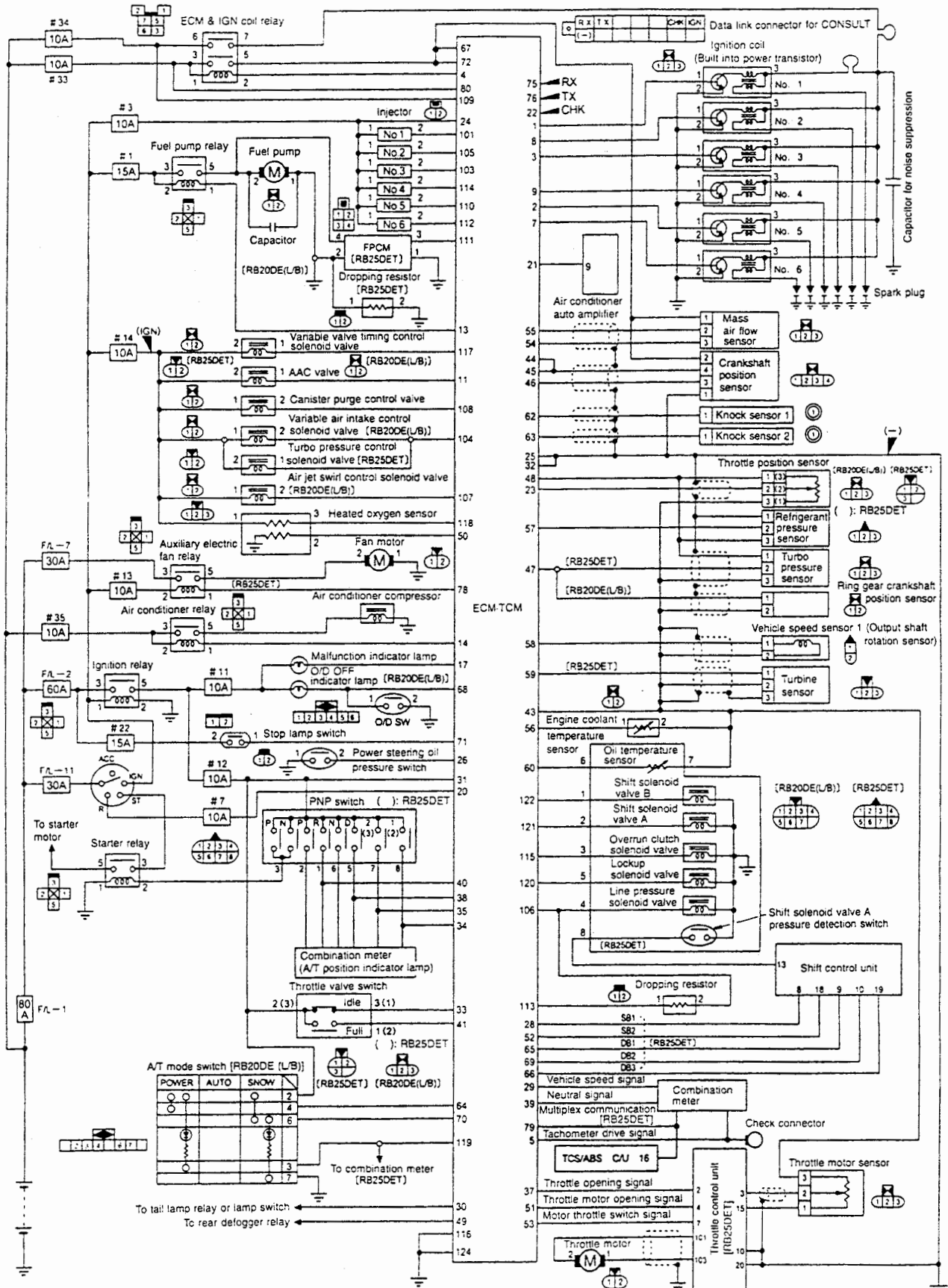


ENGINE AND EMISSION CONTROL OVERALL SYSTEM

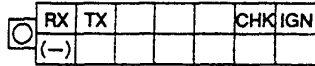
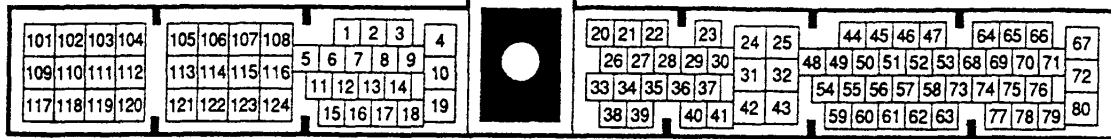
Circuit Diagram (Cont'd)

RB20DE (L/B)·A/T, RB25DET·A/T MODELS



ENGINE AND EMISSION CONTROL OVERALL SYSTEM

ECM (TCM) Terminal Layout



(Data link connector for CONSULT)

ECQ0357D

Terminal No.	Description	Terminal No.	Description
1	Ignition signal (Power transistor drive signal) Cyl. No. 1	*34	"1" position switch signal
2	Ignition signal (Power transistor drive signal) Cyl. No. 5	*35	"2" position switch signal
3	Ignition signal (Power transistor drive signal) Cyl. No. 3	36	—
4	ECM & IGN coil relay control signal	37	Throttle opening signal [RB25DE-4WD-M/T, RB25DE-A/T, RB25DET]
5	Tachometer drive signal	*38	"D" position switch signal
6	—	39	Neutral signal (Park/neutral position switch)
7	Ignition signal (Power transistor drive signal) Cyl. No. 6	*40	"R" position switch signal
8	Ignition signal (Power transistor drive signal) Cyl. No. 2	*41	Full switch signal
9	Ignition signal (Power transistor drive signal) Cyl. No. 4	42	—
10	—	43	Sensor ground
11	AAC valve control signal	44	Crankshaft position sensor 120° (REF) signal
12	—	45	Crankshaft position sensor 120° (REF) signal
13	Fuel pump relay control signal	46	Crankshaft position sensor 1° (POS) signal
14	Air conditioner relay control signal	47	Ring gear crankshaft position sensor signal [RB20DE (L/B)] Turbo pressure sensor signal [RB25DET]
15	—	48	Power supply for throttle position sensor, refrigerant pressure sensor, and turbo pressure sensor
16	—	49	Rear defogger switch signal
17	Malfunction indicator lamp	50	Heated oxygen sensor signal
18	—	51	Throttle motor sensor signal [RB25DET]
19	—	52	SB (select bit) 2 signal [RB25DET-A/T]
20	Ignition switch (START) signal	53	Motor throttle switch signal [RB25DET]
21	Air conditioner switch signal	54	Mass air flow sensor signal
22 (CHK)	Check (Diagnosis start)	55	Mass air flow sensor ground
23	Throttle position sensor signal	56	Engine coolant temperature sensor signal
24 (IGN)	Ignition switch (IGN) signal	57	Refrigerant pressure sensor signal
25	Control unit ground	*58	Output shaft rotation sensor signal (Vehicle speed sensor 1)
26	Power steering oil pressure switch signal	59	Turbine sensor signal [RB25DET-A/T]
27	—	*60	Oil temperature sensor signal
28	SB (select bit) 1 signal [RB25DET-A/T]	61	—
29	Vehicle speed sensor signal (Vehicle speed sensor 2)	62	Knock sensor signal 1
30	Headlamp switch signal	63	Knock sensor signal 2
31	Ignition power supply	64	A/T mode switch signal (POWER) [RB20DE (L/B)-A/T]
32	Control unit ground	65	DB (data bush) 1 signal [RB25DET-A/T]
*33	Idle position switch signal	66	DB (data bush) 3 signal [RB25DET-A/T]

Symbols in () next to terminal numbers indicate the data link connector terminals. Items marked with * are available on RB20DE (L/B) and RB25DET-A/T models only.

ENGINE AND EMISSION CONTROL OVERALL SYSTEM

ECM (TCM) Terminal Layout (Cont'd)

Terminal No.	Description	Terminal No.	Description
67	Control unit power supply	74	—
*68	O/D OFF indicator lamp	75 (RX)	Receive (Data input to control unit)
69	DB (data bush) 2 signal [RB25DET-A/T]	76 (TX)	Transmit (Data output from control unit)
70	A/T mode switch signal (SNOW) [RB20DE (L/B)-A/T]	77	—
*71	Stop lamp switch signal	78	Auxiliary electric fan relay control signal [RB25DE, RB25DET]
72	Control unit power	79	ECM-TCM, TCS/ABS integrated control signal [Multiplex communication] [RB25DE-A/T, RB25DET]
73	—	80	Battery power supply
101	Injector No. 1 cylinder drive signal	*113	Line pressure solenoid valve control signal (Dropping resistor circuit)
102	—	114	Injector No. 4 cylinder drive signal
103	Injector No. 3 cylinder drive signal	*115	Overrun clutch solenoid valve control signal
104	Variable air intake control solenoid valve control signal [RB20DE (L/B), BR25DE] Turbo pressure control solenoid valve control signal [RB25DET]	116	Injector ground
105	Injector No. 2 cylinder drive signal	117	Variable timing control solenoid valve control signal
*106	Line pressure solenoid valve control signal	118	Heated oxygen sensor heater control signal
107	Air jet swirl control solenoid valve control signal [RB20DE (L/B)]	*119	Power indicator lamp
108	Canister purge control valve control signal	*120	Lockup solenoid valve control signal
109	Control unit power supply (Counter-electromotive current feedback circuit)	*121	Shift solenoid valve A control signal
110	Injector No. 5 cylinder drive signal	*122	Shift solenoid valve B control signal
111	Fuel pump terminal voltage control output signal [RB25DET]	123	—
112	Injector No. 6 cylinder drive signal	124	Injector ground

Symbols in () next to terminal numbers indicate the data link connector terminals. Items marked with * are available on RB20DE (L/B) and RB25DET-A/T models only.

TROUBLE DIAGNOSES

Fail-Safe and Backup Functions

- The fail-safe function estimates the opening conditions with other input signals and selects safer conditions for the engine (vehicle) control, based on the data previously stored in the control unit, when any of the critical sensors in the ECM fails.
- The backup function allows the vehicle to be driven, using control signals previously stored in the control unit, even if the critical part of the system fails.

Function	Related sensor	Malfunction	Fail-safe/backup	MIL indication
Backup	ECM (-TCM)	The microcomputer in the control unit (CPU) is malfunctioning.	Fixes the ignition timing, fuel injection pulse width, and AAC valve opening to the preset values so that the vehicle can be driven.	MIL lights up.
Fail-safe function	Mass air flow sensor	Output voltage dropped below 0.3V while the engine is running.	Selects the fuel injection pulse width according to the engine speed and the throttle opening so that the vehicle can be driven. Fuel injection will be inhibited when the engine speed exceeded approx. 2,400 rpm. During fail-safe control, idle speed is controlled to 800 rpm.	MIL lights up.
	Engine coolant temperature sensor	Same as self-diagnostic malfunction detection conditions.	Uses the estimated engine coolant temperature (varies with elapsed time after start) to perform controls so that the vehicle can be driven normally. The auxiliary electric fan relay is turned ON. On RB25DET model, the turbo pressure control solenoid valve remains OFF.	MIL lights up.
	Heated oxygen sensor	Heated oxygen sensor output voltage exceeded approx. 2V for predetermined time.	Inhibits air/fuel ratio feedback control.	MIL lights up.
	Knock sensor	Same as self-diagnostic malfunction detection conditions.	Judges the vehicle as of regular specification. Retards the ignition timing within the knocking range so that the vehicle can be driven normally.	—
	Throttle position sensor	Same as self-diagnostic malfunction detection conditions.	Determines idle position according to the throttle position and the engine speed. Fixes the output to the preset value so that the vehicle can be driven normally. On RB25DET model, the turbo pressure control solenoid valve remains OFF.	MIL lights up.
	Throttle motor sensor	Same as self-diagnostic malfunction detection conditions.	Fixes the throttle motor sensor output to the preset value by turning the TCS switch ON/OFF, so that the vehicle can be driven normally.	MIL lights up.
	Motor throttle switch	Same as self-diagnostic malfunction detection conditions.	Fixes the TCS switch OFF.	—

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