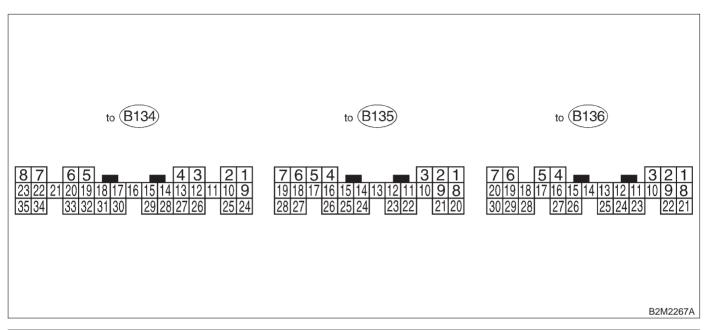
# 5. Specified Data

# A: ENGINE CONTROL MODULE (ECM) I/O SIGNAL FOR 2200 cc CALIFORNIA SPEC. VEHICLES

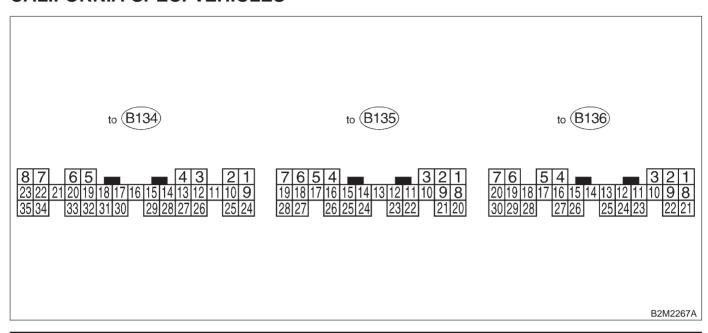


		0	Tamasiaal	Signa	al (V)	
Cor	ntent	Connector No.	Terminal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Crankshaft	Signal (+)	B135	1	0	-7 <b>—</b> +7	Sensor output waveform
position	Signal (-)	B135	8	0	0	_
sensor	Shield	B135	10	0	0	_
Camshaft	Signal (+)	B135	2	0	-7 — +7	Sensor output waveform
position	Signal (-)	B135	9	0	0	_
sensor	Shield	B135	10	0	0	_
T	Signal	B136	17		l: 0.2 — 1.0 d: 4.2 — 4.7	_
Throttle position sensor	Power supply	B136	15	5	5	_
5611501	GND (sen- sor)	B136	16	0	0	_
	Signal	B136	18	0	0 — 0.9	_
Rear oxy- gen sen-	Shield	B136	24	0	0	_
sor	GND sen- sor	B136	16	0	0	_
	Signal 1	B134	22	0.5 — 13	0.5 — 14	Waveform
Front oxy-	Signal 2	B134	23	0.5 — 13	0.5 — 14	Waveform
gen sen- sor heater	Power supply monitor	B136	3	10 — 13	13 — 14	_
Rear oxy-	Signal	B134	21	0.5 — 13	0.5 — 14	Waveform
gen sen- sor heater	Power supply monitor	B136	3	10 — 13	13 — 14	_

				Ciana	51 (V)	
		Connec-	Terminal	Signa	al (V)	
Cor	ntent	tor No.	No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Engine coolant	Signal	B136	14	1.0 — 1.4	1.0 — 1.4	After warm-up the engine.
tempera- ture sen- sor	GND (sen- sor)	B136	16	0	0	After warm-up the engine.
Vehicle spe	ed signal	B135	24	0 or 5	0 or 5	"5" and "0" are repeatedly displayed when vehicle is driven.
Starter swit	ch	B135	28	0	0	Cranking: 8 — 14
A/C switch		B135	27	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	_
Ignition swit	tch	B135	7	10 — 13	13 — 14	_
Neutral pos (MT)	ition switch	B135	26	ON: 5 OF		On MT vehicle; switch is ON when gear is in neutral position.
Neutral pos (AT)	ition switch	B135	26	ON OFF: 5	• •	On AT vehicle; switch is ON when shift is in "N" or "P" position.
Test mode	connector	B135	14	5	5	When connected: 0
Knock	Signal	B136	4	2.5	2.5	_
sensor	Shield	B136	25	0	0	_
Back-up po	wer supply	B136	9	10 — 13	13 — 14	Ignition switch "OFF": 10 — 13
Control unit	power	B136	1	10 — 13	13 — 14	_
supply		B136	2	10 — 13	13 — 14	_
Sensor pow	ver supply	B136	15	5	5	_
Line end ch	neck 1	B135	20	0	0	_
Ignition	#1, #2	B134	25	0	1 — 3.4	Waveform
control	#3, #4	B134	26	0	1 — 3.4	Waveform
	#1	B134	4	10 — 13	1 — 14	Waveform
Fuel injec-	#2	B134	13	10 — 13	1 — 14	Waveform
tor	#3	B134	14	10 — 13	1 — 14	Waveform
	#4	B134	15	10 — 13	1 — 14	Waveform
Idle air	Signal	B134	5		1 — 13	Waveform
control solenoid	Power supply	B136	2	10 — 13	13 — 14	_
valve	GND (power)	B134	8	0	0	_
Fuel pump trol	relay con-	B134	16	ON: 0.5, or less OFF: 10 — 13	0.5, or less	_
A/C relay co	ontrol	B134	17	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	_
Radiator far	n relay 1	B134	3	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	
Radiator fan relay 2 control		B134	2	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	With A/C vehicles only
Self-shutoff control		B135	19	10 — 13	13 — 14	
Malfunction indicator lamp		B134	11	_	_	Light "ON": 1, or less Light "OFF": 10 — 14
Engine speed output		B134	30	_	0 — 13, or more	Waveform
Torque cont	trol 1 signal	B135	16	5	5	_
Torque conf	trol 2 signal	B135	17	5	5	_
Torque cont	trol cut sig-	B134	31	8	8	_

				Signa	al (V)	
Соі	ntent	Connector No.	Terminal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Intake man sure signal		B136	11	3.4 — 3.6	1.2 — 1.8	_
Purge cont valve	rol solenoid	B134	2	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
	Signal	B136	5	3.4 — 3.6	1.2 — 1.8	_
Intake manifold pressure	Power supply	B136	15	5	5	_
sensor	GND (sen- sor)	B136	16	0	0	_
Fuel tempe sor	rature sen-	B136	26	2.5 — 3.8	2.5 — 3.8	Ambient temperature: 25°C (75°F)
Fuel level s	sensor	B136	27	0.12 — 4.75	0.12 — 4.75	_
Fuel tank	Signal	B136	12	2.3 — 2.7	2.3 — 2.7	The value obtained after the fuel filler cap was removed once and recapped.
pressure sensor	Power supply	B136	15	5	5	_
	GND (sen- sor)	B136	16	0	0	_
Fuel tank p		B134	1	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
Drain valve	)	B134	10	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
AT diagnos	is input sig-	B135	4	Less than 1 ←→ More than 4	Less than 1 ←→ More than 4	Waveform
Intake air to sensor	emperature	B136	13	3.0 — 3.4	3.0 — 3.4	Intake air temperature: 25°C (75°F)
Line end cl	neck 2	B135	21	5	5	_
GND (sens	ors)	B136	16	0	0	_
GND (injectors)		B134	7	0	0	_
GND (ignition system)		B134	27	0	0	_
GND (power supply)		B134	8	0	0	_
GND (control systems)		B136	21	0	0	_
		B136	22	0	0	_
GND (oxyg heater 1)		B134	35	0	0	_
GND (oxyg heater 2)	en sensor	B134	34	0	0	_

# B: ENGINE CONTROL MODULE (ECM) I/O SIGNAL FOR 2200 cc EXCEPT CALIFORNIA SPEC. VEHICLES

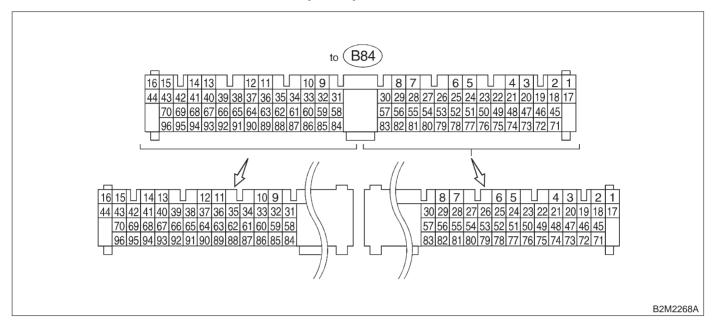


			<b>-</b>	Signa	al (V)	
Cor	itent	Connector No.	Terminal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Crankshaft	Signal (+)	B135	1	0	-7 — +7	Sensor output waveform
position	Signal (-)	B135	8	0	0	_
sensor	Shield	B135	10	0	0	_
Camshaft	Signal (+)	B135	2	0	-7 — +7	Sensor output waveform
position	Signal (-)	B135	9	0	0	_
sensor	Shield	B135	10	0	0	_
	Signal	B136	5	0 — 0.3	0.8 — 1.2	_
Mass air flow sen-	Power supply	B136	15	5	5	
sor	Shield	B136	25	0	0	_
	GND	B136	8	0	0	_
T	Signal	B136	17	Fully closed: 0.2 — 1.0 Fully opened: 4.2 — 4.7		_
Throttle position sensor	Power supply	B136	15	5	5	_
3611301	GND (sen- sor)	B136	16	0	0	_
Front oxy-	Signal (+)	B136	7	0	0 — 0.9	_
gen sen-	Signal (-)	B136	20	0		_
sor	Shield	B136	23	0	0	_
Daar 2007	Signal	B136	18	0	0 — 0.9	_
Rear oxy- gen sen-	Shield	B136	24	0	0	_
sor	GND (sen- sor)	B136	16	0	0	_
Front oxy- gen sen-	Signal 1	B134	22	0 — 1.0	0 — 1.0	_
sor heater	Signal 2	B134	23	0 — 1.0	0 — 1.0	_
Rear oxygen sensor heater signal		B134	21	0 — 1.0	0 — 1.0	_

Connection   Co					Signa	al (V)	
Second	Cor	ntent	Connector No.	Terminal No.	Ignition SW ON		Note
Subsect   Sub	-	Signal	B136	14	1.0 — 1.4	1.0 — 1.4	After warm-up the engine.
Starter switch   B135   28	ture sen-	,	B136	16	0	0	After warm-up the engine.
A/C switch   B135   27	Vehicle spe	ed signal	B135	24	0 or 5	0 or 5	
Ignition switch   B135   27	Starter swit	ch	B135	28	0	-	Cranking: 8 — 14
Neutral position switch (MT)	A/C switch		B135	27			_
Neutral position switch (MT)	Ignition swi	tch	B135	7	10 — 13	13 — 14	_
Neutral position   Switch (AT)   Series   Delta   Switch   Switc		sition switch	B135	26			when gear is in neutral posi-
Knock sensor         Signal Shield         B136         4         2.8         2.8         —           AT/MT identification         B136         25         0         0         —         When measuring voltage between ECM and chassis ground.           Back-up power supply         B136         9         10 — 13         13 — 14         Ignition switch "OFF": 10 — 13           Control unit power supply         B136         1         10 — 13         13 — 14         —           Sensor power supply         B136         1         10 — 13         13 — 14         —           Sensor power supply         B136         1         10 — 13         13 — 14         —           Sensor power supply         B136         1         10 — 13         13 — 14         —           Sensor power supply         B136         2         10 — 13         13 — 14         —           Sensor power supply         B136         2         10 — 13         13 — 14         —           Sensor power supply         B136         2         10 — 13         13 — 14         —           Line end check 1         B136         2         0         0         0         —           Lightion         #1 # 12         B134         25 <td></td> <td>sition switch</td> <td>B135</td> <td>26</td> <td></td> <td>-</td> <td>when shift is in "N" or "P"</td>		sition switch	B135	26		-	when shift is in "N" or "P"
Sensor   Shield   B136   25   0   0   0   —	Test mode	connector	B135	14	5	5	When connected: 0
AT/MT identification  B135  Back-up power supply  B136  Back-up power supply  B136  B136	Knock	Signal	B136	4	2.8	2.8	_
AT/MT identification  Back-up power supply  Back-up power supply	sensor	Shield	B136	25	0	0	_
Back-up power supply	AT/MT ider	tification	B135	25			between ECM and chassis
Supply	Back-up po	wer supply	B136	9	10 — 13	13 — 14	1 9
Sensor power supply	Control uni	t power	B136	1	10 — 13	13 — 14	_
Line end c  c  c  c  c  c  c  c  c  c  c  c  c			B136	2	10 — 13	13 — 14	_
Ignition control	Sensor pov	ver supply	B136	15	5	5	_
control         #3, #4         B134         26         0         1—3.4         Waveform           Fuel injector         #1         B134         4         10—13         1—14         Waveform           #3         B134         14         10—13         1—14         Waveform           #4         B134         15         10—13         1—14         Waveform           Idle air control         Signal 1         B134         5         —         1—13         Waveform           Signal 2         B134         6         —         1—13         Waveform           Signal 3         B134         19         —         1—13         Waveform           Signal 4         B134         20         —         1—13         Waveform           Fuel pump relay control         B136         2         10—13         13—14         —           A/C relay control         B134         17         ON: 0.5, or less OFF: 10—13         O.5, or less OFF: 13—14         —           Radiator fan relay 1 control         B134         3         ON: 0.5, or less OFF: 10—13         ON: 0.5, or less OFF: 13—14         —           Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 10—13 <td>Line end ch</td> <td>neck 1</td> <td>B135</td> <td>20</td> <td>0</td> <td>0</td> <td>_</td>	Line end ch	neck 1	B135	20	0	0	_
Fuel injector tor #1 B134	Ignition	#1, #2	B134	25	0	1 — 3.4	Waveform
Fuel injector tor #2	control	<del>  '</del>		_			
tor #3 B134 14 10 — 13 1 — 14 Waveform  #4 B134 15 10 — 13 1 — 14 Waveform    Idle air control solenoid valve   Signal 2 B134 6		#1	B134				Waveform
#4	Fuel injec-	-					
Signal 1   B134   5	tor						
Signal 2   B134   6   -					10 — 13		
Signal 3   B134   19					_		
Solenoid valve   Signal 4   B134   20		_					
Valve         Power supply         B136         2         10 — 13         13 — 14         —           Fuel pump relay control         B134         16         ON: 0.5, or less OFF: 10 — 13         0.5, or less         —           A/C relay control         B134         17         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 1 control         B134         3         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 13 — 14         ON: 0.5, or less OFF: 13 — 14         OFF: 13 — 14         —           Self-shutoff control         B135         19         10 — 13         13 — 14         —         With A/C vehicles only           Malfunction indicator lamp         B134         11         —         —         Light "ON": 1, or less Light "OFF": 10 — 14					_		
Fuel pump relay control         B134         16         ON: 0.5, or less OFF: 10 — 13         0.5, or less         —           A/C relay control         B134         17         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 1 control         B134         3         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 13 — 14         ON: 0.5, or less OFF: 13 — 14         With A/C vehicles only           Self-shutoff control         B135         19         10 — 13         13 — 14         —           Malfunction indicator lamp         B134         11         —         Light "ON": 1, or less Light "OFF": 10 — 14		Power					Waveform —
A/C relay control         B134         17         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 1 control         B134         3         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         With A/C vehicles only           Self-shutoff control         B135         19         10 — 13         13 — 14         —           Malfunction indicator lamp         B134         11         —         Light "ON": 1, or less Light "OFF": 10 — 14			B134	16		0.5, or less	_
Radiator fan relay 1 control         B134         3         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         —           Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 13 — 14         ON: 0.5, or less OFF: 13 — 14         With A/C vehicles only OFF: 13 — 14           Self-shutoff control         B135         19         10 — 13         13 — 14         —           Malfunction indicator lamp         B134         11         —         —         Light "ON": 1, or less Light "OFF": 10 — 14			B134	17	ON: 0.5, or less		_
Radiator fan relay 2 control         B134         2         ON: 0.5, or less OFF: 10 — 13         ON: 0.5, or less OFF: 13 — 14         With A/C vehicles only           Self-shutoff control         B135         19         10 — 13         13 — 14         —           Malfunction indicator lamp         B134         11         —         —         Light "ON": 1, or less Light "OFF": 10 — 14				3	ON: 0.5, or less	ON: 0.5, or less	_
Self-shutoff control         B135         19         10 — 13         13 — 14         —           Malfunction indicator lamp         B134         11         —         —         Light "ON": 1, or less Light "OFF": 10 — 14	Radiator fa	n relay 2	B134	2	ON: 0.5, or less	ON: 0.5, or less	With A/C vehicles only
Malfunction indicator lamp  B134  11  - Light "ON": 1, or less Light "OFF": 10 — 14		control	B135	19			_
	Malfunction				_	_	
		ed output	B134	30	_	0 — 13, or more	-

			Signal (V)		al (\/)		
Cor	ntent	Connec-	Terminal	Ignition SW ON		Note	
Contont		tor No.	No.	(Engine OFF)	Engine ON (Idling)	Note	
Torque con	trol 1 signal	B135	16	5	5	_	
Torque con	trol 2 signal	B135	17	5	5	_	
Torque con nal	trol cut sig-	B134	31	8	8	_	
Mass air flo	ow signal for	B136	11	0 — 0.3	0.8 — 1.2	_	
Purge conti	rol solenoid	B134	2	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_	
	Signal	B136	29	3.9 — 4.1	2.0 — 2.3		
Atmo- spheric pressure	Power supply	B136	15	5	5	_	
sensor	GND (sen- sor)	B136	16	0	0		
Pressure so switching so valve		B134	9	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_	
Fuel tempe sor	rature sen-	B136	26	2.5 — 3.8	2.5 — 3.8	Ambient temperature: 25°C (75°F)	
Fuel level s	ensor	B136	27	0.12 — 4.75	0.12 — 4.75	_	
Fuel tank	Signal	B136	12	2.3 — 2.7	2.3 — 2.7	The value obtained after the fuel filler cap was removed once and recapped.	
pressure sensor	Power supply	B136	15	5	5	_	
	GND (sen- sor)	B136	16	0	0	_	
Fuel tank p		B134	1	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_	
Drain valve		B134	10	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_	
AT diagnos nal	is input sig-	B135	4	Less than 1 $\longleftrightarrow$ More than 4	Less than 1 ←→ More than 4	Waveform	
Line end ch	neck 2	B135	21	5	5	_	
GND (sens	ors)	B136 B134	16	0	0	_	
GND (inject	GND (injectors)		7	0	0	_	
GND (ignition system)		B134	27	0	0	_	
GND (power supply)		B134	8	0	0	_	
GND (contr	GND (control systems)		21	0	0	_	
GIAD (COUL	oi ayaicilia)	B136	22	0	0	_	
GND (oxyg heater 1)	en sensor	B134	35	0	0	_	
GND (oxyg heater 2)	en sensor	B134	34	0	0	_	

## C: ENGINE CONTROL MODULE (ECM) I/O SIGNAL FOR 2500 cc MODEL



Cor	ntent	Connec-	Terminal	Signa Ignition SW ON		Note	
		tor No.	No.	(Engine OFF)	Engine ON (Idling)		
Crankshaft	Signal (+)	B84	8	0	-7 <b>—</b> +7	Sensor output waveform	
position	Signal (-)	B84	29	0	0	_	
sensor	Shield	B84	54	0	0	_	
Camshaft	Signal (+)	B84	7	0	-7 — +7	Sensor output waveform	
position	Signal (-)	B84	28	0	0	_	
sensor	Shield	B84	54	0	0	_	
	Signal	B84	5	0 — 0.3	0.8 — 1.2	_	
Mass air flow sen-	Power supply	B84	2	5	5	_	
sor	Shield	B84	57	0	0	_	
	GND	B84	53	0	0	_	
	Signal	B84	6	Fully closed: 0.2 — 1.0 Fully opened: 4.2 — 4.7		_	
Throttle position sensor	Power supply	B84	21	5	5	_	
301301	GND (sen- sor)	B84	20	0	0	_	
Front oxy- gen sen-	Signal	B84	23	0	0 — 0.9	_	
sor	Shield	B84	56	0	0	_	
Rear oxy- gen sen-	Signal	B84	24	0	0 — 0.9	_	
sor	Shield	B84	56	0	0	_	
Front oxyge heater signa		B84	38	0 — 1.0	0 — 1.0	_	
Rear oxygen sensor heater signal		B84	37	0 — 1.0	0 — 1.0	_	
Engine coolant	Signal	B84	22	1.0 — 1.4	1.0 — 1.4	After warm-up the engine.	
tempera- ture sen- sor	GND (sensor)	B84	20	0	0	After warm-up the engine.	

		Signal (V)				
C0	ntent	Connec-	Terminal	Ignition SW ON	ai (v)	_ Note
	ntent	tor No.	No.	(Engine OFF)	Engine ON (Idling)	
Vehicle spe	eed signal	B84	83	0 or 5	0 or 5	"5" and "0" are repeatedly displayed when vehicle is driven.
Starter swi	tch	B84	86	0	0	Cranking: 8 — 14
A/C switch		B84	60	ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	_
Ignition sw	itch	B84	85	10 — 13	13 — 14	_
Neutral pos	sition switch	B84	82	ON: 5	.0±0.5	On MT vehicle; switch is ON when gear is in neutral posi-
(MT)				Ur.	F: 0	tion.
Neutral pos (AT)	sition switch	B84	82	ON OFF: §	I: 0 5.0±0.5	On AT vehicle; switch is ON when shift is in "N" or "P" position.
Test mode	connector	B84	84	5	5	When connected: 0
Knock	Signal	B84	3	2.8	2.8	_
sensor	Shield	B84	56	0	0	
AT/MT ider	ntification	B84	81	AT: 5 MT: 0	AT: 5 MT: 0	When measuring voltage between ECM and chassis ground.
Back-up po	ower supply	B84	39	10 — 13	13 — 14	Ignition switch "OFF": 10 — 13
Control uni	t power	B84	1	10 — 13	13 — 14	_
supply		B84	2	10 — 13	13 — 14	_
Sensor pov	wer supply	B84	21	5	5	_
Ignition	#1, #2	B84	41	0	1 — 3.4	Waveform
control	#3, #4	B84	40	0	1 — 3.4	Waveform
	#1	B84	96	10 — 13	1 — 14	Waveform
Fuel injec-	#2	B84	70	10 — 13	1 — 14	Waveform
tor	#3	B84	44	10 — 13	1 — 14	Waveform
	#4	B84	16	10 — 13	1 — 14	Waveform
Idle air	OPEN end	B84	14	<u> </u>	1 — 13	Waveform
control solenoid valve	CLOSE end	B84	13	_	13 — 1	Waveform
Fuel pump trol	relay con-	B84	32	ON: 0.5, or less OFF: 10 — 13	0.5, or less	_
A/C relay of	control	B84	31	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	_
Radiator fa control	n relay 1	B84	74	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	_
Radiator fa control	n relay 2	B84	73	ON: 0.5, or less OFF: 10 — 13	ON: 0.5, or less OFF: 13 — 14	With A/C vehicles only
Self-shutof	f 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 1 signal		B84	79	5	5	
Torque control 2 signal		B84	78	5	5	_
	itrol cut sig-	B84	61	8	8	
Mass air flo	ow signal for	B84	47	0 — 0.3	0.8 — 1.2	_
Purge cont valve	rol solenoid	B84	72	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_

				Signa	al (V)	
Cor	ntent	Connector No.	Terminal No.	Ignition SW ON (Engine OFF)	Engine ON (Idling)	Note
Atmo-	Signal	B84	26	3.9 — 4.1	2.0 — 2.3	
spheric pressure	Power supply	B84	21	5	5	_
sensor	GND (sen- sor)	B84	20	0	0	
Pressure so switching so valve		B84 B84	15	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
EGR solen	oid valve	B84	71			
Fuel tempe sor	rature sen-	B84	25	2.5 — 3.8	2.5 — 3.8	Ambient temperature: 25°C (75°F)
Fuel level s	ensor	B84	27	0.12 — 4.75	0.12 — 4.75	_
Fuel tank	Signal	B84	4	2.3 — 2.7	2.3 — 2.7	The value obtained after the fuel filler cap was removed once and recapped.
pressure sensor	Power supply	B84	21	5	5	_
	GND (sen- sor)	B84	20	0	0	_
Fuel tank p		B84 B84	10	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
Drain valve		B84	35	ON: 1, or less OFF: 10 — 13	ON: 1, or less OFF: 13 — 14	_
AT diagnos nal	is input sig-	B84	80	Less than 1 ←→ More than 4	Less than 1 ←→ More than 4	Waveform
GND (sens	ors)	B84	20	0	0	_
GND (injec	tors)	B84	69	0	0	_
GIND (III)ec	1015)	B84	95	0	0	_
GND (ignition system)		B84	94	0	0	_
GND (power supply)		B84	19	0	0	_
		B84	46	0	0	_
GND (contr	ol systems)	B84	17	0	0	_
		B84	18	0	0	_
GND (oxyg heater)	en sensor	B84	42	0	0	_

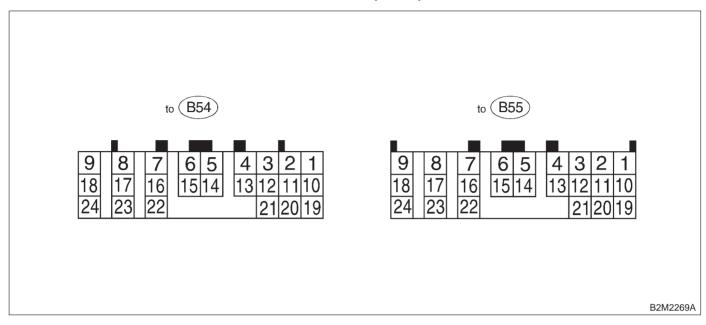
## **D: ENGINE CONDITION DATA**

Content	Model	Specified data
Mass air flow	2200 on except California and exchiples	1.7 — 3.3 (g/sec): Idling
	2200 cc except California spec. vehicles	7.1 — 14.2 (g/sec): 2,500 rpm racing
iviass air now	2500 cc	2.2 — 4.2 (g/sec): Idling
	2500 CC	8.6 — 14.2 (g/sec): 2,500 rpm racing
	2200 og California anga vahialag	1.6 — 2.9 (%): Idling
	2200 cc California spec. vehicles	6.4 — 12.8 (%): 2,500 rpm racing
Engine load	2200 cc except California spec. vehicles	1.6 — 2.9 (%): Idling
Engine load	2200 cc except California spec. verticles	6.4 — 12.8 (%): 2,500 rpm racing
	2500 cc	1.9 — 3.5 (%): Idling
	2000 CC	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.

# E: TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL



NOTE: Check with ignition switch ON.

Content		Connector No.	Terminal No.	Measuring conditions	Voltage (V)
Back-up po	ower supply	B55	6	Ignition switch OFF	10 — 16
lawiti an ma		B54	23	logition quitab CNI (with agains OFF)	10 — 16
ignition po	wer supply	B54	24	Ignition switch ON (with engine OFF)	10 — 16
	"P" range	B55	23	Selector lever in "P" range	Less than 1
	switch	B55	23	Selector lever in any other than "P" range	More than 8
	"N" range	DEE	22	Selector lever in "N" range	Less than 1
	switch	B55	22	Selector lever in any other than "N" range	More than 8
	"R" range switch	B55	17	Selector lever in "R" range	Less than 1
		D00		Selector lever in any other than "R" range	More than 9.5
Inhibitor switch	"D" range switch	B55	8	Selector lever in "D" range	Less than 1
Infilbitor Switch				Selector lever in any other than "D" range	More than 9.5
	"3" range	Dec	18	Selector lever in "3" range	Less than 1
	switch	B55		Selector lever in any other than "3" range	More than 9.5
	"2" range	DE4	40	Selector lever in "2" range	Less than 1
	switch	B54	10	Selector lever in any other than "2" range	More than 9.5
	"1" range	DE4	4	Selector lever in "1" range	Less than 1
	switch	B54	1	Selector lever in any other than "1" range	More than 9.5
Draka	ovvitab.	B55	24	Brake pedal depressed	More than 10.5
Бгаке	Brake switch		24	Brake pedal released	Less than 1
ADC	oignal	DE4	10	ABS switch ON	Less than 1
ABS	signal	B54 19		ABS switch OFF	More than 6.5

Content	Connector No.	Terminal No.	Measuring conditions	Voltage (V)	Resistance to body (ohms)	
Throttle position	B55	1	Throttle fully closed.	0.3 — 0.7		
sensor	DOO	ı	Throttle fully open.	4.3 — 4.9	_	
Throttle position sensor power supply	B55	2	Ignition switch ON (with engine OFF)	4.8 — 5.3	_	
ATF temperature	B55	11	ATF temperature 20°C (68°F)	2.9 — 4.0	2.1 k — 2.9 k	
sensor	D00	11	ATF temperature 80°C (176°F)	1.0 — 1.4	275 — 375	
Vehicle speed			Vehicle stopped.	0		
sensor 1	B55	3	Vehicle speed at least 20 km/h (12 MPH)	More than 1 (AC range)	450 — 650	
Vehicle speed sensor 2	B55	5	Vehicle speed at most 10 km/h (6 MPH)	Less than 1←→More than 4	_	
Torque converter			Vehicle stopped.	0		
turbine speed sensor	B55	12	Vehicle speed at least 20 km/h (12 MPH)	More than 1 (AC range)	450 — 650	
Vehicle speed output signal	B55	13	Vehicle speed at most 10 km/h (6 MPH)	Less than 1←→More than 4	_	
Engine speed	B55	4	Ignition switch ON (with engine OFF).	More than 10.5	_	
signal	B00	7	Ignition switch ON (with engine ON).	8 — 11		
Cruise set signal	B54	11	When cruise control is set (SET lamp ON).	Less than 1		
	504		When cruise control is not set (SET lamp OFF).	More than 6.5		
Torque control 1 signal	B54	13	Ignition switch ON (with engine ON)	More than 9	_	
Torque control 2 signal	B54	21	Ignition switch ON (with engine ON)	More than 9	_	
Torque control cut signal	B54	2	Ignition switch ON	8	_	
AT load signal	B55	20	Engine idling after warm-up	1.2 — 1.8*1	_	
7 11 10 a a 0 19 1 a 1				0.5 — 1.2*2		
Shift solenoid 1	B54	7	1st or 4th gear	More than 9	10 — 16	
		-	2nd or 3rd gear	Less than 1		
Shift solenoid 2	B54	6	1st or 2nd gear	More than 9	10 — 16	
			3rd or 4th gear	Less than 1		
			Throttle fully closed (with engine OFF) after warm-up.	1.5 — 4.0		
Duty solenoid A	B54	9	Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	2.0 — 4.5	
			Throttle fully closed (with engine OFF) after warm-up.	More than 8.5		
Dropping resistor	B54	18	Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	9 — 15	
Duty solonsid D	DE4	46	When lock up occurs.	More than 8.5	10 47	
Duty solenoid B	B54	16	When lock up is released.	Less than 0.5	10 — 17	
			Fuse on FWD switch	More than 8.5		
Duty solenoid C (AWD models only)	B54	15	Fuse removed from FWD switch (with throttle fully open and with select lever in 1st gear).	Less than 0.5	10 — 17	

Content	Connector No.	Terminal No.	Measuring conditions	Voltage (V)	Resistance to body (ohms)
Duty solenoid D	B54	8	Throttle fully closed (with engine OFF) after warm-up.	1.5 — 4.0	2.0 — 4.5
			Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	
2-4 brake duty solenoid resistor	B54	17	Throttle fully closed (with engine OFF) after warm-up.	More than 8.5	- 9 — 15
			Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	
2-4 brake timing solenoid	B54	5	3rd gear	More than 9	10 — 16
			1st gear	Less than 1	
Low clutch timing solenoid	B54	14	2nd gear	Less than 1	10 — 16
			4th gear	More than 9	
Sensor ground line 1	B55	10	_	0	Less than 1
Sensor ground line 2	B55	21	_	0	Less than 1
System ground line	B55	9		0	Less than 1
		19	_	0	
FWD switch (AWD models only)	B55	14	Fuse removed.	6 — 9.1	_
			Fuse installed.	Less than 1	
FWD indicator lamp	B54	12	Fuse on FWD switch	Less than 1	_
			Fuse removed from FWD switch.	More than 9	
Data link signal (Subaru Select Monitor)	B55	7	_	_	_
		16	_	_	
AT diagnosis sig- nal	B54	4	Ignition switch ON	Less than 1 $\longleftrightarrow$ More than 4	_