ENGINE CONTROL SYSTEM

0313V–03

SERVICE DATA

3RZ–FE:

Power steering oil pressure sensor		
Voltage		
	Not spin the steering wheel at engine idling	9 – 14V
	Spin the steering wheel at engine idling	0 – 3V
Idle speed control valve assy		
Movement		Half open → fully close → fully open → half open
Throttle body		
Idle speed		650 – 750 rpm
Throttle opener setting speed		1200 – 1500 rpm
Pressure sensor	Leaded gasoline model	
Voltage	VC – E2	4.5 – 5.5 V
Voltage drop		
	13.3 kPa (100 mmHg, 3.94 in.Hg)	0.3 – 0.5 V
	26.7 kPa (200 mmHg, 7.87 in.Hg)	0.6 – 0.8 V
	40.0 kPa (300 mmHg, 11.81 in.Hg)	0.95 – 1.15 V
Voltage up		
	19.6 kPa (0.20 kgf/cm^2, 2.84 psi)	0.4 – 0.7 V
	39.2 kPa (0.40 kgf/cm^2, 5.69 psi)	0.9 – 1.2 V
	58.8 kPa (0.60 kgf/cm^2, 8.53 psi)	1.5 – 1.8 V
	78.5 kPa (0.80 kgf/cm^2, 11.4 psi)	2.0 – 2.3 V
	98.0 kPa (1.00 kgf/cm^2, 14.2 psi)	2.5 – 2.8 V
Variable resistor	Leaded gasoline model	
Voltage	VC – E2	4.5 – 5.5 V
Intake air flow meter assy		
Resistance	at –20°C(–4°F)	12.5 – 16.9 kΩ
	at 20°C(68°F)	2.19 – 2.67 kΩ
	at 60°C(140°F)	0.50 – 0.68 kΩ
Camshaft timing oil control valve assy		
Resistance	at 20 °C (68 °F)	6.9 – 7.9 Ω
Throttle position sensor		
Resistance	VC – E2	2.5 – 6.0 kΩ
EFI engine coolant temperature sensor		
Resistance	at 20 °C (68 °F)	2.32 – 2.59kΩ
	at 80 °C (176 °F)	0.310 – 0.326kΩ
Intake air temperature sensor	Leaded gasoline model	
Resistance	at 20°C (68°F)	2.21 – 2.69 kΩ
Knock control sensor	Specified condition	No continuity
Variable resistor	Leaded gasoline model	
Resistance		3.5 – 6.5 kΩ
E.F.I. Circuit opening relay assy		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Main relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity

5L–E:

Manifold pressure sensor		
	Voltage	4.5 – 5.5 V
Voltage drop	Applied vacuum	
	39.2 kPa (100 mmHg, 3.94 in.Hg)	0.3 – 0.5 V
	26.7 kPa (200 mmHg, 7.87 in.Hg)	0.6 – 0.8 V
	40.0 kPa (300 mmHg, 11.81 in.Hg)	0.95 – 1.15 V
Voltage up	Applied pressure	
	19.6 kPa (0.20 kgf/cm^2, 2.84 psi)	0.4 – 0.7 V
	39.2 kPa (0.40 kgf/cm^2, 5.69 psi)	0.9 – 1.2 V
	58.8 kPa (0.60 kgf/cm^2, 8.53 psi)	1.5 – 1.8 V
	78.5 kPa (0.80 kgf/cm^2, 11.4 psi)	2.0 – 2.3 V
	98.0 kPa (1.00 kgf/cm^2, 14.2 psi)	2.5 – 2.8 V
Accelerator pedal position sensor		
Voltage (ACCEL POS)	Accelerator pedal released	0.3 – 0.9 V
	Accelerator pedal depress	3.2 – 4.8 V
Voltage (ACCEL POS#2)	Accelerator pedal released	1.8 – 2.7 V
	Accelerator pedal depress	4.5 – 5.5 V
Venturi		
Resistance	2 – 1.3	18 – 22 Ω at 20 °C (68 °F)
	5 – 4.6	18 – 22 Ω at 20 °C (68 °F)
Specified condition	Throttle valve fully open	Continuity
	Throttle valve fully close	No continuity
Engine coolant temperature sensor		
Resistance	at 20 °C (68 °F)	2.32 – 2.59 kΩ
	at 80 °C (176 °F)	0.310 – 0.326 kΩ
Intake air temperature sensor		
Resistance	at 20 °C (68 °F)	2.21 – 2.69 kΩ
Crankshaft position sensor		
Resistance	at cold	19 – 32 Ω
	at hot	24 – 37 Ω
DIesel ECU relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity

1KZ–TE:

Accelerator pedal position sensor		
Voltage (ACCEL POS)	Accelerator pedal released	0.3 – 0.9 V
	Accelerator pedal depress	3.2 – 4.8 V
Voltage (ACCEL POS#2)	Accelerator pedal released	1.8 – 2.7 V
	Accelerator pedal depress	4.5 – 5.5 V
Venturi		
Resistance	2 – 1.3	18.2 – 21 Ω at 20 °C (68 °F)
	5 – 4.6	18.2 – 21 Ω at 20 °C (68 °F)
Specified condition	Throttle valve fully open	Continuity
	Throttle valve fully close	No continuity
Engine coolant temperature sensor		
Resistance	at 20 °C (68 °F)	2.21 – 2.69 kΩ
	at 80 °C (176 °F)	0.287 – 0.349 kΩ
Diesel turbo inlet air temperature sensor		
Resistance	at 20 °C (68 °F)	2.21 – 2.65 Ω
Crankshaft position sensor		
Resistance	at 20 °C (68 °F)	22 – 28 Ω
Diesel ECU relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity

1KD–FTV:

Accelerator pedal position sensor		
Voltage (ACCEL POS)	Accelerator pedal released	0.3 – 0.9 V
	Accelerator pedal depress	3.2 – 4.8 V
Voltage (ACCEL POS#2)	Accelerator pedal released	1.8 – 2.7 V
	Accelerator pedal depress	4.5 – 5.5 V
Mass air flow meter		
Resistance	at –20°C(–4°F)	13.6 – 18.4 kΩ
	at 20°C(68°F)	2.21 – 2.69 kΩ
	at 60°C(140°F)	0.49 – 0.67 kΩ
Venturi		
Resistance	2 – 1.3	16 – 22 Ω (Cold)
	2 – 1.3	22 – 28 Ω (Hot)
	5 – 4.6	16 – 22 Ω (Cold)
	5 – 4.6	22 – 28 Ω (Hot)
Specified condition	Throttle valve fully open	Continuity
	Throttle valve fully close	No continuity
Engine coolant temperature sensor		
Resistance	at 20 °C (68 °F)	2.21 – 2.69 kΩ
	at 80 °C (176 °F)	0.287 – 0.349 kΩ
Diesel turbo inlet air temperature sensor		
Resistance	at 20 °C (68 °F)	2.21 – 2.65 Ω
Crankshaft position sensor		
Resistance	at cold	1630 – 2740 Ω
	at hot	2065 – 3225 Ω
Camshaft position sensor		
Resistance	at cold	1630 – 2740 Ω
	at hot	2065 – 3225 Ω
Diesel turbo main relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity
Diesel ECU relay		
Specified condition	1 – 2	Continuity
	3 – 5	No continuity