

Powertrain Control Module

	Pin	Description and Characteristic
I	C98-E3	GLOW PLUG CONTROL MODULE LOGIC MONITOR
O	C98-G3	GLOW PLUG CONTROL MODULE DRIVE : PWM, 100% = 0N, 0% = OFF
O	C98-J4	FUEL PUMP, VOLUMETRIC CONTROL VALVE : PWM, 200 Hz
O	C98-K3	FUEL PUMP, PRESSURE CONTROL VALVE : PWM, 350 Hz
O	C98-L1	FUEL INJECTOR DRIVE - CYLINDER 4: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
+	C98-L2	FUEL INJECTOR POWER SUPPLY - CYLINDER 4:
+	C98-L3	FUEL INJECTOR POWER SUPPLY - CYLINDER 5:
O	C98-M1	FUEL INJECTOR DRIVE - CYLINDER 5: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
O	C98-M2	FUEL INJECTOR DRIVE - CYLINDER 6: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
O	C98-M3	FUEL INJECTOR POWER SUPPLY - CYLINDER 6:
+	C99-L2	FUEL INJECTOR POWER SUPPLY - CYLINDER 2:
+	C99-L3	FUEL INJECTOR POWER SUPPLY - CYLINDER 1:
+	C99-L4	FUEL INJECTOR POWER SUPPLY - CYLINDER 3:
O	C99-M2	FUEL INJECTOR DRIVE - CYLINDER 2: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
+	C99-M3	FUEL INJECTOR DRIVE - CYLINDER 1: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
O	C99-M4	FUEL INJECTOR DRIVE - CYLINDER 3: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
SG	FH13-B3	AIR CONDITIONING PRESSURE SENSOR GROUND
SG	FH13-B4	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
I	FH13-C4	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
SS	FH13-D3	AIR CONDITIONING PRESSURE SENSOR POWER SUPPLY : NOMINAL 5 V
I	FH13-E3	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
I	FH13-F2	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 - 5 V; TRANSDUCER - VOLTAGE INCREASES AS PRESSURE INCREASES
O	FH13-J2	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
O	FH13-J4	FUEL LIFT PUMP DRIVE SIGNAL (TO FUEL LIFT PUMP RELAY): TO ACTIVATE, PCM SWITCHES CIRCUIT TO GROUND
O	FH13-K2	COOLING FAN MODULE CONTROL: PWM, 140 Hz, POSITIVE DUTY CYCLE RANGE 7% - 95%

NOTE: Refer to the Appendix at the rear of this book for Network Messages.

Fig. 03.8

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	C67	2-WAY / BLACK	LOWER LH SIDE OF ENGINE
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX - R8
AIR CONDITIONING PRESSURE SENSOR	FH110	3-WAY / BLACK	ENGINE COMPARTMENT, LH SIDE, HIGH PRESSURE REFRIGERANT LINE, BETWEEN COMPRESSOR AND CONDENSER
BRAKE CANCEL SWITCH	CA36	2-WAY / GREY	TOP OF BRAKE PEDAL
COOLING FAN MODULE	FH120	4-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT, REARWARD OF RADIATOR
DOSING PUMP	CA307	2-WAY / BLACK	FUEL TANK, RH SIDE, ABOVE FUEL FILLER HOSE
FRONT POWER DISTRIBUTION FUSE BOX	—	—	ENGINE COMPARTMENT, RH SIDE
FUEL INJECTOR 1	C44	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL INJECTOR 2	C46	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL INJECTOR 3	C48	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL INJECTOR 4	C45	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL INJECTOR 5	C47	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL INJECTOR 6	C49	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
FUEL LIFT PUMP	FP2	8-WAY / BLACK	FUEL TANK, RH SIDE
FUEL LIFT PUMP RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX - R15
FUEL-FIRED AUXILIARY HEATER MODULE	FH24	8-WAY / BLACK	BELOW LH HEADLAMP ASSEMBLY
GLOW PLUG CONTROL MODULE	FH25	2-WAY / BLACK	
	FH20	5-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT, BRACKET, DSC MODULE
	FH23	EYELET	
	GP4	6-WAY	
GLOW PLUGS (BANK 1)	GP1	3-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
GLOW PLUGS (BANK 2)	GP2	3-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
POWERTRAIN CONTROL MODULE	C98	48-WAY / BROWN	FRONT BULKHEAD, PASSENGER SIDE
	C99	48-WAY / GREY	
	FH13	48-WAY / BLACK	
PRESSURE CONTROL VALVE (FUEL PUMP)	C43	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33
REAR ELECTRONIC MODULE	CA63	17-WAY / BLACK	LUGGAGE COMPARTMENT, RH REAR
	CA100	12-WAY / BLACK	
	CA101	20-WAY / BLACK	
	CA102	22-WAY / BLACK	
	CA103	26-WAY / NATURAL	
REAR POWER DISTRIBUTION FUSE BOX	—	—	LUGGAGE COMPARTMENT
STEERING WHEEL SPEED CONTROL SWITCHES	SQ2	6-WAY / BLACK	STEERING WHEEL
VOLUMETRIC CONTROL VALVE (FUEL PUMP)	C42	2-WAY / BLACK	REFER TO SENSORS AND ACTUATORS, PAGE 32 OR 33

HARNES IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
FC10	14-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND INSTRUMENT PANEL, RH SIDE
FC117	10-WAY / BLACK / STEERING WHEEL CASSETTE	STEERING COLUMN
FH2	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	RH 'A' POST, LOWER
FH3	16-WAY / BLUE / CABIN HARNESS TO FRONT HARNESS	LH 'A' POST
FH6	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE, LH REAR
PI41	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESSES	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE

GROUNDS

Ground	Location
CA156	LUGGAGE COMPARTMENT, RH SIDE
FH22	ENGINE COMPARTMENT, BEHIND LH HEADLAMP
FH42	ENGINE COMPARTMENT, BEHIND RH HEADLAMP
FH95	ENGINE COMPARTMENT, BEHIND LH HEADLAMP (RADIATOR FAN GROUND)
CA52	LH 'C' POST, UPPER

FOR CONTROL MODULE PIN-OUT INFORMATION, UNFOLD PAGE TO LEFT.

The following abbreviations are used to represent values for Control Module Pin-Out data

I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted.

Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, fuses, grounds, control modules and control module pins.

