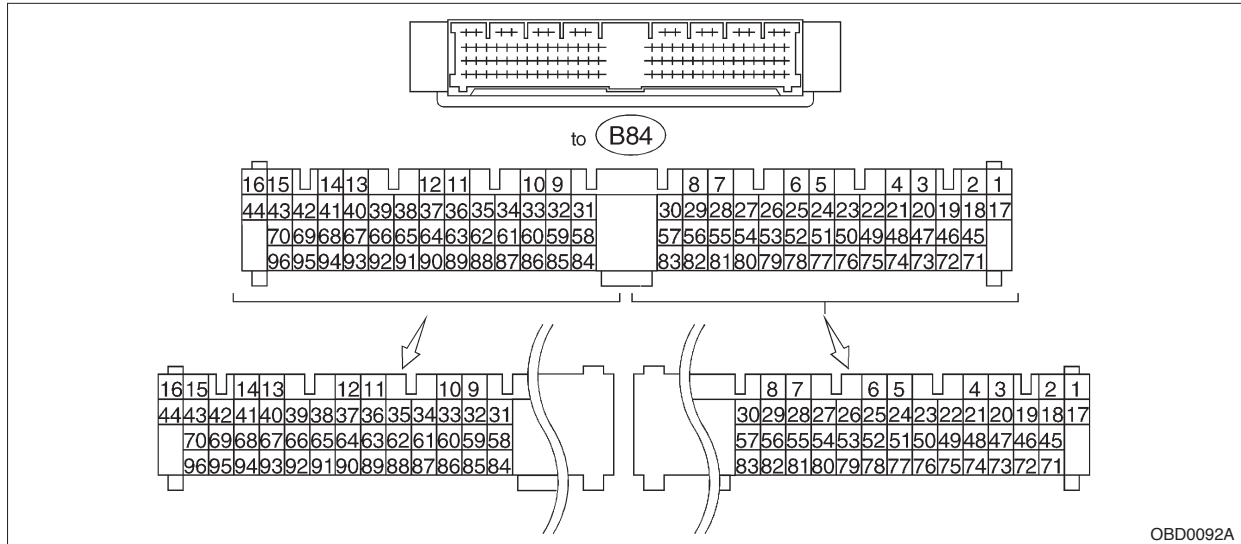


5. Specified Data

A: ENGINE CONTROL MODULE
(ECM) I/O SIGNAL



Content		Connector No.	Terminal No.	Signal (V)		Note
				Ignition SW ON (Engine OFF)	Engine ON (Idling)	
Crankshaft position sensor	Signal (+)	B84	8	0	-7 — +7	Sensor output waveform
	Signal (-)	B84	29	0	0	—
	Shield	B84	54	0	0	—
Camshaft position sensor	Signal (+)	B84	7	0	-7 — +7	Sensor output waveform
	Signal (-)	B84	28	0	0	—
	Shield	B84	54	0	0	—
Mass air flow sensor	Signal	B84	5	0 — 0.3	0.8 — 1.2	—
	Shield	B84	57	0	0	—
	GND	B84	53	0	0	—
Throttle position sensor	Signal	B84	6	Fully closed: 0.2 — 1.0 Fully opened: 4.2 — 4.7		—
	Power supply	B84	21	5	5	—
	GND	B84	20	0	0	—
Front oxygen sensor	Signal	B84	23	0	0 — 0.9	—
	Shield	B84	56	0	0	—
Rear oxygen sensor	Signal	B84	24	0	0 — 0.9	—
	Shield	B84	56	0	0	—
Engine coolant temperature sensor		B84	22	1.0 — 1.4	1.0 — 1.4	After warm-up
Vehicle speed sensor 2		B84	83	0 or 5	0 or 5	"5" and "0" are repeatedly displayed when vehicle is driven.
Starter switch		B84	86	0	0	Cranking: 8 to 14
A/C switch		B84	60	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—
Ignition switch		B84	85	10 — 13	13 — 14	—

Content	Con- nector No.	Termi- nal No.	Signal (V)		Note	
			Ignition SW ON (Engine OFF)	Engine ON (Idling)		
Neutral position switch (MT)	B84	82	ON: 5.0±0.5 OFF: 0		● On MT vehicle; switch is ON when gear is in neutral posi- tion.	
Neutral position switch (AT)			ON: 0 OFF: 5.0±0.5		● On AT vehicle; switch is ON when shift is in "N" or "P" posi- tion.	
Test mode connector	B84	84	5	5	When connected: 0	
Knock sen- sor	Signal	B84	3	2.8	—	
	Shield	B84	56	0	—	
AT/MT identification	B84	81	(AT) 5 (MT) 0	(AT) 5 (MT) 0	When measuring voltage between ECM and chassis ground.	
Back-up power supply	B84	39	10 — 13	13 — 14	Ignition switch "OFF": 10 — 13	
Control unit power sup- ply	B84	1	10 — 13	13 — 14	—	
		2				
Ignition control	# 1, # 2	B84	41	0	1 — 3.4	—
	# 3, # 4	B84	40	0	1 — 3.4	—
Fuel injec- tor	# 1	B84	96	10 — 13	1 — 14	Waveform
	# 2	B84	70	10 — 13	1 — 14	Waveform
	# 3	B84	44	10 — 13	1 — 14	Waveform
	# 4	B84	16	10 — 13	1 — 14	Waveform
Idle air con- trol sole- noid valve	OPEN end	B84	14	—	1 — 13	Waveform
	CLOSE end	B84	13	—	13 — 1	Waveform
Fuel pump relay control	B84	32	ON: 0.5, or less OFF: 10 — 13	0.5, or less	—	
A/C relay control	B84	31	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	—	
Radiator fan relay 1 con- trol	B84	74	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	—	
Radiator fan relay 2 con- trol	B84	73	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	With A/C vehicles only	
Self-shutoff control	B84	63	10 — 13	13 — 14	—	
Malfunction indicator lamp	B84	58	—	—	Light "ON": 1, or less Light "OFF": 10 — 14	
Engine speed output	B84	64	—	0 — 13, or more	Waveform	
Torque control signal	B84	79	5	5	—	
Mass air flow signal for AT	B84	47	0 — 0.3	0.8 — 1.2	—	
Purge control solenoid valve	B84	72	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	—	
Atmospheric pressure sensor	B84	26	3.9 — 4.1	2.0 — 2.3	—	
Pressure sources switch- ing solenoid valve	B84	15	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	—	
EGR solenoid valve	B84	71	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	—	
Front oxygen sensor heater signal	B84	38	0 — 1.0	0 — 1.0	—	
Rear oxygen sensor heater signal	B84	37	0 — 1.0	0 — 1.0	—	

ON-BORAD DIAGNOSTICS II SYSTEM

Content	Con- nector No.	Termi- nal No.	Signal (V)		Note
			Ignition SW ON (Engine OFF)	Engine ON (Idling)	
Fuel temperature sensor	B84	25	2.5 – 3.8	2.5 – 3.8	<ul style="list-style-type: none"> ● Except 2200 cc FWD and Taiwan spec. vehicles ● Ambient temperature: 25°C (77°F)
Fuel level sensor	B84	27	0.12 – 4.75	0.12 – 4.75	Except 2200 cc FWD and Taiwan spec. vehicles
Fuel tank pressure sensor	Signal	B84	4	2.3 – 2.7	<ul style="list-style-type: none"> ● Except 2200 cc FWD and Taiwan spec. vehicles ● The value obtained after the fuel filler cap was removed once and recapped.
	Power supply	B84	21	5	—
	GND	B84	20	0	0
Fuel tank pressure control solenoid valve	B84	10	ON: 1, or less OFF: 10 – 13	ON: 1, or less OFF: 13 – 14	Except 2200 cc FWD and Taiwan spec. vehicles
Vent control solenoid valve	B84	35	ON: 1, or less OFF: 10 – 13	ON: 1, or less OFF: 13 – 14	2500 cc models
Drain valve	B84	35	ON: 1, or less OFF: 10 – 13	ON: 1, or less OFF: 13 – 14	2200 cc AWD except Taiwan spec. vehicles
TCS signal	B84	61	0 – 7	0 – 7	Waveform
AT diagnosis input signal	B84	80	Less than 1 ↔ More than 4	Less than 1 ↔ More than 4	Waveform
GND (sensors)	B84	20	0	0	—
GND (injectors)	B84	69	0	0	—
		95			
GND (ignition system)	B84	94	0	0	—
GND (power supply)	B84	19	0	0	—
		46			
GND (control systems)	B84	17	0	0	—
		18			
GND (oxygen sensor heater)	B84	42	0	0	—

B: ENGINE CONDITION DATA

Content	Model	Specified data
Mass air flow	2200 cc	1.7 – 3.3 (g/sec): Idling
		7.1 – 14.2 (g/sec): 2,500 rpm racing
	2500 cc	2.2 – 4.2 (g/sec): Idling
		8.6 – 14.5 (g/sec): 2,500 rpm racing
Engine load	2200 cc	1.6 – 2.9 (%): Idling
		6.4 – 12.8 (%): 2,500 rpm racing
	2500 cc	1.9 – 3.5 (%): Idling
		7.2 – 12.1 (%): 2,500 rpm racing

Measuring condition:

- After warm-up the engine.
- Gear position is in “N” or “P” position.
- A/C is turned OFF.
- All accessory switches are turned OFF.