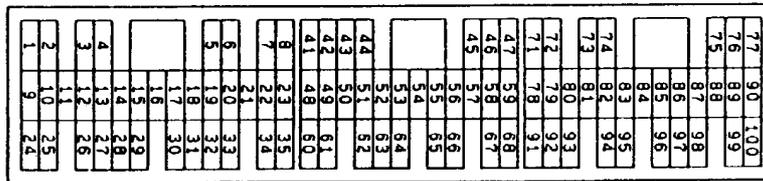


CHECK AT THE ENGINE-ECU TERMINALS**TERMINAL VOLTAGE CHECK CHART****Engine-ECU Connector Terminal Arrangement**

7FU2119

Terminal No.	Check item	Check condition (Engine condition)	Normal condition
1	No. 1 injector	While engine is idling after having warmed up, suddenly depress the accelerator pedal.	From 11 – 14 V, momentarily drops slightly
9	No. 2 injector		
24	No. 3 injector		
2	No. 4 injector		
10	No. 5 injector		
25	No. 6 injector		
14	Stepper motor coil <A1>	Engine: Soon after the warmed up engine is started	10 – 15 V ↔ 0 – 6 V (Changes repeatedly)
28	Stepper motor coil <A2>		
15	Stepper motor coil <B1>		
29	Stepper motor coil <B2>		
6	EGR control solenoid valve	Ignition switch: ON	System Voltage
		While engine is idling, suddenly depress the accelerator pedal.	From system voltage, momentarily drops
8	Alternator G terminal	<ul style="list-style-type: none"> ● Engine: Warm up, and then idling ● Radiator fan: Not operating ● Headlamp: OFF → ON ● Stop lamp: OFF → ON ● Rear defogger switch: OFF → ON 	Voltage increases by 0.2 – 3.5 V
52	Alternator FR terminal	<ul style="list-style-type: none"> ● Engine: Warm up, and then idling ● Radiator fan: Not operating ● Headlamp: OFF → ON ● Stop lamp: OFF → ON ● Rear defogger switch: OFF → ON 	Voltage decrease
11	Power transistor unit	Engine r/min: 3,000 r/min	0.3 – 3.0 V
47	Power supply	Ignition switch: ON	System voltage
59			

Terminal No.	Check item	Check condition (Engine condition)		Normal condition
19	Air flow sensor reset signal	Engine: Idle speed		0 – 1 V
		Engine r/min: 3,000 r/min		6 – 9 V
18	Fan controller	When the radiator fan and condenser fan are not operating		0 – 0.3 V
		When the radiator fan and condenser fan are operating		0.7 V or more
20	A/C relay	<ul style="list-style-type: none"> ● Engine: Idle speed ● A/C switch: OFF → ON (A/C compressor is operating) 		System voltage or momentarily 6 V or more → 0 – 3 V
21	Fuel pump relay	Ignition switch: ON		System voltage
		Engine: Idle speed		0 – 3 V
16	Purge control solenoid valve	Ignition switch: ON		System voltage
		Running at 3,000 r/min while engine is warming up after having been started.		0 – 3 V
22	Engine warning lamp	Ignition switch: OFF → ON		0 – 3 V → 9 – 13 V (After several seconds have elapsed)
30	Vacuum control solenoid valve <Vehicles with TCL>	Ignition switch: ON		System voltage
31	Ventilation control solenoid valve <Vehicles with TCL>	Ignition switch: ON		System voltage
54	Power steering fluid pressure switch	Engine: Idling after warming up	When steering wheel is stationary	System voltage
			When steering wheel is turned	0 – 3 V
57	Control relay (Power supply)	Ignition switch: OFF		System voltage
		Ignition switch: ON		0 – 3 V
83	A/C switch 1	Engine: Idle speed	Turn the A/C switch OFF	0 – 3 V
			Turn the A/C switch ON (A/C compressor is operating)	System voltage

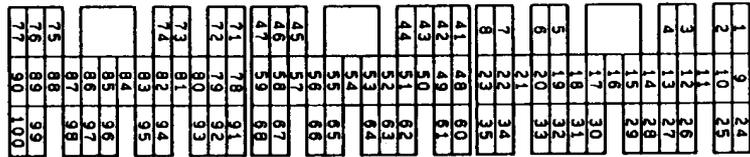
Terminal No.	Check item	Check condition (Engine condition)		Normal condition
65	A/C switch 2	<ul style="list-style-type: none"> • Engine: Idling • Outside air temperature: 25°C or more 	When A/C is MAX. COOL condition (when the load by A/C is high)	0 – 3 V
			When A/C is MAX. HOT condition (When the load by A/C is low)	System voltage
68	Ignition switch – ST	Engine: Cranking		8 V or more
62	Intake air temperature sensor	Ignition switch: ON	When intake air temperature is 0°C	3.2 – 3.8 V
			When intake air temperature is 20°C	2.3 – 2.9 V
			When intake air temperature is 40°C	1.5 – 2.1 V
			When intake air temperature is 80°C	0.4 – 1.0 V
71	Left bank oxygen sensor (front)	Engine: Running at 2,500 r/min after having warmed up (Check using a digital type voltmeter)		0 ↔ 0.8 V (Changes repeatedly)
73	Left bank oxygen sensor (rear)	<ul style="list-style-type: none"> • Transmission: 2nd gear <M/T>, L range <A/T> • Engine speed: 3,500 r/min or more • Driving with the throttle valve widely open 		0.6 – 1.0 V
72	Right bank oxygen sensor (front)	Engine: Running at 2,500 r/min after having warmed up (Check using a digital type voltmeter)		0 ↔ 0.8 V (Changes repeatedly)
74	Right bank oxygen sensor (rear)	<ul style="list-style-type: none"> • Transmission: 2nd gear <M/T>, L range <A/T> • Engine speed: 3,500 r/min or more • Driving with the throttle valve widely open 		0.6 – 1.0 V
3	Left bank oxygen sensor heater (front)	Engine: Idling		0 – 3 V
		Engine: 3,500 r/min		System voltage
26	Left bank oxygen sensor heater (rear)	Engine: Idling		0 – 3 V
		Engine: 3,500 r/min		System voltage

Terminal No.	Check item	Check condition (Engine condition)		Normal condition
4	Right bank oxygen sensor heater (front)	Engine: Idling		0 – 3 V
		Engine: 3,500 r/min		System voltage
27	Right bank oxygen sensor heater (rear)	Engine: Idling		0 – 3 V
		Engine: 3,500 r/min		System voltage
60	Backup power supply	Ignition switch: OFF		System voltage
42	Sensor impressed voltage	Ignition switch: ON		4.5 – 5.5 V
99	Ignition switch-IG	Ignition switch: ON		System voltage
44	Engine coolant temperature sensor	Ignition switch: ON	When engine coolant temperature is 0°C	3.2 – 3.8 V
			When engine coolant temperature is 20°C	2.3 – 2.9 V
			When engine coolant temperature is 40°C	1.3 – 1.9 V
			When engine coolant temperature is 80°C	0.3 – 0.9 V
78	Throttle position sensor	Ignition switch: ON	Set throttle valve to idle position	0.3 – 1.0 V
			Fully open throttle valve	4.5 – 5.5 V
51	Barometric pressure sensor	Ignition switch: ON	When altitude is 0 m	3.7 – 4.3 V
			When altitude is 1,200 m	3.2 – 3.8 V
80	Vehicle speed sensor	<ul style="list-style-type: none"> ● Ignition switch: ON ● Move the vehicle slowly forward 		0 ↔ 5 V (Changes repeatedly)
79	Idle position switch	Ignition switch: ON	Set throttle valve to idle position	0 – 1 V
			Slightly open throttle valve	4 V or more
50	Top dead centre sensor	Engine: Cranking		0.4 – 3.0 V
		Engine: Idle speed		0.5 – 2.0 V
43	Crank angle sensor	Engine: Cranking		0.4 – 4.0 V
		Engine: Idle speed		1.5 – 2.5 V

Terminal No.	Check item	Check condition (Engine condition)		Normal condition
61	Air flow sensor	Engine: Idle speed		2.2 – 3.2 V
		Engine r/min: 2,500 r/min		
67	Inhibitor switch <A/T>	Ignition switch: ON	Set selector lever to P or N	0 – 3 V
			Set selector lever to Other than P or N	8 – 14 V

CHECK CHART FOR RESISTANCE AND CONTINUITY BETWEEN TERMINALS

Engine-ECU Harness Side Connector Terminal Arrangement



7FU2120

Terminal No.	Inspection item	Normal condition (Check condition)
1 - 47	No. 1 injector	13 - 16 Ω (At 20°C)
9 - 47	No. 2 injector	
24 - 47	No. 3 injector	
2 - 47	No. 4 injector	
10 - 47	No. 5 injector	
25 - 47	No. 6 injector	
14 - 47	Stepper motor coil (A1)	28 - 33 Ω (At 20°C)
28 - 47	Stepper motor coil (A2)	
15 - 47	Stepper motor coil (B1)	
29 - 47	Stepper motor coil (B2)	
6 - 47	EGR control solenoid valve	29 - 35 Ω (At 20°C)
16 - 47	Purge control solenoid valve	30 - 34 Ω (At 20°C)
30 - 47	Vacuum control solenoid valve system <Vehicles with TCL>	36 - 44 Ω (At 20°C)
31 - 47	Ventilation control solenoid valve system <Vehicles with TCL>	36 - 44 Ω (At 20°C)
46 - Body earth	Engine-ECU earth	Continuity (0 Ω)
58 - Body earth	Engine-ECU earth	
3 - 47	Left bank oxygen sensor heater control (front)	4.5 - 8.0 Ω (At 20°C)
26 - 47	Left bank oxygen sensor heater control (rear)	11 - 18 Ω (At 20°C)
4 - 47	Right bank oxygen sensor heater (front)	4.5 - 8.0 Ω (At 20°C)
27 - 47	Right bank oxygen sensor heater (rear)	11 - 18 Ω (At 20°C)

Terminal No.	Inspection item	Normal condition (Check condition)
62 - 49	Intake air temperature sensor	5.3 - 6.7 k Ω (When intake air temperature is 0°C)
		2.3 - 3.0 k Ω (When intake air temperature is 20°C)
		1.0 - 1.5 k Ω (When intake air temperature is 40°C)
		0.30 - 0.42 k Ω (When intake air temperature is 80°C)
44 - 49	Engine coolant temperature sensor	5.1 - 6.5 k Ω (When coolant temperature is 0°C)
		2.1 - 2.7 k Ω (When coolant temperature is 20°C)
		0.9 - 1.3 k Ω (When coolant temperature is 40°C)
		0.26 - 0.36 k Ω (When coolant temperature is 80°C)
79 - 49	Idle position switch	Continuity (when throttle valve is at idle position)
		No continuity (when throttle valve is slightly open)
67 - Body earth	Inhibitor switch <A/T>	Continuity (when select lever is at P or N)
		No continuity (when select lever is at D, 2, L or R)