

4. Specified Data

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

Use copies of this page for interviewing customers

Customer's name: _____ Engine no.: _____
 Date of sale: _____ Fuel brand: _____
 Date of repair: _____ Odometer reading: _____
 Mileage: _____ to B134 _____ to B135 _____ to B136

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

Cold
 Warm
 Hot
 Highway
 City
 Lower city
 Urban
 Downhill
 Uphill
 Rough road
 Others: _____

Engine temperature: Cold Warm Hot
 Warming up
 After warming up
 Any temperature
 Others: _____

Engine speed: _____ rpm
 Vehicle speed: _____ km/h (MPH)

Driving conditions: Not affected
 At starting
 Wide idling
 At idling
 While accelerating
 While cruising
 While decelerating
 While turning (RH/LH)

Headlight	<input type="checkbox"/> ON/OFF	Rear defogger	<input type="checkbox"/> ON/OFF
Blower	<input type="checkbox"/> ON/OFF	Radio	<input type="checkbox"/> ON/OFF
A/C compressor	<input type="checkbox"/> ON/OFF	CD/Cassette	<input type="checkbox"/> ON/OFF
Cooling fan	<input type="checkbox"/> ON/OFF	Car phone	<input type="checkbox"/> ON/OFF
Front wiper	<input type="checkbox"/> ON/OFF	CB	<input type="checkbox"/> ON/OFF
Rear wiper	<input type="checkbox"/> ON/OFF		

S2M1403A

5. Control Module I/O Signal

Content	Conne- tor No.	Terminal No.	Signal (V)		Note	
			Ignition SW	Engine ON (Idling)		
			ON (Engine OFF)			
Crankshaft position sensor	Signal (+)	B136	5* 6	0	±6	Sensor output waveform
	Signal (-)	B136	23	0	0	—
	Shield	B136	30	0	0	—
Camshaft position sensor	Signal (+)	B136	6* 5	0	±6	Sensor output waveform
	Signal (-)	B136	23	0	0	—
	Shield	B136	30	0	0	—
Mass air flow sensor	Signal	B136	1	1	1.0 — 1.7	—
	Shield	B136	30	0	0	—
	GND	B136	31	0	0	—
Throttle position sensor	Signal	B136	20	Fully closed: 0.5±0.3 Fully opened: 4.3±0.3		—
	Power supply	B136	12	5	5	—
	GND	B136	24	0	0	—
Oxygen sensor	Signal	B136	21	0	Rich mixture: 0.7 Lean mixture: 0	
	Shield	B136	30	0	0	—
Engine cool- ant tem- perature sensor	Signal	B136	28	0.6 — 1.0	0.6 — 1.0	After warm-up
	GND	B136	24	0	0	—
Vehicle speed sensor	B135	26		0 or 5	0 or 5	"5" and "0" are repeatedly displayed when vehicle is driven.
Starter switch	B135	2		0	0	Cranking: 10 to 14
A/C switch	B135	11		ON: 10 — 13 OFF: 0	ON: 13 — 14 OFF: 0	—
Ignition switch	B136	25		10 — 13	13 — 14	—
Neutral position switch (MT)	B135	29		ON: 5 OFF: 0		Switch is ON when gear is in neutral position.
Park/Neutral position switch (AT)	B135	29		ON: 0 OFF: 5		Switch is ON when shift lever is in "P" or "N" position.
Test mode connector	B135	22		5	5	When connected: 0
Read memory connector	B135	13		5	5	When connected: 0
Back-up power supply	B135	17		10 — 13	13 — 14	—
Control unit power supply	B136	9		10 — 13	13 — 14	—
		8		10 — 13	13 — 14	—
Ignition control	# 1, # 2	B134	7	0	3.4, max.	—
	# 3, # 4	B134	16	0	3.4, max.	—
Fuel injector	# 1	B134	31	10 — 13	13 — 14	Waveform
	# 2	B134	32	10 — 13	13 — 14	Waveform
	# 3	B134	25	10 — 13	13 — 14	Waveform
	# 4	B134	18	10 — 13	13 — 14	Waveform

*: With immobiliser

5. Control Module I/O Signal

Content	Connector No.	Terminal No.	Signal (V)		Note	
			Ignition SW	Engine ON (Idling)		
			ON (Engine OFF)			
Idle air control solenoid valve	Signal 1	B134	14	—	1 — 13	Waveform
	Signal 2	B134	5	—	1 — 13	Waveform
	Signal 3	B134	15	—	1 — 13	Waveform
	Signal 4	B134	6	—	1 — 13	Waveform
Torque control signal 1	B135	3	5	5	5	—
Torque control signal 2	B135	12	5	5	5	—
Fuel pump relay control	B134	1*	21	ON: 0 OFF: 10 — 13	0	—
A/C relay control	B134	22	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	—	—
Radiator fan relay 1 control	B134	4	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	—	—
Radiator fan relay 2 control	B134	13	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	—	—
Self-shutoff control	B136	32	10 — 13	13 — 14	—	—
Malfunction indicator lamp	B134	28	—	—	Light "ON": 1, max. Light "OFF": 10 — 14	—
Engine speed output	B135	14	—	0 — 13, min.	—	Waveform
Knock sensor	Signal	B136	26	2.8	2.8	—
	Shield	B136	29	0	0	—
Wastegate control	B134	19	10 — 13	13 — 14	—	—
Pressure sources switching solenoid valve	B134	26	10 — 13	13 — 14	—	—
Purge control solenoid valve	B135	7	ON: 0 OFF: 10 — 13	ON: 0 OFF: 13 — 14	—	—
GND (sensors)	B136	24	0	0	—	—
GND (injectors)	B134	9	0	0	—	—
GND (ignition system)	B134	17	0	0	—	—
GND (power supply)	B134	8	0	0	—	—
GND (control systems)	B136	18	0	0	—	—
	B136	1*	21	0	0	—
Select monitor signal	B136	3	—	—	—	—
		4	—	—	—	—
Power steering switch	B135	1	ON: 0 OFF: 10 — 13	ON: 0 OFF: 10 — 13	—	—
Torque control cut signal	B135	15	8	8	—	—
AT load signal	B136	2	0 — 0.3	0.8 — 1.2	—	—
MT/AT identification	B135	4	MT: 0 AT: 5	MT: 0 AT: 5	—	—
Pressure sensor	B136	7	5	5	—	—

*: With immobiliser

6. I
A: I
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1) A
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2-7b
2) S

CHEC
YES
NO

6A2

CHEC
YES
NO

6A3

1) P
<Rel
2) F

CHEC
YES
NO