

ENGINE CONTROL SYSTEM

030EL-04

SERVICE DATA

2AZ-FE:

Throttle body	Standard throttle valve opening percentage	60% or more
Accelerator pedal position sensor	Standard voltage	0.6 to 1.0 V
Intake air flow meter assy Resistance	4 (THA) – 5 (E2) at -20°C (-4°F) at 20°C (68°F) at 60°C (140°F)	13.6 to 18.4 kΩ 2.21 to 2.69 kΩ 0.493 to 0.667 kΩ
Camshaft timing oil control valve assy Resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Accelerator pedal rod assy Resistance	2 (VPA2) – 3 (EP1) 5 (VPA1) – 1 (EP2) 6 (VCP1) – 3 (EP1) 4 (VCP2) – 1 (EP2)	5.0 kΩ or less 5.0 kΩ or less 2.25 to 4.75 kΩ 2.25 to 4.75 kΩ
Throttle body assy Resistance	at 20°C (68°F) 2 (M+) – 1 (M-) 5 (VC) – 3 (E2)	0.3 to 100 kΩ 1.2 to 3.2 kΩ
E.F.I. engine coolant temperature sensor Resistance	Approx. 20°C (68°F) Approx. 80°C (176°F)	2.32 to 2.59 kΩ 0.310 to 0.326 kΩ
Knock sensor Resistance	at 20°C (68°F)	120 to 280 kΩ
EFI relay Specified condition	3 – 5 3 – 5	10 kΩ or higher Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
C/OPN relay Specified condition	3 – 5 3 – 5	10 kΩ or higher Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

1MZ-FE/3MZ-FE:

Throttle body	Standard throttle valve opening percentage	60% or more
Accelerator pedal position sensor	Standard voltage	0.6 to 1.0 V
Intake air flow meter assy Resistance	4 (THA) – 5 (E2) at -20°C (-4°F) at 20°C (68°F) at 60°C (140°F)	13.6 to 18.4 kΩ 2.21 to 2.69 kΩ 0.493 to 0.667 kΩ
Camshaft timing oil control valve assy Resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Accelerator pedal rod assy Resistance	2 (VPA2) – 3 (EP1) 5 (VPA1) – 1 (EP2) 6 (VCP1) – 3 (EP1) 4 (VCP2) – 1 (EP2)	5.0 kΩ or less 5.0 kΩ or less 2.25 to 4.75 kΩ 2.25 to 4.75 kΩ
Throttle body assy Resistance	at 20°C (68°F) 2 (M+) – 1 (M-) 5 (VC) – 3 (E2)	0.3 to 100 kΩ 2.0 to 4.0 kΩ

SERVICE SPECIFICATIONS – ENGINE CONTROL SYSTEM

E.F.I. engine coolant temperature sensor		
Resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Knock sensor (1MZ-FE)		
Resistance	terminal – body	10 kΩ or higher
Knock sensor (3MZ-FE)		
Resistance	at 20°C (68°F)	120 to 280 kΩ
EFI relay		
Specified condition	3 – 5	10 kΩ or higher
	3 – 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
C/OPN relay		
Specified condition	3 – 5	10 kΩ or higher
	3 – 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)