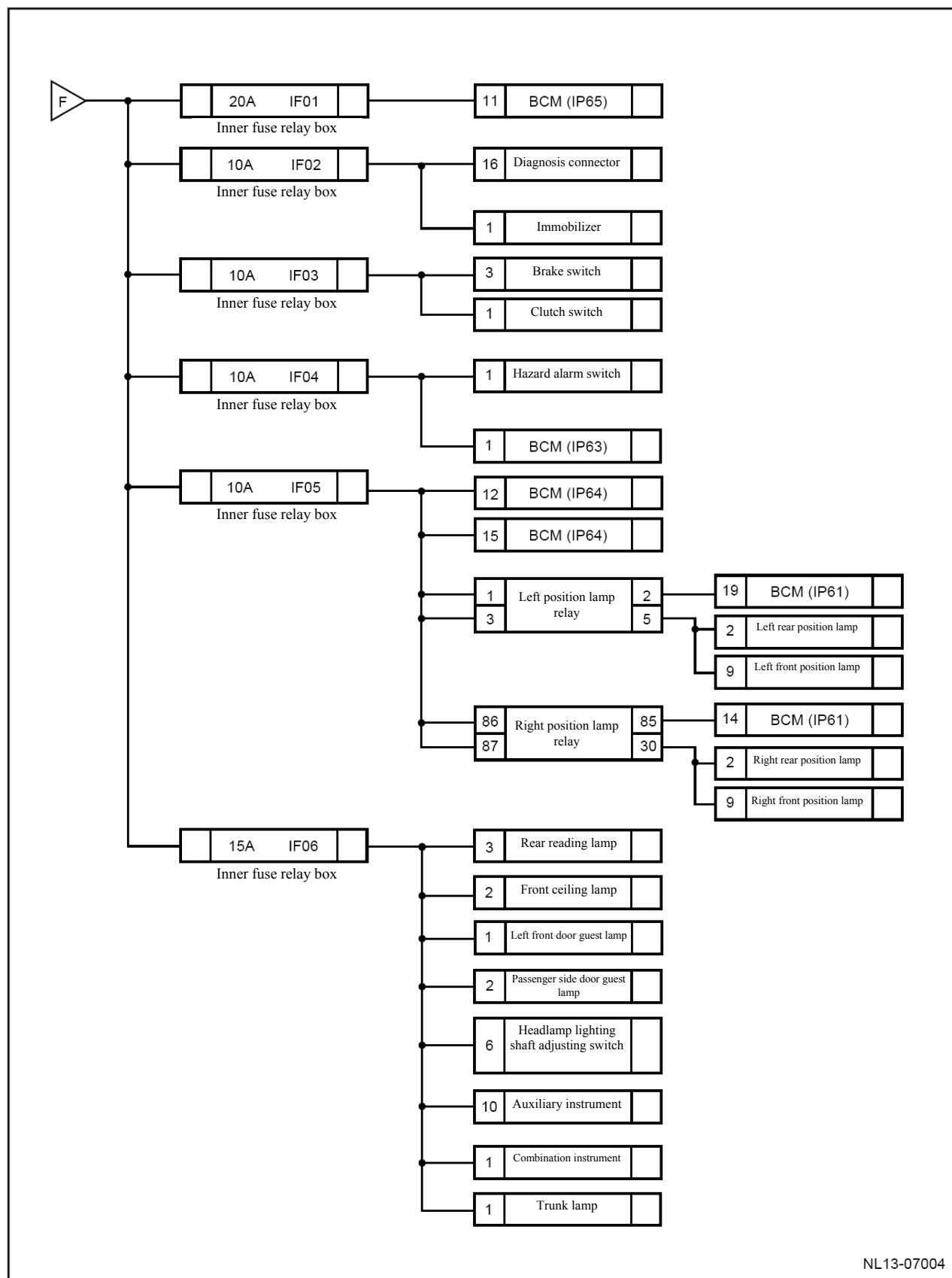




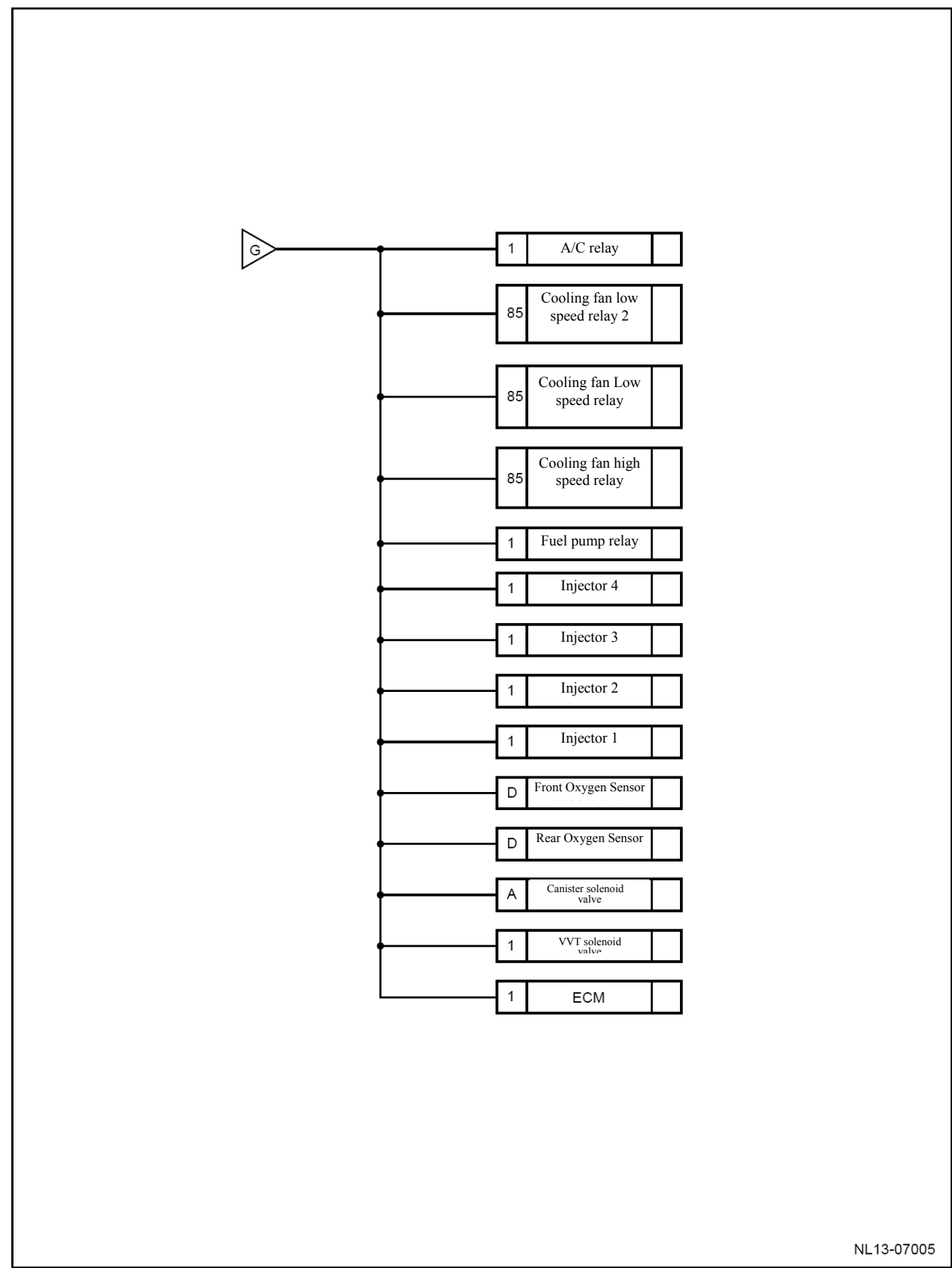
## Power Configuration Circuit Diagram 3



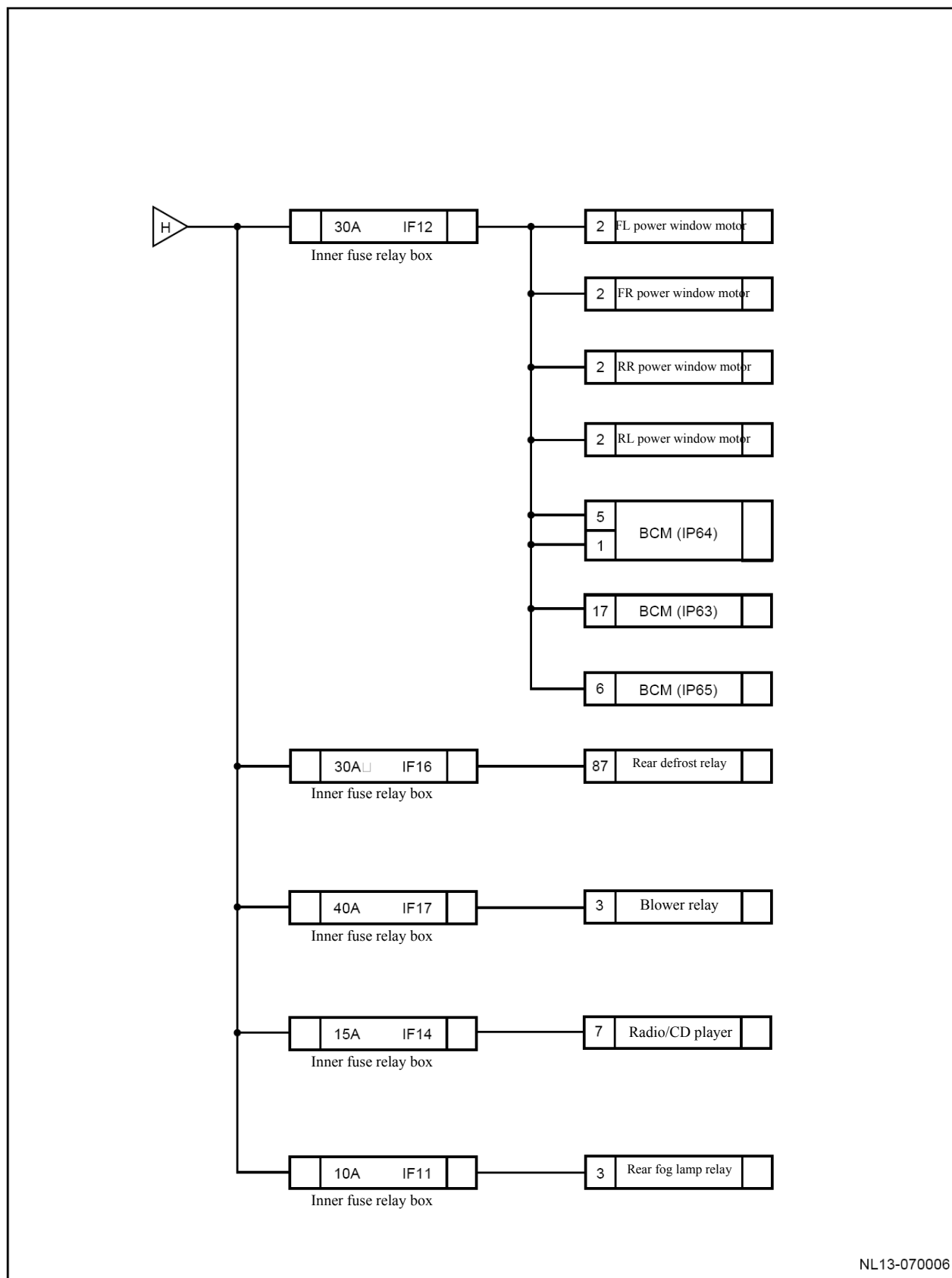
Power Configuration Circuit Diagram 4



Power Configuration Circuit Diagram 5



Power Configuration Circuit Diagram 6



**Power Configurations List**

NO.	Description	Rated current(A)	System
EF40	Main fuse of battery	100A	All systems
EF01	Fuse of power seat	30A	Power seat
EF02	Fuse of alternator	60A	Power window
			ECM
			Horn
			Radio/CD player
			Fog lamp
EF03	ABS fuse	25A	ABS
EF04	ABS fuse	40A	ABS
EF06	Fuse of front fog lamp	15A	Fog lamp
EF07	Fuse of left front high beam lamp	10A	Headlamp
EF08	Fuse of right front high beam lamp	10A	Headlamp
EF09	Fuse of A/C	10A	A/C system
EF10	Fuse of cooling fan	30A	Cooling fan
EF11	Fuse of cooling fan	30A	Cooling fan
Cooling fan-low speed	Ignition switchAM2Fuse	30A	Airbag
			ECM
			ABS
			Engine anti-theft
EF15	Vacuum fuse	10A	Charging system
EF16	ECM fuse	10A	ECM
EF17	Fuse of horn	15A	Horn
EF18	Ignition switchAM1fuse	30A	Radio /CD player
			Spare power supply
			Cigarette lighter
			Rear wiper
			Combination instrument
			Reverse lamp
			Front wiper
			Rear view mirror heating
EF21	Fuse of ignition coil	15A	ECM
EF22	Fuse of engine injecting nozzle	15A	ECM
EF24	Main fuse of battery	30A	Door lock
			Diagnosis
			Brake lamp
			Steering / hazard warning lamp
			Position lamp
			A/C and instrument

NO.	Description	Rated current(A)	System
EF25	Fuse of oil pump	15A	ECM
EF26	Fuse of right front low beam lamp	10A	Headlamp
EF27	Fuse of left front low beam lamp	10A	Headlamp
EF29	Fuse of starter	30A	Start system
EF35	Main fuse	110A	Charging system
			Power seat
			Cooling fan
			ABS
			Fog lamp
			A/C
			Headlamp
			Power window
			ECM
			Horn
			Radio /CD player
			Rear fog lamp
IF01	Fuse of door lock	20	Door lock
IF02	Diagnosis fuse	10	Diagnosis
IF03	Fuse of brake lamp	10	Brake lamp
IF04	Fuse of steering / hazard warning lamp	10	Turn signal/hazard lamp
IF05	Fuse of position lamp	10	Position lamp
IF06	Fuse of A/C and instrument	15	A/C / instrument
IF11	Fuse of rear fog lamp	10	Fog lamp
IF12	Fuse of power window	30	Power window
IF14	Fuse of radio/CD player	15	Radio
IF16	Fuse of rear defrost	30	Rear defrost
IF17	Fuse of blower	40	Blower
IF18	Rear view mirror heating fuse	10	Rear view mirror heating
IF20	Fuse of radio/CD player	10	Radio/CD player
IF21	Fuse of standby power supply	15	Spare power supply
IF22	Fuse of cigarette lighter	15	Cigarette lighter
IF23	Fuse of rear wiper	15	Rear wiper
IF25	Fuse of combination instrument	10	Combination instrument
IF26	Fuse of license lamp	10	License lamp
IF27	Fuse of reverse lamp	10	Reversing lamp
IF28	Fuse of brake lamp	10	Brake lamp
IF30	Fuse of front wiper	30	Front wiper
IF32	Fuse of airbag	10	Airbag
IF33	ECM fuse	10	ECM
IF34	ABS fuse	10	ABS
IF35	Fuse of immobilizer	10	Immobilizer

**Circuit Diagram Index**

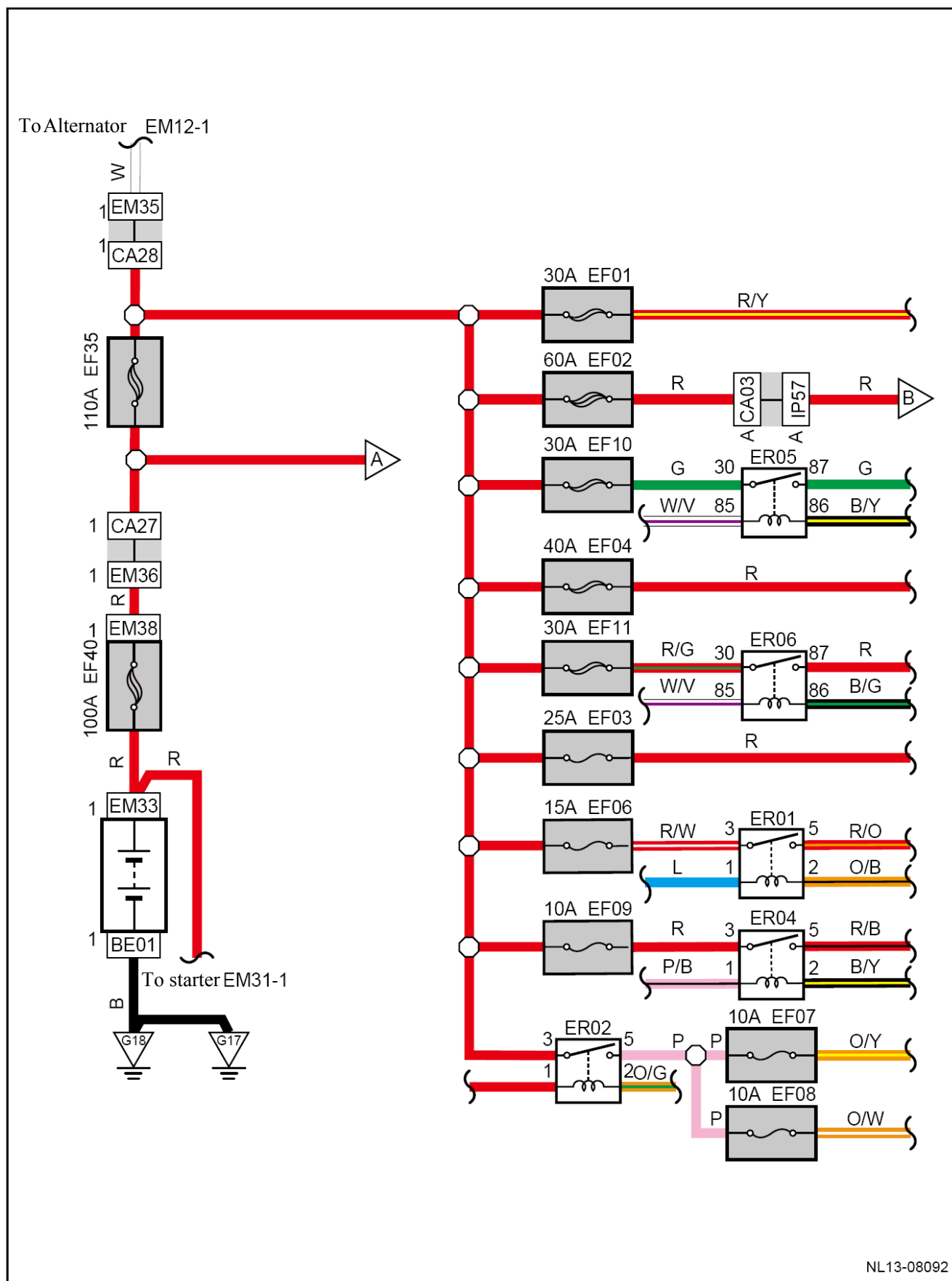
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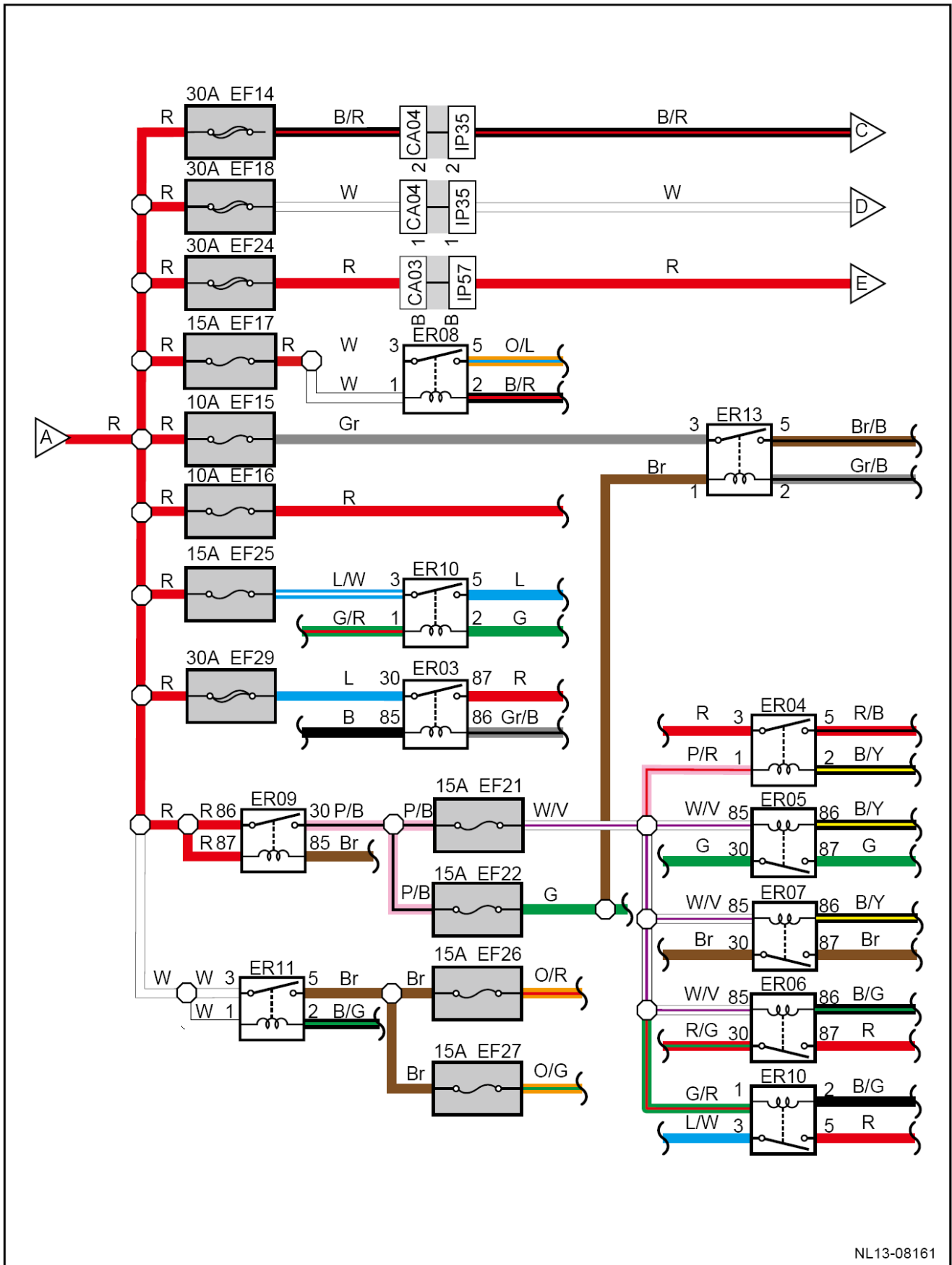
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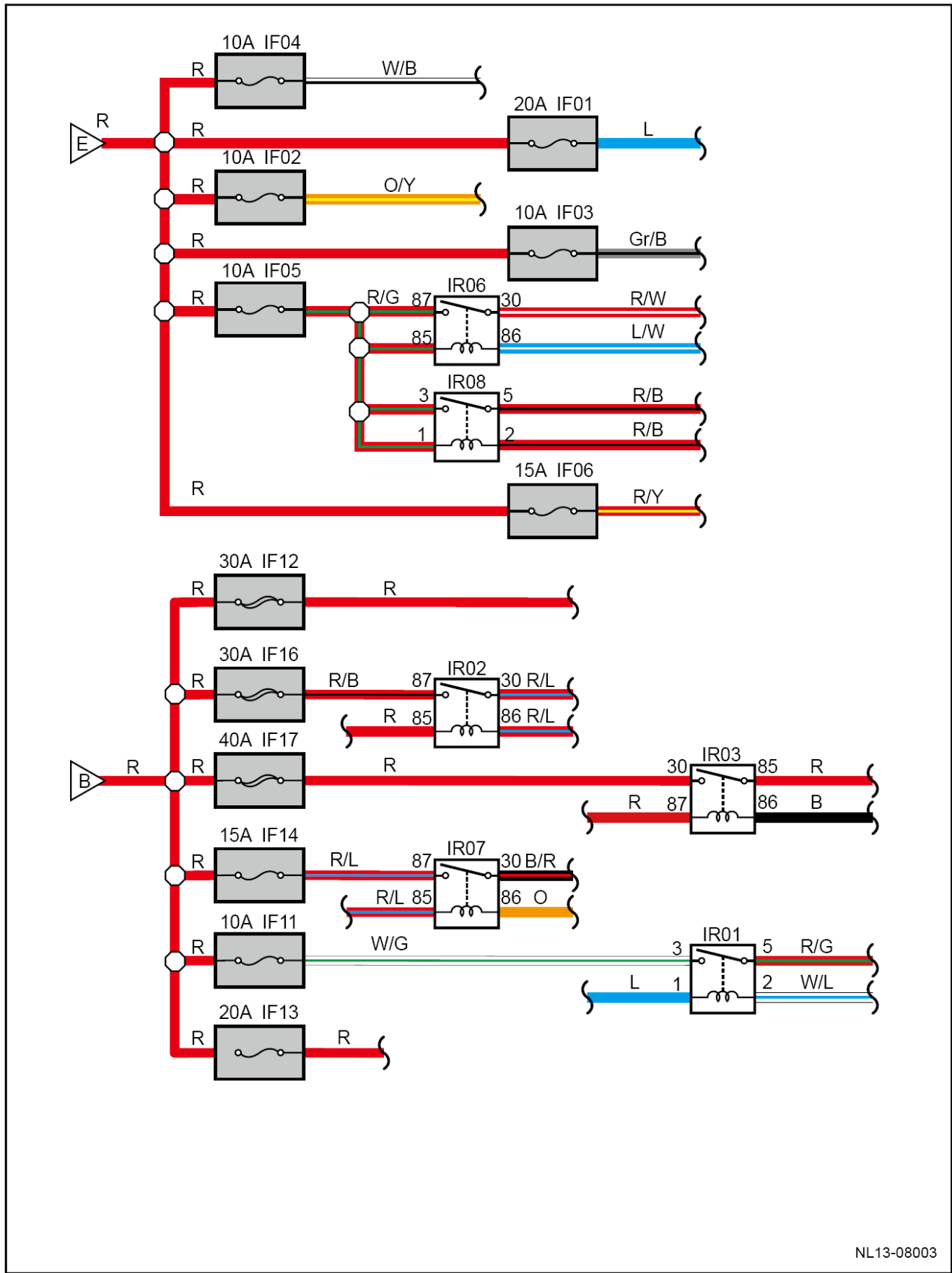
## Power Distribution Diagram 1



Power Distribution Diagram 2

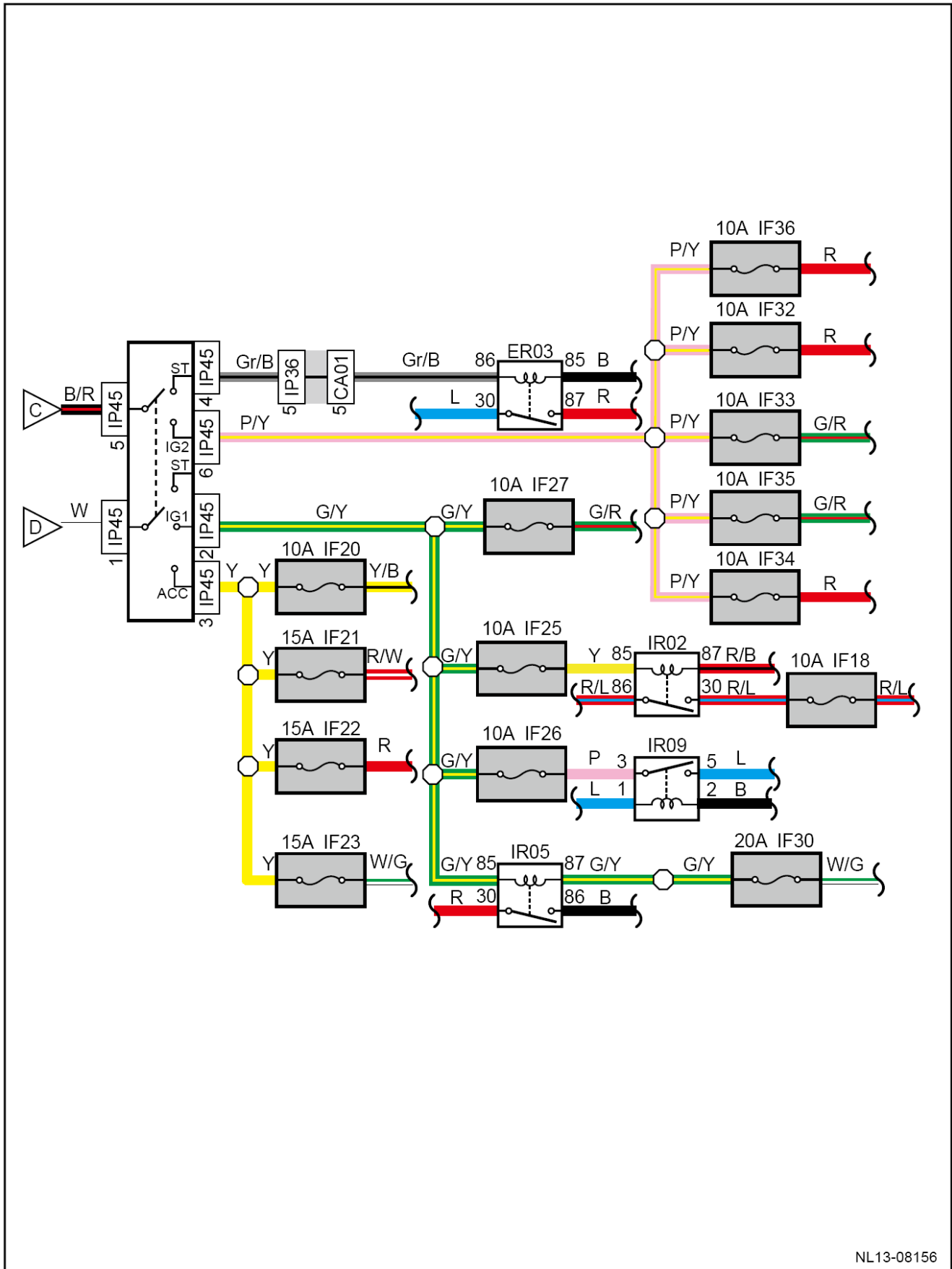


Power Distribution Diagram 3



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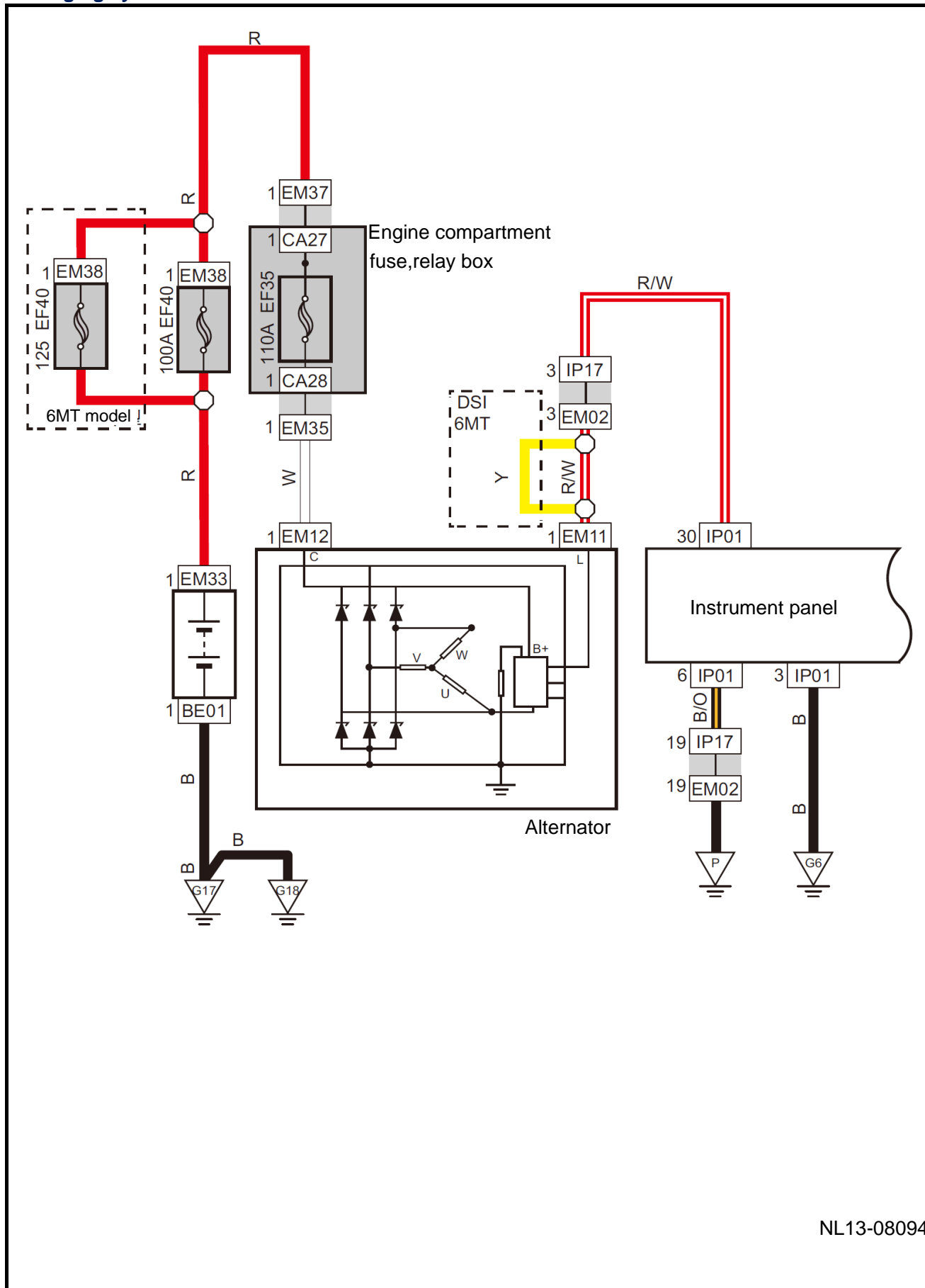
Power Distribution Diagram 4



NL13-08156

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
BE01	To battery negative	27
CA01	To instrument harness connector 1	31
CA03	To instrument harness connector 3	31
CA04	To instrument harness connector 4	31
CA27	To engine harness connector (connecting wire plate2)	31
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EM35	To engine compartment fuse, relay box (connecting wire plate1)	37
EM37	To engine compartment fuse, relay box (connecting wire plate2)	37
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EM33	Harness connector of battery (1)	37
IP35	To engine compartment harness connector 1	43
IP36	To engine compartment harness connector 2	43
IP57	To engine compartment harness connector	43
G17	Battery grounding	71
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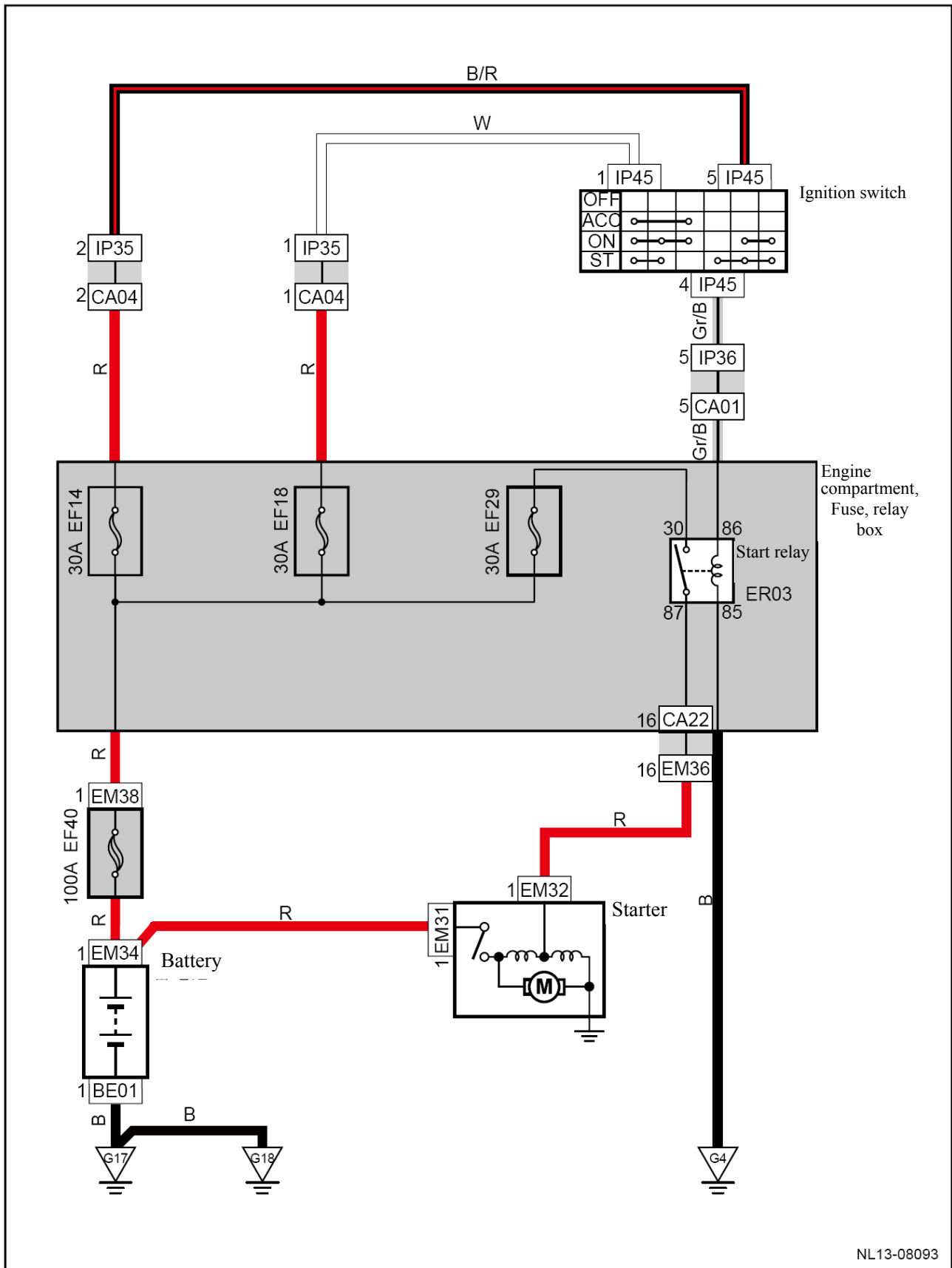
## Charging system



NL13-08094

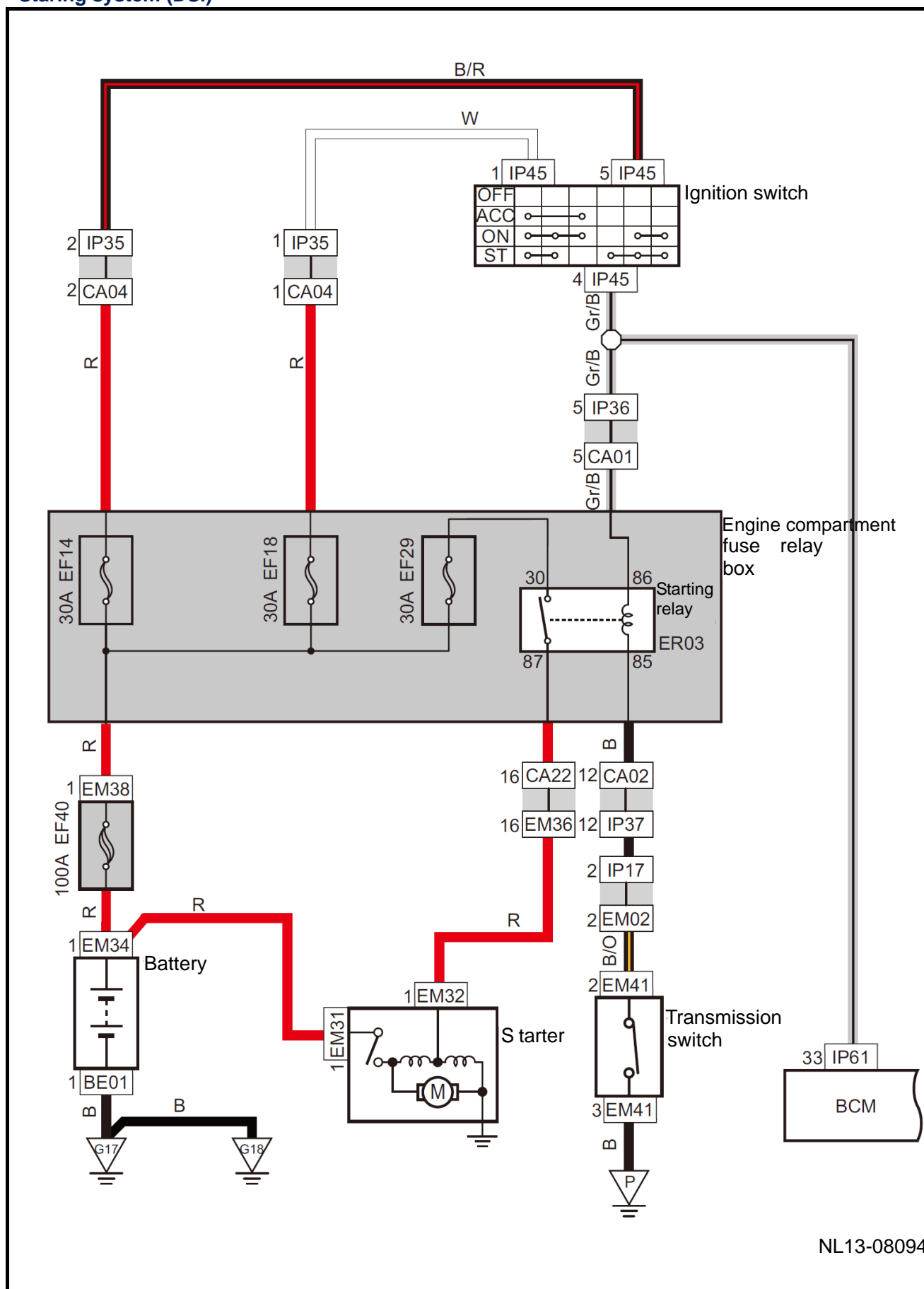
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
BE01	To battery negative	27
CA27	To engine harness connector (connecting wire plate1)	31
CA28	To engine harness connector (connecting wire plate2)	31
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EM11	Alternator harness connector	37
EM12	To alternator (connecting wire plate) harness connector	37
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EM33	Battery (connecting wire plate1)harness connector	37
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IP17	To engine harness connector	43
G6	Instrument panel grounding	72
G17	Battery grounding	71
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## Start System



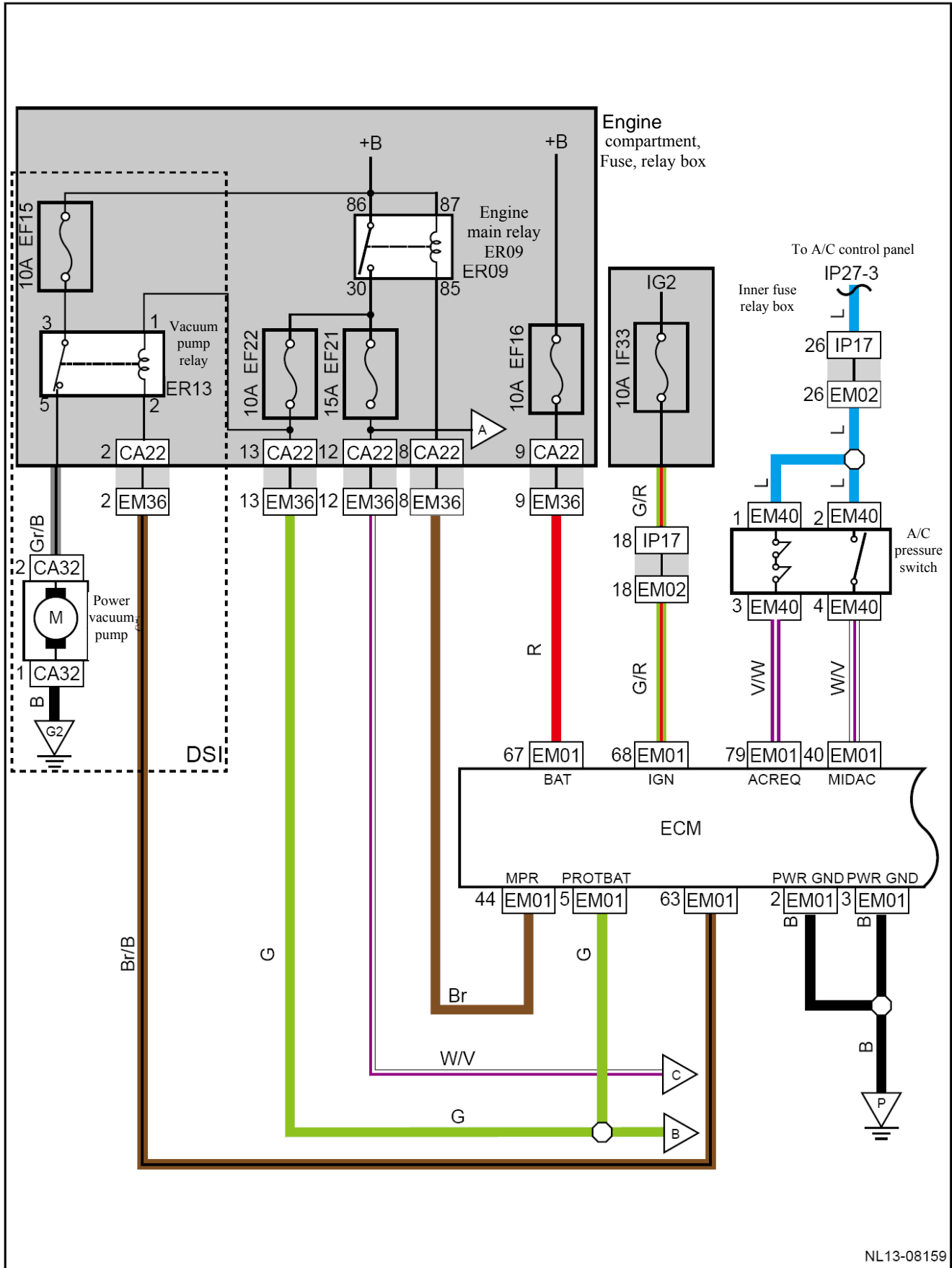


## Starting system (DSI)

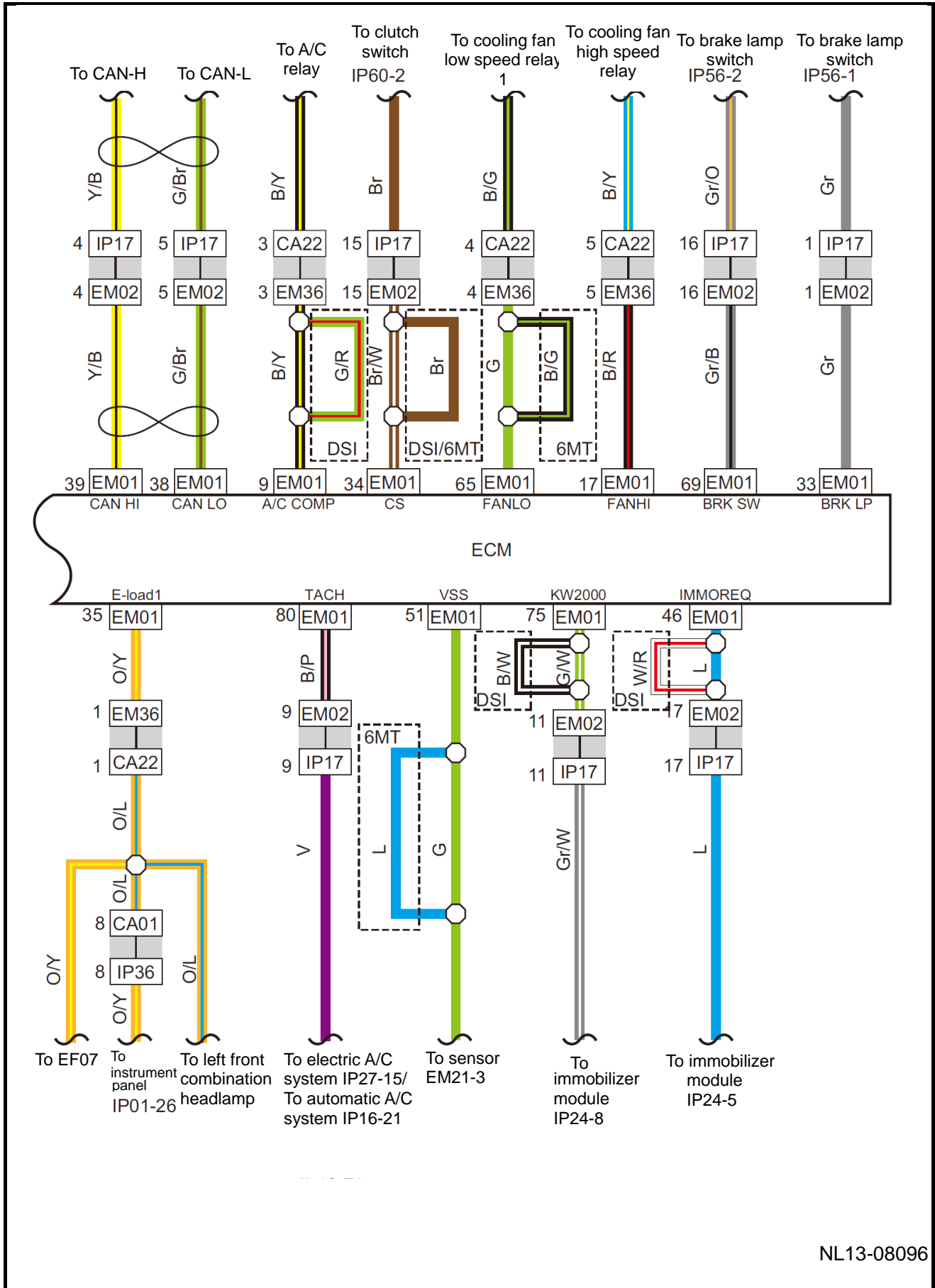


<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
BE01	To battery negative	27
CA01	To instrument harness connector 1	31
CA04	To instrument harness connector 4	31
CA22	To engine harness connector	31
CA02	To instrument harness connector 2	31
EM02	To instrument harness connector	37
EM32	Harness connector of starter solenoid switch	37
EM31	Harness connector of starter	37
EM36	To harness connector of engine compartment distribution box	37
EM34	Battery fuse box (connecting wire plate2)	37
EM38	Battery fuse box	37
IP36	To engine compartment harness connector 2	43
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IP37	To engine compartment harness connector 3	43
IP17	To engine harness connector	43
G6	Instrument panel grounding	72
G17	Battery grounding	71
G18	Battery grounding	71
P	Engine grounding	70

## ECM Power Supply, Data, Grounding Wire 1



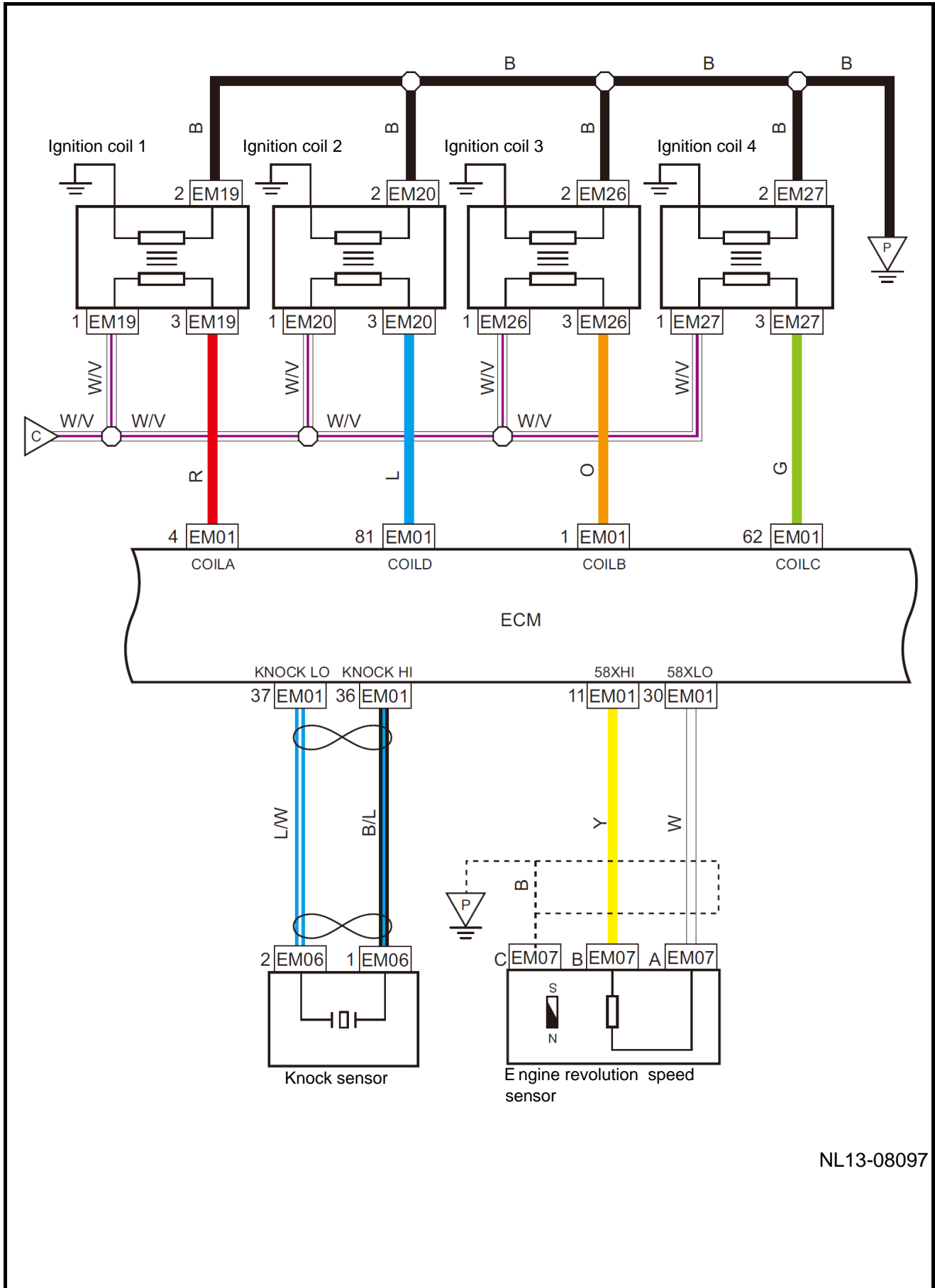
## ECM power, data and ground wire 2



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA22	To engine harness connector	28
IP17	To engine harness connector	40
IP36	To engine compartment harness connector 2	40
EM01	Harness connector of engine control module	35
EM02	To instrument harness connector	35
EM40	Harness connector of A/C pressure switch	34
EM36	To harness connector of engine compartment distribution box	34
CA32	Harness connector of power vacuum pump	28
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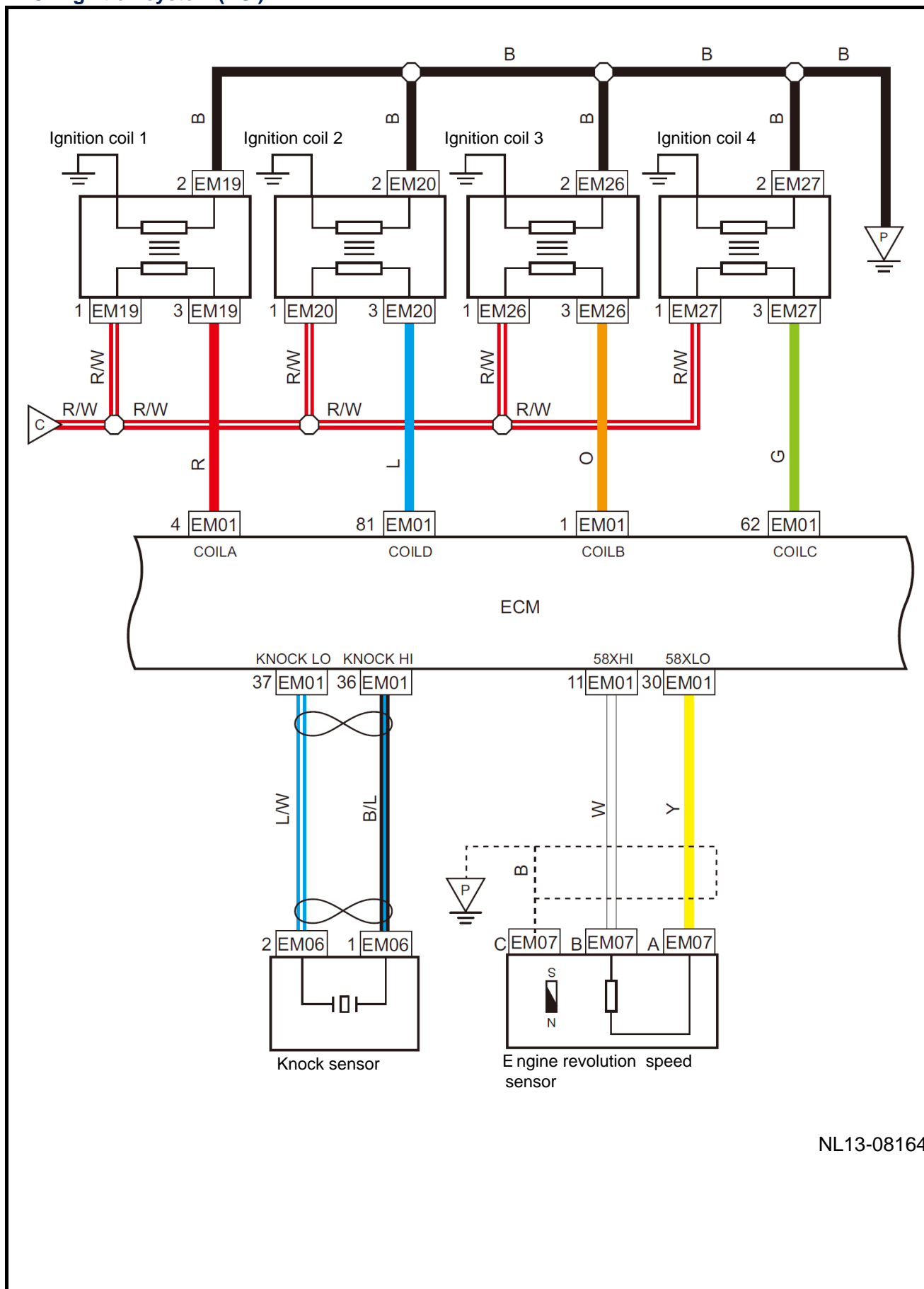
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EM01-35	To EF07	131
	To front left combination headlamp	131
	To combination instrument IP01-26	121
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EM40-2		
EM01-51	To speed sensor EM21-3	110

## ECM ignition system



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## ECM ignition system (DSI)



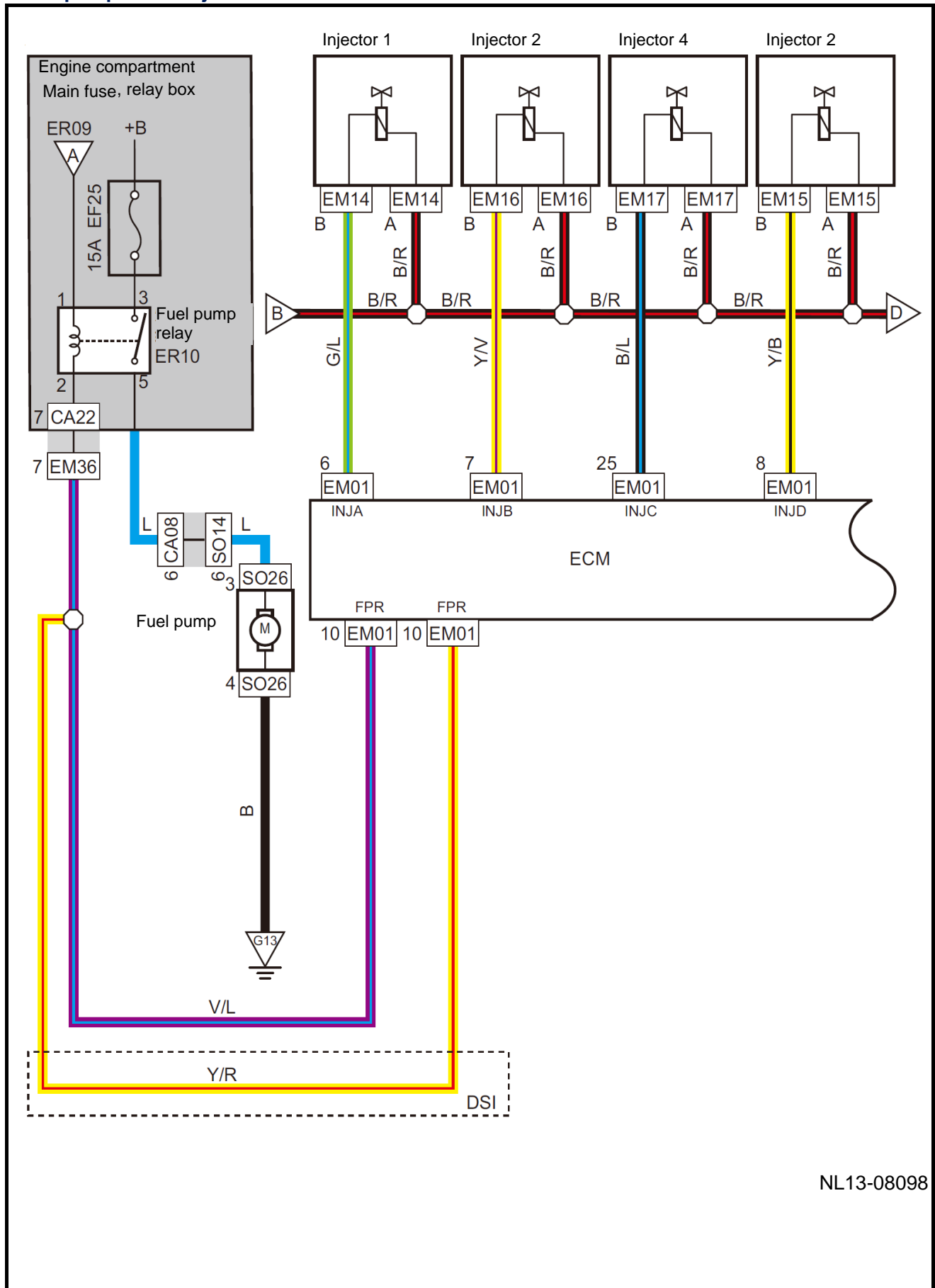
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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM19	Harness connector of cylinder No.1ignition coil	34
EM20	Harness connector of cylinder No.2ignition coil	34
EM26	Harness connector of cylinder No.3ignition coil	34
EM27	Harness connector of cylinder No.4ignition coil	34
EM01	Harness connector of engine control module	35
EM06	Harness connector of knock sensor	34
EM07	Harness connector of speed sensor	34
P	Engine harness grounding	68



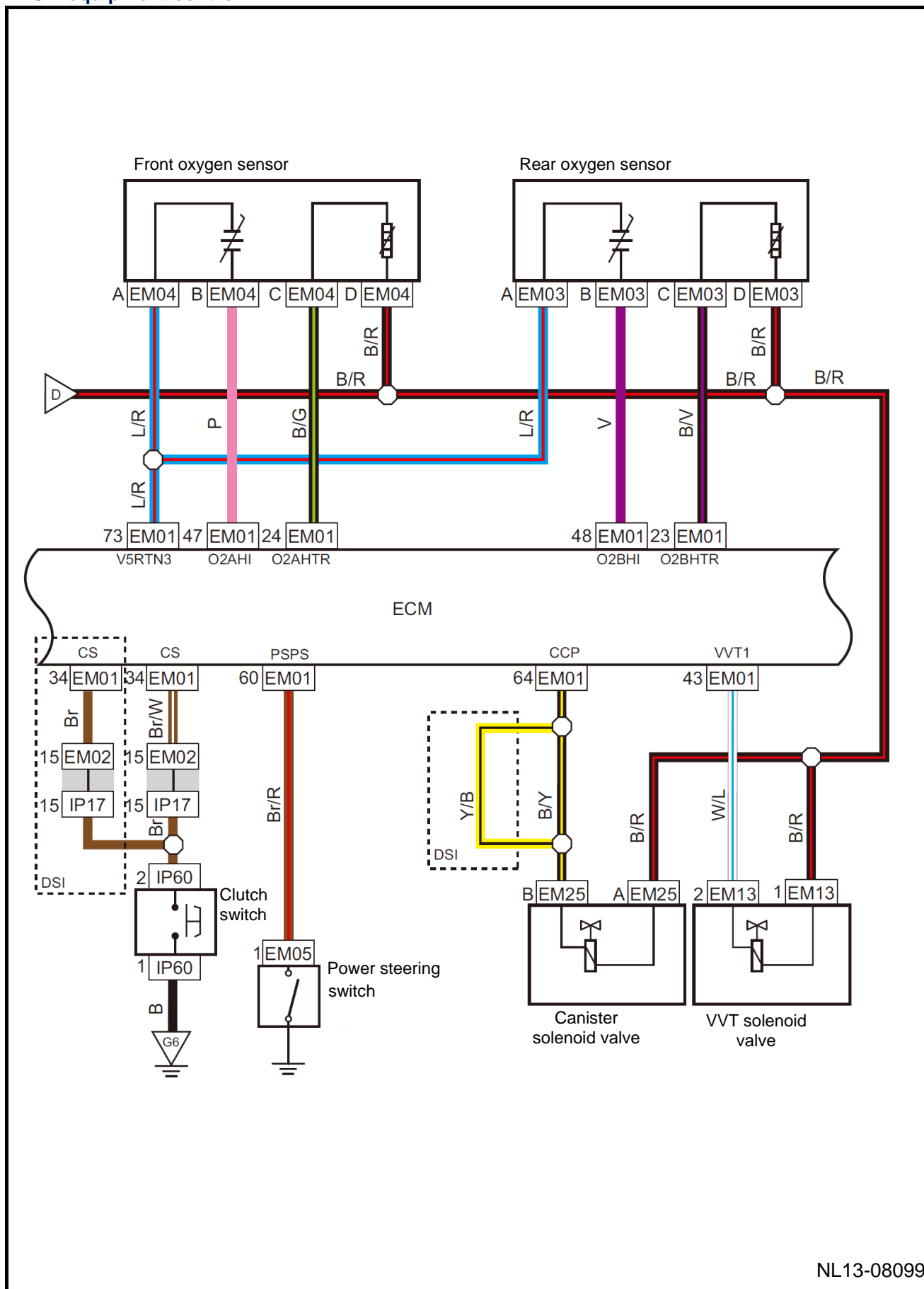
## Fuel pump & fuel injector



NL13-08098

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM14	Harness connector of 1st cylinder No.1injector	34
EM15	Harness connector of 2nd cylinder No.2injector	34
EM16	Harness connector of 3rd cylinder No.3injector	34
EM17	Harness connector of 4th cylinder No.4injector	34
EM01	Harness connector of engine control module	35
EM36	To harness connector of engine compartment fuse box (2)	34
CA08	To body harness connector	29
CA22	To engine harness connector	28
SO04	To engine compartment harness connector	50
SO26	Harness connector of fuel pump	50

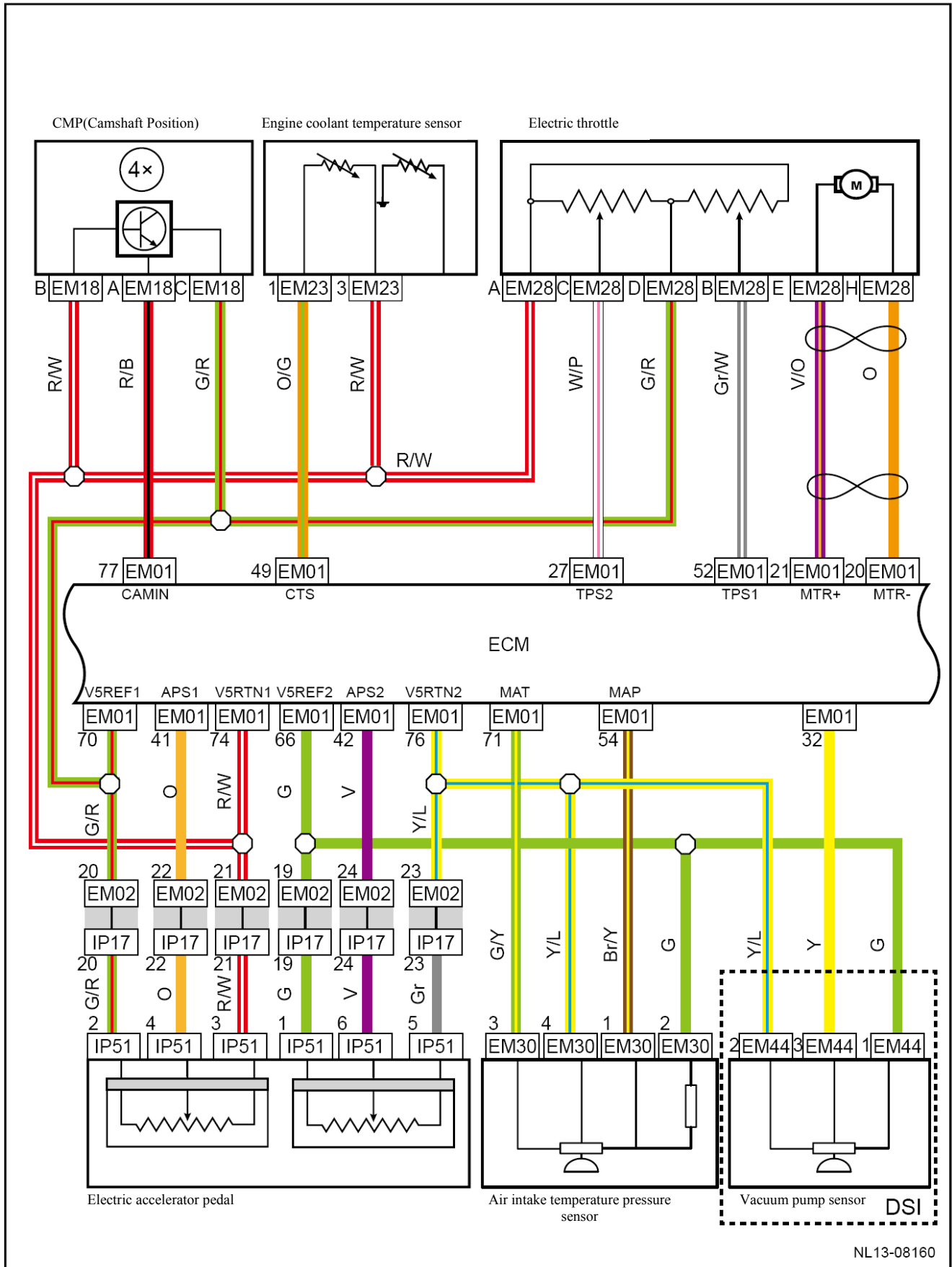
## ECM equipment control



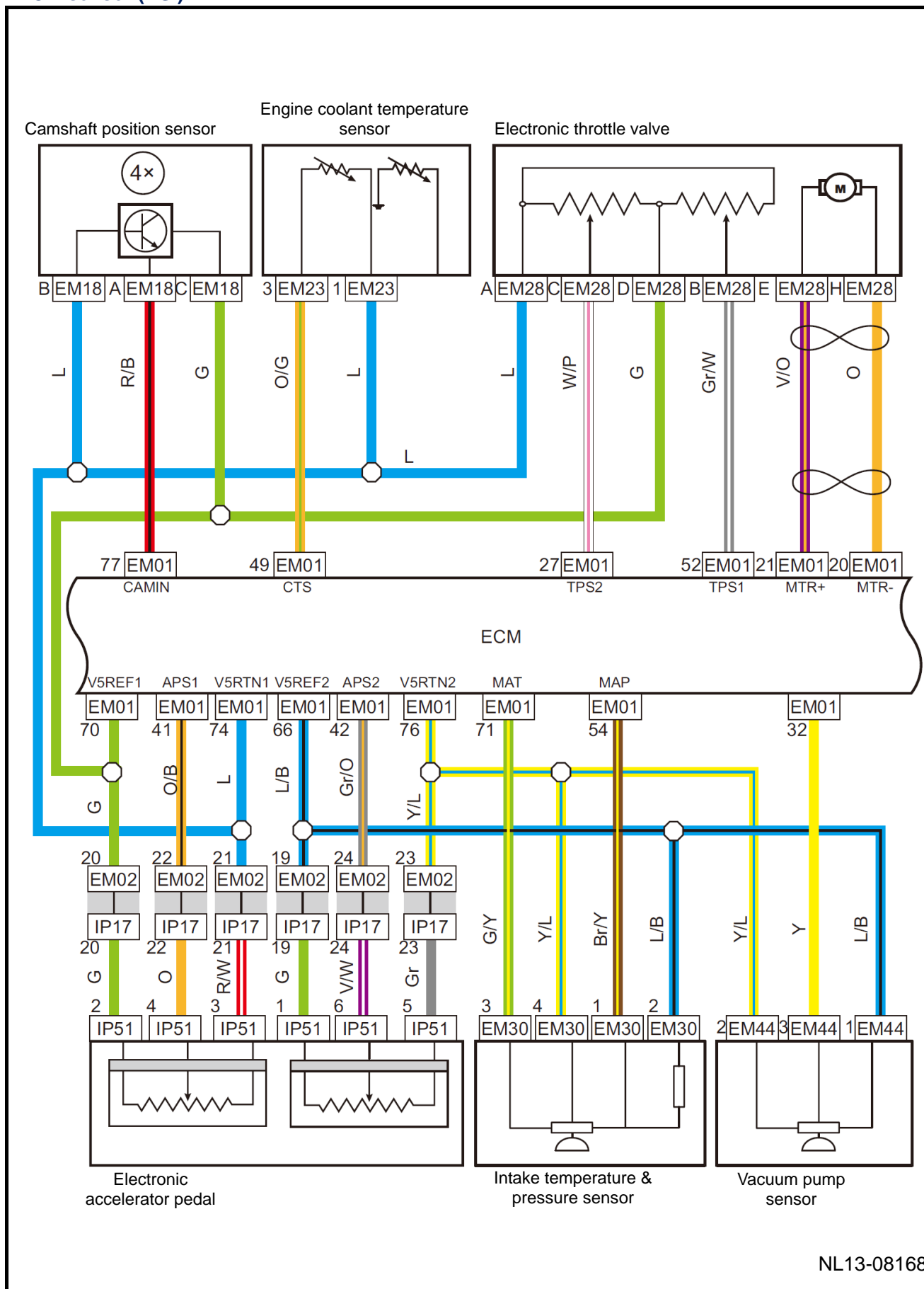
NL13-08099

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM01	Harness connector of engine control module	35
EM03	Harness connector of rear oxygen sensor	34
EM04	Harness connector of front oxygen sensor	34
EM13	Harness connector of VVT solenoid valve	34
EM25	Harness connector of carbon canister solenoid valve	34
EM05	Harness connector of power steering switch	34
EM02	To harness connector of instrument harness (1)	35
IP17	To engine harness connector	40
IP60	Harness connector of clutch switch	41

## ECM Sensor

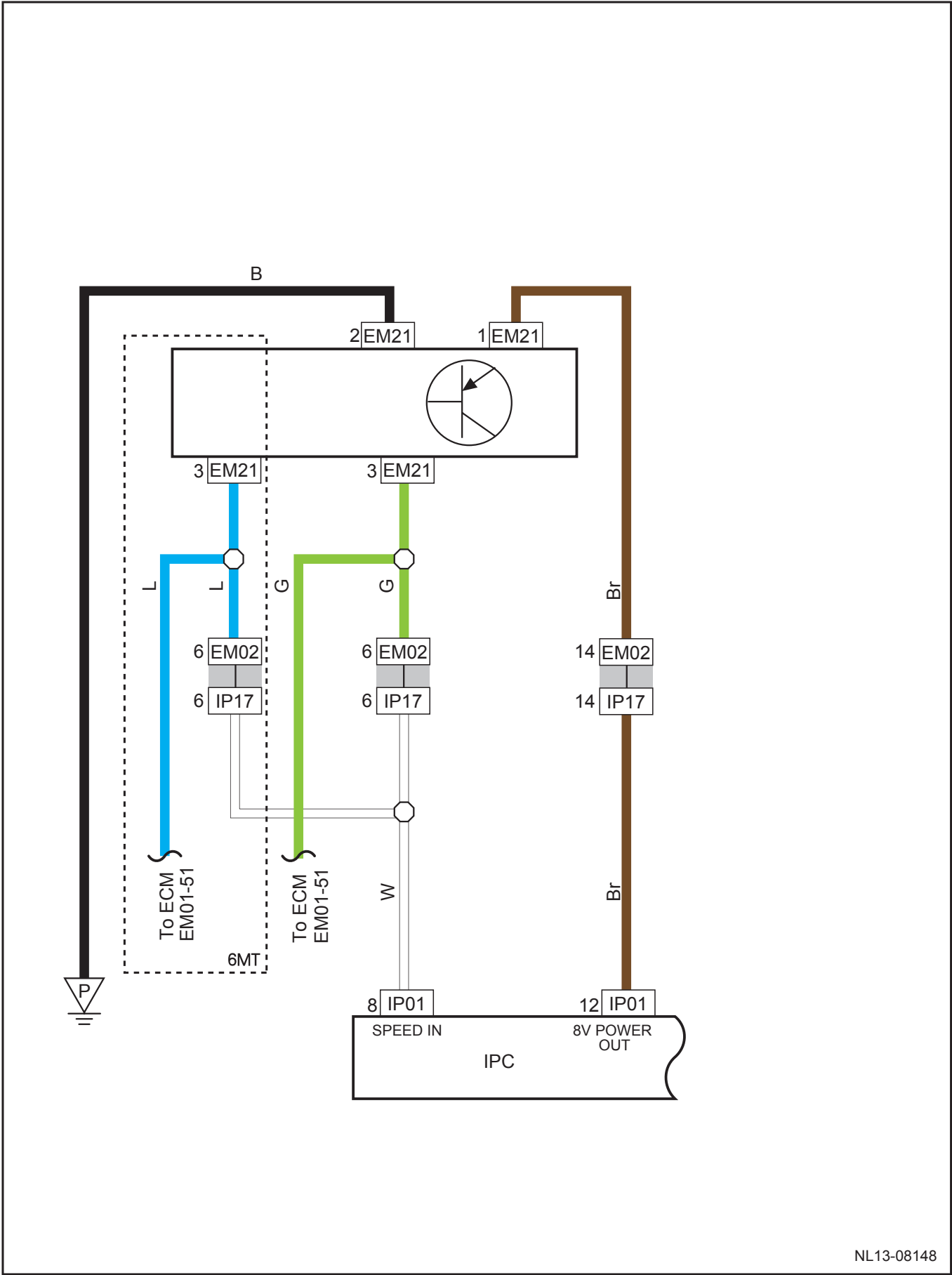


## ECM sensor (DSI)



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM18	Harness connector of front oxygen sensor	34
EM23	Harness connector of rear oxygen sensor	34
EM28	Harness connector of engine control module	34
EM01	Harness connector of engine control module	35
EM02	To harness connector of instrument harness (1)	35
IP17	To engine harness connector	40
IP51	Harness connector of electric accelerator pedal	40
EM30	Harness connector of air intake pressure temperature sensor	34
EM44	Harness connector of vacuum pump sensor	34

Speed Sensor



NL13-08148

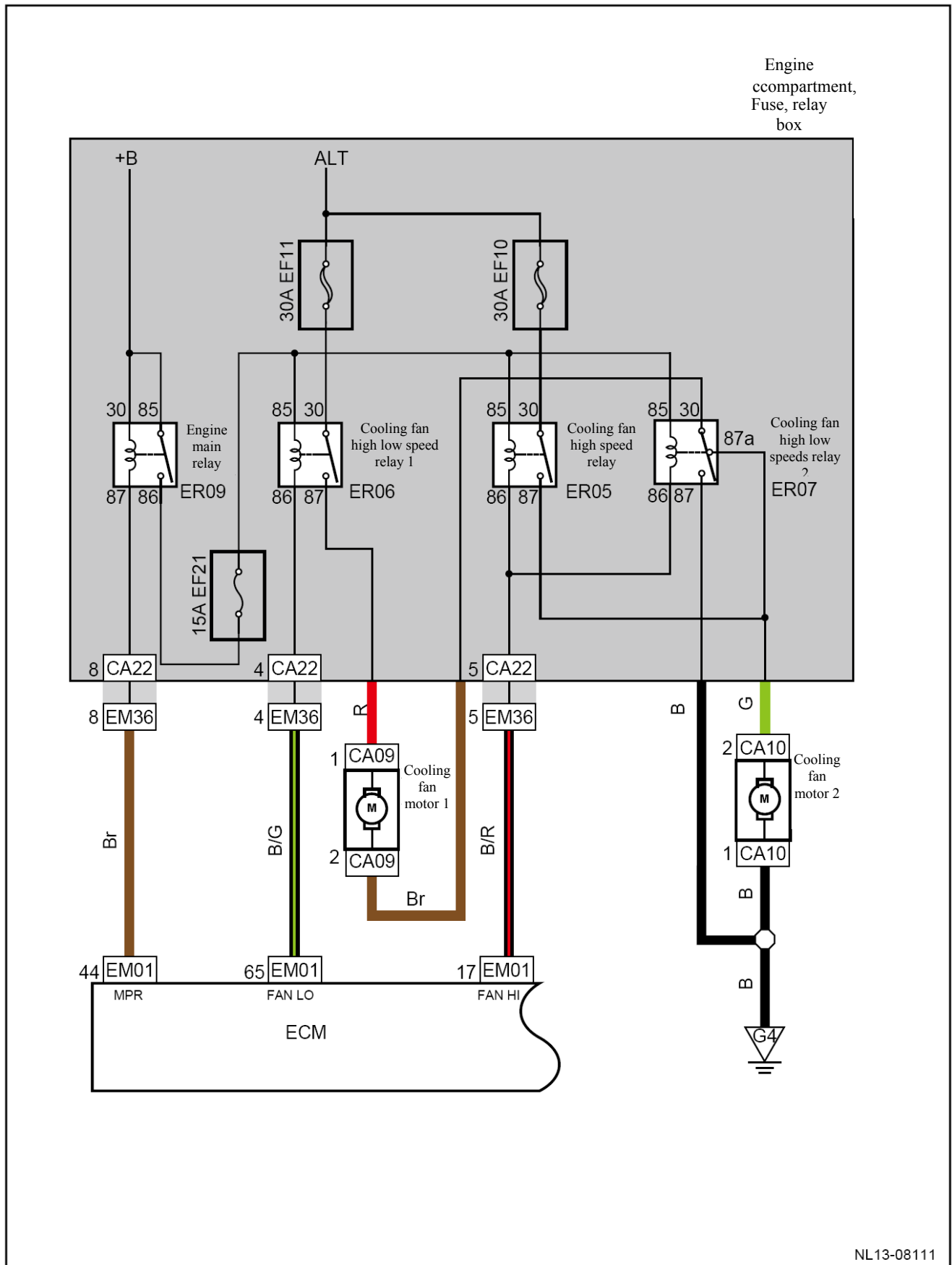


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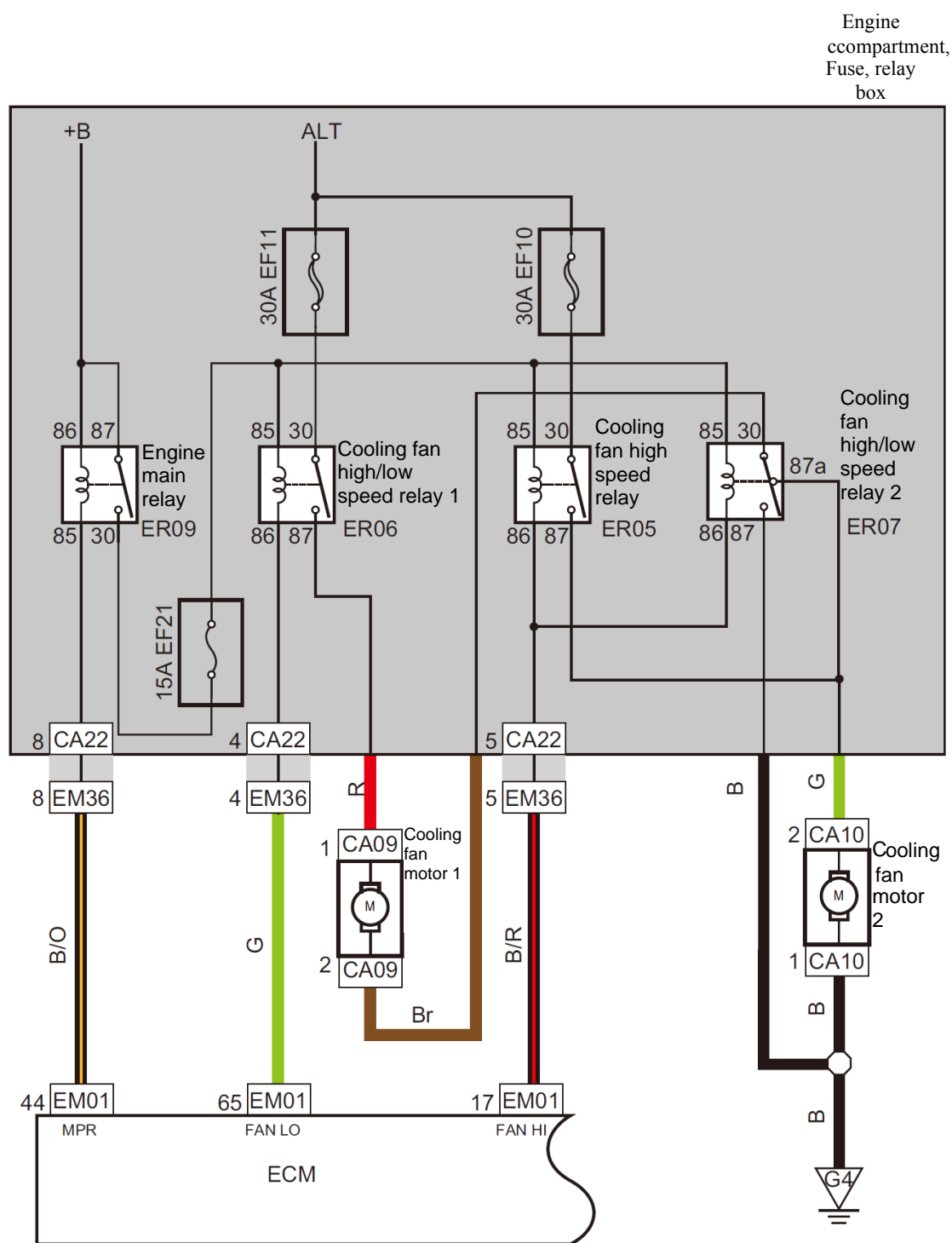
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM21	Harness connector of speed sensor	34
EM02	To harness connector of instrument harness	35
IP17	To harness connector of engine harness	40
IP01	Harness connector of combination instrument	41
IP33	To body harness connector 2	40
SO10	To instrument harness connector 3	50

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
EM21-3	To parking control module SO32-3	194
EM21-3	To engine control module EM01-51	100

## Cooling Fan Control



## Cooling fan control (DSI)

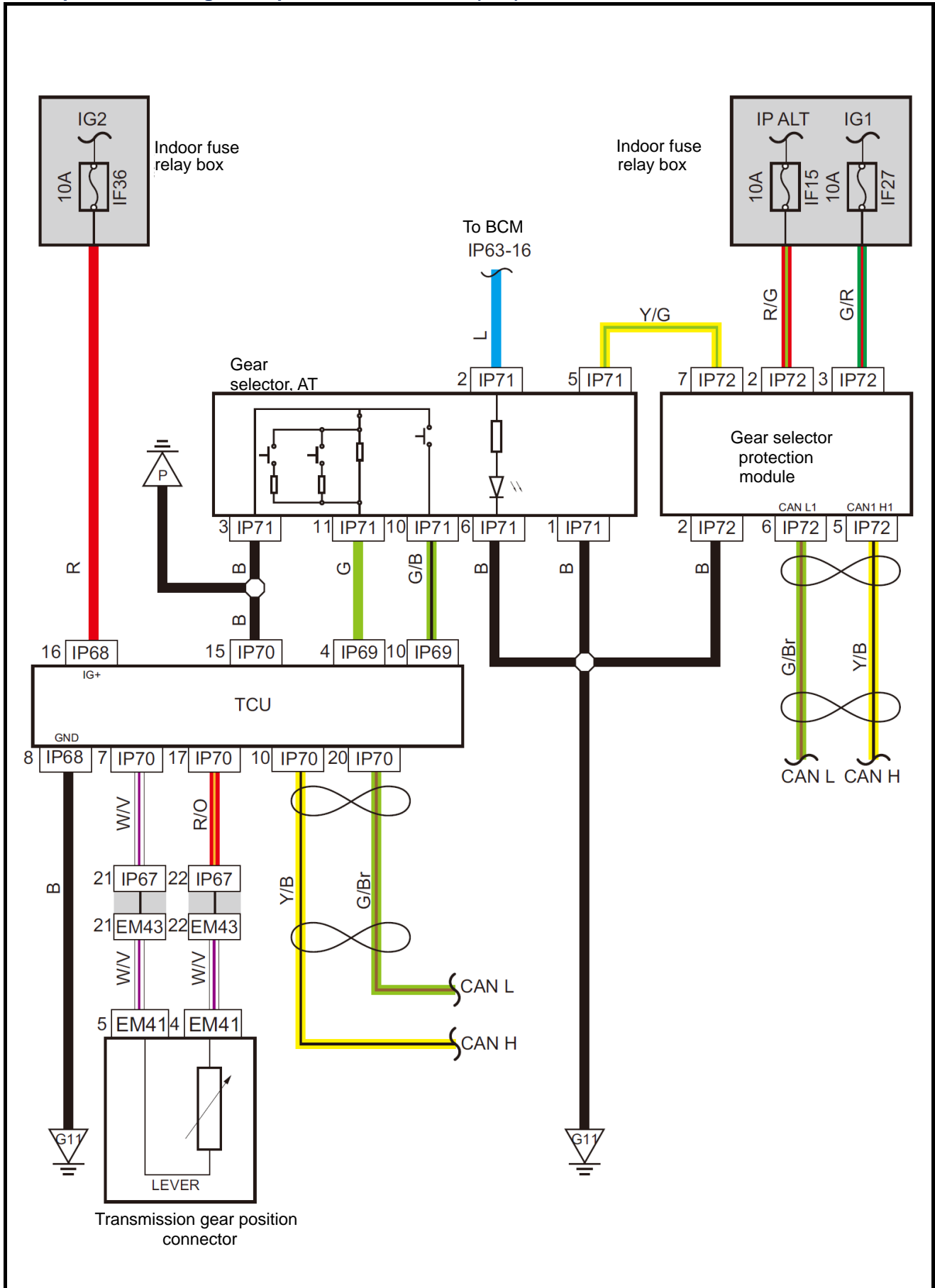


NL13-08169

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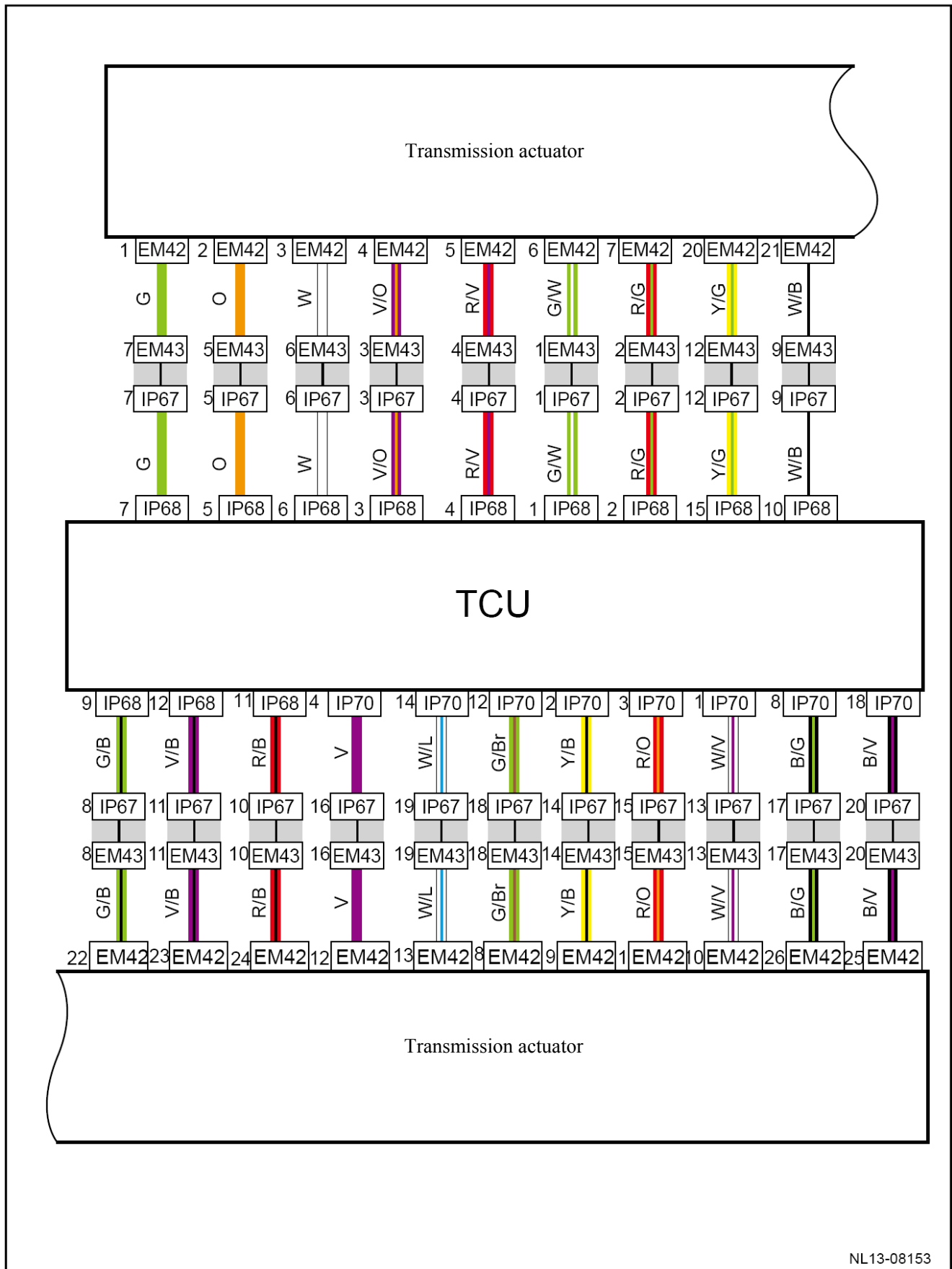
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA09	Harness connector of cooling fan motor (1)	28
CA10	Harness connector of cooling fan motor (2)	28
CA22	To engine harness connector	28
EM36	To harness connector of engine compartment fuse box (2)	34
EM01	Harness connector of engine control module	35

# TCU power source, ground point and data cable (DSI)



NL13-08152

## TCU Transmission Control

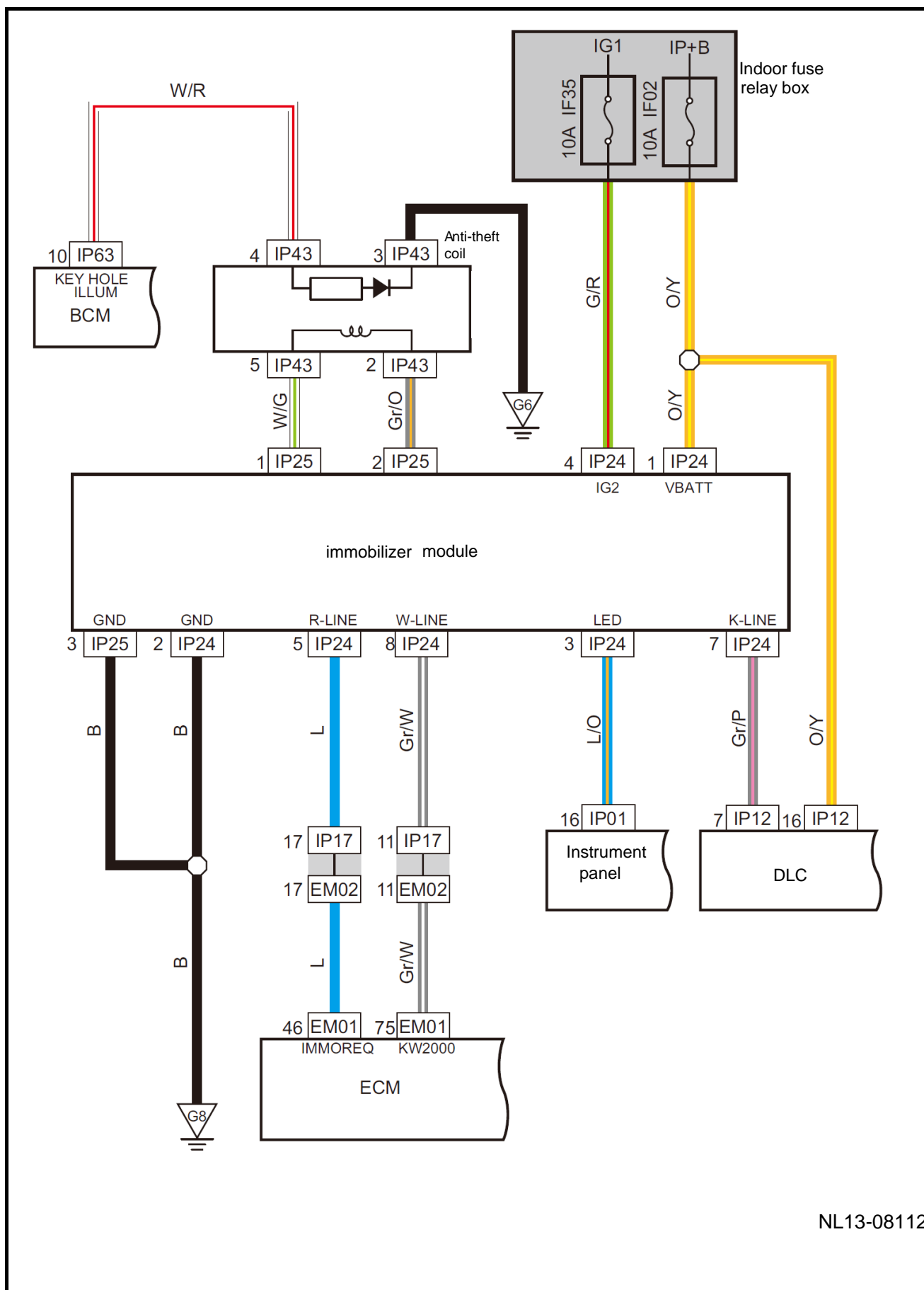


NL13-08153

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP67	To engine harness connector (2)	41
IP68	TCU harness connector 1	41
IP69	TCU harness connector 2	41
IP70	TCU harness connector 3	41
IP71	Harness connector of auto gear shift	41
IP72	Harness connector of self gear shifting protection module	41
EM41	Harness connector of transmission gear position	34
EM43	To harness connector of instrument harness (2)	34
EM42	Harness connector of transmission actuator	34

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP71-5	To brake lamp switch IP56-4	188
IP71-2	To BCM IP63-16	98

## Engine anti-theft system

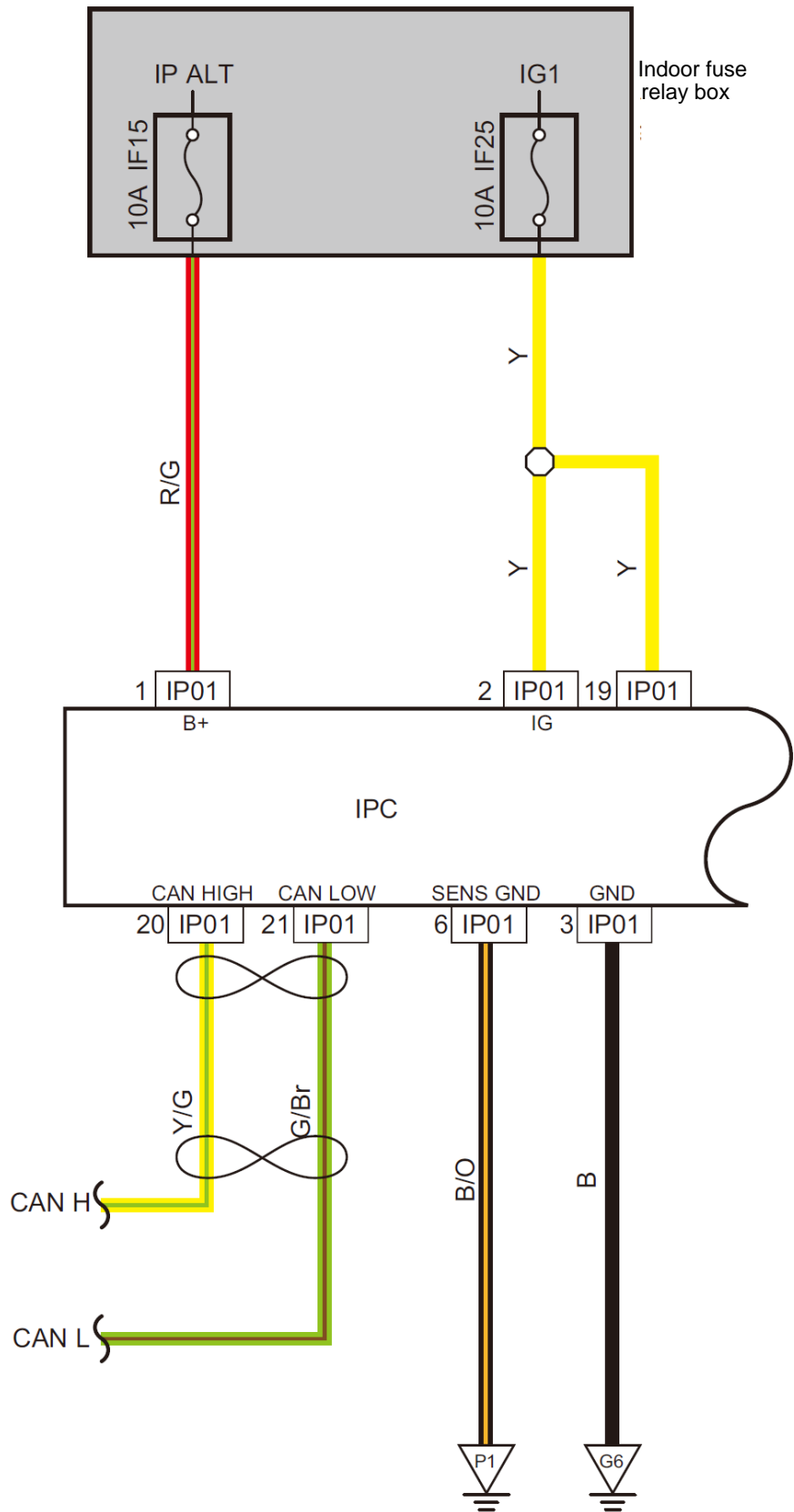


NL13-08112



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM01	To harness connector of engine control module	35
EM02	To instrument harness connector	35
IP01	Harness connector of combination instrument	41
IP12	Harness connector of diagnosis connector	40
IP17	To engine harness connector	40
IP24	Immobilizer connector 1	40
IP25	Immobilizer module connector 2	40
IP43	Harness connector of electronic anti-theft coil	41
G8	Instrument panel grounding	70

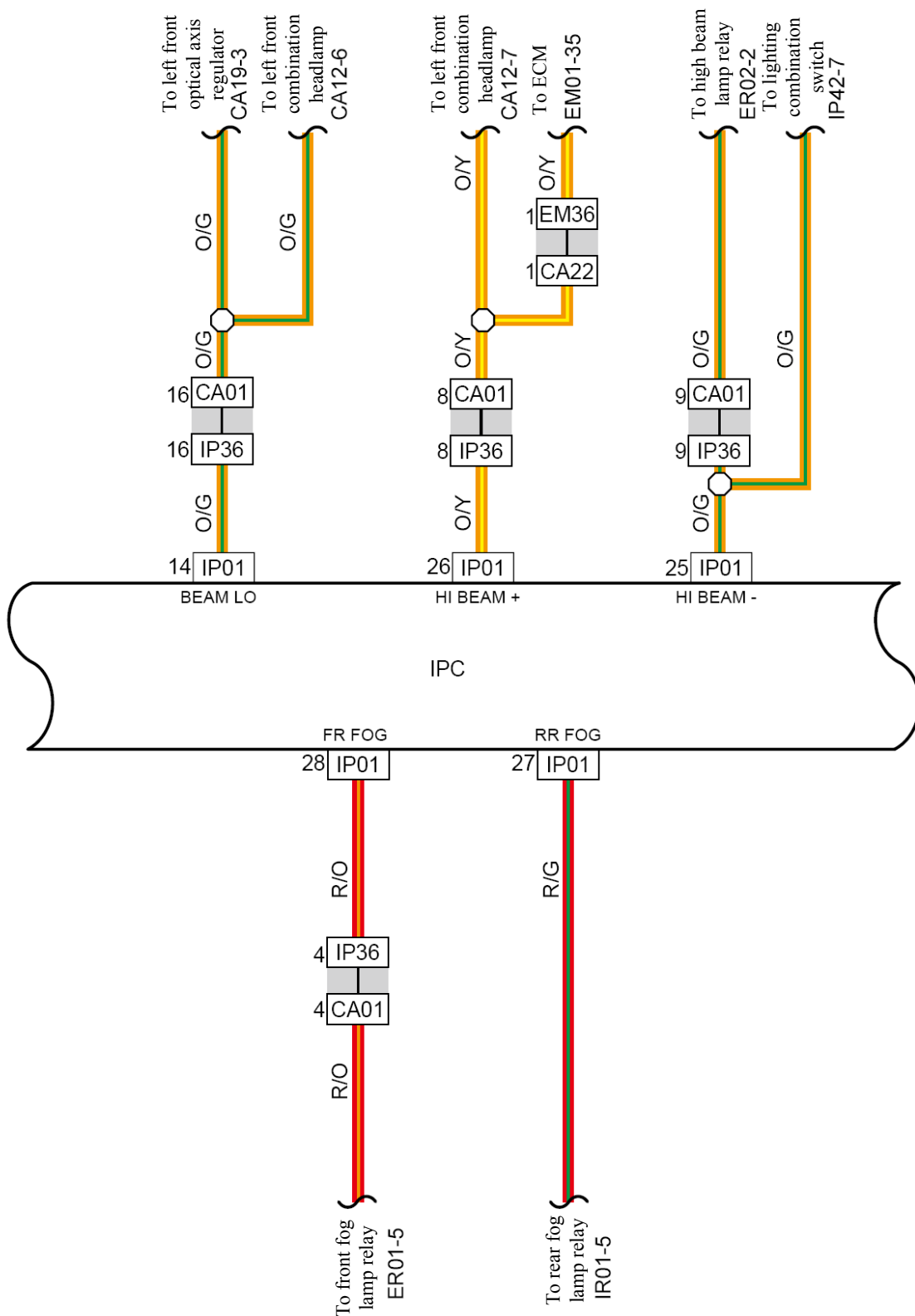
# Instrument panel power source & ground



NL13-08113

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA03	To instrument harness connector 1	29
IP57	To engine compartment harness connector 1	41
IP01	Harness connector of combination instrument	41
G6	Instrument panel grounding	70
P	Engine grounding	68

## Combination Instrument Lighting, Indicator

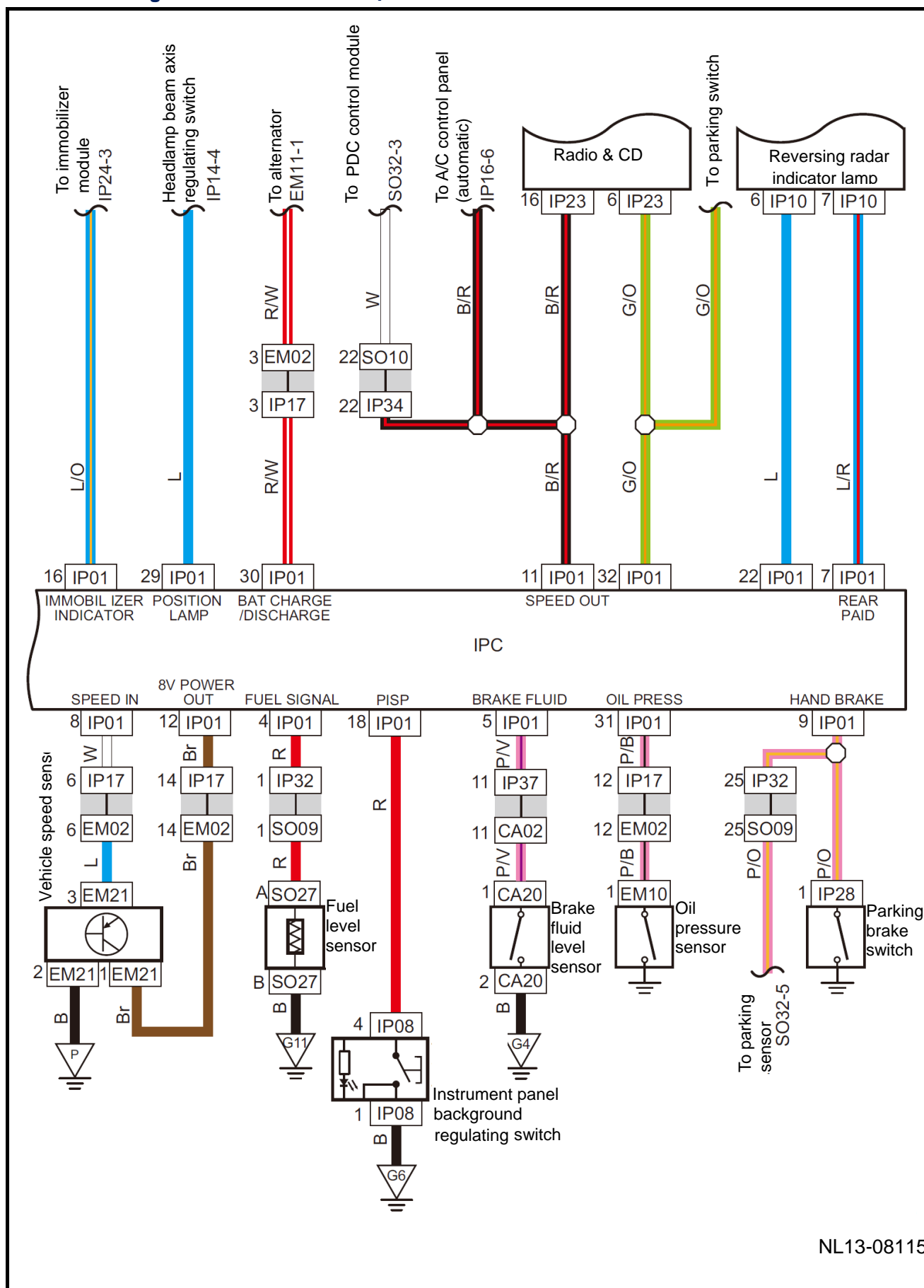


NL13-08114

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP01	Harness connector of combination instrument	41
IP36	To engine compartment harness connector 2	40
CA01	To instrument harness connector 1	29
EM36	To engine compartment harness connector 2	35
CA22	To engine harness connector 2	28

<b>Connection point</b>		<b>Pages</b>
IP01 -14	To left front optical axis regulator motor CA19-3	131
	To FL combination headlamp CA16-6	131
IP01-26	To FL combination headlamp CA12-7	131
	To engine control module EM01-35	100
IP01-25	To high beam lamp relay ER02-2	131
	To lighting combination switch IP42-7	132
IP01-27	To rear fog lamp relay IR01-5	136
IP01-28	To front fog lamp relay ER01-5	136

# Sound warning & alarm of instrument panel

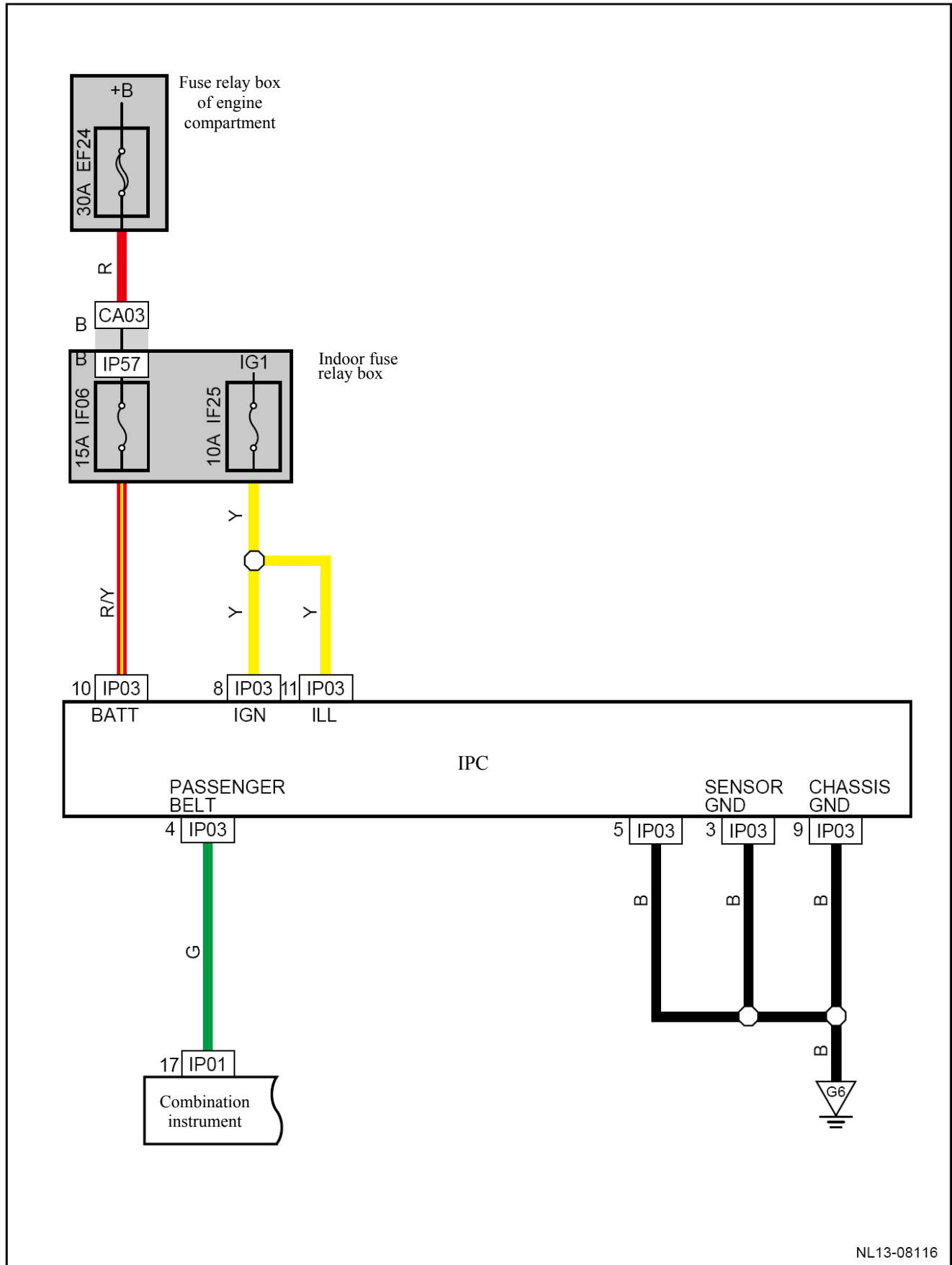


NL13-08115

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP01	Harness connector of combination instrument	41
EM02	To harness connector of engine compartment fuse box (2)	35
IP17	To engine harness connector	40
IP23	Radio / CD player harness connector 3	41
SO10	To instrument panel harness connector 3	50
IP33	To body harness connector 2	40
EM10	Oil pressure switch	34
IP28	Harness connector of parking brake switch	40
IP37	To engine compartment harness connector 3	40
CA02	To instrument harness connector 2	29
CA20	Harness connector of brake fluid level sensor	28
IP08	Harness connector of combination adjusting switch	41
IP32	To body harness connector 1	40
SO09	To instrument panel harness connector 2	50
SO27	Harness connector of fuel fluid sensor	50
EM21	Harness connector of speed sensor	34
P	Engine grounding	68
G6	Instrument grounding	70
G4	Engine compartment grounding	67

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP01-16	To immobilizer module IP24-3	117
IP01-30	To alternator EM11-1	94
IP01-7	To parking radar indication lamp IP10-2	194
IP01-29	To headlamp lighting shaft adjusting switch IP14-4	132

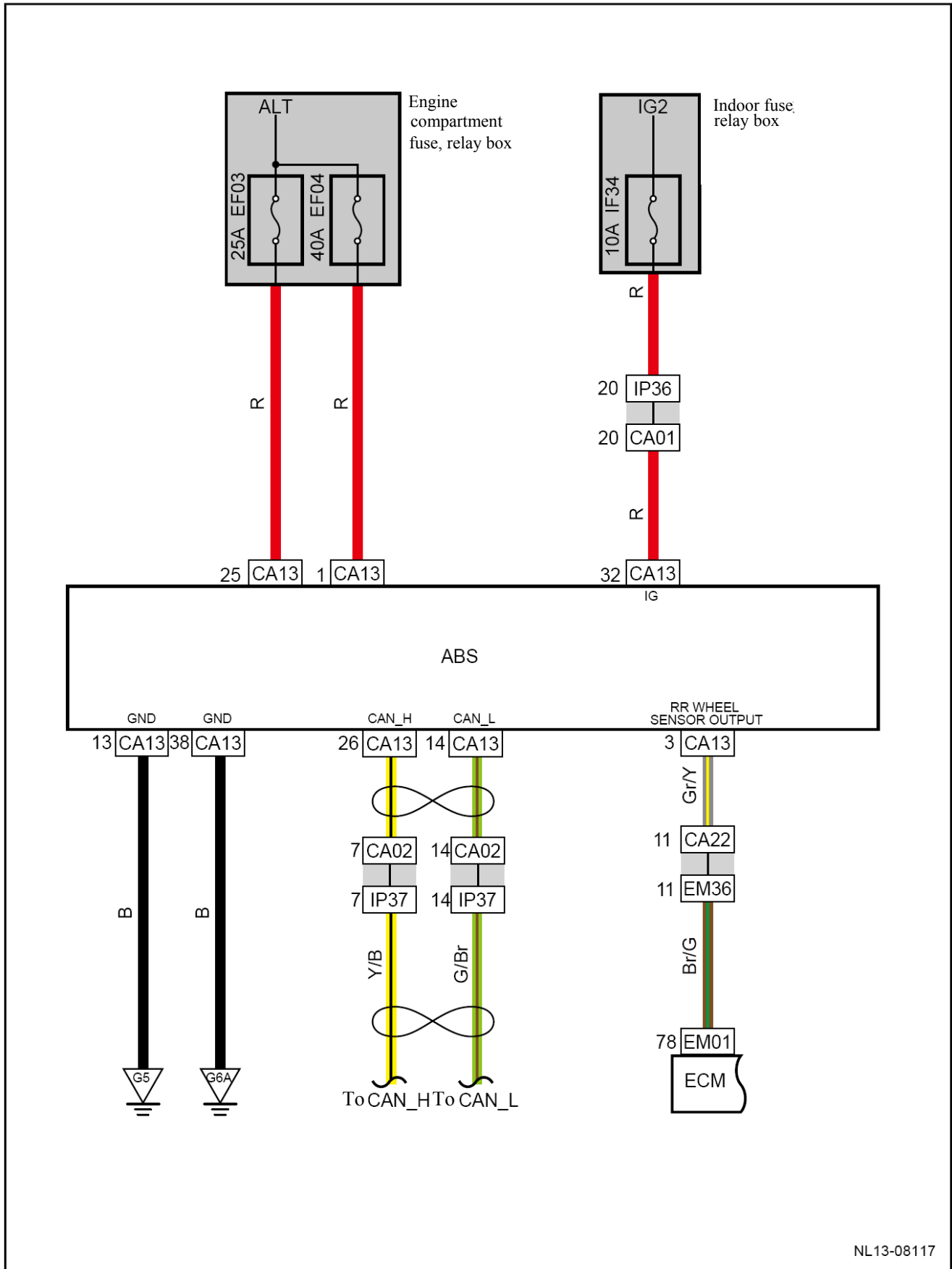
## Multi-function Instrument





<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA03	To instrument harness connector 3	29
IP01	Harness connector of combination instrument	41
IP03	Harness connector of multi-function instrument	40
IP57	To engine compartment harness connector 3	40
G6	Instrument panel grounding	70

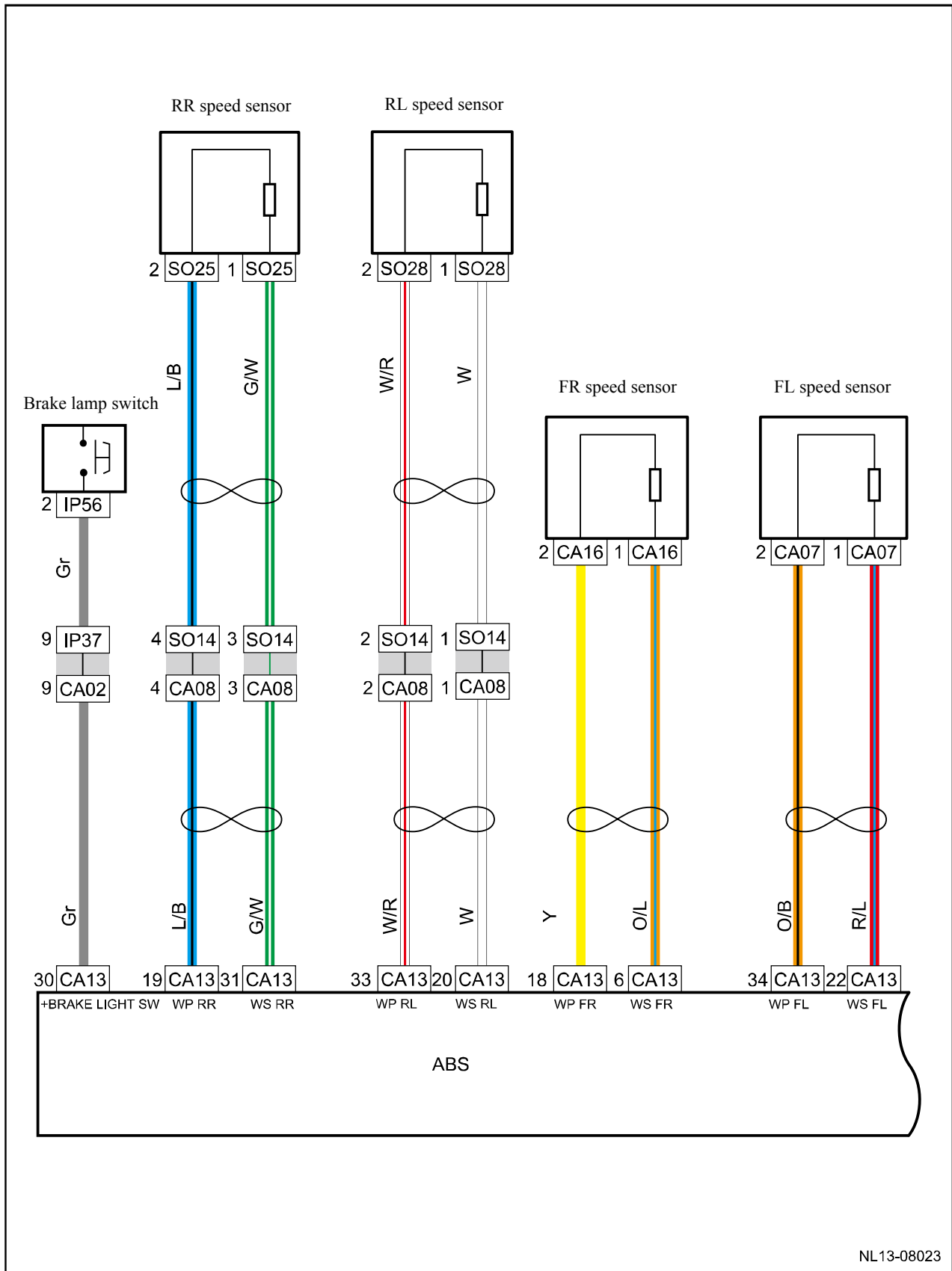
# ABS Power Supply, Grounding, Data Line



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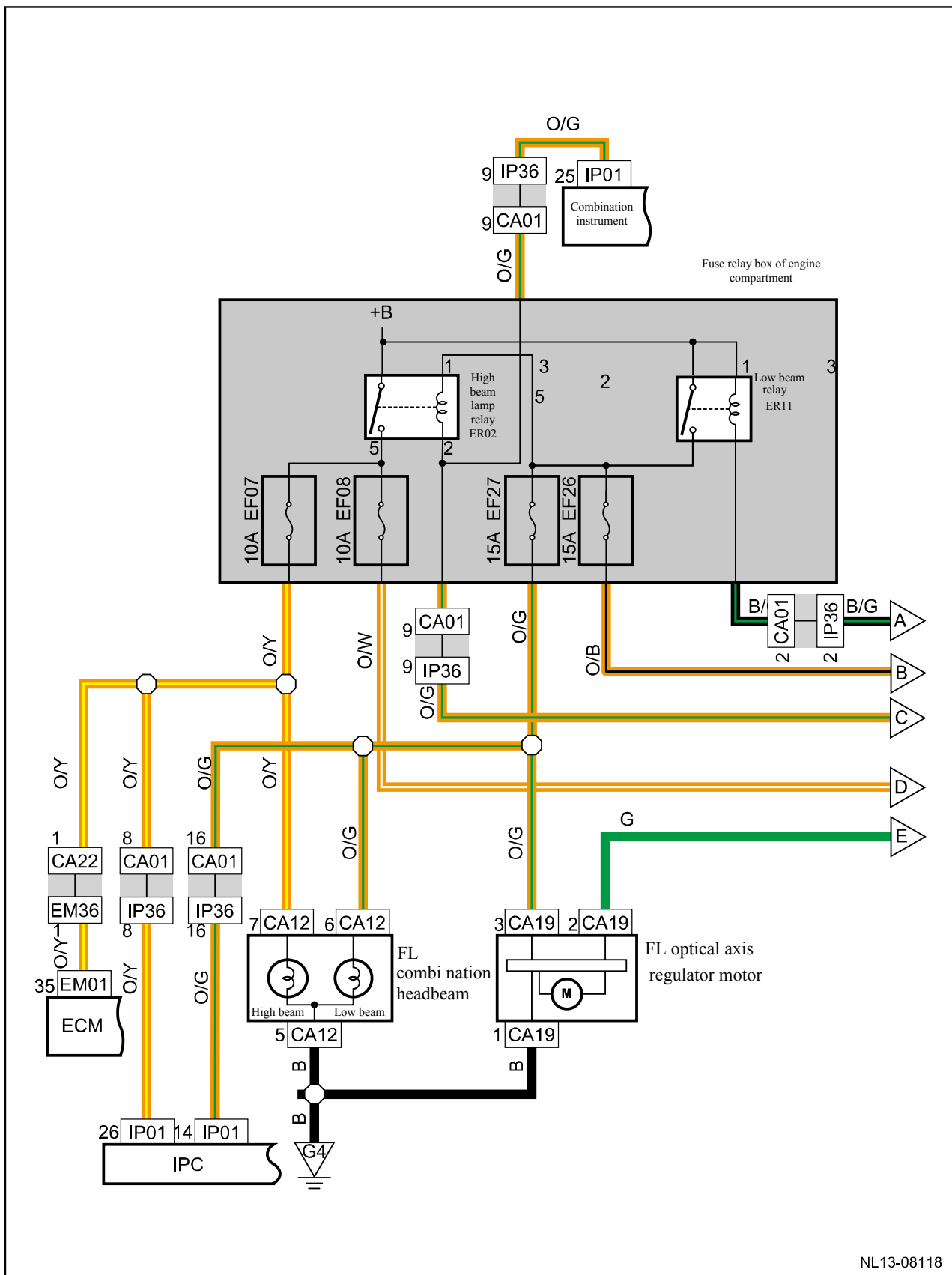
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA02	To instrument harness connector 2	29
CA13	Harness connector of ABS control module	28
IP36	To engine compartment harness connector 2	40
IP37	To engine compartment harness connector 3	40
CA22	To engine harness connector	28
EM36	To harness connector of engine compartment fuse box (2)	34
EM01	Engine control module	35
G5	Engine compartment grounding	67
G6A	Engine compartment grounding	67

## ABS Sensor

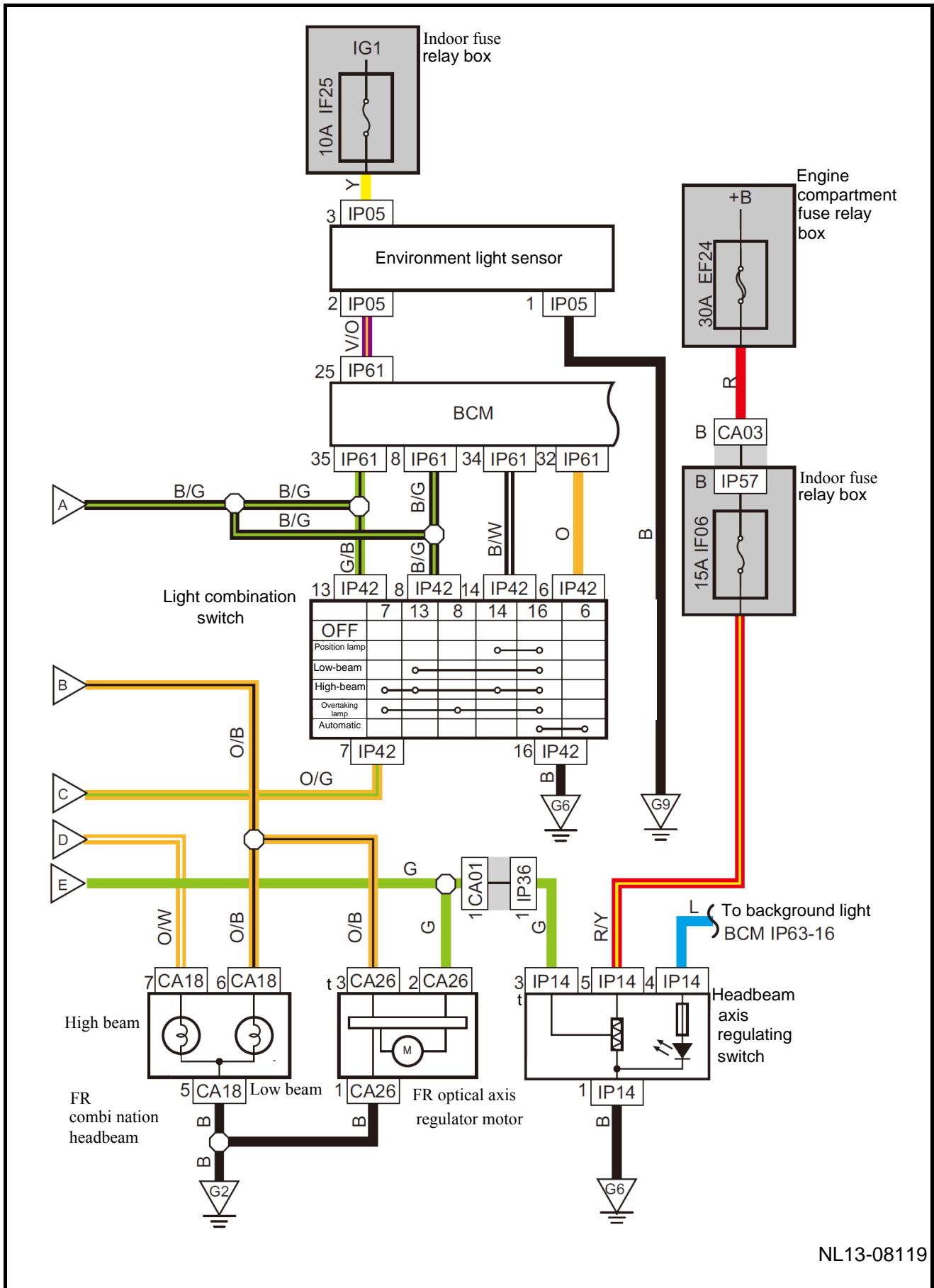


<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA02	To instrument harness connector 2	29
IP37	To engine compartment harness connector 3	40
CA07	Harness connector of FL wheel speed sensor	28
CA08	To body harness connector	29
CA13	Harness connector of ABS control module	28
CA16	Harness connector of FR wheel speed sensor	28
SO14	To engine compartment harness connector	50
SO25	Harness connector of RRwheel speed	50
SO28	Harness sensor of RL wheel speed sensor	50

## Headbeam System 1



## Headbeam system 2

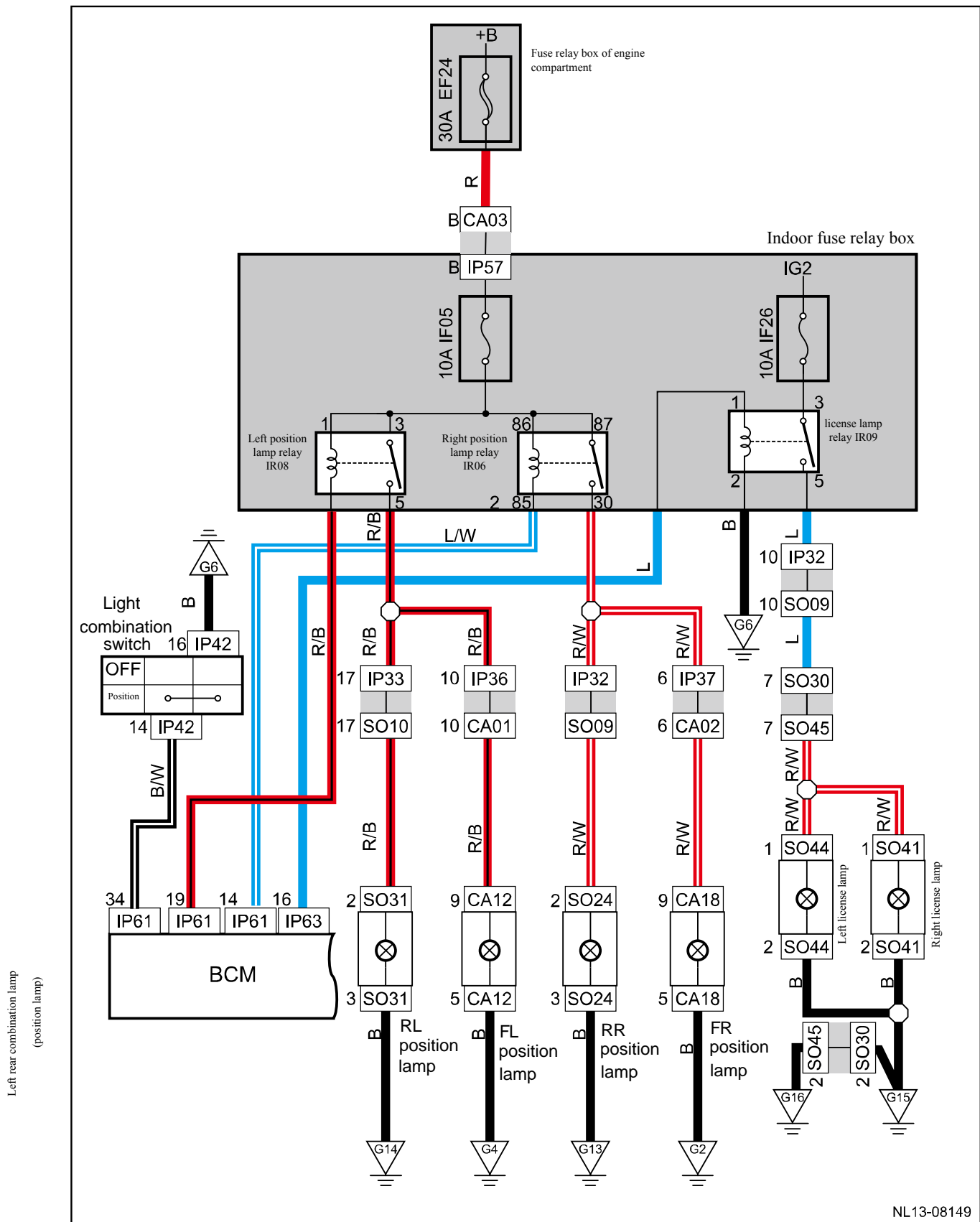


<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA03	To instrument harness connector 3	29
CA12	Harness connector of FLcombination headlamp	28
CA18	Harness connector of FR combination headlamp	28
CA19	Harness connector of FL optical axis regulating motor	28
CA22	To engine harness connector	28
CA26	Harness connector of FR optical axis regulating motor	28
EM01	Harness connector of engine control module	35
IP01	Harness connector of combination instrument	41
IP05	Harness connector of ambient light sensor	40
IP14	Harness connector of headlamp lighting shaft adjusting switch	41
IP36	To engine compartment harness connector 2	41
IP42	Harness connector of lighting combination switch	41
IP61	Body control module harness connector 1	41
IP57	To engine compartment harness connector	40
G2	Engine compartment grounding	67
G4	Engine compartment grounding	67
G6	Instrument panel grounding	70

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP14-4	To background light IP63-16	150

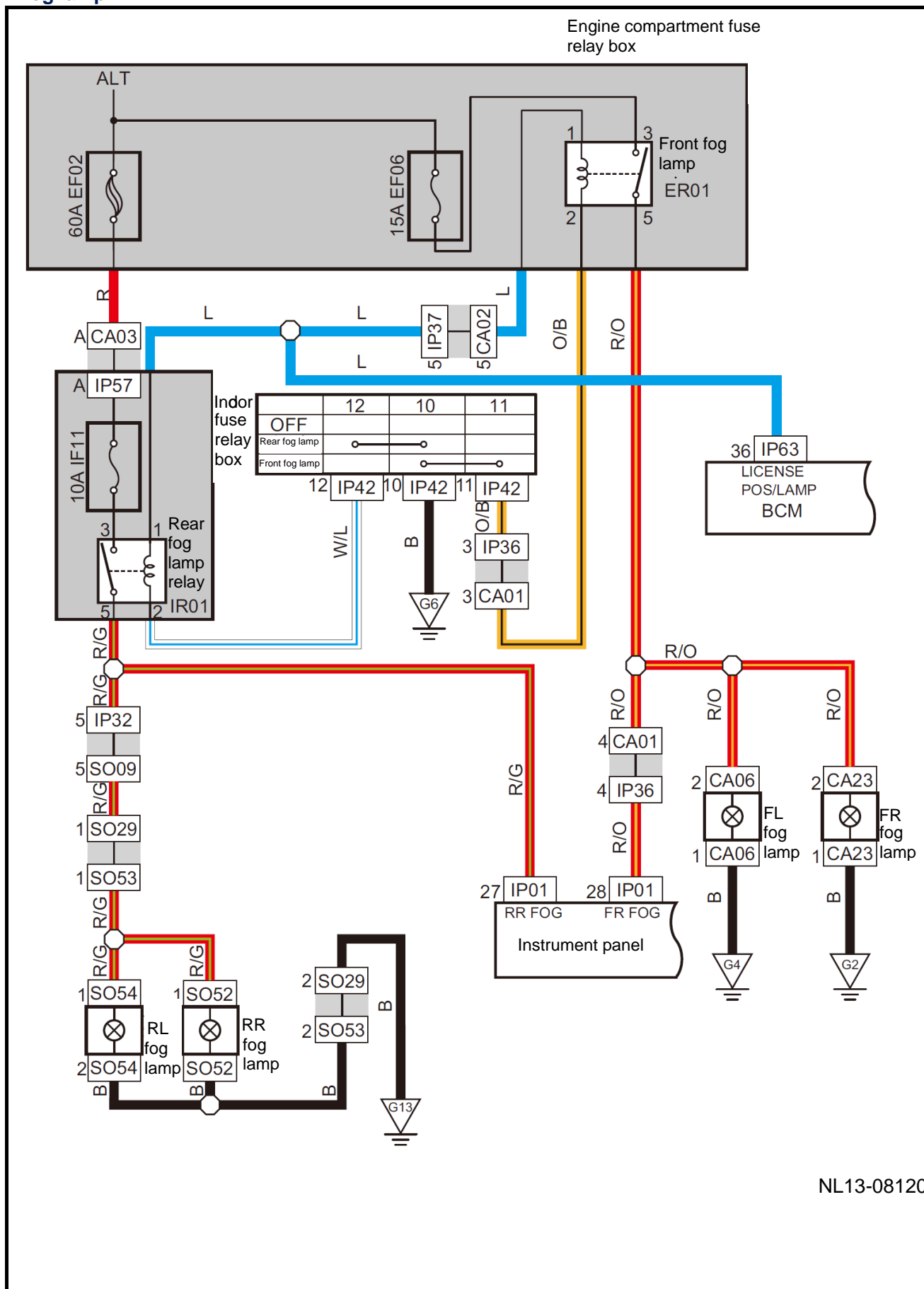


## Position Lamp



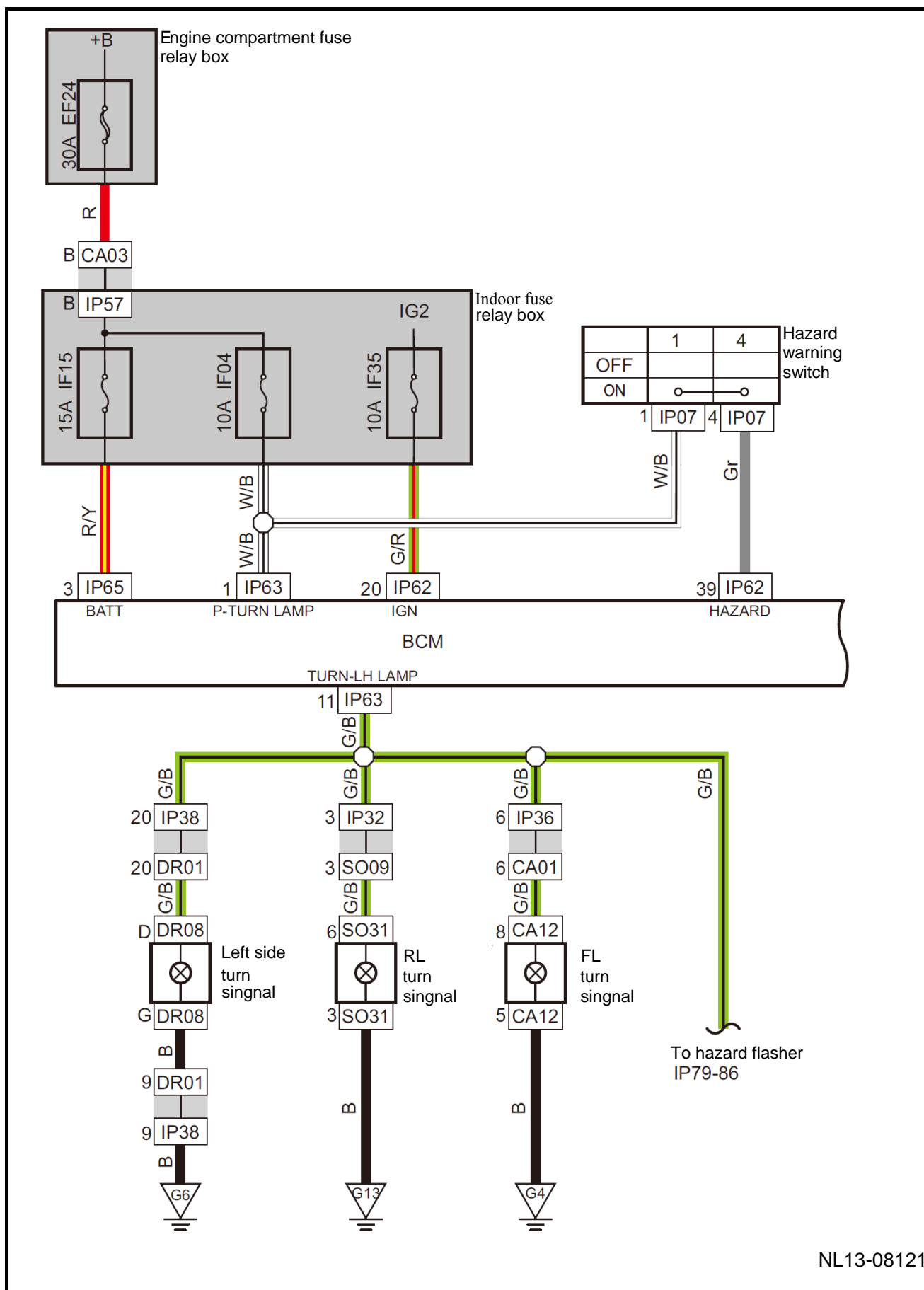
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA02	To instrument harness connector 2	29
CA03	To instrument harness connector 3	29
CA12	Harness connector of FL combination headlamp	28
CA18	Harness connector of FR combination headlamp	28
IP32	To body harness connector 1	40
IP33	To body harness connector 2	40
IP36	To engine compartment harness connector 2	40
IP37	To engine compartment harness connector 3	40
IP42	Harness connector of lighting combination switch	41
IP45	Harness connector of ignition switch	40
IP61	Body control module harness connector 1	41
IP63	Body control module harness connector 3	40
IP57	To engine compartment harness connector	40
SO09	To instrument panel harness connector 2	50
SO10	To instrument panel harness connector 3	50
SO24	Harness connector of RR combination lamp	50
SO31	Harness connector of RL combination lamp	50
SO41	Harness connector of right license lamp	51
SO44	Harness connector of left license lamp	51
G2	Engine compartment grounding	67
G4	Engine compartment grounding	67
G6	Instrument panel grounding	70
G13	Body harness grounding	71
G14	Body harness grounding	71
G15	Back door grounding	72
G16	Body harness grounding	71

## Fog lamp

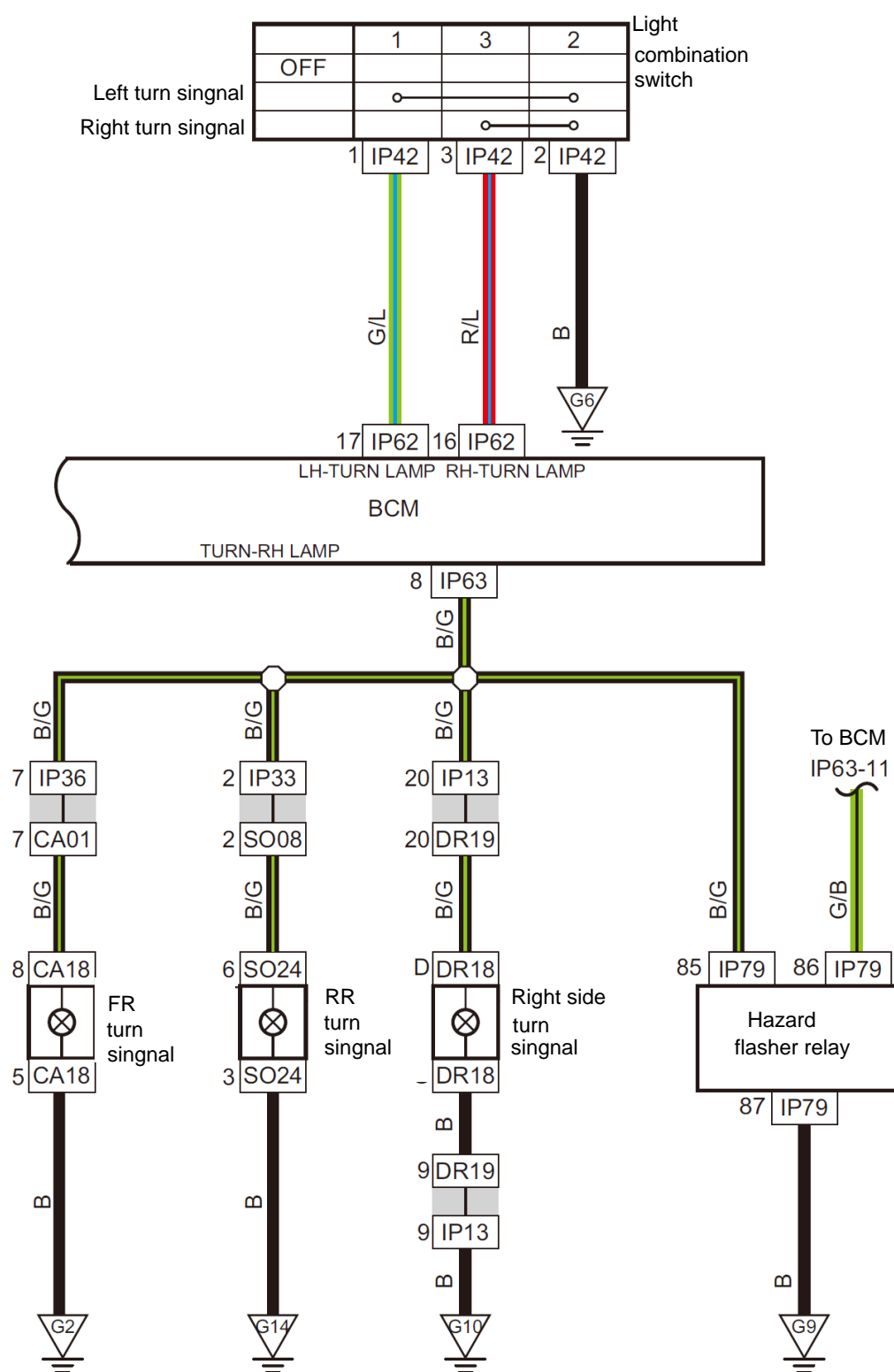


<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA03	To instrument harness connector 3	29
CA06	Harness connector of FL fog lamp	28
CA23	Harness connector of FR fog lamp	28
IP01	Harness connector of combination instrument	41
IP32	To base plate harness connector 1	40
IP36	To engine compartment harness connector 2	40
IP42	Harness connector of lighting combination switch	41
IP63	Harness connector of body control module3	41
IP57	To engine compartment harness connector	40
SO09	To instrument panel harness connector 2	50
SO29	To rear bumper harness connector	50
SO52	Harness connector of RR fog lamp	52
SO53	To body harness connector	52
SO54	Harness connector of RL fog lamp	52
G2	Engine compartment grounding	67
G4	Engine compartment grounding	67
G6	Instrument panel grounding	70
G13	Body grounding	71

## Turn signals & hazard warning lamp 1



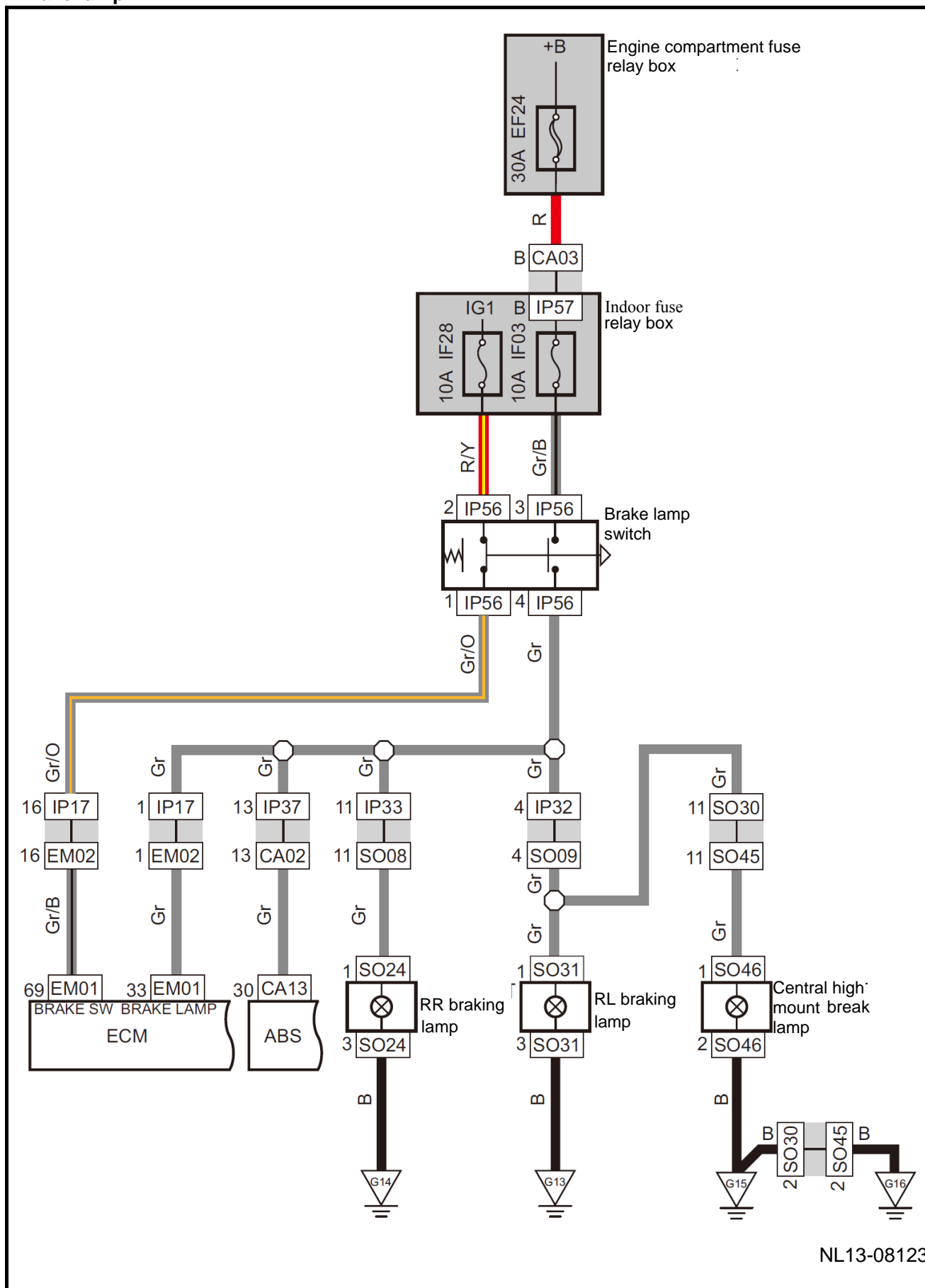
## Turn signals &amp; hazard warning lamp 2



NL13-08122

Harness connector	Name	Page
CA01	To instrument harness connector 1	29
CA03	To instrument harness connector 3	29
CA12	FL combination headlamp harness connector	28
CA18	FR combination headlamp harness connector	28
DR01	To instrument panel harness connector 1	60
DR08	Left exterior rearview mirror connector	60
DR18	Right exterior rearview mirror connector	62
DR19	FR door to Instrument panel harness connector1	62
IP07	Hazard warning switch connector	42
IP13	To FR door harness connector	41
IP32	Body harness connector 1	41
IP36	To engine compartment harness connector 2	41
IP38	To FL door harness connector	41
IP42	Light combination switch harness connector	42
IP62	BCM harness connector 2	42
IP63	BCM harness connector 3	41
IP65	BCM harness connector 5	42
IP79	Hazard flasher relay harness connector	
SO09	To instrument panel harness connector 2	52
SO24	RR combination lamp harness connector	52
SO31	RL combination lamp harness connector	52
G2	Engine compartment grounding	69
G4	Engine compartment grounding	69
G6	Instrument panel grounding	72
G10	Instrument panel grounding	72
G13	Body harness grounding	73
G14	Body harness grounding	73

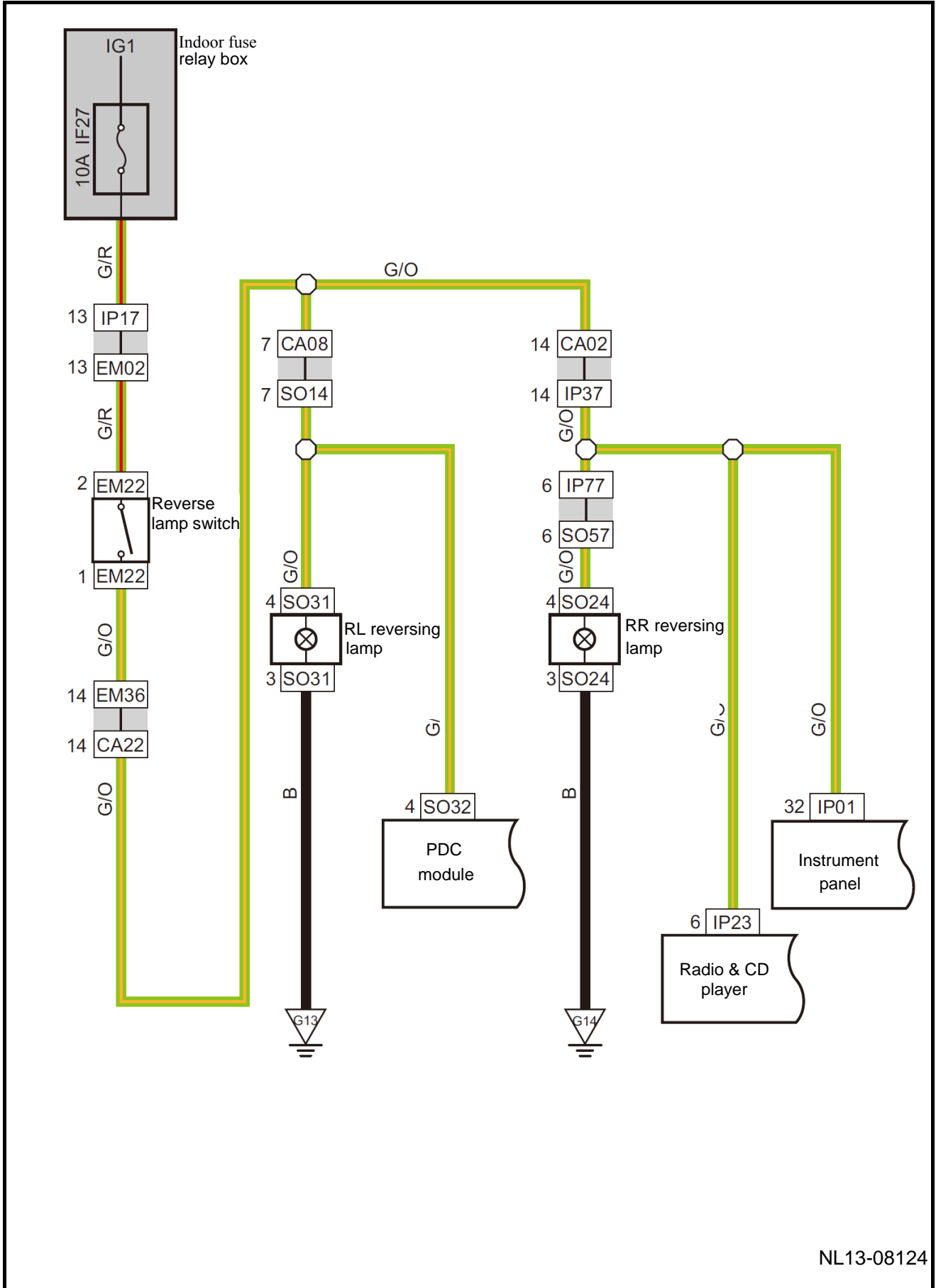
# Brake lamp





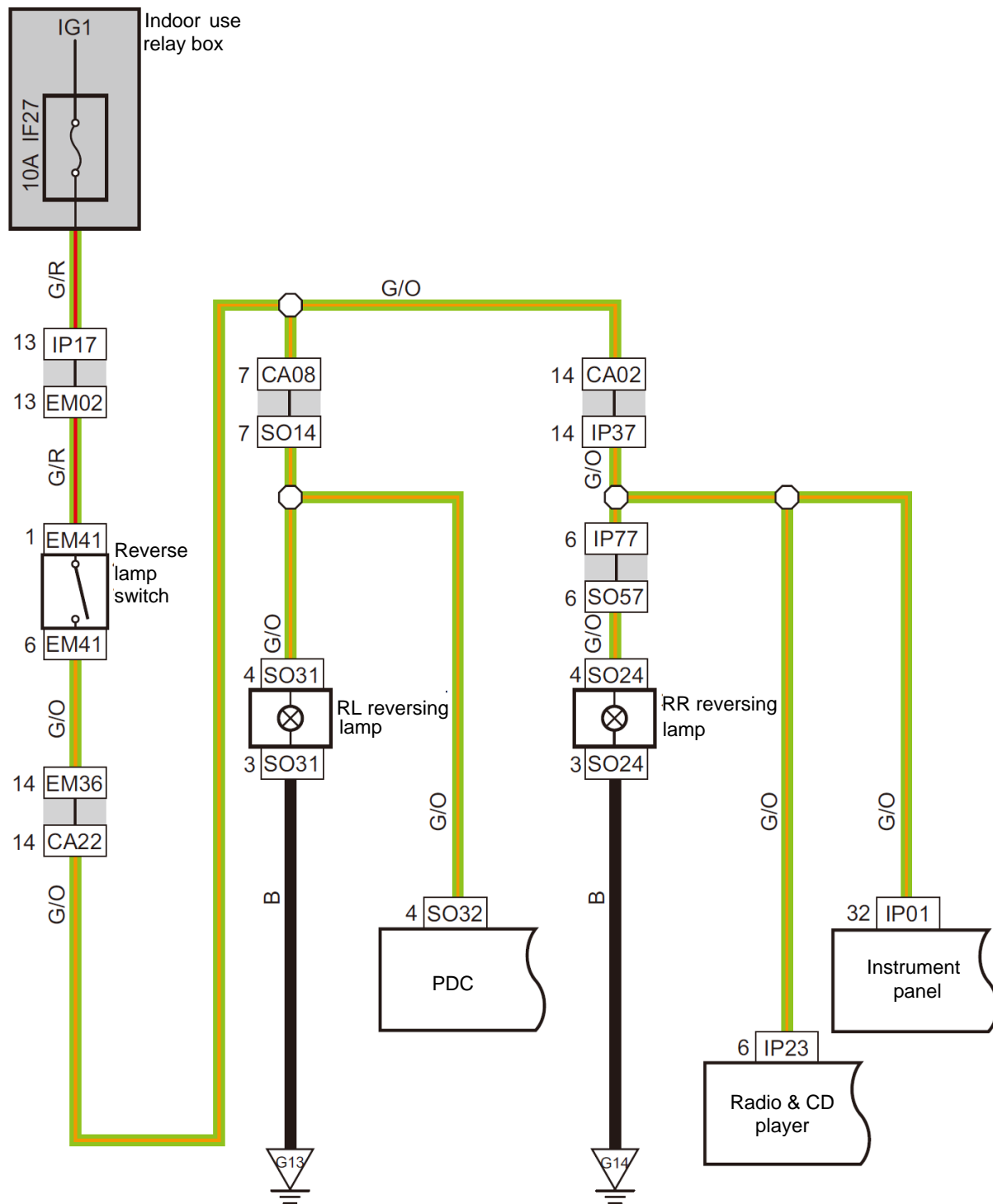
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA02	To instrument harness connector 2	29
CA03	To instrument harness connector 3	28
CA13	Harness connector of ABS control module	28
IP32	To body harness connector 1	40
IP37	To engine compartment harness connector 3	40
IP56	Harness connector of brake lamp switch	40
IP57	To engine compartment harness connector	40
SO09	To instrument panel harness connector 2	50
SO24	Harness connector of RR combination lamp	50
SO45	To body harness connector	51
SO46	Harness connector of high mount brake lamp	51
G13	Body grounding	71
G14	Body harness grounding	71
G15	Back door grounding	72
G16	Body harness grounding	71

# Reversing lamp



NL13-08124

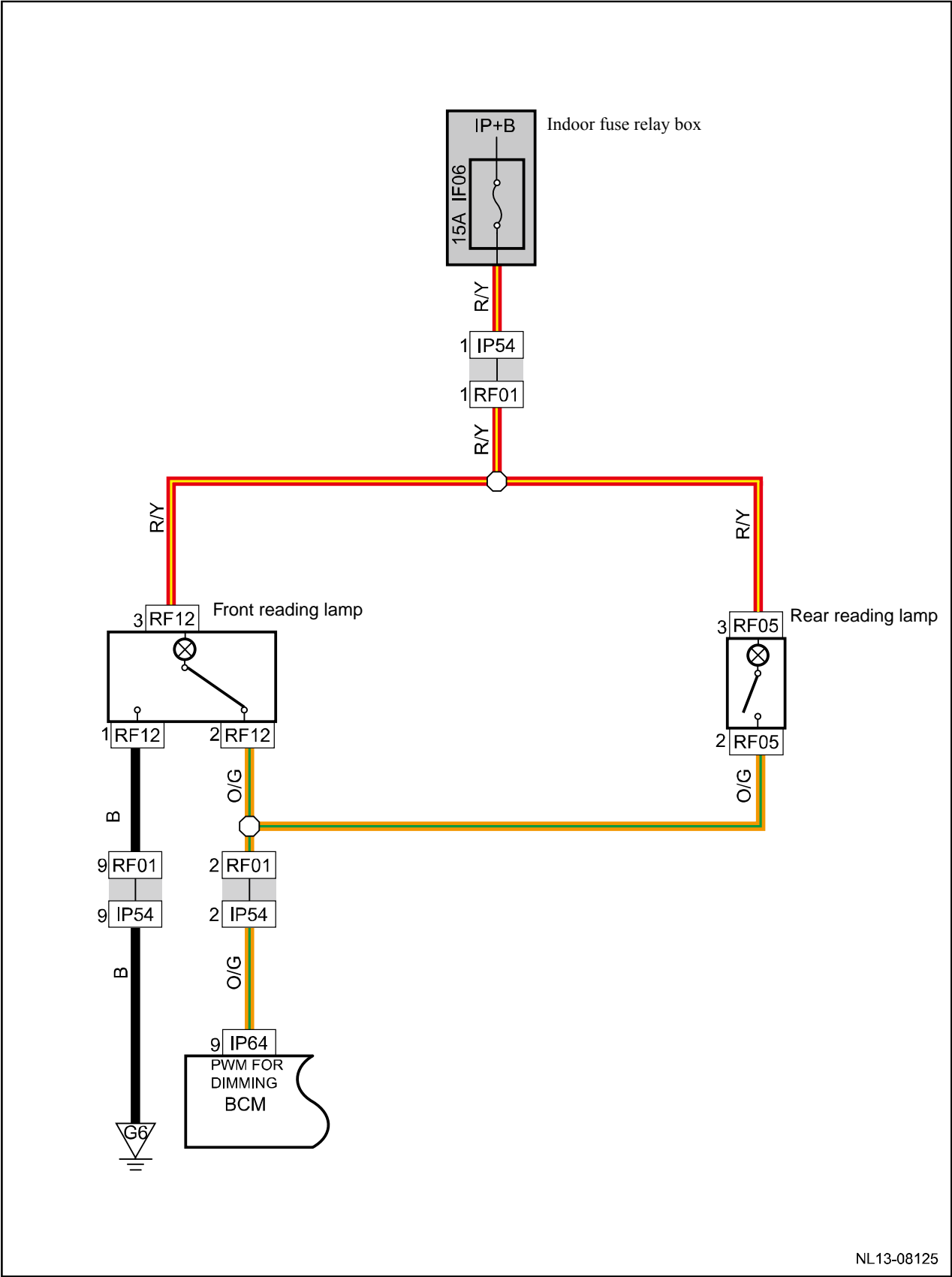
## Reverse lamp (DSI)



NL13-08154

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA08	To body harness connector	29
CA22	To engine harness connector	28
EM02	To instrument harness connector	35
EM22	Harness connector of reverse gear switch	34
EM36	To harness connector of engine compartment distribution box	34
EM41	Harness connector of transmission gear position	34
IP17	To engine harness connector	40
SO14	To engine compartment harness connector	50
SO24	Harness connector of RR combination lamp	50
SO30	To back door harness connector	50
SO31	Harness connector of RL combination lamp	50
SO32	Harness connector of PDC module	50
SO45	To body harness connector	51
G13	Body harness grounding	71
G14	Body harness grounding	71

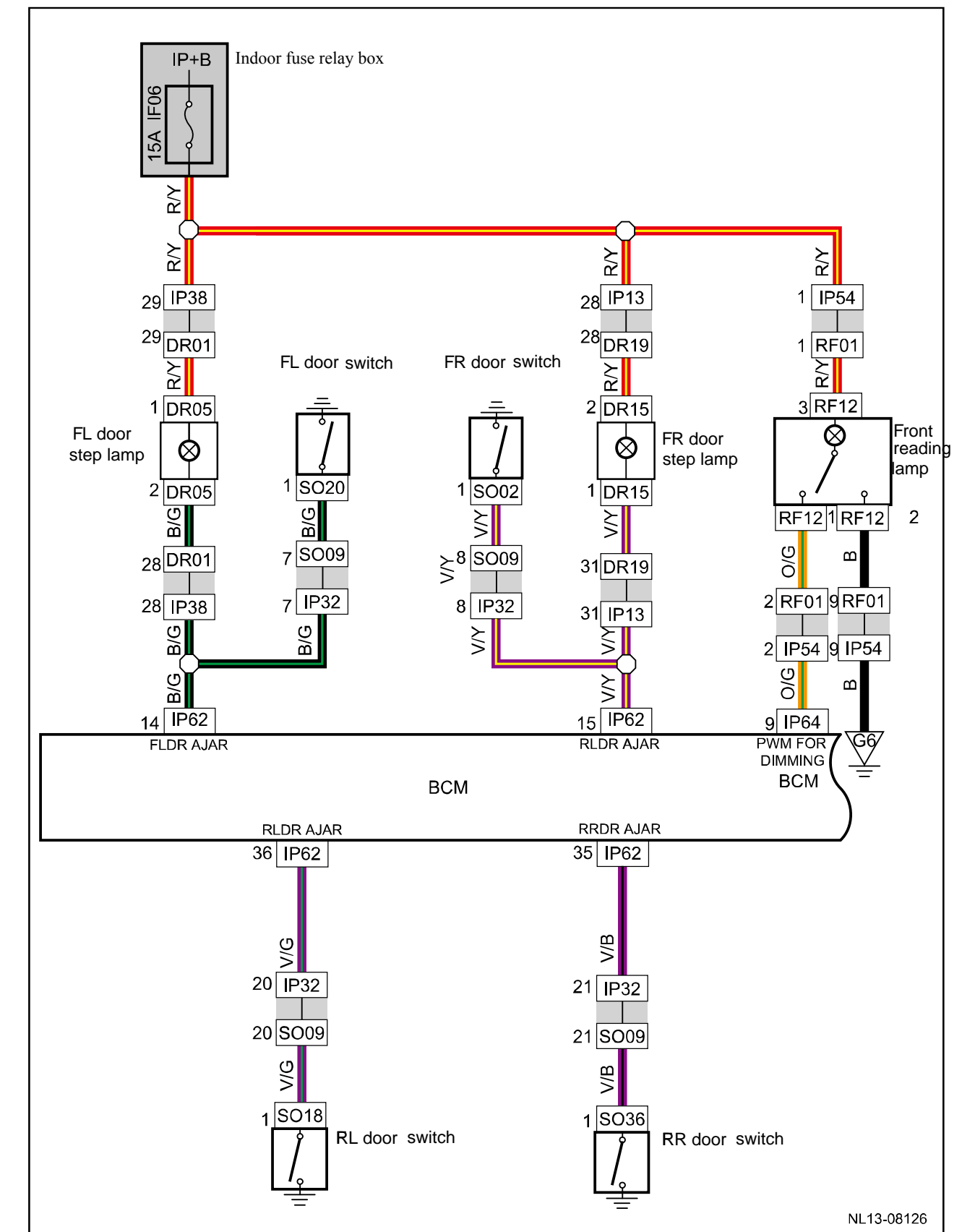
Reading Lamp



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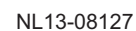
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP54	To roof harness connector 1	40
RF01	To instrument harness connector 1	47
RF05	Harness connector of rear reading lamp	47
RF12	Harness connector of front reading lamp	47
G6	Instrument harness grounding	70

## Door Step Lamp

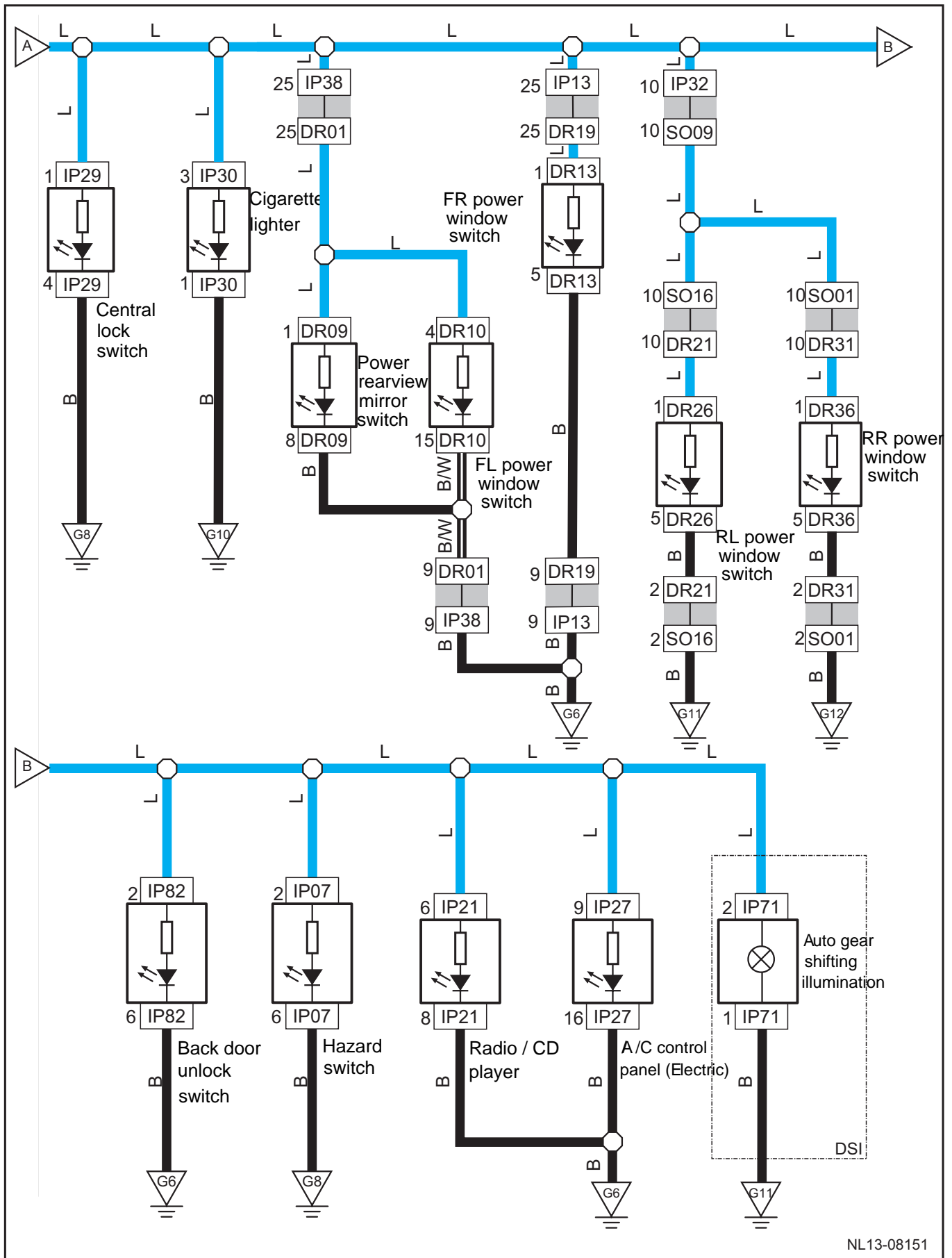


<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP13	To FR door harness connector	40
IP32	To body harness connector 1	40
IP38	To FL door harness connector	40
IP62	Body control module harness connector 2	41
IP64	Body control module harness connector 4	41
IP54	To roof harness connector 1	40
DR01	FL door connecting to instrument panel harness connector	58
DR05	FL door step lamp connector	58
DR15	FR door step lamp connector	60
DR19	FR door connecting to instrument panel harness connector	60
RF01	To instrument harness connector 1	47
RF12	Harness connector of front reading lamp	47
SO02	Harness connector of right front door control switch	50
SO09	To instrument panel harness connector 2	50
SO16	To RL door harness connector 1	50
SO18	Harness connector of RL door switch	50
SO20	Harness connector of FL door switch	50
SO36	RR door contact switch	50
G6	Instrument panel grounding	70





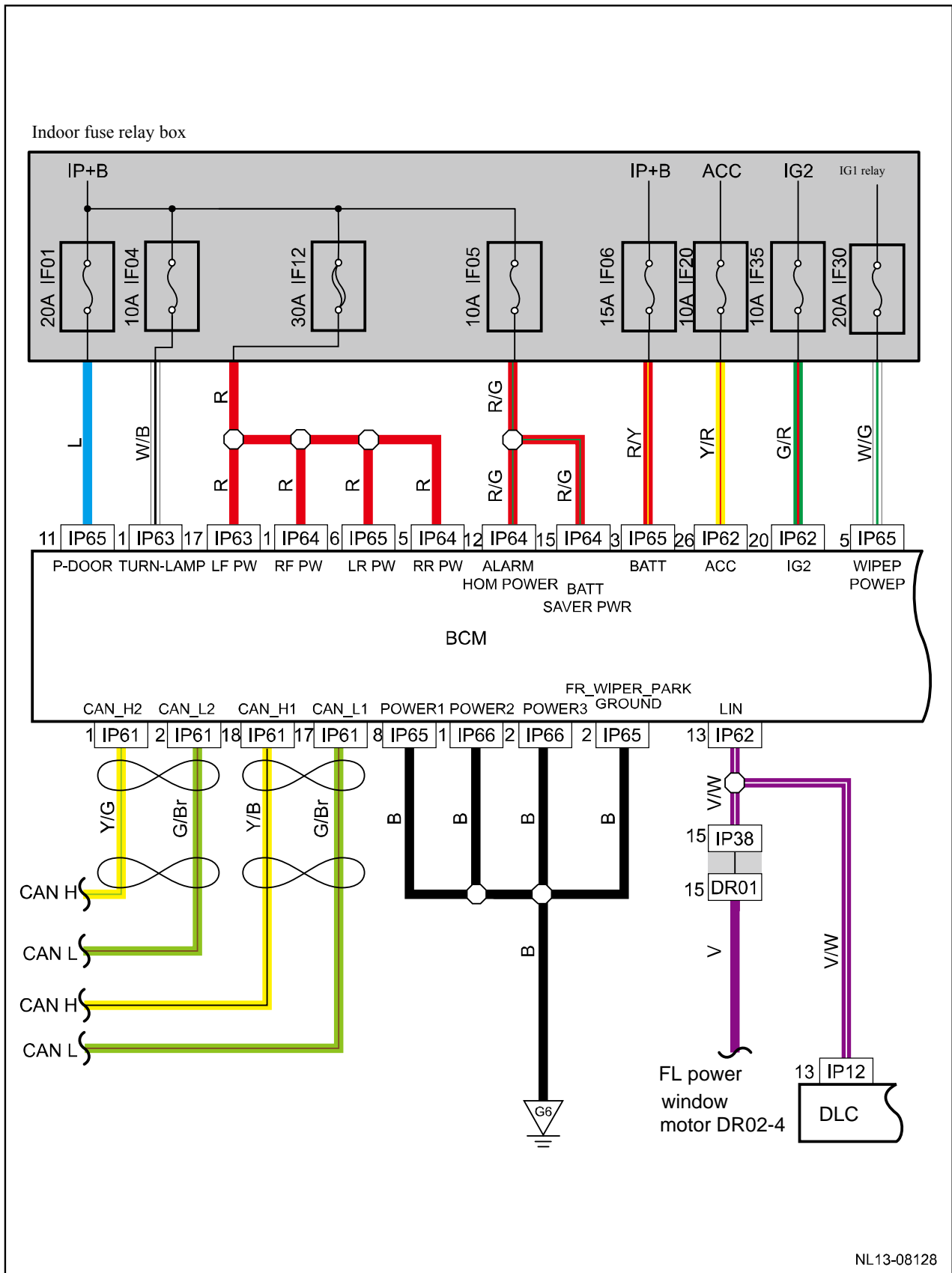
## Background lighting 2



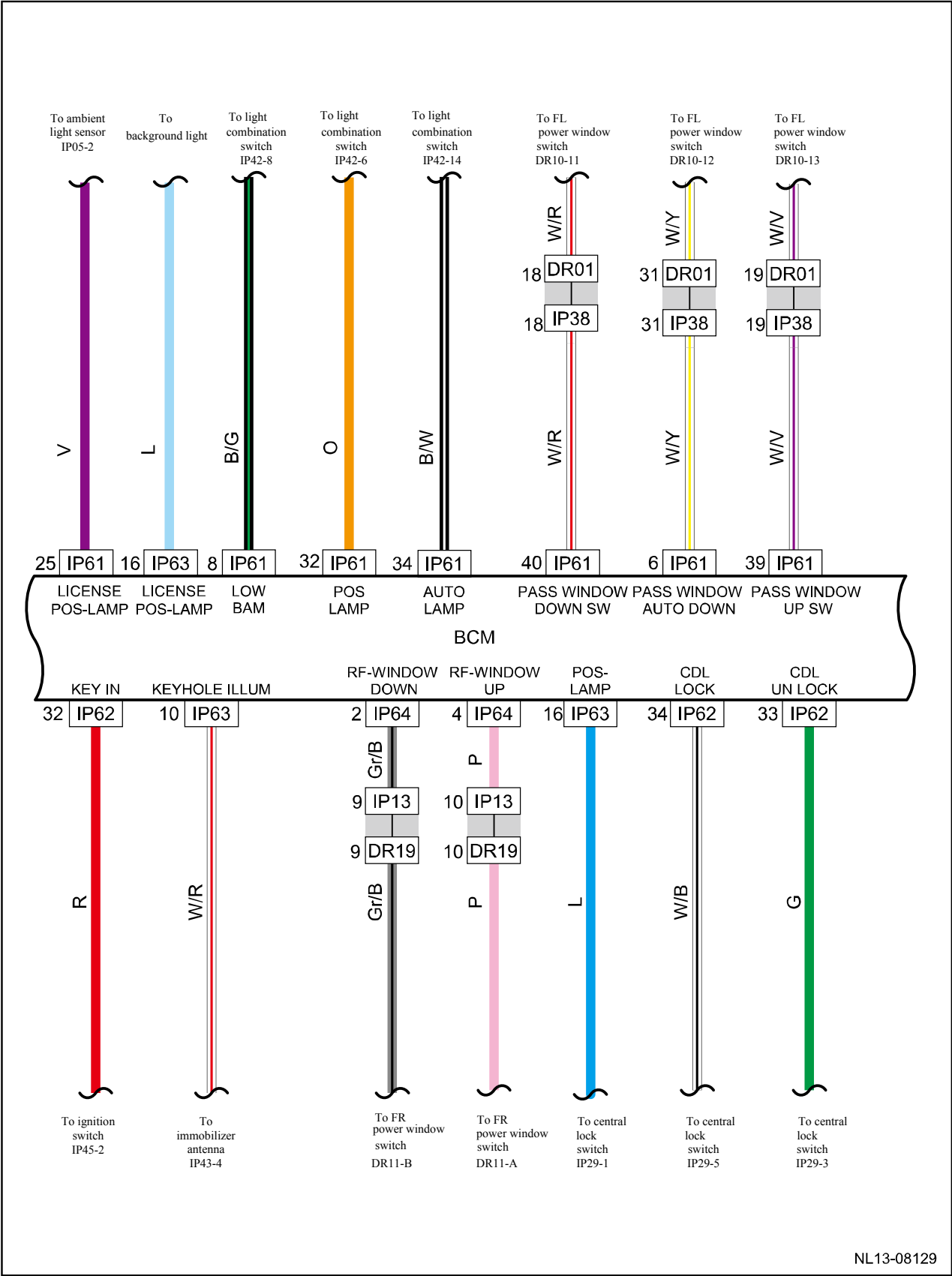
NL13-08151

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA03	To instrument harness connector 3	29
DR01	To instrument panel harness connector	58
DR09	Harness connector of power rear view mirror switch	58
DR10	Harness connector of FL power window switch	58
DR13	Harness connector of FR power window switch	60
DR19	Right front door connecting to instrument panel harness connector	60
DR21	Left rear door connecting to body harness connector	62
DR26	Harness connector of RL power window switch	62
DR31	Right rear door connecting to body harness connector	62
DR36	Harness connector of RR power window switch	62
IP06	Harness connector of rear defrost switch	41
IP07	Hazard warning lamp switch connector	41
IP08	Combination adjusting switch connector	41
IP10	To FR door harness connector	41
IP13	Harness connector of headlamp lighting shaft adjusting switch	40
IP14	Harness connector of headlamp lighting shaft adjusting switch	41
IP21	Radio / CD player harness connector 1	41
IP27	Manual A/C control panel connector A	41
IP29	Central lock switch connector	40
IP30	Harness connector of cigarette lighter	40
IP38	To FL door harness connector	40
IP42	Harness connector of light combination switch	41
IP61	Body control module harness connector 1	41
IP62	Body control module harness connector 2	41
IP63	Body control module harness connector 3	40
IP64	Body control module harness connector 4	41
IP65	Body control module harness connector 5	41
IP54	To roof harness connector 1	40
IP57	To engine compartment harness connector	40
IP71	Harness connector of auto-shifter	41
RF01	To instrument harness connector 1	47
RF13	Harness connector of sunroof switch	47
SO01	To RR door harness connector	50
SO16	To RL door harness connector	50
G6	Instrument panel grounding	70
G8	Instrument panel grounding	70
G10	Instrument panel grounding	70
G11	Body harness grounding	71
G12	Body harness grounding	71

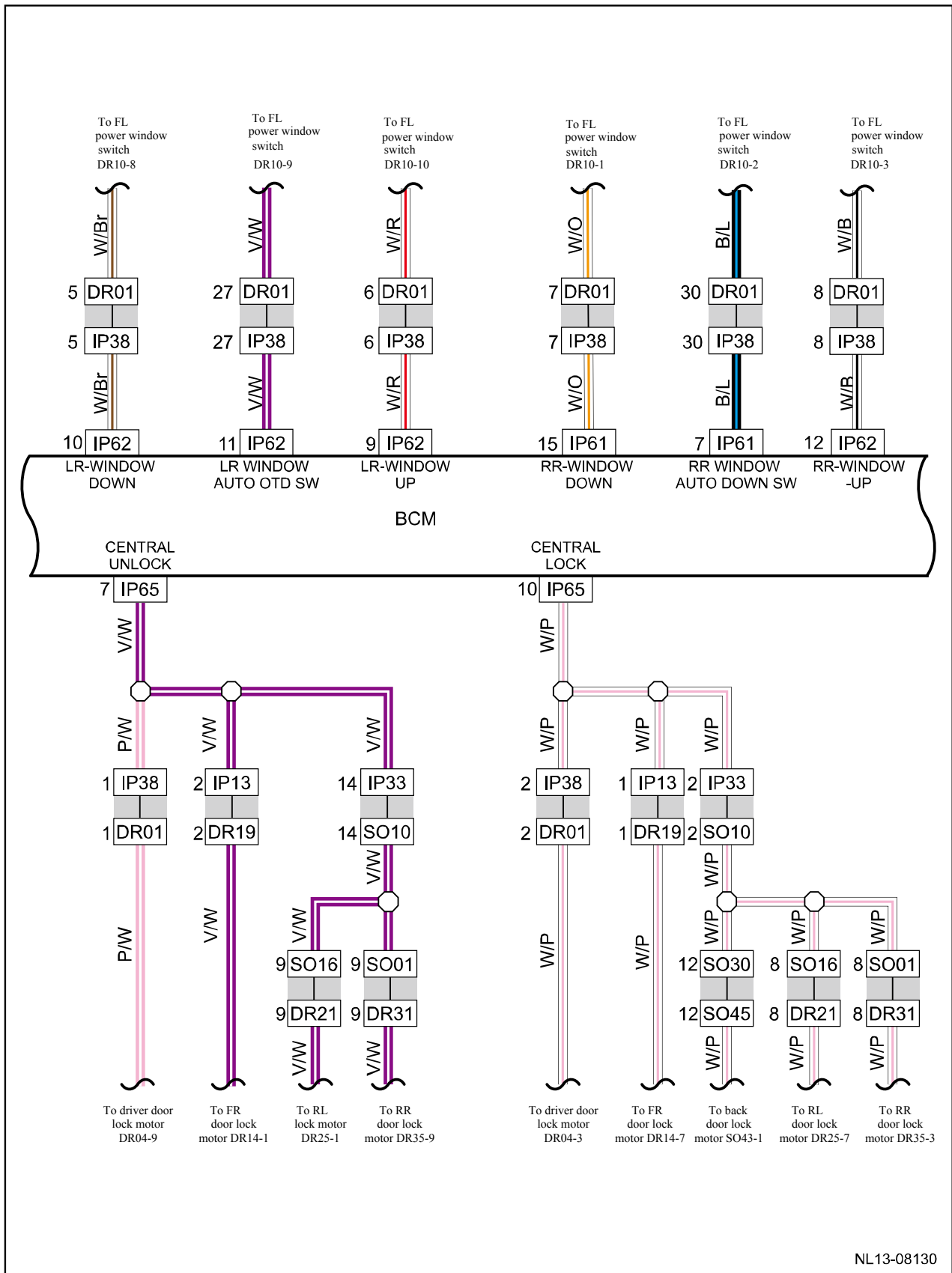
# Power Supply, Grounding And Data Line 1 of Body Control Module (BCM)



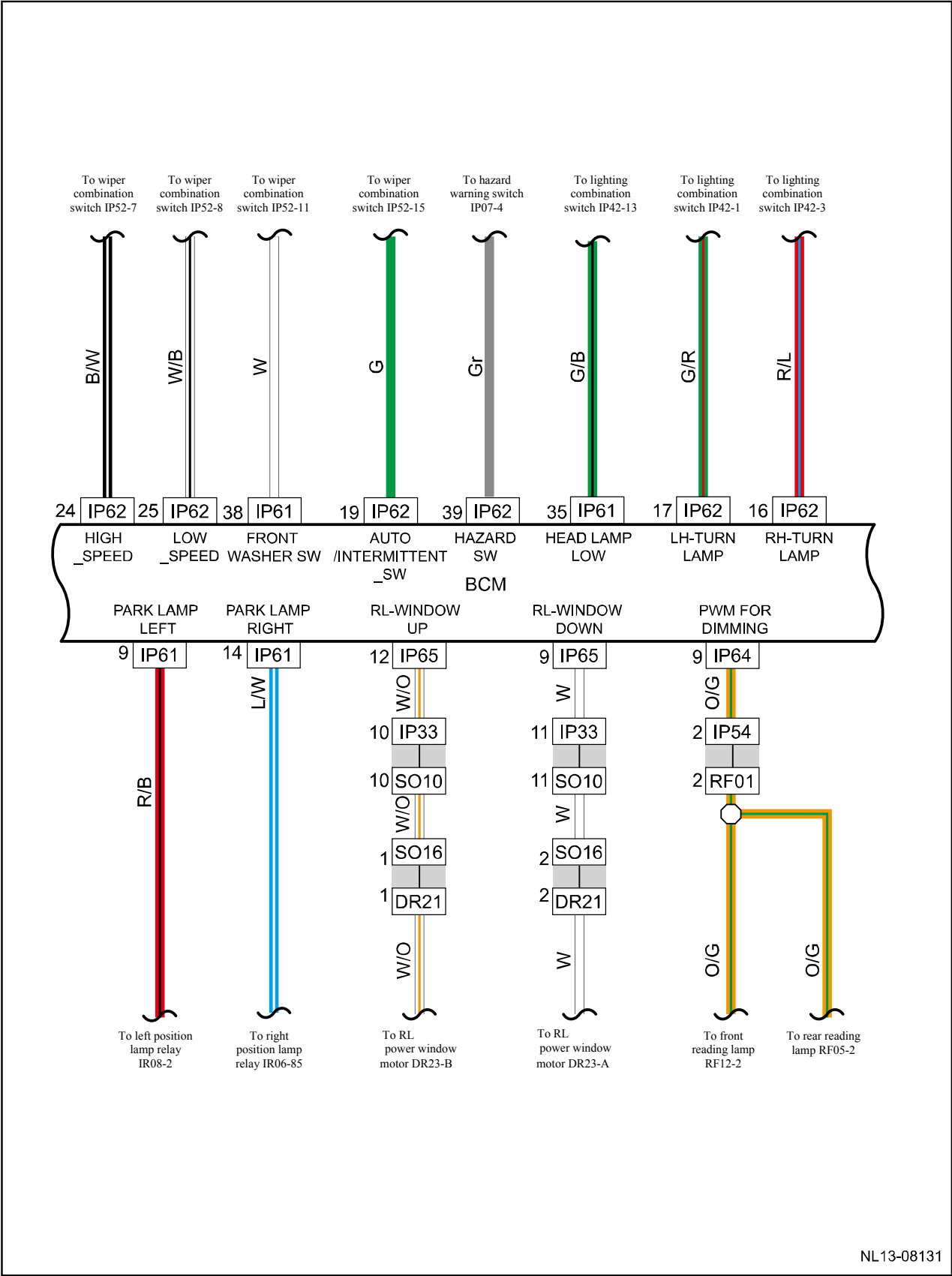
Power Supply, Grounding and Data Line 2 of Body Control Module (BCM)



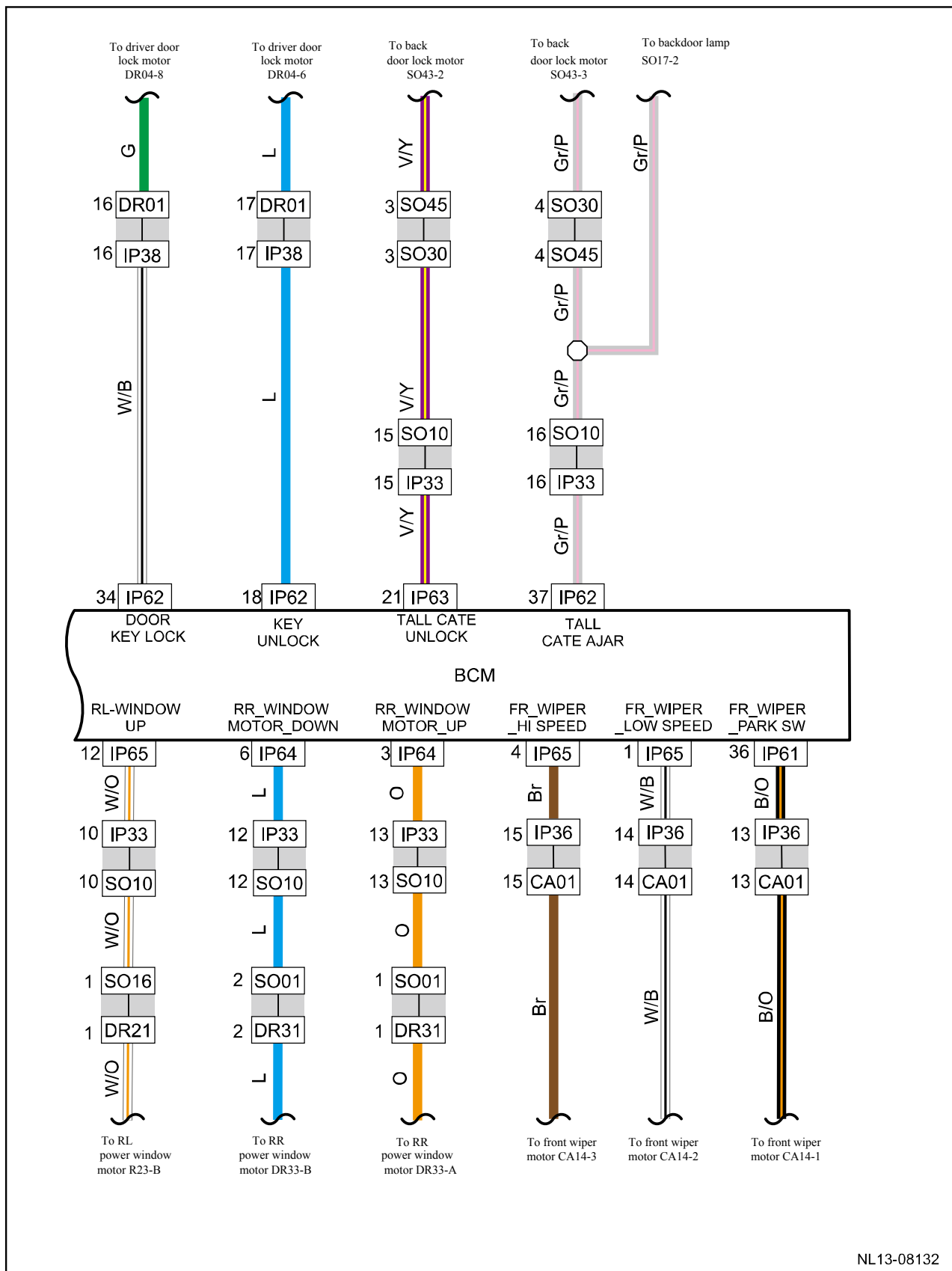
# Power Supply, Grounding and Data Line 3 of Body Control Module (BCM)



Power Supply, Grounding and Data Line 4 of Body Control Module (BCM)



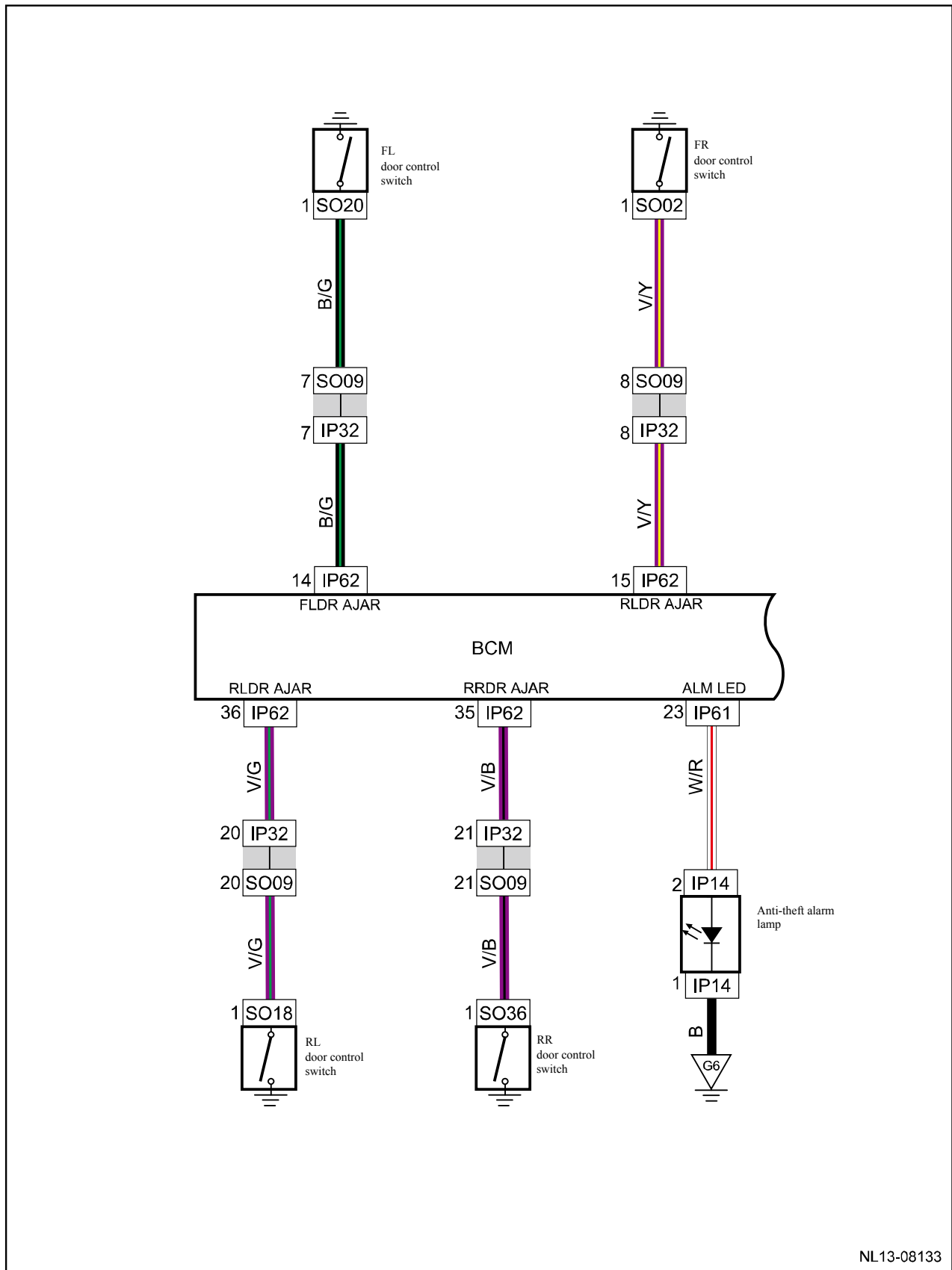
### Power Supply, Grounding and Data Line 5 of Body Control Module (BCM)





<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA02	To instrument harness connector 2	29
DR01	To instrument panel harness connector	58
DR19	Right front door connecting to instrument panel harness connector	60
DR21	RL door connecting to body harness connector	62
DR31	RR door connecting to body harness connector	62
IP12	Harness connector of diagnosis connector	38
IP13	To FR door harness connector	38
IP32	To body harness connector 1	38
IP33	To body harness connector 2	38
IP36	To engine compartment harness connector 2	40
IP37	To engine compartment harness connector 3	40
IP38	To FL door harness connector	40
IP61	Body control module harness connector 1	40
IP62	Body control module harness connector 2	41
IP63	Body control module harness connector 3	40
IP64	Body control module harness connector 4	41
IP65	Body control module harness connector 5	41
IP66	Body control module harness connector 6	41
IP54	To roof harness connector 1	40
RF01	To instrument harness connector 1	47
SO01	To RR door harness connector 1	50
SO09	To instrument panel harness connector 2	50
SO10	To instrument panel harness connector 3	50
SO16	To RL door harness connector	50
SO30	To back door harness connector	50
SO45	To body harness connector	51
G6	Instrument panel grounding	70

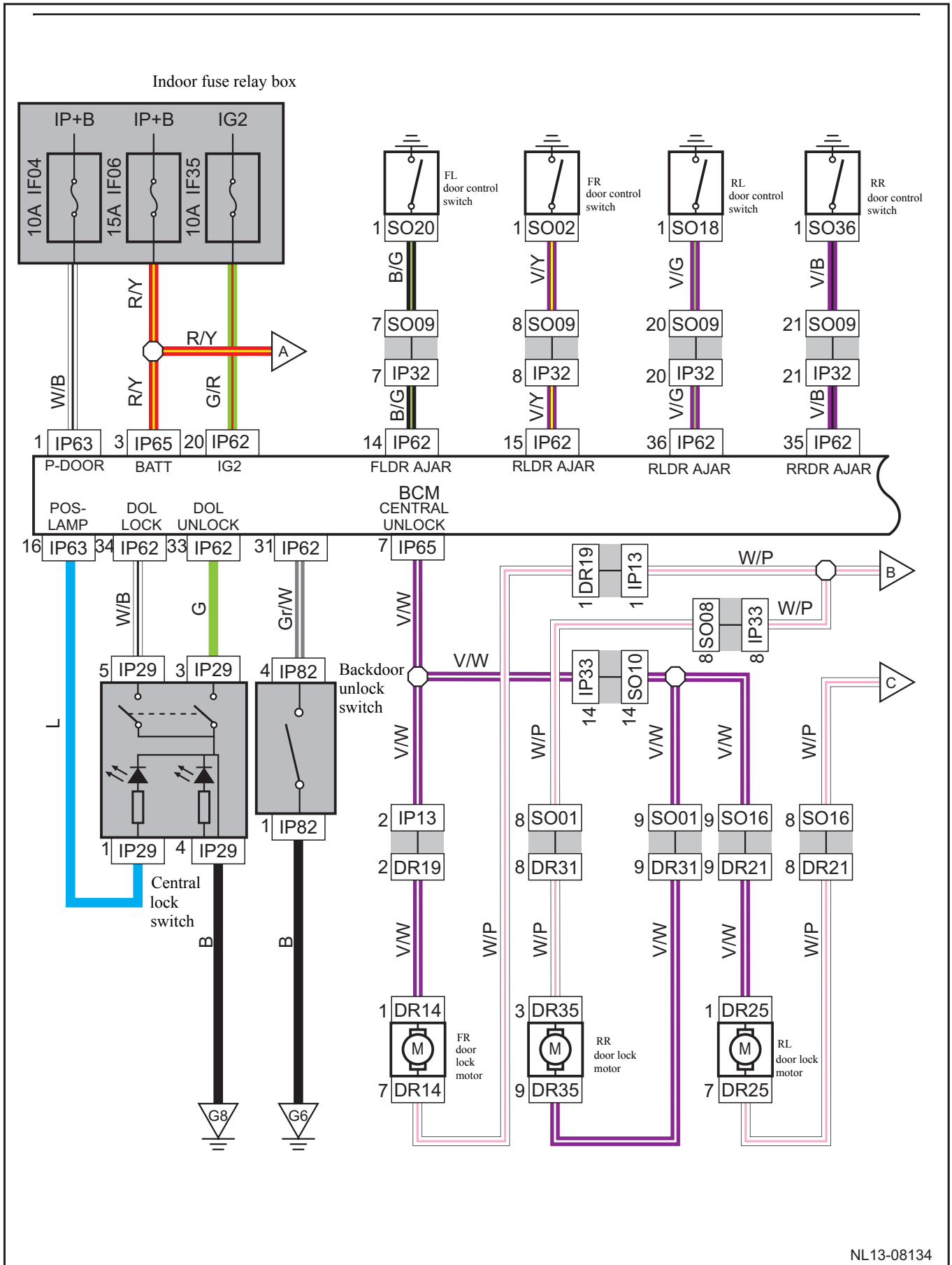
# Body Anti-theft Control System



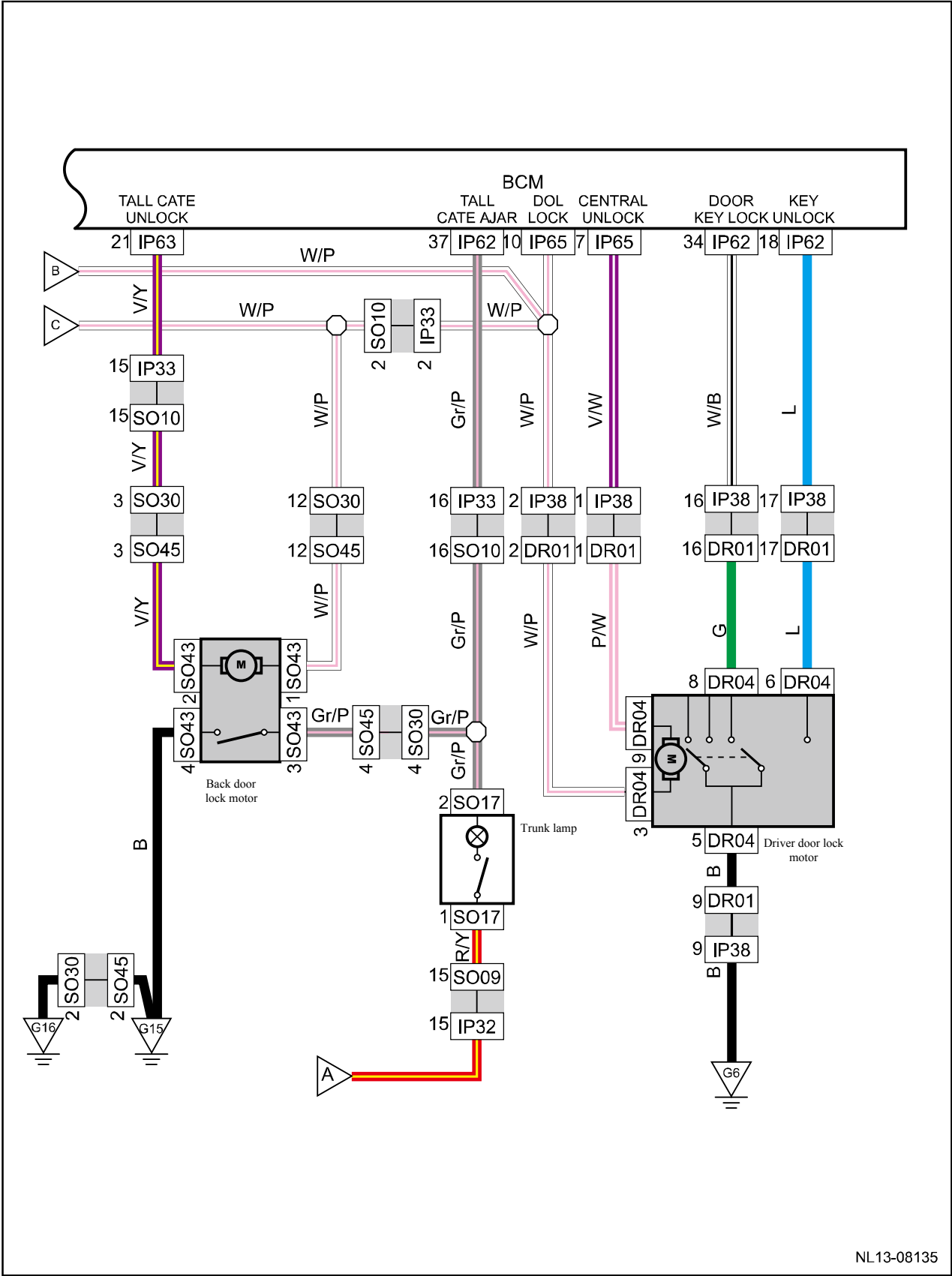
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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP32	To body harness connector 1	40
IP39	Harness connector of anti-theft alarm lamp	40
IP61	Body control module harness connector 1	41
IP62	Body control module harness connector 2	41
SO02	Harness connector of FR door control switch	50
SO09	To instrument panel harness connector 2	50
SO18	Harness connector of RL door control switch	50
SO20	Harness connector of FL door control switch	50
SO23	Harness connector of anti-theft horn	50
SO36	Harness connector of RR door control switch	50
G8	Instrument panel grounding	70
G14	Body harness grounding	71

## Center Control Lock 1

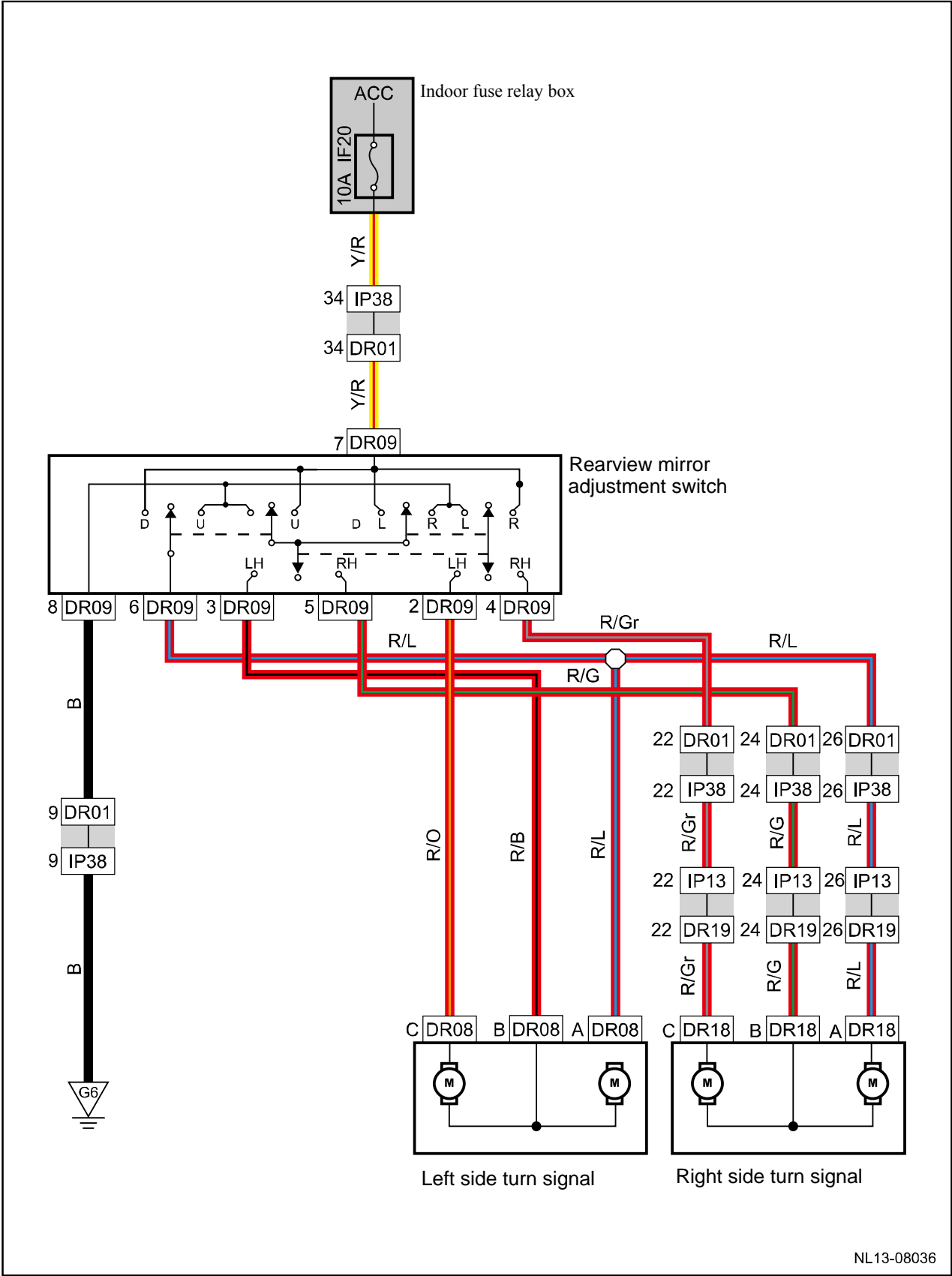


Center Control Lock 2



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
DR01	To instrument panel harness connector	58
DR04	Harness connector of FL door lock motor	58
DR14	Harness connector of FR door lock motor	60
DR19	Right front door connecting to instrument panel harness connector	60
DR21	Left rear door connecting to body harness connector	62
DR25	Harness connector of RL door lock motor	62
DR31	Right rear door connecting to body harness connector	62
DR35	Harness connector of RR door lock motor	62
IP13	To FR door harness connector	40
IP29	Central door locking switch connector	40
IP32	To body harness connector 1	40
IP33	To body harness connector 2	40
IP38	To FL door harness connector	40
IP62	Body control module harness connector 2	41
IP63	Body control module harness connector 3	40
IP65	Body control module harness connector 5	41
SO01	To RR door harness connector 1	50
SO02	Harness connector of FR door control switch	50
SO09	To instrument panel harness connector 2	50
SO10	To instrument panel harness connector 3	50
SO17	Harness connector of trunk lamp	50
SO18	Harness connector of RL door control switch	50
SO20	Harness connector of FL door control switch	50
SO30	To back door harness connector	50
SO36	Harness connector of RR door control switch	50
SO43	Harness connector of back door lock motor	51
SO45	To body harness connector	51
G6	Instrument panel grounding	70
G8	Instrument panel grounding	70
G15	Back door harness grounding	72
G16	Body harness grounding	71

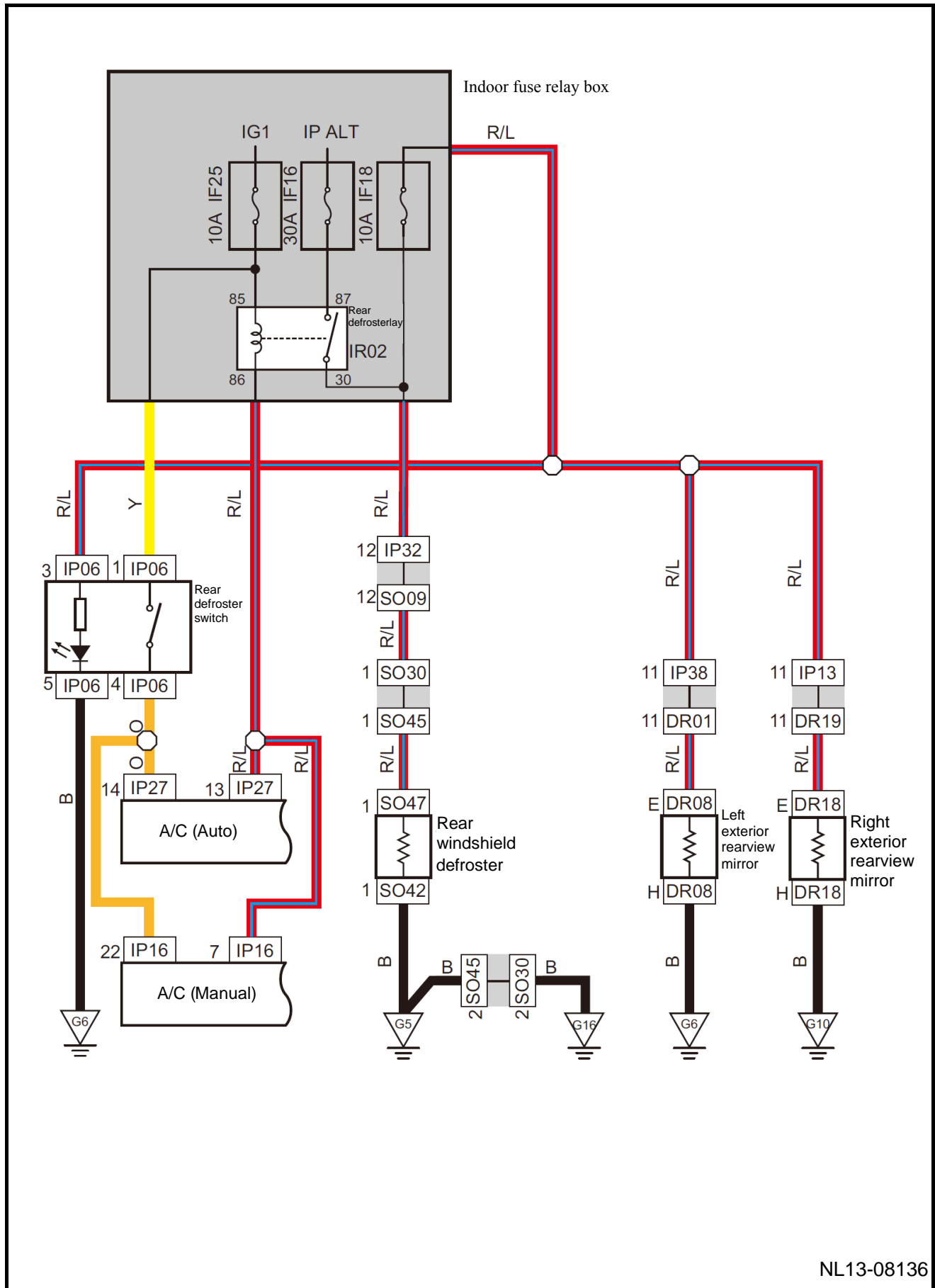
Power Rear View Mirror Control



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP13	To FR door harness connector	40
IP38	To FL door harness connector	40
DR01	To instrument panel harness connector 1	58
DR08	Left side exterior rearview mirror connector	58
DR09	Harness connector of power rearview mirror switch	58
DR18	Right side exterior rear view mirror connector	60
DR19	FR door connecting to instrument panel harness connector	60
G6	Instrument panel grounding	70



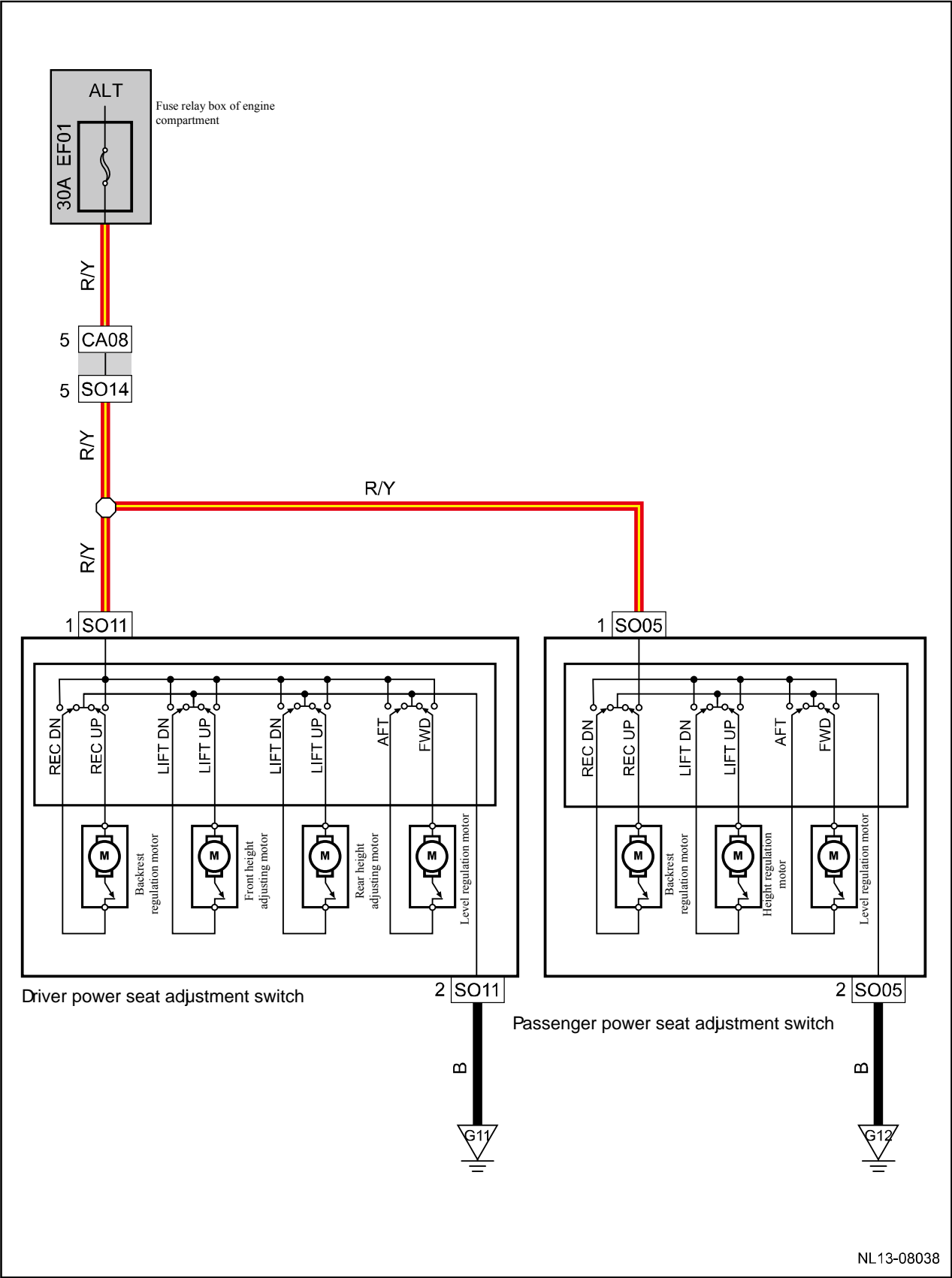
## Defroster control



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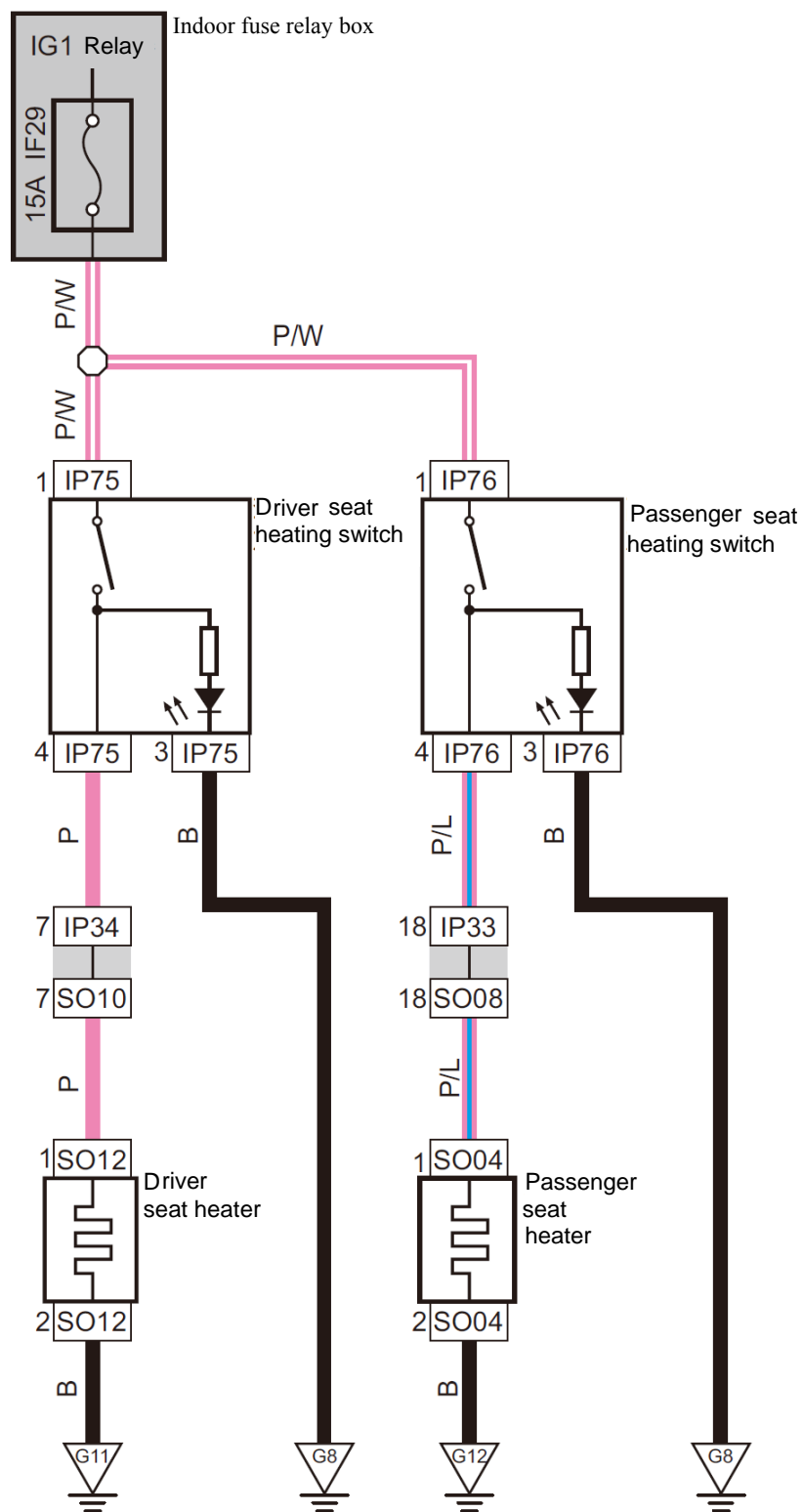
<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
DR01	To instrument panel harness connector 1	58
DR08	Left side vehicle outer rear view mirror connector	58
DR18	Right side rearview mirror connector	60
DR19	FR door connecting to instrument panel harness connector	60
EM01	Harness connector of engine control module	35
EM02	To instrument harness connector	35
IP06	Harness connector of rear defrost switch	41
IP13	To FR door harness connector	40
IP17	To engine harness connector	40
IP27	Manual A/C control panel A	41
IP32	To body harness connector 1	40
IP38	To FL door harness connector	40
SO09	To instrument panel harness connector 2	50
SO30	To back door harness connector	50
SO45	To body harness connector	51
SO47	Rear defrost positive harness connector	51
G6	Instrument panel grounding	70
G10	Instrument panel grounding	70
G15	Back door grounding	72
G16	Body harness grounding	71

Power Seat Control



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA08	To body harness connector	29
SO05	Harness connector of passenger seat power window	50
SO11	Harness connector of driver power seat	50
SO14	To engine compartment harness connector	50
G11	Body harness grounding	71
G12	Body harness grounding	71

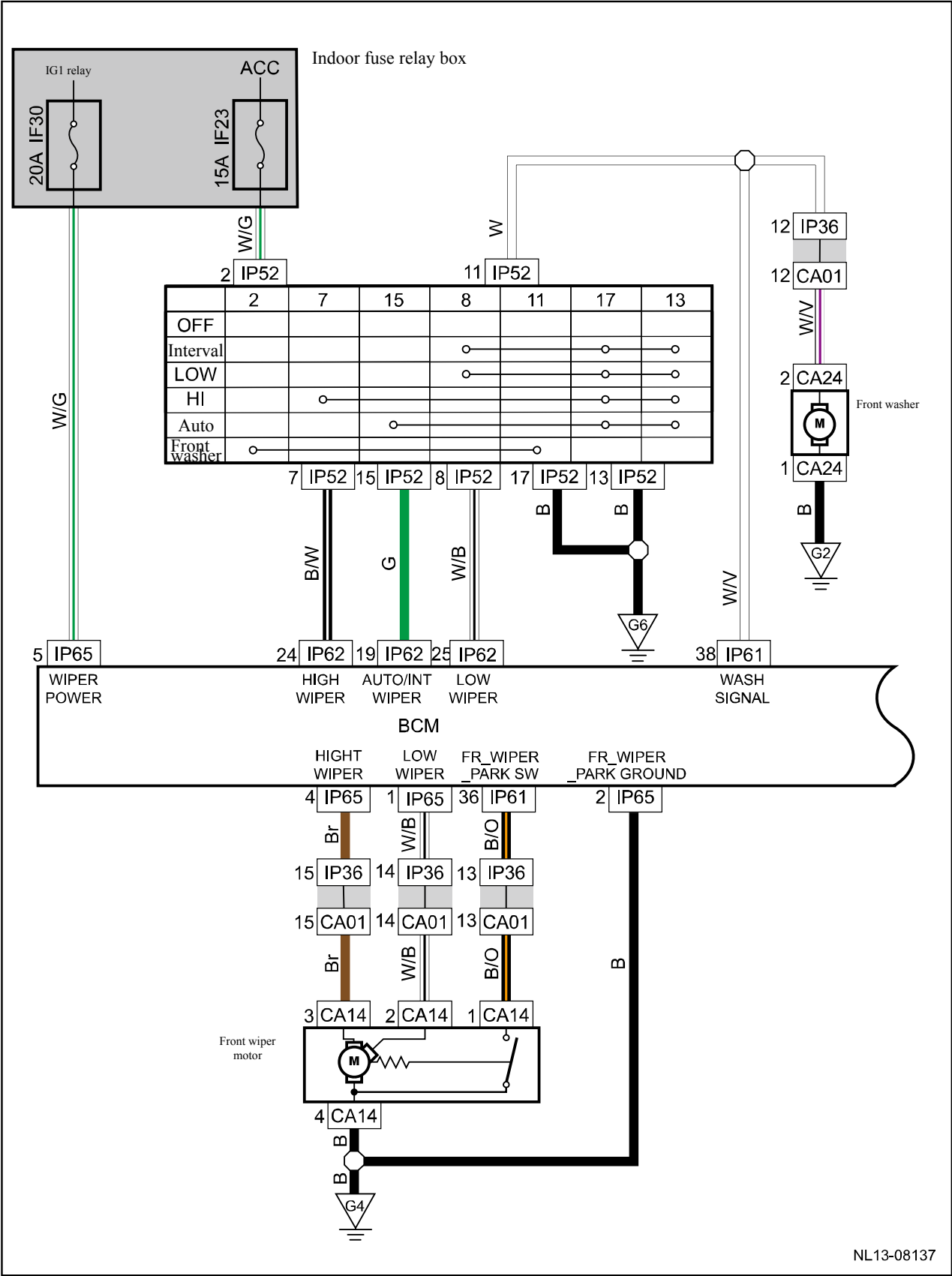
## Power seat heating



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Harness connector	Name	Page
IP75	Harness connector of driver side seat-heating switch	
IP76	Harness connector of passenger side seat-heating switch	
IP33	To body harness connector 5	
IP34	Body harness connector 2	
S004	Harness connector of passenger seat heater	
S008	To instrument panel harness connector 1	
S010	To instrument panel harness connector 3	
S012	Harness connector of driver seat heater	
G8	Instrument panel grounding	
G11	Body harness ground	
G12	Body harness ground	

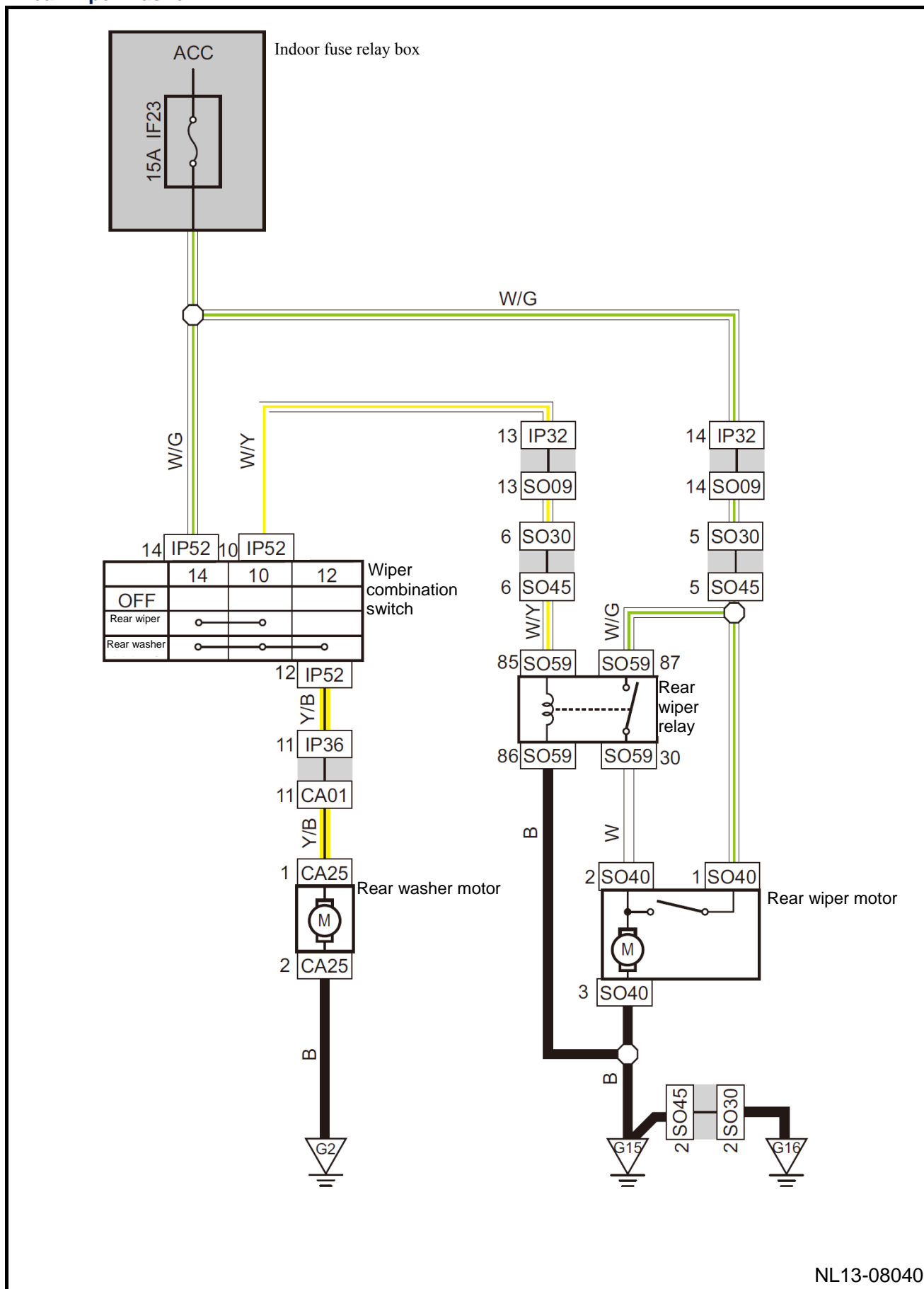
Front Wiper and Washer



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA14	Harness connector of front wiper motor	28
CA24	Harness connector of front washer	28
IP61	Body control module harness connector 1	41
IP62	Body control module harness connector 2	41
IP65	Body control module harness connector 5	40
IP52	Harness connector of wiper washer combination switch	41
IP36	To engine compartment harness connector 1	40
G2	Engine compartment grounding	67
G4	Engine compartment grounding	67
G6	Instrument grounding	70

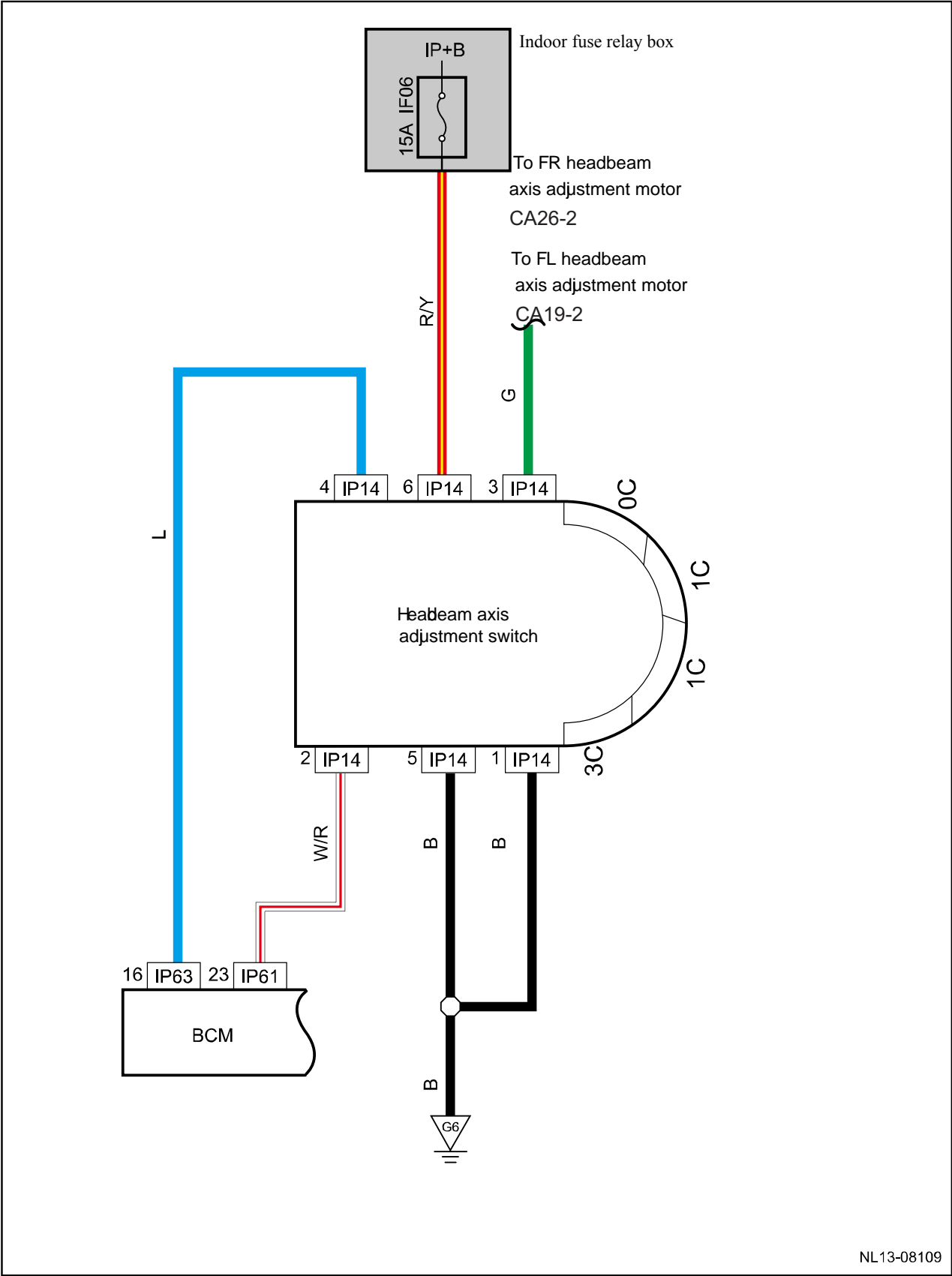


## Rear wiper washer



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	29
CA25	Harness connector of rear washer	28
IP32	To body harness connector 1	40
IP36	To engine compartment harness connector 1	40
IP52	Harness connector of wiper washer combination switch	41
SO09	To instrument panel harness connector 2	50
SO30	To back door harness connector	50
SO40	Harness connector of rear wiper motor	51
SO45	To body harness connector	51
G2	Engine compartment grounding	67
G6	Instrument panel grounding	70
G15	Back door grounding	72
G16	Body harness grounding	71

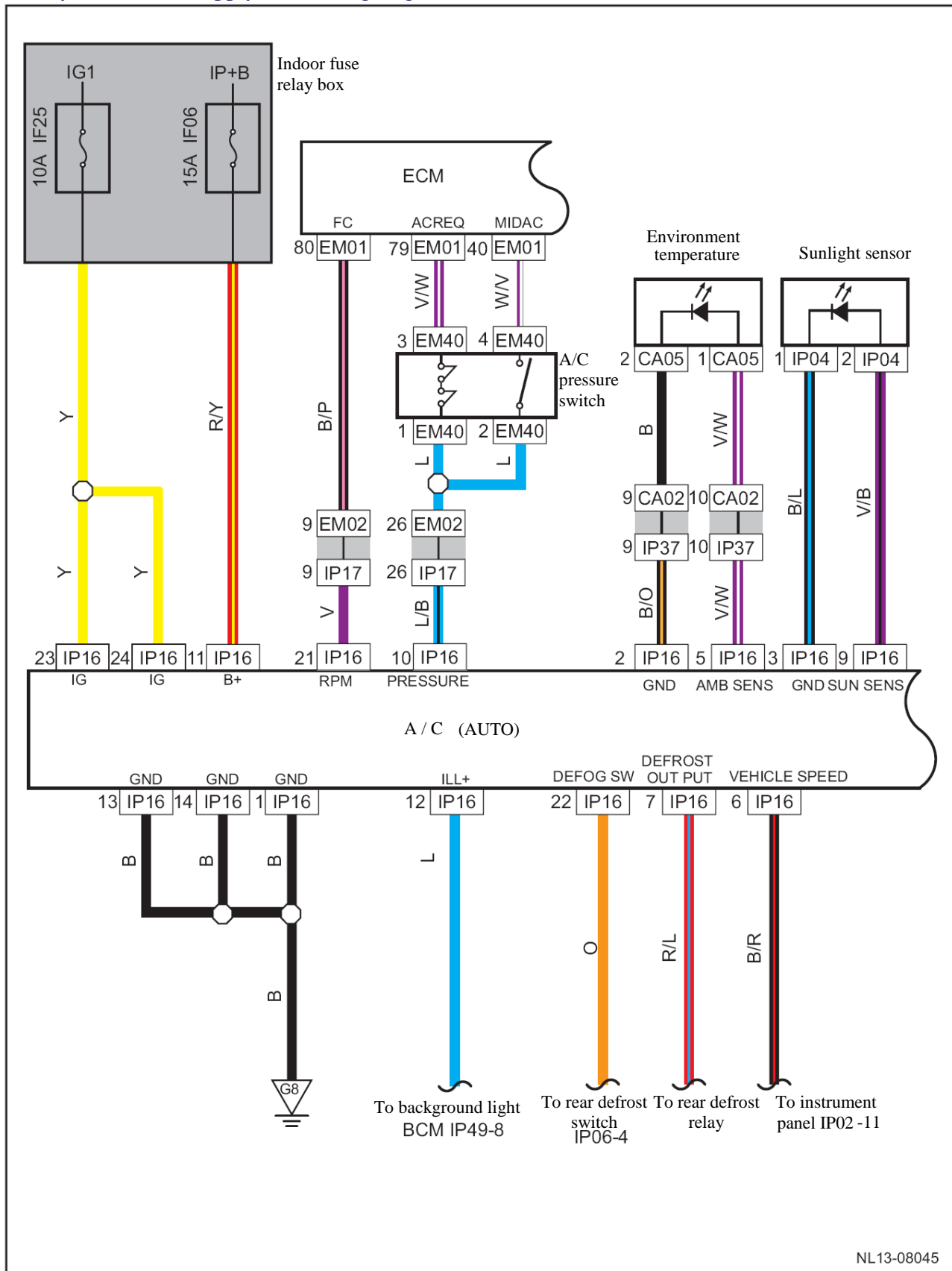
Headlamp Lighting Shaft Adjusting



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP54	To roof harness connector 1	40
IP14	Headbeam axis adjusting switch	41
IP61	Body control module harness connector 1	41
IP63	Body control module harness connector 3	40
G6	Instrument panel grounding	70

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP14-3	To FR axis regulator motor CA26-2	132
	To FL axis regulator motor CA19-2	131

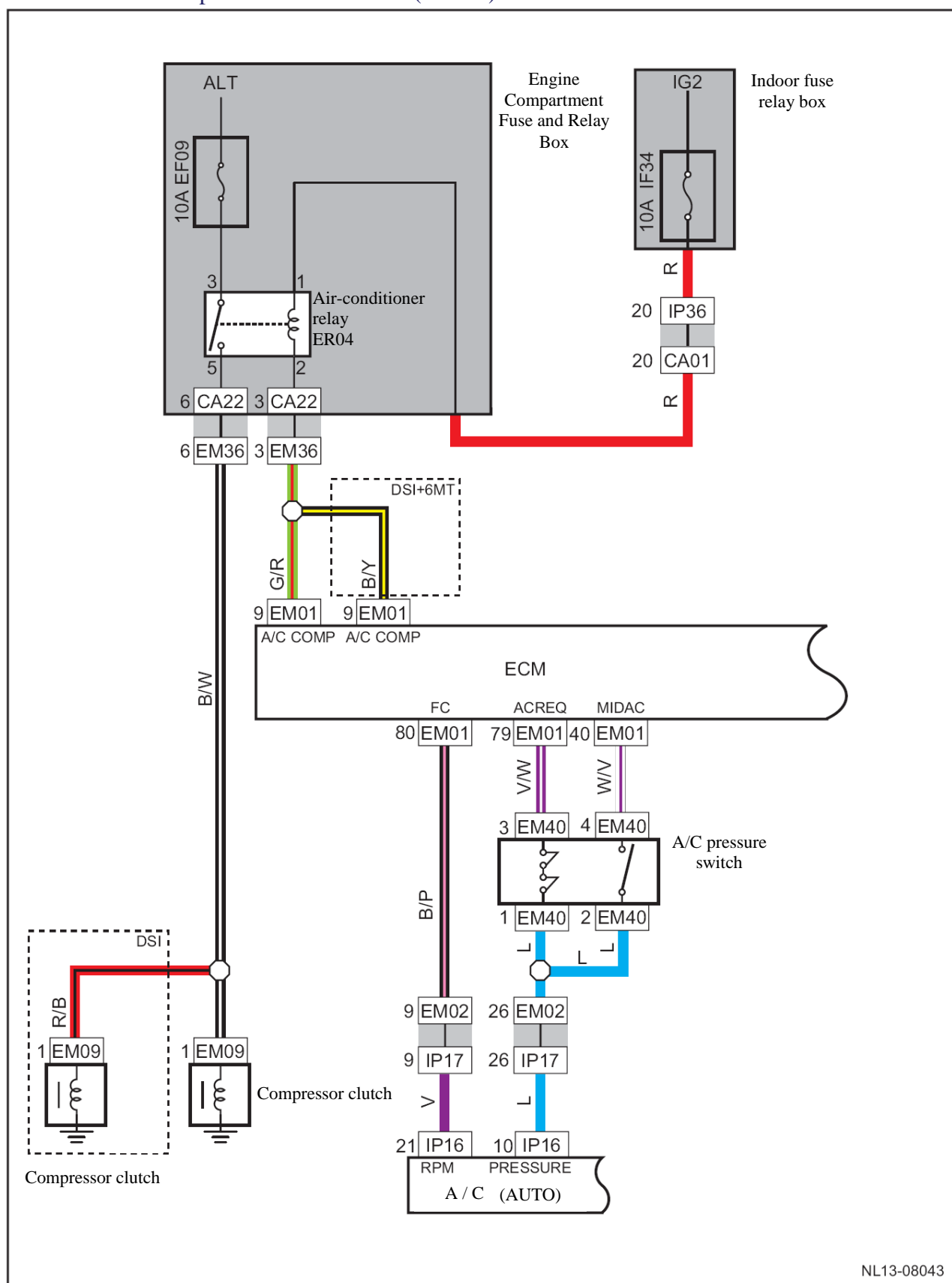
## A/C System Power Supply, Grounding, Signal (Auto)



Harness connector	Name	Page
IP04		
IP16		
IP17		
IP37		
EM02		
EM40		
CA02		
CA05		
G6	Instrument panel grounding	72

Connection point	Description	Page
IP16-12	To background light BCM IP49-8	
IP16-22	To rear defrost switch IP06-4	
IP16-7	To rear defrost relay	
IP16-6	To instrument panel IP02-11	

## Air-conditioner compressor clutch control (AUTO)

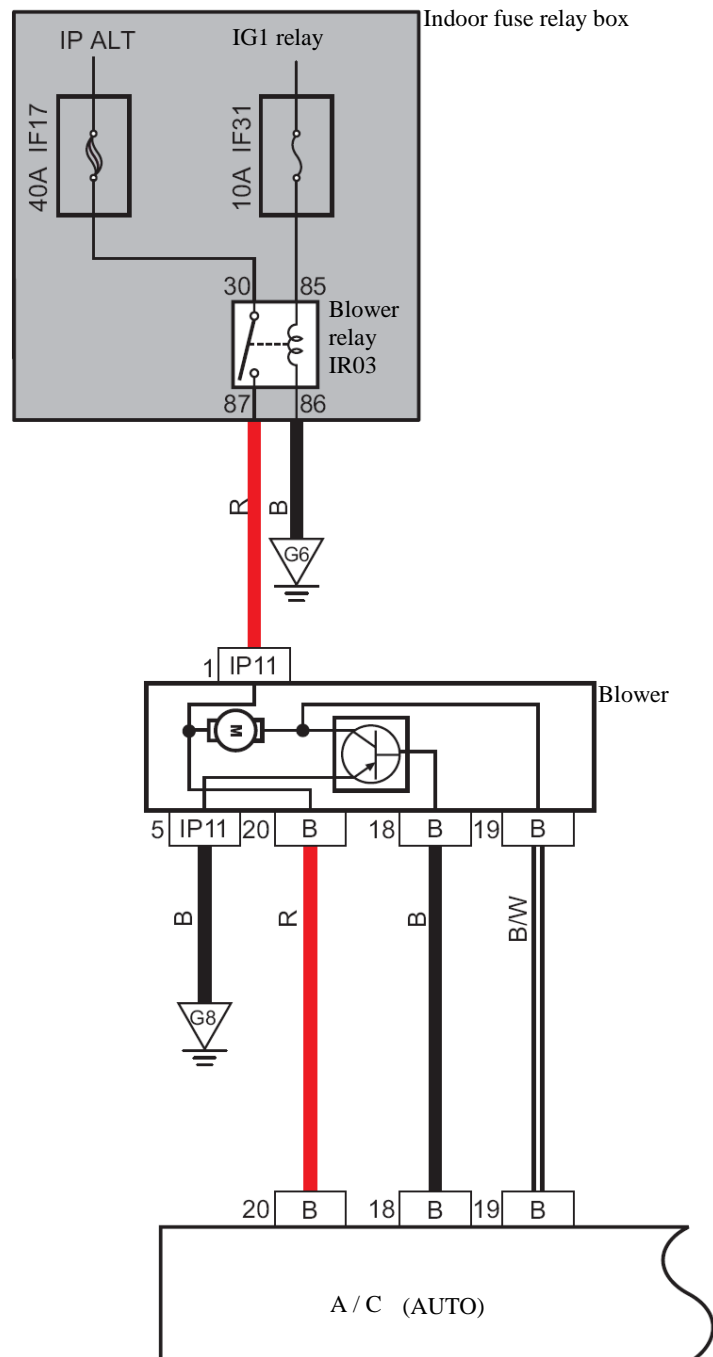


## Harness connector

Harness connector	Name	Page
CA22		
EM01		
EM40		
EM36		
EM02		
EM09		
IP16		
IP17		
G6	Instrument panel grounding	72



## Blower (Auto)

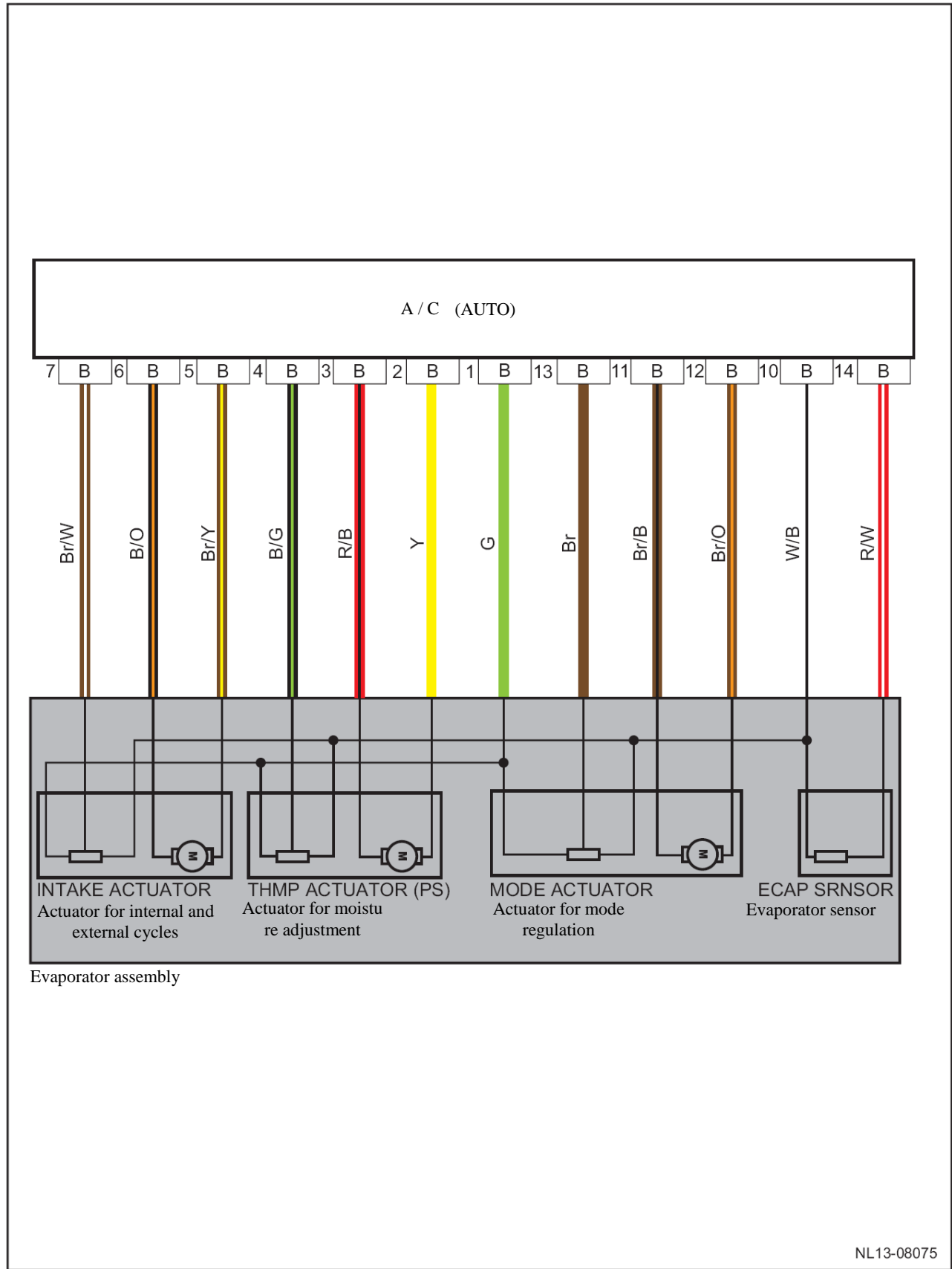


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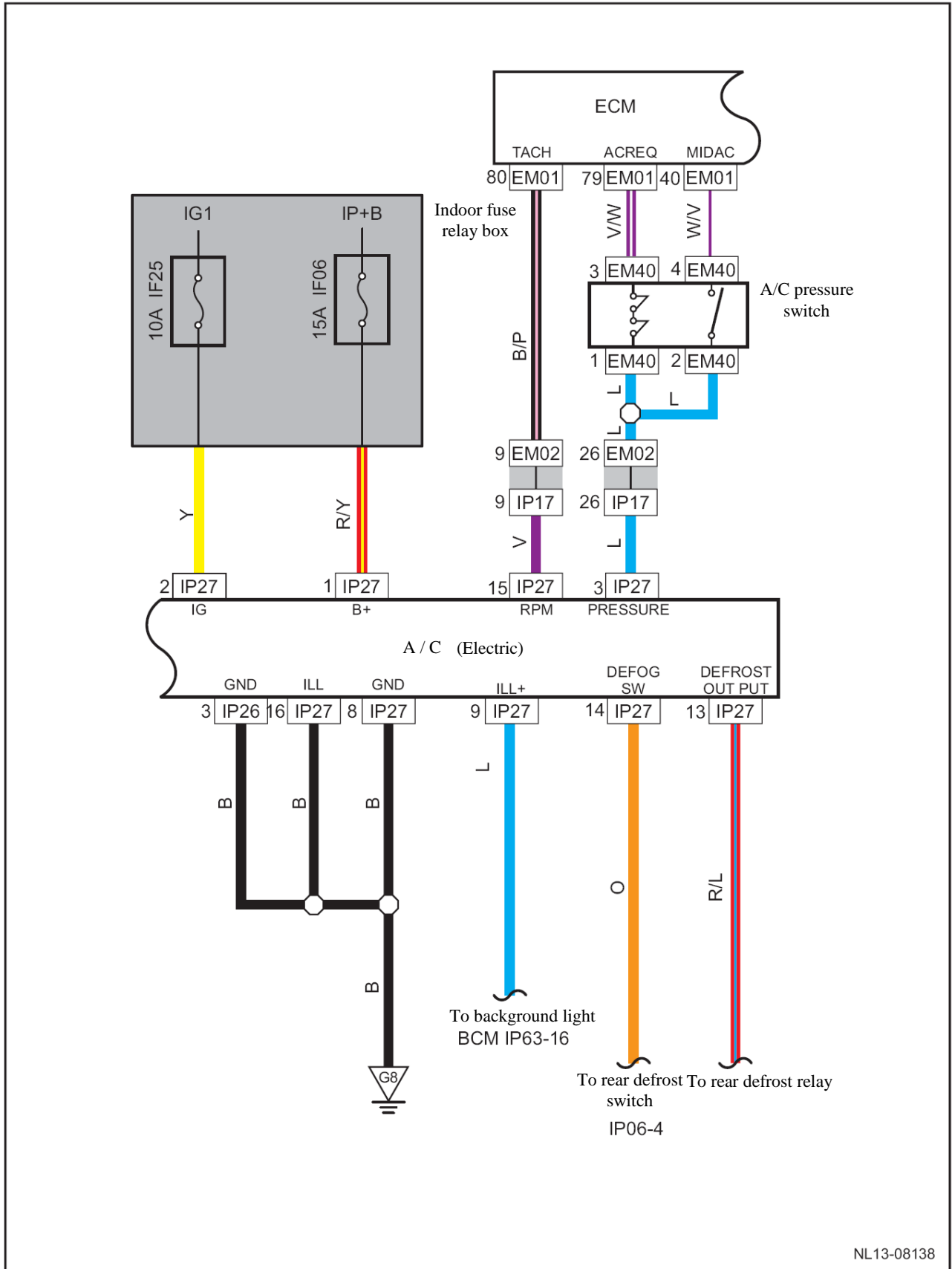
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Harness connector	Name	Page
IP11		
G6	Instrument panel grounding	72

Wind direction regulating motor (Auto)



Air-conditioner system, GD (Electric)

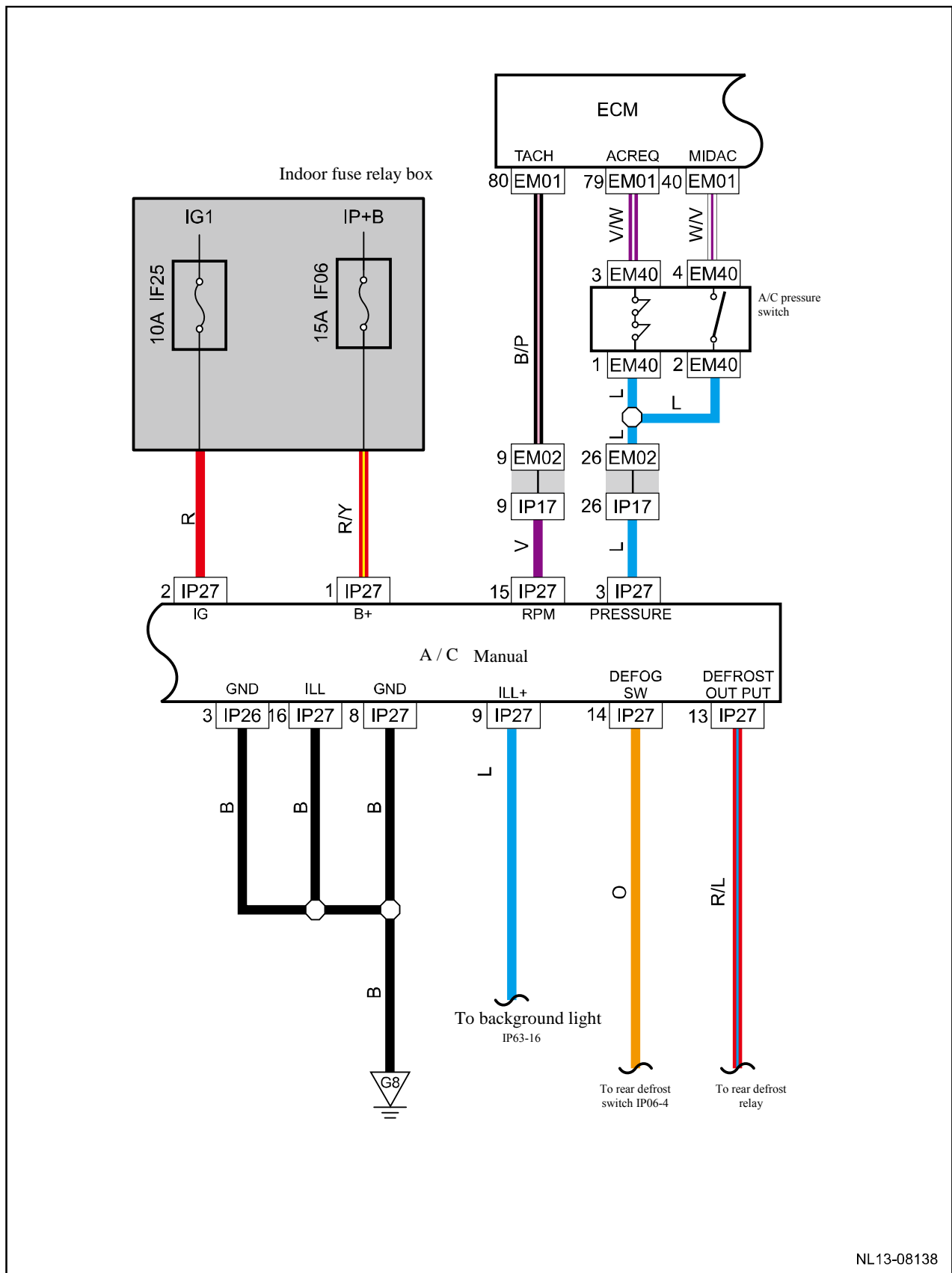


NL13-08138

Harness connector	Name	Page
EM01	ECM harness connector	35
EM02	To instrument harness connector	35
EM40	Air-conditioner pressure switch harness connector	36
IP17	To engine harness connector	41
IP26	Air-conditioner control panel harness connector C (MANUAL)	41
IP27	Air-conditioner control panel harness connector A (MANUAL)	42
G8	Instrument panel grounding	72

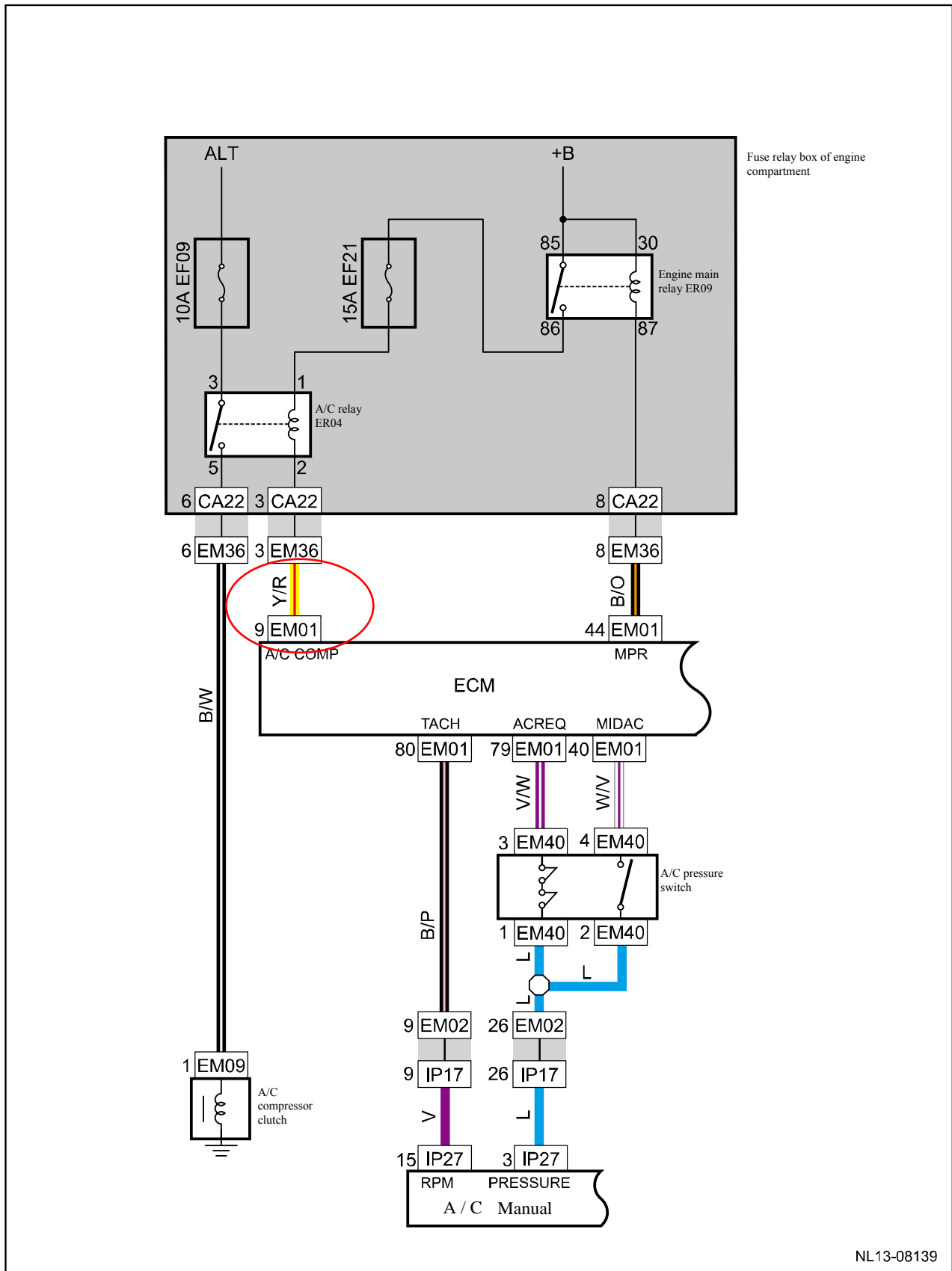
Connection point	Description	Page
IP27-9	To background light BCM IP63-16	153
IP27-14	To rear defrost switch IP06-4	168
IP27-13	To rear defrost relay	168

## A/C Power Supply, Grounding, Signal (manual)



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
EM01	Harness connector of engine control module	35
EM02	To instrument harness connector	35
EM40	Harness connector of A/C pressure switch	36
IP17	To engine harness connector	40
IP26	A/C control panel harness connector C(Manual)	40
IP27	A/C control panel harness connector A (Manual)	41
G8	Instrument panel grounding	70

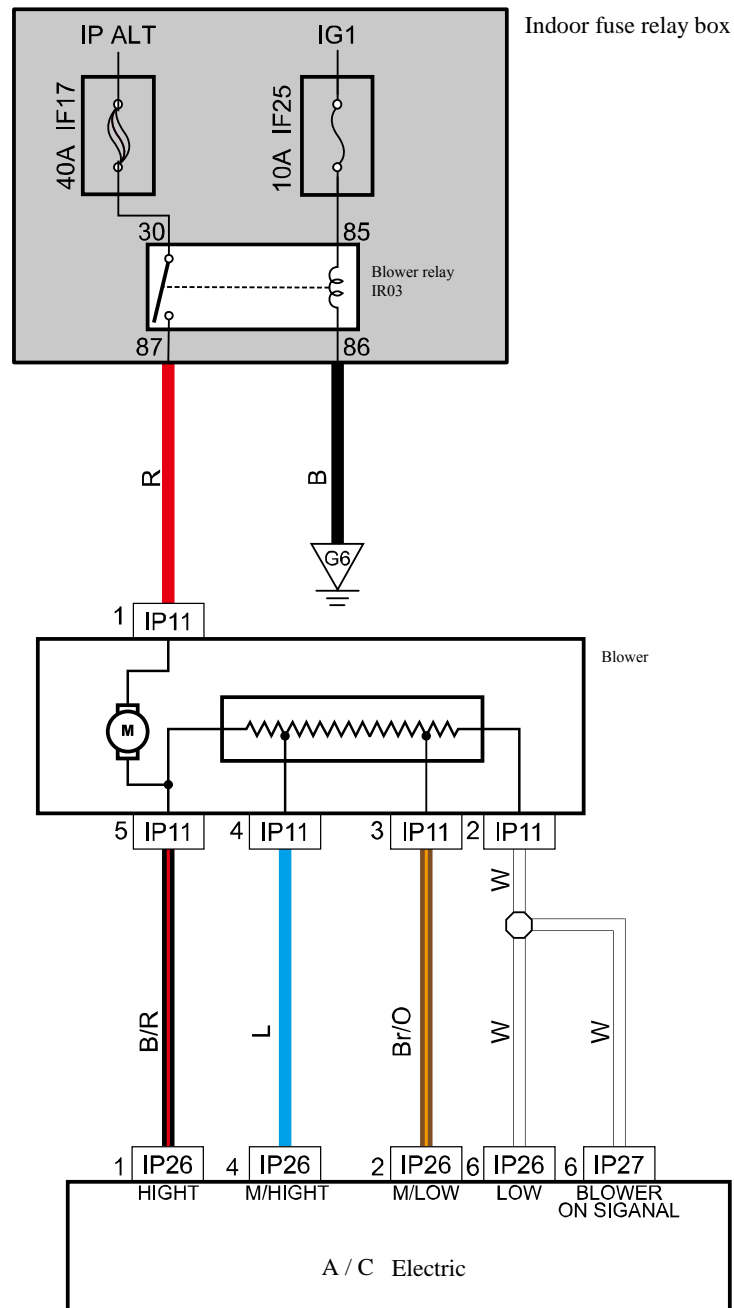
<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP27-9	To background light BCM IP63-16	151
IP27-14	To rear defrost switch IP06-4	166
IP27-13	To rear defrost relay	166





<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA22	To engine harness connector	28
EM01	Harness connector of engine control module	35
EM02	To instrument harness connector	35
EM36	To harness connector of engine compartment distribution box	34
EM09	Harness connector of A/C compressor relay	34
EM40	Harness connector of A/C pressure switch	34
IP17	To engine harness connector	40
IP27	A/C control panel harness connector A (Manual)	41

## Blower Control

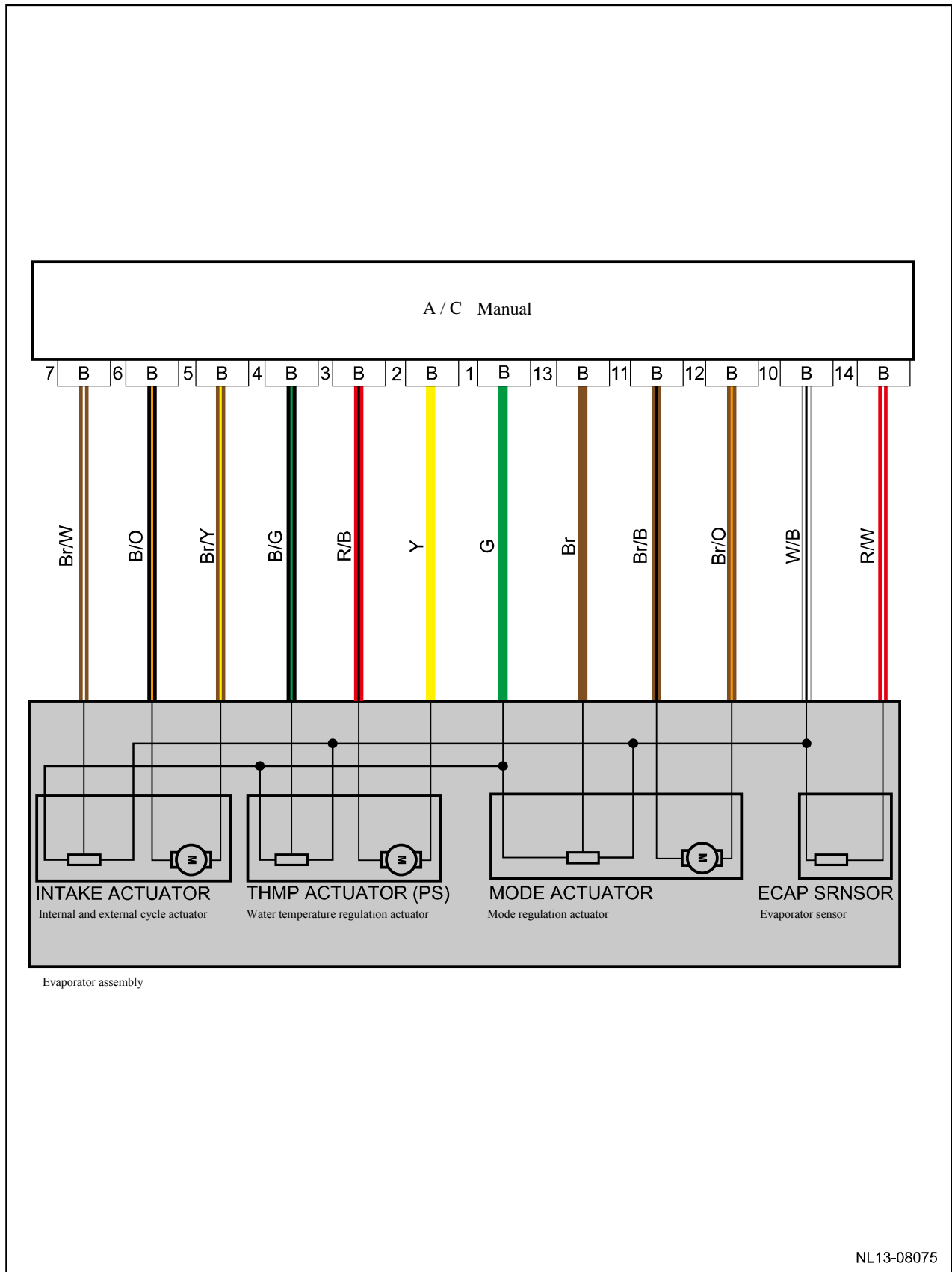


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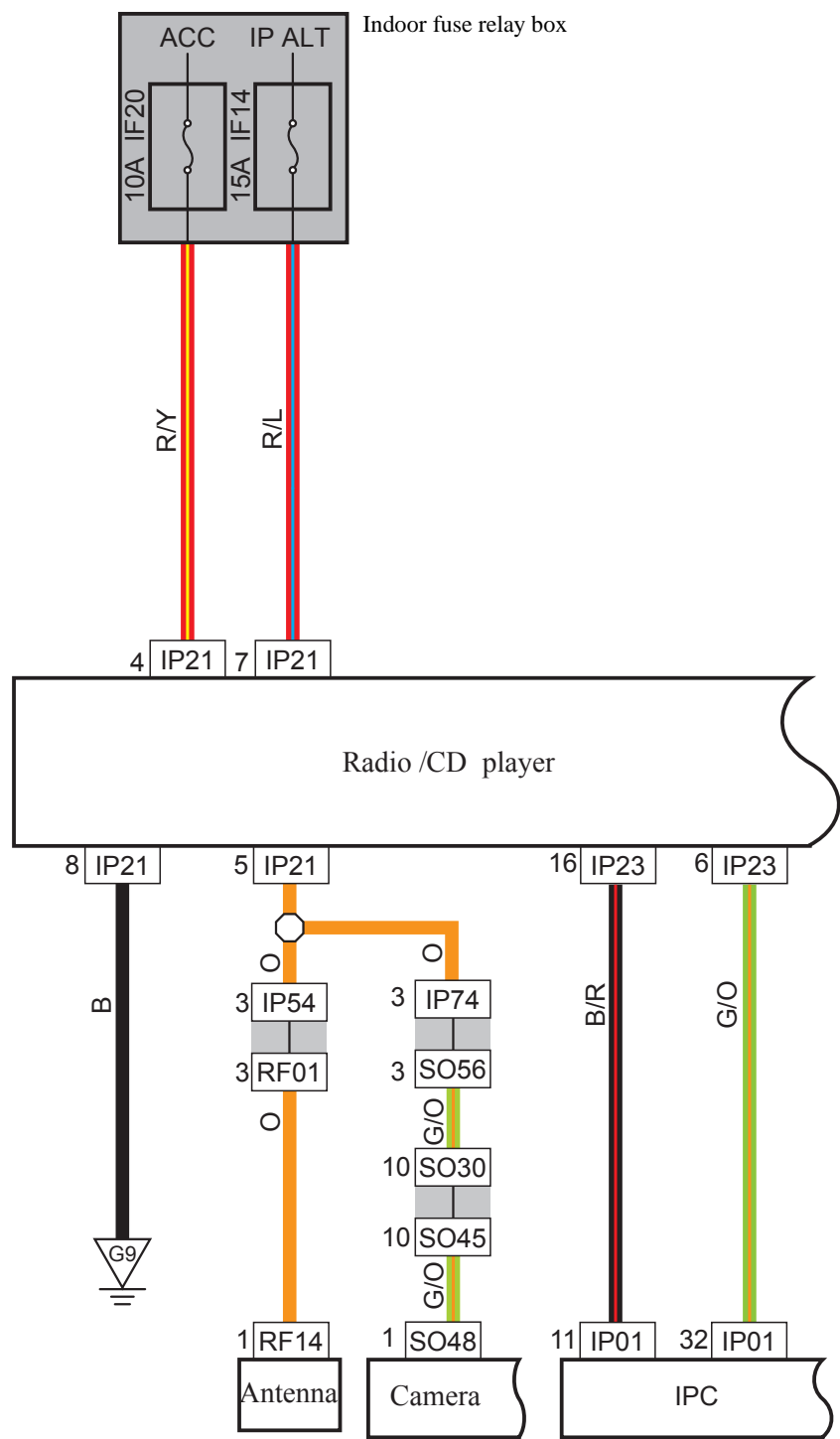
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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP11	Blower connector (Manual)	40
IP26	A/C control panel harness connector C(Manual)	40
IP27	A/C control panel harness connector A (Manual)	41
G6	Instrument panel grounding	70

# Wind Direction Regulation Motor



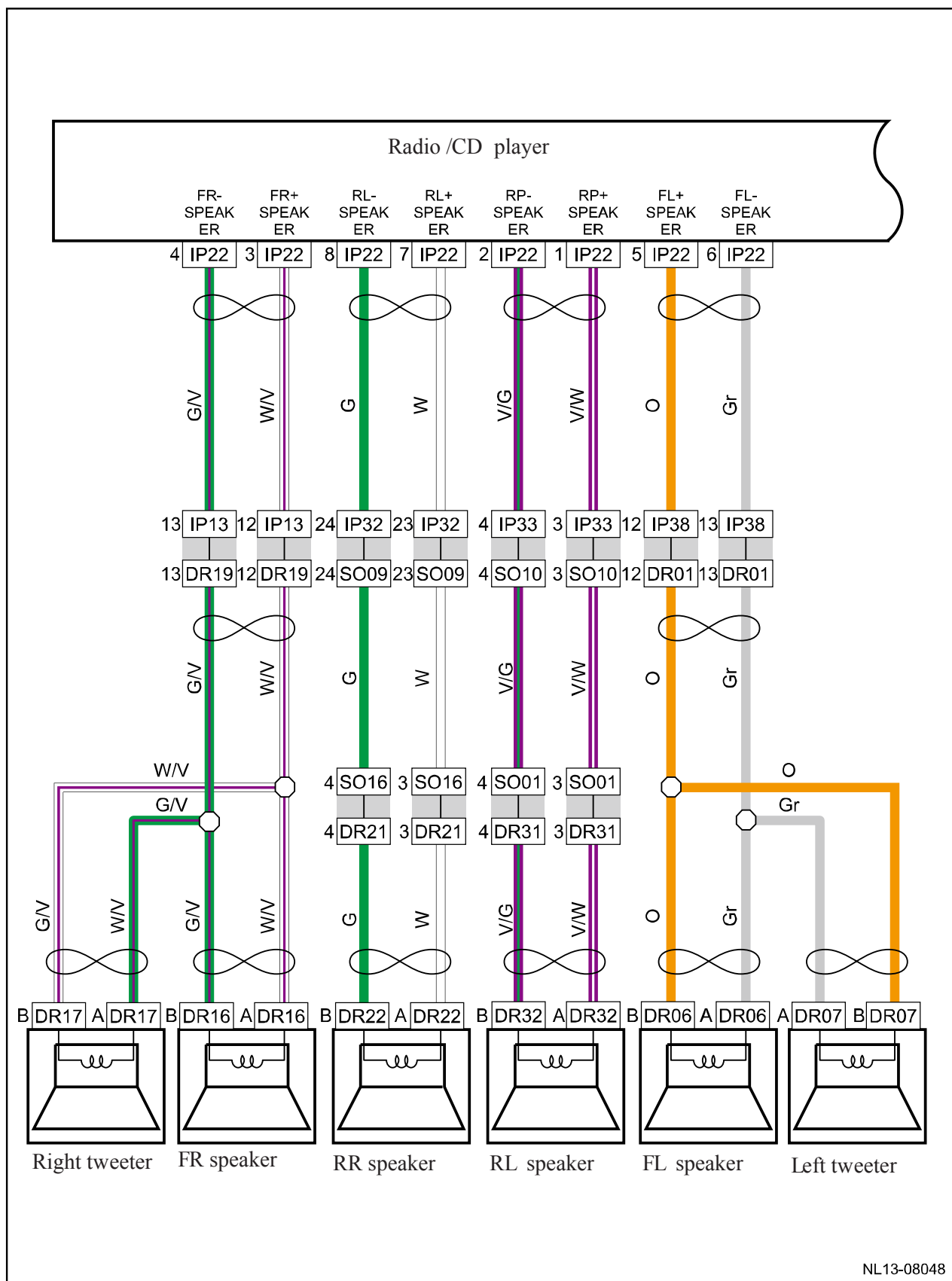
Sound Main Engine Power Supply, Signal Grounding



NL13-08047

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP21	Radio/ CD player harness connector 1	41
IP23	Radio/ CD player harness connector 3	41
IP01	Harness connector of combination instrument	41
IP54	To inside lamp harness connector 1	40
IP74	To body harness connector	
RF01	To instrument harness connector 1	47
RF14	Antenna wire connector	47
SO56	To instrument connector harness connector	
SO30	To back door harness connector	
SO45	To body harness connector	
SO48	To camera harness connector	
G9	Instrument panel grounding	70

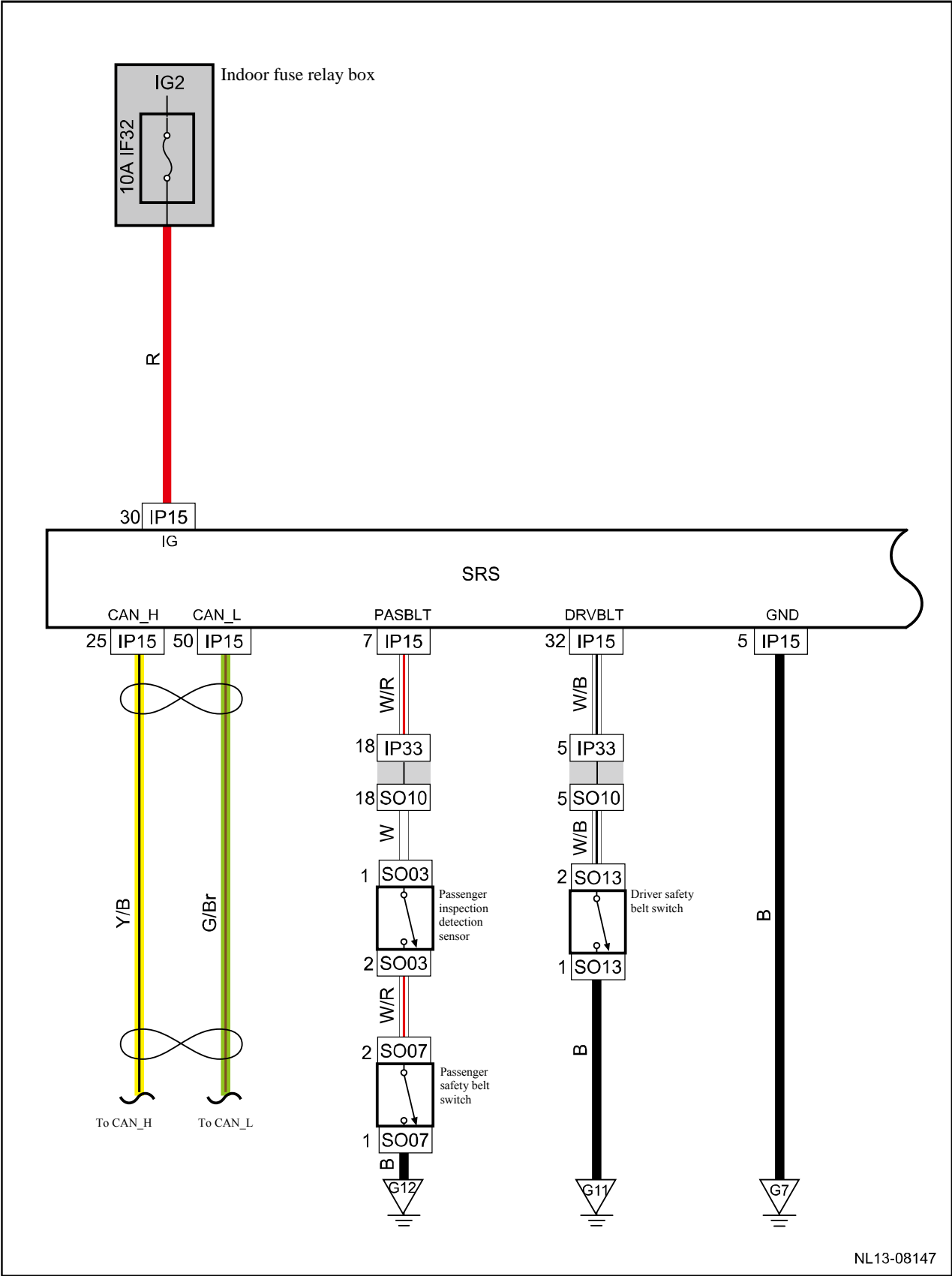
## Main Speaker Control



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
DR01	To instrument panel harness connector	58
DR06	Harness connector of FL door front speaker	58
DR07	FL door tweeter harness	58
DR16	FR door speaker connector	60
DR17	FR door tweeter speaker	60
DR19	To instrument panel harness connector	60
DR21	To body harness connector	62
DR31	To body harness connector	62
IP13	To FR door harness connector	40
IP22	Radio/CD player harness connector 2	41
IP32	To body harness connector 1	50
IP33	To body harness connector 2	40
IP38	To FL door harness connector	40
SO01	To RR door harness connector	50
SO09	To instrument panel harness connector 2	50
SO10	To instrument panel harness connector 3	50
SO16	To RL door harness connector	50



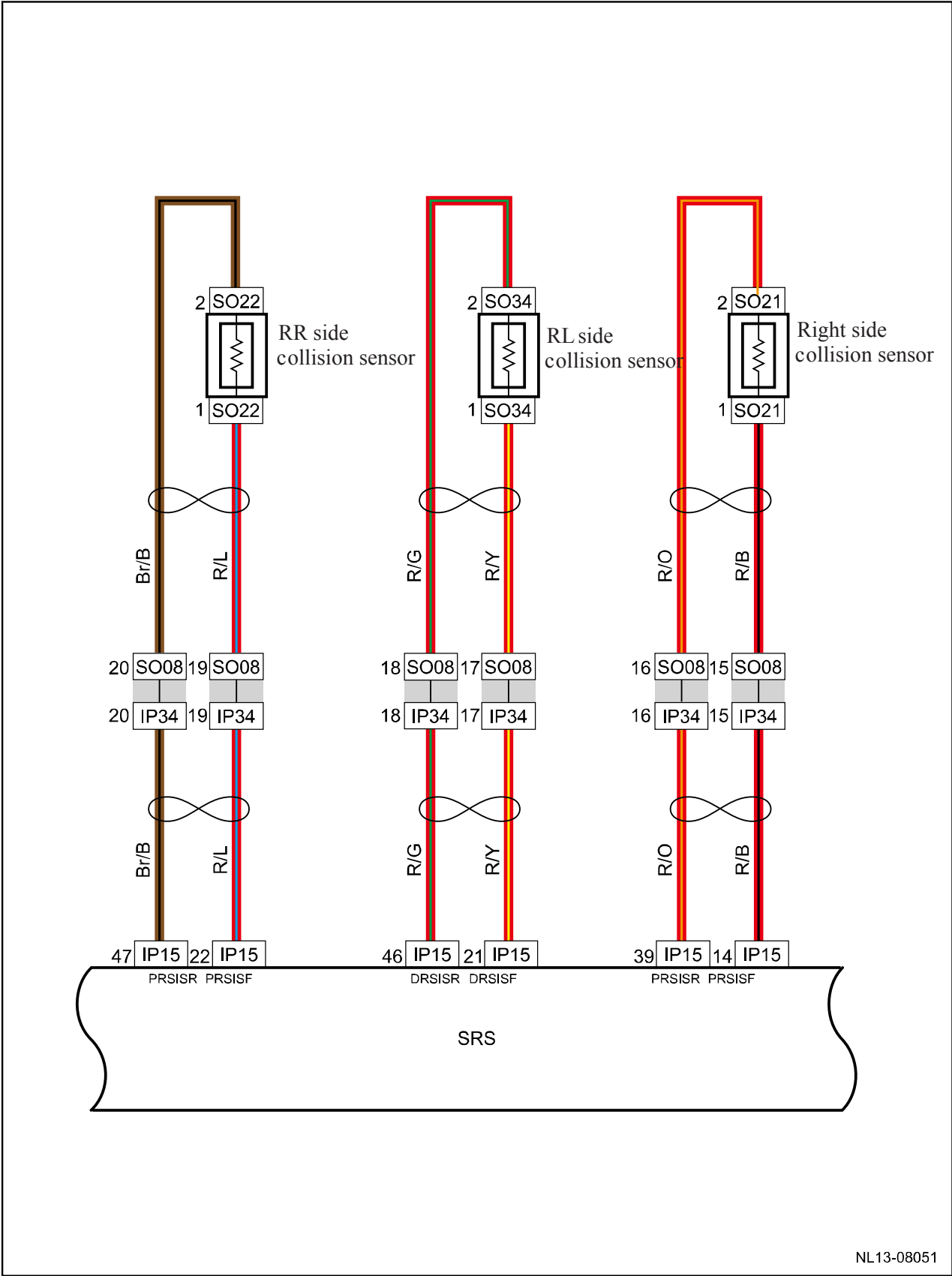
Airbag (SRS) Power Supply, Grounding, Data Line



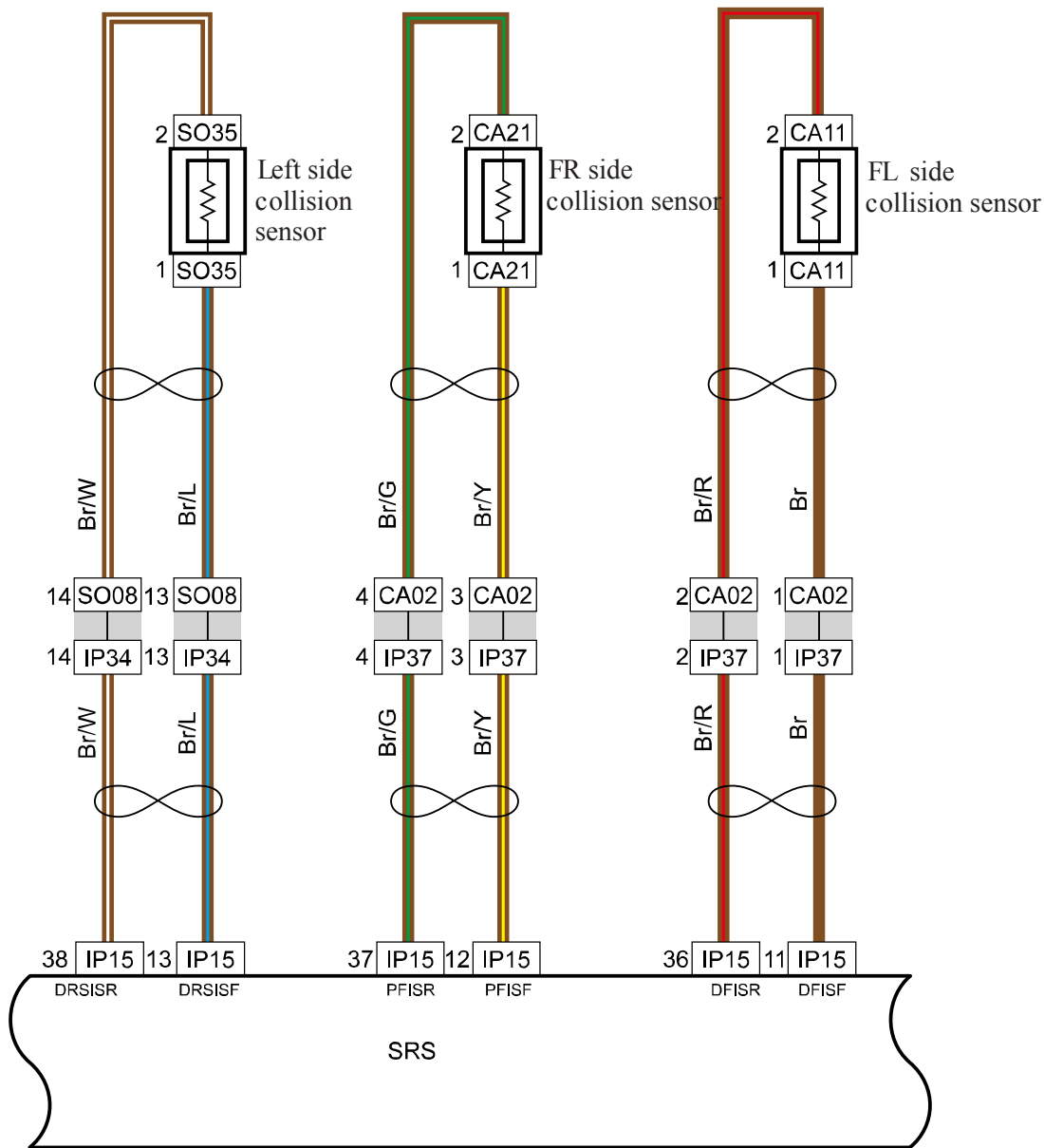
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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP15	Harness connector of airbag module	40
IP33	To body harness connector 2	40
SO07	Harness connector of passenger seat belt	50
SO10	To instrument panel harness connector 3	50
SO13	Driver safety belt switch	50
G7	Instrument panel grounding	70
G11	Body harness grounding	71
G12	Body harness grounding	71

Airbag (SRS) Sensor 1



Airbag (SRS) Sensor 2



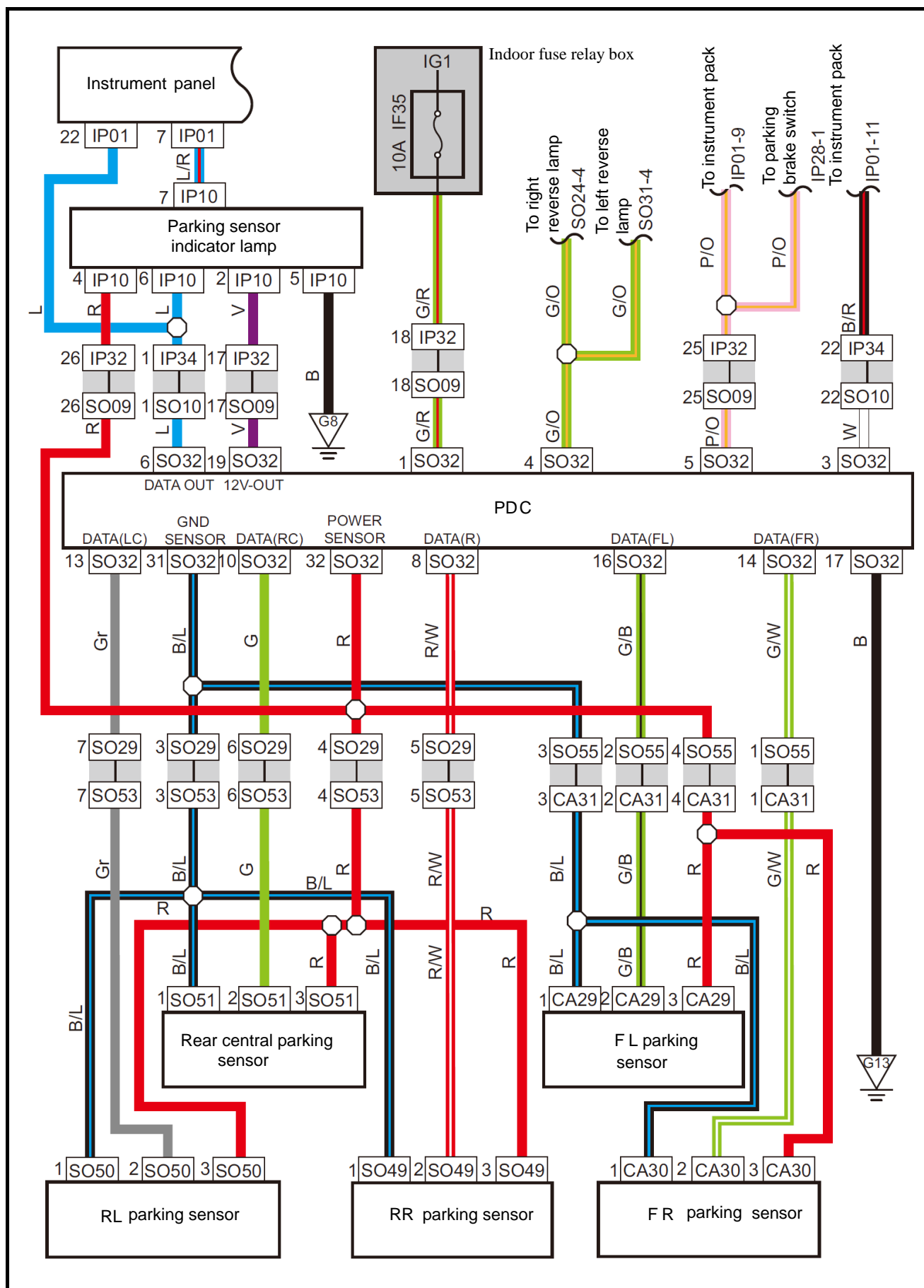
NL13-08052

<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA02	To instrument harness connector 2	28
CA11	Harness connector of FL collision sensor	28
CA21	Harness connector of right front collision sensor	28
IP15	Harness connector of airbag module	40
IP34	To body harness connector 3	40
IP37	To engine compartment harness connector 3	40
SO08	To instrument panel harness connector 1	50
SO21	Harness connector of right collision sensor	50
SO22	Harness connector of RR collision sensor	50
SO34	Harness connector of RL collision sensor	50
SO35	Harness connector of left collision sensor	50



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP15	Harness connector of airbag module	40
IP19	Harness connector of passenger seat side airbag	40
IP34	To body harness connector 3	40
IP41	Harness connector of driver airbag	41
IP44	Harness connector of knee airbag	40
IP55	To roof harness connector 2	40
RF02	To instrument harness connector 2	47
RF04	Harness connector of driver air curtain	47
RF06	Harness connector of passenger air curtain	47
SO06	Passenger seat side airbag	50
SO08	To instrument panel harness connector 1	50
SO15	Driver seat side airbag	50
SO19	Harness connector of driver safety belt pretensioner	50
SO37	Harness connector of passenger safety belt pretensioner	50

## Parking Distance Control 1

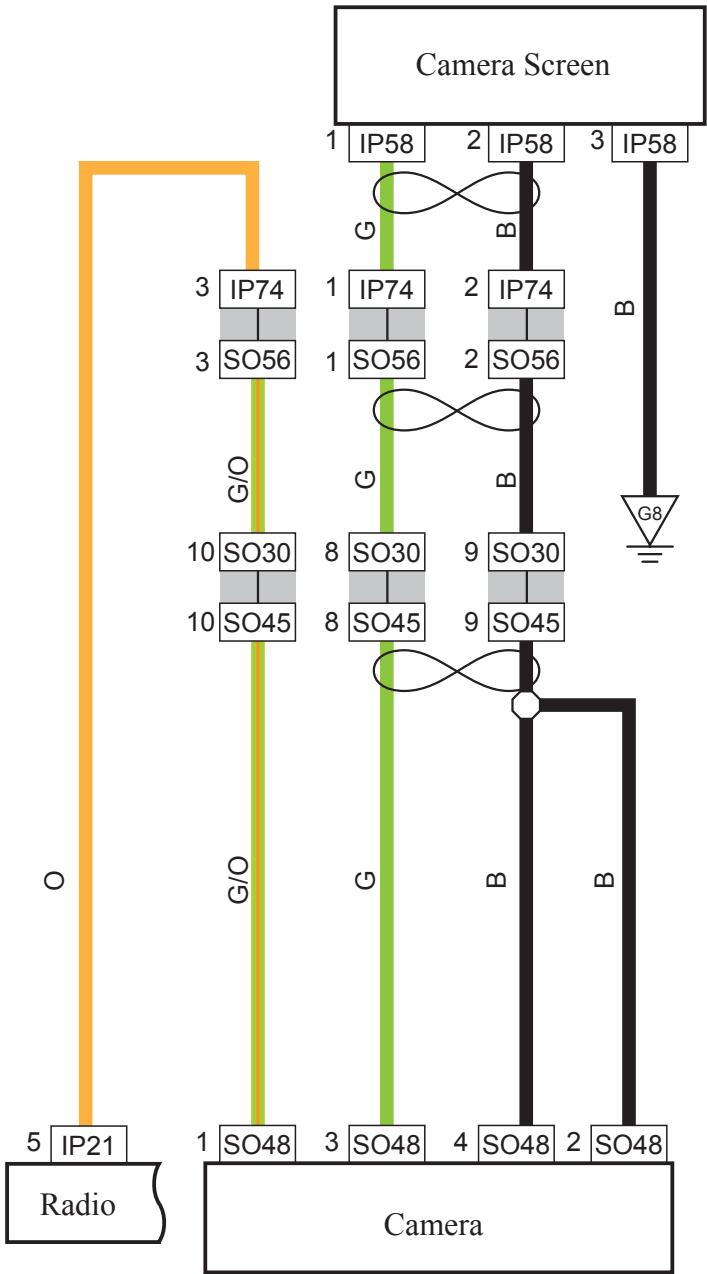




<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA29	Harness connector of FL radar sensor	28
CA30	Harness connector of FR radar sensor	28
CA31	To body harness connector 2	28
IP22	Radio / CD player harness connector 2	41
IP32	To body harness connector 1	40
IP33	To body harness connector 2	40
SO09	To instrument panel harness connector 2	50
SO10	To instrument panel harness connector 3	50
SO24	Harness connector of RR combination lamp	50
SO29	To rear bumper harness connector	50
SO32	PDC module harness connector 1	50
SO45	To body harness connector	51
SO49	To harness connector of reverse radar probe1	52
SO50	To harness connector of reverse radar probe2	52
SO51	To harness connector of reverse radar probe3	52
SO53	To base plate harness connector	52
SO55	To engine compartment harness connector 2	50
G13	Body harness grounding	71
G14	Body harness grounding	71
G8	Instrument grounding	70

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
SO32-4	To right reverse lamp SO24-4	143/144
	To left reverse lamp SO31-4	143/144
SO32-3	To speed sensor EM21-3	110
SO32-5	To combination instrument IP01-9	123
	To parking brake switch IP28-1	123

Parking Distance Control 1

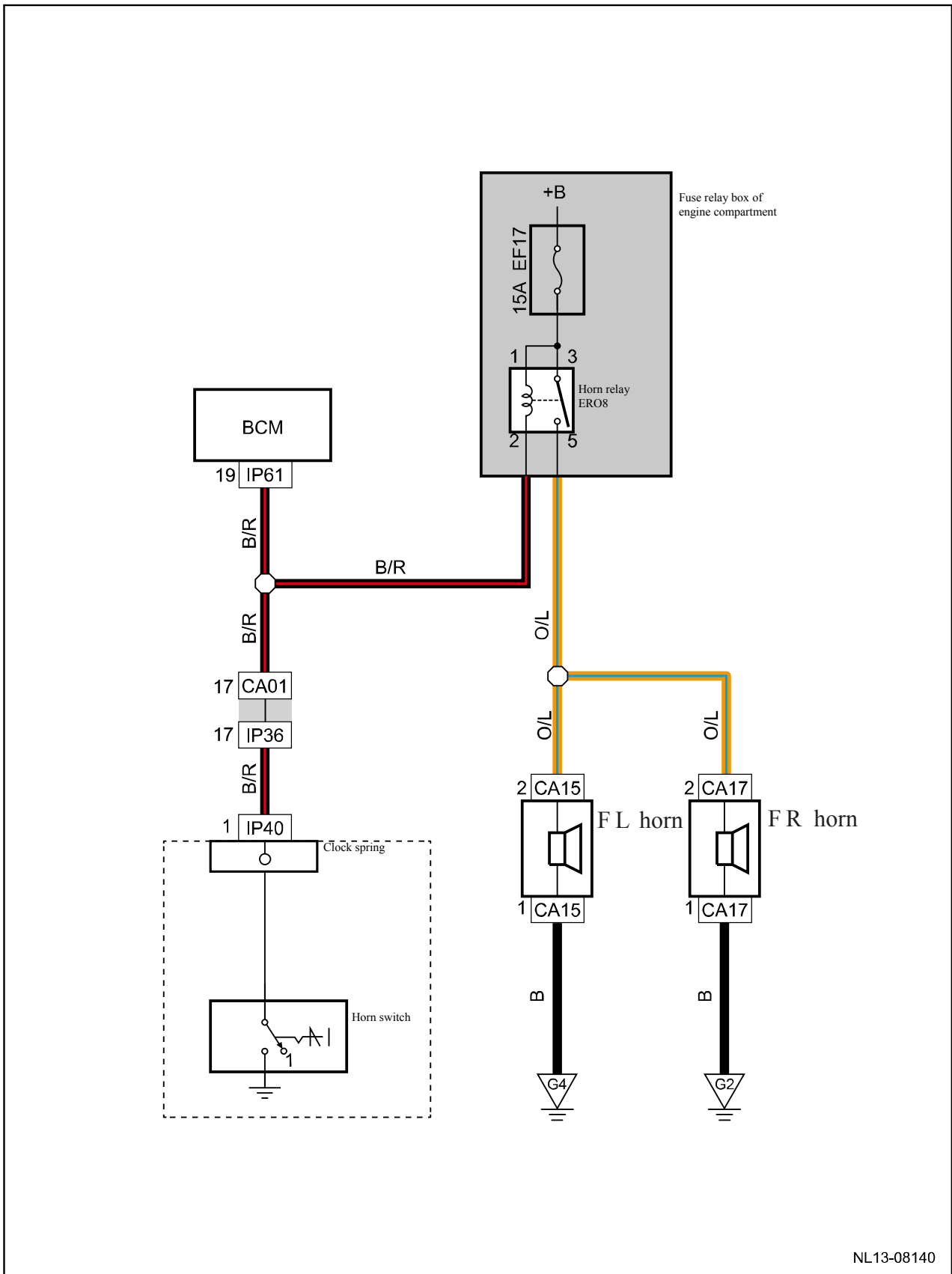


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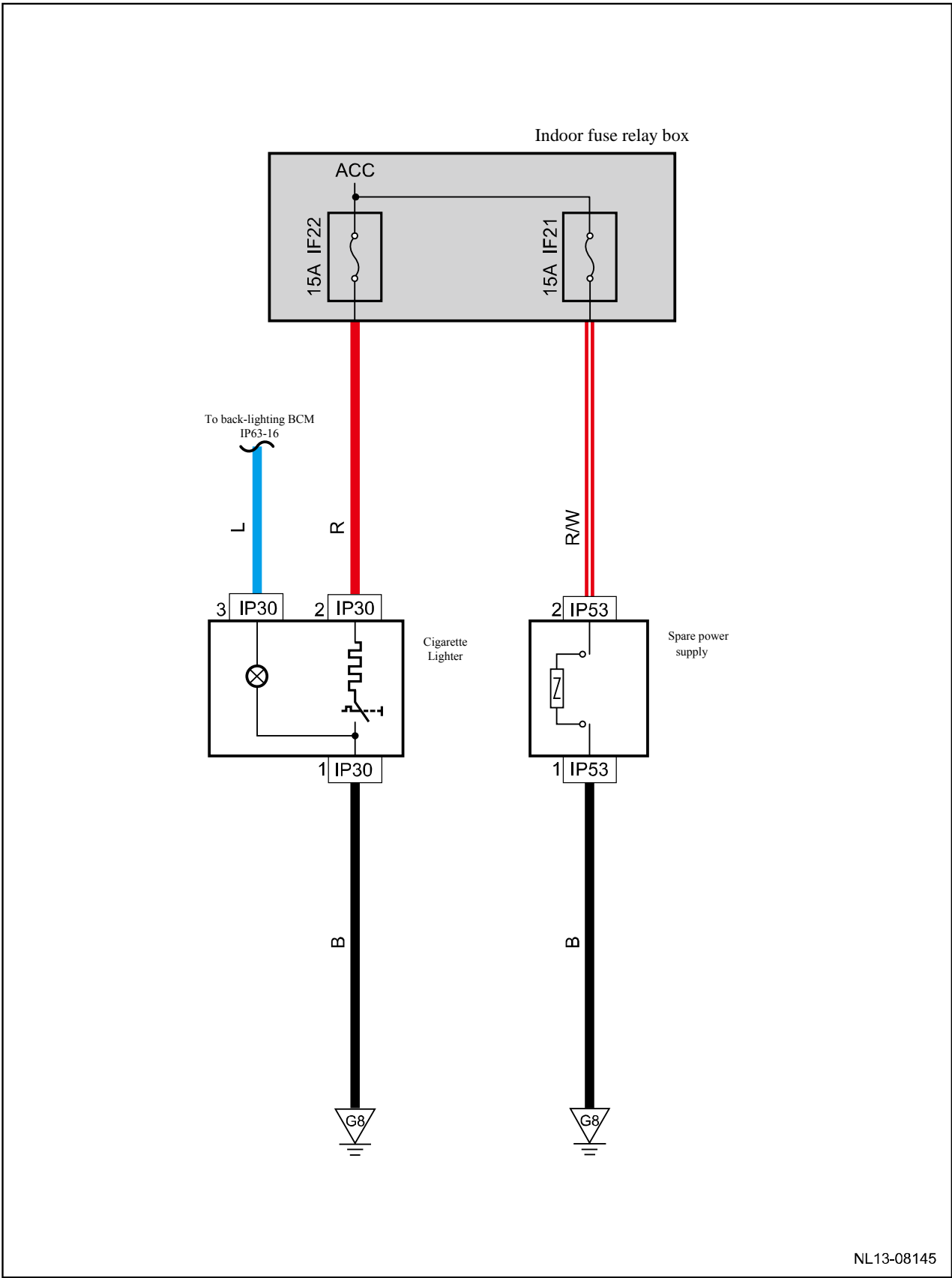
<b>Harness Connector</b>	<b>Description</b>	<b>Pages</b>
IP21	Radio /CD and player harness connector 1	
IP74	To body harness connector	
IP58	Camera harness connector	
SO56	To instrument panel harness connector	
SO45	To body harness connector	
SO30	To back door harness connector	

# Horn



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
CA01	To instrument harness connector 1	28
CA15	Harness connector of FL horn	28
CA17	Harness connector of FR horn	28
IP36	To engine compartment harness connector 2	40
IP40	Harness connector of clock spring	41
IP61	Body control module harness connector 1	41
G2	Engine compartment grounding	67
G4	Engine compartment grounding	67

Cigarette Lighter, Power Supply Socket

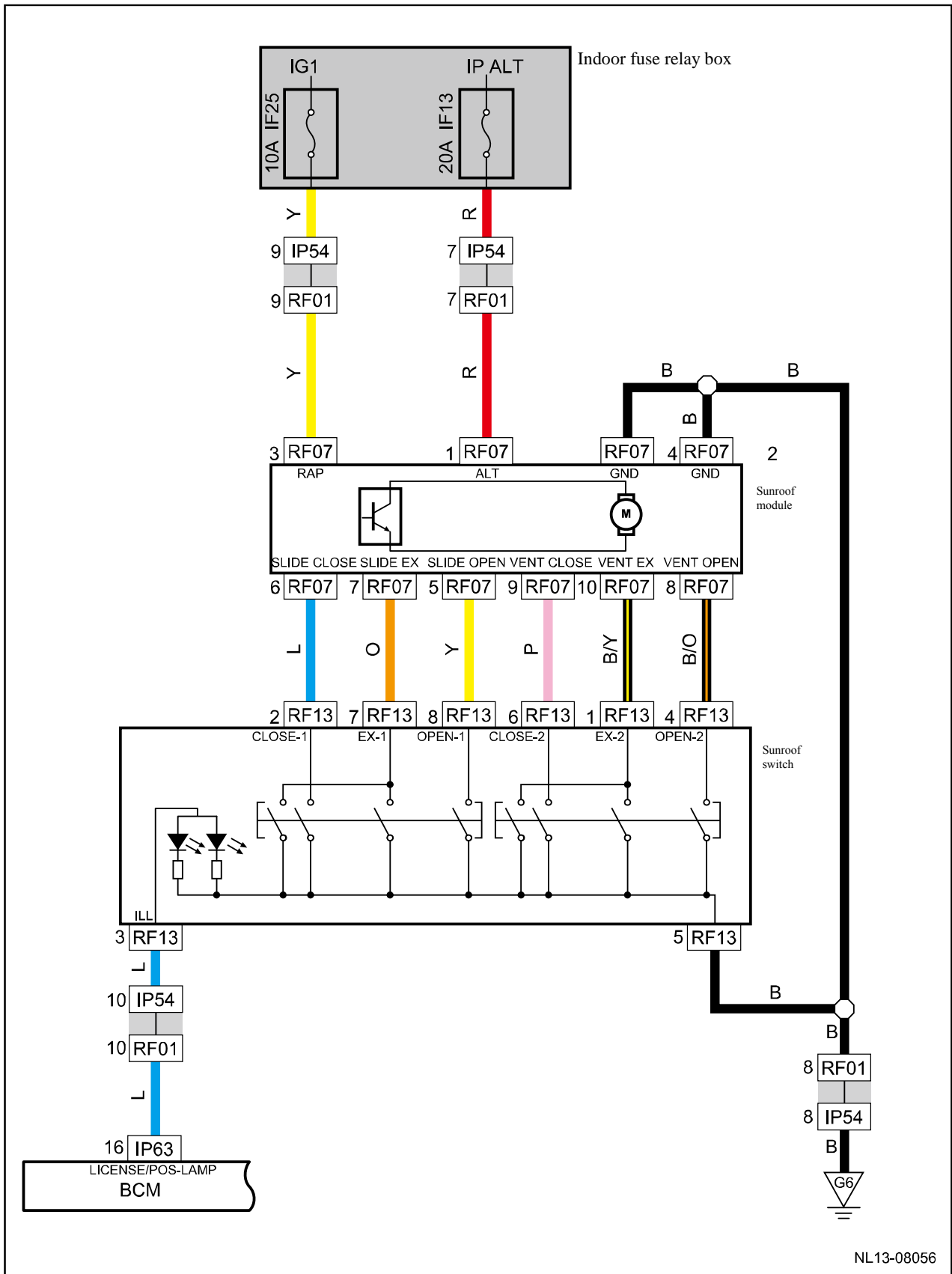


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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP30	Harness connector of cigarette lighter	40
IP53	Harness connector of spare power supply	40
G8	Instrument panel grounding	70

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP30-3	To background light BCM IP63-16	151

Sunroof System

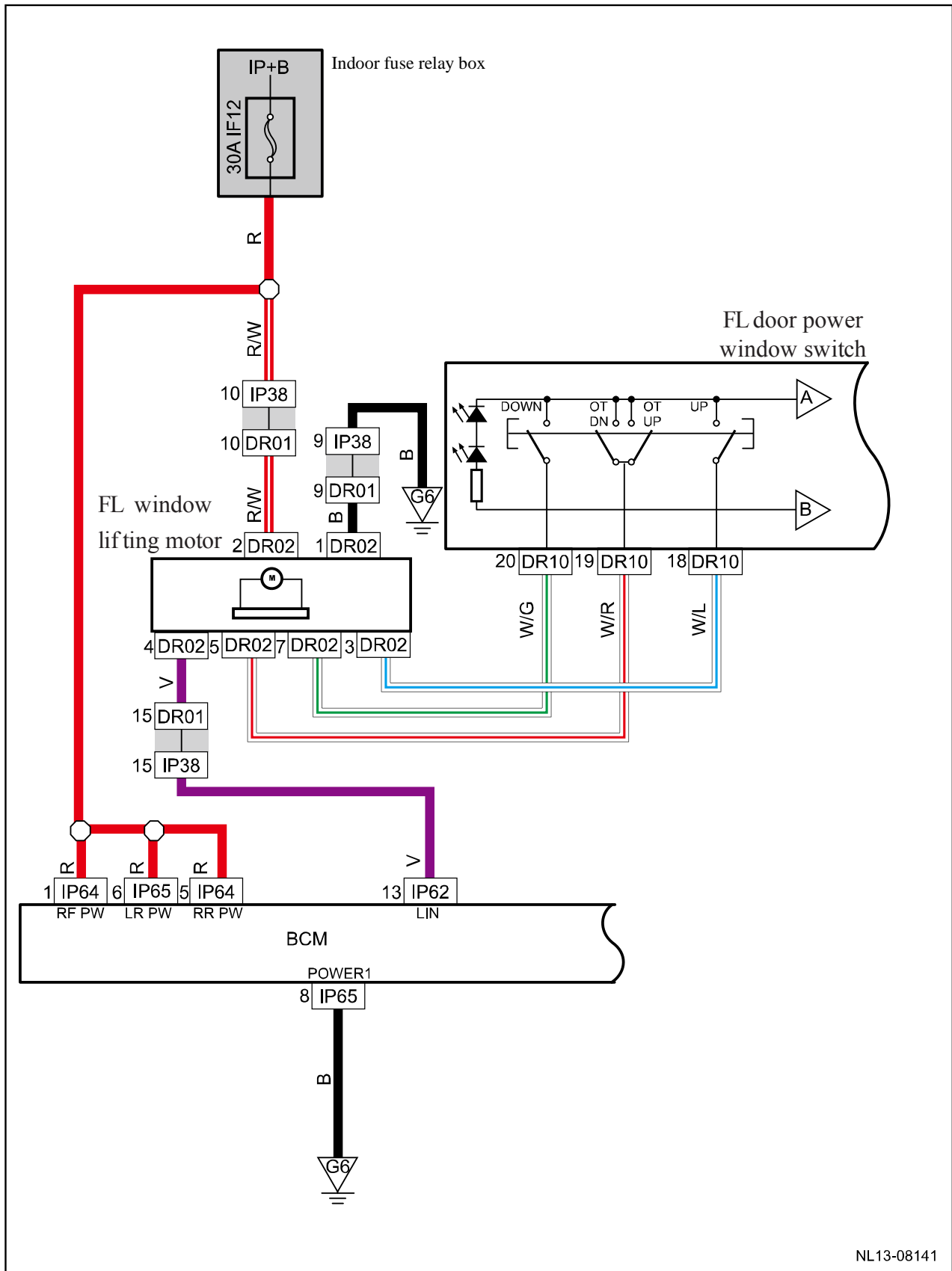




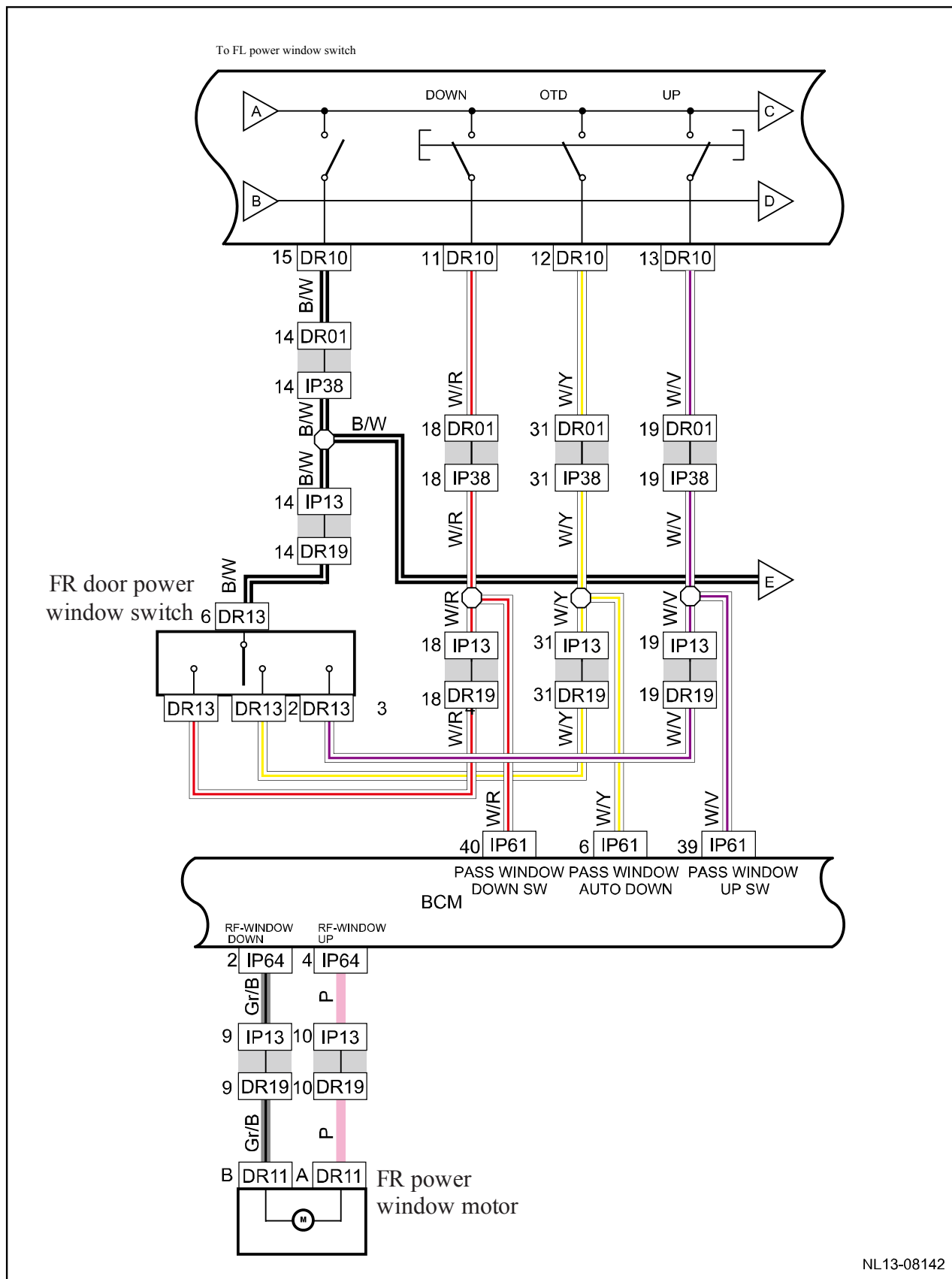
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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
RF01	To instrument harness connector 1	47
RF07	Harness connector of sunroof module	47
IP63	Body control module harness connector 3	41
IP54	To roof harness connector 1	40
G6	Instrument panel grounding	70

# Front Left Power Window (Only Driver Side Door with Anti-Clamp Function) 1

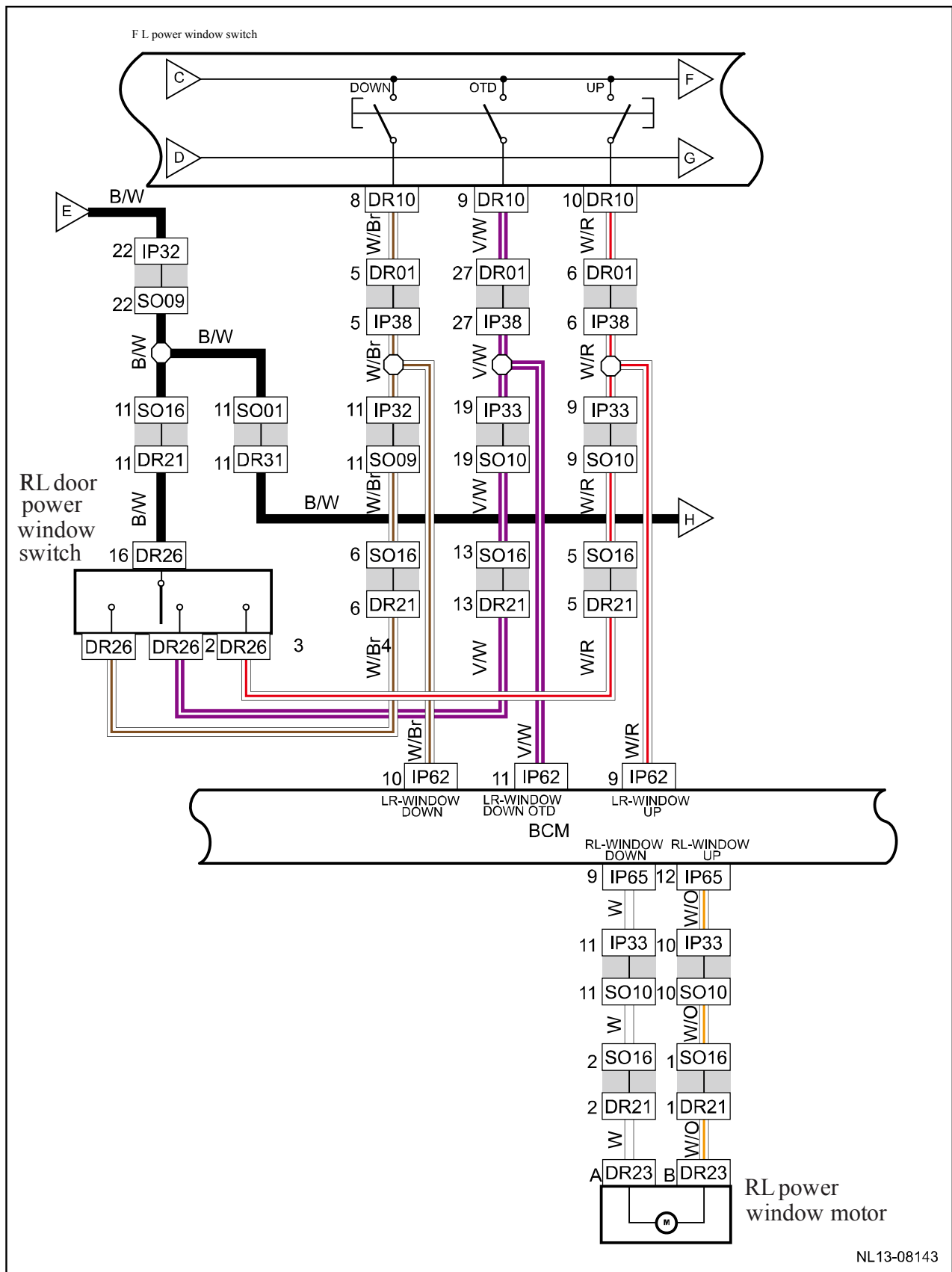


# **Frong Right Power Window (Only Driver Side Door with Anti-Clamp Function) 2**

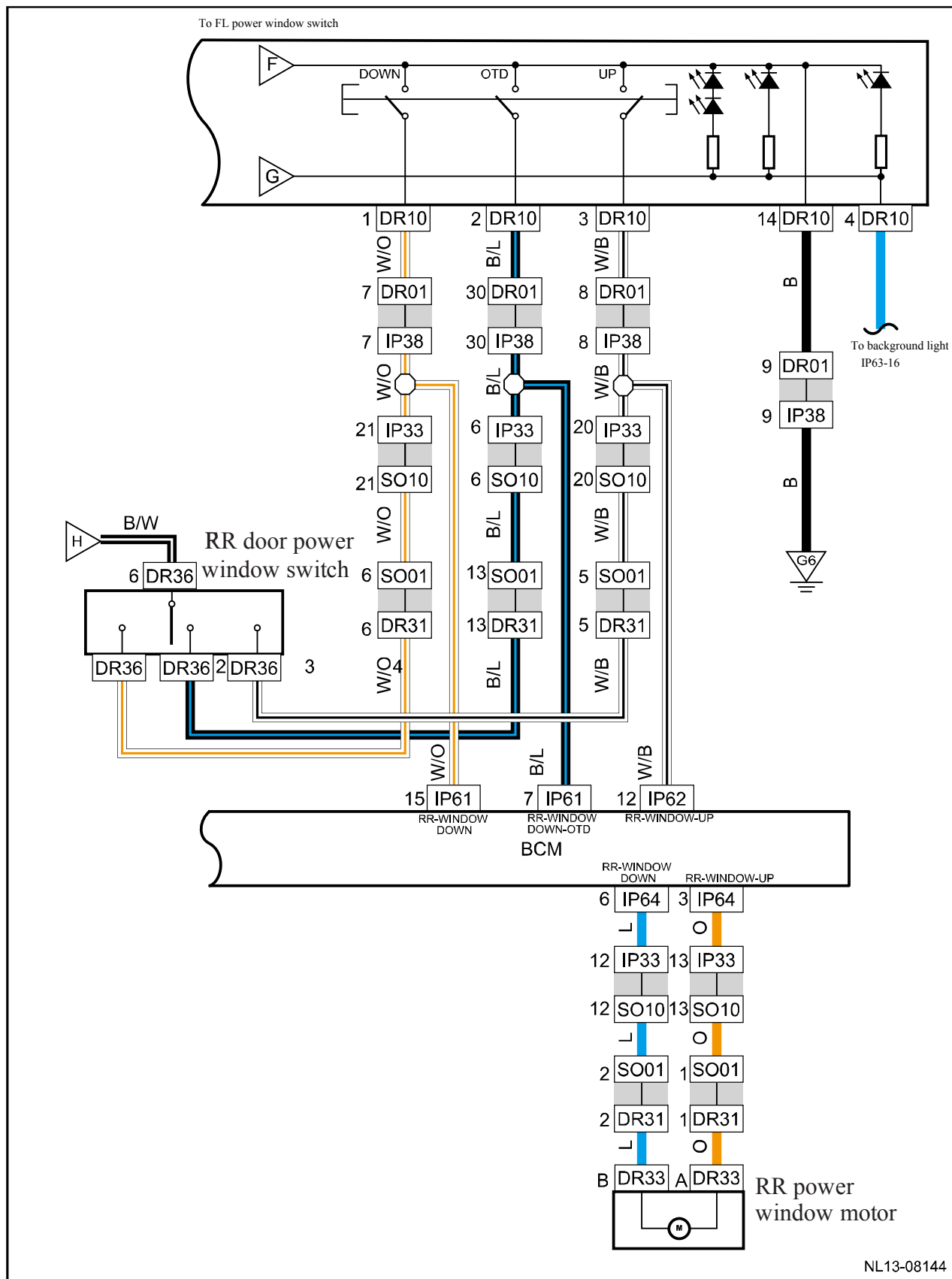


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## EX7

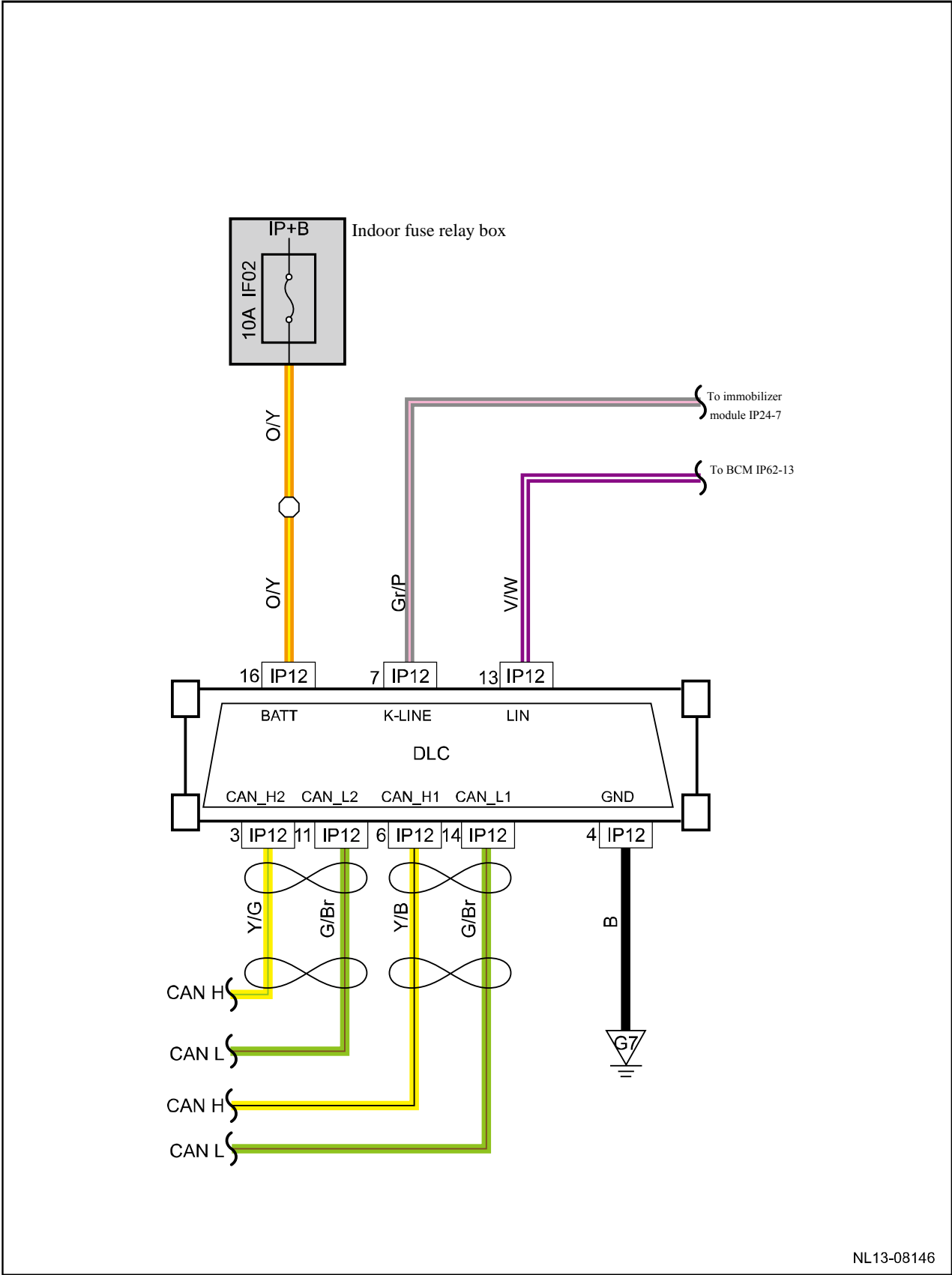


# Rear Right Power Window (Only Driver Side Door with Anti-clamp Function) 4



<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
DR02	FL power window motor connector	58
DR10	Harness connector of FL power window switch	58
DR11	FR power window motor harness connector 1	60
DR13	Harness connector of FR power window switch	60
DR19	FR door connecting to instrument panel harness connector	60
DR21	RL door connecting to body harness connector	62
DR23	Harness connector of RL power window motor	62
DR26	Harness connector of RL power window switch	62
DR31	RR door connecting to body harness connector	62
DR33	Harness connector of RR power window motor	62
IP32	To body harness connector 1	40
IP33	To body harness connector 2	40
IP38	To FL door harness connector	40
IP61	Body control module harness connector 1	41
IP62	Body control module harness connector 2	41
IP64	Body control module harness connector 4	41
IP65	Body control module harness connector 5	41
SO01	To RR door harness connector 1	51
SO09	To RR door harness connector 2	51
SO10	To RR door harness connector 3	51
SO16	To RL door harness connector 1	51
G6	Instrument panel grounding	70

Diagnosis Connector

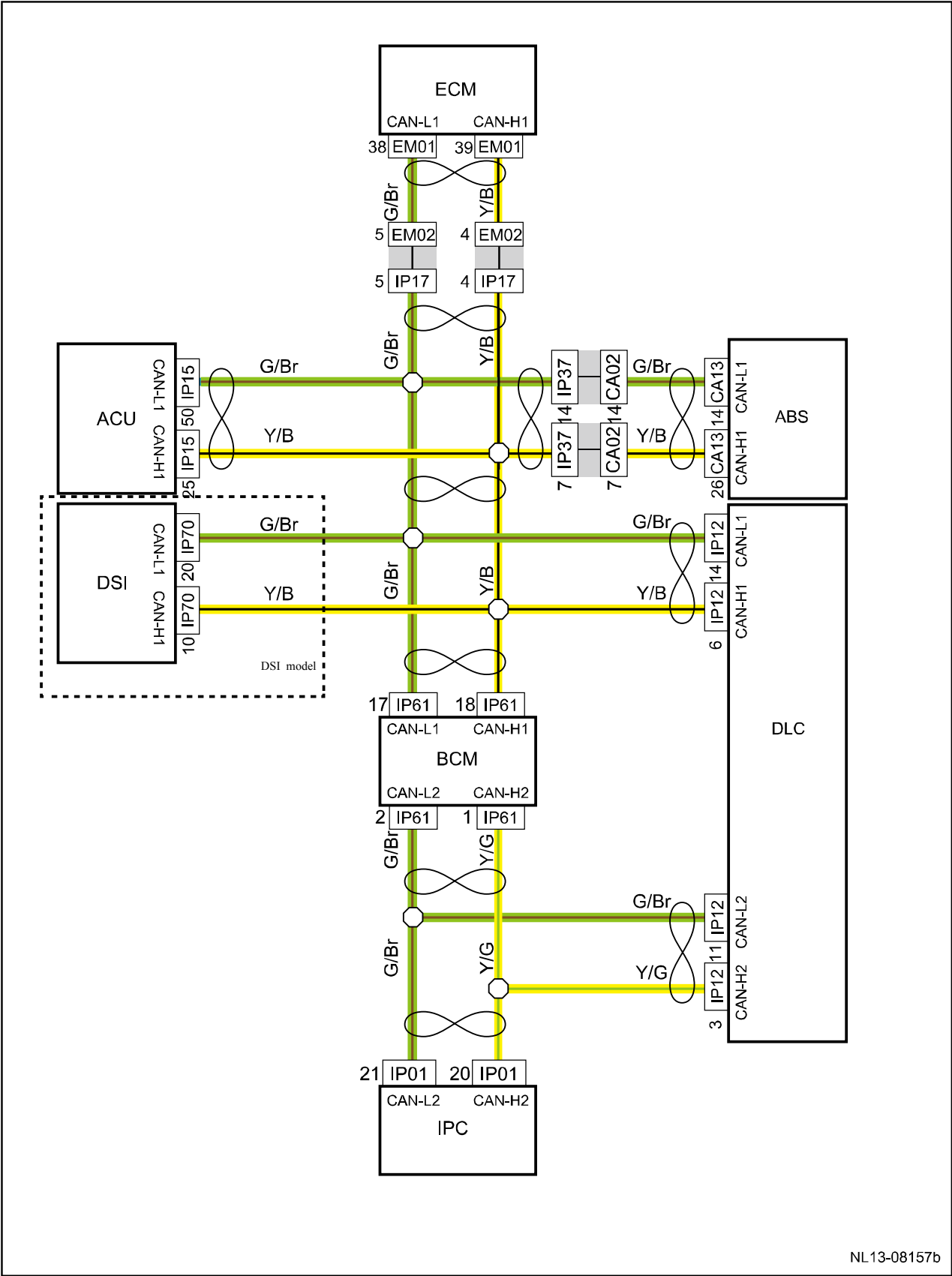


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<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP12	Harness connector of diagnosis connector	40
G7	Instrument panel grounding	70

<b>Connection point</b>	<b>Descriptions</b>	<b>Pages</b>
IP12-7	To immobilizer module IP24-7	117
IP12-13	To BCM IP62-13	153





<b>Harness connector</b>	<b>Description</b>	<b>Pages</b>
IP12	Harness connector of diagnosis connector	40
IP15	Harness connector of airbag control module	40
IP17	To engine harness connector	40
IP37	To engine compartment harness connector	40
IP61	Body control module harness connector 1	41
IP01	Harness connector of combination instrument	41
IP70	TCU3harness connector	41
EM01	Harness connector of engine control module	35
EM02	To harness connector of instrument harness (1)	35
CA02	To instrument harness connector 2	29

English Abbreviation	Specification
ABS	Anti-lock Braking System
A/C	Air Conditioner
ACU	Airbag control module
ALT	Alternator
BCM	Body control module
CAN	Controller area network
CKP	Crankshaft position sensor
CMP	Camshaft position sensor
DLC	Data Link Control
ECM	Engine control module
ECT	EngineCoolant temperature sensor
EVAP	Charcoal carbon canister solenoid valve
FL	Front Left
FR	Front Right
HO2S	Oxygen sensor
IAC	Idling speed control valve
IAT	Air intake temperature sensor
IMMO	Immobilizer
IPC	Combination instrument
KS	Knock sensor
MAP	Air intake manifold absolute pressure sensor
PDC	Parking Distance Control
RL	Rear Left
RR	Rear Right
TPS	Throttle position sensor
VSS	Vehicle Speed Sensor