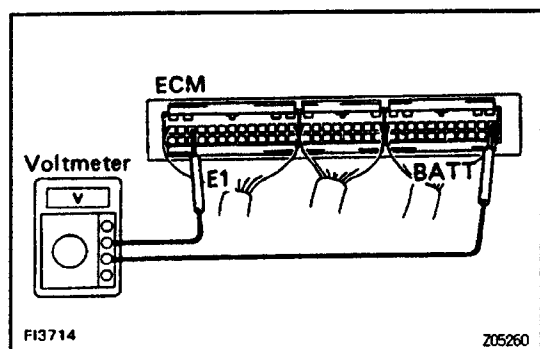


ENGINE CONTROL MODULE (ECM)

ENGINE CONTROL MODULE (ECM)

INSPECTION

HINT: The MFI circuit can be checked by measuring the voltage and resistance at the wiring connectors of the engine control module (ECM).



1. INSPECT VOLTAGE OF ENGINE CONTROL MODULE (ECM)

Check the voltage between each terminal of the wiring connectors.

- Turn the ignition switch ON.
- Measure the voltage at each terminal.

HINT:

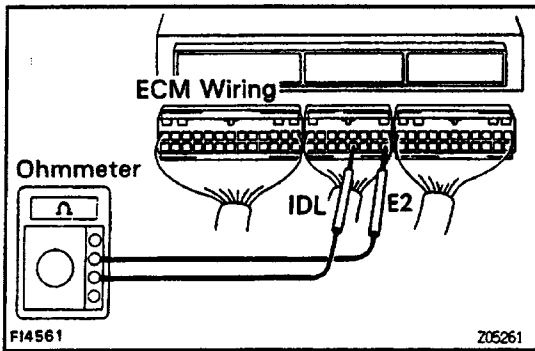
- Do all voltage measurements with the connectors connected.
- Verify that the battery voltage is 11 V or more when the ignition switch is ON.

ECM Wiring Connectors Voltage

Terminals	Condition		STD voltage
BATT — E1	—		9 — 14
+B — E1	Ignition SW ON .		
+B1 — E1			
IDL — E2 (E21)	Ignition SW ON	Throttle valve open	9 — 14
VC — E2 (E21)		—	4.5 — 5.5
VTA — E2 (E21)		Throttle valve fully closed (Throttle opener must be cancelled first)	0.3 — 0.8
		Throttle valve fully open	3.2 — 4.9
VC — E2 (E21)	Ignition SW. ON	—	4.5 — 5.5
VS — E2 (E21)		Measuring Plate fully closed	4.0 — 5.5
		Measuring plate fully open	0.2 — 0.5
		Idling	
	3,000 rpm		0.3 — 1.0
THA — E2 (E21)	Ignition SW ON	Intake air temperature 20°C (68°F)	0.5 — 3.4
THW — E2 (E21)	Ignition SW 4N	Engine coolant temperature 80°C (176°F)	0.2 — 1.0
STA — E1	Cranking		6 V or more
# 10 — E01 # 20 — E02	Ignition SW ON		9 — 14
IGT — E1	Idling		Pulse generation
W — E1	No trouble (malfunction indicator lamp off) and engine running		9 — 14
STJ — E1	Cranking	Engine coolant temperature 80°C (176°F)	6 V or more
STP — E1	Stop light switch ON		7.5 — 14

Engine Control Module (ECM) Terminals

E01	#10	E1	HT1	STJ	FPU	S1	S2	S3	S4	IGF	G1	NE	VF	TH01	OX1	KNK	THW	THA	VS	VC	STA	A/C	SPD1	MWD	P	STP	W	OL			BATT
E02	#20	ACV	AS	EGR	IGT	L4	N	2	L	SPD2	G2	G⊖	TE2	TE1	TH02	THG	IDL	VTA	OX2	E2	HT2	OD1	DG	ACT	SEL1	SEL2	OD2	E21		+B1	+B



2. INSPECT RESISTANCE OF ENGINE CONTROL MODULE (ECM)

NOTICE:

- Do not touch the engine control module (ECM) terminals.
- The tester probe should be inserted into the wiring connector from the wiring side.

Check the resistance between each terminal of the wiring connectors.

- Disconnect the connectors from the engine control module (ECM).
- Measure the resistance at each terminal.

ECM Wiring Connectors Resistance

Terminals	Condition	Resistance (Ω)
IDL – E2 (E21)	Throttle valve open	Infinity
	Throttle valve fully closed (Throttle opener must be cancelled first)	2.3 or less
VTA – E2 (E21)	Throttle valve fully open	3.1 – 12.1
	Throttle valve fully closed (Throttle opener must be cancelled first)	0.47 – 6.1
VC – E2 (E21)	Volume air flow meter connector disconnected	3.9 – 9.0
THA – E2 (E21)	Intake air temperature 20°C (68°F)	2 – 3
THW – E2 (E21)	Engine coolant temperature 80°C (176°F)	0.2 – 0.4
+B – E1	–	0.2 – 0.4
VC – E2 (E21)	Throttle position sensor connector disconnected	0.2 – 0.4
VS – E2 (E21)	Measuring plate fully closed	0.2 – 0.6
	Measuring plate fully open	0.02 – 1.20
G1, G2 – G ⊖	Cold (–10 – 50°C, 14 – 122°F)	0.125 – 0.200
	Hot (50 – 100°C, 122 – 212°F)	0.160 – 0.235
NE – G ⊖	Cold (–10 – 50°C, 14 – 122°F)	0.155 – 0.250
	Hot (50 – 100°C, 122 – 212°F)	0.190 – 0.290.

Engine Control Module (ECM) Terminals

E01 #10	E1	HT1	STJ	FPU	S1	S2	S3	S4	IGF	G1	NE	VF	TH01	OX1	KNK	THW	THA	VS	VC	STA	A/C	SPD1	4WD	P	STP	W	OIL			BATT
E02 #20	ACV	AS	EGR	IGT	L4	N	2	L	SPD2	G2	G⊖	TE2	TE1	TH02	THG	IDL	VTA	OX2	E2	HT2	OD1	DG	ACT	SEL1	SEL2	OD2	E21	+B1	+B	

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