J - PIN VOLTAGE CHARTS

1990 Nissan 240SX

1990 ENGINE PERFORMANCE
Pin Voltage Charts

Nissan; 240SX

INTRODUCTION

Pin voltage charts are supplied to reduce diagnostic time. Checking pin voltages at the ECU determines whether it's receiving and transmitting proper voltage signals. Charts may also help determine if ECU harness is shorted or opened.

NOTE: Perform all voltage tests with a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance, unless stated otherwise in test procedure. Voltage readings may vary slightly due to battery condition or charging rate.

ECU LOCATION

ECU LOCATIONS

Application	Location
240SX	Under Right Side Of Dash.

*Data are reference values.

TERMINAL NO.	ITEM	CONDITION	*DATA
1	Ignition signal	Engine is running. └ Idle speed	0.3 - 0.6V
		Engine is running. └ Engine speed is 2,000 rpm	1.2 - 1.5V
3	Ignition check	Engine is running. └ Idle speed	9 - 12V
4	E.C.C.S. relay (Main relay)	Engine is running. ↓ Ignition switch "OFF" └ Within approximately 1 second after turning ignition switch "OFF"	0 - 1V
		Ignition switch "OFF" └ For approximately 1 second after turning ignition switch "OFF"	BATTERY VOLTAGE (11 - 14V)
8	Exhaust gas temperature sensor (Only for California model)	Engine is running. └ Idle speed	1.0 - 2.0V
		Engine is running. (Racing) └ After warming up	0 - 1.0V
11	Air conditioner relay	Engine is running. └ Both A/C switch and blower switch are "ON"	0 - 1.0V
		Engine is running. └ A/C switch is "OFF".	BATTERY VOLTAGE (11 - 14V)
12	S.C.V. control solenoid valve	Engine is running. └ Idle speed	0 - 1.0V
		Engine is running. └ Engine speed is 2,000 rpm.	BATTERY VOLTAGE (11 - 14V)

Fig. 1: ECU Terminal 1-12 Pin Voltage Charts
Courtesy of Nissan Motor Co., U.S.A.

*Data are reference values.

TERMINAL NO.	ITEM	CONDITION	*DATA
16	Air flow meter	Engine is running.	1.0 - 3.0V Output voltage varies with engine revolution.
18	Engine temperature sensor	Engine is running.	1.0 - 5.0V Output voltage varies with engine water temperature.
19	Exhaust gas sensor	Engine is running. └ After warming up sufficiently.	0 - Approximately 1.0V
20	Throttle sensor	Ignition switch "ON"	0.4 - Approximately 4V Output voltage varies with the throttle valve opening angle.
22 30	Crank angle sensor (Reference signal)	Engine is running. **Do not run engine at high speed under no-load.**	0.2 - 0.5V
26	Air temperature sensor	Ignition switch "ON" └ Air temperature is 20°C (68°F).	1.0 - 1.5V
		Ignition switch "ON" └ Air temperature is 80°C (176°F).	Approximately 0.3V
28	Throttle opening signal	Ignition switch "ON"	0.3 - Approximately 3V
31 40	Crank angle sensor (Position signal)	Engine is running. **Do not run engine at high speed under no-load.**	2.0 - 3.0V
33	Idle switch (⊖ side)	Ignition switch "ON" └ Throttle valve: idle position	Approximately 9 - 10V
		Ignition switch "ON" └ Throttle valve: Any position except idle position	0V
34	Start signal	Cranking	8 - 12V
35	Neutral switch & Inhibitor switch	Ignition switch "ON" └ Neutral/Parking	0V
		Ignition switch "ON" └ Except the above gear position	6 - 7V

Fig. 2: ECU Terminal 16-35 Pin Voltage Charts
Courtesy of Nissan Motor Co., U.S.A.

*Data are reference values.

TERMINAL NO.	ITEM	CONDITION	*DATA
36	Ignition switch	Ignition switch "OFF"	0V
		Ignition switch "ON"	BATTERY VOLTAGE (11 - 14V)
37	Throttle sensor power supply	Ignition switch "ON"	Approximately 5V
38 47	Power supply for E.C.U.	Ignition switch "ON"	BATTERY VOLTAGE (11 - 14V)
41	Air conditioner switch	Engine is running. └ Both air conditioner switch and blower switch are "ON".	0V
		Engine is running. └ Air conditioner switch is "OFF".	BATTERY VOLTAGE (11 - 14V)
43	Power steering oil pressure switch	Engine is running. └ Steering wheel is being turned.	0.1 - 0.3V
		Engine is running. └ Steering wheel is not being turned.	8 - 9V
44	Idle switch (⊕ side)	Ignition switch "ON" └ Throttle valve: idle position	Approximately 9 - 10V
		Ignition switch "ON" └ Throttle valve: Except idle position	BATTERY VOLTAGE (11 - 14V)
45	5th position switch (M/T models)	Ignition switch "ON" └ Gear is in 5th position.	0V
		Ignition switch "ON" └ Gear is except in 5th position.	6 - 8V
46	Power supply (Back-up)	Ignition switch "OFF"	BATTERY VOLTAGE (11 - 14V)

Fig. 3: ECU Terminal 36-46 Pin Voltage Charts
Courtesy of Nissan Motor Co., U.S.A.

*Data are reference values.

TERMINAL NO.	ITEM	CONDITION	*DATA
101	Injector No. 1	Engine is running.	BATTERY VOLTAGE (11 - 14V)
103	Injector No. 3		
110	Injector No. 2		
112	Injector No. 4		
102	A.I.V. control solenoid valve	Engine is running. └ Idle speed	0 - 1.0V
		Engine is running. └ Accelerator pedal is depressed. └ After warming up	BATTERY VOLTAGE (11 - 14V)
104	Fuel pump relay	Ignition switch "ON" └ For 5 seconds after turning ignition switch "ON" Engine is running.	0.7 - 0.9V
		Ignition switch "ON" └ Within 5 seconds after turning ignition switch "ON"	BATTERY VOLTAGE (11 - 14V)
105	E.G.R. control solenoid valve	Engine is running. └ Engine is cold. [Water temperature is below 60°C (140°F).]	0.7 - 0.9V
		Engine is running. (Racing) └ After warming up [Water temperature is between 60°C (140°F) and 105°C (221°F).]	BATTERY VOLTAGE (11 - 14V)

Fig. 4: ECU Terminal 101-105 Pin Voltage Charts
Courtesy of Nissan Motor Co., U.S.A.

*Data are reference values.

TERMINAL NO.	ITEM	CONDITION	*DATA
106	Pressure regulator control solenoid valve	Stop and restart engine after warming it up. └ Water temperature is above 90°C (194°F)	0 - 1.0V (for 3 minutes after engine is restarted.) BATTERY VOLTAGE (After 3 minutes)
		Stop and restart engine after warming it up. └ Water temperature is below 90°C (194°F)	BATTERY VOLTAGE (11 - 14V)
113	A.A.C. valve	Engine is running. └ Idle speed	7 - 10V
		Engine is running. — Steering wheel is being turned. — Air conditioner is operating. — Rear defogger is "ON". └ Headlamps are in high position.	4 - 7V

E.C.U. HARNESS CONNECTOR TERMINAL LAYOUT

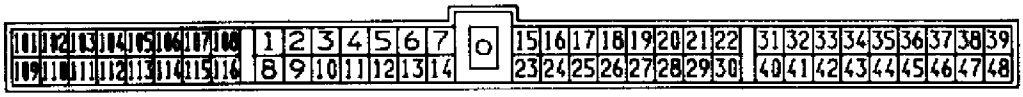

Fig. 5: ECU Terminal 106 & 113 Pin Voltage Charts & Pin ID.
Courtesy of Nissan Motor Co., U.S.A.