BY APPOINTMENT TO
HER MAJESTY QUEEN ELIZABETH II
MANUFACTURERS OF DAIMLER AND JAGUAR CARS
JAGUAR CARS LIMITED COVENTRY

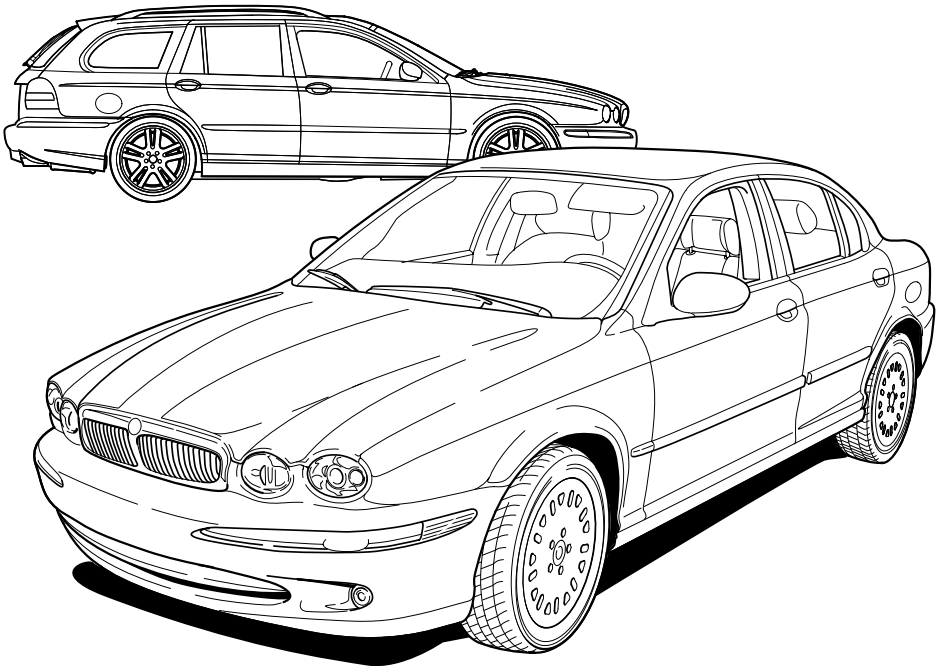
BY APPOINTMENT TO
HER MAJESTY QUEEN ELIZABETH
THE QUEEN MOTHER
MANUFACTURERS OF DAIMLER AND JAGUAR CARS
JAGUAR CARS LIMITED COVENTRY

BY APPOINTMENT TO
HIS ROYAL HIGHNESS THE PRINCE OF WALES
MANUFACTURERS OF DAIMLER AND JAGUAR CARS
JAGUAR CARS LIMITED COVENTRY

X-TYPE

2004.25 / 2004.5 Electrical Guide Sedan and Estate (Wagon)

2.0 L, 2.5 L and 3.0 L Gasoline; 2.0 L Diesel
Model Years: Sedan 2004.25, Estate (Wagon) 2004.5



Published by Technical Support and Communications
Jaguar Cars Limited

Publication Part Number – JJM 10 38 20 / 42

JAGUAR

FIGURES

FIGURES

The following abbreviations and acronyms are used throughout this Electrical Guide:

A/C	Air Conditioning
APP SENSOR	Accelerator Pedal Position Sensor
APP1	Accelerator Pedal Position Sensor Element 1
APP2	Accelerator Pedal Position Sensor Element 2
APP3	Accelerator Pedal Position Sensor Element 3
AWD	All Wheel Drive
B+	Battery Voltage
BANK 1	RH Cylinder Bank (Cylinders 1, 3, 5)
BANK 2	LH Cylinder Bank (Cylinders 2, 4, 6)
CAN	Controller Area Network
CHT SENSOR	Cylinder Head Temperature Sensor
CKP SENSOR	Crankshaft Position Sensor
CMP SENSOR / 1	Camshaft Position Sensor / RH Bank
CMP SENSOR / 2	Camshaft Position Sensor / LH Bank
D2B	D2B Network
ECT SENSOR	Engine Coolant Temperature Sensor
EFT SENSOR	Engine Fuel Temperature Sensor
EGR VALVE	Exhaust Gas Recirculation Valve
EGT SENSOR	Exhaust Gas Temperature Sensor
EMS	Engine Management System
EOT SENSOR	Engine Oil Temperature Sensor
EST / WAG	Estate / Wagon Vehicles
EVAP CANISTER CLOSE VALVE	Evaporative Emission Canister Close Valve
EVAP CANISTER PURGE VALVE	Evaporative Emission Canister Purge Valve
FTP SENSOR	Fuel Tank Pressure Sensor
FWD	Front Wheel Drive
GPS	Global Positioning System
HID	High Intensity Discharge
HO2 SENSOR 1 / 1	Heated Oxygen Sensor – RH Bank / Upstream
HO2 SENSOR 1 / 2	Heated Oxygen Sensor – RH Bank / Downstream
HO2 SENSOR 2 / 1	Heated Oxygen Sensor – LH Bank / Upstream
HO2 SENSOR 2 / 2	Heated Oxygen Sensor – LH Bank / Downstream
IAT SENSOR	Intake Air Temperature Sensor
ICE	In-Car Entertainment System
IMT SOLENOID VALVE / 1	Intake Manifold Tuning Valve / Bottom
IMT SOLENOID VALVE / 2	Intake Manifold Tuning Valve / Top
IP SENSOR	Injection Pressure Sensor
KS	Knock Sensor
LH	Left Hand
LHD	Left Hand Drive
MAF SENSOR	Mass Air Flow Sensor
MAP SENSOR	Manifold Absolute Pressure Sensor
N/A	Normally Aspirated
NAS	North American Specification
PATS	Passive Anti-Theft System
PWM	Pulse Width Modulated
RH	Right Hand
RHD	Right Hand Drive
ROW	Rest of World
SCP	Standard Corporate Protocol Network
SEDAN	Sedan Vehicles
T-MAP SENSOR	Temperature Manifold Absolute Pressure Sensor
TP SENSOR	Throttle Position Sensor
TP1	Throttle Position Sensor Element 1
TP2	Throttle Position Sensor Element 2
TURN	Turn Signal
TV	Television
V6	V6 Engine
VVT SOLENOID VALVE / 1	Variable Valve Timing Valve / Bank 1
VVT SOLENOID VALVE / 2	Variable Valve Timing Valve / Bank 2
+ve	Positive
–ve	Negative
2.0 L D	2.0 L Diesel Vehicles
2.0 L	2.0 L V6 Vehicles
2.5 L, 3.0 L	2.5 L and 3.0 L V6 Vehicles

Electrical Guide Format

This Electrical Guide is made up of two major sections. The first section, at the front of the book, provides general information for and about the use of the book, and information and illustrations to aid in the understanding of the Jaguar X-TYPE electrical / electronic systems, as well as the location and identification of components.

The second section includes the Figures, which are the basis of the book. Each Figure is identified by a Figure Number (i.e. Fig. 01.1) and Title, and is accompanied by a page of data containing information specific to that Figure.

It is recommended that the user read through the front section of the book to develop a familiarity with the layout of the book and with the system of symbols and abbreviations used. The Table of Contents should help to guide the user.

Vehicle Identification Numbers (VIN)

VIN ranges are presented throughout the book in the following manner:

→ VIN 123456 indicates "up to VIN 123456"; VIN 123456 → indicates "from VIN 123456 on".

Jaguar 2004.25 / 2004.5 Model Year X-TYPE Electrical System Architecture

Power Supplies

The Jaguar X-TYPE electrical system is a supply-side switched system. The ignition switch directly carries much of the ignition switched power supply load. Power supply is provided via three methods: direct battery power supply, ignition switched power supply, and "Battery Saver Power Supply". The "Battery Saver Power Supply" circuit is controlled via the GEM (General Electronic Module). Refer to Figure 01.7 for circuit activation details.

Fuse Boxes

The electrical harness incorporates two serviceable power distribution fuse boxes: the Power Distribution Fuse Box located in the engine compartment and the Passenger Junction Fuse Box located in the left-hand 'A' Post. All fuses and relays (except the trailer towing accessory kit and two Diesel vehicle relays) are located in the two fuse boxes.

Vehicle Networks

The X-TYPE employs three different networks: a CAN (Controller Area Network) for high-speed power train communications, an SCP (Standard Corporate Protocol) network for slower speed body systems communications, and a D2B (Optical) Network for very high-speed "real-time" audio data transfer. The D2B Network is a fiber optic network with a gateway to the remaining vehicle networks via the Audio Unit. Technician access to the three networks and the Serial Data Link is via the Data Link Connector.

Ground Studs

Circuit ground connections are made at body studs located throughout the vehicle. There are no separate power and logic grounding systems; however, there are a certain number of components that use unique ground points.

X-TYPE INSTRUMENT PANEL

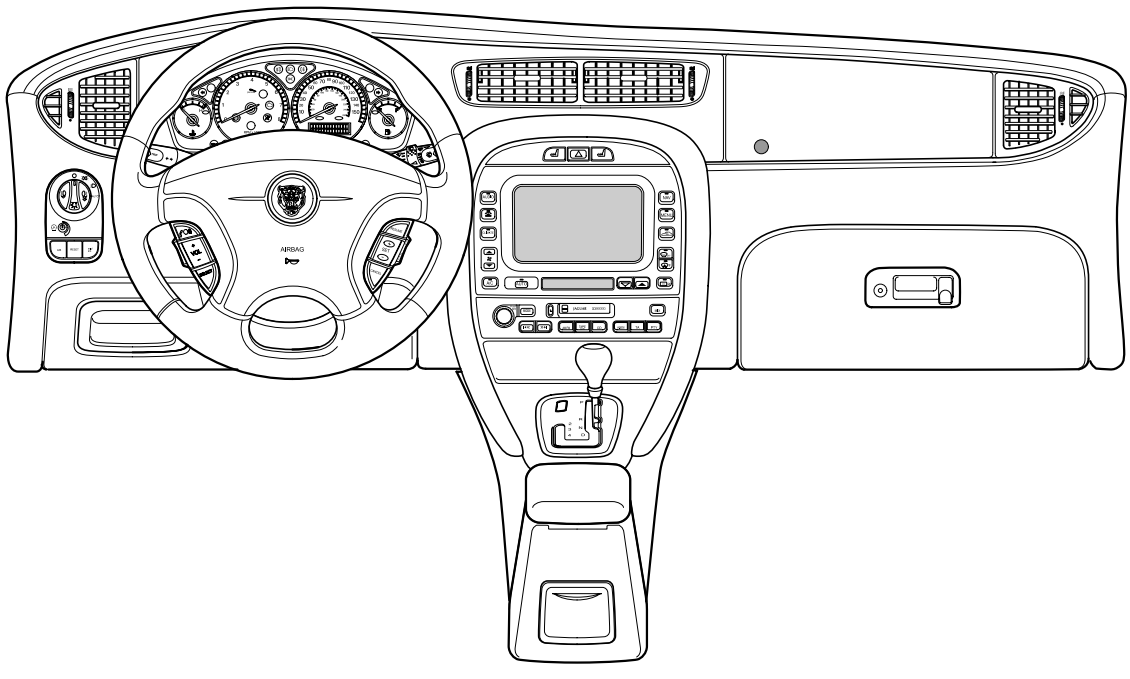


Figure and Data Page Layout

Figure Pages

Each Figure represents a specific electrical system of the vehicle. The Figures are arranged numerically by system (**01 - Power Distribution, 02 - Battery; Starter; Generator**, etc.) with variations in the system identified by a numeral following a decimal point (**01.1, 01.2**, etc.). Refer to the **Table of Contents: Figures** for a complete list of the Figures.

The Figures **01 - Power Distribution** detail the distribution of power to each of the systems. Numbered reference symbols refer the user to a specific Figure and from a specific Figure back to the Power Distribution Figures. This method eliminates the need to include detailed Power Distribution information on each of the Figures. The reference symbols are defined on page 12.

Each Figure appears on a right-hand page with a corresponding Data page to the left. The Figure and Data pages are folding pages. The user must fold out both pages in order to access all the information provided.

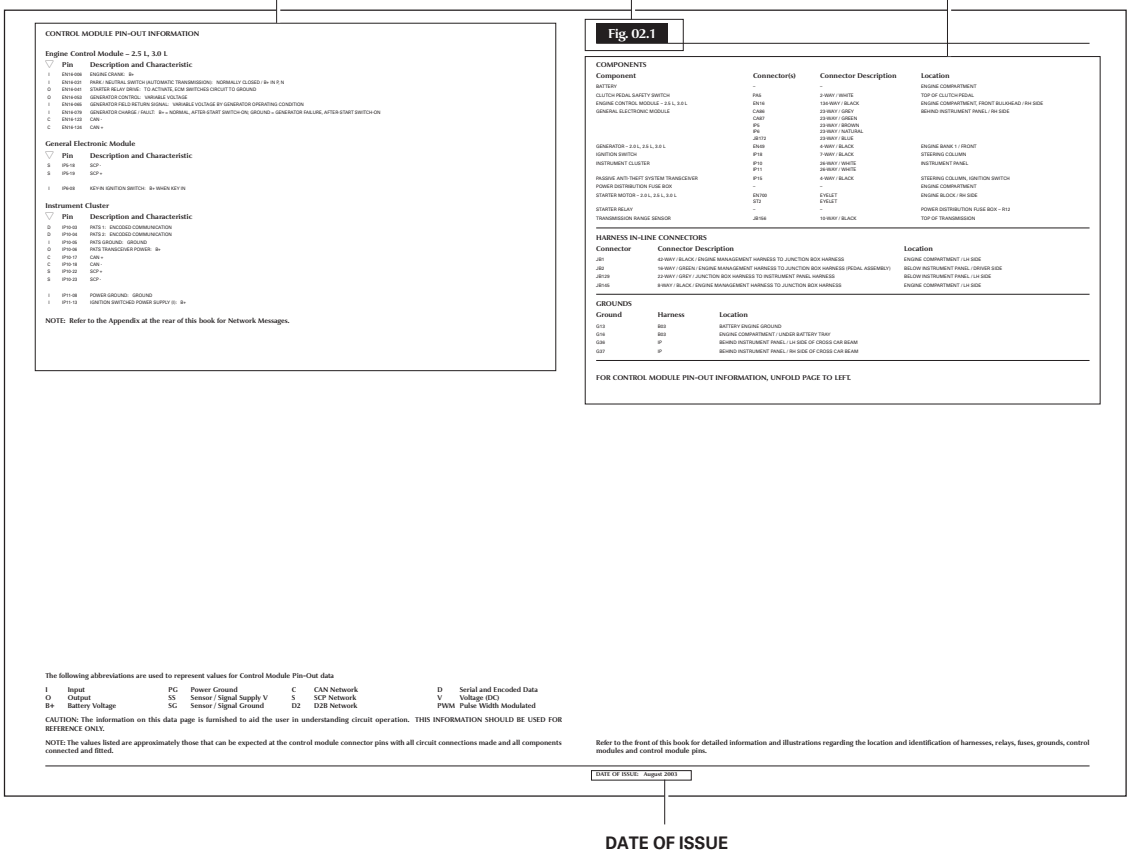
Data Pages

The Data page includes information to assist the user in identifying and locating components, connectors and grounds. This information is supplemented by the illustrations in this front section of the book.

When network data is required for the understanding of a particular circuit, the user is directed to the Appendix.

Most circuits that incorporate a control module include pinout information. The characteristics 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. This information is provided to assist the user in understanding circuit operation and should be used FOR REFERENCE ONLY.

CONTROL MODULE PIN OUT INFORMATION | FIGURE NUMBER | COMPONENT, CONNECTOR AND GROUND INFORMATION



CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.5 L, 3.0 L

	Pin	Description and Characteristic
I	EN18-006	ENGINE CRANK: B+
I	EN18-031	PARK / NEUTRAL SWITCH (AUTOMATIC TRANSMISSION): NORMALLY CLOSED / B+ IN P, N
O	EN18-041	STARTER RELAY DRIVE: TO ACTIVATE ECM SWITCHES CIRCUIT TO GROUND
O	EN18-053	GENERATOR CONTROL: VARIABLE VOLTAGE
I	EN18-066	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
I	EN18-079	GENERATOR CHARGE / FAULT: B+ = NORMAL, AFTER-START SWITCH-ON; GROUND = GENERATOR FAILURE, AFTER-START SWITCH-ON
C	EN18-123	CAN -
C	EN18-136	CAN +

General Electronic Module

	Pin	Description and Characteristic
S	IP6-18	SCP -
S	IP6-19	SCP +
I	IP6-68	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN

Instrument Cluster

	Pin	Description and Characteristic
D	IP10-03	PATS 1 - ENCODED COMMUNICATION
D	IP10-04	PATS 2 - ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

Fig. 02.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	–	–	ENGINE COMPARTMENT
CLUTCH PEDAL SAFETY SWITCH	PA6	2-WAY / WHITE	TOP OF CLUTCH PEDAL
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA66	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA67	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
GENERATOR – 2.0 L, 2.5 L, 3.0 L	EN49	4-WAY / BLACK	ENGINE BANK 1 / FRONT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
STARTER MOTOR – 2.0 L, 2.5 L, 3.0 L	EN760	EYELET	ENGINE BLOCK / RH SIDE
	ST3	EYELET	
STARTER RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R12
TRANSMISSION RANGE SENSOR	JB164	10-WAY / BLACK	TOP OF TRANSMISSION

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB145	8-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE

GROUNDS

Ground	Harness	Location
G12	B03	BATTERY ENGINE GROUND
G16	B03	ENGINE COMPARTMENT / UNDER BATTERY TRAY
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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
O	Output	SS	Sensor / Signal Supply V	S	SCP Network
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network
D	Serial and Encoded Data				
V	Voltage (DC)				
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.

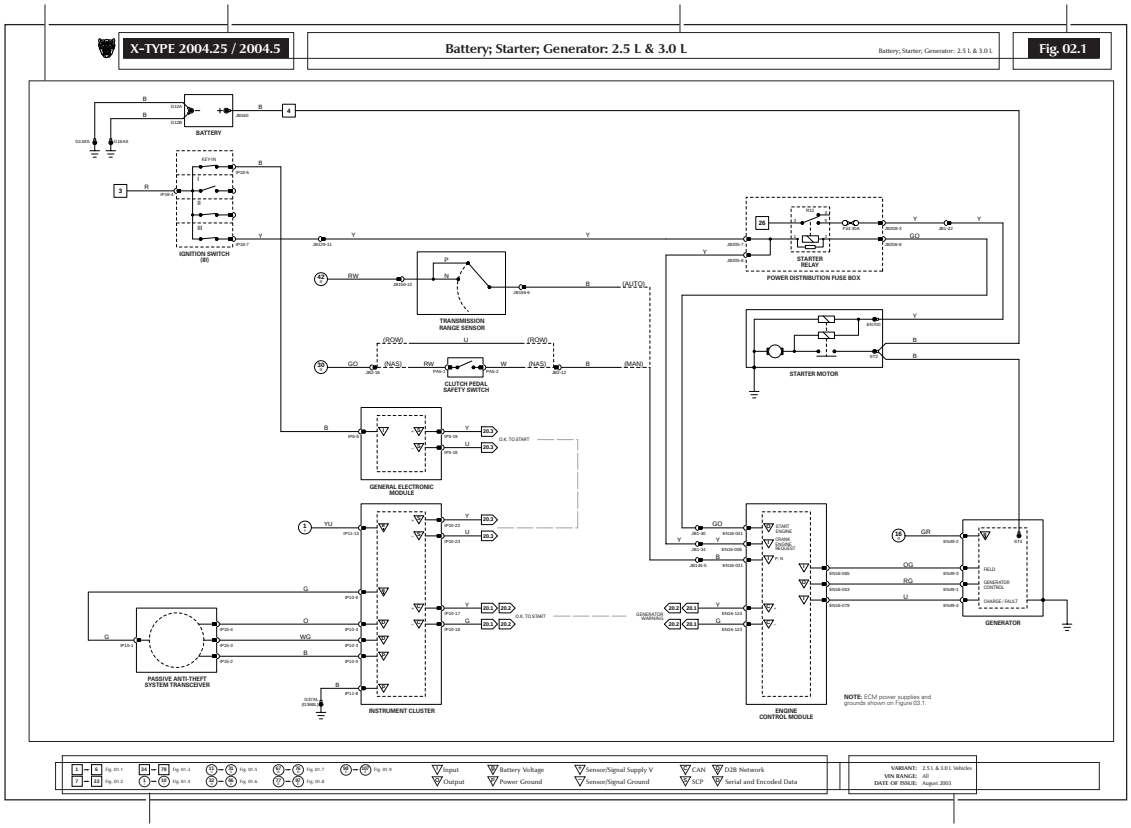
Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, fuses, grounds, control modules and control module pins.

DATE OF ISSUE: August 2003

DATE OF ISSUE

DATA PAGE

FIGURE | MODEL RANGE AND YEAR | TITLE | FIGURE NUMBER



KEY TO REFERENCE SYMBOLS | VARIANT, VIN RANGE AND DATE OF ISSUE

FIGURE PAGE

NOTE: In the examples on this page, an 'X' is used where a number would appear on an actual Figure.

Reference Symbols

- X — Battery power supply
- X (I) — Ignition switched auxiliary power supply (key I)
- X (II) — Ignition switched power supply (key II, III)
- X (B) — Ignition switched Battery Saver power supply
- X (E) — Engine Management System power supply
- XX.X — Figure number reference
- CAN — Controller Area Network
- SCP — Standard Corporate Protocol network
- D2B — D2B network

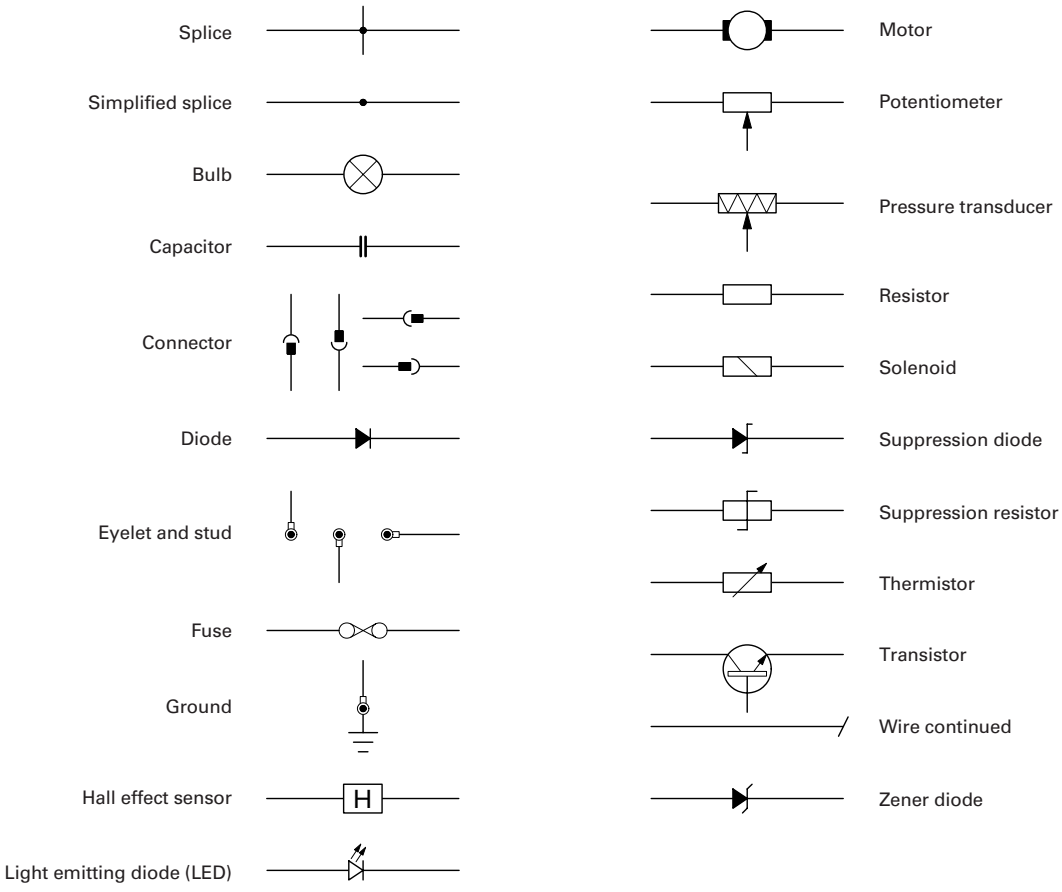
Control Module Pin Symbols

- I — Input
- O — Output
- B — Battery voltage
- P — Power ground
- \+ — Sensor/signal supply V *
- − — Sensor/signal ground **
- C — CAN network
- S — SCP network
- D — D2B network
- D — Serial and encoded data

* May also indicate Reference Voltage.

** May also indicate Reference Ground or Logic Ground. Refer to Control Module Pin-Out Information.

Wiring Symbols



Harness Codes

AC Climate Control
AS Side Airbag
BH Engine Block Heaters
BL LH Rear Door
BR RH Rear Door
CA Cabin
DE Diesel Engine
DL Diesel Engine Link
EN Engine
FB Front Bumper
FL LH Front Door
FR RH Front Door
FT Fuel Tank
GC Cooling Pack
IJ Injector Rail
IP Instrument Panel
JB Junction Box
LF LH Front Wheel Speed Sensor
LR LH Rear Wheel Speed Sensor
LS LH Front Seat
NA Navigation System
PA Pedal Assembly
PH Telephone
RB Rear Bumper
RC Roof Console
RF RH Front Wheel Speed Sensor
RR RH Rear Wheel Speed Sensor
RS RH Front Seat
SL Security Sounder Link
TL Trunk Lid
TT Trailer Towing
TV Television
WG Tailgate Glass (Estate / Wagon only)
WL Tailgate Link (Estate / Wagon only)
WS Weight Sensor
WT Tailgate (Estate / Wagon only)

Wiring Color Codes

N	Brown	O	Orange
B	Black	S	Slate
W	White	L	Light
K	Pink	U	Blue
G	Green	P	Purple
R	Red	BRD	Braid
Y	Yellow	BOF	Fiber optic (D2B Network)

Code Numbering

When numbering connectors, grounds and splices, Jaguar Engineering uses a three-position format: AC001, AC002, etc. Because space is limited in this Electrical Guide the codes have, in most cases, been shortened. Thus AC001-001 becomes AC1-1, AC002-001 becomes AC2-1, etc.

Grounds

There may be up to three eyelets on one ground stud. A, B and C are used to indicate the position of the eyelet on the stud: A – first (bottom), B – second (middle), C – third (top). Two eyelet variations are used: a single eyelet and an eyelet pair. The single eyelet has a single 'leg', which is identified by an S; the eyelet pair has two 'legs', identified as L (left) or R (right).

EXAMPLE:

On figures where LHD and RHD circuits are combined and the ground designation differs from LHD to RHD, the RHD ground is shown in parentheses. If the ground designation is the same for LHD and RHD, only one ground designation is used.

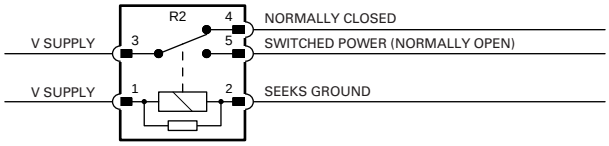
EXAMPLE:

Relays

Serviceable Relays

Serviceable relays are located in both fuse boxes. They do not have a separate relay connector (base). All relays use the ISO pin numbering system – 1, 2, 3, 4, 5. Each relay is identified by an "R" number unique only to the fuse box in which it is located.

EXAMPLE:

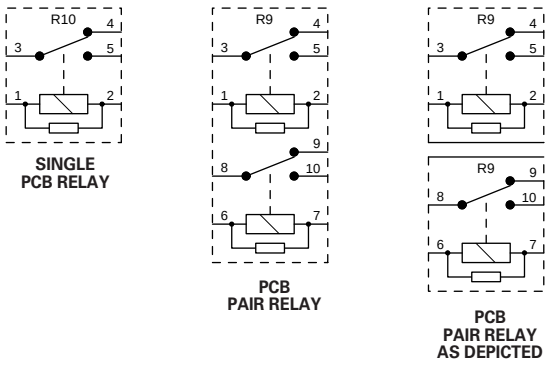


CHANGE-OVER RELAY: RELAY PIN NUMBERS AND STANDARD FUNCTIONS

Non-Serviceable Relays

Non-serviceable relays are located in both fuse boxes. They are a component part of the fuse box printed circuit board (PCB) and are arranged in singles or pairs. The relays use the ISO pin numbering system – 1, 2, 3, 4, 5 (single relay or top pair relay) and 6, 7, 8, 9, 10 (bottom pair relay). Each relay is identified by an "R" number unique only to the fuse box in which it is located. Pair relays are normally depicted separately.

EXAMPLE:



SINGLE PCB RELAY

PCB PAIR RELAY

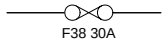
PCB PAIR RELAY AS DEPICTED

NOTE: Diesel vehicles have one serviceable relay located on the Junction Box harness and one serviceable relay attached to the Power Distribution Fuse Box.

Fuses

All fuses are located in the fuse boxes. Each fuse is identified by an “F” number unique only to the fuse box in which it is located.

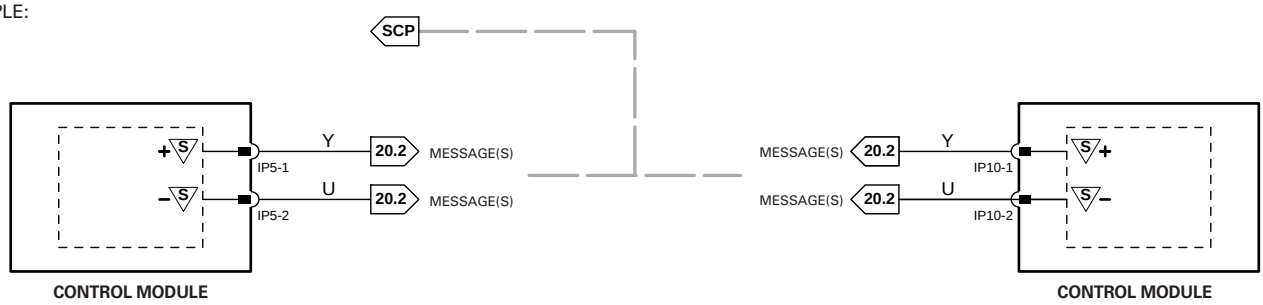
EXAMPLE:



Networks

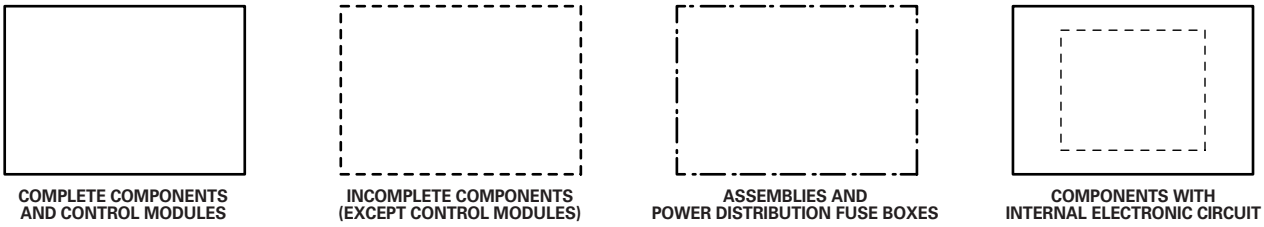
In most instances, networks are shown as a broken grey line to indicate that there is network communication between the depicted control modules. Refer to Figures 20.1, 20.2, 20.3 and 20.4 for circuit details.

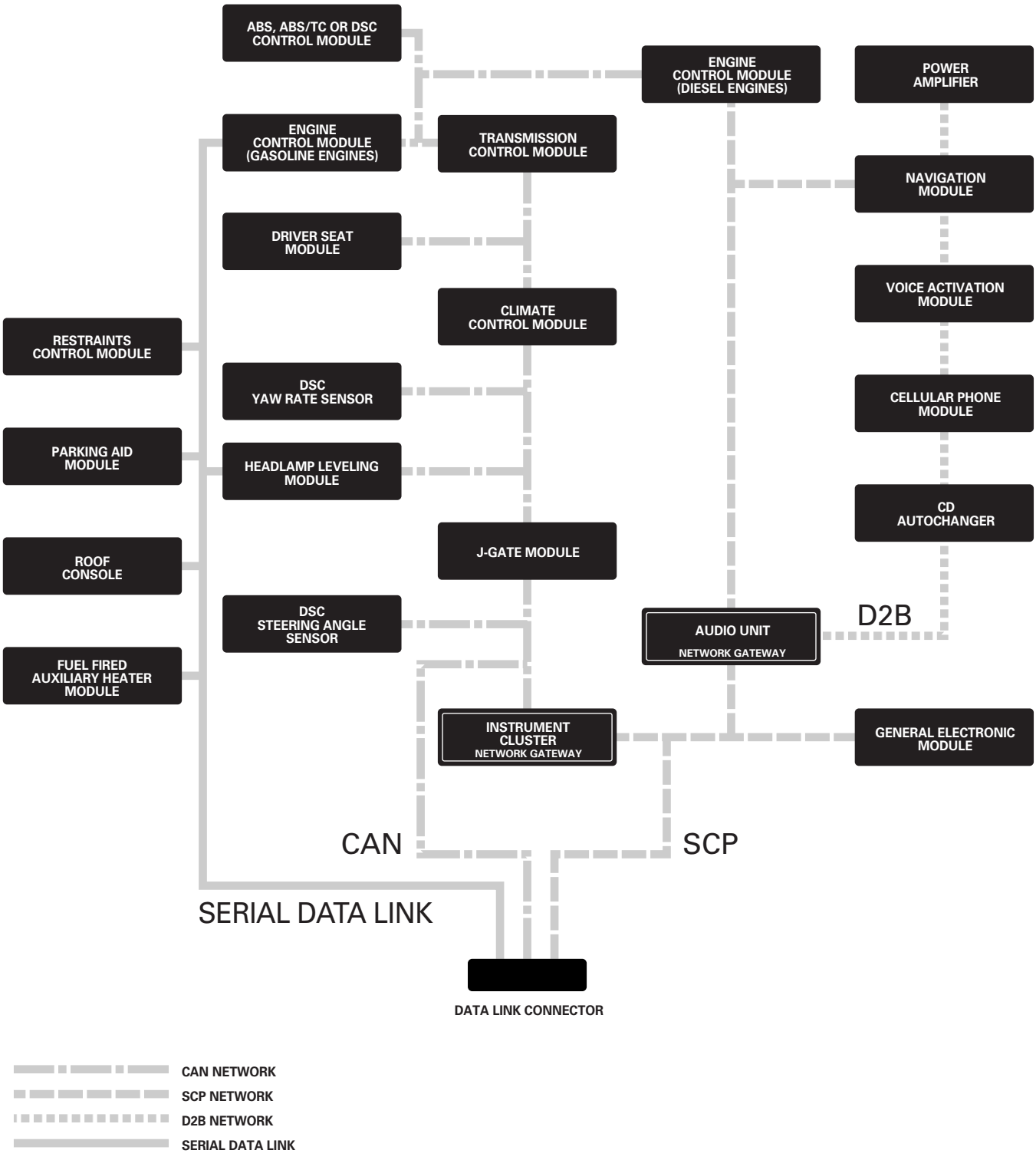
EXAMPLE:



Component Depictions

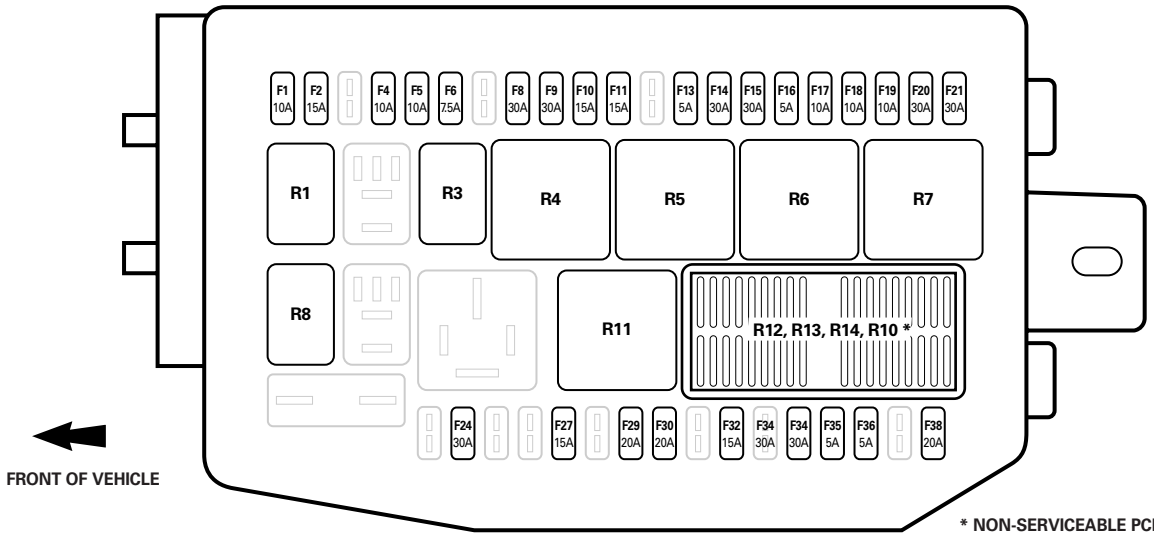
EXAMPLE:





NOTE: TYPICAL NETWORK CONFIGURATION.
REFER TO FIGURES 20.1, 20.2, 20.3 AND 20.4 FOR CIRCUIT DETAILS.

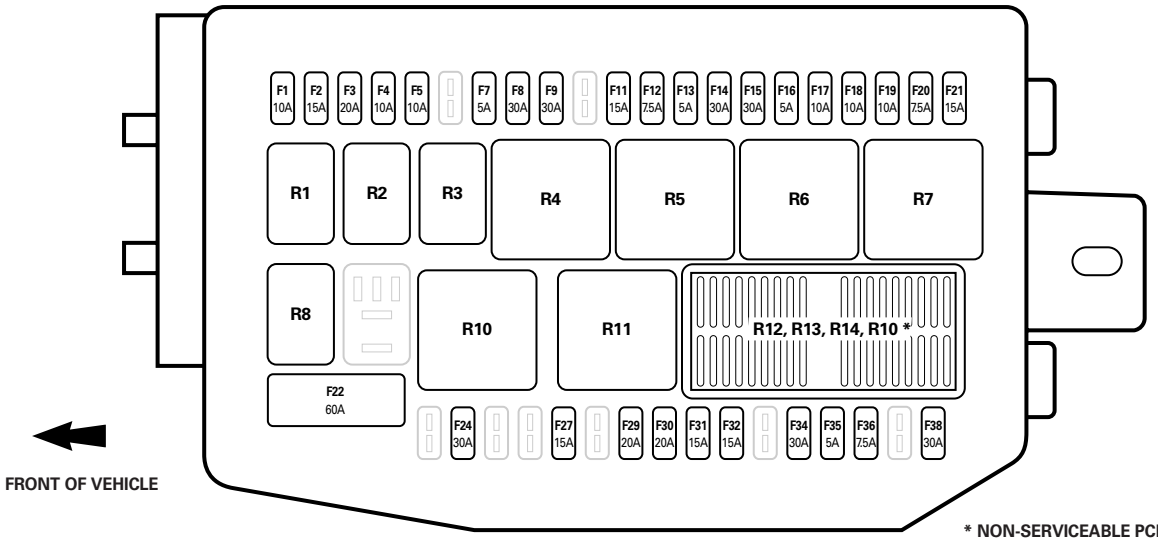
POWER DISTRIBUTION FUSE BOX (TOP): GASOLINE ENGINE VEHICLES



* NON-SERVICEABLE PCB RELAYS

R1 MAIN BEAM / FRONT FOG RELAY
R2 NOT USED
R3 A/C COMPRESSOR CLUTCH RELAY
R4 WINDSHIELD WIPER MOTOR RELAY
R5 POWER DISTRIBUTION FUSE BOX IGNITION RELAY
R6 WINDSHIELD HEATER RELAY
R7 EMS CONTROL RELAY
R8 POWERWASH PUMP RELAY
R9 NOT USED
R10 NOT USED
R11 DIP BEAM RELAY
R12 STARTER RELAY
R13 SLAVE IGNITION RELAY
R14 NOT USED
R15 HORN RELAY

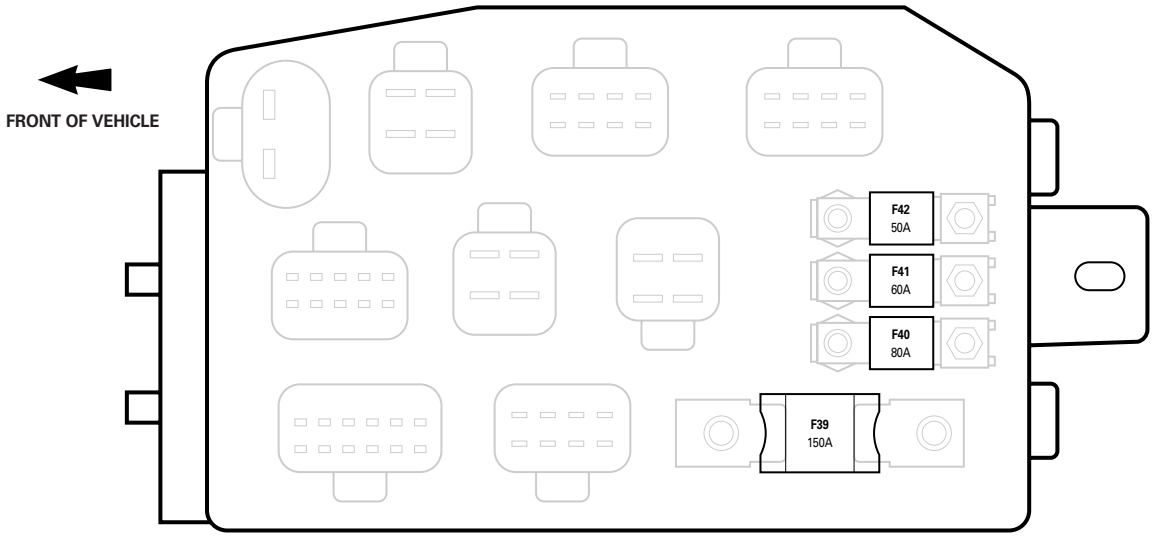
POWER DISTRIBUTION FUSE BOX (TOP): DIESEL ENGINE VEHICLES



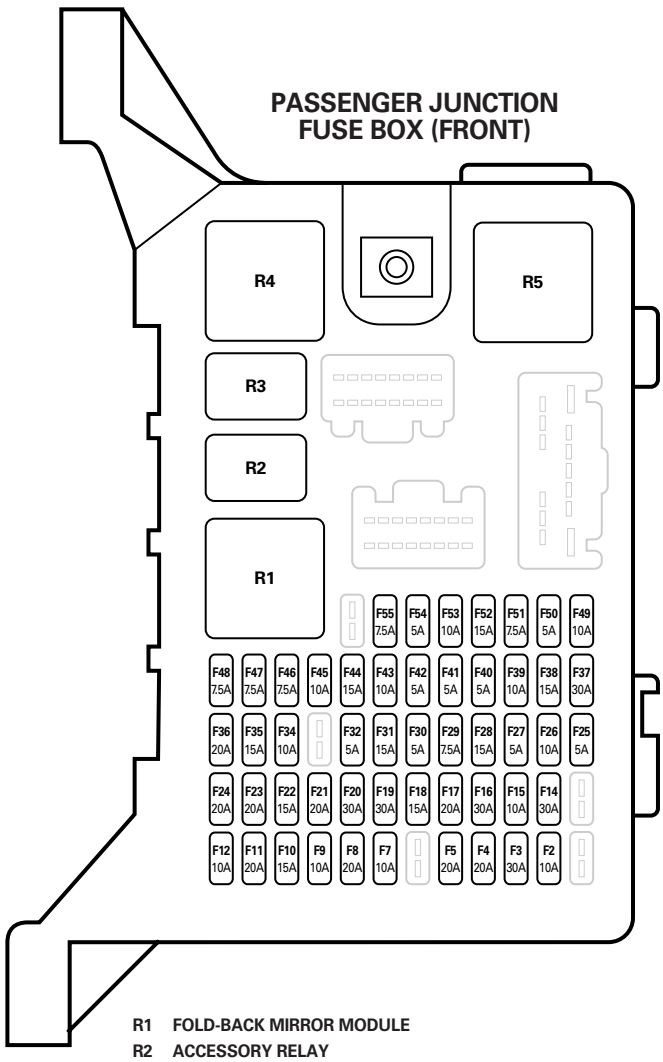
* NON-SERVICEABLE PCB RELAYS

R1 MAIN BEAM / FRONT FOG RELAY
R2 HORN RELAY
R3 A/C COMPRESSOR CLUTCH RELAY
R4 WINDSHIELD WIPER MOTOR RELAY
R5 POWER DISTRIBUTION FUSE BOX IGNITION RELAY
R6 WINDSHIELD HEATER RELAY
R7 EMS CONTROL RELAY
R8 POWERWASH PUMP RELAY
R9 NOT USED
R10 GLOW PLUG RELAY
R11 DIP BEAM RELAY
R12 STARTER RELAY
R13 SLAVE IGNITION RELAY
R14 NOT USED
R15 AUXILIARY HEATER RELAY 1

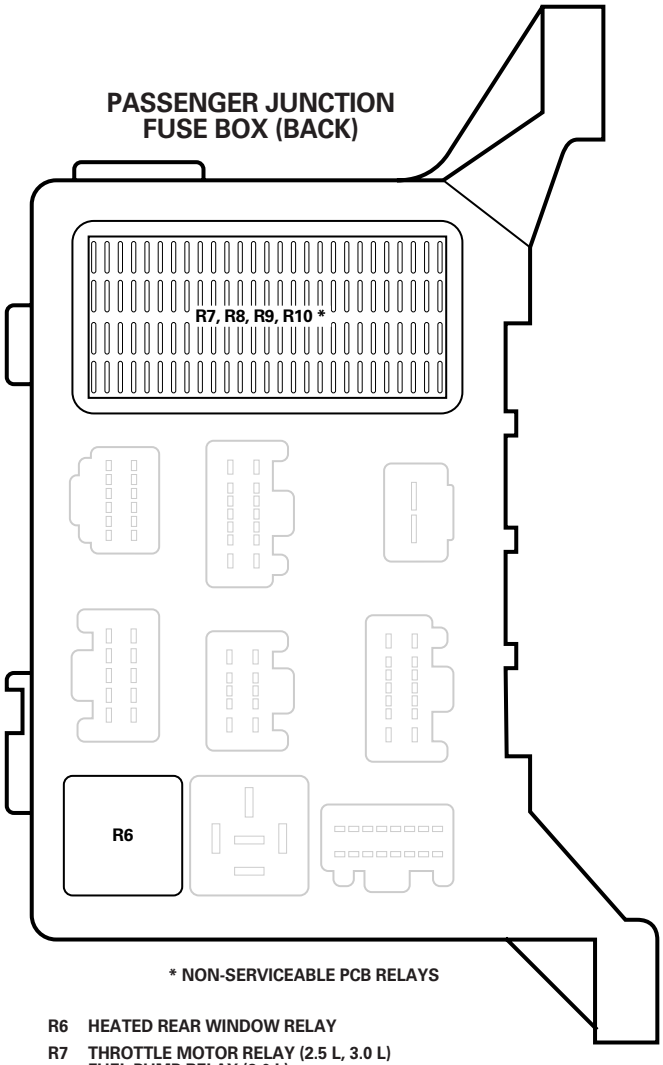
POWER DISTRIBUTION FUSE BOX (BOTTOM)



PASSENGER JUNCTION FUSE BOX (FRONT)



PASSENGER JUNCTION FUSE BOX (BACK)

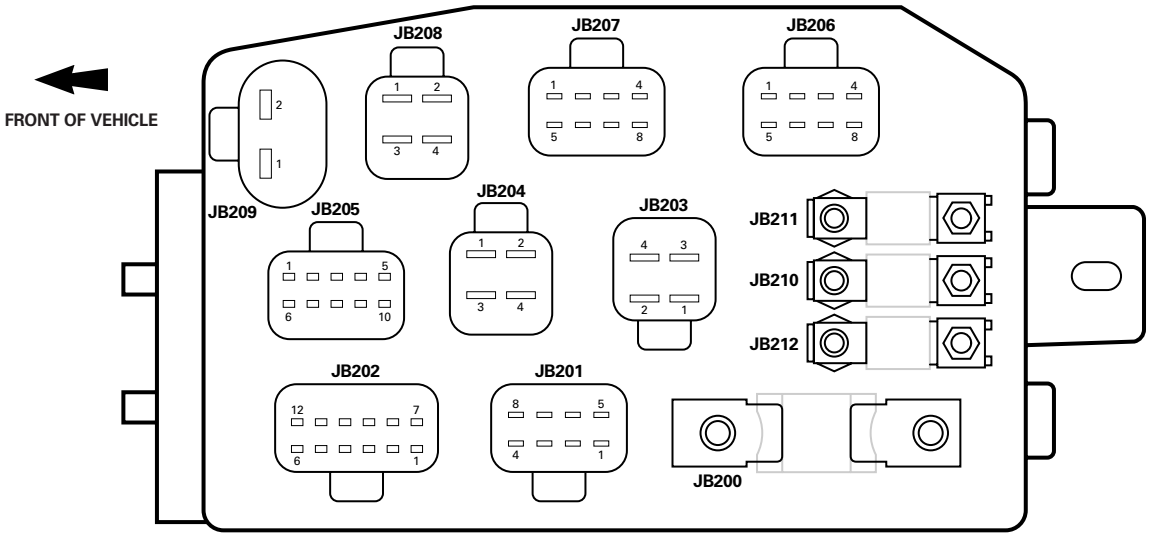


* NON-SERVICEABLE PCB RELAYS

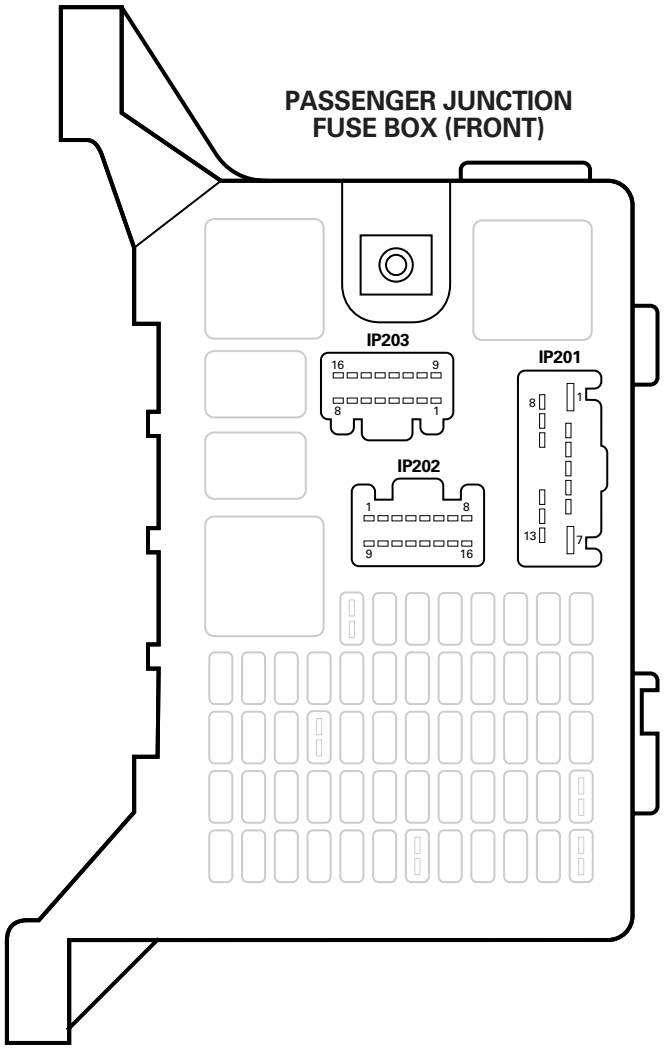
R1 FOLD-BACK MIRROR MODULE
R2 ACCESSORY RELAY
R3 REAR WIPER MOTOR RELAY (ESTATE / WAGON ONLY)
R4 BLOWER MOTOR RELAY
R5 PASSENGER JUNCTION FUSE BOX IGNITION RELAY

R6 HEATED REAR WINDOW RELAY
R7 THROTTLE MOTOR RELAY (2.5 L, 3.0 L) FUEL PUMP RELAY (2.0 L)
R8 NOT USED
R9 REVERSE LAMPS RELAY
R10 BATTERY SAVER RELAY

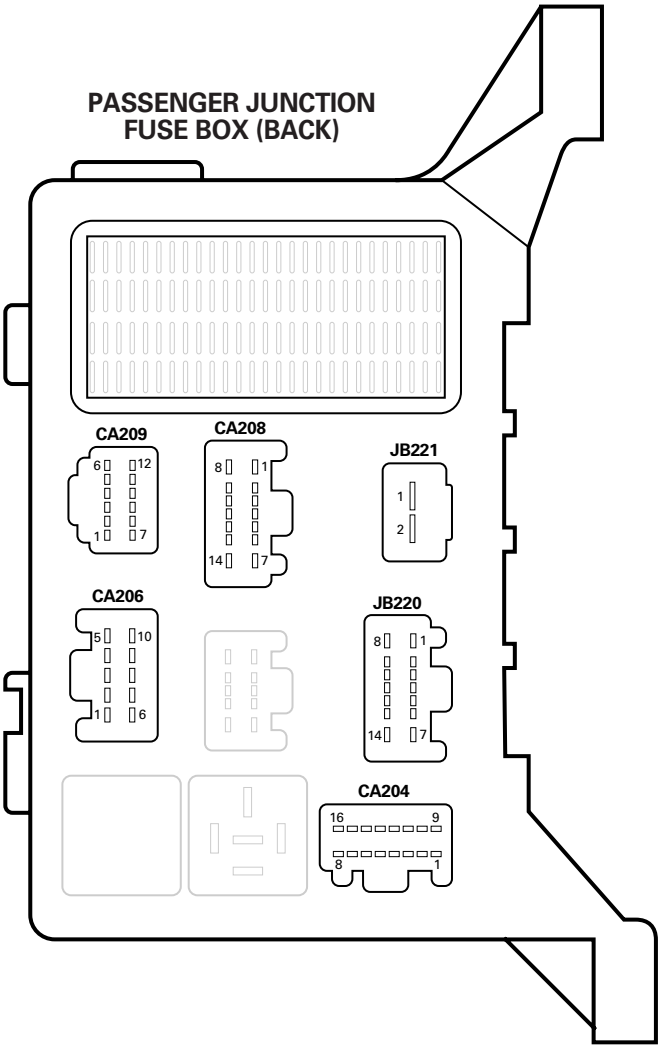
POWER DISTRIBUTION FUSE BOX (BOTTOM)



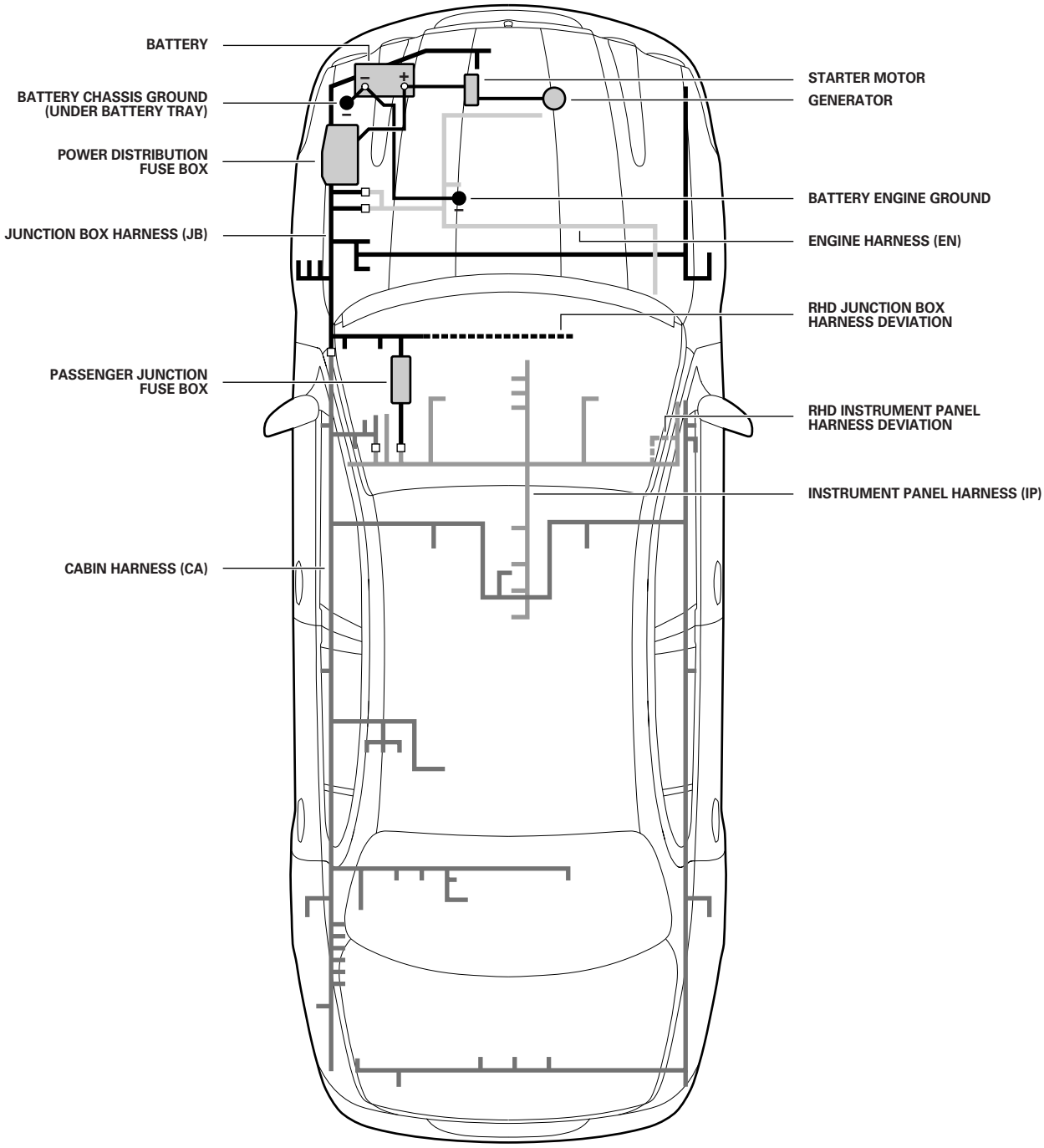
PASSENGER JUNCTION FUSE BOX (FRONT)



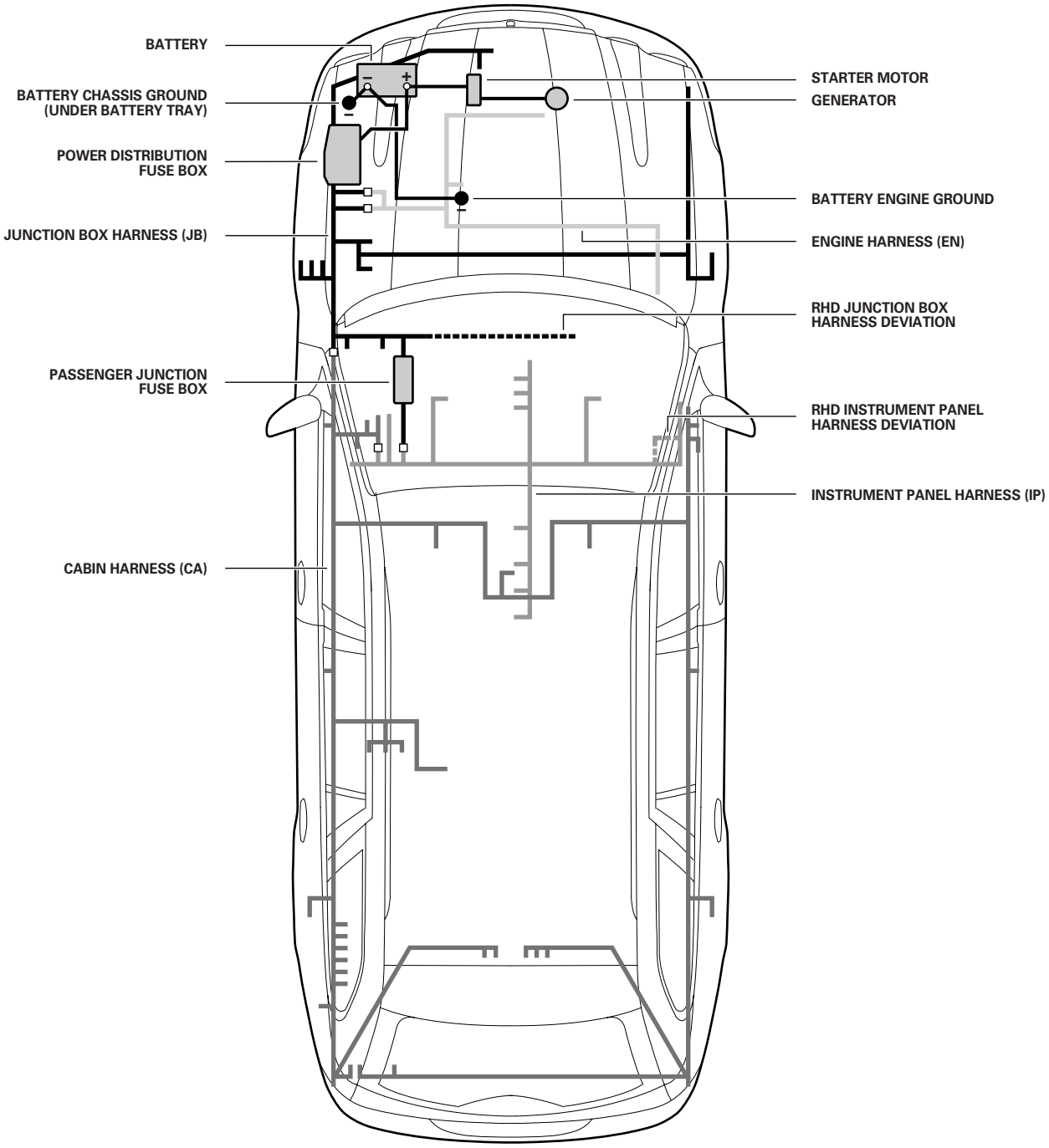
PASSENGER JUNCTION FUSE BOX (BACK)



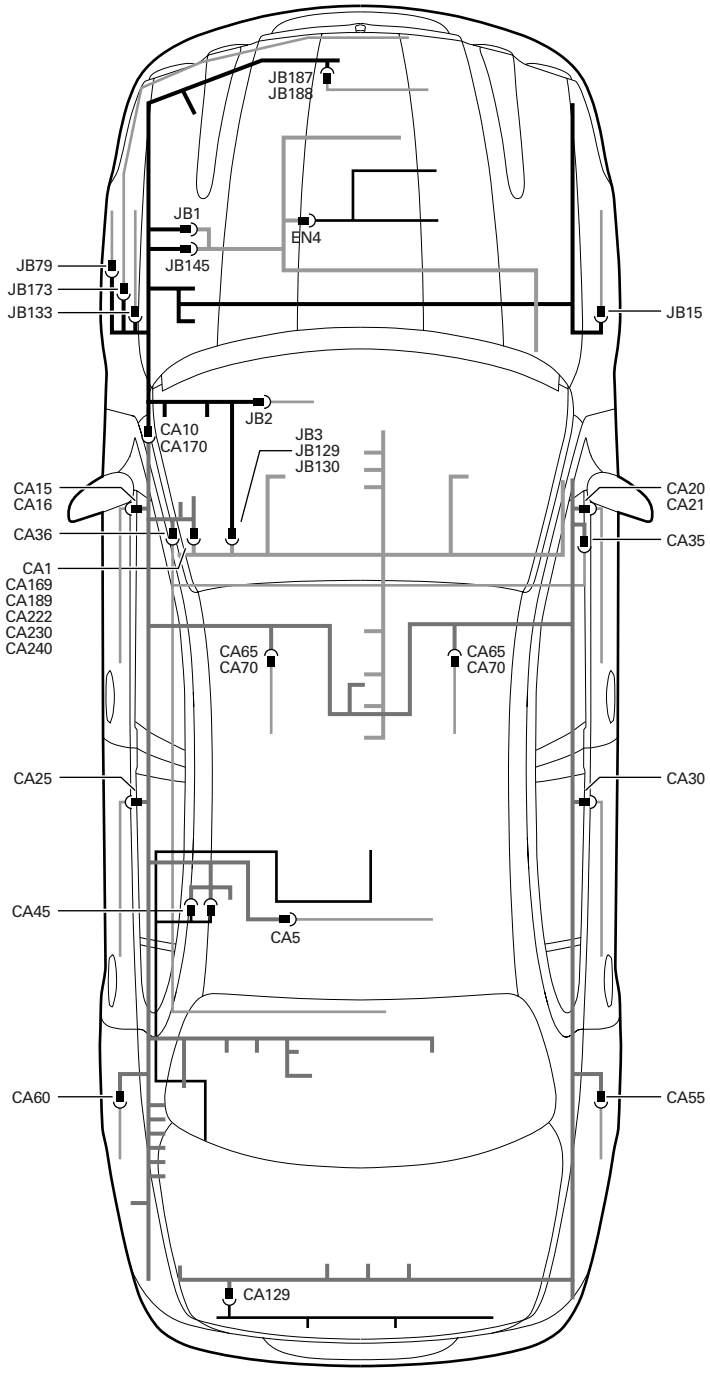
SEDAN (GASOLINE ENGINE SHOWN)



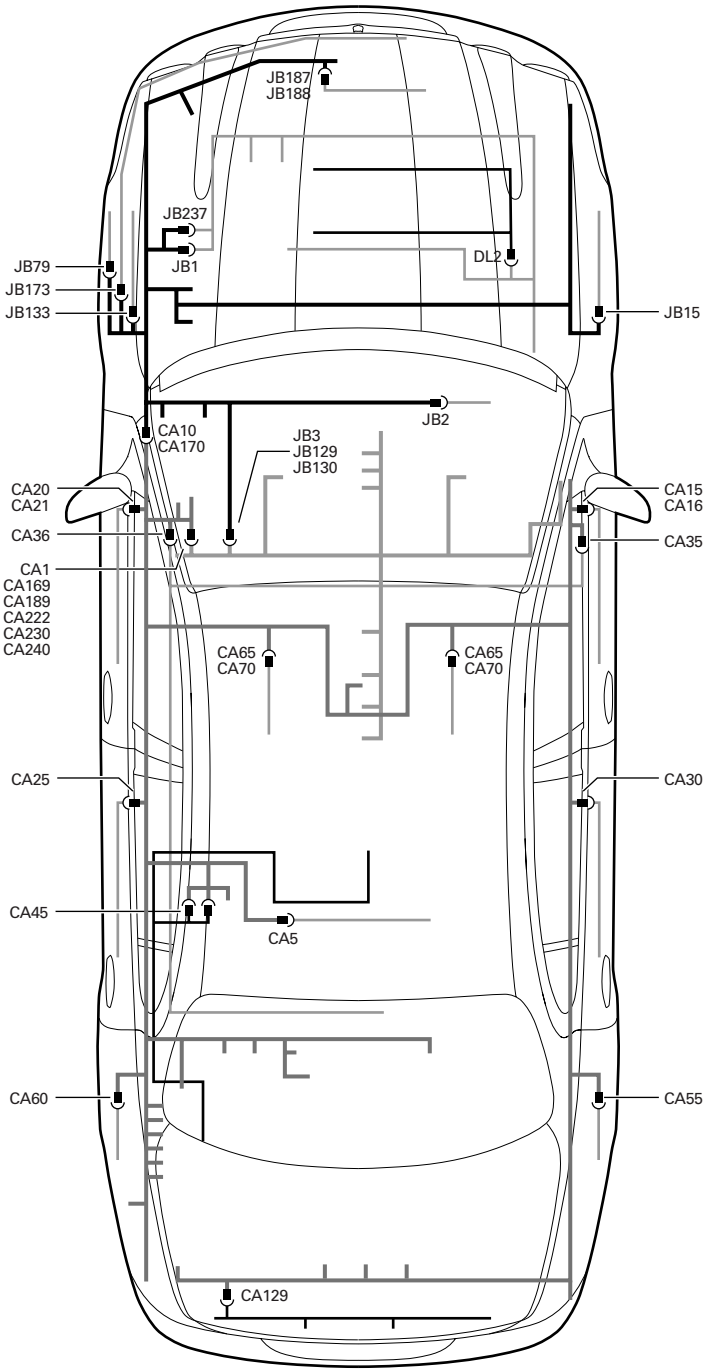
ESTATE / WAGON (GASOLINE ENGINE SHOWN)



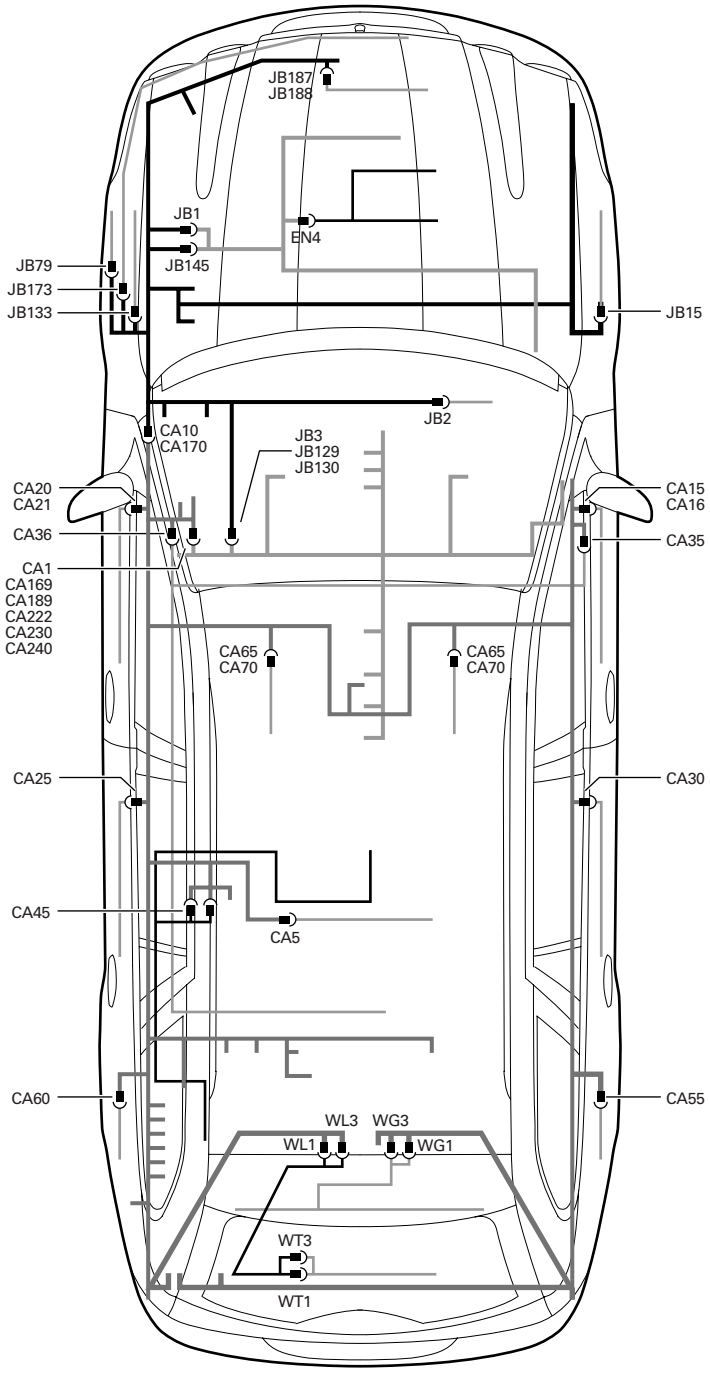
SEDAN: GASOLINE ENGINE (LHD SHOWN)



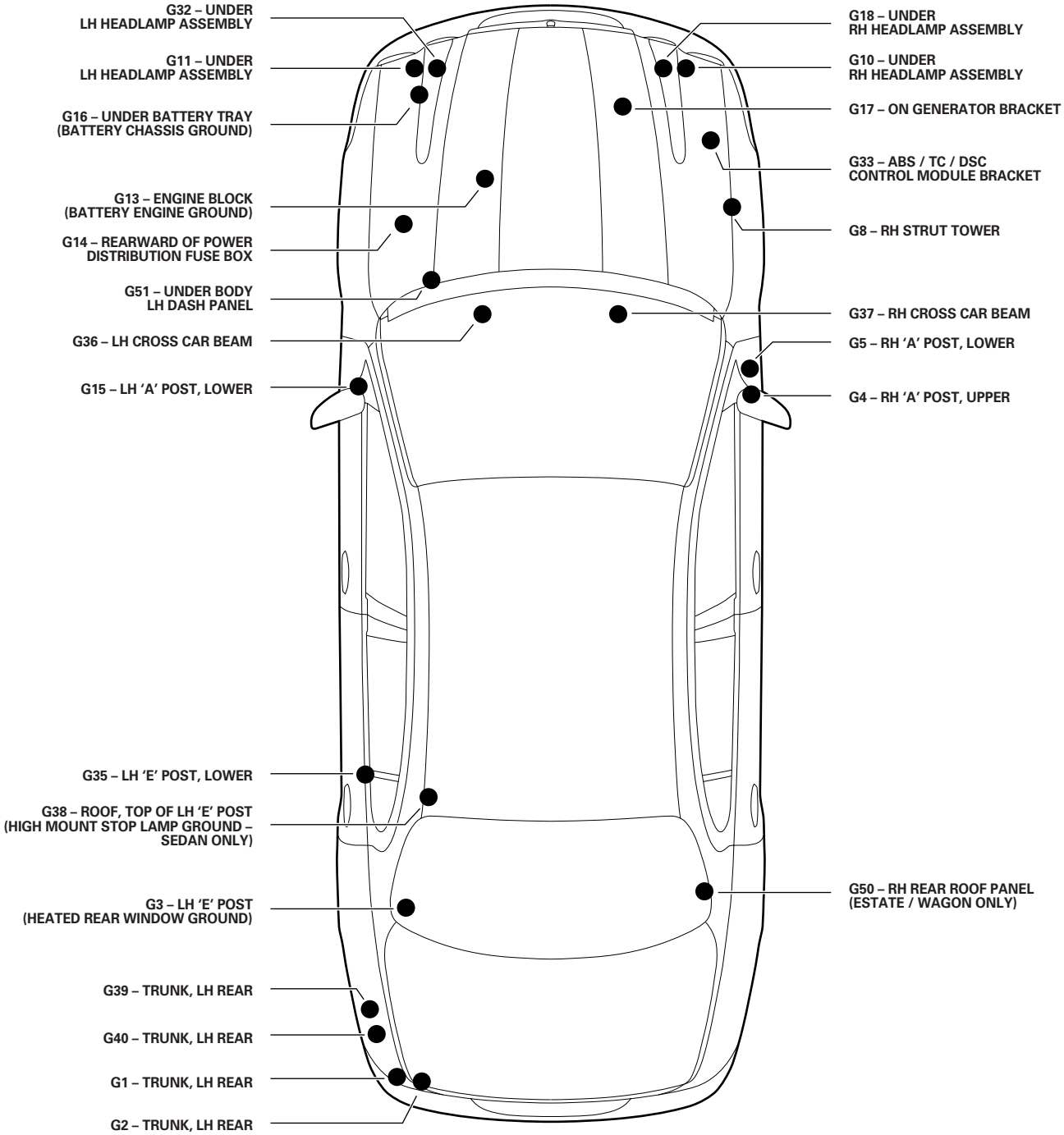
SEDAN: DIESEL ENGINE (RHD SHOWN)



ESTATE / WAGON (RHD SHOWN)

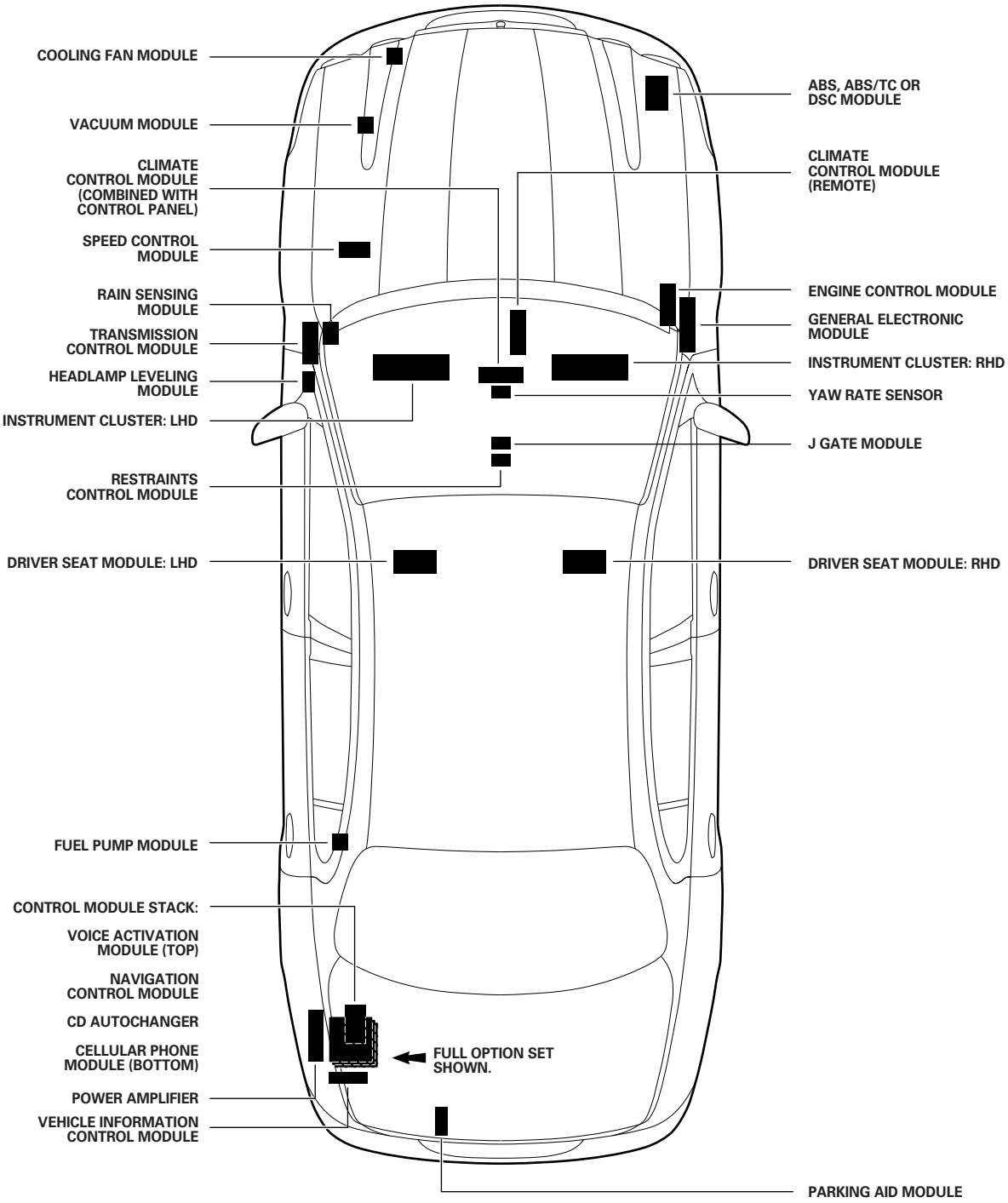


SEDAN SHOWN

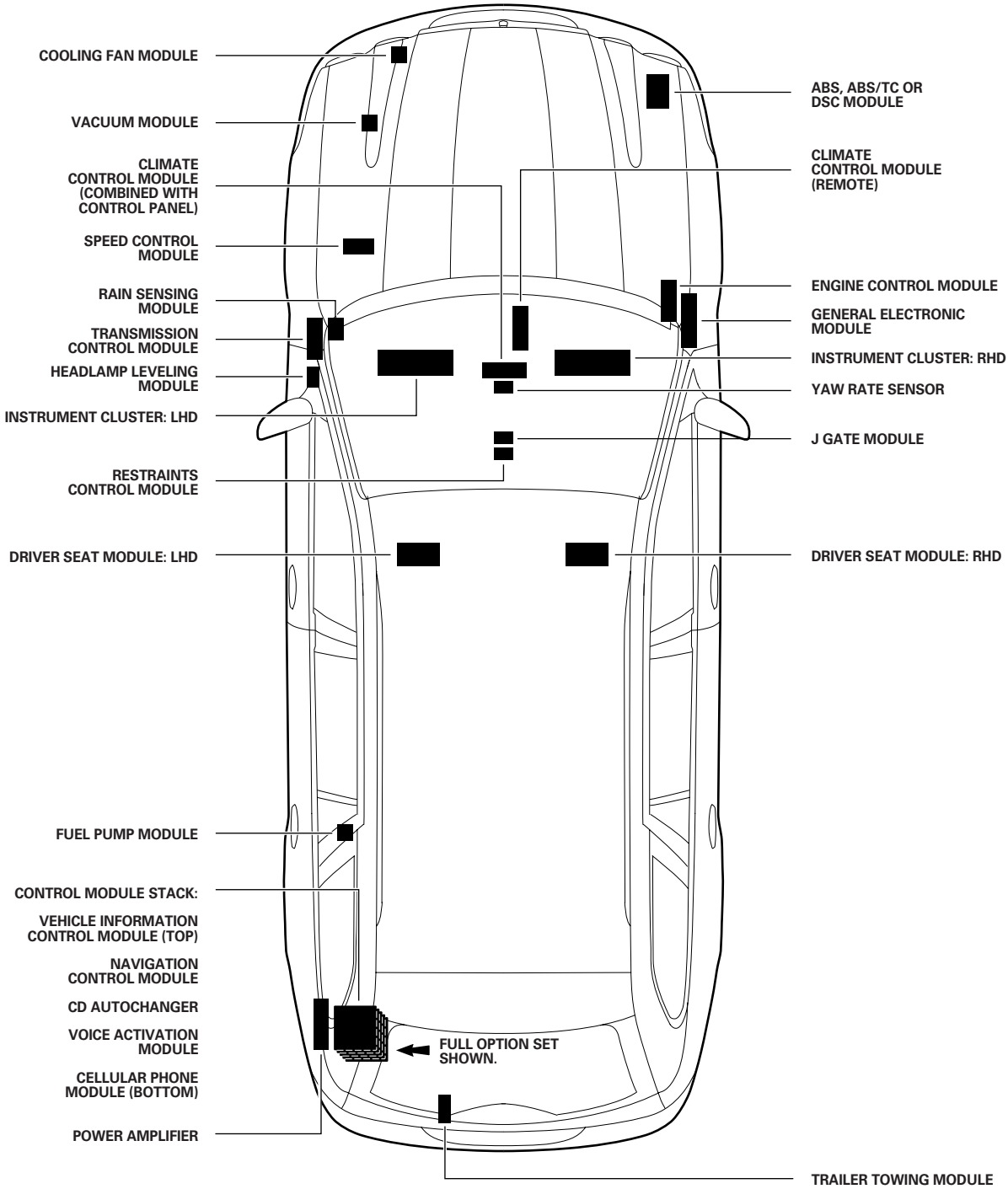


NOTE: UNIQUE GROUND STUDS ARE NOTED IN PARENTHESES.

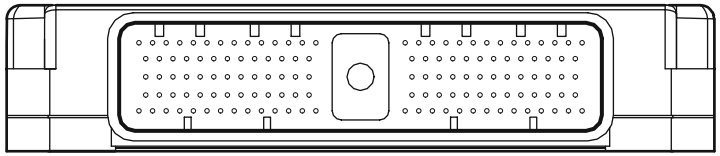
SEDAN


COOLING FAN MODULE
VACUUM MODULE
CLIMATE CONTROL MODULE (COMBINED WITH CONTROL PANEL)
SPEED CONTROL MODULE
RAIN SENSING MODULE
TRANSMISSION CONTROL MODULE
HEADLAMP LEVELING MODULE
INSTRUMENT CLUSTER: LHD
RESTRAINTS CONTROL MODULE
DRIVER SEAT MODULE: LHD
FUEL PUMP MODULE
CONTROL MODULE STACK:
VOICE ACTIVATION MODULE (TOP)
NAVIGATION CONTROL MODULE
CD AUTOCHANGER
CELLULAR PHONE MODULE (BOTTOM)
POWER AMPLIFIER
VEHICLE INFORMATION CONTROL MODULE
FULL OPTION SET SHOWN.
ABS, ABS/TC OR DSC MODULE
CLIMATE CONTROL MODULE (REMOTE)
ENGINE CONTROL MODULE
GENERAL ELECTRONIC MODULE
INSTRUMENT CLUSTER: RHD
YAW RATE SENSOR
J GATE MODULE
DRIVER SEAT MODULE: RHD
PARKING AID MODULE

ESTATE / WAGON



ENGINE CONTROL MODULE – 2.5 L, 3.0 L

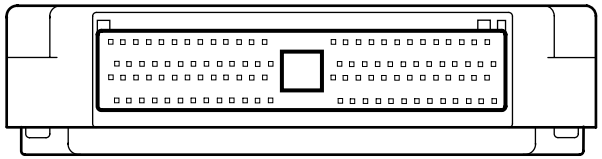


EN16 / 134-WAY / BLACK

107 Y	108 G	109 RW	110 G	111 B	112 –	113 BG	114 BO	115 BG	116 B	117 –	118 BO	119 BW	120 BW
81 B	82 B	83 Y	84 G	85 –	86 –	87 GU	88 GW	89 GR	90 –	91 B	92 U	93 UY	
55 GO	56 GO	57 –	58 –	59 –	60 –	61 GU	62 GW	63 GR	64 –	65 OG	66 UY	67 O	
29 B	30 B	31 B	32 –	33 WG	34 BG	35 –	36 G	37 Y	38 OY	39 OY	40 B	41 GO	
1 RU	2 RU	3 –	4 B	5 B	6 Y	7 GO	8 GO	9 U	10 GU	11 –	12 OY	13 Y	14 –

121 WU	122 –	123 G	124 Y	125 –	126 –	127 BW	128 N	129 N	130 BR	131 YG	132 YG	133 BG	134 RW		
94 O	95 B	96 –	97 –	98 N	99 –	100 BG	101 –	102 R	103 Y	104 RG	105 W	106 R			
68 G	69 N	70 UY	71 O	72 –	73 U	74 –	75 G	76 Y	77 –	78 Y	79 U	80 G			
42 –	43 W	44 GW	45 BW	46 BW	47 YR	48 YG	49 –	50 U	51 WU	52 GR	53 RG	54 B			
15 –	16 –	17 B	18 B	19 BG	20 BG	21 –	22 NR	23 WG	24 WG	25 W	26 –	27 N	28 –		

ENGINE CONTROL MODULE – 2.0 L

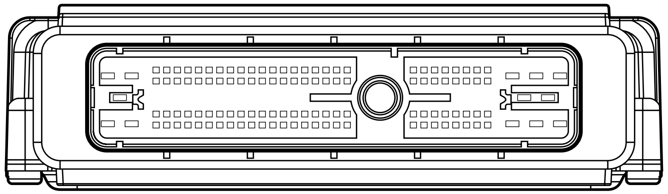


EN65 / 104-WAY / BLACK

79 Y	80 UY	81 O	82 –	83 –	84 WG	85 B	86 G	87 N	88 G	89 Y	90 –	91 B
53 N	54 N	55 BR	56 GW	57 GU	58 –	59 O	60 B	61 G	62 Y	63 GO	64 B	65 BG
27 N	28 –	29 BW	30 GW	31 BW	32 –	33 –	34 GO	35 U	36 GU	37 N	38 BG	39 W
1 BW	2 WU	3 BG	4 B	5 B	6 Y	7 U	8 OG	9 –	10 –	11 OY	12 YG	13 YG

92 BW	93 BW	94 BO	95 G	96 RW	97 G	98 R	99 GR	100 –	101 –	102 B	103 GO	104 RU	
66 BO	67 BG	68 GO	69 B	70 –	71 OY	72 –	73 –	74 UY	75 B	76 GO	77 RU	78 B	
40 GU	41 GW	42 GR	43 RG	44 WU	45 –	46 UY	47 U	48 B	49 –	50 G	51 Y	52 B	
14 GU	15 GW	16 GR	17 G	18 B	19 B	20 BG	21 NR	22 WG	23 WG	24 –	25 G	26 Y	

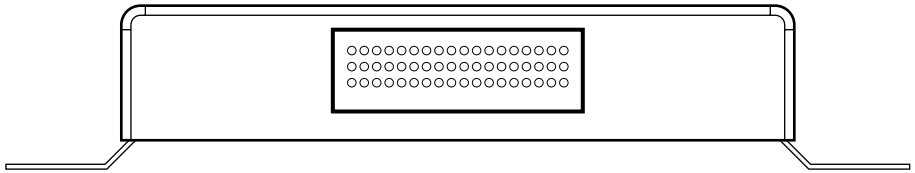
ENGINE CONTROL MODULE – 2.0 L D



DL1 / 121-WAY / BLACK

4 WG	5 WG	24 —	23 —	22 —	21 GO	20 OG	19 —	18 GU	17 —	16 —	15 —	14 NR	13 YG	12 BU	11 —	10 —	9 B	8 —	7 —	6 YG	106 WU	107 WG	108 YG	109 WU	110 NU	111 —	112 N	113 —	119 —	120 BY	121 BU
		43 —	42 —	41 —	40 —	39 —	38 BY	37 GO	36 —	35 —	34 —	33 YR	32 WR	31 —	30 —	29 —	28 B	27 —	26 NG	25 WG	98 —	99 WG	100 NG	101 WK	102 NW	103 WK	104 NW	105 WU			
3 WG																													117 GW	118 GY	
		62 BG	61 BO	60 —	59 —	58 GO	57 YR	56 —	55 Y	54 Y	53 N	52 —	51 YU	50 WU	49 —	48 —	47 W	46 NY	45 N	44 —	90 WR	91 —	92 —	93 —	94 BR	95 BU	96 —	97 —			
1 B	2 B	81 —	80 U	79 BG	78 —	77 U	76 —	75 —	74 U	73 G	72 Y	71 W	70 NU	69 —	68 BG	67 —	66 B	65 —	64 WK	63 —	82 NR	83 WU	84 NU	85 NW	86 OY	87 BU	88 B	89 —	114 BW	115 BO	116 —

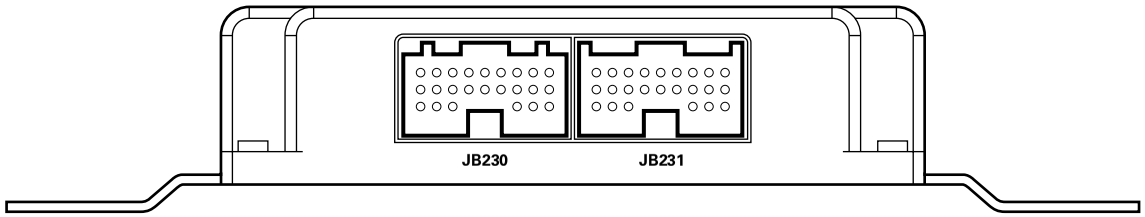
TRANSMISSION CONTROL MODULE – 16 BIT



JB131 / 37-WAY / BLUE

18 R	17 B	16 O	15 B	14 N	13 G	12 G	11 –	10 W	9 B	8 R	7 O	6 UY	5 O	4 U	3 G	2 –	1 –
36 WU	35 –	34 Y	33 Y	32 –	31 –	30 U	29 –	28 –	27 Y	26 S	25 W	24 N	23 –	22 –	21 G	20 R	19 –
54 WU	53 Y	52 G	51 –	50 –	49 –	48 –	47 OY	46 BRD	45 BW	44 BRD	43 –	42 BRD	41 –	40 –	39 W	38 B	37 –

TRANSMISSION CONTROL MODULE – 32 BIT



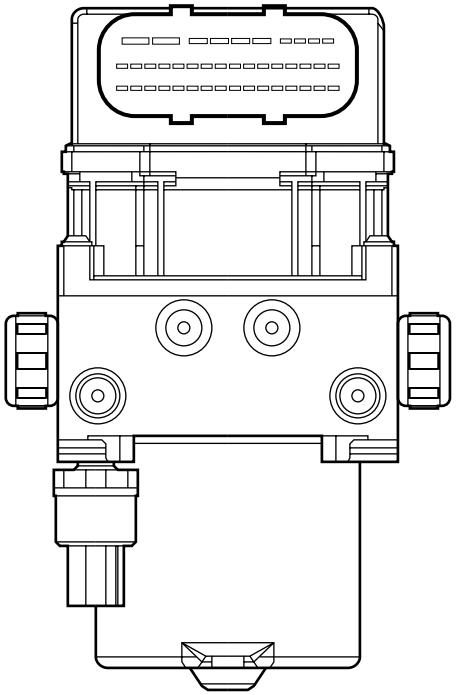
JB230 / 24-WAY / WHITE

1 R	2 G	3 O	4 B	5 Y	6 G	7 W	8 Y	9 –
10 WU	11 B	12 N	13 –	14 Y	15 G	16 –	17 –	18 U
19 WU	20 G	21 U				22 –	23 BRD	24 O

JB231 / 24-WAY / GREY

25 B	26 BRD	27 R	28 UY	29 O	30 –	31 –	32 –	33 –
34 Y	35 S	36 W	37 –	38 N	39 G	40 –	41 OY	42 R
43 BW	44 BRD	45 –				46 –	47 W	48 B

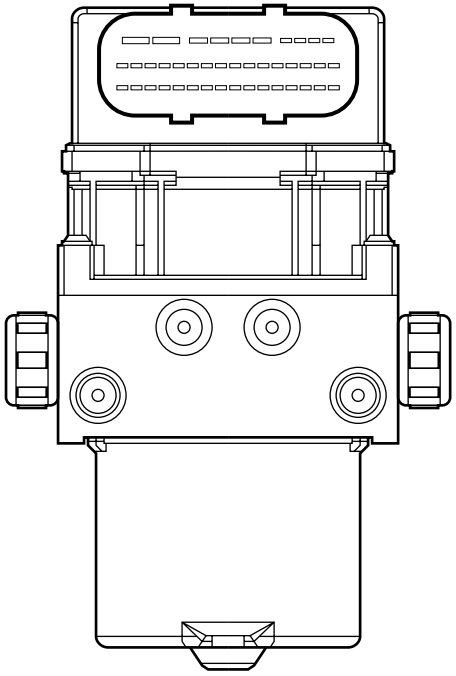
DYNAMIC STABILITY CONTROL MODULE



JB185 / 42-WAY / BLUE

		1 B	2 R		3 —	4 —	5 B	6 R		7 —	8 —	9 —	10 —			
11 —	12 W	13 GB	14 WU	15 NR	16 WR	17 —	18 —	19 —	20 —	21 U	22 —	23 GW	24 Y	25 B	26 WG	
27 B	28 N	29 —	30 NG	31 WG	32 GO	33 —	34 —	35 —	36 —	37 —	38 —	39 GW	40 G	41 —	42 GB	

ANTI-LOCK BRAKING SYSTEM MODULE OR ANTI-LOCK BRAKING / TRACTION CONTROL MODULE



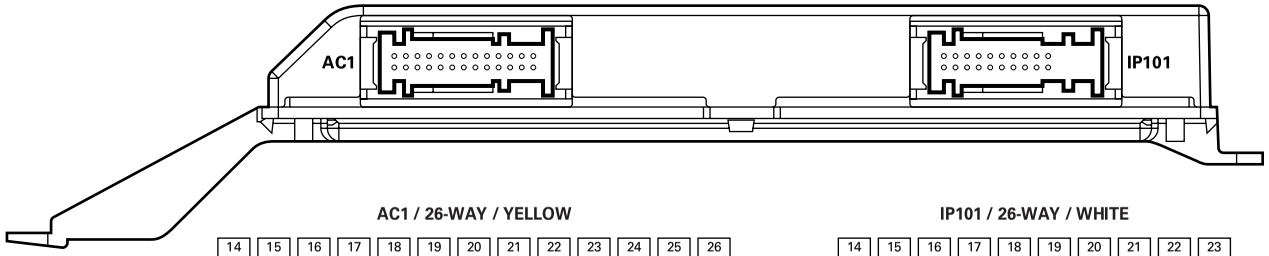
JB45 / 42-WAY BLUE (ABS)

		1 B	2 R		3 —	4 —	5 B	6 R		7 —	8 —	9 —	10 —			
11 —	12 W	13 GB	14 WU	15 NR	16 WR	17 —	18 —	19 —	20 —	21 —	22 —	23 GW	24 Y	25 —	26 —	
27 —	28 N	29 —	30 NG	31 WG	32 GO	33 —	34 —	35 —	36 —	37 —	38 —	39 —	40 G	41 —	42 —	

JB197 / 42-WAY / BLUE (ABS/TC)

		1 B	2 R		3 —	4 —	5 B	6 R		7 —	8 —	9 —	10 —			
11 —	12 W	13 GB	14 WU	15 NR	16 WR	17 —	18 —	19 —	20 —	21 —	22 —	23 GW	24 Y	25 —	26 —	
27 B	28 N	29 —	30 NG	31 WG	32 GO	33 —	34 —	35 —	36 —	37 —	38 —	39 —	40 G	41 —	42 —	

CLIMATE CONTROL MODULE – AUTOMATIC (REMOTE)



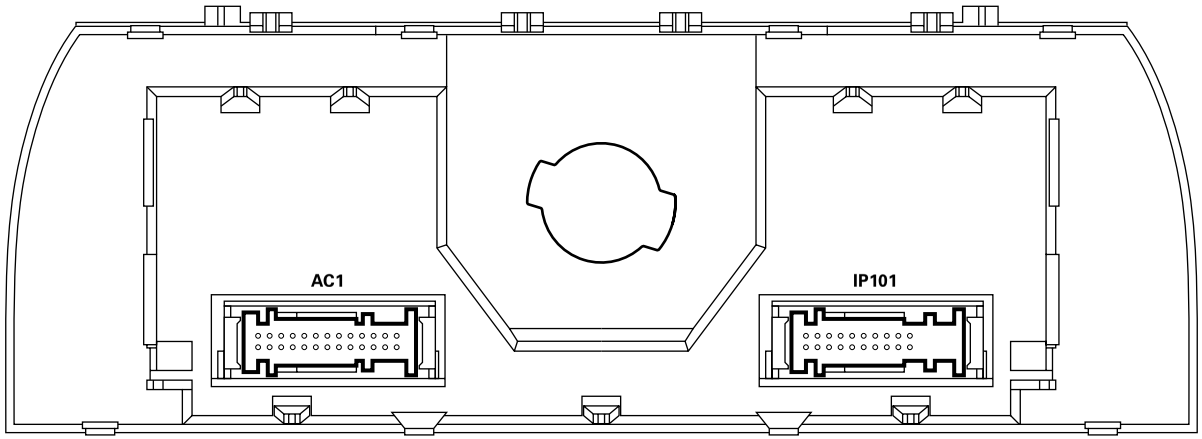
AC1 / 26-WAY / YELLOW

14 G	15 UY	16 B	17 —	18 —	19 —	20 GU	21 GB	22 OG	23 O	24 RW	25 RG	26 OY
1 —	2 —	3 —	4 GW	5 U	6 GR	7 GO	8 RU	9 R	10 WB	11 W	12 Y	13 R

IP101 / 26-WAY / WHITE

14 OG	15 B	16 W	17 B	18 —	19 B	20 G	21 W	22 Y	23 G
1 OY	2 WR	3 B	4 B	5 BW	6 B	7 BW	8 —	9 Y	10 G

CLIMATE CONTROL MODULE – AUTOMATIC (PANEL)

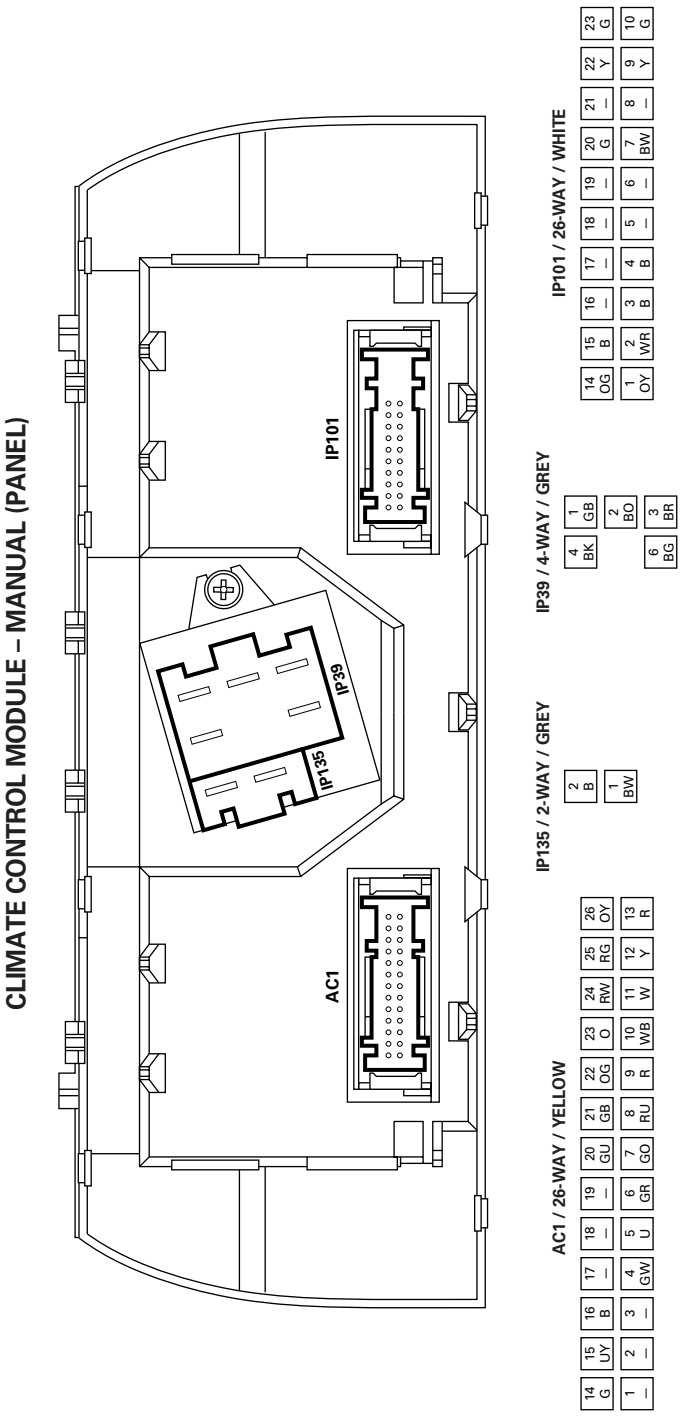


AC1 / 26-WAY / YELLOW

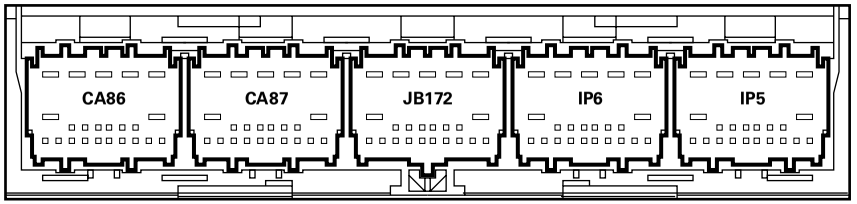
14 G	15 UY	16 B	17 —	18 —	19 —	20 GU	21 GB	22 OG	23 O	24 RW	25 RG	26 OY
1 —	2 —	3 —	4 GW	5 U	6 GR	7 GO	8 RU	9 R	10 WB	11 W	12 Y	13 R

IP101 / 26-WAY / WHITE

14 OG	15 B	16 W	17 B	18 —	19 B	20 G	21 W	22 Y	23 G
1 OY	2 WR	3 B	4 B	5 BW	6 B	7 BW	8 —	9 Y	10 G


CLIMATE CONTROL MODULE – MANUAL (PANEL)
IP101
IP39
IP135
AC1
IP101 / 26-WAY / WHITE
14 OG
15 B
16 —
17 —
18 —
19 —
20 G
21 —
22 Y
23 G
1 OY
2 WR
3 B
4 B
5 —
6 —
7 BW
8 —
9 Y
10 G
IP39 / 4-WAY / GREY
4 BK
1 GB
2 BO
6 BG
3 BR
IP135 / 2-WAY / GREY
2 B
1 BW
AC1 / 26-WAY / YELLOW
14 G
15 UY
16 B
17 —
18 —
19 —
20 GU
21 GB
22 OG
23 O
24 RW
25 RG
26 OY
1 —
2 —
3 —
4 GW
5 U
6 GR
7 GO
8 RU
9 R
10 WB
11 W
12 Y
13 R

GENERAL ELECTRONIC MODULE



CA86 / 23-WAY / GREY

1 –	2 OY	3 BK	4 YB	5 B								
6 –				7 –								
		8 –	9 –	10 –	11 –	12 –	13 –					
14 U	15 RW	16 G	17 G	18 Y	19 O	20 Y	21 –	22* N/U	23 W			

*CA86-22: SEDAN – N; ESTATE (WAGON) – U

IP5 / 23-WAY / BROWN

1 WB	2 O	3* B/U	4 GU	5 WG								
6 –				7 –								
		8 –	9 –	10 –	11 –	12 –	13 –					
14 B	15 GB	16* U/G	17 GB	18 U	19 Y	20 B	21 WG	22 OY	23 B			

*IP5-3: SEDAN – B; ESTATE (WAGON) – U
*IP5-16: SEDAN – U; ESTATE (WAGON) – G

CA87 / 23-WAY / GREEN

1 O	2* O/R	3 YB	4 NR	5 WB								
6 –				7 –								
		8 –	9 –	10 –	11 –	12 –	13 –					
14 –	15 Y	16 W	17 WG	18 –	19 –	20 U	21 –	22 –	23 –			

*CA87-2: SEDAN – O; ESTATE (WAGON) – R

JB172 / 23-WAY / BLUE

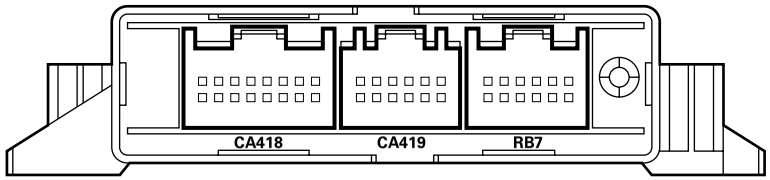
1 OY	2 WB	3 O	4 OY	5 O								
6 –				7 –								
		8 –	9 –	10 –	11 –	12 –	13 –					
14 –	15 –	16 –	17 –	18 U	19 –	20 –	21 B	22 –	23 GU			

IP6 / 23-WAY / NATURAL

1 B	2 W	3 –	4 W	5* GR/G								
6 –				7 –								
		8 B	9 G	10 R	11 BW	12 WU	13 U					
14 –	15 Y	16 –	17 BG	18 O	19 BG	20 BG	21 R	22 R	23 BO			

*IP6-5: SEDAN – GR; ESTATE (WAGON) – G

PARKING AID MODULE



CA418 / 16-WAY / WHITE

1 N	2 U	3 –	4 W	5 S	6 GB	7 –	8 –
9 –	10 RU	11 U	12 W	13 R	14 –	15 –	16 B

CA419 / 12-WAY / WHITE

1 BG	2 RW	3 Y	4 RU	5 WG	6 WU
7 WR	8 W	9 –	10 –	11 –	12 –

RB7 / 12-WAY / WHITE

1 –	2 WR	3 WU	4 W	5 WG	6 –
7 –	8 BG	9 –	10 –	11 RW	12 –

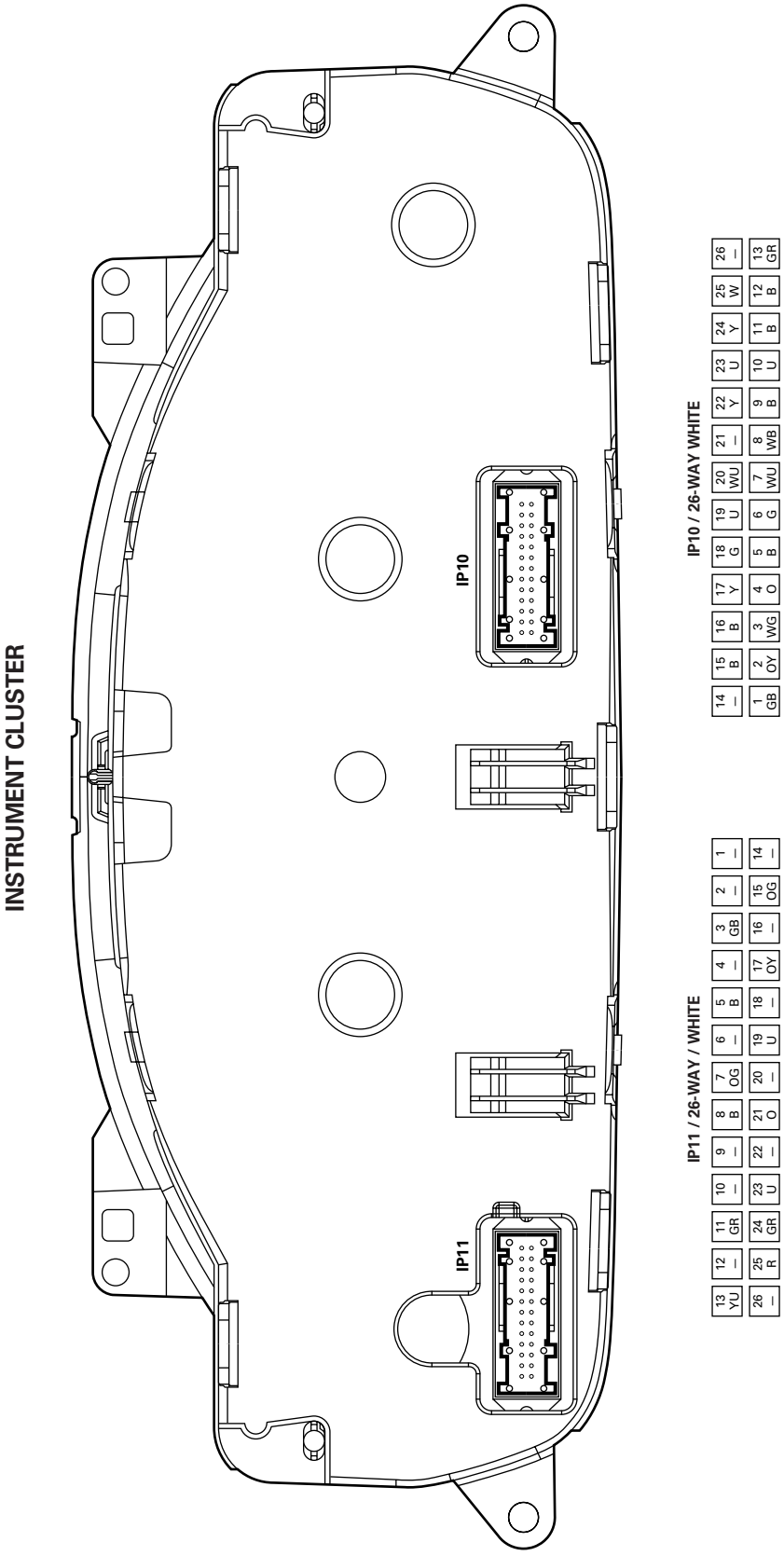

INSTRUMENT CLUSTER
IP10
IP11
IP10 / 26-WAY WHITE
1 GB
2 OY
3 WG
4 O
5 B
6 G
7 WU
8 WB
9 B
10 U
11 B
12 B
13 GR
14 —
15 B
16 B
17 Y
18 G
19 U
20 WU
21 —
22 Y
23 U
24 Y
25 W
26 —
IP11 / 26-WAY / WHITE
1 —
2 —
3 GB
4 —
5 B
6 —
7 OG
8 B
9 —
10 —
11 GR
12 —
13 YU
14 —
15 OG
16 —
17 OY
18 —
19 U
20 —
21 O
22 —
23 U
24 GR
25 R
26 —

Fig. 01.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	–	–	ENGINE COMPARTMENT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	IP132	3-WAY / BLACK	LOWER RH 'A' POST
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
TRANSIT ISOLATION RELAY	JB186	2-WAY / BLACK	BATTERY

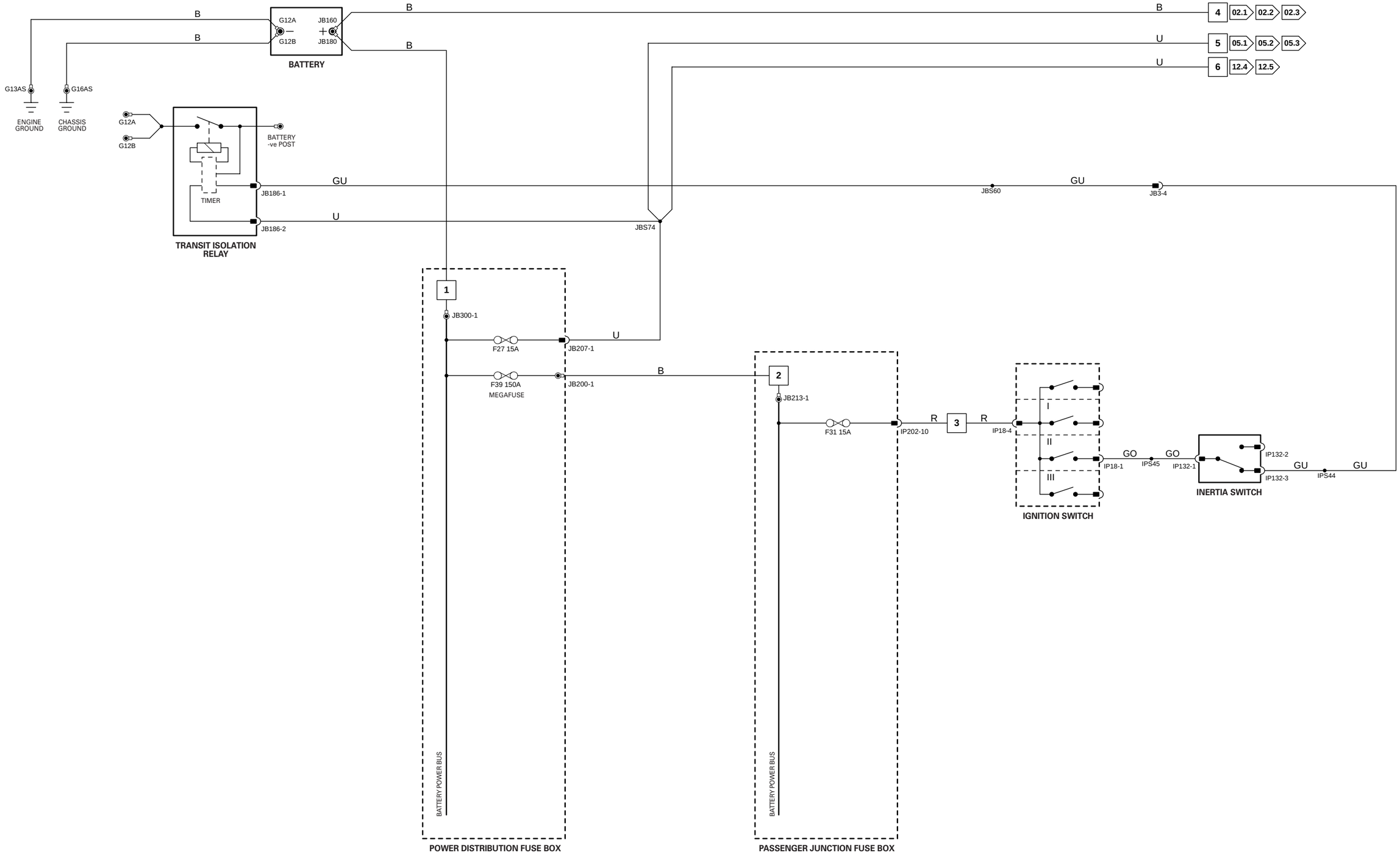
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G13	B03	BATTERY ENGINE GROUND
G16	B03	ENGINE COMPARTMENT / UNDER BATTERY TRAY

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.



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 T → 10 T	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 01.2

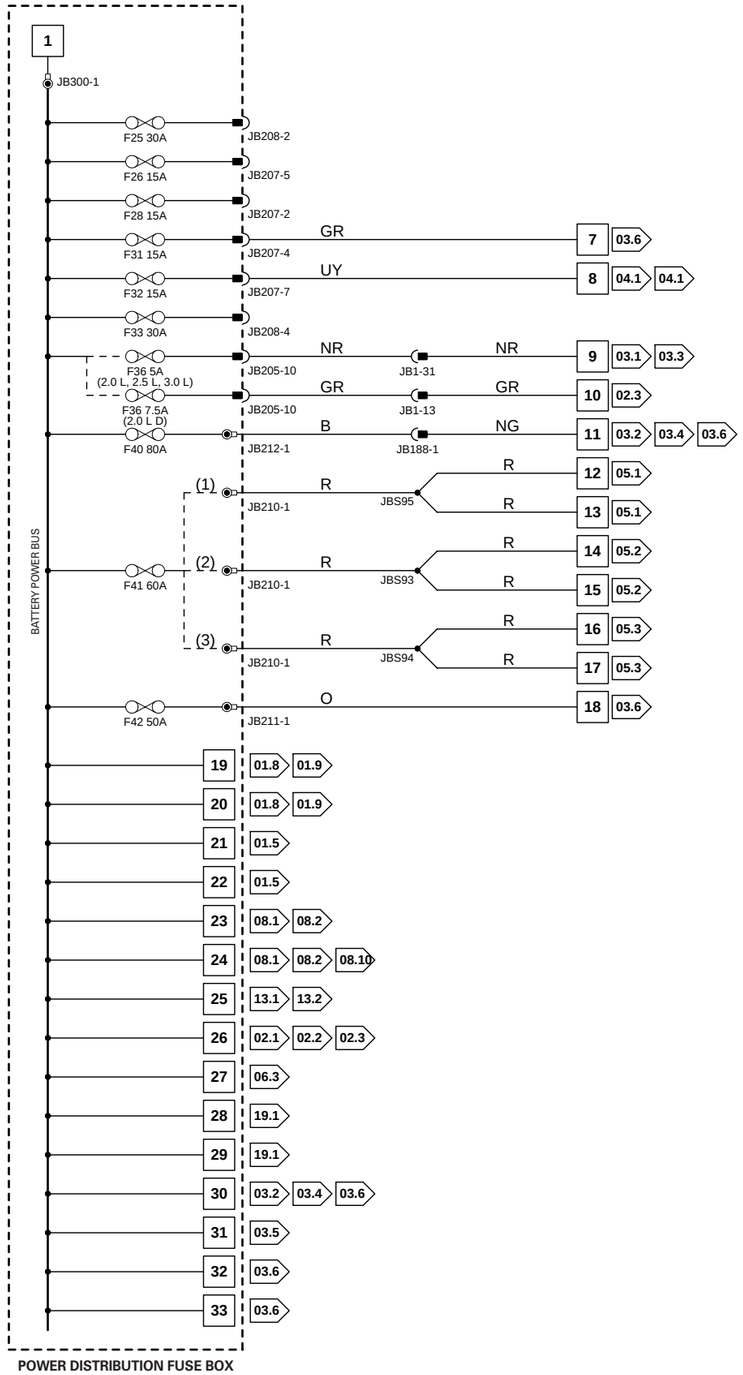
COMPONENTS

Component	Connector(s)	Connector Description	Location
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB188	2-WAY / BLACK / JUNCTION BOX HARNESS TO COOLING FAN MODULE LINK LEAD	ENGINE COMPARTMENT / FRONT, LH SIDE

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.



NOTATION:
(1) Vehicles with Anti-Lock Braking only
(2) Vehicles with ABS and Traction Control
(3) Vehicles with Dynamic Stability Control

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 01.3

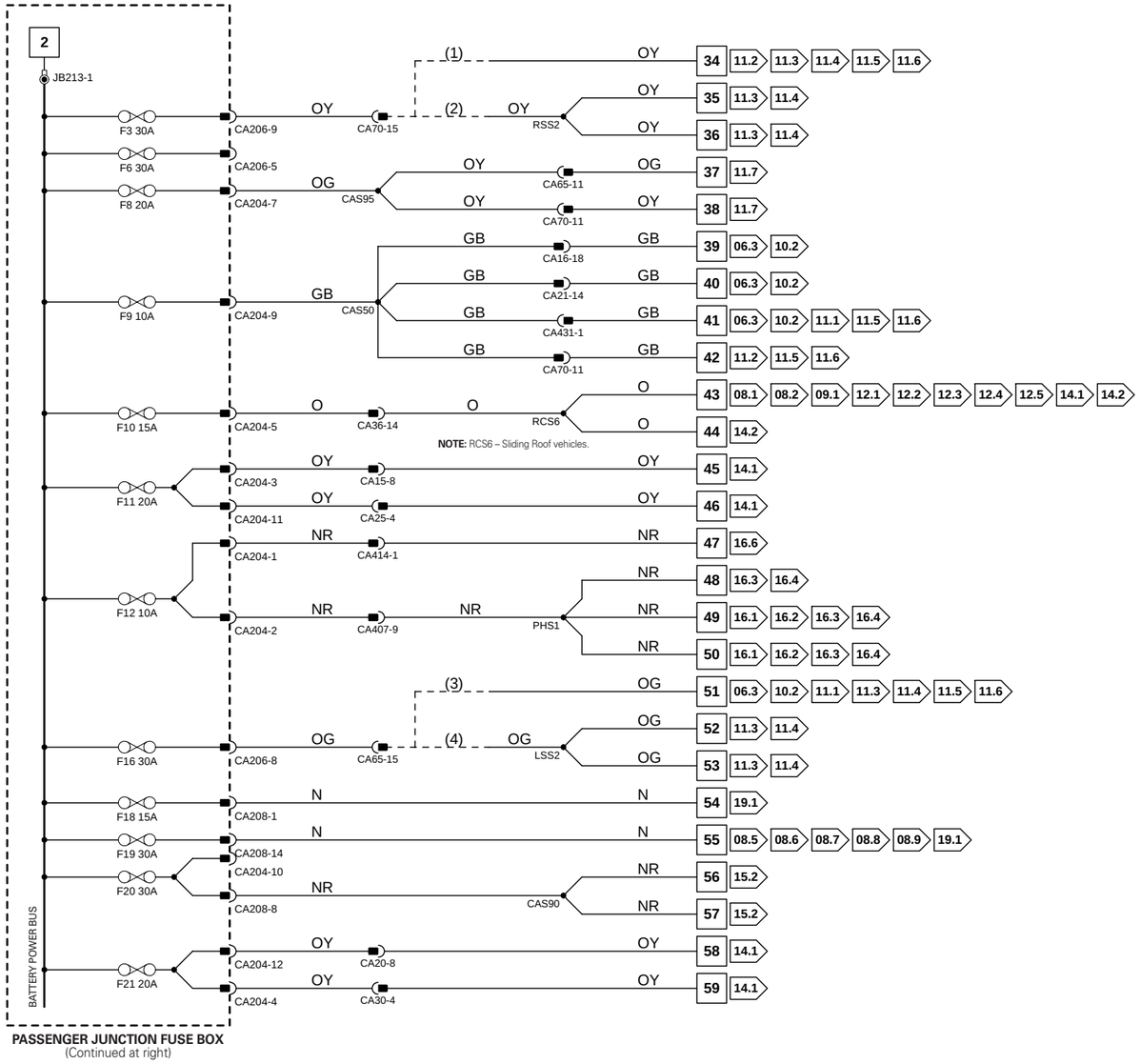
COMPONENTS

Component	Connector(s)	Connector Description	Location
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

HARNESS IN-LINE CONNECTORS

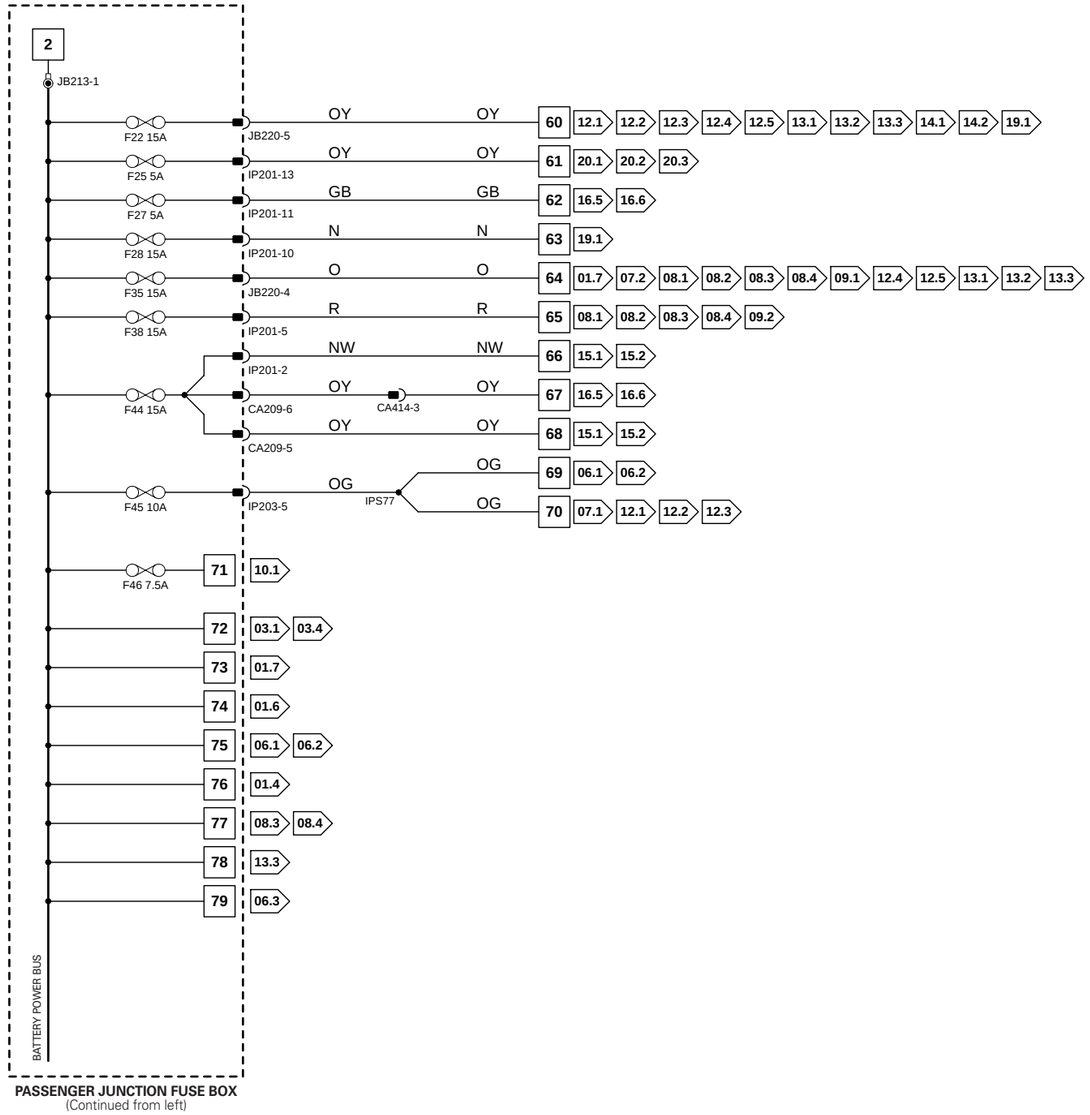
Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA431	16-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT

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.



NOTE: RCS6 – Sliding Roof vehicles.

PASSENGER JUNCTION FUSE BOX
(Continued at right)



PASSENGER JUNCTION FUSE BOX
(Continued from left)

NOTATION:
(1) Passenger Memory Seat; RH Seat without Lumbar
(2) RH Seat with Lumbar
(3) Driver Memory Seat; LH Seat without Lumbar
(4) LH Seat with Lumbar

Fig. 01.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R2
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

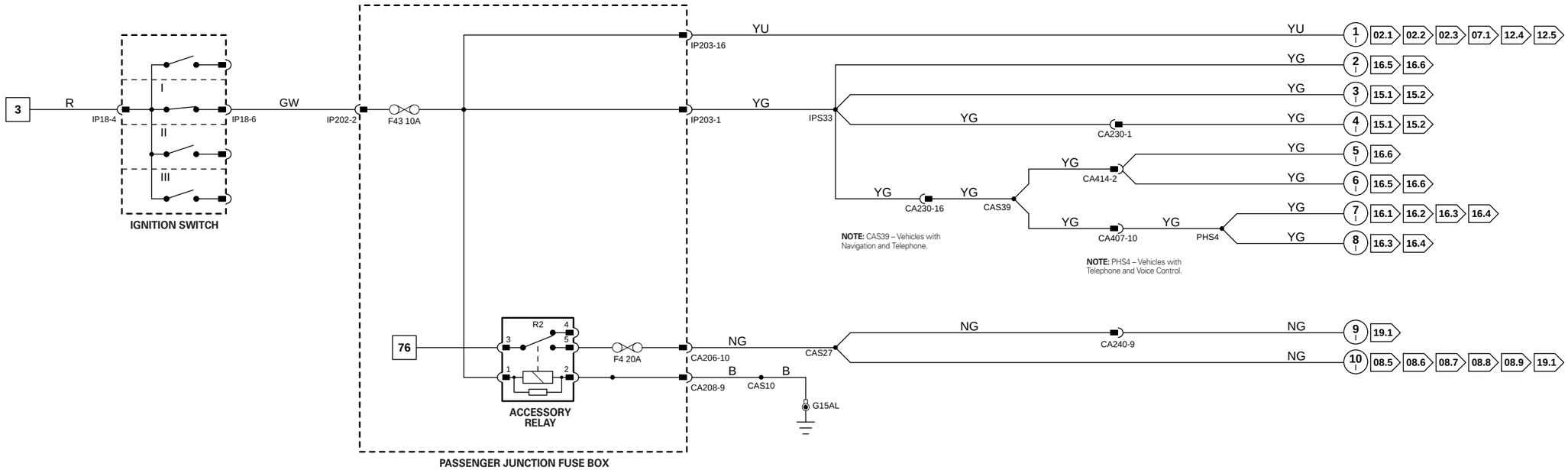
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION

GROUNDS

Ground	Harness	Location
G15	CA	LOWER LH 'A' POST

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.



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 III → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 III → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 01.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	IP132	3-WAY / BLACK	LOWER RH 'A' POST
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
POWER DISTRIBUTION FUSE BOX IGNITION RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R5
SLAVE IGNITION RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R13

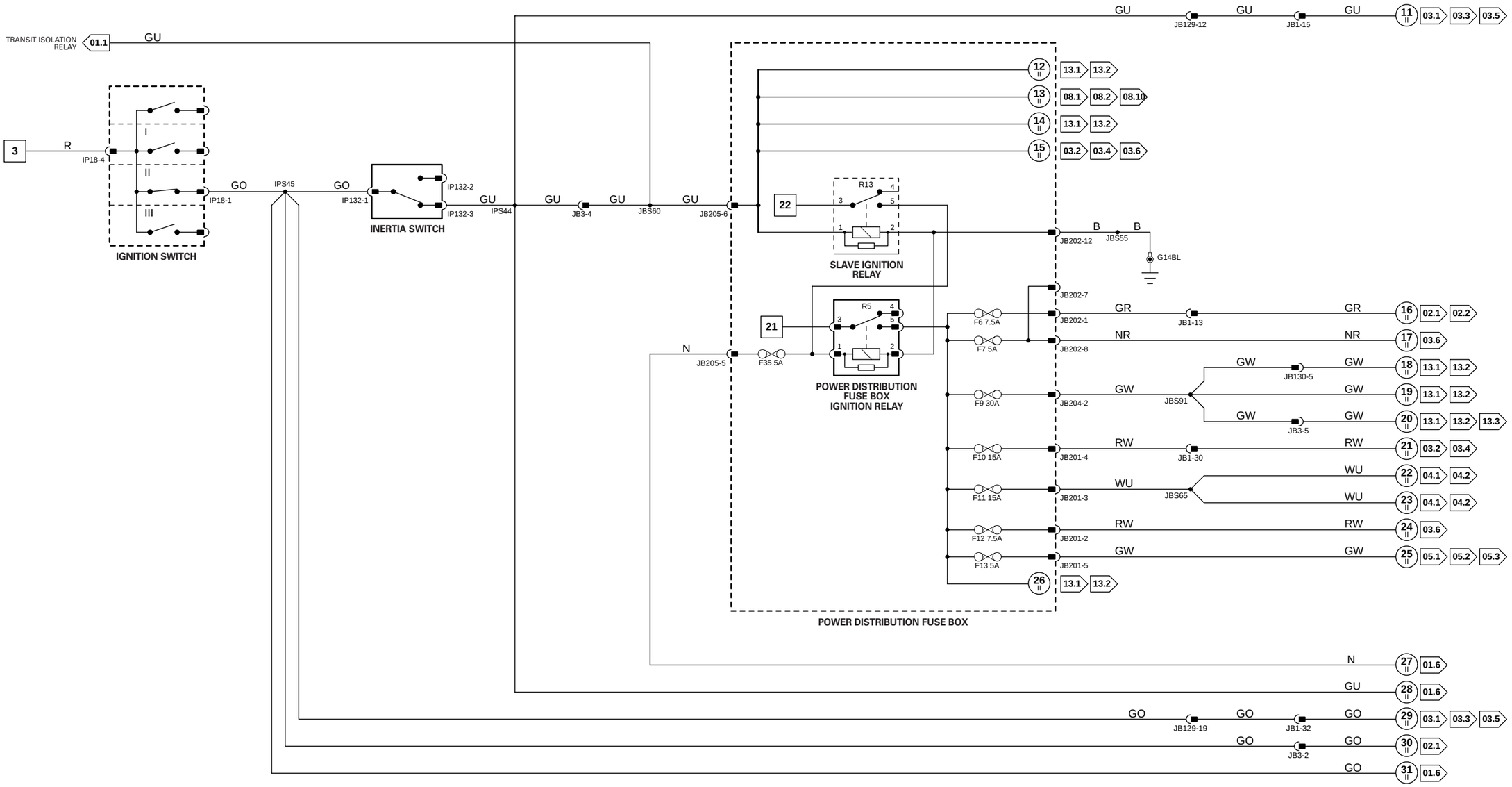
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX

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.



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 II → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 01.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
PASSENGER JUNCTION FUSE BOX IGNITION RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R5

HARNESS IN-LINE CONNECTORS

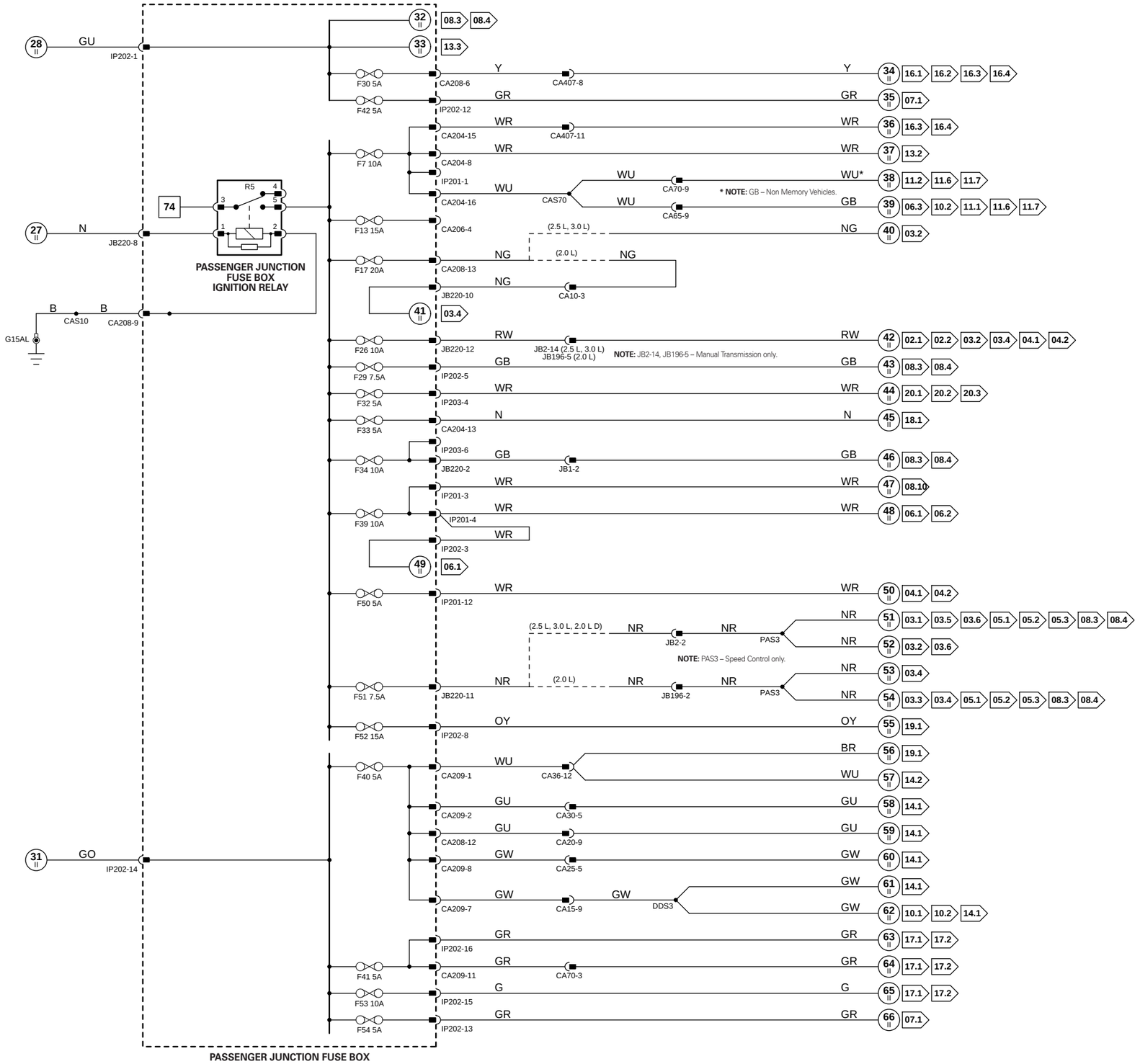
Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

Ground	Harness	Location
G15	CA	LOWER LH 'A' POST

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.

Ignition Switched Power Distribution: II (Run) – Part 2



VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 01.7

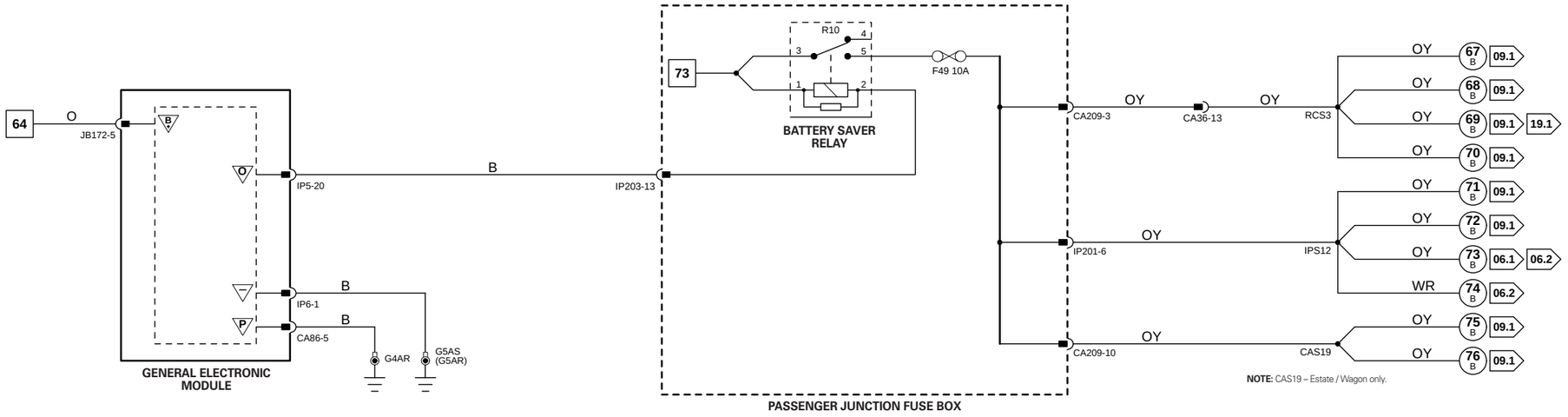
COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY SAVER RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R10
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description		Location
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS		LH 'A' POST / WINDSHIELD PILLAR
GROUNDS Ground	Harness		Location
G4	CA	LOWER RH 'A' POST	
G5	IP	UPPER RH 'A' POST	

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.



NOTE: "Battery Saver" provides automatic switch-off of the Courtesy Lamps after 10 minutes and automatic switch-off of the Demand Lighting and Audible Warning after 30 minutes.

GEM timers are started when the Ignition Key has been switched to the I (Accessory) or 0 (Off) position. When the timers expire at 10 and 30 minutes, the feature(s) is/are switched off.

When one of the following actions is detected, all features are enabled, and the Battery Saver timer is reset:

- The Ignition is switched to II (run) or III (start).
- Any door or trunk lid becomes ajar or is opened.
- Any unlock is activated.

Battery Saver is also active when GEM diagnostic mode is entered.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
O	EN65-69	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
O	EN16-40	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND

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.

Fig. 01.8

COMPONENTS

Component	Connector(s)	Connector Description	Location
EMS CONTROL RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R5
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT

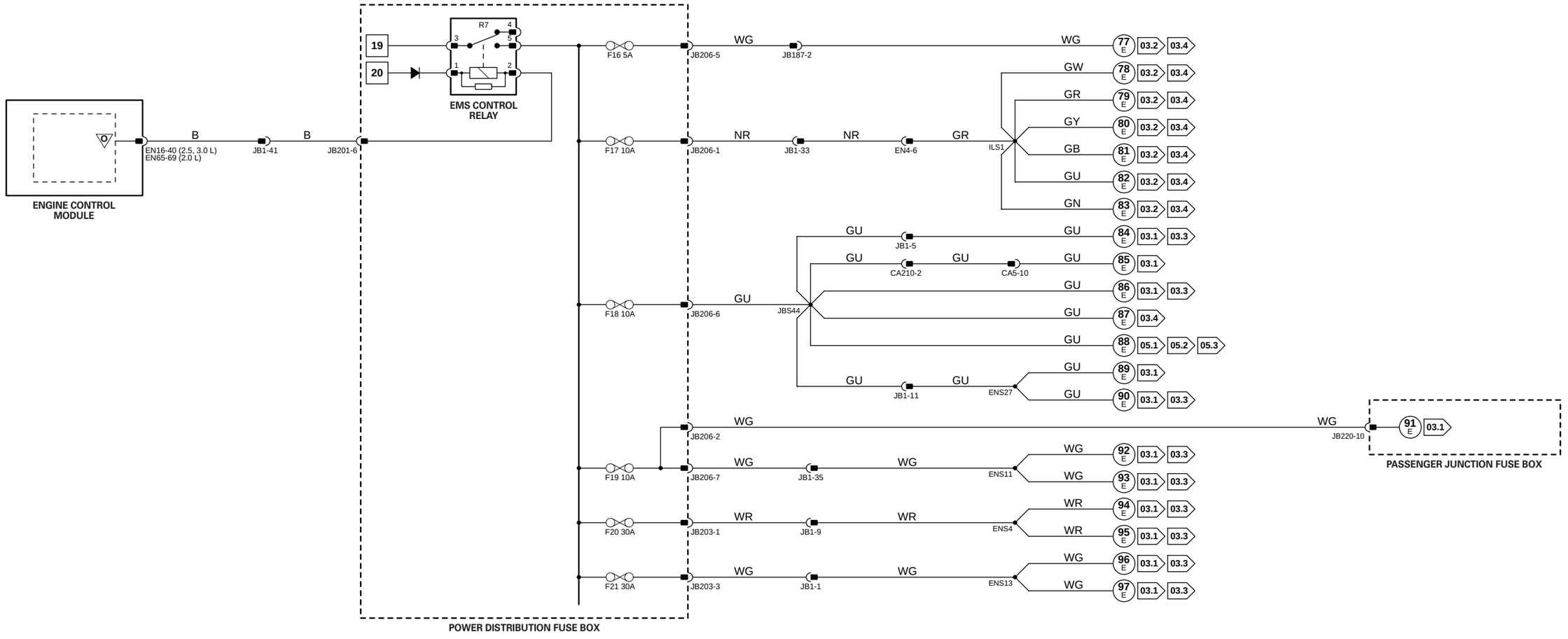
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA5	12-WAY / BLACK / FUEL TANK LINK HARNESS TO CABIN HARNESS	TOP OF FUEL TANK
CA210	2-WAY / BLACK / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
EN4	12-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO FUEL INJECTION HARNESS	ENGINE COMPARTMENT / ENGINE TOP
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB187	2-WAY / BLACK / JUNCTION BOX HARNESS TO COOLING FAN MODULE LINK LEAD	ENGINE COMPARTMENT / FRONT, LH SIDE

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

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.

DATE OF ISSUE: August 2003



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 U → 31 U Fig. 01.5
32 U → 66 U Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Gasoline Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
O	DL1-9	EMS CONTROL RELAY ACTIVATE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND

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.

Fig. 01.9

COMPONENTS

Component	Connector(s)	Connector Description	Location
EMS CONTROL RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R5
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT

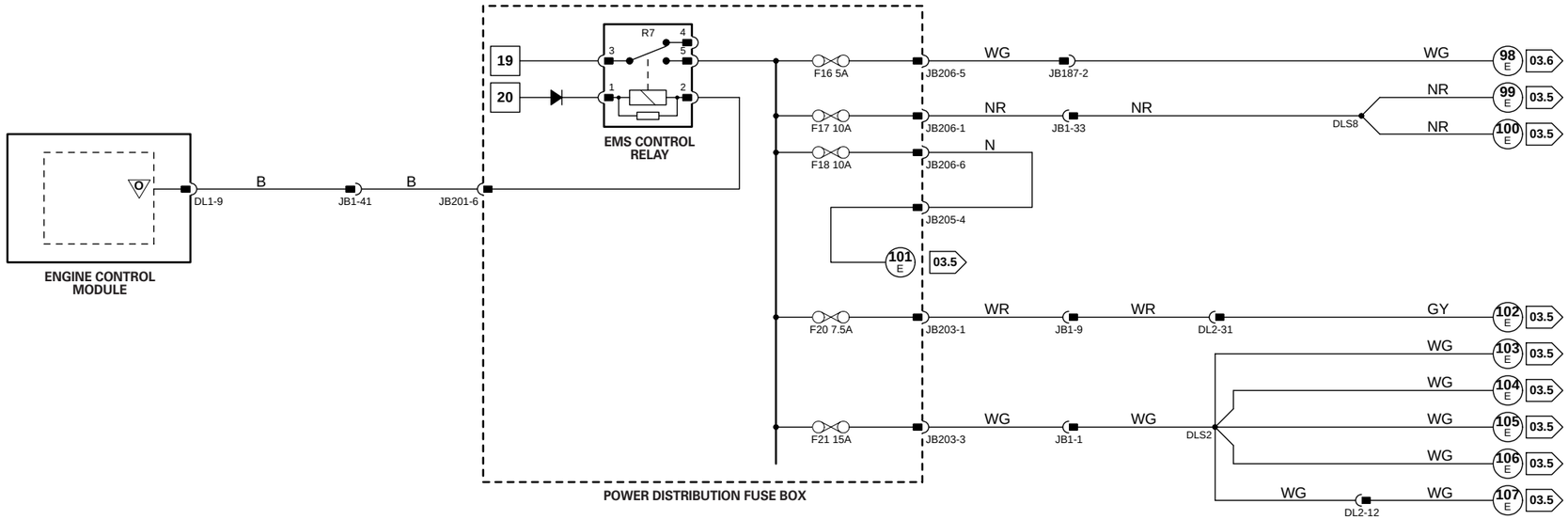
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB187	2-WAY / BLACK / JUNCTION BOX HARNESS TO COOLING FAN MODULE LINK LEAD	ENGINE COMPARTMENT / FRONT, LH SIDE
DL2	42-WAY / BLACK / ENGINE HARNESS TO ENGINE MANAGEMENT HARNESS	ENGINE COMPARTMENT / RH SIDE

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

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.

DATE OF ISSUE: August 2003



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 III → 31 III Fig. 01.5
32 III → 66 III Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Diesel Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
I	EN16-006	ENGINE CRANK: B+
I	EN16-031	PARK / NEUTRAL SWITCH (AUTOMATIC TRANSMISSION): NORMALLY CLOSED / B+ IN P, N
O	EN16-041	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-053	GENERATOR CONTROL: VARIABLE VOLTAGE
I	EN16-065	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
I	EN16-079	GENERATOR CHARGE / FAULT: B+ = NORMAL, AFTER-START SWITCH-ON; GROUND = GENERATOR FAILURE, AFTER-START SWITCH-ON
C	EN16-123	CAN -
C	EN16-124	CAN +

General Electronic Module

▽	Pin	Description and Characteristic
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN

Instrument Cluster

▽	Pin	Description and Characteristic
D	IP10-03	PATS 1: ENCODED COMMUNICATION
D	IP10-04	PATS 2: ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

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.

Fig. 02.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	–	–	ENGINE COMPARTMENT
CLUTCH PEDAL SAFETY SWITCH	PA5	2-WAY / WHITE	TOP OF CLUTCH PEDAL
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
GENERATOR – 2.0 L, 2.5 L, 3.0 L	EN49	4-WAY / BLACK	ENGINE BANK 1 / FRONT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
STARTER MOTOR – 2.0 L, 2.5 L, 3.0 L	EN700	EYELET	ENGINE BLOCK / RH SIDE
	ST2	EYELET	
STARTER RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R12
TRANSMISSION RANGE SENSOR	JB156	10-WAY / BLACK	TOP OF TRANSMISSION

HARNESS IN-LINE CONNECTORS

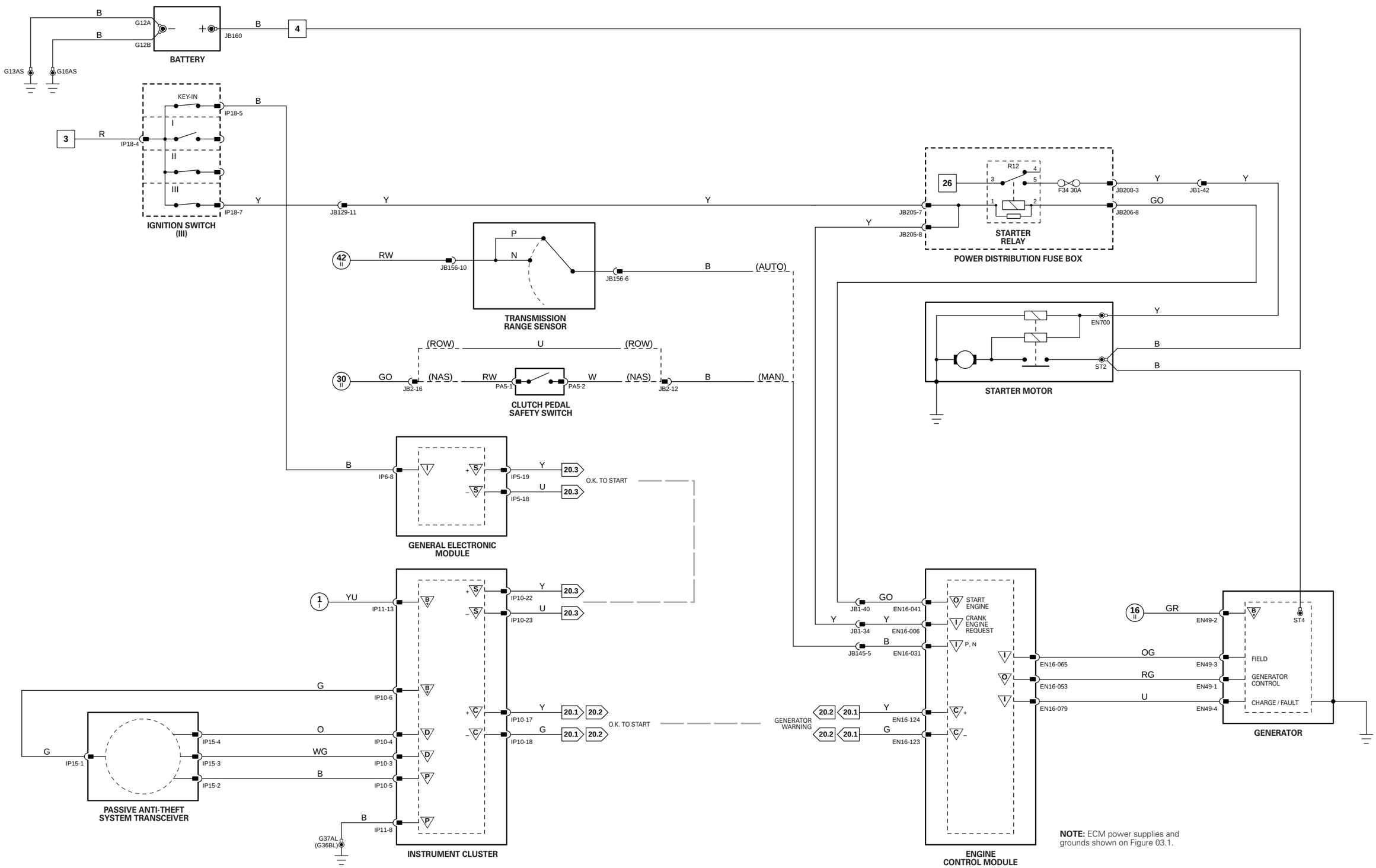
Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB145	8-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE

GROUNDS

Ground	Harness	Location
G13	B03	BATTERY ENGINE GROUND
G16	B03	ENGINE COMPARTMENT / UNDER BATTERY TRAY
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 → 31 Fig. 01.5	67 → 76 Fig. 01.7	98 → 107 Fig. 01.9	Input	Battery Voltage	Sensor/Signal Supply V	CAN	D2B Network
7 → 33 Fig. 01.2	1 → 10 Fig. 01.4	32 → 66 Fig. 01.6	77 → 97 Fig. 01.8		Output	Power Ground	Sensor/Signal Ground	SCP	Serial and Encoded Data

VARIANT: 2.5 L & 3.0 L Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
I	EN65-006	ENGINE CRANK: B+
O	EN65-008	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
I	EN65-035	GENERATOR CHARGE / FAULT: B+ = NORMAL, AFTER-START SWITCH-ON; GROUND = GENERATOR FAILURE, AFTER-START SWITCH-ON
I	EN65-043	GENERATOR CONTROL: VARIABLE VOLTAGE
O	EN65-068	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	EN65-085	PARK / NEUTRAL SWITCH (AUTOMATIC TRANSMISSION): NORMALLY CLOSED / GROUND WHEN ACTIVATED
C	EN65-088	CAN -
C	EN65-089	CAN +

General Electronic Module

▽	Pin	Description and Characteristic
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN

Instrument Cluster

▽	Pin	Description and Characteristic
D	IP10-03	PATS 1: ENCODED COMMUNICATION
D	IP10-04	PATS 2: ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

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.

Fig. 02.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	–	–	ENGINE COMPARTMENT
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
GENERATOR – 2.0 L, 2.5 L, 3.0 L	EN49	4-WAY / BLACK	ENGINE BANK 1 / FRONT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
STARTER MOTOR – 2.0 L, 2.5 L, 3.0 L	EN700	EYELET	ENGINE BLOCK / RH SIDE
	ST2	EYELET	
STARTER RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R12
TRANSMISSION RANGE SENSOR	JB156	10-WAY / BLACK	TOP OF TRANSMISSION

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G13	B03	BATTERY ENGINE GROUND
G16	B03	ENGINE COMPARTMENT / UNDER BATTERY TRAY
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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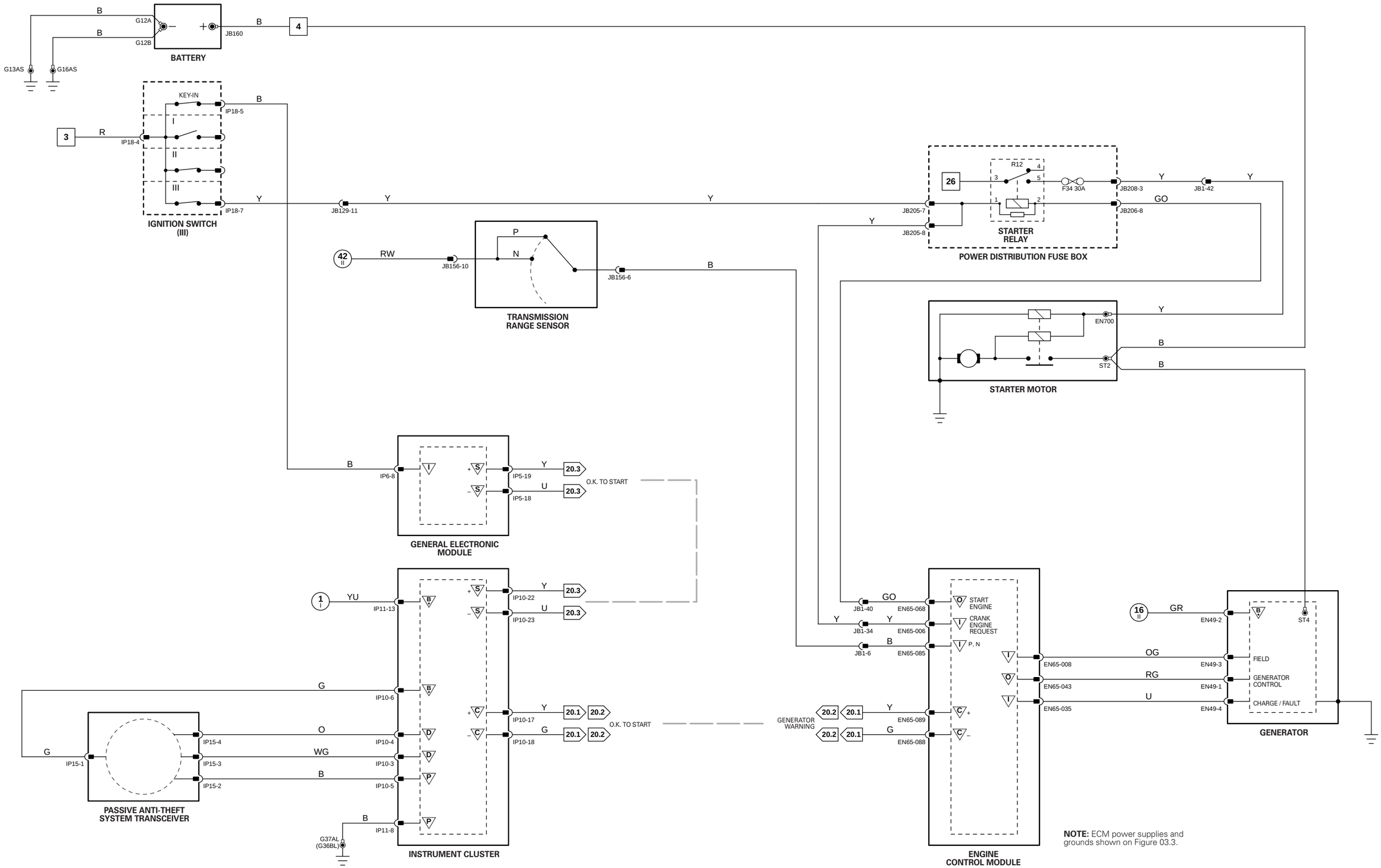


1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: 2.0 L Gasoline Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
O	DL1-021	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-047	GENERATOR MONITOR
C	DL1-054	CAN +
C	DL1-073	CAN -
O	DL1-112	GENERATOR COMMON

▽	Pin	Description and Characteristic
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN

Instrument Cluster

▽	Pin	Description and Characteristic
D	IP10-03	PATS 1: ENCODED COMMUNICATION
D	IP10-04	PATS 2: ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

Fig. 02.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	–	–	ENGINE COMPARTMENT
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
GENERATOR – 2.0 L D	DE2	4-WAY / BLACK	ENGINE BLOCK / RH SIDE / FRONT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
STARTER MOTOR – 2.0 L D	DL8	EYELET	ENGINE BLOCK / LH SIDE
	ST2	EYELET	
STARTER RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R12

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
DL2	42-WAY / BLACK / ENGINE HARNESS TO ENGINE MANAGEMENT HARNESS	ENGINE COMPARTMENT / RH SIDE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G13	B03	BATTERY ENGINE GROUND
G16	B03	ENGINE COMPARTMENT / UNDER BATTERY TRAY
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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

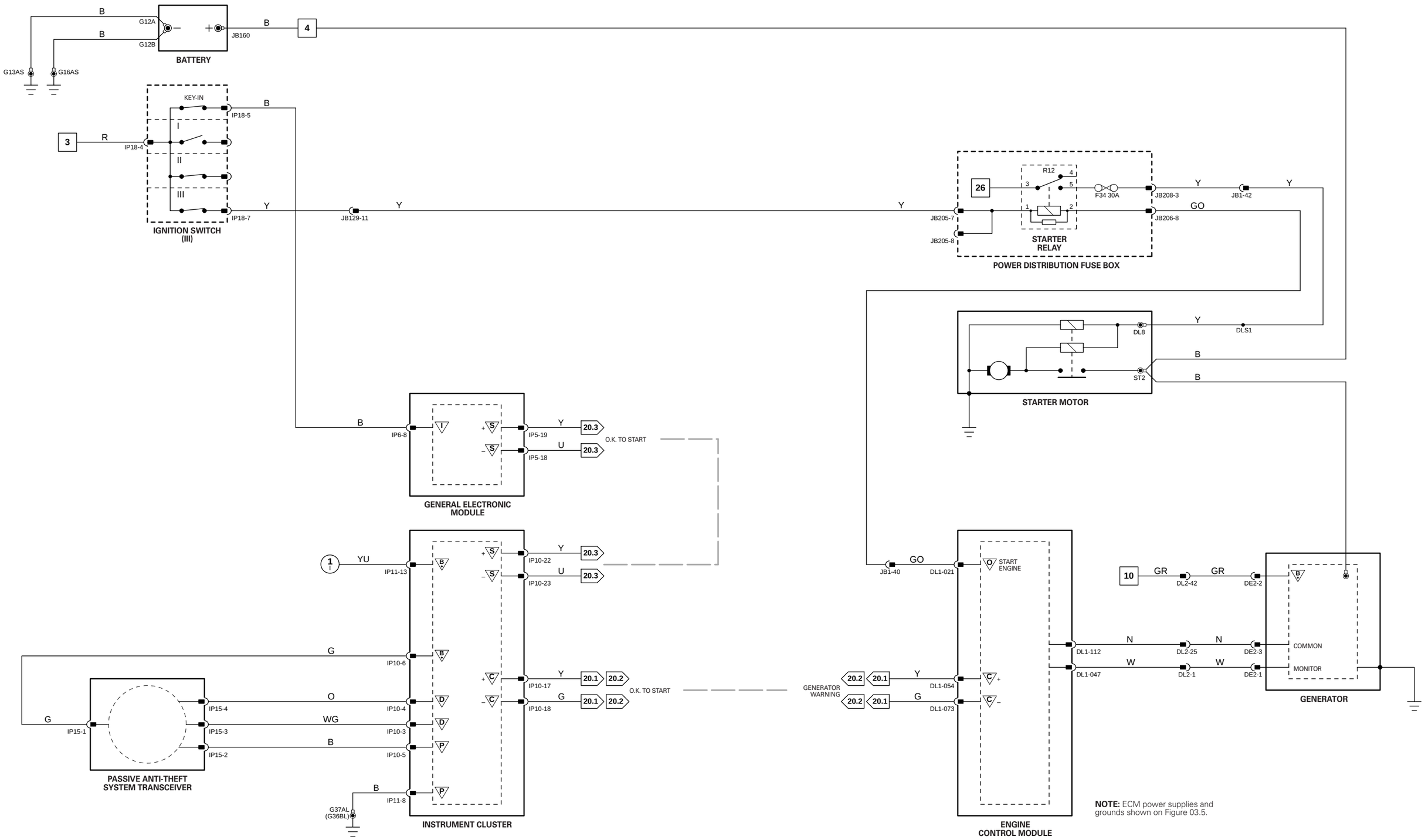
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

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.

DATE OF ISSUE: August 2003



NOTE: ECM power supplies and grounds shown on Figure 03.5.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
(I) 1 → 10 Fig. 01.4
(II) 11 → 31 Fig. 01.5
(II) 32 → 66 Fig. 01.6
(E) 67 → 76 Fig. 01.7
(E) 77 → 97 Fig. 01.8
(E) 98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 2.0 L Diesel Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
O	EN16-001	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	EN16-002	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
PG	EN16-004	POWER GROUND 1: GROUND
PG	EN16-005	POWER GROUND 2: GROUND
I	EN16-006	ENGINE CRANK: B+
I	EN16-007	IGNITION ON: B+
I	EN16-008	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	EN16-010	INERTIA SWITCH: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
SS	EN16-012	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SS	EN16-013	SENSOR POWER SUPPLY 2: NOMINAL 5 V
SG	EN16-017	SMALL SIGNAL GROUND1: GROUND
SG	EN16-018	SMALL SIGNAL GROUND 2: GROUND
SG	EN16-019	SENSOR GROUND 1: GROUND
SG	EN16-020	SENSOR GROUND 2: GROUND
B+	EN16-022	BATTERY POWER SUPPLY: B+
B+	EN16-023	EMS SWITCHED POWER SUPPLY 1: B+
B+	EN16-024	EMS SWITCHED POWER SUPPLY 2: B+
SG	EN16-029	HO2 SENSOR HEATER GROUND – 1/1: GROUND
SG	EN16-030	HO2 SENSOR HEATER GROUND – 1/1: GROUND
I	EN16-031	(MANUAL TRANSMISSION) CLUTCH PEDAL SAFETY SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	EN16-031	(AUTOMATIC TRANSMISSION) PARK / NEUTRAL SWITCH: NORMALLY CLOSED / B+ IN P, N
I	EN16-036	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL, 70 PULSES PER ENGINE CYCLE
SG	EN16-037	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
O	EN16-038	INTAKE MANIFOLD TUNING VALVE SOLENOID DRIVE – 1 / BOTTOM: GROUND WHEN ACTIVATED
O	EN16-039	INTAKE MANIFOLD TUNING VALVE SOLENOID DRIVE – 2 / TOP: GROUND WHEN ACTIVATED
O	EN16-040	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-041	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	EN16-043	TP AND APP SIGNALS SHIELD: GROUND
I	EN16-044	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	EN16-045	MASS AIR FLOW SENSOR GROUND: GROUND
SG	EN16-046	MASS AIR FLOW SENSOR GROUND: GROUND
I	EN16-050	ENGINE FUEL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
O	EN16-052	THROTTLE MOTOR RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-053	GENERATOR CONTROL: VARIABLE VOLTAGE
SG	EN16-054	THROTTLE MOTOR GROUND: GROUND
O	EN16-055	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	EN16-056	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
I	EN16-065	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
O	EN16-066	EVAP CANISTER PURGE VALVE DRIVE: PWM, 10 Hz, POSITIVE DUTY CYCLE RANGE 0.04% – 100%
O	EN16-067	EVAP CANISTER CLOSE VALVE DRIVE: TO CLOSE, ECM SWITCHES CIRCUIT TO GROUND
I	EN16-068	BANK 2 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	EN16-069	BANK 2 CAMSHAFT SENSOR GROUND: GROUND
I	EN16-070	ENGINE COOLANT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN16-071	INTAKE AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN16-073	INJECTION PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: POTENTIOMETER – VOLTAGE DECREASES AS PRESSURE INCREASES
I	EN16-075	THROTTLE POSITION SENSOR 1 SIGNAL: IDLE = 0.74 V; FULL THROTTLE = 3.97 V
I	EN16-076	THROTTLE POSITION SENSOR 2 SIGNAL: IDLE = 1.65 V; FULL THROTTLE = 4.20 V
I	EN16-078	ENGINE OIL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN16-079	GENERATOR CHARGE / FAULT: B+ = NORMAL, AFTER-START SWITCH-ON; GROUND = GENERATOR FAILURE, AFTER-START SWITCH-ON
O	EN16-080	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
SG	EN16-081	HO2 SENSOR HEATER GROUND – 2/1: GROUND
SG	EN16-082	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	EN16-083	HO2 SENSOR 1/1 SIGNAL: VARIABLE CURRENT
I	EN16-084	HO2 SENSOR 1/1 SIGNAL: CONSTANT CURRENT
SG	EN16-091	HO2 SENSOR HEATERS 1/2, 2/2 GROUND: GROUND
O	EN16-092	HO2 SENSOR HEATER CONTROL – 1/2: PWM, 1 CYCLE PER 256 mS, POSITIVE DUTY CYCLE RANGE 0 mS = 0%, 77 mS = 30%, 256 mS = 100%
O	EN16-093	HO2 SENSOR HEATER CONTROL – 2/2: PWM, 1 CYCLE PER 256 mS, POSITIVE DUTY CYCLE RANGE 0 mS = 0%, 77 mS = 30%, 256 mS = 100%
I	EN16-094	BANK 1 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	EN16-095	BANK 1 CAMSHAFT SENSOR GROUND: GROUND
I	EN16-098	KNOCK SENSOR SIGNAL: PULSED SIGNAL
SG	EN16-100	SENSOR SHIELD: GROUND
I	EN16-102	ACCELERATOR PEDAL POSITION SENSOR 1 SIGNAL: FOOT OFF = 0.97 V; FULLY DEPRESSED = 3.33 V
I	EN16-103	ACCELERATOR PEDAL POSITION SENSOR 2 SIGNAL: FOOT OFF = 3.97 V; FULLY DEPRESSED = 0.84 V
I	EN16-104	FUEL TANK PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE DECREASES AS PRESSURE INCREASES
D	EN16-105	SERIAL DATA LINK: SERIAL COMMUNICATION
O	EN16-106	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
I	EN16-107	HO2 SENSOR 2/1 SIGNAL: VARIABLE CURRENT
I	EN16-108	HO2 SENSOR 2/1 SIGNAL: CONSTANT CURRENT
O	EN16-109	BANK 1 VVT SOLENOID VALVE: PWM, 300Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	EN16-110	BANK 2 VVT SOLENOID VALVE: PWM, 300Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
SG	EN16-111	BANK 1 FUEL INJECTORS (1, 3, 5) GROUND: GROUND
SG	EN16-116	BANK 2 FUEL INJECTORS (2, 4, 6) GROUND: GROUND
C	EN16-123	CAN -
C	EN16-124	CAN +
I	EN16-127	MAP SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
I	EN16-128	HO2 SENSOR 1/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
I	EN16-129	HO2 SENSOR 2/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
SG	EN16-130	HO2 SENSORS GROUND: GROUND
B+	EN16-134	THROTTLE MOTOR POWER SUPPLY: B+ WHEN RELAY ACTIVATED

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

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.

Fig. 03.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
APP SENSOR – 2.5 L, 3.0 L	PA1	6-WAY / BLACK	ABOVE ACCELERATOR PEDAL
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
CKP SENSOR – 2.0 L, 2.5 L, 3.0 L	EN12	2-WAY / BLACK	ADJACENT TO ENGINE CRANKSHAFT PULLEY
CMP SENSOR 1 – 2.0 L, 2.5 L, 3.0 L	EN43	2-WAY / BLACK	BANK 1 CYLINDER HEAD, FRONT
CMP SENSOR 2 – 2.0 L, 2.5 L, 3.0 L	EN33	2-WAY / BLACK	BANK 2 CYLINDER HEAD, FRONT
ECT SENSOR	EN18	2-WAY / BLACK	ENGINE VEE, FRONT
EFT SENSOR – 2.5 L, 3.0 L	IL8	2-WAY / BLACK	FUEL RAIL, FRONT
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
EOT SENSOR	EN25	2-WAY / GREY	ADJACENT TO ENGINE OIL FILTER
EVAP CANISTER CLOSE VALVE	FT5	2-WAY / BLACK	REARWARD OF FUEL TANK
EVAP CANISTER PURGE VALVE	JB170	2-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD
FTP SENSOR	FT7	3-WAY / BLACK	TOP OF FUEL TANK
HO2 SENSOR DOWNSTREAM 1/2	EN14	4-WAY / BLACK	BANK 1 EXHAUST
HO2 SENSOR DOWNSTREAM 2/2	EN9	4-WAY / BLACK	BANK 2 EXHAUST
HO2 SENSOR UPSTREAM 1/1	EN37	4-WAY / GREY	BANK 1 EXHAUST
HO2 SENSOR UPSTREAM 2/1	EN32	4-WAY / GREY	BANK 2 EXHAUST
IMT SOLENOID VALVE 1	EN999	2-WAY / BLACK	INTAKE MANIFOLD BOTTOM
IMT SOLENOID VALVE 2	EN998	2-WAY / BLACK	INTAKE MANIFOLD TOP
IP SENSOR – 2.5 L, 3.0 L	IL7	2-WAY / BLACK	FUEL RAIL REAR
KNOCK SENSOR – 2.0 L, 2.5 L, 3.0 L	EN23	2-WAY / BLACK	ENGINE VEE
MAF SENSOR – 2.0 L, 2.5 L, 3.0 L	EN6	5-WAY / BLACK	ENGINE AIR INTAKE DUCT
MAP SENSOR	EN8	4-WAY / BLACK	INTAKE MANIFOLD, REAR
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
THROTTLE MOTOR	EN10	2-WAY / BLACK	ENGINE INTAKE MANIFOLD
THROTTLE MOTOR RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R7
TP SENSOR – 2.5 L, 3.0 L	EN13	4-WAY / BLACK	THROTTLE BODY
VVT SOLENOID VALVE 1	EN61	2-WAY / BLACK	BANK 1 CYLINDER HEAD
VVT SOLENOID VALVE 2	EN42	2-WAY / BLACK	BANK 2 CYLINDER HEAD

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA5	12-WAY / BLACK / FUEL TANK LINK HARNESS TO CABIN HARNESS	TOP OF FUEL TANK
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
EN4	12-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO FUEL INJECTION HARNESS	ENGINE COMPARTMENT / ENGINE TOP
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

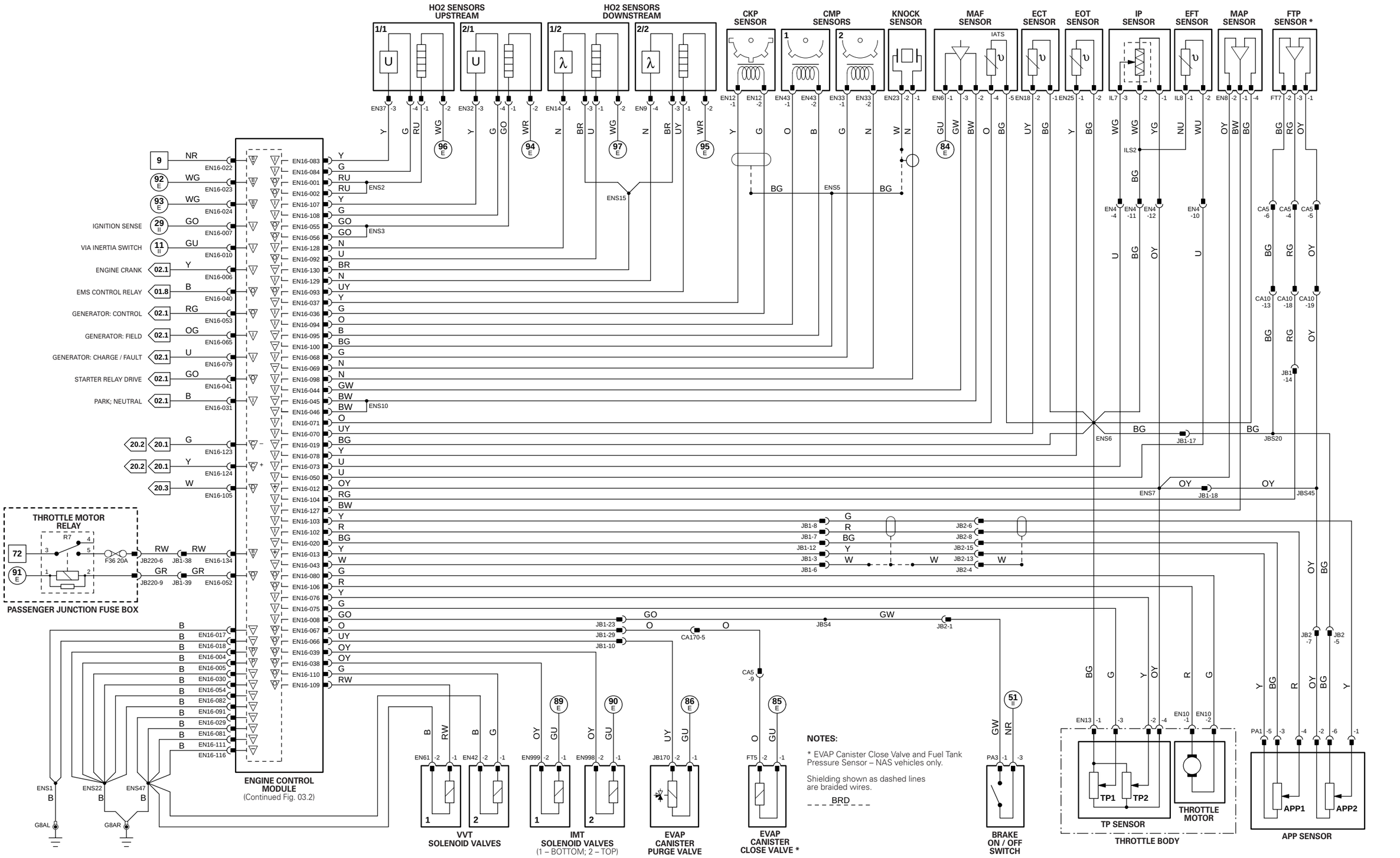
GROUNDS

Ground	Harness	Location
G8	EN	ENGINE COMPARTMENT / RH STRUT TOWER

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

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.

Engine Management: 2.5 L & 3.0 L – Part 1



NOTES:

* EVAP Canister Close Valve and Fuel Tank Pressure Sensor – NAS vehicles only.

Shielding shown as dashed lines are braided wires.

BRD

1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 → 31	Fig. 01.5	67 → 76	Fig. 01.7	98 → 107 Fig. 01.9
7 → 33	Fig. 01.2	1 → 10	Fig. 01.4	32 → 66	Fig. 01.6	77 → 97	Fig. 01.8	

I Input
O Output
B Battery Voltage
P Power Ground
\+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D2B Network
D Serial and Encoded Data

VARIANT: 2.5 L & 3.0 L Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
I	EN16-009	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
SS	EN16-012	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SG	EN16-019	SENSOR GROUND 1: GROUND
I	EN16-025	FUEL PUMP MODULE MONITOR: PWM, 1 Hz, 50% POSITIVE DUTY CYCLE = NORMAL, 25% POSITIVE DUTY CYCLE = NO CONTROL SIGNAL, 75% POSITIVE DUTY CYCLE = FUEL PUMP INOPERATIVE
O	EN16-027	FUEL PUMP MODULE CONTROL: PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
SG	EN16-029	HO2 SENSOR HEATER GROUND – 1/1: GROUND
I	EN16-033	CLUTCH CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
O	EN16-034	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SS	EN16-047	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	EN16-048	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
O	EN16-051	COOLING FAN MODULE CONTROL: PWM, 140Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
O	EN16-061	IGNITION COIL ACTIVATE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-062	IGNITION COIL ACTIVATE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-063	IGNITION COIL ACTIVATE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-087	IGNITION COIL ACTIVATE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-088	IGNITION COIL ACTIVATE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-089	IGNITION COIL ACTIVATE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-113	FUEL INJECTOR DRIVE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-114	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-115	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-118	FUEL INJECTOR DRIVE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-119	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN16-120	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	EN16-121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	EN16-131	IGNITION MONITOR BANK 1 (1, 3, 5): PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
I	EN16-132	IGNITION MONITOR BANK 2 (2, 4, 6): PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
SG	EN16-133	FUEL PUMP CONTROL CIRCUIT SHIELD: GROUND

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.

Fig. 03.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	EN30	2-WAY / BLACK	2.0 L, 2.5 L, 3.0 L: ADJACENT TO ENGINE OIL FILTER
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R3
AIR CONDITIONING PRESSURE SENSOR	JB106	4-WAY / BLACK	BEHIND FRONT LH WHEEL ARCH LINER
BRAKE CANCEL SWITCH	PA2	2-WAY / BLACK	TOP OF BRAKE PEDAL
CLUTCH CANCEL SWITCH	PA4	5-WAY / BLACK	TOP OF CLUTCH PEDAL
COOLING FAN – LH	GC2	2-WAY / BLACK	COOLING PACK / LH SIDE
COOLING FAN – RH	GC1	2-WAY / BLACK	COOLING PACK / RH SIDE
COOLING FAN MODULE	JB187 JB188	2-WAY / BLACK 2-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
FUEL INJECTOR 1 – 2.0 L, 2.5 L, 3.0 L	IL1	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 2 – 2.0 L, 2.5 L, 3.0 L	IL4	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 3 – 2.0 L, 2.5 L, 3.0 L	IL2	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 4 – 2.0 L, 2.5 L, 3.0 L	IL5	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 5 – 2.0 L, 2.5 L, 3.0 L	IL3	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 6 – 2.0 L, 2.5 L, 3.0 L	IL6	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL PUMP – 2.5 L, 3.0 L (NAS)	FT6	6-WAY / BLACK	FUEL TANK
FUEL PUMP – 2.5 L, 3.0 L (ROW)	FT2	4-WAY / BLACK	FUEL TANK
FUEL PUMP MODULE	CA105	11-WAY / BLACK	UNDER REAR SEAT / LH SIDE
IGNITION CAPACITOR	EN94	2-WAY / BLACK	BELOW AIR INTAKE
IGNITION MODULE AND COIL 1	EN51	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 2	EN54	4-WAY / BLACK	BANK 2 CYLINDER HEAD
IGNITION MODULE AND COIL 3	EN52	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 4	EN55	4-WAY / BLACK	BANK 2 CYLINDER HEAD
IGNITION MODULE AND COIL 5	EN53	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 6	EN56	4-WAY / BLACK	BANK 2 CYLINDER HEAD
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
SPEED CONTROL SWITCHES	SW5	4-WAY / BLACK	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA5	12-WAY / BLACK / FUEL TANK LINK HARNESS TO CABIN HARNESS	TOP OF FUEL TANK
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
EN4	12-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO FUEL INJECTION HARNESS	ENGINE COMPARTMENT / ENGINE TOP
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB145	8-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE

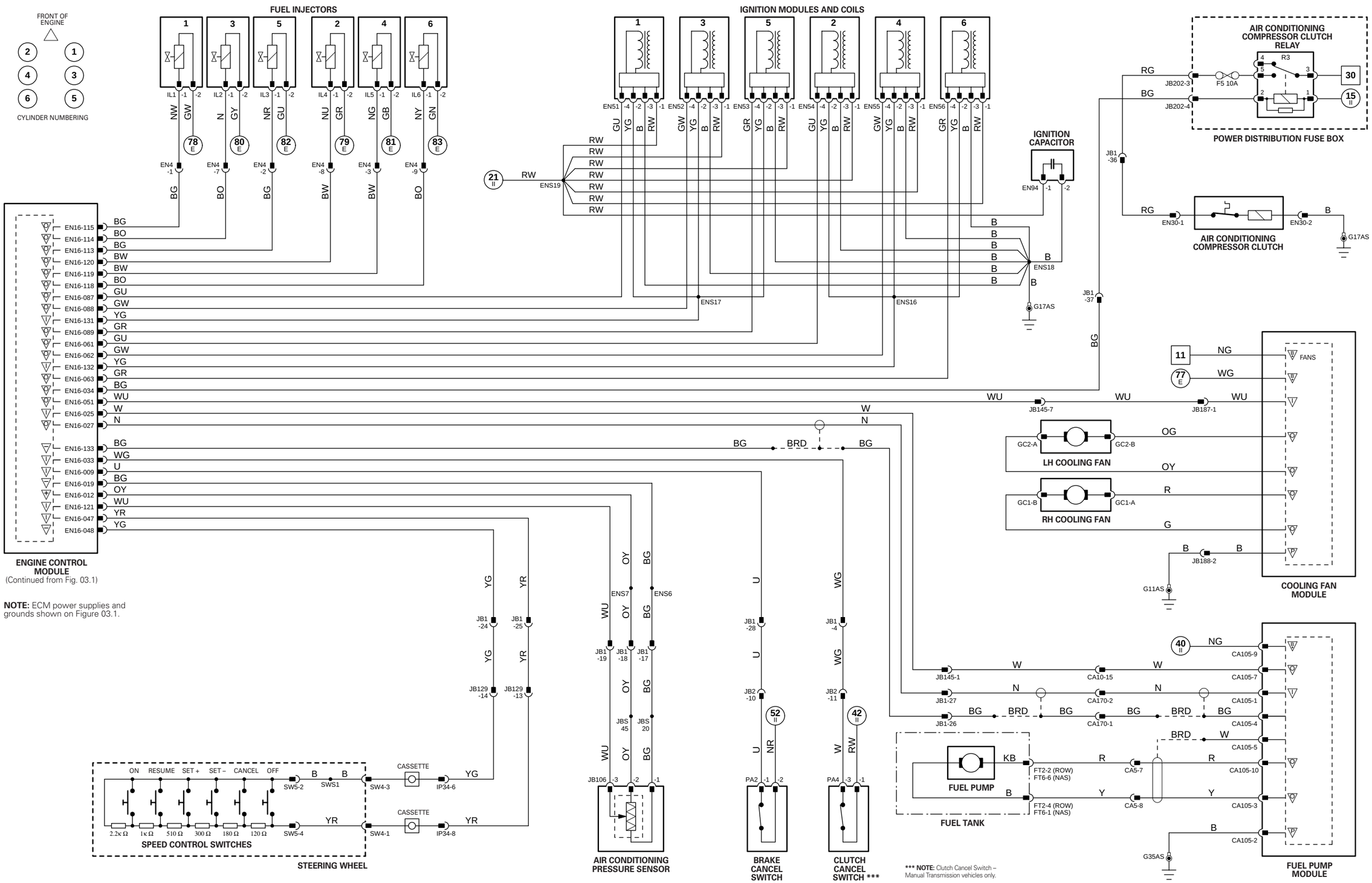
GROUNDS

Ground	Harness	Location
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G17	EN	ENGINE COMPARTMENT / TOP OF GENERATOR BRACKET
G35	CA	LOWER LH 'E' POST

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

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.

DATE OF ISSUE: August 2003



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 → 31	Fig. 01.5	67 → 76	Fig. 01.7	98 → 107	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network	**VARIANT:**	2.5 L & 3.0 L Vehicles
7 → 33	Fig. 01.2	1 → 10	Fig. 01.4	32 → 66	Fig. 01.6	77 → 97	Fig. 01.8			O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data	**VIN RANGE:**	All
															DATE OF ISSUE:	August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
I	EN65-001	MAP SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
SG	EN65-003	SENSOR GROUND: GROUND
SG	EN65-004	SMALL SIGNAL GROUND1: GROUND
SG	EN65-005	SMALL SIGNAL GROUND 2: GROUND
I	EN65-006	ENGINE CRANK: B+
O	EN65-008	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
SS	EN65-011	SENSOR POWER SUPPLY: NOMINAL 5 V
PG	EN65-018	POWER GROUND 2: GROUND
PG	EN65-019	POWER GROUND 1: GROUND
B+	EN65-021	BATTERY POWER SUPPLY: B+
B+	EN65-022	EMS SWITCHED POWER SUPPLY 1: B+
B+	EN65-023	EMS SWITCHED POWER SUPPLY 2: B+
I	EN65-025	HO2 SENSOR 2/1 SIGNAL: CONSTANT CURRENT
I	EN65-026	HO2 SENSOR 2/1 SIGNAL: VARIABLE CURRENT
I	EN65-027	THROTTLE POSITION SENSOR SIGNAL: CLOSED THROTTLE = 0.89 V; FULL THROTTLE = 4.50 V
SG	EN65-029	MASS AIR FLOW SENSOR GROUND: GROUND
I	EN65-030	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	EN65-031	MASS AIR FLOW SENSOR GROUND: GROUND
I	EN65-034	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	EN65-035	GENERATOR CHARGE / FAULT: B+ = NORMAL, AFTER-START SWITCH-ON; GROUND = GENERATOR FAILURE, AFTER-START SWITCH-ON
I	EN65-036	INERTIA SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
I	EN65-037	KNOCK SENSOR SIGNAL: PULSED SIGNAL
SG	EN65-038	SENSOR SHIELD: GROUND
D	EN65-039	SERIAL DATA LINK: SERIAL COMMUNICATION
I	EN65-043	GENERATOR CONTROL: VARIABLE VOLTAGE
O	EN65-046	HO2 SENSOR HEATER CONTROL – 2/2: PWM, 1 CYCLE PER 256 mS, POSITIVE DUTY CYCLE RANGE 0 mS = 0%, 77 mS = 30%, 256 mS = 100%
O	EN65-047	HO2 SENSOR HEATER CONTROL – 1/2: PWM, 1 CYCLE PER 256 mS, POSITIVE DUTY CYCLE RANGE 0 mS = 0%, 77 mS = 30%, 256 mS = 100%
SG	EN65-048	HO2 SENSOR HEATER GROUND – 1/2 AND 2/2: GROUND
I	EN65-050	HO2 SENSOR 1/1 SIGNAL: CONSTANT CURRENT
I	EN65-051	HO2 SENSOR 1/1 SIGNAL: VARIABLE CURRENT
SG	EN65-052	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	EN65-053	HO2 SENSOR 1/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
I	EN65-054	HO2 SENSOR 2/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
SG	EN65-055	HO2 SENSORS GROUND: GROUND
I	EN65-059	BANK 1 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	EN65-060	BANK 1 CAMSHAFT SENSOR GROUND: GROUND
I	EN65-061	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL, 70 PULSES PER ENGINE CYCLE
SG	EN65-062	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
I	EN65-063	IGNITION ON: B+
SG	EN65-064	BANK 2 FUEL INJECTORS (2, 4, 6) GROUND: GROUND
O	EN65-068	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-069	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-071	INTAKE MANIFOLD TUNING VALVE SOLENOID DRIVE: GROUND WHEN ACTIVATED
O	EN65-074	EVAP CANISTER PURGE VALVE DRIVE: PWM, 10 Hz, POSITIVE DUTY CYCLE RANGE 0.04% – 100%
SG	EN65-075	HO2 SENSOR HEATER GROUND – 1/1: GROUND
O	EN65-076	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	EN65-077	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
SG	EN65-078	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	EN65-079	ENGINE OIL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN65-080	ENGINE COOLANT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN65-081	INTAKE AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	EN65-085	PARK / NEUTRAL SWITCH (AUTOMATIC TRANSMISSION): NORMALLY CLOSED / GROUND WHEN ACTIVATED
I	EN65-086	BANK 2 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	EN65-087	BANK 2 CAMSHAFT SENSOR GROUND: GROUND
C	EN65-088	CAN -
C	EN65-089	CAN +
SG	EN65-091	BANK 1 FUEL INJECTORS (1, 3, 5) GROUND: GROUND
O	EN65-095	BANK 2 VVT SOLENOID VALVE: PWM, 300Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	EN65-096	BANK 1 VVT SOLENOID VALVE: PWM, 300Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	EN65-097	IDLE SPEED CONTROL VALVE MOTOR DRIVE (–): PWM
O	EN65-098	IDLE SPEED CONTROL VALVE MOTOR DRIVE (+): PWM
SG	EN65-102	HO2 SENSOR HEATER GROUND – 1/1: GROUND
O	EN65-103	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	EN65-104	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE

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

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.

Fig. 03.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
CKP SENSOR – 2.0 L, 2.5 L, 3.0 L	EN12	2-WAY / BLACK	ADJACENT TO ENGINE CRANKSHAFT PULLEY
CMP SENSOR 1 – 2.0 L, 2.5 L, 3.0 L	EN43	2-WAY / BLACK	BANK 1 CYLINDER HEAD, FRONT
CMP SENSOR 2 – 2.0 L, 2.5 L, 3.0 L	EN33	2-WAY / BLACK	BANK 2 CYLINDER HEAD, FRONT
ECT SENSOR	EN18	2-WAY / BLACK	ENGINE VEE, FRONT
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
EOT SENSOR	EN25	2-WAY / GREY	ADJACENT TO ENGINE OIL FILTER
EVAP CANISTER PURGE VALVE	JB170	2-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD
HO2 SENSOR DOWNSTREAM 1/2	EN14	4-WAY / BLACK	BANK 1 EXHAUST
HO2 SENSOR DOWNSTREAM 2/2	EN9	4-WAY / BLACK	BANK 2 EXHAUST
HO2 SENSOR UPSTREAM 1/1	EN37	4-WAY / GREY	BANK 1 EXHAUST
HO2 SENSOR UPSTREAM 2/1	EN32	4-WAY / GREY	BANK 2 EXHAUST
IDLE SPEED CONTROL VALVE	EN87	2-WAY / BLACK	THROTTLE ASSEMBLY
IMT SOLENOID VALVE	EN998	2-WAY / BLACK	INTAKE MANIFOLD TOP
KNOCK SENSOR – 2.0 L, 2.5 L, 3.0 L	EN23	2-WAY / BLACK	ENGINE VEE
MAF SENSOR – 2.0 L, 2.5 L, 3.0 L	EN6	5-WAY / BLACK	ENGINE AIR INTAKE DUCT
MAP SENSOR	EN8	4-WAY / BLACK	INTAKE MANIFOLD, REAR
TP SENSOR – 2.0 L	EN88	3-WAY / BLACK	THROTTLE BODY
VVT SOLENOID VALVE 1	EN61	2-WAY / BLACK	BANK 1 CYLINDER HEAD
VVT SOLENOID VALVE 2	EN42	2-WAY / BLACK	BANK 2 CYLINDER HEAD

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

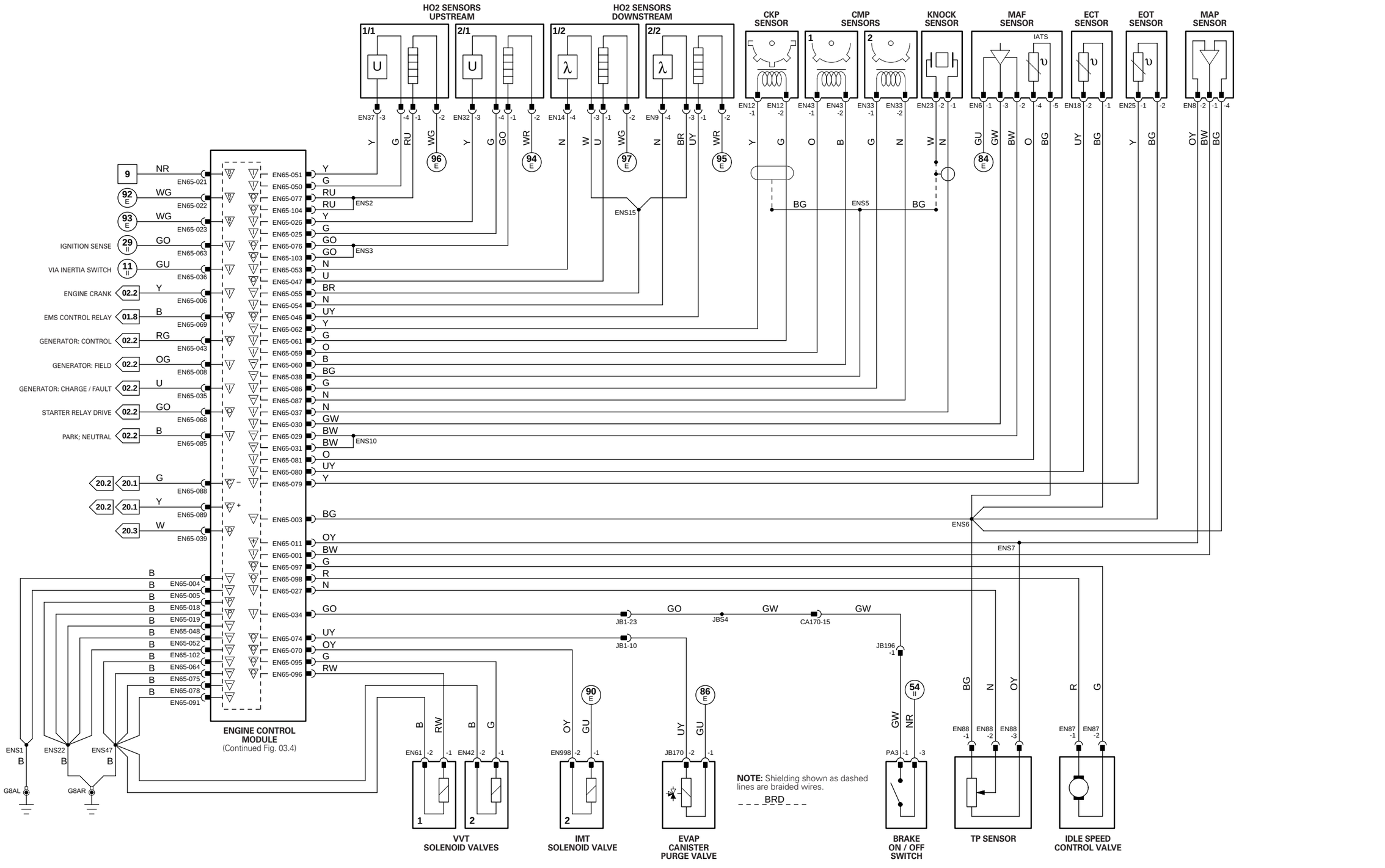
Ground	Harness	Location
G8	EN	ENGINE COMPARTMENT / RH STRUT TOWER

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

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.

DATE OF ISSUE: August 2003

Engine Management: 2.0 L – Part 1



NOTE: Shielding shown as dashed lines are braided wires.

BRD

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D2B D2B Network
D Serial and Encoded Data

VARIANT: 2.0 L Gasoline Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
I	EN65-002	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
SG	EN65-003	SENSOR GROUND: GROUND
I	EN65-007	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
SS	EN65-011	SENSOR POWER SUPPLY: NOMINAL 5 V
I	EN65-012	IGNITION MONITOR BANK 1 (1, 3, 5): PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
I	EN65-013	IGNITION MONITOR BANK 2 (2, 4, 6): PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
O	EN65-014	IGNITION COIL ACTIVATE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-015	IGNITION COIL ACTIVATE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-016	IGNITION COIL ACTIVATE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	EN65-017	INTELLIGENT SPEED SIGNAL (VEHICLE SPEED) : PWM, DUTY CYCLE RANGE 30% to 70 %
O	EN65-020	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	EN65-034	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
O	EN65-040	IGNITION COIL ACTIVATE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-041	IGNITION COIL ACTIVATE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-042	IGNITION COIL ACTIVATE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-044	COOLING FAN MODULE CONTROL: PWM, 140Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
I	EN65-056	SPEED CONTROL STATUS 1 ON / Off: GROUND = ON; 5 V = OFF
I	EN65-057	SPEED CONTROL STATUS 2 ACTIVE / INACTIVE: GROUND = ACTIVE; 5 V = INACTIVE
O	EN65-065	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-066	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-067	FUEL INJECTOR DRIVE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	EN65-084	CLUTCH CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
O	EN65-092	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-093	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-094	FUEL INJECTOR DRIVE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	EN65-099	FUEL PUMP RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND

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.

Fig. 03.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	EN30	2-WAY / BLACK	2.0 L, 2.5 L, 3.0 L: ADJACENT TO ENGINE OIL FILTER
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R3
AIR CONDITIONING PRESSURE SENSOR	JB106	4-WAY / BLACK	BEHIND FRONT LH WHEEL ARCH LINER
BRAKE CANCEL SWITCH	PA2	2-WAY / BLACK	TOP OF BRAKE PEDAL
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
CLUTCH CANCEL SWITCH	PA4	5-WAY / BLACK	TOP OF CLUTCH PEDAL
COOLING FAN – LH	GC2	2-WAY / BLACK	COOLING PACK / LH SIDE
COOLING FAN – RH	GC1	2-WAY / BLACK	COOLING PACK / RH SIDE
COOLING FAN MODULE	JB187 JB188	2-WAY / BLACK 2-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
FUEL INJECTOR 1 – 2.0 L, 2.5 L, 3.0 L	IL1	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 2 – 2.0 L, 2.5 L, 3.0 L	IL4	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 3 – 2.0 L, 2.5 L, 3.0 L	IL2	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 4 – 2.0 L, 2.5 L, 3.0 L	IL5	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 5 – 2.0 L, 2.5 L, 3.0 L	IL3	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL INJECTOR 6 – 2.0 L, 2.5 L, 3.0 L	IL6	2-WAY / BLACK	ENGINE FUEL RAIL
FUEL PUMP – 2.0 L	CA415	6-WAY / BLACK	FUEL TANK
FUEL PUMP RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R7
IGNITION CAPACITOR	EN94	2-WAY / BLACK	BELOW AIR INTAKE
IGNITION MODULE AND COIL 1	EN51	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 2	EN54	4-WAY / BLACK	BANK 2 CYLINDER HEAD
IGNITION MODULE AND COIL 3	EN52	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 4	EN55	4-WAY / BLACK	BANK 2 CYLINDER HEAD
IGNITION MODULE AND COIL 5	EN53	4-WAY / BLACK	BANK 1 CYLINDER HEAD
IGNITION MODULE AND COIL 6	EN56	4-WAY / BLACK	BANK 2 CYLINDER HEAD
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
SPEED CONTROL MODULE	JB161	10-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD / LH SIDE
SPEED CONTROL SWITCHES	SW5	4-WAY / BLACK	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
EN4	12-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO FUEL INJECTION HARNESS	ENGINE COMPARTMENT / ENGINE TOP
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

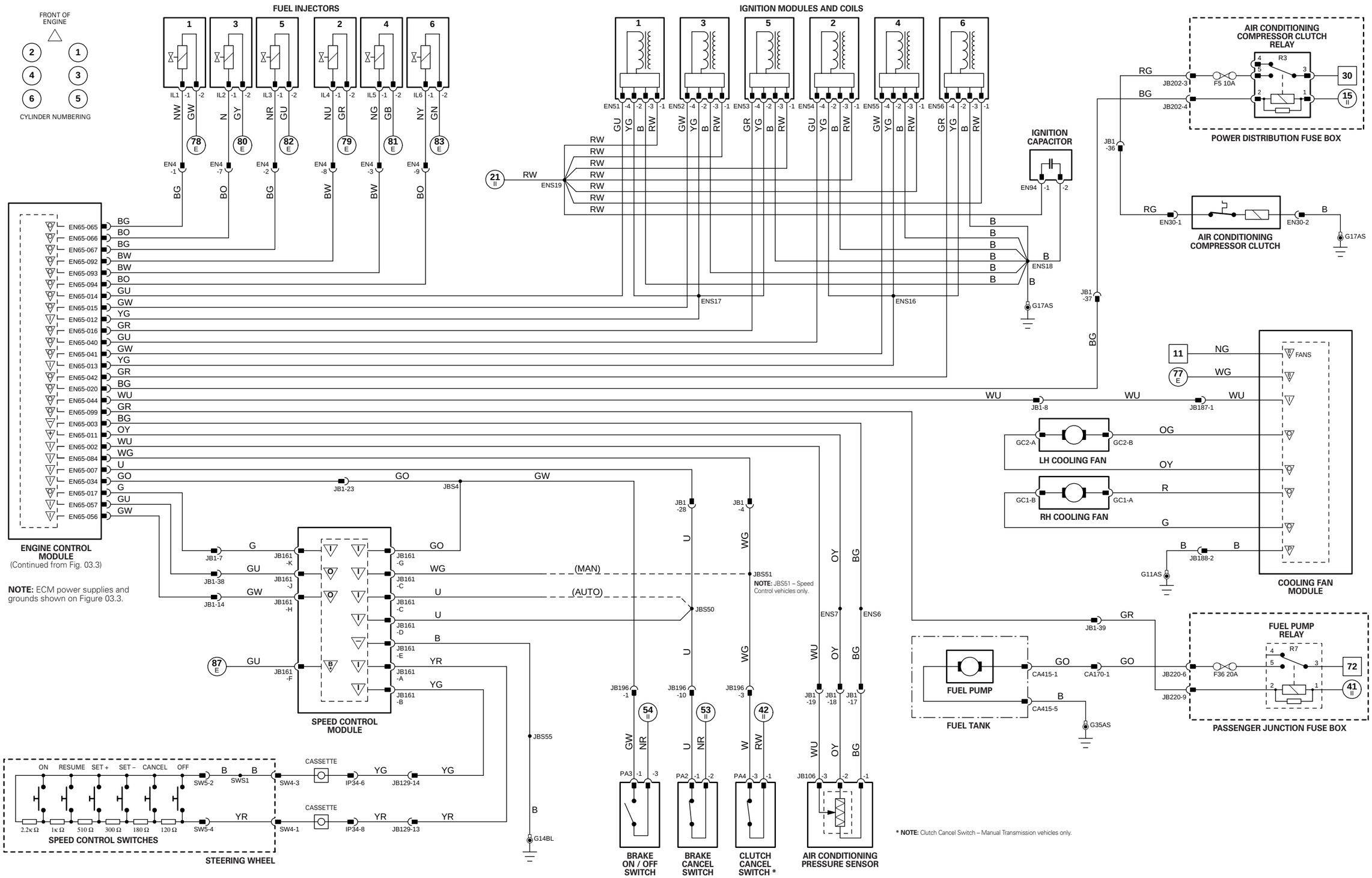
Ground	Harness	Location
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G17	EN	ENGINE COMPARTMENT / TOP OF GENERATOR BRACKET
G35	CA	LOWER LH 'E' POST

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

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.

DATE OF ISSUE: August 2003

Engine Management: 2.0 L – Part 2



NOTE: ECM power supplies and grounds shown on Figure 03.3.

* NOTE: Clutch Cancel Switch – Manual Transmission vehicles only.

1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 → 31 Fig. 01.5	67 → 76 Fig. 01.7	98 → 107 Fig. 01.9
7 → 33 Fig. 01.2	1 → 10 Fig. 01.4	32 → 66 Fig. 01.6	77 → 97 Fig. 01.8	

I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D2B Network
O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: 2.0 L Gasoline Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
PG	DL1-001	POWER GROUND: GROUND
PG	DL1-002	POWER GROUND: GROUND
B+	DL1-003	EMS SWITCHED POWER SUPPLY: B+
B+	DL1-004	EMS SWITCHED POWER SUPPLY: B+
B+	DL1-005	EMS SWITCHED POWER SUPPLY: B+
SS	DL1-006	INJECTION PRESSURE SENSOR POWER SUPPLY V: NOMINAL 5 V
O	DL1-009	EMS CONTROL RELAY ACTIVATE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	DL1-014	ACCELERATOR PEDAL POSITION SENSOR 2 GROUND: GROUND
I	DL1-018	INERTIA SWITCH: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
O	DL1-020	GLOW PLUG RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-021	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	DL1-025	INJECTION PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: 0.5 V – 4.5 V DEPENDANT ON FUEL RAIL PRESSURE
SG	DL1-026	INJECTION PRESSURE SENSOR GROUND: GROUND
PG	DL1-028	POWER GROUND: GROUND
I	DL1-032	ACCELERATOR PEDAL POSITION SENSOR 2 SIGNAL: VARIABLE VOLTAGE DEPENDANT ON PEDAL POSITION
SS	DL1-033	ACCELERATOR PEDAL POSITION SENSOR 2 POWER SUPPLY: NOMINAL 5 V
I	DL1-037	IGNITION SENSE: B+
	DL1-038	CLUTCH SWITCH SIGNAL: NORMALLY OPEN / GROUND WHEN ACTIVATED
I	DL1-045	KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
SG	DL1-046	KNOCK SENSOR GROUND: GROUND
O	DL1-047	GENERATOR MONITOR
I	DL1-050	ACCELERATOR PEDAL POSITION SENSOR 3 SIGNAL: VARIABLE VOLTAGE DEPENDANT ON PEDAL POSITION
SS	DL1-051	ACCELERATOR PEDAL POSITION SENSOR 3 POWER SUPPLY: NOMINAL 5 V
SG	DL1-053	ACCELERATOR PEDAL POSITION SENSOR 1 GROUND: GROUND
C	DL1-054	CAN +
S	DL1-055	SCP +
I	DL1-058	BRAKE ON / OFF SWITCH SIGNAL: NORMALLY OPEN / B+ WHEN ACTIVATED
I	DL1-064	AMBIENT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	DL1-065	AMBIENT AIR TEMPERATURE SENSOR GROUND: GROUND
PG	DL1-066	POWER GROUND: GROUND
SG	DL1-070	ACCELERATOR PEDAL POSITION SENSOR 3 GROUND: GROUND
I	DL1-071	ACCELERATOR PEDAL POSITION SENSOR 1 SIGNAL: VARIABLE VOLTAGE DEPENDANT ON PEDAL POSITION
SS	DL1-072	ACCELERATOR PEDAL POSITION SENSOR 1 POWER SUPPLY: NOMINAL 5 V
C	DL1-073	CAN -
S	DL1-074	SCP –
SG	DL1-082	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
I	DL1-083	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	DL1-084	MASS AIR FLOW SENSOR GROUND: GROUND
O	DL1-087	FUEL METERING VALVE DRIVE: PWM
PG	DL1-088	POWER GROUND: GROUND
I	DL1-090	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL
O	DL1-095	TURBOCHARGER SOLENOID VALVE DRIVE: PWM
O	DL1-096	EXHAUST GAS RECIRCULATION SOLENOID VALVE DRIVE: PWM
I	DL1-099	T-MAP SENSOR PRESSURE SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
SG	DL1-100	T-MAP SENSOR GROUND: GROUND
I	DL1-101	CYLINDER HEAD TEMPERATURE SENSOR SIGNAL, NOMINAL 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	DL1-102	CYLINDER HEAD TEMPERATURE SENSOR GROUND: GROUND
I	DL1-103	CAMSHAFT POSITION SENSOR SIGNAL: PULSED SIGNAL
SG	DL1-104	CAMSHAFT POSITION SENSOR GROUND: GROUND
I	DL1-107	T-MAP SENSOR TEMPERATURE SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SS	DL1-108	T-MAP SENSOR POWER SUPPLY: NOMINAL 5 V
I	DL1-109	ENGINE FUEL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	DL1-110	ENGINE FUEL TEMPERATURE SENSOR GROUND: GROUND
O	DL1-112	GENERATOR COMMON
O	DL1-114	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-115	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
B+	DL1-117	FUEL INJECTORS 1, 4 POWER SUPPLY: B+
B+	DL1-118	FUEL INJECTORS 2, 3 POWER SUPPLY: B+
O	DL1-120	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-121	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND

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

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.

Fig. 03.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
AMBIENT TEMPERATURE SENSOR – 2.0 L D	DL4	2-WAY / BLACK	ENGINE COMPARTMENT FRONT OF COOLING PACK
APP SENSOR – 2.0 L D	PA6	10-WAY / GREY	ABOVE ACCELERATOR PEDAL
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
CHT SENSOR	DE13	2-WAY / GREY	ENGINE CYLINDER HEAD
CKP SENSOR – 2.0 L D	DE6	2-WAY / GREY	ENGINE FLYWHEEL / RH SIDE
CLUTCH SWITCH – 2.0 L D	PA4	5-WAY / BLACK	TOP OF CLUTCH PEDAL
CMP SENSOR – 2.0 L D	DE7	3-WAY / GREY	CYLINDER HEAD INLET CAMSHAFT
EFT SENSOR – 2.0 L D	DE1	2-WAY / BLUE	REAR OF HIGH PRESSURE FUEL PUMP
EGR SOLENOID VALVE	DL14	2-WAY / BLACK	VACUUM RESERVOIR BRACKET
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
FUEL INJECTOR 1 – 2.0 L D	DE9	2-WAY / GREY	ENGINE CYLINDER HEAD
FUEL INJECTOR 2 – 2.0 L D	DE11	2-WAY / GREY	ENGINE CYLINDER HEAD
FUEL INJECTOR 3 – 2.0 L D	DE12	2-WAY / GREY	ENGINE CYLINDER HEAD
FUEL INJECTOR 4 – 2.0 L D	DE10	2-WAY / GREY	ENGINE CYLINDER HEAD
FUEL METERING VALVE	DE5	2-WAY / BROWN	REAR OF HIGH PRESSURE FUEL PUMP
GLOW PLUG POWER EYELET	DL10	EYELET	ENGINE CYLINDER HEAD
GLOW PLUG RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R10
IP SENSOR – 2.0 L D	DE3	3-WAY / PURPLE	FRONT OF FUEL RAIL
KNOCK SENSOR – 2.0 L D	DE8	2-WAY / BLACK	CYLINDER BLOCK / LH SIDE
MAF SENSOR – 2.0 L D	DL6	6-WAY / BLACK	ENGINE AIR INTAKE DUCT
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
T-MAP SENSOR	DL5	4-WAY / BLACK	ENGINE CHARGE AIR DUCT BETWEEN CHARGE AIR COOLER AND EGR VALVE
TURBOCHARGER SOLENOID VALVE	DL13	2-WAY / BLACK	VACUUM RESERVOIR BRACKET

HARNESS IN-LINE CONNECTORS

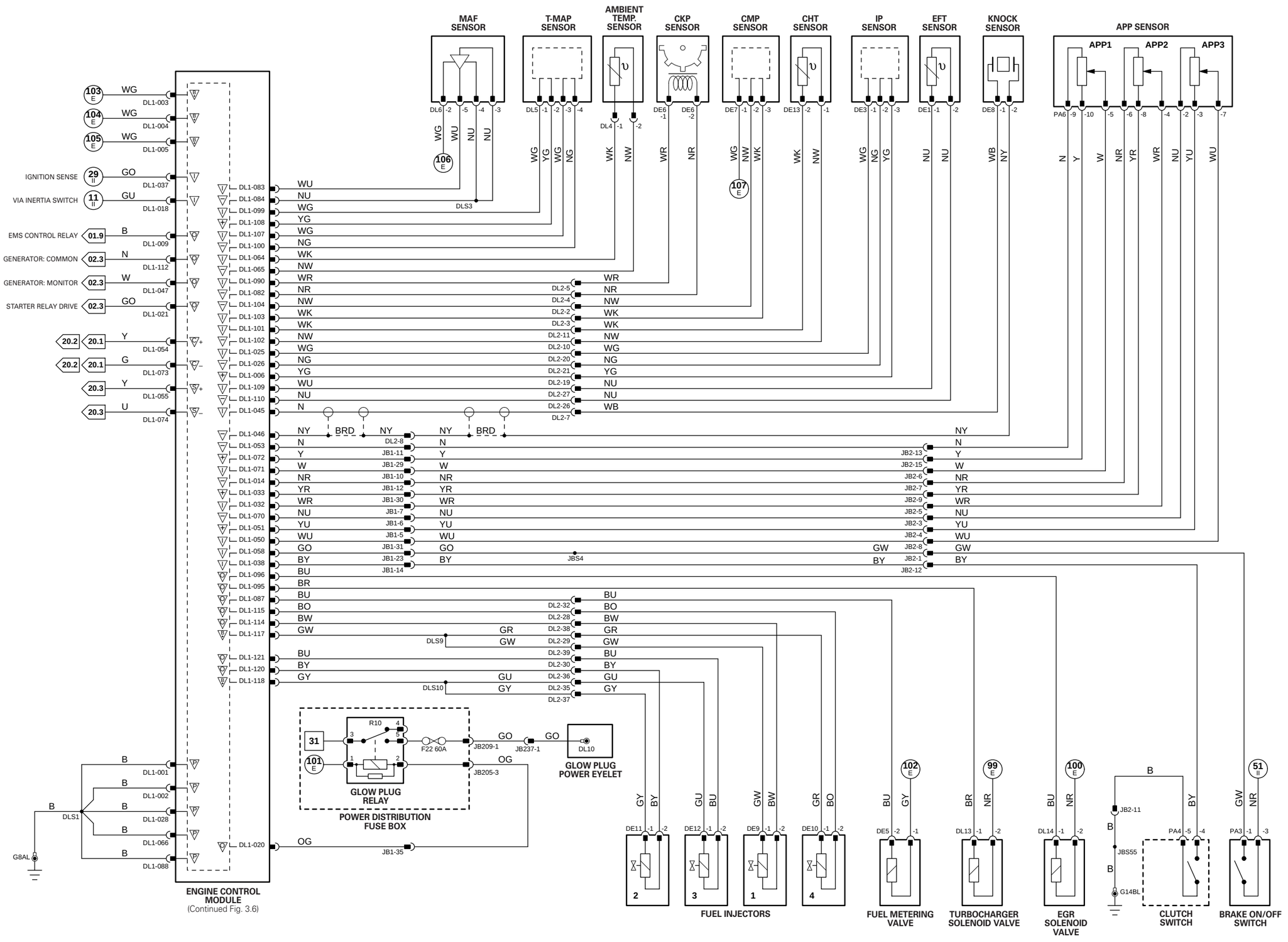
Connector	Connector Description	Location
DL2	42-WAY / BLACK / ENGINE HARNESS TO ENGINE MANAGEMENT HARNESS	ENGINE COMPARTMENT / RH SIDE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB237	2-WAY / BLACK / JUNCTION BOX HARNESS TO ENGINE MANAGEMENT HARNESS	ENGINE COMPARTMENT / LH SIDE

GROUNDS

Ground	Harness	Location
G8	EN	ENGINE COMPARTMENT / RH STRUT TOWER
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX

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

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.



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D2B D2B Network
D Serial and Encoded Data

VARIANT: 2.0 L Diesel Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
	DL1-012	CLUTCH CANCEL SWITCH SIGNAL: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
SG	DL1-013	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
I	DL1-057	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	DL1-058	BRAKE ON / OFF SWITCH SIGNAL: NORMALLY OPEN / B+ WHEN ACTIVATED
O	DL1-061	AUXILIARY HEATER RELAY 1 DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-062	AUXILIARY HEATER RELAY 2 DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	DL1-068	AIR CONDITIONING PRESSURE SENSOR GROUND: GROUND
I	DL1-077	BRAKE CANCEL SWITCH SIGNAL: NORMALLY CLOSED, B+ / OPEN CIRCUIT WHEN ACTIVATED
O	DL1-079	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	DL1-080	SOLID STATE RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SS	DL1-086	AIR CONDITIONING PRESSURE SENSOR POWER SUPPLY: NOMINAL 5 V
O	DL1-105	COOLING FAN MODULE CONTROL: PWM, 140Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
I	DL1-106	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES

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.

Fig. 03.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	EN30	2-WAY / BLACK	2.0 L D: ENGINE BLOCK / LH FRONT
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R3
AIR CONDITIONING PRESSURE SENSOR	JB106	4-WAY / BLACK	BEHIND FRONT LH WHEEL ARCH LINER
AUXILIARY HEATER RELAY 1	–	–	POWER DISTRIBUTION FUSE BOX – R15
AUXILIARY HEATER RELAY 2	JB234	RELAY BASE	ENGINE COMPARTMENT / CENTER, FRONT
BRAKE CANCEL SWITCH	PA2	2-WAY / BLACK	TOP OF BRAKE PEDAL
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
CLUTCH SWITCH – 2.0 L D	PA4	5-WAY / BLACK	TOP OF CLUTCH PEDAL
COOLING FAN – LH	GC2	2-WAY / BLACK	COOLING PACK / LH SIDE
COOLING FAN – RH	GC1	2-WAY / BLACK	COOLING PACK / RH SIDE
COOLING FAN MODULE	JB187 JB188	2-WAY / BLACK 2-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
ELECTRIC AUXILIARY HEATER	JB235	6-WAY / BLACK	VEHICLE UNDER-FLOOR REARWARD OF ENGINE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
FUEL-FIRED AUXILIARY HEATER MODULE	JB232	6-WAY / BLACK	VEHICLE UNDER-FLOOR REARWARD OF ENGINE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
SOLID STATE RELAY	JB238	7-WAY / BROWN	ATTACHED TO TOP OF PASSENGER JUNCTION FUSE BOX
SPEED CONTROL SWITCHES	SW5	4-WAY / BLACK	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB187	2-WAY / BLACK / JUNCTION BOX HARNESS TO COOLING FAN MODULE LINK LEAD	ENGINE COMPARTMENT / FRONT, LH SIDE

GROUNDS

Ground	Harness	Location
G8	EN	ENGINE COMPARTMENT / RH STRUT TOWER
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G51	JB	UNDER BODY / LH DASH PANEL

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

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.

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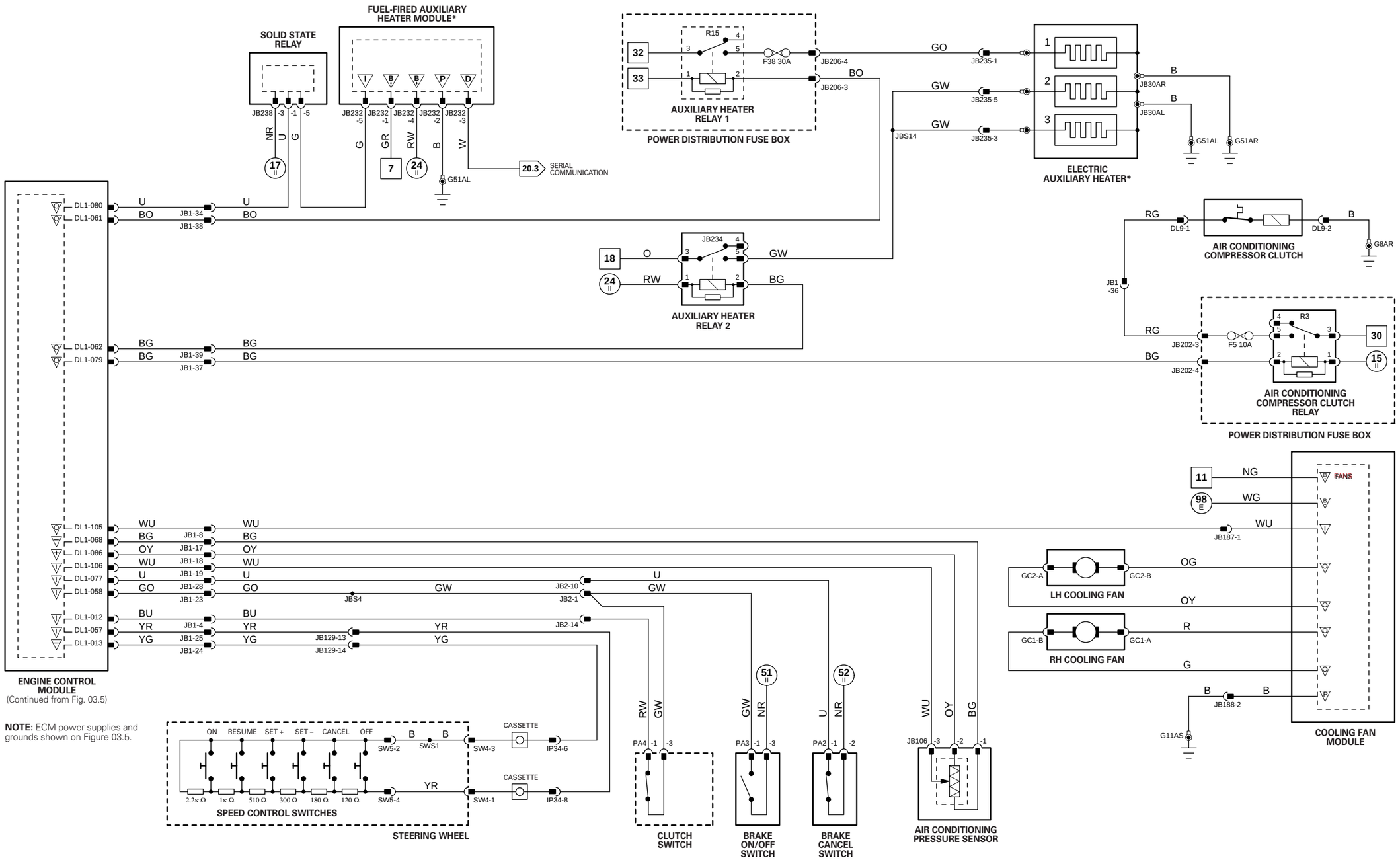
*** NOTE:** Either Fuel-Fired Auxiliary Heater or Electric Auxiliary Heater fitted.



NOTE: ECM power supplies and grounds shown on Figure 03.5.

1 → 6 Fig. 01.1 | 7 → 33 Fig. 01.2 | 34 → 79 Fig. 01.3 | 1 I → 10 I Fig. 01.4 | 11 II → 31 II Fig. 01.5 | 32 II → 66 II Fig. 01.6 | 67 B → 76 B Fig. 01.7 | 77 E → 97 E Fig. 01.8 | 98 E → 107 E Fig. 01.9

I Input | O Output | B Battery Voltage | P Power Ground | + Sensor/Signal Supply V | − Sensor/Signal Ground | C CAN | S SCP | D D2B Network | D Serial and Encoded Data

VARIANT: 2.0 L Diesel Engine Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Transmission Control Module – 16 BIT

▽	Pin	Description and Characteristic
O	JB131-03	2 / 4 BRAKE PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
O	JB131-04	2 / 4 BRAKE TIMING SOLENOID DRIVE: B+ TO ACTIVATE
I	JB131-05	OUTPUT SPEED SENSOR SIGNAL: 18 PULSES PER OUTPUT SHAFT REVOLUTION
B+	JB131-06	BATTERY POWER SUPPLY: B+
I	JB131-07	GEAR SELECTOR SIGNAL – 3: 3 = GROUND; NOT IN 3 = OPEN CIRCUIT
I	JB131-08	GEAR SELECTOR SIGNAL – 2: 2 = GROUND; NOT IN 2 = OPEN CIRCUIT
PG	JB131-09	POWER GROUND: GROUND
O	JB131-10	REDUCTION TIMING SOLENOID DRIVE: B+ TO ACTIVATE
C	JB131-12	CAN - 1
C	JB131-13	CAN - 2
O	JB131-14	SHIFT SOLENOID B DRIVE: B+ TO ACTIVATE
O	JB131-15	SHIFT SOLENOID A DRIVE: B+ TO ACTIVATE
O	JB131-16	TCC PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
SG	JB131-17	SOLENOID GROUND RETURN: GROUND
O	JB131-18	LINE PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
SG	JB131-20	SENSOR GROUND: GROUND
I	JB131-21	INTERMEDIATE SPEED SENSOR SIGNAL: 54 PULSES PER INTERMEDIATE SHAFT REVOLUTION*
I	JB131-24	TURBINE SPEED SENSOR SIGNAL: 36 PULSES PER ENGINE REVOLUTION
I	JB131-25	RANGE SENSOR – N: N = GROUND; NOT IN N = OPEN CIRCUIT
I	JB131-26	RANGE SENSOR – R: R = GROUND; NOT IN R = OPEN CIRCUIT
I	JB131-27	RANGE SENSOR – D: D = GROUND; NOT IN D = OPEN CIRCUIT
I	JB131-30	RANGE SENSOR – P: P = GROUND; NOT IN P = OPEN CIRCUIT
C	JB131-33	CAN + 1
C	JB131-34	CAN + 2
B+	JB131-36	IGNITION SWITCHED POWER SUPPLY: B+
PG	JB131-38	POWER GROUND: GROUND
I	JB131-39	FLUID TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	JB131-42	OUTPUT SPEED SENSOR GROUND: GROUND
SG	JB131-44	TURBINE SPEED SENSOR GROUND: GROUND
I	JB131-45	GEAR SELECTOR SIGNAL – 4: 4 = GROUND; NOT IN 4 = OPEN CIRCUIT
SG	JB131-46	INTERMEDIATE SPEED SENSOR GROUND: GROUND
I	JB131-47	MODE SWITCH: "SPORT" SELECTED = GROUND
O	JB131-52	SHIFT SOLENOID C DRIVE: B+ TO ACTIVATE
O	JB131-53	LOW CLUTCH TIMING SOLENOID DRIVE: B+ TO ACTIVATE
B+	JB131-54	IGNITION SWITCHED POWER SUPPLY: B+

* IN 1ST – 4TH AND R, THE INTERMEDIATE SHAFT SPEED IS THE SAME AS THE OUTPUT SHAFT SPEED. IN 5TH, THE INTERMEDIATE SHAFT SPEED IS MULTIPLIED BY 1.2.

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

Fig. 04.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTOMATIC TRANSMISSION	JB155	18-WAY / BLACK	ENGINE COMPARTMENT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
TRANSMISSION CONTROL MODULE – 16 BIT	JB131	37-WAY / BLUE	LOWER LH 'A' POST
TRANSMISSION RANGE SENSOR	JB156	10-WAY / BLACK	TOP OF TRANSMISSION

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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

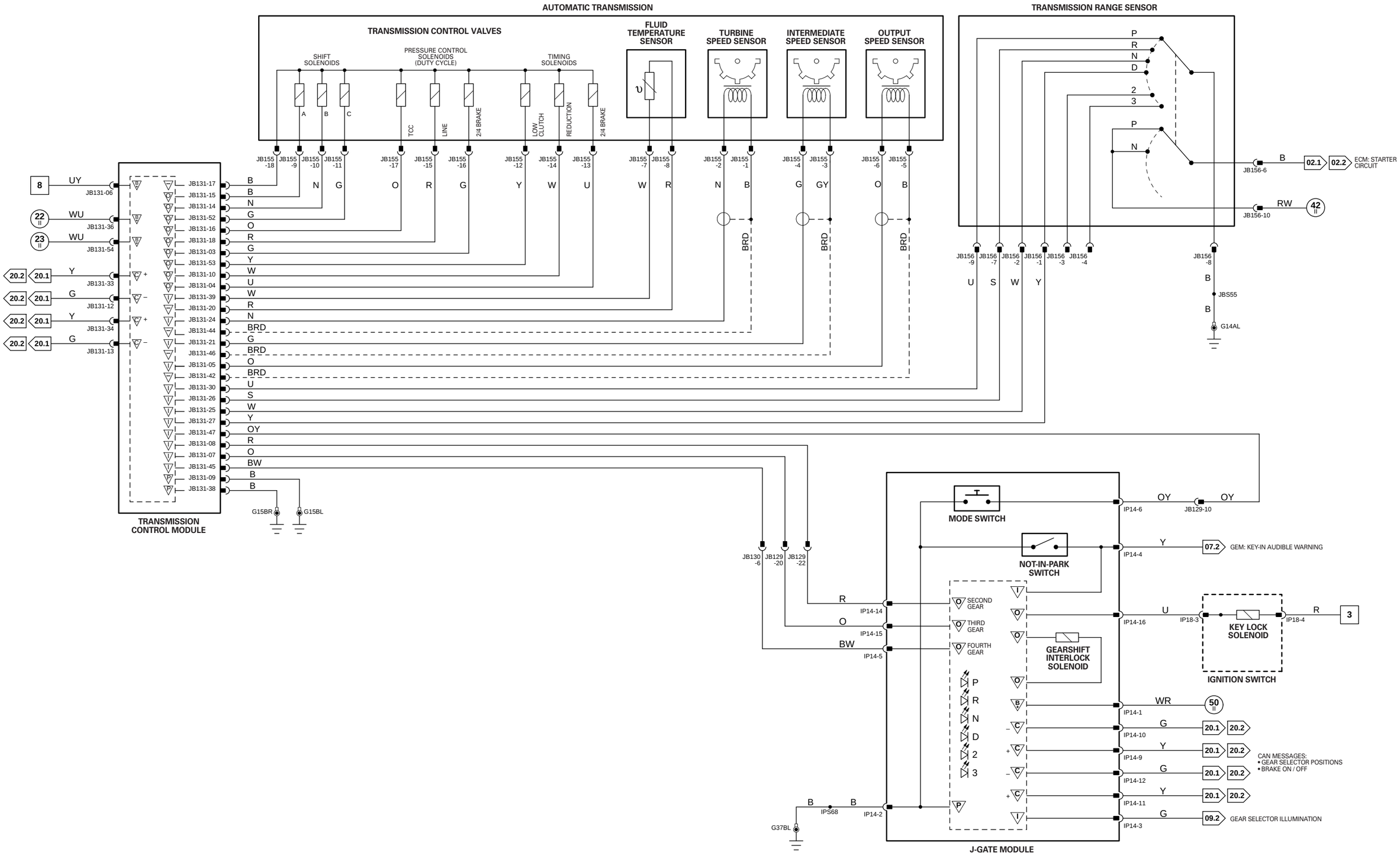
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

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.

DATE OF ISSUE: August 2003



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 16-Bit TCM Vehicles
VIN RANGE: Early Production Sedan Vehicles
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Transmission Control Module – 32 BIT

▽	Pin	Description and Characteristic
O	JB230-01	LINE PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
O	JB230-02	2 / 4 BRAKE PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
O	JB230-03	TCC PRESSURE CONTROL SOLENOID DRIVE: PWM, 1.25 kHz, POSITIVE DUTY CYCLE 5 – 95%
SG	JB230-04	SOLENOID GROUND RETURN: GROUND
C	JB230-05	CAN +
C	JB230-06	CAN -
O	JB230-07	REDUCTION TIMING SOLENOID DRIVE: B+ TO ACTIVATE
O	JB230-08	LOW CLUTCH TIMING SOLENOID DRIVE: B+ TO ACTIVATE
B+	JB230-10	IGNITION SWITCHED POWER SUPPLY: B+
O	JB230-11	SHIFT SOLENOID A DRIVE: B+ TO ACTIVATE
O	JB230-12	SHIFT SOLENOID B DRIVE: B+ TO ACTIVATE
C	JB230-14	CAN +
C	JB230-15	CAN -
I	JB230-18	RANGE SENSOR – P: P = GROUND; NOT IN P = OPEN CIRCUIT
B+	JB230-19	IGNITION SWITCHED POWER SUPPLY: B+
O	JB230-20	SHIFT SOLENOID C DRIVE: B+ TO ACTIVATE
O	JB230-21	2 / 4 BRAKE TIMING SOLENOID DRIVE: B+ TO ACTIVATE
SG	JB230-23	TURBINE SPEED SENSOR GROUND: GROUND
I	JB230-24	GEAR SELECTOR SIGNAL – 3: 3 = GROUND; NOT IN 3 = OPEN CIRCUIT
PG	JB231-25	POWER GROUND: GROUND
SG	JB231-26	SENSOR GROUND: GROUND
I	JB231-27	GEAR SELECTOR SIGNAL – 2: 2 = GROUND; NOT IN 2 = OPEN CIRCUIT
B+	JB231-28	BATTERY POWER SUPPLY: B+
I	JB231-29	OUTPUT SPEED SENSOR SIGNAL: 18 PULSES PER OUTPUT SHAFT REVOLUTION
I	JB231-34	RANGE SENSOR – D: D = GROUND; NOT IN D = OPEN CIRCUIT
I	JB231-35	RANGE SENSOR – R: R = GROUND; NOT IN R = OPEN CIRCUIT
I	JB231-36	RANGE SENSOR – N: N = GROUND; NOT IN N = OPEN CIRCUIT
I	JB231-38	TURBINE SPEED SENSOR SIGNAL: 36 PULSES PER ENGINE REVOLUTION
I	JB231-39	INTERMEDIATE SPEED SENSOR SIGNAL: 54 PULSES PER INTERMEDIATE SHAFT REVOLUTION*
I	JB231-41	MODE SWITCH: "SPORT" SELECTED = GROUND
SG	JB231-42	SENSOR GROUND: GROUND
I	JB231-43	GEAR SELECTOR SIGNAL – 4: 4 = GROUND; NOT IN 4 = OPEN CIRCUIT
SG	JB231-44	SENSOR GROUND: GROUND
I	JB231-47	FLUID TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
PG	JB231-48	POWER GROUND: GROUND

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

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.

Fig. 04.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTOMATIC TRANSMISSION	JB155	18-WAY / BLACK	ENGINE COMPARTMENT
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
TRANSMISSION CONTROL MODULE – 32 BIT	JB230 JB231	24-WAY / WHITE 24-WAY / GREY	LOWER LH 'A' POST
TRANSMISSION RANGE SENSOR	JB156	10-WAY / BLACK	TOP OF TRANSMISSION

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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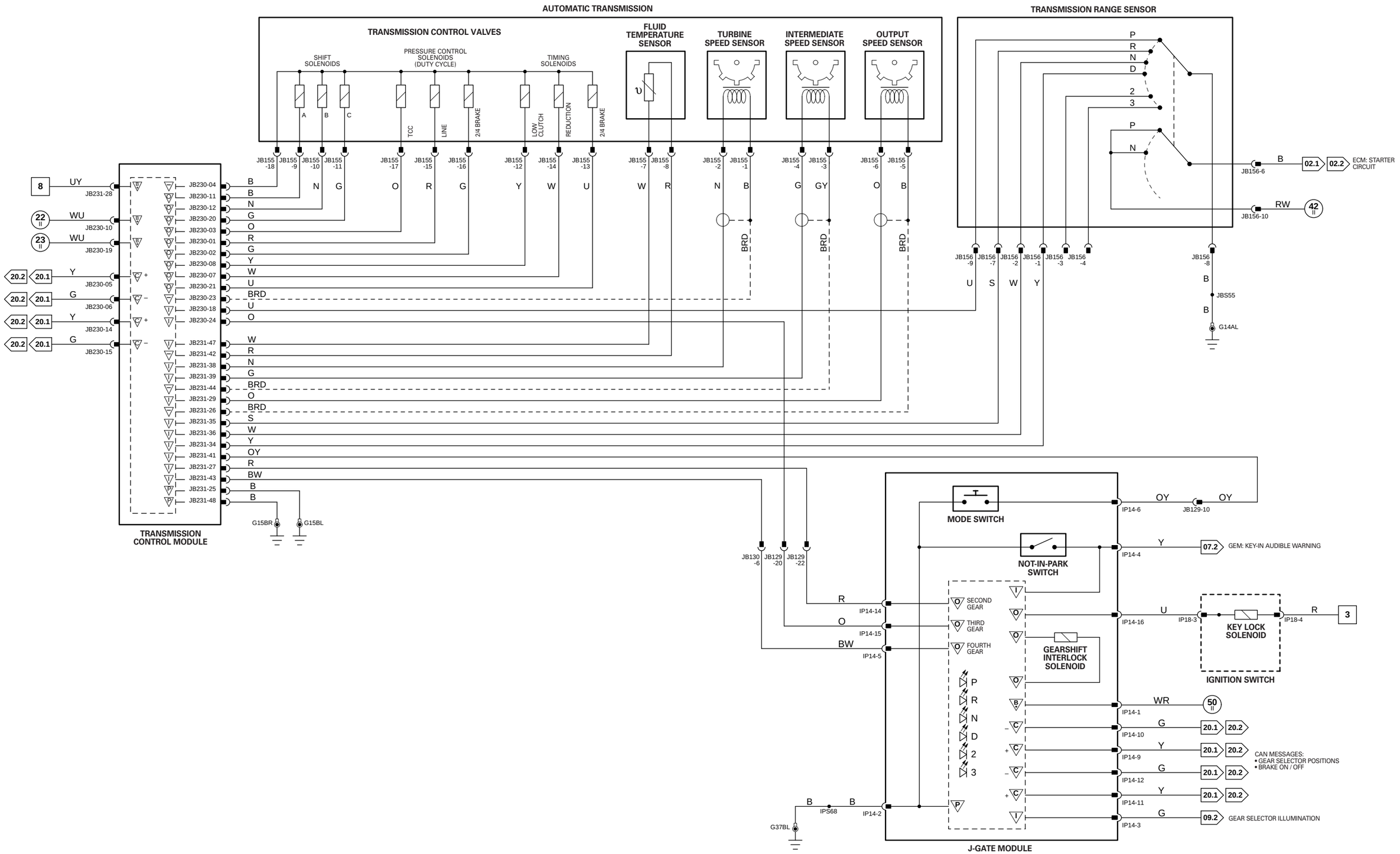

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 32-Bit TCM Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Anti-Lock Braking System Module

▽	Pin	Description and Characteristic
PG	JB45-01	MOTOR GROUND: GROUND
B+	JB45-02	BATTERY POWER SUPPLY – MOTOR: B+
PG	JB45-05	POWER GROUND: GROUND
B+	JB45-06	BATTERY POWER SUPPLY: B+
I	JB45-12	LH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB45-13	LH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB45-14	LH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB45-15	RH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB45-16	RH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
B+	JB45-23	IGNITION SWITCHED POWER SUPPLY: B+
C	JB45-24	CAN +
O	JB45-28	LH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
O	JB45-30	RH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB45-31	RH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
I	JB45-32	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
C	JB45-40	CAN -

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

Fig. 05.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ANTI-LOCK BRAKING SYSTEM MODULE	JB45	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
VACUUM MODULE	JB240 JB241 JB242	5-WAY / BLACK 2-WAY / BLACK 2-WAY / GREY	UNDER BATTERY TRAY
VACUUM PUMP	VP1	2-WAY / GREY	ADJACENT TO BRAKE SERVO
WHEEL SPEED SENSOR – LH FRONT	LF1	2-WAY / BLACK	LH FRONT WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.0 L	LR1	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.5 L, 3.0 L, 2.0 L D	CA55	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH FRONT	RF1	2-WAY / BLACK	RH FRONT WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.0 L	RR1	2-WAY / BLACK	RH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.5 L, 3.0 L, 2.0 L D	CA60	2-WAY / BLACK	RH REAR WHEEL HUB

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB15	2-WAY / BLACK / JUNCTION BOX HARNESS TO RH WHEEL SPEED SENSOR LINK LEAD	BEHIND RH FRONT WHEEL ARCH LINER
JB133	2-WAY / BLACK / JUNCTION BOX HARNESS TO LH WHEEL SPEED SENSOR LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G18	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP

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.

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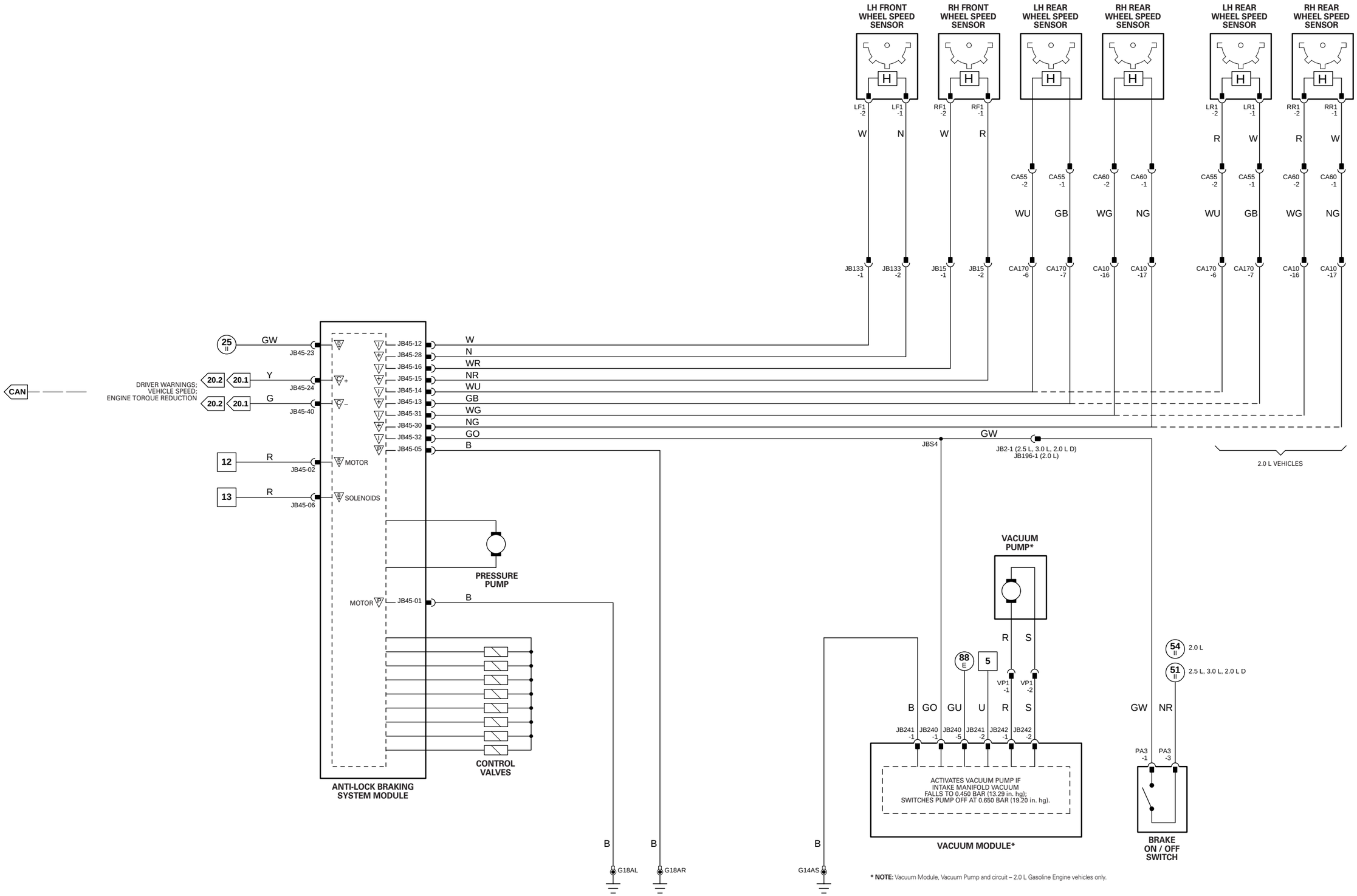

* **NOTE:** Vacuum Module, Vacuum Pump and circuit – 2.0 L Gasoline Engine vehicles only.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input / O Output
B Battery Voltage / P Power Ground
+ Sensor/Signal Supply V / − Sensor/Signal Ground
C CAN / S SCP
D D2B Network / D Serial and Encoded Data

VARIANT: ABS Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Anti-Lock Braking / Traction Control Module

▽	Pin	Description and Characteristic
PG	JB197-01	MOTOR GROUND: GROUND
B+	JB197-02	BATTERY POWER SUPPLY – MOTOR: B+
PG	JB197-05	POWER GROUND: GROUND
B+	JB197-06	BATTERY POWER SUPPLY: B+
I	JB197-12	LH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB197-13	LH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB197-14	LH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB197-15	RH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB197-16	RH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
B+	JB197-23	IGNITION SWITCHED POWER SUPPLY: B+
C	JB197-24	CAN +
I	JB197-27	TRACTION CONTROL SWITCH SIGNAL: GROUND WHEN ACTIVATED
O	JB197-28	LH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
O	JB197-30	RH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB197-31	RH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
I	JB197-32	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
C	JB197-40	CAN -

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

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.

Fig. 05.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
ANTI-LOCK BRAKING / TRACTION CONTROL MODULE	JB197	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
TRACTION CONTROL SWITCH	IP29	6-WAY / BLACK	INSTRUMENT PANEL
VACUUM MODULE	JB240 JB241 JB242	5-WAY / BLACK 2-WAY / BLACK 2-WAY / GREY	UNDER BATTERY TRAY
VACUUM PUMP	VP1	2-WAY / GREY	ADJACENT TO BRAKE SERVO
WHEEL SPEED SENSOR – LH FRONT	LF1	2-WAY / BLACK	LH FRONT WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.0 L	LR1	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.5 L, 3.0 L, 2.0 L D	CA55	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH FRONT	RF1	2-WAY / BLACK	RH FRONT WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.0 L	RR1	2-WAY / BLACK	RH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.5 L, 3.0 L, 2.0 L D	CA60	2-WAY / BLACK	RH REAR WHEEL HUB

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB15	2-WAY / BLACK / JUNCTION BOX HARNESS TO RH WHEEL SPEED SENSOR LINK LEAD	BEHIND RH FRONT WHEEL ARCH LINER
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB133	2-WAY / BLACK / JUNCTION BOX HARNESS TO LH WHEEL SPEED SENSOR LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G18	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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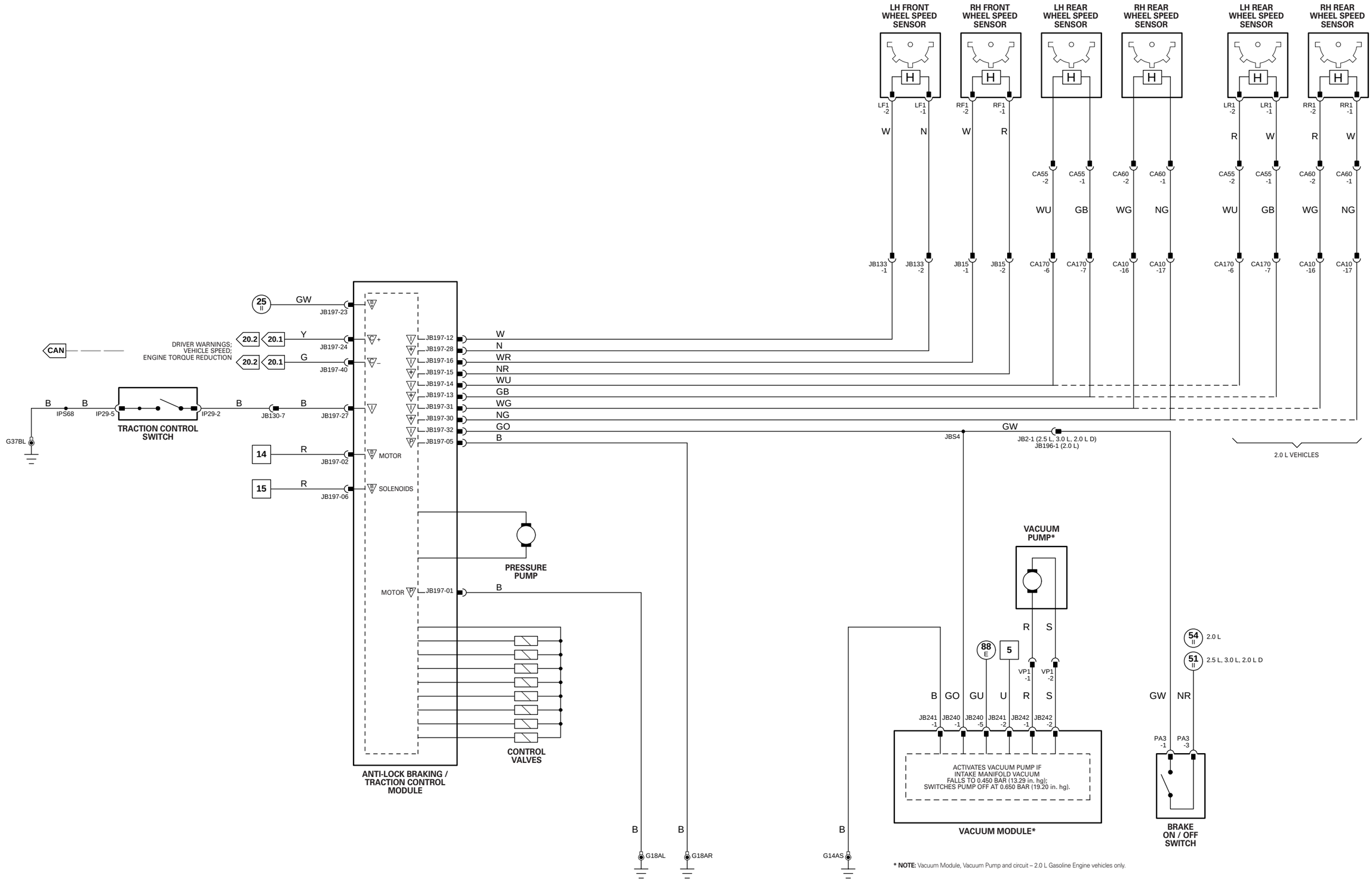

* **NOTE:** Vacuum Module, Vacuum Pump and circuit – 2.0 L Gasoline Engine vehicles only.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: ABS / TC Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Dynamic Stability Control Module

▽	Pin	Description and Characteristic
PG	JB185-01	MOTOR GROUND: GROUND
B+	JB185-02	BATTERY POWER SUPPLY – MOTOR: B+
PG	JB185-05	POWER GROUND: GROUND
B+	JB185-06	BATTERY POWER SUPPLY: B+
I	JB185-12	LH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB185-13	LH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB185-14	LH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SS	JB185-15	RH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB185-16	RH FRONT WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
SG	JB185-21	SENSOR GROUND – YAW RATE, STEERING ANGLE SENSORS: GROUND
B+	JB185-23	IGNITION SWITCHED POWER SUPPLY: B+
C	JB185-24	CAN +
SG	JB185-25	SENSOR GROUND – BRAKE PRESSURE SENSOR: GROUND
I	JB185-26	BRAKE PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS PRESSURE INCREASES
I	JB185-27	DYNAMIC STABILITY CONTROL SWITCH: NORMALLY OPEN / GROUND WHEN ACTIVATED
O	JB185-28	LH FRONT WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
O	JB185-30	RH REAR WHEEL SPEED SENSOR SUPPLY VOLTAGE: B+
I	JB185-31	RH REAR WHEEL SPEED SENSOR SIGNAL: 32 PULSES PER WHEEL REVOLUTION
I	JB185-32	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
SS	JB185-39	YAW RATE, STEERING ANGLE SENSORS SUPPLY VOLTAGE: B+
C	JB185-40	CAN -
SS	JB185-42	BRAKE PRESSURE SENSOR SUPPLY VOLTAGE: NOMINAL 5 V

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

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.

Fig. 05.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
BRAKE PRESSURE SENSOR	JB89	3-WAY / BLACK	ON DYNAMIC STABILITY CONTROL MODULATOR
DYNAMIC STABILITY CONTROL MODULE	JB185	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
DYNAMIC STABILITY CONTROL SWITCH	IP29	6-WAY / BLACK	INSTRUMENT PANEL
STEERING ANGLE SENSOR	IP19	4-WAY / BLACK	STEERING COLUMN
VACUUM MODULE	JB240 JB241 JB242	5-WAY / BLACK 2-WAY / BLACK 2-WAY / GREY	UNDER BATTERY TRAY
VACUUM PUMP	VP1	2-WAY / GREY	ADJACENT TO BRAKE SERVO
WHEEL SPEED SENSOR – LH FRONT	LF1	2-WAY / BLACK	LH FRONT WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.0 L	LR1	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – LH REAR: 2.5 L, 3.0 L, 2.0 L D	CA55	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH FRONT	RF1	2-WAY / BLACK	RH FRONT WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.0 L	RR1	2-WAY / BLACK	RH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH REAR: 2.5 L, 3.0 L, 2.0 L D	CA60	2-WAY / BLACK	RH REAR WHEEL HUB
YAW RATE SENSOR	IP20	4-WAY / BLACK	BEHIND CENTER CONSOLE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB15	2-WAY / BLACK / JUNCTION BOX HARNESS TO RH WHEEL SPEED SENSOR LINK LEAD	BEHIND RH FRONT WHEEL ARCH LINER
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB133	2-WAY / BLACK / JUNCTION BOX HARNESS TO LH WHEEL SPEED SENSOR LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
JB196	10-WAY / GREY / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G18	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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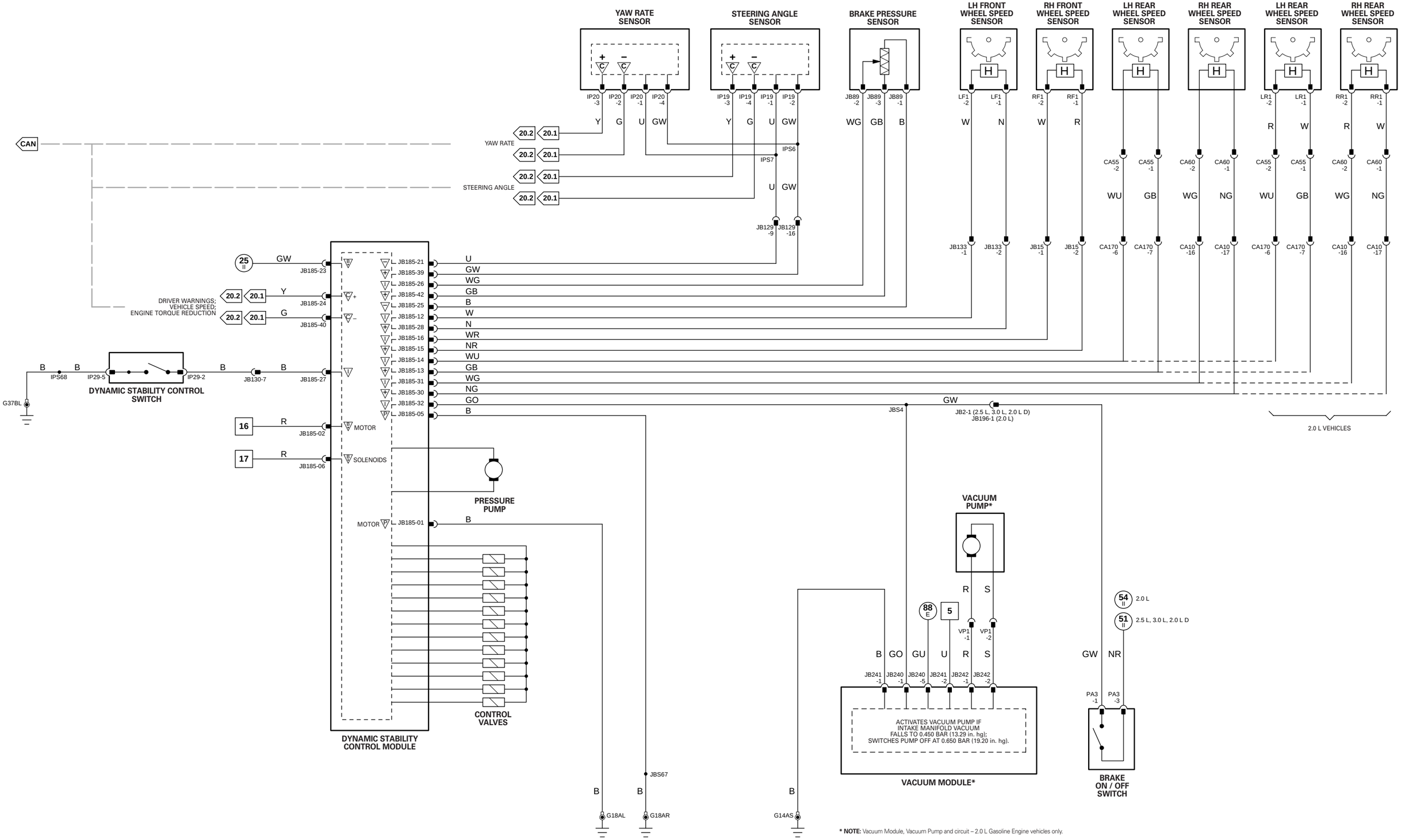


* **NOTE:** Vacuum Module, Vacuum Pump and circuit – 2.0 L Gasoline Engine vehicles only.

1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network	**VARIANT:**	DSC Vehicles
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data	**VIN RANGE:**	All
															DATE OF ISSUE:	August 2003

CONTROL MODULE PIN-OUT INFORMATION

Climate Control Module – Manual

▽	Pin	Description and Characteristic
O	AC1-04	FRESH / RECIRCULATION FLAP ACTUATOR DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO B+ OR TO GROUND
O	AC1-05	FRESH / RECIRCULATION FLAP ACTUATOR DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO B+ OR TO GROUND
O	AC1-06	DEFROST DOOR ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-07	DEFROST DOOR ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-08	PANEL / FLOOR ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-09	PANEL / FLOOR ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-10	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-11	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-12	AIR TEMPERATURE BLEND ACTUATOR POWER SUPPLY: B+
O	AC1-13	DEFROST DOOR ACTUATOR POWER SUPPLY: B+
I	AC1-14	EVAPORATOR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC1-15	DISCHARGE TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	AC1-16	SENSOR GROUND: GROUND
O	AC1-20	DEFROST DOOR ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-21	DEFROST DOOR ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-22	PANEL / FLOOR ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-23	PANEL / FLOOR ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-24	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-25	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-26	PANEL / FLOOR ACTUATOR POWER SUPPLY: B+
O	IP39-01	BLOWER SPEED CONTROL 6: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	IP39-02	BLOWER SPEED CONTROL 4: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	IP39-03	BLOWER SPEED CONTROL 2: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	IP39-04	BLOWER SPEED CONTROL 3: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	IP39-06	BLOWER SPEED CONTROL 5: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
B+	IP101-01	BATTERY SAVER POWER SUPPLY: B+
B+	IP101-02	IGNITION SWITCHED POWER SUPPLY: B+
I	IP101-07	BLOWER SPEED SENSE: B+ WHEN BLOWER OFF, 0 V WHEN BLOWER RUNNING
C	IP101-09	CAN +
C	IP101-10	CAN -
B+	IP101-14	BATTERY POWER SUPPLY: B+
PG	IP101-15	POWER GROUND: GROUND
I	IP101-20	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
C	IP101-22	CAN +
C	IP101-23	CAN -
O	IP135-01	BLOWER SPEED CONTROL 1: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
PG	IP135-02	BLOWER GROUND: GROUND

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

Fig. 06.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING BLOWER RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R4
AIR TEMPERATURE BLEND ACTUATOR	AC2	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
BLOWER – MANUAL CLIMATE CONTROL	IP58	2-WAY / GREY	LHD: BEHIND INSTRUMENT PANEL / RH SIDE RHD: BEHIND INSTRUMENT PANEL / LH SIDE
BLOWER SERIES RESISTOR	IP121	6-WAY / GREY	ADJACENT TO BLOWER MOTOR
CLIMATE CONTROL MODULE – PANEL	AC1 IP39 IP101 IP135	26-WAY / YELLOW 4-WAY / GREY 26-WAY / WHITE 2-WAY / GREY	BEHIND CLIMATE CONTROL PANEL
DEFROST DOOR ACTUATOR	AC4	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
DISCHARGE TEMPERATURE SENSOR	AC6	2-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
EVAPORATOR TEMPERATURE SENSOR	AC5	2-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
FRESH / RECIRCULATION FLAP ACTUATOR	AC7	4-WAY / BLACK	LHD: LH SIDE OF AIR DISTRIBUTION UNIT RHD: RH SIDE OF AIR DISTRIBUTION UNIT
PANEL / FLOOR ACTUATOR	AC3	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

GROUNDS

Ground	Harness	Location
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

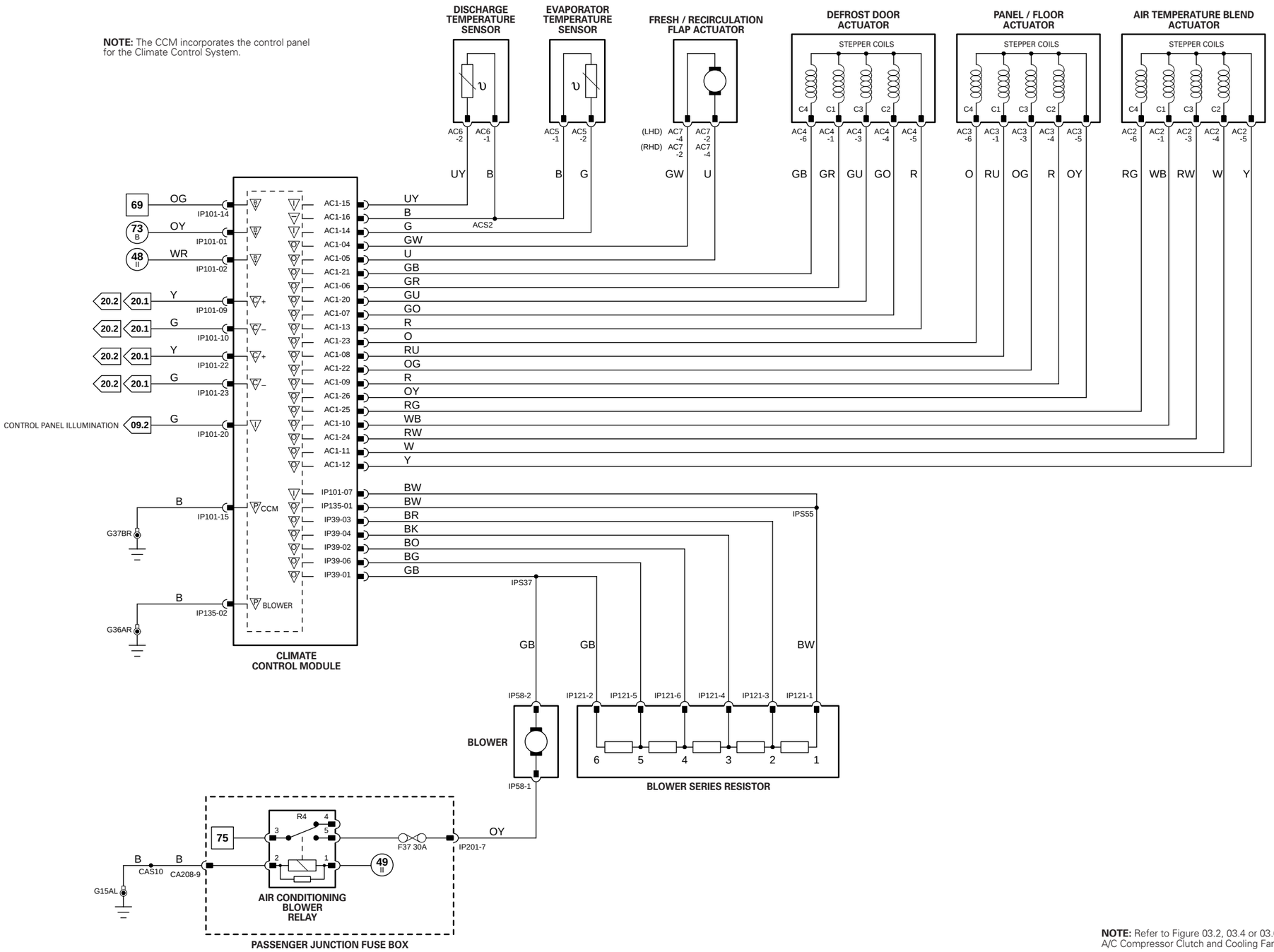
CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.

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.

DATE OF ISSUE: August 2003

NOTE: The CCM incorporates the control panel for the Climate Control System.



NOTE: Refer to Figure 03.2, 03.4 or 03.6 for A/C Compressor Clutch and Cooling Fan circuits.

CONTROL MODULE PIN-OUT INFORMATION

Climate Control Module – Automatic

▽	Pin	Description and Characteristic
O	AC1-04	FRESH / RECIRCULATION FLAP ACTUATOR DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO B+ OR TO GROUND
O	AC1-05	FRESH / RECIRCULATION FLAP ACTUATOR DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO B+ OR TO GROUND
O	AC1-06	DEFROST DOOR ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-07	DEFROST DOOR ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-08	PANEL / FLOOR ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-09	PANEL / FLOOR ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-10	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 1 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-11	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 2 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-12	AIR TEMPERATURE BLEND ACTUATOR POWER SUPPLY: B+
O	AC1-13	DEFROST DOOR ACTUATOR POWER SUPPLY: B+
I	AC1-14	EVAPORATOR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC1-15	DISCHARGE TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC1-16	SENSOR GROUND: GROUND
O	AC1-20	DEFROST DOOR ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-21	DEFROST DOOR ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-22	PANEL / FLOOR ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-23	PANEL / FLOOR ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-24	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 3 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-25	AIR TEMPERATURE BLEND ACTUATOR STEPPER COIL 4 DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	AC1-26	PANEL / FLOOR ACTUATOR POWER SUPPLY: B+
B+	IP101-01	BATTERY SAVER POWER SUPPLY: B+
B+	IP101-02	IGNITION SWITCHED POWER SUPPLY: B+
I	IP101-05	ASPIRATOR MOTOR DRIVE: PERMANENTLY CONNECTED TO GROUND; A/CCM MONITORS CIRCUIT FOR MOTOR RUNNING CONDITION
O	IP101-06	BLOWER MOTOR CONTROL: PWM, 400 Hz, APPROXIMATELY 8% – 90%; HIGHER DUTY CYCLE = HIGHER BLOWER SPEED
I	IP101-07	BLOWER MOTOR SPEED SENSE: FREQUENCY = RPM / 20; FREQUENCY PROPORTIONAL TO BLOWER SPEED
C	IP101-09	CAN +
C	IP101-10	CAN -
B+	IP101-14	BATTERY POWER SUPPLY: B+
PG	IP101-15	POWER GROUND: GROUND
I	IP101-16	IN CAR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SG	IP101-17	SENSOR GROUND: GROUND
I	IP101-19	AMBIENT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	IP101-20	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
O	IP101-21	AIR CONDITIONING BLOWER RELAY DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO B+
C	IP101-22	CAN +
C	IP101-23	CAN -

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

Fig. 06.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING BLOWER RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R4
AIR TEMPERATURE BLEND ACTUATOR	AC2	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
AMBIENT TEMPERATURE SENSOR	JB105	2-WAY / BLACK	FRONT CROSS MEMBER, ADJACENT TO RADIATOR / LH SIDE
BLOWER – AUTOMATIC CLIMATE CONTROL	IP134	6-WAY / BLACK	BEHIND INSTRUMENT PANEL / RH SIDE
CLIMATE CONTROL MODULE – REMOTE	AC1 IP101	26-WAY / YELLOW 26-WAY / WHITE	RH SIDE OF AIR DISTRIBUTION UNIT
DEFROST DOOR ACTUATOR	AC4	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
DISCHARGE TEMPERATURE SENSOR	AC6	2-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
EVAPORATOR TEMPERATURE SENSOR	AC5	2-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
FRESH / RECIRCULATION FLAP ACTUATOR	AC7	4-WAY / BLACK	LHD: LH SIDE OF AIR DISTRIBUTION UNIT RHD: RH SIDE OF AIR DISTRIBUTION UNIT
IN-CAR TEMPERATURE SENSOR	IP66	4-WAY / BLACK	BELOW INSTRUMENT PANEL CENTER RIGHT
PANEL / FLOOR ACTUATOR	AC3	6-WAY / BLACK	RH SIDE OF AIR DISTRIBUTION UNIT
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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.

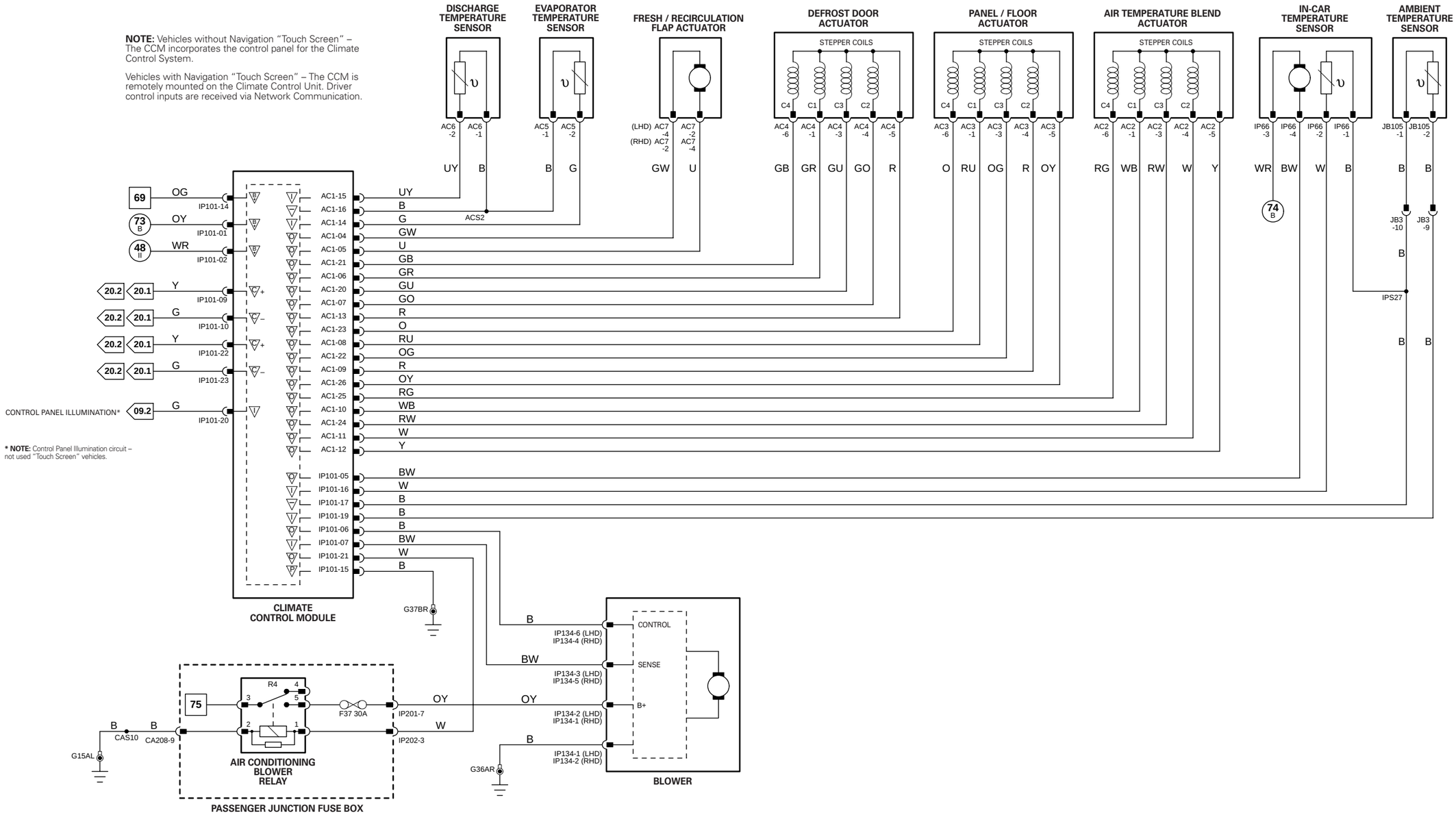
NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted.

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.

DATE OF ISSUE: August 2003

NOTE: Vehicles without Navigation "Touch Screen" – The CCM incorporates the control panel for the Climate Control System.

Vehicles with Navigation "Touch Screen" – The CCM is remotely mounted on the Climate Control Unit. Driver control inputs are received via Network Communication.



NOTE: Refer to Figure 03.2, 03.4 or 03.6 for A/C Compressor Clutch and Cooling Fan circuits.

CONTROL MODULE PIN-OUT INFORMATION

Climate Control Module – Manual or Automatic

▽	Pin	Description and Characteristic
O	IP101-03	WINDSHIELD HEATER RELAY DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND
O	IP101-04	HEATED REAR WINDOW RELAY DRIVE: TO ACTIVATE, A/CCM SWITCHES CIRCUIT TO GROUND

Driver Seat Module

▽	Pin	Description and Characteristic
I	DM1-10	HEATED REAR WINDOW RELAY ACTIVATED SIGNAL
O	DM1-14	DOOR MIRROR MOVEMENT / HEATERS DRIVE
B+	DM2-01	BATTERY POWER SUPPLY: B+
SG	DM2-03	SIGNAL GROUND: GROUND
B+	DM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	DM2-05	POWER GROUND: GROUND
B+	DM2-06	BATTERY POWER SUPPLY: B+

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.

Fig. 06.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
CLIMATE CONTROL MODULE – PANEL	AC1 IP39 IP101 IP135	26-WAY / YELLOW 4-WAY / GREY 26-WAY / WHITE 2-WAY / GREY	BEHIND CLIMATE CONTROL PANEL
CLIMATE CONTROL MODULE – REMOTE	AC1 IP101	26-WAY / YELLOW 26-WAY / WHITE	RH SIDE OF AIR DISTRIBUTION UNIT
DOOR MIRROR – DRIVER	DD5	22-WAY / GREY	DRIVER DOOR
DOOR MIRROR – PASSENGER	PD4	22-WAY / GREY	PASSENGER DOOR
HEATED DOOR MIRROR – DRIVER	DD5	22-WAY / GREY	DRIVER DOOR
HEATED DOOR MIRROR – PASSENGER	PD4	22-WAY / GREY	PASSENGER DOOR
HEATED REAR WINDOW – ESTATE (WAGON)	WG5	2-WAY / BLACK	REAR WINDOW
HEATED REAR WINDOW – SEDAN	ZA1 ZA10	1-WAY / BLACK 1-WAY / BLACK	REAR WINDOW
HEATED REAR WINDOW RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R6
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
SEAT MODULE – DRIVER	DM2 DM3 DM4 DM5	10-WAY / GREY 16-WAY / BLACK 8-WAY / BLUE 8-WAY / GREEN	DRIVER SEAT SWITCH PACK
WINDSHIELD HEATER – LH	JB95	2-WAY / BLACK	WINDSHIELD / LH SIDE
WINDSHIELD HEATER – RH	JB96	2-WAY / BLACK	WINDSHIELD / RH SIDE
WINDSHIELD HEATER RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R6

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA127	2-WAY / BLACK / CABIN HARNESS TO HEATER REAR WINDOW HARNESS	BEHIND LH 'E' POST TRIM
CA431	16-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
WG3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE GLASS HARNESS	ROOF / CENTER REAR

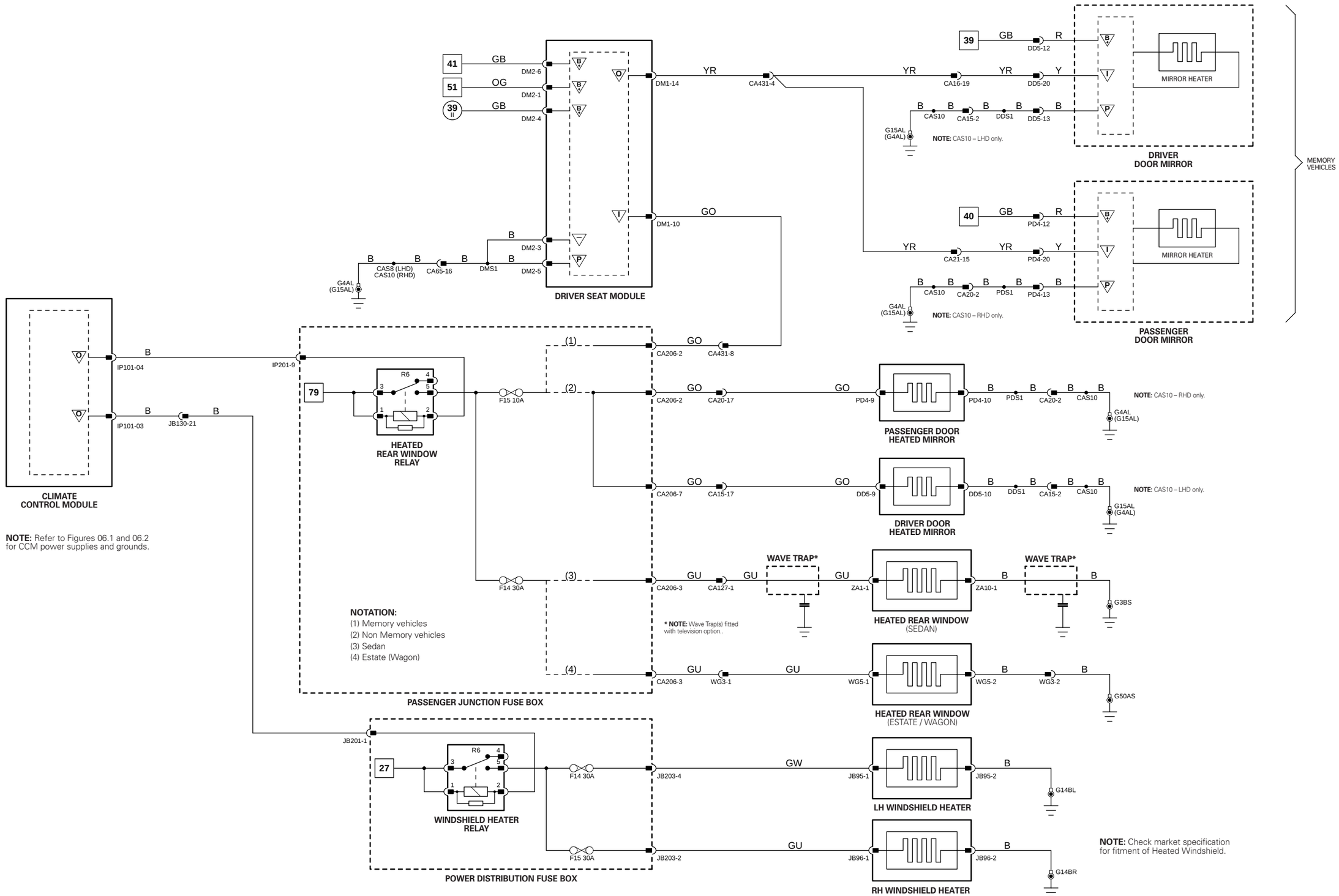
GROUNDS

Ground	Harness	Location
G3	C03	LH 'E' POST
G4	CA	LOWER RH 'A' POST
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G50	CA	HEADLINER / RH REAR ROOF PANEL

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

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.

DATE OF ISSUE: August 2003



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input / O Output
B Battery Voltage / P Power Ground
+ Sensor/Signal Supply V / − Sensor/Signal Ground
C CAN / S SCP
D D2B Network / D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP6-18	SEATBELT AND AIRBAG AUDIBLE WARNING REQUEST: AUDIBLE WARNING REQUEST ACTIVE = GROUND

Instrument Cluster

▽	Pin	Description and Characteristic
I	IP10-01	REVERSE LAMP SWITCH: B+ WHEN ACTIVATED
I	IP10-07	FUEL LEVEL SENSOR 1 SIGNAL: VARIABLE RESISTANCE: 20 Ω = EMPTY; 160 Ω = FULL
I	IP10-08	FUEL LEVEL SENSOR 2 SIGNAL: VARIABLE RESISTANCE: 20 Ω = EMPTY; 160 Ω = FULL
SG	IP10-09	FUEL LEVEL SENSOR REFERENCE: GROUND
I	IP10-10	MAIN BEAM STATUS: B+ WHEN ACTIVATED
I	IP10-11	WASHER FLUID LEVEL LOW SIGNAL: FLUID LEVEL LOW = GROUND
I	IP10-12	BRAKE FLUID LEVEL WARNING SIGNAL: FLUID LEVEL LOW = GROUND
I	IP10-15	PARKING BRAKE SIGNAL: PARKING BRAKE ON = GROUND
I	IP10-16	TRIP COMPUTER CYCLE SWITCH: GROUND WHEN ACTIVATED
C	IP10-17	CAN +
C	IP10-18	CAN -
I	IP10-19	FRONT FOG STATUS (HARD WIRED TO INDICATOR): B+ WHEN ACTIVATED
I	IP10-20	REAR FOG STATUS (HARD WIRED TO INDICATOR): B+ WHEN ACTIVATED
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP10-24	TRIP COMPUTER MODE SIGNAL: STEPPED RESISTANCE
SG	IP10-25	TRIP COMPUTER SWITCH PACK REFERENCE: GROUND
I	IP11-05	ENGINE OIL PRESSURE SIGNAL: ENGINE OIL PRESSURE PRESENT = GROUND
I	IP11-07	BATTERY POWER SUPPLY: B+
I	IP11-08	POWER GROUND: GROUND
I	IP11-11	IGNITION SWITCHED POWER SUPPLY (II): B+
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+
I	IP11-15	SIDE LAMPS STATUS: B+ WHEN ACTIVATED
I	IP11-17	DIP BEAM STATUS: B+ WHEN ACTIVATED
I	IP11-19	AIR BAG WARNING: HARD WIRED TO AIR BAG INDICATOR
I	IP11-21	DIMMER CONTROLLED ILLUMINATION: PWM, 80 Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE; HARD WIRED TO BACK LIGHTING; MICRO SENSED FOR DISPLAY

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

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.

Fig. 07.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE FLUID LEVEL SWITCH	JB70	3-WAY / BLACK	BRAKE MASTER CYLINDER
FUEL LEVEL SENSOR – 2.0 L, 2.0 L D	CA415	6-WAY / BLACK	FUEL TANK
FUEL LEVEL SENSOR 1 – 2.5 L, 3.0 L (NAS)	FT6	6-WAY / BLACK	FUEL TANK
FUEL LEVEL SENSOR 1 – 2.5 L, 3.0 L (ROW)	FT2	4-WAY / BLACK	FUEL TANK
FUEL LEVEL SENSOR 2 – 2.5 L, 3.0 L (NAS)	FT6	6-WAY / BLACK	FUEL TANK
FUEL LEVEL SENSOR 2 – 2.5 L, 3.0 L (ROW)	FT3	4-WAY / BLACK	FUEL TANK
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
OIL PRESSURE SWITCH – 2.0 L D	DE4	1-WAY / BLACK	ABOVE ENGINE OIL FILTER
OIL PRESSURE SWITCH – 2.0 L, 2.5 L, 3.0 L	EN19	1-WAY / BLACK	ADJACENT TO ENGINE OIL FILTER
PARKING BRAKE SWITCH	IP72	1-WAY / ORANGE	PARKING BRAKE
RESTRAINTS CONTROL MODULE – ALL WHEEL DRIVE VEHICLES	CA450 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
RESTRAINTS CONTROL MODULE – FRONT WHEEL DRIVE VEHICLES	CA165 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
TURN SIGNAL SWITCH	IP53	10-WAY / GREY	STEERING COLUMN
WASHER FLUID LEVEL SWITCH	JB103	2-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA5	12-WAY / BLACK / FUEL TANK LINK HARNESS TO CABIN HARNESS	TOP OF FUEL TANK
DL2	42-WAY / BLACK / ENGINE HARNESS TO ENGINE MANAGEMENT HARNESS	ENGINE COMPARTMENT / RH SIDE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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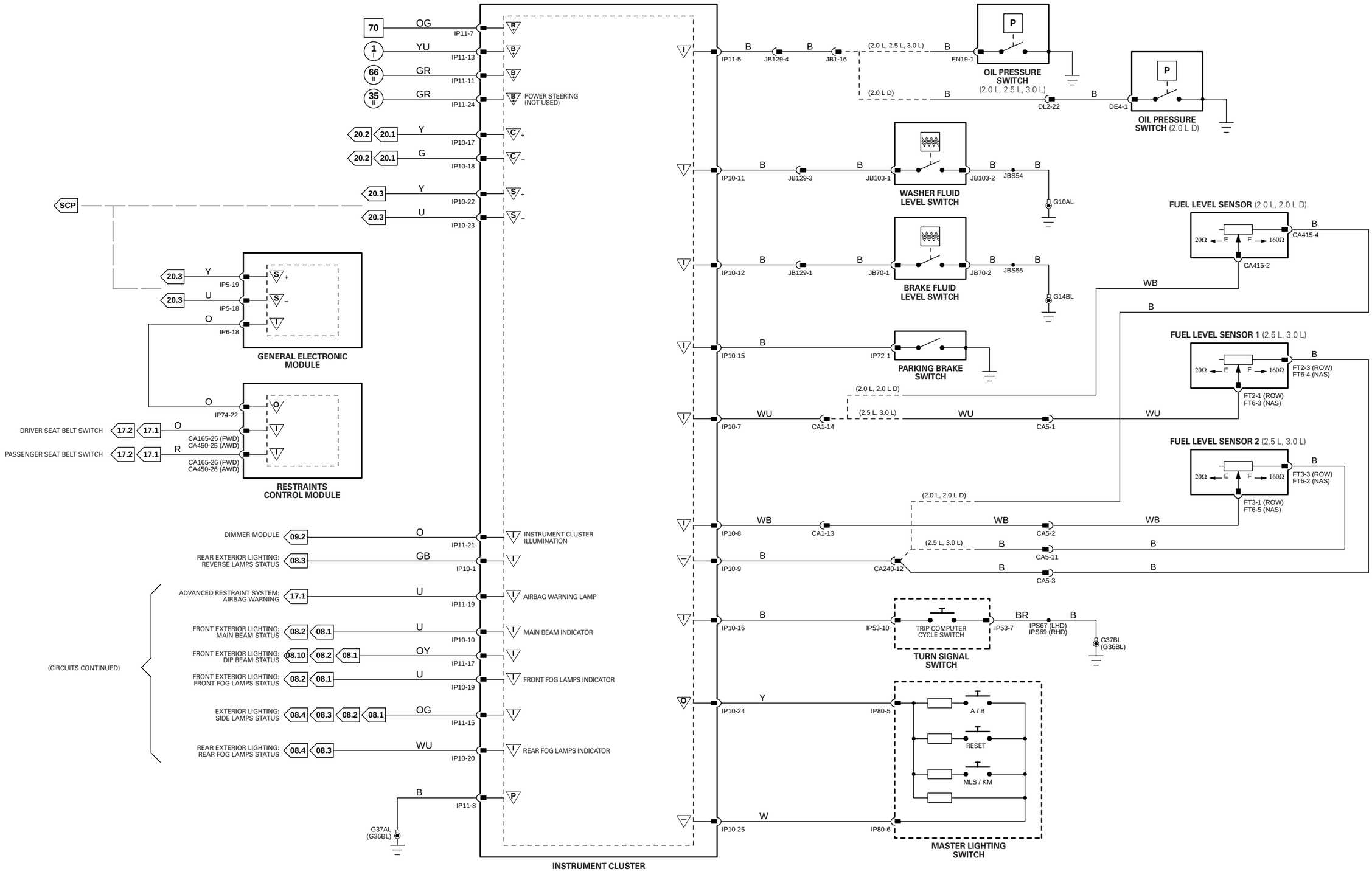

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
S	IP5-18	SCP -
S	IP5-19	SCP +
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-15	NOT-IN-PARK SWITCH: PARK = OPEN CIRCUIT; NOT-IN-PARK = GROUND
I	IP6-18	SEATBELT AND AIRBAG AUDIBLE WARNING REQUEST: AUDIBLE WARNING REQUEST ACTIVE = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

Instrument Cluster

▽	Pin	Description and Characteristic
S	IP10-22	SCP +
S	IP10-23	SCP -

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

Fig. 07.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3	8-WAY / BLACK	DRIVER DOOR
	DD9	2-WAY / BLACK	
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
RESTRAINTS CONTROL MODULE – ALL WHEEL DRIVE VEHICLES	CA450	40-WAY / BLACK	UNDER CENTER CONSOLE
	IP74	24-WAY / BLACK	
RESTRAINTS CONTROL MODULE – FRONT WHEEL DRIVE VEHICLES	CA165	40-WAY / BLACK	UNDER CENTER CONSOLE
	IP74	24-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST

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.

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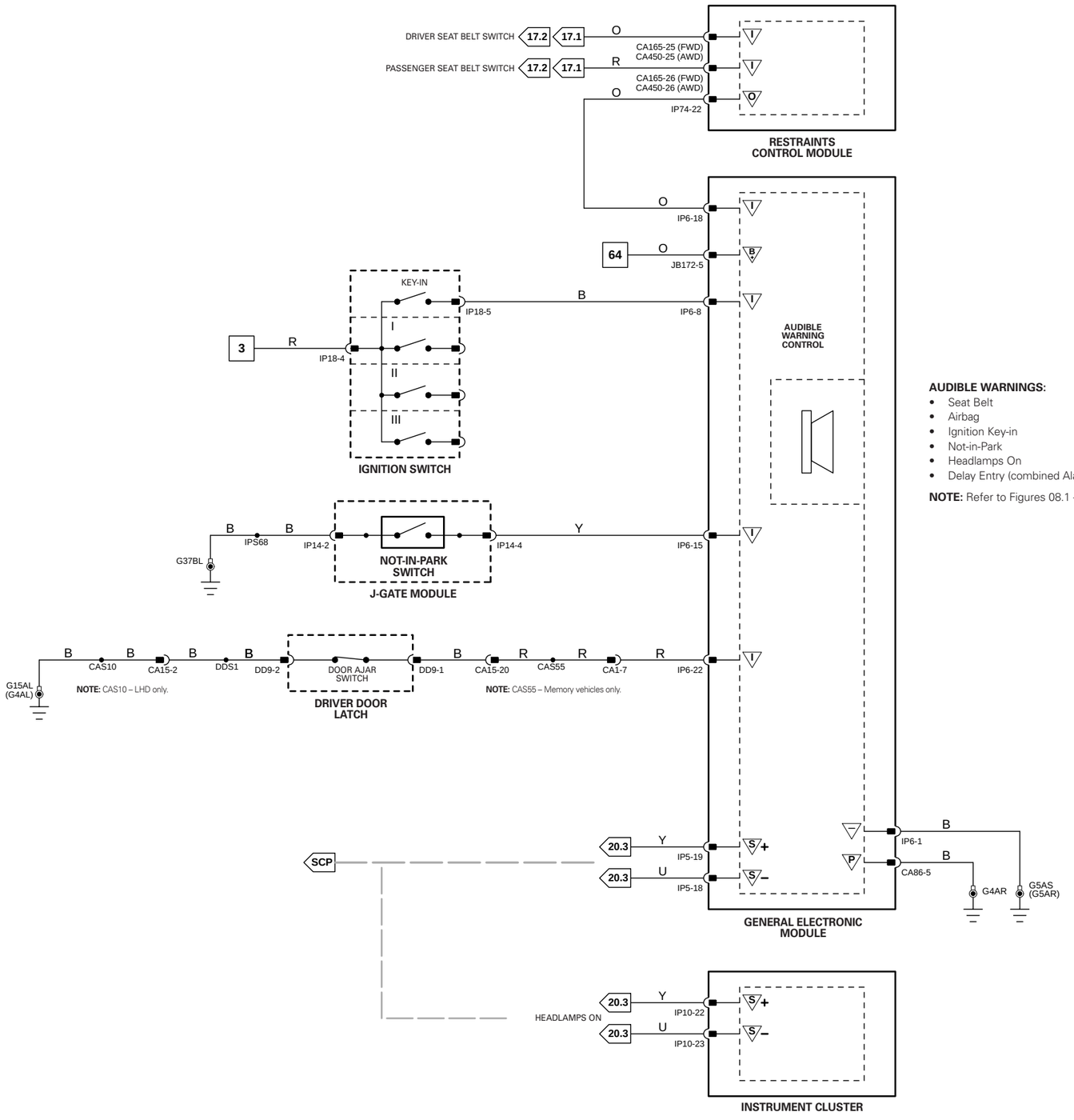

AUDIBLE WARNINGS:

- Seat Belt
- Airbag
- Ignition Key-in
- Not-in-Park
- Headlamps On
- Delay Entry (combined Alarm State and Driver Door Ajar status)

NOTE: Refer to Figures 08.1 – 08.4 for Turn Signal Audible Warning.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
I → 10 Fig. 01.4
II → 31 Fig. 01.5
II → 66 Fig. 01.6
B → 76 Fig. 01.7
E → 97 Fig. 01.8
E → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-22	TURN SIGNAL AUDIBLE WARNING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-09	HEADLAMP FLASH SWITCH: GROUND WHEN SELECTED
I	IP6-11	MAIN BEAM SWITCH: GROUND WHEN SELECTED
O	IP6-13	MAIN BEAM / FRONT FOG RELAY DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP6-17	LH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-19	RH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-23	HAZARD SWITCH: GROUND WHEN SELECTED
O	JB172-03	RH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	JB172-04	LH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

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

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.

Fig. 08.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTO HEADLAMPS SENSOR	RC5	5-WAY / BLACK	BEHIND REAR VIEW MIRROR
DIP BEAM RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R11
FOG LAMP – LH FRONT	FB1	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FOG LAMP – RH FRONT	FB3	2-WAY / BLACK	FRONT BUMPER / RH SIDE
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
GLOVE BOX LAMP	IP25	2-WAY / BROWN	GLOVE BOX
HAZARD SWITCH	IP51	6-WAY / BLACK	CENTER CONSOLE
HEADLAMP UNIT – LH	JB84	10-WAY / BLACK	ENGINE COMPARTMENT / LH SIDE
HEADLAMP UNIT – RH	JB85	10-WAY / BLACK	ENGINE COMPARTMENT / RH SIDE
MAIN BEAM / FRONT FOG RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R1
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
SIDE MARKER LAMP – LH FRONT	FB2	2-WAY / BLACK	FRONT BUMPER / LH SIDE
SIDE MARKER LAMP – RH FRONT	FB4	2-WAY / BLACK	FRONT BUMPER / RH SIDE
TURN SIGNAL REPEATER – LH FRONT	JB132	2-WAY / BLACK	LH FRONT FENDER
TURN SIGNAL REPEATER – RH FRONT	JB98	2-WAY / BLACK	RH FRONT FENDER
TURN SIGNAL SWITCH	IP53	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB173	10-WAY / BLACK / JUNCTION BOX HARNESS TO FRONT BUMPER HARNESS	BEHIND LH FRONT WHEEL ARCH LINER

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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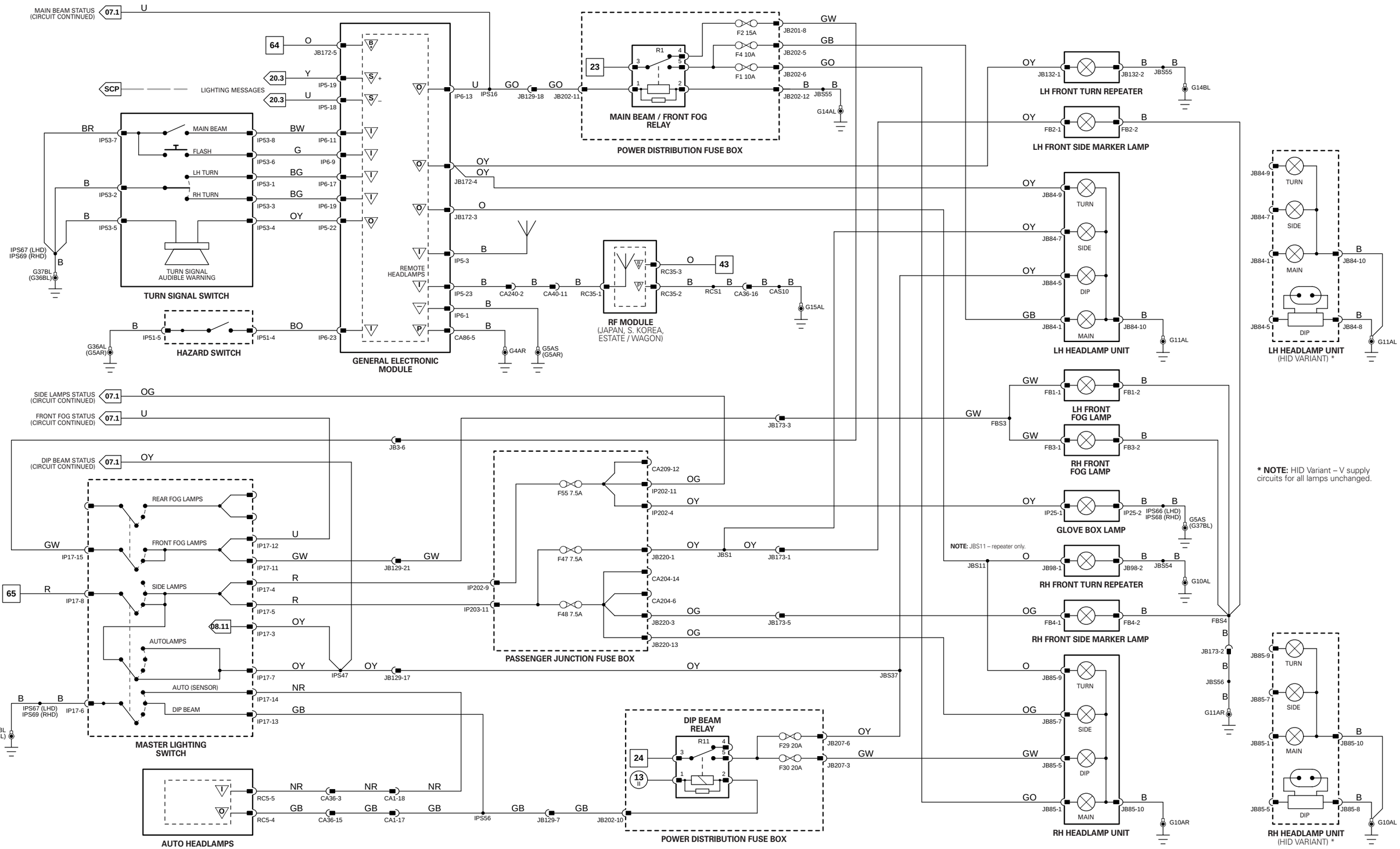

1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 (U) → 31 (U) Fig. 01.5	67 (B) → 76 (B) Fig. 01.7	98 (E) → 107 (E) Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 (I) → 10 (I) Fig. 01.4	32 (U) → 66 (B) Fig. 01.6	77 (E) → 97 (E) Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Auto Headlamp Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-22	TURN SIGNAL AUDIBLE WARNING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-09	HEADLAMP FLASH SWITCH: GROUND WHEN SELECTED
I	IP6-11	MAIN BEAM SWITCH: GROUND WHEN SELECTED
O	IP6-13	MAIN BEAM / FRONT FOG RELAY DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP6-17	LH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-19	RH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-23	HAZARD SWITCH: GROUND WHEN SELECTED
O	JB172-03	RH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	JB172-04	LH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

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

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.

Fig. 08.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DIP BEAM RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R11
FOG LAMP – LH FRONT	FB1	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FOG LAMP – RH FRONT	FB3	2-WAY / BLACK	FRONT BUMPER / RH SIDE
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
GLOVE BOX LAMP	IP25	2-WAY / BROWN	GLOVE BOX
HAZARD SWITCH	IP51	6-WAY / BLACK	CENTER CONSOLE
HEADLAMP UNIT – LH	JB84	10-WAY / BLACK	ENGINE COMPARTMENT / LH SIDE
HEADLAMP UNIT – RH	JB85	10-WAY / BLACK	ENGINE COMPARTMENT / RH SIDE
MAIN BEAM / FRONT FOG RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R1
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
SIDE MARKER LAMP – LH FRONT	FB2	2-WAY / BLACK	FRONT BUMPER / LH SIDE
SIDE MARKER LAMP – RH FRONT	FB4	2-WAY / BLACK	FRONT BUMPER / RH SIDE
TURN SIGNAL REPEATER – LH FRONT	JB132	2-WAY / BLACK	LH FRONT FENDER
TURN SIGNAL REPEATER – RH FRONT	JB98	2-WAY / BLACK	RH FRONT FENDER
TURN SIGNAL SWITCH	IP53	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB173	10-WAY / BLACK / JUNCTION BOX HARNESS TO FRONT BUMPER HARNESS	BEHIND LH FRONT WHEEL ARCH LINER

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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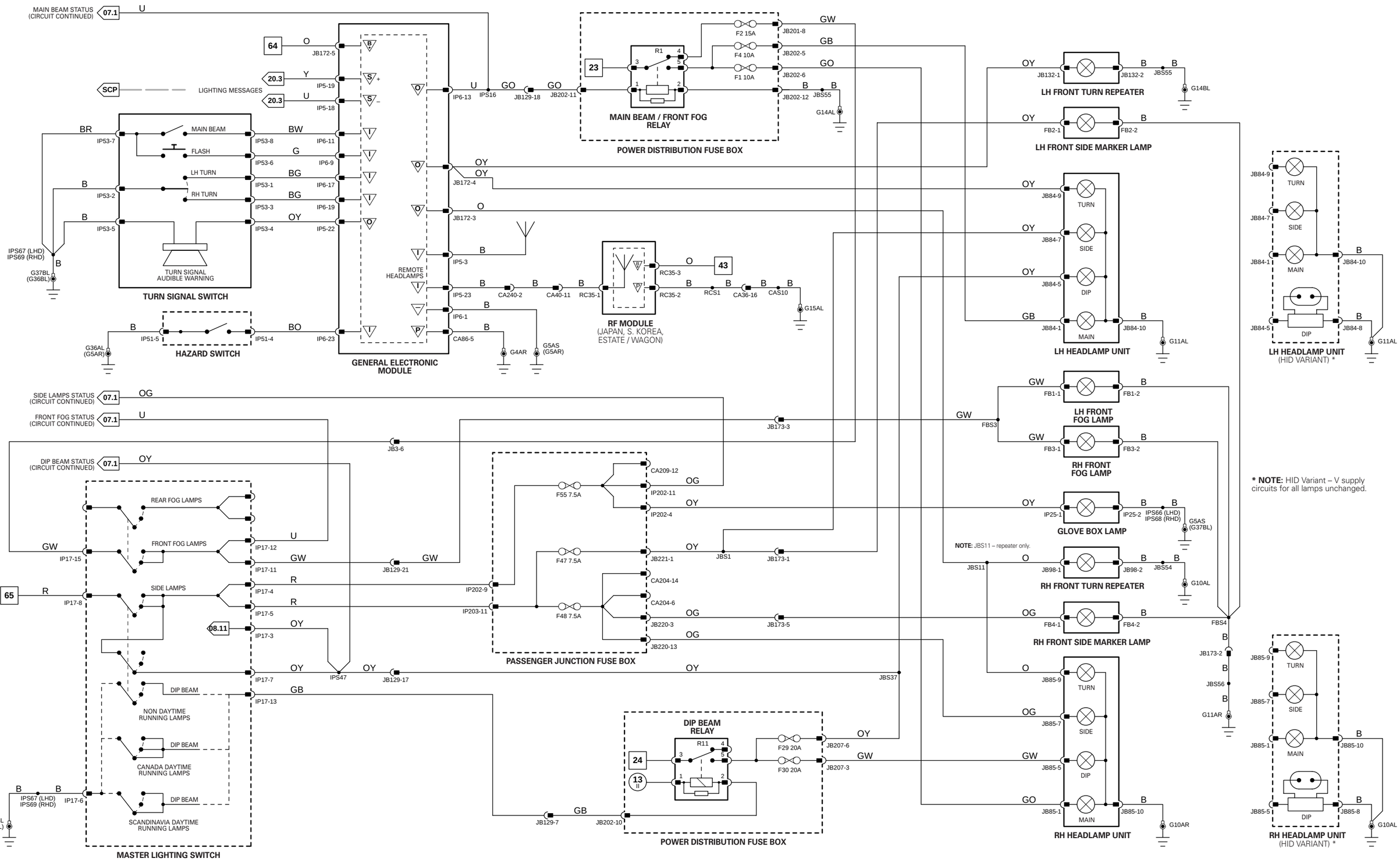


1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 → 10	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: Non Autolamp Daytime Running Lamp Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
O	CA86-02	LH REAR TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
PG	CA86-05	POWER GROUND
O	CA87-04	RH REAR TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-22	TURN SIGNAL AUDIBLE WARNING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-17	LH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-19	RH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-23	HAZARD SWITCH: GROUND WHEN SELECTED
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

Instrument Cluster

▽	Pin	Description and Characteristic
I	IP10-01	REVERSE LAMP SWITCH: B+ WHEN ACTIVATED
C	IP10-17	CAN +
C	IP10-18	CAN -
O	IP11-03	REVERSE LAMPS RELAY DRIVE: TO ACTIVATE, IC SWITCHES CIRCUIT TO GROUND

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

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.

Fig. 08.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
HAZARD SWITCH	IP51	6-WAY / BLACK	CENTER CONSOLE
HIGH-MOUNT STOP LAMP – SEDAN	CA304	2-WAY / WHITE	REAR WINDOW
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
LICENSE PLATE LAMP – LH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
REVERSE LAMPS RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R9
REVERSE LAMPS SWITCH – 2.0 L D	DL7	2-WAY / BLACK	TOP OF TRANSMISSION
REVERSE LAMPS SWITCH – 2.0 L, 2.5 L, 3.0 L	EN85	2-WAY / BLACK	TOP OF TRANSMISSION
SIDE MARKER LAMP – LH REAR	RB5	2-WAY / BLACK	REAR BUMPER / LH SIDE
SIDE MARKER LAMP – RH REAR	RB6	2-WAY / BLACK	REAR BUMPER / RH SIDE
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TURN SIGNAL SWITCH	IP53	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA129	12-WAY / GREY / REAR BUMPER HARNESS TO CABIN HARNESS	SPARE WHEEL WELL
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB145	8-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE

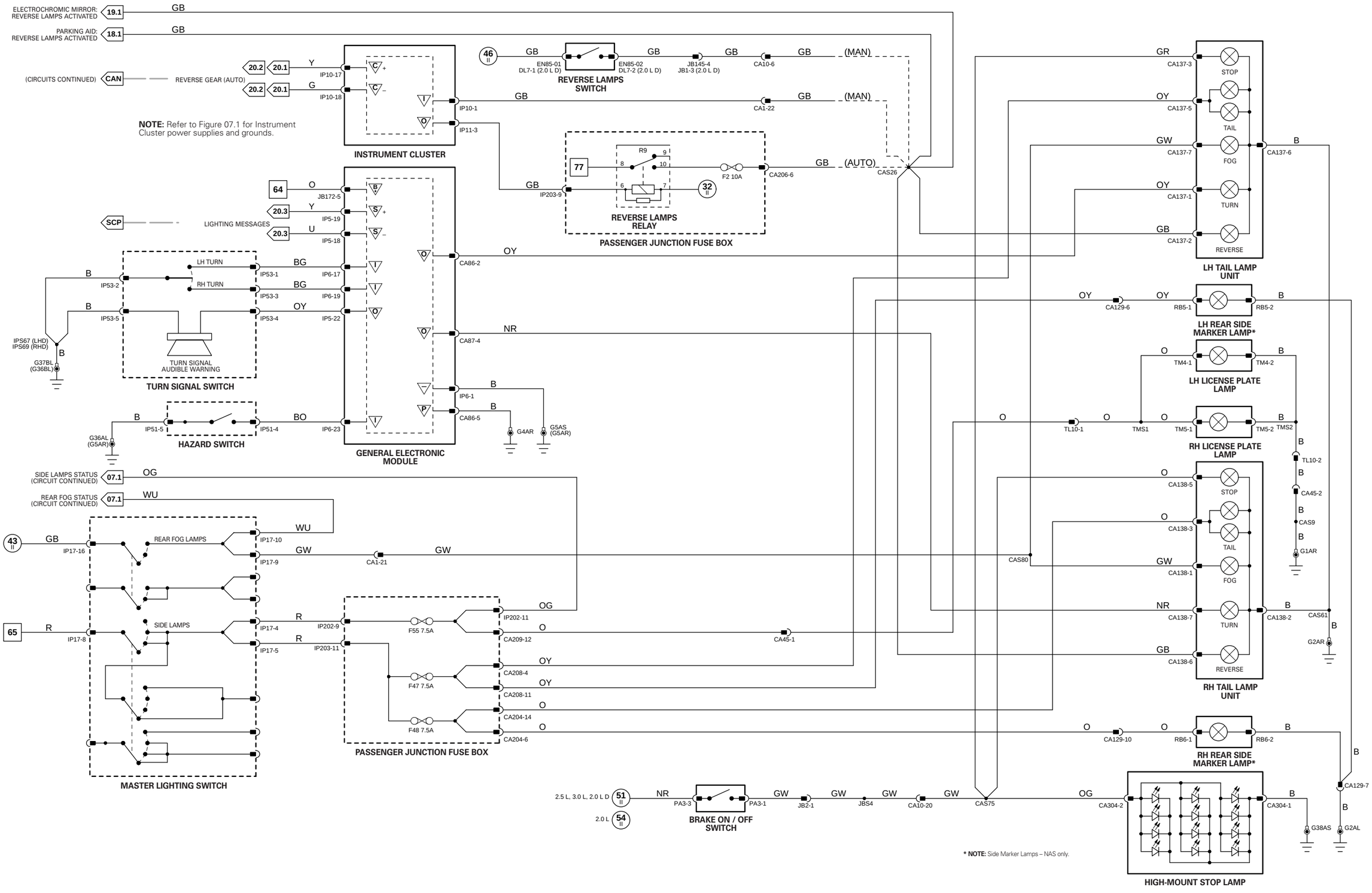
GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G38	CA	UPPER LH 'E' POST

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

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.

DATE OF ISSUE: August 2003



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 II → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Sedan Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
O	CA86-02	LH REAR TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
PG	CA86-05	POWER GROUND
O	CA87-04	RH REAR TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-22	TURN SIGNAL AUDIBLE WARNING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-17	LH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-19	RH TURN SIGNAL SWITCH: GROUND WHEN SELECTED
I	IP6-23	HAZARD SWITCH: GROUND WHEN SELECTED
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

Instrument Cluster

▽	Pin	Description and Characteristic
I	IP10-01	REVERSE LAMP SWITCH: B+ WHEN ACTIVATED
C	IP10-17	CAN +
C	IP10-18	CAN -
O	IP11-03	REVERSE LAMPS RELAY DRIVE: TO ACTIVATE, IC SWITCHES CIRCUIT TO GROUND

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

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.

Fig. 08.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE ON / OFF SWITCH	PA3	3-WAY / BLACK	TOP OF BRAKE PEDAL
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
HAZARD SWITCH	IP51	6-WAY / BLACK	CENTER CONSOLE
HIGH-MOUNT STOP LAMP – ESTATE (WAGON)	WG6	6-WAY / BLACK	REAR SPOILER
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
LICENSE PLATE LAMP – LH: ESTATE (WAGON)	WT9	2-WAY / BLACK	TAIL GATE
LICENSE PLATE LAMP – RH: ESTATE (WAGON)	WT10	2-WAY / BLACK	TAIL GATE
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
REVERSE LAMPS RELAY	–	–	PASSENGER JUNCTION FUSE BOX – R9
REVERSE LAMPS SWITCH – 2.0 L D	DL7	2-WAY / BLACK	TOP OF TRANSMISSION
REVERSE LAMPS SWITCH – 2.0 L, 2.5 L, 3.0 L	EN85	2-WAY / BLACK	TOP OF TRANSMISSION
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TURN SIGNAL SWITCH	IP53	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
JB2	16-WAY / GREEN / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS (PEDAL ASSEMBLY)	BELOW INSTRUMENT PANEL / DRIVER SIDE
JB145	8-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
WG1	4-WAY / BLACK / CABIN HARNESS TO TAIL GATE GLASS HARNESS	ROOF / CENTER REAR
WL1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

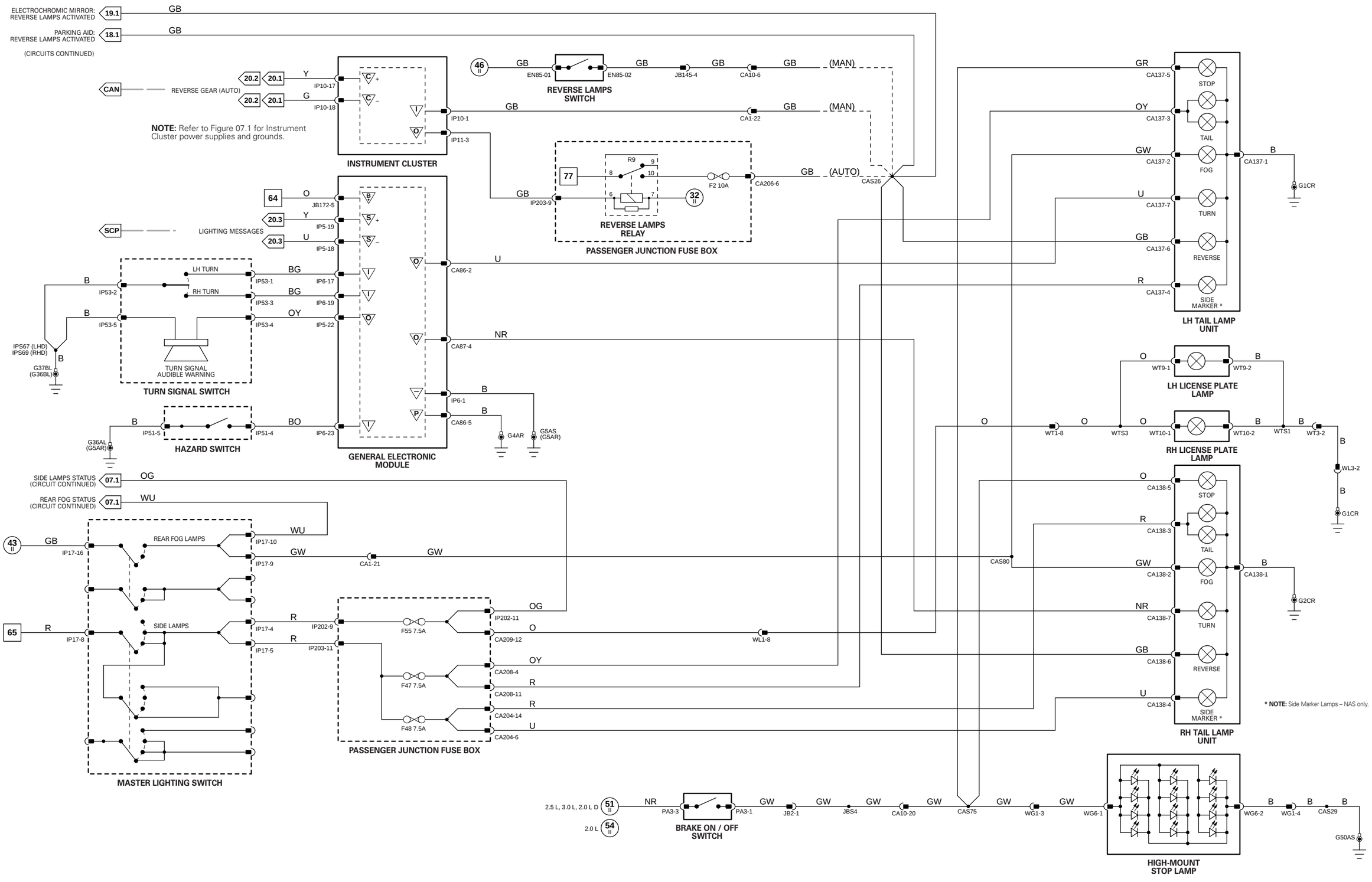
GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G50	CA	HEADLINER / RH REAR ROOF PANEL

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

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.

DATE OF ISSUE: August 2003



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: Estate (Wagon) Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 08.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
ACCESSORY CONNECTOR – TRAILER TOWING	T5001	DATA NOT AVAILABLE	
HIGH-MOUNT STOP LAMP – SEDAN	CA304	2-WAY / WHITE	REAR WINDOW
LICENSE PLATE LAMP – LH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TRAILER TOWING CONNECTOR	T5011	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT1	DATA NOT AVAILABLE	
	TT2	DATA NOT AVAILABLE	
	TT3	DATA NOT AVAILABLE	

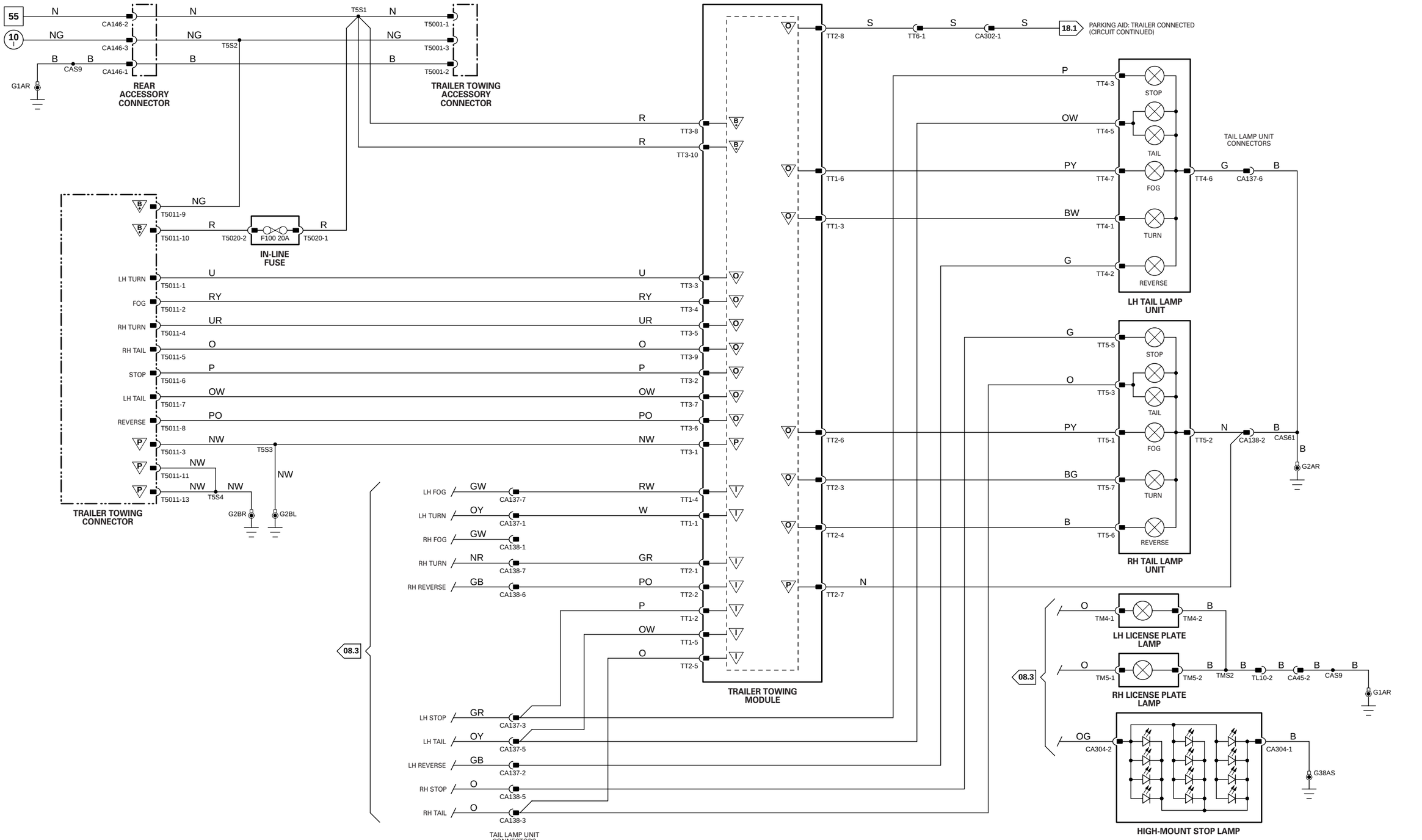
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA302	2-WAY / BLACK / CABIN HARNESS TO TRAILER HARNESS	TRUNK / ADJACENT TO LH REAR TAIL LAMP
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE
TT6	DATA NOT AVAILABLE	

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G38	CA	UPPER LH 'E' POST

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.



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 T → 10 T Fig. 01.4	32 II → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Euro. Sedan Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 08.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
ACCESSORY CONNECTOR – TRAILER TOWING	T4001	DATA NOT AVAILABLE	
CARAVAN CONNECTOR	T412S	DATA NOT AVAILABLE	
HIGH-MOUNT STOP LAMP – SEDAN	CA304	2-WAY / WHITE	REAR WINDOW
LICENSE PLATE LAMP – LH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TRAILER TOWING CONNECTOR	T312N	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT1	DATA NOT AVAILABLE	
	TT2	DATA NOT AVAILABLE	
	TT3	DATA NOT AVAILABLE	

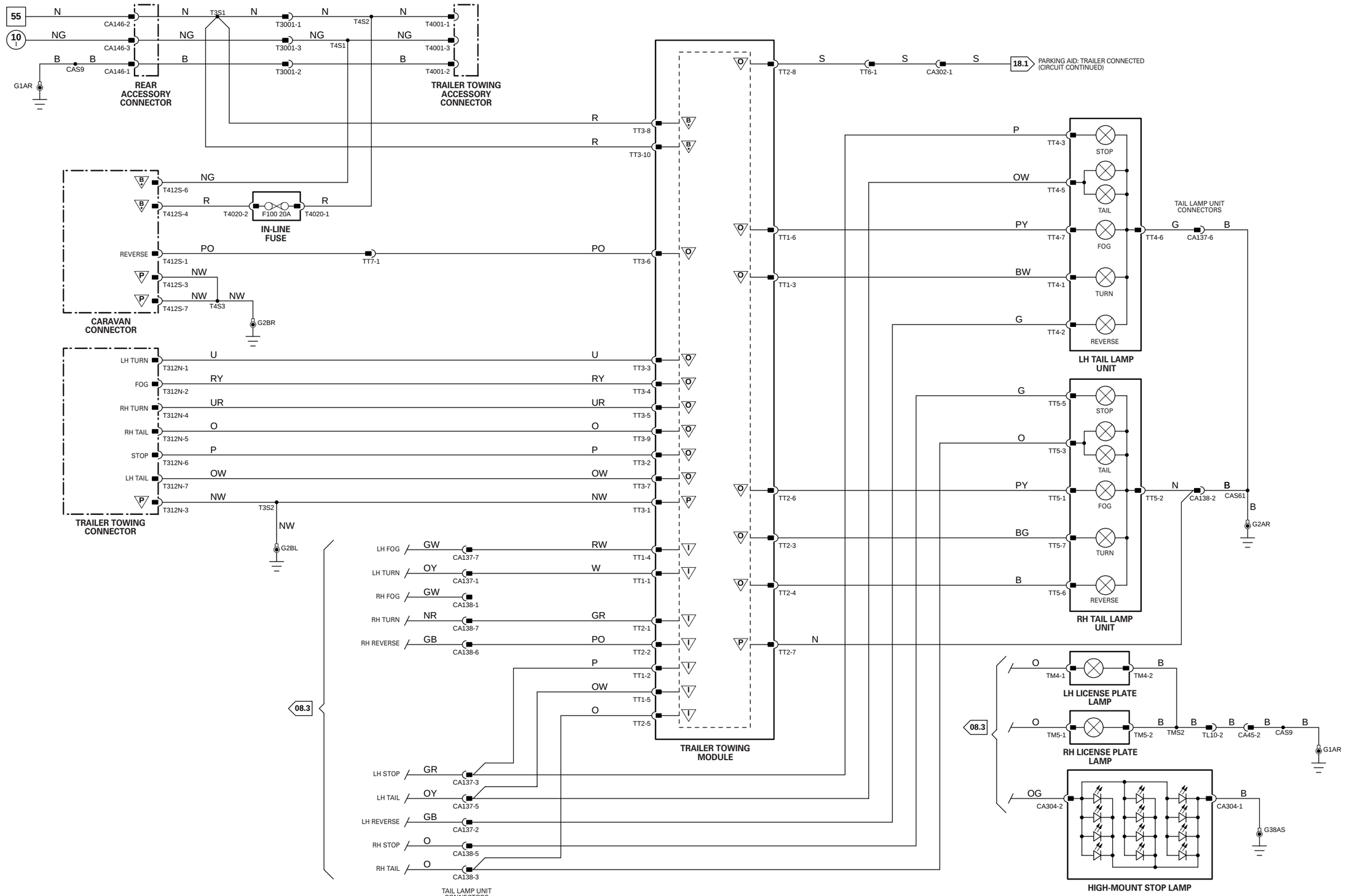
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA302	2-WAY / BLACK / CABIN HARNESS TO TRAILER HARNESS	TRUNK / ADJACENT TO LH REAR TAIL LAMP
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE
TT6	DATA NOT AVAILABLE	
TT7	DATA NOT AVAILABLE	

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G38	CA	UPPER LH 'E' POST

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.



1 → 6 Fig. 01.1 7 → 33 Fig. 01.2	34 → 79 Fig. 01.3 1 → 10 Fig. 01.4	11 → 31 Fig. 01.5 32 → 66 Fig. 01.6	67 → 76 Fig. 01.7 77 → 97 Fig. 01.8	98 → 107 Fig. 01.9	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V − Sensor/Signal Ground	C CAN S SCP	D D2B Network D Serial and Encoded Data

VARIANT: U.K. Sedan Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 08.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
ACCESSORY CONNECTOR – TRAILER TOWING	T3001	DATA NOT AVAILABLE	
HIGH-MOUNT STOP LAMP – SEDAN	CA304	2-WAY / WHITE	REAR WINDOW
LICENSE PLATE LAMP – LH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH: SEDAN	TM5	2-WAY / BLACK	TRUNK LID
SIDE MARKER LAMP – LH REAR	RB5	2-WAY / BLACK	REAR BUMPER / LH SIDE
SIDE MARKER LAMP – RH REAR	RB6	2-WAY / BLACK	REAR BUMPER / RH SIDE
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TRAILER TOWING CONNECTOR	T6US1	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT1	DATA NOT AVAILABLE	
	TT2	DATA NOT AVAILABLE	
	TT3	DATA NOT AVAILABLE	

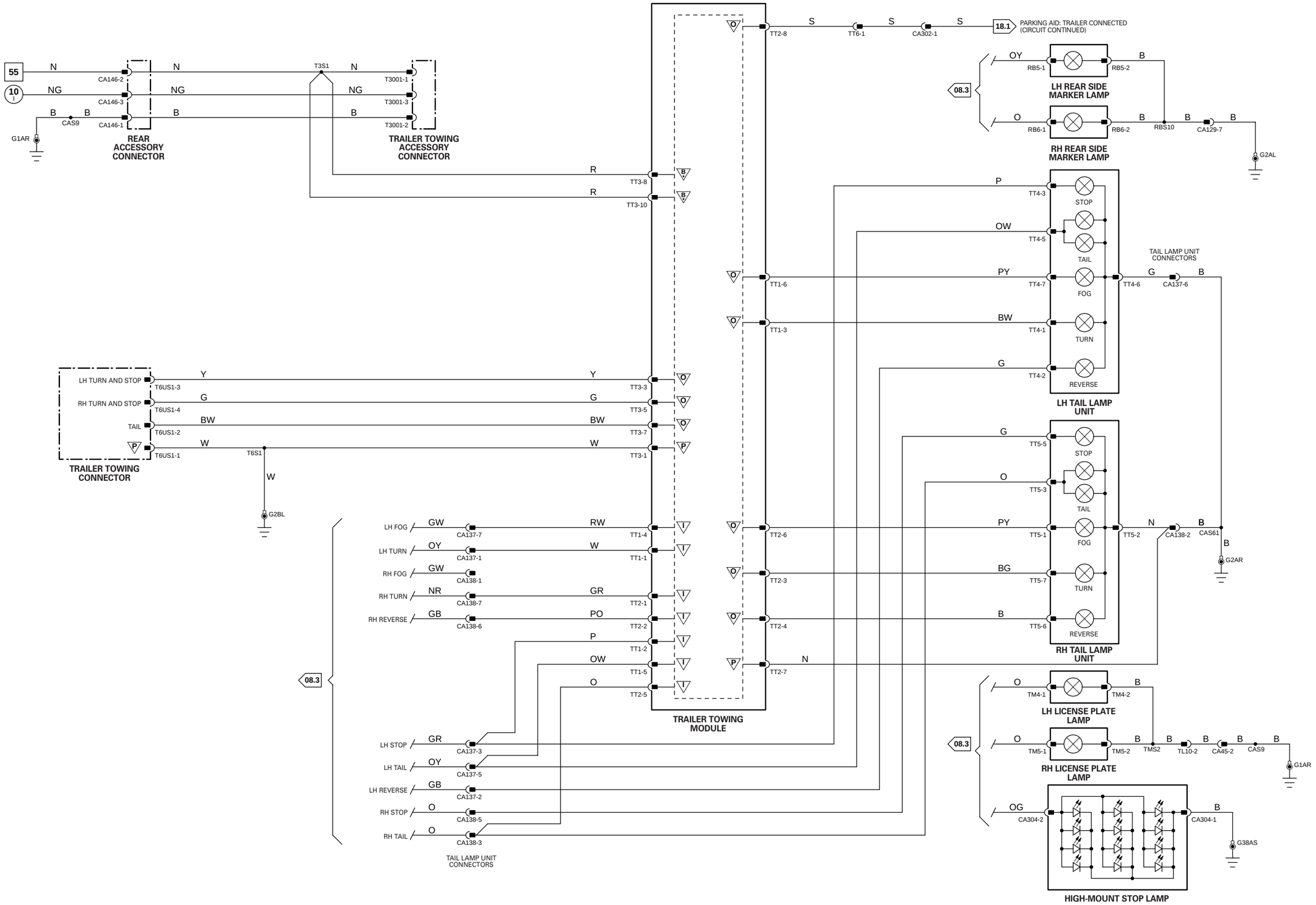
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA129	12-WAY / GREY / REAR BUMPER HARNESS TO CABIN HARNESS	SPARE WHEEL WELLCA302
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE
TT6	DATA NOT AVAILABLE	

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G38	CA	UPPER LH 'E' POST

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.



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network	**VARIANT:**	NAS Sedan Trailer Towing Vehicles
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data	**VIN RANGE:**	All
															DATE OF ISSUE:	August 2003

Fig. 08.8

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
ACCESSORY CONNECTOR – TRAILER TOWING	T5001	DATA NOT AVAILABLE	
HIGH-MOUNT STOP LAMP – ESTATE (WAGON)	WG6	6-WAY / BLACK	REAR SPOILER
LICENSE PLATE LAMP – LH: ESTATE (WAGON)	WT9	2-WAY / BLACK	TAIL GATE
LICENSE PLATE LAMP – RH: ESTATE (WAGON)	WT10	2-WAY / BLACK	TAIL GATE
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TRAILER TOWING CONNECTOR	T5011	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT1	DATA NOT AVAILABLE	
	TT2	DATA NOT AVAILABLE	
	TT3	DATA NOT AVAILABLE	

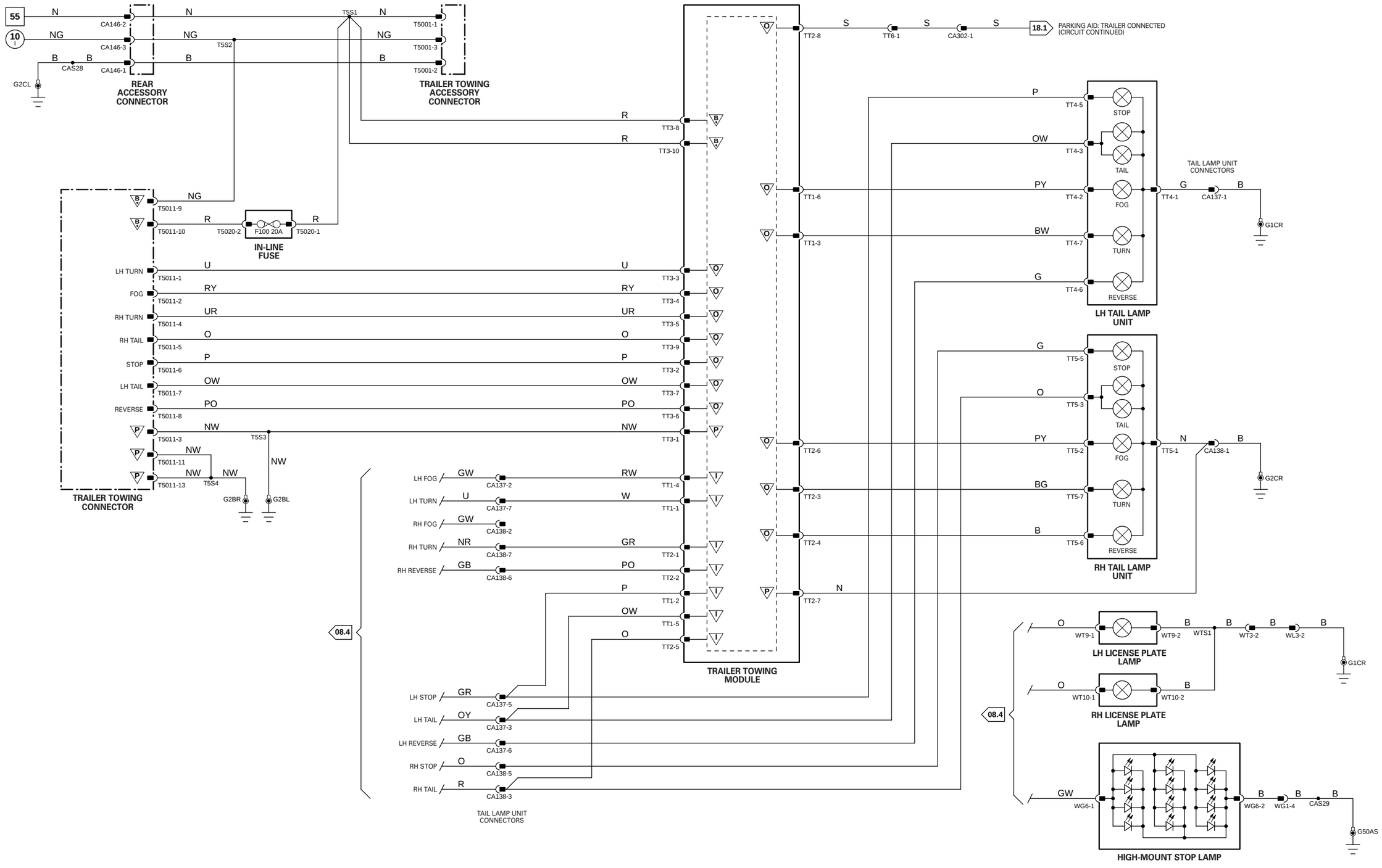
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA302	2-WAY / BLACK / CABIN HARNESS TO TRAILER HARNESS	TRUNK / ADJACENT TO LH REAR TAIL LAMP
TT6	DATA NOT AVAILABLE	
WG1	4-WAY / BLACK / CABIN HARNESS TO TAIL GATE GLASS HARNESS	ROOF / CENTER REAR
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G50	CA	HEADLINER / RH REAR ROOF PANEL

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.



1 → 6 Fig. 01.1 7 → 33 Fig. 01.2	34 → 79 Fig. 01.3 (1 I) → (10 I) Fig. 01.4	(11 U) → (31 U) Fig. 01.5 (32 U) → (66 U) Fig. 01.6	(67 B) → (76 B) Fig. 01.7 (77 E) → (97 E) Fig. 01.8	(98 E) → (107 E) Fig. 01.9	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V − Sensor/Signal Ground	C CAN S SCP	D D2B Network D Serial and Encoded Data

VARIANT: European Estate (Wagon) Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 08.9

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
ACCESSORY CONNECTOR – TRAILER TOWING	T4001	DATA NOT AVAILABLE	
CARAVAN CONNECTOR	T412S	DATA NOT AVAILABLE	
HIGH-MOUNT STOP LAMP – ESTATE (WAGON)	WG6	6-WAY / BLACK	REAR SPOILER
LICENSE PLATE LAMP – LH: ESTATE (WAGON)	WT9	2-WAY / BLACK	TAIL GATE
LICENSE PLATE LAMP – RH: ESTATE (WAGON)	WT10	2-WAY / BLACK	TAIL GATE
TAIL LAMP UNIT – LH	CA137	7-WAY / BLACK	TRUNK, LH REAR
TAIL LAMP UNIT – RH	CA138	7-WAY / BLACK	TRUNK, RH REAR
TRAILER TOWING CONNECTOR	T312N	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT1	DATA NOT AVAILABLE	
	TT2	DATA NOT AVAILABLE	
	TT3	DATA NOT AVAILABLE	

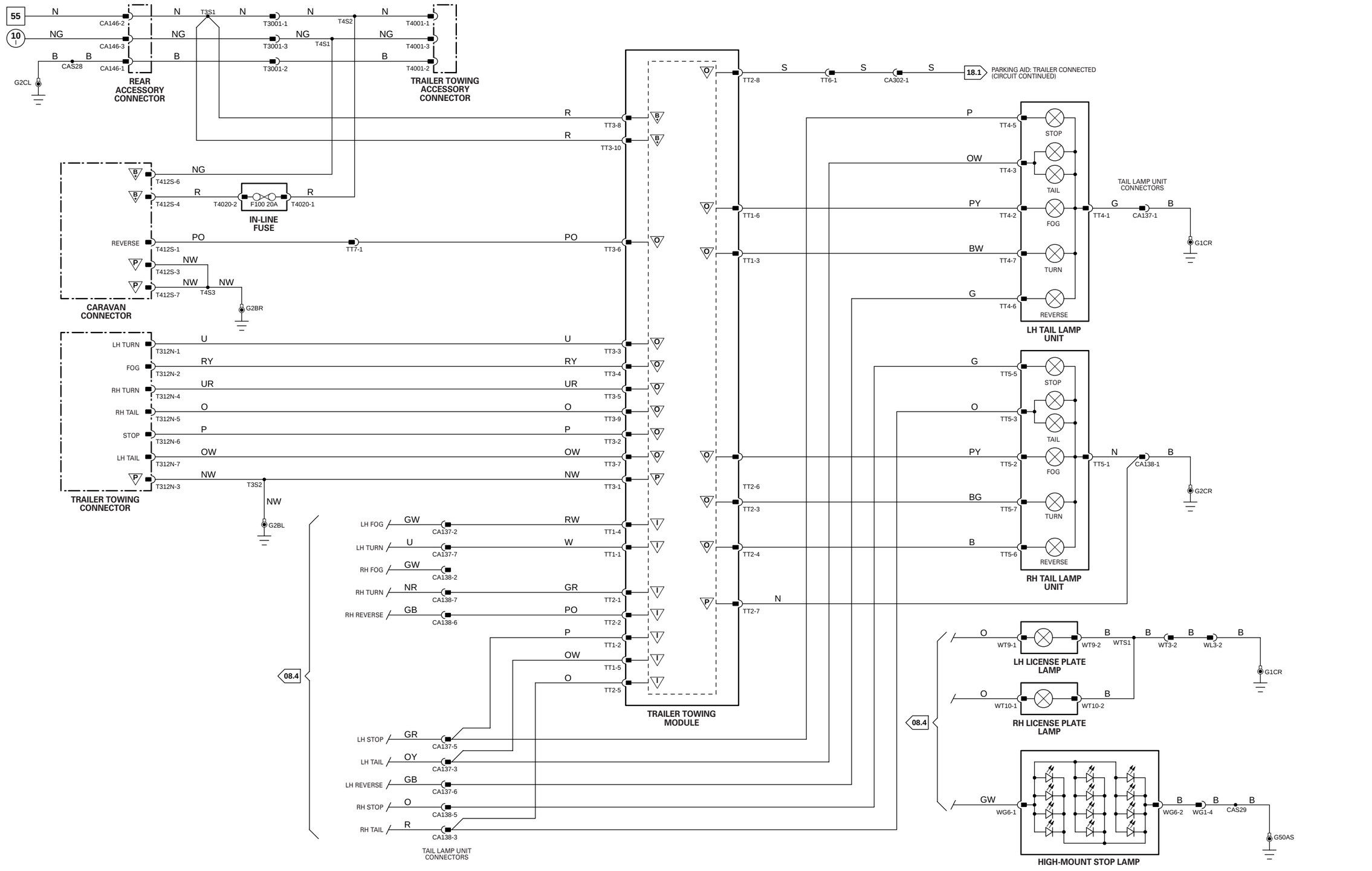
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA302	2-WAY / BLACK / CABIN HARNESS TO TRAILER HARNESS	TRUNK / ADJACENT TO LH REAR TAIL LAMP
TT6	DATA NOT AVAILABLE	
TT7	DATA NOT AVAILABLE	
WG1	4-WAY / BLACK / CABIN HARNESS TO TAIL GATE GLASS HARNESS	ROOF / CENTER REAR
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G50	CA	HEADLINER / RH REAR ROOF PANEL

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.



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 U → 31 U	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network									
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 U → 66 B	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data									

VARIANT: U.K. Estate (Wagon) Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 08.10

COMPONENTS

Component	Connector(s)	Connector Description	Location
AXLE SENSOR – FRONT	JB140	6-WAY / BLACK	LH FRONT SUSPENSION
AXLE SENSOR – REAR	HI1	6-WAY / BLACK	LH REAR SUSPENSION
HEADLAMP LEVELING MODULE	IP130	26-WAY / WHITE	BEHIND INSTRUMENT PANEL / LH SIDE
HEADLAMP UNIT – LH	JB84	10-WAY / BLACK	ENGINE COMPARTMENT / LH SIDE
HEADLAMP UNIT – RH	JB85	10-WAY / BLACK	ENGINE COMPARTMENT / RH SIDE
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT

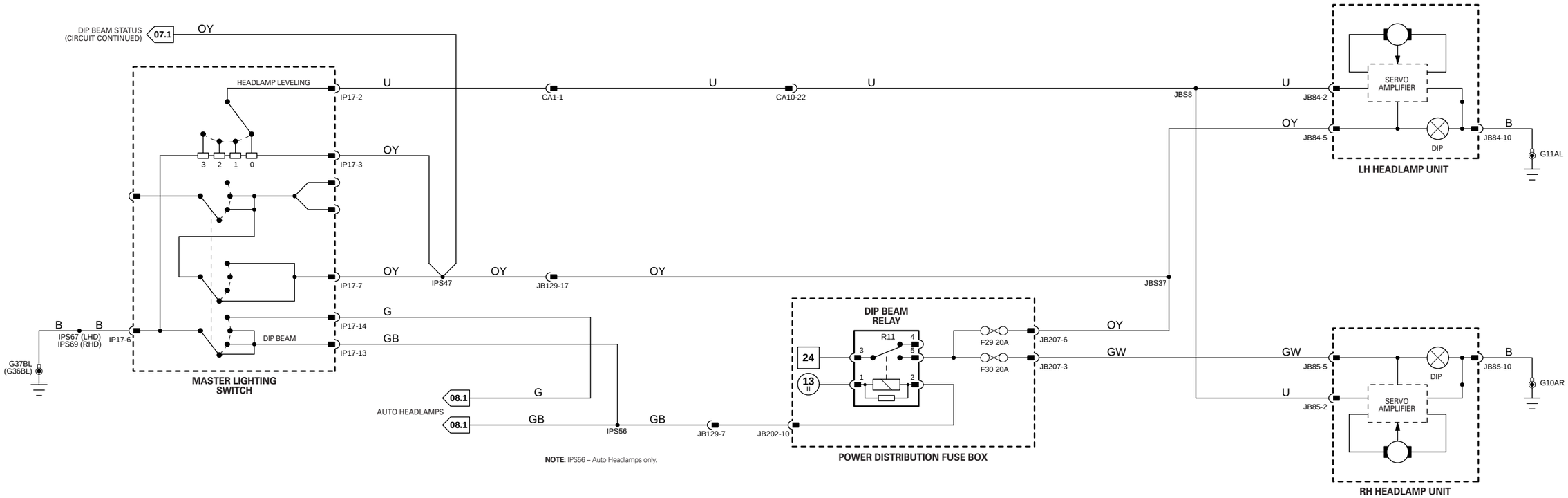
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA303	3-WAY GREY / CABIN HARNESS TO REAR AXLE HARNESS	BELOW LH REAR SEAT CUSHION
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

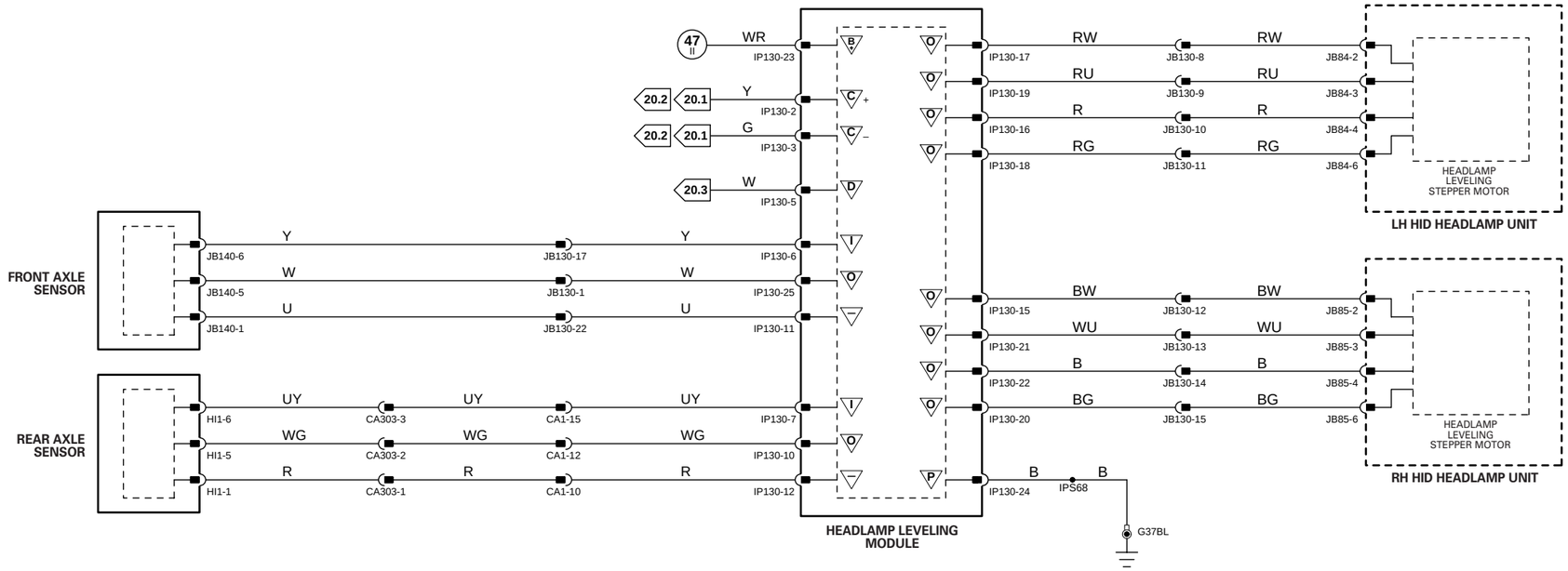
GROUNDS

Ground	Harness	Location
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G11	JB	ENGINE COMPARTMENT / BEHIND LH HEADLAMP
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G38	CA	UPPER LH 'E' POST

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.



DRIVER–CONTROLLED HEADLAMP LEVELING



AUTOMATIC HEADLAMP LEVELING

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

Input / Output
Battery Voltage / Power Ground
Sensor/Signal Supply V / Sensor/Signal Ground
CAN / SCP
D2B Network / Serial and Encoded Data

VARIANT: Headlamp Leveling & HID Headlamp Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
O	CA86-03	INTERIOR LAMPS : TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND
PG	CA86-05	POWER GROUND
I	CA86-14	RESET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-15	TAIL GLASS RELEASE SWITCH: GROUND WHEN ACTIVATED
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
S	IP5-18	SCP -
S	IP5-19	SCP +
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

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

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.

Fig. 09.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3 DD9	8-WAY / BLACK 2-WAY / BLACK	DRIVER DOOR
DOOR LATCH – LH REAR	BL3 BL6	8-WAY / BLACK 2-WAY / BLACK	LH REAR DOOR
DOOR LATCH – PASSENGER	PD3 PD9	8-WAY / BLACK 2-WAY / BLACK	PASSENGER DOOR
DOOR LATCH – RH REAR	BR3 BR6	8-WAY / BLACK 2-WAY / BLACK	RH REAR DOOR
FOOTWELL LAMP – LH	IP27	2-WAY / GREY	INSTRUMENT PANEL / LH SIDE
FOOTWELL LAMP – RH	IP26	2-WAY / GREY	INSTRUMENT PANEL / RH SIDE
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
GLOVE BOX LAMP	IP25	2-WAY / BROWN	GLOVE BOX
INTERIOR LAMP – REAR	RC11 RC20	2-WAY / BLACK 1-WAY / ORANGE	REAR HEAD LINER
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30 RC31 RC33 RC34	4-WAY / BLACK 2-WAY / BLACK 4-WAY / BLACK 6-WAY / BLACK	ROOF CENTER FRONT
TAIL GATE LATCH	WT6	6-WAY / BLACK	TAIL GATE
TAIL GLASS LATCH	WT7	4-WAY / BLACK	TAIL GATE
TRUNK LAMP – LH: ESTATE (WAGON)	CA434	2-WAY / BLACK	LH REAR INTERIOR TRIM
TRUNK LAMP – RH: ESTATE (WAGON)	CA433	2-WAY / BLACK	RH REAR INTERIOR TRIM
TRUNK LAMP – SEDAN	CA132	2-WAY / BLACK	TRUNK / RH SIDE
TRUNK LOCK MOTOR	TM6	5-WAY / NATURAL	TRUNK LID
VANITY MIRROR LAMP – LH	RC9	2-WAY / BLACK	LH SUN VISOR
VANITY MIRROR LAMP – RH	RC8	2-WAY / BLACK	RH SUN VISOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE
WL1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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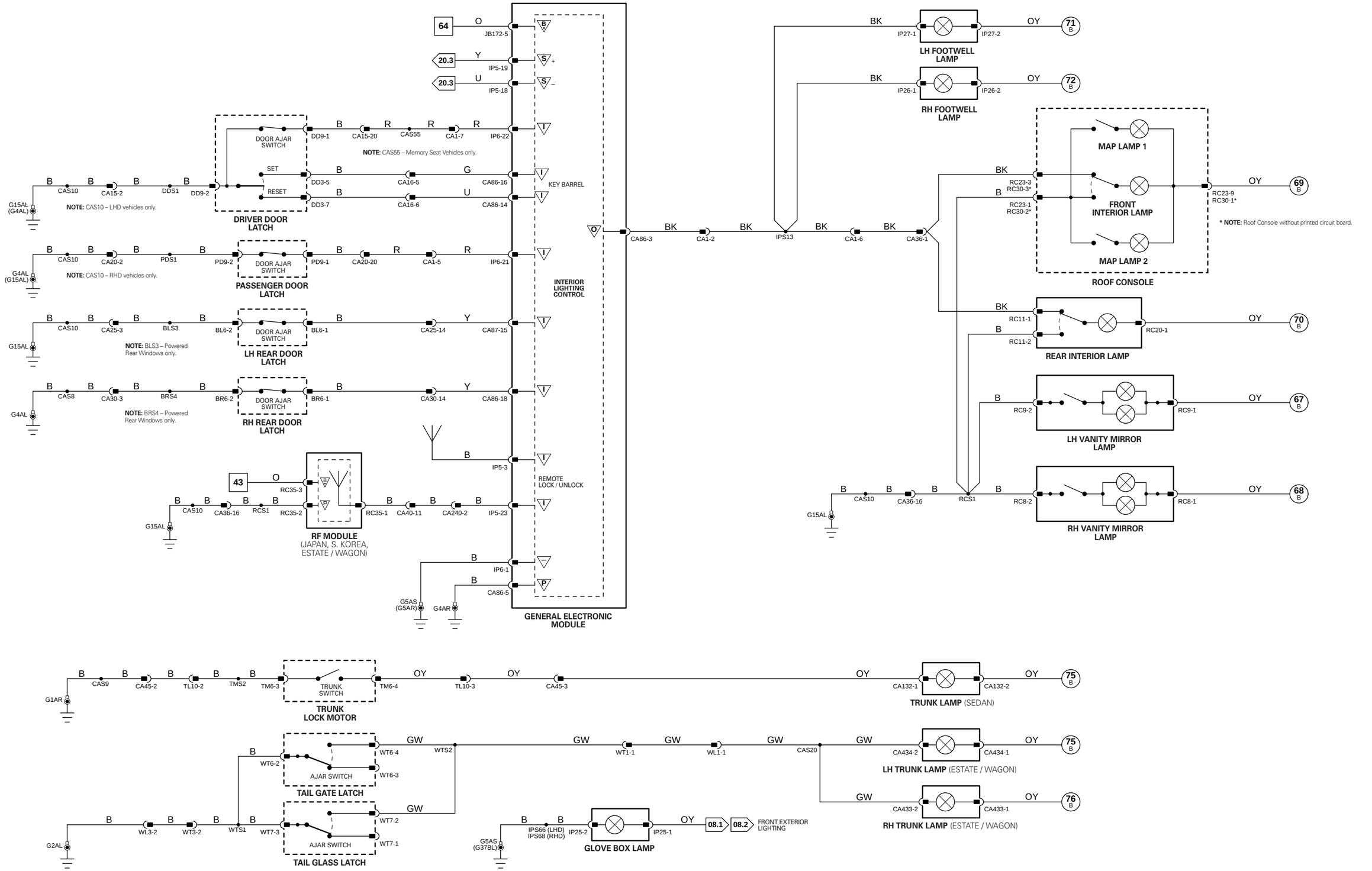


1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network									
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data									

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 09.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
CIGAR LIGHTER	IP42	2-WAY / ORANGE	ASH TRAY
CLIMATE CONTROL MODULE – PANEL	AC1	26-WAY / YELLOW	BEHIND CLIMATE CONTROL PANEL
	IP39	4-WAY / GREY	
	IP101	26-WAY / WHITE	
	IP135	2-WAY / GREY	
DOOR SWITCH PACK – DRIVER	DD1	20-WAY / BLACK	DRIVER DOOR CASING
DOOR SWITCH PACK – LH REAR	BL1	8-WAY / BLACK	LH REAR DOOR CASING
DOOR SWITCH PACK – PASSENGER	PD10	8-WAY / BLACK	PASSENGER DOOR CASING
DOOR SWITCH PACK – RH REAR	BR1	8-WAY / BLACK	RH REAR DOOR CASING
HAZARD AND SEAT HEATER SWITCHES	IP51	6-WAY / BLACK	CENTER CONSOLE
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
MASTER LIGHTING SWITCH	IP17	16-WAY / BLACK	INSTRUMENT PANEL
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
STEERING WHEEL	SW4	6-WAY / BLACK	STEERING COLUMN
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TRACTION CONTROL / DYNAMIC STABILITY CONTROL SWITCH	IP29	6-WAY / BLACK	INSTRUMENT PANEL

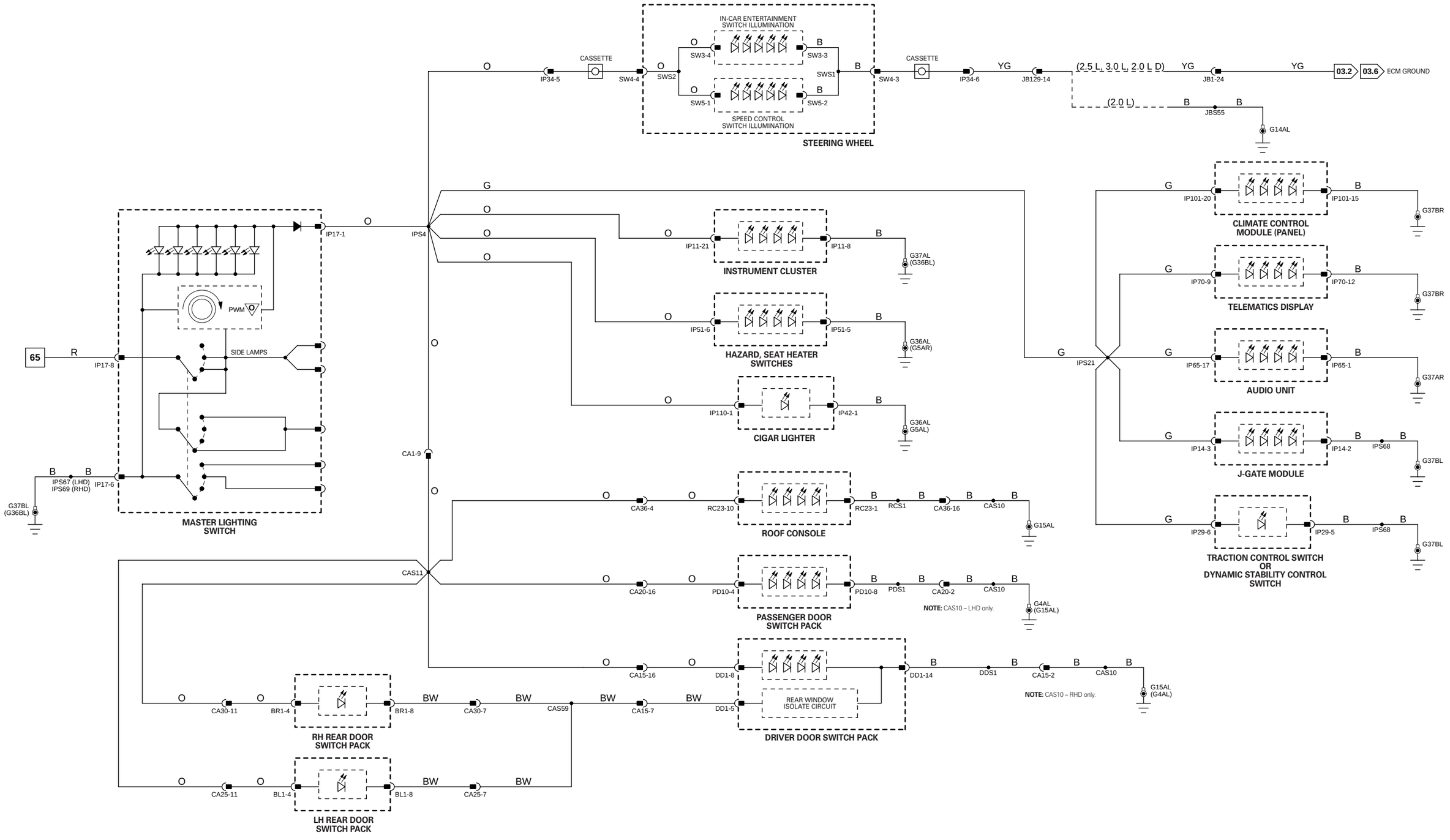
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH ‘A’ POST / ‘A’ POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH ‘B/C’ POST / ‘B/C’ POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH ‘B/C’ POST / ‘B/C’ POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH ‘A’ POST / WINDSHIELD PILLAR
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH ‘A’ POST
G35	CA	LOWER LH ‘E’ POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G38	CA	UPPER LH ‘E’ POST
G4	CA	LOWER RH ‘A’ POST

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.



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 10.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR MIRROR – DRIVER	DD5	22-WAY / GREY	DRIVER DOOR
DOOR MIRROR – PASSENGER	PD4	22-WAY / GREY	PASSENGER DOOR
DOOR SWITCH PACK – DRIVER	DD1	20-WAY / BLACK	DRIVER DOOR CASING
FOLD BACK MODULE	–	–	PASSENGER JUNCTION FUSE BOX
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE

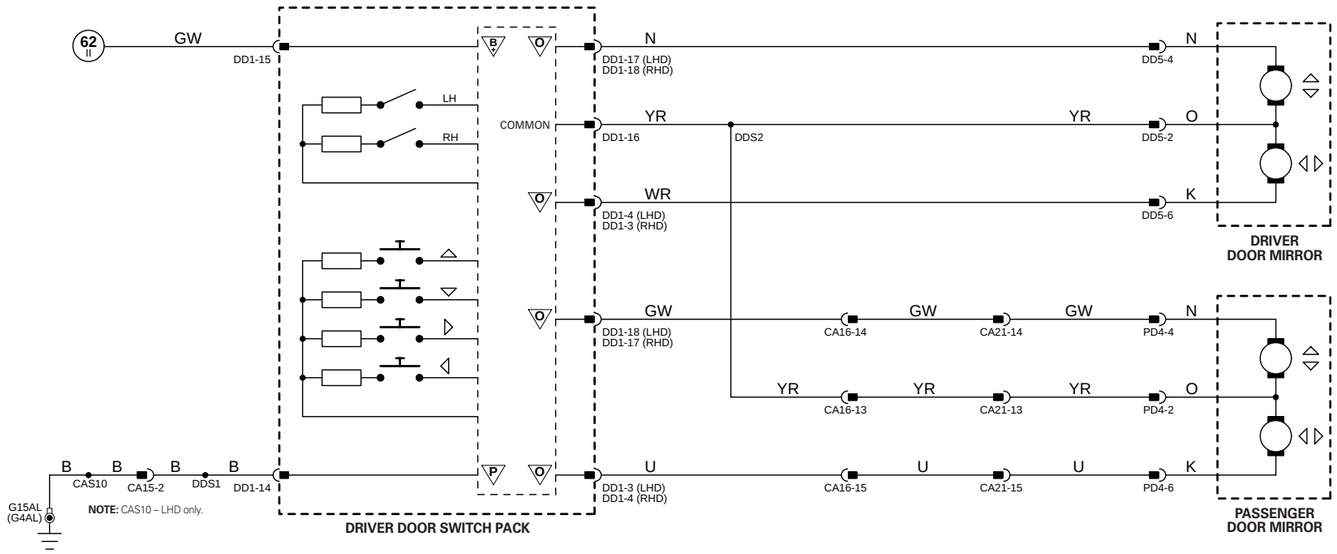
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING

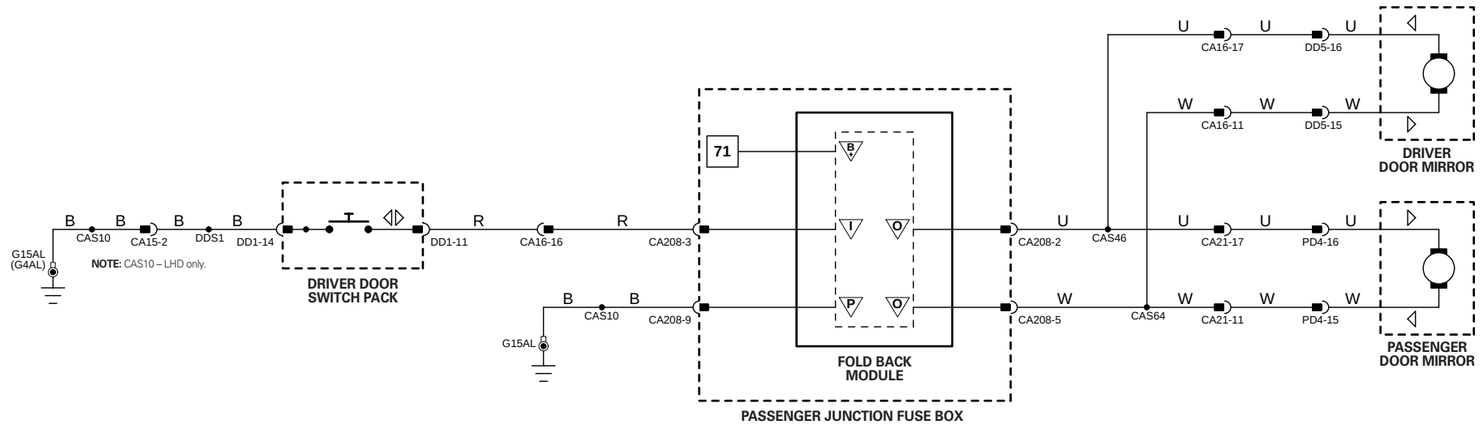
GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.



DOOR MIRROR MOVEMENT



NOTE: Refer to Figure 06.3 for Mirror Heaters.

DOOR MIRRORS: FOLD-BACK

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

Input / Output
Battery Voltage / Power Ground
Sensor/Signal Supply V / Sensor/Signal Ground
CAN / SCP
D2B Network / Serial and Encoded Data

VARIANT: Non Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Driver Seat Module

▽	Pin	Description and Characteristic
C	DM1-02	CAN -
I	DM1-05	LH DOOR MIRROR LEFT / RIGHT MOVEMENT SWITCH SIGNAL
I	DM1-06	LH DOOR MIRROR UP / DOWN MOVEMENT SWITCH SIGNAL
I	DM1-07	RH DOOR MIRROR UP / DOWN MOVEMENT SWITCH SIGNAL
I	DM1-08	RH DOOR MIRROR LEFT / RIGHT MOVEMENT SWITCH SIGNAL
I	DM1-09	DOOR MIRROR MOVEMENT SWITCHES COMMON
C	DM1-12	CAN +
O	DM1-14	DOOR MIRROR MOVEMENT / HEATERS DRIVE
I	DM1-20	MIRRORS FOLD BACK SWITCH SIGNAL: GROUND WHEN ACTIVATED
B+	DM2-01	BATTERY POWER SUPPLY: B+
SG	DM2-03	SIGNAL GROUND: GROUND
B+	DM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	DM2-05	POWER GROUND: GROUND
B+	DM2-06	BATTERY POWER SUPPLY: B+

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

Fig. 10.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR MIRROR – DRIVER	DD5	22-WAY / GREY	DRIVER DOOR
DOOR MIRROR – PASSENGER	PD4	22-WAY / GREY	PASSENGER DOOR
DOOR SWITCH PACK – DRIVER	DD1	20-WAY / BLACK	DRIVER DOOR CASING
SEAT MODULE – DRIVER	DM2	10-WAY / GREY	DRIVER SEAT SWITCH PACK
	DM3	16-WAY / BLACK	
	DM4	8-WAY / BLUE	
	DM5	8-WAY / GREEN	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA431	16-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
GROUNDS		
Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.

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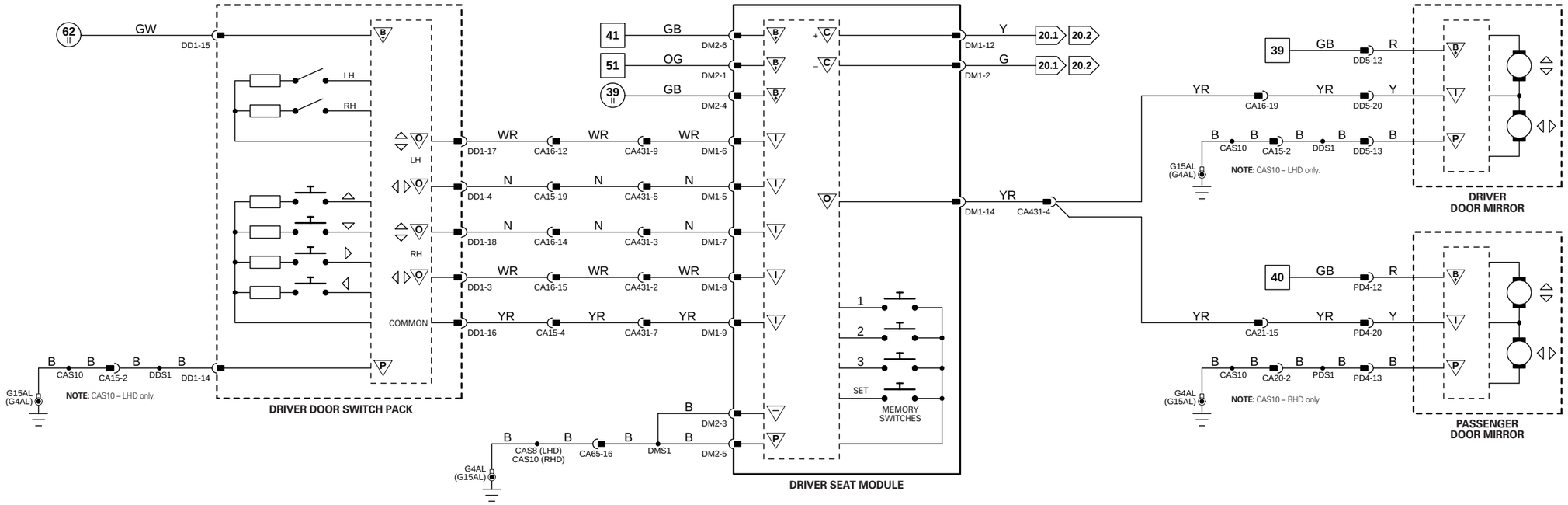
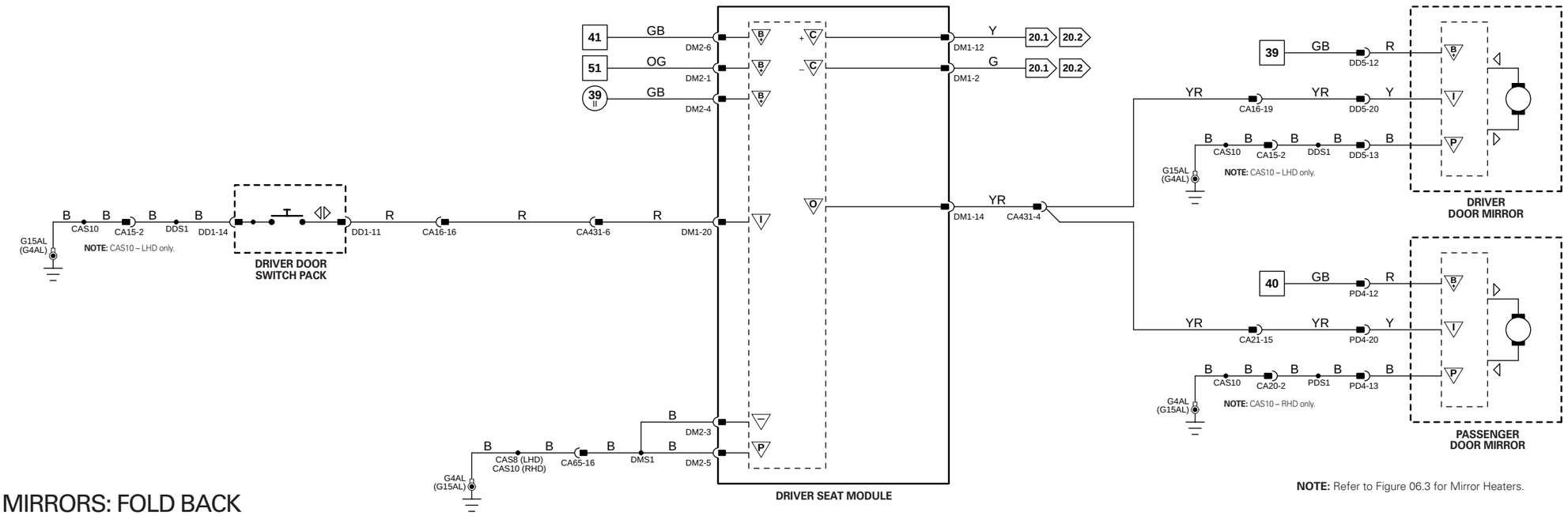


DOOR MIRROR MOVEMENT



DOOR MIRRORS: FOLD BACK

NOTE: Refer to Figure 06.3 for Mirror Heaters.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 T → 10 T Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input / O Output
B Battery Voltage / P Power Ground
+ Sensor/Signal Supply V / – Sensor/Signal Ground
C CAN / S SCP
D D2B Network / D Serial and Encoded Data

VARIANT: Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Driver Seat Module

▽	Pin	Description and Characteristic
C	DM1-02	CAN -
C	DM1-12	CAN +
B+	DM2-01	BATTERY POWER SUPPLY: B+
SG	DM2-03	SIGNAL GROUND: GROUND
B+	DM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	DM2-05	POWER GROUND: GROUND
B+	DM2-06	BATTERY POWER SUPPLY: B+
I	DM2-07	DRIVER DOOR AJAR SWITCH SIGNAL: OPEN CIRCUIT WHEN ACTIVATED
PG	DM2-10	POWER GROUND: GROUND
I	DM3-01	DRIVER SEAT BACK RECLINE / INCLINE POSITION SIGNAL
SG	DM3-02	DRIVER SEAT BACK RECLINE / INCLINE POSITION SIGNAL GROUND
I	DM3-03	DRIVER SEAT CUSHION REAR UP / DOWN POSITION SIGNAL
SG	DM3-04	DRIVER SEAT CUSHION REAR UP / DOWN POSITION SIGNAL GROUND
I	DM3-05	DRIVER SEAT CUSHION FRONT UP / DOWN POSITION SIGNAL
SG	DM3-06	DRIVER SEAT CUSHION FRONT UP / DOWN POSITION SIGNAL GROUND
I	DM3-07	DRIVER SEAT FORE / AFT POSITION SIGNAL
SG	DM3-08	DRIVER SEAT FORE / AFT POSITION SIGNAL GROUND
O	DM4-01	DRIVER SEAT BACK RECLINE / INCLINE MOTOR DRIVE
O	DM4-02	DRIVER SEAT BACK RECLINE / INCLINE MOTOR DRIVE
O	DM4-03	DRIVER SEAT CUSHION REAR UP / DOWN MOTOR DRIVE
O	DM4-04	DRIVER SEAT CUSHION REAR UP / DOWN MOTOR DRIVE
O	DM4-05	DRIVER SEAT CUSHION FRONT UP / DOWN MOTOR DRIVE
O	DM4-06	DRIVER SEAT CUSHION FRONT UP / DOWN MOTOR DRIVE
O	DM4-07	DRIVER SEAT FORE / AFT MOTOR DRIVE
O	DM4-08	DRIVER SEAT FORE / AFT MOTOR DRIVE
O	DM5-01	DRIVER SEAT LUMBAR PUMP DRIVE
O	DM5-02	DRIVER SEAT LUMBAR PUMP DRIVE

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

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.

Fig. 11.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3	8-WAY / BLACK	DRIVER DOOR
	DD9	2-WAY / BLACK	
SEAT LUMBAR PUMP – DRIVER	DM10	3-WAY / WHITE	DRIVER SEAT
SEAT MODULE – DRIVER	DM2	10-WAY / GREY	DRIVER SEAT SWITCH PACK
	DM3	16-WAY / BLACK	
	DM4	8-WAY / BLUE	
	DM5	8-WAY / GREEN	
SEAT MOTORS AND POSITION SENSORS – DRIVER	DM7	4-WAY / GREY	DRIVER SEAT
	DM8	4-WAY / GREY	
	DM9	4-WAY / GREY	
	ML12	4-WAY / GREY	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA413	12-WAY / BLACK / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	INSTRUMENT PANEL
DM6	4-WAY / GREY / DRIVER SEAT HARNESS TO LINK LEAD HARNESS	UNDER DRIVER SEAT

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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

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.

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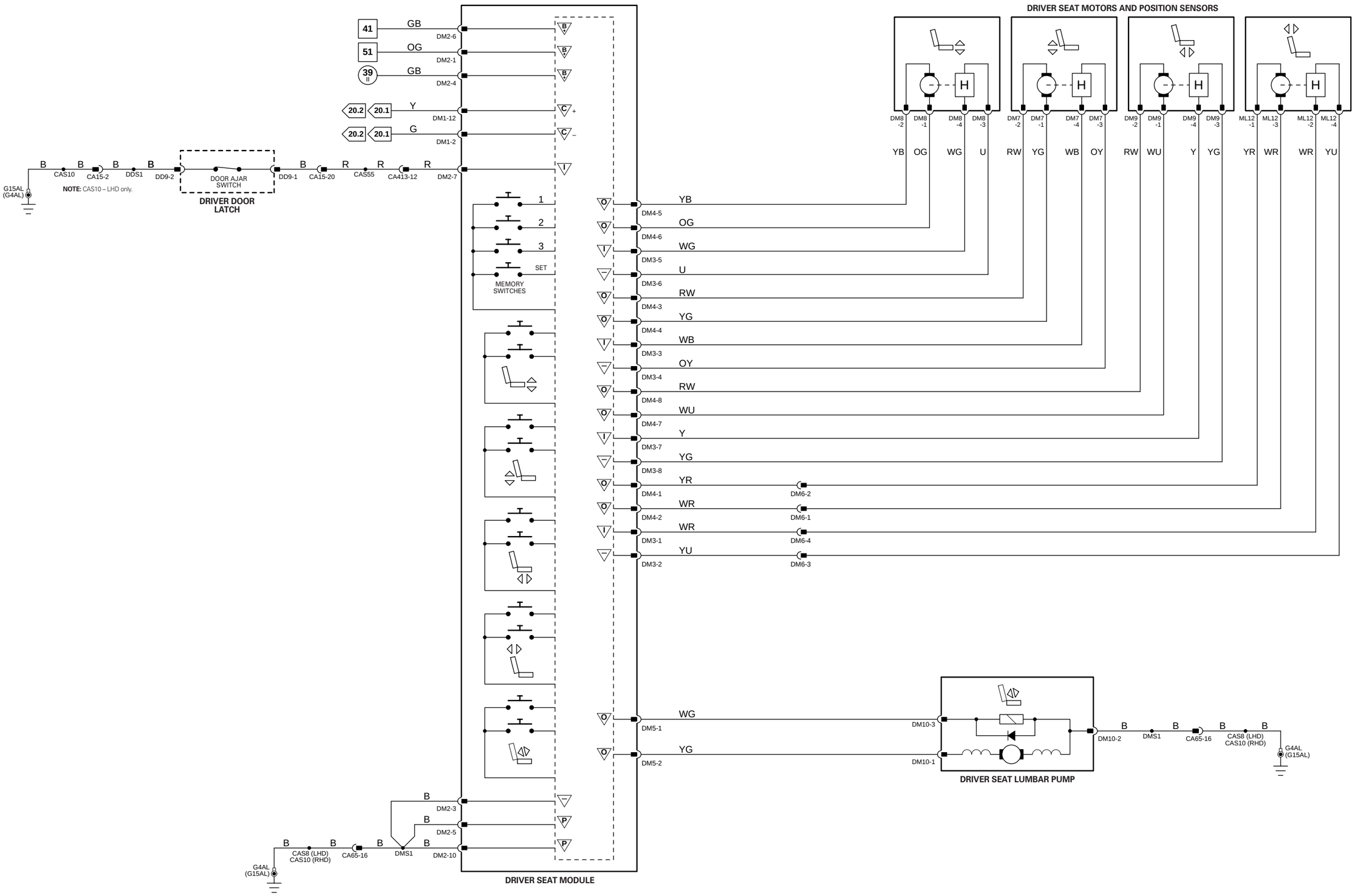


1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 II → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Passenger Seat Module

▽	Pin	Description and Characteristic
B+	PM2-01	BATTERY POWER SUPPLY: B+
I	PM2-02	PASSENGER SEAT HEATER SWITCH SIGNAL
B+	PM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	PM2-05	POWER GROUND: GROUND
B+	PM2-06	BATTERY POWER SUPPLY: B+
PG	PM2-10	POWER GROUND: GROUND
O	PM4-01	PASSENGER SEAT BACK RECLINE / INCLINE MOTOR DRIVE
O	PM4-02	PASSENGER SEAT BACK RECLINE / INCLINE MOTOR DRIVE
O	PM4-03	PASSENGER SEAT CUSHION REAR UP / DOWN MOTOR DRIVE
O	PM4-04	PASSENGER SEAT CUSHION REAR UP / DOWN MOTOR DRIVE
O	PM4-05	PASSENGER SEAT CUSHION FRONT UP / DOWN MOTOR DRIVE
O	PM4-06	PASSENGER SEAT CUSHION FRONT UP / DOWN MOTOR DRIVE
O	PM4-07	PASSENGER SEAT FORE / AFT MOTOR DRIVE
O	PM4-08	PASSENGER SEAT FORE / AFT MOTOR DRIVE
†		
O	PM5-01	PASSENGER SEAT LUMBAR PUMP DRIVE
O	PM5-02	PASSENGER SEAT LUMBAR PUMP DRIVE

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

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.

Fig. 11.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT LUMBAR PUMP – PASSENGER	PM19	3-WAY / WHITE	PASSENGER SEAT
SEAT MODULE – PASSENGER	PM2	10-WAY / GREY	PASSENGER SEAT SWITCH PACK
	PM4	8-WAY / BLUE	
	PM5	8-WAY / GREEN	
SEAT MOTORS – PASSENGER	PM6	2-WAY / RED	PASSENGER SEAT
	PM7	2-WAY / RED	
	PM8	2-WAY / BLACK	
	PM9	2-WAY / RED	

HARNESS IN-LINE CONNECTORS

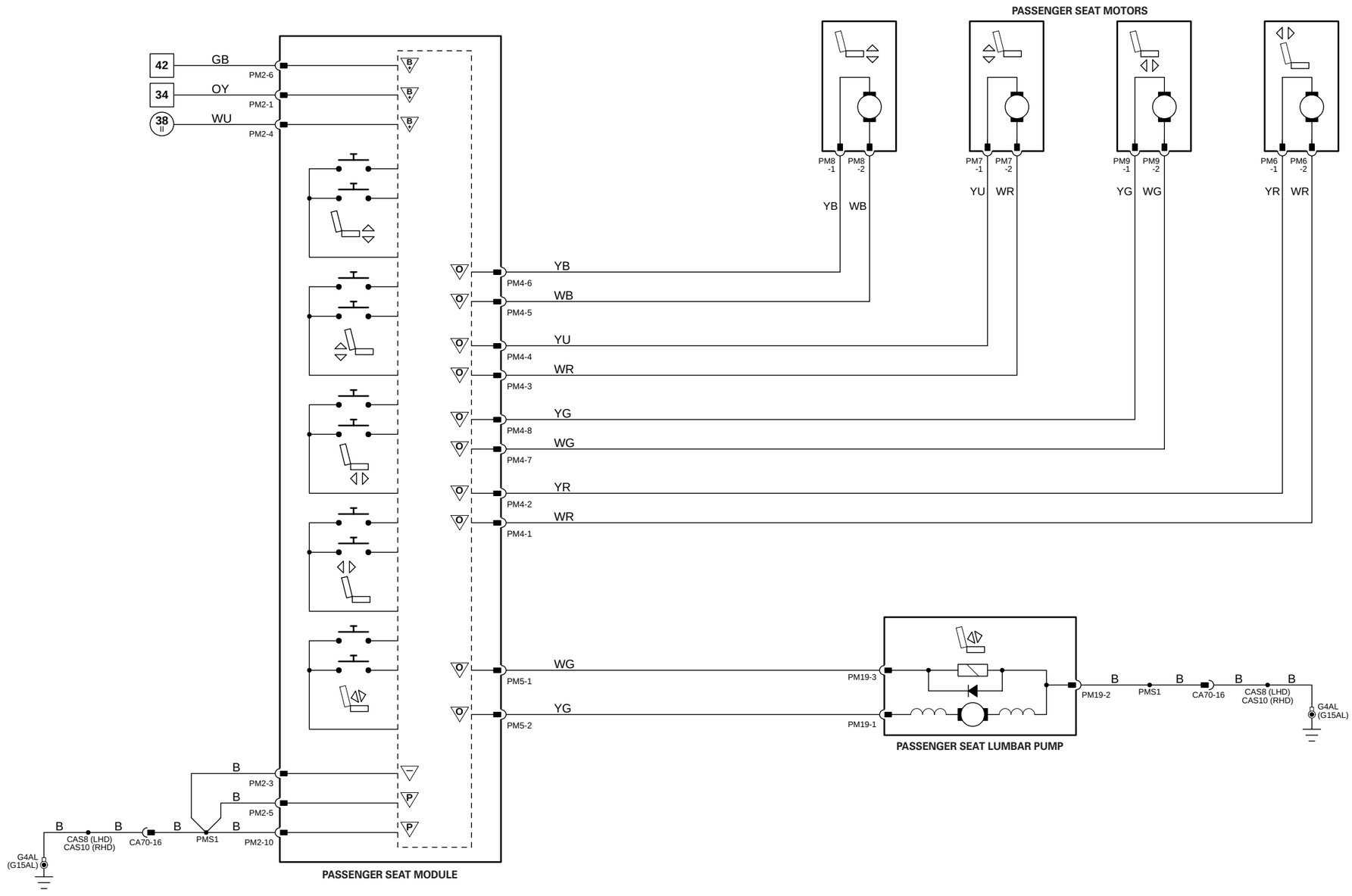
Connector	Connector Description	Location
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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

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.



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 11.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
LUMBAR SWITCH PACK – RH	LS16	7-WAY / BLACK	RH FRONT SEAT
LUMBAR SWITCH PACK – LH	RS16	7-WAY / BLACK	LH FRONT SEAT
SEAT LUMBAR PUMP – LH	LS19	3-WAY / WHITE	LH FRONT SEAT
SEAT LUMBAR PUMP – RH	RS19	3-WAY / WHITE	RH FRONT SEAT
SEAT MOVEMENT MOTORS – RH	RS2	2-WAY / NATURAL	RH FRONT SEAT
	RS4	2-WAY / RED	
	RS5	2-WAY / BLACK	
	RS6	2-WAY / RED	
SEAT MOVEMENT MOTORS – LH	LS2	2-WAY / NATURAL	LH FRONT SEAT
	LS4	2-WAY / RED	
	LS5	2-WAY / BLACK	
	LS6	2-WAY / RED	
SEAT SWITCH PACK – LH	LS1	12-WAY / GREY	LH FRONT SEAT
SEAT SWITCH PACK – RH	RS1	12-WAY / GREY	RH FRONT SEAT

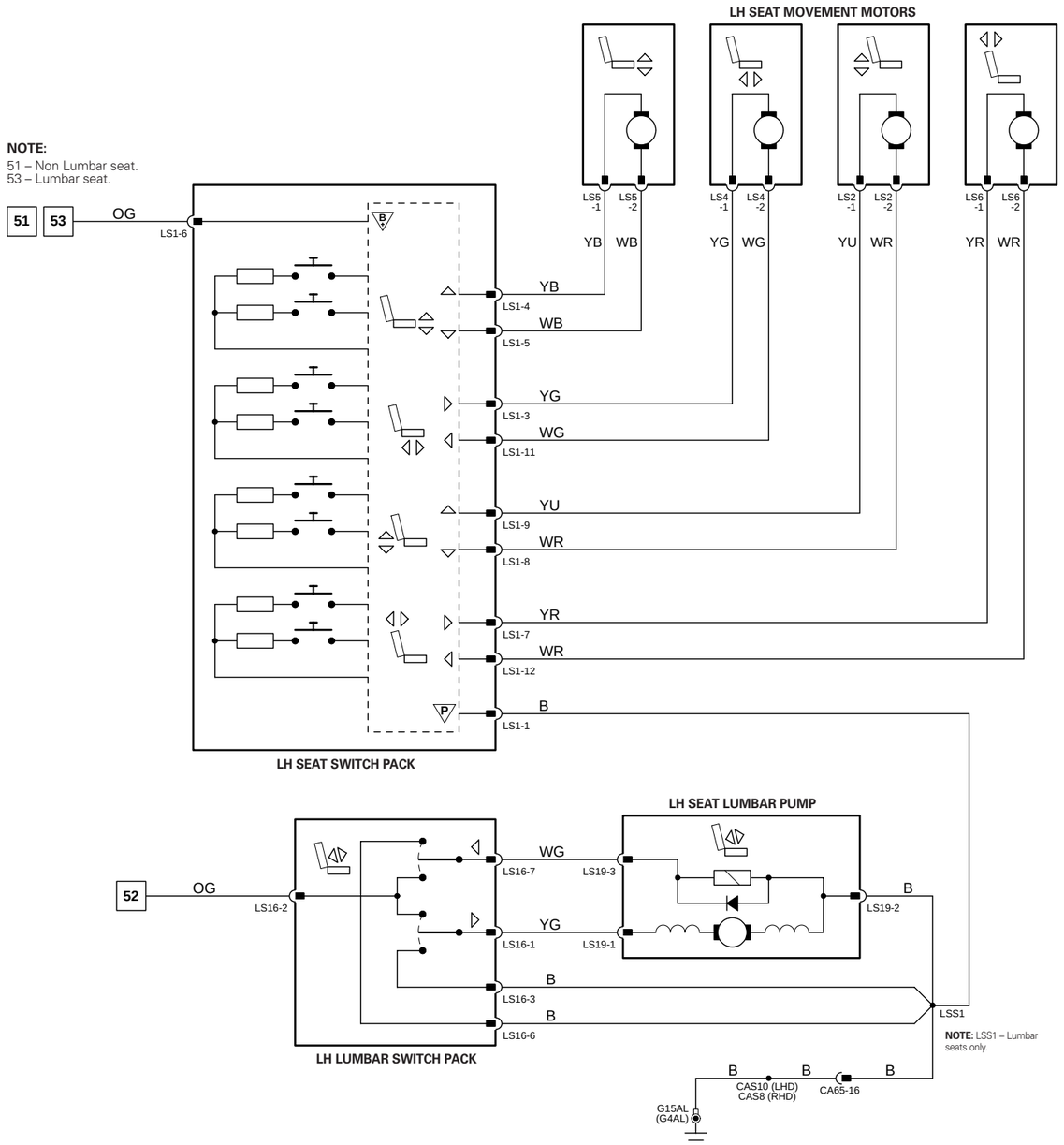
HARNESS IN-LINE CONNECTORS

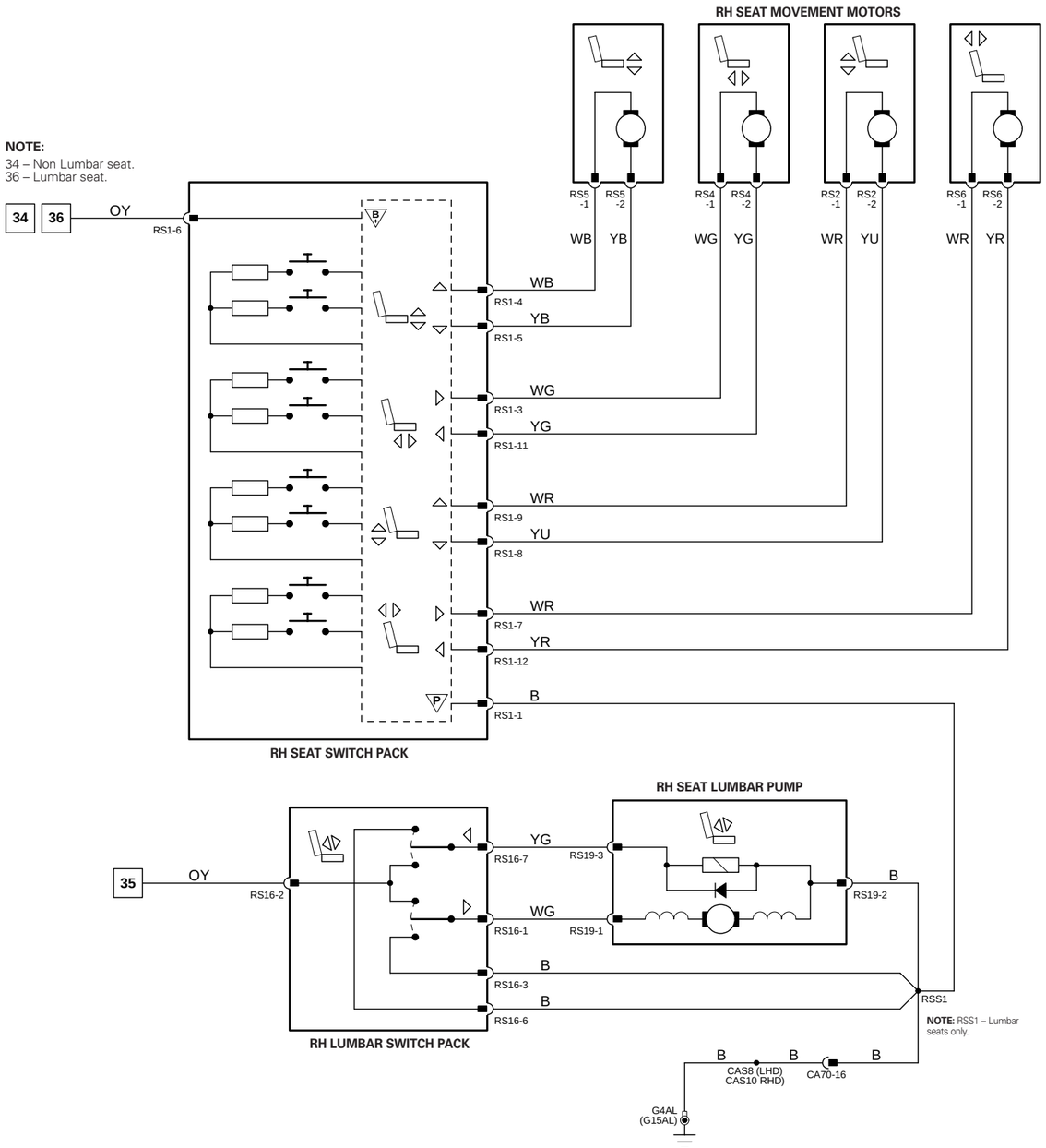
Connector	Connector Description	Location
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.





NOTE: Powered Lumbar circuit and components – Powered Lumbar seats only.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 8-Way Powered Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 11.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
LUMBAR SWITCH PACK – RH	LS16	7-WAY / BLACK	RH FRONT SEAT
LUMBAR SWITCH PACK – LH	RS16	7-WAY / BLACK	LH FRONT SEAT
SEAT LUMBAR PUMP – LH	LS19	3-WAY / WHITE	LH FRONT SEAT
SEAT LUMBAR PUMP – RH	RS19	3-WAY / WHITE	RH FRONT SEAT
SEAT MOVEMENT MOTORS – RH	RS2	2-WAY / NATURAL	RH FRONT SEAT
	RS4	2-WAY / RED	
	RS5	2-WAY / BLACK	
	RS6	2-WAY / RED	
SEAT MOVEMENT MOTORS – LH	LS2	2-WAY / NATURAL	LH FRONT SEAT
	LS4	2-WAY / RED	
	LS5	2-WAY / BLACK	
	LS6	2-WAY / RED	
SEAT SWITCH PACK – LH	LS1	12-WAY / GREY	LH FRONT SEAT
SEAT SWITCH PACK – RH	RS1	12-WAY / GREY	RH FRONT SEAT

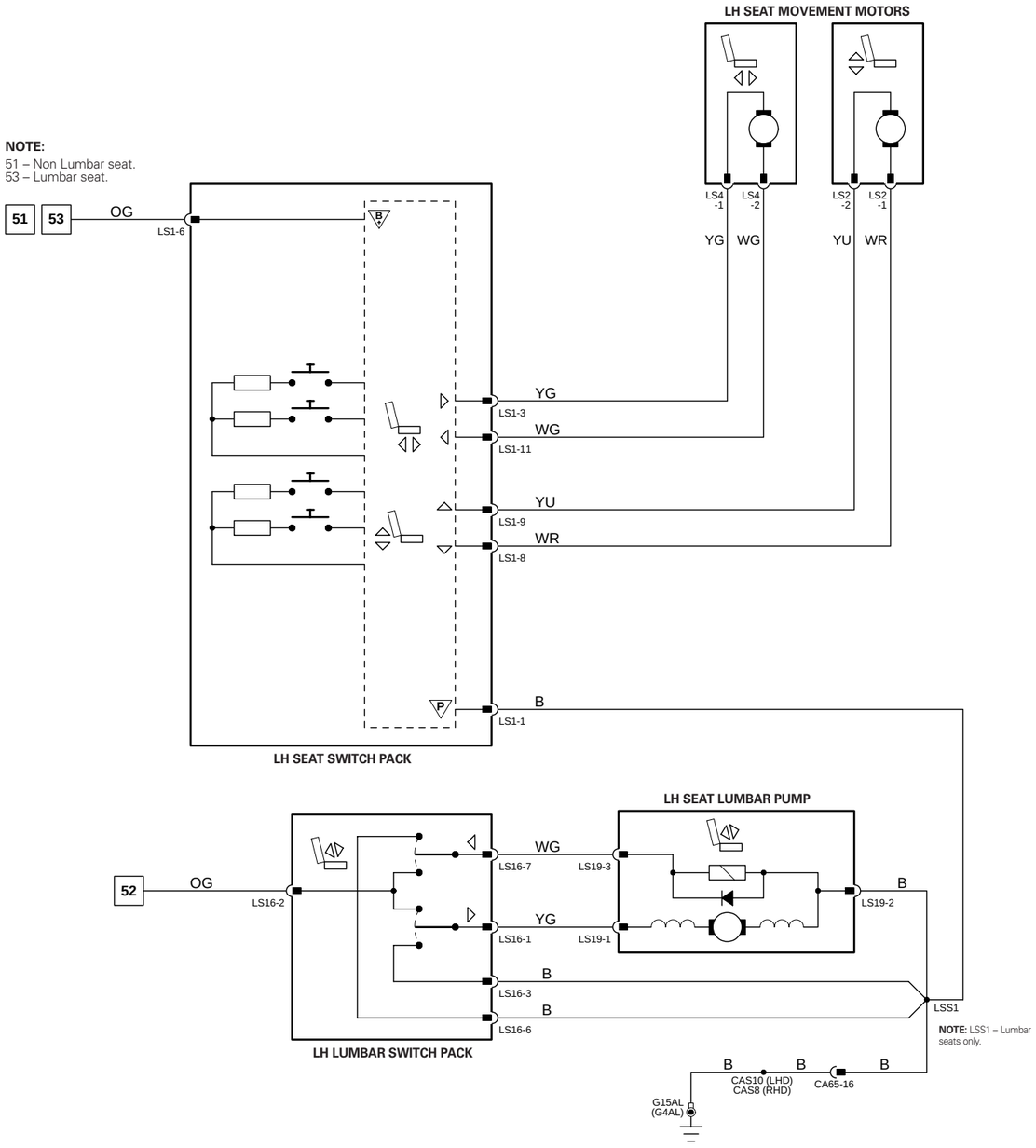
HARNESS IN-LINE CONNECTORS

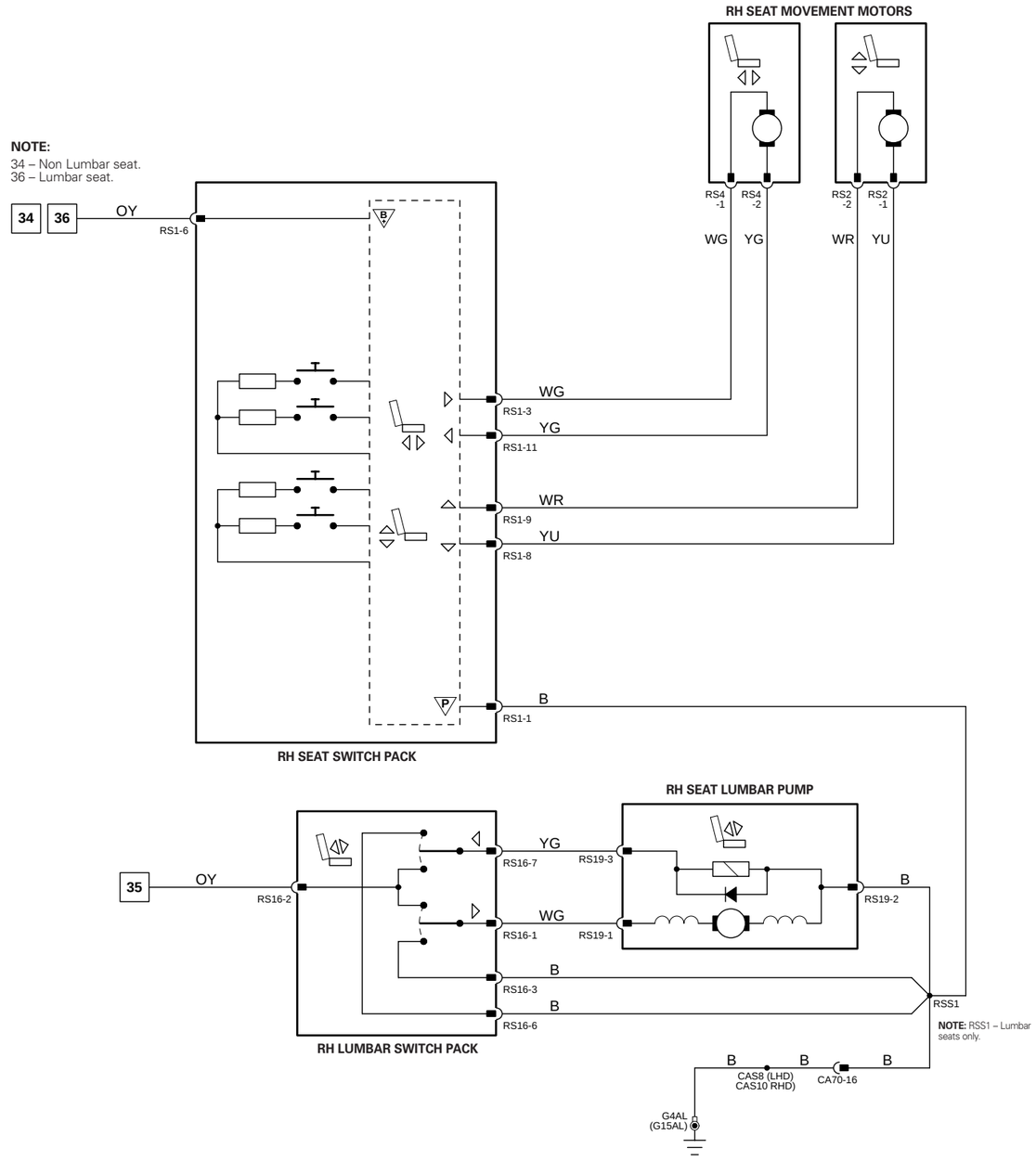
Connector	Connector Description	Location
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.





NOTE: Powered Lumbar circuit and components – Powered Lumbar seats only.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 4-Way Powered Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 11.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT MOTOR – LH	LS10	2-WAY / RED	LH FRONT SEAT
SEAT MOTOR – RH	RS10	2-WAY / RED	RH FRONT SEAT
SEAT SWITCH PACK – LH	LS1	12-WAY / GREY	LH FRONT SEAT
SEAT SWITCH PACK – RH	RS1	12-WAY / GREY	RH FRONT SEAT

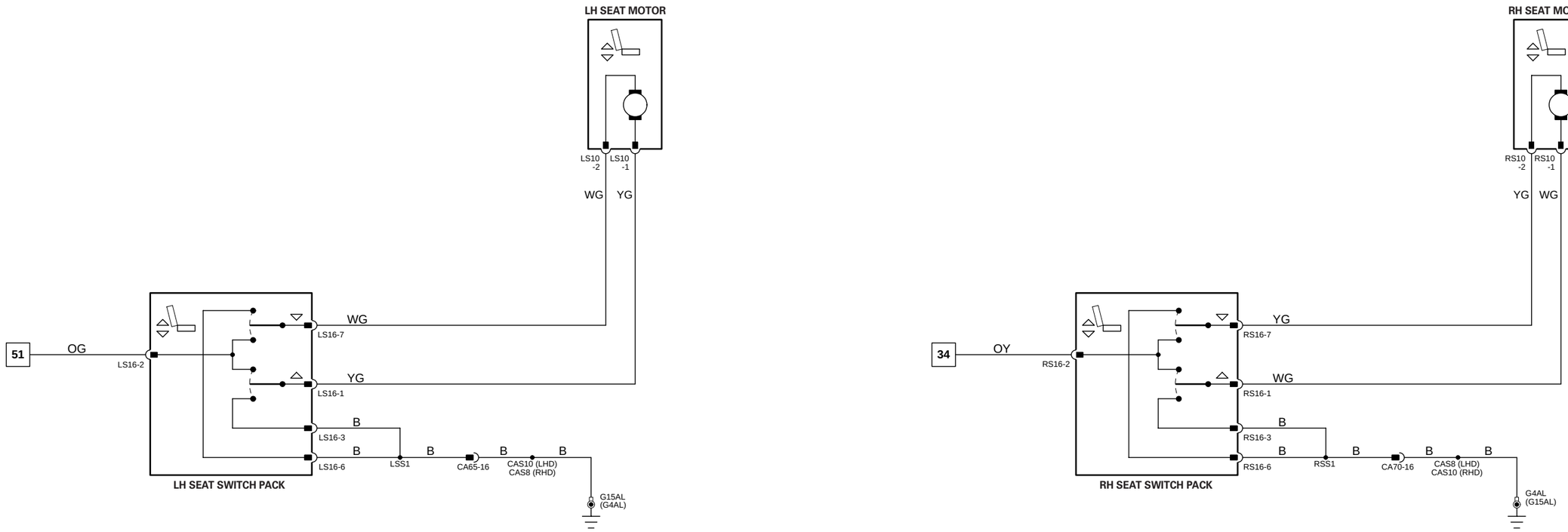
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (U) → 31 (U) Fig. 01.5
32 (U) → 66 (U) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: 2-Way Powered Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Driver Seat Module

▽	Pin	Description and Characteristic
B+	DM2-01	BATTERY POWER SUPPLY: B+
I	DM2-02	DRIVER SEAT HEATER SWITCH SIGNAL
SG	DM2-03	SIGNAL GROUND: GROUND
B+	DM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	DM2-05	POWER GROUND: GROUND
B+	DM2-06	BATTERY POWER SUPPLY: B+
O	DM2-08	DRIVER SEAT HEATER STATE
O	DM2-09	DRIVER SEAT HEATER STATE
PG	DM2-10	POWER GROUND: GROUND
O	DM5-03	DRIVER SEAT HEATER DRIVE
I	DM5-04	DRIVER SEAT HEATER GROUND
I	DM5-07	DRIVER SEAT HEATER TEMPERATURE SENSOR SIGNAL
SG	DM5-08	DRIVER SEAT HEATER TEMPERATURE SENSOR SIGNAL GROUND

Passenger Seat Module

▽	Pin	Description and Characteristic
B+	PM2-01	BATTERY POWER SUPPLY: B+
I	PM2-02	PASSENGER SEAT HEATER SWITCH SIGNAL
SG	PM2-03	SIGNAL GROUND: GROUND
B+	PM2-04	IGNITION SWITCHED POWER SUPPLY II: B+
PG	PM2-05	POWER GROUND: GROUND
B+	PM2-06	BATTERY POWER SUPPLY: B+
O	PM2-08	PASSENGER SEAT HEATED STATE
O	PM2-09	PASSENGER SEAT HEATED STATE
PG	PM2-10	POWER GROUND: GROUND
O	PM5-03	PASSENGER SEAT HEATER DRIVE
I	PM5-04	PASSENGER SEAT HEATER GROUND
I	PM5-07	PASSENGER SEAT HEATER TEMPERATURE SENSOR SIGNAL
SG	PM5-08	PASSENGER SEAT HEATER TEMPERATURE SENSOR SIGNAL GROUND

Fig. 11.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT BACK HEATER – DRIVER	DM11	4-WAY / GREY	DRIVER SEAT
SEAT BACK HEATER – PASSENGER	PM10	4-WAY / GREY	PASSENGER SEAT
SEAT CUSHION HEATER – DRIVER	DM11	4-WAY / GREY	DRIVER SEAT
SEAT CUSHION HEATER – PASSENGER	PM10	4-WAY / GREY	PASSENGER SEAT
SEAT HEATER SWITCH – DRIVER: LHD	IP51	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – DRIVER: RHD	IP56	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – PASSENGER: LHD	IP56	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – PASSENGER: RHD	IP51	6-WAY / BLACK	CENTER CONSOLE
SEAT MODULE – DRIVER	DM2 DM3 DM4 DM5	10-WAY / GREY 16-WAY / BLACK 8-WAY / BLUE 8-WAY / GREEN	DRIVER SEAT SWITCH PACK
SEAT MODULE – PASSENGER	PM2 PM4 PM5	10-WAY / GREY 8-WAY / BLUE 8-WAY / GREEN	PASSENGER SEAT SWITCH PACK

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM

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

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

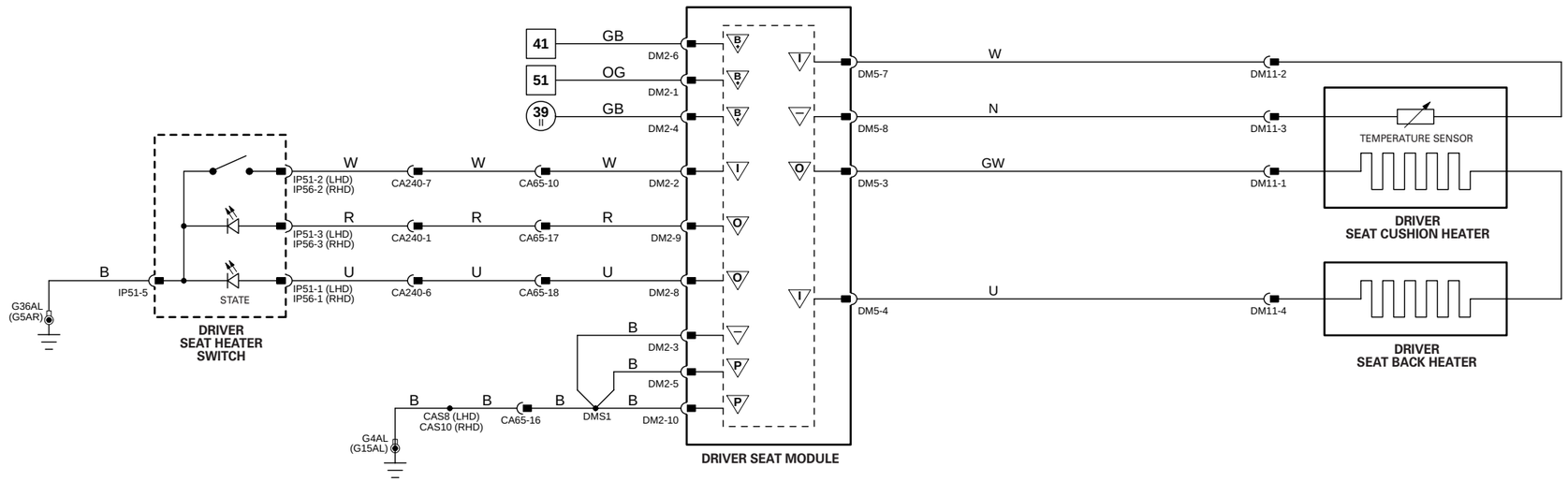
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

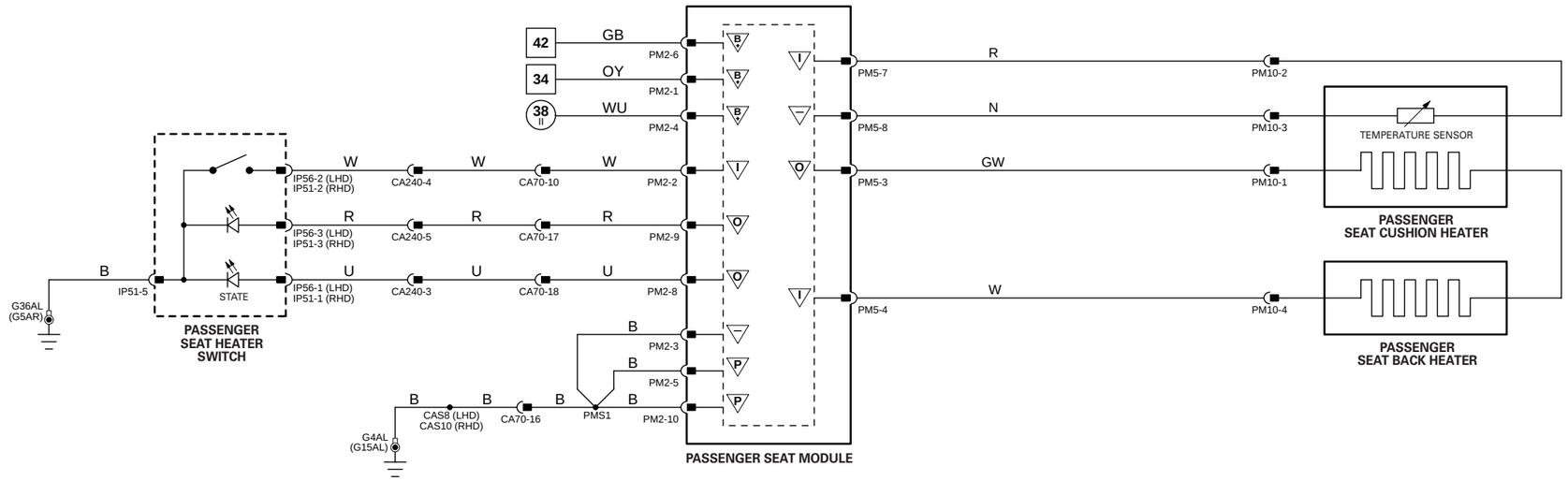
CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.

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.

DATE OF ISSUE: August 2003





1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 11.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT BACK HEATER – LH	LS7	4-WAY / GREY	LH FRONT SEAT
SEAT BACK HEATER – RH	RS7	4-WAY / GREY	RH FRONT SEAT
SEAT CUSHION HEATER – LH	LS7	4-WAY / GREY	LH FRONT SEAT
SEAT CUSHION HEATER – RH	RS7	4-WAY / GREY	RH FRONT SEAT
SEAT HEATER MODULE – LH	LS13	12-WAY / GREY	BELOW LH FRONT SEAT
SEAT HEATER MODULE – RH	RS13	12-WAY / GREY	BELOW RH FRONT SEAT
SEAT HEATER SWITCH – LH: LHD	IP51	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – LH: RHD	IP56	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – RH: LHD	IP56	6-WAY / BLACK	CENTER CONSOLE
SEAT HEATER SWITCH – RH: RHD	IP51	6-WAY / BLACK	CENTER CONSOLE

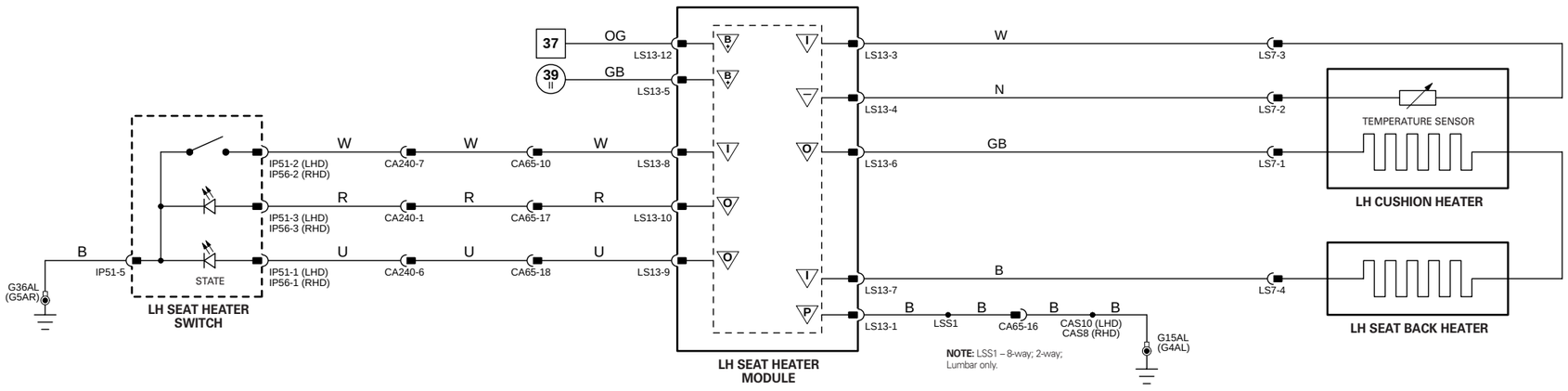
HARNESS IN-LINE CONNECTORS

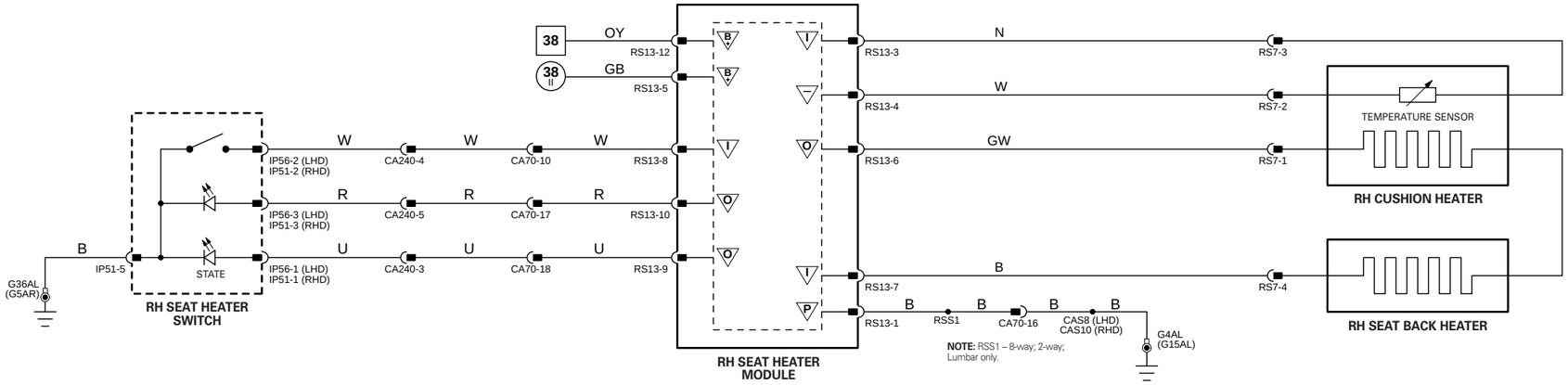
Connector	Connector Description	Location
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM

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.





1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (T) → 10 (T) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Heated Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
O	CA86-04	CENTRAL LOCKING MOTORS DRIVE – DOUBLE LOCKING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
PG	CA86-05	POWER GROUND
I	CA86-14	RESET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-18	RH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	CA86-19	LOCK SWITCH: OPEN CIRCUIT / GROUND
I	CA86-22	TRUNK LID AJAR / TAIL GATE AJAR: OPEN = OPEN CIRCUIT; CLOSED = GROUND
O	CA87-02	TRUNK / TAIL GATE LOCK MOTOR DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-03	CENTRAL LOCKING MOTORS DRIVE – LOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-05	CENTRAL LOCKING REAR MOTORS DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	IP5-01	PASSENGER DOORS LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
O	IP5-05	DRIVER DOOR LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-16	TRUNK / TAIL GATE RELEASE SWITCH: GROUND WHEN SELECTED
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

Instrument Cluster

▽	Pin	Description and Characteristic
I	IP10-13	EMERGENCY UNLOCK: B+ WHEN ACTIVATED
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-07	BATTERY POWER SUPPLY: B+
I	IP11-08	POWER GROUND: GROUND

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

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.

Fig. 12.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3 DD9	8-WAY / BLACK 2-WAY / BLACK	DRIVER DOOR
DOOR LATCH – LH REAR	BL3 BL6	8-WAY / BLACK 2-WAY / BLACK	LH REAR DOOR
DOOR LATCH – PASSENGER	PD3 PD9	8-WAY / BLACK 2-WAY / BLACK	PASSENGER DOOR
DOOR LATCH – RH REAR	BR3 BR6	8-WAY / BLACK 2-WAY / BLACK	RH REAR DOOR
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	IP132	3-WAY / BLACK	LOWER RH 'A' POST
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
TRUNK LOCK MOTOR	TM6	5-WAY / NATURAL	TRUNK LID
TRUNK RELEASE SWITCH	TM8	2-WAY / WHITE	TRUNK LID

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE

GROUNDS

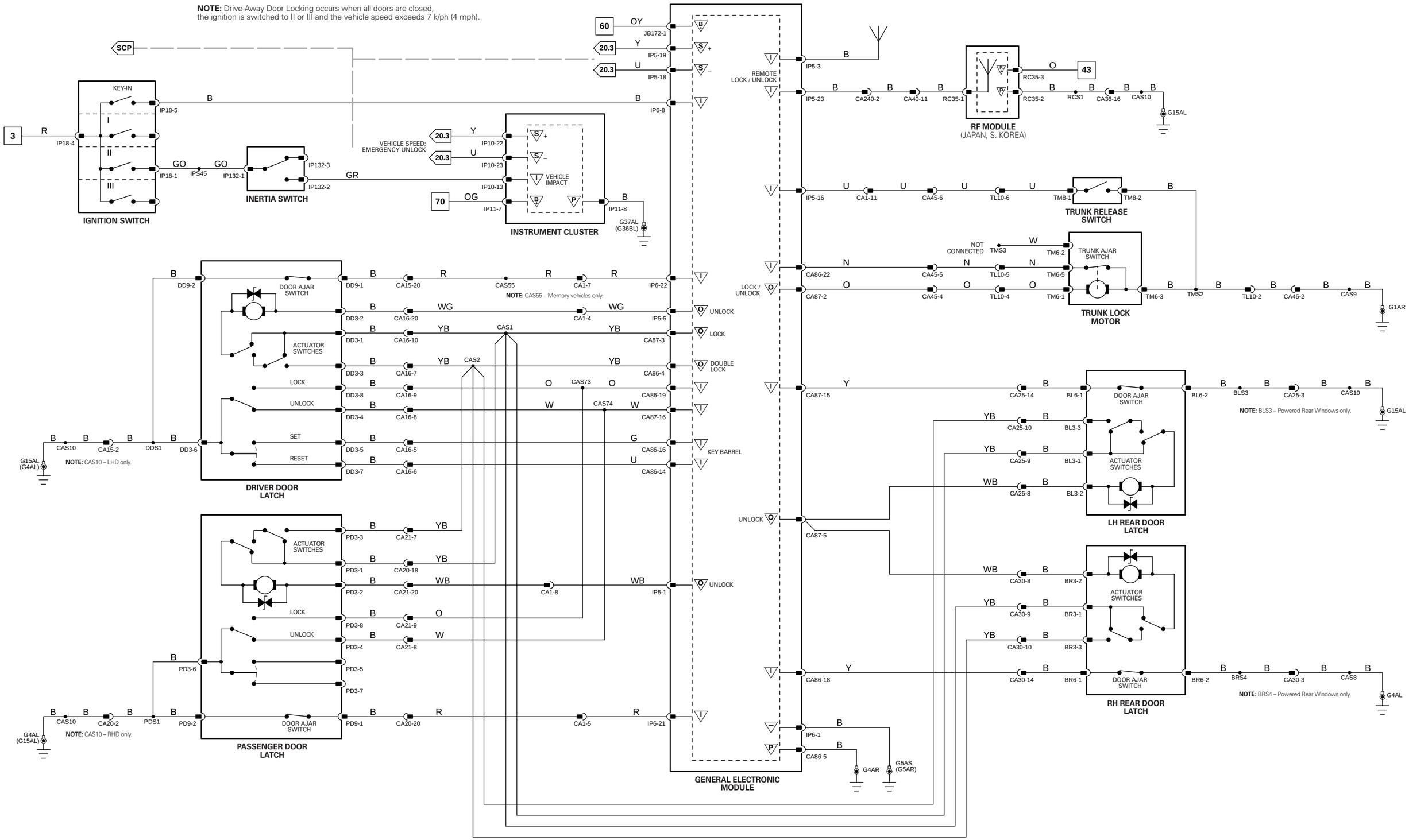
Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

DATE OF ISSUE: August 2003

NOTE: Drive-Away Door Locking occurs when all doors are closed, the ignition is switched to II or III and the vehicle speed exceeds 7 k/ph (4 mph).



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 U → 31 U Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 U → 66 B Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Double Locking Sedan Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	CA86-14	RESET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-18	RH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	CA86-19	LOCK SWITCH: OPEN CIRCUIT / GROUND
I	CA86-22	TRUNK LID AJAR / TAIL GATE AJAR: OPEN = OPEN CIRCUIT; CLOSED = GROUND
O	CA87-02	TRUNK / TAIL GATE LOCK MOTOR DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-03	CENTRAL LOCKING MOTORS DRIVE – LOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-05	CENTRAL LOCKING REAR MOTORS DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	IP5-01	PASSENGER DOORS LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
O	IP5-05	DRIVER DOOR LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-16	TRUNK / TAIL GATE RELEASE SWITCH: GROUND WHEN SELECTED
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

Instrument Cluster

▽	Pin	Description and Characteristic
I	IP10-13	EMERGENCY UNLOCK: B+ WHEN ACTIVATED
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-07	BATTERY POWER SUPPLY: B+
I	IP11-08	POWER GROUND: GROUND

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

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.

Fig. 12.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3 DD9	8-WAY / BLACK 2-WAY / BLACK	DRIVER DOOR
DOOR LATCH – LH REAR	BL3 BL6	8-WAY / BLACK 2-WAY / BLACK	LH REAR DOOR
DOOR LATCH – PASSENGER	PD3 PD9	8-WAY / BLACK 2-WAY / BLACK	PASSENGER DOOR
DOOR LATCH – RH REAR	BR3 BR6	8-WAY / BLACK 2-WAY / BLACK	RH REAR DOOR
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	IP132	3-WAY / BLACK	LOWER RH 'A' POST
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
TRUNK LOCK MOTOR	TM6	5-WAY / NATURAL	TRUNK LID
TRUNK RELEASE SWITCH	TM8	2-WAY / WHITE	TRUNK LID

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

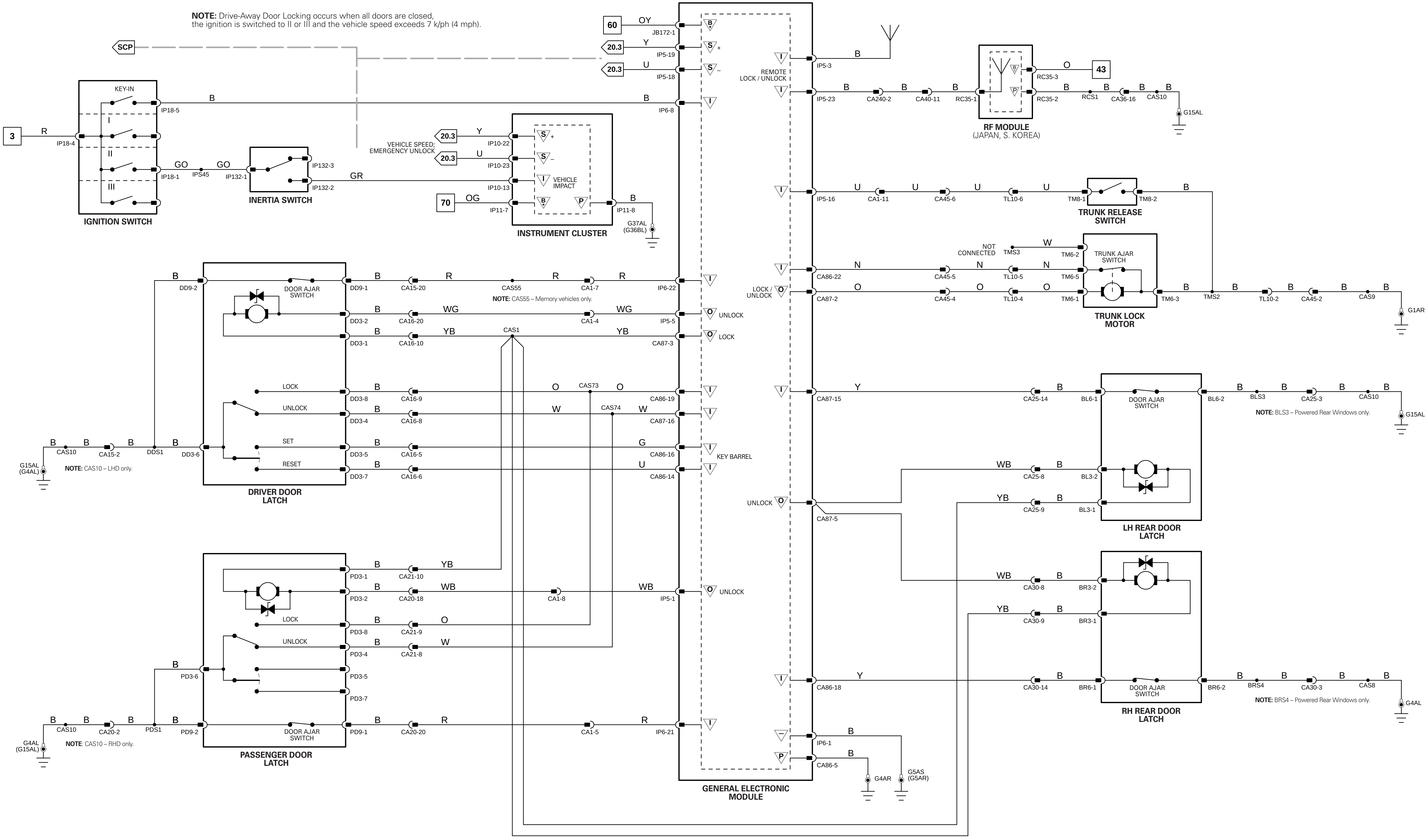
FOR CONTROL MODULE PIN-OUT INFORMATION, UNFOLD PAGE TO LEFT.

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.

DATE OF ISSUE: August 2003

Central Door Locking: Sedan – Non Double Locking

NOTE: Drive-Away Door Locking occurs when all doors are closed, the ignition is switched to II or III and the vehicle speed exceeds 7 k/ph (4 mph).



VARIANT: Non Double Locking Sedan Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
O	CA86-04	CENTRAL LOCKING MOTORS DRIVE – DOUBLE LOCKING: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
PG	CA86-05	POWER GROUND
I	CA86-14	RESET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-15	TAIL GLASS RELEASE SWITCH: GROUND WHEN ACTIVATED
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
I	CA86-18	RH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	CA86-19	LOCK SWITCH: OPEN CIRCUIT / GROUND
I	CA86-22	TRUNK LID AJAR / TAIL GATE AJAR: OPEN = OPEN CIRCUIT; CLOSED = GROUND
O	CA87-02	TRUNK / TAIL GATE LOCK MOTOR DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-03	CENTRAL LOCKING MOTORS DRIVE – LOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	CA87-05	CENTRAL LOCKING REAR MOTORS DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	IP5-01	PASSENGER DOORS LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	IP5-05	DRIVER DOOR LOCK MOTOR DRIVE – UNLOCK: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	IP5-16	TRUNK / TAIL GATE RELEASE SWITCH: GROUND WHEN SELECTED
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

▽	Pin	Description and Characteristic
I	IP10-13	EMERGENCY UNLOCK: B+ WHEN ACTIVATED
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-07	BATTERY POWER SUPPLY: B+
I	IP11-08	POWER GROUND: GROUND

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

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.

Fig. 12.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3 DD9	8-WAY / BLACK 2-WAY / BLACK	DRIVER DOOR
DOOR LATCH – LH REAR	BL3 BL6	8-WAY / BLACK 2-WAY / BLACK	LH REAR DOOR
DOOR LATCH – PASSENGER	PD3 PD9	8-WAY / BLACK 2-WAY / BLACK	PASSENGER DOOR
DOOR LATCH – RH REAR	BR3 BR6	8-WAY / BLACK 2-WAY / BLACK	RH REAR DOOR
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	IP132	3-WAY / BLACK	LOWER RH 'A' POST
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
TAIL GATE LATCH	WT6	6-WAY / BLACK	TAIL GATE
TAIL GATE RELEASE SWITCH	WT4	2-WAY / WHITE	TAIL GATE
TAIL GLASS LATCH	WT7	4-WAY / BLACK	TAIL GATE
TAIL GLASS RELEASE SWITCH	WG2	2-WAY / BLACK	TAIL GATE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA169	4-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER A POST / A POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
WG1	4-WAY / BLACK / CABIN HARNESS TO TAIL GATE GLASS HARNESS	ROOF / CENTER REAR
WL1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

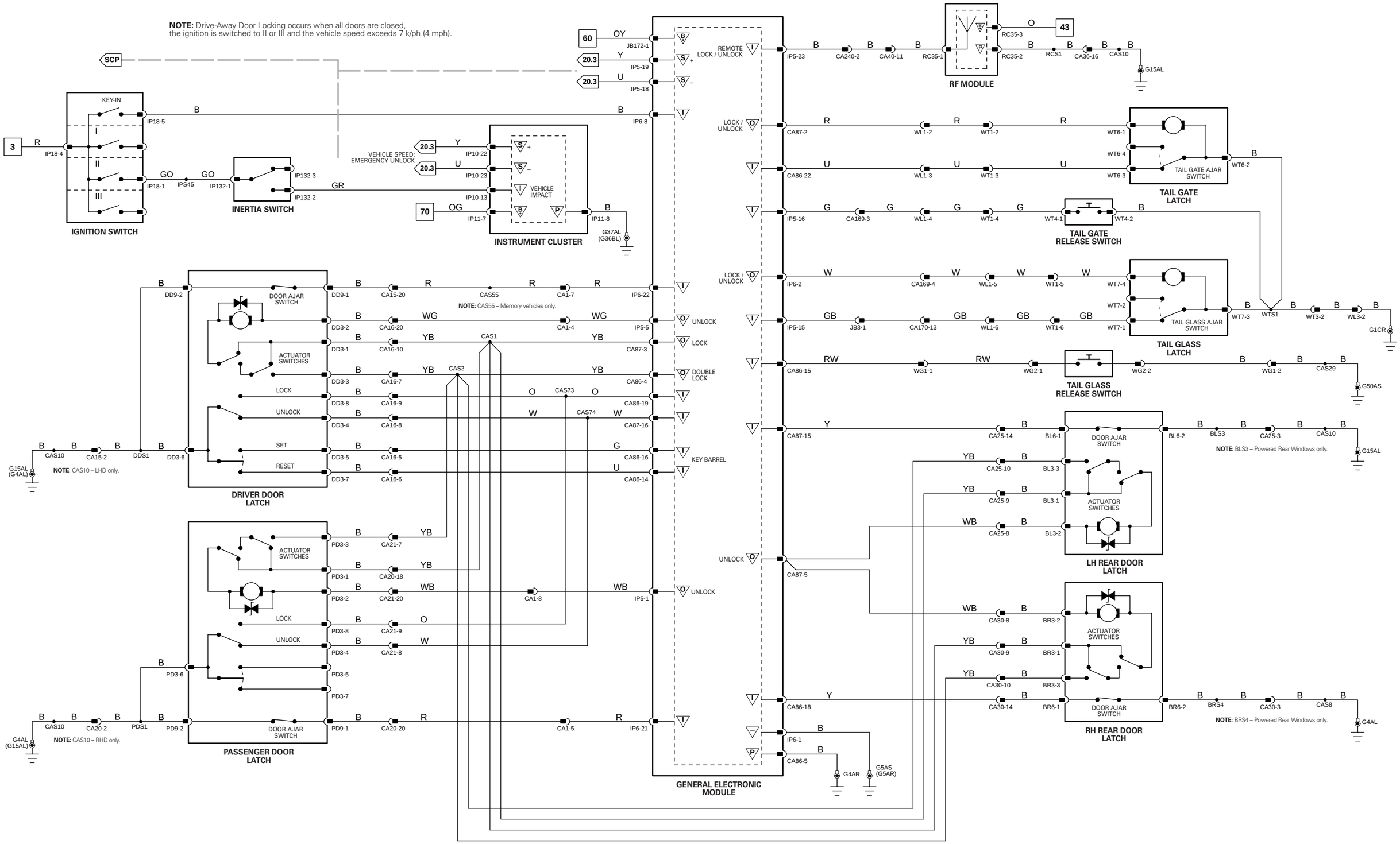
Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G50	CA	HEADLINER / RH REAR ROOF PANEL

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

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.

DATE OF ISSUE: August 2003

NOTE: Drive-Away Door Locking occurs when all doors are closed, the ignition is switched to II or III and the vehicle speed exceeds 7 k/ph (4 mph).



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 III → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Estate (Wagon)s Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
C	EN65-088	CAN -
C	EN65-089	CAN +

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
C	DL1-054	CAN +
C	DL1-073	CAN -

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
C	EN16-123	CAN -
C	EN16-124	CAN +

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	CA86-17	INCLINATION SENSOR SENSE: ALARM TRIGGERED = GROUND; ALARM NOT TRIGGERED = B+
I	CA86-18	RH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	CA86-20	INCLINATION AND INTRUSION SENSORS POWER SUPPLY: B+
I	CA86-22	TRUNK LID AJAR / TAIL GATE AJAR: OPEN = OPEN CIRCUIT; CLOSED = GROUND
I	CA86-23	INTRUSION SENSOR SENSE: ALARM TRIGGERED = GROUND; ALARM NOT TRIGGERED = B+
O	CA87-01	PASSIVE SECURITY SOUNDER DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
O	IP5-14	HORN RELAY DRIVE : TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-10	AUDIO UNIT PRESENCE SENSE: GROUND WHEN RADIO INSTALLED
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+
O	JB172-03	RH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	JB172-04	LH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+
D	JB172-18	ACTIVE SECURITY SOUNDER DRIVE: ENCODED COMMUNICATIONS
I	JB172-21	HOOD AJAR: HOOD OPEN = OPEN CIRCUIT; HOOD CLOSED = GROUND

Instrument Cluster

▽	Pin	Description and Characteristic
O	IP10-02	SECURITY INDICATOR DRIVE: TO ACTIVATE, IC SWITCHES CIRCUIT TO B+
D	IP10-03	PATS 1: ENCODED COMMUNICATION
D	IP10-04	PATS 2: ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

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.

Fig. 12.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
DOOR LATCH – DRIVER	DD3	8-WAY / BLACK	DRIVER DOOR
	DD9	2-WAY / BLACK	
DOOR LATCH – LH REAR	BL3	8-WAY / BLACK	LH REAR DOOR
	BL6	2-WAY / BLACK	
DOOR LATCH – PASSENGER	PD3	8-WAY / BLACK	PASSENGER DOOR
	PD9	2-WAY / BLACK	
DOOR LATCH – RH REAR	BR3	8-WAY / BLACK	RH REAR DOOR
	BR6	2-WAY / BLACK	
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
HOOD SECURITY SWITCH	JB81	2-WAY / BLACK	ADJACENT TO RH FRONT SUSPENSION TURRET
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INCLINATION SENSOR	CA190	6-WAY / BLACK	TRUNK, LH REAR
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
SECURITY INDICATOR	IP29	6-WAY / BLACK	CENTER CONSOLE
SECURITY SOUNDER – ACTIVE	SL3	3-WAY / BLACK	BEHIND FRONT LH WHEEL ARCH LINER
SECURITY SOUNDER – PASSIVE	SL1	1-WAY / ORANGE	LH FRONT OF VEHICLE
	SL2	1-WAY / ORANGE	
TRUNK LOCK MOTOR	TM6	5-WAY / NATURAL	TRUNK LID

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA45	6-WAY / GREY / CABIN HARNESS TO TRUNK LID HARNESS	BEHIND LH 'E' POST TRIM
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB79	6-WAY / BLACK / JUNCTION BOX HARNESS TO SECURITY SOUNDER LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
TL10	6-WAY / GREY / TRUNK LINK LEAD TO TRUNK LID HARNESS	BELOW PARCEL SHELF / LH SIDE

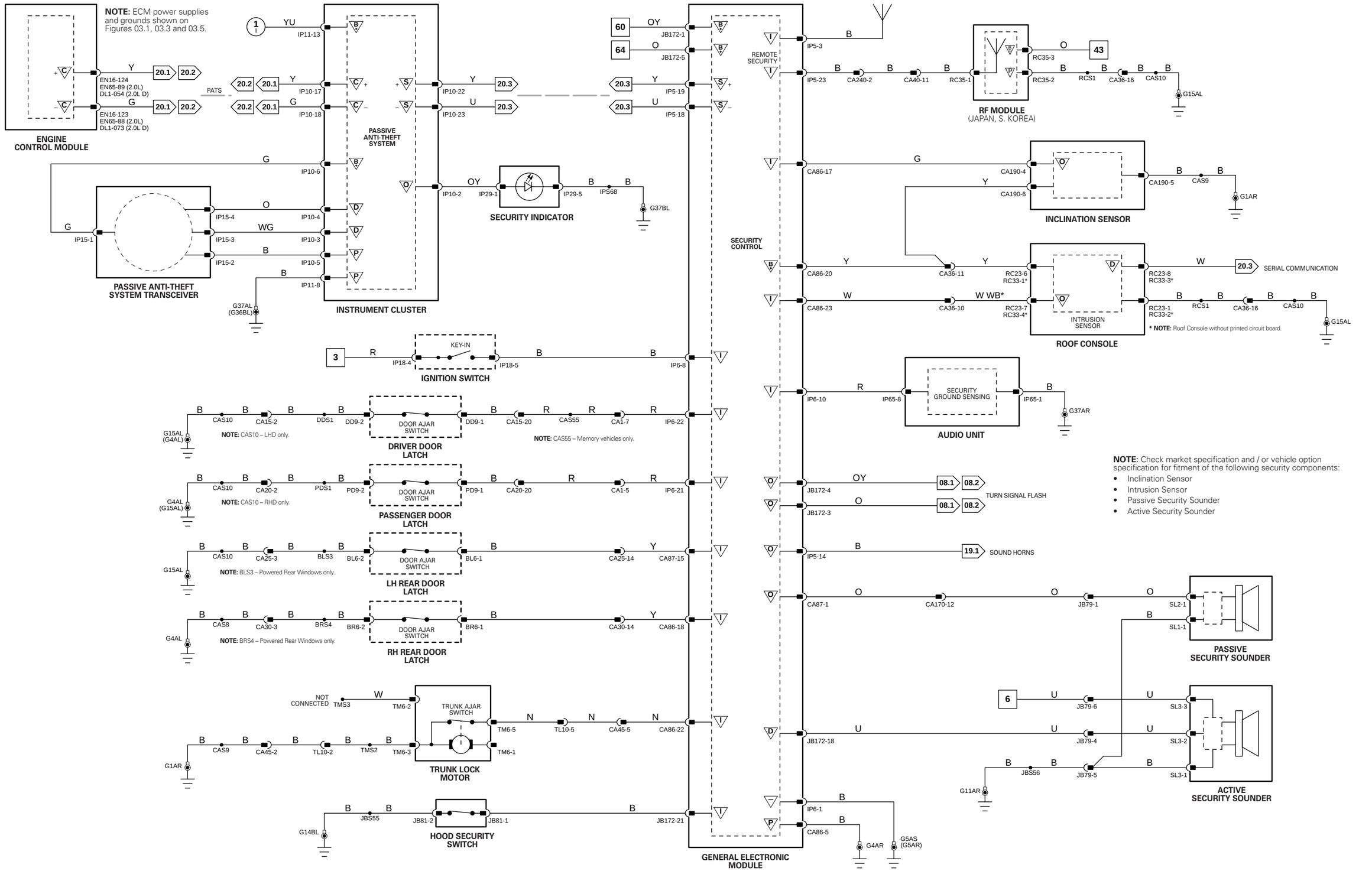
GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

Security: Sedan



NOTE: Check market specification and / or vehicle option specification for fitment of the following security components:
- Inclination Sensor
- Intrusion Sensor
- Passive Security Sounder
- Active Security Sounder

VARIANT: Sedan Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module – 2.0 L

▽	Pin	Description and Characteristic
C	EN65-088	CAN -
C	EN65-089	CAN +

Engine Control Module – 2.0 L D

▽	Pin	Description and Characteristic
C	DL1-054	CAN +
C	DL1-073	CAN -

Engine Control Module – 2.5 L, 3.0 L

▽	Pin	Description and Characteristic
C	EN16-123	CAN -
C	EN16-124	CAN +

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	CA86-17	INCLINATION SENSOR SENSE: ALARM TRIGGERED = GROUND; ALARM NOT TRIGGERED = B+
I	CA86-18	RH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	CA86-20	INCLINATION AND INTRUSION SENSORS POWER SUPPLY: B+
I	CA86-22	TRUNK LID AJAR / TAIL GATE AJAR: OPEN = OPEN CIRCUIT; CLOSED = GROUND
I	CA86-23	INTRUSION SENSOR SENSE: ALARM TRIGGERED = GROUND; ALARM NOT TRIGGERED = B+
O	CA87-01	PASSIVE SECURITY SOUNDER DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
I	CA87-15	LH REAR DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
O	IP5-14	HORN RELAY DRIVE : TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND
I	IP5-15	TAIL GLASS AJAR: GLASS OPEN = OPEN CIRCUIT; GLASS CLOSED = GROUND
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-08	KEY-IN IGNITION SWITCH: B+ WHEN KEY IN
I	IP6-10	AUDIO UNIT PRESENCE SENSE: GROUND WHEN RADIO INSTALLED
I	IP6-21	PASSENGER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
I	IP6-22	DRIVER DOOR AJAR: DOOR OPEN = OPEN CIRCUIT; DOOR CLOSED = GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+
O	JB172-03	RH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
O	JB172-04	LH FRONT TURN SIGNAL: TO ACTIVATE, GEM SWITCHES CIRCUIT TO B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+
D	JB172-18	ACTIVE SECURITY SOUNDER DRIVE: ENCODED COMMUNICATIONS
I	JB172-21	HOOD AJAR: HOOD OPEN = OPEN CIRCUIT; HOOD CLOSED = GROUND

Instrument Cluster

▽	Pin	Description and Characteristic
O	IP10-02	SECURITY INDICATOR DRIVE: TO ACTIVATE, IC SWITCHES CIRCUIT TO B+
D	IP10-03	PATS 1: ENCODED COMMUNICATION
D	IP10-04	PATS 2: ENCODED COMMUNICATION
I	IP10-05	PATS GROUND: GROUND
O	IP10-06	PATS TRANSCEIVER POWER: B+
C	IP10-17	CAN +
C	IP10-18	CAN -
S	IP10-22	SCP +
S	IP10-23	SCP -
I	IP11-08	POWER GROUND: GROUND
I	IP11-13	IGNITION SWITCHED POWER SUPPLY (I): B+

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

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.

Fig. 12.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
DOOR LATCH – DRIVER	DD3	8-WAY / BLACK	DRIVER DOOR
	DD9	2-WAY / BLACK	
DOOR LATCH – LH REAR	BL3	8-WAY / BLACK	LH REAR DOOR
	BL6	2-WAY / BLACK	
DOOR LATCH – PASSENGER	PD3	8-WAY / BLACK	PASSENGER DOOR
	PD9	2-WAY / BLACK	
DOOR LATCH – RH REAR	BR3	8-WAY / BLACK	RH REAR DOOR
	BR6	2-WAY / BLACK	
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
HOOD SECURITY SWITCH	JB81	2-WAY / BLACK	ADJACENT TO RH FRONT SUSPENSION TURRET
IGNITION SWITCH	IP18	7-WAY / BLACK	STEERING COLUMN
INCLINATION SENSOR	CA190	6-WAY / BLACK	TRUNK, LH REAR
INSTRUMENT CLUSTER	IP10	26-WAY / WHITE	INSTRUMENT PANEL
	IP11	26-WAY / WHITE	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP15	4-WAY / BLACK	STEERING COLUMN, IGNITION SWITCH
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
SECURITY INDICATOR	IP29	6-WAY / BLACK	CENTER CONSOLE
SECURITY SOUNDER – ACTIVE	SL3	3-WAY / BLACK	BEHIND FRONT LH WHEEL ARCH LINER
SECURITY SOUNDER – PASSIVE	SL1	1-WAY / ORANGE	LH FRONT OF VEHICLE
	SL2	1-WAY / ORANGE	
TAIL GATE LATCH	WT6	6-WAY / BLACK	TAIL GATE
TAIL GLASS LATCH	WT7	4-WAY / BLACK	TAIL GATE

HARNESS IN-LINE CONNECTORS

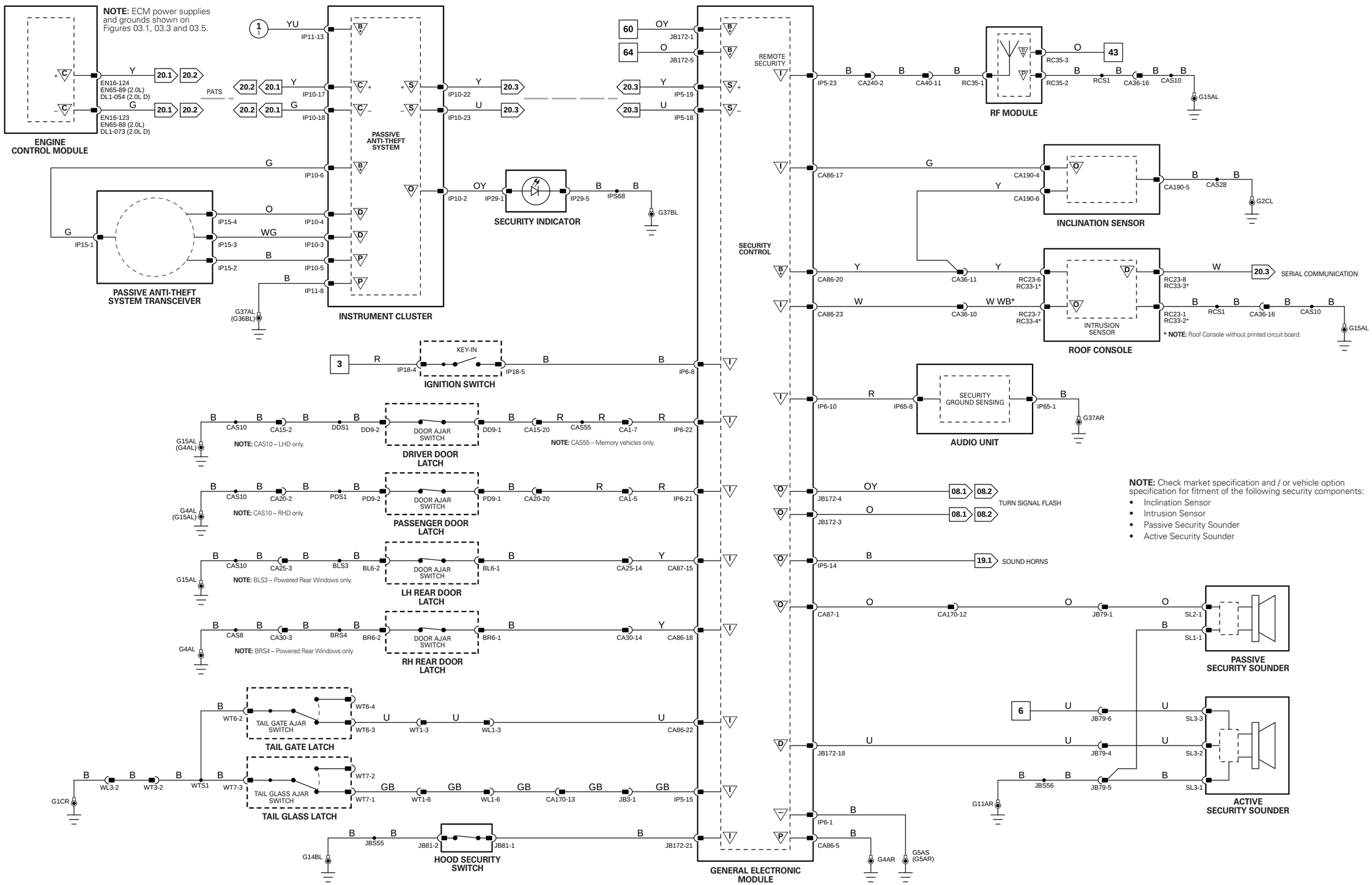
Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB79	6-WAY / BLACK / JUNCTION BOX HARNESS TO SECURITY SOUNDER LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
WL1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT1	8-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.



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1 → 10 Fig. 01.4
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32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

Input / Output
Battery Voltage / Power Ground
Sensor/Signal Supply V / Sensor/Signal Ground
CAN / SCP
D2B Network / Serial and Encoded Data

VARIANT: Estate (Wagon) Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	IP5-04	INTERMITTENT WIPE INTERVAL: 1 = 0.5†– 4 kΩ; 2 = 4†– 14 kΩ; 3 = 14†– 24 kΩ; 4 = 24†– 34 kΩ; 5 = 34†– 43 kΩ; 6 = 43†– 57 kΩ
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-21	WINDSHIELD WIPER RELAY DRIVE: TO ACTIVATE, CIRCUIT SWITCHED TO GROUND
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-04	INTERMITTENT WIPE: B+ WHEN SELECTED
I	IP6-05	FRONT WASHER SWITCH: WASHER ON = GROUND; WASHER OFF = B+
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+
I	JB172-02	WIPER MOTOR PARK SWITCH: PARKED = GROUND; NOT PARKED = B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+
O	JB172-23	POWER WASH PUMP RELAY DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND

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

Fig. 13.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
POWERWASH PUMP	JB65	2-WAY / GREY	BEHIND RH FRONT WHEEL ARCH LINER
POWERWASH PUMP RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R8
WINDSHIELD WASHER PUMP	JB109		ENGINE COMPARTMENT / RH FRONT
WINDSHIELD WIPER MOTOR RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R4
WIPER MOTOR – FRONT	JB63		BASE OF WINDSHIELD / LH SIDE
WIPER SWITCH ASSEMBLY	IP16	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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.

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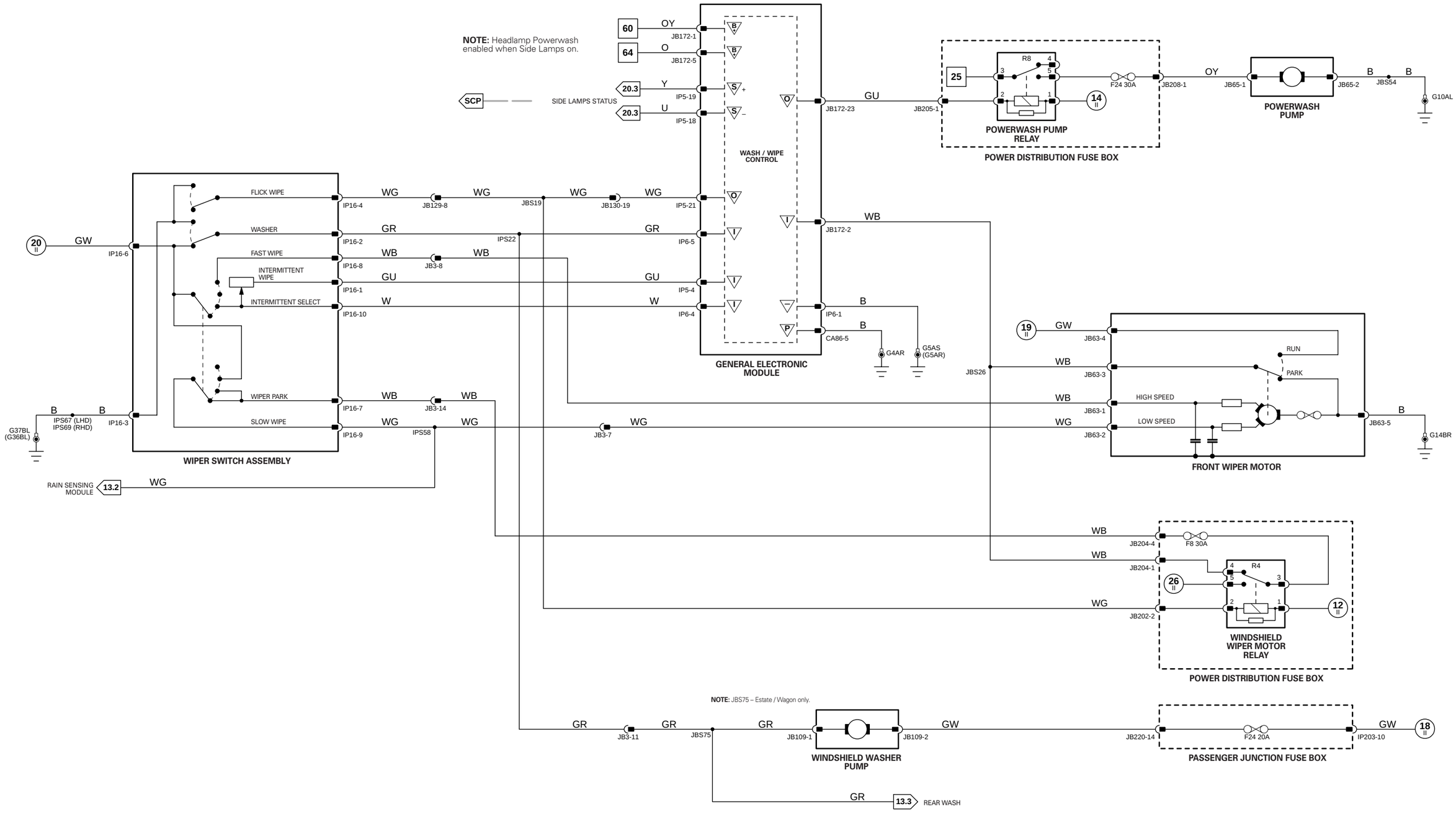

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67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input / O Output
B Battery Voltage / P Power Ground
+ Sensor/Signal Supply V / – Sensor/Signal Ground
C CAN / S SCP / D D2B Network / D Serial and Encoded Data

VARIANT: Non Rain Sensing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	IP5-04	INTERMITTENT WIPE INTERVAL: 1 = 0.5†– 4 kΩ; 2 = 4†– 14 kΩ; 3 = 14†– 24 kΩ; 4 = 24†– 34 kΩ; 5 = 34†– 43 kΩ; 6 = 43†– 57 kΩ
S	IP5-18	SCP -
S	IP5-19	SCP +
O	IP5-21	WINDSHIELD WIPER RELAY DRIVE: TO ACTIVATE, CIRCUIT SWITCHED TO GROUND
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-04	INTERMITTENT WIPE: B+ WHEN SELECTED
I	IP6-05	FRONT WASHER SWITCH: WASHER ON = GROUND; WASHER OFF = B+
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+
I	JB172-02	WIPER MOTOR PARK SWITCH: PARKED = GROUND; NOT PARKED = B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+
O	JB172-23	POWER WASH PUMP RELAY DRIVE: TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND

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

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.

Fig. 13.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
POWERWASH PUMP	JB65	2-WAY / GREY	BEHIND RH FRONT WHEEL ARCH LINER
POWERWASH PUMP RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R8
RAIN SENSING MODULE	CA6	12-WAY / BLACK	BEHIND INSTRUMENT PANEL / LH SIDE
RAIN SENSOR	RC15	3-WAY / BLACK	BEHIND REAR VIEW MIRROR
WINDSHIELD WASHER PUMP	JB109		ENGINE COMPARTMENT / RH FRONT
WINDSHIELD WIPER MOTOR RELAY	–	–	POWER DISTRIBUTION FUSE BOX – R4
WIPER MOTOR – FRONT	JB63		BASE OF WINDSHIELD / LH SIDE
WIPER SWITCH ASSEMBLY	IP16	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB130	22-WAY / GREEN / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G10	JB	ENGINE COMPARTMENT / BEHIND RH HEADLAMP
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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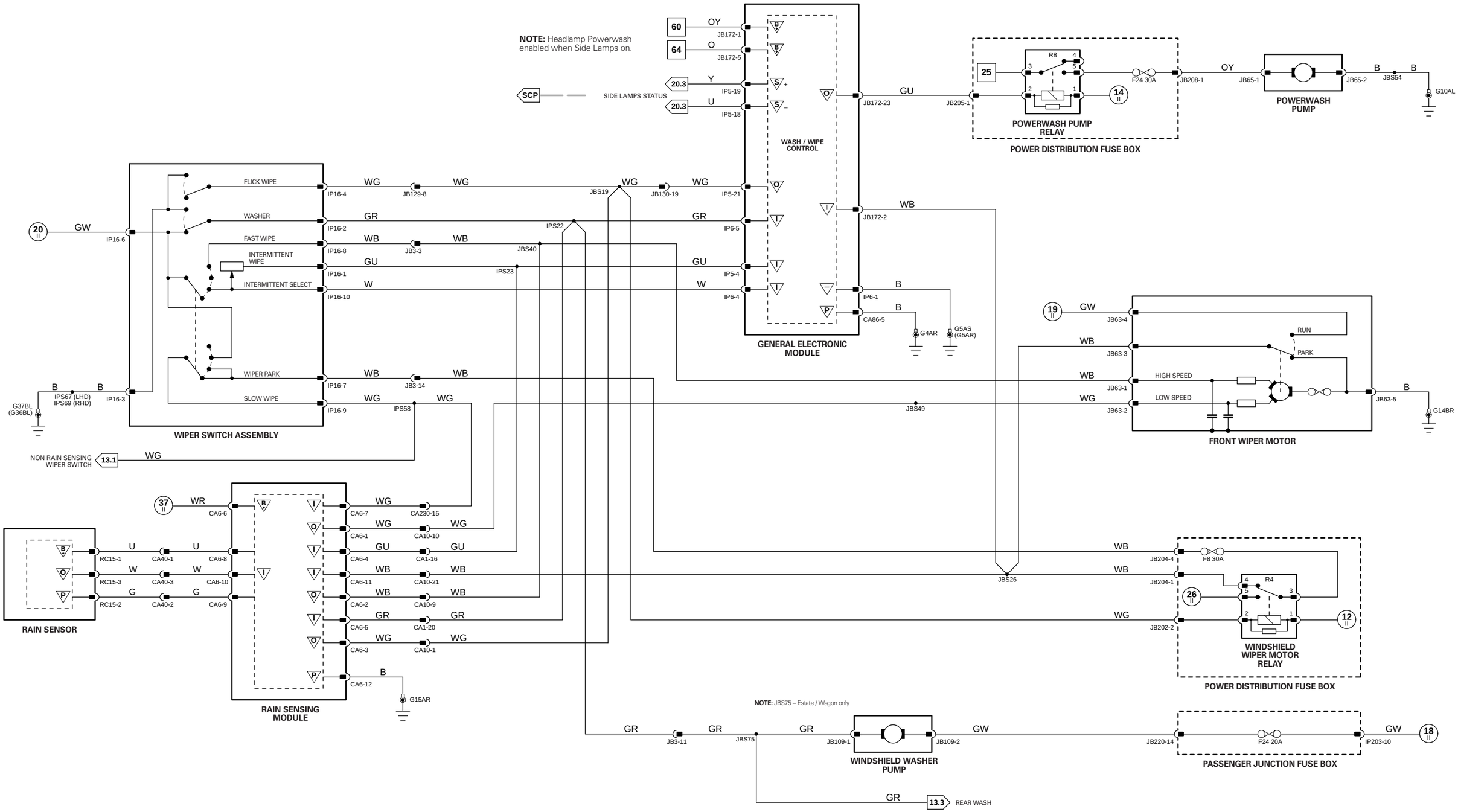

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77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Rain Sensing Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
I	IP5-02	REAR WASHER SWITCH: WASHER ON = GROUND; WASHER OFF = B+
I	IP5-03	ESTATE (WAGON): REAR WIPER SWITCH: B+ WHEN SELECTED
O	IP5-17	REAR WIPER MOTOR RELAY DRIVE: TO ACTIVATE, GEM SWITCH CIRCUIT TO GROUND
S	IP5-18	SCP -
S	IP5-19	SCP +
SG	IP6-01	LOGIC GROUND: GROUND
I	IP6-05	FRONT WASHER SWITCH: WASHER ON = GROUND; WASHER OFF = B+
I	IP6-12	REAR WIPER MOTOR PARK SWITCH: PARKED = GROUND; NOT PARKED = B+
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+
B+	JB172-05	BATTERY POWER SUPPLY (TURN SIGNALS): B+

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

Fig. 13.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
PASSENGER JUNCTION FUSE BOX	–	–	PASSENGER COMPARTMENT, FRONT BULKHEAD / LH SIDE
WINDSHIELD WASHER PUMP	JB109		ENGINE COMPARTMENT / RH FRONT
WIPER MOTOR – REAR	WT5		TAIL GATE
WIPER MOTOR RELAY – REAR	–	–	PASSENGER JUNCTION FUSE BOX – R3
WIPER SWITCH ASSEMBLY	IP16	10-WAY / GREY	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA169	4-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER A POST / A POST TRIM
WL3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE LINK LEAD	ROOF / CENTER REAR
WT3	3-WAY / BLACK / CABIN HARNESS TO TAIL GATE HARNESS	TAIL GATE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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.

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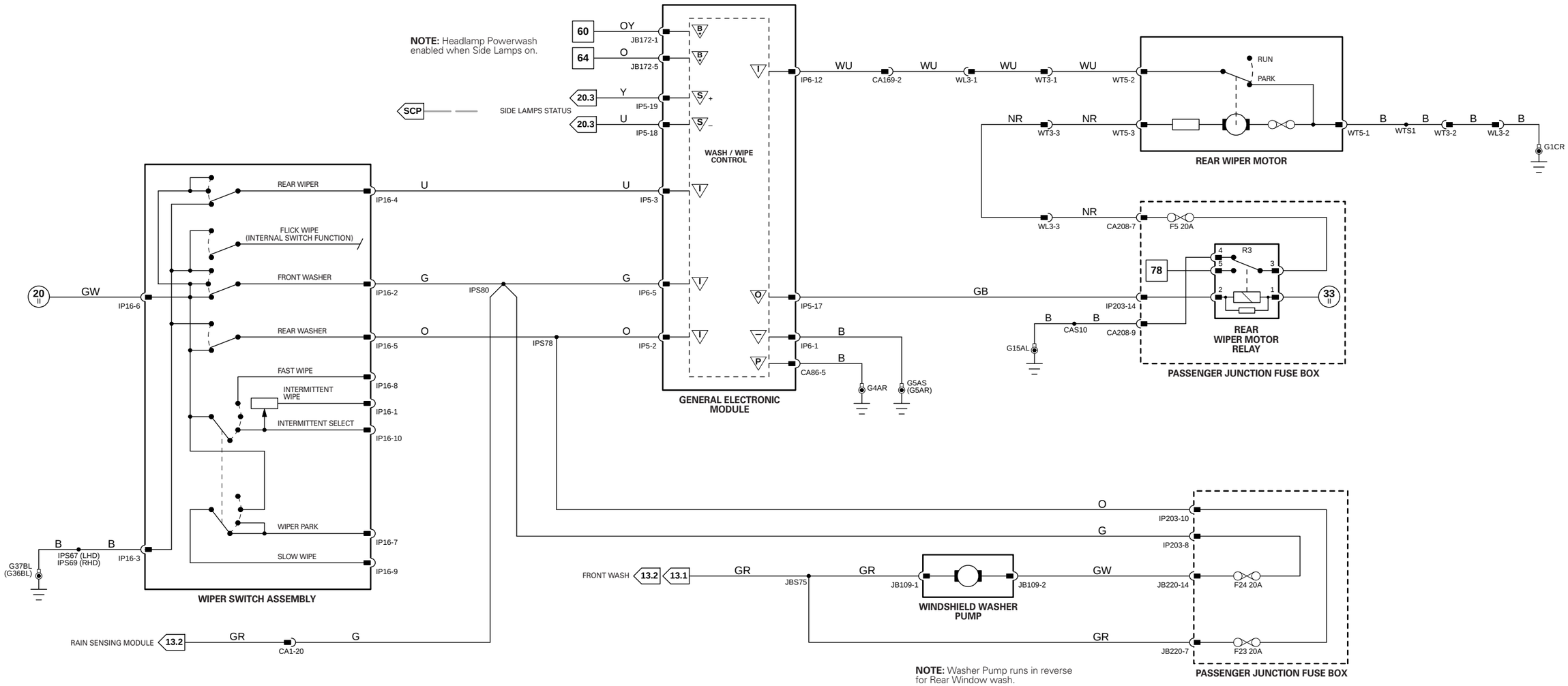

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77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Estate (Wagon) Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
O	CA87-17	GLOBAL CLOSE REQUEST: 20 mS PULSED SIGNAL
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

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

Fig. 14.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3 DD9	8-WAY / BLACK 2-WAY / BLACK	DRIVER DOOR
DOOR SWITCH PACK – DRIVER	DD1	20-WAY / BLACK	DRIVER DOOR CASING
DOOR SWITCH PACK – LH REAR	BL1	8-WAY / BLACK	LH REAR DOOR CASING
DOOR SWITCH PACK – PASSENGER	PD10	8-WAY / BLACK	PASSENGER DOOR CASING
DOOR SWITCH PACK – RH REAR	BR1	8-WAY / BLACK	RH REAR DOOR CASING
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
WINDOW MOTOR – DRIVER	DD2	8-WAY / GREY	DRIVER DOOR
WINDOW MOTOR – LH REAR	BL2	8-WAY / GREY	LH REAR DOOR
WINDOW MOTOR – PASSENGER	PD2	8-WAY / GREY	PASSENGER DOOR
WINDOW MOTOR – RH REAR	BR2	8-WAY / GREY	RH REAR DOOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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

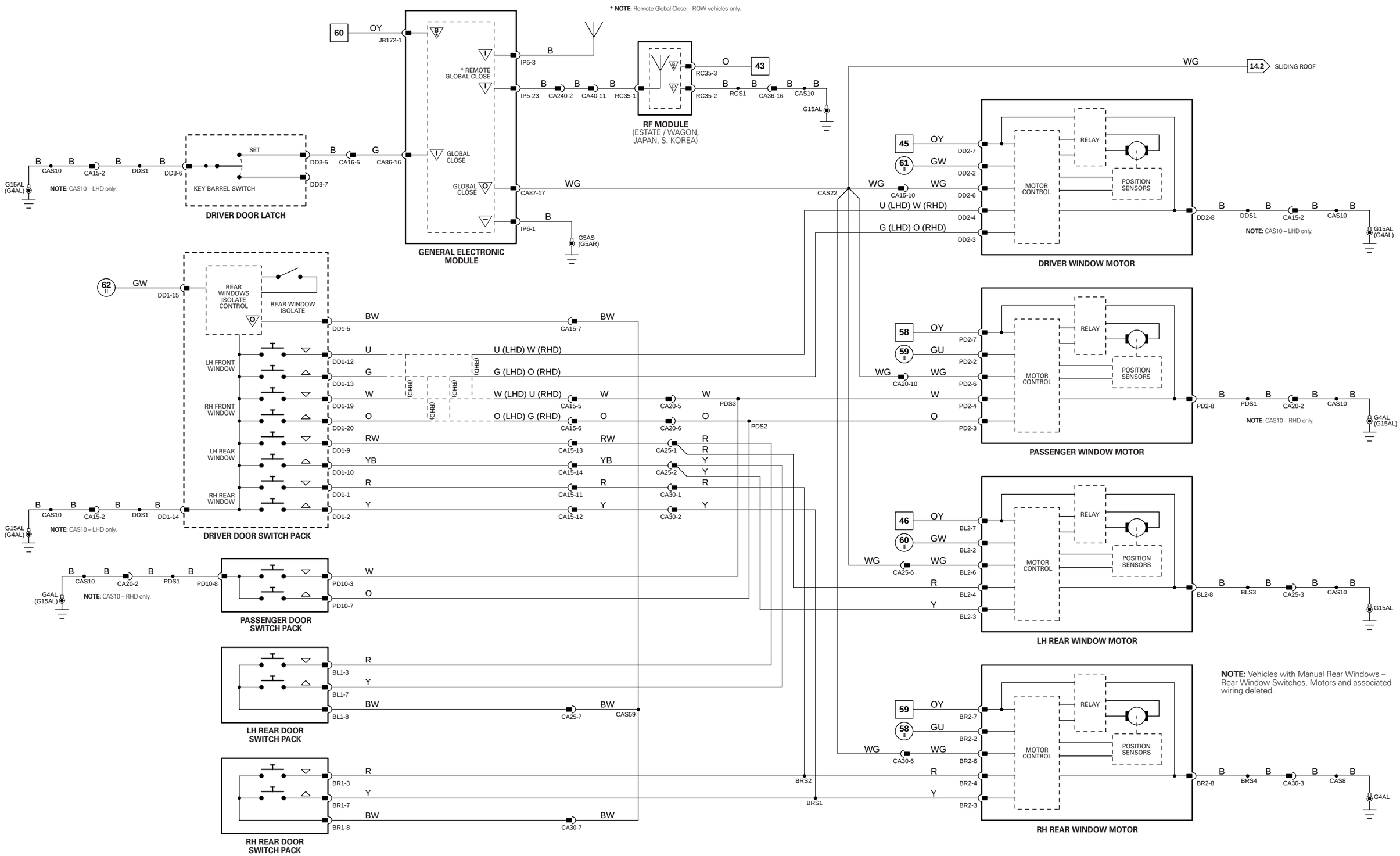
The following abbreviations are used to represent values for Control Module Pin-Out data

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.



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 II → 31 II Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 II → 66 II Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	– Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
I	CA86-16	SET SWITCH: OPEN CIRCUIT / GROUND
O	CA87-17	GLOBAL CLOSE REQUEST: 20 mS PULSED SIGNAL
O	CA87-20	VEHICLE SPEED SIGNAL: PULSED SIGNAL, 8000 PULSES PER MPH
I	IP5-03	SEDAN (EXCEPT JAPAN AND S. KOREA): EXTERNAL ANTENNA
S	IP5-18	SCP -
S	IP5-19	SCP +
I	IP5-23	REMOTE RF SIGNAL
SG	IP6-01	LOGIC GROUND: GROUND
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

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

Fig. 14.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR LATCH – DRIVER	DD3	8-WAY / BLACK	DRIVER DOOR
	DD9	2-WAY / BLACK	
GENERAL ELECTRONIC MODULE	CA86	23-WAY / GREY	BEHIND INSTRUMENT PANEL / RH SIDE
	CA87	23-WAY / GREEN	
	IP5	23-WAY / BROWN	
	IP6	23-WAY / NATURAL	
	JB172	23-WAY / BLUE	
RF MODULE	RC35	3-WAY / BLACK	ROOF CONSOLE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
SLIDING ROOF MODULE	RC14	10-WAY / GREY	ROOF CONSOLE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST

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.

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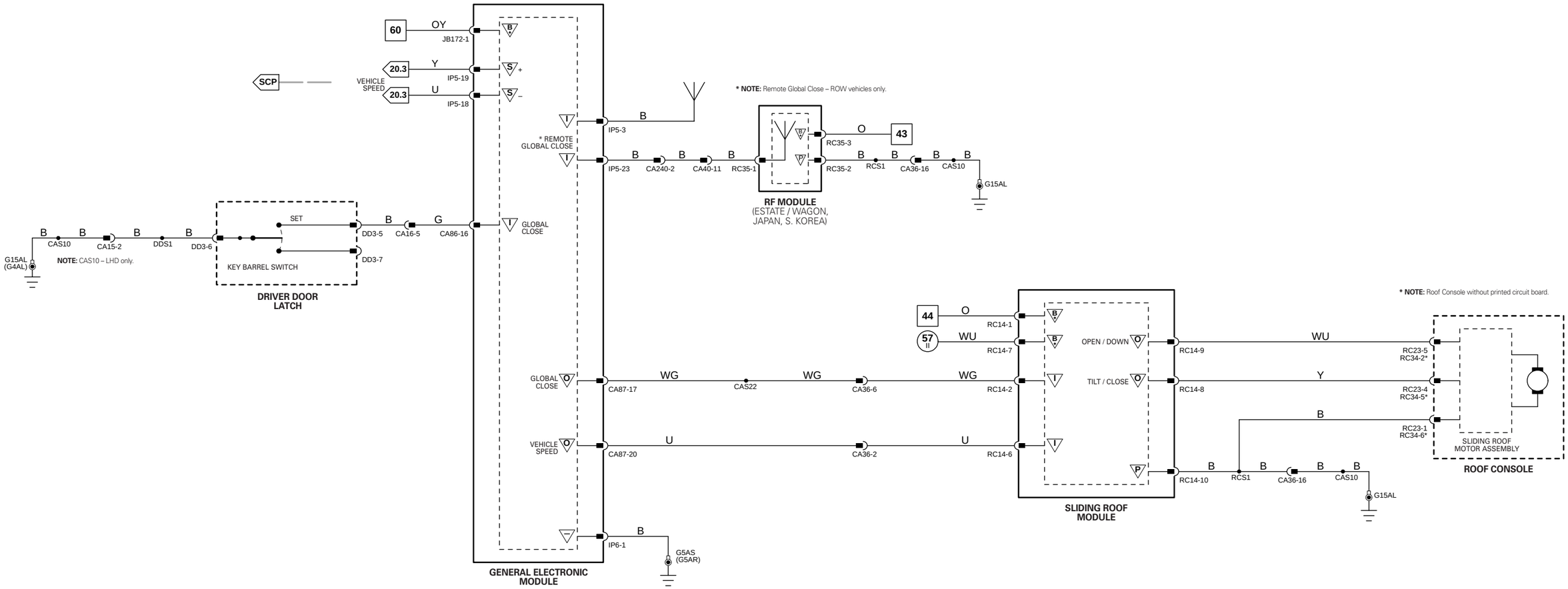

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Sliding Roof Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Audio Unit

▽	Pin	Description and Characteristic
D2	ID1-1	D2B NETWORK TRANSMIT
D2	ID1-2	D2B NETWORK RECEIVE
PG	IP65-01	POWER GROUND: GROUND
B+	IP65-02	IGNITION SWITCHED POWER SUPPLY (I): B+
O	IP65-03	LH REAR AUDIO +
O	IP65-04	LH REAR AUDIO -
O	IP65-05	RH REAR AUDIO +
O	IP65-06	RH REAR AUDIO -
I	IP65-07	TELEPHONE MUTE SIGNAL
O	IP65-08	SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
S	IP65-09	SCP +
S	IP65-10	SCP -
B+	IP65-11	BATTERY POWER SUPPLY: B+
O	IP65-13	LH FRONT AUDIO -
O	IP65-14	LH FRONT AUDIO +
O	IP65-15	RH FRONT AUDIO -
O	IP65-16	RH FRONT AUDIO +
I	IP65-17	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
I	IP65-18	STEERING WHEEL SWITCHES: STEPPED RESISTANCE
O	IP65-19	D2B NETWORK WAKE-UP

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

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.

Fig. 15.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AM / FM ANTENNA – ESTATE (WAGON)	CA116 CA118	3-WAY / BLACK 2-WAY / BLACK	ROOF CENTER REAR
ANTENNA MODULE – SEDAN	CA115 CA117	3-WAY / BLACK 2-WAY / BLACK	BEHIND LH 'E' POST TRIM
AUDIO CONTROL SWITCHES	SW3	4-WAY / BLACK	STEERING WHEEL
AUDIO UNIT	ID1 IP65 IP106	2-WAY / D2B 20-WAY / BLACK 2-WAY / METALLIC	INSTRUMENT PANEL CENTER
CD AUTOCHANGER	CD2 CA301	2-WAY / D2B 3-WAY / BLACK	TRUNK / LH SIDE
FULL RANGE SPEAKER – LH REAR	BL4	2-WAY / WHITE	LH REAR DOOR
FULL RANGE SPEAKER – RH REAR	BR4	2-WAY / WHITE	RH REAR DOOR
HEATED REAR WINDOW – SEDAN	ZA1 ZA10	1-WAY / BLACK 1-WAY / BLACK	REAR WINDOW
MID BASS SPEAKER – DRIVER DOOR	DD6	2-WAY / WHITE	DRIVER DOOR CASING
MID BASS SPEAKER – PASSENGER DOOR	PD5	2-WAY / WHITE	PASSENGER DOOR CASING
TWEETER SPEAKER – DRIVER DOOR	DD12	2-WAY / WHITE	DRIVER DOOR CASING
TWEETER SPEAKER – PASSENGER DOOR	PD11	2-WAY / WHITE	PASSENGER DOOR CASING

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA189	2-WAY / BLACK / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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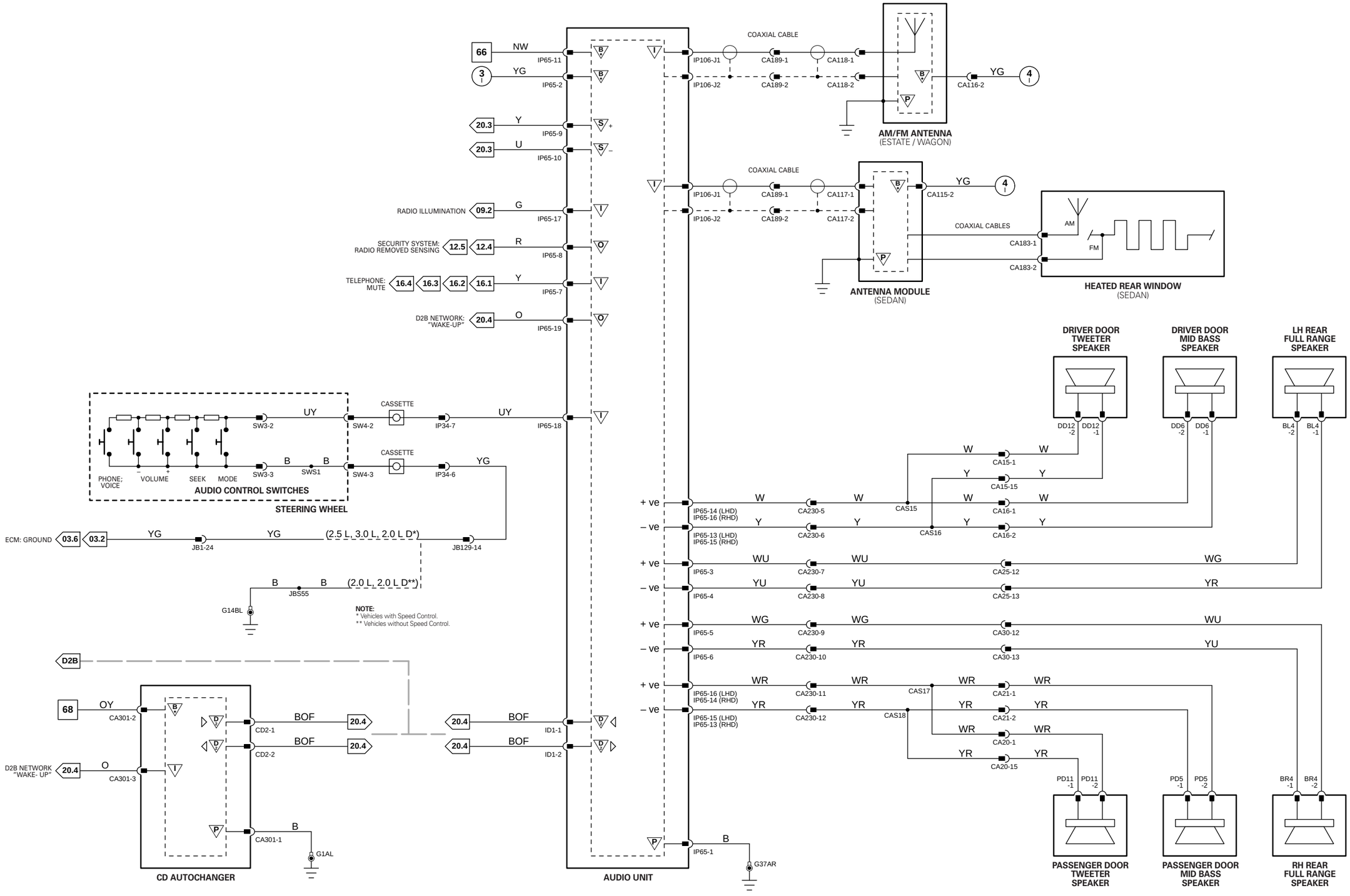

1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 (U) → 31 (U) Fig. 01.5	67 (B) → 76 (B) Fig. 01.7	98 (E) → 107 (E) Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 (I) → 10 (I) Fig. 01.4	32 (II) → 66 (II) Fig. 01.6	77 (E) → 97 (E) Fig. 01.8		O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Standard ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Audio Unit

▽	Pin	Description and Characteristic
D2	ID1-1	D2B NETWORK TRANSMIT
D2	ID1-2	D2B NETWORK RECEIVE
PG	IP65-01	POWER GROUND: GROUND
B+	IP65-02	IGNITION SWITCHED POWER SUPPLY (I): B+
I	IP65-07	TELEPHONE MUTE SIGNAL
O	IP65-08	SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
S	IP65-09	SCP +
S	IP65-10	SCP -
B+	IP65-11	BATTERY POWER SUPPLY: B+
I	IP65-17	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
I	IP65-18	STEERING WHEEL SWITCHES: STEPPED RESISTANCE
O	IP65-19	D2B NETWORK WAKE-UP

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

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.

Fig. 15.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AM / FM ANTENNA – ESTATE (WAGON)	CA116 CA118	3-WAY / BLACK 2-WAY / BLACK	ROOF CENTER REAR
ANTENNA MODULE – SEDAN	CA115 CA117	3-WAY / BLACK 2-WAY / BLACK	BEHIND LH 'E' POST TRIM
AUDIO CONTROL SWITCHES	SW3	4-WAY / BLACK	STEERING WHEEL
AUDIO UNIT	ID1 IP65 IP106	2-WAY / D2B 20-WAY / BLACK 2-WAY / METALLIC	INSTRUMENT PANEL CENTER
CD AUTOCHANGER	CD2 CA301	2-WAY / D2B 3-WAY / BLACK	TRUNK / LH SIDE
HEATED REAR WINDOW – SEDAN	ZA1 ZA10	1-WAY / BLACK 1-WAY / BLACK	REAR WINDOW
MID BASS SPEAKER – DRIVER DOOR	DD6	2-WAY / WHITE	DRIVER DOOR CASING
MID BASS SPEAKER – LH REAR	BL4	2-WAY / WHITE	LH REAR DOR CASING
MID BASS SPEAKER – PASSENGER DOOR	PD5	2-WAY / WHITE	PASSENGER DOOR CASING
MID BASS SPEAKER – RH REAR	BR4	2-WAY / WHITE	RH REAR DOOR CASING
POWER AMPLIFIER	CA425 CA426 CD7	12-WAY / GREY 18-WAY / BLACK 2-WAY / D2B	TRUNK, LH REAR
SUB WOOFER – ESTATE (WAGON)	CA428	4-WAY / BLACK	RH REAR INTERIOR TRIM
SUB WOOFER 1 – SEDAN	CA427	4-WAY / WHITE	PARCEL SHELF
SUB WOOFER 2 – SEDAN	CA427	4-WAY / WHITE	PARCEL SHELF
TWEETER SPEAKER – DRIVER DOOR	DD12	2-WAY / WHITE	DRIVER DOOR CASING
TWEETER SPEAKER – LH REAR	BL7	2-WAY / WHITE	LH REAR DOOR CASING
TWEETER SPEAKER – PASSENGER DOOR	PD11	2-WAY / WHITE	PASSENGER DOOR CASING
TWEETER SPEAKER – RH REAR	BR9	2-WAY / WHITE	RH REAR DOOR CASING

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA15	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA16	20-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	DRIVER DOOR / DOOR CASING
CA20	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA21	20-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	PASSENGER DOOR / DOOR CASING
CA25	14-WAY / NATURAL / CABIN HARNESS TO LH REAR DOOR HARNESS	LH 'B/C' POST / 'B/C' POST TRIM
CA30	14-WAY / NATURAL / CABIN HARNESS TO RH REAR DOOR HARNESS	RH 'B/C' POST / 'B/C' POST TRIM
CA189	2-WAY / BLACK / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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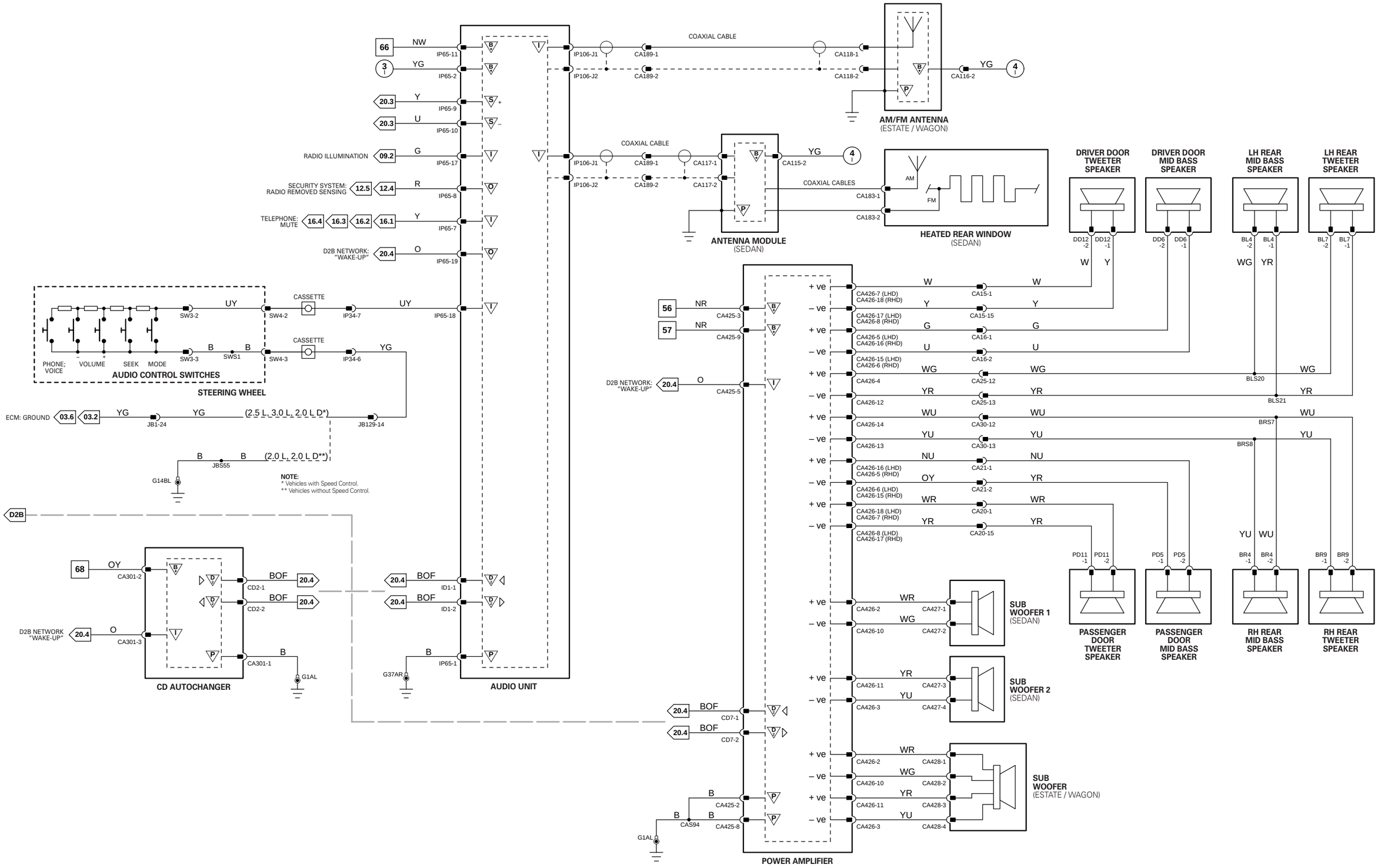

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
I 1 → 10 I Fig. 01.4
II 11 → 31 II Fig. 01.5
II 32 → 66 II Fig. 01.6
B 67 → 76 B Fig. 01.7
E 77 → 97 E Fig. 01.8
E 98 → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Premium ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Cellular Phone Module

▽	Pin	Description and Characteristic
I	CD3-1	D2B NETWORK RECEIVE
O	CD3-2	D2B NETWORK TRANSMIT
O	PH1-01	PHONE BATTERY CHARGING SUPPLY
O	PH1-03	PHONE ON /OFF (RESPONSE TO INCOMING AUDIO)
O	PH1-04	MUTE COMMAND
PG	PH1-09	POWER GROUND: GROUND
SG	PH1-11	MICROPHONE SHIELD: GROUND
B+	PH1-12	BATTERY POWER SUPPLY: B+
B+	PH1-13	BATTERY POWER SUPPLY: B+
B+	PH1-14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	PH1-17	MICROPHONE +
I	PH1-18	MICROPHONE –
D	PH1-20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	PH1-22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	PH1-23	D2B NETWORK WAKE-UP
I	PH1-25	POWER GROUND: GROUND
I	PH1-26	TELEPHONE LOGIC GROUND: GROUND
I	PH1-29	IGNITION SWITCHED POWER SUPPLY (II): B+

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.

Fig. 16.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
CELLULAR PHONE MODULE	CD3	2-WAY / D2B	TRUNK / LH SIDE
	PH1	32-WAY / BLACK	
	PH3	2-WAY / GREY	
HANDSET	PP1	–	CENTER CONSOLE
NAVIGATION CONTROL MODULE	CD5	2-WAY / D2B	TRUNK, LH REAR
	NA1	26-WAY / WHITE	
	NA2	12-WAY / BLACK	
	NA6	2-WAY / GREY	
	NA7	20-WAY / BLACK	
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TELEPHONE ANTENNA – ESTATE (WAGON): AM / FM	PH15	2-WAY / GREY	ROOF CENTER REAR
TELEPHONE ANTENNA – SEDAN: BUMPER	–	–	REAR BUMPER

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA406	3-WAY / GREY / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
PH11	10-WAY / GREY / CELLULAR PHONE LINK LEAD	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G39	PH	TRUNK / LH QUARTER PANEL

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

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.

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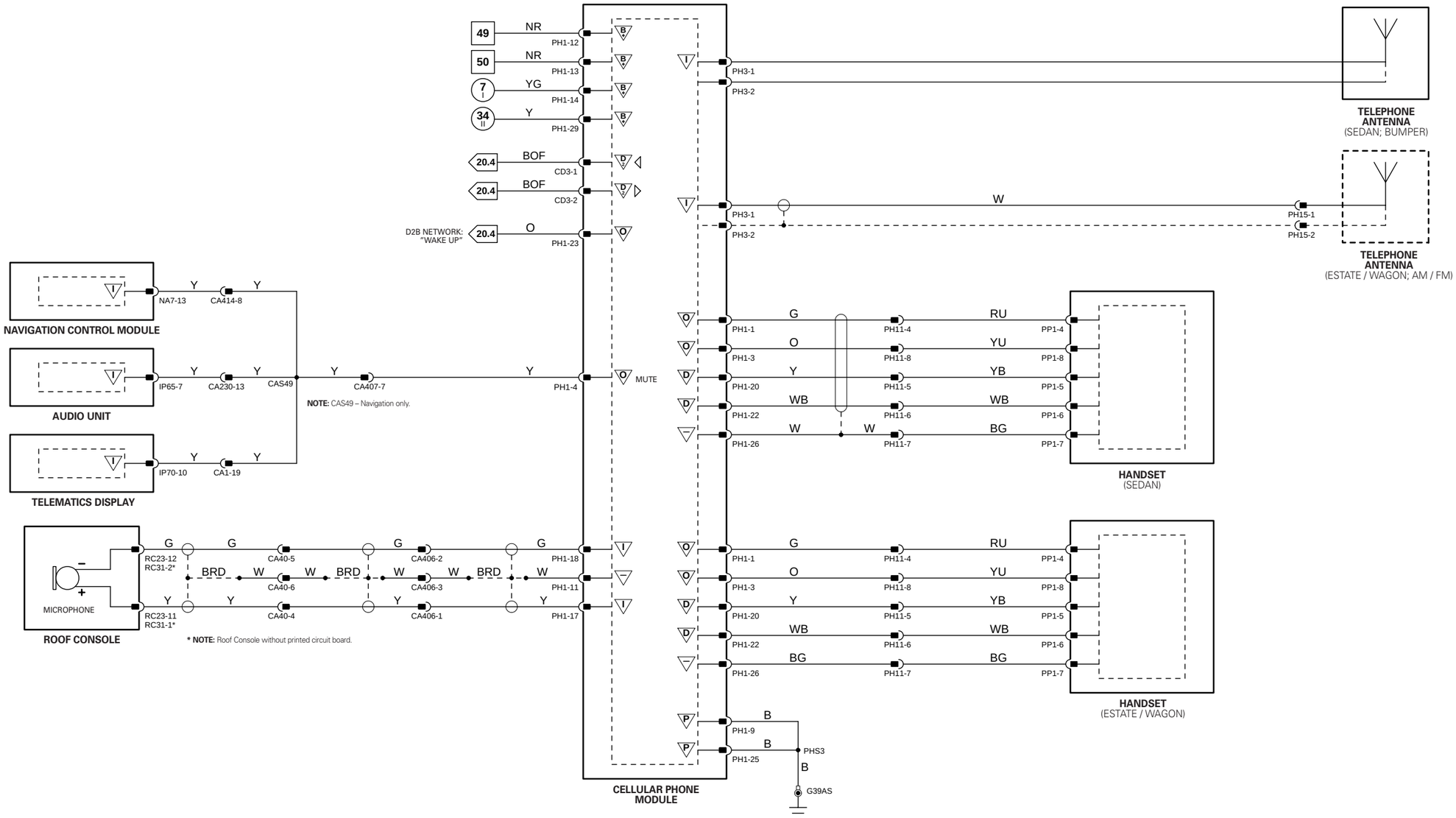


1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Cellular Phone Module

▽	Pin	Description and Characteristic
I	CD3-1	D2B NETWORK RECEIVE
O	CD3-2	D2B NETWORK TRANSMIT
O	PH1-01	PHONE BATTERY CHARGING SUPPLY
O	PH1-02	HANDS FREE AUDIO TO PHONE
O	PH1-03	PHONE ON /OFF (RESPONSE TO INCOMING AUDIO)
O	PH1-04	MUTE COMMAND
I	PH1-05	MANUAL TEST DATA
I	PH1-06	PHONE BATTERY VOLTAGE
PG	PH1-09	POWER GROUND: GROUND
SG	PH1-10	ANALOG GROUND: GROUND
SG	PH1-11	MICROPHONE SHIELD: GROUND
B+	PH1-12	BATTERY POWER SUPPLY: B+
B+	PH1-13	BATTERY POWER SUPPLY: B+
B+	PH1-14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	PH1-17	MICROPHONE +
I	PH1-18	MICROPHONE –
D	PH1-20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	PH1-22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	PH1-23	D2B NETWORK WAKE-UP
I	PH1-25	POWER GROUND: GROUND
I	PH1-26	TELEPHONE LOGIC GROUND: GROUND
I	PH1-29	IGNITION SWITCHED POWER SUPPLY (II): B+

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.

Fig. 16.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
CELLULAR PHONE MODULE	CD3	2-WAY / D2B	TRUNK / LH SIDE
	PH1	32-WAY / BLACK	
	PH3	2-WAY / GREY	
HANDSET RECEIVER	PH9	2-WAY / GREY	CENTER CONSOLE
	PH10	10-WAY / GREY	
NAVIGATION CONTROL MODULE	CD5	2-WAY / D2B	TRUNK, LH REAR
	NA1	26-WAY / WHITE	
	NA2	12-WAY / BLACK	
	NA6	2-WAY / GREY	
	NA7	20-WAY / BLACK	
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TELEPHONE ANTENNA – BUMPER	PH4	2-WAY / GREY	REAR BUMPER

HARNESS IN-LINE CONNECTORS

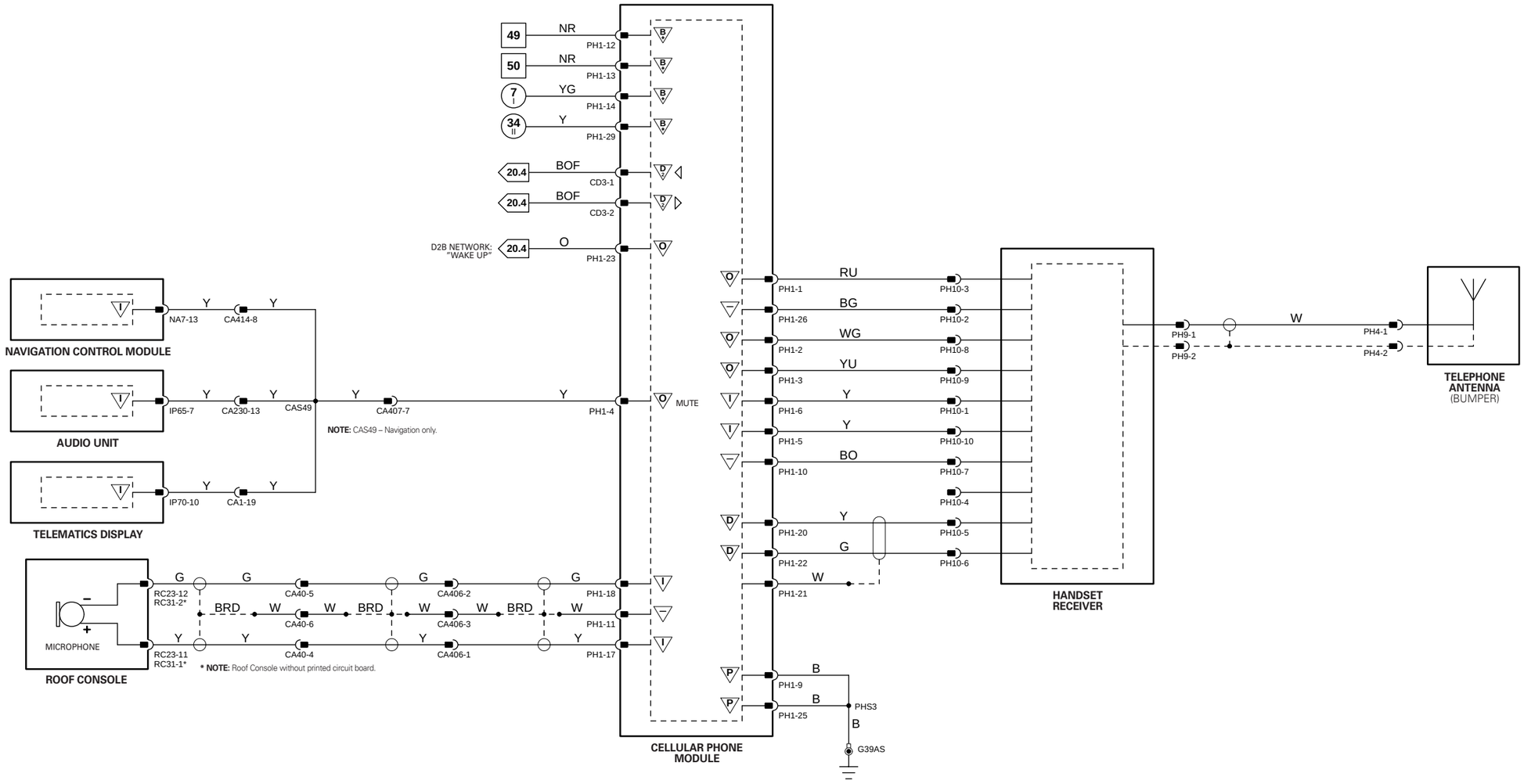
Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA406	3-WAY / GREY / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION

GROUNDS

Ground	Harness	Location
G39	PH	TRUNK / LH QUARTER PANEL

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

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.



1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

Input / Output
Battery Voltage / Power Ground
Sensor/Signal Supply V / Sensor/Signal Ground
CAN / SCP
D2B Network / Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

Cellular Phone Module

▽	Pin	Description and Characteristic
I	CD3-1	D2B NETWORK RECEIVE
O	CD3-2	D2B NETWORK TRANSMIT
O	PH1-01	PHONE BATTERY CHARGING SUPPLY
O	PH1-03	PHONE ON /OFF (RESPONSE TO INCOMING AUDIO)
O	PH1-04	MUTE COMMAND
PG	PH1-09	POWER GROUND: GROUND
SG	PH1-11	MICROPHONE SHIELD: GROUND
B+	PH1-12	BATTERY POWER SUPPLY: B+
B+	PH1-13	BATTERY POWER SUPPLY: B+
B+	PH1-14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	PH1-17	MICROPHONE +
I	PH1-18	MICROPHONE –
D	PH1-20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	PH1-22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	PH1-23	D2B NETWORK WAKE-UP
I	PH1-25	POWER GROUND: GROUND
I	PH1-26	TELEPHONE LOGIC GROUND: GROUND
I	PH1-29	IGNITION SWITCHED POWER SUPPLY (II): B+

Voice Activation Module

▽	Pin	Description and Characteristic
D2	CD4-1	D2B NETWORK TRANSMIT
D2	CD2-2	D2B NETWORK RECEIVE
I	PH2-01	MICROPHONE +
SG	PH2-02	MICROPHONE SHIELD
I	PH2-03	MICROPHONE +
B+	PH2-06	IGNITION SWITCHED POWER SUPPLY (II) (START / RUN STATUS)
B+	PH2-08	IGNITION SWITCHED POWER SUPPLY (I)
PG	PH2-11	POWER GROUND
I	PH2-12	MICROPHONE –
O	PH2-13	MICROPHONE –
O	PH2-14	D2B NETWORK WAKE UP
SG	PH2-15	MICROPHONE SHIELD
B+	PH2-22	BATTERY POWER SUPPLY: B+

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.

Fig. 16.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
CELLULAR PHONE MODULE	CD3	2-WAY / D2B	TRUNK / LH SIDE
	PH1	32-WAY / BLACK	
	PH3	2-WAY / GREY	
HANDSET	PP1	–	CENTER CONSOLE
NAVIGATION CONTROL MODULE	CD5	2-WAY / D2B	TRUNK, LH REAR
	NA1	26-WAY / WHITE	
	NA2	12-WAY / BLACK	
	NA6	2-WAY / GREY	
	NA7	20-WAY / BLACK	
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
STEERING WHEEL	SW4	6-WAY / BLACK	STEERING COLUMN
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TELEPHONE ANTENNA – ESTATE (WAGON): AM / FM	PH15	2-WAY / GREY	ROOF CENTER REAR
TELEPHONE ANTENNA – SEDAN: BUMPER	–	–	REAR BUMPER
VOICE ACTIVATION MODULE	CD4	2-WAY / D2B	TRUNK, LH REAR
	PH2	22-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

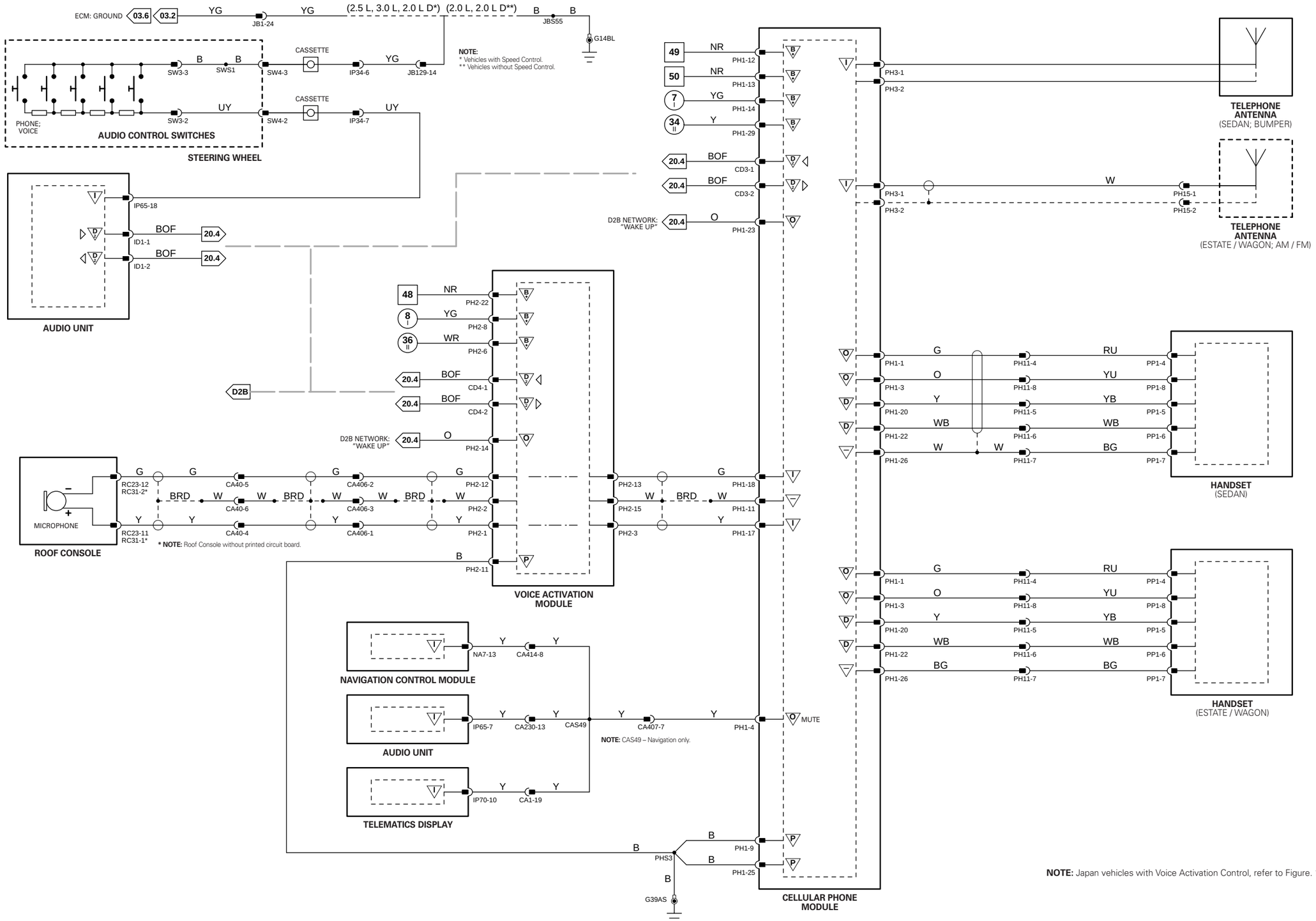
Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA406	3-WAY / GREY / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
PH11	10-WAY / GREY / CELLULAR PHONE LINK LEAD	LH LOWER 'A' POST / 'A' POST TRIM

GROUNDS

Ground	Harness	Location
G14	JB	ENGINE COMPARTMENT / BEHIND POWER DISTRIBUTION FUSE BOX
G39	PH	TRUNK / LH QUARTER PANEL

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

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.



NOTE: Japan vehicles with Voice Activation Control, refer to Figure. 16.6.

CONTROL MODULE PIN-OUT INFORMATION

Cellular Phone Module

▽	Pin	Description and Characteristic
I	CD3-1	D2B NETWORK RECEIVE
O	CD3-2	D2B NETWORK TRANSMIT
O	PH1-01	PHONE BATTERY CHARGING SUPPLY
O	PH1-02	HANDS FREE AUDIO TO PHONE
O	PH1-03	PHONE ON /OFF (RESPONSE TO INCOMING AUDIO)
O	PH1-04	MUTE COMMAND
I	PH1-05	MANUAL TEST DATA
I	PH1-06	PHONE BATTERY VOLTAGE
PG	PH1-09	POWER GROUND: GROUND
SG	PH1-10	ANALOG GROUND: GROUND
SG	PH1-11	MICROPHONE SHIELD: GROUND
B+	PH1-12	BATTERY POWER SUPPLY: B+
B+	PH1-13	BATTERY POWER SUPPLY: B+
B+	PH1-14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	PH1-17	MICROPHONE +
I	PH1-18	MICROPHONE –
D	PH1-20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	PH1-22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	PH1-23	D2B NETWORK WAKE-UP
I	PH1-25	POWER GROUND: GROUND
I	PH1-26	TELEPHONE LOGIC GROUND: GROUND
I	PH1-29	IGNITION SWITCHED POWER SUPPLY (II): B+

Voice Activation Module

▽	Pin	Description and Characteristic
D2	CD4-1	D2B NETWORK TRANSMIT
D2	CD2-2	D2B NETWORK RECEIVE
I	PH2-01	MICROPHONE +
SG	PH2-02	MICROPHONE SHIELD
I	PH2-03	MICROPHONE +
B+	PH2-06	IGNITION SWITCHED POWER SUPPLY (II) (START / RUN STATUS)
B+	PH2-08	IGNITION SWITCHED POWER SUPPLY (I)
PG	PH2-11	POWER GROUND
I	PH2-12	MICROPHONE –
O	PH2-13	MICROPHONE –
O	PH2-14	D2B NETWORK WAKE UP
SG	PH2-15	MICROPHONE SHIELD
B+	PH2-22	BATTERY POWER SUPPLY: B+

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.

Fig. 16.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1	2-WAY / D2B	INSTRUMENT PANEL CENTER
	IP65	20-WAY / BLACK	
	IP106	2-WAY / METALLIC	
CELLULAR PHONE MODULE	CD3	2-WAY / D2B	TRUNK / LH SIDE
	PH1	32-WAY / BLACK	
	PH3	2-WAY / GREY	
HANDSET RECEIVER	PH9	2-WAY / GREY	CENTER CONSOLE
	PH10	10-WAY / GREY	
NAVIGATION CONTROL MODULE	CD5	2-WAY / D2B	TRUNK, LH REAR
	NA1	26-WAY / WHITE	
	NA2	12-WAY / BLACK	
	NA6	2-WAY / GREY	
	NA7	20-WAY / BLACK	
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30	4-WAY / BLACK	ROOF CENTER FRONT
	RC31	2-WAY / BLACK	
	RC33	4-WAY / BLACK	
	RC34	6-WAY / BLACK	
STEERING WHEEL	SW4	6-WAY / BLACK	STEERING COLUMN
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TELEPHONE ANTENNA – BUMPER	PH4	2-WAY / GREY	REAR BUMPER
VOICE ACTIVATION MODULE	CD4	2-WAY / D2B	TRUNK, LH REAR
	PH2	22-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA1	22-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA406	3-WAY / GREY / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G39	PH	TRUNK / LH QUARTER PANEL

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

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.

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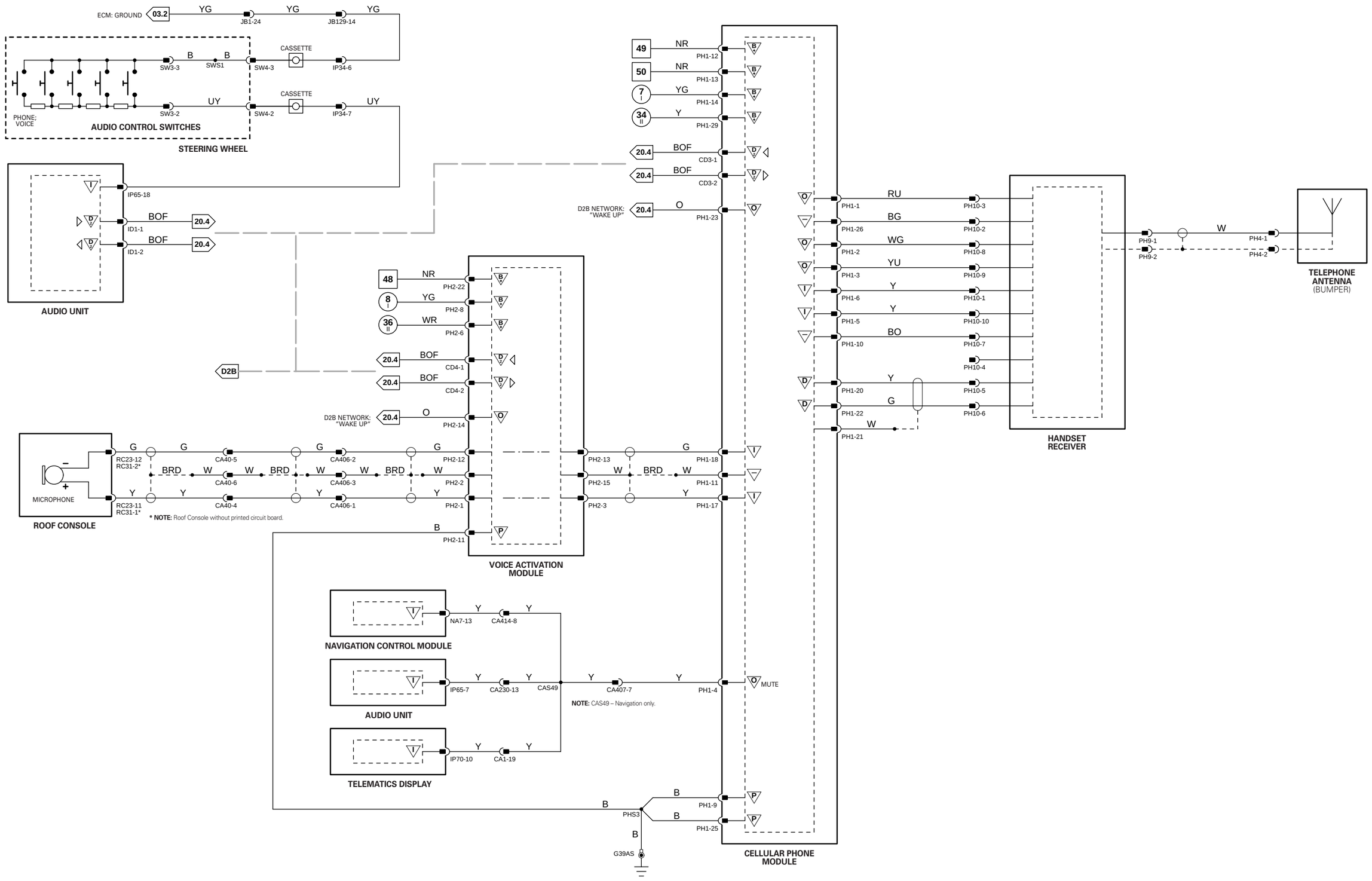


1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network					
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data					

VARIANT: NAS Voice Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 16.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	CD5	2-WAY / D2B	TRUNK, LH REAR
	NA1	26-WAY / WHITE	
	NA2	12-WAY / BLACK	
	NA6	2-WAY / GREY	
	NA7	20-WAY / BLACK	
NAVIGATION GPS ANTENNA – ESTATE (WAGON)	WG9	2-WAY / BLACK	UNDER REAR SPOILER / LH SIDE
NAVIGATION GPS ANTENNA – SEDAN	NA12	2-WAY / GREY	BELOW PARCEL SHELF / LH SIDE
TELEMATICS DISPLAY	IP70	22-WAY / BLACK	CENTER CONSOLE
	IP136	2-WAY / METALLIC	
	IP137	2-WAY / METALLIC	
	IP138	2-WAY / METALLIC	
	IP139	2-WAY / METALLIC	
TV ANTENNA AND AMPLIFIER 1	TV1	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 2	TV2	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 3	TV3	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 4	TV4	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS

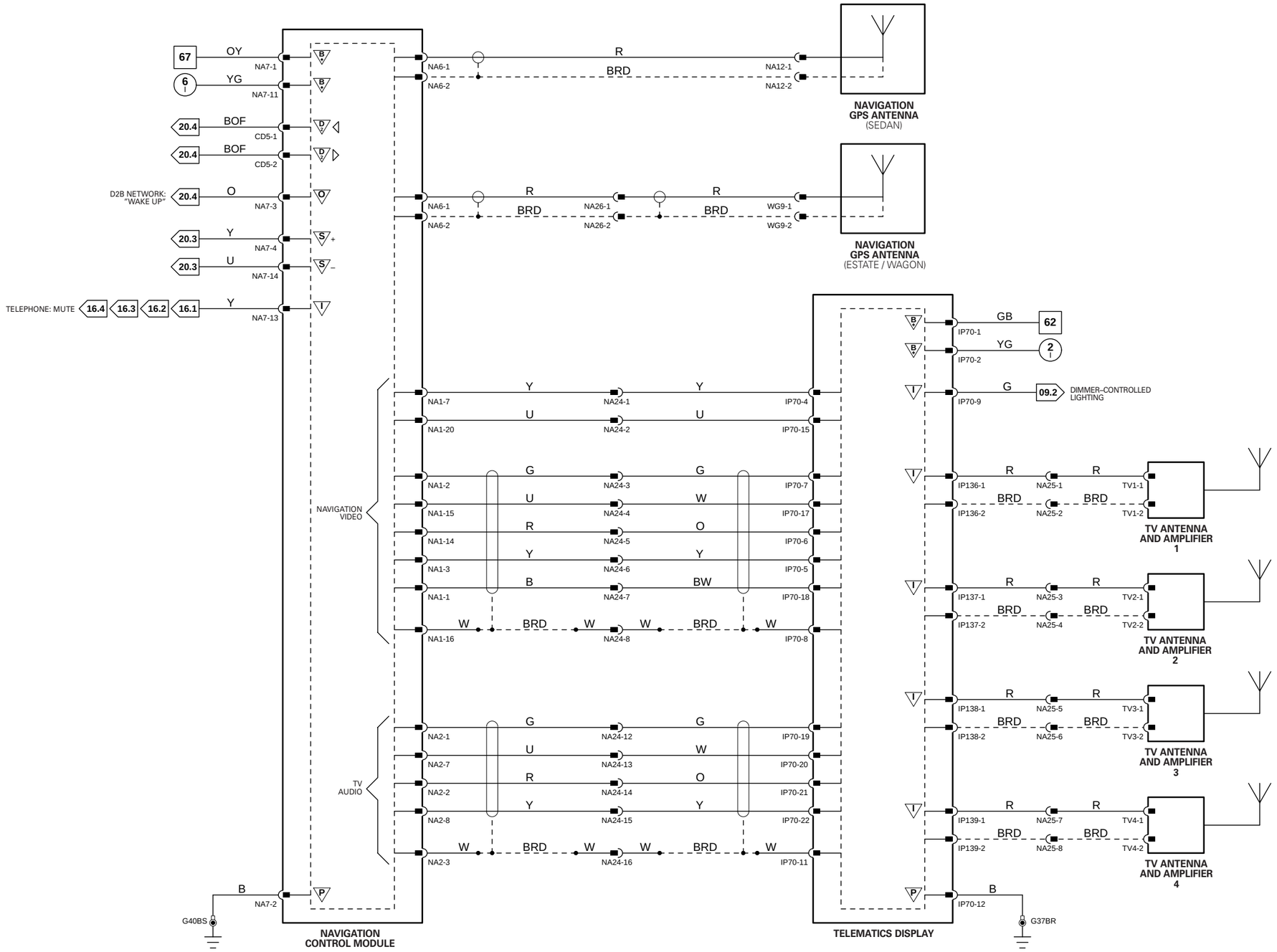
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
NA24	16-WAY / GREEN / INSTRUMENT PANEL HARNESS TO NAVIGATION HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
NA25	8-WAY / GREY / INSTRUMENT PANEL HARNESS TO NAVIGATION HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
NA26	2-WAY / BLACK / NAVIGATION HARNESS TO TAIL GATE GLASS HARNESS	ESTATE (WAGON) GPS ANTENNA

GROUNDS

Ground	Harness	Location
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G40	NA	TRUNK / LH QUARTER PANEL

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.



1 → 6 Fig. 01.1
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1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: NAV Vehicles (except Japan)
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 16.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	CD5 NA1 NA2 NA6 NA7	2-WAY / D2B 26-WAY / WHITE 12-WAY / BLACK 2-WAY / GREY 20-WAY / BLACK	TRUNK, LH REAR
NAVIGATION GPS ANTENNA – ESTATE (WAGON)	WG9	2-WAY / BLACK	UNDER REAR SPOILER / LH SIDE
NAVIGATION GPS ANTENNA – SEDAN	NA12	2-WAY / GREY	BELOW PARCEL SHELF / LH SIDE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30 RC31 RC33 RC34	4-WAY / BLACK 2-WAY / BLACK 4-WAY / BLACK 6-WAY / BLACK	ROOF CENTER FRONT
TELEMATICS DISPLAY	IP70 IP136 IP137 IP138 IP139	22-WAY / BLACK 2-WAY / METALLIC 2-WAY / METALLIC 2-WAY / METALLIC 2-WAY / METALLIC	CENTER CONSOLE
TV ANTENNA AND AMPLIFIER 1	TV1	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 2	TV2	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 3	TV3	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
TV ANTENNA AND AMPLIFIER 4	TV4	2-WAY / METALLIC	REAR ROOF TRIM, ABOVE FIXED GLASS
VEHICLE INFORMATION ANTENNA AND AMPLIFIER	NA11	2-WAY / METALLIC	SEDAN: BEHIND RH 'E' POST ESTATE (WAGON): REAR ROOF TRIM ABOVE FIXED GLASS / LH SIDE
VEHICLE INFORMATION CONTROL MODULE	NA8 NA9 NA10	2-WAY / METALLIC 10-WAY / NATURAL 2-WAY / METALLIC	
VEHICLE INFORMATION SENSOR	CA222	2-WAY / METALLIC	TOP OF INSTRUMENT PANEL / LH SIDE

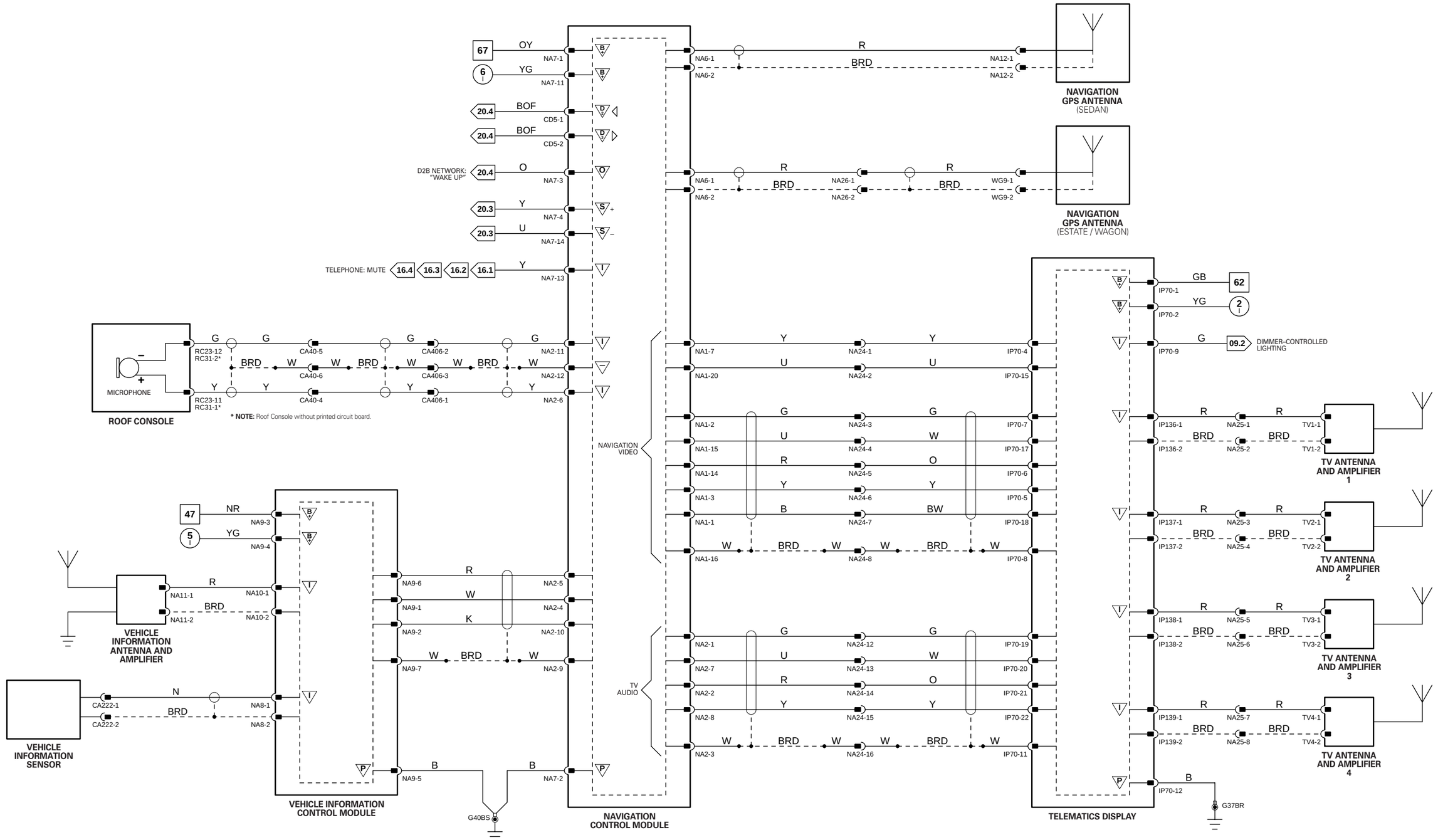
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA40	16-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	RH 'A' POST / WINDSHIELD PILLAR
CA406	3-WAY / GREY / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
NA24	16-WAY / GREEN / INSTRUMENT PANEL HARNESS TO NAVIGATION HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
NA25	8-WAY / GREY / INSTRUMENT PANEL HARNESS TO NAVIGATION HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
NA26	2-WAY / BLACK / NAVIGATION HARNESS TO TAIL GATE GLASS HARNESS	ESTATE (WAGON) GPS ANTENNA

GROUNDS

Ground	Harness	Location
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM
G40	NA	TRUNK / LH QUARTER PANEL

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.



1 → 6 Fig. 01.1	34 → 79 Fig. 01.3	11 U → 31 U Fig. 01.5	67 B → 76 B Fig. 01.7	98 E → 107 E Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network
7 → 33 Fig. 01.2	1 I → 10 I Fig. 01.4	32 U → 66 U Fig. 01.6	77 E → 97 E Fig. 01.8		O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data

VARIANT: Japan Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 17.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CURTAIN AIRBAG IGNITER – DRIVER	CA144	2-WAY / BLACK	DRIVER SIDE 'E' POST
CURTAIN AIRBAG IGNITER – PASSENGER	CA145	2-WAY / BLACK	PASSENGER SIDE 'E' POST
DUAL AIRBAG IGNITERS – DRIVER	SW1 SW2	2-WAY / BLACK 2-WAY / BLACK	STEERING WHEEL
DUAL AIRBAG IGNITERS – PASSENGER	IP36 IP37	2-WAY / BROWN 2-WAY / BROWN	INSTRUMENT PANEL PASSENGER SIDE
IMPACT SENSOR – FRONT	JB93	2-WAY / BLACK	ADJACENT TO HOOD CATCH
PASSENGER AIRBAG DEACTIVATED INDICATOR LAMP	IP140	4-WAY / BLACK	PASSENGER AIRBAG COVER
PASSENGER SEAT WEIGHT PRESSURE SENSOR	WS18	3-WAY / BLACK	PASSENGER SEAT CUSHION
PASSENGER SEAT WEIGHT SENSING MODULE	WS17	10-WAY / BLACK	UNDER PASSENGER SEAT
RESTRAINTS CONTROL MODULE – FRONT WHEEL DRIVE VEHICLES	CA165 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
SEAT BELT BUCKLE PRETENSIONER IGNITER – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT BELT BUCKLE
SEAT BELT BUCKLE PRETENSIONER IGNITER – PASSENGER	CA70	18-WAY / BLACK	PASSENGER SEAT BELT BUCKLE
SEAT BELT SWITCH – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT BELT BUCKLE
SEAT BELT SWITCH – PASSENGER	CA70	18-WAY / BLACK	PASSENGER SEAT BELT BUCKLE
SEAT POSITION SWITCH – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT TRACK
SIDE AIRBAG IGNITER – DRIVER	AL1	2-WAY / BLACK	DRIVER SEAT BACK
SIDE AIRBAG IGNITER – PASSENGER	AD1	2-WAY / BLACK	PASSENGER SEAT BACK
SIDE IMPACT SENSOR – DRIVER REAR	CA140	2-WAY / BLACK	ADJACENT TO DRIVER SIDE REAR LOWER SAFETY BELT ANCHOR
SIDE IMPACT SENSOR – DRIVER	CA215	2-WAY / BLACK	DRIVER SIDE LOWER 'B/C' POST
SIDE IMPACT SENSOR – PASSENGER REAR	CA131	2-WAY / BLACK	ADJACENT TO PASSENGER SIDE REAR LOWER SAFETY BELT ANCHOR
SIDE IMPACT SENSOR – PASSENGER	CA216	2-WAY / BLACK	PASSENGER SIDE LOWER 'B/C' POST

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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.

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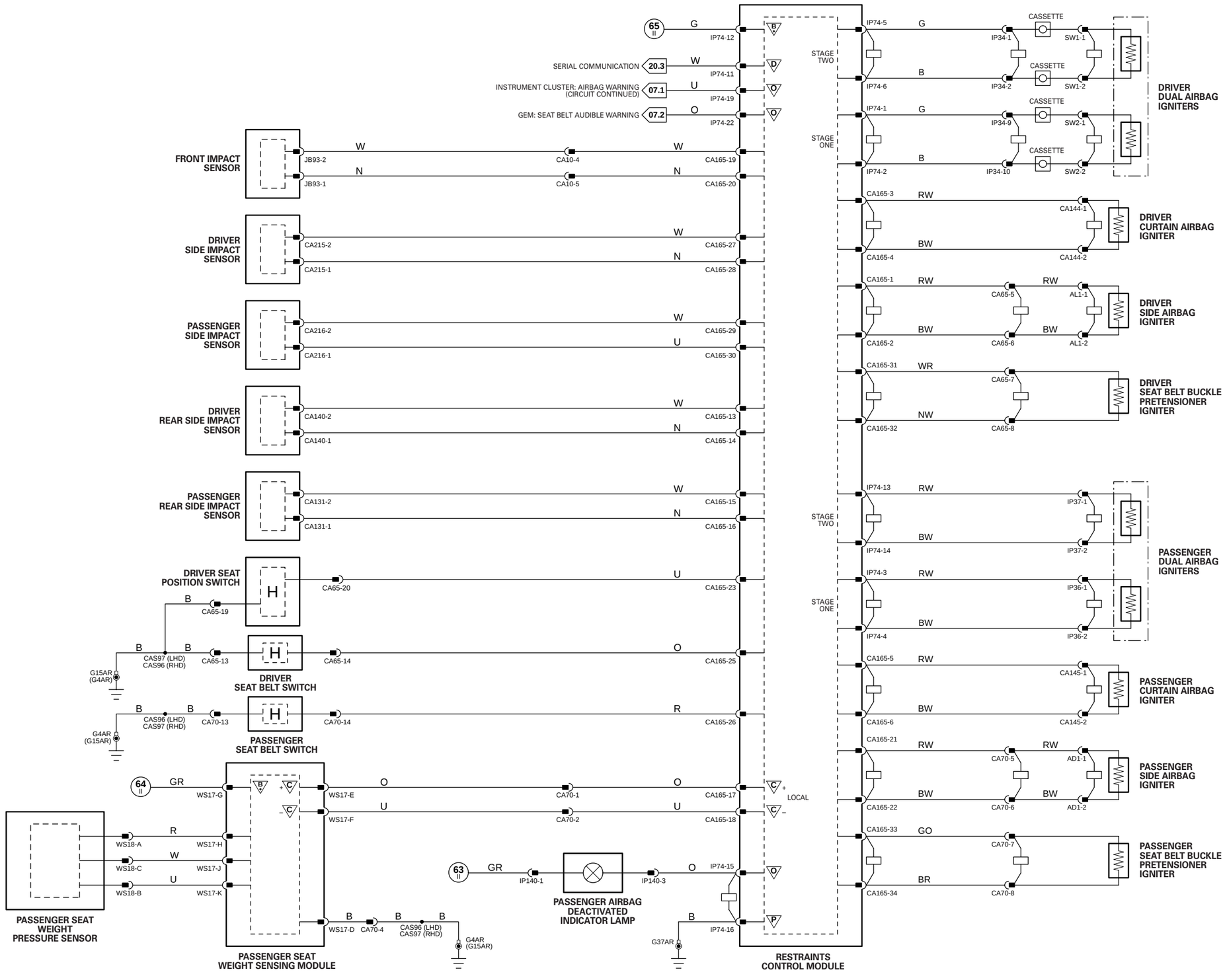


1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 I → 10 I Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Front Wheel Drive Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 17.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
CURTAIN AIRBAG IGNITER – DRIVER	CA144	2-WAY / BLACK	DRIVER SIDE 'E' POST
CURTAIN AIRBAG IGNITER – PASSENGER	CA145	2-WAY / BLACK	PASSENGER SIDE 'E' POST
DUAL AIRBAG IGNITERS – DRIVER	SW1 SW2	2-WAY / BLACK 2-WAY / BLACK	STEERING WHEEL
DUAL AIRBAG IGNITERS – PASSENGER	IP36 IP37	2-WAY / BROWN 2-WAY / BROWN	INSTRUMENT PANEL PASSENGER SIDE
IMPACT SENSOR – FRONT	JB93	2-WAY / BLACK	ADJACENT TO HOOD CATCH
KNEE BOLSTER IGNITER – DRIVER	CA420	2-WAY / BROWN	BELOW STEERING COLUMN
PASSENGER AIRBAG DEACTIVATED INDICATOR LAMP	IP140	4-WAY / BLACK	PASSENGER AIRBAG COVER
PASSENGER SEAT BELT TENSION SENSOR	WS19	3-WAY / BLACK	PASSENGER SEAT BELT BUCKLE
PASSENGER SEAT WEIGHT PRESSURE SENSOR	WS18	3-WAY / BLACK	PASSENGER SEAT CUSHION
PASSENGER SEAT WEIGHT SENSING MODULE	WS17	10-WAY / BLACK	UNDER PASSENGER SEAT
RESTRAINTS CONTROL MODULE – ALL WHEEL DRIVE VEHICLES	CA450 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
SEAT BELT BUCKLE PRETENSIONER IGNITER – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT BELT BUCKLE
SEAT BELT BUCKLE PRETENSIONER IGNITER – PASSENGER	CA70	18-WAY / BLACK	PASSENGER SEAT BELT BUCKLE
SEAT BELT REEL PRETENSIONER IGNITER – DRIVER	CA241	3-WAY / YELLOW	DRIVER SIDE 'B/C' POST
SEAT BELT REEL PRETENSIONER IGNITER – PASSENGER	CA422	3-WAY / YELLOW	PASSENGER SIDE 'B/C' POST
SEAT BELT SWITCH – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT BELT BUCKLE
SEAT BELT SWITCH – PASSENGER	CA70	18-WAY / BLACK	PASSENGER SEAT BELT BUCKLE
SEAT POSITION SWITCH – DRIVER	CA65	18-WAY / BLACK	DRIVER SEAT TRACK
SEAT POSITION SWITCH – PASSENGER	CA70	18-WAY / BLACK	PASSENGER SEAT TRACK
SIDE AIRBAG IGNITER – DRIVER	AL1	2-WAY / BLACK	DRIVER SEAT BACK
SIDE AIRBAG IGNITER – PASSENGER	AD1	2-WAY / BLACK	PASSENGER SEAT BACK
SIDE IMPACT SENSOR – DRIVER REAR	CA140	2-WAY / BLACK	ADJACENT TO DRIVER SIDE REAR LOWER SAFETY BELT ANCHOR
SIDE IMPACT SENSOR – DRIVER	CA215	2-WAY / BLACK	DRIVER SIDE LOWER 'B/C' POST
SIDE IMPACT SENSOR – PASSENGER REAR	CA131	2-WAY / BLACK	ADJACENT TO PASSENGER SIDE REAR LOWER SAFETY BELT ANCHOR
SIDE IMPACT SENSOR – PASSENGER	CA216	2-WAY / BLACK	PASSENGER SIDE LOWER 'B/C' POST

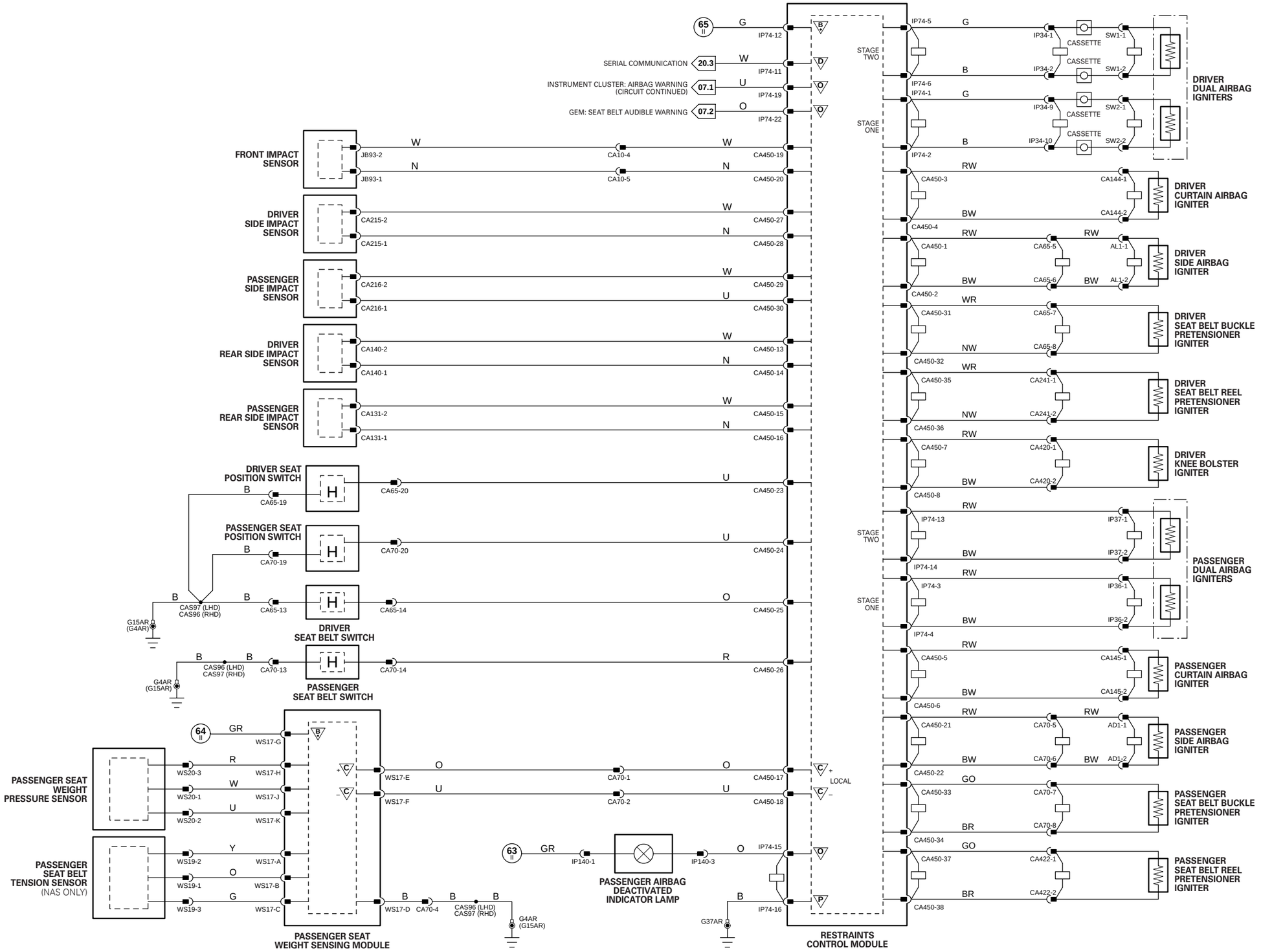
HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA65	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
CA70	18-WAY / BLACK / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE

GROUNDS

Ground	Harness	Location
G4	CA	LOWER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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.



1 → 6	Fig. 01.1	34 → 79	Fig. 01.3	11 II → 31 II	Fig. 01.5	67 B → 76 B	Fig. 01.7	98 E → 107 E	Fig. 01.9	I Input	B Battery Voltage	+ Sensor/Signal Supply V	C CAN	D D2B Network	**VARIANT:**	All Wheel Drive Vehicles
7 → 33	Fig. 01.2	1 I → 10 I	Fig. 01.4	32 II → 66 II	Fig. 01.6	77 E → 97 E	Fig. 01.8			O Output	P Power Ground	− Sensor/Signal Ground	S SCP	D Serial and Encoded Data	**VIN RANGE:**	All
															DATE OF ISSUE:	August 2003

CONTROL MODULE PIN-OUT INFORMATION

Parking Aid Module

▽	Pin	Description and Characteristic
B+	CA418-01	IGNITION SWITCHED POWER SUPPLY: B+
O	CA418-02	REAR PARKING AID SOUNDER –
I	CA418-04	FRONT SENSORS SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	CA418-05	TRAILER CONNECTED STATUS: GROUND = TRAILER CONNECTED
I	CA418-06	REVERSE LAMPS STATUS: B+ = REVERSE LAMPS ON
O	CA418-10	REAR PARKING AID SOUNDER +
I	CA418-11	CHIME INHIBIT SIGNAL
D	CA418-12	SERIAL DATA LINK
O	CA418-13	FRONT SENSORS STATUS LED ACTIVATE: TO ACTIVATE, PAM SWITCHES CIRCUIT TO B+
PG	CA418-16	POWER GROUND: GROUND
†		
SG	CA419-01	FRONT SENSORS GROUND: GROUND
SS	CA419-02	FRONT SENSORS POWER SUPPLY: B+
O	CA419-03	FRONT PARKING AID SOUNDER –
O	CA419-04	FRONT PARKING AID SOUNDER +
D	CA419-05	FRONT LH SENSOR SIGNAL DATA
D	CA419-06	FRONT LH CENTER SENSOR SIGNAL DATA
D	CA419-07	FRONT RH CENTER SENSOR SIGNAL DATA
D	CA419-08	FRONT RH SENSOR SIGNAL DATA
D	RB7-02	REAR RH CENTER SENSOR SIGNAL DATA
D	RB7-03	REAR LH CENTER SENSOR SIGNAL DATA
D	RB7-04	REAR RH SENSOR SIGNAL DATA
D	RB7-05	REAR LH SENSOR SIGNAL DATA
SG	RB7-08	REAR SENSORS GROUND: GROUND
SS	RB7-11	REAR SENSORS POWER SUPPLY: B+

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.

Fig. 18.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
PARKING AID MODULE	CA418 CA419 RB7	16-WAY / WHITE 12-WAY / WHITE 12-WAY / WHITE	SPARE WHEEL WELL
PARKING AID SENSOR – LH: FRONT	FB8	3-WAY / BLACK	FRONT BUMPER
PARKING AID SENSOR – LH: REAR	RB1	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – RH: FRONT	FB5	3-WAY / BLACK	FRONT BUMPER
PARKING AID SENSOR – RH: REAR	RB4	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – LH CENTER: FRONT	FB7	3-WAY / BLACK	FRONT BUMPER
PARKING AID SENSOR – LH CENTER: REAR	RB2	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – RH CENTER: FRONT	FB6	3-WAY / BLACK	FRONT BUMPER
PARKING AID SENSOR – RH CENTER: REAR	RB3	3-WAY / BLACK	REAR BUMPER
PARKING AID SOUNDER – FRONT	IP151	2-WAY / WHITE	INSTRUMENT PANEL CENTER
PARKING AID SOUNDER – REAR	CA136	2-WAY / WHITE	ESTATE (WAGON): LH REAR QUARTER PANEL INTERIOR TRIM SEDAN: PARCEL SHELF

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA170	16-WAY / GREEN / JUNCTION BOX HARNESS TO CABIN HARNESS	LH 'A' POST / 'A' POST TRIM
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE
JB173	10-WAY / BLACK / JUNCTION BOX HARNESS TO FRONT BUMPER HARNESS	BEHIND LH FRONT WHEEL ARCH LINER

GROUNDS

Ground	Harness	Location
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G15	CA	LOWER LH 'A' POST

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

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.

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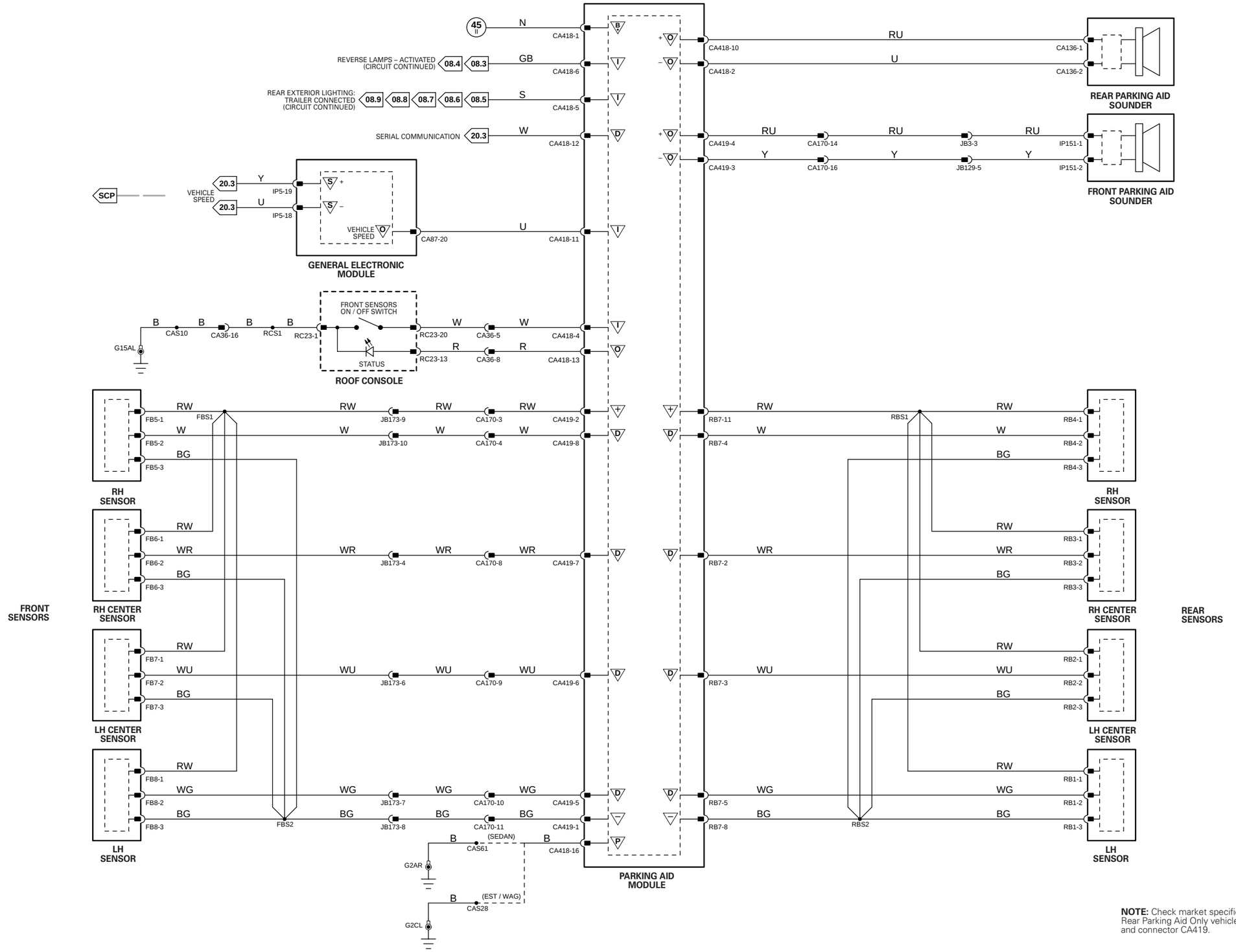

NOTE: Check market specification for fitment of Front Parking Aid. Rear Parking Aid Only vehicles delete front circuits and PAM socket and connector CA419.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: Parking Aid Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Module

▽	Pin	Description and Characteristic
PG	CA86-05	POWER GROUND
O	IP5-14	HORN RELAY DRIVE : TO ACTIVATE, GEM SWITCHES CIRCUIT TO GROUND
I	IP6-20	STEERING WHEEL HORN SWITCH: GROUND WHEN SELECTED
B+	JB172-01	BATTERY POWER SUPPLY (LOCKING): B+

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.

Fig. 19.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR – CABIN	IP24	3-WAY / BLACK	BEHIND GLOVE BOX
ACCESSORY CONNECTOR – REAR	CA146	3-WAY / BLACK	TRUNK, LH REAR
CIGAR LIGHTER	IP42	2-WAY / ORANGE	ASH TRAY
CUSTOMER POWER CONNECTOR	CA435	2-WAY / NATURAL	RH REAR INTERIOR TRIM
ELECTROCHROMIC REAR VIEW MIRROR	RC5	5-WAY / BLACK	REAR VIEW MIRROR
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
HORN RELAY – 2.0 L D	–	–	POWER DISTRIBUTION FUSE BOX – R2
HORN RELAY – 2.0 L, 2.5 L, 3.0 L	–	–	POWER DISTRIBUTION FUSE BOX – R15
HORN SWITCH	SW6	2-WAY / BLACK	STEERING WHEEL
HORNS	JB87	2-WAY / BLACK	ADJACENT TO BATTERY
POWER DISTRIBUTION FUSE BOX	–	–	ENGINE COMPARTMENT
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
STEERING WHEEL	SW4	6-WAY / BLACK	STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
IP34	10-WAY / NATURAL / INSTRUMENT PANEL HARNESS TO STEERING WHEEL HARNESS	STEERING WHEEL CASSETTE
JB129	22-WAY / GREY / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G1	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G2	CA	TRUNK / UNDER LH TAIL LAMP UNIT
G4	CA	LOWER RH 'A' POST
G5	IP	UPPER RH 'A' POST
G15	CA	LOWER LH 'A' POST
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.

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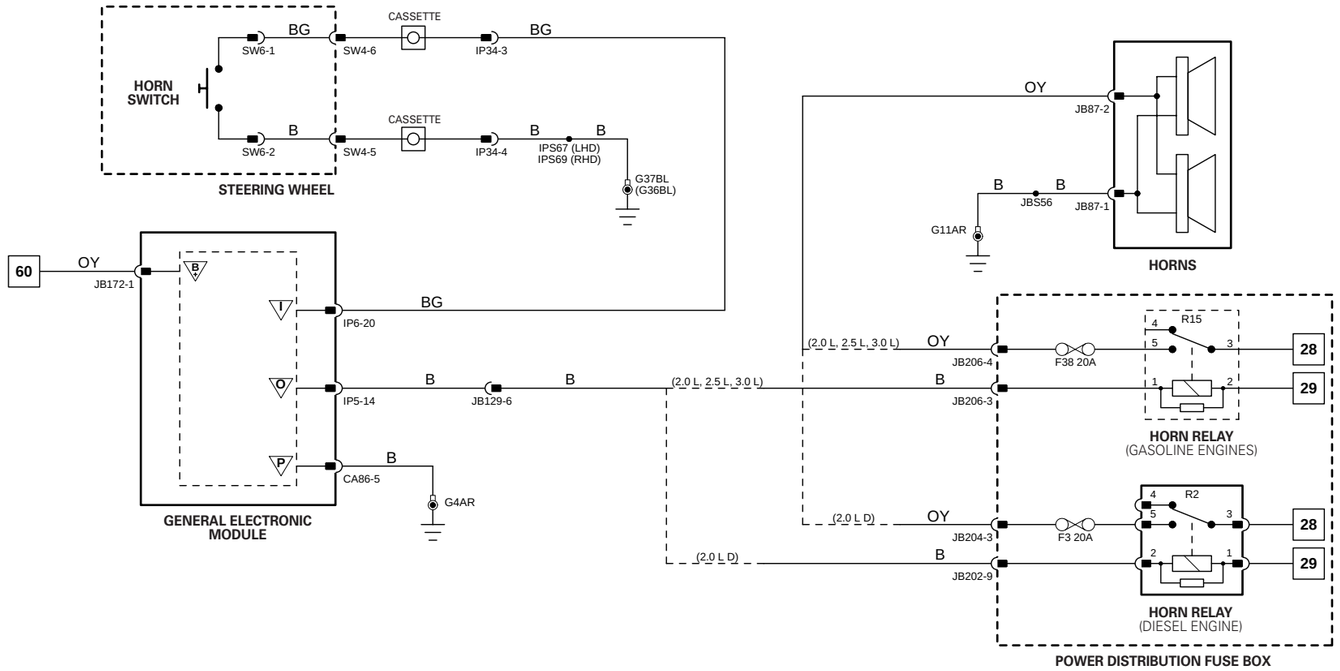
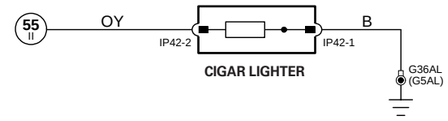
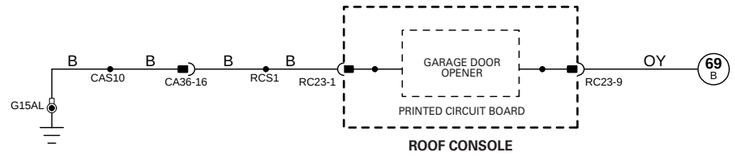
HORN



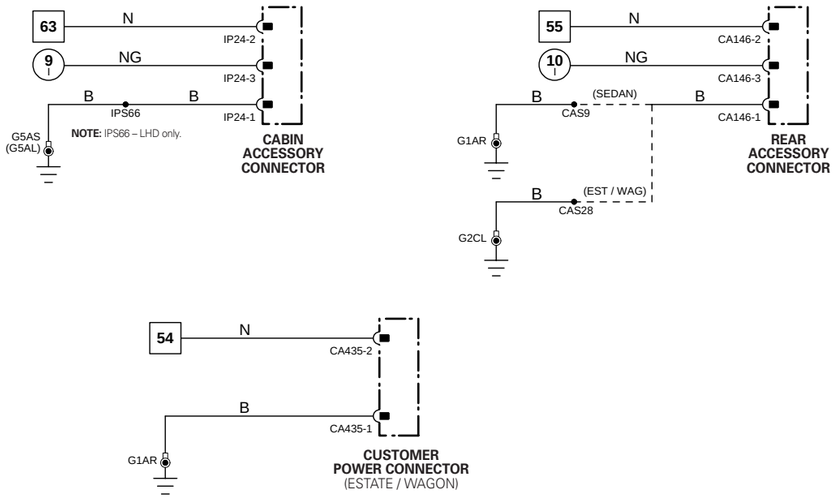
CIGAR LIGHTER



GARAGE DOOR OPENER



ACCESSORY CONNECTORS



ELECTROCHROMIC REAR VIEW MIRROR

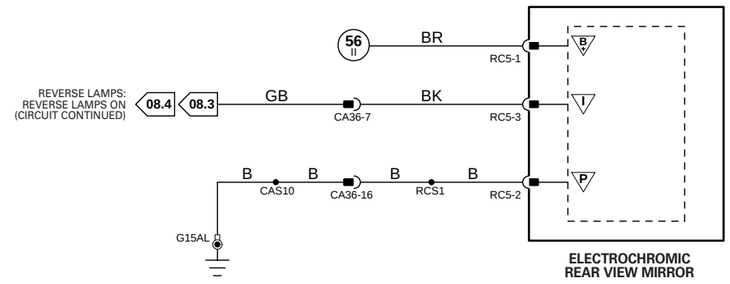


Fig. 20.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ANTI-LOCK BRAKING / TRACTION CONTROL MODULE	JB197	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
ANTI-LOCK BRAKING SYSTEM MODULE	JB45	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
CLIMATE CONTROL MODULE – PANEL	AC1 IP39 IP101 IP135	26-WAY / YELLOW 4-WAY / GREY 26-WAY / WHITE 2-WAY / GREY	BEHIND CLIMATE CONTROL PANEL
CLIMATE CONTROL MODULE – REMOTE	AC1 IP101	26-WAY / YELLOW 26-WAY / WHITE	RH SIDE OF AIR DISTRIBUTION UNIT
DATA LINK CONNECTOR	IP22	16-WAY / BLACK	BELOW STEERING COLUMN
DYNAMIC STABILITY CONTROL MODULE	JB185	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
HEADLAMP LEVELING MODULE	IP130	26-WAY / WHITE	BEHIND INSTRUMENT PANEL / LH SIDE
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
SEAT MODULE – DRIVER	DM2 DM3 DM4 DM5	10-WAY / GREY 16-WAY / BLACK 8-WAY / BLUE 8-WAY / GREEN	DRIVER SEAT SWITCH PACK
STEERING ANGLE SENSOR	IP19	4-WAY / BLACK	STEERING COLUMN
TRANSMISSION CONTROL MODULE – 16 BIT	JB131	37-WAY / BLUE	LOWER LH 'A' POST
TRANSMISSION CONTROL MODULE – 32 BIT	JB230 JB231	24-WAY / WHITE 24-WAY / GREY	LOWER LH 'A' POST
YAW RATE SENSOR	IP20	4-WAY / BLACK	BEHIND CENTER CONSOLE

HARNESS IN-LINE CONNECTORS

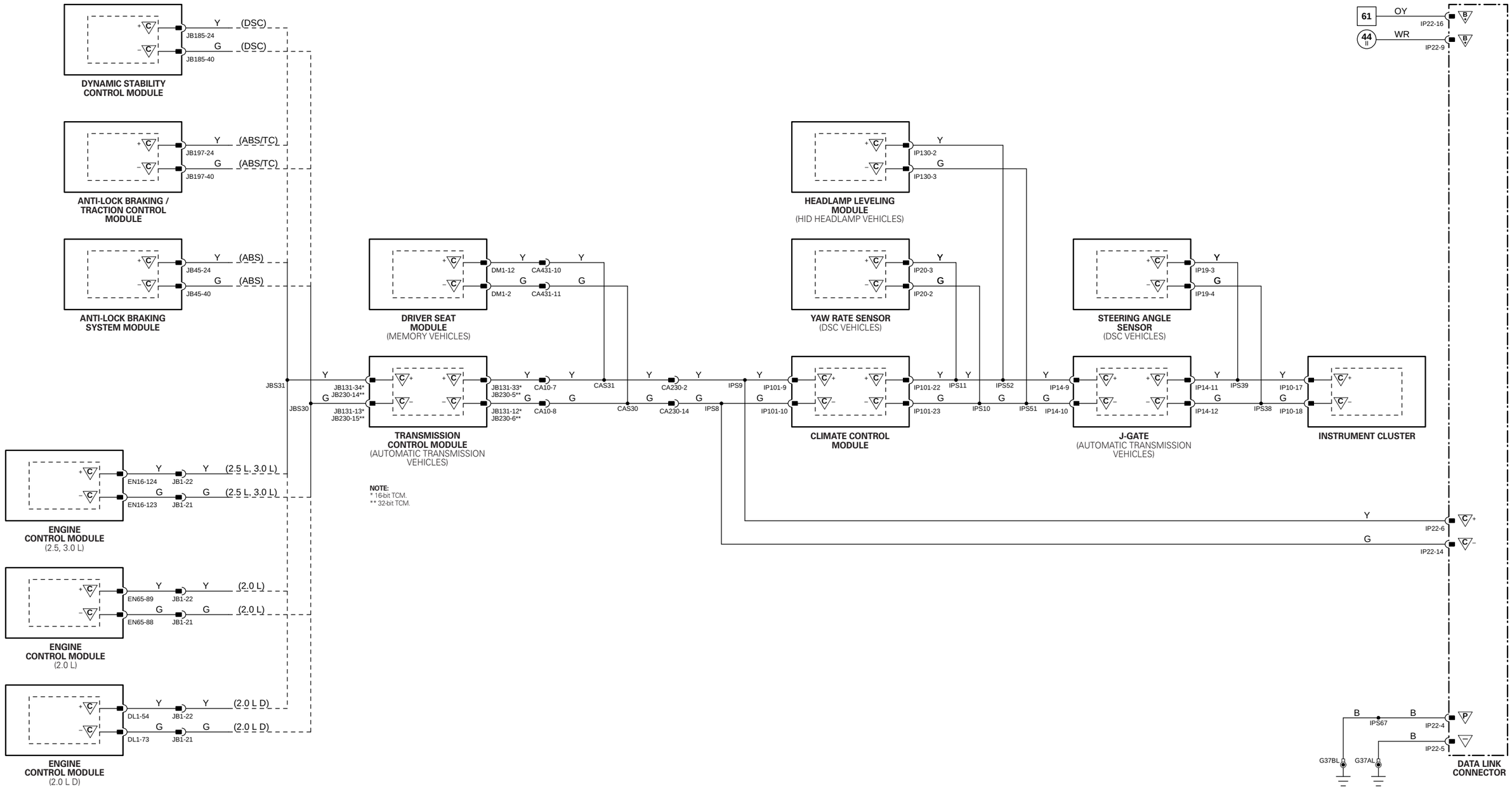
Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA431	16-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE

GROUNDS

Ground	Harness	Location
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.



NOTE:
* 16-bit TCM.
** 32-bit TCM.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: LHD Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 20.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
ANTI-LOCK BRAKING / TRACTION CONTROL MODULE	JB197	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
ANTI-LOCK BRAKING SYSTEM MODULE	JB45	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
CLIMATE CONTROL MODULE – PANEL	AC1 IP39 IP101 IP135	26-WAY / YELLOW 4-WAY / GREY 26-WAY / WHITE 2-WAY / GREY	BEHIND CLIMATE CONTROL PANEL
CLIMATE CONTROL MODULE – REMOTE	AC1 IP101	26-WAY / YELLOW 26-WAY / WHITE	RH SIDE OF AIR DISTRIBUTION UNIT
DATA LINK CONNECTOR	IP22	16-WAY / BLACK	BELOW STEERING COLUMN
DYNAMIC STABILITY CONTROL MODULE	JB185	42-WAY / BLUE	ENGINE COMPARTMENT / RH SIDE
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
HEADLAMP LEVELING MODULE	IP130	26-WAY / WHITE	BEHIND INSTRUMENT PANEL / LH SIDE
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
J-GATE MODULE	IP14	16-WAY / GREY	CENTER CONSOLE
SEAT MODULE – DRIVER	DM2 DM3 DM4 DM5	10-WAY / GREY 16-WAY / BLACK 8-WAY / BLUE 8-WAY / GREEN	DRIVER SEAT SWITCH PACK
STEERING ANGLE SENSOR	IP19	4-WAY / BLACK	STEERING COLUMN
TRANSMISSION CONTROL MODULE – 16 BIT	JB131	37-WAY / BLUE	LOWER LH 'A' POST
TRANSMISSION CONTROL MODULE – 32 BIT	JB230 JB231	24-WAY / WHITE 24-WAY / GREY	LOWER LH 'A' POST
YAW RATE SENSOR	IP20	4-WAY / BLACK	BEHIND CENTER CONSOLE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA10	22-WAY / SLATE / CABIN HARNESS TO JUNCTION BOX HARNESS	LH 'A' POST / 'A' POST TRIM
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA431	16-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	UNDER DRIVER SEAT
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE

GROUNDS

Ground	Harness	Location
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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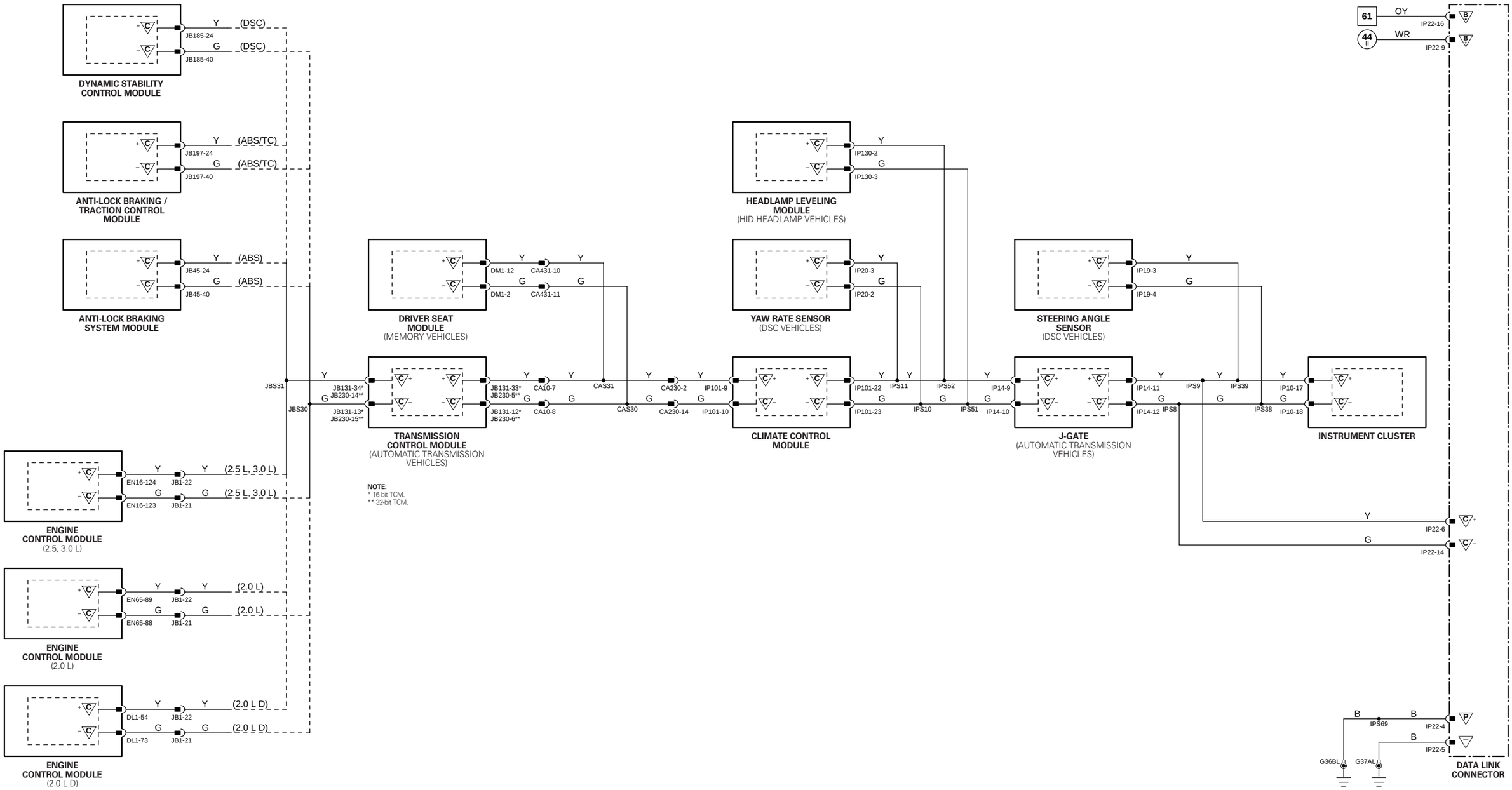


NOTE:
* 16-bit TCM.
** 32-bit TCM.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 → 31 Fig. 01.5
32 → 66 Fig. 01.6
67 → 76 Fig. 01.7
77 → 97 Fig. 01.8
98 → 107 Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: RHD Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 20.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1 IP65 IP106	2-WAY / D2B 20-WAY / BLACK 2-WAY / METALLIC	INSTRUMENT PANEL CENTER
DATA LINK CONNECTOR	IP22	16-WAY / BLACK	BELOW STEERING COLUMN
ENGINE CONTROL MODULE – 2.0 L	EN65	104-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.0 L D	DL1	121-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
ENGINE CONTROL MODULE – 2.5 L, 3.0 L	EN16	134-WAY / BLACK	ENGINE COMPARTMENT, FRONT BULKHEAD / RH SIDE
FUEL-FIRED AUXILIARY HEATER MODULE	JB232	6-WAY / BLACK	VEHICLE UNDER-FLOOR REARWARD OF ENGINE
GENERAL ELECTRONIC MODULE	CA86 CA87 IP5 IP6 JB172	23-WAY / GREY 23-WAY / GREEN 23-WAY / BROWN 23-WAY / NATURAL 23-WAY / BLUE	BEHIND INSTRUMENT PANEL / RH SIDE
HEADLAMP LEVELING MODULE	IP130	26-WAY / WHITE	BEHIND INSTRUMENT PANEL / LH SIDE
INSTRUMENT CLUSTER	IP10 IP11	26-WAY / WHITE 26-WAY / WHITE	INSTRUMENT PANEL
NAVIGATION CONTROL MODULE	CD5 NA1 NA2 NA6 NA7	2-WAY / D2B 26-WAY / WHITE 12-WAY / BLACK 2-WAY / GREY 20-WAY / BLACK	TRUNK, LH REAR
PARKING AID MODULE	CA418 CA419 RB7	16-WAY / WHITE 12-WAY / WHITE 12-WAY / WHITE	SPARE WHEEL WELL
RESTRAINTS CONTROL MODULE – ALL WHEEL DRIVE VEHICLES	CA450 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
RESTRAINTS CONTROL MODULE – FRONT WHEEL DRIVE VEHICLES	CA165 IP74	40-WAY / BLACK 24-WAY / BLACK	UNDER CENTER CONSOLE
ROOF CONSOLE – PRINTED CIRCUIT BOARD	RC23	20-WAY / WHITE	ROOF CENTER FRONT
ROOF CONSOLE – WITHOUT PRINTED CIRCUIT BOARD	RC30 RC31 RC33 RC34	4-WAY / BLACK 2-WAY / BLACK 4-WAY / BLACK 6-WAY / BLACK	ROOF CENTER FRONT

HARNESS IN-LINE CONNECTORS

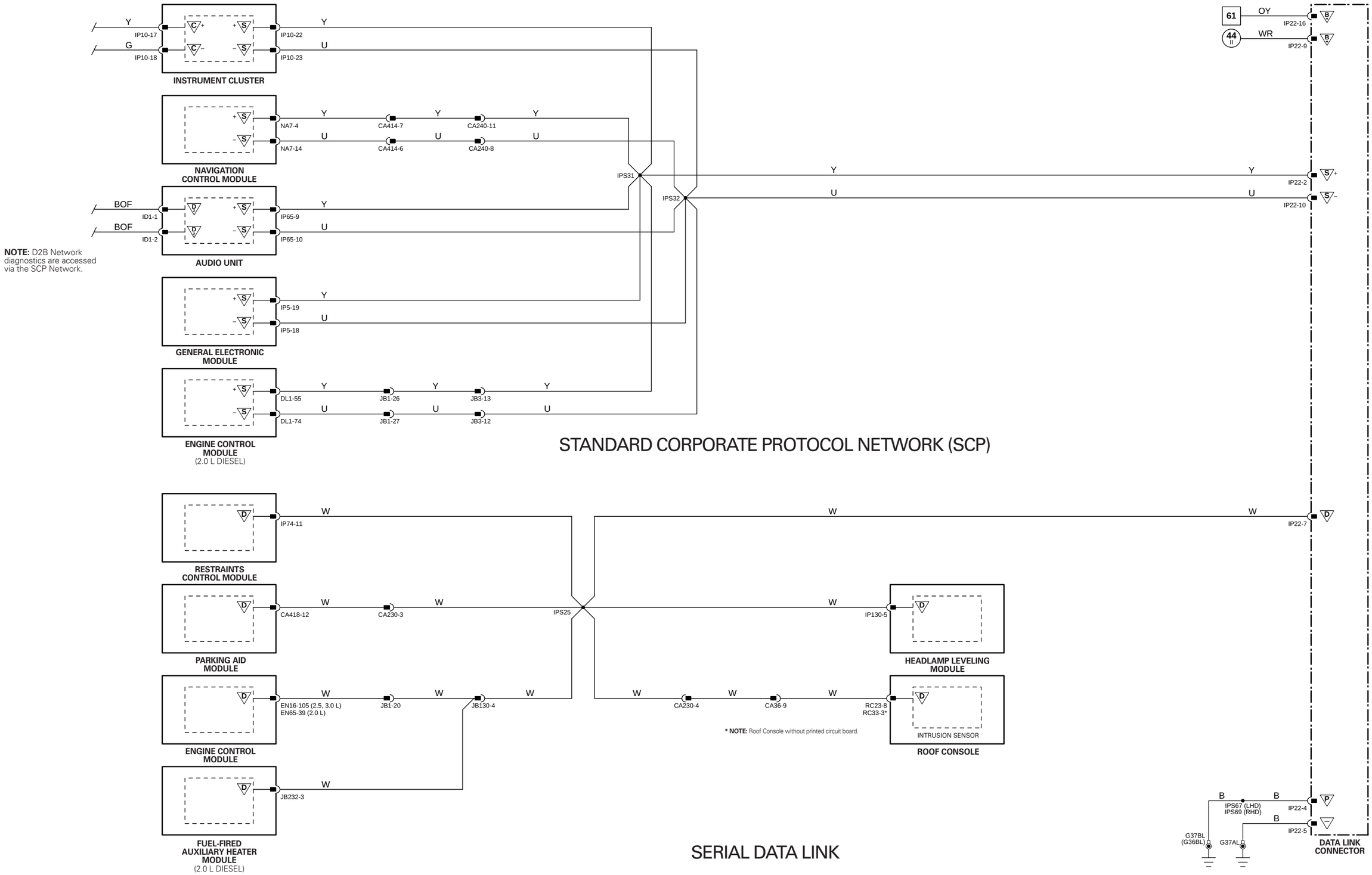
Connector	Connector Description	Location
CA36	16-WAY / GREEN / CABIN HARNESS TO ROOF HARNESS	LH 'A' POST / WINDSHIELD PILLAR
CA230	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
JB1	42-WAY / BLACK / ENGINE MANAGEMENT HARNESS TO JUNCTION BOX HARNESS	ENGINE COMPARTMENT / LH SIDE
JB3	14-WAY / BLUE / JUNCTION BOX HARNESS TO INSTRUMENT PANEL HARNESS	BELOW INSTRUMENT PANEL / LH SIDE

GROUNDS

Ground	Harness	Location
G36	IP	BEHIND INSTRUMENT PANEL / LH SIDE OF CROSS CAR BEAM
G37	IP	BEHIND INSTRUMENT PANEL / RH SIDE OF CROSS CAR BEAM

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

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.



NOTE: D2B Network diagnostics are accessed via the SCP Network.

*** NOTE:** Roof Console without printed circuit board.

STANDARD CORPORATE PROTOCOL NETWORK (SCP)

SERIAL DATA LINK

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 → 10 Fig. 01.4
11 II → 31 II Fig. 01.5
32 II → 66 II Fig. 01.6
67 B → 76 B Fig. 01.7
77 E → 97 E Fig. 01.8
98 E → 107 E Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
− Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

Fig. 20.4

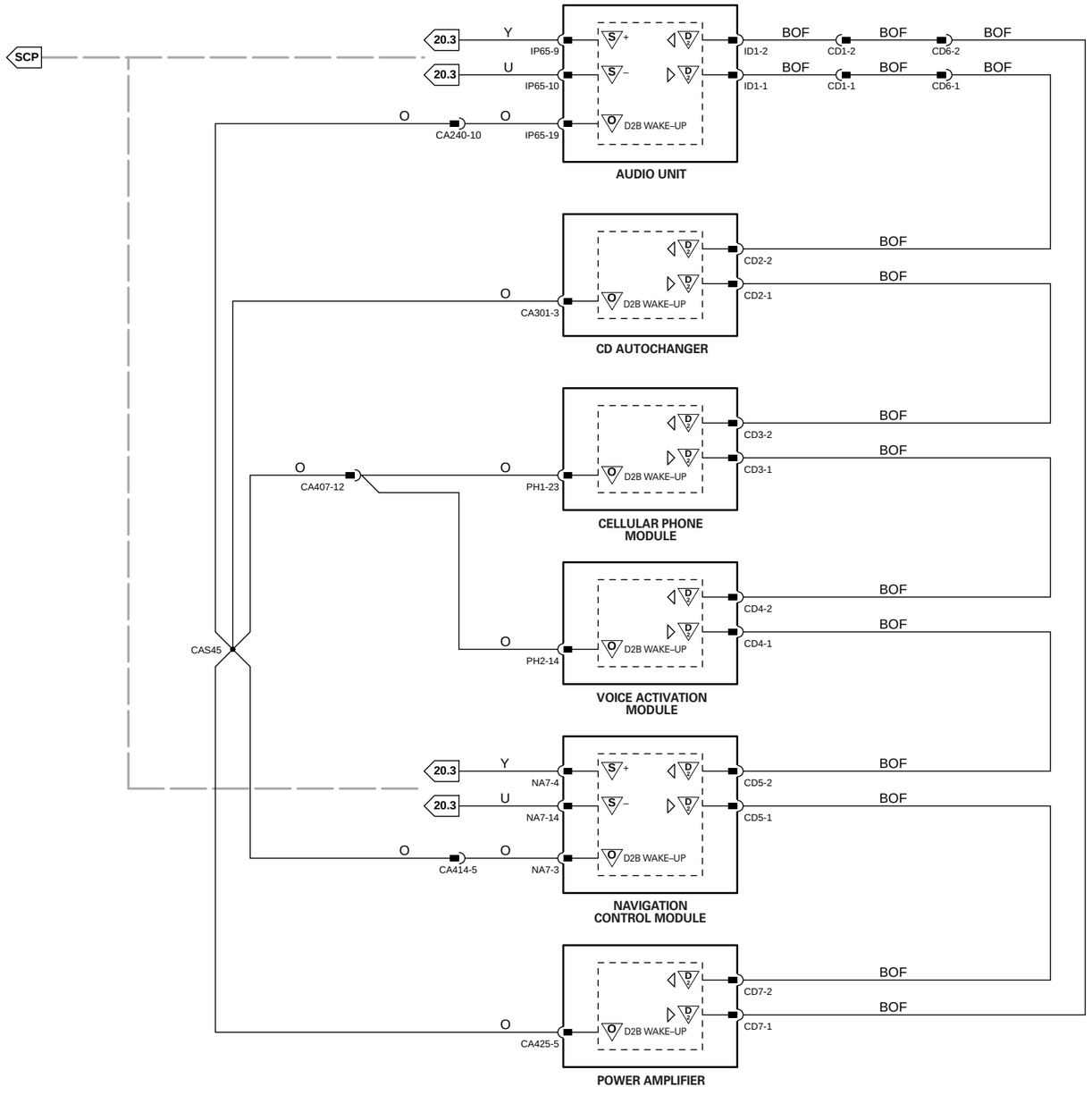
COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	ID1 IP65 IP106	2-WAY / D2B 20-WAY / BLACK 2-WAY / METALLIC	INSTRUMENT PANEL CENTER
CD AUTOCHANGER	CD2 CA301	2-WAY / D2B 3-WAY / BLACK	TRUNK / LH SIDE
CELLULAR PHONE MODULE	CD3 PH1 PH3	2-WAY / D2B 32-WAY / BLACK 2-WAY / GREY	TRUNK / LH SIDE
NAVIGATION CONTROL MODULE	CD5 NA1 NA2 NA6 NA7	2-WAY / D2B 26-WAY / WHITE 12-WAY / BLACK 2-WAY / GREY 20-WAY / BLACK	TRUNK, LH REAR
POWER AMPLIFIER	CA425 CA426 CD7	12-WAY / GREY 18-WAY / BLACK 2-WAY / D2B	TRUNK, LH REAR
VOICE ACTIVATION MODULE	CD4 PH2	2-WAY / D2B 22-WAY / BLACK	TRUNK, LH REAR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description	Location
CA240	12-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	LH LOWER 'A' POST / 'A' POST TRIM
CA407	16-WAY / GREY / CELLULAR PHONE HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CA414	16-WAY / BLUE / NAVIGATION HARNESS TO CABIN HARNESS	BELOW LH REAR SEAT CUSHION
CD1	2-WAY / BLACK / FIBER OPTIC CONNECTOR	LH LOWER 'A' POST / 'A' POST TRIM
CD6	2-WAY / BLACK / FIBER OPTIC CONNECTOR	TRUNK, LH REAR

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.



NOTES:

The 6-module D2B Network shown depicts the greatest number of modules available. D2B Networks containing less than 6 modules are always connected in the sequence shown from top to bottom.

Audio Unit – Master Module
1 – CD Autochanger
2 – Cellular Phone Module
3 – Voice Activation Module
4 – Navigation Control Module
5 – Power Amplifier

When modules are not fitted to the vehicle, the fiber optic cables and the connectors are deleted. Therefore, each Network containing less than 6 modules has a unique fiber optic and "wake up" circuit.

D2B Network diagnostics via SCP Network – refer to Figure 20.3.

1 → 6 Fig. 01.1
7 → 33 Fig. 01.2
34 → 79 Fig. 01.3
1 (I) → 10 (I) Fig. 01.4
11 (II) → 31 (II) Fig. 01.5
32 (II) → 66 (II) Fig. 01.6
67 (B) → 76 (B) Fig. 01.7
77 (E) → 97 (E) Fig. 01.8
98 (E) → 107 (E) Fig. 01.9

I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
C CAN
S SCP
D D2B Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: August 2003

This Appendix contains a listing of CAN and SCP Network messages.
NOTE: Passive Anti-Theft System and Security System messages are not included in this appendix.

The following acronyms and abbreviations are used throughout this section:

A/C	Air Conditioning
ABS	Anti-Lock Braking
AT CMD	Commands for configuring and controlling telecommunication devices
AUDIO	Audio Unit
BIT	Smallest element of data code (1 or 0)
BYTE	Grouping of 8 bits (one alphanumeric character)
°C	Degrees Celsius
CAL	Calibrate
CAN	Controller Area Network
CCM	Climate Control Module
CID	CAN Identifier
CM	Control module
CPM	Cellular Phone Module
D2B	D2B Fiber Optic Network
D2B OPC	Instructions for translating and routing data for D2B use
DIAG	Diagnostics
DSC	Dynamic Stability Control
DSCM	Dynamic Stability Control Module
DSM	Driver Seat Module
DTC	Diagnostic Trouble Code
ECM	Engine Control Module
°F	Degrees Fahrenheit
Gateway	Device that converts messages between different types of networks
GEM	General Electronic Module
HLM	Headlamp Leveling Module
IDB	Identification Byte
IC	Instrument Cluster
JGM	J-Gate Module
LED	Light Emitting Diode
MIL	Malfunction Indicator Lamp
MSG	Message
NCM	Navigation Control Module
OBD	On Board Diagnostics (OBD II, EOBD)
ODO	Odometer
PTT	Push to Talk
RPM	Revolutions Per Minute
SAS	Steering Angle Sensor
SCP	Standard Corporate Protocol Network
SMS	Short Message Service for Mobile Communications
STM	Switch to Test Mode
TCM	Transmission Control Module
TCS	Traction Control System
VAM	Voice Activation Module
WDS	Worldwide Diagnostic System
YRS	Yaw Rate Sensor

Message	Source	Receivers			
		GECM	IC	NCM	AUDIO
All Headlamp Status - Off	IC	X			X
All Headlamp Status - On	IC	X			X
All Park Lamp Status - Off	IC	X		X	X
All Park Lamp Status - On	IC	X		X	X
ALL Turn signal Lamp Command - Off	GEM		X		
ALL Turn signal Lamp Command - On	GEM		X		
Cellular Phone In Use Status - No (False)	AUDIO		X		
Cellular Phone In Use Status - Yes (True)	AUDIO		X		
Chime Configuration 1 Command - Disabled (Airbag)	IC	X			
Chime Configuration 1 Command - Enabled (Airbag)	IC	X			
Chime Configuration 2 Command - Disabled (Seat Belt)	IC	X			
Chime Configuration 2 Command - Enabled (Seat Belt)	IC	X			
Trunk lid Ajar Switch Status - Active	GEM		X		X
Trunk lid Ajar Switch Status - Inactive	GEM		X		X
Display Access Confirmation Status - Accept	IC			X	X
Display Access Confirmation Status - Reject	IC			X	X
Display Access Display String Command - Clear Display	AUDIO		X		
Display Access Display String Command - Clear Display	NCM		X		
Display Access Display String Command - Overwrite Display	AUDIO		X		
Display Access Display String Command - Overwrite Display	NCM		X		
Display Access Terminate Command	AUDIO		X		
Display Access Terminate Command	NCM		X		
Download Block to Display Command	AUDIO		X		
Download Block to Display Command	NCM		X		
Driver's Front Door Ajar Switch Status - Active	GEM		X		X
Driver's Front Door Ajar Switch Status - Inactive	GEM		X		X
Driver's Rear Door Ajar Switch Status - Active	GEM		X		X
Driver's Rear Door Ajar Switch Status - Inactive	GEM		X		X
Gateway Climate Control to Display Status	IC			X	
Gateway Climate Control to Voice Status	IC				X
Gateway Audio to NCM	AUDIO			X	
Gateway Audio to NCM (Multiframe)	AUDIO		X		

Message	Source	Receivers			
		GECM	IC	NCM	AUDIO
Gateway Display to Climate Control Command	NCM		X		
Gateway NCM to Audio	NCM				X
Gateway NCM to Phone (AT Cmd) (First Frame)	NCM				X
Gateway NCM to Phone (AT Cmd) (Continuation Frame)	NCM				X
Gateway NCM to Phone (D2B OPC) (First Frame)	NCM				X
Gateway NCM to Phone (D2B OPC) (Continuation Frame)	NCM				X
Gateway NCM to SMS (SMS Data) (First Frame)	NCM				X
Gateway NCM to SMS (SMS Data) (Continuation Frame)	NCM				X
Gateway NCM to VAM	NCM				X
Gateway Phone to NCM (AT Cmd) (First Frame)	AUDIO			X	
Gateway Phone to NCM (AT Cmd) (Continuation Frame)	AUDIO			X	
Gateway Phone to NCM (D2B OPC) (First Frame)	AUDIO			X	
Gateway Phone to NCM (D2B OPC) (Continuation Frame)	AUDIO			X	
Gateway SMS to NCM (SMS Data) (First Frame)	AUDIO			X	
Gateway SMS to NCM (SMS Data) (Continuation Frame)	AUDIO			X	
Gateway Voice to Climate Control Command	AUDIO		X		
Gateway VAM to NCM	AUDIO			X	
Hood Ajar Switch Status - Active	GEM		X		X
Hood Ajar Switch Status - Inactive	GEM		X		X
Ignition Switch Position with Initialize Status - No (False)	IC	X		X	X
Ignition Switch Position with Initialize Status - Yes (True)	IC	X		X	X
Left Side Turn Signal Command - Off	GEM		X		
Left Side Turn Signal Command - On	GEM		X		
Low Fuel Level Status - No (False)	IC			X	
Low Fuel Level Status - Yes (True)	IC			X	
Low Washer Fluid warning - Off	IC	X			
Low Washer Fluid warning - On	IC	X			
Network Bus Wake-up Command - Yes (True)	GEM				
Network Bus Wake-up Command - Yes (True)	IC				
Odometer Rolling Count Status	IC			X	
Parking Brake Switch Status - Active	IC				X
Parking Brake Switch Status - Inactive	IC				X

Message	Source	Receivers			
		GECM	IC	NCM	AUDIO
Passenger's Front Door Ajar Switch Status - Active	GEM		X		X
Passenger's Front Door Ajar Switch Status - Inactive	GEM		X		X
Passenger's Rear Door Ajar Switch Status - Active	GEM		X		X
Passenger's Rear Door Ajar Switch Status - Inactive	GEM		X		X
Remote Control Button Status - Button 7 (PTT) Active	AUDIO			X	
Remote Control Button Status - Button 6 (VOL+) Active	AUDIO			X	
Remote Control Button Status - Button 5 (VOL-) Active	AUDIO			X	
Remote Control Button Status - Button 4 (SELECT) Active	AUDIO			X	
Remote Control Button Status - Button 3 (SEEK UP) Active	AUDIO			X	
Remote Control Button Status - Button 2 (SEEK DOWN) Active	AUDIO			X	
Remote Control Button Status - All Buttons Inactive	AUDIO			X	
Request All Headlamp Status	GEM		X		
Request All Headlamp Status	AUDIO		X		
Request All Park Lamp Status	GEM		X		
Request All Park Lamp Status	NCM		X		
Request All Park Lamp Status	AUDIO		X		
Request trunk Ajar Switch Status	IC	X			
Request trunk Ajar Switch Status	AUDIO	X			
Request Driver's Front Door Ajar Switch Status	IC	X			
Request Driver's Front Door Ajar Switch Status	AUDIO	X			
Request Driver's Rear Door Ajar Switch Status	IC	X			
Request Driver's Rear Door Ajar Switch Status	AUDIO	X			
Request Hood Ajar Switch Status	IC	X			
Request Hood Ajar Switch Status	AUDIO	X			
Request Ignition Switch Position with Initialize Status	GEM		X		
Request Ignition Switch Position with Initialize Status	AUDIO		X		
Request Ignition Switch Position with Initialize Status	NCM		X		
Request Low Fuel Level Status	NCM		X		
Request Low Washer Fluid warning Command	GEM		X		
Request Parking Brake Switch Status	AUDIO		X		
Request Passenger's Front Door Ajar Switch Status	IC	X			
Request Passenger's Front Door Ajar Switch Status	AUDIO	X			

Message	Source	Receivers			
		GECM	IC	NCM	AUDIO
Request Passenger's Rear Door Ajar Switch Status	IC	X			
Request Passenger's Rear Door Ajar Switch Status	AUDIO	X			
Request Seat belt warning Status	IC	X			
Request Tailgate Glass Ajar Switch Status	IC	X			
Request Vehicle Anti-theft System Status	IC	X			
Request Vehicle Configuration Module Programmed Status	IC	X			
Request Vehicle Inertia Switch Status	GEM		X		
Request Vehicle Security Key Status	GEM		X		
Request Vehicle Security Key Status	AUDIO		X		
Right Side Turn Signal Command - Off	GEM		X		
Right Side Turn Signal Command - On	GEM		X		
Seatbelt warning Command Off	GEM		X		
Seatbelt warning Command On	GEM		X		
Steering Wheel Button Pressed	AUDIO			X	
Tailgate Glass Ajar Switch Status - Active	GEM		X		
Tailgate Glass Ajar Switch Status - Inactive	GEM		X		
Terminate Display Confirmation Status - Accept	IC			X	X
Terminate Display Confirmation Status - Reject	IC			X	X
Terminate Display Definition Command	AUDIO		X		
Terminate Display Definition Command	NCM		X		
Time of Day (with Mode) Command	NCM				X
Time of Day (with Mode) Status	AUDIO			X	
Transit Mode Command - Active	EXTERNAL	X	X		
Transit Mode Command - Inactive	IC	X			
Transmission PRNDL Range Selected Status	IC			X	
Vehicle Anti-theft System Status	GEM		X		
Vehicle Configuration Module Programmed Status - No (False)	GEM		X		
Vehicle Configuration Module Programmed Status - No (False)	AUDIO		X		
Vehicle Configuration Module Programmed Status - Yes (True)	GEM		X		
Vehicle Inertia Switch Status - Active (Crashed)	IC	X			
Vehicle Inertia Switch Status - Inactive (OK)	IC	X			
Vehicle Security Key Status	IC	X			X

SCP Message Matrix

Message	Source	Receivers			
		GECM	IC	NCM	AUDIO
Vehicle Speed - High Resolution Status	IC	X			X
VAM Control Mode Status - Off	AUDIO	X	X		
VAM Control Mode Status - On	AUDIO	X	X		
VAM Control Mode Status - Off	NCM	X	X		
VAM Control Mode Status - On	NCM	X	X		
VAM Training Mode A/B Entry	NCM				X

CAN Message Matrix

Message	Source	Receivers										
		ABS/TC/DSC	ECM	TCM	IC	CCM	HLM	JGM	SAS	YRS	DSM	WDS
CAN reflash WDS ECM	WDS		X									
CAN reflash ECM WDS	ECM											X
CAN engine torque request	ABS / TC / DSC		X									
CAN temporary torque request	ABS / TC / DSC		X									
CAN engine drag torque request	ABS / TC / DSC		X									
CAN YRS test mode	YRS	X										
CAN YRS positive TM bit	YRS	X										
CAN YRS error bit	YRS	X										
CAN YRS temporary error bit	YRS	X										
CAN YRS calibration response	YRS	X										
CAN YRS ID byte response	YRS	X										
CAN yaw rate signal	YRS	X										
CAN lateral acceleration signal	YRS	X										
CAN YRS switch to test mode	ABS / TC / DSC									X		
CAN YRS calibration	ABS / TC / DSC									X		
CAN YRS ID byte	ABS / TC / DSC									X		
CAN steering wheel angle	SAS	X										
CAN steering wheel speed	SAS	X										
CAN steering wheel status	SAS	X										
CAN SWS message count	SAS	X										
CAN SWS checksum	SAS	X										
CAN indicated engine torque	ECM	X		X								
CAN engine friction torque	ECM	X		X								
CAN actual engine torque	ECM	X		X								
CAN driver demand torque	ECM	X		X								
CAN torque reduction request	TCM		X									
CAN transmission torque limit	TCM		X									
CAN torque converter slip	TCM	X	X									
CAN transmission input speed	TCM		X									

CAN Message Matrix

Message	Source	Receivers										
		ABS/TC/DSC	ECM	TCM	IC	CCM	HLM	JGM	SAS	YRS	DSM	WDS
CAN transmission output speed	TCM		X									
CAN traction shift map	ABS / TC / DSC			X								
CAN OBD II ABS clear acknowledge	ABS / TC / DSC		X									
CAN ABS fault code MIL status	ABS / TC / DSC		X									
CAN ABS status	ABS / TC / DSC											
CAN vehicle reference speed	ABS / TC / DSC		X		X	X						
CAN ABS fault codes	ABS / TC / DSC		X									
CAN ODO rolling count	ABS / TC / DSC				X							
CAN ABS malfunction	ABS / TC / DSC		X		X							
CAN ABS flags	ABS / TC / DSC		X		X							
CAN transmission input indicated torque	ECM	X		X								
CAN engine acceleration	ECM	X										
CAN throttle position	ECM	X		X								
CAN pedal position	ECM	X		X								
CAN engine speed	ECM	X		X	X	X						
CAN alternator status	ECM				X							
CAN speed control status	ECM			X	X							
CAN kick down	ECM			X								
CAN OBD II clear fault codes	ECM	X		X								
CAN brake pedal pressed	ECM			X	X		X					
CAN crank in progress	ECM	X		X	X	X					X	
CAN traction acknowledge	ECM	X										
CAN fuel cap warning	ECM				X							
CAN brake fluid low	IC	X	X									
CAN park brake status	IC	X	X								X	
CAN dipped beam status	IC		X			X	X					
CAN reverse gear manual selected	IC		X									
CAN oil pressure low	IC		X									
CAN restrict climate control blowers	IC					X						

CAN Message Matrix

Message	Source	Receivers										
		ABS/TC/DSC	ECM	TCM	IC	CCM	HLM	JGM	SAS	YRS	DSM	WDS
CAN fuel level damped	IC		X									
CAN fuel level raw 1	IC		X									
CAN fuel level raw 2	IC		X									
CAN backlight status	IC							X				
CAN gear position actual	TCM	X	X		X						X	
CAN gear position selected	TCM		X		X			X				
CAN transmission shift map	TCM	X	X									
CAN transmission oil temperature	TCM		X		X							
CAN transmission malfunction	TCM	X	X		X							
CAN TCM configuration flag	TCM				X							
CAN torque converter status	TCM	X	X									
CAN gear selection fault	TCM		X		X			X				
CAN idle neutral control	TCM		X									
CAN performance mode indication	TCM							X				
CAN TCM fault code MIL status	TCM		X									
CAN OBD II TCM clear acknowledge	TCM		X									
CAN transmission fault codes	TCM	X	X									
CAN gear position target	TCM	X										
CAN pressure transducer	ECM					X						
CAN engine intake temperature	ECM					X						
CAN A/C clutch inhibit status	ECM					X						
CAN electrical load management	ECM					X						
CAN A/C load control	ECM					X						
CAN cooling fan feedback	ECM					X						
CAN ambient temperature	CCM		X		X							
CAN compressor torque	CCM		X									
CAN A/C commands	CCM		X									
CAN A/C status	CCM		X									
CAN cooling fan request	CCM		X									

CAN Message Matrix

Message	Source	Receivers										
		ABS/TC/DSC	ECM	TCM	IC	CCM	HLM	JGM	SAS	YRS	DSM	WDS
CAN fuel used	ECM				X							
CAN engine OBD II MIL	ECM				X							
CAN throttle malfunction RED	ECM	X			X							
CAN throttle malfunction AMBER	ECM	X			X							
CAN ECM fault code MIL status	ECM	X		X	X							
CAN ECM configuration flag	ECM				X							
CAN engine fault codes	ECM				X							
CAN engine coolant temperature	ECM			X	X	X						
CAN engine oil temperature	ECM			X								
CAN barometric pressure	ECM			X								
CAN front left wheel speed	ABS / TC / DSC		X	X			X					
CAN front right wheel speed	ABS / TC / DSC		X	X			X					
CAN rear left wheel speed	ABS / TC / DSC		X	X			X					
CAN rear right wheel speed	ABS / TC / DSC		X	X			X					
CAN odometer reading	IC		X			X						
CAN display memory stored	DSM				X							
CAN display memory recalled	DSM				X							
CAN VOICE climate control command	IC					X						
CAN climate control VOICE status	CCM				X							
CAN display climate control command	IC					X						
CAN climate control display status	CCM				X							
CAN powertrain configuration	ECM	X		X								
CAN SWS command code word	ABS / TC / DSC								X			
CAN SWS CAN ID	ABS / TC / DSC								X			
CAN diagnostic data in CCM	WDS					X						
CAN diagnostic data out CCM	CCM											X
CAN diagnostic data in DSM	WDS										X	
CAN diagnostic data out DSM	WDS										X	
CAN diagnostic data in ECM	WDS		X									

CAN Message Matrix

Message	Source	Receivers										
		ABS/TC/DSC	ECM	TCM	IC	CCM	HLM	JGM	SAS	YRS	DSM	WDS
CAN diagnostic data in TCM	WDS			X								
CAN diagnostic data in IC	WDS				X							
CAN diagnostic data in ABS / TC / DSC	WDS	X										
CAN diagnostic data out ECM	ECM											X
CAN diagnostic data out TCM	TCM											X
CAN diagnostic data out IC	IC											X
CAN diagnostic data out ABS / TC / DSC	ABS / TC / DSC											X