

INSPECTION OF ECM AND ITS CIRCUITS

ECM and its circuits can be checked at ECM wiring couplers by measuring voltage and resistance.

CAUTION:

ECM cannot be checked by itself. It is strictly prohibited to connect voltmeter or ohmmeter to ECM with couplers disconnected from it.

Voltage Check

1. Remove ECM from body referring to p 6E-82.
2. Connect ECM couplers to ECM.
3. Check voltage at each terminal of couplers connected.

NOTE:

As each terminal voltage is affected by the battery voltage, confirm that it is 11V or more when ignition switch is ON.

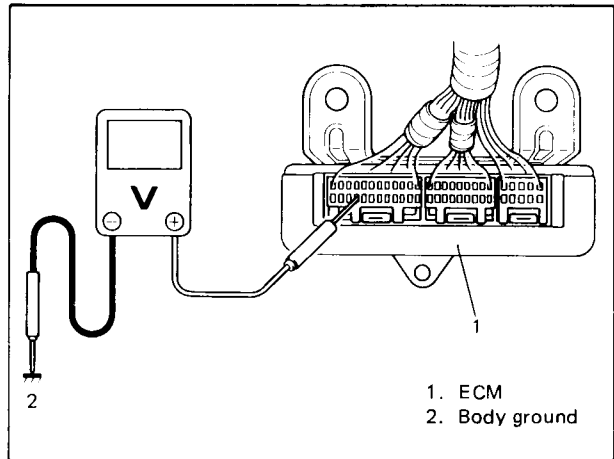


Fig. 6E-91 Checking Voltage

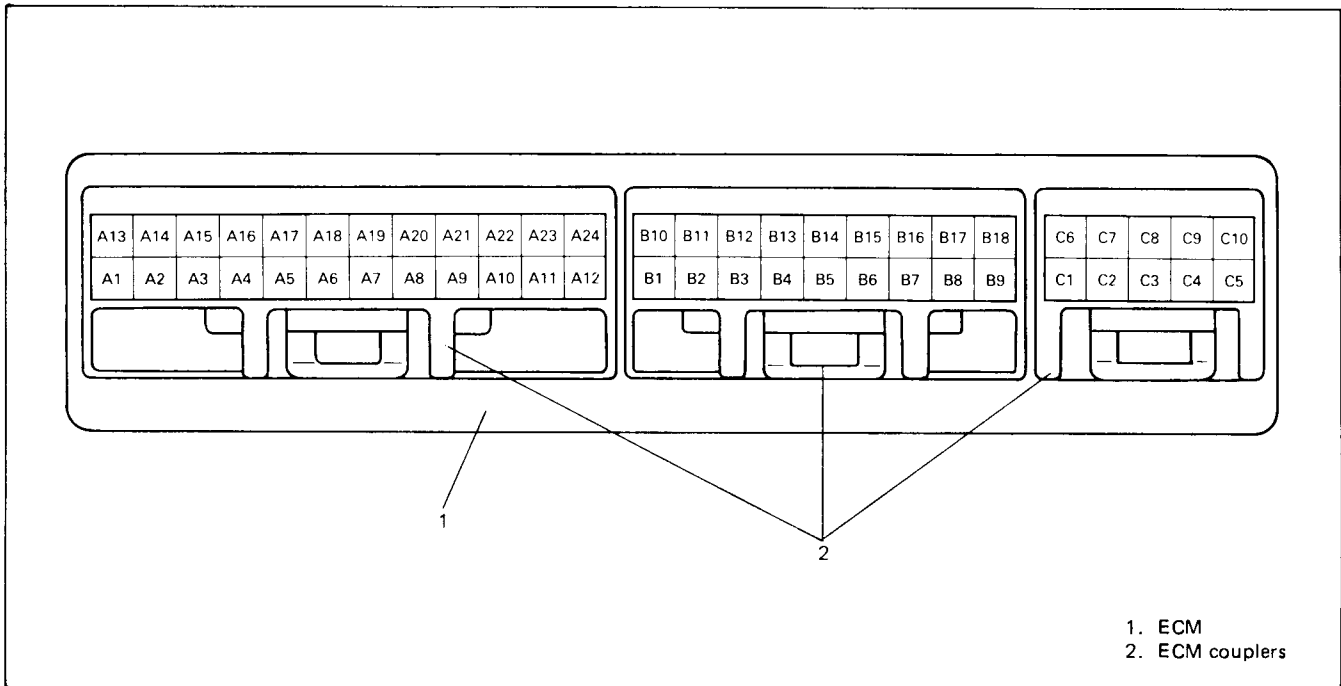


Fig. 6E-92 ECM Coupler Terminals

TERMINAL	CIRCUIT	STANDARD VOLTAGE	CONDITION
A1 A2	Power source	10 – 14V	Ignition switch ON
A3	Power source of AFS	10 – 14V	Ignition switch ON
A4	Power source of TPS	4.0 – 5.5V	Ignition switch ON
A5	Sensor ground	—	—
A6	AFS signal	0.2 – 0.8V	Ignition switch ON
A7	WTS	1.0 – 3.0V	Ignition switch ON Engine cooling water temp.: 80°C (176°F)
A8	Oxygen sensor	Indicator deflection repeated between over and under 0.45V	While engine running at 2000 r/min for 1 minute or longer after warmed up
A9	TPS signal	0 – 1V	Ignition switch ON Throttle valve at idle position
		3.0 – 5.0V	Ignition switch ON Throttle valve at full open position
A10	Speed sensor signal	Indicator deflection repeated between 0V and 3 – 5V	Ignition switch ON Front left tire turned slowly with front right tire locked
A11 A20 B4 (A/T model only)	Throttle valve opening output signal (A/T control module)	10 – 14V	Ignition switch ON Throttle valve at idle position
		0 – 1V ↓ 10 – 14V	Ignition switch ON Opening throttle valve slowly causes voltage to vary as given at the left. (Refer to Fig. 6E-160 for relations between opening and voltage)
A12	Ignition signal	10 – 14V	Ignition switch ON
A13 A14	Ground	—	—
A15	—	—	—
A16	Power source for back up circuit	10 – 14V	Ignition switch ON and OFF
A17 (A/T model only)	"R", "D", "2" or "L" range signal (A/T control module)	0 – 2V	Ignition switch ON, Selector lever in "P" or "N" range position
		10 – 14V	Ignition switch ON, Selector lever in "R", "D", "2" or "L" range position
A18	Air-conditioner ON/OFF signal (if equipped)	8 – 14V	Ignition switch ON
		0 – 2V	While engine running at idle speed, Air-conditioner ON

6E-70 ELECTRONIC FUEL INJECTION SYSTEM

TERMINAL	CIRCUIT	STANDARD VOLTAGE	CONDITION
A19	Test switch terminal	10 – 14V	Ignition switch ON
		0 – 1V	Ignition switch ON Test switch terminal grounded
A21	Idle switch (in TPS)	0 – 1V	Ignition switch ON Throttle valve at idle position
		3.0 – 5.0V	Ignition switch ON Throttle valve opens larger than idle position
A22	Diagnosis switch terminal	10 – 14V	Ignition switch ON
		0 – 1V	Ignition switch ON Diagnosis switch terminal grounded
A23 (California spec. model only)	REGTS	4.0 – 5.0V	Ignition switch ON Sensor ambient temp.: 20°C (68°F)
A24	_____	_____	_____
B1	CAS (positive)	_____	_____
B2	"CHECK ENGINE" light	0 – 3V	Ignition switch ON Diagnosis switch terminal ungrounded
		10 – 14V	Engine running Diagnosis switch terminal ungrounded
		Indicator deflection within 1.2V – 14V	Diagnosis switch terminal grounded Test switch terminal grounded, while engine running at 2000 r/min after warmed up
B3	_____	_____	_____
B5	Canister purge VSV	10 – 14V	Ignition switch ON
B6 B7	_____	_____	_____
B8	Main relay ground	0 – 2V	Ignition switch ON
B9	_____	_____	_____
B10	CAS (negative)	_____	_____
B11 B12	_____	_____	_____
B13	Fuel pump relay ground	0 – 4V	For 3 seconds after ignition switch ON
		10 – 14V	When over 3 seconds after ignition switch ON
B14 (California spec. model only)	EGR VSV	10 – 14V	Ignition switch ON
B15	_____	_____	_____

TERMINAL	CIRCUIT	STANDARD VOLTAGE	CONDITION
B16	Ground	————	————
B17	————	————	————
B18	ISC solenoid valve	10 – 14V	Ignition switch ON
C1	Engine start signal (Engine start switch)	6 – 12V	While engine cranking
		0 – 1V	Other than above
C2 C7	Power source for injector	10 – 14V	Ignition switch ON
C3 C4	Injector (positive)	————	————
C5 C10	Ground for injector	————	————
C6	Ignition output signal	0V	Ignition switch ON
		1 – 3V	While engine cranking
C8 C9	Injector (negative)	————	————
		————	————

Resistance Check

1. Disconnect ECM couplers from ECM with ignition switch OFF.

CAUTION:

Never touch terminals of ECM itself or connect voltmeter or ohmmeter.

2. Check resistance between each pair of terminals disconnected couplers as listed in following table.

CAUTION:

- Be sure to connect ohmmeter probe from wire harness side of coupler.
- Be sure to turn OFF ignition switch for this check.
- Resistance in table represents that when ambient temperature is 20°C (68°F).

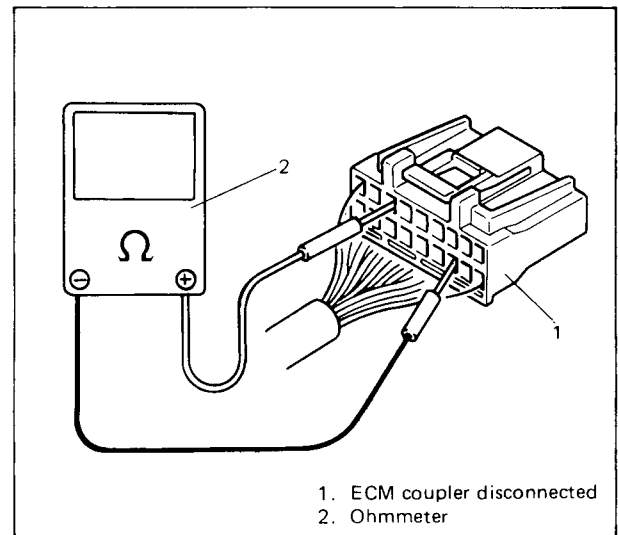


Fig. 6E-93 Checking Resistance

6E-72 ELECTRONIC FUEL INJECTION SYSTEM

TERMINALS	CIRCUIT	STANDARD RESISTANCE	CONDITION
A7 – A5	WTS	Approx. 320 Ω	Engine cooling water temp. 80°C (176°F)
A9 – A5	TPS	0 – 500 Ω	Throttle valve at idle position
		3.5 – 6.5 k Ω	Throttle valve at full open position
A10 – Body ground	Speed sensor	Ohmmeter indicator deflects between 0 and ∞	While front left tire turned slowly with front right tire locked
A13 – Body ground	Ground	0 (Zero)	_____
A14 – Body ground	Ground	0 (Zero)	_____
A19 – Body ground	Test switch terminal	∞ (Infinity)	Test switch terminal ungrounded
		0 (Zero)	Test switch terminal grounded
A21 – A5	Idle switch (in TPS)	0 (Zero)	Throttle valve is at idle position
		∞ (Infinity)	Throttle valve opens larger than idle position
A22 – Body ground	Diagnosis switch terminal	∞ (Infinity)	Diagnosis switch terminal ungrounded
		0 (Zero)	Diagnosis switch terminal grounded
B1 – B10	CAS	588 – 882 Ω	_____
B5 – A1	Canister purge VSV	33 – 39 Ω	_____
B14 – A1	EGR VSV	33 – 39 Ω	_____
B16 – Body ground	Ground	0 (Zero)	_____
B18 – A1	ISC solenoid valve	30 – 33 Ω	_____
C5 – Body ground C10 – Body ground	Ground	0 (Zero)	_____