

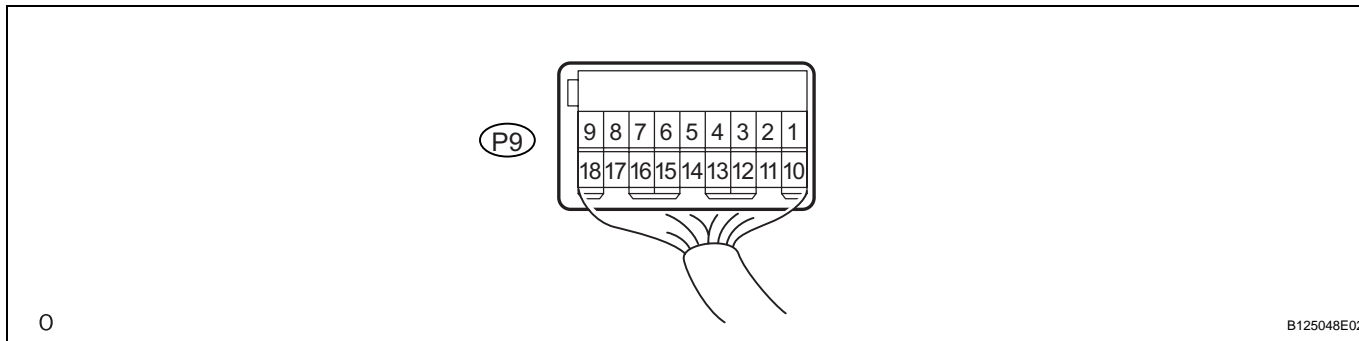
PROBLEM SYMPTOMS TABLE

Symptom	Suspected area	See page
Remote UP / DOWN function does not operate	Power window regulator master switch assembly	WS-11
	Wire harness	
Driver side power window does not operate with power window master switch	D FR P/W fuse	WS-15
	P/W Relay	
	Power window regulator master switch assembly	
	Power window regulator motor assembly (Driver side)	
	Wire harness	
Front passenger side power window does not operate with front power window switch	Power window regulator switch assembly (Passenger side)	WS-20
	Power window regulator motor assembly (Passenger side)	
	Wire harness	
Rear power window LH does not operate with rear power window switch LH	Power window regulator switch assembly (Rear LH)	WS-23
	Power window regulator motor assembly (Rear LH)	
	Wire harness	
Rear power window RH does not operate with rear power window switch RH	Power window regulator switch assembly (Rear RH)	WS-26
	Power window regulator motor assembly (Rear RH)	
	Wire harness	
Power window do not operate at all	D FR P/W fuse	WS-29
	IG1 NO.2 fuse	
	ECU-B fuse	
	AM1 fuse	
	J/B fuse	
	P/W fuse	
	Power window regulator master switch assembly	
	Wire harness	
	Driver side J/B assembly (Multiplex network body ECU)	
Power window can be operated after ignition switch is turned off even if operative conditions are not met	Power window regulator master switch assembly	WS-34
	Front door courtesy light switch	
	Wire harness	
	Driver side J/B assembly (Multiplex network body ECU)	

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TERMINALS OF ECU

1. CHECK POWER WINDOW REGULATOR MASTER SWITCH (FOR DOUBLE CAB):



- (a) Disconnect the P9 power window regulator master switch connector.
- (b) Measure the voltage and resistance of each of the wire harness side connector terminals.

Standard:

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E (P9-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (P9-7) - E (P9-1)	R - W-B	Regulator motor power supply	Always	10 to 14 V
B (P9-7) - E (P9-1)	R - W-B	Master switch power supply	Ignition switch OFF	0 V
B (P9-7) - E (P9-1)	R - W-B	Master switch power supply	ignition switch ON	10 to 14 V
DU (P9-4) - DD (P9-9)	L - L-B	•Power window motor UP output •Power window motor DOWN output	Always	Below 1 Ω

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

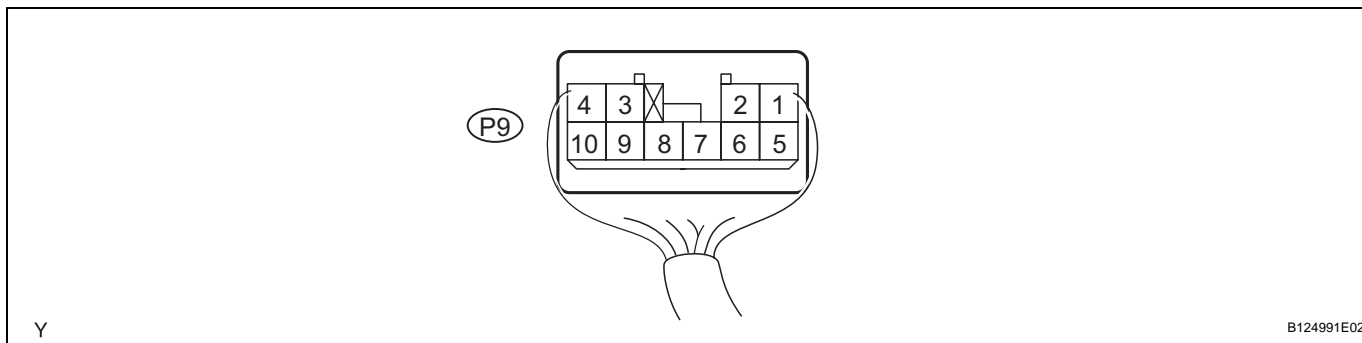
- (c) Reconnect the power window regulator master switch connector.
- (d) Measure the voltage of the connector terminals.

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
DU (P9-4) - E (P9-1)	L - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch OFF	0 V
DU (P9-4) - E (P9-1)	L - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch UP	10 to 14 V
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch OFF	0 V
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch DOWN (manual operation)	10 to 14 V
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window fully closed → driver side power window switch DOWN (AUTO operation) → driver side power window fully open	0 V → 10 to 14 V → 0 V

If the result is not as specified, the switch may have a malfunction.

- (e) Check the illumination.
- (1) When the ignition switch is turned to ON from OFF with the connector connected, check that the illumination (YELLOW) AUTO lights up.

2. CHECK POWER WINDOW REGULATOR MASTER SWITCH (FOR ACCESS CAB):



- (a) Disconnect the P9 power window regulator master switch connector.
- (b) Measure the voltage and resistance of each of the wire harness side connector terminals.

Standard:

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E (P9-1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
B (P9-9) - E (P9-1)	R - W-B	Regulator motor power	Always	10 to 14 V
B (P9-9) - E (P9-1)	R - W-B	Master switch power supply	Ignition switch OFF	0 V
B (P9-9) - E (P9-1)	R - W-B	Master switch power supply	ignition switch ON	10 to 14 V
DU (P9-3) - DD (P9-4)	L - L-B	<ul style="list-style-type: none"> •Power window motor UP output •Power window motor DOWN output 	Always	Below 1 Ω

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

- (c) Reconnect the power window regulator master switch connector.
- (d) Measure the voltage of the connector terminals.

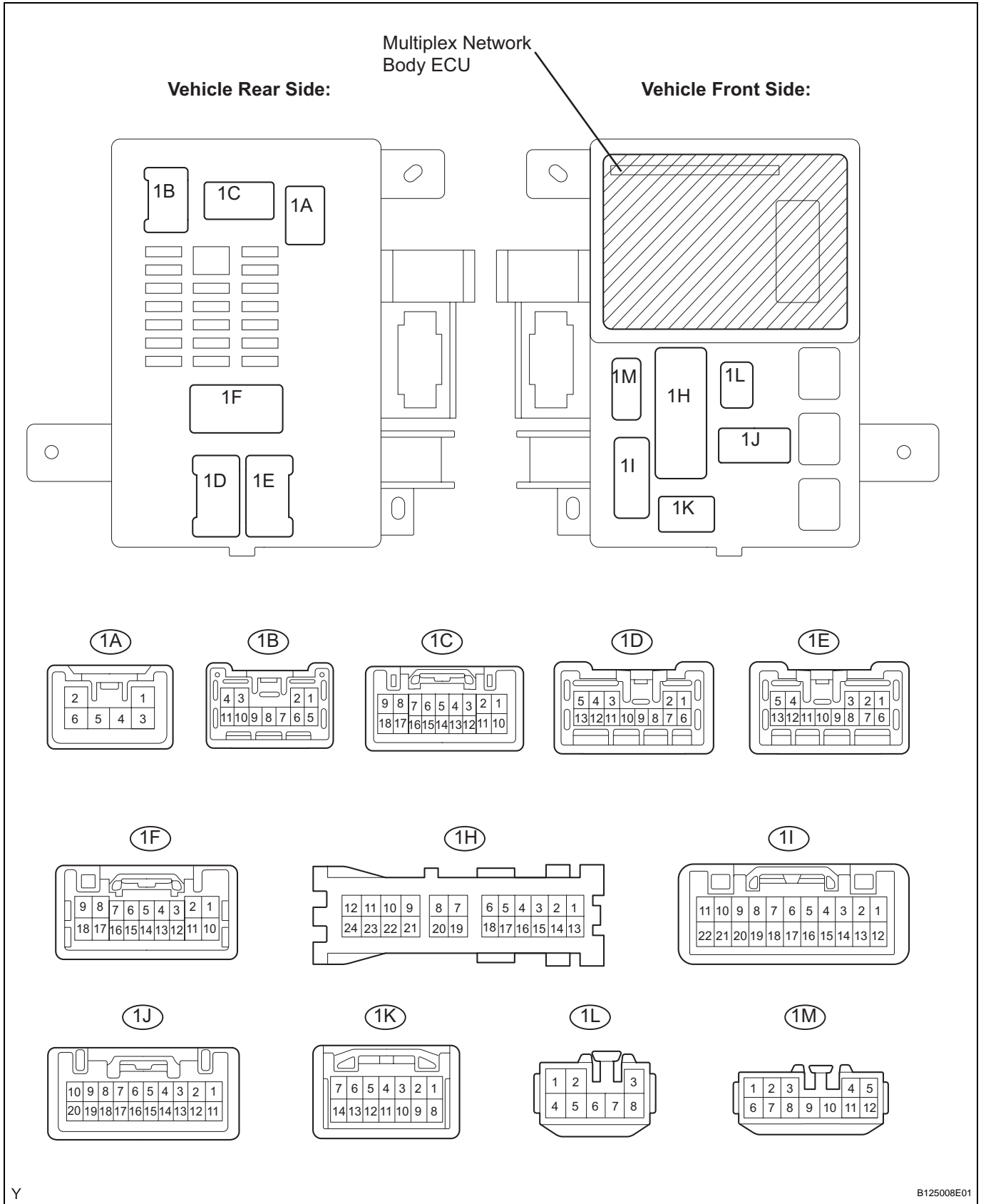
Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
DU (P9-4) - E (P9-1)	L - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch OFF	0 V
DU (P9-4) - E (P9-1)	L - W-B	Power window motor UP output	Ignition switch ON, driver side power window switch UP	10 to 14 V
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch OFF	0 V
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window switch DOWN (manual operation)	10 to 14 V

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
DD (P9-9) - E (P9-1)	L-B - W-B	Power window motor DOWN output	Ignition switch ON, driver side power window fully closed → driver side power window switch DOWN (AUTO operation) → driver side power window fully open	0 V → 10 to 14 V → 0 V

If the result is not as specified, the switch may have a malfunction.

- (e) Check the illumination.
 - (1) When the ignition switch is turned to ON from OFF with the connector connected, check that the illumination (YELLOW) AUTO lights up.

3. CHECK DRIVER SIDE J/B ASSEMBLY (MULTIPLEX NETWORK BODY ECU)



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(a) Disconnect the 1A, 1C, 1F, 1H, 1I and 1K driver side J/B connectors.

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- (b) Measure the voltage and resistance between each terminal of the wire harness side connectors and body ground.

Standard:

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ECUB (1C-16) - Body ground	R - Body ground	+B (ECUB) power supply	Always	10 to 14 V
ALTB (1A-6) - Body ground	L - Body ground	+B (power system, generator system) power supply	Always	10 to 14 V
PWS (1H-10) - Body ground	W-B - Body ground	PWR Relay ON signal	Ignition switch OFF	0 V
			Ignition switch ON	10 to 14 V
KSW (1K-10) - Body ground	G-B - Body ground	Key unlock warning switch input	No key in ignition key cylinder	10 kΩ or higher
			Key inserted ignition key cylinder	Below 1 Ω
DCTY (1F-7) - Body ground	G-Y - Body ground	Driver side courtesy switch input	Driver side door CLOSED	10 kΩ or higher
			Driver side door OPEN	Below 1 Ω
PCTY (1I-8) - Body ground	R-B - Body ground	Passenger side courtesy switch input	Passenger side door CLOSED	10 kΩ or higher
			Passenger side door OPEN	Below 1 Ω
GND (1H-18) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

- (c) Reconnect the driver side J/B connectors.
- (d) Measure the voltage between each terminal of the connector and body ground.

Standard:

Symbol (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
KSW (1K-10) - Body ground	G-B - Body ground	Key unlock warning switch input	No key in ignition key cylinder	10 to 14 Vr
			Key inserted ignition key cylinder	0 V

If the result is not as specified, the driver side J/B assembly (multiplex network body ECU) may have a malfunction.

ON-VEHICLE INSPECTION

1. CHECK WINDOW LOCK SWITCH

- (a) Check that the passenger side power window and rear door side power window operations are disabled when the window lock switch of the power window regulator master switch assembly is pressed.
- (b) Check that the passenger side power window and rear door side power window can be operated when the window lock switch is pressed again.



2. CHECK MANUAL UP/DOWN FUNCTION

- (a) Check that the driver side power window operates as follows:

OK:

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled up	UP (closes)
Ignition switch ON	Driver side	Pushed halfway down	DOWN (opens)

- (b) Check that the power windows, except the driver side power window, operate as follows:

OK:

Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Front passenger side	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Front passenger side	Pushed down	DOWN (opens)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear LH	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear LH	Pushed down	DOWN (opens)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear RH	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear RH	Pushed down	DOWN (opens)

3. CHECK AUTO DOWN FUNCTION

- (a) Check that the driver side power window operates as follows:

OK:

Condition	Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pushed fully down	AUTO DOWN (fully opens)

(b)

4. CHECK REMOTE UP/DOWN FUNCTION

- (a) Check that the power windows except the driver side power window operate as follows:

OK:

Condition	Master Switch	Switch Operation	Power Window
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Front passenger side	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Front passenger side	Pushed down	DOWN (opens)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear LH	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear LH	Pushed down	DOWN (opens)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear RH	Pulled up	UP (closes)
<ul style="list-style-type: none"> • Ignition switch ON • Window lock switch OFF 	Rear RH	Pushed down	DOWN (opens)

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