

SYSTEM OUTLINE

1. MANUAL DOWN OR UP OPERATION

The signal is input to **TERMINAL MDN** of the driver door ECU while the power window master SW is kept pressed one step. This activates the driver door ECU to flow the current from **TERMINAL DN** into the power window motor front LH to **TERMINAL UP** of the driver door ECU to **GROUND**, to rotate the motor and open the window.

The signal is input to **TERMINAL MUP** of the driver door ECU while the power window master SW is kept pulled one step. This activates the driver door ECU to flow the current from **TERMINAL UP** into the power window motor front LH to **TERMINAL DN** of the driver door ECU to **GROUND**, to reversely rotate the motor and close the window. For other windows, as the power window master SW or each power window SW is operated, the window of the relevant door is opened or closed.

2. AUTO DOWN OR UP OPERATION

The signals are input to **TERMINALS MDN** and **AUTO** of the driver door ECU when the power window master SW is pressed two steps. According to these signals, it is determined that the driver door ECU is in the auto mode. The current flows from **TERMINAL DN** into the power window motor front LH to **TERMINAL UP** of the driver door ECU to **GROUND**, to rotate the motor and automatically open the window. Accordingly, when each window switch of the power window master SW is pressed, the window of the relevant door is automatically opened through communication control of the body ECU and door ECU etc.

The signals are input to **TERMINALS MUP** and **AUTO** of the driver door ECU when the power window master SW is pulled two steps. According to these signals, it is determined that the driver door ECU is in the auto mode. The current flows from **TERMINAL UP** into the power window motor front LH to **TERMINAL DN** of the driver door ECU to **GROUND**, to rotate the motor and automatically close the window. Accordingly, when each window switch of the power window master SW is pressed, the window of the relevant door is automatically closed through communication control of the body ECU and door ECU etc.

For other windows, as each power window control SW is operated, the window of the relevant door is automatically opened or closed.

3. POWER WINDOW OPERATION LINKED WITH DOOR KEY LOCK AND UNLOCK SW

When the ignition key is inserted into the door key cylinder on the driver or passenger side and kept turned to the lock or unlock position for approximately **1.5 sec.** or longer, all the door windows can be opened or closed.

* Power window close operation

When the ignition key is inserted into the door key cylinder and kept turned to the lock position for **1.5 sec.** or longer, the signal from the door key lock and unlock SW is input to **TERMINAL KL** of the driver door ECU or front passenger door ECU. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL UP** of each door ECU into the power window motor to **TERMINAL DN** of the each door ECU to **GROUND**, to close all the door windows.

* Power window open operation

When the ignition key is inserted into the door key cylinder and kept turned to the unlock position for **1.5 sec.** or longer, the signal from the door key lock and unlock SW is input to **TERMINAL KUL** of the driver door ECU or front passenger door ECU. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to close all the door windows.

If any of the following conditions is detected, the power window operation is stopped.

Approximately **10 sec.** or longer has elapsed after starting open/close operation. Catching prevention function is activated.

4. POWER WINDOW OPERATION LINKED WITH TRANSMITTER

(Europe)

When the lock or unlock SW on the transmitter of the ignition key is kept pressed for **1 sec.** or longer, all the door windows can be opened or closed.

* Power window close operation

When the lock SW of the ignition key is kept pressed for **1 sec.** or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL UP** of each door ECU into the power window motor to **TERMINAL DN** of the each door ECU to **GROUND**, to close all the door windows.

* Power window open operation

When the unlock SW of the ignition key is kept pressed for **1 sec.** or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to open all the door windows.

If any of the following conditions is detected, the power window operation is stopped.

Approximately **10 sec.** or longer have elapsed after starting open/close operation.

The lock or unlock switch on the transmitter is released.

Catching prevention function is activated.

(G.C.C.)

When the unlock SW on the transmitter of the ignition key is kept pressed for **1 sec.** or longer, all the door windows can be opened.

* Power window open operation

When the unlock SW of the ignition key is kept pressed for **1 sec.** or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to open all the door windows.

If any of the following conditions is detected, the power window operation is stopped.

Approximately **10 sec.** or longer have elapsed after starting open/close operation.

The lock or unlock SW on the transmitter is released.

Catching prevention function is activated.

5. CATCHING PREVENTION FUNCTION

If any foreign matter is caught in the window while it is rising, the pulse sensor installed in the power window motor detects changes in the number of motor rotations, forcibly lowers the door window **50 mm** or if the door window opening amount is **200 mm** or less, the window is lowered so that the opening amount is **200 mm**.

6. KEY OFF POWER WINDOW OPERATION

The power window can be operated for approximately **45 seconds**, when the ignition SW is turned from ON to OFF with all doors closed. However, when the driver side door or front passenger side door is opened during this time, the operation is canceled. (If the door is opened during auto operation, the operation will stop after it is completed.)

POWER WINDOW (LHD)

SERVICE HINTS

B6 BODY ECU NO.2

- 1-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 8-GROUND : Always approx. **12** volts
- 11-GROUND : Always continuity

B5 (A) BODY ECU NO.1

- 1-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 8-GROUND : Always approx. **12** volts
- 11-GROUND : Always continuity
- 4-GROUND : Always approx. **12** volts
- (A)15-GROUND : Approx. **12** volts with ignition SW at **ACC** or **ON** position

D18 (A), D20 (C) DRIVER DOOR ECU

- (A) 1-GROUND : Always approx. **12** volts
- (C) 3-GROUND : Always approx. **12** volts
- (C) 2-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- (C)12-GROUND : Always continuity

F11 (A), F13 (C) FRONT PASSENGER DOOR ECU

- (A) 2-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- (A) 3-GROUND : Always approx. **12** volts
- (A)12-GROUND : Always continuity
- (C) 1-GROUND : Always approx. **12** volts

R13 REAR DOOR LH ECU

- 9-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 14-GROUND : Always approx. **12** volts
- 15-GROUND : Always approx. **12** volts
- 25-GROUND : Always continuity

R14 REAR DOOR RH ECU

- 9-GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
- 15-GROUND : Always approx. **12** volts
- 14-GROUND : Always approx. **12** volts
- 20-GROUND : Always continuity
- 25-GROUND : Always continuity

P11 POWER WINDOW MASTER SW

- 15-6 : Closed with power window master SW at **MANUAL UP** position
- 15-18 : Closed with power window master SW at **MANUAL DOWN** position
- 15-6, 7 : Closed with power window master SW at **AUTO UP** position
- 15-18, 7 : Closed with power window master SW at **AUTO DOWN** position

P8, P9, P10 POWER WINDOW CONTROL SW FRONT RH, REAR LH, REAR RH

- 3-6 : Closed with power window SW at **MANUAL UP** operation
- 3-4 : Closed with power window SW at **MANUAL DOWN** operation
- 3-6, 5 : Closed with power window SW at **AUTO UP** operation
- 3-4, 5 : Closed with power window SW at **AUTO DOWN** operation

WINDOW LOCK SW

- Closed with window lock SW at **LOCK** position

○ : PARTS LOCATION

Code		See Page	Code		See Page	Code	See Page
A16		72 (LHD)	F11	A	76 (LHD)	P9	78 (LHD)
B5	A	72 (LHD)	F12	B	76 (LHD)	P10	78 (LHD)
B6	A	72 (LHD)	F13	C	76 (LHD)	P11	78 (LHD)
C12		72 (LHD)	J7		74 (LHD)	P12	78 (LHD)
D8		76 (LHD)	J8		74 (LHD)	P13	78 (LHD)
D9		76 (LHD)	J10		74 (LHD)	P19	80 (LHD)
D16		76 (LHD)	J13		74 (LHD)	R13	78 (LHD)
D17		76 (LHD)	J16		74 (LHD)	R14	78 (LHD)
D18	A	76 (LHD)	J18		74 (LHD)	T5	74 (LHD)
D19	B	76 (LHD)	J22		78 (LHD)	W6	78 (LHD)
D20	C	76 (LHD)	M2		74 (LHD)		
E5		68 (LHD)	P8		78 (LHD)		

○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	54 (LHD)	Engine Room No.1 R/B (Engine Compartment Right)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1E	58 (LHD)	Floor No.2 Wire and Driver Side J/B (Left Kick Panel)
1F	58 (LHD)	Cowl Wire and Driver Side J/B (Left Kick Panel)
1G	59 (LHD)	
1H		
2B	60 (LHD)	Engine Room Main Wire and Passenger Side J/B (Right Kick Panel)
2E	60 (LHD)	Floor No.1 Wire and Passenger Side J/B (Right Kick Panel)
2F	60 (LHD)	Cowl Wire and Passenger Side J/B (Right Kick Panel)
2G	61 (LHD)	
2H		

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IB1	98 (LHD)	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IC2	98 (LHD)	Floor No.2 Wire and Cowl Wire (Left Kick Panel)
IC3		
IE1	98 (LHD)	Instrument Panel Wire and Cowl Wire (Left Side of the Steering Column)
IJ1	100 (LHD)	Instrument Panel Wire and Cowl Wire (Left Side of the Blower Unit)
IK1	100 (LHD)	Front Door RH Wire and Cowl Wire (Right Kick Panel)
IL1	100 (LHD)	Floor No.1 Wire and Cowl Wire (Right Kick Panel)
IL3		
BA1	102 (LHD)	Rear Door LH Wire and Floor No.2 Wire (Under the Center Pillar LH)
BB1	102 (LHD)	Rear Door RH Wire and Floor No.1 Wire (Under the Center Pillar RH)
BC1	104 (LHD)	Floor No.2 Wire and Front Seat LH Wire (Under the Driver's Seat)

▽ : GROUND POINTS

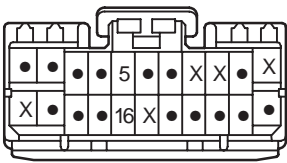
Code	See Page	Ground Points Location
IF	98 (LHD)	Left Kick Panel
II	98 (LHD)	Right Side of the Cowl Panel
BJ	102 (LHD)	Rear Floor Partition Panel LH
BL	102 (LHD)	Rear Floor Partition Panel RH
BM	102 (LHD)	Quarter Panel RH

POWER WINDOW (LHD)

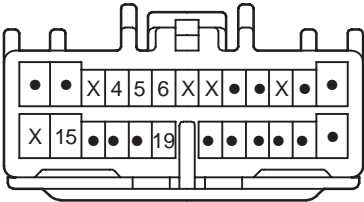
 : SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I6	100 (LHD)	Cowl Wire			

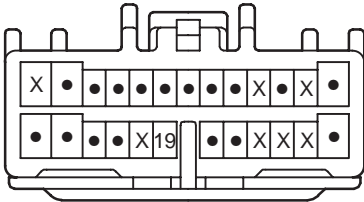
A16



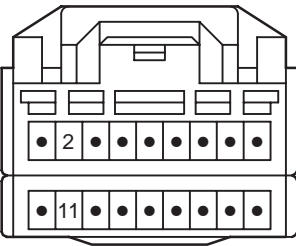
B5 (A)



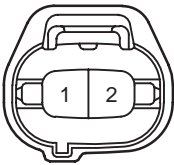
B6 (A)



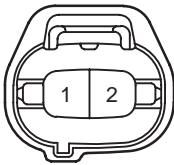
C12



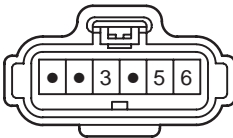
D8 GRAY



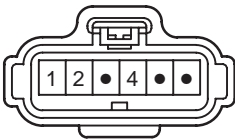
D9 GRAY



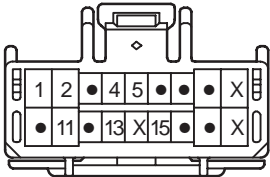
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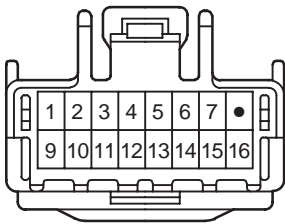
D17 BLACK



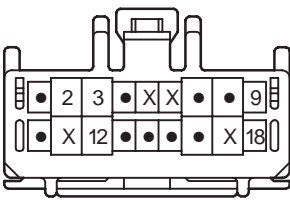
D18 (A) GRAY



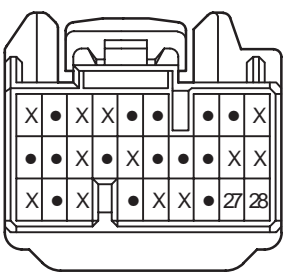
D19 (B) GRAY



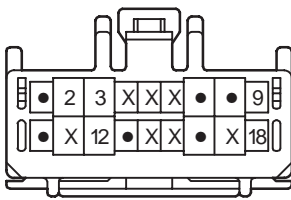
D20 (C) GRAY



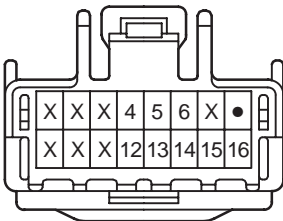
E5



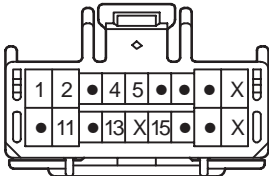
F11 (A) GRAY



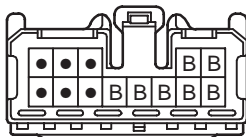
F12 (B) GRAY



F13 (C) GRAY

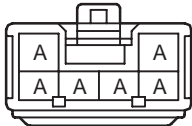


J7 GRAY



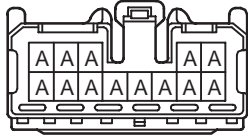
(Hint : See Page 7, 23, 39)

J8



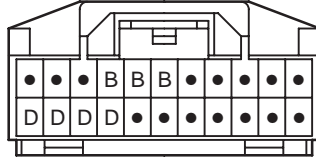
(Hint : See Page 7, 23, 39)

J10 ORANGE



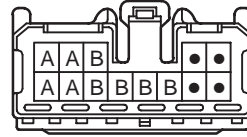
(Hint : See Page 7, 23, 39)

J13



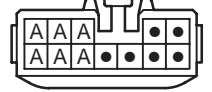
(Hint : See Page 7, 23, 39)

J16



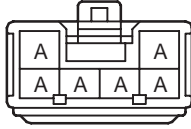
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J18



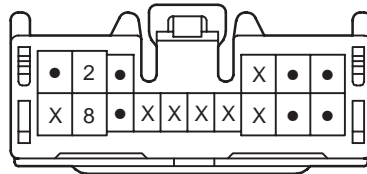
(Hint : See Page 7, 23, 39)

J22

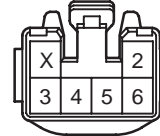


(Hint : See Page 7, 23, 39)

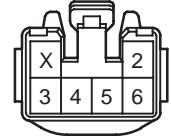
M2 BLUE



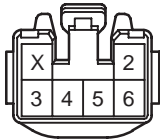
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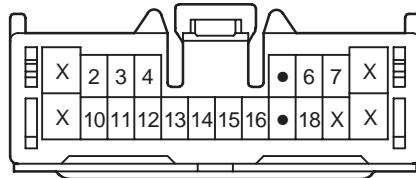
P9



P10



P11



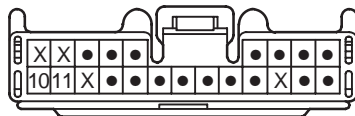
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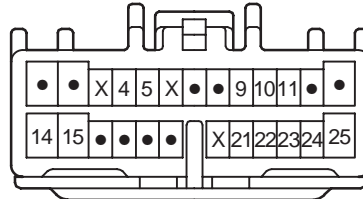
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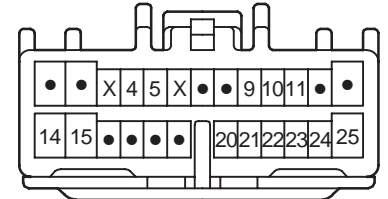
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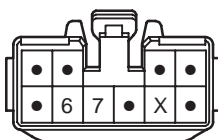
R13



R14



T5 GRAY



W6

