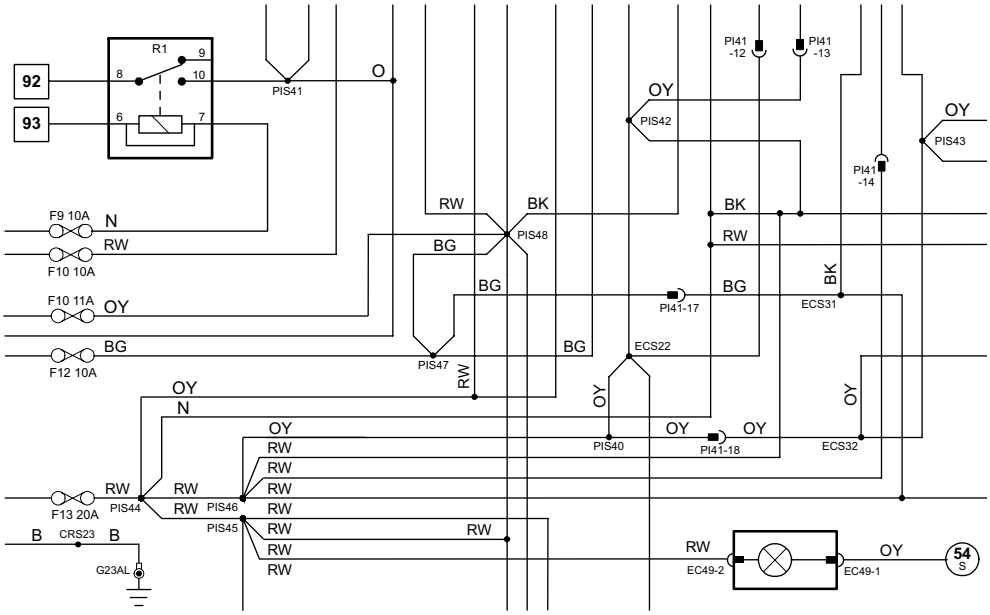
JAGUAR

Electrical Guide



XJ Sedan

including LWB

2005 Model Year, VIN: G34528 onwards

Publication Part Number: **S 2005 XJ**, September 2004

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Published by Technical Communications, **Jaguar Cars Limited**
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While every effort is made to ensure accuracy, design changes to the vehicle may be made in the period between the completion of this publication and the introduction of vehicles.

FIGURES

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
ASCM	Adaptive Speed Control Module
ASM	Air Suspension Module
AUDIO	Audio Unit
AUTO	Automatic Transmission
B+	Battery Voltage
BANK 1	RH Cylinder Bank
BANK 2	LH Cylinder Bank
CAN	Controller Area Network
CCM	Climate Control Module
CKP SENSOR	Crankshaft Position Sensor
CM	Control Module
CMP SENSOR / 1	Camshaft Position Sensor / RH Bank
CMP SENSOR / 2	Camshaft Position Sensor / LH Bank
CPM	Cellular Phone Module
D2B	D2B Network
DDM	Driver Door Module
DSC	Dynamic Stability Control
DSCM	Dynamic Stability Control Module
DSM	Driver Seat Module
ECM	Engine Control Module
ECT SENSOR	Engine Coolant Temperature Sensor
EFT SENSOR	Engine Fuel Temperature Sensor
EGR	Exhaust Gas Recirculation
EGT SENSOR	Exhaust Gas Temperature Sensor
EOT SENSOR	Engine Oil Temperature Sensor
EVAP CANISTER CLOSE VALVE	Evaporative Emission Canister Close Valve
EVAP CANISTER PURGE VALVE	Evaporative Emission Canister Purge Valve
FEM	Front Electronic Module
FPDB	Front Power Distribution Box
FTP SENSOR	Fuel Tank Pressure Sensor
GPS	Global Positioning System
HID	High Intensity Discharge
HLM	Headlamp Leveling Module
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
IC	Instrument Cluster
ICE	In-Car Entertainment
IMT VALVE / 1	Intake Manifold Tuning Valve / Top
IMT VALVE / 2	Intake Manifold Tuning Valve / Bottom
IP SENSOR	Injection Pressure Sensor
JGM	J-Gate Module
KS / 1	Knock Sensor / RH Bank
KS / 2	Knock Sensor / LH Bank
LH	Left-Hand
LHD	Left-Hand Drive
MAF SENSOR	Mass Air Flow Sensor
MAN	Manual Transmission
MAP SENSOR	Manifold Absolute Pressure Sensor
MCP	Multimedia Control Panel
N/A	Normally Aspirated
NAS	North American Specification
NCM	Navigation Control Module
PAM	Parking Aid Module
PATS	Passive Anti-Theft System
PBM	Parking Brake Module
PJB	Passenger (Primary) Junction Box
PWM	Pulse Width Modulated
RCCM	Rear Climate Control Module
RCM	Restraints Control Module

REM	Rear Electronic Module
RH	Right-Hand
RHD	Right-Hand Drive
RMM	Rear Memory Module
ROW	Rest of World
RPDB	Rear Power Distribution Box
SC	Supercharged
SCLM	Steering Column Lock Module
SCP	Standard Corporate Protocol
TCM	Transmission Control Module
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
V8	V8 Engine
VAM	Voice Activation Module
VICS	Vehicle Information Control System
VVT VALVE / 1	Variable Valve Timing Valve / Bank 1
VVT VALVE / 2	Variable Valve Timing Valve / Bank 2
+ve	Positive
–ve	Negative

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; model-specific information and illustrations to aid in the understanding of the 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 (e.g. Fig. 01.1) and Title. The page adjacent to the Figure contains data information specific to that Figure.

NOTE: Data pages are not available for inclusion in Provisional versions of the Electrical Guide.

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'.

Electrical System Architecture

Power Supplies

The 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;
- Switched system power supply.

The 'Switched System Power Supply' circuit is controlled via the FEM (Front Electronic Module) and the REM (Rear Electronic Module). Refer to Fig. 01.6 for circuit activation details.

Fuse Boxes

The electrical harness incorporates three serviceable power distribution fuse boxes:

- the Front Power Distribution Fuse Box, located in the engine compartment;
- the Rear Power Distribution Fuse Box, located in the trunk.
- the Primary Junction Fuse Box, located in the front right-hand foot well.

All fuses and relays (except the trailer towing accessory kit) are located in the three fuse boxes.

Vehicle Networks

Three different networks are employed:

- CAN (Controller Area Network) for high-speed power train communications;
- SCP (Standard Corporate Protocol) network for slower speed body systems communications;
- D2B (Optical) Network for very high-speed 'real-time' audio data transfer.

NOTE: 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.

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 10.

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

Engine Control Module

	Pin	Description and Characteristic
I	P11–6	ENGINE CRANK: B+
I	P11–21	AUTOMATIC – PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED MANUAL – PARK / NEUTRAL SIGNAL: B+ WHEN IGNITION CRANK (III) MANUAL – CLUTCH PEDAL SAFETY SWITCH (PARK / NEUTRAL SIGNAL): B+ WHEN ACTIVATED
O	P11–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	P11–53	FUEL PUMP 2 DRIVE (TO FUEL PUMP 2 MODULE): PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
I	P11–65	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
I	P11–79	GENERATOR FAULT; CHARGE WARNING
C	P11–123	CAN –
C	P11–124	CAN +

Instrument Cluster

	Pin	Description and Characteristic
I	FC16–2	KEY-IN AUDIBLE WARNING: B+ WHEN KEY IN
B+	FC14–3	IGNITION SWITCHED POWER SUPPLY (II): B+
SG	FC16–14	SIGNAL GROUND: GROUND
PG	FC15–3	POWER GROUND: GROUND
B+	FC15–2	BATTERY POWER (LOGIC): B+
G	FC15–4	PATS GROUND: GROUND
D	FC15–5	PATS TRANSCEIVER: ENCODED COMMUNICATION
D	FC15–6	PATS TRANSCEIVER: ENCODED COMMUNICATION
C	FC15–18	CAN +
C	FC15–19	CAN –

Transmission Control Module

	Pin	Description and Characteristic
B+	GB2–9	IGNITION SWITCHED POWER SUPPLY: B+
G	GB2–10	PARK / NEUTRAL SIGNAL: GROUND WHEN ACTIVATED
PG	GB2–13	POWER GROUND: GROUND
PG	GB2–16	POWER GROUND: GROUND

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

Fig. 2.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	—	—	LUGGAGE COMPARTMENT
CLUTCH PEDAL SAFETY SWITCH	CA286	2-WAY / BLACK	TOP OF CLUTCH PEDAL (BOTTOM SWITCH)
ENGINE CONTROL MODULE	P11	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
FRONT POWER DISTRIBUTION FUSE BOX	—	—	ENGINE COMPARTMENT, RH SIDE
GENERATOR (V6)	P47	4-WAY / BLACK	ENGINE, RH SIDE, FRONT
	ST7	EYELET	
IGNITION SWITCH	FC18	7-WAY / BLACK	STEERING COLUMN COWLING
INSTRUMENT CLUSTER	FC14	22-WAY / GREY	INSTRUMENT PANEL
	FC15	20-WAY / BLACK	
	FD63	22-WAY / BLACK	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	FC52	4-WAY / GREEN	STEERING COLUMN, IGNITION SWITCH
PRIMARY JUNCTION FUSE BOX	CA2	26-WAY / BLACK	RH 'A' POST
	CA58	8-WAY / BLACK	
	FC37	26-WAY / BLACK	
	FH7	6-WAY / BLACK	
	FH53	10-WAY / BLACK	
STARTER MEGAFUSE	—	—	LUGGAGE COMPARTMENT
STARTER MOTOR	—	—	ENGINE BLOCK, RH SIDE
STARTER RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R20
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE ASSEMBLY

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
FH3	16-WAY / BLUE / CABIN HARNESS TO FRONT HARNESS	LH 'A' POST
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
P41	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESSES	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE
P42	8-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE
ST4	2-WAY / GREY / FRONT HARNESS TO STARTER LINK	ENGINE COMPARTMENT, REARWARD OF RH WHEEL ARCH

GROUNDS

Ground	Location
FC38	UNDER CENTER OF INSTRUMENT PANEL, ON TRANSMISSION TUNNEL
JB1	LUGGAGE COMPARTMENT, BATTERY GROUND
P40 (LHD)	ENGINE COMPARTMENT, BEHIND RH WHEEL ARCH LINER
P40 (RHD)	ENGINE COMPARTMENT, BEHIND LH WHEEL ARCH LINER
ST2	ENGINE COMPARTMENT, BEHIND LH WHEEL ARCH LINER

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

DATA PAGE

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 furhished 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 ciruit 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: February 2004

DATE OF ISSUE

FIGURE | MODEL RANGE AND YEAR | TITLE | FIGURE NUMBER

[redacted] | Battery; Starter; Generator: V6 | Battery; Starter; Generator: V6 | Fig. 02.1

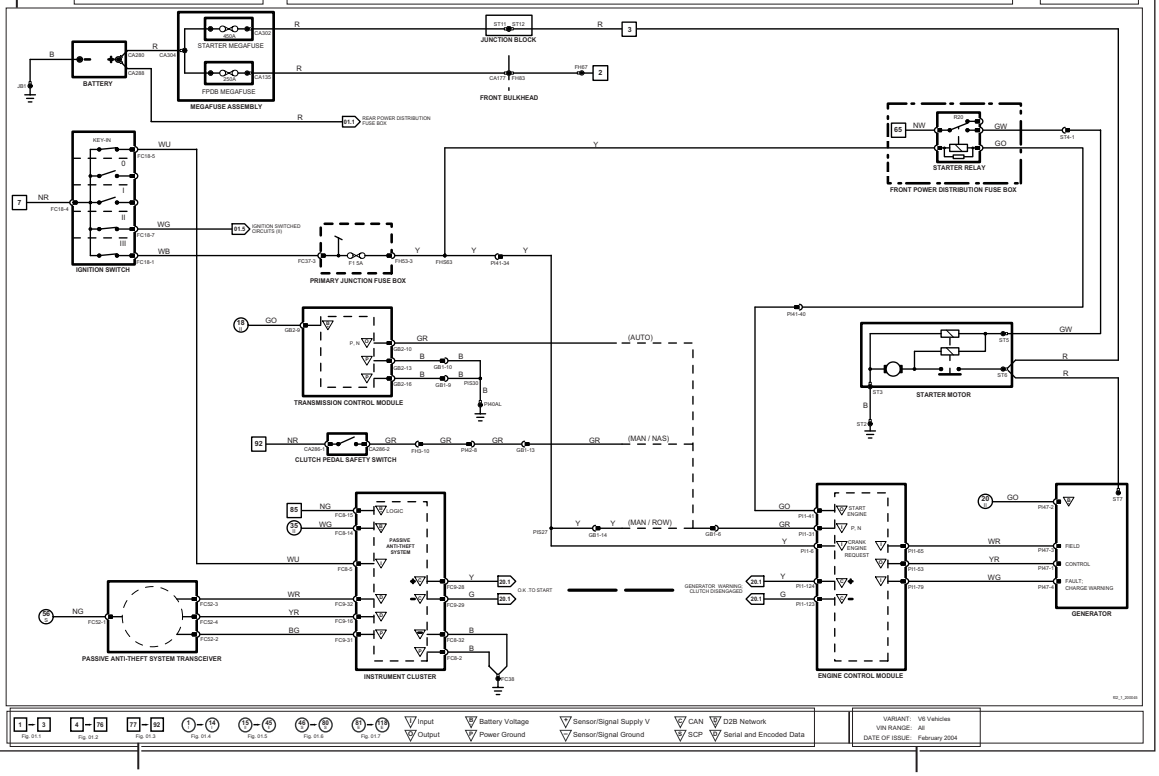


FIGURE PAGE

KEY TO REFERENCE SYMBOLS

VARIANT, VIN RANGE AND DATE OF ISSUE

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, II)
- X II — Ignition switched power supply (key II, III)
- X S — Switched System Power Supply 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

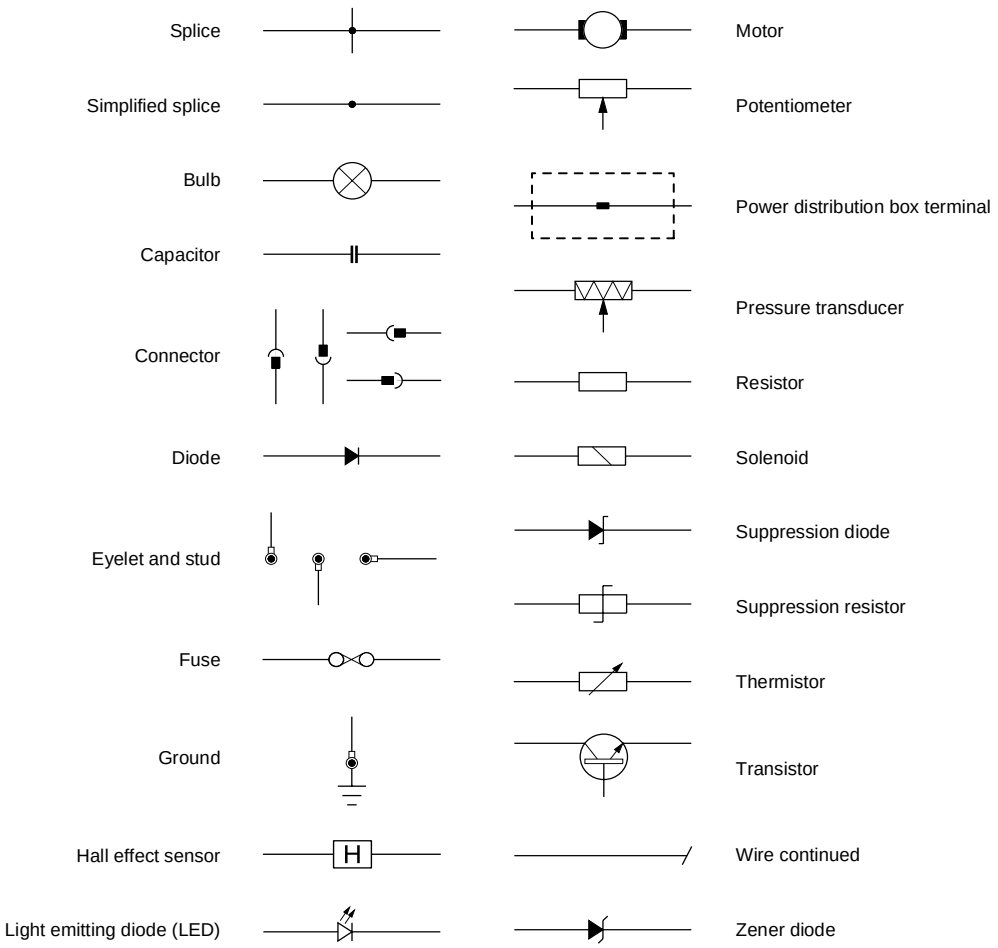
Control Module Pin Symbols

- I — Input
- O — Output
- B+ — Battery voltage
- P — Power ground
- \+ — Sensor / signal supply V *
- − — Sensor / signal ground **
- C — CAN network
- S — SCP network
- D2 — 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 Link
BC Battery Ground Harness
BF Front Bumper Harness
BL Cabin to Trunk Lid Harness
BO Battery Harness
BR Rear Bumper Harness
BS Battery Backed Sounder Harness
BT Trunk Lid Harness
CC Center Console Harness
CL Center Console Link Harness
CP Cooling Pump Harness
CR Cabin Harness
CV EVAP Canister Close Valve Link Harness
DB D2B Network Harness
DD Driver Door Harness
DL Driver Seat Lumbar Harness
DT Driver Door Trim Harness
EC Engine Compartment Harness
EL Starter Motor Solenoid Link Harness
FP Fuel Tank Link Harness
GB Transmission Harness
GC Radiator Cooling Fan Harness
IJ Fuel Injector Link
IL Fuel Injector Link
IP Instrument Panel (Fascia) Harness
IS Fuel Injector Link Harness
LL LH Rear Seat Lumbar Harness
LS LH Rear Seat Harness
LT LH Rear Door Trim Harness
PD Passenger Door Harness
PH Telephone Harness
PI Engine Management Harness
PL Passenger Seat Lumbar Harness
PS Passive Security Sounder Harness
PT Passenger Door Trim Harness
RA Rear Air Conditioning Harness
RC Rear In-Car Entertainment Controls Harness
RF Roof Harness
RL LH Rear Door Harness
RR RH Rear Door Harness
RS RH Rear Seat Harness
RT RH Rear Door Trim Harness
SD Driver Seat Harness
SL LH Rear Seat Motor Harness
SP Passenger Seat Harness
SR RH Rear Seat Motor Harness
SW Steering Wheel Harness
TL Telematics Harness
TT Trailer Tow Harness
VL LH Rear Television Harness
VP Voice Activation Pre-Wire Harness
VR RH Rear Television Harness
VX RH Rear Television Link Harness
VY LH Rear Television Link Harness
YL RH Rear Seat Lumbar Harness

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	Black fiber optic (D2B Network)

Code Numbering

When numbering connectors, grounds and splices, Jaguar Engineering uses a three-position format: CA001, CA002, etc. Because space is limited in this Electrical Guide the codes have, in most cases, been shortened. Thus CA001–001 becomes CA1–1, CA002–001 becomes CA2–1, etc.

Resistor Values

The omega symbol often used to represent resistance is not used in this publication.

- Whole-number resistor values below 1000 ohms are suffixed with ‘R’, for example: 820R.
- Whole-number resistor values above 1000 ohms are suffixed with ‘K’, for example: 820K.
- Fractional resistors values have ‘R’ or ‘K’ inserted at the position of the decimal point, for example: 8R2 represents 8.2 ohms, 1K0 represents 1K ohms.

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 code is shown in parentheses. If the ground designation is the same for LHD and RHD, only one ground code is used, with no parentheses.

EXAMPLE:

Relays

Serviceable Relays:

- are located in all three fuse boxes;
- do not have a separate relay connector (base);
- use the ISO pin numbering system (1, 2, 3, 4, 5);
- are identified by an 'R' number unique only to the fuse box in which it is located.

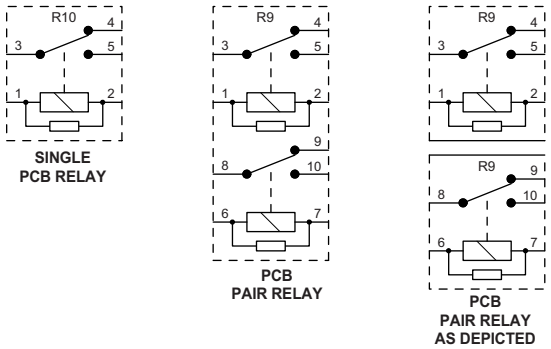
EXAMPLE:

Non-Serviceable Relays:

- are located in all three fuse boxes.
- are a component part of the fuse box printed circuit board (PCB) and are arranged in singles or pairs.
- 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).
- are identified by an 'R' number unique only to the fuse box in which it is located.

NOTE: Pair relays are normally depicted separately.

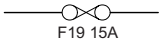
EXAMPLE:



Fuses

Each fuse is identified by an 'F' number unique only to the fuse box in which it is located.

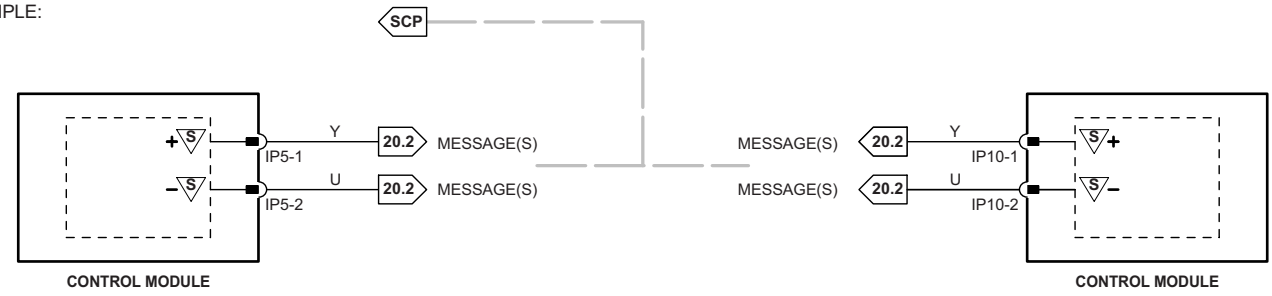
EXAMPLE:



Networks

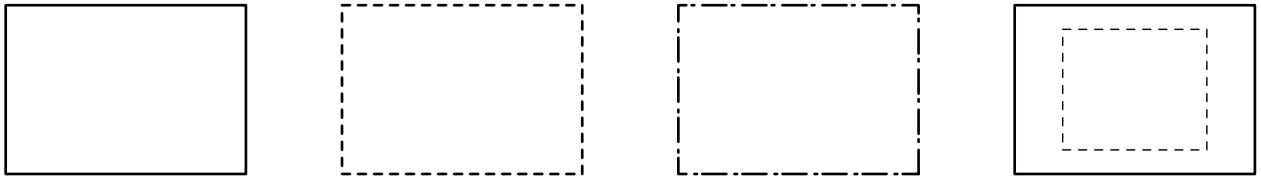
In most instances, networks are shown as a broken grey line to indicate that there is network communication between the depicted control modules. Refer to Figs. 20 for circuit details.

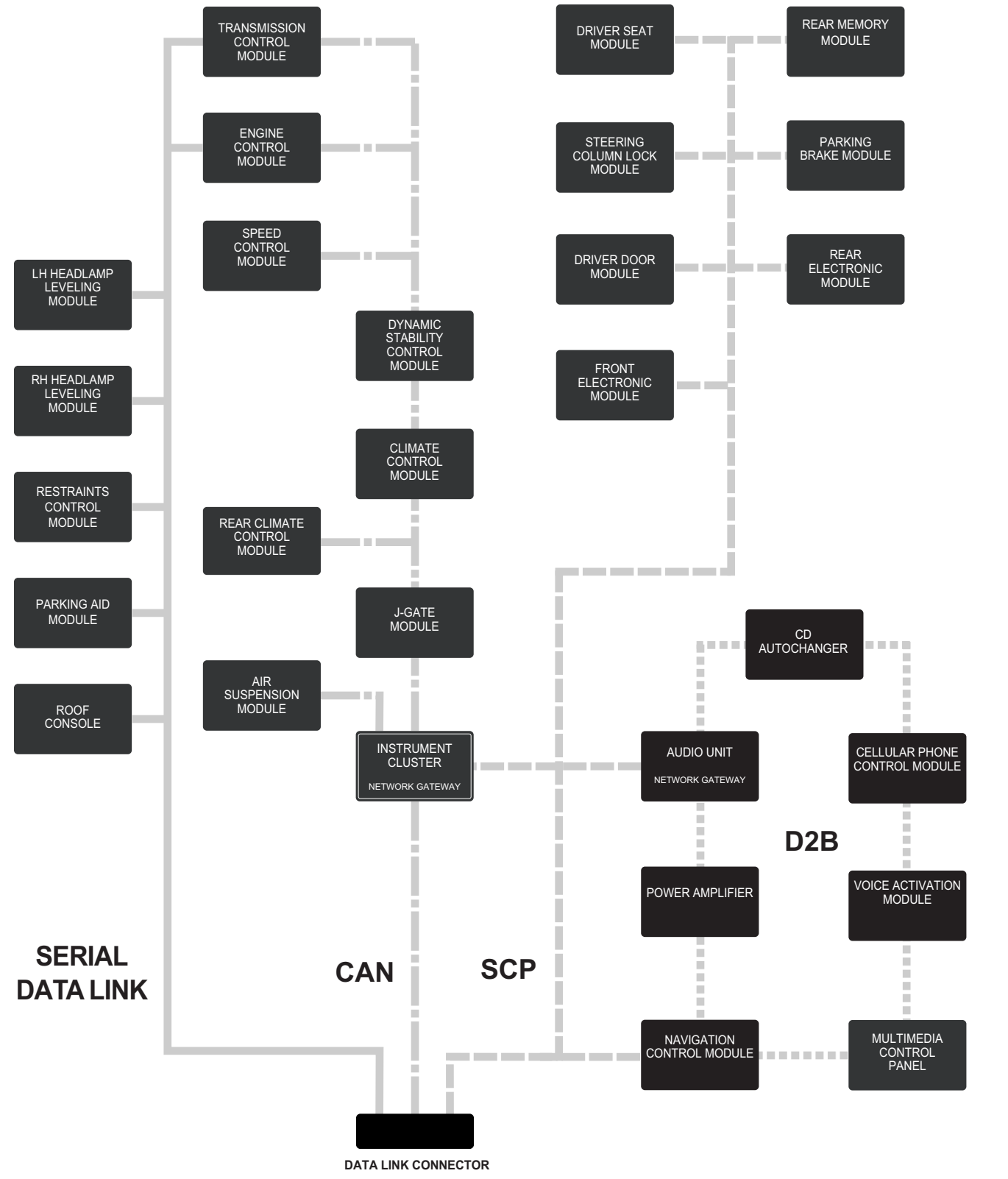
EXAMPLE:



Component Depictions

EXAMPLE:





NOTE: TYPICAL XJ RANGE NETWORK CONFIGURATION (FULL OPTION SET). REFER TO FIGURES 20.1, 20.2, 20.3, AND 20.4 FOR CIRCUIT DETAILS.

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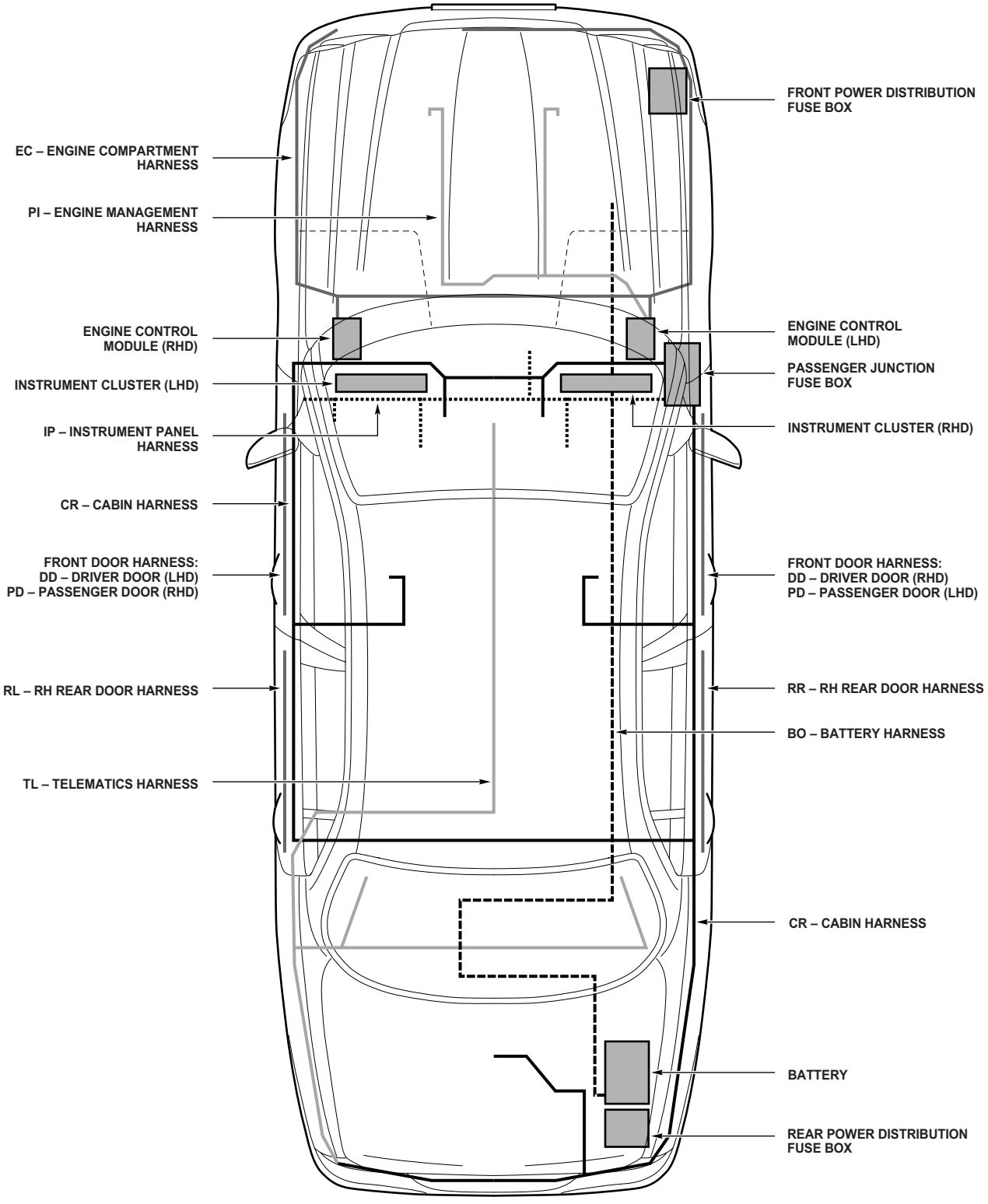
Major Harnesses and Fusebox Location



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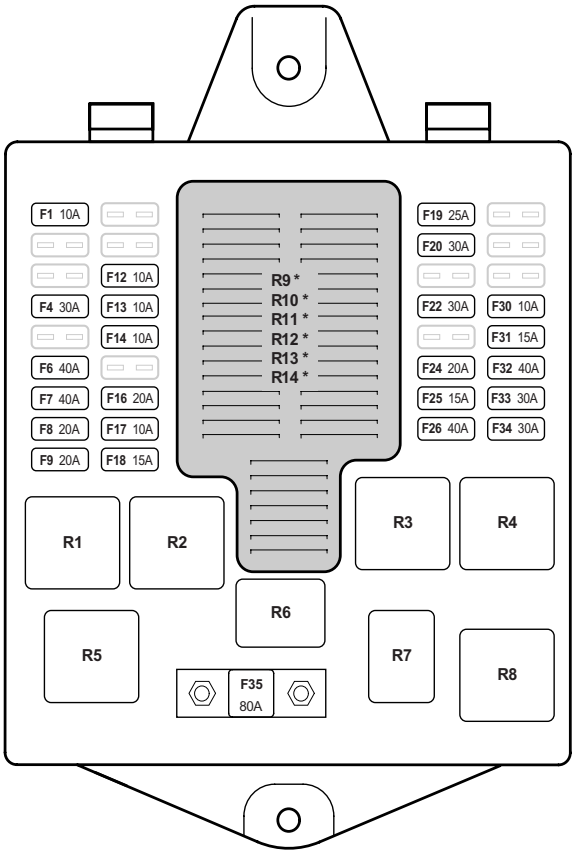
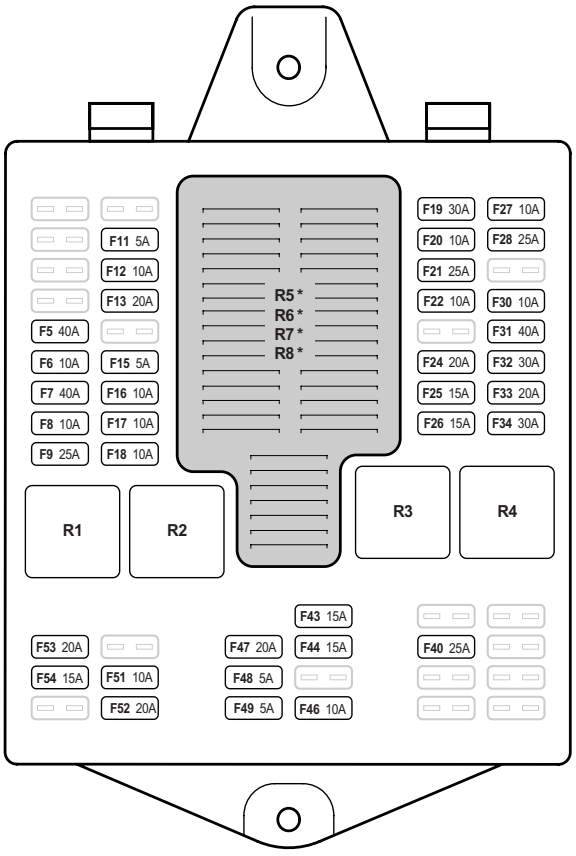
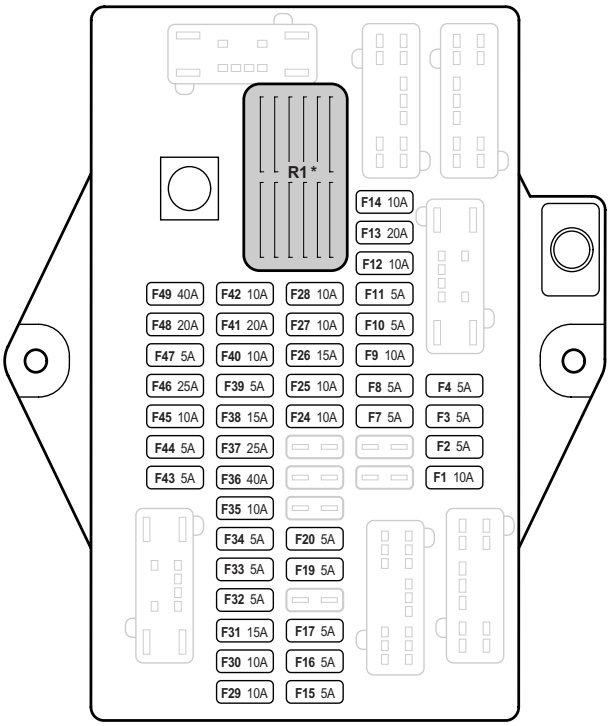


FRONT POWER DISTRIBUTION FUSE BOX
* NON-SERVICEABLE PCB RELAYS



REAR POWER DISTRIBUTION FUSE BOX
* NON-SERVICEABLE PCB RELAYS



PASSENGER JUNCTION FUSE BOX
* NON-SERVICEABLE PCB RELAY

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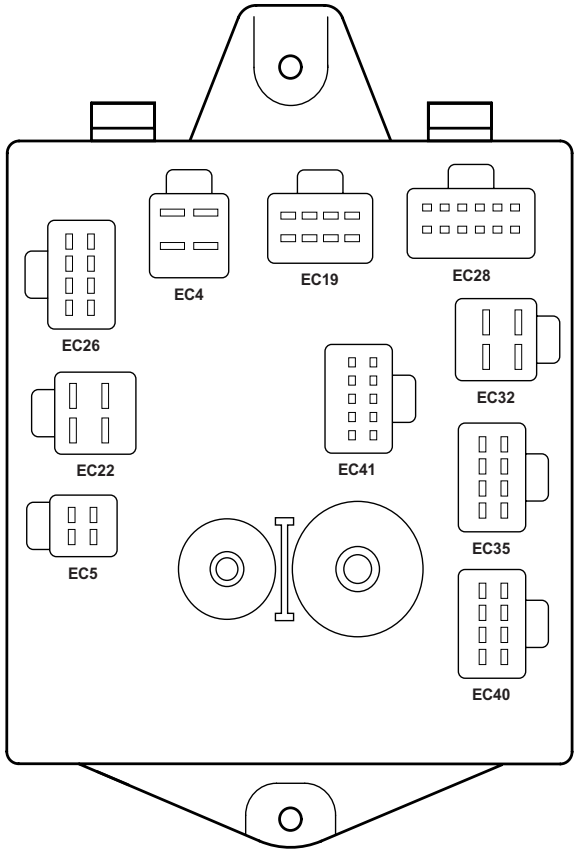
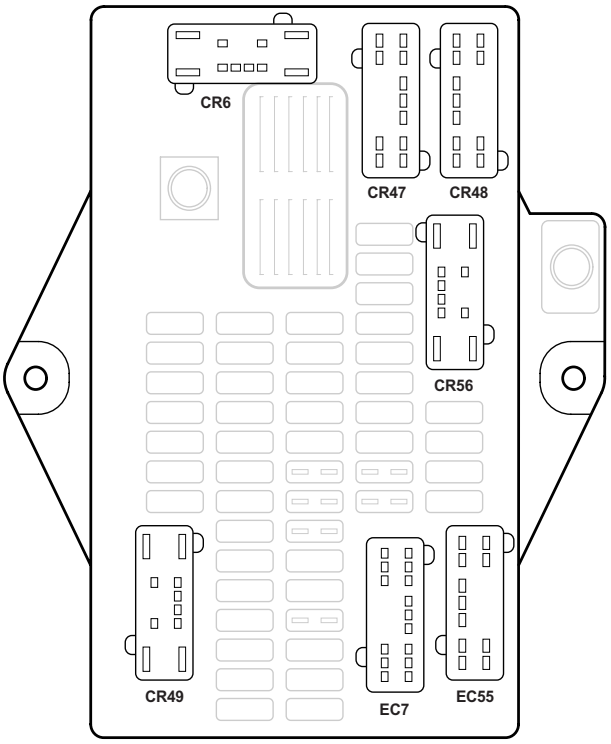
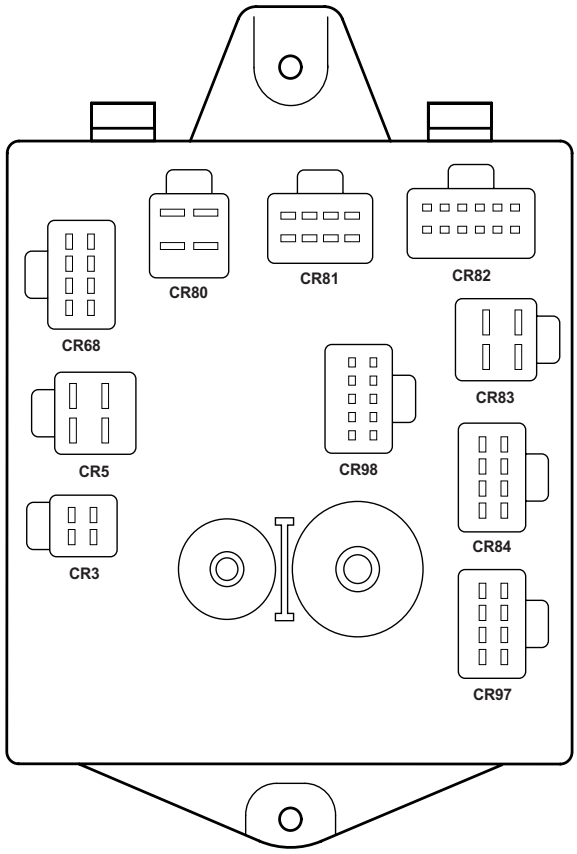


FRONT POWER DISTRIBUTION FUSE BOX



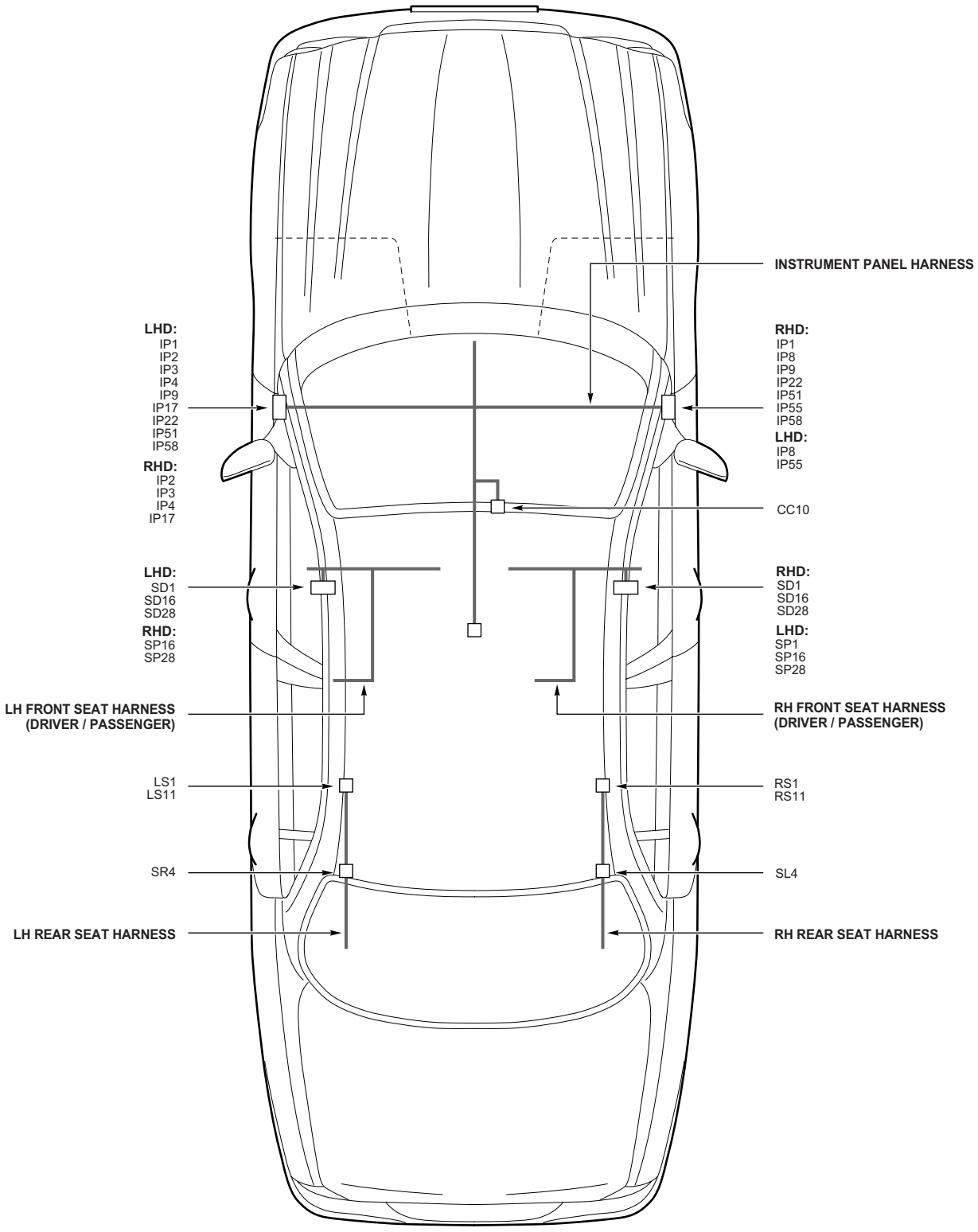
PASSENGER JUNCTION FUSE BOX



REAR POWER DISTRIBUTION FUSE BOX

fuse_box_con__35005

Instrument Panel and Seat Harnesses



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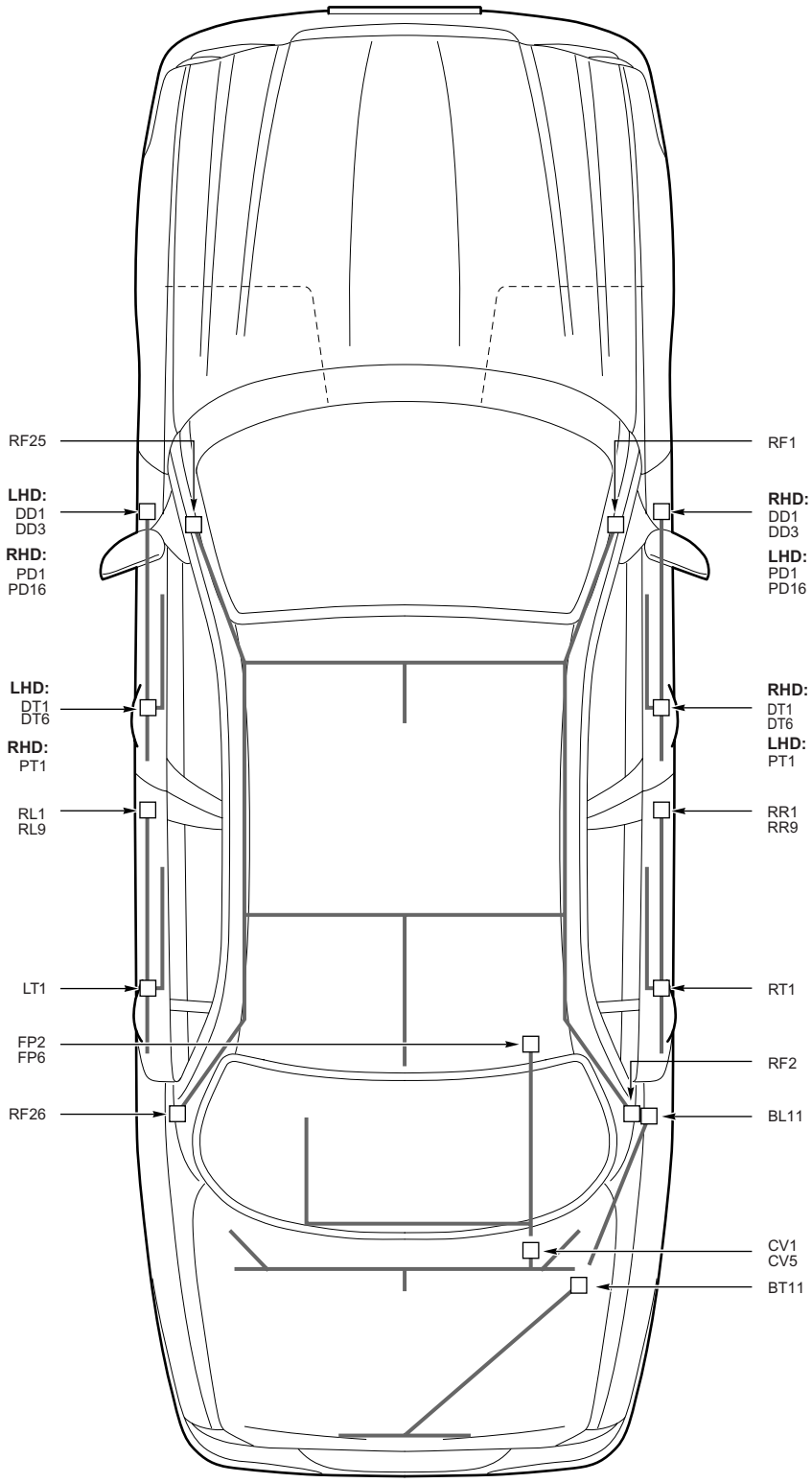
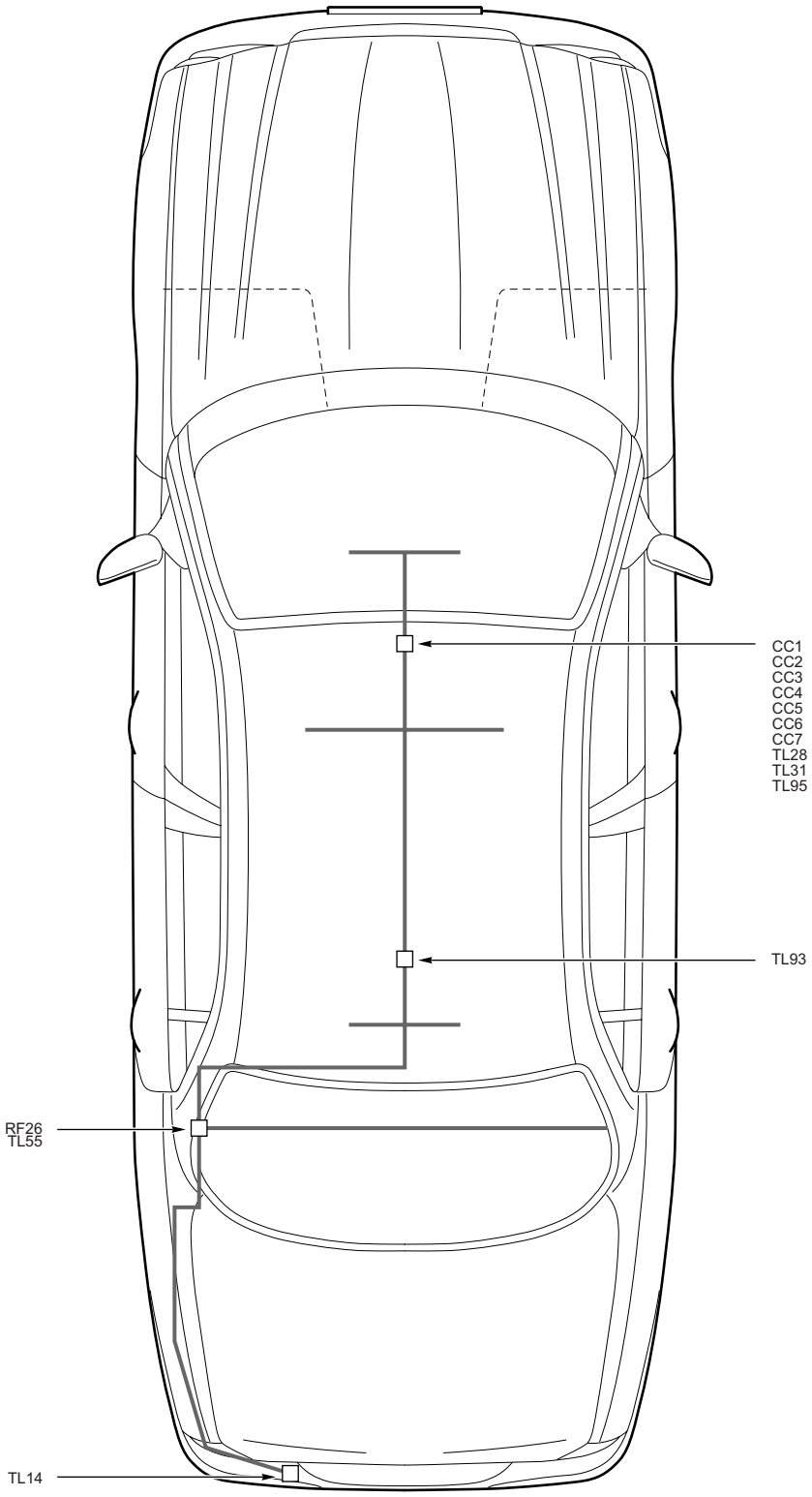
Small Harnesses

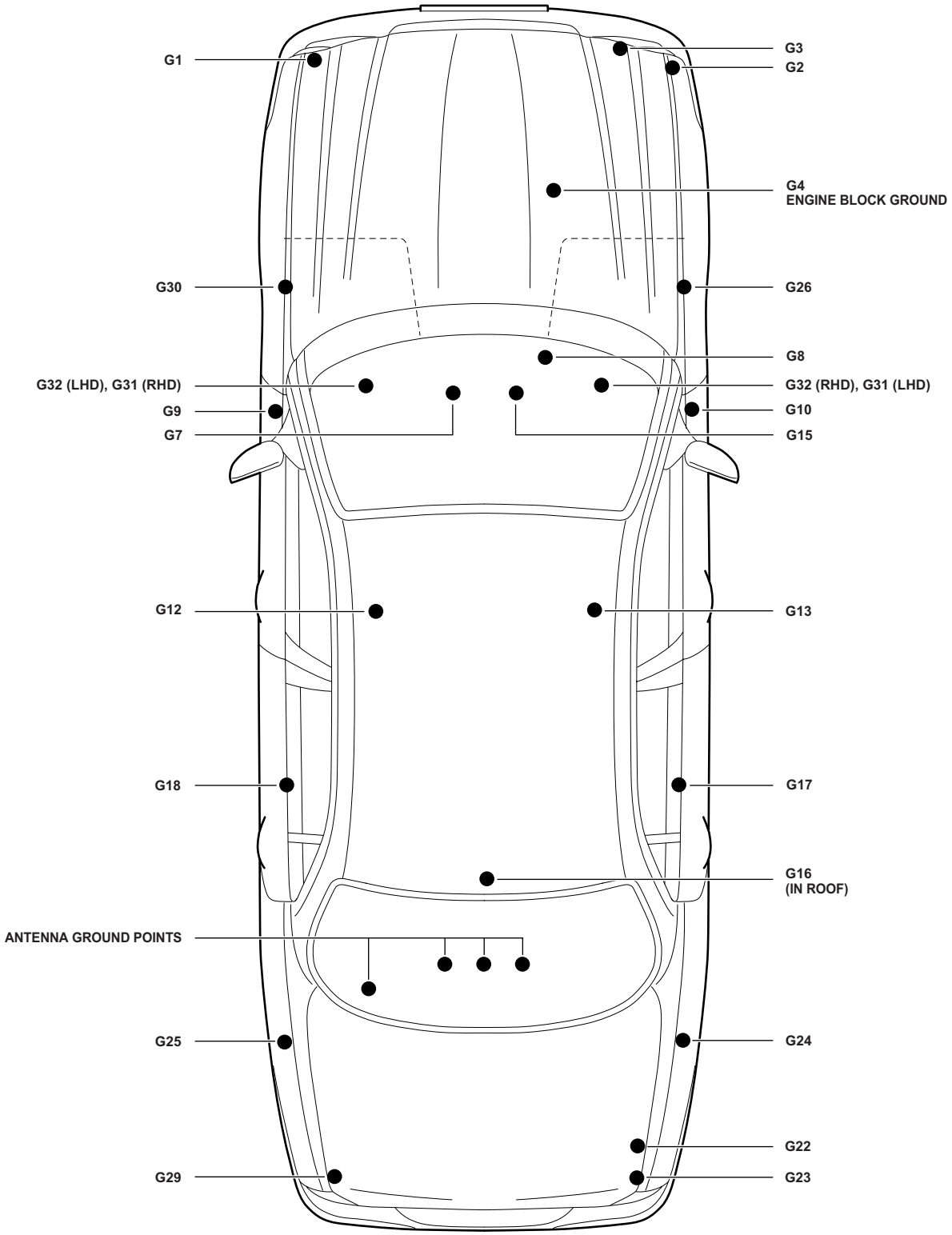


small_harn_35005

Telematics Harness



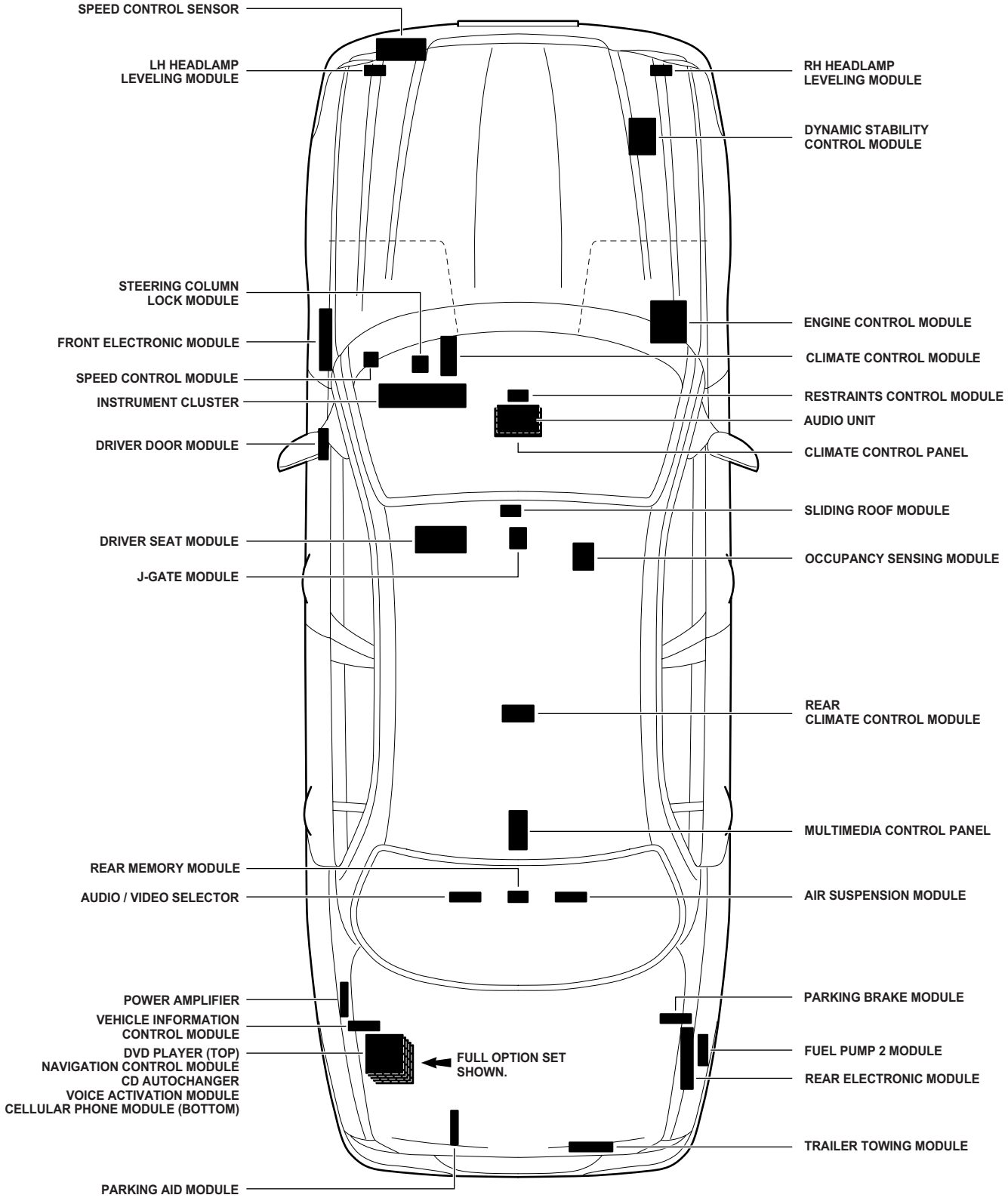
tele-_harn_35005


G1
G3
G2
G4
ENGINE BLOCK GROUND
G30
G26
G8
G32 (LHD), G31 (RHD)
G32 (RHD), G31 (LHD)
G9
G10
G7
G15
G12
G13
G18
G17
G16
(IN ROOF)
ANTENNA GROUND POINTS
G25
G24
G22
G29
G23

gp_loc__35005

LHD

NOTE: THE TRANSMISSION CONTROL MODULE IS CONTAINED WITHIN THE TRANSMISSION.



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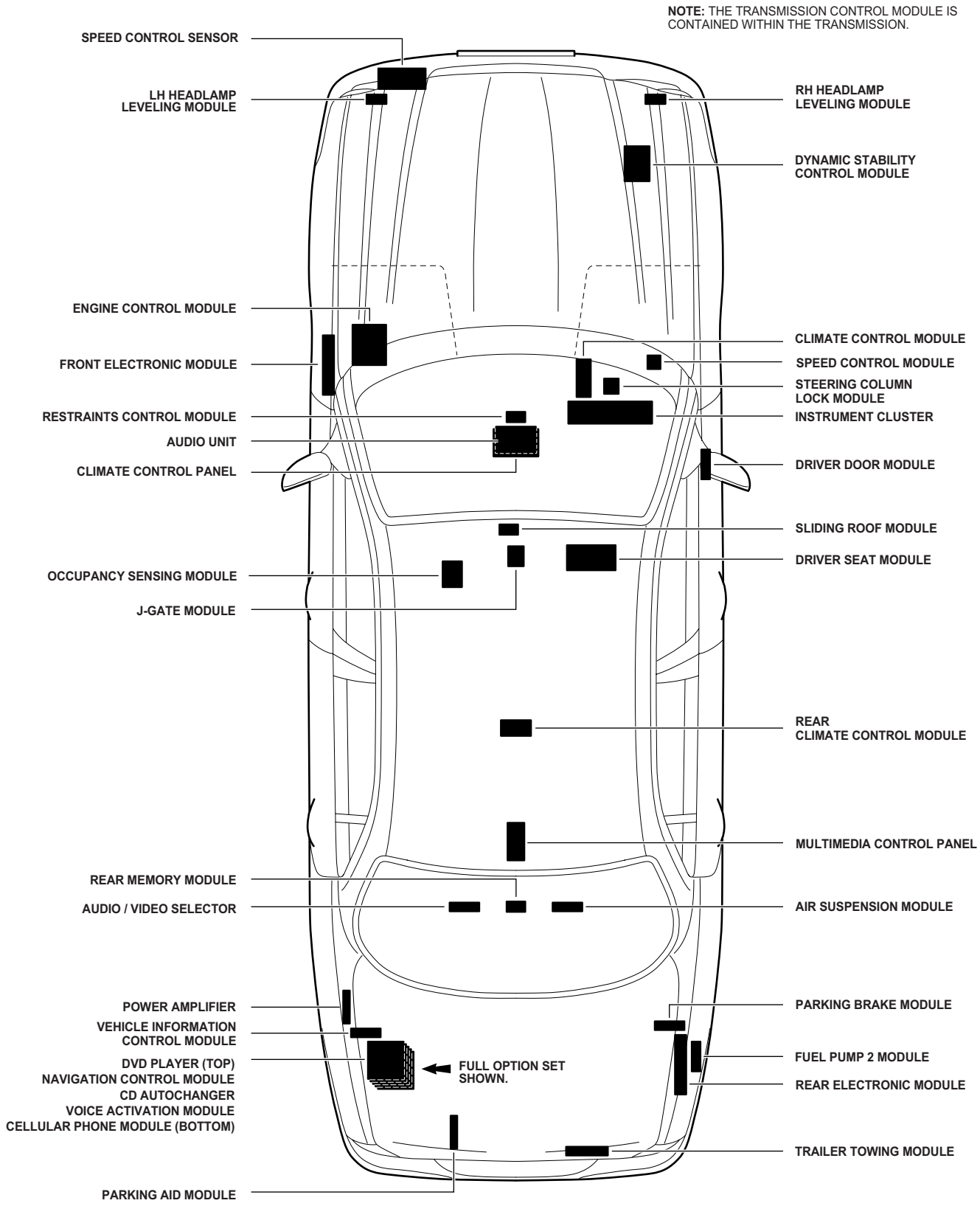
RHD



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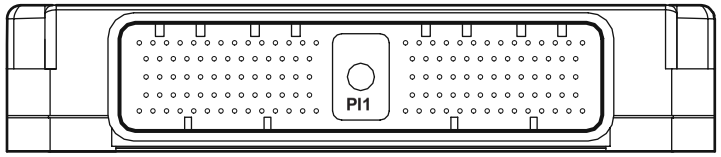
ENGINE CONTROL MODULE



PI1 / BLACK

V6

107 G	108 N	109 Y	110 YU	111 B	112 —	113 BG	114 BK	115 BG	116 B	117 —	118 U	119 BO	120 BR
81 B	82 B	83 R	84 Y	85 —	86 —	87 GU	88 Y	89 YR	90 —	91 B	92 UY	93 RW	
55 RW	56 RW	57 —	58 —	59 —	60 —	61 GW	62 GW	63 GR	64 —	65 WR	66 UY	67 —	
29 B	30 B	31 GR	32 —	33 —	34 —	35 —	36 O	37 B	38 OY	39 OG	40 BW	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 BK	128 N	129 N	130 BW	131 GB	132 YB	133 —	134 GU
94 Y	95 R	96 —	97 —	98 N	99 N	100 BG	101 —	102 B	103 O	104 —	105 W	106 RW	
68 N	69 G	70 UY	71 U	72 —	73 U	74 —	75 R	76 Y	77 —	78 Y	79 YR	80 GW	
42 —	43 BG	44 GW	45 BK	46 BK	47 YR	48 YG	49 —	50 WU	51 WU	52 GR	53 YR	54 B	
15 —	16 —	17 B	18 B	19 BG	20 BG	21 —	22 NR	23 WG	24 WG	25 —	26 —	27 WR	28 —

V8 N/A

107 G	108 N	109 Y	110 YU	111 B	112 UY	113 BG	114 BK	115 BR	116 B	117 BW	118 U	119 BO	120 BG
81 B	82 B	83 R	84 Y	85 —	86 —	87 GU	88 Y	89 YR	90 GR	91 B	92 UY	93 RW	
55 RW	56 RW	57 YU	58 YG	59 YR	60 YU	61 GW	62 GW	63 GR	64 YR	65 —	66 UY	67 O	
29 B	30 B	31 GR	32 —	33 —	34 —	35 —	36 O	37 B	38 OY	39 OG	40 BW	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 —

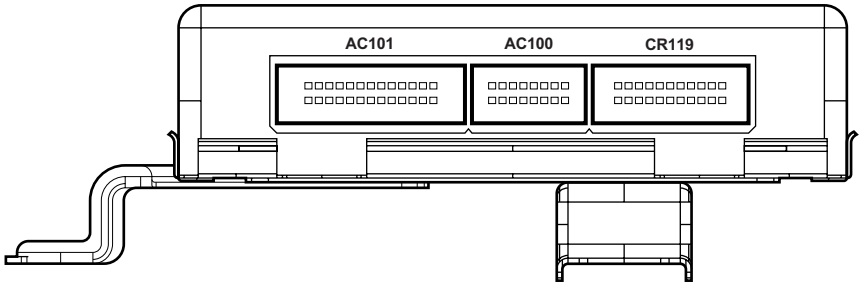
121 WU	122 —	123 G	124 Y	125 —	126 —	127 BK	128 N	129 N	130 BW	131 GB	132 YB	133 —	134 GU
94 Y	95 R	96 —	97 —	98 N	99 N	100 BG	101 —	102 B	103 O	104 RG	105 W	106 RW	
68 N	69 G	70 UY	71 U	72 —	73 U	74 —	75 R	76 Y	77 —	78 Y	79 YR	80 GW	
42 —	43 BG	44 GW	45 BK	46 BK	47 YR	48 YG	49 —	50 YR	51 WU	52 GR	53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

V8 SC

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

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

CLIMATE CONTROL MODULE



AC101 / BLACK

13 YR	12 WG	11 YG	10 BR	9 YB	8 N	7 NW	6 RY	5 —	4 RB	3 GY	2 GU	1 R
26 GR	25 BG	24 NB	23 WU	22 UW	21 Y	20 UO	19 WY	18 —	17 K	16 O	15 U	14 BY

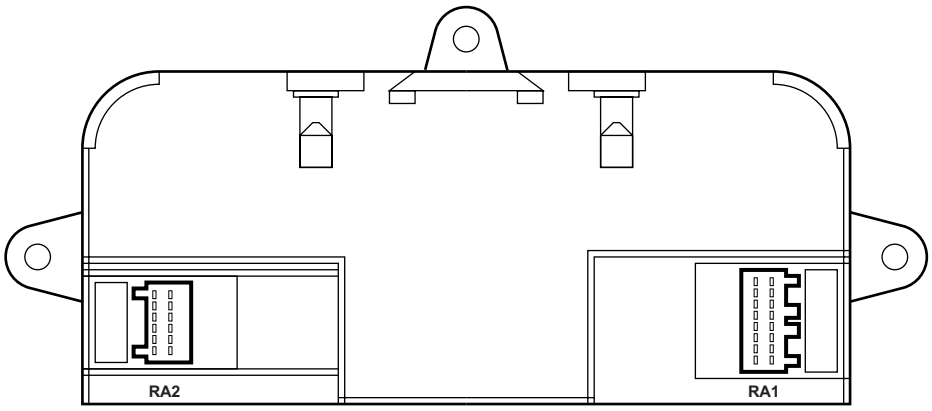
AC100 / BLACK

8 GB	7 UB	6 LGB	5 S	4 YW	3 UY	2 NR	1 UR
16 WR	15 RG	14 GW	13 G	12 RW	11 WO	10 LG	9 YU

CR119 / BLACK

11 RW	10 RU	9 RW	8 Y	7 G	6 Y	5 B	4 RG	3 WG	2 N	1 —
22 B	21 GW	20 YG	19 OY	18 BW	17 G	16 Y	15 —	14 —	13 —	12 —

REAR CLIMATE CONTROL MODULE



RA2 / BLACK

1 NB	7 WR
2 —	8 RB
3 KB	9 —
4 G	10 KW
5 KG	11 W
6 U	12 KU

RA1 / BLACK

16 R	8 RY
15 —	7 —
14 GW	6 RW
13 BW	5 —
12 NR	4 —
11 OW	3 YB
10 —	2 YU
9 UR	1 YR

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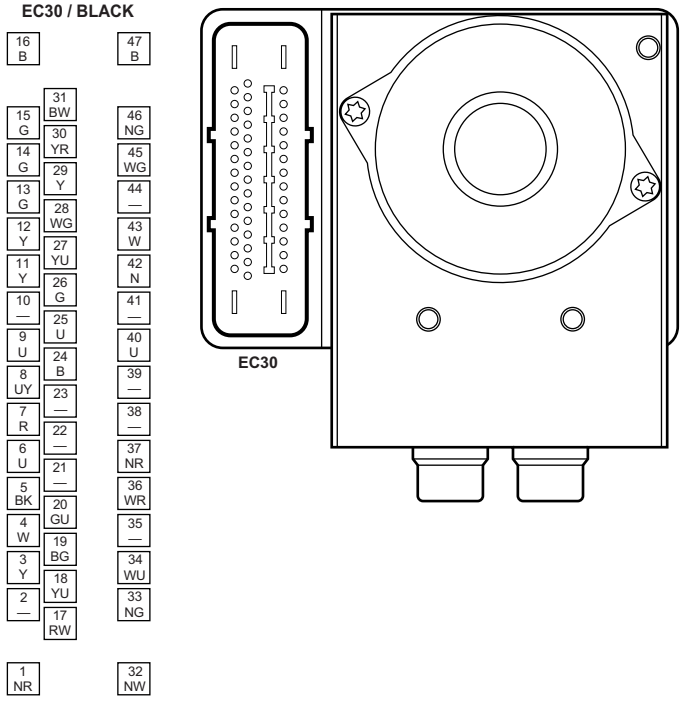
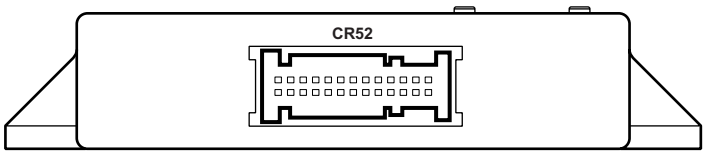
DYNAMIC STABILITY CONTROL MODULE



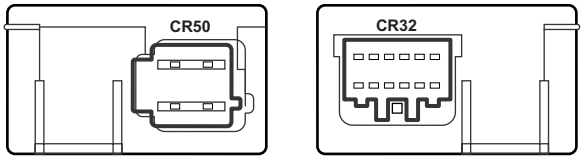
PARKING AID MODULE



CR52 / BLACK

1 WR	2 RU	3 B	4 BO	5 W	6 OY	7 GW	8 RG	9 OG	10 WU	11 WG	12 YU	13 YR
14 RU	15 RW	16 BG	17 YR	18 Y	19 GU	20 —	21 —	22 —	23 WR	24 W	25 YR	26 Y

PARKING BRAKE MODULE



CR50 / BLACK

1 NW	2 GW
3 RW	4 B

CR32 / GREY

12 WU	11 —	10 Y	9 —	8 —	7 U
6 RW	5 WU	4 YB	3 —	2 —	1 Y

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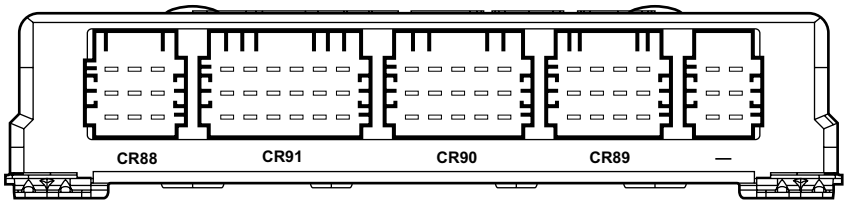
AIR SUSPENSION MODULE



CR88 / BLACK

1 NW	4 —	7 Y
2 N	5 —	8 G
3 B	6 —	9 —

CR91 / BLACK

1 YG	4 —	7 —	10 YU	13 —	16 Y
2 WR	5 WU	8 BO	11 U	14 GO	17 G
3 WB	6 WG	9 —	12 NR	15 —	18 BK

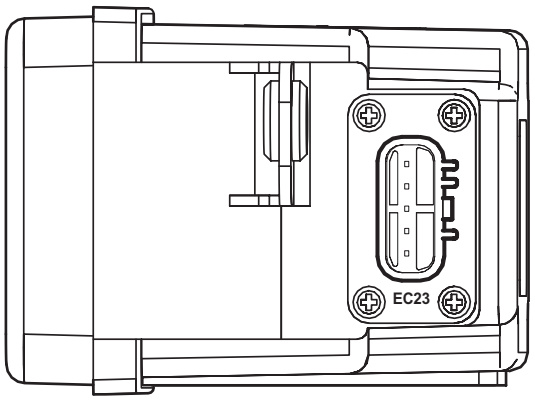
CR90 / BLACK

1 G	4 GO	7 BW	10 YR	13 Y
2 GU	5 GW	8 BR	11 YG	14 G
3 GB	6 GR	9 BK	12 YU	15 BK

CR89 / BLACK

1 BO	4 WR	7 WG	10 BG
2 BK	5 WU	8 WB	11 BG
3 Y	6 —	9 —	12 —

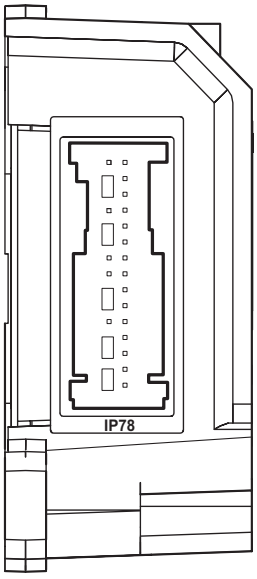
SPEED CONTROL SENSOR



EC23 / BLACK

1 WG
2 B
3 U
4 R
5 NW

SPEED CONTROL MODULE



IP78 / YELLOW

15 NW	30 —
14 WG	29 —
13 —	28 —
12 B	27 —
11 —	26 —
10 —	25 —
9 Y	24 Y
8 G	23 G
7 —	22 —
6 R	21 —
5 GW	20 U
4 —	19 —
3 R	18 —
2 B	17 —
1 —	16 —

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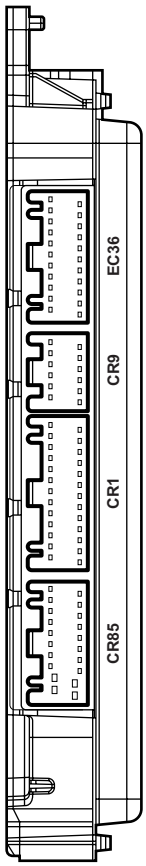
FRONT ELECTRONIC MODULE



CR85 / BLACK

1 NW	2 BK	3 GO	4 BW	5 —	6 YU	7 BG	8 G	9 YR	10 WB
11 RW	12 RW	13 Y	14 B	15 U	16 YB	17 WU	18 RW	19 WU	20 Y

CR1 / NATURAL

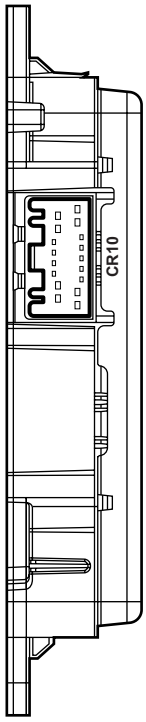
1 GU	2 GW	3 R	4 YB	5 G	6 WG	7 OY	8 WU	9 U	10 —	11 O	12 RW	13 RW	
14 R	15 RU	16 WG	17 WG	18 WB	19 WB	20 OG	21 O	22 U	23 OY	24 OG	25 UY	26 B	

CR9 / BLACK

1 U	2 OG	3 BW	4 —	5 —	6 NW								
7 Y	8 WU	9 —	10 —	11 O	12 B								

EC36 / BLACK

1 BR	2 U	3 BW	4 —	5 NR	6 WU	7 BK	8 YR	9 GU	10 B	11 —			
12 —	13 BR	14 —	15 U	16 BG	17 BG	18 UY	19 BG	20 GW	21 RW	22 BW			



CR10 / BLACK

1 OY	2 W	3 —	4 BW	5 —	6 WB	7 RU	8 RU
9 R	10 BR	11 B	12 —	13 B	14 B	15 BO	16 RU	17 RU

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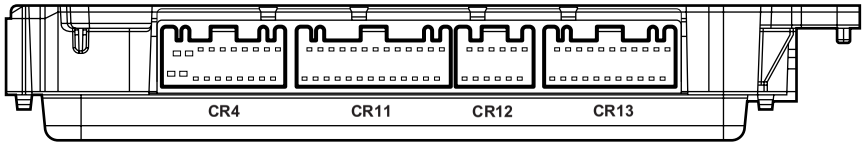
REAR ELECTRONIC MODULE



CR4 / BLACK

1 Y	2 YB	3 NW	4 RW	5 GU	6 OY	7 O	8 WB	9 WB	10 WG
11 YG	12 YG	13 —	14 —	15 WR	16 WU	17 GW	18 —	19 UY	20 RG

CR11 / NATURAL

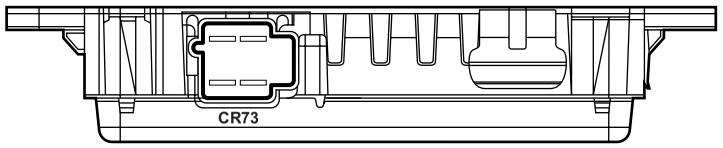
1 —	2 —	3 RU	4 R	5 U	6 YB	7 Y	8 OG	9 GO	10 BO	11 B	12 B	13 WU
14 —	15 —	16 GW	17 OY	18 OG	19 N	20 —	21 OY	22 RU	23 BK	24 —	25 B	26 B

CR12 / BLACK

1 YR	2 R	3 —	4 —	5 U	6 OG
7 G	8 GU	9 RG	10 —	11 RW	12 OY

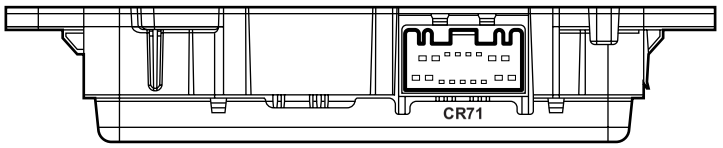
CR13 / BLACK

1 Y	2 U	3 —	4 —	5 —	6 N	7 —	8 GR	9 YG	10 YU	11 —
12 B	13 GO	14 WG	15 OY	16 WR	17 WG	18 —	19 —	20 GR	21 —	22 GW



CR73 / BLACK

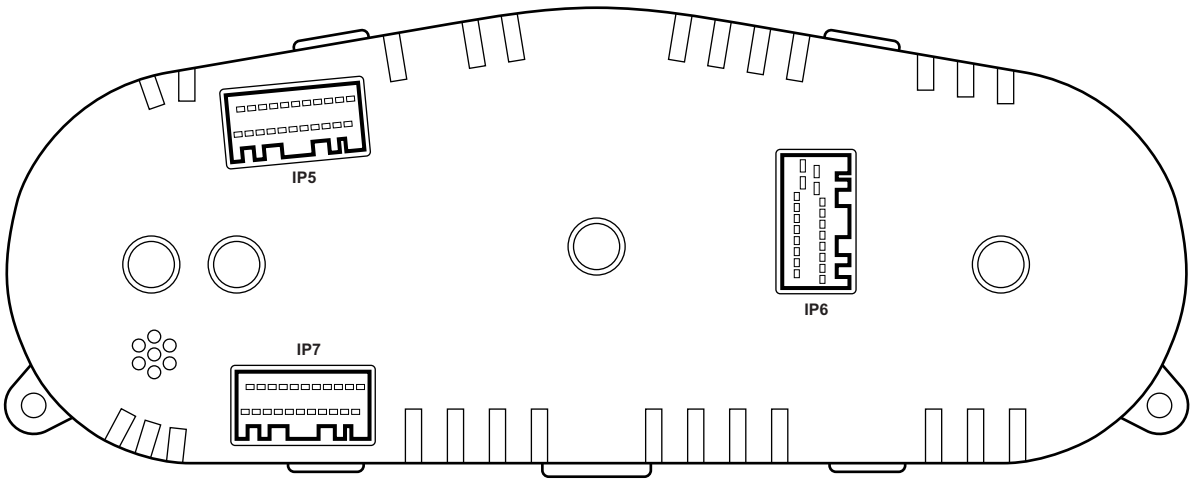
1 N	2 B
3 R	4 Y



CR71 / BLACK

1 UY	2 —	3 U	4 O	5 GB	6 G	7 RU	8 RU
9 OG	10 UY	11 W	12 O	13 —	14 —	15 B	16 RU	17 RU

INSTRUMENT CLUSTER



IP5 / GREY

22 —	21 —	20 —	19 —	18 —	17 —	16 —	15 —	14 B	13 —	12 GO

11 —	10 GO	9 Y	8 YR	7 R	6 —	5 OG	4 YG	3 GR	2 RW	1 YU

IP6 / BLACK

11 R	1 OY
12 U	2 B
13 GB	3 O
14 RG	4 BG
15 RW	5 WR
16 W	6 GR
17 WB	7 —
18 Y	8 Y
19 G	9 G
20 Y	10 U

IP7 / BLACK

22 —	21 WB	20 GW	19 UY	18 BR	17 Y	16 NW	15 BO	14 YU	13 WR	12 W

11 BG	10 —	9 GU	8 GO	7 GR	6 YB	5 RW	4 G	3 BW	2 WG	1 WU

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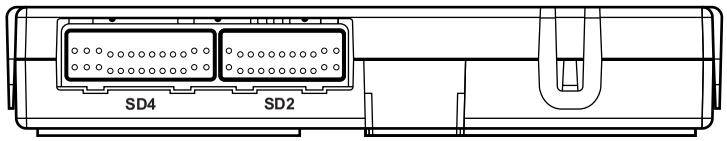
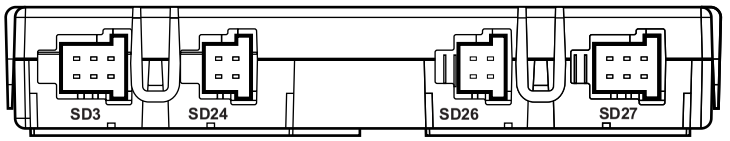
DRIVER SEAT MODULE





SD4 / BLACK

13 NG	12 WB	11 WB	10 R	9 WU	8 U	7 O	6 —	5 —	4 —	3 —	2 —	1 —
26 BK	25 WB	24 —	23 WR	22 WU	21 —	20 —	19 —	18 —	17 —	16 —	15 —	14 —

SD2 / BLACK

11 GB	10 RW	9 —	8 —	7 —	6 —	5 UY	4 U	3 —	2 —	1 Y
22 WR	21 O	20 YR	19 N	18 YB	17 Y	16 WG	15 RU	14 —	13 —	12 U

SD3 / BLACK

6 NR	4 —	2 OG
5 B	3 —	1 GO

SD24 / BLACK

4 YR	2 UY
3 RU	1 YU

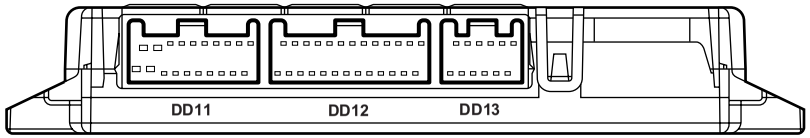
SD26 / BLACK

4 GU	2 —
3 U	1 —

SD27 / BLACK

6 GR	4 GO	2 NG
5 RG	3 GW	1 B

DRIVER DOOR MODULE



DD11 / BLACK

1 OY	2 OG	3 OG	4 O	5 WU	6 U	7 —	8 YB	9 Y	10 YG
11 —	12 —	13 N	14 OY	15 O	16 R	17 O	18 R	19 U	20 G

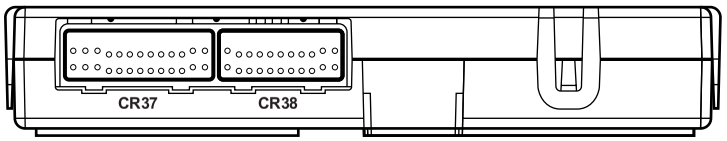
DD12 / BLACK

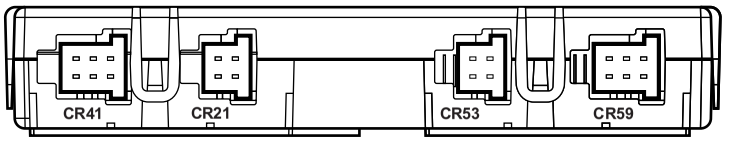
1 —	2 GW	3 GU	4 —	5 —	6 G	7 WR	8 YB	9 —	10 O	11 —	12 UY	13 GW
14 YR	15 Y	16 OY	17 O	18 —	19 —	20 —	21 G	22 BR	23 —	24 —	25 GO	26 —

DD13 / NATURAL

1 —	2 RU	3 Y	4 U	5 R	6 YR
7 BK	8 B	9 —	10 OY	11 NW	12 N

REAR MEMORY MODULE





CR37 / BLACK

13 —	12 —	11 —	10 —	9 —	8 —	7 —	6 —	5 —	4 —	3 —	2 —	1 —
26 —	25 —	24 —	23 —	22 —	21 —	20 —	19 —	18 —	17 —	16 —	15 —	14 —

CR36 / BLACK

11 —	10 —	9 —	8 —	7 —	6 —	5 —	4 —	3 —	2 —	1 —
22 —	21 —	20 —	19 —	18 —	17 —	16 —	15 —	14 —	13 —	12 —

CR41 / BLACK

6 —	4 —	2 —
5 —	3 —	1 —

CR21 / BLACK

4 —	2 —
3 —	1 —

CR53 / BLACK

4 —	2 —
3 —	1 —

CR59 / BLACK

6 —	4 —	2 —
5 —	3 —	1 —

Fig. 01.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	—	—	TRUNK / RH SIDE
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
MEGAFUSES	—	—	TRUNK / RH SIDE
PASSENGER (PRIMARY) JUNCTION FUSE BOX	CR6	10-WAY / BLACK	CABIN / RH 'A' POST
	CR47	11-WAY / GREEN	
	CR48	11-WAY / SLATE	
	CR49	10-WAY / SLATE	
	CR56	10-WAY / GREEN	
	EC7	15-WAY / BLACK	
	EC55	11-WAY / NATURAL	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
TRANSIT ISOLATION RELAY	CR95	2-WAY / WHITE	TRUNK / ADJACENT TO BATTERY

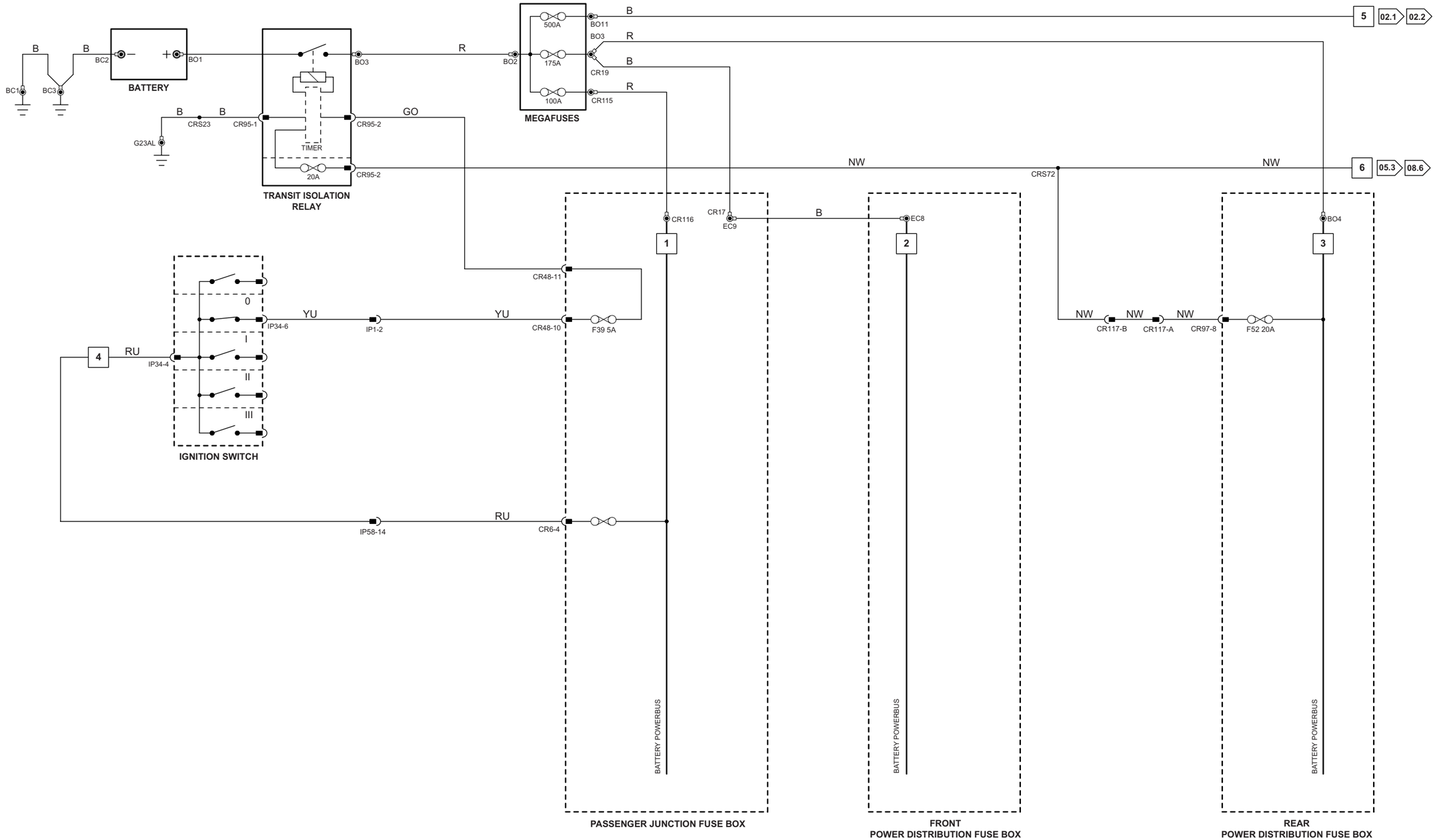
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CR117	2-WAY / GREY / CABIN HARNESS INTERCONNECT	TRUNK / ADJACENT TO BATTERY
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND DRIVER SIDE INSTRUMENT PANEL END PLATE
IP58	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)

GROUNDS

Ground	Location
BC1	TRUNK / RH SIDE / ADJACENT TO BATTERY
BC3	TRUNK / RH SIDE / ADJACENT TO BATTERY
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY

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	64 → 95 Fig. 01.3	16 (II) → 52 (II) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	
7 → 63 Fig. 01.2	1 (I) → 15 (II) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 01.2

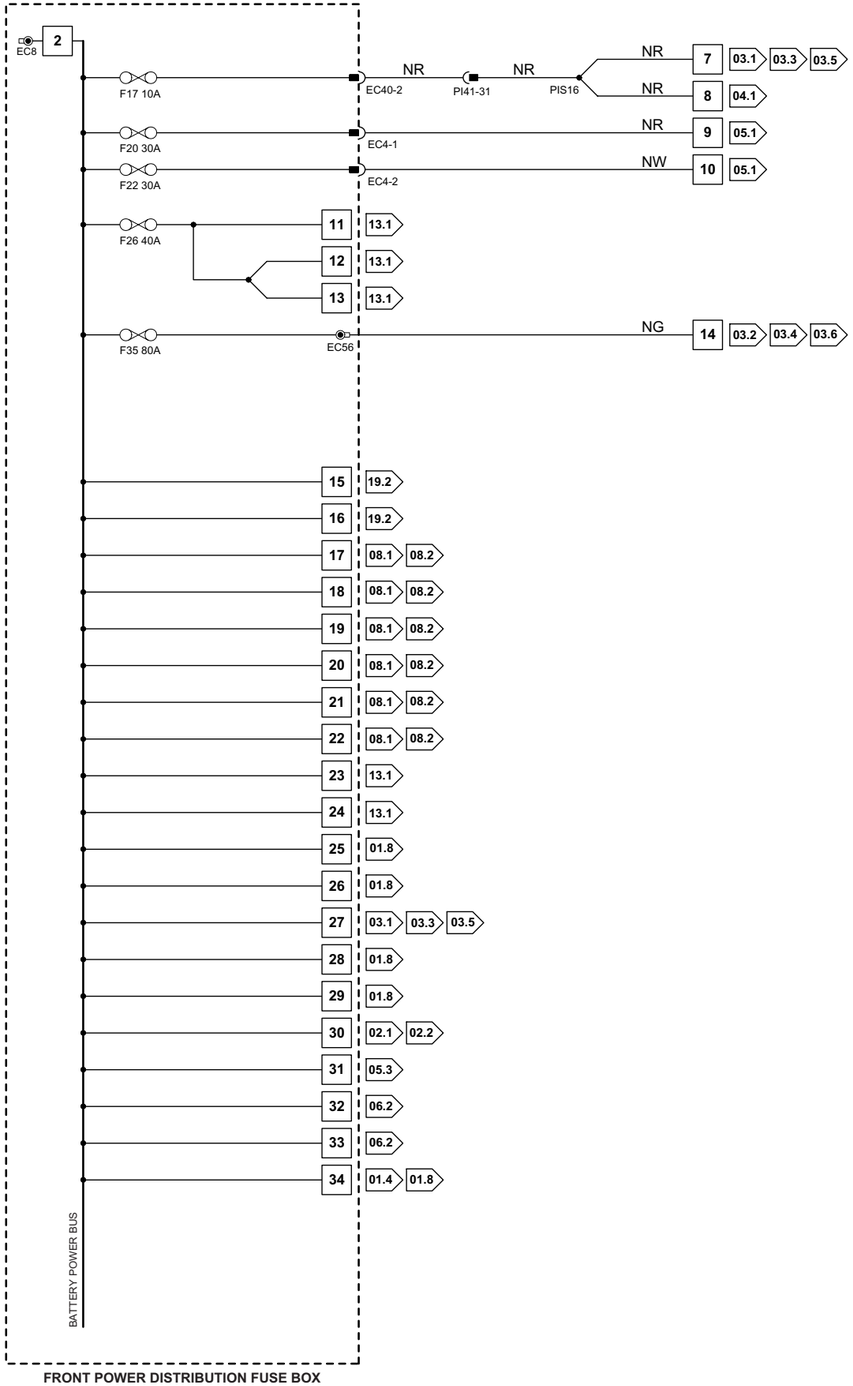
COMPONENTS

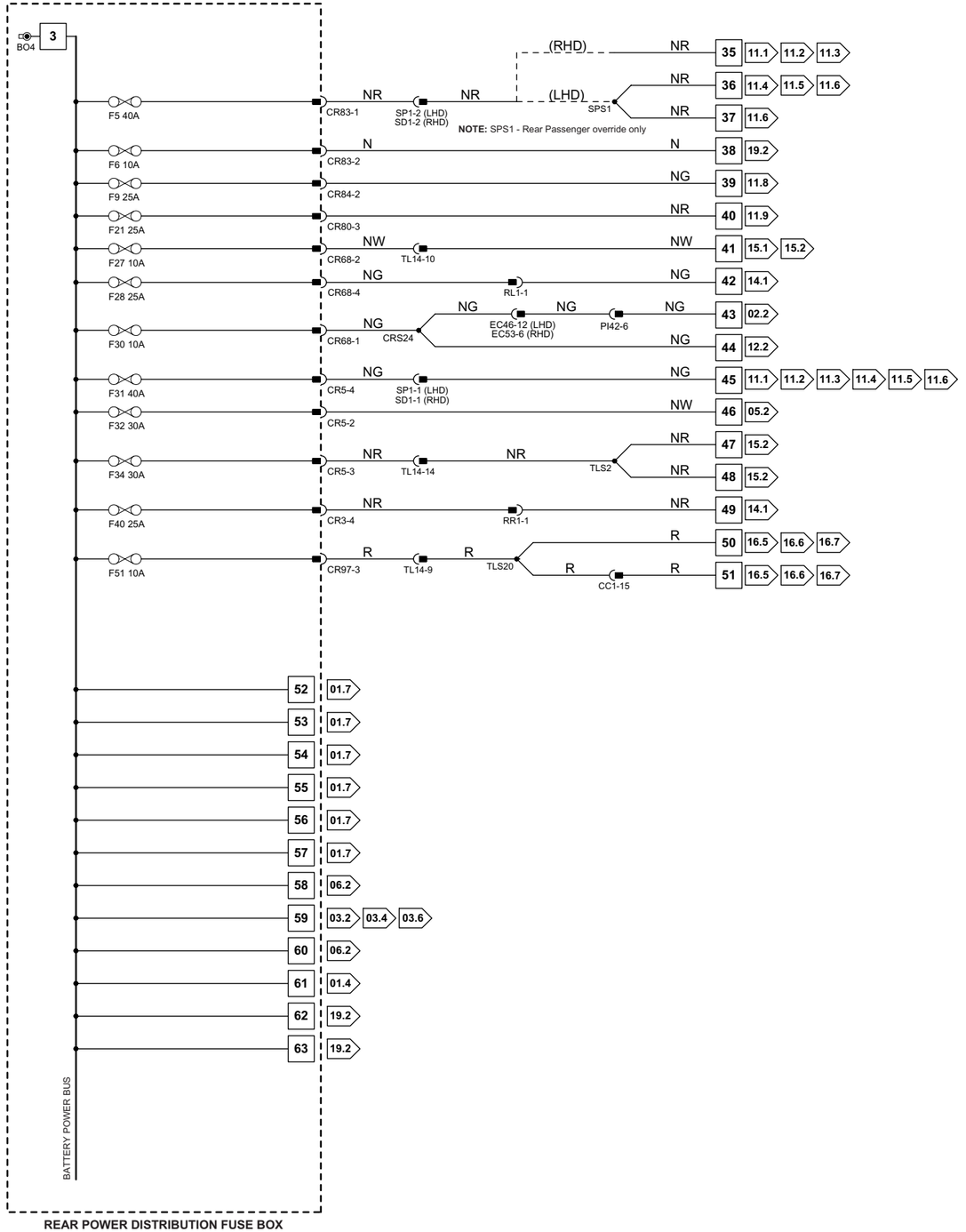
Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
PI42	8-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR1	6-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SP1	4-WAY / GREY / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL14	14-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	TRUNK / LH SIDE / BEHIND CD AUTOCHANGER

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 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (E) Fig. 01.4
16 (E) → 52 (E) Fig. 01.5
53 (S) → 77 (S) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 01.3

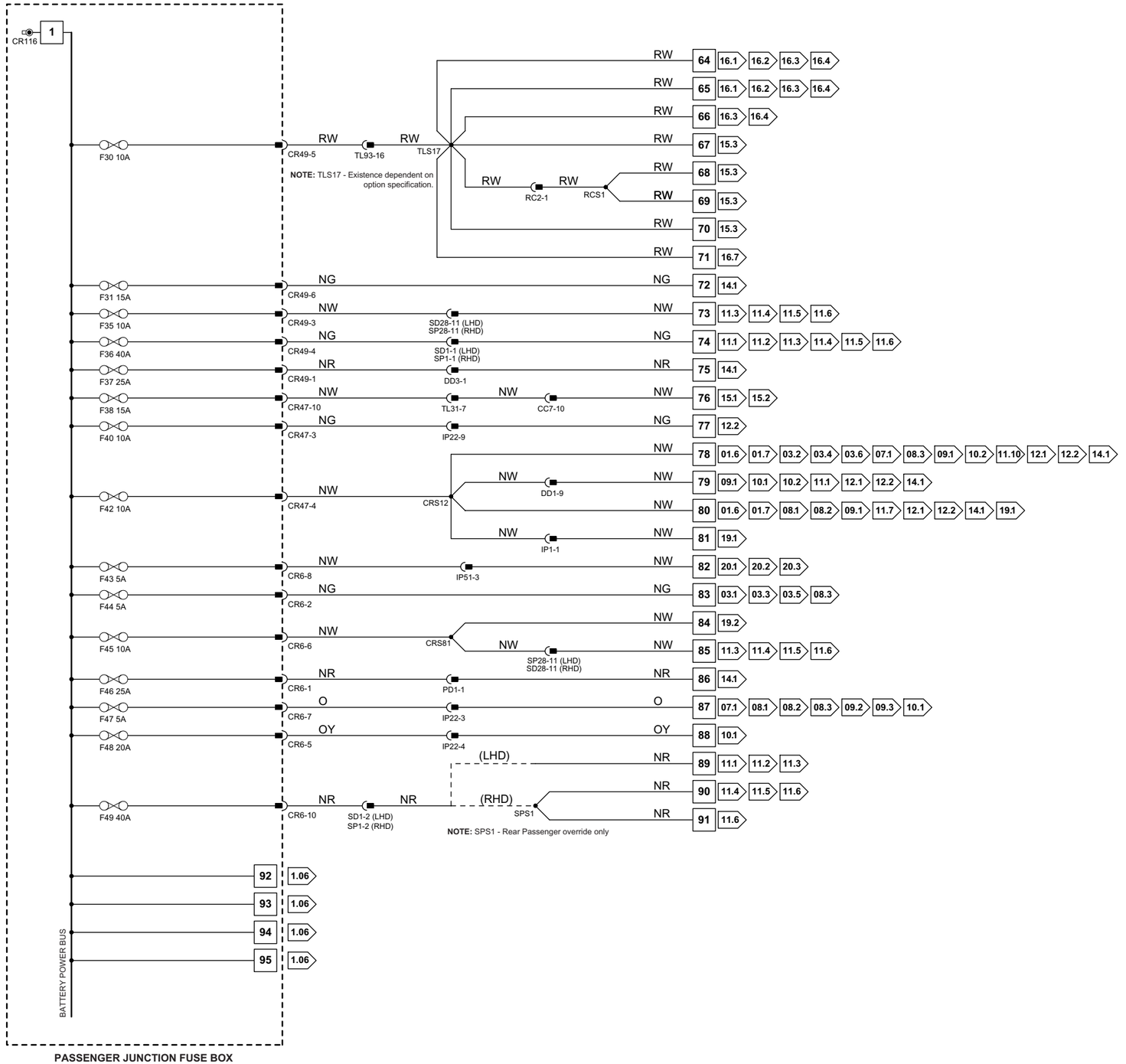
COMPONENTS

Component	Connector(s)	Connector Description	Location
PASSENGER (PRIMARY) JUNCTION FUSE BOX	CR6	10-WAY / BLACK	CABIN / RH 'A' POST
	CR47	11-WAY / GREEN	
	CR48	11-WAY / SLATE	
	CR49	10-WAY / SLATE	
	CR56	10-WAY / GREEN	
	EC7	15-WAY / BLACK	
	EC55	11-WAY / NATURAL	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC7	10-WAY / GREY / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND DRIVER SIDE INSTRUMENT PANEL END PLATE
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP51	10-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
RC2	8-WAY / BLACK / TELEMATICS HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SP1	4-WAY / GREY / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL31	14-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

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 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (E) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 01.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
PASSENGER (PRIMARY) JUNCTION FUSE BOX	CR6	10-WAY / BLACK	CABIN / RH 'A' POST
	CR47	11-WAY / GREEN	
	CR48	11-WAY / SLATE	
	CR49	10-WAY / SLATE	
	CR56	10-WAY / GREEN	
	EC7	15-WAY / BLACK	
	EC55	11-WAY / NATURAL	
REAR IGNITION RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX — R2
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
SLAVE IGNITION RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX — R9

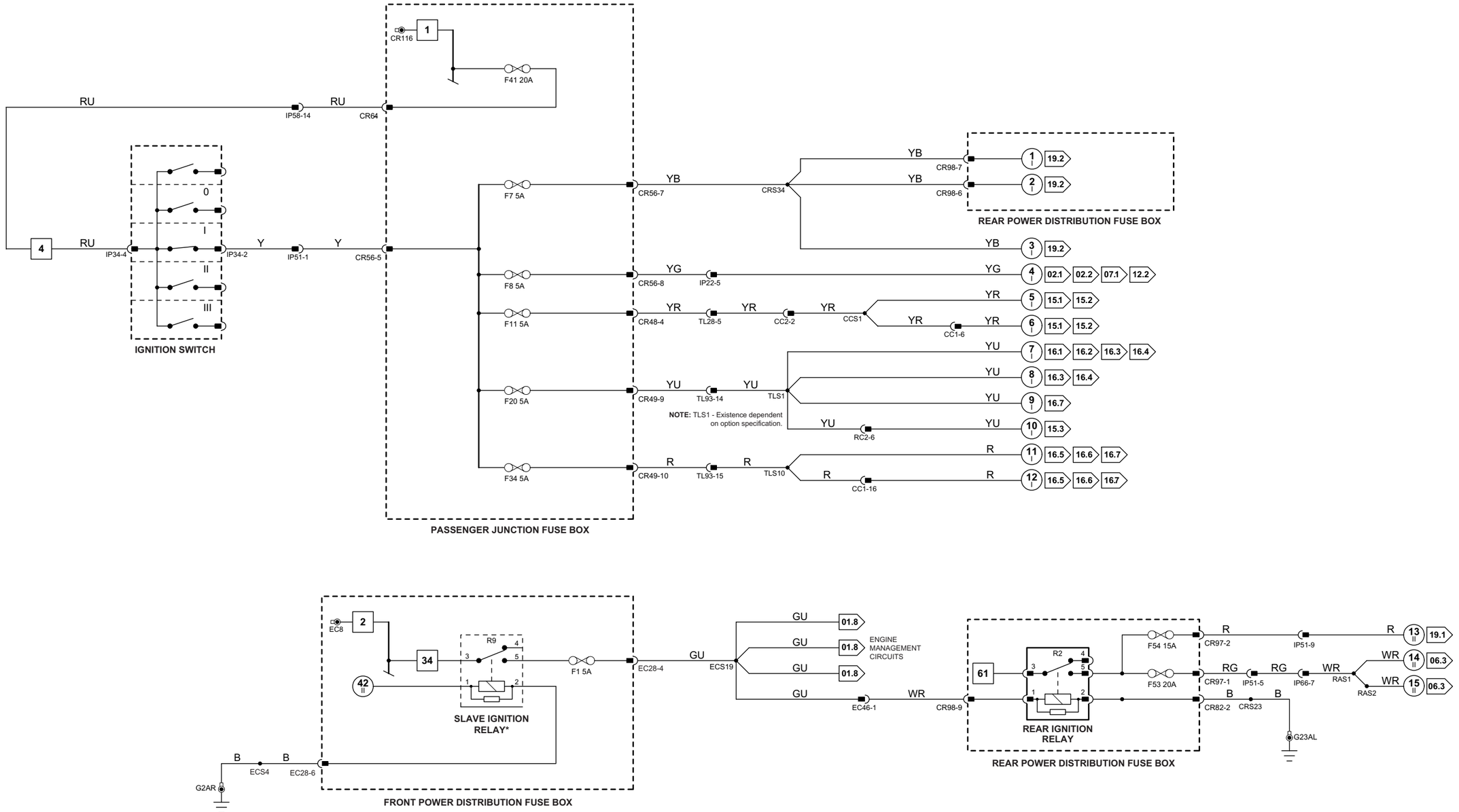
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP51	10-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP58	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP66	14-WAY / GREY / INSTRUMENT PANEL HARNESS TO REAR AIR CONDITIONING HARNESS	CABIN / BELOW CENTER CONSOLE
RC2	8-WAY / BLACK / TELEMATICS HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY

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: Refer to Fig. 01.8 for complete Slave Ignition Relay circuit details.

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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 E → 52 E Fig. 01.5	78 S → 105 S Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	VARIANT:	All Vehicles
7 → 63 Fig. 01.2	1 I → 15 E Fig. 01.4	53 S → 77 S Fig. 01.6	106 E → 143 E Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	VIN RANGE:	All
									DATE OF ISSUE:	September 2004

Fig. 01.5

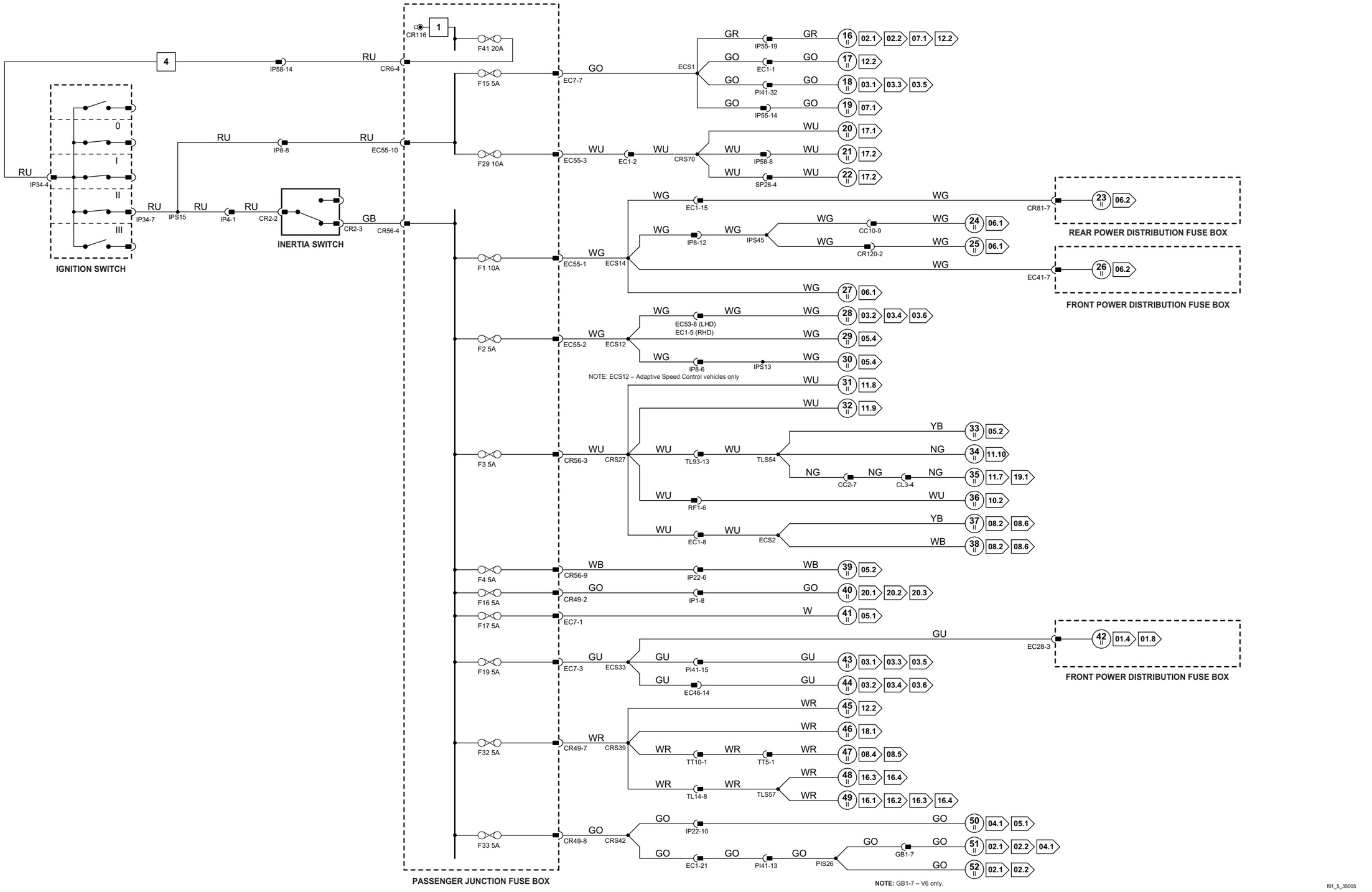
COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	CR2	3-WAY / GREY	LH 'A' POST
PASSENGER (PRIMARY) JUNCTION FUSE BOX	CR6	10-WAY / BLACK	CABIN / RH 'A' POST
	CR47	11-WAY / GREEN	
	CR48	11-WAY / SLATE	
	CR49	10-WAY / SLATE	
	CR56	10-WAY / GREEN	
	EC7	15-WAY / BLACK	
	EC55	11-WAY / NATURAL	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
CR120	8-WAY / BLACK / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL / LH SIDE
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND DRIVER SIDE INSTRUMENT PANEL END PLATE
IP4	14-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP58	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS CABIN / UPPER	CABIN / RH 'A' POST
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL14	14-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	TRUNK / LH SIDE / BEHIND CD AUTOCHANGER
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE
TT5	DATA NOT AVAILABLE	
TT10	2-WAY / GREY / TRAILER TOWING HARNESS	TRUNK / SPARE WHEEL WELL

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 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (I) Fig. 01.4
16 (E) → 52 (E) Fig. 01.5
53 (S) → 77 (S) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 01.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT ELECTRONIC MODULE	CR1	26-WAY / NATURAL	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
PASSENGER (PRIMARY) JUNCTION FUSE BOX	CR6	10-WAY / BLACK	CABIN / RH 'A' POST
	CR47	11-WAY / GREEN	
	CR48	11-WAY / SLATE	
	CR49	10-WAY / SLATE	
	CR56	10-WAY / GREEN	
	EC7	15-WAY / BLACK	
	EC55	11-WAY / NATURAL	
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
SWITCHED SYSTEM POWER RELAY 1	—	—	PASSENGER JUNCTION FUSE BOX — R1
SWITCHED SYSTEM POWER RELAY 2	—	—	PASSENGER JUNCTION FUSE BOX — R1

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BF1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO FRONT BUMPER HARNESS	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CR120	8-WAY / BLACK / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL / LH SIDE
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND DRIVER SIDE INSTRUMENT PANEL END PLATE
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP66	14-WAY / GREY / INSTRUMENT PANEL HARNESS TO REAR AIR CONDITIONING HARNESS	CABIN / BELOW CENTER CONSOLE
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE

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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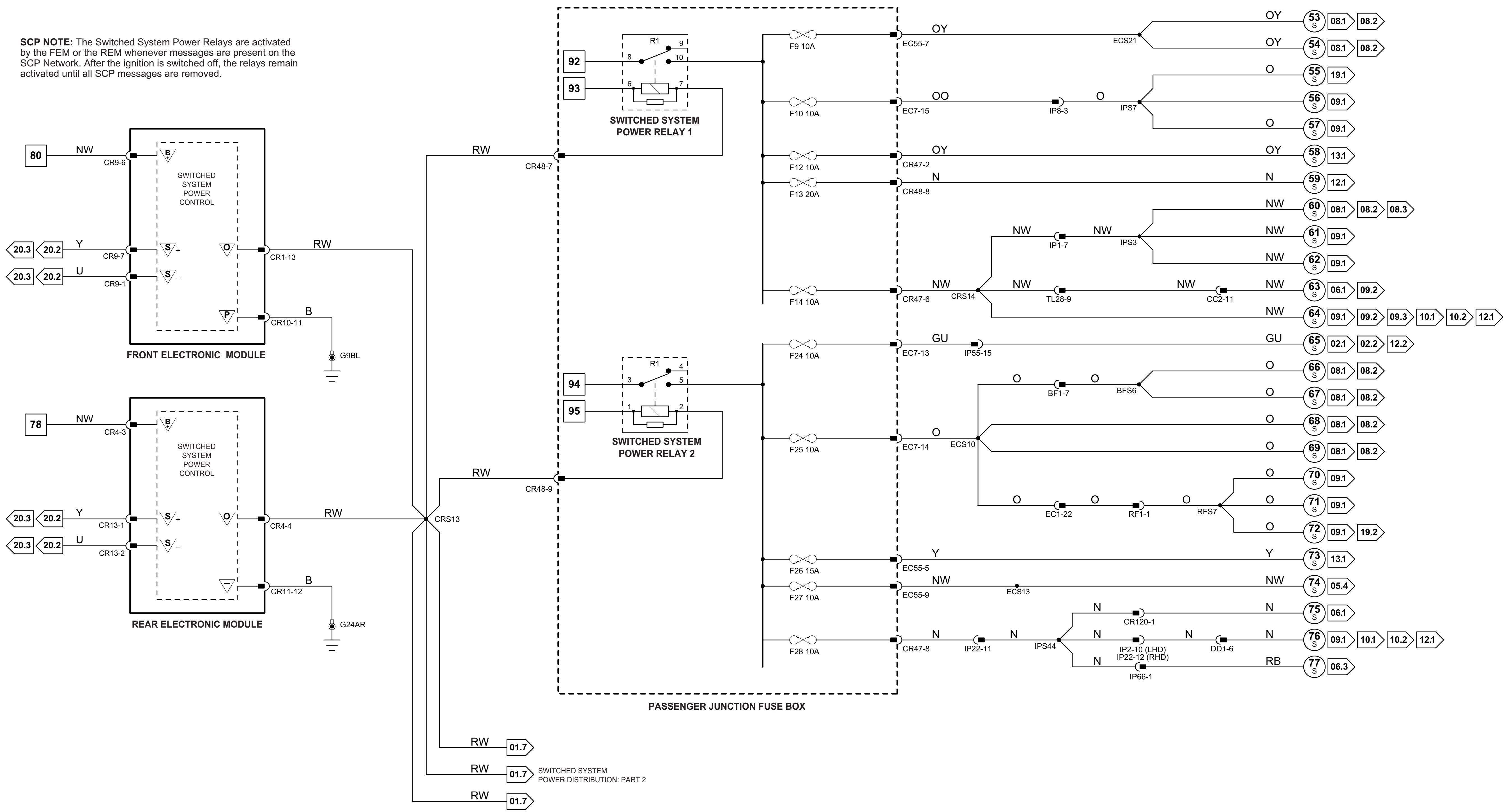


1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	Input	Battery Voltage	Sensor/Signal Supply V
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	Output	Power Ground	Sensor/Signal Ground

ACP	SCP	VARIANT: All Vehicles
CAN	Serial and Encoded Data	VIN RANGE: All
		DATE OF ISSUE: September 2004

Fig. 01.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT ELECTRONIC MODULE	CR1	26-WAY / NATURAL	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
SWITCHED SYSTEM POWER RELAY 3	—	—	PASSENGER JUNCTION FUSE BOX — R7
SWITCHED SYSTEM POWER RELAY 4	—	—	PASSENGER JUNCTION FUSE BOX — R7
SWITCHED SYSTEM POWER RELAY 5	—	—	PASSENGER JUNCTION FUSE BOX — R8

HARNESS IN-LINE CONNECTORS

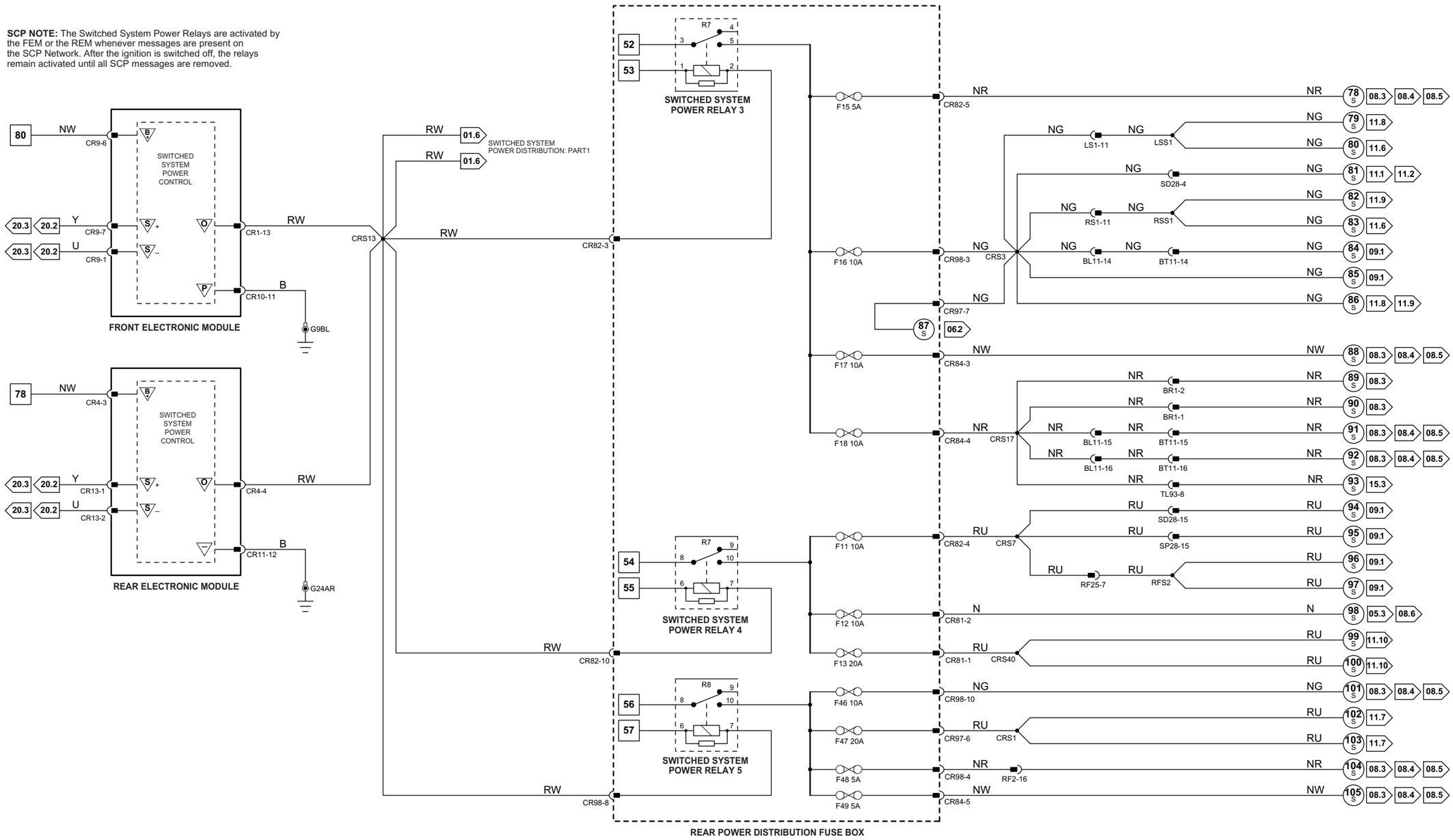
Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BR1	10-WAY / GREY / CABIN HARNESS TO REAR BUMPER HARNESS	TRUNK / RH SIDE / ADJACENT TO REAR ELECTRONIC MODULE
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
LS1	22-WAY / BLACK / CABIN HARNESS TO LH REAR SEAT HARNESS	CABIN / BELOW LH REAR SEAT
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF25	8-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER LH 'A' POST
RS1	22-WAY / BLACK / CABIN HARNESS TO REAR SEAT HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE

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.

SCP NOTE: The Switched System Power Relays are activated by the FEM or the REM whenever messages are present on the SCP Network. After the ignition is switched off, the relays remain activated until all SCP messages are removed.



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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (E) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** All Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Powertrain Control Module

	Pin	Description and Characteristic
O	PI1–40	EMS CONTROL RELAY DRIVE: 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. 01.8

COMPONENTS

Component	Connector(s)	Connector Description	Location
EMS CONTROL RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX — R11
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD / PASSENGER SIDE
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
IGNITION COIL RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX — R7
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
SLAVE IGNITION RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX — R9

HARNESS IN-LINE CONNECTORS

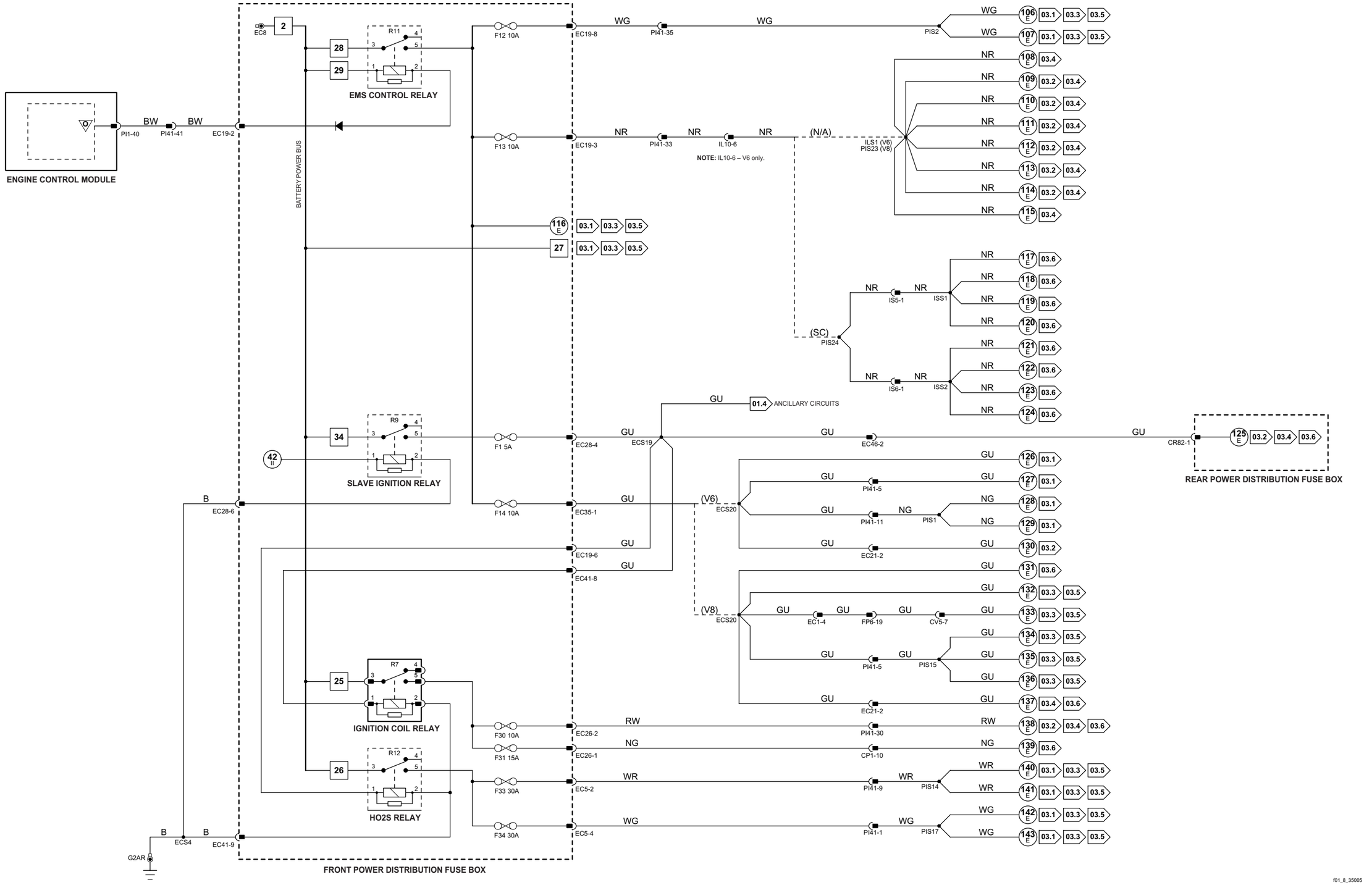
Connector	Connector Description / Location	Location
CP1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INTERCOOLER COOLANT PUMP HARNESS	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
CV5	12-WAY / GREY / FUEL PUMP LINK HARNESS TO EVAP CANISTER CLOSE VALVE LINK HARNESS	ABOVE REAR AXLE / CENTER
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC21	2-WAY / BLACK / ENGINE HARNESS TO COOLING FAN MODULE	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	REAR OF ENGINE
IS5	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE COMPARTMENT / ENGINE / LH REAR
IS6	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE COMPARTMENT / ENGINE / RH REAR
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G2	ENGINE COMPARTMENT / BELOW FRONT 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.



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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 I → 15 II Fig. 01.4	16 II → 52 II Fig. 01.5 53 S → 77 S Fig. 01.6	78 S → 105 S Fig. 01.7 106 E → 143 E Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** All Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Engine Control Module

	Pin	Description and Characteristic
I	PI1–6	ENGINE CRANK: B+
I	PI1–31	PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED
O	PI1–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–53	GENERATOR CONTROL: VARIABLE VOLTAGE
I	PI1–65	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
I	PI1–79	GENERATOR FAULT; CHARGE WARNING
C	PI1–123	CAN –
C	PI1–124	CAN +

Instrument Cluster

	Pin	Description and Characteristic
I	IP5-02	KEY-IN AUDIBLE WARNING: B+ WHEN KEY IN
B+	IP5-03	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	IP5-04	IGNITION SWITCHED POWER SUPPLY (I): B+
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
I	IP6-04	PATS GROUND: GROUND
D	IP6-05	PATS TRANSCEIVER: ENCODED COMMUNICATION
D	IP6-06	PATS TRANSCEIVER: ENCODED COMMUNICATION
C	IP6-08	CAN +
C	IP6-09	CAN –

Transmission Control Module

	Pin	Description and Characteristic
B+	GB2–9	IGNITION SWITCHED POWER SUPPLY (II): B+
O	GB2–10	PARK / NEUTRAL SIGNAL: GROUND WHEN ACTIVATED
PG	GB2–13	POWER GROUND: GROUND
PG	GB2–16	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. 02.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	—	—	TRUNK / RH SIDE
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD, PASSENGER SIDE
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
GENERATOR	PI47	4-WAY / BLACK	ENGINE, RH SIDE, FRONT
	BO10		
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MEGAFUSE	—	—	TRUNK / RH SIDE
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP18	4-WAY / GREEN	IGNITION SWITCH
STARTER MOTOR	—	—	ENGINE BLOCK / RH SIDE
STARTER RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX — R10
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC2	2-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EL1	2-WAY / GREY / ENGINE COMPARTMENT TO STARTER MOTOR LINK HARNESS	ENGINE COMPARTMENT / BULKHEAD CENTER / REARWARD OF ENGINE
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
IP51	10-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER

GROUNDS

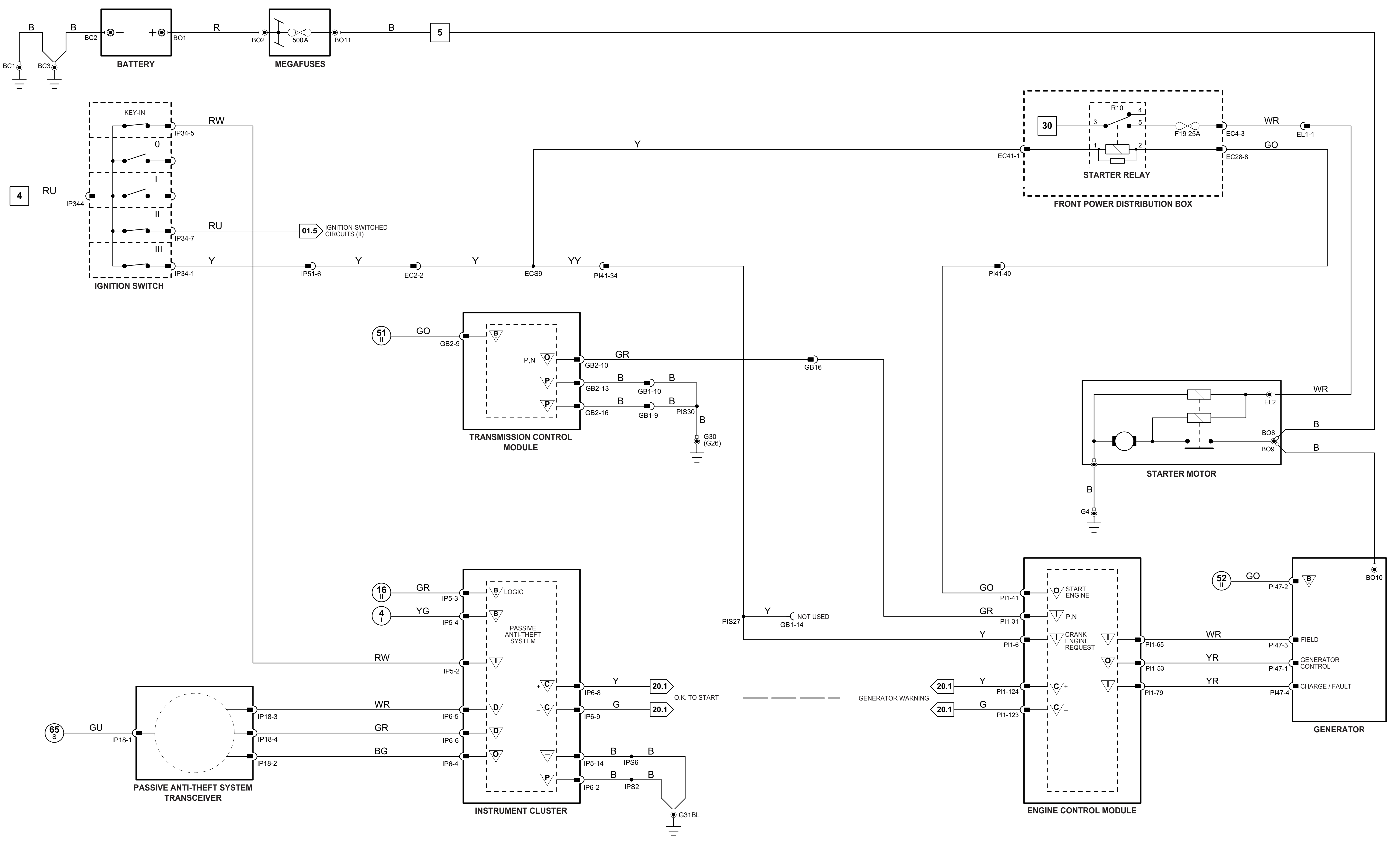
Ground	Location
BC1	TRUNK / RH SIDE / ADJACENT TO BATTERY
BC3	TRUNK / RH SIDE / ADJACENT TO BATTERY
G4	ENGINE COMPARTMENT / ENGINE BLOCK GROUND
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER
G31	CABIN / BEHIND PASSENGER AIR BAG

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: September 2004

Battery; Starter; Generator: V6



1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP / S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN / D Serial and Encoded Data

VARIANT: V6 Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
I	PI1–6	ENGINE CRANK: B+
I	PI1–31	PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED
O	PI1–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–79	GENERATOR FAULT; CHARGE WARNING
C	PI1–123	CAN –
C	PI1–124	CAN +

Instrument Cluster

	Pin	Description and Characteristic
I	IP5-02	KEY-IN AUDIBLE WARNING: B+ WHEN KEY IN
B+	IP5-03	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	IP5-04	IGNITION SWITCHED POWER SUPPLY (I): B+
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
I	IP6-04	PATS GROUND: GROUND
D	IP6-05	PATS TRANSCEIVER: ENCODED COMMUNICATION
D	IP6-06	PATS TRANSCEIVER: ENCODED COMMUNICATION
C	IP6-08	CAN +
C	IP6-09	CAN –

Transmission Control Module

	Pin	Description and Characteristic
B+	GB2–9	IGNITION SWITCHED POWER SUPPLY (II): B+
O	GB2–10	PARK / NEUTRAL SIGNAL: GROUND WHEN ACTIVATED
PG	GB2–13	POWER GROUND: GROUND
PG	GB2–16	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. 02.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	—	—	LUGGAGE COMPARTMENT
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
GENERATOR	PI48	4-WAY / BLACK	ENGINE, RH SIDE, FRONT
	ST7	EYELET	
IGNITION SWITCH	FC18	7-WAY / BLACK	STEERING COLUMN COWLING
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MEGAFUSE	—	—	ENGINE COMPARTMENT, RH SIDE
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP18	4-WAY / GREEN	IGNITION SWITCH
STARTER MOTOR	—	—	ENGINE BLOCK, RH SIDE
STARTER RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R20
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE ASSEMBLY

HARNESS IN-LINE CONNECTORS

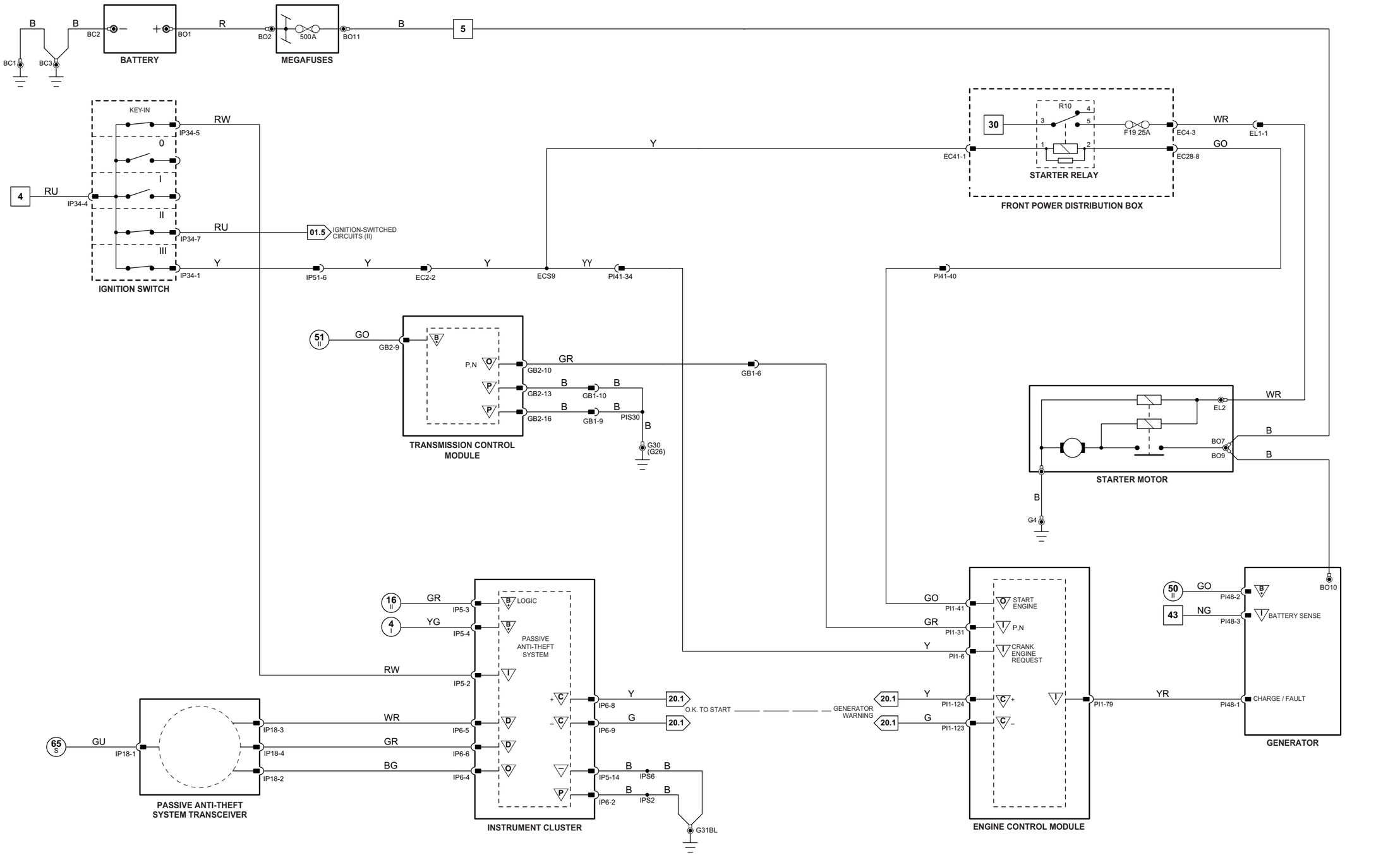
Connector	Connector Description / Location	Location
EC2	2-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EL1	2-WAY / GREY / ENGINE COMPARTMENT TO STARTER MOTOR LINK HARNESS	ENGINE COMPARTMENT / BULKHEAD CENTER / REARWARD OF ENGINE
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
IP51	10-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PI41	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESSES	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE

GROUNDS

Ground	Location
BC1	TRUNK / RH SIDE / ADJACENT TO BATTERY
BC3	TRUNK / RH SIDE / ADJACENT TO BATTERY
G4	ENGINE COMPARTMENT / ENGINE BLOCK GROUND
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER
G31	CABIN / BEHIND PASSENGER AIR BAG

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	64 → 95 Fig. 01.3	16 (E) → 52 (E) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	**VARIANT:** V8 Vehicles
7 → 63 Fig. 01.2	1 (I) → 15 (I) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	**VIN RANGE:** All
									DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
O	PI1–1	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–2	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
PG	PI1–4	POWER GROUND 1: GROUND
PG	PI1–5	POWER GROUND 2: GROUND
I	PI1–6	ENGINE CRANK: B+
I	PI1–7	IGNITION ON: B+
I	PI1–8	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	PI1–10	INERTIA SWITCH: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SS	PI1–13	SENSOR POWER SUPPLY 2: NOMINAL 5 V
SG	PI1–17	SMALL SIGNAL GROUND 1: GROUND
SG	PI1–18	SMALL SIGNAL GROUND 2: GROUND
SG	PI1–19	SENSOR GROUND 1: GROUND
SG	PI1–20	SENSOR GROUND 2: GROUND
B+	PI1–22	BATTERY POWER SUPPLY: B+
B+	PI1–23	EMS SWITCHED POWER SUPPLY 1: B+
B+	PI1–24	EMS SWITCHED POWER SUPPLY 2: B+
SG	PI1–29	HO2 SENSOR HEATER GROUND – 1/1: GROUND
SG	PI1–30	HO2 SENSOR HEATER GROUND – 1/1: GROUND
I	PI1–31	PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PI1–36	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL, 70 PULSES PER ENGINE CYCLE
SG	PI1–37	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
O	PI1–38	INTAKE MANIFOLD TUNING VALVE SOLENOID DRIVE – 1 / TOP: GROUND WHEN ACTIVATED
O	PI1–39	INTAKE MANIFOLD TUNING VALVE SOLENOID DRIVE – 2 / BOTTOM: GROUND WHEN ACTIVATED
O	PI1–40	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	PI1–43	TP AND APP SIGNALS SHIELD: GROUND
I	PI1–44	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	PI1–45	MASS AIR FLOW SENSOR GROUND: GROUND
SG	PI1–46	MASS AIR FLOW SENSOR GROUND: GROUND
I	PI1–50	ENGINE FUEL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
O	PI1–52	THROTTLE MOTOR RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–53	GENERATOR CONTROL: VARIABLE VOLTAGE
SG	PI1–54	THROTTLE MOTOR GROUND: GROUND
O	PI1–55	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–56	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
I	PI1–65	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
O	PI1–66	EVAP CANISTER PURGE VALVE DRIVE: PWM, 10 Hz, POSITIVE DUTY CYCLE RANGE 7% – 100%
O	PI1–67	EVAP CANISTER CLOSE VALVE DRIVE: TO CLOSE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–68	BANK 2 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–69	BANK 2 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–70	ENGINE COOLANT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–71	INTAKE AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–73	INJECTION PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: POTENTIOMETER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–75	THROTTLE POSITION SENSOR 1 SIGNAL: IDLE = 0.60 V; FULL THROTTLE = 4.30 V
I	PI1–76	THROTTLE POSITION SENSOR 2 SIGNAL: IDLE = 1.48 V; FULL THROTTLE = 4.40 V
I	PI1–78	ENGINE OIL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–79	GENERATOR FAULT; CHARGE WARNING
O	PI1–80	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
SG	PI1–81	HO2 SENSOR HEATER GROUND – 2/1: GROUND
SG	PI1–82	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	PI1–83	HO2 SENSOR 1/1 SIGNAL: VARIABLE CURRENT
I	PI1–84	HO2 SENSOR 1/1 SIGNAL: CONSTANT CURRENT
SG	PI1–91	HO2 SENSOR HEATERS 1/2, 2/2 GROUND: GROUND
O	PI1–92	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	PI1–93	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	PI1–94	BANK 1 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–95	BANK 1 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–98	BANK 1 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
I	PI1–99	BANK 2 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
SG	PI1–100	SENSOR SHIELD: GROUND
I	PI1–102	ACCELERATOR PEDAL POSITION SENSOR 1 SIGNAL: FOOT OFF = 0.75 V; FULLY DEPRESSED = 3.40 V (AUTO) 3.20 V (MAN)
I	PI1–103	ACCELERATOR PEDAL POSITION SENSOR 2 SIGNAL: FOOT OFF = 3.38 V; FULLY DEPRESSED = 2.05 V (AUTO) 2.14 V (MAN)
D	PI1–105	SERIAL DATA LINK: SERIAL COMMUNICATION
O	PI1–106	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
I	PI1–107	HO2 SENSOR 2/1 SIGNAL: VARIABLE CURRENT
I	PI1–108	HO2 SENSOR 2/1 SIGNAL: CONSTANT CURRENT
O	PI1–109	BANK 1 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	PI1–110	BANK 2 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
SG	PI1–111	FUEL INJECTORS 2, 3, 5, 8 GROUND: GROUND
SG	PI1–116	FUEL INJECTORS 1, 4, 6, 7 GROUND: GROUND
C	PI1–123	CAN –
C	PI1–124	CAN +
I	PI1–127	MAP SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
I	PI1–128	HO2 SENSOR 1/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
I	PI1–129	HO2 SENSOR 2/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
SG	PI1–130	HO2 SENSORS SHIELD: GROUND
B+	PI1–134	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	CR14	6-WAY / BLACK	TOP OF ACCELERATOR PEDAL
BRAKE ON / OFF SWITCH	CR78	2-WAY / BLACK	TOP OF BRAKE PEDAL
CKP SENSOR	PI55	2-WAY / BLACK	ENGINE TIMING COVER, CRANKSHAFT PULLEY
CMP SENSOR 1	PI57	2-WAY / BLACK	BANK 1 (RH) CAMSHAFT COVER, FRONT
CMP SENSOR 2	PI56	2-WAY / BLACK	BANK 2 (LH) CAMSHAFT COVER, FRONT
ECT SENSOR	PI25	2-WAY / BLACK	ENGINE VEE, COOLANT OUTLET CASTING
EFT SENSOR	IL9	2-WAY / BLACK	FUEL RAIL, FRONT
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD, PASSENGER SIDE
EOT SENSOR	PI24	2-WAY / BLACK	ADJACENT TO OIL FILTER
EVAP CANISTER PURGE VALVE	EC63	2-WAY / BLACK	ENGINE COMPARTMENT, BEHIND RH WHEEL ARCH LINER
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
HO2 SENSOR DOWNSTREAM 1/2	PI11	4-WAY / BLACK	RH EXHAUST, CATALYST CENTER
HO2 SENSOR DOWNSTREAM 2/2	PI13	4-WAY / BLACK	LH EXHAUST, CATALYST CENTER
HO2 SENSOR UPSTREAM 1/1	PI10	4-WAY / BLACK	RH EXHAUST, TOP OF CATALYST
HO2 SENSOR UPSTREAM 2/1	PI12	4-WAY / BLACK	LH EXHAUST, TOP OF CATALYST
IMT SOLENOID VALVE 1	PI30	2-WAY / BLACK	INTAKE MANIFOLD, REAR
IMT SOLENOID VALVE 2	PI31	2-WAY / BLACK	INTAKE MANIFOLD, REAR
IP SENSOR	IL12	3-WAY / BLACK	FUEL RAIL, REAR
KNOCK SENSOR 1	PI20	2-WAY / BLACK	ENGINE BLOCK / REAR / BANK 1 (REAR SENSOR)
KNOCK SENSOR 2	PI19	2-WAY / BLACK	ENGINE VEE / TOWARD FRONT / BANK 2 (FRONT SENSOR)
MAF SENSOR	PI14	5-WAY / BLACK	ENGINE AIR INTAKE, ADJACENT TO AIR CLEANER
MAP SENSOR	PI29	4-WAY / BLACK	INTAKE MANIFOLD, UPPER REAR
THROTTLE BODY	—	—	ENGINE AIR INTAKE, FRONT
THROTTLE MOTOR	PI18	2-WAY / BLACK	THROTTLE BODY
THROTTLE MOTOR RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R12
TP SENSOR	PI26	4-WAY / BLACK	THROTTLE BODY, THROTTLE SHAFT
VVT SOLENOID VALVE 1	PI16	2-WAY / BLACK	RH CYLINDER HEAD, FRONT
VVT SOLENOID VALVE 2	PI17	2-WAY / BLACK	LH CYLINDER HEAD, FRONT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	REAR OF ENGINE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION 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.

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NOTE: Shielding shown as dashed lines are braided wires.

BRD

HO2 SENSORS UPSTREAM
HO2 SENSORS DOWNSTREAM
CKP SENSOR
CMP SENSORS
KNOCK SENSORS
MAF SENSOR
ECT SENSOR
EOT SENSOR
IP SENSOR
EFT SENSOR
MAP SENSOR

1/1 2/1 1/2 2/2 1 2 1 2 IATS

PI10 -3 -4 -2 -1 | PI12 -3 -4 -2 -1 | PI11 -4 -3 -2 -1 | PI13 -4 -3 -2 -1 | PI55 -1 -2 | PI57 -1 -2 | PI56 -1 PI56-2 | PI20 -2 -1 | PI19 -2 -1 | PI14 -1 -3 -2 -4 -5 | PI25 -2 -1 | PI24 -1 -2 | IL12 -3 -2 -1 | IL9 -1 -2 | PI29 -2 -1 -4

R Y RU WG | G N RW WR | N B UY WG | N B RW WR | B O Y R N G | B N | B N | GU GW BK U BG | UY BG | Y BG | U BG OY | BG WU | OY BK BG

142 E | 140 E | 143 E | 141 E | 127 E

7 NR PI1-022
106 E WG PI1-023
107 E WG PI1-024
18 II GO PI1-007
VIA INERTIA SWITCH 43 II GU PI1-010
ENGINE CRANK 02.1 Y PI1-006
EMS CONTROL RELAY 01.8 BW PI1-040
GENERATOR: CONTROL 02.1 YR PI1-053
GENERATOR: FIELD 02.1 WR PI1-065
GENERATOR: FAULT; CHARGE WARNING 02.1 YR PI1-079
STARTER RELAY DRIVE 02.1 GO PI1-041
PARK; NEUTRAL (CIRCUIT CONTINUED) 04.1 02.1 GR PI1-031
20.1 Y PI1-124
20.1 G PI1-123
SERIAL COMMUNICATION 20.3 20.2 W PI1-105

PI1-083 R
PI1-084 Y
PI1-001 RU
PI1-002 RU PIS11
PI1-107 G
PI1-108 N
PI1-055 RW
PI1-056 RW PIS13
PI1-130 BW
PI1-128 N
PI1-092 UY
PI1-129 N
PI1-093 RW
PI1-037 B
PI1-036 O
PI1-094 Y
PI1-095 R
PI1-100 BG
PI1-068 N
PI1-069 G
PI1-098 N
PI1-099 N
PI1-044 GW
PI1-045 BK
PI1-046 BK
PI1-071 U
PI1-070 UY
PI1-019 BG
PI1-078 Y
PI1-073 U
PI1-050 WU
PI1-012 OY
PI1-127 BK
PI1-103 O
PI1-102 B
PI1-020 BG
PI1-013 Y
PI1-043 BG
PI1-080 GW
PI1-106 RW
PI1-076 Y
PI1-075 R
PI1-008 GO
PI1-066 UY
PI1-039 OG
PI1-038 OY
PI1-110 YU
PI1-109 Y

B PI1-017
B PI1-018
B PI1-005
B PI1-029
B PI1-054
B PI1-091
B PI1-004
B PI1-030
B PI1-111
B PI1-116
B PI1-081
B PI1-082

BB PIS12
BG PIS19
BG PIS25
BG PIS21
BG PIS22
ILS2
IL10 -4 -11 -12 -10

THROTTLE MOTOR RELAY
R12 9 8 10 6 7
27
116 E
F24 20A
GU EC26-5 PI41-38 PI1-134
GR EC19-5 PI41-39 PI1-052

FRONT POWER DISTRIBUTION FUSE BOX

PIS29 B G26BR (G30BR)
PIS30 B G26AL (G30AL)
PIS28 B G26AR (G30AR)

ENGINE CONTROL MODULE
(Continued Fig. 03.2)

PI16 -2 -1 | PI17 -2 -1
VVT SOLENOID VALVES

128 E OY NG | 129 E OG NG
PI30 -2 -1 | PI31 -2 -1
IMT SOLENOID VALVES
(1 BOTTOM; 2 TOP)

126 E UY GU
EC63 -1 -2
EVAP CANISTER PURGE VALVE

83 GO NG
C78 -2 -1
BRAKE ON / OFF SWITCH

PI41-8 Y
PI41-7 R
PI41-12 BG
PI41-3 Y
PI41-6 W
B W W

EC61-5 (LHD) EC16-7 (RHD)
EC61-6 (LHD) EC16-8 (RHD)
EC16-7 (LHD) EC61-10 (RHD)
EC16-8 (LHD) EC61-11 (RHD)
EC61-7 (LHD) EC16-1 (RHD)

PI41-23 GO EC53-3 (LHD) EC53-5 (RHD) GO
PI41-10

PI41 -18 OY | PI41 -17 BG
ECS32 ECS31
EC16 -5 OY | EC16 -9 BG

PI26 -1 BG | PI26 -3 R | PI26 -2 Y | PI26 -4 OY | PI18 -2 RW | PI18 -1 GW
TP1 TP2
THROTTLE MOTOR
TP SENSOR
THROTTLE BODY

CR14 -5 Y | CR14 -3 BG | CR14 -4 R | CR14 -2 OY | CR14 -6 BG | CR14 -1 Y
APP1 APP2
APP SENSOR

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1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 I → 15 II Fig. 01.4
16 II → 52 II Fig. 01.5
53 S → 77 S Fig. 01.6
78 S → 105 S Fig. 01.7
106 E → 143 E Fig. 01.8

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

VARIANT: V6 Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
I	PI1–9	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SG	PI1–19	SENSOR GROUND 1: GROUND
O	PI1–27	FUEL PUMP DRIVE SIGNAL (TO REM): PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
I	PI1–33	CLUTCH CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
O	PI1–34	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SS	PI1–47	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	PI1–48	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
O	PI1–51	COOLING FAN MODULE CONTROL: PWM, 140 Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
O	PI1–61	IGNITION COIL ACTIVATE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–62	IGNITION COIL ACTIVATE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–63	IGNITION COIL ACTIVATE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–87	IGNITION COIL ACTIVATE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–88	IGNITION COIL ACTIVATE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–89	IGNITION COIL ACTIVATE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–113	FUEL INJECTOR DRIVE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–114	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–115	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–118	FUEL INJECTOR DRIVE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–119	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–120	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–131	IGNITION MONITOR BANK 1: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
I	PI1–132	IGNITION MONITOR BANK 2: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
SG	CR11-12	LOGIC GROUND: GROUND
I	CR11-19	FUEL PUMP (1) DRIVE SIGNAL: PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
SG	CR11-25	LOGIC GROUND: GROUND
SG	CR11-26	LOGIC GROUND: GROUND
B+	CR12-08	IGNITION SWITCHED POWER SUPPLY (II) (FUEL PUMP CONTROL): B+
S	CR13-01	SCP NETWORK +
S	CR13-02	SCP NETWORK –
SG	CR71-15	LOGIC GROUND: GROUND
B+	CR73-01	FUEL PUMP POWER SUPPLY: B+ WHEN FUEL PUMP RELAY ACTIVATED
PG	CR73-02	POWER GROUND (FUEL PUMP): GROUND
O	CR73-03	FUEL PUMP GROUND: GROUND, PWM
O	CR73-04	FUEL PUMP B+: 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. 03.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING PRESSURE SENSOR	EC11	3-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
BRAKE CANCEL SWITCH	CR77	2-WAY / BLACK	TOP OF BRAKE PEDAL
COOLING FAN MODULE AND MOTOR	GC1	2-WAY / GREY	RADIATOR COOLING FAN
	EC20	2-WAY / GREY	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD, PASSENGER SIDE
FUEL INJECTOR 1	IL3	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 2	IL6	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 3	IL4	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 4	IL7	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 5	IL5	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 6	IL8	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL PUMP	FP4	8-WAY / BLACK	FUEL TANK, RH SIDE
FUEL PUMP RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R6
IGNITION CAPACITOR	PI54	2-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD / CENTER
IGNITION MODULE AND COIL 1	PI2	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 2	PI6	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 3	PI3	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 4	PI7	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 5	PI4	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 6	PI8	4-WAY / BLACK	LH CYLINDER HEAD
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK, RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK, RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
STEERING WHEEL SPEED CONTROL SWITCHES	—	—	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC21	2-WAY / BLACK / ENGINE HARNESS TO COOLING FAN MODULE	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP2	6-WAY / GREY / CABIN HARNESS TO FUEL PUMP HARNESS	CABIN / BELOW REAR SEAT CUSHION / RH SIDE
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	REAR OF ENGINE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
PI42	8-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION 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.

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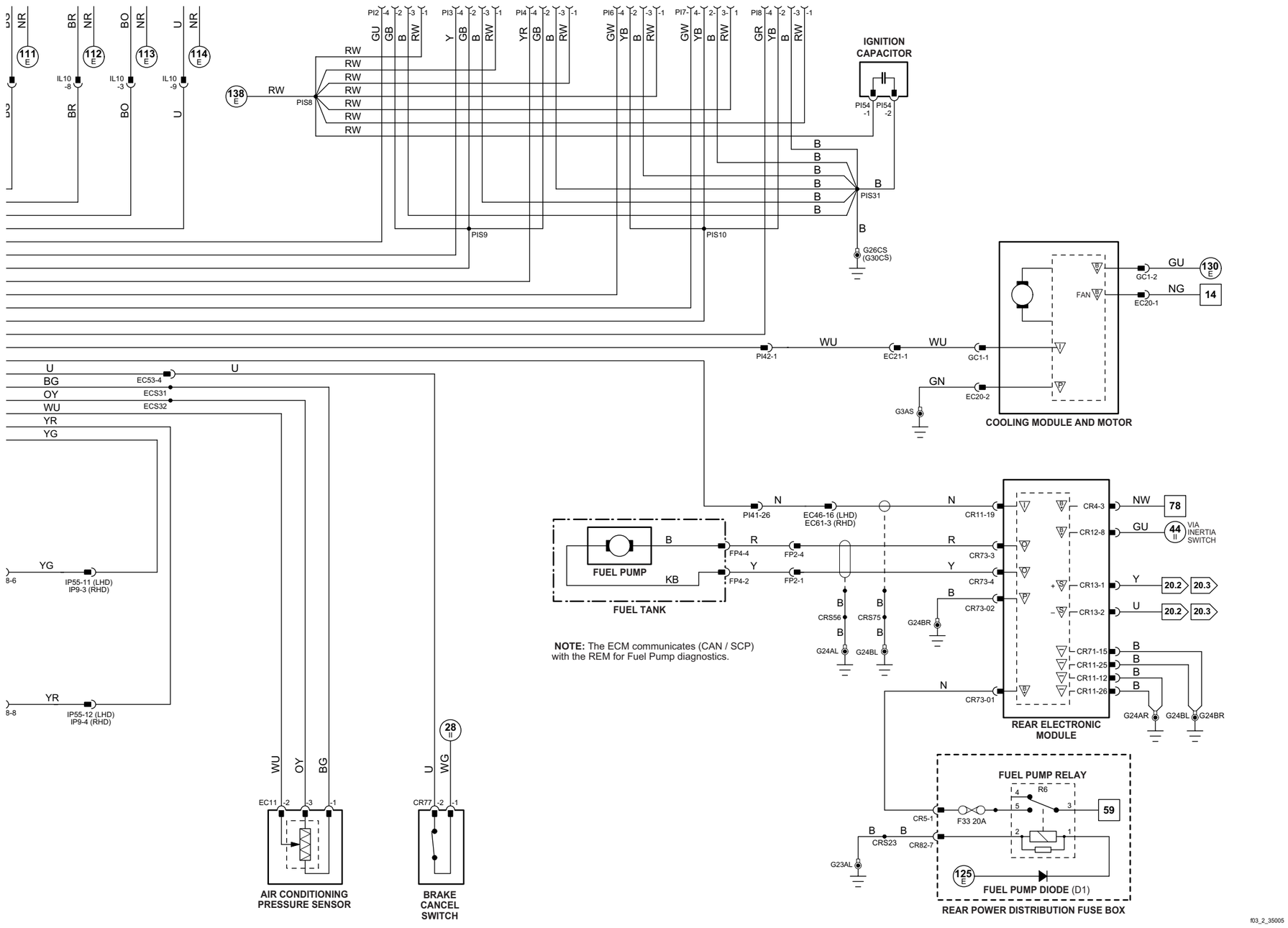

NOTE: The ECM communicates (CAN / SCP) with the REM for Fuel Pump diagnostics.

f03_2_35005

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN D Serial and Encoded Data

VARIANT: V6 Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
O	PI1–1	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–2	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
PG	PI1–4	POWER GROUND 1: GROUND
PG	PI1–5	POWER GROUND 2: GROUND
I	PI1–6	ENGINE CRANK: B+
I	PI1–7	IGNITION ON: B+
I	PI1–8	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	PI1–10	INERTIA SWITCH: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SS	PI1–13	SENSOR POWER SUPPLY 2: NOMINAL 5 V
SG	PI1–17	SMALL SIGNAL GROUND 1: GROUND
SG	PI1–18	SMALL SIGNAL GROUND 2: GROUND
SG	PI1–19	SENSOR GROUND 1: GROUND
SG	PI1–20	SENSOR GROUND 2: GROUND
B+	PI1–22	BATTERY POWER SUPPLY: B+
B+	PI1–23	EMS SWITCHED POWER SUPPLY 1: B+
B+	PI1–24	EMS SWITCHED POWER SUPPLY 2: B+
SG	PI1–29	HO2 SENSOR HEATER GROUND – 1/1: GROUND
SG	PI1–30	HO2 SENSOR HEATER GROUND – 1/1: GROUND
I	PI1–31	PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PI1–36	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL, 70 PULSES PER ENGINE CYCLE
SG	PI1–37	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
O	PI1–40	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	PI1–43	TP AND APP SIGNALS SHIELD: GROUND
I	PI1–44	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	PI1–45	MASS AIR FLOW SENSOR GROUND: GROUND
SG	PI1–46	MASS AIR FLOW SENSOR GROUND: GROUND
I	PI1–50	ENGINE FUEL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
O	PI1–52	THROTTLE MOTOR RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–53	GENERATOR CONTROL: VARIABLE VOLTAGE
SG	PI1–54	THROTTLE MOTOR GROUND: GROUND
O	PI1–55	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–56	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–57	EGR DRIVE 1: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–58	EGR DRIVE 2: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–59	EGR DRIVE 3: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–60	EGR DRIVE 4: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
I	PI1–65	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
O	PI1–66	EVAP CANISTER PURGE VALVE DRIVE: PWM, 10 Hz, POSITIVE DUTY CYCLE RANGE 7% – 100%
O	PI1–67	EVAP CANISTER CLOSE VALVE DRIVE: TO CLOSE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–68	BANK 2 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–69	BANK 2 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–70	ENGINE COOLANT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–71	INTAKE AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–73	INJECTION PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: POTENTIOMETER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–75	THROTTLE POSITION SENSOR 1 SIGNAL: IDLE = 0.60 V; FULL THROTTLE = 4.30 V
I	PI1–76	THROTTLE POSITION SENSOR 2 SIGNAL: IDLE = 1.48 V; FULL THROTTLE = 4.40 V
I	PI1–78	ENGINE OIL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–79	GENERATOR FAULT; CHARGE WARNING
O	PI1–80	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
SG	PI1–81	HO2 SENSOR HEATER GROUND – 2/1: GROUND
SG	PI1–82	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	PI1–83	HO2 SENSOR 1/1 SIGNAL: VARIABLE CURRENT
I	PI1–84	HO2 SENSOR 1/1 SIGNAL: CONSTANT CURRENT
SG	PI1–91	HO2 SENSOR HEATERS 1/2, 2/2 GROUND: GROUND
O	PI1–92	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	PI1–93	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	PI1–94	BANK 1 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–95	BANK 1 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–98	BANK 1 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
I	PI1–99	BANK 2 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
SG	PI1–100	SENSOR SHIELD: GROUND
I	PI1–102	ACCELERATOR PEDAL POSITION SENSOR 1 SIGNAL: FOOT OFF = 0.75 V; FULLY DEPRESSED = 3.40 V (AUTO) 3.20 V (MAN)
I	PI1–103	ACCELERATOR PEDAL POSITION SENSOR 2 SIGNAL: FOOT OFF = 3.38 V; FULLY DEPRESSED = 2.05 V (AUTO) 2.14 V (MAN)
I	PI1–104	FUEL TANK PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS PRESSURE INCREASES
D	PI1–105	SERIAL DATA LINK: SERIAL COMMUNICATION
O	PI1–106	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
I	PI1–107	HO2 SENSOR 2/1 SIGNAL: VARIABLE CURRENT
I	PI1–108	HO2 SENSOR 2/1 SIGNAL: CONSTANT CURRENT
O	PI1–109	BANK 1 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	PI1–110	BANK 2 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
SG	PI1–111	FUEL INJECTORS 2, 3, 5, 8 GROUND: GROUND
SG	PI1–116	FUEL INJECTORS 1, 4, 6, 7 GROUND: GROUND
C	PI1–123	CAN –
C	PI1–124	CAN +
I	PI1–127	MAP SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
I	PI1–128	HO2 SENSOR 1/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
I	PI1–129	HO2 SENSOR 2/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
SG	PI1–130	HO2 SENSORS SHIELD: GROUND
B+	PI1–134	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. 03.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
APP SENSOR	CR14	6-WAY / BLACK	TOP OF ACCELERATOR PEDAL
BRAKE ON / OFF SWITCH	CR78	2-WAY / BLACK	TOP OF BRAKE PEDAL
CKP SENSOR	PI21	2-WAY / BLACK	ENGINE UNDER SIDE, FORWARD OF BELL HOUSING
CMP SENSOR 1	PI23	2-WAY / BLACK	BANK 1 (RH) CAMSHAFT COVER, REAR
CMP SENSOR 2	PI22	2-WAY / BLACK	BANK 2 (LH) CAMSHAFT COVER, REAR
ECT SENSOR	PI25	2-WAY / BLACK	ENGINE VEE, COOLANT OUTLET CASTING
EFT SENSOR	PI27	2-WAY / BLACK	FUEL RAIL, RH REAR
EGR VALVE	PI15	6-WAY / BLACK	INTAKE MANIFOLD, RH FRONT
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
EOT SENSOR	PI24	2-WAY / BLACK	ADJACENT TO OIL FILTER
EVAP CANISTER CLOSE VALVE	CV2	2-WAY / BLACK	ABOVE REAR AXLE (FUEL TANK COMPONENTS)
EVAP CANISTER PURGE VALVE	EC63	2-WAY / BLACK	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
FTP SENSOR	FP1	3-WAY / BLACK	FUEL TANK PIPING, LH SIDE (UNDER ACCESS PLATE)
HO2 SENSOR DOWNSTREAM 1/2	PI11	4-WAY / BLACK	RH EXHAUST, CATALYST CENTER
HO2 SENSOR DOWNSTREAM 2/2	PI13	4-WAY / BLACK	LH EXHAUST, CATALYST CENTER
HO2 SENSOR UPSTREAM 1/1	PI10	4-WAY / BLACK	RH EXHAUST, TOP OF CATALYST
HO2 SENSOR UPSTREAM 2/1	PI12	4-WAY / BLACK	LH EXHAUST, TOP OF CATALYST
IAT SENSOR 2	PI43	2-WAY / BLACK	INTAKE MANIFOLD, RH SIDE, REAR
IP SENSOR	PI28	3-WAY / BLACK	FUEL RAIL, RH FRONT
KNOCK SENSOR 1	PI20	2-WAY / BLACK	ENGINE VEE, BANK 1
KNOCK SENSOR 2	PI19	2-WAY / BLACK	ENGINE VEE, BANK 2
MAF SENSOR	PI14	5-WAY / BLACK	ENGINE AIR INTAKE, ADJACENT TO AIR CLEANER
MAP SENSOR	PI29	4-WAY / BLACK	INTAKE MANIFOLD, REAR, BELOW THROTTLE ASSEMBLY
THROTTLE BODY	—	—	ENGINE AIR INTAKE, REAR
THROTTLE MOTOR	PI18	2-WAY / BLACK	THROTTLE BODY
THROTTLE MOTOR RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R12
TP SENSOR	PI26	4-WAY / BLACK	THROTTLE BODY, THROTTLE SHAFT
VVT SOLENOID VALVE 1	PI16	2-WAY / BLACK	RH CYLINDER HEAD, FRONT
VVT SOLENOID VALVE 2	PI17	2-WAY / BLACK	LH CYLINDER HEAD, FRONT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CV5	12-WAY / GREY / FUEL PUMP LINK HARNESS TO EVAP CANISTER CLOSE VALVE LINK HARNESS	ABOVE REAR AXLE / CENTER
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
VVT SOLENOID VALVE 1	PI16	2-WAY / BLACK
VVT SOLENOID VALVE 2	PI17	2-WAY / BLACK

GROUNDS

Ground	Location
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION 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.

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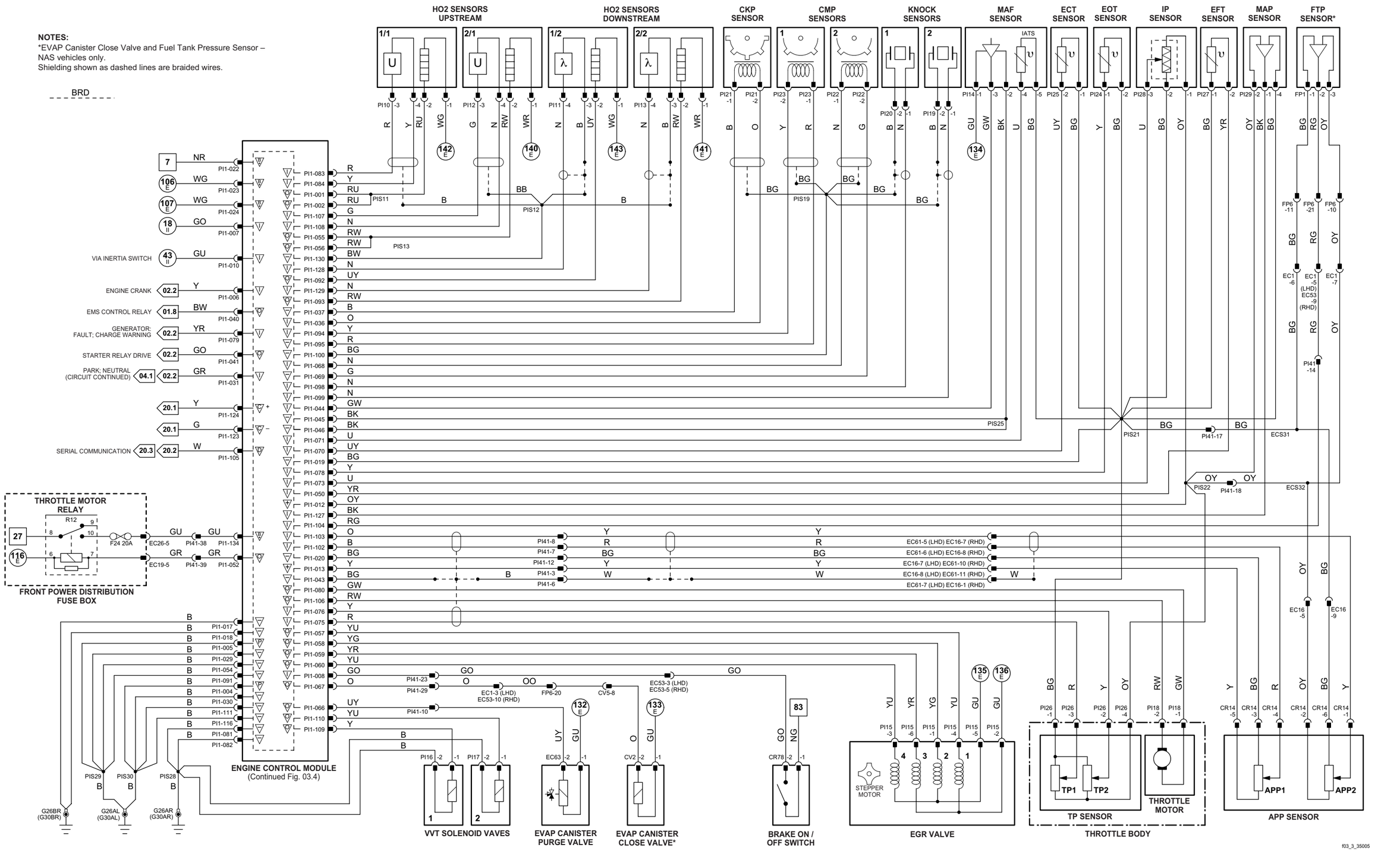
NOTES:
*EVAP Canister Close Valve and Fuel Tank Pressure Sensor – NAS vehicles only.
Shielding shown as dashed lines are braided wires.



1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	− Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: V8 N/A Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
I	PI1–9	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SG	PI1–19	SENSOR GROUND 1: GROUND
O	PI1–27	FUEL PUMP DRIVE SIGNAL (TO REM): PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
O	PI1–34	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SS	PI1–47	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	PI1–48	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
O	PI1–51	COOLING FAN MODULE CONTROL: PWM, 140 Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
O	PI1–61	IGNITION COIL ACTIVATE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–62	IGNITION COIL ACTIVATE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–63	IGNITION COIL ACTIVATE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–64	IGNITION COIL ACTIVATE – CYLINDER 8: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–87	IGNITION COIL ACTIVATE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–88	IGNITION COIL ACTIVATE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–89	IGNITION COIL ACTIVATE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–90	IGNITION COIL ACTIVATE – CYLINDER 7: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–112	FUEL INJECTOR DRIVE – CYLINDER 8: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–113	FUEL INJECTOR DRIVE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–114	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–115	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–117	FUEL INJECTOR DRIVE – CYLINDER 7: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–118	FUEL INJECTOR DRIVE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–119	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–120	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–131	IGNITION MONITOR BANK 1: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
I	PI1–132	IGNITION MONITOR BANK 2: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
SG	CR11-12	LOGIC GROUND: GROUND
I	CR11-19	FUEL PUMP (1) DRIVE SIGNAL: PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
SG	CR11-25	LOGIC GROUND: GROUND
SG	CR11-26	LOGIC GROUND: GROUND
B+	CR12-08	IGNITION SWITCHED POWER SUPPLY (II) (FUEL PUMP CONTROL): B+
S	CR13-01	SCP NETWORK +
S	CR13-02	SCP NETWORK –
SG	CR71-15	LOGIC GROUND: GROUND
B+	CR73-01	FUEL PUMP POWER SUPPLY: B+ WHEN FUEL PUMP RELAY ACTIVATED
PG	CR73-02	POWER GROUND (FUEL PUMP): GROUND
O	CR73-03	FUEL PUMP GROUND: GROUND, PWM
O	CR73-04	FUEL PUMP B+: 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. 03.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING PRESSURE SENSOR	EC11	4-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
BRAKE CANCEL SWITCH	CR77	2-WAY / BLACK	TOP OF BRAKE PEDAL
COOLING FAN MODULE AND MOTOR	GC1	2-WAY / GREY	RADIATOR COOLING FAN
	EC20	2-WAY / GREY	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD, PASSENGER SIDE
FUEL INJECTOR 1	PI32	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 2	PI36	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 3	PI33	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 4	PI37	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 5	P34	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 6	PI38	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 7	PI35	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 8	PI39	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL PUMP	FP4	4-WAY / BLACK	FUEL TANK, RH SIDE
FUEL PUMP RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R6
IGNITION CAPACITOR	PI54	2-WAY / BLACK	LH CYLINDER HEAD, REAR
IGNITION MODULE AND COIL 1	PI2	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 2	PI6	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 3	PI3	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 4	PI7	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 5	PI4	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 6	PI8	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 7	PI5	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 8	PI9	4-WAY / BLACK	LH CYLINDER HEAD
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK, RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
STEERING WHEEL SPEED CONTROL SWITCHES	—	—	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC21	2-WAY / BLACK / ENGINE HARNESS TO COOLING FAN MODULE	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP2	6-WAY / GREY / CABIN HARNESS TO FUEL PUMP HARNESS	CABIN / BELOW REAR SEAT CUSHION / RH SIDE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
PI42	8-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION 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.

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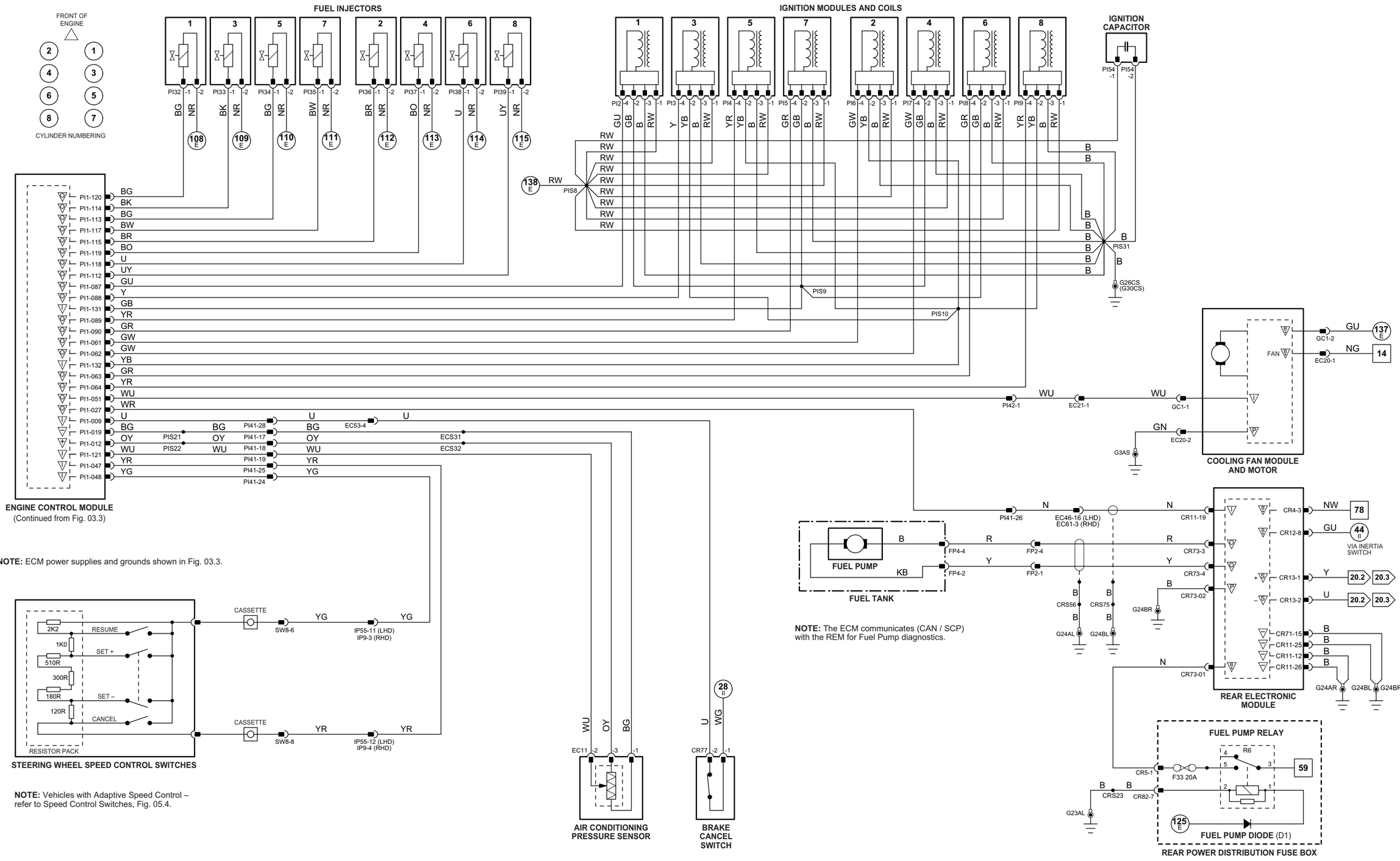


1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 03.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: V8 N/A Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
O	PI1–1	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–2	HO2 SENSOR HEATER CONTROL – 1/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
PG	PI1–4	POWER GROUND 1: GROUND
PG	PI1–5	POWER GROUND 2: GROUND
I	PI1–6	ENGINE CRANK: B+
I	PI1–7	IGNITION ON: B+
I	PI1–8	BRAKE ON / OFF SWITCH: NORMALLY OPEN / B+ WHEN ACTIVATED
I	PI1–10	INERTIA SWITCH: NORMALLY CLOSED / OPEN CIRCUIT WHEN ACTIVATED
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SS	PI1–13	SENSOR POWER SUPPLY 2: NOMINAL 5 V
SG	PI1–17	SMALL SIGNAL GROUND 1: GROUND
SG	PI1–18	SMALL SIGNAL GROUND 2: GROUND
SG	PI1–19	SENSOR GROUND 1: GROUND
SG	PI1–20	SENSOR GROUND 2: GROUND
B+	PI1–22	BATTERY POWER SUPPLY: B+
B+	PI1–23	EMS SWITCHED POWER SUPPLY 1: B+
B+	PI1–24	EMS SWITCHED POWER SUPPLY 2: B+
SG	PI1–29	HO2 SENSOR HEATER GROUND – 1/1: GROUND
SG	PI1–30	HO2 SENSOR HEATER GROUND – 1/1: GROUND
I	PI1–31	PARK / NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PI1–36	CRANKSHAFT SENSOR SIGNAL: PULSED SIGNAL, 70 PULSES PER ENGINE CYCLE
SG	PI1–37	CRANKSHAFT SENSOR SIGNAL GROUND: GROUND
O	PI1–40	EMS CONTROL RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–41	STARTER RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	PI1–43	TP AND APP SIGNALS SHIELD: GROUND
I	PI1–44	MASS AIR FLOW SENSOR SIGNAL: NOMINAL 0 – 5 V BY ENGINE OPERATING CONDITION
SG	PI1–45	MASS AIR FLOW SENSOR GROUND: GROUND
SG	PI1–46	MASS AIR FLOW SENSOR GROUND: GROUND
I	PI1–50	ENGINE FUEL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
O	PI1–52	THROTTLE MOTOR RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–53	GENERATOR CONTROL: VARIABLE VOLTAGE
SG	PI1–54	THROTTLE MOTOR GROUND: GROUND
O	PI1–55	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–56	HO2 SENSOR HEATER CONTROL – 2/1: PWM, 1 CYCLE PER 128 mS, VARIABLE DUTY CYCLE
O	PI1–57	EGR DRIVE 1: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–58	EGR DRIVE 2: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–59	EGR DRIVE 3: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
O	PI1–60	EGR DRIVE 4: B+; EGR DRIVE 1, 2, 3 AND 4 ARE OPERATED IN TURN
I	PI1–65	GENERATOR FIELD RETURN SIGNAL: VARIABLE VOLTAGE BY GENERATOR OPERATING CONDITION
O	PI1–66	EVAP CANISTER PURGE VALVE DRIVE: PWM, 10 Hz, POSITIVE DUTY CYCLE RANGE 7% – 100%
O	PI1–67	EVAP CANISTER CLOSE VALVE DRIVE: TO CLOSE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–68	BANK 2 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–69	BANK 2 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–70	ENGINE COOLANT TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–71	INTAKE AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–73	INJECTION PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: POTENTIOMETER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–75	THROTTLE POSITION SENSOR 1 SIGNAL: IDLE = 0.60 V; FULL THROTTLE = 4.30 V
I	PI1–76	THROTTLE POSITION SENSOR 2 SIGNAL: IDLE = 1.48 V; FULL THROTTLE = 4.40 V
I	PI1–78	ENGINE OIL TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	PI1–79	GENERATOR FAULT; CHARGE WARNING
O	PI1–80	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
SG	PI1–81	HO2 SENSOR HEATER GROUND – 2/1: GROUND
SG	PI1–82	HO2 SENSOR HEATER GROUND – 2/1: GROUND
I	PI1–83	HO2 SENSOR 1/1 SIGNAL: VARIABLE CURRENT
I	PI1–84	HO2 SENSOR 1/1 SIGNAL: CONSTANT CURRENT
SG	PI1–91	HO2 SENSOR HEATERS 1/2, 2/2 GROUND: GROUND
O	PI1–92	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	PI1–93	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	PI1–94	BANK 1 CAMSHAFT SENSOR SIGNAL: PULSED SIGNAL, 4 PULSES PER ENGINE CYCLE
SG	PI1–95	BANK 1 CAMSHAFT SENSOR GROUND: GROUND
I	PI1–98	BANK 1 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
I	PI1–99	BANK 2 KNOCK SENSOR SIGNAL: VARIABLE VOLTAGE DEPENDENT ON ENGINE VIBRATION
SG	PI1–100	SENSOR SHIELD: GROUND
I	PI1–102	ACCELERATOR PEDAL POSITION SENSOR 1 SIGNAL: FOOT OFF = 0.75 V; FULLY DEPRESSED = 3.40 V (AUTO) 3.20 V (MAN)
I	PI1–103	ACCELERATOR PEDAL POSITION SENSOR 2 SIGNAL: FOOT OFF = 3.38 V; FULLY DEPRESSED = 2.05 V (AUTO) 2.14 V (MAN)
I	PI1–104	FUEL TANK PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS PRESSURE INCREASES
D	PI1–105	SERIAL DATA LINK: SERIAL COMMUNICATION
O	PI1–106	THROTTLE MOTOR DRIVE: B+ TO ACTIVATE MOTOR
I	PI1–107	HO2 SENSOR 2/1 SIGNAL: VARIABLE CURRENT
I	PI1–108	HO2 SENSOR 2/1 SIGNAL: CONSTANT CURRENT
O	PI1–109	BANK 1 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
O	PI1–110	BANK 2 VVT SOLENOID VALVE: PWM, 300 Hz, POSITIVE DUTY CYCLE RANGE 0% – 100%
SG	PI1–111	FUEL INJECTORS 2, 3, 5, 8 GROUND: GROUND
SG	PI1–116	FUEL INJECTORS 1, 4, 6, 7 GROUND: GROUND
C	PI1–123	CAN –
C	PI1–124	CAN +
I	PI1–127	MAP SENSOR SIGNAL, NOMINAL 0 – 5 V: VOLTAGE INCREASES AS MANIFOLD ABSOLUTE PRESSURE INCREASES
I	PI1–128	HO2 SENSOR 1/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
I	PI1–129	HO2 SENSOR 2/2 SIGNAL, NOMINAL 1 V SWING: 0.1 – 0.9 V SWING
SG	PI1–130	HO2 SENSORS SHIELD: GROUND
B+	PI1–134	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. 03.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
APP SENSOR	CA88	6-WAY / BLACK	TOP OF ACCELERATOR PEDAL
BRAKE ON / OFF SWITCH	CR78	2-WAY / BLACK	TOP OF BRAKE PEDAL
CKP SENSOR	PI21	2-WAY / BLACK	ENGINE UNDER SIDE, FORWARD OF BELL HOUSING
CMP SENSOR 1	PI23	2-WAY / BLACK	BANK 1 (RH) CAMSHAFT COVER, FRONT
CMP SENSOR 2	PI22	2-WAY / BLACK	BANK 2 (LH) CAMSHAFT COVER, FRONT
ECT SENSOR	PI25	2-WAY / BLACK	ENGINE VEE, COOLANT OUTLET CASTING
EFT SENSOR	PI27	2-WAY / BLACK	FUEL RAIL, RH REAR
EGR VALVE	PI15	6-WAY / BLACK	INTAKE MANIFOLD, REAR
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
EOT SENSOR	PI24	2-WAY / BLACK	ADJACENT TO OIL FILTER
EVAP CANISTER CLOSE VALVE	CA270	2-WAY / BLACK	ABOVE REAR AXLE (FUEL TANK COMPONENTS)
EVAP CANISTER PURGE VALVE	FH111	2-WAY / BLACK	ENGINE COMPARTMENT, LH SIDE, ADJACENT TO SUSPENSION TURRET
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
FTP SENSOR	FP1	3-WAY / BLACK	FUEL TANK PIPING, LH SIDE (UNDER ACCESS PLATE)
HO2 SENSOR DOWNSTREAM 1/2	PI11	4-WAY / BLACK	RH EXHAUST, CATALYST CENTER
HO2 SENSOR DOWNSTREAM 2/2	PI13	4-WAY / BLACK	LH EXHAUST, CATALYST CENTER
HO2 SENSOR UPSTREAM 1/1	PI10	4-WAY / BLACK	RH EXHAUST, TOP OF CATALYST
HO2 SENSOR UPSTREAM 2/1	PI12	4-WAY / BLACK	LH EXHAUST, TOP OF CATALYST
IAT SENSOR 2	PI43	2-WAY / BLACK	INTAKE MANIFOLD, RH SIDE, REAR
IP SENSOR	PI28	3-WAY / BLACK	FUEL RAIL, LH REAR
KNOCK SENSOR 1	PI20	2-WAY / BLACK	ENGINE VEE, BANK 1
KNOCK SENSOR 2	PI19	2-WAY / BLACK	ENGINE VEE, BANK 2
MAF SENSOR	PI14	5-WAY / BLACK	ENGINE AIR INTAKE, ADJACENT TO AIR CLEANER
MAP SENSOR	PI29	4-WAY / BLACK	INTAKE MANIFOLD, REAR, BELOW THROTTLE ASSEMBLY
THROTTLE BODY	—	—	ENGINE AIR INTAKE, REAR
THROTTLE MOTOR	PI18	2-WAY / BLACK	THROTTLE BODY
THROTTLE MOTOR RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R12
TP SENSOR	PI26	4-WAY / BLACK	THROTTLE BODY, THROTTLE SHAFT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CV5	12-WAY / GREY / FUEL PUMP LINK HARNESS TO EVAP CANISTER CLOSE VALVE LINK HARNESS	ABOVE REAR AXLE / CENTER
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER

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

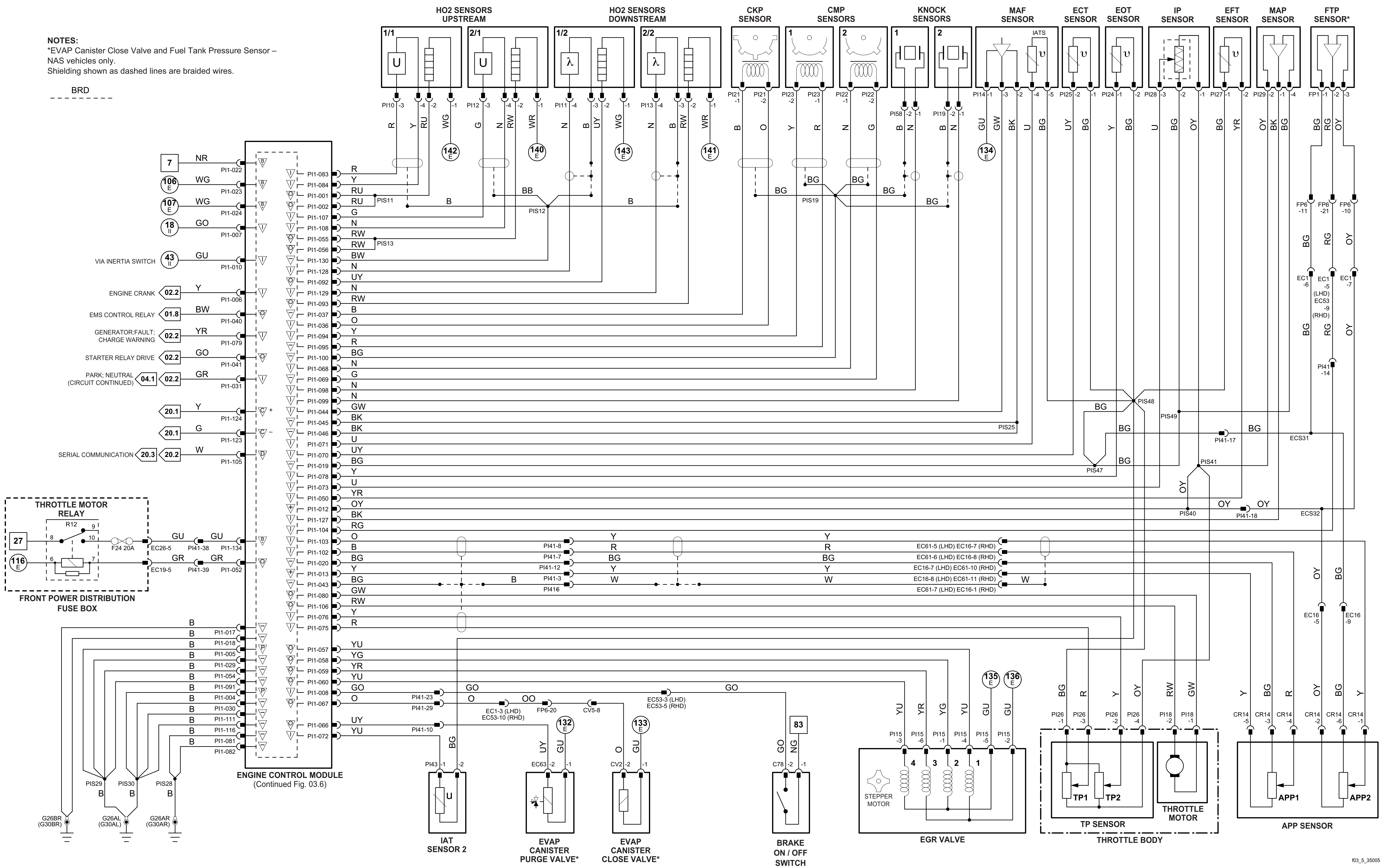
Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, fuses, grounds, control modules and control module pins.

DATE OF ISSUE: September 2004

Engine Management: V8 SC – 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	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP / S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN / D Serial and Encoded Data

VARIANT: V8 SC Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Engine Control Module

	Pin	Description and Characteristic
I	PI1–9	BRAKE CANCEL SWITCH: NORMALLY CLOSED / GROUND WHEN ACTIVATED
I	PI1–11	FUEL PUMP 2 MODULE MONITOR: 1 Hz FREQUENCY; 50% DUTY CYCLE = OK, 25% OR 75% DUTY CYCLE = FAULT
SS	PI1–12	SENSOR POWER SUPPLY 1: NOMINAL 5 V
O	PI1–14	AIR CLEANER SOLENOID VALVE DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SG	PI1–19	SENSOR GROUND 1: GROUND
O	PI1–27	FUEL PUMP DRIVE SIGNAL (TO REM): PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
O	PI1–34	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
SS	PI1–47	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	PI1–48	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
O	PI1–51	COOLING FAN MODULE CONTROL: PWM, 140 Hz, POSITIVE DUTY CYCLE RANGE 7% – 95%
O	PI1–53	FUEL PUMP 2 DRIVE (TO FUEL PUMP 2 MODULE): PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
O	PI1–61	IGNITION COIL ACTIVATE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–62	IGNITION COIL ACTIVATE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–63	IGNITION COIL ACTIVATE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–64	IGNITION COIL ACTIVATE – CYLINDER 8: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–87	IGNITION COIL ACTIVATE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–88	IGNITION COIL ACTIVATE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–89	IGNITION COIL ACTIVATE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–90	IGNITION COIL ACTIVATE – CYLINDER 7: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–112	FUEL INJECTOR DRIVE – CYLINDER 8: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–113	FUEL INJECTOR DRIVE – CYLINDER 5: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–114	FUEL INJECTOR DRIVE – CYLINDER 3: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–115	FUEL INJECTOR DRIVE – CYLINDER 2: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–117	FUEL INJECTOR DRIVE – CYLINDER 7: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–118	FUEL INJECTOR DRIVE – CYLINDER 6: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–119	FUEL INJECTOR DRIVE – CYLINDER 4: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
O	PI1–120	FUEL INJECTOR DRIVE – CYLINDER 1: TO ACTIVATE, ECM SWITCHES CIRCUIT TO GROUND
I	PI1–121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
I	PI1–131	IGNITION MONITOR BANK 1: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
I	PI1–132	IGNITION MONITOR BANK 2: PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
SG	CR11-12	LOGIC GROUND: GROUND
I	CR11-19	FUEL PUMP (1) DRIVE SIGNAL: PWM, 150 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% – 51%
SG	CR11-25	LOGIC GROUND: GROUND
SG	CR11-26	LOGIC GROUND: GROUND
B+	CR12-08	IGNITION SWITCHED POWER SUPPLY (II) (FUEL PUMP CONTROL): B+
S	CR13-01	SCP NETWORK +
S	CR13-02	SCP NETWORK –
SG	CR71-15	LOGIC GROUND: GROUND
B+	CR73-01	FUEL PUMP POWER SUPPLY: B+ WHEN FUEL PUMP RELAY ACTIVATED
PG	CR73-02	POWER GROUND (FUEL PUMP): GROUND
O	CR73-03	FUEL PUMP GROUND: GROUND, PWM
O	CR73-04	FUEL PUMP B+: 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. 03.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CLEANER SOLENOID VALVE	EC37	2-WAY / BLACK	AIR CLEANER HOUSING
AIR CONDITIONING PRESSURE SENSOR	EC11	3-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
BRAKE CANCEL SWITCH	CR77	2-WAY / BLACK	TOP OF BRAKE PEDAL
COOLING FAN MODULE AND MOTOR	GC1	2-WAY / GREY	RADIATOR COOLING FAN
	EC20	2-WAY / GREY	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
FUEL INJECTOR 1 (V8 SC)	IS1	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 2 (V8 SC)	IS7	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 3 (V8 SC)	IS2	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 4 (V8 SC)	IS8	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 5 (V8 SC)	IS3	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 6 (V8 SC)	IS9	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 7 (V8 SC)	IS4	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 8 (V8 SC)	IS10	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL PUMP 1	FP4	4-WAY / BLACK	FUEL TANK, RH SIDE
FUEL PUMP 2	FP3	4-WAY / BLACK	FUEL TANK, LH SIDE
FUEL PUMP 2 MODULE	CR26	11-WAY / BLACK	TRUNK, RH REAR
FUEL PUMP RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R6
IGNITION CAPACITOR	PI54	2-WAY / BLACK	LH CYLINDER HEAD, REAR
IGNITION MODULE AND COIL 1	PI2	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 2	PI6	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 3	PI3	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 4	PI7	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 5	PI4	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 6	PI8	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 7	PI5	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 8	PI9	4-WAY / BLACK	LH CYLINDER HEAD
INTERCOOLER PUMP	CP2	2-WAY / BLACK	ENGINE COMPARTMENT, RH SIDE, ADJACENT TO RADIATOR
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
STEERING WHEEL SPEED CONTROL SWITCHES	—	—	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CP1	10-WAY / BLACK / INTERCOOLER PUMP LINK LEAD	ENGINE COMPARTMENT, RH FRONT, ADJACENT TO RADIATOR
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC21	2-WAY / BLACK / ENGINE HARNESS TO COOLING FAN MODULE	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP2	6-WAY / GREY / CABIN HARNESS TO FUEL PUMP HARNESS	CABIN / BELOW REAR SEAT CUSHION / RH SIDE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IS5	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE, LH REAR
IS6	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE, RH REAR
PI41	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESSES	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE
PI42	8-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE

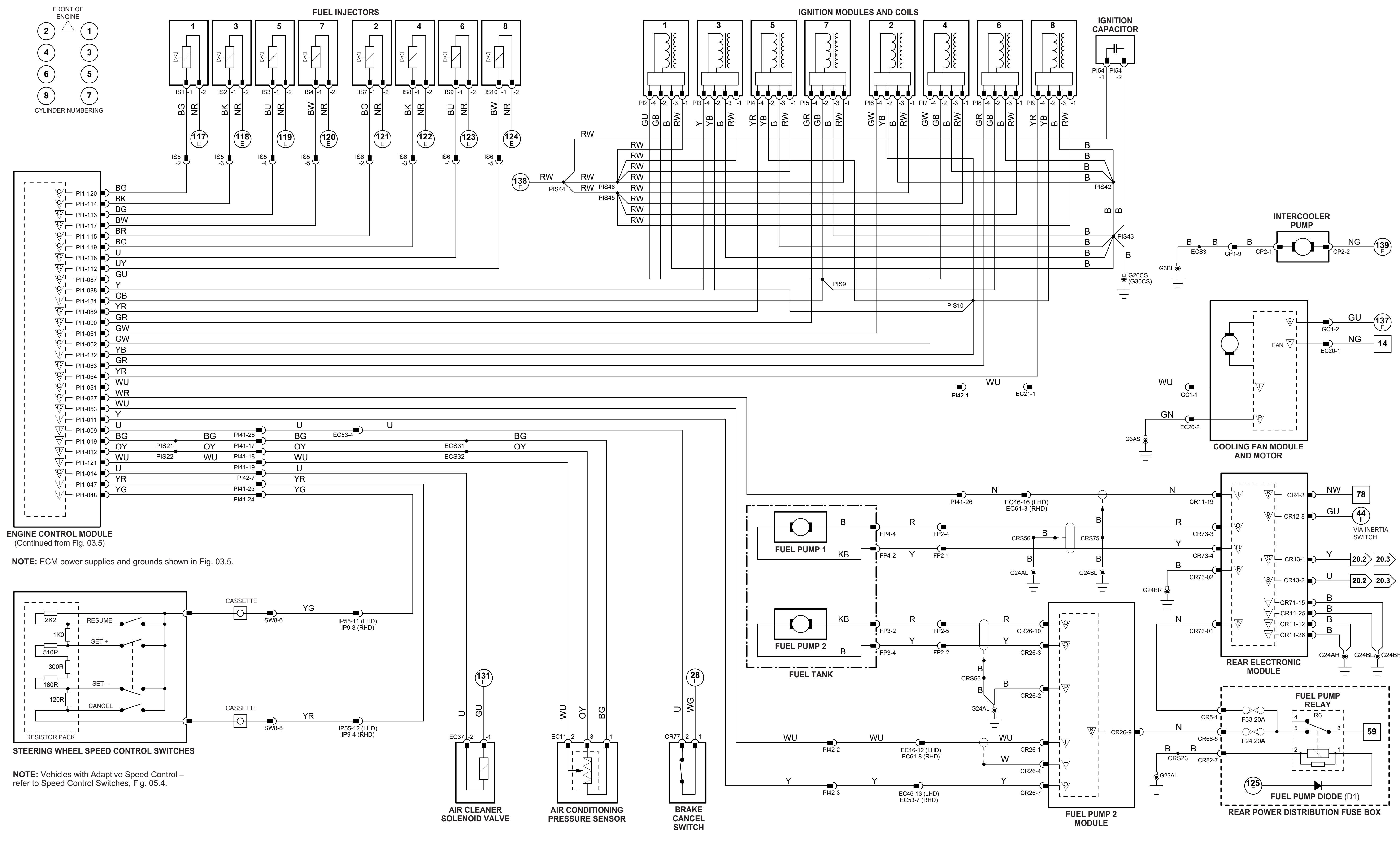
GROUNDS

Ground	Location
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER

FOR CONTROL MODULE PIN-OUT INFORMATION AND GROUNDS, 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: September 2004



1 → 6 Fig. 01.1 | 64 → 95 Fig. 01.3 | 16 → 52 Fig. 01.5 | 78 → 105 Fig. 01.7
7 → 63 Fig. 01.2 | 1 → 15 Fig. 01.4 | 53 → 77 Fig. 01.6 | 106 → 143 Fig. 01.8

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

VARIANT: V8 SC Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Transmission Control Module

	Pin	Description and Characteristic
C	GB2–2	CAN –
C	GB2–6	CAN +
B+	GB2–9	IGNITION SWITCHED POWER SUPPLY (II): B+
O	GB2–10	PARK / NEUTRAL SIGNAL: GROUND WHEN ACTIVATED
PG	GB2–13	POWER GROUND: GROUND
B+	GB2–14	BATTERY POWER SUPPLY: B+
PG	GB2–16	POWER GROUND: GROUND

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

Fig. 04.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN COWLING
J-GATE MODULE	IP32	16-WAY / BLACK	J-GATE ASSEMBLY
TCM CAPACITOR (V6)	GB17	2-WAY / BLACK	ENGINE COMPARTMENT, BULKHEAD
TCM CAPACITOR (V8)	PI59	2-WAY / BLACK	ENGINE COMPARTMENT, BULKHEAD
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE ASSEMBLY

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING

GROUNDS

Ground	Location
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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

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

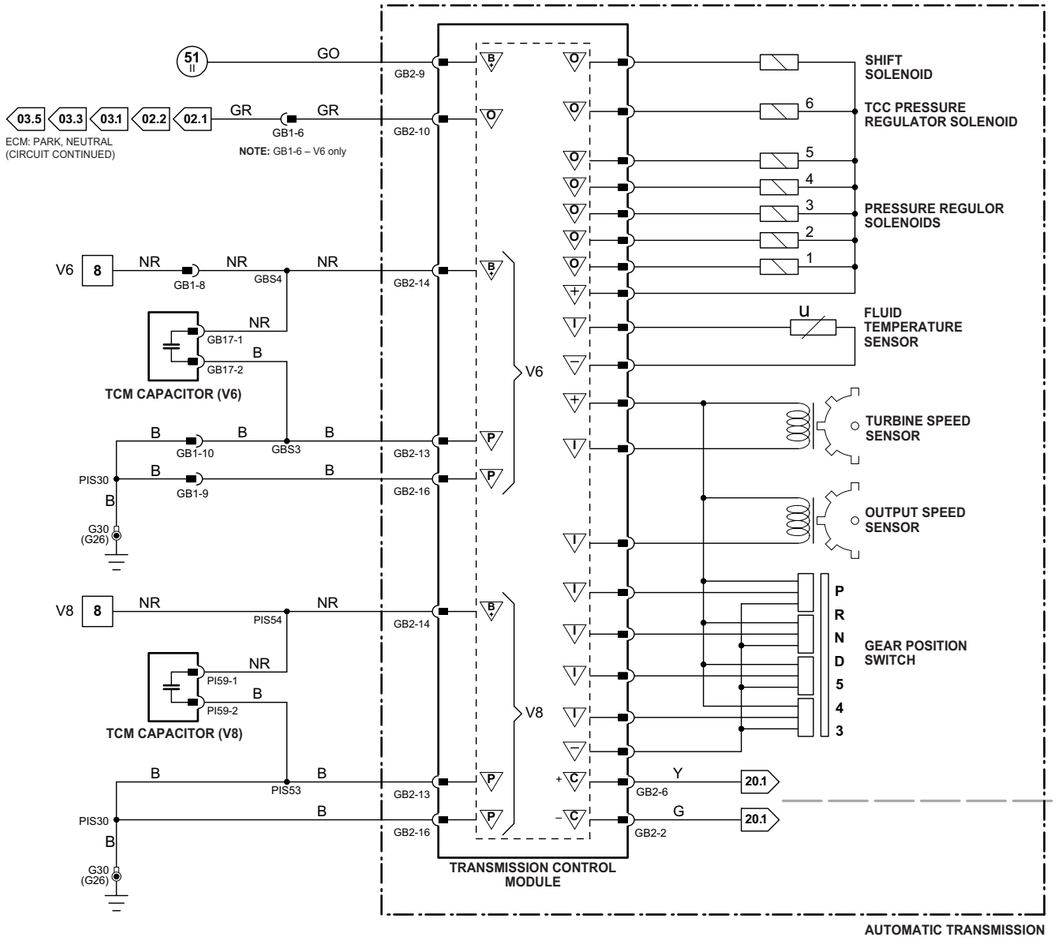
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

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: September 2004



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1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: Automatic Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Dynamic Stability Control Module

	Pin	Description and Characteristic
B+	EC30–1	BATTERY POWER SUPPLY – PUMP: B+
—	EC30–3	STEERING ANGLE SENSOR SIGNAL (A): PULSED SIGNAL
B+	EC30–4	IGNITION SWITCHED POWER SUPPLY (II): B+
SG	EC30–5	SENSOR GROUND – YAW RATE, STEERING ANGLE SENSORS: GROUND
I	EC30–6	STEERING ANGLE SENSOR SIGNAL (B): PULSED SIGNAL
SS	EC30–7	YAW RATE, STEERING ANGLE SENSORS SUPPLY VOLTAGE: B+
SG	EC30–8	BRAKE FLUID LEVEL SENSOR SIGNAL GROUND: GROUND
I	EC30–9	BRAKE FLUID LEVEL SENSOR SIGNAL: BRAKE FLUID LEVEL LOW = GROUND
C	EC30–11	CAN +
C	EC30–12	CAN +
O	EC30–13	VEHICLE SPEED SIGNAL (SLIDING ROOF THRESHOLD): < 62 KM/H (38.5 MPH) = GROUND; > 62 KM/H (38.5 MPH) = B+
C	EC30–14	CAN –
C	EC30–15	CAN –
PG	EC30–16	POWER GROUND – VALVES: GROUND
SS	EC30–17	ACTIVE BRAKE BOOSTER SOLENOID SUPPLY VOLTAGE: NOMINAL 5 V
SS	EC30–18	BRAKE PRESSURE SENSOR SUPPLY VOLTAGE: NOMINAL 5 V
SG	EC30–19	SENSOR GROUND – BRAKE PRESSURE SENSOR: GROUND
I	EC30–20	BRAKE PRESSURE SENSOR SIGNAL, NOMINAL 0.5 – 4.5 V: VOLTAGE INCREASES AS PRESSURE INCREASES
SG	EC30–24	ACTIVE BRAKE BOOSTER TRAVEL SENSOR SIGNAL GROUND: GROUND
C	EC30–25	CAN – (LOCAL)
SS	EC30–26	ACTIVE BRAKE BOOSTER TRAVEL SENSOR SUPPLY VOLTAGE: NOMINAL 5 V
SS	EC30–27	ACTIVE BRAKE BOOSTER FORCE SWITCH NORMALLY OPEN (NOMINAL 5 V): OPEN / CLOSED CIRCUIT
I	EC30–28	ACTIVE BRAKE BOOSTER FORCE SWITCH SIGNAL: GROUND
C	EC30–29	CAN + (LOCAL)
SS	EC30–30	ACTIVE BRAKE BOOSTER FORCE SWITCH NORMALLY CLOSED (NOMINAL 5 V): CLOSED / OPEN CIRCUIT
O	EC30–31	ACTIVE BRAKE BOOSTER SOLENOID DRIVE: GROUND (PWM)
B+	EC30–32	BATTERY POWER SUPPLY – VALVES: B+
SG	EC30–33	RH FRONT WHEEL SPEED SENSOR SIGNAL GROUND: GROUND
I	EC30–34	RH FRONT WHEEL SPEED SENSOR SIGNAL: 46 PULSES PER WHEEL REVOLUTION
I	EC30–36	LH REAR WHEEL SPEED SENSOR SIGNAL: 46 PULSES PER WHEEL REVOLUTION
SG	EC30–37	LH REAR WHEEL SPEED SENSOR SIGNAL GROUND: GROUND
I	EC30–40	ACTIVE BRAKE BOOSTER TRAVEL SENSOR SIGNAL, NOMINAL 0.5 – 4.5 V: VARIABLE VOLTAGE
SG	EC30–42	RH REAR WHEEL SPEED SENSOR SIGNAL GROUND: GROUND
I	EC30–43	RH REAR WHEEL SPEED SENSOR SIGNAL: 46 PULSES PER WHEEL REVOLUTION
I	EC30–45	LH FRONT WHEEL SPEED SENSOR SIGNAL: 46 PULSES PER WHEEL REVOLUTION
SG	EC30–46	LH FRONT WHEEL SPEED SENSOR SIGNAL GROUND: GROUND
PG	EC30–47	POWER GROUND – PUMP: GROUND

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

Fig. 05.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACTIVE BRAKE BOOSTER	—	—	ENGINE COMPARTMENT BULKHEAD, DRIVER SIDE
ACTIVE BRAKE BOOSTER SOLENOID	EC3	6-WAY / BLACK	ENGINE COMPARTMENT, BRAKE BOOSTER
BRAKE FLUID RESERVOIR	EC52	2-WAY / BLACK	BRAKE BOOSTER
BRAKE PRESSURE SENSOR	EC34	3-WAY / BLACK	ENGINE COMPARTMENT, BRAKE BOOSTER
DYNAMIC STABILITY CONTROL MODULE	EC30	47-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
J-GATE MODULE	IP32	16-WAY / BLACK	J-GATE ASSEMBLY
PEDAL FORCE SWITCH	EC3	6-WAY / BLACK	ENGINE COMPARTMENT, BRAKE BOOSTER
PEDAL TRAVEL SENSOR	EC10	3-WAY / BLACK	ENGINE COMPARTMENT, BRAKE BOOSTER
STEERING ANGLE SENSOR	IP37	4-WAY / GREY	STEERING COLUMN
WHEEL SPEED SENSOR – LH FRONT	EC44	2-WAY / BLACK	LH FRONT WHEEL HUB
WHEEL SPEED SENSOR – LH REAR	CV6	2-WAY / BLACK	LH REAR WHEEL HUB
WHEEL SPEED SENSOR – RH FRONT	EC15	2-WAY / BLACK	RH FRONT WHEEL HUB
WHEEL SPEED SENSOR – RH REAR	CV8	2-WAY / BLACK	RH REAR WHEEL HUB
YAW RATE AND LATERAL ACCELERATION SENSORS CLUSTER	IP23	6-WAY / BLACK	CENTER CONSOLE / REARWARD OF J-GATE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CV5	12-WAY / GREY / FUEL PUMP LINK HARNESS TO EVAP CANISTER CLOSE VALVE LINK HARNESS	ABOVE REAR AXLE / CENTER
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST

GROUNDS

Ground	Location
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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

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

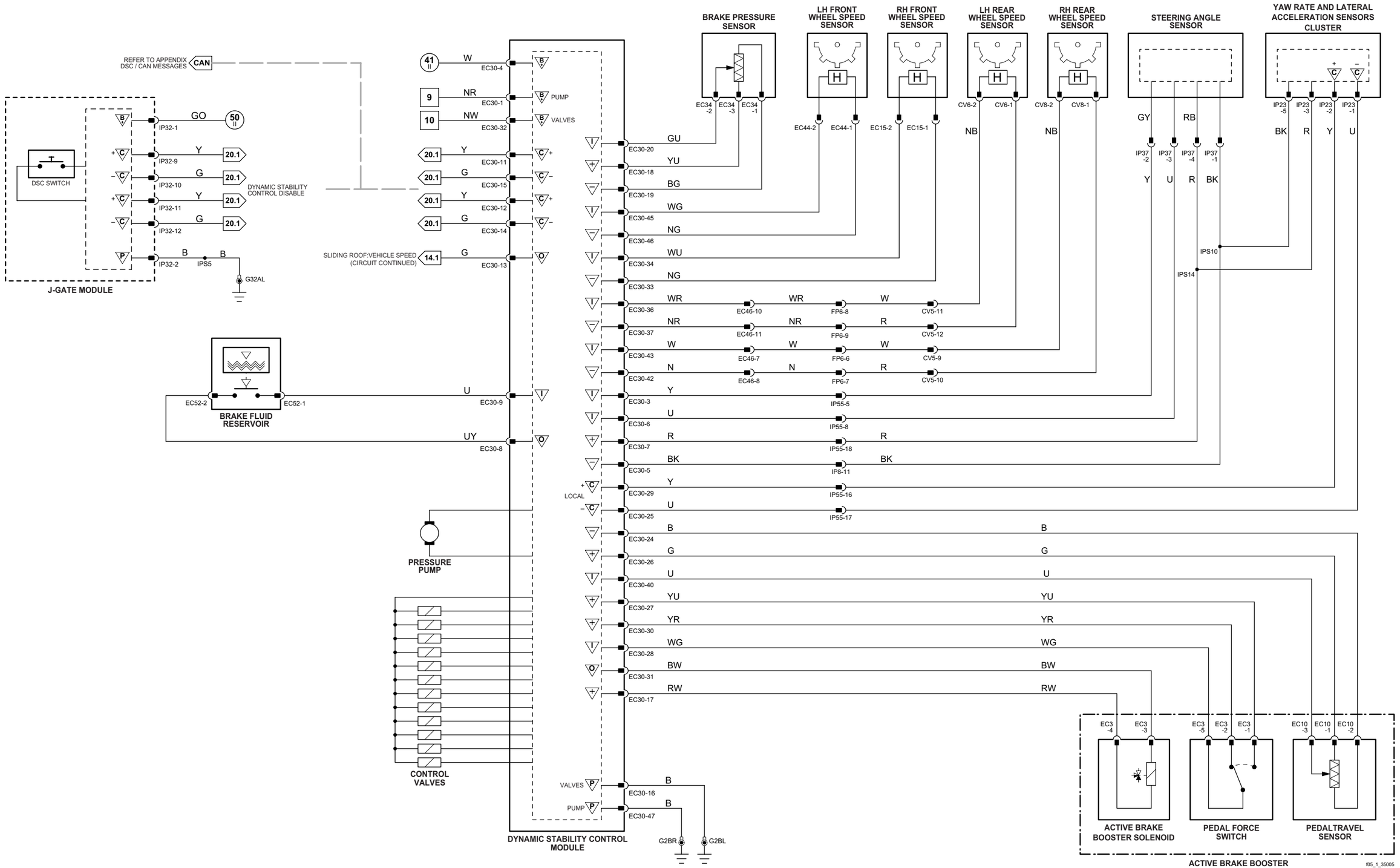
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

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: September 2004



1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Instrument Cluster

	Pin	Description and Characteristic
PG	IP6-02	POWER GROUND: GROUND
S	IP6-10	SCP –
O	IP6-15	VAPS – DRIVE
O	IP6-16	VAPS + DRIVE
B+	IP6-17	IGNITION SWITCHED POWER SUPPLY (VAPS): B+
S	IP6-20	SCP +

Parking Brake Module

	Pin	Description and Characteristic
S	CR32–01	SCP +
I	CR32–04	PARKING BRAKE MOTOR POSITION SENSOR FEEDBACK SIGNAL: VARIABLE VOLTAGE
I	CR32–05	PARKING BRAKE SWITCH – APPLY: CHANGE IN RESISTANCE
I	CR32–06	PARKING BRAKE SWITCH – RELEASE: CHANGE IN RESISTANCE
S	CR32–07	SCP –
SS	CR32–10	SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
SG	CR32–12	SIGNAL GROUND: GROUND
B+	CR50–01	BATTERY POWER SUPPLY: B+
O	CR50–02	PARKING BRAKE MOTOR DISENGAGE: ACTIVATE = B+
O	CR50–03	PARKING BRAKE MOTOR ENGAGE: ACTIVATE = B+
PG	CR50–04	POWER GROUND: GROUND

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

Fig. 05.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
PARKING BRAKE MODULE	CR32	12-WAY / GREY	LUGGAGE COMPARTMENT, RH REAR
	CR50	4-WAY / BLACK	
PARKING BRAKE MOTOR	CV7	6-WAY / BLACK	REAR SUSPENSION SUB FRAME
PARKING BRAKE SWITCH	TL82	8-WAY / BLACK	CENTER CONSOLE / REARWARD OF J-GATE
VARIABLE ASSIST STEERING ACTUATOR	EC33	2-WAY / BLACK	STEERING RACK PINION HOUSING

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CV1	6-WAY / GREY / FUEL PUMP LINK HARNESS TO PARKING BRAKE MOTOR HARNESS	REAR OF FUEL TANK / RH SIDE
FP2	6-WAY / GREY / CABIN HARNESS TO FUEL PUMP HARNESS	CABIN / BELOW REAR SEAT CUSHION / RH SIDE
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
TL28	16-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G18	CABIN / BELOW REAR SEAT / LH SIDE
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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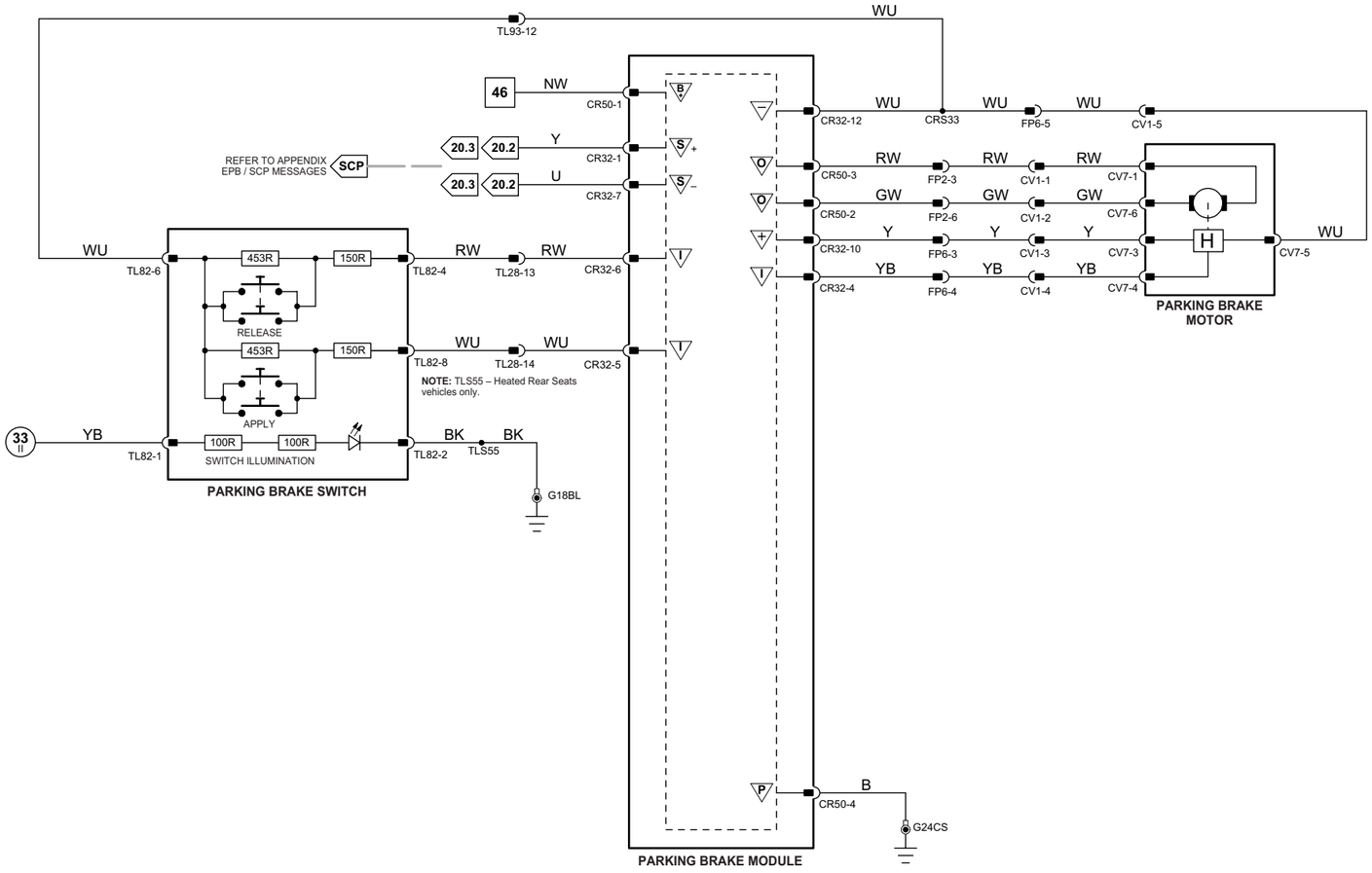
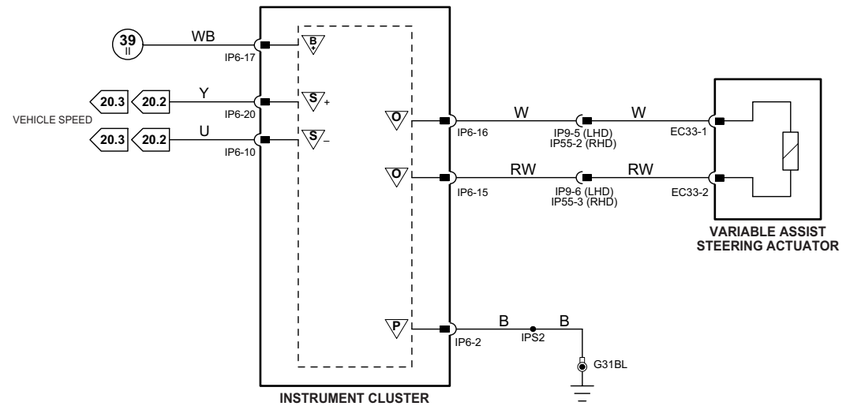


ELECTRONIC PARKING BRAKE



VARIABLE ASSIST POWER STEERING

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1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Dynamic Stability Control Module

	Pin	Description and Characteristic
B+	CR88-01	BATTERY POWER SUPPLY: B+
B+	CR88-02	SWITCHED SYSTEM POWER SUPPLY (WAKE UP): B+
PG	CR88-03	POWER GROUND: GROUND
C	CR88-07	CAN +
C	CR88-08	CAN –
O	CR89-01	LH FRONT DAMPER ACTUATOR DRIVE – : PWM –
O	CR89-02	LH REAR DAMPER ACTUATOR DRIVE – : PWM –
O	CR89-03	HEADLAMP LEVELING SENSOR: PWM
O	CR89-04	LH FRONT DAMPER ACTUATOR DRIVE + : PWM +
O	CR89-05	RH FRONT DAMPER ACTUATOR DRIVE + : PWM +
O	CR89-07	LH REAR DAMPER ACTUATOR DRIVE + : PWM +
O	CR89-08	RH REAR DAMPER ACTUATOR DRIVE + : PWM +
O	CR89-10	RH FRONT DAMPER ACTUATOR DRIVE – : PWM –
O	CR89-11	RH REAR DAMPER ACTUATOR DRIVE – : PWM –
SS	CR90-01	LH FRONT HEIGHT SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
I	CR90-02	LH FRONT HEIGHT SENSOR SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SG	CR90-03	LH FRONT HEIGHT SENSOR SIGNAL GROUND: GROUND
SS	CR90-07	LH REAR HEIGHT SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
I	CR90-08	LH REAR HEIGHT SENSOR SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SG	CR90-09	LH REAR HEIGHT SENSOR SIGNAL GROUND: GROUND
SS	CR90-10	RH REAR HEIGHT SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
I	CR90-11	RH REAR HEIGHT SENSOR SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SG	CR90-12	RH REAR HEIGHT SENSOR SIGNAL GROUND: GROUND
SS	CR90-13	PRESSURE SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
I	CR90-14	PRESSURE SENSOR SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SG	CR90-15	PRESSURE SENSOR SIGNAL GROUND: GROUND
B+	CR91-01	AIR SPRING SOLENOID VALVES POWER SUPPLY: PWM +
O	CR91-02	LH FRONT AIR SPRING SOLENOID VALVE DRIVE: PWM –
O	CR91-03	RH FRONT AIR SPRING SOLENOID VALVE DRIVE: PWM –
O	CR91-05	LH REAR AIR SPRING SOLENOID VALVE DRIVE: PWM –
O	CR91-06	RH REAR AIR SPRING SOLENOID VALVE DRIVE: PWM –
O	CR91-08	RESERVOIR SOLENOID VALVE DRIVE: PWM –
B+	CR91-10	COMPRESSOR VENT VALVE POWER SUPPLY: PWM +
O	CR91-11	COMPRESSOR VENT VALVE DRIVE: PWM –
O	CR91-12	AIR SUSPENSION RELAY ACTIVATE: PWM –
I	CR91-14	REAR VERTICAL ACCELEROMETER SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SS	CR91-16	ACCELEROMETER SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
I	CR91-17	FRONT VERTICAL ACCELEROMETER SIGNAL: VARIABLE VOLTAGE 0 – 5 V
SG	CR91-18	ACCELEROMETER SIGNAL GROUND: GROUND

Instrument Cluster

	Pin	Description and Characteristic
S	IP6–10	SCP –
C	IP6–18	CAN +
C	IP6–19	CAN –
S	IP6–20	SCP +

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
AIR SUSPENSION COMPRESSOR	EC60	2-WAY / BLACK	LH FRONT OF VEHICLE / REARWARD OF FRONT BUMPER BEAM
AIR SUSPENSION MODULE	CR88	9-WAY / BLACK	CABIN REAR BULKHEAD / BEHIND REAR SEAT BACK / RH SIDE
		CR89 12-WAY / BLACK	
		CR90 15-WAY / BLACK	
		CR91 18-WAY / BLACK	
AIR SUSPENSION PRESSURE SENSOR	CR92	3-WAY / BLACK	TRUNK / UNDER SPARE WHEEL / AIR SUSPENSION VALVE BLOCK
AIR SUSPENSION RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R1
AIR SUSPENSION VALVE BLOCK	CR22	6-WAY / BLACK	TRUNK / UNDER SPARE WHEEL
AIR SUSPENSION VENT SOLENOID	EC62	2-WAY / BLACK	AIR SUSPENSION COMPRESSOR ASSEMBLY
DAMPER ACTUATOR – LH FRONT	EC47	2-WAY / BLACK	LH FRONT DAMPER / TOP
DAMPER ACTUATOR – LH REAR	TL33	2-WAY / BLACK	LH REAR DAMPER / TOP
DAMPER ACTUATOR – RH FRONT	EC12	2-WAY / BLACK	RH FRONT DAMPER / TOP
DAMPER ACTUATOR – RH REAR	CR23	2-WAY / BLACK	RH REAR DAMPER / TOP
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
		EC5 4-WAY / BLACK	
		EC19 8-WAY / BLACK	
		EC22 4-WAY / BLACK	
		EC26 8-WAY / BLACK	
		EC28 12-WAY / BLACK	
		EC32 4-WAY / BLACK	
		EC35 8-WAY / BLACK	
		EC40 8-WAY / BLACK	
		EC41 10-WAY / BLACK	
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
HEIGHT SENSOR – LH FRONT	EC45	6-WAY / BLACK	FRONT SUSPENSION SUB FRAME / LH SIDE
HEIGHT SENSOR – LH REAR	CV3	6-WAY / BLACK	REAR SUSPENSION SUB FRAME / LH SIDE
HEIGHT SENSOR – RH REAR	CV4	6-WAY / BLACK	REAR SUSPENSION SUB FRAME / RH SIDE
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
VERTICAL ACCELEROMETER – FRONT	EC13	3-WAY / GREY	RH FRONT WHEEL ARCH
VERTICAL ACCELEROMETER – REAR	TL34	3-WAY / GREY	TRUNK / RH SIDE / FORWARD OF CONTROL MODULES

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CV5	12-WAY / GREY / FUEL PUMP LINK HARNESS TO EVAP CANISTER CLOSE VALVE LINK HARNESS	ABOVE REAR AXLE / CENTER
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G17	CABIN / BELOW REAR SEAT / 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.

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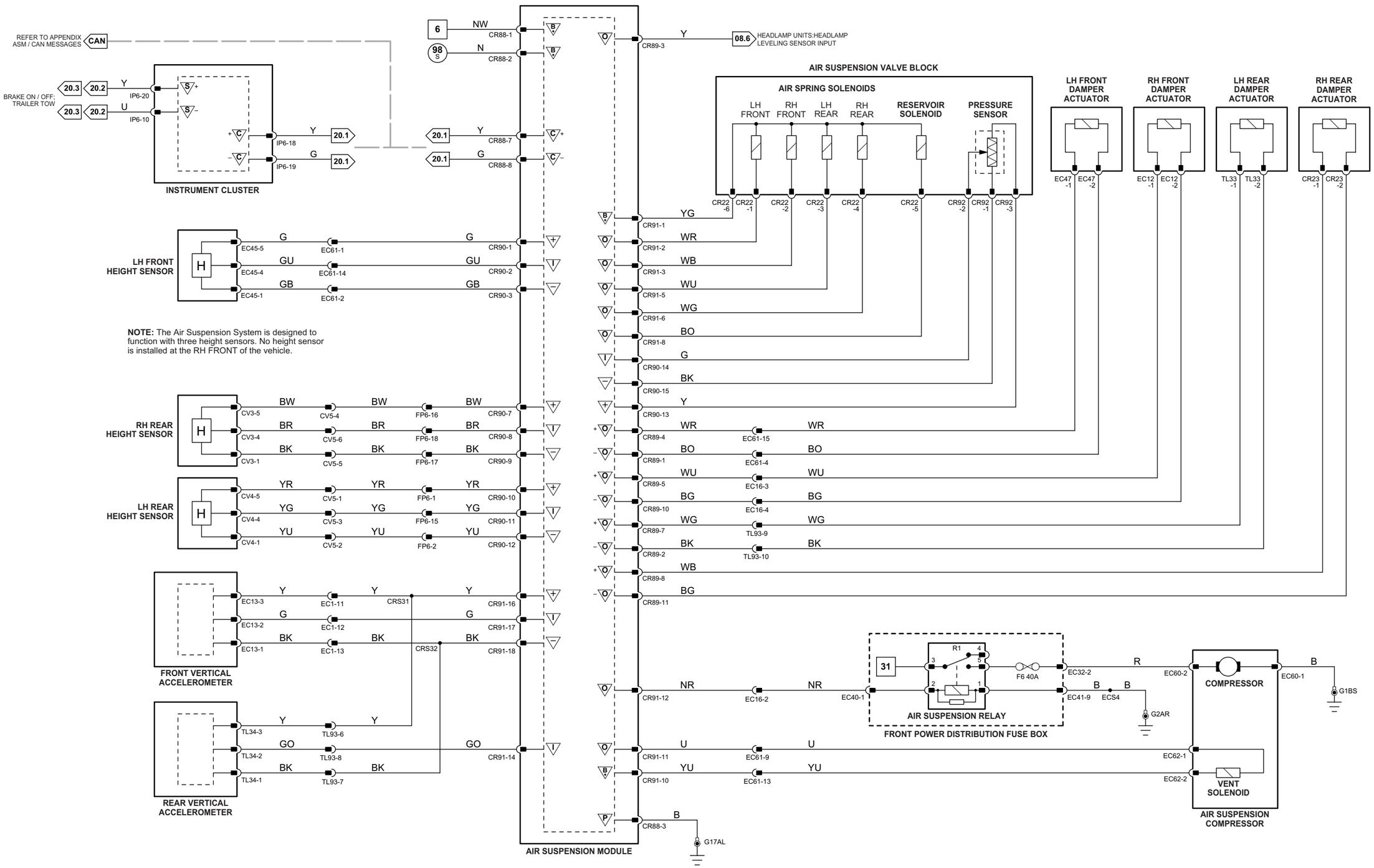

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I Input
O Output
B Battery Voltage
P Power Ground
+ Sensor/Signal Supply V
– Sensor/Signal Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Dynamic Stability Control Module

	Pin	Description and Characteristic
C	EC30–11	CAN +
C	EC30–12	CAN +
C	EC30–14	CAN –
C	EC30–15	CAN –

Engine Control Module

	Pin	Description and Characteristic
SS	PI1-047	SPEED CONTROL SWITCH REQUEST: STEPPED RESISTANCE
I	PI1-048	SPEED CONTROL SWITCHES SIGNAL GROUND: GROUND
C	PI1-123	CAN –
C	PI1-124	CAN +

Instrument Cluster

	Pin	Description and Characteristic
C	IP6–08	CAN +
C	IP6–09	CAN –
C	IP6–18	CAN +
C	IP6–19	CAN –

Speed Control Module

	Pin	Description and Characteristic
C	IP78–02	CAN – (LOCAL)
C	IP78–03	CAN + (LOCAL)
O	IP78–05	FORWARD ALERT INDICATOR DRIVE
O	IP78–06	CHIME MODULE DRIVE: CHIME ACTIVATE
C	IP78–08	CAN –
C	IP78–09	CAN +
PG	IP78–12	POWER GROUND: GROUND
B+	IP78–14	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	IP78–15	SWITCHED SYSTEM POWER SUPPLY: B+
I	IP78–20	FORWARD ALERT SWITCH

Transmission Control Module

	Pin	Description and Characteristic
C	GB2–02	CAN –
C	GB2–06	CAN +

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

Fig. 05.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
DYNAMIC STABILITY CONTROL MODULE	EC30	47-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD, PASSENGER SIDE
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	GREY INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
SPEED CONTROL MODULE	IP78	30-WAY / YELLOW	INSTRUMENT PANEL, DRIVER SIDE
SPEED CONTROL SENSOR	EC23	5-WAY / BLACK	BELOW LH FRONT BUMPER
STEERING WHEEL SPEED CONTROL SWITCHES	—	—	STEERING WHEEL
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE ASSEMBLY

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G31	CABIN / BEHIND PASSENGER AIR BAG

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

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

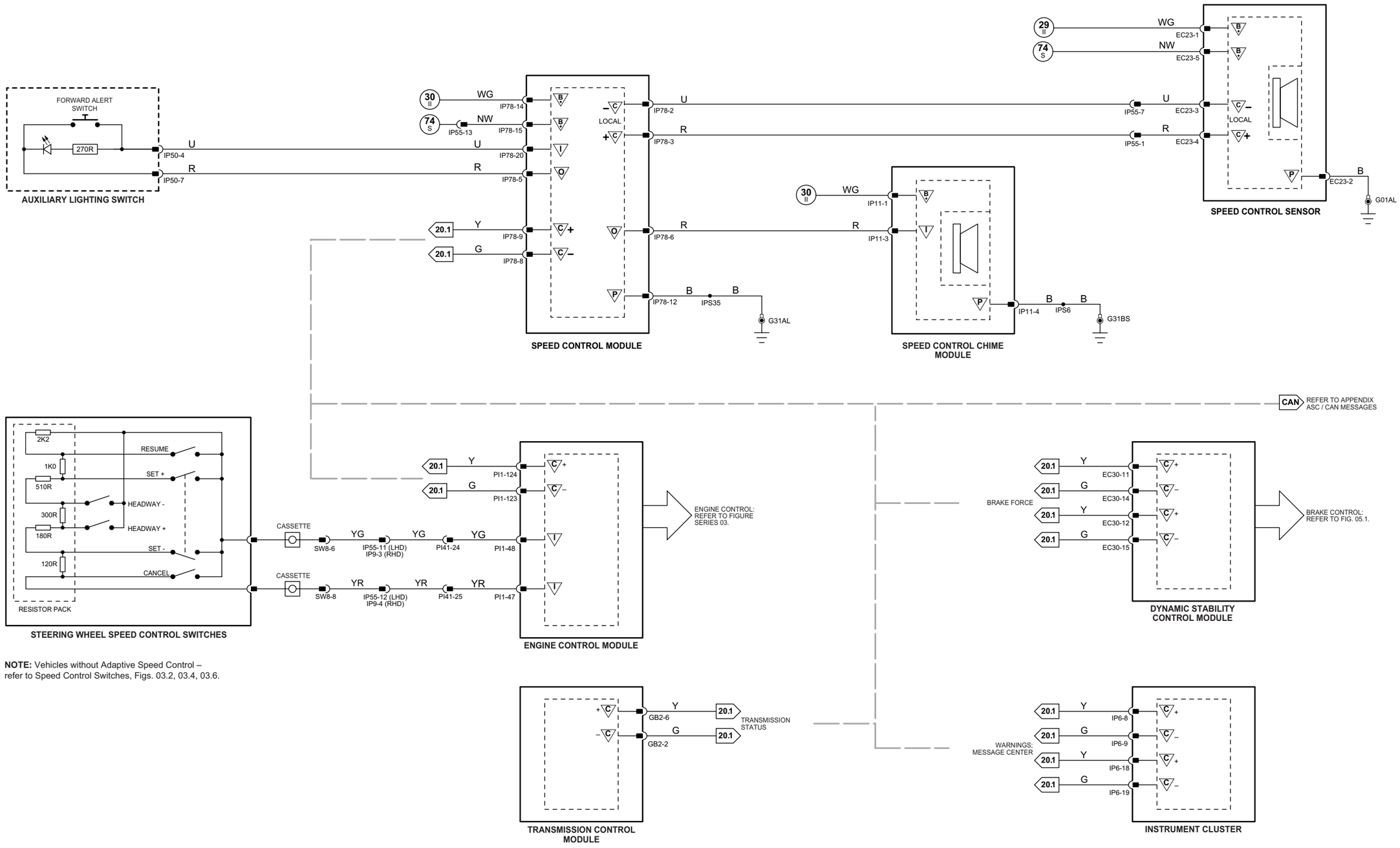
I	**Input**	**PG**	**Power Ground**	**C**	**CAN Network**	**D**	**Serial and Encoded Data**
O	**Output**	**SS**	**Sensor / Signal Supply V**	**S**	**SCP Network**	**V**	**Voltage (DC)**
B+	**Battery Voltage**	**SG**	**Sensor / Signal Ground**	**D2**	**D2B Network**	**PWM**	**Pulse Width Modulated**

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: September 2004



NOTE: Vehicles without Adaptive Speed Control – refer to Speed Control Switches, Figs. 03.2, 03.4, 03.6.

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Climate Control Module

	Pin	Description and Characteristic
I	AC100-01	IN-CAR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC100-02	EVAPORATOR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC100-03	DUAL SOLAR SENSOR SIGNAL – LH: VOLTAGE DECREASES A LIGHT INCREASES
I	AC100-04	DUAL SOLAR SENSOR SIGNAL – RH: VOLTAGE DECREASES A LIGHT INCREASES
I	AC100-05	RH AIR MIX SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	AC100-06	RH MODE SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	AC100-07	RH COOL AIR BYPASS / DEFROST SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
SS	AC100-08	SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
O	AC100-09	PANEL ILLUMINATION: SIGNAL FROM RCCM TO PANEL FOR ILLUMINATION REQUIREMENTS
I	AC100-10	LH OUTLET AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC100-11	RH OUTLET AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	AC100-12	AIR INTAKE SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	AC100-13	LH AIR MIX SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	AC100-14	LH MODE SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	AC100-15	LH COOL AIR BYPASS / DEFROST SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
SG	AC100-16	SENSOR SIGNAL GROUND: GROUND
O	AC101-02	PANEL COMMUNICATION CLOCK: SYNCHRONIZATION PULSES: 1 KHZ, 50% DUTY
D	AC101-03	PANEL COMMUNICATION SWITCH DATA: INDICATES SWITCH BEING PRESSED
I	AC101-04	PANEL COMMUNICATION BLANK: INDICATES TO CCM TO MAKE PANEL BLANK DURING CRANK
I	AC101-06	PANEL BUZZER: INDICATES TO CCM TO MAKE AUDIO BEEP
O	AC101-07	RH AIR MIX SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-08	LH AIR MIX SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-09	AIR INTAKE SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-10	RH MODE SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-11	LH MODE SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-12	RH COOL AIR BYPASS / DEFROST SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-13	LH COOL AIR BYPASS / DEFROST SERVO DRIVE – : B+ WHEN ACTIVATED
I	AC101-14	HUMIDITY SENSOR SIGNAL: 0.7 VOLTS = 10% HUMIDITY (DRY); 2.5 VOLTS = 60% HUMIDITY (TYPICAL); 3.0 VOLTS = 90% HUMIDITY (DAMP)
D	AC101-16	PANEL COMMUNICATION DATA: INDICATES TO PANEL WHICH LCD SEGMENTS OR LEDS ARE TO BE ILLUMINATED
O	AC101-17	PANEL COMMUNICATION STX: SYNCHRONIZATION PULSES: 30 HZ, 3% DUTY
SG	AC101-18	PANEL SHIELD: GROUND
O	AC101-19	PANEL BACK LIGHTING: CCM INDICATES TO PANEL TO BACKLIGHT LCD
O	AC101-20	RH AIR MIX SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-21	LH AIR MIX SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-22	AIR INTAKE SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-23	RH MODE SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-24	LH MODE SERVO DRIVE – : B+ WHEN ACTIVATED
O	AC101-25	RH COOL AIR BYPASS / DEFROST SERVO DRIVE + : B+ WHEN ACTIVATED
O	AC101-26	LH COOL AIR BYPASS / DEFROST SERVO DRIVE + : B+ WHEN ACTIVATED
B+	CR119-02	SWITCHED SYSTEM POWER SUPPLY: B+
B+	CR119-03	IGNITION SWITCHED POWER SUPPLY (II): B+
O	CR119-04	COMPRESSOR CLUTCH DRIVE + : B+ WHEN ACTIVATED
O	CR119-05	COMPRESSOR CLUTCH DRIVE – : GROUND WHEN ACTIVATED
C	CR119-06	CAN +
C	CR119-07	CAN –
I	CR119-08	SMOG SENSOR HC SIGNAL: RESISTANCE TO SENSOR GROUND (CR119-18) VARIES WITH HYDROCARBON / CO CONCENTRATION
I	CR119-11	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
C	CR119-16	CAN +
C	CR119-17	CAN –
SG	CR119-18	AMBIENT AIR; SMOG SENSOR SIGNAL GROUND: GROUND
I	CR119-19	AMBIENT AIR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – 5 V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
I	CR119-20	SMOG SENSOR NOX SIGNAL: RESISTANCE TO SENSOR GROUND (CR119-18) VARIES WITH NOX CONCENTRATION
PG	CR119-22	POWER GROUND: GROUND

Engine Control Module

	Pin	Description and Characteristic
SS	PI1-012	SENSOR POWER SUPPLY 1: NOMINAL 5 V
SG	PI1-019	SENSOR GROUND 1: GROUND
I	PI1-121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NOMINAL 0 – 5 V: TRANSDUCER – VOLTAGE INCREASES AS PRESSURE INCREASES
C	PI1-123	CAN –
C	PI1-124	CAN +

Instrument Cluster

	Pin	Description and Characteristic
C	IP6–08	CAN +
C	IP6–09	CAN –
S	IP6–10	SCP –
S	IP6–20	SCP +

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. 06.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	PI49	2-WAY / BLACK	LOWER LH SIDE OF ENGINE
AIR CONDITIONING PRESSURE SENSOR	EC11	3-WAY / BLACK	ADJACENT TO RADIATOR / LH SIDE
AIR INTAKE SERVO	AC103	7-WAY / BLACK	CLIMATE CONTROL UNIT AIR INTAKE
AIR MIX SERVO – LH	AC8	7-WAY / BLACK	CLIMATE CONTROL UNIT / LH SIDE
AIR MIX SERVO – RH	AC9	7-WAY / BLACK	CLIMATE CONTROL UNIT / RH SIDE
AMBIENT TEMPERATURE SENSOR	EC48	2-WAY / BLACK	BEHIND FRONT BUMPER / CENTER RIGHT
CLIMATE CONTROL MODULE	AC100	16-WAY / BLACK	CLIMATE CONTROL UNIT / DRIVER SIDE
	AC101	26-WAY / BLACK	
	CR119	22-WAY / BLACK	
CLIMATE CONTROL PANEL	CC20	12-WAY / BLACK	CENTER CONSOLE
COOL AIR BYPASS / DEFROST SERVO – RH	AC5	7-WAY / BLACK	CLIMATE CONTROL UNIT / RH SIDE
COOL AIR BYPASS / DEFROST SERVO – LH	AC4	7-WAY / BLACK	CLIMATE CONTROL UNIT / LH SIDE
DUAL SOLAR SENSOR	IP45	3-WAY / NATURAL	INSTRUMENT PANEL / FRONT CENTER
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD / PASSENGER SIDE
EVAPORATOR TEMPERATURE SENSOR	AC1	2-WAY / BLACK	CLIMATE CONTROL UNIT / EVAPORATOR
HUMIDITY SENSOR	IP48	4-WAY / NATURAL	CLIMATE CONTROL UNIT / DRIVER SIDE
IN-CAR TEMPERATURE SENSOR	IP48	4-WAY / NATURAL	CLIMATE CONTROL UNIT / DRIVER SIDE
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MODE SERVO – LH	AC6	7-WAY / BLACK	CLIMATE CONTROL UNIT / LH SIDE
MODE SERVO – RH	AC7	7-WAY / BLACK	CLIMATE CONTROL UNIT / RH SIDE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
OUTLET AIR TEMPERATURE SENSOR – LH	AC2	2-WAY / BLACK	CLIMATE CONTROL UNIT / LH OUTLET
OUTLET AIR TEMPERATURE SENSOR – RH	AC3	2-WAY / BLACK	CLIMATE CONTROL UNIT / RH OUTLET
SMOG SENSOR	EC42	6-WAY / GREY	ENGINE COMPARTMENT / FORWARD OF COOLING PACK / CENTER

HARNESS IN-LINE CONNECTORS

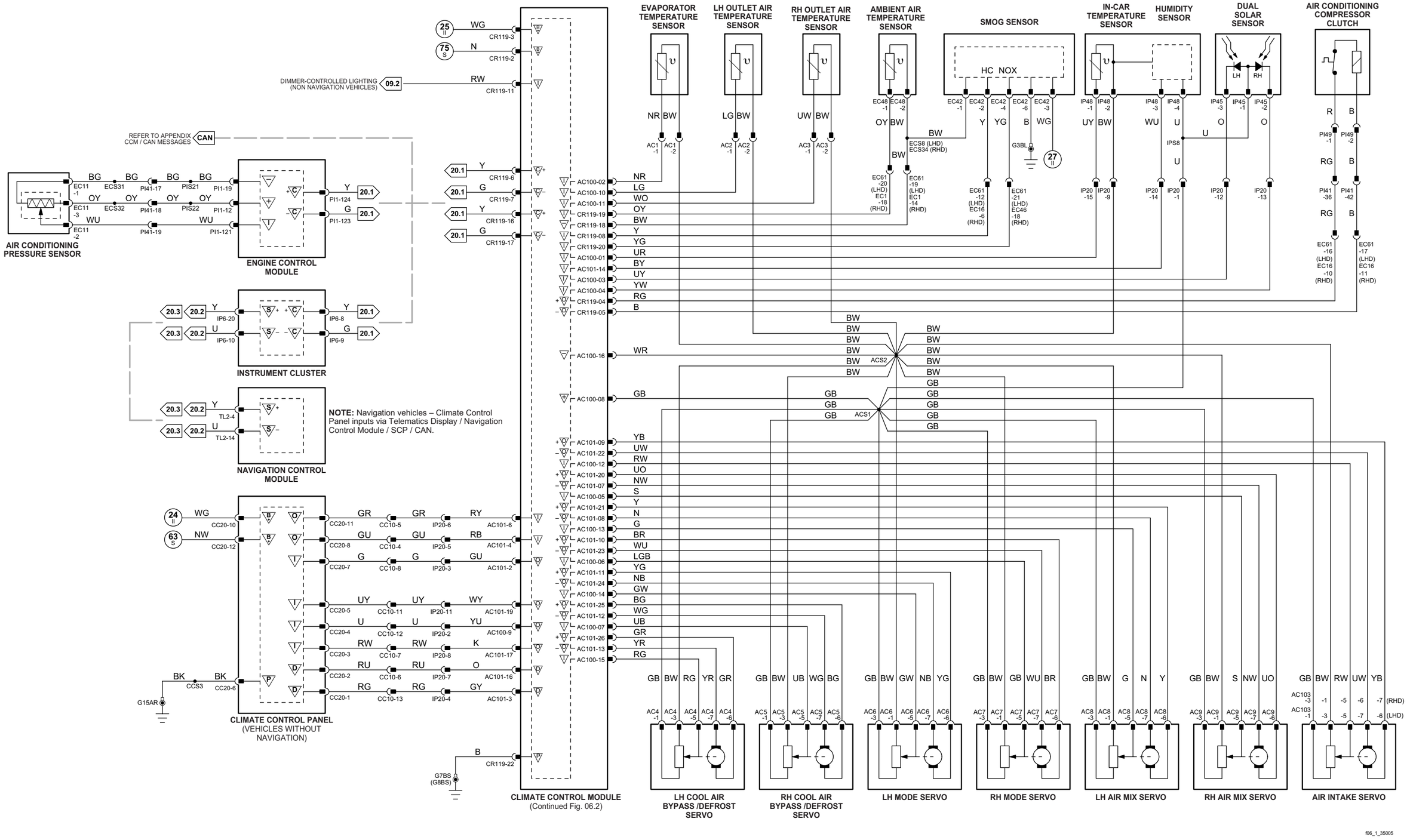
Connector	Connector Description / Location	Location
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC16	12-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
IP20	16-WAY / BLUE / AIR CONDITIONING HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / LH SIDE TO CLIMATE CONTROL UNIT
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G7	CABIN / LH SIDE OF TRANSMISSION TUNNEL
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL

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	64 → 95 Fig. 01.3	16 (II) → 52 (II) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (II) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Climate Control Module

	Pin	Description and Characteristic
O	AC101-01	LOWER MOTOR DRIVE SIGNAL: HIGH BLOWER = HIGH VOLTAGE; LOW BLOWER = LOW VOLTAGE
I	AC101-15	BLOWER MOTOR SPEED SIGNAL: 0 VOLTS WHEN RELAY IS OPEN; WHEN RELAY CLOSED LOWER VOLTAGE INDICATES MORE BLOWER VOLTAGE
O	CR119-09	HEATED WIPER PARK; HEATED WINDSHIELD RELAY(S) ACTIVATE: TO ACTIVATE, CCM SWITCHES CIRCUIT TO GROUND
O	CR119-10	BLOWER RELAY ACTIVATE: TO ACTIVATE, CCM SWITCHES CIRCUIT TO GROUND
O	CR119-21	HEATED REAR WINDOW RELAY ACTIVATE: TO ACTIVATE, CCM 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. 06.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUXILIARY COOLANT PUMP	CP4	2-WAY / BLACK	ENGINE COMPARTMENT / RH SIDE / REARWARD OF COOLING PACK
BLOWER	AC105	2-WAY / BLACK	CLIMATE CONTROL UNIT / BETWEEN AIR INTAKE AND MAIN UNIT
BLOWER CONTROLLER	AC104	4-WAY / BLACK	CLIMATE CONTROL UNIT / BETWEEN AIR INTAKE AND MAIN UNIT / TOP
BLOWER RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R1
CLIMATE CONTROL MODULE	AC100	16-WAY / BLACK	CLIMATE CONTROL UNIT / DRIVER SIDE
	AC101	26-WAY / BLACK	
	CR119	22-WAY / BLACK	
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
HEATED REAR VIEW MIRROR – DRIVER	DD9	22-WAY / BLACK	DRIVER DOOR
HEATED REAR VIEW MIRROR – PASSENGER	PD9	22-WAY / BLACK	PASSENGER DOOR
HEATED REAR WINDOW RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R5
HEATED REAR WINDOW	HW1	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
	HW2	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
HEATED WIPER PARK RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R13
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
WINDSHIELD HEATED WIPER PARK	CR27	1-WAY / BLACK	CABIN / LH UPPER 'A' POST (CONNECTOR LOCATION)
	CR39	1-WAY / BLACK	CABIN / RH UPPER 'A' POST (CONNECTOR LOCATION)
WINDSHIELD HEATER – LH	CR20	1-WAY / BLACK	CABIN / LH UPPER 'A' POST (CONNECTOR LOCATION)
	CR27	1-WAY / BLACK	CABIN / LH UPPER 'A' POST (CONNECTOR LOCATION)
WINDSHIELD HEATER – RH	CR39	1-WAY / BLACK	CABIN / RH UPPER 'A' POST (CONNECTOR LOCATION)
	CR43	1-WAY / BLACK	CABIN / RH UPPER 'A' POST (CONNECTOR LOCATION)
WINDSHIELD HEATER RELAY – LH	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R3
WINDSHIELD HEATER RELAY – RH	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R13

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CP1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INTERCOOLER COOLANT PUMP HARNESS	ENGINE COMPARTMENT / ADJACENT TO RADIATOR RH SIDE
CR24	2-WAY / BLACK / CABIN HARNESS TO HEATED REAR WINDOW HARNESS	CABIN / BEHIND REAR SEAT BACK / LH SIDE
CR25	2-WAY / NATURAL / CABIN HARNESS TO AIR CONDITIONING HARNESS	CABIN / ADJACENT TO BLOWER MOTOR
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC2	2-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC54	2-WAY / GREY / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST

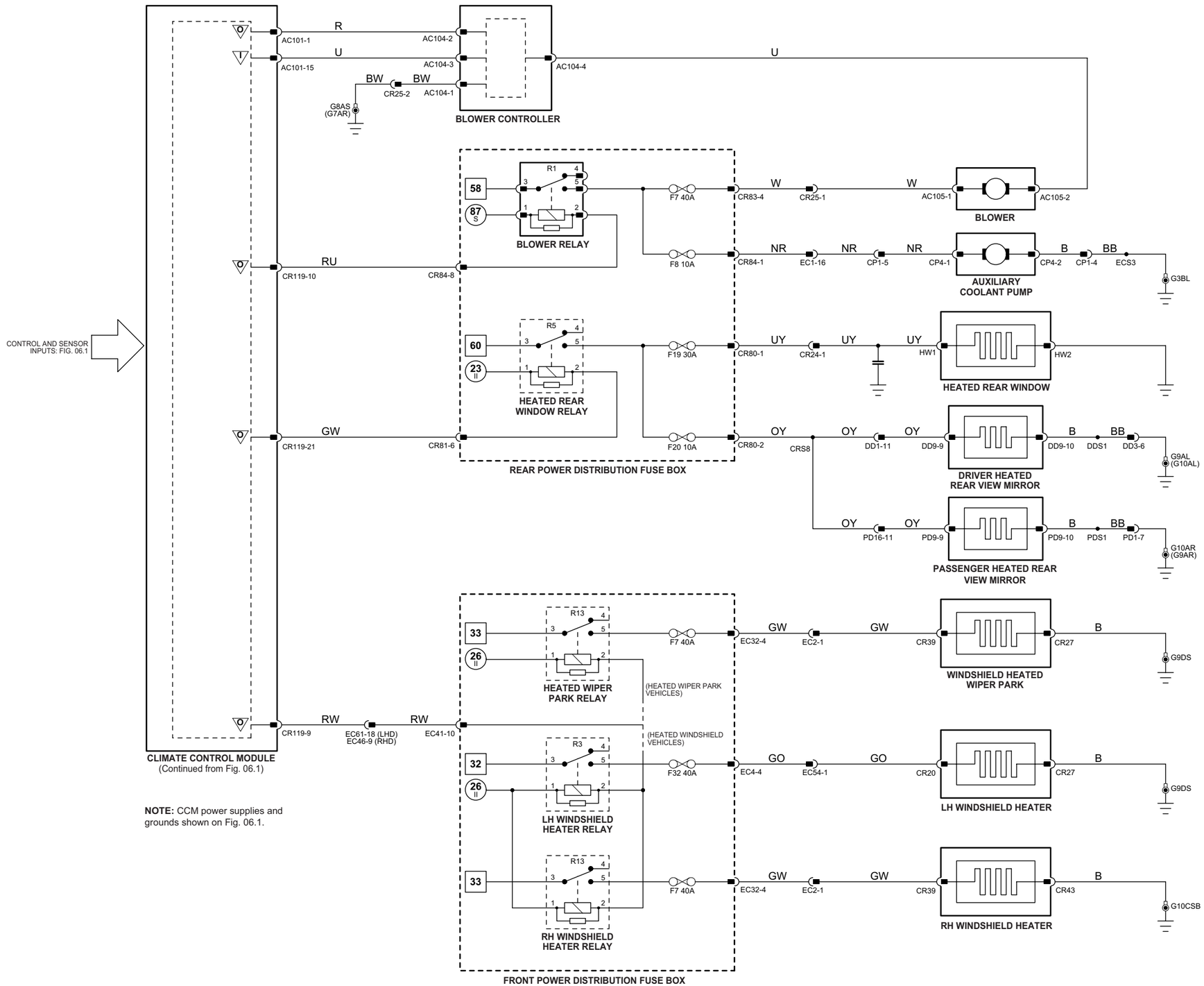
GROUNDS

Ground	Location
G3	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G7	CABIN / LH SIDE OF TRANSMISSION TUNNEL
G8	CABIN / ABOVE RH SIDE OF TRANSMISSION TUNNEL
G9	CABIN / UPPER LH A POST
G10	CABIN / RH A POST

NOTE: 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: September 2004



1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (E) Fig. 01.4
16 (E) → 52 (E) Fig. 01.5
53 (S) → 77 (S) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Rear Climate Control Module

	Pin	Description and Characteristic
I	RAI-01	REAR MODE SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	RAI-02	LH REAR AIR MIX SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
I	RAI-03	RH REAR AIR MIX SERVO POSITION SENSOR SIGNAL, NOMINAL 0 – 5 V: CLOSED DIRECTION = LOWER VOLTAGE; OPEN DIRECTION = HIGHER VOLTAGE
O	RAI-06	MAGNETIC VALVE OUTPUT SIGNAL
C	RAI-08	CAN +
I	RAI-09	REAR EVAPORATOR TEMPERATURE SENSOR SIGNAL, NOMINAL 0 – V: NTC SENSOR – VOLTAGE DECREASES AS TEMPERATURE INCREASES
SS	RAI-11	SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V
SG	RAI-12	SENSOR SIGNAL GROUND: GROUND
I	RAI-13	BLOWER MOTOR SPEED SIGNAL: HIGH BLOWER = HIGH VOLTAGE; LOW BLOWER = LOW VOLTAGE
O	RAI-14	BLOWER MOTOR DRIVE SIGNAL: 0 VOLTS WHEN RELAY IS OPEN; WHEN RELAY CLOSED, LOWER VOLTAGE INDICATES MORE BLOWER VOLTAGE
C	RAI-16	CAN –
PG	RA2-01	POWER GROUND: GROUND
I	RA2-03	DIMMER CONTROLLED LIGHTING: B+ PWM
O	RA2-04	REAR MODE SERVO DRIVE + : B+ WHEN ACTIVATED
O	RA2-05	REAR MODE SERVO DRIVE – : B+ WHEN ACTIVATED
O	RA2-06	LH REAR AIR MIX SERVO DRIVE + : B+ WHEN ACTIVATED
B+	RA2-07	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	RA2-08	SWITCHED SYSTEM POWER SUPPLY: B+
O	RA2-10	RH REAR AIR MIX SERVO DRIVE – : B+ WHEN ACTIVATED
O	RA2-11	RH REAR AIR MIX SERVO DRIVE + : B+ WHEN ACTIVATED
O	RA2-12	LH REAR AIR MIX SERVO DRIVE – : B+ WHEN ACTIVATED

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

Fig. 06.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
MAGNETIC VALVE	RA11	UNKNOWN	REAR CLIMATE CONTROL UNIT
REAR AIR MIX SERVO – LH	RA7	5-WAY / BLACK	REAR CLIMATE CONTROL UNIT / LH SIDE / TOP
REAR AIR MIX SERVO – RH	RA8	5-WAY / BLACK	REAR CLIMATE CONTROL UNIT / RH SIDE / TOP
REAR BLOWER	RA4	2-WAY / BLACK	REAR CLIMATE CONTROL UNIT / FRONT
REAR BLOWER CONTROLLER	RA3	4-WAY / BLACK	REAR CLIMATE CONTROL UNIT / LH SIDE / FRONT
REAR CLIMATE CONTROL MODULE	RA1	16-WAY / BLACK	REAR CENTER CONSOLE
	RA2	12-WAY / BLACK	
REAR EVAPORATOR TEMPERATURE SENSOR	RA10	2-WAY / BLACK	REAR CLIMATE CONTROL UNIT / EVAPORATOR
REAR MODE SERVO	RA9	5-WAY / BLACK	REAR CLIMATE CONTROL UNIT / LH SIDE / BOTTOM

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
IP66	14-WAY / GREY / INSTRUMENT PANEL HARNESS TO REAR AIR CONDITIONING HARNESS	CABIN / BELOW CENTER CONSOLE

GROUNDS

Ground	Location
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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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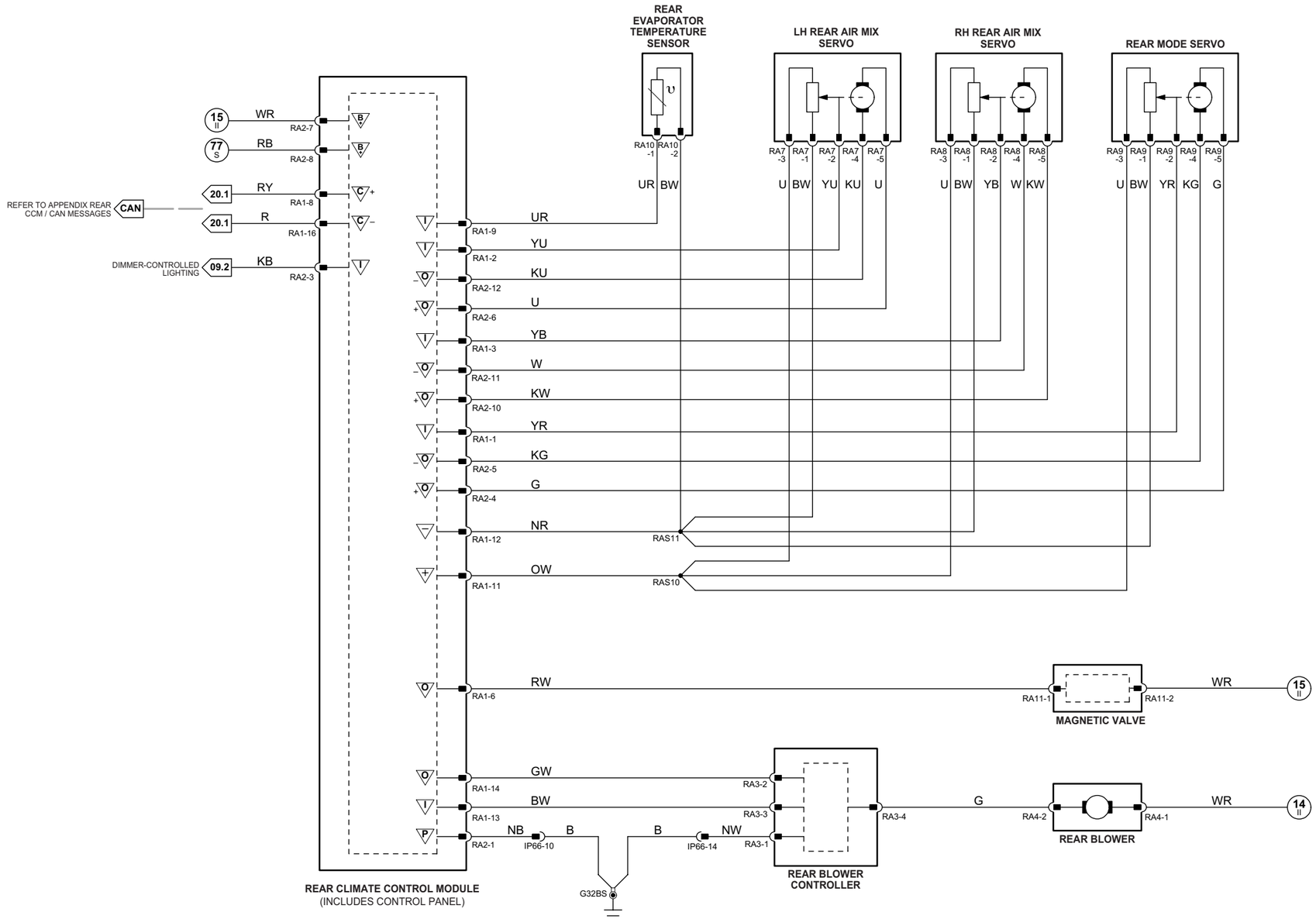

f06_3_35005

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	**VARIANT:** Rear Climate Control Vehicles
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	− Sensor/Signal Ground	C CAN	D Serial and Encoded Data	**VIN RANGE:** All
									DATE OF ISSUE: September 2004

Instrument Cluster

	Pin	Description and Characteristic
I	IP5-01	AIR BAG WARNING: HARD WIRED TO AIR BAG INDICATOR
I	IP5-02	KEY-IN AUDIBLE WARNING: B+ WHEN KEY IN
B+	IP5-03	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	IP5-04	IGNITION SWITCHED POWER SUPPLY (I): B+
I	IP5-05	LOW ENGINE COOLANT LEVEL WARNING: GROUND WHEN COOLANT LEVEL LOW
I	IP5-07	KEY-IN AUDIBLE WARNING (J-GATE): GROUND WHEN NOT-IN-PARK
I	IP5-08	SEAT BELT AUDIBLE WARNING REQUEST: AUDIBLE WARNING REQUEST ACTIVE = GROUND
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
C	IP6–08	CAN +
C	IP6–09	CAN –
S	IP6-10	SCP –
C	IP6–18	CAN +
C	IP6–19	CAN –
S	IP6-20	SCP +
SG	IP7-03	MAIN LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-04	TRIP COMPUTER – MESSAGE CENTER SIGNALS: VARIABLE RESISTANCE
I	IP7-11	ENGINE OIL PRESSURE SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	IP7-14	TRIP CYCLE SWITCH – MESSAGE CENTER SIGNAL: VARIABLE RESISTANCE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
I	CR4-15	RH SIDE FUEL LEVEL SENSOR SIGNAL: VARIABLE RESISTANCE
I	CR4-16	LH SIDE FUEL LEVEL SENSOR SIGNAL: VARIABLE RESISTANCE
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-23	FUEL LEVEL SENSORS SIGNAL GROUND: GROUND
SG	CR11-25	LOGIC GROUND: GROUND
S	CR13-01	SCP +
S	CR13-02	SCP –

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

Fig. 07.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
ENGINE COOLANT LEVEL SWITCH	CP3	2-WAY / BLACK	ENGINE COOLANT EXPANSION TANK / BOTTOM
ENGINE OIL PRESSURE SWITCH	PI46	1-WAY / BLACK	ENGINE BLOCK / ADJACENT TO OIL FILTER
FUEL LEVEL SENSOR – LH (N/A)	FP7	4-WAY / BLACK	FUEL TANK / LH SIDE
FUEL LEVEL SENSOR – LH (SC)	FP3	4-WAY / BLACK	FUEL TANK / LH SIDE
FUEL LEVEL SENSOR – RH	FP4	4-WAY / BLACK	FUEL TANK / RH SIDE
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MAIN LIGHTING SWITCH (COLUMN SWITCHGEAR)	IP26	6-WAY / BLACK	STEERING COLUMN / LH SIDE
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CP1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INTERCOOLER COOLANT PUMP HARNESS	ENGINE COMPARTMENT / ADJACENT TO RADIATOR / RH SIDE
FP6	22-WAY / NATURAL / CABIN HARNESS TO FUEL PUMP HARNESS	TOP OF FUEL TANK / RH SIDE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP17	16-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE

GROUNDS

Ground	Location
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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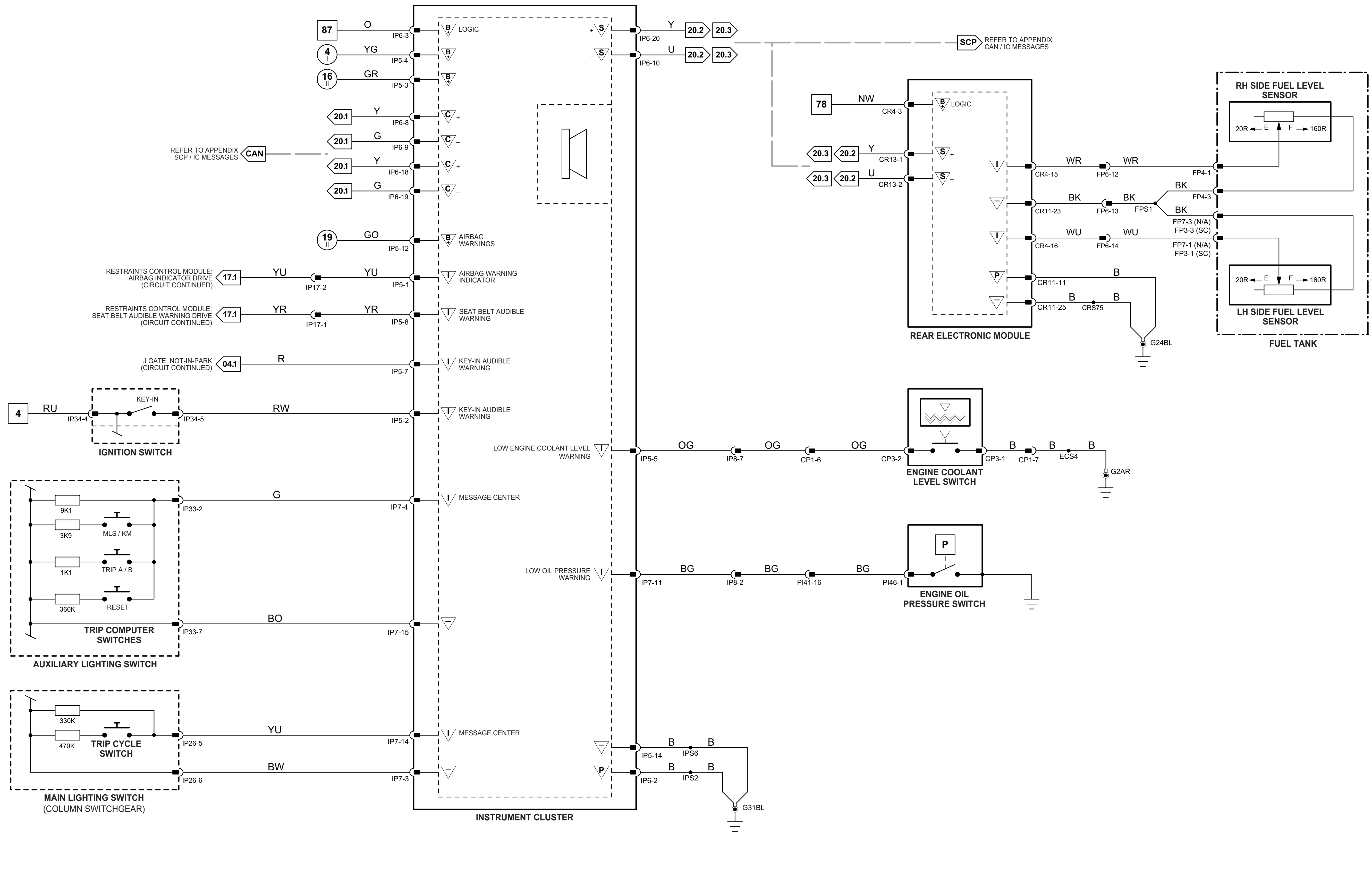

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Front Electronic Module

	Pin	Description and Characteristic
PG	CR1-26	POWER GROUND: GROUND
S	CR9-01	SCP –
B+	CR9-06	BATTERY POWER SUPPLY: LOGIC: B+
S	CR9-07	SCP +
SG	CR9-12	LOGIC GROUND: GROUND
O	CR10-04	LH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	CR10-10	RH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
PG	CR10-11	POWER GROUND: GROUND
PG	CR10-13	POWER GROUND: GROUND
PG	CR10-14	POWER GROUND: GROUND
O	CR10-15	SIDE MARKER LAMPS ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
PG	CR85-02	POWER GROUND: GROUND
O	EC36-07	LH TURN SIGNAL REPEATER ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-13	LH SIDE LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-15	HEADLAMP DIP BEAM RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-18	FRONT FOG LAMP RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-19	RH TURN SIGNAL REPEATER ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-21	HEADLAMP MAIN BEAM RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-22	RH SIDE LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND

Instrument Cluster

	Pin	Description and Characteristic
O	IP5-09	HAZARD INDICATOR: PULSED B+
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
S	IP6-20	SCP +
I	IP7-01	MAIN LIGHTING SWITCH SIGNALS: TURN SIGNALS; HAZARD WARNING: TURN = VARIABLE RESISTANCE; HAZARD = GROUND
I	IP7-02	MAIN LIGHTING SWITCH SIGNALS: EXIT DELAY: VARIABLE RESISTANCE
SG	IP7-03	MAIN LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-06	FOG LAMPS SWITCH SIGNAL: VARIABLE RESISTANCE
I	IP7-12	MAIN LIGHTING SWITCH SIGNALS: MAIN; FLASH: VARIABLE RESISTANCE
I	IP7-13	MAIN LIGHTING SWITCH SIGNALS: OFF; SIDE; DIP; AUTOLAMP: VARIABLE RESISTANCE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-21	AUTOLAMP SENSOR SIGNAL: VARIABLE RESISTANCE

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 LAMP SENSOR	IP36	6-WAY / BLACK	INSTRUMENT PANEL / CENTER FRONT
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
DIP BEAM RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R5
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
FRONT FOG LAMP – LH	BF9	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FRONT FOG LAMP – RH	BF8	2-WAY / BLACK	FRONT BUMPER / RH SIDE
FRONT FOG LAMP RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R6
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
FRONT SIDE MARKER LAMP – LH	BF7	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FRONT SIDE MARKER LAMP – RH	BF6	2-WAY / BLACK	FRONT BUMPER / RH SIDE
HEADLAMP UNIT – LH (NON-HID)	EC57	9-WAY / BLACK	ENGINE COMPARTMENT / LH FRONT
HEADLAMP UNIT – RH (NON-HID)	EC6	9-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MAIN BEAM RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R2
MAIN LIGHTING SWITCH (COLUMN SWITCHGEAR)	IP26	6-WAY / BLACK	STEERING COLUMN / LH SIDE
TURN SIGNAL REPEATER – LH	EC49	2-WAY / BLACK	LH FRONT FENDER
TURN SIGNAL REPEATER – RH	EC31	2-WAY / BLACK	RH FRONT FENDER

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BF1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO FRONT BUMPER HARNESS	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G3	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G9	CABIN / UPPER LH 'A' POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G31	CABIN / BEHIND PASSENGER AIR BAG

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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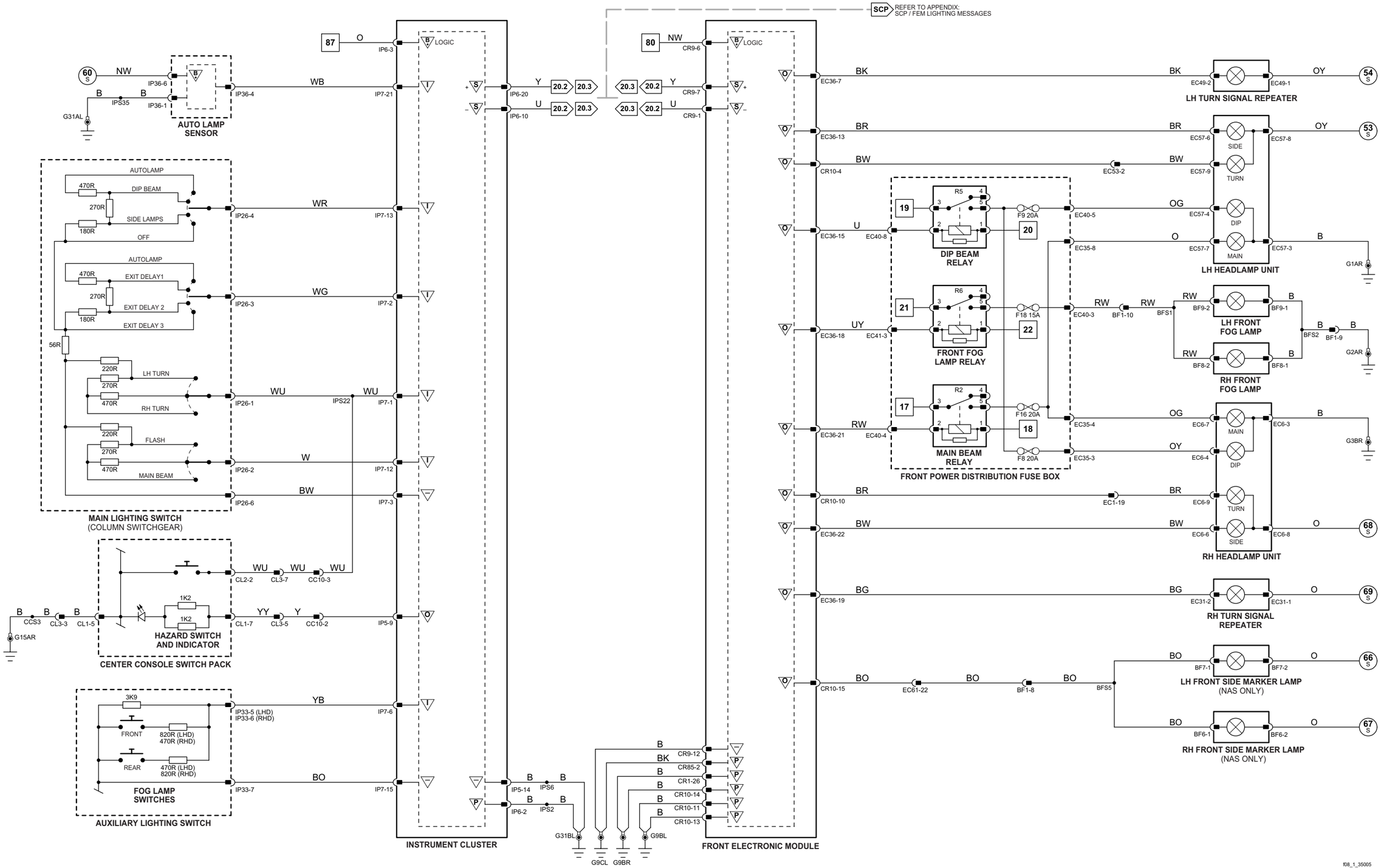

1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 I → 15 I Fig. 01.4
16 E → 52 E Fig. 01.5
53 S → 77 S Fig. 01.6
78 S → 105 S Fig. 01.7
106 E → 143 E Fig. 01.8

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

VARIANT: Non HID Headlamp Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Front Electronic Module

	Pin	Description and Characteristic
PG	CR1-26	POWER GROUND: GROUND
S	CR9-01	SCP –
B+	CR9-06	BATTERY POWER SUPPLY: LOGIC: B+
S	CR9-07	SCP +
SG	CR9-12	LOGIC GROUND: GROUND
O	CR10-04	LH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	CR10-10	RH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
PG	CR10-11	POWER GROUND: GROUND
PG	CR10-13	POWER GROUND: GROUND
PG	CR10-14	POWER GROUND: GROUND
O	CR10-15	SIDE MARKER LAMPS ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
PG	CR85-02	POWER GROUND: GROUND
O	EC36-07	LH TURN SIGNAL REPEATER ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-13	LH SIDE LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-15	HEADLAMP DIP BEAM RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-18	FRONT FOG LAMP RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-19	RH TURN SIGNAL REPEATER ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-21	HEADLAMP MAIN BEAM RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-22	RH SIDE LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND

Instrument Cluster

	Pin	Description and Characteristic
O	IP5-09	HAZARD INDICATOR: PULSED B+
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
S	IP6-20	SCP +
I	IP7-01	MAIN LIGHTING SWITCH SIGNALS: TURN SIGNALS; HAZARD WARNING: TURN = VARIABLE RESISTANCE; HAZARD = GROUND
I	IP7-02	MAIN LIGHTING SWITCH SIGNALS: EXIT DELAY: VARIABLE RESISTANCE
SG	IP7-03	MAIN LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-06	FOG LAMPS SWITCH SIGNAL: VARIABLE RESISTANCE
I	IP7-12	MAIN LIGHTING SWITCH SIGNALS: MAIN; FLASH: VARIABLE RESISTANCE
I	IP7-13	MAIN LIGHTING SWITCH SIGNALS: OFF; SIDE; DIP; AUTOLAMP: VARIABLE RESISTANCE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-21	AUTOLAMP SENSOR SIGNAL: VARIABLE RESISTANCE

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
AUTO LAMP SENSOR	IP36	6-WAY / BLACK	INSTRUMENT PANEL / CENTER FRONT
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
DIP BEAM RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R5
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
FRONT FOG LAMP – LH	BF9	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FRONT FOG LAMP – RH	BF8	2-WAY / BLACK	FRONT BUMPER / RH SIDE
FRONT FOG LAMP RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R6
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
FRONT SIDE MARKER LAMP – LH	BF7	2-WAY / BLACK	FRONT BUMPER / LH SIDE
FRONT SIDE MARKER LAMP – RH	BF6	2-WAY / BLACK	FRONT BUMPER / RH SIDE
HEADLAMP UNIT – LH (HID)	EC57	9-WAY / BLACK	ENGINE COMPARTMENT / LH FRONT
HEADLAMP UNIT – RH (HID)	EC6	9-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
		IP6 20-WAY / BLACK	
		IP7 22-WAY / BLACK	
MAIN BEAM RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R2
MAIN LIGHTING SWITCH (COLUMN SWITCHGEAR)	IP26	6-WAY / BLACK	STEERING COLUMN / LH SIDE
TURN SIGNAL REPEATER – LH	EC49	2-WAY / BLACK	LH FRONT FENDER
TURN SIGNAL REPEATER – RH	EC31	2-WAY / BLACK	RH FRONT FENDER

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BF1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO FRONT BUMPER HARNESS	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
EC61	22-WAY / NATURAL / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / LH UPPER 'A' POST

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G3	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G9	CABIN / UPPER LH 'A' POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G31	CABIN / BEHIND PASSENGER AIR BAG

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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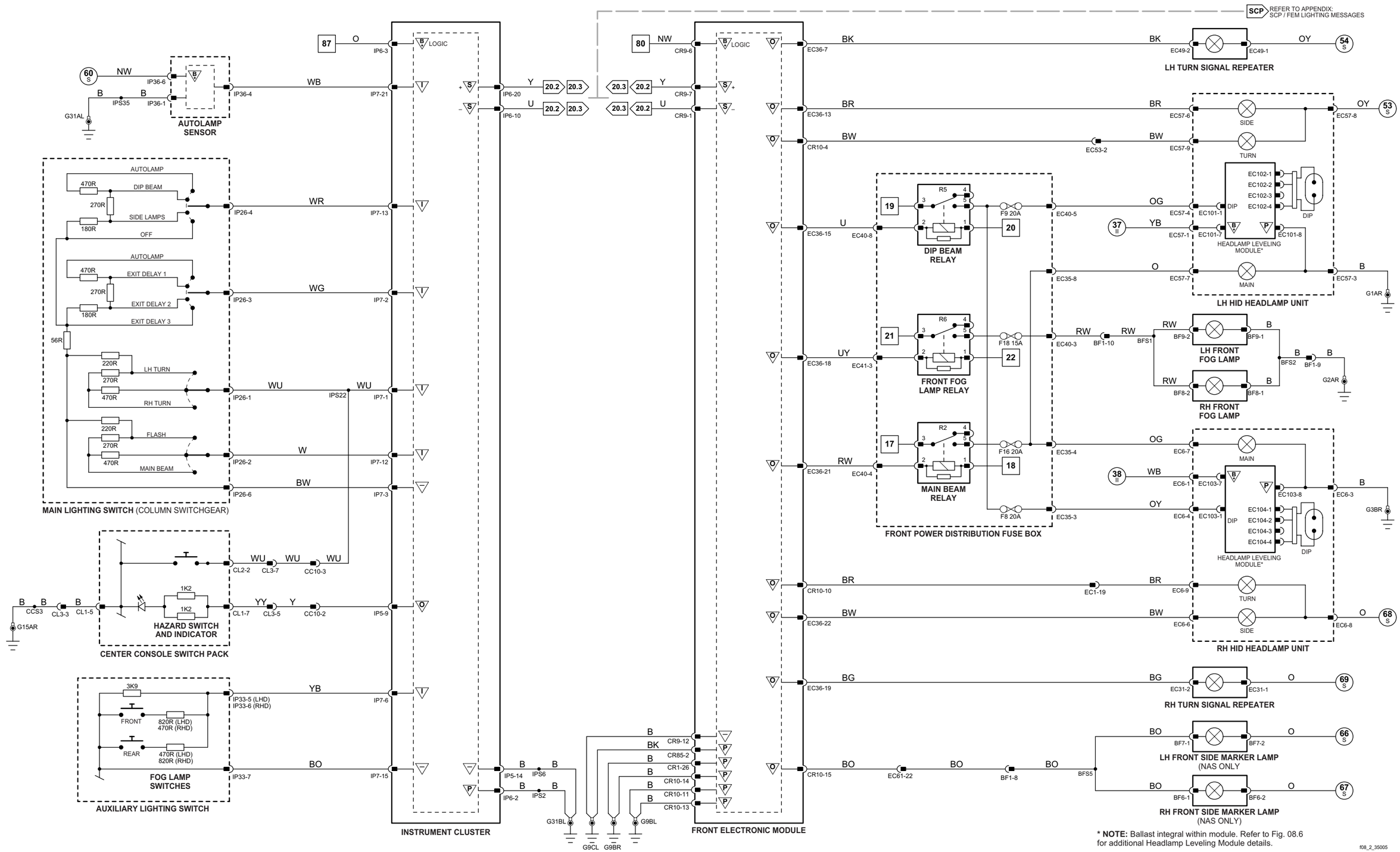

* **NOTE:** Ballast integral within module. Refer to Fig. 08.6 for additional Headlamp Leveling Module details.

f08_2_35005

1 → 6 Fig. 01.1 | 7 → 63 Fig. 01.2 | 64 → 95 Fig. 01.3 | 1 I → 15 II Fig. 01.4 | 16 II → 52 II Fig. 01.5 | 53 S → 77 S Fig. 01.6 | 78 S → 105 S Fig. 01.7 | 106 E → 143 E Fig. 01.8

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

VARIANT: HID Headlamp Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Instrument Cluster

	Pin	Description and Characteristic
O	IP5-09	HAZARD INDICATOR: PULSED B+
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
S	IP6-20	SCP +
I	IP7-01	MAIN LIGHTING SWITCH SIGNALS: TURN SIGNALS; HAZARD WARNING: TURN = VARIABLE RESISTANCE; HAZARD = GROUND
I	IP7-02	MAIN LIGHTING SWITCH SIGNALS: EXIT DELAY: VARIABLE RESISTANCE
SG	IP7-03	MAIN LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-06	FOG LAMPS SWITCH SIGNAL: VARIABLE RESISTANCE
I	IP7-12	MAIN LIGHTING SWITCH SIGNALS: MAIN; FLASH: VARIABLE RESISTANCE
I	IP7-13	MAIN LIGHTING SWITCH SIGNALS: OFF; SIDE; DIP; AUTOLAMP: VARIABLE RESISTANCE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND
I	IP7-21	AUTOLAMP SENSOR SIGNAL: VARIABLE RESISTANCE

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-12	LOGIC GROUND: GROUND
SG	CR11-25	LOGIC GROUND: GROUND
SG	CR11-26	LOGIC GROUND: GROUND
O	CR12-05	LICENSE PLATE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR12-06	LH REAR SIDE MARKER LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR12-12	RH REAR SIDE MARKER LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
S	CR13-01	SCP +
S	CR13-02	SCP –
I	CR13-13	BRAKE ON / OFF SWITCH SIGNAL: B+ WHEN ACTIVATED
O	CR71-03	LH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-04	RH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-05	RH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-06	LH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-09	REVERSE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-10	REAR FOG LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-11	RH STOP LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-12	LH STOP LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
SG	CR71-15	LOGIC GROUND: GROUND
PG	CR73-02	POWER GROUND (FUEL PUMP): 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
AUTO LAMP SENSOR	IP36	6-WAY / BLACK	INSTRUMENT PANEL / CENTER FRONT
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
BRAKE ON / OFF SWITCH	CR78	2-WAY / BLACK	TOP OF BRAKE PEDAL
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
HIGH-MOUNTED STOP LAMP	RF27	2-WAY / BLACK	PARCEL SHELF / CENTER
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
LICENSE PLATE LAMP – LH	BT7	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH	BT6	2-WAY / BLACK	TRUNK LID
MAIN LIGHTING SWITCH (COLUMN SWITCHGEAR)	IP26	6-WAY / BLACK	STEERING COLUMN / LH SIDE
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR SIDE MARKER LAMP – LH	BR7	2-WAY / BLACK	REAR BUMPER / LH SIDE
REAR SIDE MARKER LAMP – RH	BR6	2-WAY / BLACK	REAR BUMPER / RH SIDE
TAIL LAMP UNIT – LH	CR8	7-WAY / BLACK	TRUNK / LH REAR
TAIL LAMP UNIT – RH	CR7	7-WAY / BLACK	TRUNK / RH REAR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BR1	10-WAY / GREY / CABIN HARNESS TO REAR BUMPER HARNESS	TRUNK / RH SIDE / ADJACENT TO REAR ELECTRONIC MODULE
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST

GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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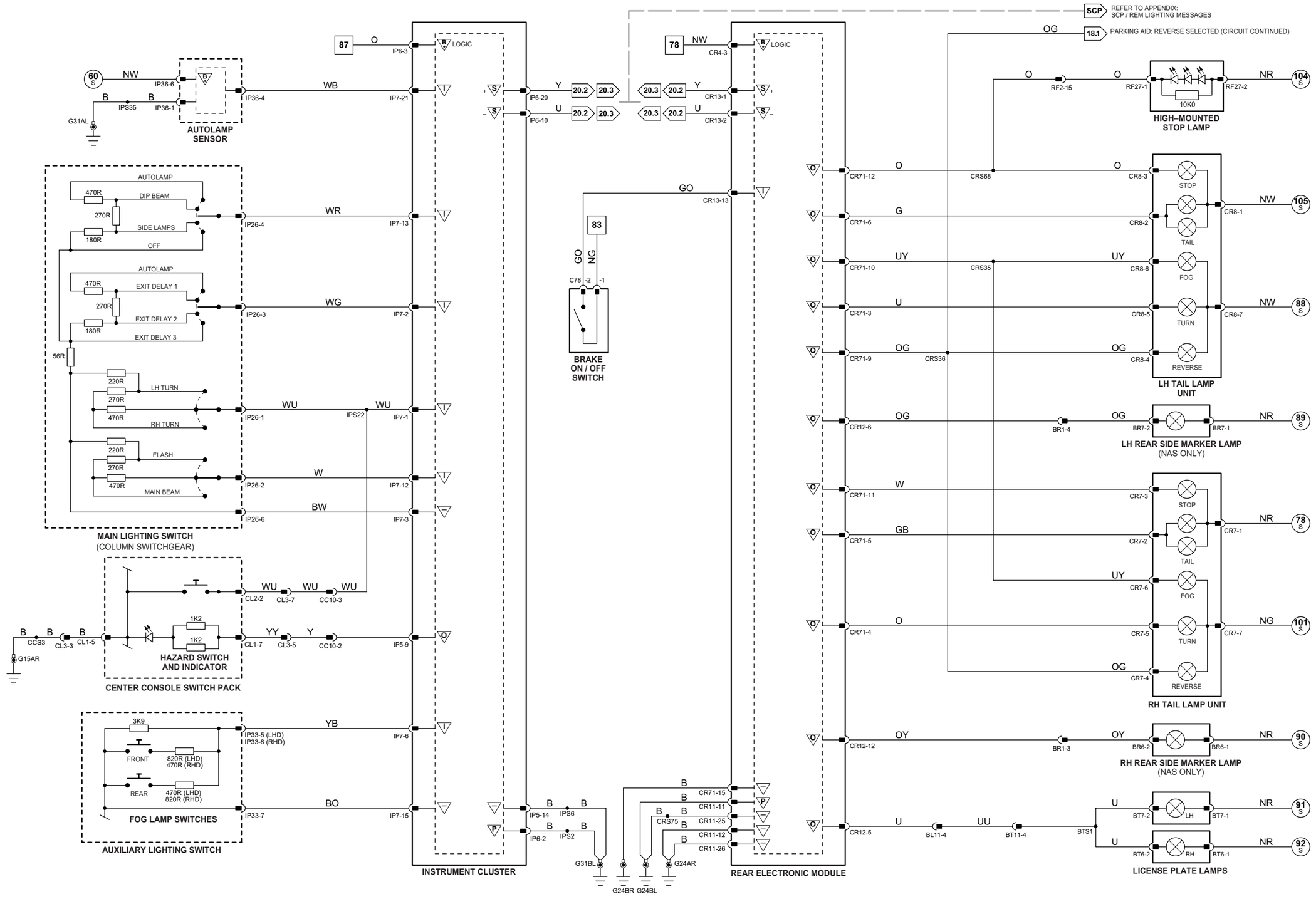

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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 II → 52 II Fig. 01.5	78 S → 105 S Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	
7 → 63 Fig. 01.2	1 I → 15 II Fig. 01.4	53 S → 77 S Fig. 01.6	106 E → 143 E Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Rear Electronic Module

	Pin	Description and Characteristic
O	CR4-20	TRAILER CONNECTED SIGNAL: GROUND = TRAILER CONNECTED
O	CR12-05	LICENSE PLATE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-03	LH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-04	RH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-05	RH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-06	LH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-09	REVERSE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-10	REAR FOG LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-11	RH STOP LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-12	LH STOP LAMP ACTIVATE: TO ACTIVATE, REM 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
BATTERY	—	—	TRUNK / RH SIDE
HIGH-MOUNTED STOP LAMP	RF27	2-WAY / BLACK	PARCEL SHELF / CENTER
LICENSE PLATE LAMP – LH	BT7	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH	BT6	2-WAY / BLACK	TRUNK LID
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
TAIL LAMP UNIT – LH	CR8	7-WAY / BLACK	TRUNK / LH REAR
TAIL LAMP UNIT – RH	CR7	7-WAY / BLACK	TRUNK / RH REAR
TRAILER TOWING CONNECTOR	TT8	DATA NOT AVAILABLE	
	TT18	DATA NOT AVAILABLE	
TRAILER TOWING JUNCTION FUSE BOX	TT12	DATA NOT AVAILABLE	
TRAILER TOWING MODULE	TT15	DATA NOT AVAILABLE	
	TT16	DATA NOT AVAILABLE	
	TT17	DATA NOT AVAILABLE	
TRAILER TOWING RELAY	TT9	DATA NOT AVAILABLE	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
CR106	8-WAY / BLACK / TRAILER TOWING HARNESS	TRUNK / RH SIDE
CR107	8-WAY / BLACK / TRAILER TOWING HARNESS	TRUNK / RH SIDE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
TT10	2-WAY / GREY / TRAILER TOWING HARNESS	TRUNK / SPARE WHEEL WELL

GROUNDS

Ground	Location
BC1	TRUNK / RH SIDE / ADJACENT TO BATTERY
BC3	TRUNK / RH SIDE / ADJACENT TO BATTERY
G29	TRUNK / SPARE WHEEL WELL

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

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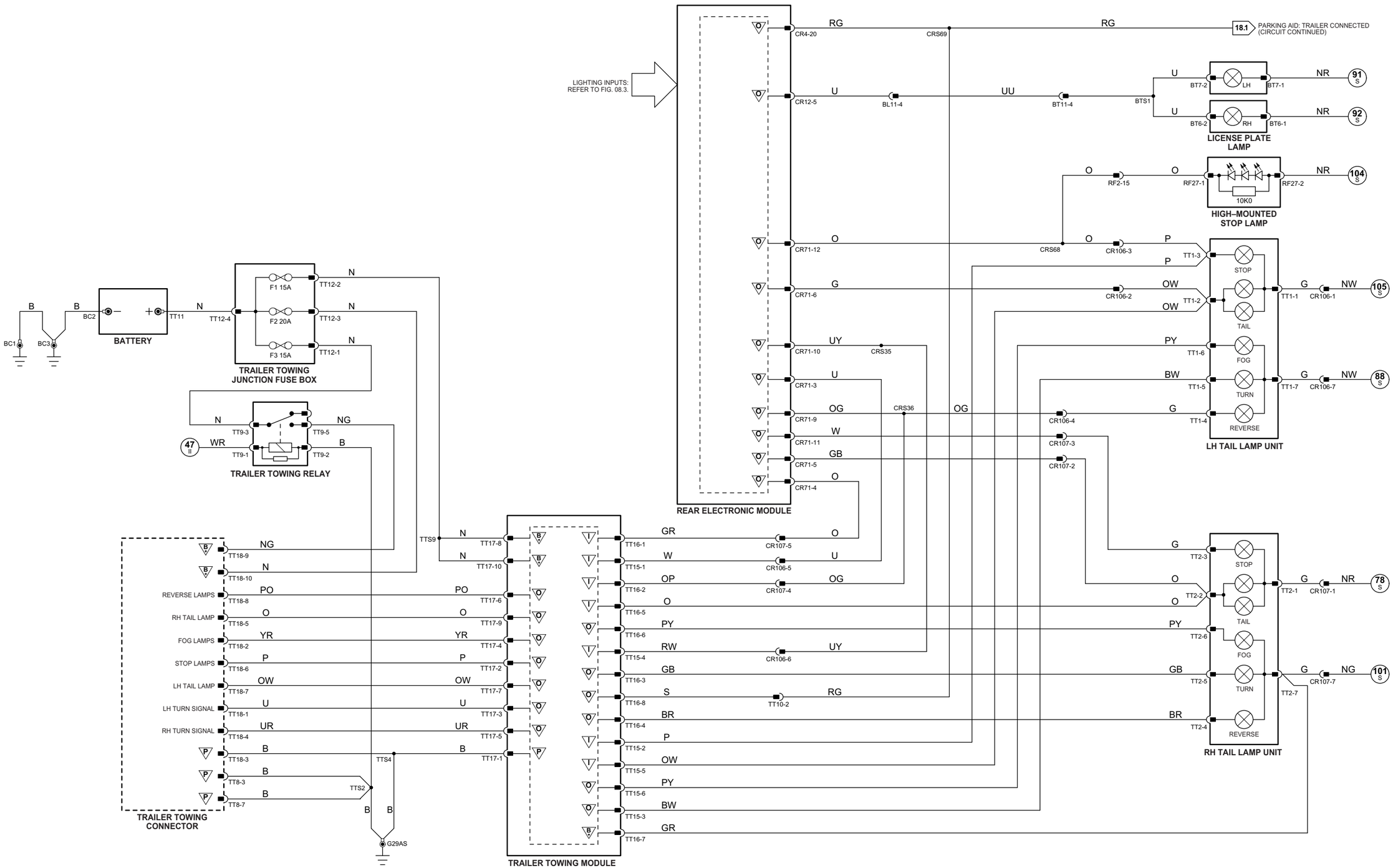


1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 E → 52 E Fig. 01.5	78 S → 105 S Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	**VARIANT:** European Trailer Towing Vehicles
7 → 63 Fig. 01.2	1 I → 15 E Fig. 01.4	53 S → 77 S Fig. 01.6	106 E → 143 E Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	**VIN RANGE:** All
									DATE OF ISSUE: September 2004

Rear Electronic Module

	Pin	Description and Characteristic
O	CR4-20	TRAILER CONNECTED SIGNAL: GROUND = TRAILER CONNECTED
O	CR12-05	LICENSE PLATE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-03	LH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-04	RH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-05	RH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-06	LH TAIL LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-09	REVERSE LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-10	REAR FOG LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-11	RH STOP LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-12	LH STOP LAMP ACTIVATE: TO ACTIVATE, REM 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. 08.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	—	—	TRUNK / RH SIDE
HIGH-MOUNTED STOP LAMP	RF27	2-WAY / BLACK	PARCEL SHELF / CENTER
LICENSE PLATE LAMP – LH	BT7	2-WAY / BLACK	TRUNK LID
LICENSE PLATE LAMP – RH	BT6	2-WAY / BLACK	TRUNK LID
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
TAIL LAMP UNIT – LH	CR8	7-WAY / BLACK	TRUNK / LH REAR
TAIL LAMP UNIT – RH	CR7	7-WAY / BLACK	TRUNK / RH REAR
TRAILER TOWING CONNECTOR	TT8	DATA NOT AVAILABLE	
	TT18	DATA NOT AVAILABLE	
TRAILER TOWING JUNCTION FUSE BOX	TT12	DATA NOT AVAILABLE	
	TT15	DATA NOT AVAILABLE	
	TT16	DATA NOT AVAILABLE	
	TT17	DATA NOT AVAILABLE	
TRAILER TOWING RELAY	TT9	DATA NOT AVAILABLE	

HARNESS IN-LINE CONNECTORS

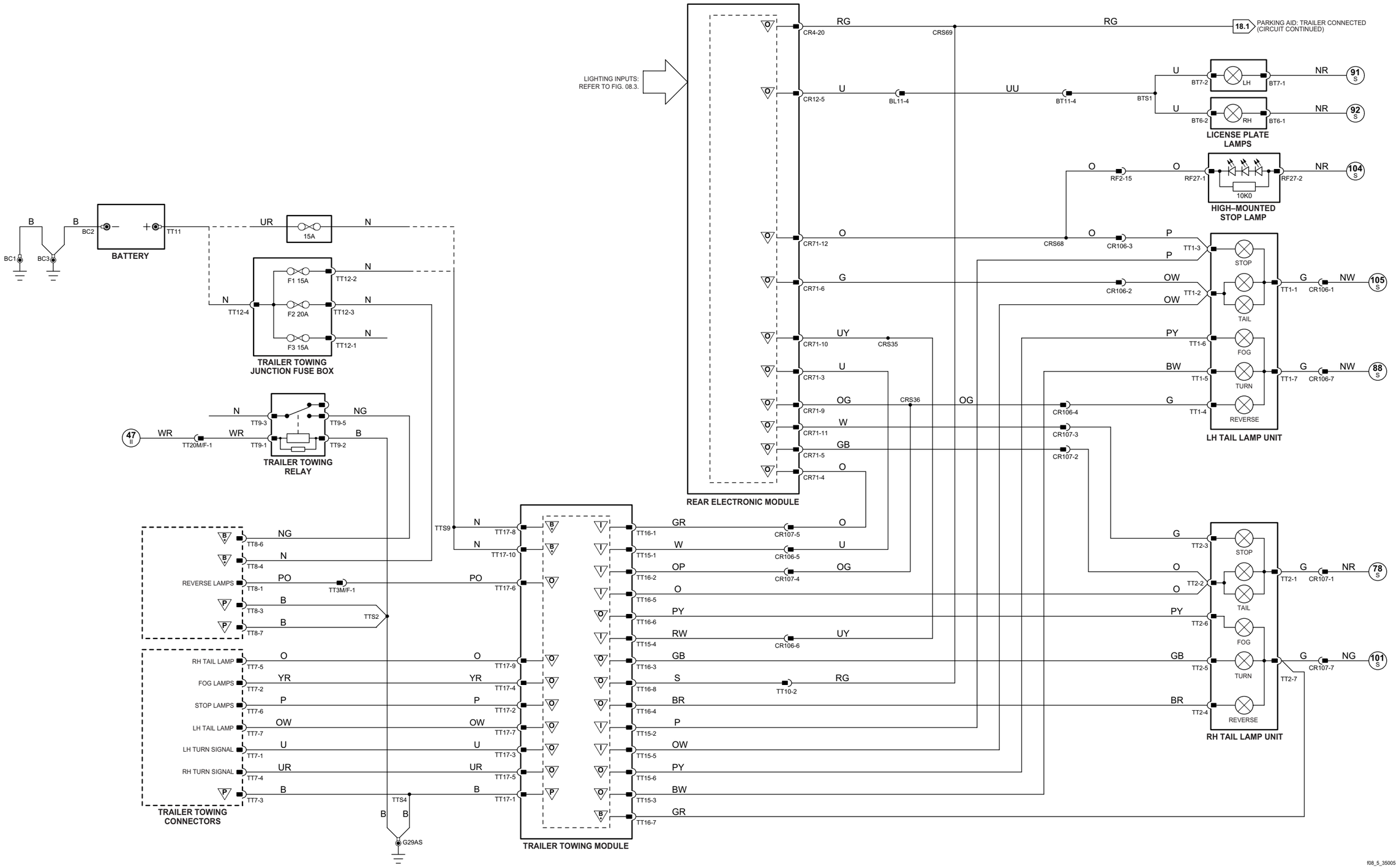
Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
CR106	8-WAY / BLACK / TRAILER TOWING HARNESS	TRUNK / RH SIDE
CR107	8-WAY / BLACK / TRAILER TOWING HARNESS	TRUNK / RH SIDE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
TT3	DATA NOT AVAILABLE	TRAILER TOWING HARNESS
TT10	2-WAY / GREY / TRAILER TOWING HARNESS	TRUNK / SPARE WHEEL WELL
TT20	DATA NOT AVAILABLE	TRAILER TOWING HARNESS

GROUNDS

Ground	Location
BC1	TRUNK / RH SIDE / ADJACENT TO BATTERY
BC3	TRUNK / RH SIDE / ADJACENT TO BATTERY
G29	TRUNK / SPARE WHEEL WELL

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 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (I) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V − Sensor/Signal Ground	A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: U.K. Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Air Suspension Module

	Pin	Description and Characteristic
B+	CR88-01	BATTERY POWER SUPPLY: B+
B+	CR88-02	SWITCHED SYSTEM POWER SUPPLY (WAKE UP): B+
PG	CR88-03	POWER GROUND: GROUND
O	CR89-03	HEADLAMP LEVELING SENSOR: PWM

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

Fig. 08.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR SUSPENSION MODULE	CR88	9-WAY / BLACK	CABIN REAR BULKHEAD / BEHIND REAR SEAT BACK / RH SIDE
	CR89	12-WAY / BLACK	
	CR90	15-WAY / BLACK	
	CR91	18-WAY / BLACK	
HID HEADLAMP UNIT – LH	EC57	9-WAY / BLACK	ENGINE COMPARTMENT / LH FRONT
HID HEADLAMP UNIT – RH	EC6	9-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G3	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G17	CABIN / BELOW REAR SEAT / RH SIDE

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

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

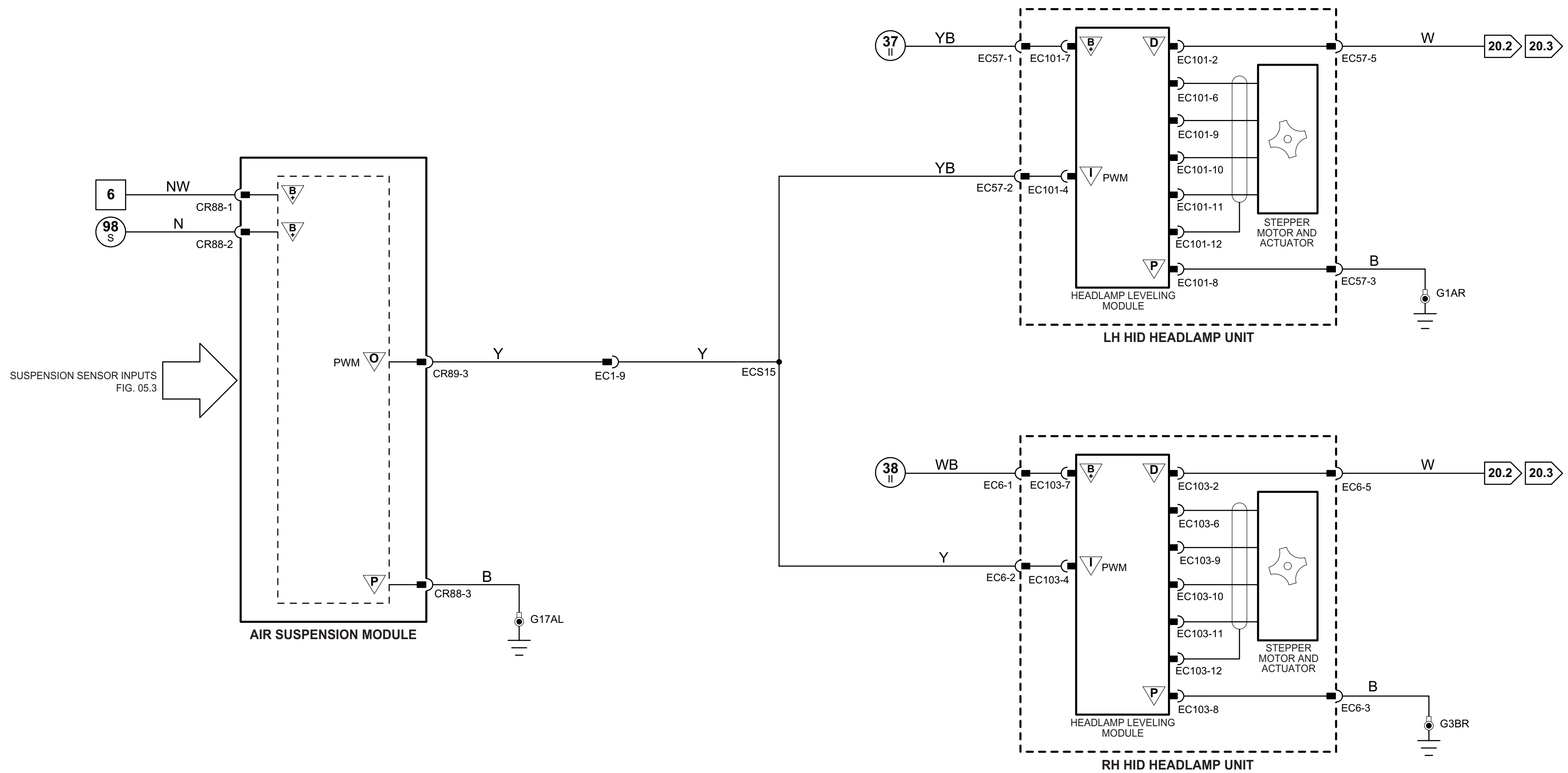
I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply V	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SG	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

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.

Headlamp Leveling



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

VARIANT: HID Headlamp Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD12-13	DRIVER DOOR PUDDLE LAMP ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
O	DD12-21	DRIVER APPROACH LAMP ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
I	DD12-25	DRIVER DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
SG	DD13-07	LOGIC GROUND: GROUND
PG	DD13-08	POWER GROUND: GROUND
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+
B+	DD13-12	SWITCHED SYSTEM POWER SUPPLY: B+

Front Electronic Module

	Pin	Description and Characteristic
I	CR1-01	PASSENGER DOOR AJAR SWITCH SIGNAL: GROUND WHEN ACTIVATED
O	CR1-02	PASSENGER DOOR PUDDLE LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
I	CR1-03	MASTER LIGHTING SWITCH SIGNAL: GROUND WHEN ACTIVATED
O	CR1-05	PASSENGER DOOR APPROACH LAMP ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
S	CR9-01	SCP –
B+	CR9–6	BATTERY POWER SUPPLY (LOGIC): B+
S	CR9-07	SCP +
SG	CR9-12	LOGIC GROUND: GROUND
O	CR10–06	FRONT FOOTWELL LAMPS ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
PG	CR10–11	POWER GROUND: GROUND
PG	CR10–13	POWER GROUND: GROUND
B+	CR85-01	SWITCHED SYSTEM POWER SUPPLY: B+

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
I	CR4-17	RH REAR DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
SG	CR11-10	TRUNK LATCH SIGNAL GROUND: GROUND
PG	CR11-11	POWER GROUND: GROUND
I	CR11-16	LH REAR DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
SG	CR11-25	LOGIC GROUND: GROUND
O	CR12-11	TRUNK LAMPS ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
S	CR13-01	SCP NETWORK +
S	CR13-02	SCP NETWORK –
I	CR13-14	TRUNK AJAR SWITCH SIGNAL: GROUND (SIGNAL) WHEN TRUNK IS AJAR
O	CR13-20	LH REAR DOOR PUDDLE LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR13-22	RH REAR DOOR PUDDLE LAMP ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR71-01	REAR COURTESY LAMPS ACTIVATE: TO ACTIVATE, REM 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. 09.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
APPROACH LAMP – DRIVER DOOR	DD9	22-WAY / BLACK	DRIVER DOOR MIRROR
APPROACH LAMP – PASSENGER DOOR	PD9	22-WAY / BLACK	PASSENGER DOOR MIRROR
COURTESY LAMP – LH REAR	RF21	3-WAY / BLACK	LH REAR ASSIST HANDLE
COURTESY LAMP – RH REAR	RF22	3-WAY / BLACK	RH REAR ASSIST HANDLE
DOOR AJAR SWITCH – DRIVER	DD7	2-WAY / BLACK	DRIVER DOOR
	DD10	3-WAY / BLACK	
DOOR AJAR SWITCH – LH REAR	RL7	2-WAY / BLACK	LH REAR DOOR
	RL10	3-WAY / BLACK	
DOOR AJAR SWITCH – PASSENGER	PD7	2-WAY / BLACK	PASSENGER DOOR
	PD10	3-WAY / BLACK	
DOOR AJAR SWITCH – RH REAR	RR7	2-WAY / BLACK	RH REAR DOOR
	RR10	3-WAY / BLACK	
FOOTWELL LAMP – LH FRONT	IP13	2-WAY / WHITE	INSTRUMENT PANEL / LH SIDE / UNDER
FOOTWELL LAMP – LH REAR	SD23	2-WAY / WHITE	LH FRONT SEAT / LOWER REAR
FOOTWELL LAMP – RH FRONT	IP14	2-WAY / WHITE	INSTRUMENT PANEL / RH SIDE / UNDER
FOOTWELL LAMP – RH REAR	SP23	2-WAY / WHITE	RH FRONT SEAT / LOWER REAR
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
GLOVE BOX LAMP – LH	IP28	2-WAY / GREY	GLOVE BOX
GLOVE BOX LAMP – RH	IP43	2-WAY / GREY	GLOVE BOX
MAP LAMP – LH REAR	RF21	3-WAY / BLACK	LH REAR ASSIST HANDLE
MAP LAMP – RH REAR	RF22	3-WAY / BLACK	RH REAR ASSIST HANDLE
PUDDLE LAMP – DRIVER DOOR	DT2	2-WAY / WHITE	DRIVER DOOR TRIM
PUDDLE LAMP – LH REAR DOOR	LT2	2-WAY / WHITE	LH REAR DOOR TRIM
PUDDLE LAMP – PASSENGER DOOR	PT2	2-WAY / WHITE	PASSENGER DOOR TRIM
PUDDLE LAMP – RH REAR DOOR	RT2	2-WAY / WHITE	RH REAR DOOR TRIM
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
ROOF CONSOLE	RF3	20-WAY / BLACK	CABIN ROOF
TRUNK LAMP	CR18	2-WAY / BLACK	TRUNK / CENTER FRONT
TRUNK LATCH	BT2	8-WAY / BLACK	TRUNK LID
TRUNK LID LAMP	BT3	2-WAY / BLACK	TRUNK LID
VANITY MIRROR LAMP – LH	RF4	2-WAY / BLACK	LH SUN VISOR
VANITY MIRROR LAMP – RH	RF5	2-WAY / BLACK	RH SUN VISOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT6	16-WAY / BLUE / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PT1	12-WAY / GREY / PASSENGER DOOR HARNESS TO PASSENGER DOOR TRIM HARNESS	CABIN / BEHIND PASSENGER DOOR TRIM
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF25	8-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER LH 'A' POST
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR1	6-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G10	CABIN / RH A POST
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER SEAT
G17	CABIN / BELOW REAR SEAT / RH SIDE
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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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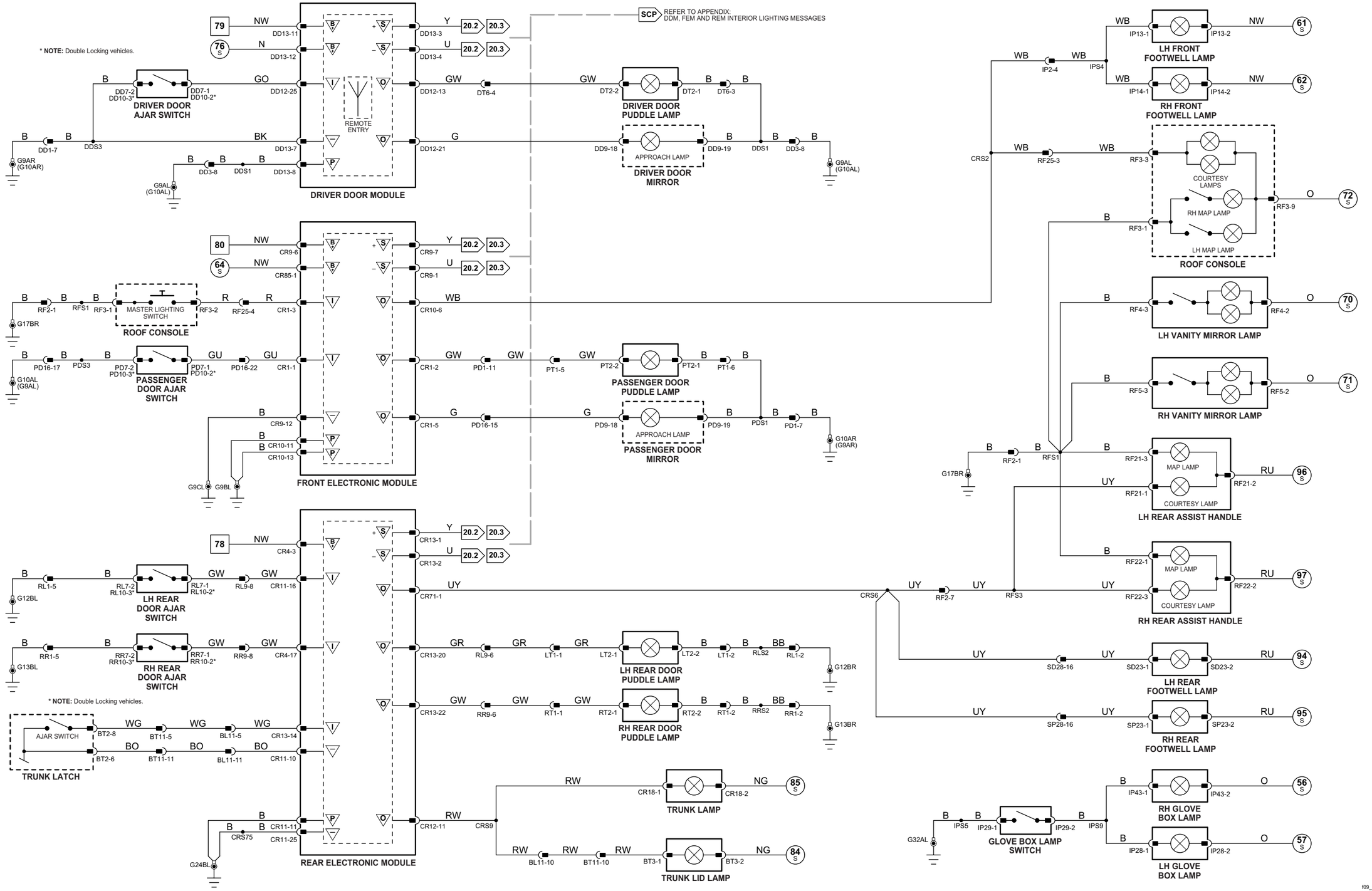

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (E) → 52 (E) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (E) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Climate Control Module – Panel

	Pin	Description and Characteristic
O	AC101-19	PANEL BACK LIGHTING: CCM INDICATES TO PANEL TO BACKLIGHT LCD
I	CR119-11	DIMMER CONTROLLED ILLUMINATION: PWM, 80Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE

Front Electronic Module

	Pin	Description and Characteristic
S	CR9–01	SCP –
S	CR9–07	SCP +
SG	CR9–12	LOGIC GROUND: GROUND
PG	CR10–11	POWER GROUND: GROUND
PG	CR10–13	POWER GROUND: GROUND
B+	CR85–01	SWITCHED SYSTEM POWER SUPPLY: B+
O	CR85–11	BULB BACK LIGHTING ACTIVATE: B+ PWM
O	CR85–12	LED BACK LIGHTING ACTIVATE: B+ PWM

Instrument Cluster

	Pin	Description and Characteristic
SG	IP5-14	SIGNAL GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
S	IP6-20	SCP +
I	IP7-05	DIMMER SIGNAL: VARIABLE VOLTAGE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND
SS	IP7-16	DIMMER SUPPLY VOLTAGE: 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. 09.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO / VIDEO SELECTOR	TL20	20-WAY / BLACK	CABIN REAR BULKHEAD / BEHIND REAR SEAT BACK / LH SIDE
	TL85	20-WAY / BLACK	
	TL86	20-WAY / BLACK	
	TL87	20-WAY / BLACK	
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
CIGAR LIGHTER – FRONT	TL69	3-WAY / BLACK	CENTER CONSOLE
CIGAR LIGHTER – REAR	TL70	3-WAY / BLACK	REAR CENTER CONSOLE
CLOCK	IP19	6-WAY / BLACK	INSTRUMENT PANEL / CENTER VENT
CLIMATE CONTROL MODULE	AC100	16-WAY / BLACK	CLIMATE CONTROL UNIT / DRIVER SIDE
	AC101	26-WAY / BLACK	
	CR119	22-WAY / BLACK	
CLIMATE CONTROL PANEL	CC20	12-WAY / BLACK	CENTER CONSOLE
FASCIA VENT – LH	IP52	2-WAY / BLACK	INSTRUMENT PANEL / LH SIDE
FASCIA VENT – RH	IP54	2-WAY / BLACK	INSTRUMENT PANEL / RH SIDE
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
J-GATE MODULE	IP32	16-WAY / BLACK	J GATE ASSEMBLY
MULTIMEDIA CONTROL PANEL	RC1	8-WAY / BLACK	REAR SEAT ARM REST OR REAR FLOOR CONSOLE
	RC3	20-WAY / BLACK	
	RC5	FIBER OPTIC CONNECTOR	
POWER POINT – FRONT	IP21	3-WAY / BLACK	FRONT CENTER CONSOLE GLOVE BOX
POWER POINT – REAR	TL72	3-WAY / BLACK	REAR CENTER CONSOLE
REAR CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
REAR CLIMATE CONTROL MODULE	RA1	16-WAY / BLACK	REAR CENTER CONSOLE
	RA2	12-WAY / BLACK	
REAR VENTS	TL23	2-WAY / BLACK	BELOW CENTER CONSOLE
STEERING WHEEL LIGHTING	—	—	STEERING WHEEL
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TRUNK AND FUEL FLAP RELEASE SWITCH PACK	IP50	10-WAY / BLACK	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP20	16-WAY / BLUE / AIR CONDITIONING HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / LH SIDE TO CLIMATE CONTROL UNIT
IP66	14-WAY / GREY / INSTRUMENT PANEL HARNESS TO REAR AIR CONDITIONING HARNESS	CABIN / BELOW CENTER CONSOLE
RC2	8-WAY / BLACK / TELEMATICS HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G18	CABIN / BELOW REAR SEAT / LH SIDE
G31	CABIN / BEHIND PASSENGER AIR BAG
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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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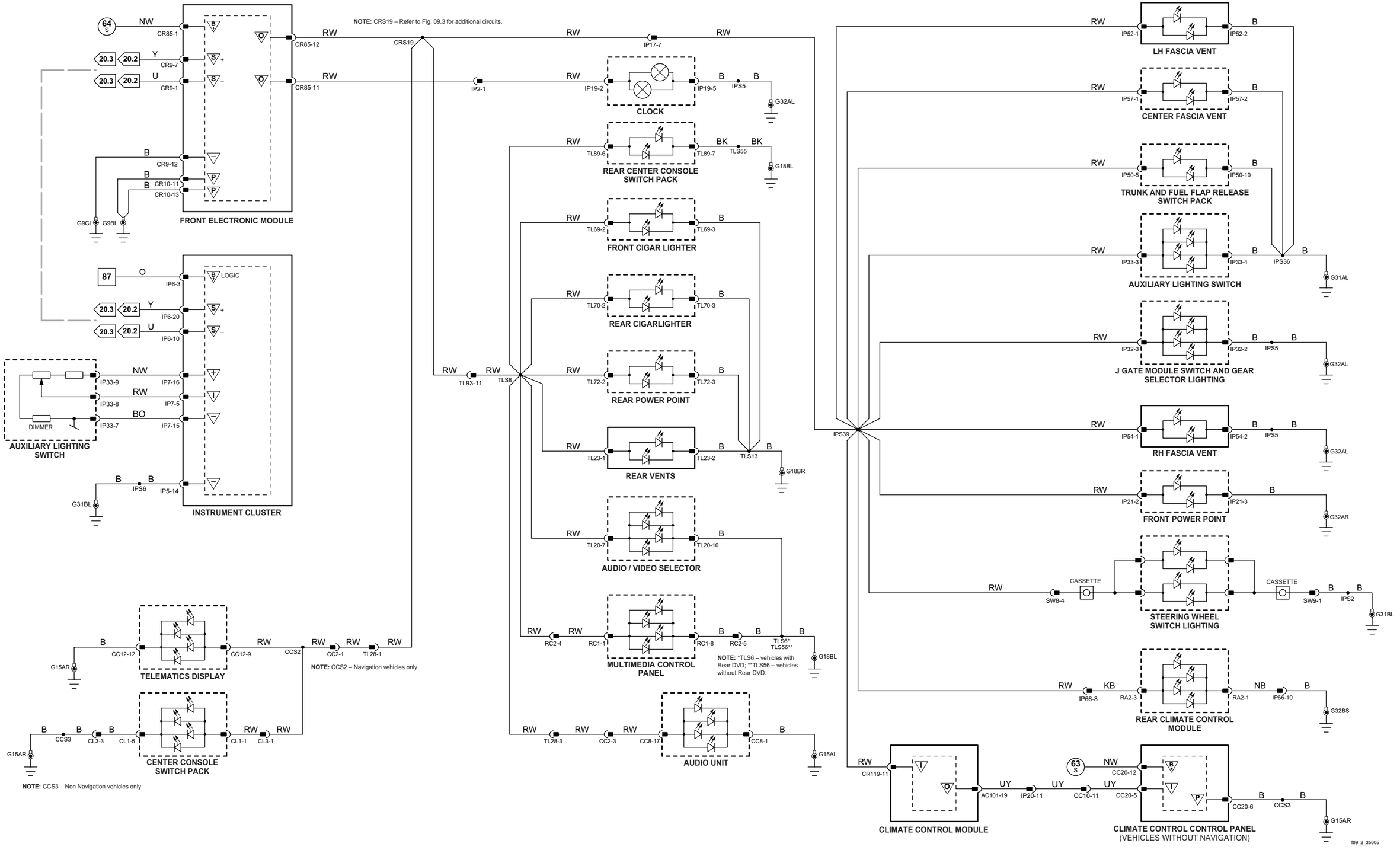

1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Front Electronic Module

	Pin	Description and Characteristic
S	CR9–01	SCP –
S	CR9–07	SCP +
SG	CR9–12	LOGIC GROUND: GROUND
PG	CR10–11	POWER GROUND: GROUND
PG	CR10–13	POWER GROUND: GROUND
B+	CR85–01	SWITCHED SYSTEM POWER SUPPLY: B+
O	CR85–12	LED BACK LIGHTING ACTIVATE: B+ PWM

Instrument Cluster

	Pin	Description and Characteristic
SG	IP5-14	SIGNAL GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
S	IP6-20	SCP +
I	IP7-05	DIMMER SIGNAL: VARIABLE VOLTAGE
SG	IP7-15	AUXILIARY LIGHTING SWITCH SIGNAL GROUND: GROUND
SS	IP7-16	DIMMER SUPPLY VOLTAGE: B+

Rear Electronic Module

	Pin	Description and Characteristic
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-25	LOGIC GROUND: GROUND
O	CR12-02	REAR WINDOW ISOLATE: TO ISOLATE, REM INTERRUPTS GROUND SUPPLY

Rear Memory Module

	Pin	Description and Characteristic
SG	CR37-14	REAR SEAT MEMORY SWITCH PACK REFERENCE GROUND: GROUND
SG	CR37-15	REAR SEAT MEMORY SWITCH PACK REFERENCE GROUND: GROUND
SG	CR37-26	SIGNAL 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. 09.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUXILIARY LIGHTING SWITCH	IP50	10-WAY / GREY	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
DOOR SWITCH PACK – DRIVER	DT4	20-WAY / BLACK	DRIVER DOOR TRIM
DOOR SWITCH PACK – LH REAR	LT3	8-WAY / BLACK	LH REAR DOOR TRIM
DOOR SWITCH PACK – PASSENGER	PT4	8-WAY / BLACK	PASSENGER DOOR TRIM
DOOR SWITCH PACK – RH REAR	RT3	8-WAY / BLACK	RH REAR DOOR TRIM
MEMORY SWITCH PACK – DRIVER	DT5	8-WAY / BLACK	DRIVER DOOR TRIM
MEMORY SWITCH PACK – LH REAR	LT5	8-WAY / BLACK	LH REAR DOOR TRIM
MEMORY SWITCH PACK – RH REAR	RT5	8-WAY / BLACK	RH REAR DOOR TRIM
REAR ASSIST HANDLE – LH	RF14	2-WAY / BLACK	CABIN ROOF / LH SIDE
REAR ASSIST HANDLE – RH	RF15	2-WAY / BLACK	CABIN ROOF / LH SIDE
ROOF CONSOLE	RF3	20-WAY / BLACK	CABIN ROOF
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR MEMORY MODULE	CR21	4-WAY / BLACK	REAR BULKHEAD / BEHIND REAR SEAT BACK
	CR37	26-WAY / BLACK	
	CR38	22-WAY / BLACK	
	CR41	6-WAY / BLACK	
	CR53	4-WAY / BLACK	
	CR59	6-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PT1	12-WAY / GREY / PASSENGER DOOR HARNESS TO PASSENGER DOOR TRIM HARNESS	CABIN / BEHIND PASSENGER DOOR TRIM
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G10	CABIN / RH 'A' POST
G18	CABIN / BELOW REAR SEAT / LH SIDE
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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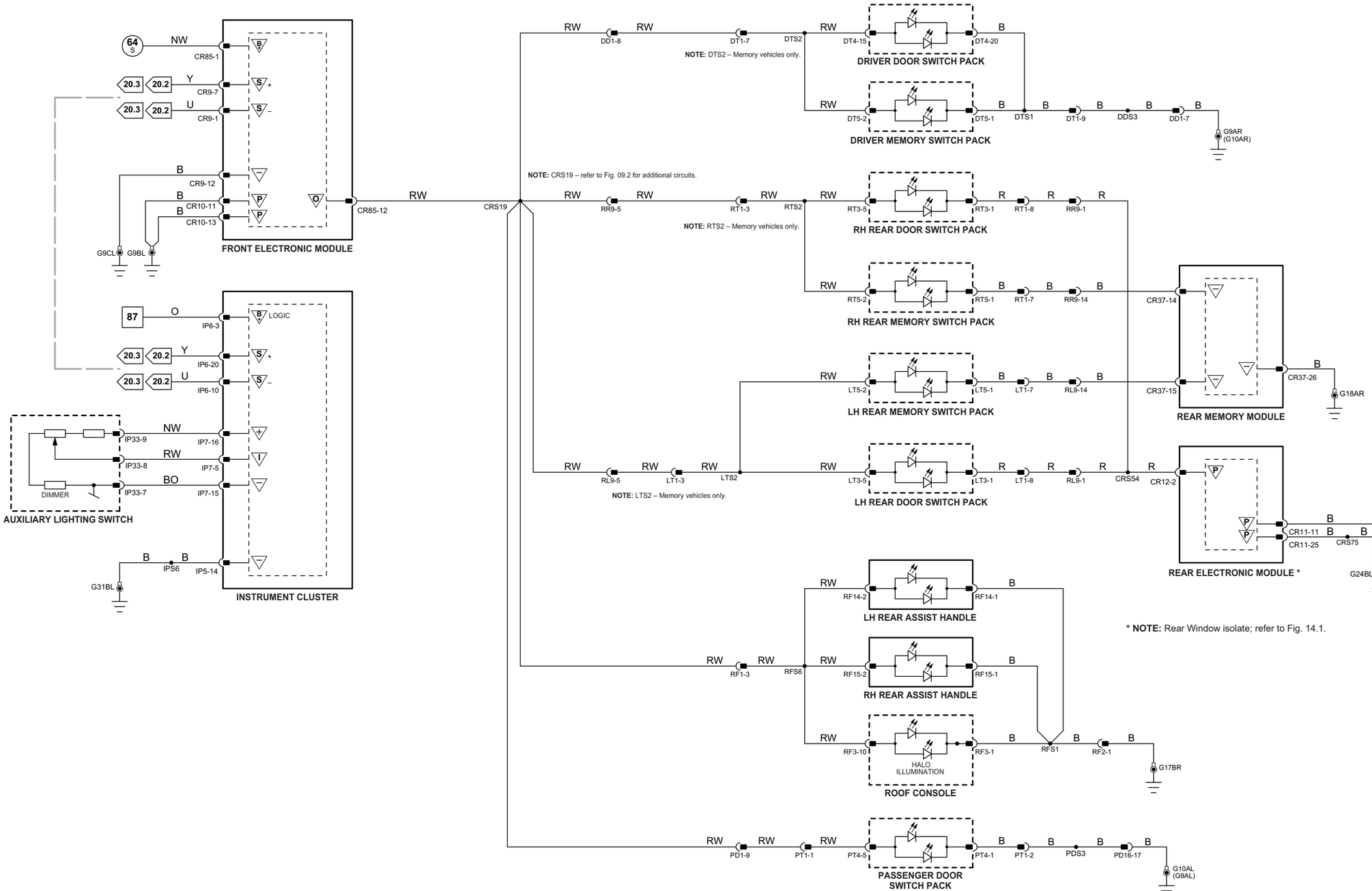

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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 → 15 Fig. 01.4	16 → 52 Fig. 01.5 53 → 77 Fig. 01.6	78 → 105 Fig. 01.7 106 → 143 Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** All Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD12-07	MEMORY SET INDICATOR ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
I	DD12-10	MEMORY 1, 2, 3, SET INPUT SIGNAL: VARIABLE RESISTANCE
I	DD12-25	DRIVER DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
SG	DD13-07	LOGIC GROUND: GROUND
PG	DD13-08	POWER GROUND: GROUND
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+
B+	DD13-12	SWITCHED SYSTEM POWER SUPPLY: B+

Front Electronic Module

	Pin	Description and Characteristic
I	CR1–09	PEDAL ADJUST SWITCH OUT SIGNAL: GROUND WHEN ACTIVATED
I	CR1–12	PEDAL ADJUST SWITCH IN SIGNAL: GROUND WHEN ACTIVATED
PG	CR1–26	POWER GROUND: GROUND
S	CR9–01	SCP –
S	CR9–07	SCP +
SG	CR9–11	PEDAL ADJUST MOTOR POSITION SENSOR SIGNAL: VARIABLE VOLTAGE 0 – 5 V
O	CR10–02	PEDAL ADJUST MOTOR DRIVE – OUT: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
O	CR10–09	PEDAL ADJUST MOTOR DRIVE – IN: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
PG	CR10–11	POWER GROUND: GROUND
PG	CR10–13	POWER GROUND: GROUND
PG	CR10–14	POWER GROUND: GROUND
B+	CR85–01	SWITCHED SYSTEM POWER SUPPLY: B+
SG	CR85–15	PEDAL ADJUST MOTOR POSITION SENSOR SIGNAL GROUND: GROUND
SS	CR85–17	PEDAL ADJUST MOTOR POSITION SENSOR SIGNAL SUPPLY VOLTAGE: NOMINAL 5 V

Instrument Cluster

	Pin	Description and Characteristic
SG	IP5-14	SIGNAL GROUND: GROUND
B+	IP6-01	BATTERY POWER SUPPLY (COLUMN MOTOR): B+
PG	IP6-02	POWER GROUND: GROUND
B+	IP6-03	BATTERY POWER SUPPLY (LOGIC): B+
S	IP6-10	SCP –
O	IP6-11	STEERING COLUMN MOTOR DRIVE – DOWN / OUT: B+ WHEN ACTIVATED
O	IP6-12	STEERING COLUMN MOTOR DRIVE – UP / IN: B+ WHEN ACTIVATED
O	IP6-13	STEERING COLUMN IN / OUT FUNCTION SOLENOID DRIVE: B+ WHEN ACTIVATED
O	IP6-14	STEERING COLUMN UP / DOWN FUNCTION SOLENOID DRIVE: B+ WHEN ACTIVATED
S	IP6-20	SCP +
I	IP7-07	FUNCTION SELECT SIGNAL: VARIABLE RESISTANCE
SG	IP7-08	STEERING COLUMN POSITION FEEDBACK POTENTIOMETERS SIGNAL GROUND: GROUND
I	IP7-17	STEERING COLUMN MOVEMENT SWITCH SIGNAL: VARIABLE VOLTAGE
SG	IP7-18	STEERING COLUMN MOVEMENT / SELECT SIGNAL GROUND: GROUND
O	IP7-19	STEERING COLUMN POSITION FEEDBACK POTENTIOMETERS SUPPLY VOLTAGE: B+
I	IP7-20	STEERING COLUMN UP / DOWN POSITION FEEDBACK POTENTIOMETER SIGNAL: VARIABLE VOLTAGE

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. 10.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
COLUMN AND PEDAL ADJUST SWITCH	IP27	8-WAY / BLACK	STEERING COLUMN COWLING
DOOR AJAR SWITCH – DRIVER	DD7	2-WAY / BLACK	DRIVER DOOR
	DD10	3-WAY / BLACK	
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
MEMORY SWITCH PACK – DRIVER	DT5	8-WAY / BLACK	DRIVER DOOR TRIM
PEDAL ADJUST MOTOR	CR103	3-WAY / BLACK	DRIVER PEDAL ASSEMBLY
	CR104	2-WAY / BLACK	
STEERING COLUMN MOVEMENT ASSEMBLY	IP10	10-WAY / BLACK	UPPER STEERING COLUMN

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
DT6	16-WAY / BLUE / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G10	CABIN / RH 'A' POST
G31	CABIN / BEHIND PASSENGER AIR BAG

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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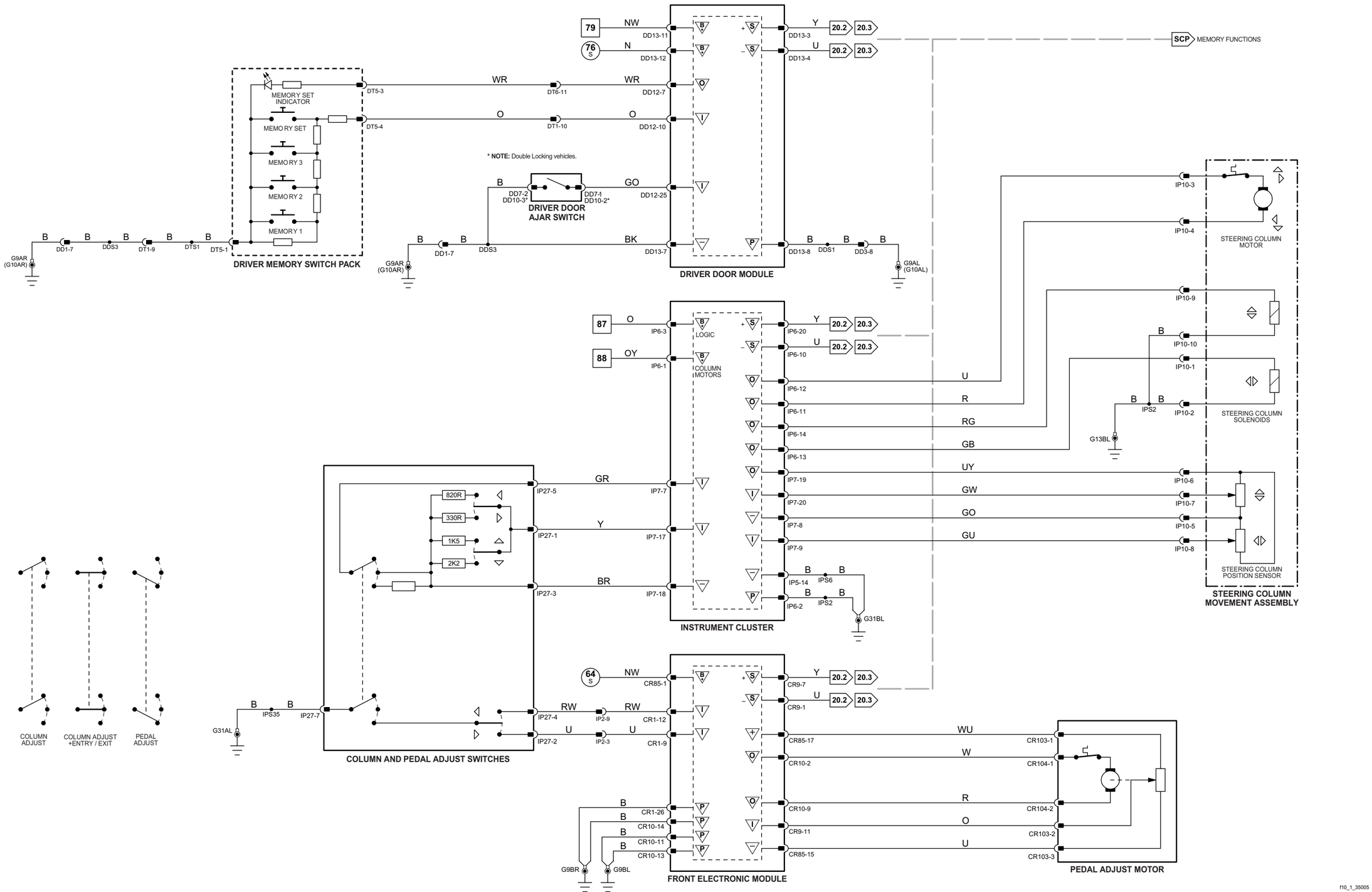

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (F) → 52 (F) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	
7 → 63 Fig. 01.2	1 (I) → 15 (E) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD11-01	DRIVER DOOR MIRROR DRIVE – LEFT: TO ACTIVATE, DDCM SWITCHES CIRCUIT TO B+
O	DD11-02	DRIVER DOOR MIRROR DRIVE – RIGHT: TO ACTIVATE, DDCM SWITCHES CIRCUIT TO B+
O	DD11-03	DRIVER DOOR MIRROR DRIVE – UP: TO ACTIVATE, DDCM SWITCHES CIRCUIT TO B+
O	DD11-04	DRIVER DOOR MIRROR DRIVE – DOWN: TO ACTIVATE, DDCM SWITCHES CIRCUIT TO B+
SS	DD11-05	DRIVER DOOR MIRROR POSITION SENSORS SIGNAL SUPPLY VOLTAGE: B+
I	DD11-14	DRIVER DOOR MIRROR LEFT / RIGHT POSITION FEEDBACK SIGNAL: VARIABLE VOLTAGE
I	DD11-15	DRIVER DOOR MIRROR UP / DOWN POSITION FEEDBACK SIGNAL: VARIABLE VOLTAGE
SG	DD11-19	DRIVER DOOR MIRROR POSITION SENSORS SIGNAL GROUND: GROUND
I	DD12-02	RH MIRROR MOVEMENT SELECT SIGNAL: GROUND WHEN SELECTED
I	DD12-03	LH MIRROR MOVEMENT SELECT SIGNAL: GROUND WHEN SELECTED
O	DD12-07	MEMORY SET INDICATOR ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
I	DD12-08	MIRROR FOLD FLAT SWITCH SIGNAL: GROUND WHEN SELECTED
I	DD12-10	MEMORY 1, 2, 3, SET INPUT SIGNAL: VARIABLE RESISTANCE
I	DD12-14	MIRROR UP SWITCH SIGNAL: GROUND WHEN SELECTED
I	DD12-15	MIRROR DOWN SWITCH SIGNAL: GROUND WHEN SELECTED
I	DD12-16	MIRROR LEFT SWITCH SIGNAL: GROUND WHEN SELECTED
I	DD12-17	MIRROR RIGHT SWITCH SIGNAL: GROUND WHEN SELECTED
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
O	DD13-05	DRIVER DOOR MIRROR FOLD FLAT: IN-TO-OUT: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
O	DD13-06	DRIVER DOOR MIRROR FOLD FLAT: OUT-TO-IN: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
SG	DD13-07	LOGIC GROUND: GROUND
PG	DD13-08	POWER GROUND: GROUND
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+
B+	DD13-12	SWITCHED SYSTEM POWER SUPPLY: B+

Front Electronic Module

	Pin	Description and Characteristic
I	CR1–07	PASSENGER DOOR MIRROR LEFT / RIGHT POSITION FEEDBACK SIGNAL: VARIABLE VOLTAGE
SS	CR1–08	PASSENGER DOOR MIRROR POSITION SENSORS SIGNAL SUPPLY VOLTAGE: B+
I	CR1–11	PASSENGER DOOR MIRROR UP / DOWN POSITION FEEDBACK SIGNAL: VARIABLE VOLTAGE
O	CR1–20	PASSENGER DOOR MIRROR DRIVE – UP: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
O	CR1–21	PASSENGER DOOR MIRROR DRIVE – DOWN: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
SG	CR1–22	PASSENGER DOOR MIRROR POSITION SENSORS SIGNAL GROUND: GROUND
O	CR1–23	PASSENGER DOOR MIRROR DRIVE – LEFT: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
O	CR1–24	PASSENGER DOOR MIRROR DRIVE – RIGHT: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
PG	CR1–26	POWER GROUND: GROUND
S	CR9–01	SCP –
S	CR9–07	SCP +
PG	CR10–11	POWER GROUND: GROUND
PG	CR10–13	POWER GROUND: GROUND
PG	CR10–14	POWER GROUND: GROUND
B+	CR85–01	SWITCHED SYSTEM POWER SUPPLY: B+

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
SG	CR11-12	LOGIC GROUND: GROUND
O	CR11-18	REVERSE GEAR SIGNAL (DIM REQUEST): TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
S	CR13-01	SCP –
S	CR13-02	SCP +

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. 10.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR MIRROR – DRIVER	DD9	22-WAY / BLACK	DRIVER DOOR
DOOR MIRROR – PASSENGER	PD9	22-WAY / BLACK	PASSENGER DOOR
DOOR SWITCH PACK – DRIVER	DT4	20-WAY / BLACK	DRIVER DOOR TRIM
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
ELECTROCHROMIC REAR VIEW MIRROR AND COMPASS	RF7	8-WAY / BLACK	FORWARD OF ROOF CONSOLE
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
MEMORY SWITCH PACK – DRIVER	DT5	8-WAY / BLACK	DRIVER DOOR TRIM
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
DT6	16-WAY / BLUE / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G10	CABIN / RH 'A' POST
G17	CABIN / BELOW REAR SEAT / RH SIDE
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE

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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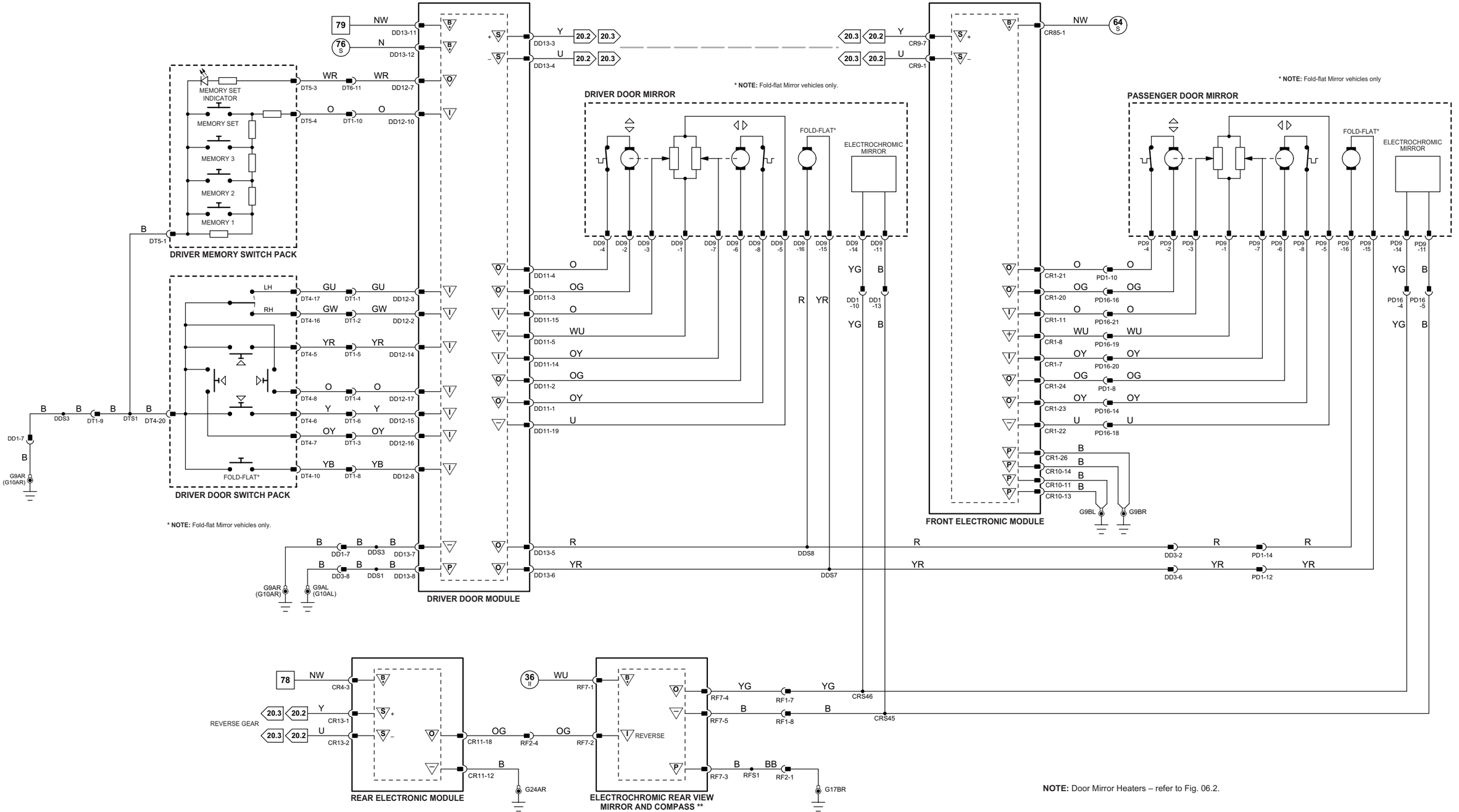

** **NOTE:** Includes Compass, when fitted.

NOTE: Door Mirror Heaters – refer to Fig. 06.2.

f10_2_35005

1 → 6 Fig. 01.1 | 7 → 63 Fig. 01.2 | 64 → 95 Fig. 01.3 | 1 (I) → 15 (I) Fig. 01.4 | 16 (I) → 52 (I) Fig. 01.5 | 53 (S) → 77 (S) Fig. 01.6 | 78 (S) → 105 (S) Fig. 01.7 | 106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD12-07	MEMORY SET INDICATOR ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
I	DD12-10	MEMORY 1, 2, 3, SET INPUT SIGNAL: VARIABLE RESISTANCE
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
O	DD13-06	DRIVER DOOR MIRROR FOLD FLAT: OUT-TO-IN: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+

Driver Seat Module

	Pin	Description and Characteristic
S	SD2-01	SCP+
I	SD2-04	SEAT CUSHION FRONT RAISE REQUEST: ACTIVE = B+
I	SD2-05	SEAT CUSHION FRONT LOWER REQUEST: ACTIVE = B+
I	SD2-10	SEAT BACK RECLINE REARWARD REQUEST: ACTIVE = B+
I	SD2-11	SEAT BACK RECLINE FORWARD REQUEST: ACTIVE = B+
S	SD2-12	SCP –
I	SD2-15	HEAD REST RAISE REQUEST: ACTIVE = B+
I	SD2-16	SD2-16 HEADREST LOWER REQUEST: ACTIVE = B+
I	SD2-17	SD2-17 SEAT RAISE REQUEST: ACTIVE = B+
I	SD2-18	SD2-18 SEAT LOWER REQUEST: ACTIVE = B+
I	SD2-19	SD2-19 SEAT FORWARD REQUEST: ACTIVE = B+
I	SD2-20	SD2-20 SEAT REARWARD REQUEST: ACTIVE = B+
O	SD3-01	SEAT HEIGHT MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD3-02	SEAT HEIGHT MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
PG	SD3-05	POWER GROUND: GROUND
B+	SD3-06	BATTERY POWER SUPPLY: B+
I	SD4-07	SEAT CUSHION FRONT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-08	SEAT HEIGHT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-09	HEADREST POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-10	SEAT BACK RECLINE POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
SG	SD4-11	SIGNAL GROUND: GROUND
B+	SD4-13	BATTERY POWER SUPPLY – LOGIC: B+
I	SD4-22	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
SG	SD4-25	SIGNAL GROUND: GROUND
SG	SD4-26	LOGIC GROUND: GROUND
O	SD24-01	SEAT POSITION MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD24-02	SEAT POSITION MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD26-03	SEAT BACK RECLINE MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD26-04	SEAT BACK RECLINE MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
PG	SD27-01	POWER GROUND: GROUND
B+	SD27-02	BATTERY POWER SUPPLY: B+
O	SD27-03	HEADREST POSITION MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-04	HEADREST POSITION MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-05	SEAT CUSHION FRONT MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-06	SEAT CUSHION FRONT MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO 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. 11.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
DRIVER SEAT MODULE	SD2	22-WAY / BLACK	UNDER DRIVER SEAT
	SD3	6-WAY / BLACK	
	SD4	6-WAY / BLACK	
	SD24	4-WAY / BLACK	
	SD26	4-WAY / BLACK	
	SD27	6-WAY / BLACK	
MEMORY SWITCH PACK – DRIVER	DT5	8-WAY / BLACK	DRIVER DOOR TRIM
SEAT CUSHION FRONT RAISE / LOWER MOTOR AND POSITION SENSOR – DRIVER	SD6	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR AND POSITION SENSOR – DRIVER	SD12	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR AND POSITION SENSOR – DRIVER	SD8	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR AND POSITION SENSOR – DRIVER	SD9	5-WAY / BLACK	DRIVER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR AND POSITION SENSOR – DRIVER	SD13	5-WAY / BLACK	DRIVER SEAT BACK / LOWER
SEAT LUMBAR PUMP – 12-WAY SEAT – DRIVER	DL4	6-WAY / BLACK	DRIVER SEAT BACK / LOWER
SEAT SWITCH PACK – DRIVER	SD5	12-WAY / BLACK	DRIVER SEAT / OUTBOARD
	SD29	14-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DL2	6-WAY / BLACK / DRIVER SEAT HARNESS TO DRIVER SEAT LUMBAR HARNESS	CABIN / BEHIND DRIVER SEAT BACK
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
DT6	16-WAY / BLUE / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G10	CABIN / RH 'A' POST
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER SEAT

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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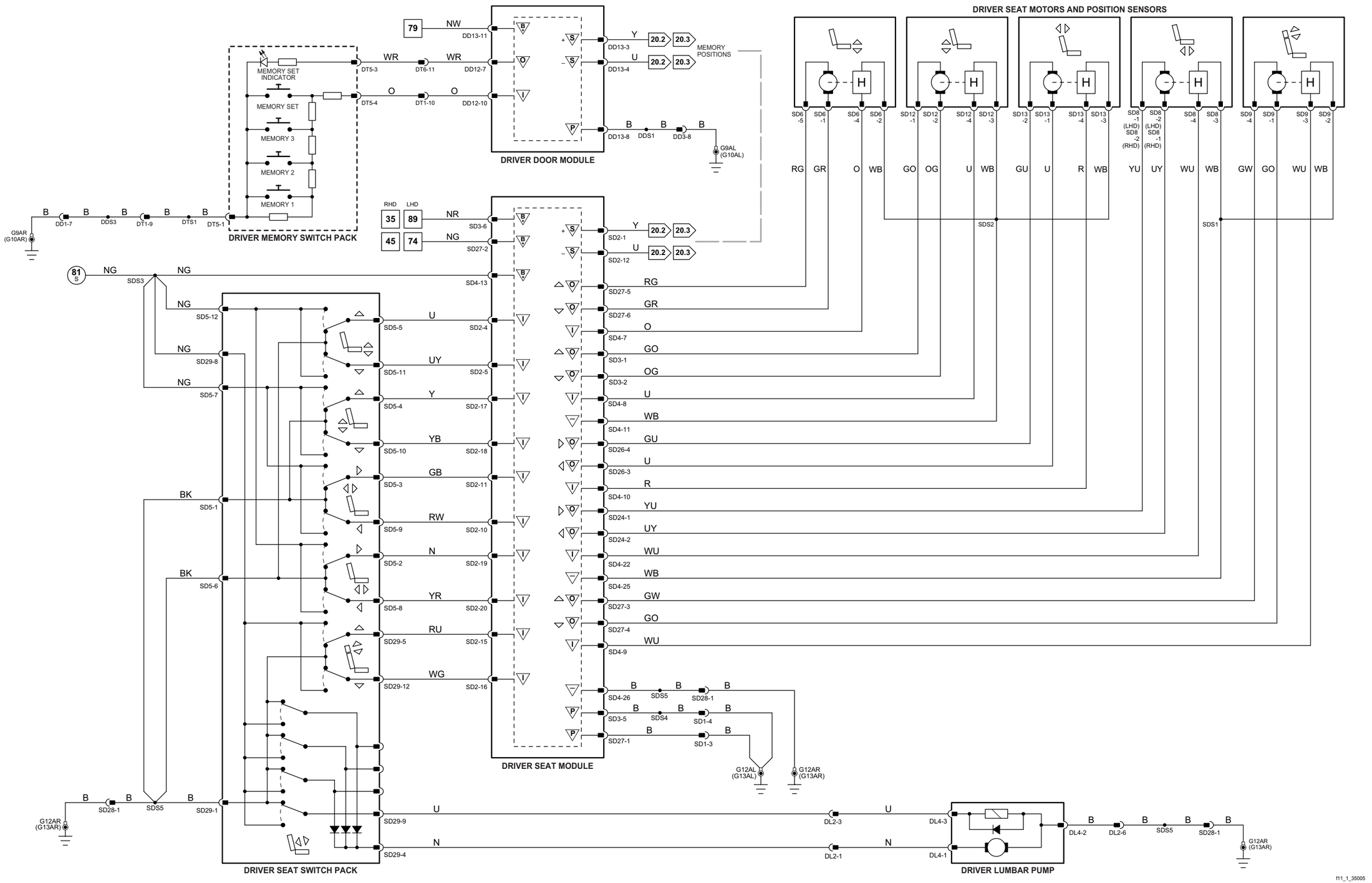

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (K) → 52 (K) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (I) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	− Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: 12-Way Driver Seat Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Seat Module

	Pin	Description and Characteristic
S	SD2-01	SCP+
I	SD2-04	SEAT CUSHION FRONT RAISE REQUEST: ACTIVE = B+
I	SD2-05	SEAT CUSHION FRONT LOWER REQUEST: ACTIVE = B+
I	SD2-10	SEAT BACK RECLINE REARWARD REQUEST: ACTIVE = B+
I	SD2-11	SEAT BACK RECLINE FORWARD REQUEST: ACTIVE = B+
S	SD2-12	SCP –
I	SD2-15	HEAD REST RAISE REQUEST: ACTIVE = B+
I	SD2-16	SD2-16 HEADREST LOWER REQUEST: ACTIVE = B+
I	SD2-17	SD2-17 SEAT RAISE REQUEST: ACTIVE = B+
I	SD2-18	SD2-18 SEAT LOWER REQUEST: ACTIVE = B+
I	SD2-19	SD2-19 SEAT FORWARD REQUEST: ACTIVE = B+
I	SD2-20	SD2-20 SEAT REARWARD REQUEST: ACTIVE = B+
I	SD2-21	SEAT CUSHION EXTEND REARWARD REQUEST: ACTIVE = B+
I	SD2-22	SEAT CUSHION EXTEND FORWARD REQUEST: ACTIVE = B+
O	SD3-01	SEAT HEIGHT MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD3-02	SEAT HEIGHT MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
PG	SD3-05	POWER GROUND: GROUND
B+	SD3-06	BATTERY POWER SUPPLY: B+
I	SD4-07	SEAT CUSHION FRONT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-08	SEAT HEIGHT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-09	HEADREST POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-10	SEAT BACK RECLINE POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
SG	SD4-11	SIGNAL GROUND: GROUND
SG	SD4-12	SIGNAL GROUND: GROUND
B+	SD4-13	BATTERY POWER SUPPLY – LOGIC: B+
I	SD4-22	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	SD4-23	SEAT CUSHION EXTEND POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
SG	SD4-25	SIGNAL GROUND: GROUND
SG	SD4-26	LOGIC GROUND: GROUND
O	SD24-01	SEAT POSITION MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD24-02	SEAT POSITION MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD24-03	SEAT CUSHION EXTEND MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD24-04	SEAT CUSHION EXTEND MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD26-03	SEAT BACK RECLINE MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD26-04	SEAT BACK RECLINE MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
PG	SD27-01	POWER GROUND: GROUND
B+	SD27-02	BATTERY POWER SUPPLY: B+
O	SD27-03	HEADREST POSITION MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-04	HEADREST POSITION MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-05	SEAT CUSHION FRONT MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	SD27-06	SEAT CUSHION FRONT MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+

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

Fig. 11.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DRIVER SEAT MODULE	SD2	22-WAY / BLACK	UNDER DRIVER SEAT
	SD3	6-WAY / BLACK	
	SD4	26-WAY / BLACK	
	SD24	4-WAY / BLACK	
	SD26	4-WAY / BLACK	
	SD27	6-WAY / BLACK	
SEAT CUSHION EXTEND MOTOR AND POSITION SENSOR – DRIVER	SD7	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT CUSHION FRONT RAISE / LOWER MOTOR AND POSITION SENSOR – DRIVER	SD6	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR AND POSITION SENSOR – DRIVER	SD12	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR AND POSITION SENSOR – DRIVER	SD8	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR AND POSITION SENSOR – DRIVER	SD9	5-WAY / BLACK	DRIVER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR AND POSITION SENSOR – DRIVER	SD13	5-WAY / BLACK	DRIVER SEAT BACK / LOWER
SEAT LUMBAR PUMP – 16-WAY SEAT – DRIVER	DL3	2-WAY / BLACK	DRIVER SEAT BACK / LOWER
SEAT LUMBAR SOLENOIDS – DRIVER	DL1	6-WAY / BLACK	DRIVER SEAT BACK / UPPER
SEAT SWITCH PACK – DRIVER	SD5	12-WAY / BLACK	DRIVER SEAT / OUTBOARD
	SD29	14-WAY / BLACK	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DL2	6-WAY / BLACK / DRIVER SEAT HARNESS TO DRIVER SEAT LUMBAR HARNESS	CABIN / BEHIND DRIVER SEAT BACK
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT

GROUNDS

Ground	Location
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER SEAT

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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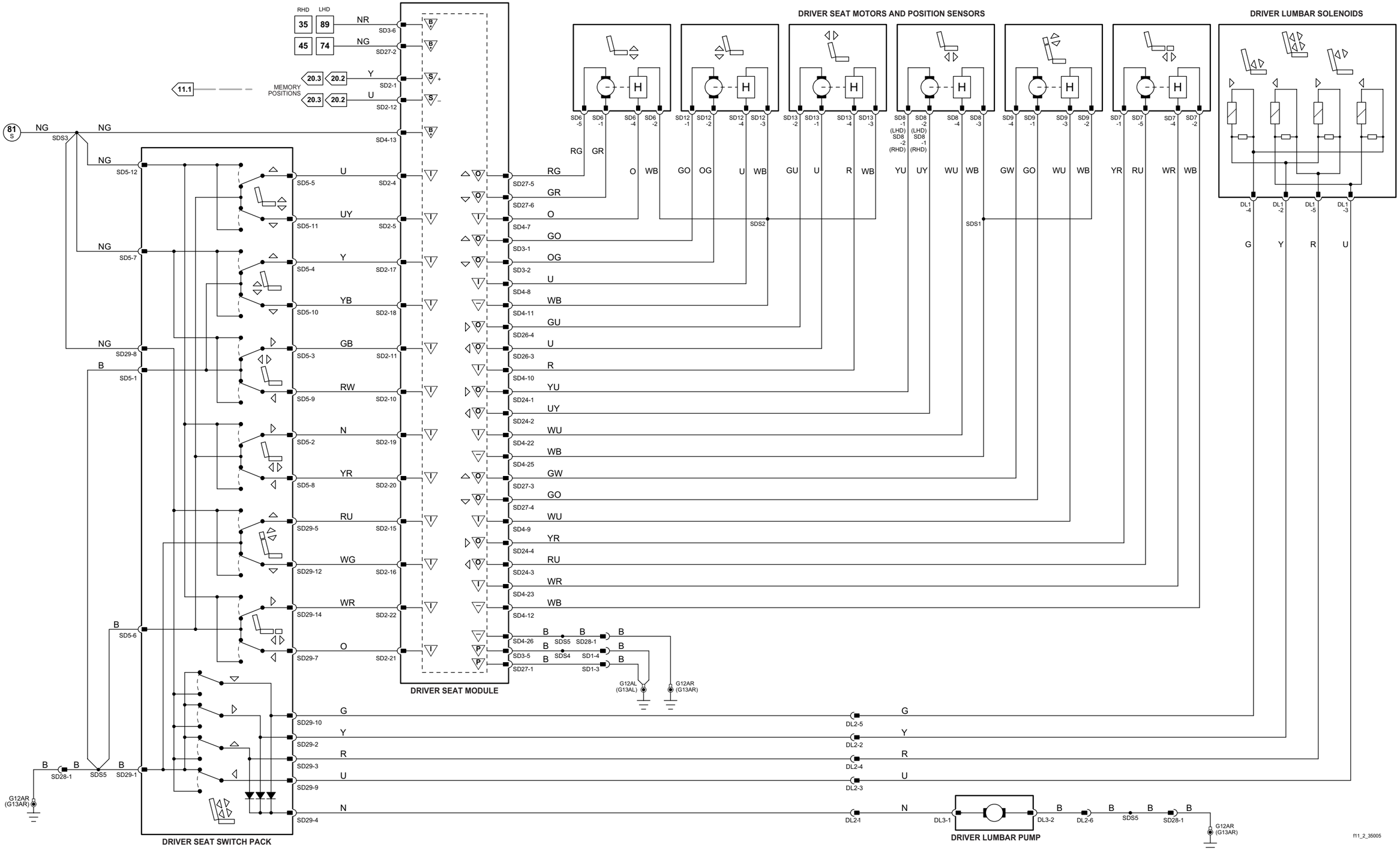


1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: 16-Way Driver Seat Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 11.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT CUSHION FRONT RAISE / LOWER MOTOR – DRIVER	SD6	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR – DRIVER	SD12	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR – DRIVER	SD8	5-WAY / BLACK	DRIVER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR – DRIVER	SD9	5-WAY / BLACK	DRIVER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR – DRIVER	SD13	5-WAY / BLACK	DRIVER SEAT BACK / LOWER
SEAT LUMBAR PUMP – DRIVER	DL4	3-WAY / BLACK	LOWER SEAT BACK
SEAT SWITCH PACK – DRIVER	SD5	12-WAY / BLACK	DRIVER SEAT / OUTBOARD
	SD29	14-WAY / BLACK	

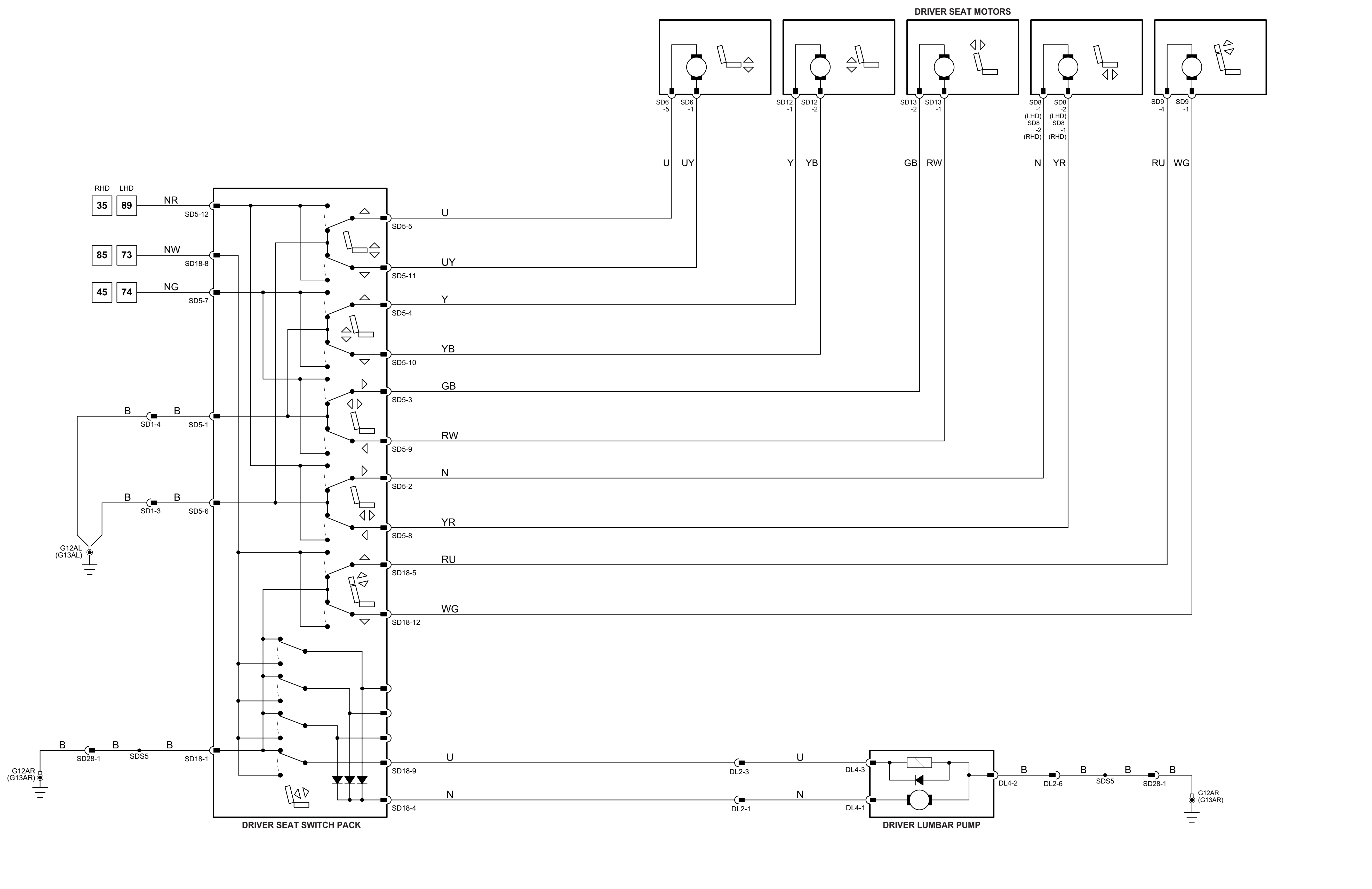
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
DL2	6-WAY / BLACK / DRIVER SEAT HARNESS TO DRIVER SEAT LUMBAR HARNESS	CABIN / BEHIND DRIVER SEAT BACK
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT

GROUNDS

Ground	Location
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER 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.



1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	− Sensor/Signal Ground	C CAN D Serial and Encoded Data

VARIANT: Non Memory Driver Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 11.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT CUSHION FRONT RAISE / LOWER MOTOR – PASSENGER	SP6	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR – PASSENGER	SP12	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR – PASSENGER	SP8	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR – PASSENGER	SP9	5-WAY / BLACK	PASSENGER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR – PASSENGER	SP13	5-WAY / BLACK	PASSENGER SEAT BACK / LOWER
SEAT LUMBAR PUMP – 12-WAY SEAT – PASSENGER	PL4	6-WAY / BLACK	PASSENGER SEAT BACK / LOWER
SEAT SWITCH PACK – PASSENGER	SP5	12-WAY / BLACK	PASSENGER SEAT / OUTBOARD
	SP24	14-WAY / BLACK	

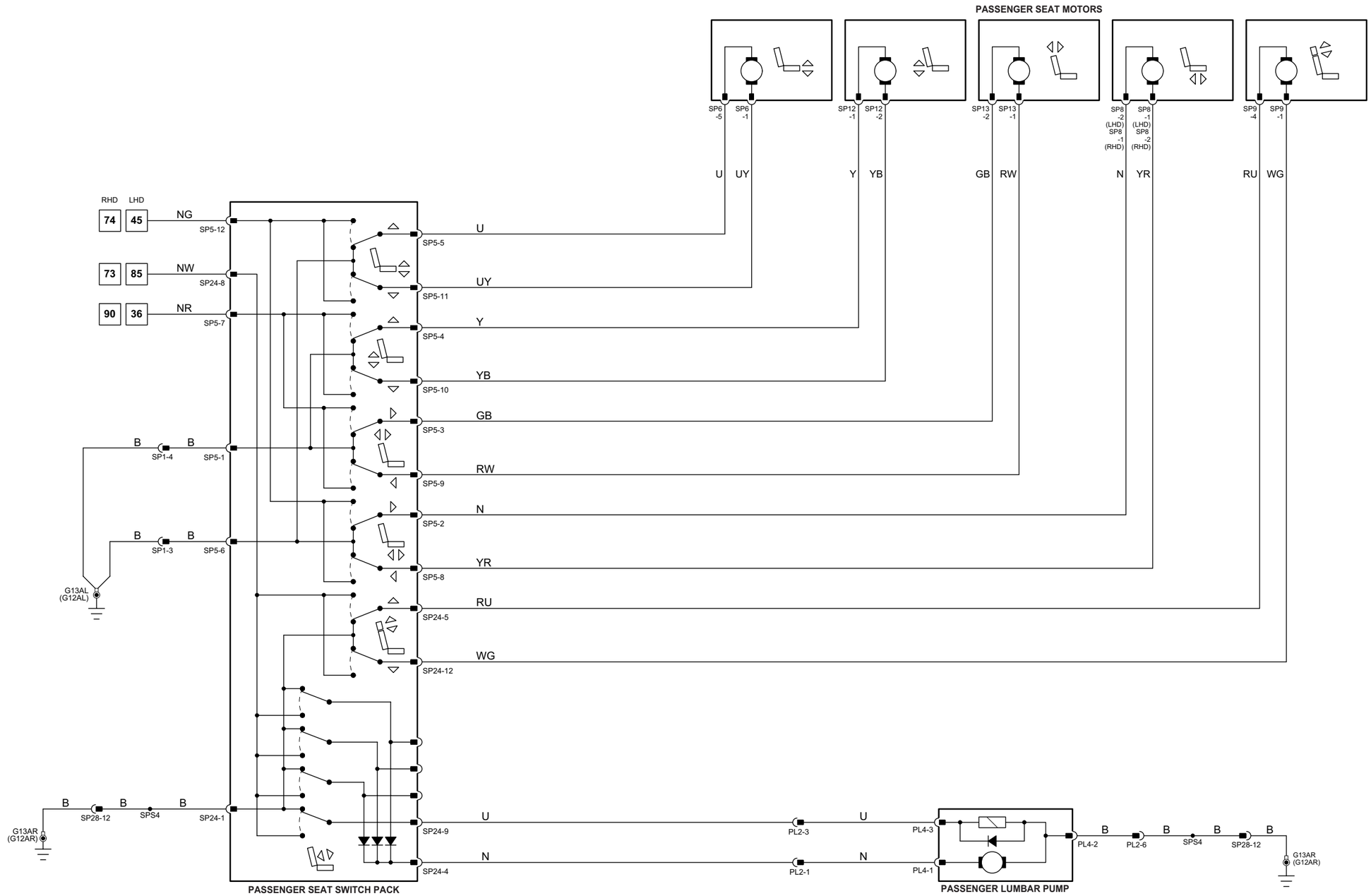
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
PL2	6-WAY / BLACK / PASSENGER SEAT HARNESS TO PASSENGER SEAT LUMBAR HARNESS	CABIN / BEHIND PASSENGER SEAT BACK
SP1	4-WAY / GREY / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT

GROUNDS

Ground	Location
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER 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.



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1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (I) Fig. 01.4
16 (I) → 52 (I) Fig. 01.5
53 (I) → 77 (I) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: 12-Way Passenger Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 11.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
SEAT CUSHION EXTEND MOTOR – PASSENGER	SP26	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT CUSHION FRONT RAISE / LOWER MOTOR – PASSENGER	SP6	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR – PASSENGER	SP12	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR – PASSENGER	SP8	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR – PASSENGER	SP9	5-WAY / BLACK	PASSENGER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR – PASSENGER	SP13	5-WAY / BLACK	PASSENGER SEAT BACK / LOWER
SEAT SWITCH PACK – PASSENGER	SP5	12-WAY / BLACK	PASSENGER SEAT / OUTBOARD
	SP24	14-WAY / BLACK	
SEAT LUMBAR PUMP – PASSENGER (16-WAY)	PL3	2-WAY / BLACK	LOWER SEAT BACK
SEAT LUMBAR SOLENOIDS – PASSENGER	PL1	6-WAY / BLACK	UPPER SEAT BACK

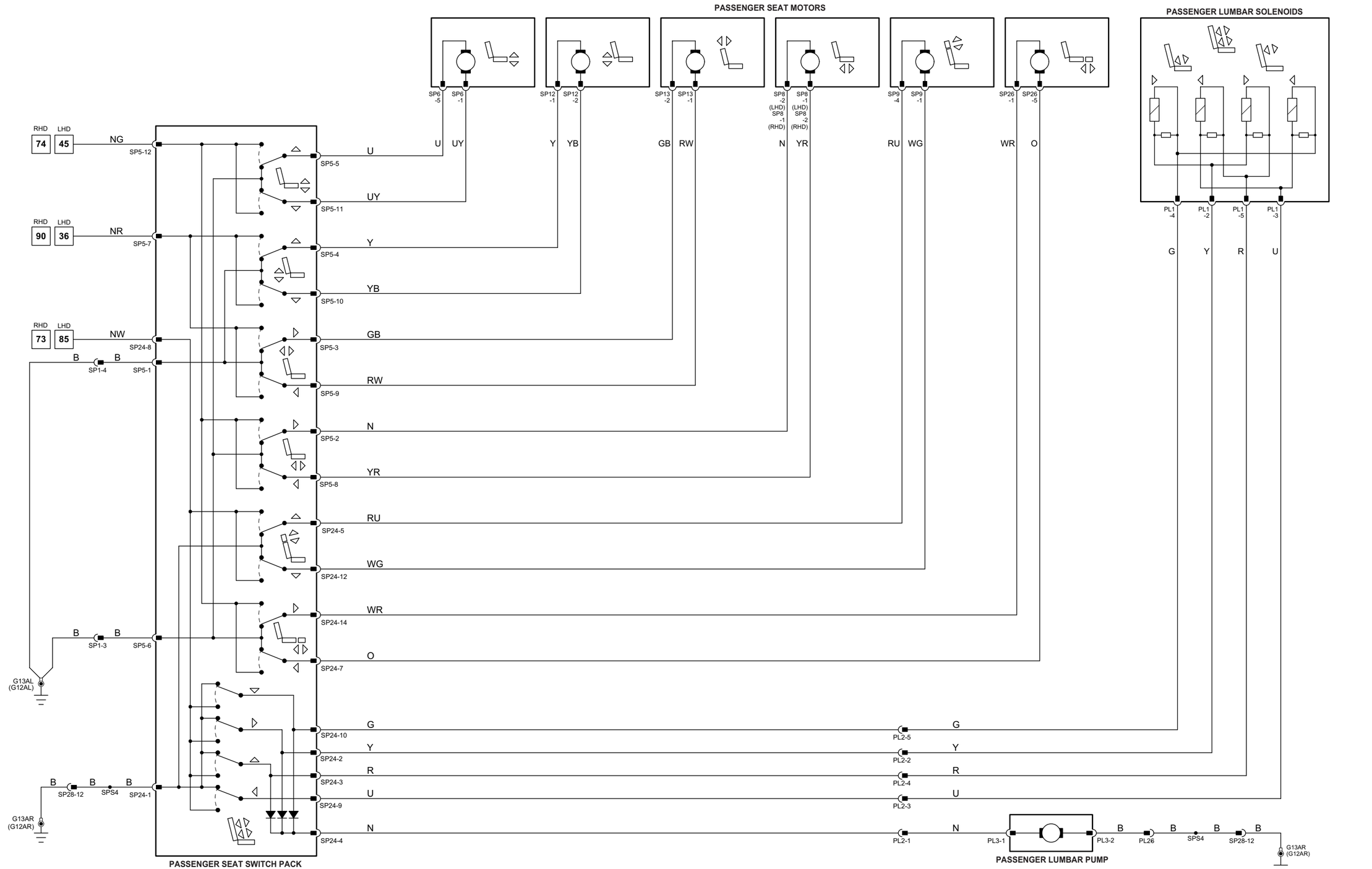
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
PL2	6-WAY / BLACK / PASSENGER SEAT HARNESS TO PASSENGER SEAT LUMBAR HARNESS	CABIN / BEHIND PASSENGER SEAT BACK
SP1	4-WAY / GREY / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT

GROUNDS

Ground	Location
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER 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.



1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (F) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** 16-Way Passenger Seat Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Rear Electronic Module

	Pin	Description and Characteristic
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-25	LOGIC GROUND: GROUND
O	CR12-02	REAR WINDOW ISOLATE: TO ISOLATE, REM INTERRUPTS GROUND SUPPLY

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

Fig. 11.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR OVERRIDE RELAY PACK	SP31	8-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
	SP32	8-WAY / BLACK	
REAR SEAT SWITCH PACK – LH	LS5	22-WAY / BLACK	LH REAR SEAT CUSHION / OUTBOARD
REAR SEAT SWITCH PACK – RH	RS5	22-WAY / BLACK	RH REAR SEAT CUSHION / OUTBOARD
SEAT CUSHION EXTEND MOTOR – PASSENGER	SP26	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT CUSHION FRONT RAISE / LOWER MOTOR – PASSENGER	SP6	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT CUSHION REAR RAISE / LOWER MOTOR – PASSENGER	SP12	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT FORE / AFT MOTOR – PASSENGER	SP8	5-WAY / BLACK	PASSENGER SEAT CUSHION / UNDER
SEAT HEADREST MOTOR – PASSENGER	SP9	5-WAY / BLACK	PASSENGER SEAT BACK / UPPER
SEAT INCLINE / RECLINE MOTOR – PASSENGER	SP13	5-WAY / BLACK	PASSENGER SEAT BACK / LOWER
SEAT SWITCH PACK – PASSENGER	SP5	12-WAY / BLACK	PASSENGER SEAT / OUTBOARD
	SP24	14-WAY / BLACK	
SEAT LUMBAR PUMP – PASSENGER (16-WAY)	PL3	2-WAY / BLACK	LOWER SEAT BACK
SEAT LUMBAR SOLENOIDS – PASSENGER	PL1	6-WAY / BLACK	UPPER SEAT BACK

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
LS1	22-WAY / BLACK / CABIN HARNESS TO LH REAR SEAT HARNESS	CABIN / BELOW LH REAR SEAT
PL2	6-WAY / BLACK / PASSENGER SEAT HARNESS TO PASSENGER SEAT LUMBAR HARNESS	CABIN / BEHIND PASSENGER SEAT BACK
RS1	22-WAY / BLACK / CABIN HARNESS TO REAR SEAT HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
SP1	4-WAY / GREY / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G10	CABIN / RH 'A' POST
G17	CABIN / BELOW REAR SEAT / RH SIDE

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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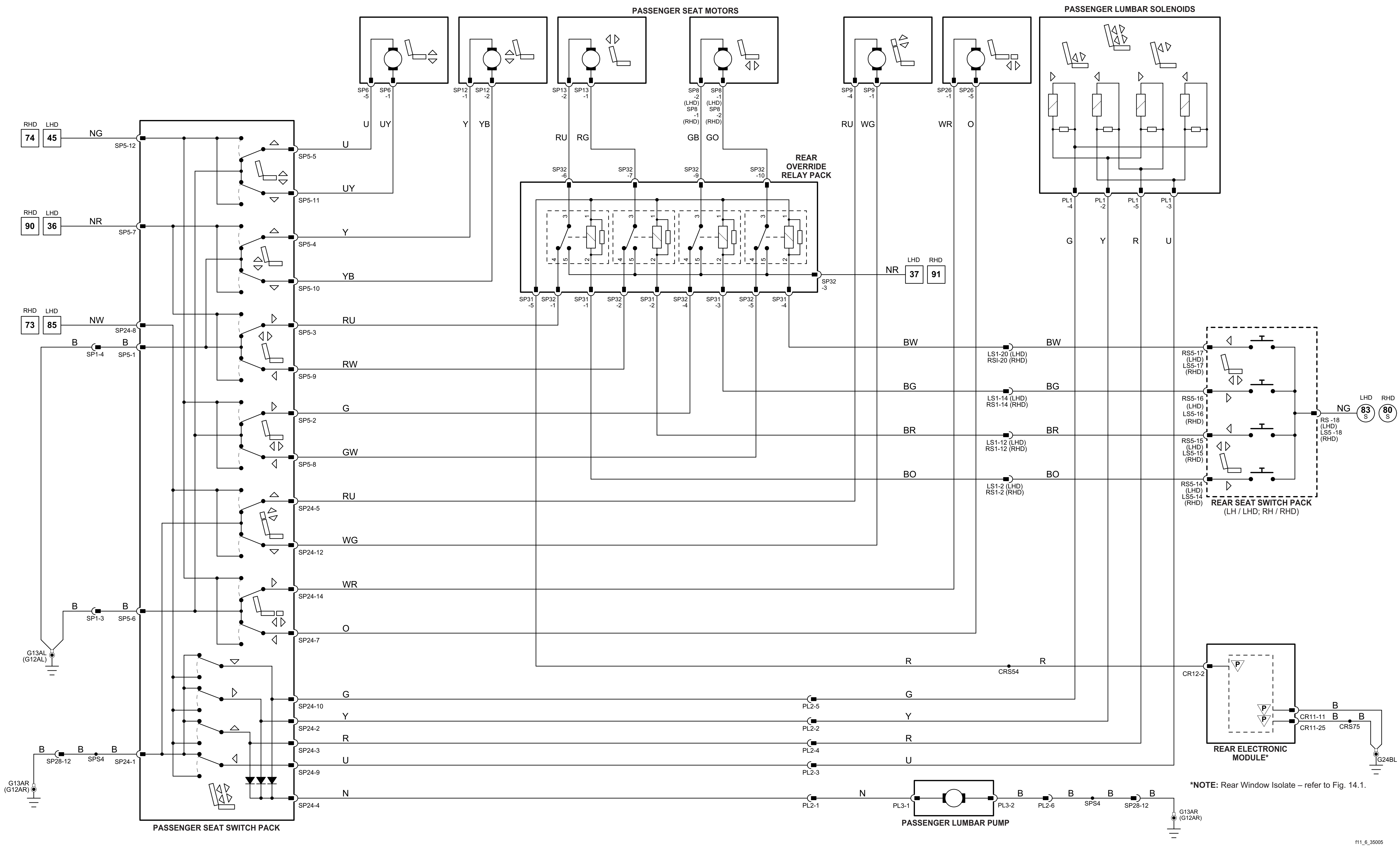


*NOTE: Rear Window Isolate – refer to Fig. 14.1.

1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8

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

VARIANT: Powered Rear Seats Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 11.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
SEAT BACK HEATER – DRIVER	SD15	2-WAY / BLACK	DRIVER SEAT BACK
SEAT BACK HEATER – PASSENGER	SP15	2-WAY / BLACK	PASSENGER SEAT BACK
SEAT CUSHION HEATERS – DRIVER	SD14	4-WAY / BLACK	DRIVER SEAT CUSHION
SEAT CUSHION HEATERS – PASSENGER	SP14	4-WAY / BLACK	PASSENGER SEAT CUSHION

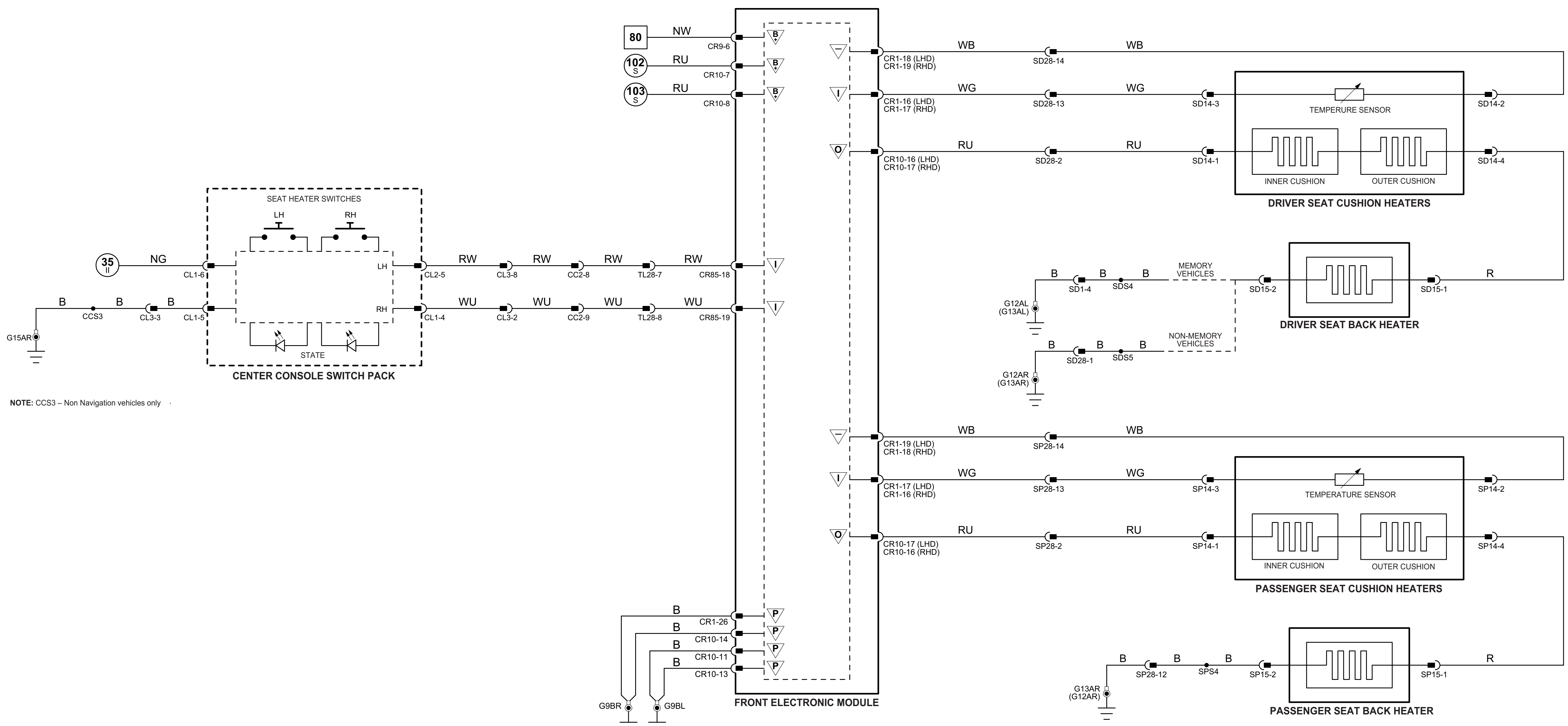
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
SD1	4-WAY / GREY / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G9	CABIN / UPPER LH 'A' POST
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER SEAT
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL

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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VARIANT: Heated Front Seats Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Rear Memory Module

	Pin	Description and Characteristic
I	CR37-02	MEMORY 1, 2, 3, SET INPUT SIGNAL: VARIABLE RESISTANCE
O	CR37-03	MEMORY SET INDICATOR ACTIVATE: TO ACTIVATE, RMM SWITCHES CIRCUIT TO B+
I	CR37-09	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	CR37-10	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
B+	CR37-13	SWITCHED SYSTEM POWER SUPPLY (LOGIC): B+
SG	CR37-15	REAR SEAT MEMORY SWITCH PACK REFERENCE GROUND: GROUND
SG	CR37-24	SIGNAL GROUND: GROUND
SG	CR37-25	SIGNAL GROUND: GROUND
S	CR38-01	SCP +
I	CR38-10	SEAT BACK RECLINE REARWARD REQUEST: ACTIVE = B+
I	CR38-11	SEAT BACK RECLINE FORWARD REQUEST: ACTIVE = B+
S	CR38-12	SCP –
I	CR38-15	HEAD REST RAISE REQUEST: ACTIVE = B+
I	CR38-16	HEADREST LOWER REQUEST: ACTIVE = B+
O	CR53-03	SEAT BACK RECLINE MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	CR53-04	SEAT BACK RECLINE MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
B+	CR59-02	BATTERY POWER SUPPLY (LH SEAT): B+
O	CR59-03	HEADREST POSITION MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	CR59-04	HEADREST POSITION MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+

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

Fig. 11.8

COMPONENTS

Component	Connector(s)	Connector Description	Location
REAR MEMORY MODULE	CR21	4-WAY / BLACK	REAR BULKHEAD / BEHIND REAR SEAT BACK
	CR37	26-WAY / BLACK	
	CR38	22-WAY / BLACK	
	CR41	6-WAY / BLACK	
	CR53	4-WAY / BLACK	
	CR59	6-WAY / BLACK	
REAR SEAT BACK INCLINE / RECLINE MOTOR AND POSITION SENSOR – LH	SL1	5-WAY / BLACK	LH REAR SEAT BACK / UPPER
REAR SEAT BELT COMFORT SOLENOID – LH	CR112	3-WAY / BLACK	LH REAR SEAT BELT TENSIONER
REAR SEAT BELT COMFORT SWITCH – LH	CR109	2-WAY / BLACK	LH REAR SEAT BELT BUCKLE
REAR SEAT HEADREST MOTOR AND POSITION SENSOR – LH	SL2	5-WAY / BLACK	LH REAR SEAT BACK / UPPER
REAR SEAT LUMBAR PUMP – LH	LL3	2-WAY / BLACK	LH REAR SEAT BACK / UPPER
REAR SEAT LUMBAR SOLENOIDS – LH	LL1	5-WAY / BLACK	LH REAR SEAT BACK / UPPER
REAR SEAT MEMORY SWITCH PACK – LH	LT5	8-WAY / BLACK	LH REAR DOOR TRIM
REAR SEAT SWITCH PACK – LH	LS5	22-WAY / BLACK	LH REAR SEAT CUSHION / OUTBOARD

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
LL2	6-WAY / BLACK / LH REAR SEAT HARNESS TO LH REAR SEAT LUMBAR HARNESS	CABIN / BEHIND REAR SEAT BACK / LH SIDE
LS1	22-WAY / BLACK / CABIN HARNESS TO LH REAR SEAT HARNESS	CABIN / BELOW LH REAR SEAT
LS11	6-WAY / GREY / CABIN HARNESS TO LH REAR SEAT MOTOR HARNESS	CABIN / BELOW LH REAR SEAT
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
SL4	20-WAY / BLACK / LH REAR SEAT HARNESS TO LH REAR SEAT MOTOR HARNESS	CABIN / BELOW REAR SEAT / RH SIDE

GROUNDS

Ground	Location
G17	CABIN / BELOW REAR SEAT / RH SIDE
G18	CABIN / BELOW REAR SEAT / LH SIDE

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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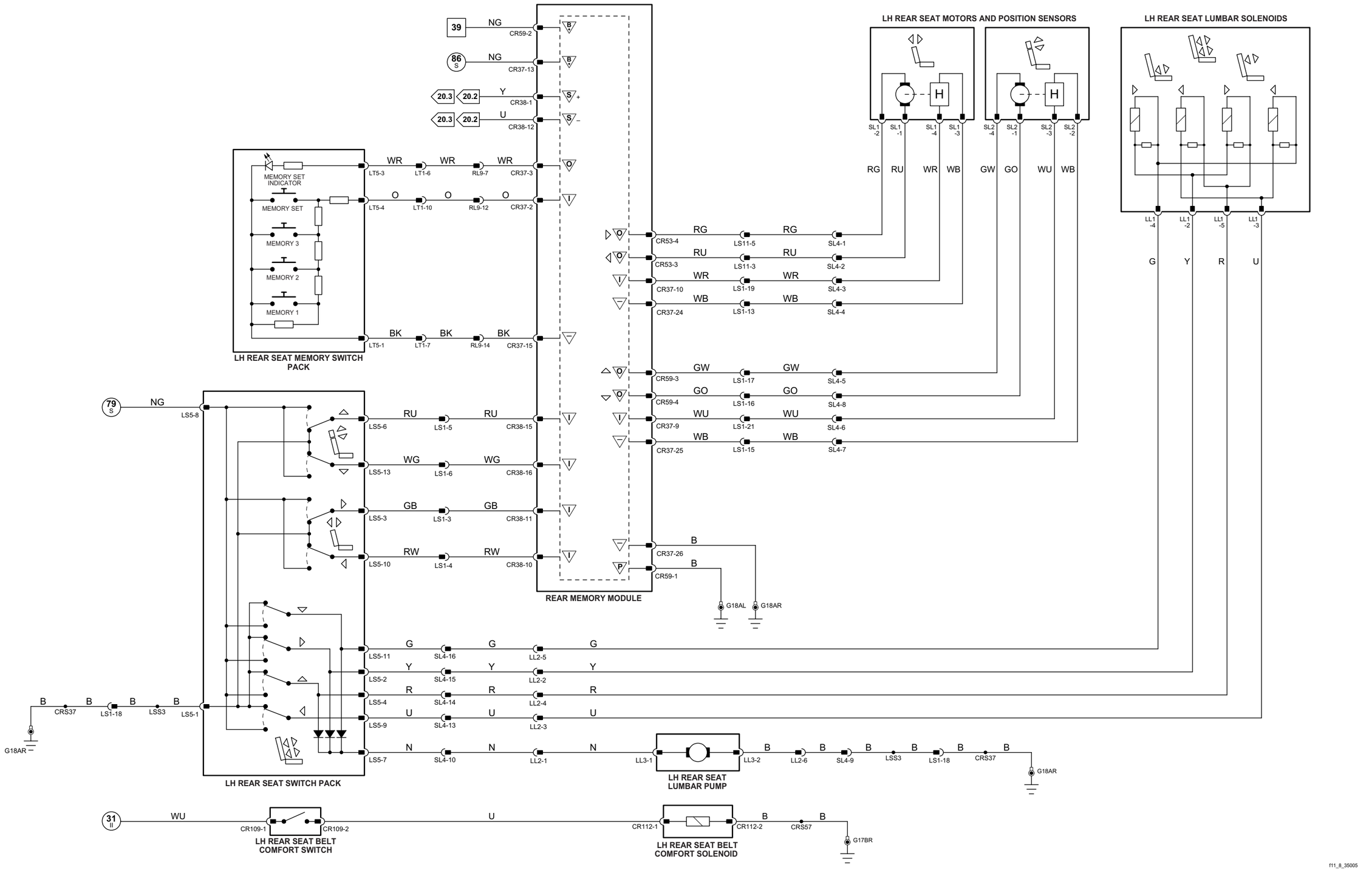
DATE OF ISSUE: September 2004



1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (II) Fig. 01.4
16 (I) → 52 (I) Fig. 01.5
53 (S) → 77 (S) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: Powered Rear Seats Vehicles
VIN RANGE: All
DATE OF ISSUE: Sep 2004

Rear Memory Module

	Pin	Description and Characteristic
O	CR21-01	SEAT BACK RECLINE MOTOR DRIVE – REARWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	CR21-02	SEAT BACK RECLINE MOTOR DRIVE – FORWARD: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	CR21-03	HEADREST POSITION MOTOR DRIVE – RAISE: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
O	CR21-04	HEADREST POSITION MOTOR DRIVE – LOWER: TO ACTIVATE, DSCM SWITCHES CIRCUIT TO B+
I	CR37-01	MEMORY 1, 2, 3, SET INPUT SIGNAL: VARIABLE RESISTANCE
SG	CR37-11	SIGNAL GROUND: GROUND
SG	CR37-12	SIGNAL GROUND: GROUND
B+	CR37-13	SWITCHED SYSTEM POWER SUPPLY (LOGIC): B+
SG	CR37-14	REAR SEAT MEMORY SWITCH PACK REFERENCE GROUND: GROUND
O	CR37-16	MEMORY SET INDICATOR ACTIVATE: TO ACTIVATE, RMM SWITCHES CIRCUIT TO B+
I	CR37-22	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
I	CR37-23	SEAT POSITION SENSOR SIGNAL: 5 V PULSED SIGNAL
SG	CR37-26	SIGNAL GROUND: GROUND
S	CR38-01	SCP +
S	CR38-12	SCP –
I	CR38-19	HEAD REST RAISE REQUEST: ACTIVE = B+
I	CR38-20	HEADREST LOWER REQUEST: ACTIVE = B+
I	CR38-21	SEAT BACK RECLINE REARWARD REQUEST: ACTIVE = B+
I	CR38-22	SEAT BACK RECLINE FORWARD REQUEST: ACTIVE = B+
PG	CR41-05	POWER GROUND (RH SEAT): GROUND
B+	CR41-06	BATTERY POWER SUPPLY (RH SEAT): B+

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

Fig. 11.9

COMPONENTS

Component	Connector(s)	Connector Description	Location
REAR MEMORY MODULE	CR21	4-WAY / BLACK	REAR BULKHEAD / BEHIND REAR SEAT BACK
	CR37	26-WAY / BLACK	
	CR38	22-WAY / BLACK	
	CR41	6-WAY / BLACK	
	CR53	4-WAY / BLACK	
	CR59	6-WAY / BLACK	
REAR SEAT BACK INCLINE / RECLINE MOTOR AND POSITION SENSOR – RH	SR1	5-WAY / BLACK	RH REAR SEAT BACK / UPPER
REAR SEAT BELT COMFORT SOLENOID – RH	CR114	3-WAY / BLACK	RH REAR SEAT BELT TENSIONER
REAR SEAT BELT COMFORT SWITCH – RH	CR111	2-WAY / BLACK	RH REAR SEAT BELT BUCKLE
REAR SEAT HEADREST MOTOR AND POSITION SENSOR – RH	SR2	5-WAY / BLACK	RH REAR SEAT BACK / UPPER
REAR SEAT LUMBAR PUMP – RH	YL3	2-WAY / BLACK	RH REAR SEAT BACK / UPPER
REAR SEAT LUMBAR SOLENOIDS – RH	YL1	5-WAY / BLACK	RH REAR SEAT BACK / UPPER
REAR SEAT MEMORY SWITCH PACK – RH	RT5	8-WAY / BLACK	RH REAR DOOR TRIM
REAR SEAT SWITCH PACK – RH	RS5	22-WAY / BLACK	RH REAR SEAT CUSHION / OUTBOARD

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RS1	22-WAY / BLACK / CABIN HARNESS TO REAR SEAT HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
RS11	6-WAY / GREY / CABIN HARNESS TO REAR SEAT HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM
SR4	20-WAY / BLACK / RH REAR SEAT HARNESS TO RH REAR SEAT MOTOR HARNESS	CABIN / BELOW REAR SEAT / LH SIDE
YL2	6-WAY / BLACK / RH REAR SEAT HARNESS TO RH REAR SEAT LUMBAR HARNESS	CABIN / BEHIND REAR SEAT BACK / RH SIDE

GROUNDS

Ground	Location
G17	CABIN / BELOW REAR SEAT / RH SIDE
G18	CABIN / BELOW REAR SEAT / LH SIDE

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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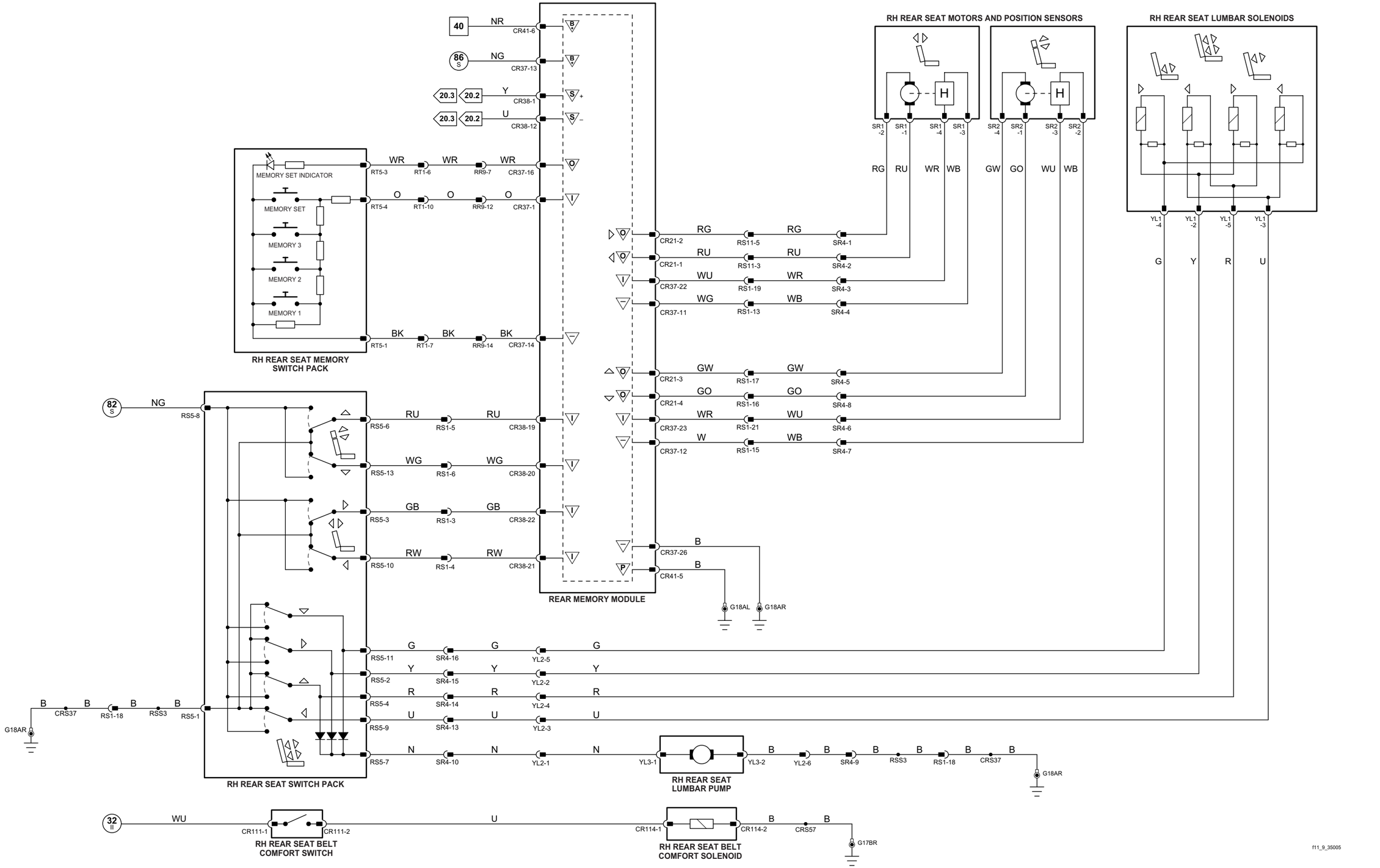


1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 I → 15 I Fig. 01.4
16 E → 52 E Fig. 01.5
53 S → 77 S Fig. 01.6
78 S → 105 S Fig. 01.7
106 E → 143 E Fig. 01.8

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

VARIANT: Powered Rear Seats Vehicles
VIN RANGE: All
DATE OF ISSUE: Sep 2004

Fig. 11.10

COMPONENTS

Component	Connector(s)	Connector Description	Location
REAR CENTER CONSOLE SWITCH PACK	TL89	8-WAY / BLACK	REAR CENTER CONSOLE
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR SEAT BACK HEATER – LH	SL4	20-WAY / BLACK	LH REAR SEAT BACK
REAR SEAT BACK HEATER – RH	SR4	20-WAY / BLACK	RH REAR SEAT BACK
REAR SEAT CUSHION HEATERS – LH	LS4	4-WAY / BLACK	LH REAR SEAT CUSHION
REAR SEAT CUSHION HEATERS – RH	RS4	4-WAY / BLACK	RH REAR SEAT CUSHION

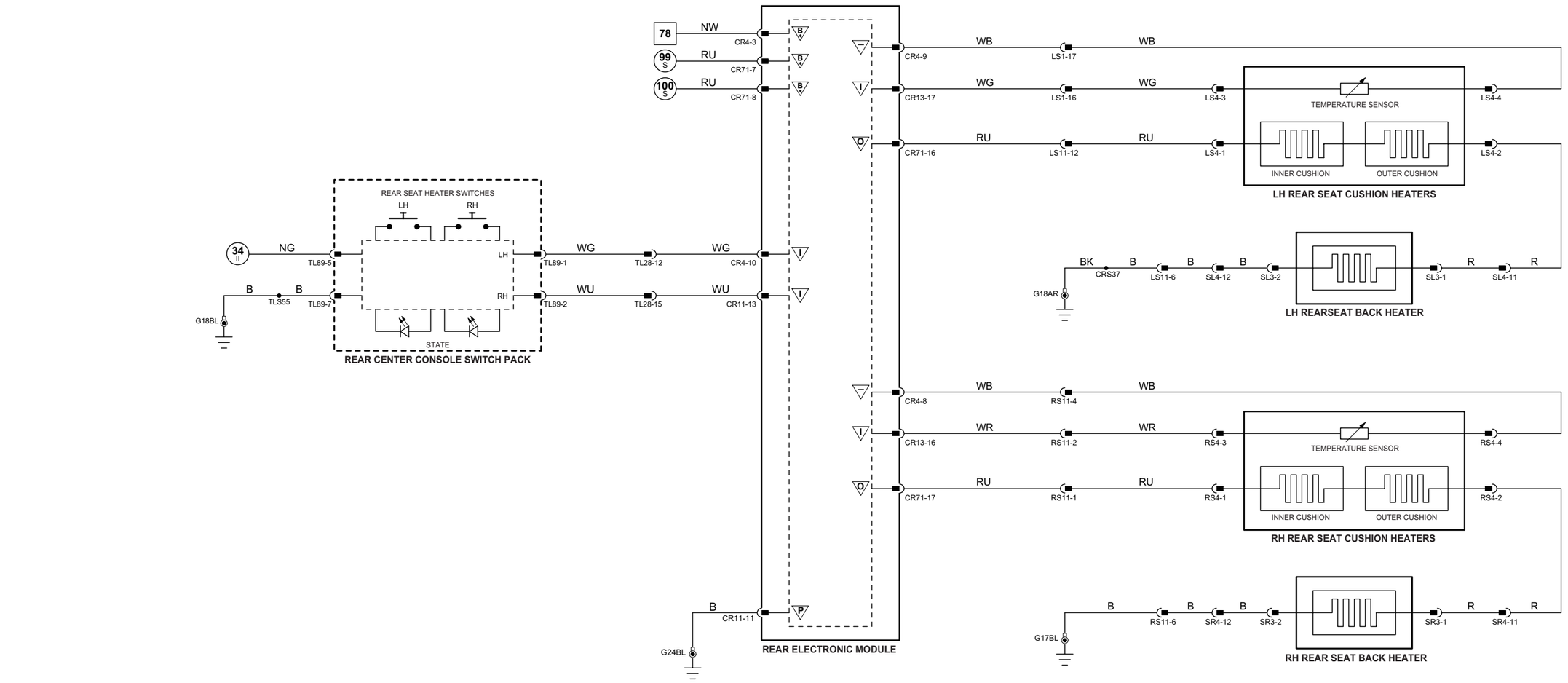
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
LS1	22-WAY / BLACK / CABIN HARNESS TO LH REAR SEAT HARNESS	CABIN / BELOW LH REAR SEAT
LS11	6-WAY / GREY / CABIN HARNESS TO LH REAR SEAT MOTOR HARNESS	CABIN / BELOW LH REAR SEAT
RS11	6-WAY / GREY / CABIN HARNESS TO REAR SEAT HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
SL4	20-WAY / BLACK / LH REAR SEAT HARNESS TO LH REAR SEAT MOTOR HARNESS	CABIN / BELOW REAR SEAT / RH SIDE
SR4	20-WAY / BLACK / RH REAR SEAT HARNESS TO RH REAR SEAT MOTOR HARNESS	CABIN / BELOW REAR SEAT / LH SIDE
TL28	16-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE

GROUNDS

Ground	Location
G17	CABIN / BELOW REAR SEAT / RH SIDE
G18	CABIN / BELOW REAR SEAT / RH SIDE
G24	TRUNK / RH REAR / REAR ELECTRONIC MODULE

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.



f11_10_35005

1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 I → 15 II Fig. 01.4	16 II → 52 P Fig. 01.5 53 S → 77 S Fig. 01.6	78 S → 105 S Fig. 01.7 106 E → 143 E Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V − Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** Heated Rear Seats Vehicles **VIN RANGE:** All **DATE OF ISSUE:** Sep 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD11–6	REMOTE KEYLESS ENTRY MODULE POWER SUPPLY: B+
O	DD11–8	LOCK DRIVE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
O	DD11–9	UNLOCK DRIVE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
O	DD11–10	DOUBLE LOCK DRIVE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
D	DD11–13	REMOTE KEYLESS ENTRY MODULE SIGNAL: ENCODED COMMUNICATIONS
I	DD11–16	DRIVER DOOR ALARM SET / LOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
I	DD11–17	DRIVER DOOR ALARM RESET / UNLOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
D	DD11–18	REMOTE KEYLESS ENTRY MODULE SIGNAL: ENCODED COMMUNICATIONS
D	DD11–20	REMOTE KEYLESS ENTRY RETURN
I	DD12-25	DRIVER DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
I	DD13-02	DRIVER UNLOCK STATUS SWITCH SIGNAL: GROUND WHEN ACTIVATED
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
SG	DD13-07	LOGIC GROUND: GROUND
PG	DD13-08	POWER GROUND: GROUND
I	DD13-10	DRIVER LOCK STATUS SWITCH SIGNAL: GROUND WHEN ACTIVATED
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+
B+	DD13-12	SWITCHED SYSTEM POWER SUPPLY: B+

Front Electronic Module

	Pin	Description and Characteristic
I	CR1-01	PASSENGER DOOR AJAR SWITCH SIGNAL: GROUND WHEN ACTIVATED
S	CR9–01	SCP –
B+	CR9–06	BATTERY POWER SUPPLY (LOGIC): B+
S	CR9–07	SCP +
I	CR9-08	GLOBAL OPEN / CLOSE SWITCH SIGNAL: GROUND WHEN ACTIVATED
SG	CR9-12	LOGIC GROUND: GROUND
B+	CR85-01	SWITCHED SYSTEM POWER SUPPLY: B+
I	CR85-06	VALET SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	EC36-05	FUEL FLAP RELEASE SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	EC36-08	TRUNK RELEASE SWITCH SIGNAL: GROUND WHEN ACTIVATED

Rear Electronic Module

	Pin	Description and Characteristic
O	CR4-01	UNLOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR4-02	LOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
I	CR4-07	TRUNK CLOSE SWITCH SIGNAL: GROUND (SIGNAL) WHEN TRUNK IS AJAR
O	CR4-11	DOUBLE LOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR4-12	DOUBLE LOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR11-03	FUEL FILLER FLAP MOTOR ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR11-04	TRUNK RELEASE MOTOR ACTIVATE: OPEN / CLOSE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR11-05	TRUNK RELEASE MOTOR ACTIVATE: CLOSE / OPEN: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR11-06	LOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR11-07	UNLOCK MOTOR DRIVE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
I	CR11-08	TRUNK RELEASE MOTOR OPEN STATUS SIGNAL: GROUND (SIGNAL) WHEN ACTIVATED
SG	CR11-10	TRUNK LATCH SIGNAL GROUND: GROUND
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-12	LOGIC GROUND: GROUND
I	CR11-21	PASSENGER DOOR LATCH LOCK STATUS SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	CR11-22	PASSENGER DOOR LATCH UNLOCK STATUS SWITCH SIGNAL: GROUND WHEN ACTIVATED
SG	CR11-25	LOGIC GROUND: GROUND
I	CR12-09	EXTERNAL TRUNK RELEASE SWITCH SIGNAL: GROUND WHEN ACTIVATED
S	CR13-01	SCP +
S	CR13-02	SCP –
I	CR13-14	TRUNK AJAR SWITCH SIGNAL: GROUND (SIGNAL) WHEN TRUNK IS AJAR
I	CR13-15	TRUNK RELEASE MOTOR CLOSED STATUS SIGNAL: GROUND (SIGNAL) WHEN 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. 12.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
DOOR AJAR SWITCH – DRIVER	DD7	2-WAY / BLACK	DRIVER DOOR
	DD10	3-WAY / BLACK	
DOOR AJAR SWITCH – PASSENGER	PD7	2-WAY / BLACK	PASSENGER DOOR
	PD10	3-WAY / BLACK	
DOOR LATCH – DRIVER	DD2	8-WAY / BLACK	DRIVER DOOR TRIM
DRIVER DOOR MODULE	CA85	12-WAY / BLACK	DRIVER DOOR
	DD4	26-WAY / NATURAL	
	DD11	20-WAY / BLACK	
EXTERNAL TRUNK RELEASE SWITCH	CA97	2-WAY / BLACK	LUGGAGE COMPARTMENT LID
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
FUEL FILLER FLAP MOTOR	CR15	2-WAY / BLACK	TRUNK / RH SIDE
REAR DOOR LOCK MOTOR – DRIVER	RL2	8-WAY / BLACK	DRIVER REAR DOOR
	RR2	8-WAY / BLACK	DRIVER REAR DOOR
REAR DOOR LOCK MOTOR – PASSENGER	RR2	8-WAY / BLACK	PASSENGER REAR DOOR
	RL2	8-WAY / BLACK	PASSENGER REAR DOOR
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REMOTE KEYLESS ENTRY MODULE	IP60	4-WAY / BLACK	BEHIND INSTRUMENT PANEL / DRIVER SIDE
TRUNK LATCH	BT2	8-WAY / BLACK	TRUNK LID

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
IP3	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP17	16-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G10	CABIN / RH A POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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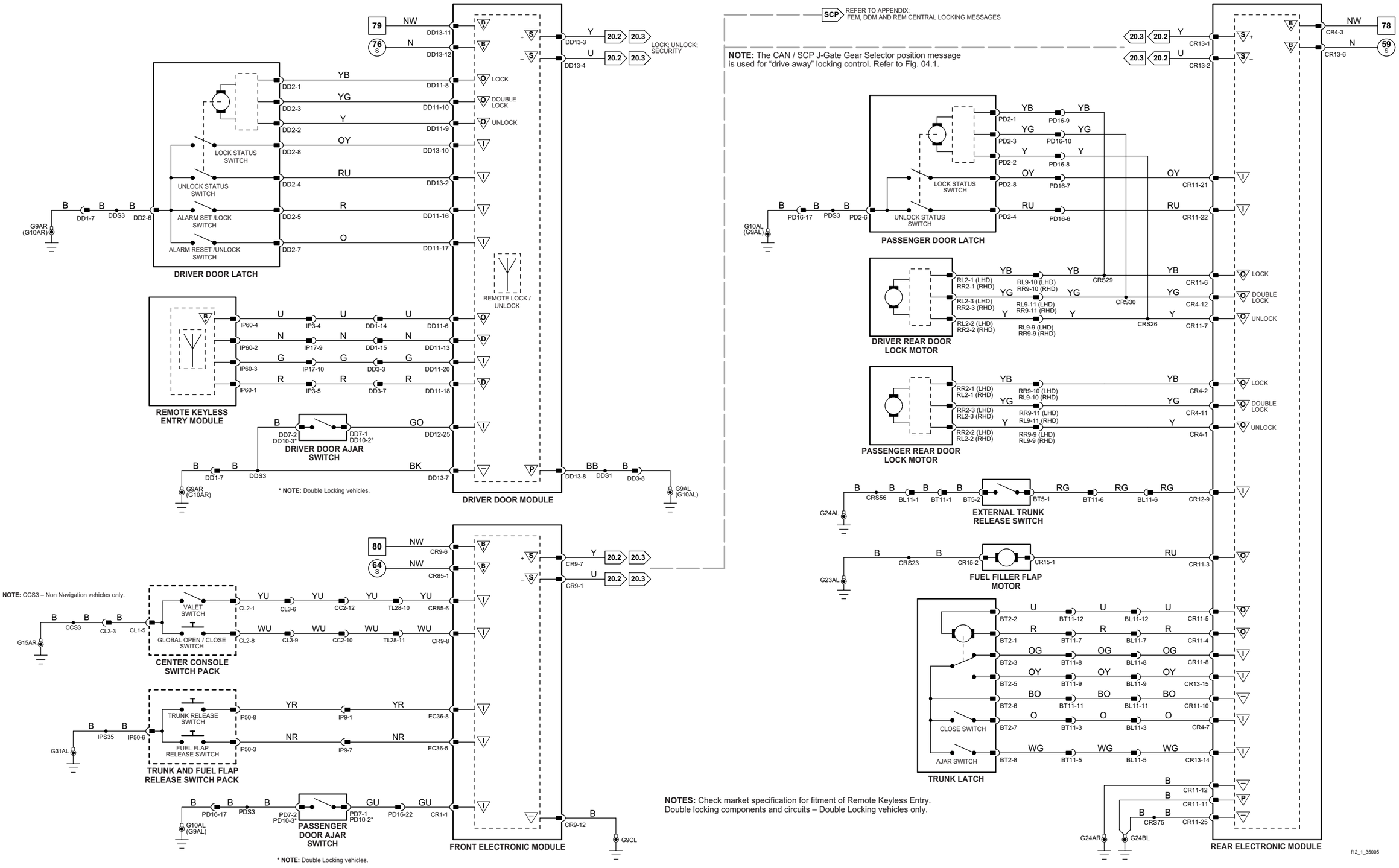

1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Door Module

	Pin	Description and Characteristic
O	DD11–6	REMOTE KEYLESS ENTRY MODULE POWER SUPPLY: B+
D	DD11–13	REMOTE KEYLESS ENTRY MODULE SIGNAL: ENCODED COMMUNICATIONS
I	DD11–16	DRIVER DOOR ALARM SET / LOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
I	DD11–17	DRIVER DOOR ALARM RESET / UNLOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
D	DD11–18	REMOTE KEYLESS ENTRY MODULE SIGNAL: ENCODED COMMUNICATIONS
D	DD11–20	REMOTE KEYLESS ENTRY RETURN
O	DD12-06	DDM SECURITY: DDM GROUND
I	DD12-25	DRIVER DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
SG	DD13-07	LOGIC GROUND: GROUND
PG	DD13-08	POWER GROUND: GROUND
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+

Engine Control Module

	Pin	Description and Characteristic
C	PI1-123	CAN +
C	PI1-124	CAN –

Front Electronic Module

	Pin	Description and Characteristic
I	CR1-01	PASSENGER DOOR AJAR SWITCH SIGNAL: GROUND WHEN ACTIVATED
PG	CR1-25	FEM SECURITY SYSTEM GROUND SENSING: GROUND WHEN FEM IS INSTALLED
S	CR9-01	SCP –
I	CR9-03	TELEMATICS DISPLAY SECURITY GROUND SENSING: OPEN CIRCUIT IF TELEMATICS DISPLAY IS REMOVED
B+	CR9-06	BATTERY POWER SUPPLY: LOGIC: B+
S	CR9-07	SCP +
SG	CR9-12	LOGIC GROUND: GROUND
O	CR10-04	LH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	CR10-10	RH TURN SIGNAL ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
B+	CR85-03	IGNITION SWITCHED POWER SUPPLY (II): B+
I	CR85-06	VALET SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	CR85-07	AUDIO UNIT SECURITY GROUND SENSING: OPEN CIRCUIT IF AUDIO UNIT IS REMOVED
P	CR85-14	STEERING COLUMN LOCK MODULE GROUND: GROUND
I	EC36-02	HOOD AJAR SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	EC36-08	TRUNK RELEASE SWITCH SIGNAL: GROUND WHEN ACTIVATED
O	EC36-20	HORN RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND

Instrument Cluster

	Pin	Description and Characteristic
I	IP5-02	KEY-IN AUDIBLE WARNING: B+ WHEN KEY IN
B+	IP5-03	IGNITION SWITCHED POWER SUPPLY (II): B+
B+	IP5-04	IGNITION SWITCHED POWER SUPPLY (I): B+
O	IP5-10	SEAT BELT AUDIBLE WARNING REQUEST: AUDIBLE WARNING REQUEST ACTIVE = GROUND
SG	IP5-14	SIGNAL GROUND: GROUND
PG	IP6-02	POWER GROUND: GROUND
I	IP6-04	PATS GROUND: GROUND
D	IP6-05	PATS TRANSCEIVER: ENCODED COMMUNICATION
D	IP6-06	PATS TRANSCEIVER: ENCODED COMMUNICATION
C	IP6–08	CAN +
C	IP6–09	CAN –
S	IP6-10	SCP –
S	IP6-20	SCP +

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
O	CR4-05	ACTIVE SECURITY SOUNDER ACTIVATE: ENCODED COMMUNICATION
I	CR4-06	INTRUSION SENSOR SIGNAL: GROUND (PULSED)
I	CR4-07	TRUNK CLOSE SWITCH SIGNAL: GROUND (SIGNAL) WHEN TRUNK IS AJAR
I	CR4-17	RH REAR DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
I	CR4-19	FEM SECURITY SYSTEM GROUND SENSING: GROUND WHEN FEM IS INSTALLED
I	CR11-09	INCLINATION SENSOR SIGNAL
SG	CR11-10	TRUNK LATCH SIGNAL GROUND: GROUND
PG	CR11-11	POWER GROUND: GROUND
I	CR11-16	LH REAR DOOR AJAR SWITCH SIGNAL: GROUND WHEN DOOR IS AJAR
SG	CR11-25	LOGIC GROUND: GROUND
O	CR12-01	SCLM POWER SUPPLY: B+
I	CR12-07	DDM SECURITY SYSTEM GROUND SENSING: GROUND WHEN DDM IS INSTALLED
S	CR13-01	SCP +
S	CR13-02	SCP –
O	CR13-08	PASSIVE SECURITY SOUNDER ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO B+
O	CR13-09	INCLINATION SENSOR POWER SUPPLY: B+
O	CR13-10	INTRUSION SENSOR POWER SUPPLY: B+
PG	CR13-12	ACTIVE SECURITY SOUNDER GROUND SUPPLY: GROUND
I	CR13-14	TRUNK AJAR SWITCH SIGNAL: GROUND (SIGNAL) WHEN TRUNK IS AJAR
O	CR71-03	LH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM SWITCHES CIRCUIT TO GROUND
O	CR71-04	RH REAR TURN SIGNAL ACTIVATE: TO ACTIVATE, REM 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. 12.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
AUTO LAMP SENSOR	IP36	6-WAY / BLACK	INSTRUMENT PANEL / CENTER FRONT
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
DOOR AJAR SWITCH – DRIVER	DD7	2-WAY / BLACK	DRIVER DOOR
	DD10	3-WAY / BLACK	
DOOR AJAR SWITCH – LH REAR	RL7	2-WAY / BLACK	LH REAR DOOR
	RL10	3-WAY / BLACK	
DOOR AJAR SWITCH – PASSENGER	PD7	2-WAY / BLACK	PASSENGER DOOR
	PD10	3-WAY / BLACK	
DOOR AJAR SWITCH – RH REAR	RR7	2-WAY / BLACK	RH REAR DOOR
	RR10	3-WAY / BLACK	
DOOR LATCH – DRIVER	DD2	8-WAY / BLACK	DRIVER DOOR TRIM
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR / BEHIND TRIM
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	ENGINE COMPARTMENT BULKHEAD / PASSENGER SIDE
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
HOOD AJAR SWITCH	EC14	2-WAY / BLACK	ENGINE COMPARTMENT / BEHIND RH HEADLAMP UNIT
IGNITION SWITCH	IP34	7-WAY / BLACK	STEERING COLUMN
INCLINATION SENSOR	CR28	6-WAY / BLACK	TRUNK / LH REAR
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	IP18	4-WAY / GREEN	IGNITION SWITCH
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REMOTE KEYLESS ENTRY MODULE	IP60	4-WAY / BLACK	BEHIND INSTRUMENT PANEL / DRIVER SIDE
ROOF CONSOLE	RF3	20-WAY / BLACK	CABIN ROOF
SECURITY SOUNDER – ACTIVE	BS1	3-WAY / BLACK	TRUNK / RH SIDE / FORWARD
SECURITY SOUNDER – PASSIVE	PS1	1-WAY / BLACK	TRUNK / RH SIDE / FORWARD
	PS2	1-WAY / BLACK	
STEERING COLUMN LOCK MODULE	IP24	4-WAY / BLACK	UPPER STEERING COLUMN
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
TRUNK AND FUEL FLAP RELEASE SWITCH PACK	IP50	10-WAY / BLACK	INSTRUMENT PANEL / OUTBOARD OF STEERING COLUMN
TRUNK LATCH	BT2	8-WAY / BLACK	TRUNK LID

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BL11	16-WAY / BLACK / CABIN HARNESS TO TRUNK LID HARNESS	TRUNK / BEHIND TRUNK LID LINER
BT11	16-WAY / GREY / CABIN TO TRUNK LID LINK HARNESS TO TRUNK LID HARNESS	TRUNK / TRUNK LID
CC1	22-WAY / GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
CR45	6-WAY / BLACK / CABIN HARNESS TO BATTERY BACKED SOUNDER HARNESS	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND DRIVER SIDE INSTRUMENT PANEL END PLATE
IP3	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP17	16-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION

GROUNDS

Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G9	CABIN / UPPER LH A POST
G10	CABIN / RH A POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G17	CABIN / BELOW REAR SEAT / RH SIDE
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE
G31	CABIN / BEHIND PASSENGER AIR BAG

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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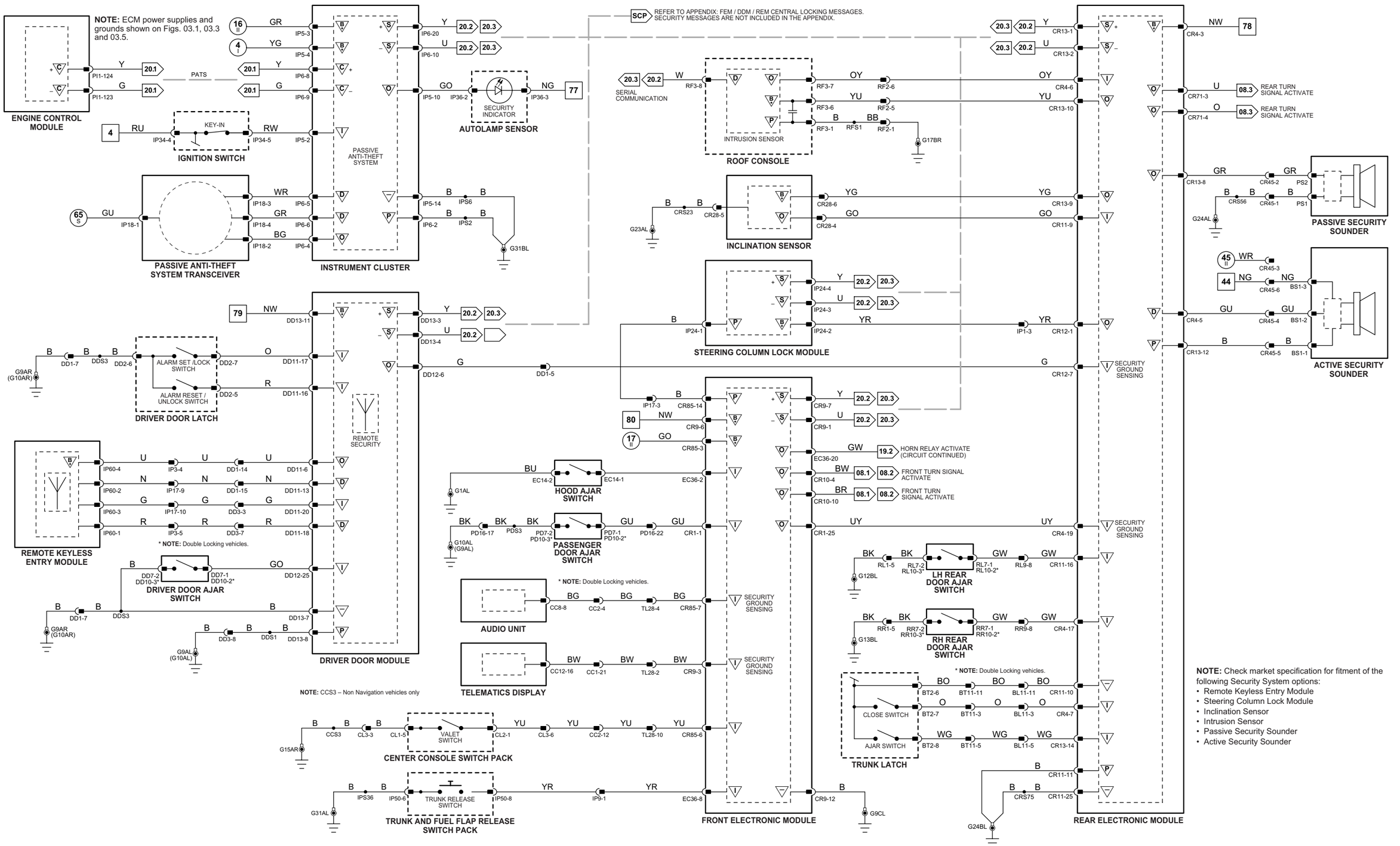

NOTE: Check market specification for fitment of the following Security System options:
- Remote Keyless Entry Module
- Steering Column Lock Module
- Inclination Sensor
- Intrusion Sensor
- Passive Security Sounder
- Active Security Sounder

f12_2_35005

1 → 6 Fig. 01.1	64 → 95 Fig. 03.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	**VARIANT:** All Vehicles
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	**VIN RANGE:** All **DATE OF ISSUE:** September 2004

Front Electronic Module

	Pin	Description and Characteristic
I	CR1-04	RAIN SENSING MODULE SIGNAL: PULSED SIGNAL
O	CR1-06	RAIN SENSING MODULE POWER SUPPLY: B+
PG	CR1-26	POWER GROUND: GROUND
SG	CR9-12	LOGIC GROUND: GROUND
B+	CR10-01	SWITCHED SYSTEM POWER SUPPLY: B+
PG	CR10-11	POWER GROUND: GROUND
PG	CR10-13	POWER GROUND: GROUND
PG	CR10-14	POWER GROUND: GROUND
PG	CR85-02	POWER GROUND: GROUND
O	CR85-04	WINDSHIELD WASHER PUMP DRIVE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
SG	CR85-08	WIPE / WASH SWITCHES SIGNAL GROUND: GROUND
I	CR85-09	MOMENTARY WIPE SWITCH SIGNAL: VARIABLE RESISTANCE
I	CR85-10	WASH / WIPE SWITCH SIGNAL: VARIABLE RESISTANCE
I	CR85-13	INTERMITTENT WIPE SWITCH SIGNAL: VARIABLE RESISTANCE
I	CR85-16	WIPER MASTER SWITCH SIGNAL: VARIABLE RESISTANCE
O	EC36-01	WIPER ON / OFF RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
I	EC36-03	WIPERS PARKED SIGNAL: GROUND = PARKED
I	EC36-06	WASHER FLUID LEVEL SIGNAL: GROUND WHEN ACTIVATED
PG	EC36-10	RAIN SENSING MODULE POWER GROUND: GROUND
O	EC36-16	POWER WASH RELAY ACTIVATE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO GROUND
O	EC36-17	WIPER FAST / SLOW RELAY ACTIVATE: TO ACTIVATE, FEM 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. 13.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
POWER WASH PUMP	EC24	2-WAY / BLACK	ADJACENT TO WASHER FLUID RESERVOIR
POWER WASH RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R11
RAIN SENSING MODULE	RF6	3-WAY / BLACK	CABIN / WINDSHIELD CENTER
WASHER FLUID LEVEL SWITCH	EC25	2-WAY / BLACK	WASHER FLUID RESERVOIR
WINDSHIELD WASHER PUMP	EC51	2-WAY / BLACK	ADJACENT TO WASHER FLUID RESERVOIR
WIPE / WASH COLUMN SWITCH	IP40	6-WAY / BLACK	STEERING COLUMN
WIPER FAST / SLOW RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R8
WIPER MOTOR	EC27	4-WAY / BLACK	ENGINE COMPARTMENT, BULKHEAD
WIPER ON / OFF RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R4

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
EC53	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / ABOVE LH FOOTWELL
IP3	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP4	14-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF25	8-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER LH 'A' POST

GROUNDS

Ground	Location
G2	ENGINE COMPARTMENT / BELOW FRONT POWER DISTRIBUTION FUSE BOX
G9	CABIN / UPPER LH 'A' POST
G26	ENGINE COMPARTMENT / RH SIDE / REARWARD OF SUSPENSION TOWER
G30	ENGINE COMPARTMENT / LH SIDE / REARWARD OF SUSPENSION TOWER

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

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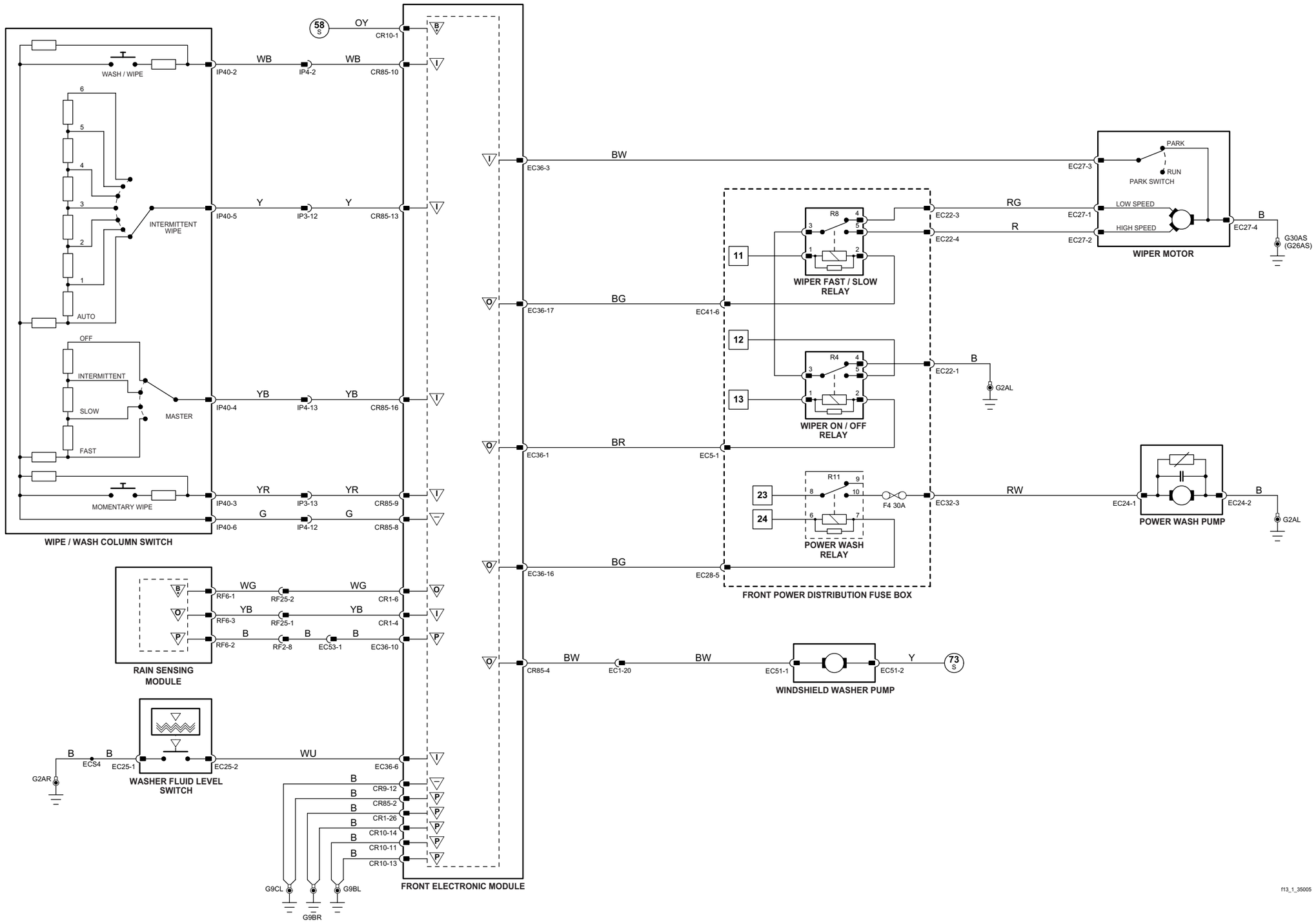

1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Driver Door Module

	Pin	Description and Characteristic
I	DD11–16	DRIVER DOOR ALARM SET / LOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
I	DD11–17	DRIVER DOOR ALARM RESET / UNLOCK SWITCH (NORMALLY OPEN): OPEN CIRCUIT / GROUND
O	DD12-12	REAR WINDOW ISOLATE STATUS LED ACTIVATE: TO ACTIVATE, DDM SWITCHES CIRCUIT TO B+
I	DD12-22	REAR WINDOW ISOLATE SWITCH SIGNAL: NORMALLY CLOSED SWITCH, OPEN CIRCUIT WHEN SELECTED
S	DD13-03	SCP NETWORK +
S	DD13-04	SCP NETWORK –
SG	DD13-07	LOGIC GROUND: GROUND
B+	DD13-11	BATTERY POWER SUPPLY: LOGIC: B+

Front Electronic Module

	Pin	Description and Characteristic
O	CR1–14	POWER WINDOWS ENABLE: TO ACTIVATE, FEM SWITCHES CIRCUIT TO B+
O	CR1–15	GLOBAL CLOSE SIGNAL: 20 ms PULSED SIGNAL
S	CR9–01	SCP –
B+	CR9–06	BATTERY POWER SUPPLY (LOGIC): B+
S	CR9–07	SCP +
I	CR9-08	GLOBAL OPEN / CLOSE SWITCH SIGNAL: GROUND WHEN ACTIVATED
SG	CR9-12	LOGIC GROUND: GROUND

Rear Electronic Module

	Pin	Description and Characteristic
B+	CR4-03	BATTERY POWER SUPPLY (LOGIC): B+
PG	CR11-11	POWER GROUND: GROUND
SG	CR11-25	LOGIC GROUND: GROUND
O	CR12-02	REAR WINDOW ISOLATE: TO ISOLATE, REM INTERRUPTS GROUND SUPPLY
S	CR13-01	SCP +
S	CR13-02	SCP –

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. 14.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
DOOR LATCH – DRIVER	DD2	8-WAY / BLACK	DRIVER DOOR TRIM
DOOR SWITCH PACK – DRIVER	DT4	20-WAY / BLACK	DRIVER DOOR TRIM
DOOR SWITCH PACK – LH REAR	LT3	8-WAY / BLACK	LH REAR DOOR TRIM
DOOR SWITCH PACK – PASSENGER	PT4	8-WAY / BLACK	PASSENGER DOOR TRIM
DOOR SWITCH PACK – RH REAR	RT3	8-WAY / BLACK	RH REAR DOOR TRIM
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
ROOF CONSOLE	RF3	22-WAY / BLACK	ROOF HEADLINER
SLIDING ROOF MODULE	CR30	10-WAY / GREY	ABOVE ROOF CONSOLE
WINDOW MOTOR ASSEMBLY – DRIVER	DD6	8-WAY / GREY	DRIVER DOOR
WINDOW MOTOR ASSEMBLY – LH REAR	RL6	8-WAY / GREY	PASSENGER DOOR
WINDOW MOTOR ASSEMBLY – PASSENGER	PD6	8-WAY / GREY	LH REAR DOOR
WINDOW MOTOR ASSEMBLY – RH REAR	RR6	8-WAY / GREY	RH REAR DOOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
DT6	16-WAY / BLUE / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
EC1	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PD16	22-WAY / BLACK / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PT1	12-WAY / GREY / PASSENGER DOOR HARNESS TO PASSENGER DOOR TRIM HARNESS	CABIN / BEHIND PASSENGER DOOR TRIM
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RL9	16-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR1	6-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RR9	16-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G10	CABIN / RH 'A' POST
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER SEAT
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G17	CABIN / BELOW REAR SEAT / RH SIDE
G24	TRUNK / RH SIDE / REAR ELECTRONIC MODULE

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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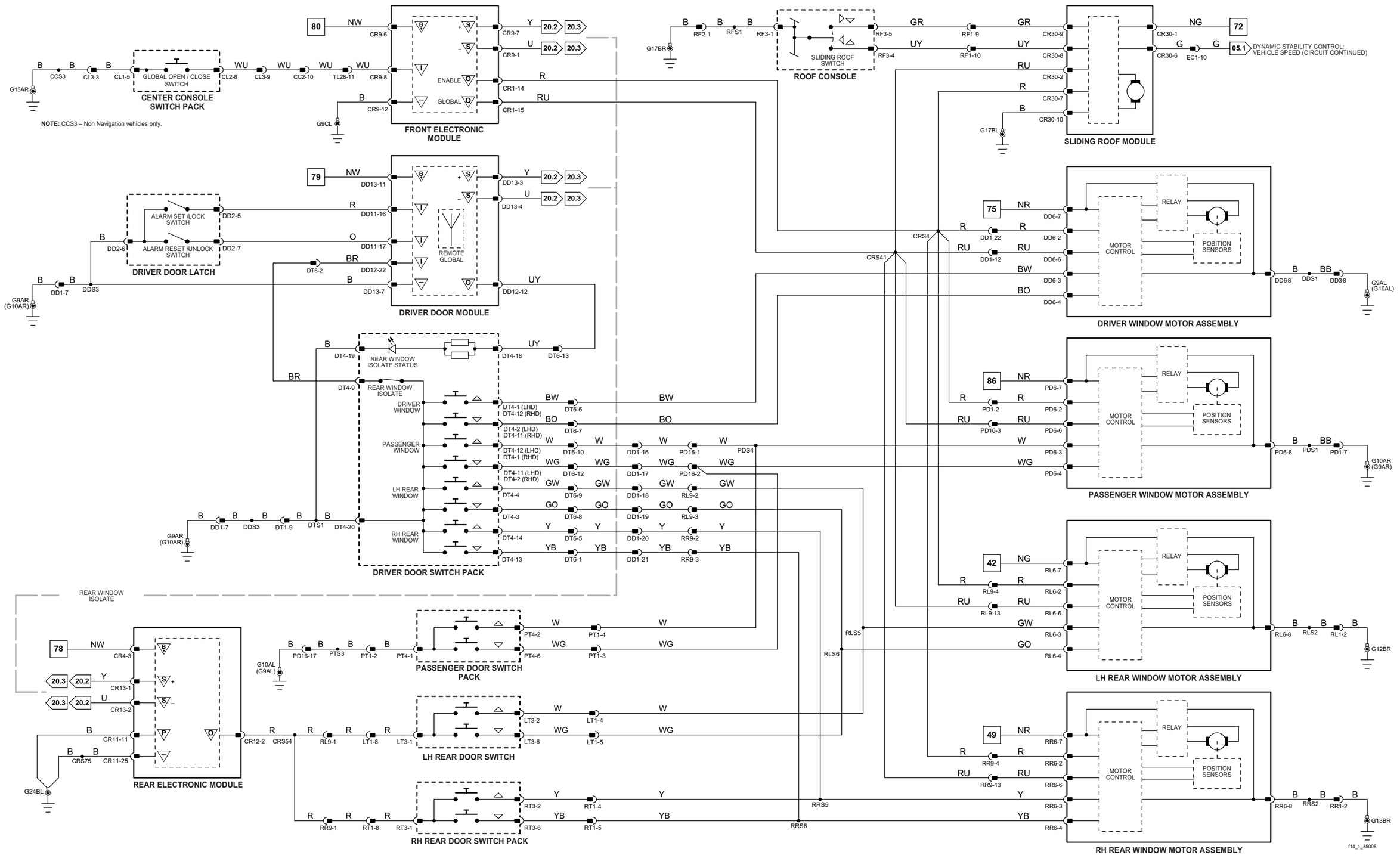


1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 → 15 Fig. 01.4	16 → 52 Fig. 01.5 53 → 77 Fig. 01.6	78 → 105 Fig. 01.7 106 → 143 Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** All Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004		

Audio Unit – Premium

	Pin	Description and Characteristic
PG	CC8–01	POWER GROUND: GROUND
B+	CC8–02	IGNITION SWITCHED POWER SUPPLY (I): B+
I	CC8–07	TELEPHONE MUTE SIGNAL
O	CC8–08	SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
S	CC8–09	SCP +
S	CC8–10	SCP –
B+	CC8–11	BATTERY POWER SUPPLY: B+
I	CC8–17	DIMMER-CONTROLLED ILLUMINATION: PWM, 80 Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
I	CC8–18	STEERING WHEEL SWITCHES: STEPPED RESISTANCE
O	CC8–19	D2B NETWORK WAKE-UP
I	CC9–01	ANTENNA
SG	CC9–02	ANTENNA SHIELD
D2	CC21–01	D2B NETWORK TRANSMIT
D2	CC21–02	D2B NETWORK RECEIVE

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 AMPLIFIER	TL26	2-WAY / BLACK	CABIN / LH 'D' POST
	TL11	3-WAY / BLACK	
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CD AUTOCHANGER	TL5	3-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / THIRD FROM TOP
	DB2	FIBER OPTIC CONNECTOR	
HEATED REAR WINDOW	HW1	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
	HW2	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
MID BASS SPEAKER – LH FRONT	DD4	2-WAY / WHITE	LH FRONT DOOR
	PD4	2-WAY / WHITE	
MID-BASS SPEAKER – LH REAR	RL4	2-WAY / WHITE	LH REAR DOOR
MID BASS SPEAKER – RH FRONT	PD4	2-WAY / WHITE	RH FRONT DOOR
	DD4	2-WAY / WHITE	
MID-BASS SPEAKER – RH REAR	RR4	2-WAY / WHITE	RH REAR DOOR
STEERING WHEEL AUDIO SWITCHES	—	—	STEERING WHEEL
TWEETER SPEAKER – LH FRONT	DT3	2-WAY / WHITE	LH FRONT DOOR
	PT3	2-WAY / WHITE	
TWEETER SPEAKER – LH REAR	LT4	2-WAY / WHITE	LH REAR DOOR
TWEETER SPEAKER – RH FRONT	PT3	2-WAY / WHITE	RH FRONT DOOR
	DT3	2-WAY / WHITE	
TWEETER SPEAKER – RH REAR	RT4	2-WAY / WHITE	RH REAR DOOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC7	10-WAY / GREY / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CC19	2-WAY / BLACK / AUDIO UNIT ANTENNA	CABIN / BEHIND CENTER CONSOLE
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
PT1	12-WAY / GREY / PASSENGER DOOR HARNESS TO PASSENGER DOOR TRIM HARNESS	CABIN / BEHIND PASSENGER DOOR TRIM
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR1	6-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM
TL31	14-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

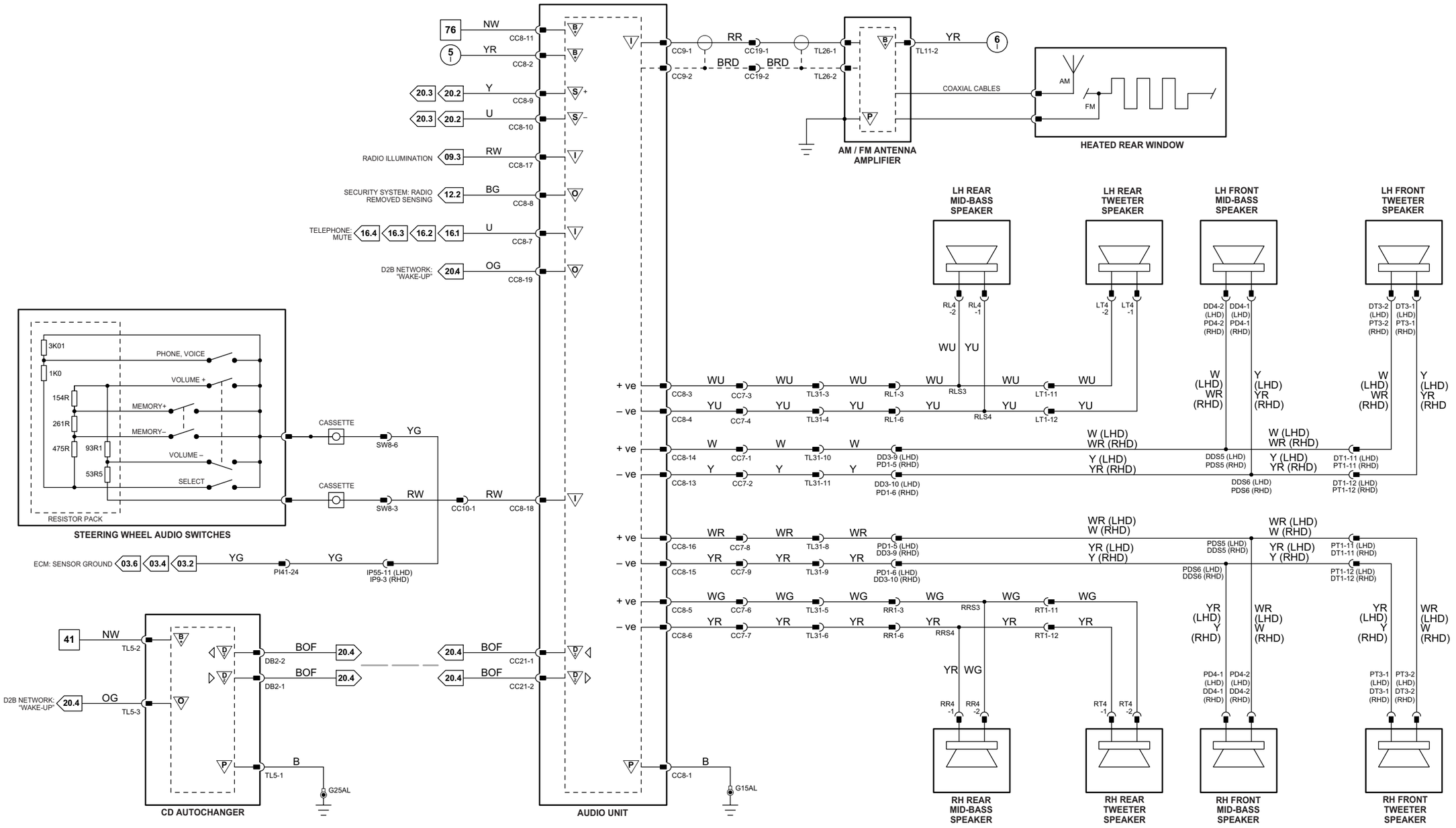
GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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: September 2004



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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (E) → 52 (E) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (I) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: Premium ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Audio Unit – Audiophile

	Pin	Description and Characteristic
PG	CC8–01	POWER GROUND: GROUND
B+	CC8–02	IGNITION SWITCHED POWER SUPPLY (I): B+
O	CC8–03	LH REAR AUDIO +
O	CC8–04	LH REAR AUDIO –
O	CC8–05	RH REAR AUDIO +
O	CC8–06	RH REAR AUDIO –
I	CC8–07	TELEPHONE MUTE SIGNAL
O	CC8–08	SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
S	CC8–09	SCP +
S	CC8–10	SCP –
B+	CC8–11	BATTERY POWER SUPPLY: B+
O	CC8–13	LH FRONT AUDIO –
O	CC8–14	LH FRONT AUDIO +
O	CC8–15	RH FRONT AUDIO –
O	CC8–16	RH FRONT AUDIO +
I	CC8–17	DIMMER-CONTROLLED ILLUMINATION: PWM, 80 Hz, GROUND = 0% DUTY CYCLE, B+ = 100% DUTY CYCLE
I	CC8–18	STEERING WHEEL SWITCHES: STEPPED RESISTANCE
O	CC8–19	D2B NETWORK WAKE-UP
I	CC9–01	ANTENNA
SG	CC9–2	ANTENNA SHIELD
D2	CC21–01	D2B NETWORK TRANSMIT
D2	CC21–02	D2B NETWORK RECEIVE

Power Amplifier

	Pin	Description and Characteristic
D2	DB7–01	D2B NETWORK TRANSMIT
D2	DB7–02	D2B NETWORK RECEIVE
PG	TL9–02	POWER GROUND: GROUND
B+	TL9–03	BATTERY POWER SUPPLY: B+
O	TL9–05	D2B NETWORK WAKE-UP
PG	TL9–08	POWER GROUND: GROUND
B+	TL9–09	BATTERY POWER SUPPLY: B+
O	TL10–02	RH SUBWOOFER AUDIO +
O	TL10–03	LH SUBWOOFER AUDIO –
O	TL10–04	LH REAR AUDIO +
O	TL10–05	LH FRONT AUDIO +
O	TL10–06	RH FRONT AUDIO –
O	TL10–07	LH FASCIA AUDIO +
O	TL10–08	RH FASCIA AUDIO –
O	TL10–10	RH SUBWOOFER AUDIO –
O	TL10–11	LH SUBWOOFER AUDIO +
O	TL10–12	LH REAR AUDIO –
O	TL10–13	RH REAR AUDIO –
O	TL10–14	RH REAR AUDIO +
O	TL10–15	LH FRONT AUDIO –
O	TL10–16	RH FRONT AUDIO +
O	TL10–17	LH FASCIA AUDIO –
O	TL10–18	RH FASCIA AUDIO +

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 AMPLIFIER	TL26	2-WAY / BLACK	CABIN / LH 'D' POST
	TL11	3-WAY / BLACK	
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CD AUTOCHANGER	TL5	3-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / THIRD FROM TOP
	DB2	FIBER OPTIC CONNECTOR	
HEATED REAR WINDOW	HW1	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
	HW2	1-WAY / BLACK	CABIN / BEHIND REAR SEAT BACK / LH SIDE (CONNECTOR LOCATION)
MID BASS SPEAKER – LH FRONT	DD4	2-WAY / WHITE	LH FRONT DOOR
	PD4	2-WAY / WHITE	
MID-BASS SPEAKER – LH REAR	RL4	2-WAY / WHITE	LH REAR DOOR
MID BASS SPEAKER – RH FRONT	PD4	2-WAY / WHITE	RH FRONT DOOR
	DD4	2-WAY / WHITE	
MID-BASS SPEAKER – RH REAR	RR4	2-WAY / WHITE	RH REAR DOOR
MID-RANGE SPEAKER – LH FASCIA	IP25	2-WAY / WHITE	INSTRUMENT PANEL / LH SIDE
MID-RANGE SPEAKER – RH FASCIA	IP30	2-WAY / WHITE	INSTRUMENT PANEL / RH SIDE
POWER AMPLIFIER	TL9	12-WAY / WHITE	LUGGAGE COMPARTMENT, LH REAR
	TL10	18-WAY / WHITE	
	DB7	FIBER OPTIC CONNECTOR	
STEERING WHEEL AUDIO SWITCHES	—	—	STEERING WHEEL
SUBWOOFER – LH	TL3	2-WAY / WHITE	PARCEL SHELF, LH SIDE
SUBWOOFER – RH	TL61	2-WAY / WHITE	PARCEL SHELF, RH SIDE
TWEETER SPEAKER – LH FRONT	DT3	2-WAY / WHITE	LH FRONT DOOR
	PT3	2-WAY / WHITE	
TWEETER SPEAKER – LH REAR	LT4	2-WAY / WHITE	LH REAR DOOR
TWEETER SPEAKER – RH FRONT	PT3	2-WAY / WHITE	RH FRONT DOOR
	DT3	2-WAY / WHITE	
TWEETER SPEAKER – RH REAR	RT4	2-WAY / WHITE	RH REAR DOOR

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	NOT AVAILABLE	NOT AVAILABLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
CC19	2-WAY / BLACK / AUDIO UNIT ANTENNA	CABIN / BEHIND CENTER CONSOLE
DD3	10-WAY / GREY / DRIVER DOOR HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / DRIVER SIDE 'A' POST
DT1	16-WAY / GREEN / DRIVER DOOR HARNESS TO DRIVER DOOR TRIM HARNESS	CABIN / BEHIND DRIVER DOOR TRIM
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
LT1	12-WAY / GREY / LH REAR DOOR HARNESS TO LH REAR DOOR TRIM HARNESS	CABIN / LH REAR DOOR TRIM
PD1	14-WAY / BLUE / CABIN HARNESS TO PASSENGER DOOR HARNESS	CABIN / PASSENGER SIDE 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
PT1	12-WAY / GREY / PASSENGER DOOR HARNESS TO PASSENGER DOOR TRIM HARNESS	CABIN / BEHIND PASSENGER DOOR TRIM
RL1	6-WAY / GREY / LH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / LH 'B/C' POST
RR1	6-WAY / GREY / RH REAR DOOR HARNESS TO CABIN HARNESS	CABIN / RH 'B/C' POST
RT1	12-WAY / GREY / RH REAR DOOR HARNESS TO RH REAR DOOR TRIM HARNESS	CABIN / RH REAR DOOR TRIM
TL31	14-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

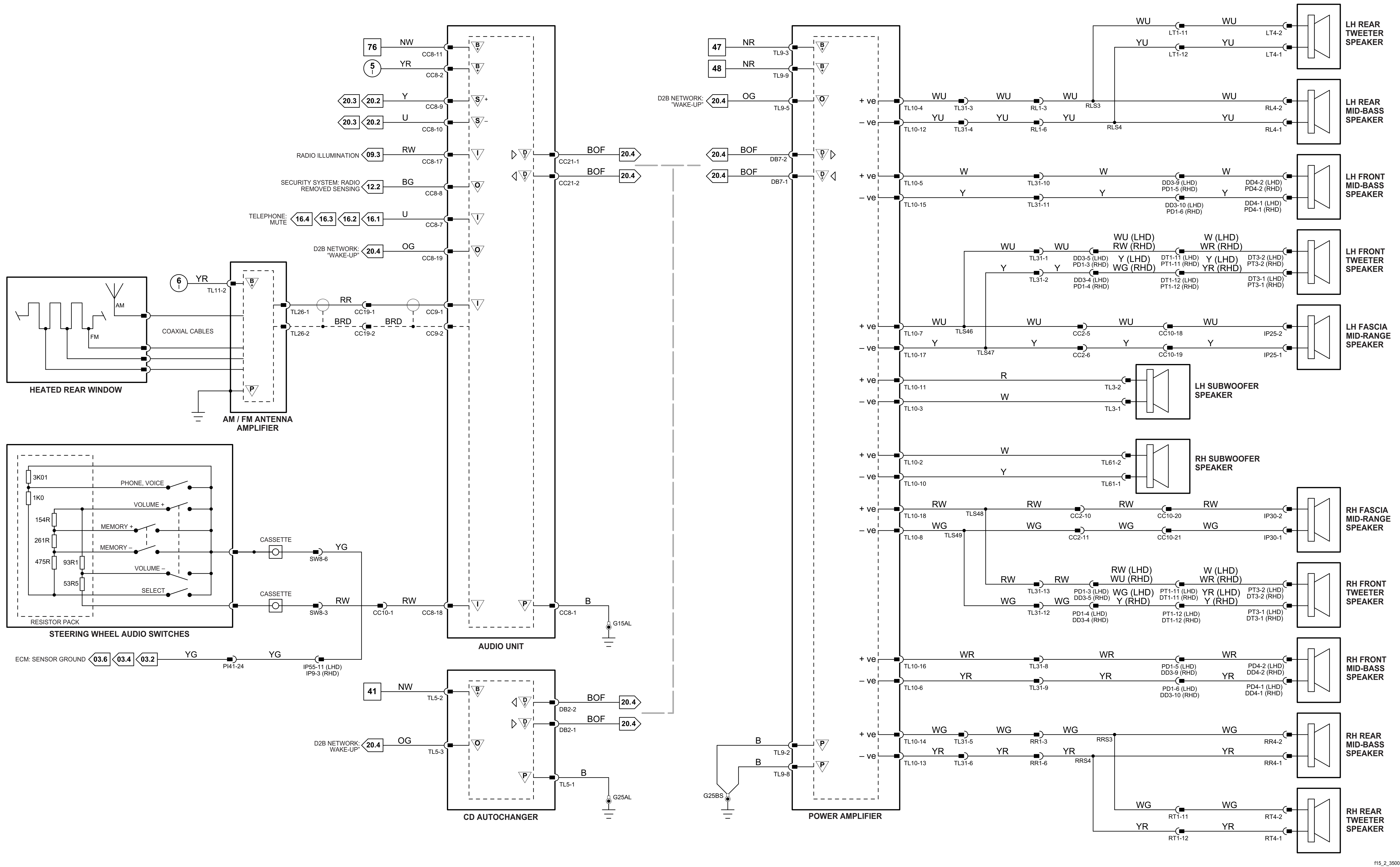
GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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.

In-Car Entertainment: Audiophile



1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	Input	Battery Voltage	Sensor/Signal Supply V	ACP / SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	Output	Power Ground	Sensor/Signal Ground	CAN / Serial and Encoded Data

VARIANT: Audiophile ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 15.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
ARMREST LID SWITCH	RC7	3-WAY / BLACK	REAR SEAT ARMREST
AUDIO / VIDEO SELECTOR	TL20	20-WAY / BLACK	CABIN REAR BULKHEAD / BEHIND REAR SEAT BACK / LH SIDE
	TL85	20-WAY / BLACK	
	TL86	20-WAY / BLACK	
	TL87	20-WAY / BLACK	
DVD PLAYER	TL32	4-WAY / NATURAL	TRUNK / LH SIDE / MODULE STACK / TOP
	TL47	13-WAY / BLACK	
MULTIMEDIA CONTROL PANEL	RC1	8-WAY / BLACK	REAR SEAT ARM REST OR REAR FLOOR CONSOLE
	RC3	20-WAY / BLACK	
	RC5	FIBER OPTIC CONNECTOR	
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEVISION SCREEN – LH REAR	VL1	20-WAY / GREEN	LH FRONT SEAT HEAD REST
TELEVISION SCREEN – RH REAR	VR1	20-WAY / GREEN	RH FRONT SEAT HEAD REST

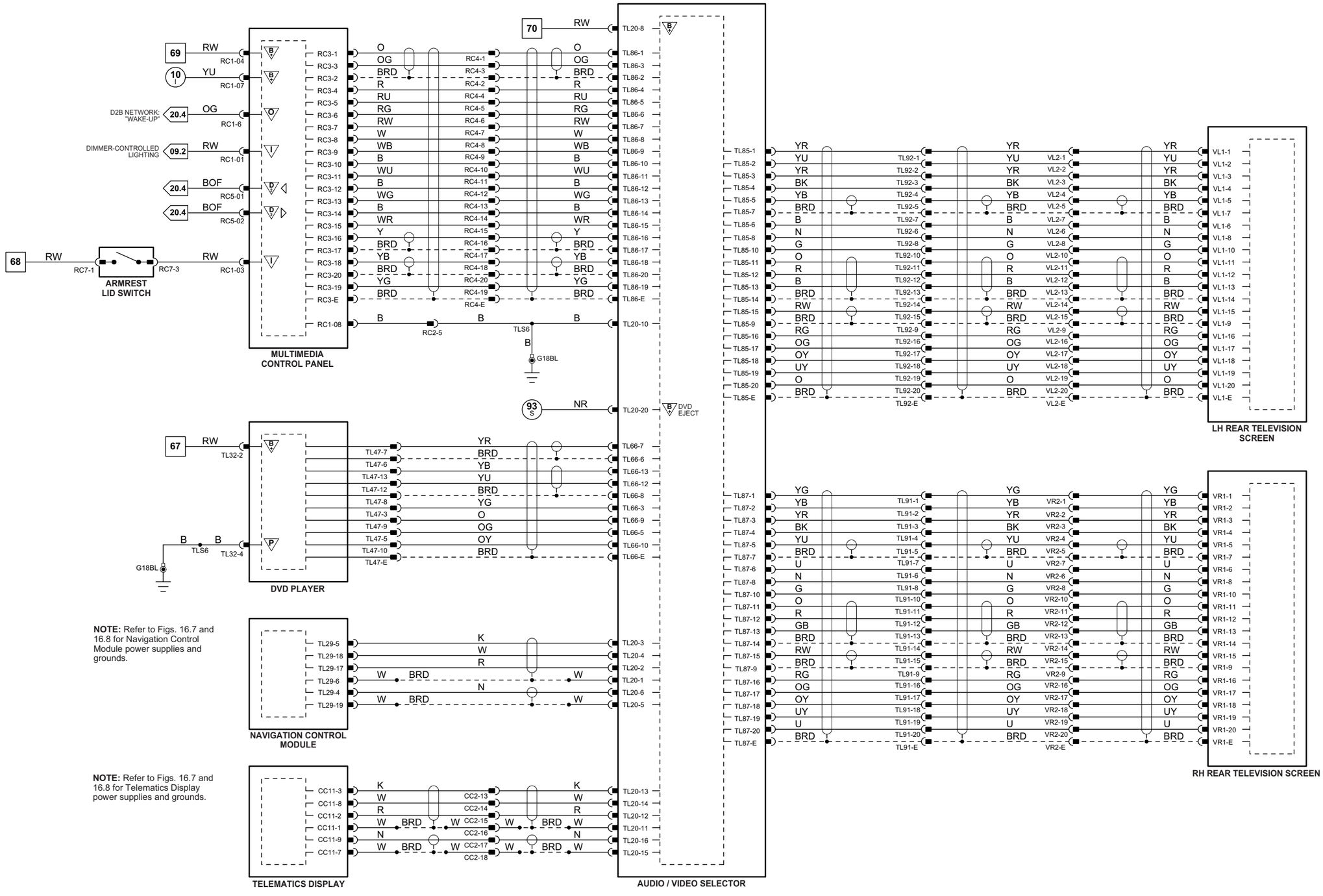
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
RC4	20-WAY / BLACK / TELEMATICS HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
TL91	20-WAY / BLACK / TELEMATICS HARNESS TO RH REAR TELEVISION HARNESS	CABIN / BELOW RH FRONT SEAT
TL92	20-WAY / GREEN / TELEMATICS HARNESS TO LH REAR TELEVISION HARNESS	CABIN / BELOW LH FRONT SEAT
VL2	21-WAY / BLACK / TELEMATICS HARNESS TO LH REAR TELEVISION HARNESS	CABIN / BEHIND LH FRONT SEAT BACK FINISHER
VR2	21-WAY / BLACK / TELEMATICS HARNESS TO RH REAR TELEVISION HARNESS	CABIN / BEHIND RH FRONT SEAT BACK FINISHER

GROUNDS

Ground	Location
G18	CABIN / BELOW REAR SEAT / 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.



NOTE: Refer to Figs. 16.7 and 16.8 for Navigation Control Module power supplies and grounds.

NOTE: Refer to Figs. 16.7 and 16.8 for Telematics Display power supplies and grounds.

1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: Rear ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Audio Unit

	Pin	Description and Characteristic
I	CC8–7	TELEPHONE MUTE SIGNAL

Cellular Phone Module

	Pin	Description and Characteristic
D2	DB3–1	D2B NETWORK RECEIVE
D2	DB3–2	D2B NETWORK TRANSMIT
O	TL7–1	PHONE BATTERY CHARGING SUPPLY
O	TL7–3	PHONE ON / OFF (RESPONSE TO INCOMING AUDIO)
O	TL7–4	MUTE COMMAND
PG	TL7–9	POWER GROUND: GROUND
SG	TL7–11	MICROPHONE SHIELD: GROUND
B+	TL7–12	BATTERY POWER SUPPLY: B+
B+	TL7–13	BATTERY POWER SUPPLY: B+
B+	TL7–14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	TL7–17	MICROPHONE +
I	TL7–18	MICROPHONE –
D	TL7–20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	TL7–22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	TL7–23	D2B NETWORK WAKE-UP
I	TL7–25	POWER GROUND: GROUND
I	TL7–26	TELEPHONE LOGIC GROUND: GROUND
I	TL7–29	IGNITION SWITCHED POWER SUPPLY (II): 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. 16.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CELLULAR PHONE MODULE	TL7	32-WAY / BLACK	LUGGAGE COMPARTMENT, LH REAR
	TL94	2-WAY / BLACK	
	DB3	FIBER OPTIC CONNECTOR	
HANDSET RECEIVER	PH2	10-WAY / TELEPHONE	CENTER CONSOLE
MICROPHONE	RF3	20-WAY / BLACK	ROOF CONSOLE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEPHONE ANTENNA – ROW	TL56	2-WAY / BLACK	REAR BUMPER, LH SIDE

HARNESS IN-LINE CONNECTORS

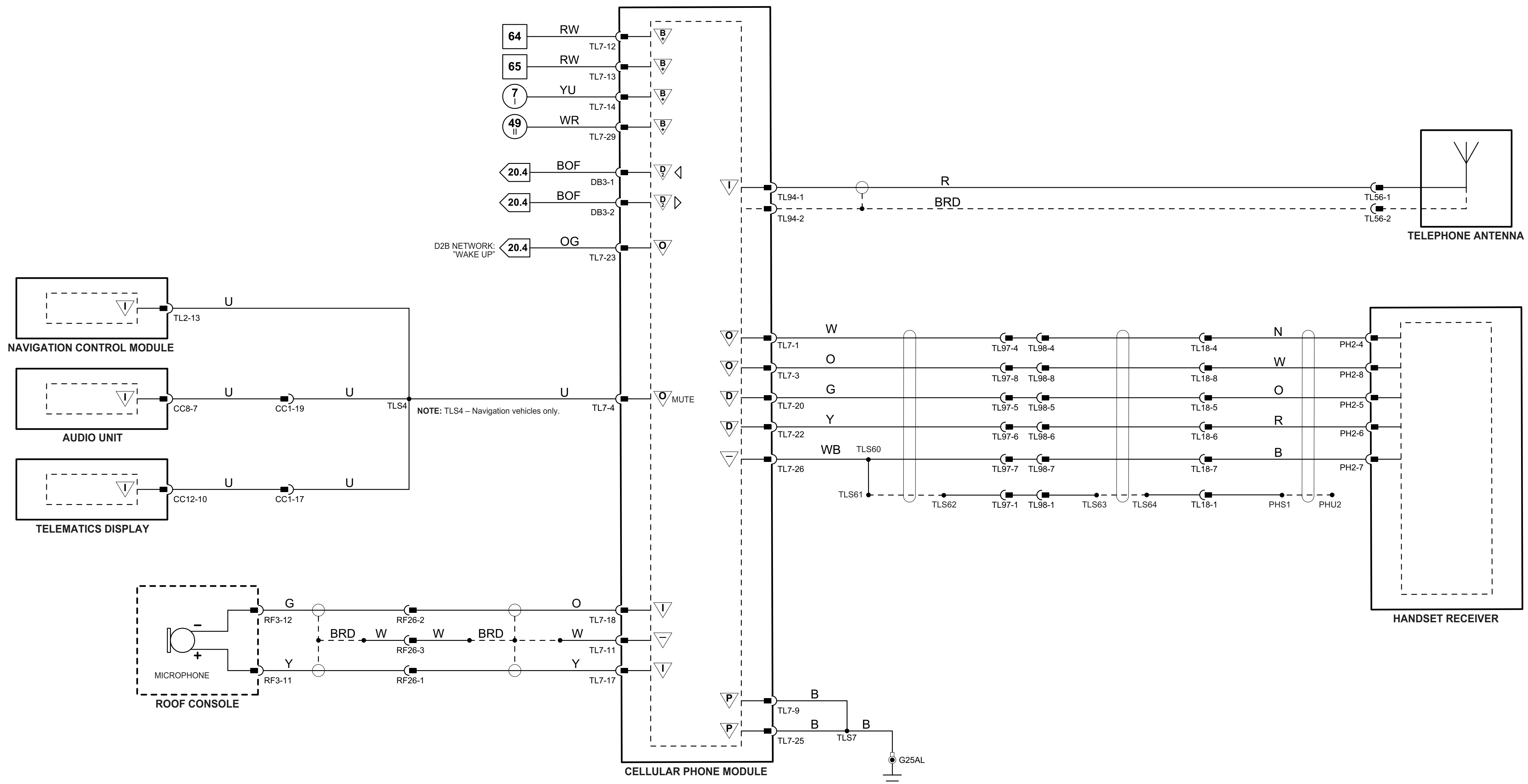
Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF26	8-WAY / BLACK / TELEMATICS HARNESS TO ROOF HARNESS	CABIN / LH 'D' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL
TL97	NOT AVAILABLE	NOT AVAILABLE
TL98	NOT AVAILABLE	NOT AVAILABLE

GROUNDS

Ground	Location
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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.



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

VARIANT: ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Audio Unit

	Pin	Description and Characteristic
I	CC8–7	TELEPHONE MUTE SIGNAL

Cellular Phone Control Module

	Pin	Description and Characteristic
D2	DB3–1	D2B NETWORK RECEIVE
D2	DB3–2	D2B NETWORK TRANSMIT
O	TL7–1	PHONE BATTERY CHARGING SUPPLY
O	TL7–2	HANDS FREE AUDIO TO PHONE
O	TL7–3	PHONE ON / OFF (RESPONSE TO INCOMING AUDIO)
O	TL7–4	MUTE COMMAND
I	TL7–5	MANUAL TEST DATA
I	TL7–6	PHONE BATTERY VOLTAGE
PG	TL7–9	POWER GROUND: GROUND
SG	TL7–10	ANALOG GROUND: GROUND
SG	TL7–11	MICROPHONE SHIELD: GROUND
B+	TL7–12	BATTERY POWER SUPPLY: B+
B+	TL7–13	BATTERY POWER SUPPLY: B+
B+	TL7–14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	TL7–17	MICROPHONE +
I	TL7–18	MICROPHONE –
D	TL7–20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	TL7–21	TELEPHONE SERIAL COMMUNICATIONS DATA
D	TL7–22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	TL7–23	D2B NETWORK WAKE-UP
I	TL7–25	POWER GROUND: GROUND
I	TL7–26	TELEPHONE LOGIC GROUND: GROUND
I	TL7–29	IGNITION SWITCHED POWER SUPPLY (II): 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. 16.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CELLULAR PHONE MODULE	TL7	32-WAY / BLACK	LUGGAGE COMPARTMENT, LH REAR
	TL94	2-WAY / BLACK	
	DB3	FIBER OPTIC CONNECTOR	
HANDSET	TL45	2-WAY / BLACK	CENTER CONSOLE
	TL48	10-WAY / TELEPHONE	
MICROPHONE	RF3	20-WAY / BLACK	ROOF CONSOLE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEPHONE ANTENNA – NAS	TL56	2-WAY / BLACK	PARCEL SHELF / LH SIDE

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF26	8-WAY / BLACK / TELEMATICS HARNESS TO ROOF HARNESS	CABIN / LH 'D' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

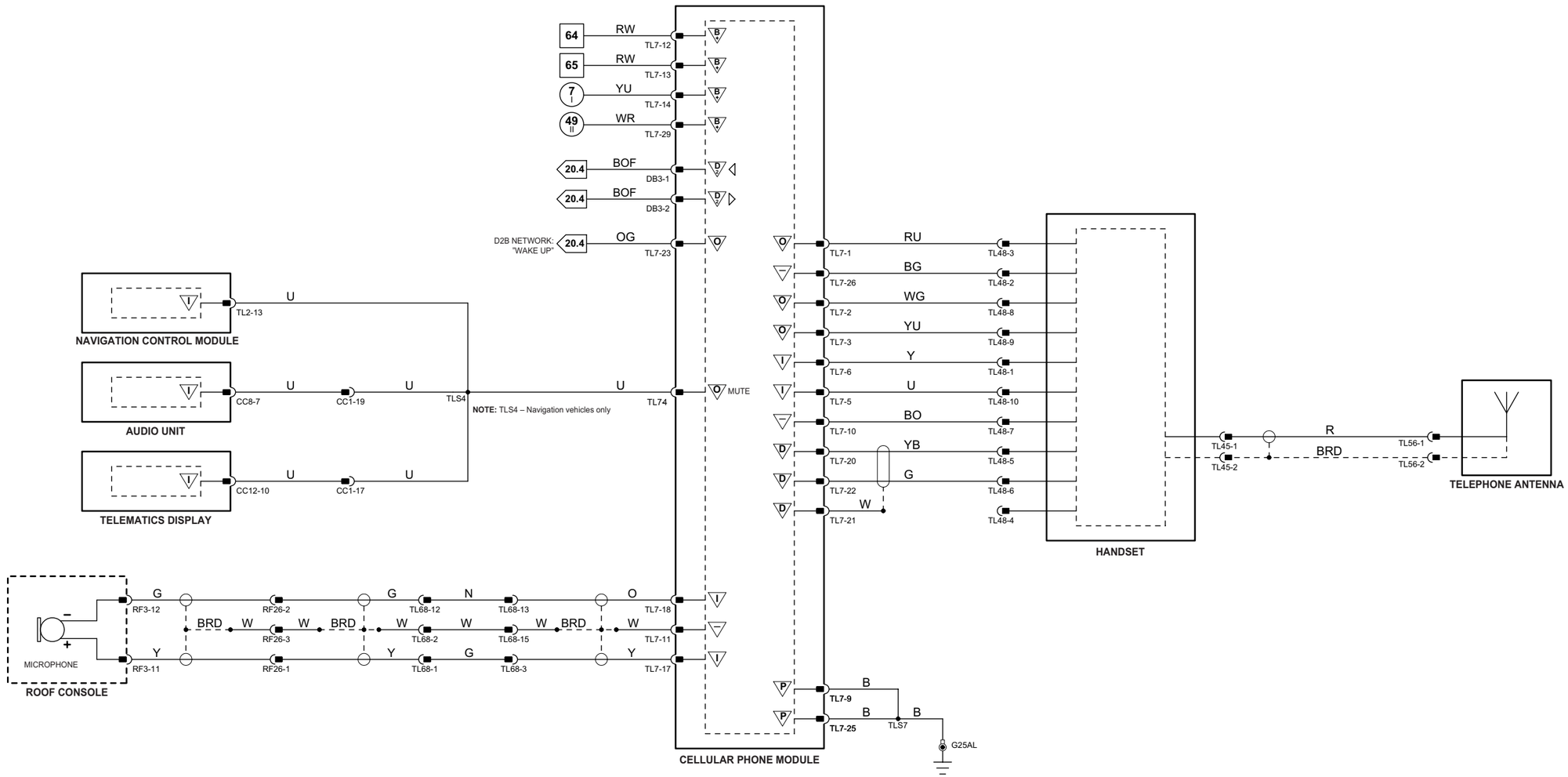
GROUNDS

Ground	Location
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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: September 2004



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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 → 52 Fig. 01.5	78 → 105 Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP S SCP
7 → 63 Fig. 01.2	1 → 15 Fig. 01.4	53 → 77 Fig. 01.6	106 → 143 Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN D Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Audio Unit

	Pin	Description and Characteristic
I	CC8–7	TELEPHONE MUTE SIGNAL
I	CC8-08	AUDIO UNIT SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
D2	CC21-01	D2B NETWORK TRANSMIT
D2	CC21-02	D2B NETWORK RECEIVE

Cellular Phone Control Module

	Pin	Description and Characteristic
D2	DB3–1	D2B NETWORK RECEIVE
D2	DB3–2	D2B NETWORK TRANSMIT
O	TL7–1	PHONE BATTERY CHARGING SUPPLY
O	TL7–3	PHONE ON / OFF (RESPONSE TO INCOMING AUDIO)
O	TL7–4	MUTE COMMAND
–	TL7–7	TRANSMIT
–	TL7–8	RECEIVE
PG	TL7–9	POWER GROUND: GROUND
SG	TL7–11	MICROPHONE SHIELD: GROUND
B+	TL7–12	BATTERY POWER SUPPLY: B+
B+	TL7–13	BATTERY POWER SUPPLY: B+
B+	TL7–14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	TL7–17	MICROPHONE +
I	TL7–18	MICROPHONE –
D	TL7–20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	TL7–22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	TL7–23	D2B NETWORK WAKE-UP
–	TL7–24	COMPUTER
I	TL7–25	POWER GROUND: GROUND
I	TL7–26	TELEPHONE LOGIC GROUND: GROUND
I	TL7–29	IGNITION SWITCHED POWER SUPPLY (II): B+

Voice Activation Module

	Pin	Description and Characteristic
D2	DB4–01	D2B NETWORK TRANSMIT
D2	DB4–02	D2B NETWORK RECEIVE
I	TL68–01	MICROPHONE +
SG	TL68–02	MICROPHONE SHIELD
O	TL68–03	MICROPHONE +
B+	TL68–06	IGNITION SWITCHED POWER SUPPLY (II) (START / RUN STATUS)
SG	TL68–07	MICROPHONE SHIELD
B+	TL68–08	IGNITION SWITCHED POWER SUPPLY (I)
SG	TL68–09	MICROPHONE SHIELD
PG	TL68–11	POWER GROUND
I	TL68–12	MICROPHONE –
O	TL68–13	MICROPHONE –
O	TL68–14	D2B NETWORK WAKE UP
SG	TL68–15	MICROPHONE SHIELD
I	TL68–18	MICROPHONE +
I	TL68–19	MICROPHONE –
I	TL68–20	MICROPHONE +
I	TL68–21	MICROPHONE –
B+	TL68–22	BATTERY POWER SUPPLY

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

Fig. 16.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CELLULAR PHONE MODULE	TL7	32-WAY / BLACK	LUGGAGE COMPARTMENT, LH REAR
	TL94	2-WAY / BLACK	
	DB3	FIBER OPTIC CONNECTOR	
HANDSET RECEIVER	PH2	10-WAY / TELEPHONE	CENTER CONSOLE
MICROPHONE – LH REAR	TL55	4-WAY / BLACK	ROOF / LH REAR
MICROPHONE – RH REAR	TL55	4-WAY / BLACK	ROOF / RH REAR
MICROPHONE	RF3	20-WAY / BLACK	ROOF CONSOLE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
STEERING WHEEL AUDIO SWITCHES	—	—	STEERING WHEEL
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEPHONE ANTENNA – ROW	TL56	2-WAY / BLACK	REAR BUMPER, LH SIDE
VOICE ACTIVATION MODULE	TL68	22-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / SECOND FROM BOTTOM
	DB4	FIBER OPTIC CONNECTOR	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF26	8-WAY / BLACK / TELEMATICS HARNESS TO ROOF HARNESS	CABIN / LH 'D' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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

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

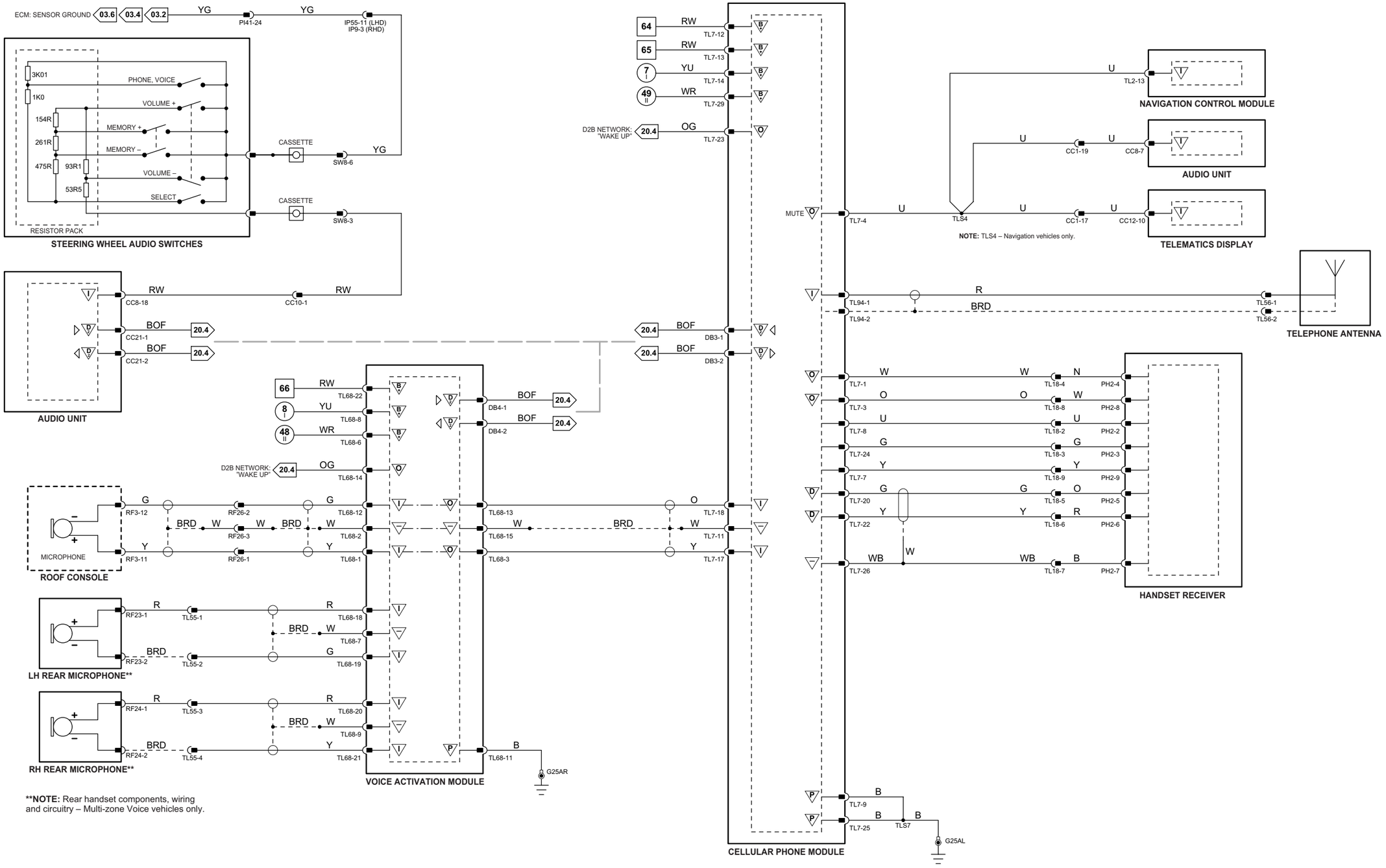
I	**Input**	**PG**	**Power Ground**	**C**	**CAN Network**	**D**	**Serial and Encoded Data**
O	**Output**	**SS**	**Sensor / Signal Supply V**	**S**	**SCP Network**	**V**	**Voltage (DC)**
B+	**Battery Voltage**	**SG**	**Sensor / Signal Ground**	**D2**	**D2B Network**	**PWM**	**Pulse Width Modulated**

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: September 2004



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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (I) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: ROW Voice Vehicles (except Japan)
VIN RANGE: All
DATE OF ISSUE: September 2004

Audio Unit

	Pin	Description and Characteristic
I	CC8–7	TELEPHONE MUTE SIGNAL
I	CC8-08	AUDIO UNIT SECURITY SYSTEM GROUND SENSING: GROUND WHEN AUDIO UNIT INSTALLED
D2	CC21-01	D2B NETWORK TRANSMIT
D2	CC21-02	D2B NETWORK RECEIVE

Cellular Phone Control Module

	Pin	Description and Characteristic
D2	DB3–1	D2B NETWORK RECEIVE
D2	DB3–2	D2B NETWORK TRANSMIT
O	TL7–1	PHONE BATTERY CHARGING SUPPLY
O	TL7–3	PHONE ON / OFF (RESPONSE TO INCOMING AUDIO)
O	TL7–4	MUTE COMMAND
–	TL7–7	TRANSMIT
–	TL7–8	RECEIVE
PG	TL7–9	POWER GROUND: GROUND
SG	TL7–11	MICROPHONE SHIELD: GROUND
B+	TL7–12	BATTERY POWER SUPPLY: B+
B+	TL7–13	BATTERY POWER SUPPLY: B+
B+	TL7–14	IGNITION SWITCHED POWER SUPPLY (I): B+
I	TL7–17	MICROPHONE +
I	TL7–18	MICROPHONE –
D	TL7–20	TELEPHONE SERIAL COMMUNICATIONS DATA
D	TL7–22	TELEPHONE SERIAL COMMUNICATIONS DATA
I	TL7–23	D2B NETWORK WAKE-UP
–	TL7–24	COMPUTER
I	TL7–25	POWER GROUND: GROUND
I	TL7–26	TELEPHONE LOGIC GROUND: GROUND
I	TL7–29	IGNITION SWITCHED POWER SUPPLY (II): B+

Voice Activation Module

	Pin	Description and Characteristic
D2	DB4–01	D2B NETWORK TRANSMIT
D2	DB4–02	D2B NETWORK RECEIVE
I	TL68–01	MICROPHONE +
SG	TL68–02	MICROPHONE SHIELD
O	TL68–03	MICROPHONE +
B+	TL68–06	IGNITION SWITCHED POWER SUPPLY (II) (START / RUN STATUS)
B+	TL68–08	IGNITION SWITCHED POWER SUPPLY (I)
PG	TL68–11	POWER GROUND
I	TL68–12	MICROPHONE –
O	TL68–13	MICROPHONE –
O	TL68–14	D2B NETWORK WAKE UP
SG	TL68–15	MICROPHONE SHIELD
B+	TL68–22	BATTERY POWER SUPPLY

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. 16.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CELLULAR PHONE MODULE	TL7	32-WAY / BLACK	LUGGAGE COMPARTMENT, LH REAR
	TL94	2-WAY / BLACK	
	DB3	FIBER OPTIC CONNECTOR	
HANDSET RECEIVER	PH2	10-WAY / TELEPHONE	CENTER CONSOLE
MICROPHONE	RF3	20-WAY / BLACK	ROOF CONSOLE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
STEERING WHEEL AUDIO SWITCHES	—	—	STEERING WHEEL
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEPHONE ANTENNA – NAS	TL56	2-WAY / BLACK	REAR BUMPER, LH SIDE
VOICE ACTIVATION MODULE	TL68	22-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / SECOND FROM BOTTOM
	DB4	FIBER OPTIC CONNECTOR	

HARNESS IN-LINE CONNECTORS

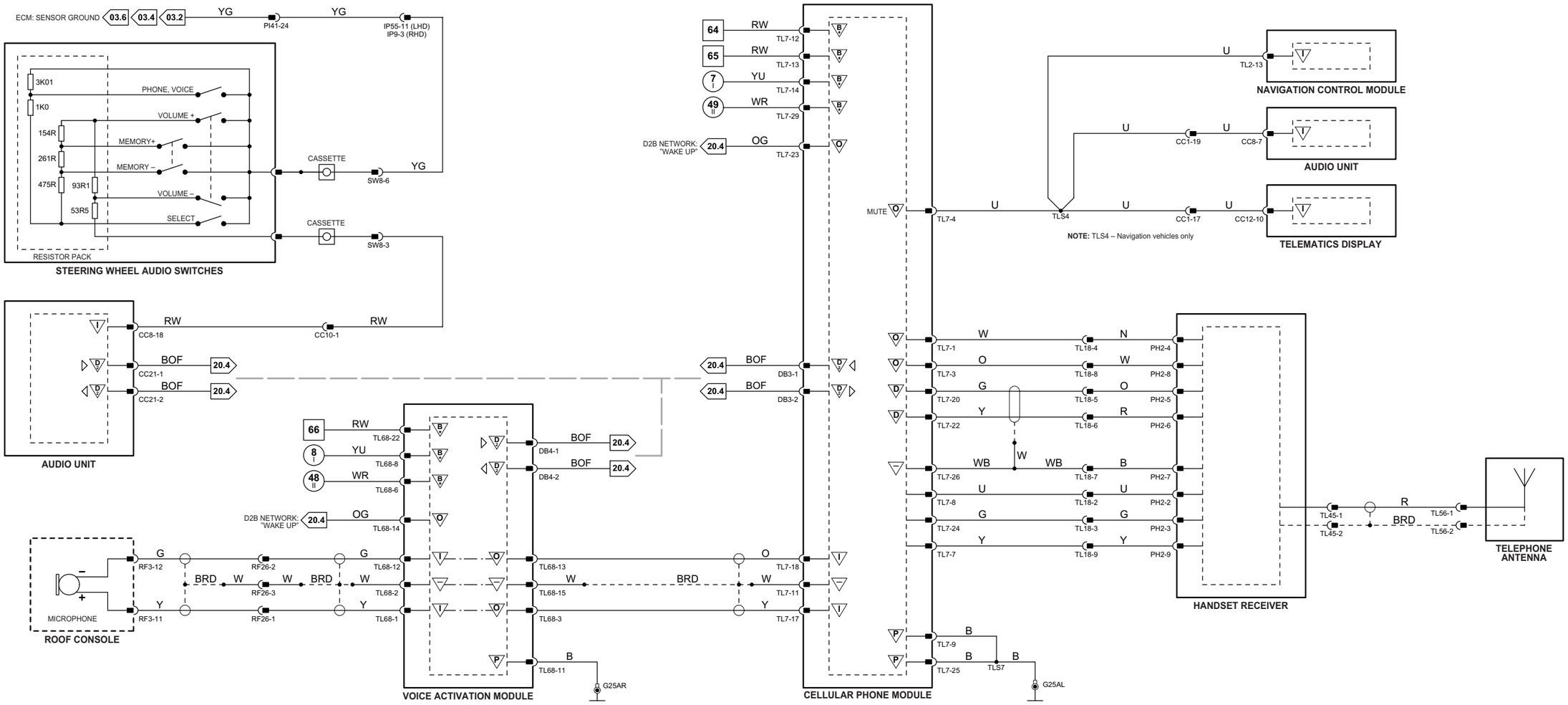
Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
RF26	8-WAY / BLACK / TELEMATICS HARNESS TO ROOF HARNESS	CABIN / LH 'D' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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	64 → 95 Fig. 01.3	16 (E) → 52 (E) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP, S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (I) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN, D Serial and Encoded Data

VARIANT: NAS Voice Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 16.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
NAVIGATION GPS ANTENNA	TL8	2-WAY / BLACK	PARCEL SHELF
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	

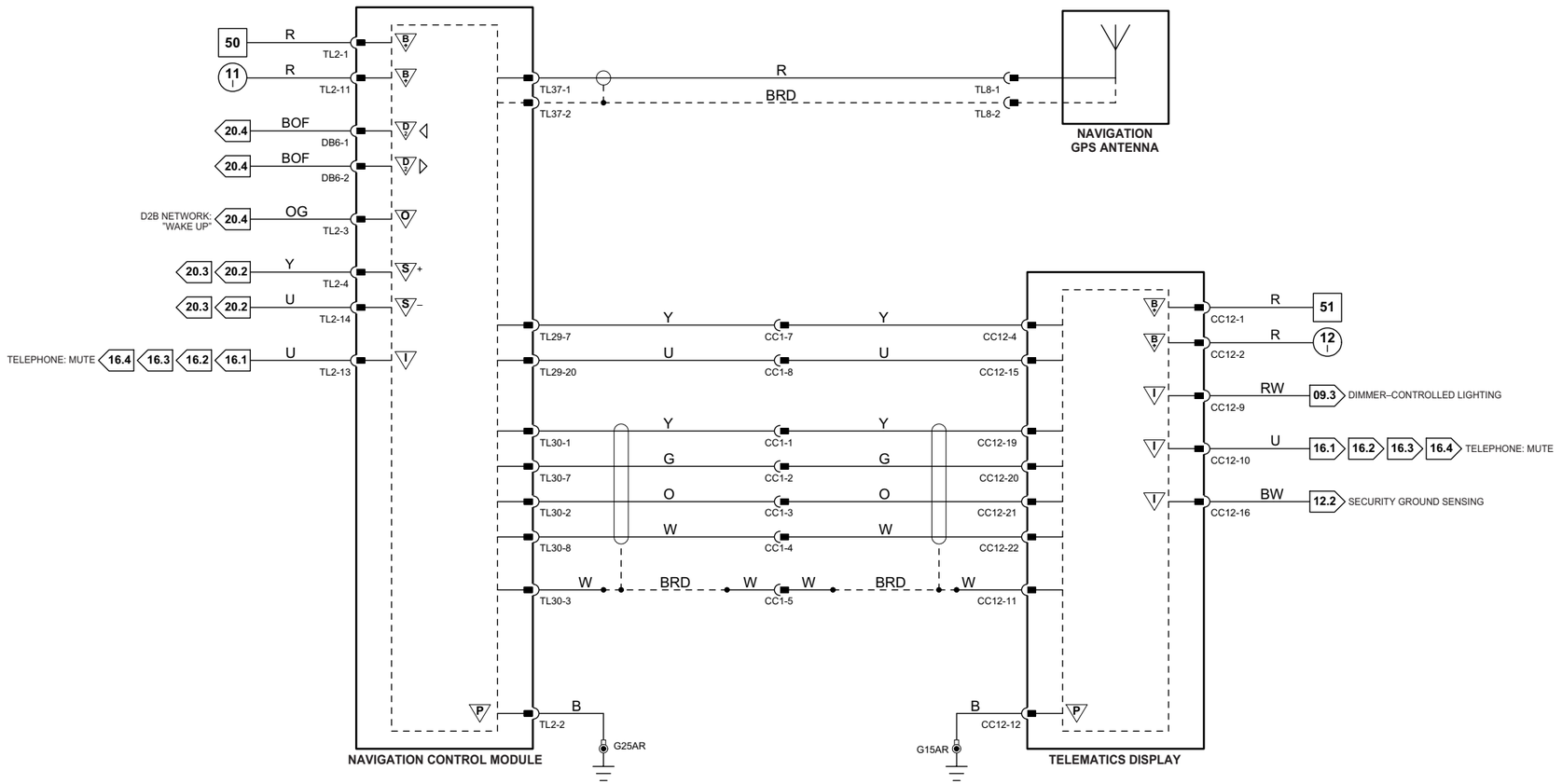
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE

GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: Navigation Vehicles (except Japan)
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 16.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
NAVIGATION GPS ANTENNA	TL8	2-WAY / BLACK	PARCEL SHELF
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEVISION ANTENNA 1	—	—	PARCEL SHELF
TELEVISION ANTENNA 2	—	—	PARCEL SHELF
TELEVISION ANTENNA 3	—	—	RH 'B/C' POST / UPPER
TELEVISION ANTENNA 4	—	—	RH 'B/C' POST / UPPER
TV ANTENNA AMPLIFIER 1	TL51	2-WAY / BLACK	PARCEL SHELF
TV ANTENNA AMPLIFIER 2	TL52	2-WAY / BLACK	PARCEL SHELF
TV ANTENNA AMPLIFIER 3	TL53	2-WAY / BLACK	RH 'B/C' POST / UPPER
TV ANTENNA AMPLIFIER 4	TL54	2-WAY / BLACK	RH 'B/C' POST / UPPER

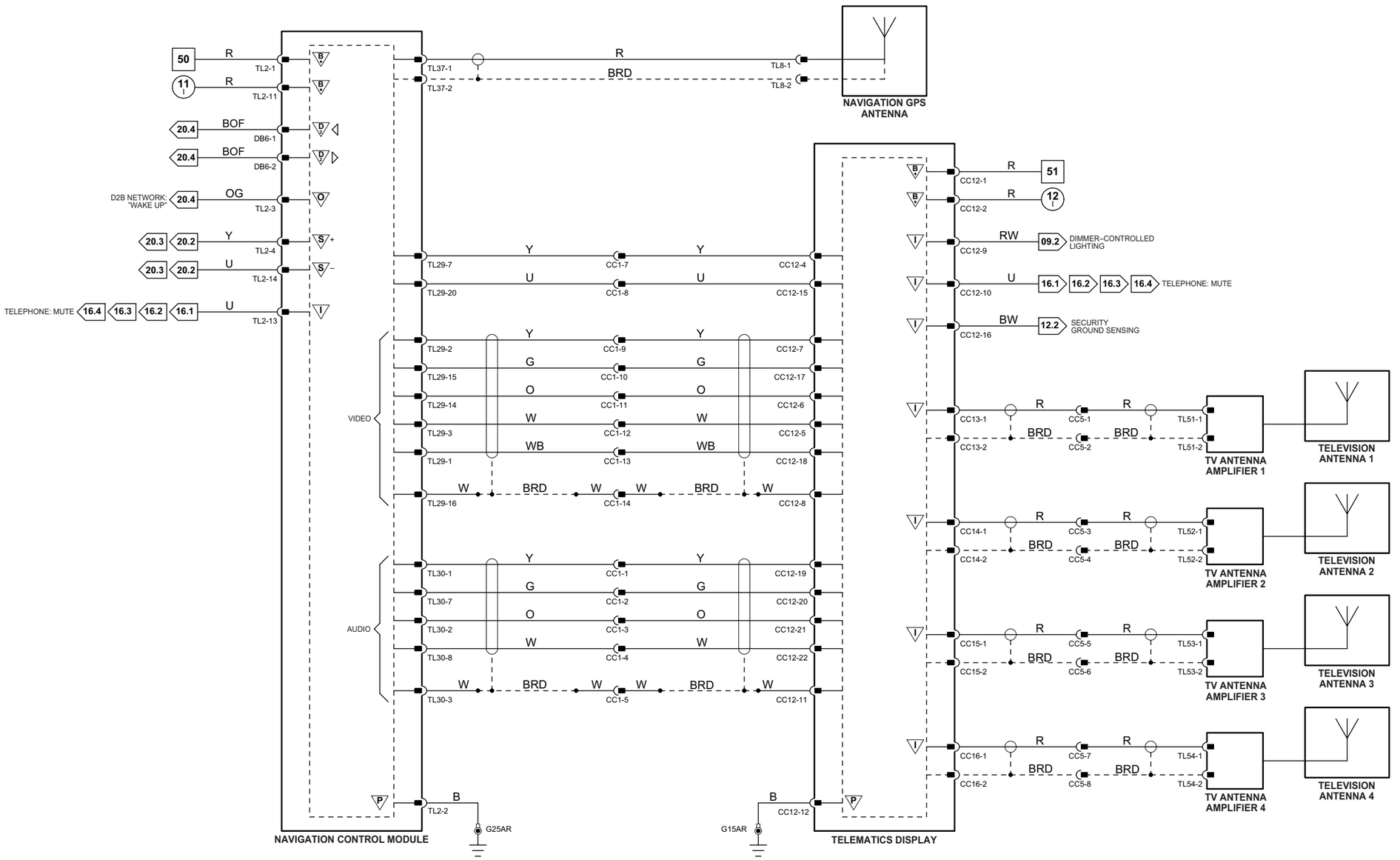
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC5	8-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE

GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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	64 → 95 Fig. 01.3	16 (F) → 52 (F) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	**VARIANT:** Navigation Vehicles with TV (except Japan)
7 → 63 Fig. 01.2	1 (I) → 15 (E) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	**VIN RANGE:** All
									DATE OF ISSUE: September 2004

Fig. 16.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
MICROPHONE	RF3	20-WAY / BLACK	ROOF CONSOLE
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
NAVIGATION GPS ANTENNA	TL8	2-WAY / BLACK	PARCEL SHELF
TELEMATICS DISPLAY	CC12	22-WAY / BLACK	CENTER CONSOLE
	CC13	2-WAY / BLACK	
	CC14	2-WAY / BLACK	
	CC15	2-WAY / BLACK	
	CC16	2-WAY / BLACK	
TELEVISION ANTENNA 1	—	—	PARCEL SHELF
TELEVISION ANTENNA 2	—	—	PARCEL SHELF
TELEVISION ANTENNA 3	—	—	RH 'B/C' POST / UPPER
TELEVISION ANTENNA 4	—	—	RH 'B/C' POST / UPPER
TV ANTENNA AMPLIFIER 1	TL51	2-WAY / BLACK	PARCEL SHELF
TV ANTENNA AMPLIFIER 2	TL52	2-WAY / BLACK	PARCEL SHELF
TV ANTENNA AMPLIFIER 3	TL53	2-WAY / BLACK	RH 'B/C' POST / UPPER
TV ANTENNA AMPLIFIER 4	TL54	2-WAY / BLACK	RH 'B/C' POST / UPPER
VEHICLE INFORMATION ANTENNA	TL63	2-WAY / BLACK	INSTRUMENT PANEL / LH SIDE
VEHICLE INFORMATION CONTROL MODULE	TL16	10-WAY / NATURAL	TRUNK / LH SIDE / FORWARD OF MODULE STACK
	TL36	2-WAY / BLACK	
	TL64	2-WAY / BLACK	
VEHICLE INFORMATION SENSOR	CR108	2-WAY / BLACK	UPPER LH 'A' POST

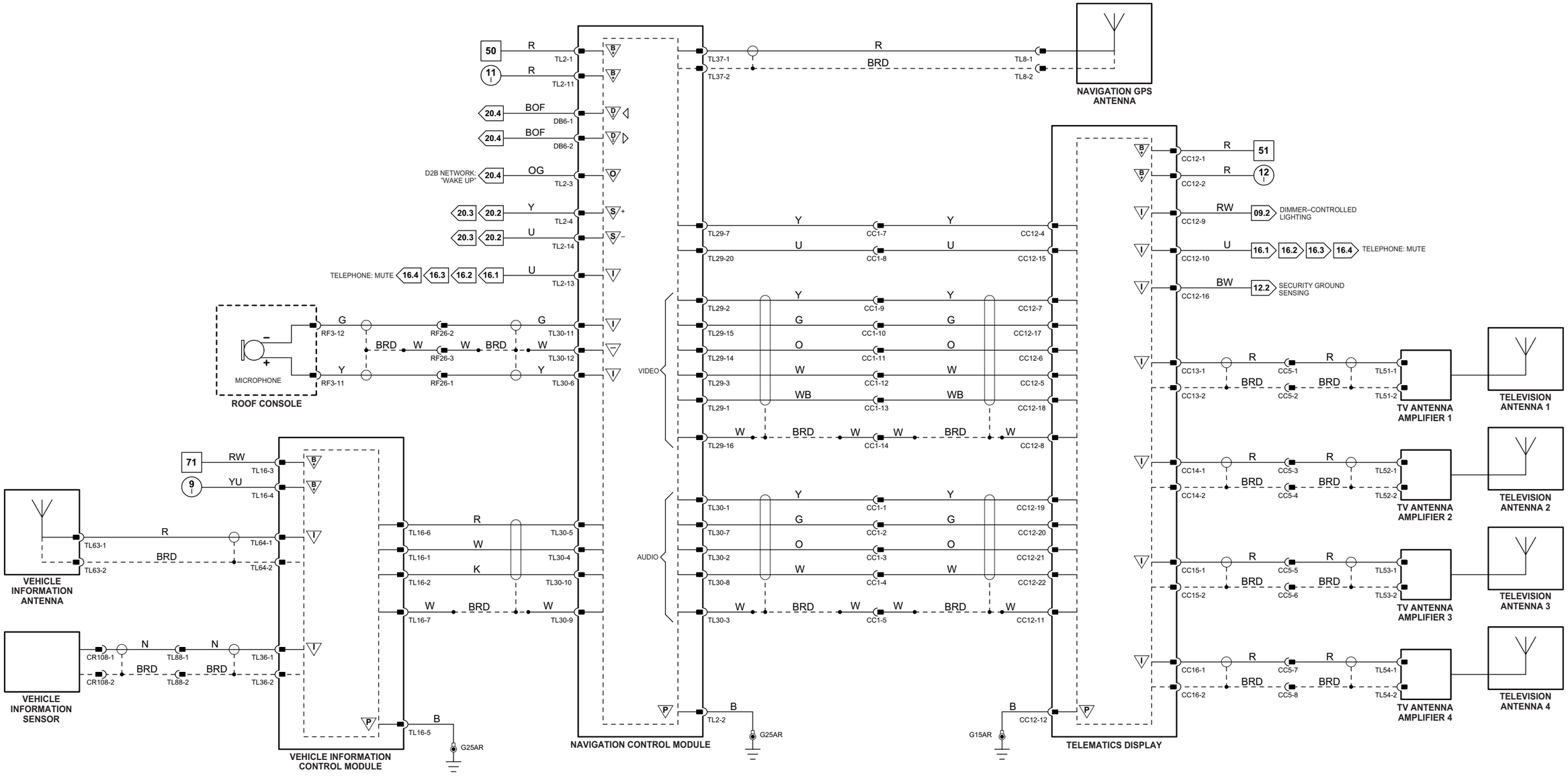
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC5	8-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
RF26	8-WAY / BLACK / TELEMATICS HARNESS TO ROOF HARNESS	CABIN / LH 'D' POST
TL88	2-WAY / BLACK / CABIN HARNESS TO TELEMATICS HARNESS	CABIN / BELOW LH FRONT SEAT

GROUNDS

Ground	Location
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G25	TRUNK / LH SIDE / ADJACENT TO CD AUTOCHANGER

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 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: Japan Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 17.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CURTAIN AIR BAG IGNITER – DRIVER	CR62	2-WAY / YELLOW	HEADLINER, DRIVER SIDE
CURTAIN AIR BAG IGNITER – PASSENGER	CR33	2-WAY / YELLOW	HEADLINER, PASSENGER SIDE
DUAL AIR BAG IGNITERS – DRIVER	SW11	2-WAY / BLACK	STEERING WHEEL
	SW12	2-WAY / BLACK	
DRIVER SEAT POSITION SWITCH	SD20	2-WAY / GREY	DRIVER SEAT TRACK, LH SIDE
FRONT IMPACT SENSOR	EC50	2-WAY / BLACK	FRONT CROSS MEMBER, CENTER
RESTRAINTS CONTROL MODULE	CR86	24-WAY / BLACK	TRANSMISSION TUNNEL, UNDER CENTER CONSOLE
	CR87	40-WAY / BLACK	
SEAT BELT PRETENSIONER IGNITER – CENTER REAR	CR65	2-WAY / YELLOW	SEAT BELT RETRACTOR
SEAT BELT PRETENSIONER IGNITER – DRIVER	SD19	4-WAY / GREY	SEAT BELT BUCKLE
SEAT BELT PRETENSIONER IGNITER – DRIVER SIDE REAR	CR64	2-WAY / YELLOW	SEAT BELT RETRACTOR
SEAT BELT PRETENSIONER IGNITER – PASSENGER	SP19	4-WAY / GREY	SEAT BELT BUCKLE
SEAT BELT PRETENSIONER IGNITER – PASSENGER SIDE REAR	CR66	2-WAY / YELLOW	SEAT BELT RETRACTOR
SEAT BELT SWITCH – DRIVER	SD19	4-WAY / GREY	SEAT BELT BUCKLE
SIDE AIR BAG IGNITER – DRIVER	SD17	2-WAY / YELLOW	DRIVER SEAT, SEAT BACK
SIDE AIR BAG IGNITER – PASSENGER	SP17	2-WAY / YELLOW	PASSENGER SEAT, SEAT BACK
SIDE IMPACT SENSOR – DRIVER	CR60	2-WAY / BLACK	DRIVER SIDE 'B/C' POST, LOWER
SIDE IMPACT SENSOR – DRIVER REAR	CR61	2-WAY / BLACK	DRIVER SIDE 'D' POST, LOWER
SIDE IMPACT SENSOR – PASSENGER	CR35	2-WAY / BLACK	PASSENGER SIDE 'B/C' POST, LOWER
SIDE IMPACT SENSOR – PASSENGER REAR	CR51	2-WAY / BLACK	PASSENGER SIDE 'D' POST, LOWER

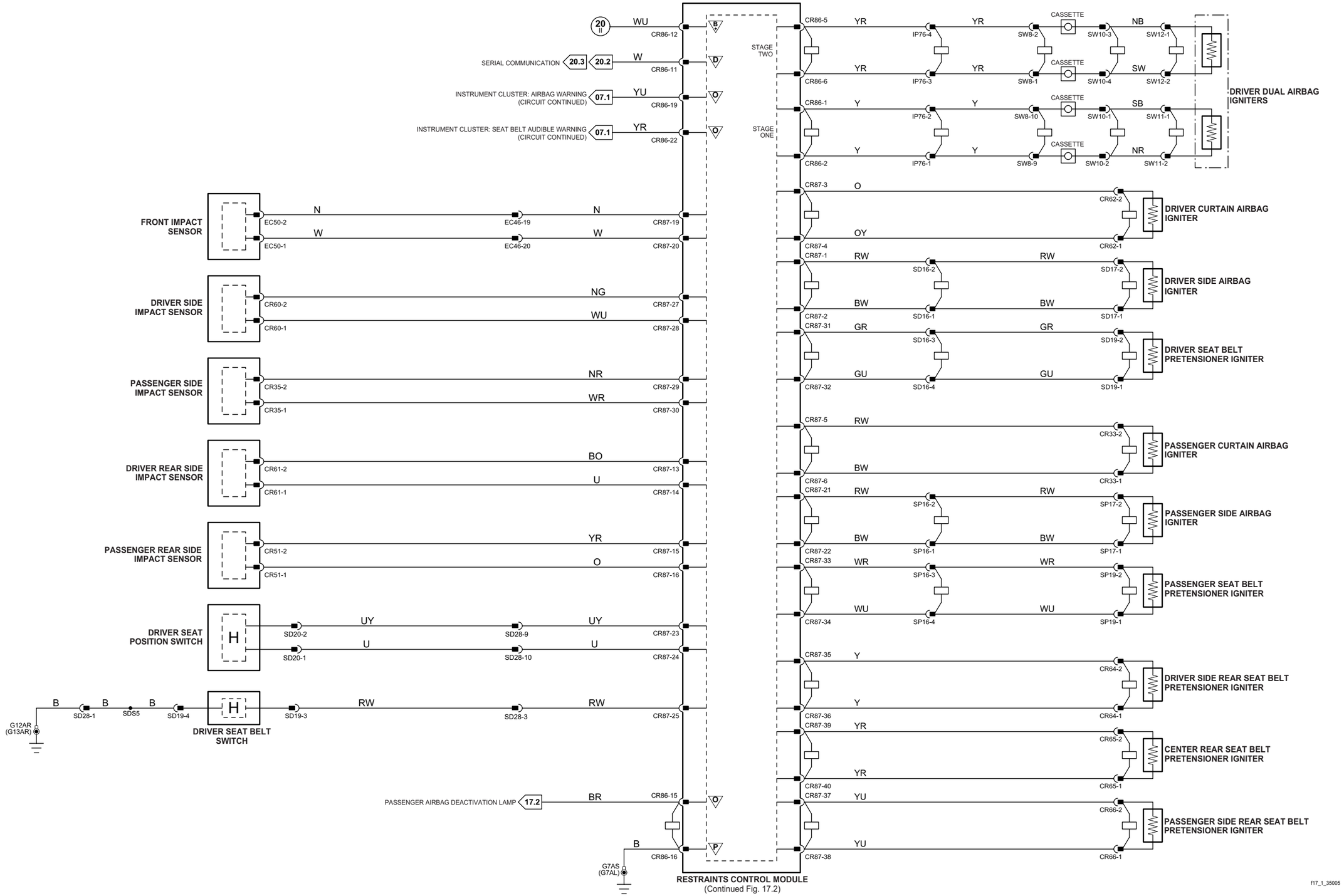
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT

GROUNDS

Ground	Location
G7	CABIN / LH SIDE OF TRANSMISSION TUNNEL
G12	CABIN / BELOW 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.



1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 (I) → 15 (E) Fig. 01.4
16 (E) → 52 (E) Fig. 01.5
53 (S) → 77 (S) Fig. 01.6
78 (S) → 105 (S) Fig. 01.7
106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 17.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DUAL AIR BAG IGNITERS – PASSENGER	IP15	2-WAY / BLACK	INSTRUMENT PANEL
	IP56	2-WAY / BLACK	
OCCUPANCY SENSING MODULE	SP30	26-WAY / BLACK	UNDER PASSENGER SEAT
PASSENGER AIR BAG DEACTIVATED INDICATOR LAMP	IP68	3-WAY / BLACK	INSTRUMENT PANEL / PASSENGER SIDE
PASSENGER SEAT WEIGHT PRESSURE SENSOR	SP3	3-WAY / BLACK	PASSENGER SEAT
PASSENGER SEAT WEIGHT SENSING MODULE	SP2	10-WAY / BLACK	UNDER PASSENGER SEAT
RESTRAINTS CONTROL MODULE	CR86	24-WAY / BLACK	TRANSMISSION TUNNEL, UNDER CENTER CONSOLE
	CR87	40-WAY / BLACK	
SEAT BELT SWITCH – PASSENGER	SP19	4-WAY / GREY	SEAT BELT BUCKLE
SEAT BELT TENSION SENSOR – PASSENGER	SP33	4-WAY / GREY	UNDER PASSENGER SEAT
SPATIAL SENSOR – CENTER CONSOLE (LHD)	CL6	2-WAY / BLACK	
SPATIAL SENSOR – CENTER CONSOLE (RHD)	CL7	2-WAY / BLACK	CENTER CONSOLE
SPATIAL SENSOR – HEADLINER INNER	RF16	2-WAY / BLACK	HEADLINER, ABOVE FRONT PASSENGER
SPATIAL SENSOR – HEADLINER OUTER	RF18	2-WAY / BLACK	HEADLINER, ABOVE FRONT PASSENGER
SPATIAL SENSOR – PASSENGER 'A' POST	CR105	2-WAY / BLACK	PASSENGER SIDE 'A' POST / UPPER

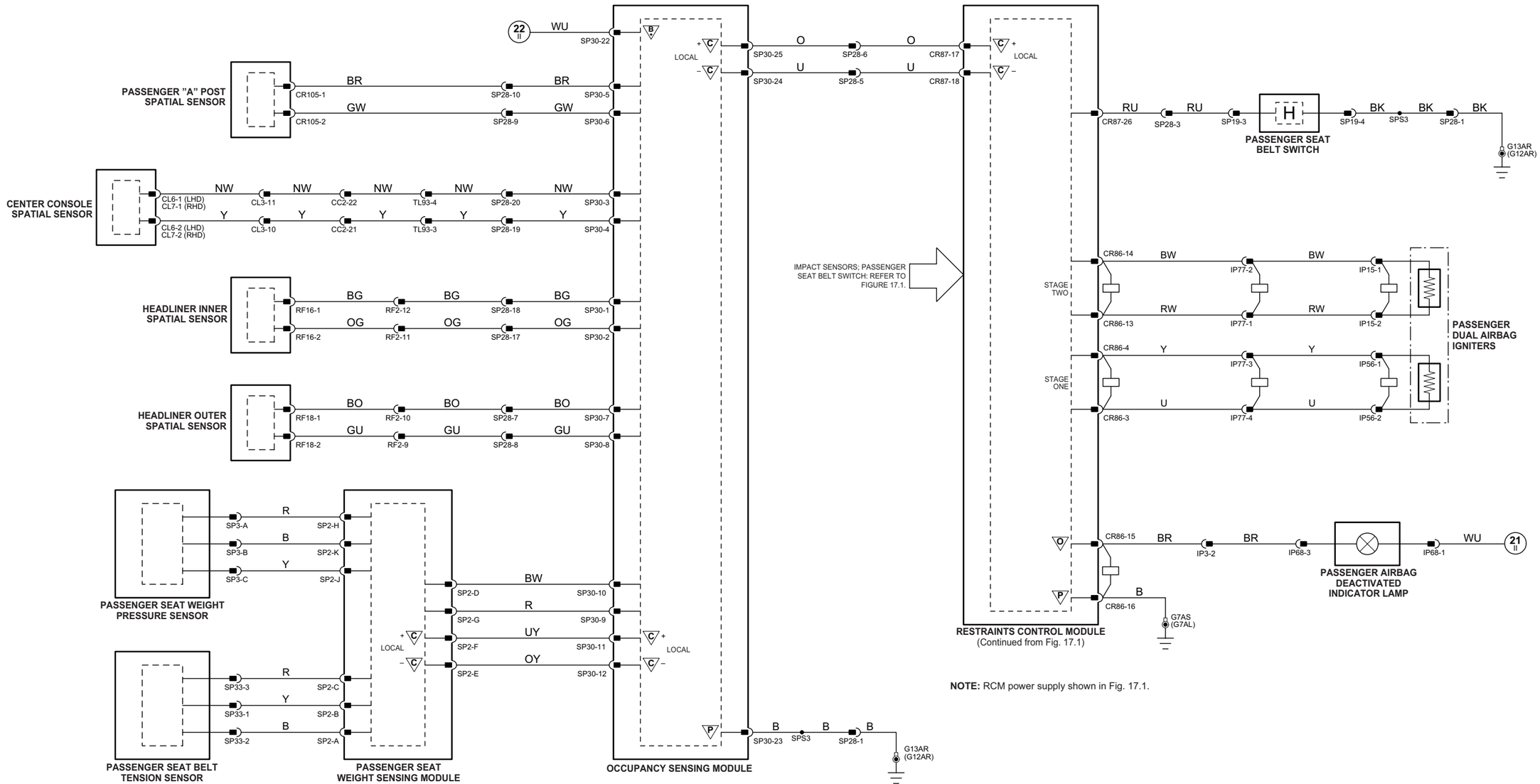
HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
IP3	14-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
SP28	20-WAY / BLACK / PASSENGER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW PASSENGER SEAT
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G7	CABIN / LH SIDE OF TRANSMISSION TUNNEL
G12	CABIN / BELOW DRIVER SEAT
G13	CABIN / BELOW PASSENGER 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: RCM power supply shown in Fig. 17.1.

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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 → 15 Fig. 01.4	16 → 52 Fig. 01.5 53 → 77 Fig. 01.6	78 → 105 Fig. 01.7 106 → 143 Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** All Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Instrument Cluster

	Pin	Description and Characteristic
C	IP6–08	CAN +
C	IP6–09	CAN –
S	IP6–10	SCP –
S	IP6–20	SCP +

Parking Aid Module

	Pin	Description and Characteristic
B+	CR52-01	IGNITION SWITCHED POWER SUPPLY (II): B+
SS	CR52-02	FRONT SENSOR SIGNAL SUPPLY VOLTAGE: B+
PG	CR52-03	POWER GROUND: GROUND
SG	CR52-04	REAR SENSOR SIGNAL GROUND: GROUND
D	CR52-05	D CR52-05 SERIAL DATA LINK
I	CR52-06	CHIME INHIBIT SIGNAL
I	CR52-07	PARKING AID SWITCH SIGNAL: GROUND WHEN ACTIVATED
I	CR52-08	TRAILER CONNECTED STATUS: GROUND = TRAILER CONNECTED
I	CR52-09	REVERSE LAMPS STATUS: B+ = REVERSE LAMPS ON
D	CR52-10	REAR LH CENTER SENSOR SIGNAL DATA
D	CR52-11	REAR LH SENSOR SIGNAL DATA
D	CR52-12	FRONT LH CENTER SENSOR SIGNAL DATA
D	CR52-13	FRONT LH SENSOR SIGNAL DATA
O	CR52-14	PARKING AID SOUNDERS +
SS	CR52-15	REAR SENSOR SIGNAL SUPPLY VOLTAGE: B+
SG	CR52-16	REAR SENSOR SIGNAL GROUND: GROUND
O	CR52-17	REAR PARKING AID SOUNDER ñ
O	CR52-18	FRONT PARKING AID SOUNDER ñ
O	CR52-19	PARKING AID STATUS LED ACTIVATE: TO ACTIVATE, PAM SWITCHES CIRCUIT TO B+
D	CR52-23	REAR RH CENTER SENSOR SIGNAL DATA
D	CR52-24	REAR RH SENSOR SIGNAL DATA
D	CR52-25	FRONT RH CENTER SENSOR SIGNAL DATA
D	CR52-26	FRONT RH SENSOR SIGNAL DATA

Rear Electronic Module

	Pin	Description and Characteristic
O	CR11–17	PARKING AID CHIME INHIBIT SIGNAL
S	CR13–01	SCP +
S	CR13–02	SCP –

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. 18.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT LH CENTER SENSOR	BF4	3-WAY / BLACK	FRONT BUMPER, LH, CENTER
FRONT LH SENSOR	BF5	3-WAY / BLACK	FRONT BUMPER, LH
FRONT RH CENTER SENSOR	BF3	3-WAY / BLACK	FRONT BUMPER, RH CENTER
FRONT RH SENSOR	BF2	3-WAY / BLACK	FRONT BUMPER, RH
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
PARKING AID MODULE	CR52	12-WAY / BLACK	LUGGAGE COMPARTMENT, LH REAR
PARKING AID SOUNDER, FRONT	IP46	2-WAY / BLACK	INSTRUMENT PANEL / DRIVER SIDE
PARKING AID SOUNDER, REAR	TL6	2-WAY / BLACK	PARCEL SHELF / RH SIDE
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR LH CENTER SENSOR	BR4	3-WAY / BLACK	REAR BUMPER, LH, CENTER
REAR LH SENSOR	BR5	3-WAY / BLACK	REAR BUMPER, LH
REAR RH CENTER SENSOR	BR3	3-WAY / BLACK	REAR BUMPER, RH CENTER
REAR RH SENSOR	BR2	3-WAY / BLACK	REAR BUMPER, RH
ROOF CONSOLE	RF3	20-WAY / BLACK	CABIN ROOF

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
BF1	10-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO FRONT BUMPER HARNESS	ENGINE COMPARTMENT / BEHIND RH WHEEL ARCH LINER
BR1	10-WAY / GREY / CABIN HARNESS TO REAR BUMPER HARNESS	BEHIND REAR BUMPER, RH SIDE
EC46	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO CABIN HARNESS	CABIN / RH 'A' POST
IP1	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS CABIN / BEHIND	DRIVER SIDE INSTRUMENT PANEL END PLATE
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G17	CABIN / BELOW REAR SEAT / RH SIDE
G29	TRUNK / SPARE WHEEL WELL

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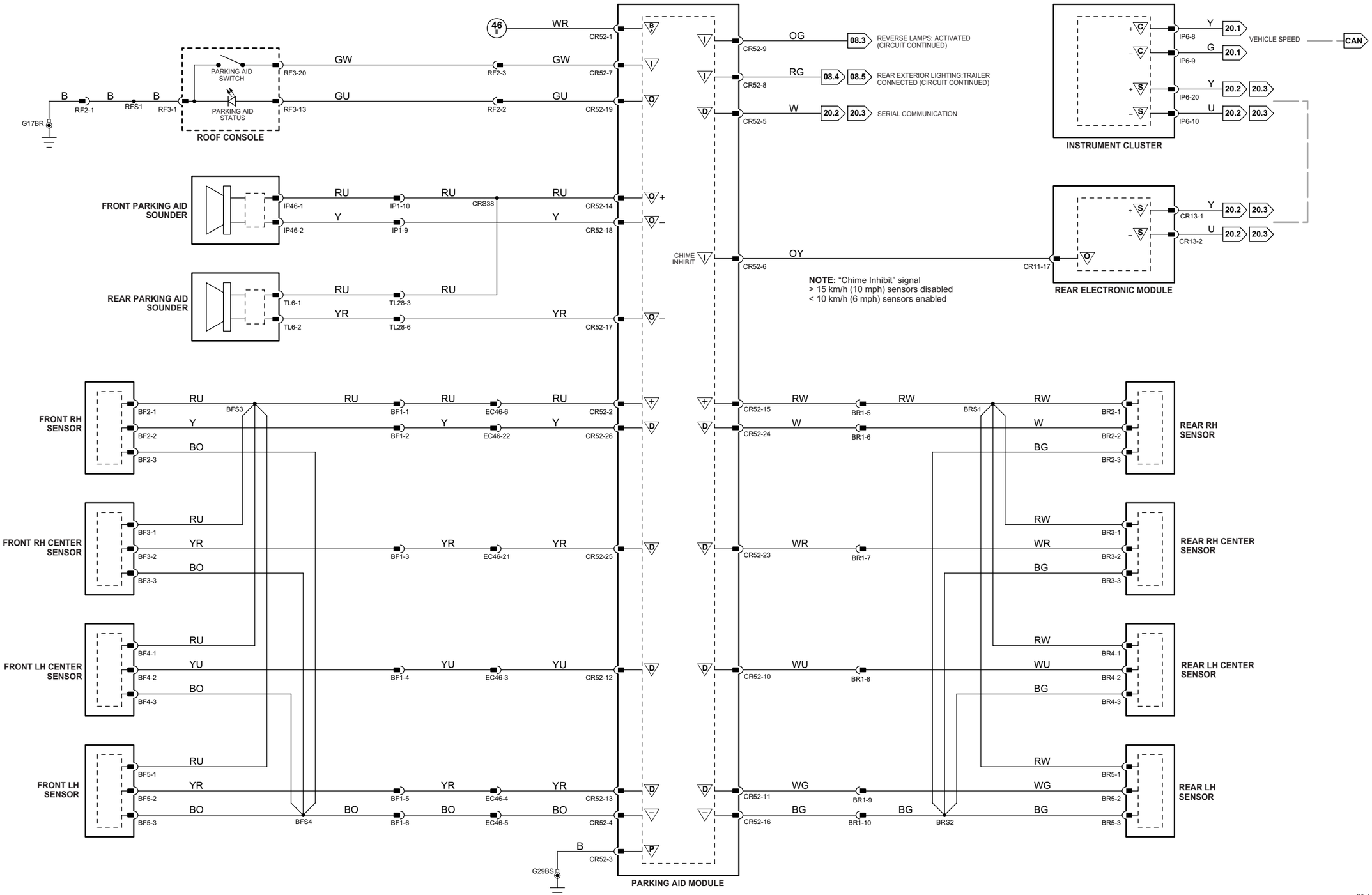

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1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (E) Fig. 01.4	16 (E) → 52 (E) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: Parking Aid Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Front Electronic Module

	Pin	Description and Characteristic
PG	CR1-26	POWER GROUND: GROUND
B+	CR9-06	BATTERY POWER SUPPLY: LOGIC: B+
PG	CR10-11	POWER GROUND: GROUND
PG	CR10-13	POWER GROUND: GROUND
PG	CR10-14	POWER GROUND: GROUND
I	CR85-18	LH FRONT SEAT HEATER SWITCH SIGNAL: PWM
I	CR85-19	RH FRONT SEAT HEATER SWITCH SIGNAL: PWM
O	CR85-20	SEAT HEATERS SWITCHED ON SIGNAL: B+ WHEN ACTIVATED
O	EC36-09	GLOVE BOX RELEASE ACTIVATE

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. 19.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CENTER CONSOLE SWITCH PACK	CL1	8-WAY / BLACK	CENTER CONSOLE
	CL2	8-WAY / BLACK	
CLOCK	IP19	6-WAY / BLACK	INSTRUMENT PANEL / CENTER VENT
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
GLOVE BOX MOTOR	IP16	3-WAY / BLACK	GLOVE BOX
GLOVE BOX SWITCH	IP12	2-WAY / BLACK	GLOVE BOX
STEERING WHEEL	SW7	4-WAY / BLACK	STEERING WHEEL
STEERING WHEEL HEATER MODULE	SW5	4-WAY / BLACK	STEERING WHEEL

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CL3	16-WAY / GREY / CENTER CONSOLE HARNESS TO CENTER CONSOLE LINK HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP17	16-WAY / GREEN / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
TL28	16-WAY / GREY / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW CENTER CONSOLE / RH SIDE OF TRANSMISSION TUNNEL

GROUNDS

Ground	Location
G9	CABIN / UPPER LH A POST
G15	CABIN / RH SIDE OF TRANSMISSION TUNNEL
G31	CABIN / BEHIND PASSENGER AIR BAG
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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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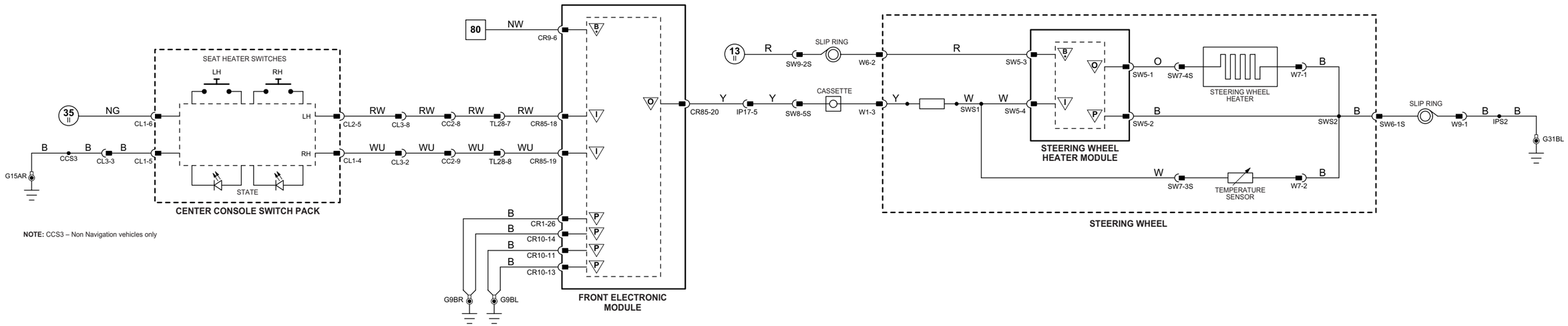
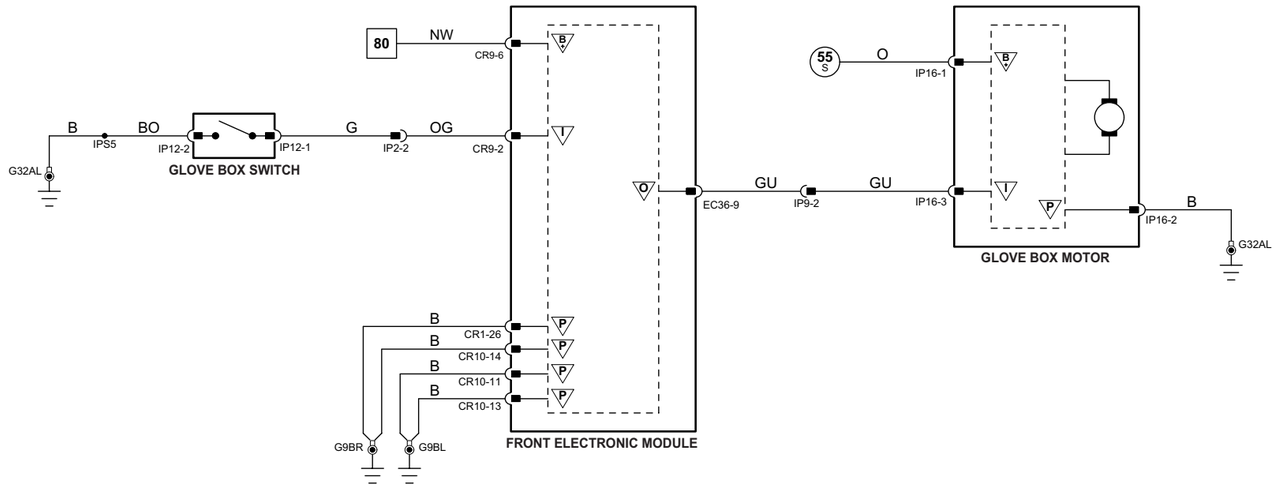
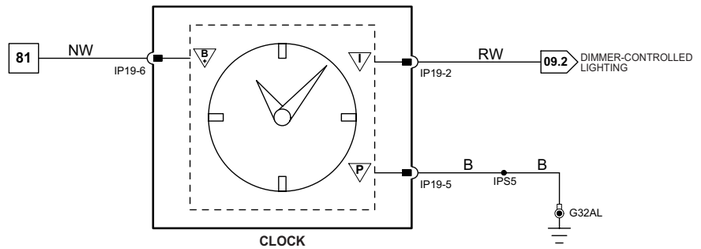


STEERING WHEEL HEATER



GLOVE BOX DOOR



CLOCK

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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (I) → 52 (E) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP	S SCP	VARIANT: All Vehicles
7 → 63 Fig. 01.2	1 (I) → 15 (E) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN	D Serial and Encoded Data	VIN RANGE: All
									DATE OF ISSUE: September 2004

Fig. 19.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R3
AUXILIARY RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX – R8
CIGAR LIGHTER – FRONT	TL69	3-WAY / BLACK	CENTER CONSOLE
CIGAR LIGHTER – REAR	TL70	3-WAY / BLACK	REAR CENTER CONSOLE
ELECTRONIC ROAD PRICING MODULE	CR121	2-WAY / BLACK	INSTRUMENT PANEL
FRONT POWER DISTRIBUTION FUSE BOX	EC4	4-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
	EC5	4-WAY / BLACK	
	EC19	8-WAY / BLACK	
	EC22	4-WAY / BLACK	
	EC26	8-WAY / BLACK	
	EC28	12-WAY / BLACK	
	EC32	4-WAY / BLACK	
	EC35	8-WAY / BLACK	
	EC40	8-WAY / BLACK	
	EC41	10-WAY / BLACK	
HORN RELAY	—	—	FRONT POWER DISTRIBUTION FUSE BOX – R14
HORN SWITCH	—	—	STEERING WHEEL
HORNS	EC58	2-WAY / BLACK	BEHIND FRONT BUMPER / LH SIDE
POWER POINT – FRONT	IP21	3-WAY / BLACK	FRONT CENTER CONSOLE GLOVE BOX
POWER POINT – REAR	TL72	3-WAY / BLACK	REAR CENTER CONSOLE
REAR ACCESSORY CONNECTOR	CR40	3-WAY / BLACK	TRUNK / RH REAR
REAR POWER DISTRIBUTION FUSE BOX	CR3	4-WAY / BLACK	TRUNK / RH REAR
	CR5	4-WAY / BLACK	
	CR68	8-WAY / BLACK	
	CR80	4-WAY / BLACK	
	CR81	8-WAY / BLACK	
	CR82	12-WAY / BLACK	
	CR83	4-WAY / BLACK	
	CR84	8-WAY / BLACK	
	CR97	8-WAY / BLACK	
	CR98	10-WAY / BLACK	
ROOF CONSOLE	RF3	20-WAY / BLACK	CABIN ROOF
SUN SHADE MOTOR	CR70	4-WAY / GREY	REAR WINDOW

HARNESS IN-LINE CONNECTORS

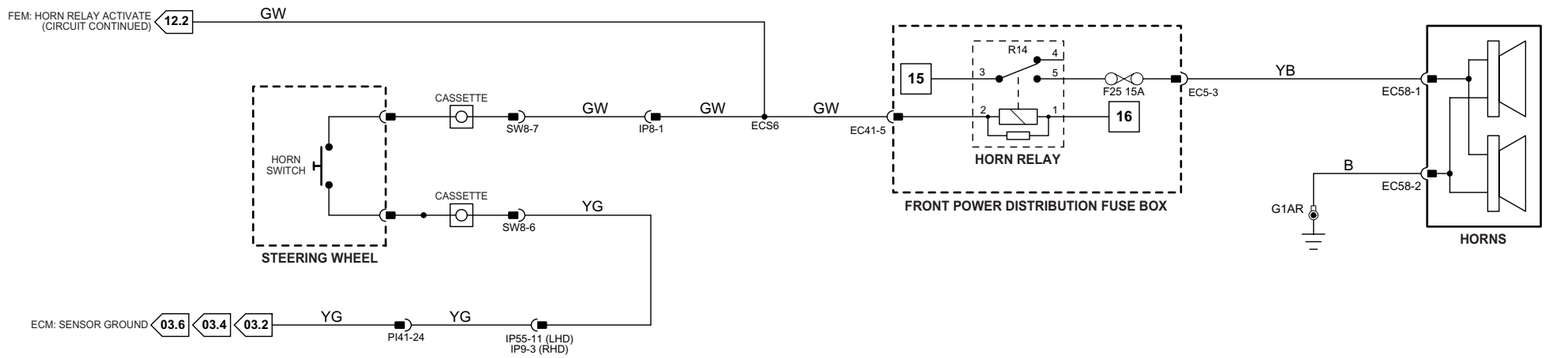
Connector	Connector Description / Location	Location
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP9	8-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / ADJACENT TO HOOD RELEASE
IP51	10-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
RF2	16-WAY / BLUE / CABIN HARNESS TO ROOF HARNESS	CABIN / RH 'D' POST
TL14	14-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	TRUNK / LH SIDE / BEHIND CD AUTOCHANGER

GROUNDS

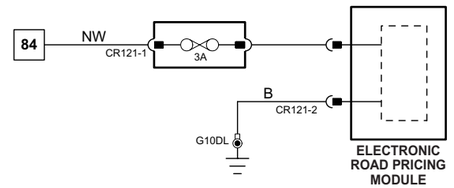
Ground	Location
G1	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
G10	CABIN / RH A POST
G17	CABIN / BELOW REAR SEAT / RH SIDE
G18	CABIN / BELOW REAR SEAT / LH SIDE
G23	TRUNK / RH SIDE / ADJACENT TO BATTERY
G32	CABIN / BEHIND INSTRUMENT CLUSTER

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.

HORNS



ELECTRONIC ROAD PRICING



GARAGE DOOR OPENER

SUN SHADE

CIGAR LIGHTERS, POWER POINTS, ACCESSORY CONNECTOR

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1 → 6 Fig. 01.1 | 7 → 63 Fig. 01.2 | 64 → 95 Fig. 01.3 | 1 I → 15 II Fig. 01.4 | 16 II → 52 II Fig. 01.5 | 53 S → 77 S Fig. 01.6 | 78 S → 105 S Fig. 01.7 | 106 E → 143 E Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 20.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR SUSPENSION MODULE	CR88	9-WAY / BLACK	CABIN REAR BULKHEAD / BEHIND REAR SEAT BACK / RH SIDE
	CR89	12-WAY / BLACK	
	CR90	15-WAY / BLACK	
	CR91	18-WAY / BLACK	
CLIMATE CONTROL MODULE	AC100	16-WAY / BLACK	CLIMATE CONTROL UNIT / DRIVER SIDE
	AC101	26-WAY / BLACK	
	CR119	22-WAY / BLACK	
DATA LINK CONNECTOR	IP39	DATA LINK CONNECTOR	TRANSMISSION TUNNEL / DRIVER SIDE
DYNAMIC STABILITY CONTROL MODULE	EC30	47-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
J-GATE MODULE	IP32	16-WAY / BLACK	J-GATE ASSEMBLY
REAR CLIMATE CONTROL MODULE	RA1	16-WAY / BLACK	REAR CENTER CONSOLE
	RA2	12-WAY / BLACK	
SPEED CONTROL MODULE	IP78	30-WAY YELLOW	BEHIND INSTRUMENT PANEL, DRIVER SIDE
TRANSMISSION CONTROL MODULE	GB2	16-WAY / BLACK	TRANSMISSION CONTROL VALVE ASSEMBLY
YAW RATE SENSOR	IP23	6-WAY / BLACK	CENTER CONSOLE / REARWARD OF J GATE

HARNESS IN-LINE CONNECTORS

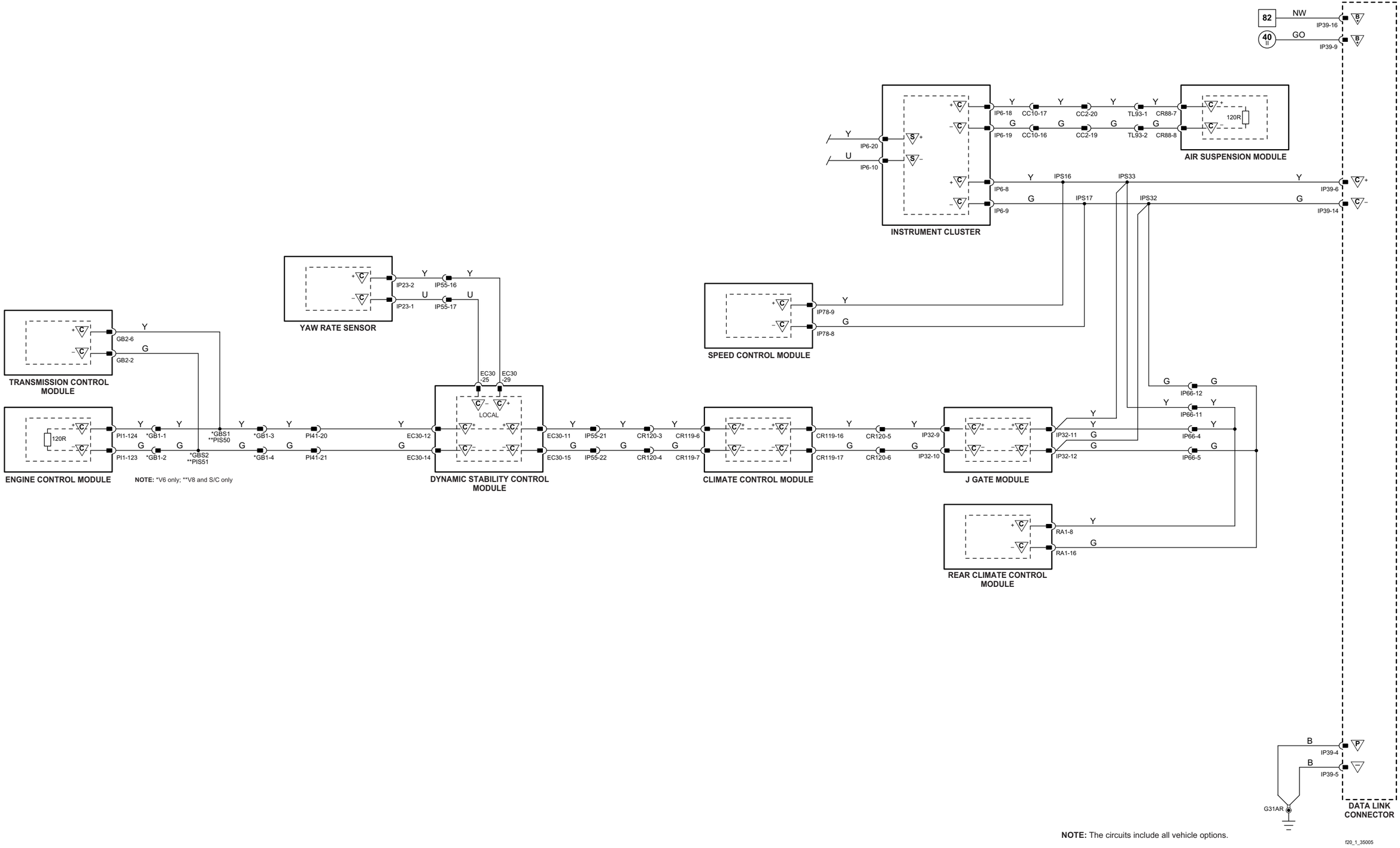
Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CC2	22-WAY / BLACK / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
CR120	8-WAY / BLACK / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL / LH SIDE
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
IP55	22-WAY / BLACK / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP66	14-WAY / GREY / INSTRUMENT PANEL HARNESS TO REAR AIR CONDITIONING HARNESS	CABIN / BELOW CENTER CONSOLE
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
TL22	16-WAY / GREEN / TELEMATICS HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE
TL93	8-WAY / BLACK / CENTER CONSOLE HARNESS TO TELEMATICS HARNESS	CABIN / BELOW REAR CENTER CONSOLE

GROUNDS

Ground	Location
G31	CABIN / BEHIND PASSENGER AIR BAG

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: The circuits include all vehicle options.

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1 → 6 Fig. 01.1	64 → 95 Fig. 01.3	16 (S) → 52 (S) Fig. 01.5	78 (S) → 105 (S) Fig. 01.7	I Input	B Battery Voltage	+ Sensor/Signal Supply V	A ACP S SCP
7 → 63 Fig. 01.2	1 (I) → 15 (S) Fig. 01.4	53 (S) → 77 (S) Fig. 01.6	106 (E) → 143 (E) Fig. 01.8	O Output	P Power Ground	– Sensor/Signal Ground	C CAN D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 20.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
DATA LINK CONNECTOR	IP39	16-WAY / BLACK	TRANSMISSION TUNNEL / DRIVER SIDE
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
DRIVER SEAT MODULE	SD2	22-WAY / BLACK	UNDER DRIVER SEAT
	SD3	6-WAY / BLACK	
	SD4	6-WAY / BLACK	
	SD24	4-WAY / BLACK	
	SD26	4-WAY / BLACK	
	SD27	6-WAY / BLACK	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
FRONT ELECTRONIC MODULE	CR1	26-WAY / BLACK	CABIN / LH 'A' POST
	CR9	12-WAY / BLACK	
	CR10	17-WAY / BLACK	
	CR85	20-WAY / BLACK	
	EC36	22-WAY / BLACK	
HID HEADLAMP UNIT – LH	EC57	9-WAY / BLACK	ENGINE COMPARTMENT / LH FRONT
HID HEADLAMP UNIT – RH	EC6	9-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
PARKING AID MODULE	CR52	26-WAY / BLACK	TRUNK / SPARE WHEEL WELL
PARKING BRAKE MODULE	CR32	12-WAY / GREY	TRUNK / RH SIDE / ADJACENT TO REM
	CR50	4-WAY / BLACK	
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
REAR MEMORY MODULE	CR21	4-WAY / BLACK	REAR BULKHEAD / BEHIND REAR SEAT BACK
	CR37	26-WAY / BLACK	
	CR38	22-WAY / BLACK	
	CR41	6-WAY / BLACK	
	CR53	4-WAY / BLACK	
	CR59	6-WAY / BLACK	
RESTRAINTS CONTROL MODULE	CR86	24-WAY / BLACK	TRANSMISSION TUNNEL, UNDER CENTER CONSOLE
	CR87	40-WAY / BLACK	
ROOF CONSOLE	RF3	20-WAY / BLACK	ROOF HEADLINER
STEERING COLUMN LOCK MODULE	IP24	4-WAY / BLACK	UPPER STEERING COLUMN

HARNESS IN-LINE CONNECTORS

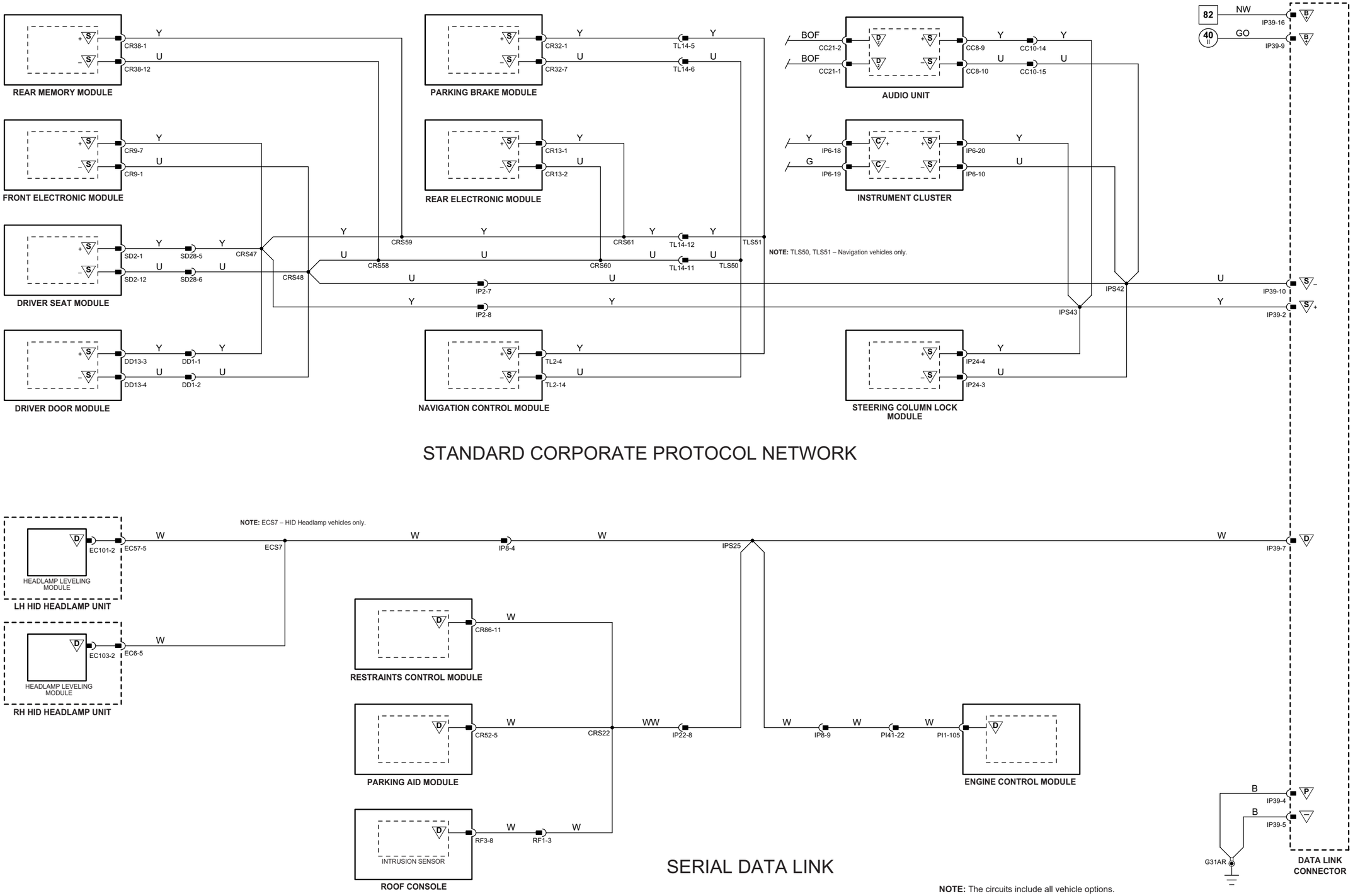
Connector	Connector Description / Location	Location
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
TL14	14-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	TRUNK / LH SIDE / BEHIND CD AUTOCHANGER

GROUNDS

Ground	Location
G31	CABIN / BEHIND PASSENGER AIR BAG

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.



1 → 6 Fig. 01.1 7 → 63 Fig. 01.2	64 → 95 Fig. 01.3 1 (I) → 15 (F) Fig. 01.4	16 (F) → 52 (F) Fig. 01.5 53 (S) → 77 (S) Fig. 01.6	78 (S) → 105 (S) Fig. 01.7 106 (E) → 143 (E) Fig. 01.8	I Input O Output	B Battery Voltage P Power Ground	+ Sensor/Signal Supply V – Sensor/Signal Ground	A ACP C CAN	S SCP D Serial and Encoded Data	**VARIANT:** LHD Vehicles **VIN RANGE:** All **DATE OF ISSUE:** September 2004

Fig. 20.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
DATA LINK CONNECTOR	IP39	16-WAY / BLACK	TRANSMISSION TUNNEL / DRIVER SIDE
DRIVER DOOR MODULE	DD11	20-WAY / BLACK	DRIVER DOOR
	DD12	26-WAY / BLACK	
	DD13	26-WAY / NATURAL	
DRIVER SEAT MODULE	SD2	22-WAY / BLACK	UNDER DRIVER SEAT
	SD3	6-WAY / BLACK	
	SD4	6-WAY / BLACK	
	SD24	4-WAY / BLACK	
	SD26	4-WAY / BLACK	
	SD27	6-WAY / BLACK	
ENGINE CONTROL MODULE	PI1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
HID HEADLAMP UNIT – LH	EC57	9-WAY / BLACK	ENGINE COMPARTMENT / LH FRONT
HID HEADLAMP UNIT – RH	EC6	9-WAY / BLACK	ENGINE COMPARTMENT / RH FRONT
INSTRUMENT CLUSTER	IP5	22-WAY / GREY	INSTRUMENT PANEL
	IP6	20-WAY / BLACK	
	IP7	22-WAY / BLACK	
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
PARKING AID MODULE	CR52	26-WAY / BLACK	TRUNK / SPARE WHEEL WELL
PARKING BRAKE MODULE	CR32	12-WAY / GREY	TRUNK / RH SIDE / ADJACENT TO REM
	CR50	4-WAY / BLACK	
REAR ELECTRONIC MODULE	CR4	20-WAY / BLACK	TRUNK / RH REAR
	CR11	26-WAY / NATURAL	
	CR12	12-WAY / BLACK	
	CR13	22-WAY / BLACK	
	CR71	17-WAY / BLACK	
	CR73	4-WAY / BLACK	
RESTRAINTS CONTROL MODULE	CR86	24-WAY / BLACK	TRANSMISSION TUNNEL, UNDER CENTER CONSOLE
	CR87	40-WAY / BLACK	
ROOF CONSOLE	RF3	20-WAY / BLACK	ROOF HEADLINER
STEERING COLUMN LOCK MODULE	IP24	4-WAY / BLACK	UPPER STEERING COLUMN

HARNESS IN-LINE CONNECTORS

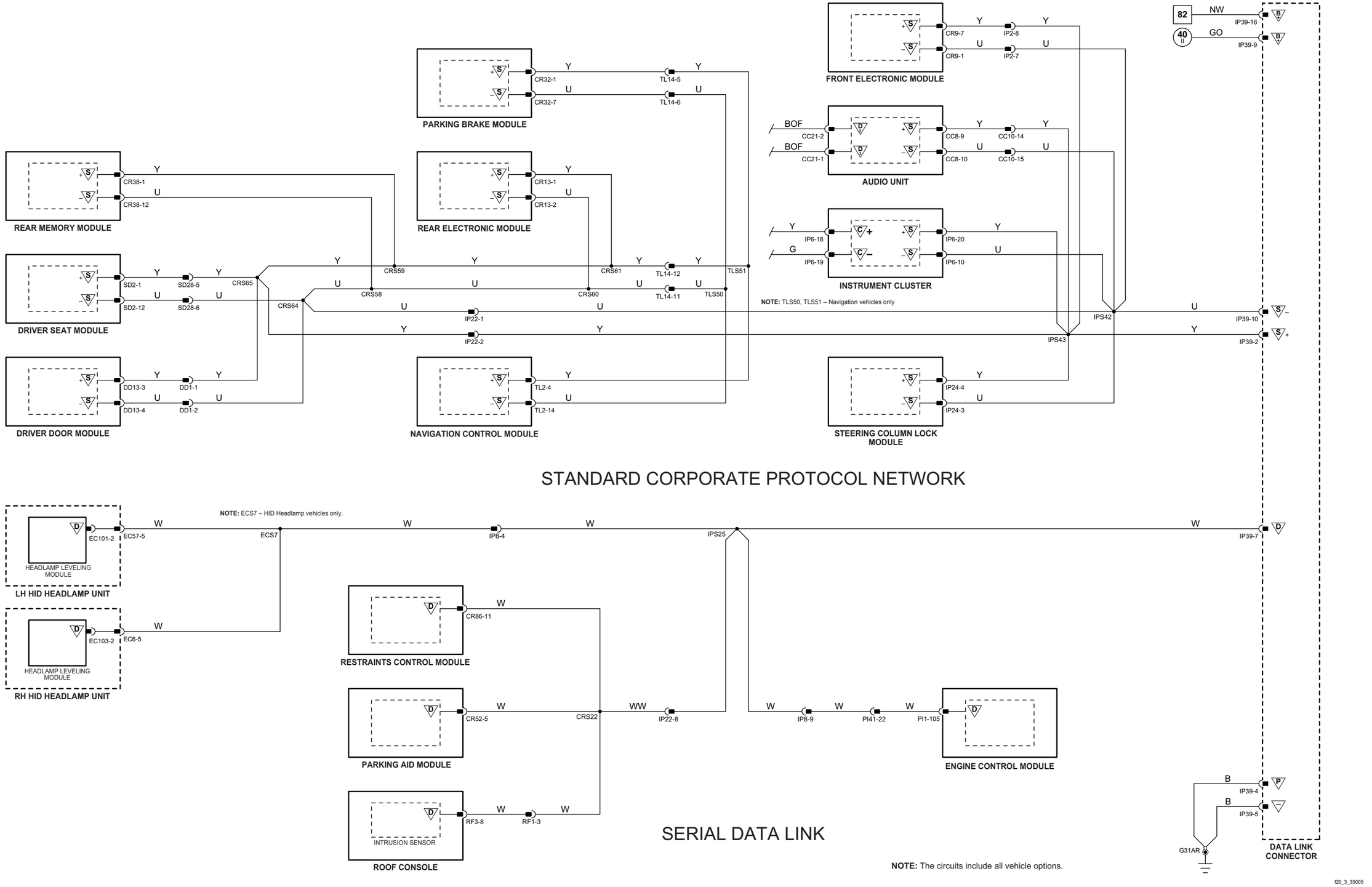
Connector	Connector Description / Location	Location
CC10	22-WAY / GREEN / CENTER CONSOLE HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BELOW CENTER CONSOLE / LH SIDE (LHD), RH SIDE (RHD)
DD1	22-WAY / BLACK / CABIN HARNESS TO DRIVER DOOR HARNESS	CABIN / DRIVER SIDE 'A' POST
IP2	10-WAY / GREY / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND LH SIDE INSTRUMENT PANEL END PLATE
IP8	14-WAY / GREY / ENGINE COMPARTMENT HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / RH 'A' POST
IP22	16-WAY / BLUE / CABIN HARNESS TO INSTRUMENT PANEL HARNESS	CABIN / BEHIND INSTRUMENT PANEL END PLATE / LH SIDE (LHD), RH SIDE (RHD)
PI41	42-WAY / BLACK / ENGINE HARNESS TO ENGINE COMPARTMENT HARNESSES	ENGINE COMPARTMENT / TOP OF SUSPENSION TOWER / PASSENGER SIDE
RF1	10-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	CABIN / UPPER RH 'A' POST
SD28	20-WAY / BLACK / DRIVER SEAT HARNESS TO CABIN HARNESS	CABIN / BELOW DRIVER SEAT
TL14	14-WAY / GREY / CABIN HARNESS TO TELEMATICS HARNESS	TRUNK / LH SIDE / BEHIND CD AUTOCHANGER

GROUNDS

Ground	Location
G31	CABIN / BEHIND PASSENGER AIR BAG

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.



1 → 6 Fig. 01.1
7 → 63 Fig. 01.2
64 → 95 Fig. 01.3
1 → 15 Fig. 01.4
16 → 52 Fig. 01.5
53 → 77 Fig. 01.6
78 → 105 Fig. 01.7
106 → 143 Fig. 01.8

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

VARIANT: RHD Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

Fig. 20.4

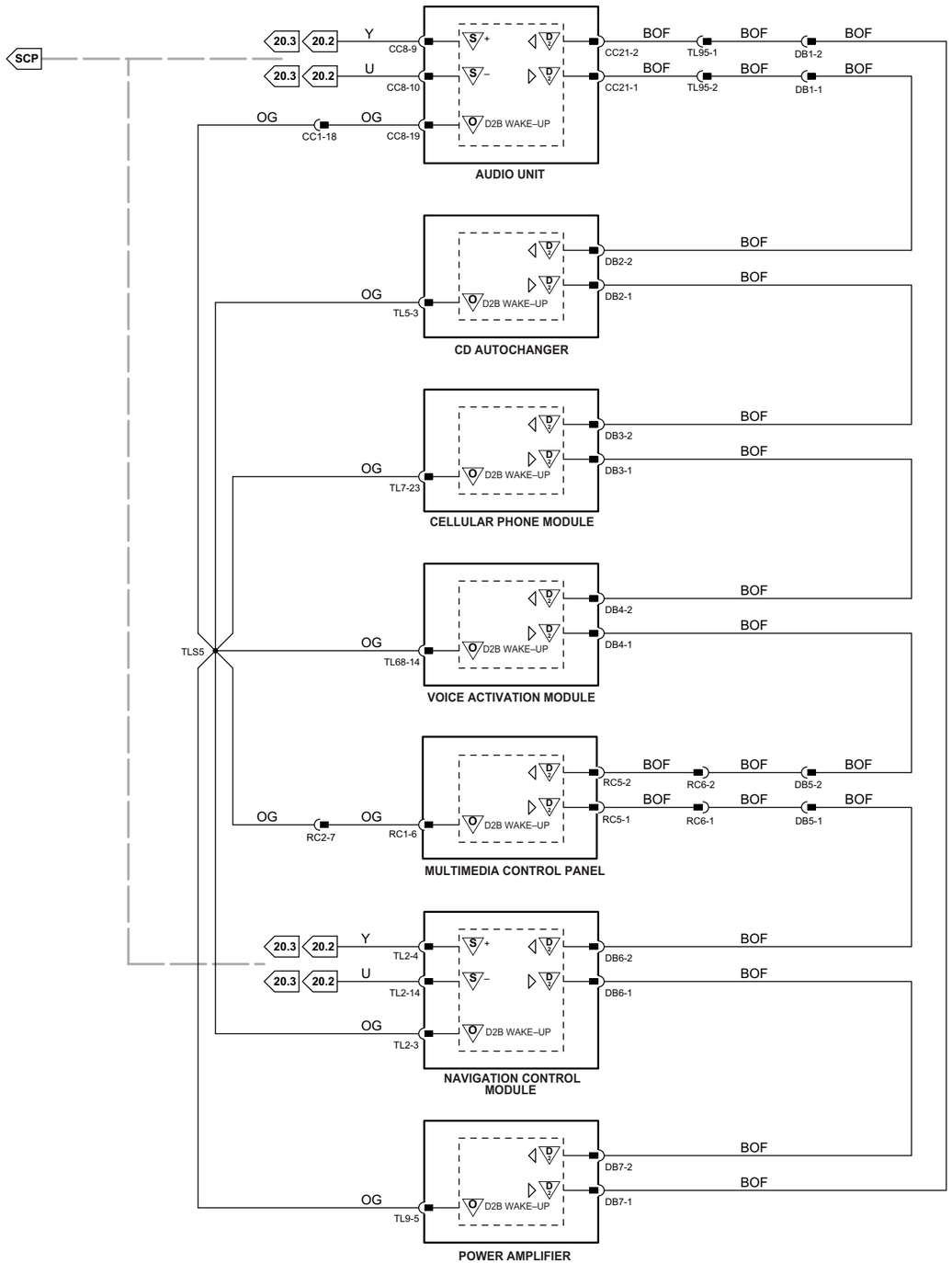
COMPONENTS

Component	Connector(s)	Connector Description	Location
AUDIO UNIT	CC8	20-WAY / BLACK	CENTER CONSOLE
	CC9	2-WAY / BLACK	
	CC21	FIBER OPTIC CONNECTOR	
CD AUTOCHANGER	TL5	3-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / THIRD FROM TOP
	DB2	FIBER OPTIC CONNECTOR	
CELLULAR PHONE CONTROL MODULE	TL7	32-WAY / BLACK	TRUNK / LH SIDE / MODULE STACK / BOTTOM
	TL94	2-WAY / BLACK	
	DB3	FIBER OPTIC CONNECTOR	
MULTIMEDIA CONTROL PANEL	RC1	8-WAY / BLACK	REAR SEAT ARM REST OR REAR FLOOR CONSOLE
	RC3	20-WAY / BLACK	
	RC5	FIBER OPTIC CONNECTOR	
NAVIGATION CONTROL MODULE	DB6	FIBER OPTIC CONNECTOR	TRUNK / LH SIDE / MODULE STACK / SECOND FROM TOP
	TL2	20-WAY / BLACK	
	TL29	26-WAY / BLACK	
	TL30	12-WAY / BLACK	
	TL37	2-WAY / BLACK	
POWER AMPLIFIER	TL9	12-WAY / WHITE	TRUNK / LH SIDE
	TL10	18-WAY / WHITE	
	DB7	FIBER OPTIC CONNECTOR	
VOICE ACTIVATION MODULE	TL68	22-WAY / GREY	TRUNK / LH SIDE / MODULE STACK / SECOND FROM BOTTOM
	DB4	FIBER OPTIC CONNECTOR	

HARNESS IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CC1	22-WAY GREEN / TELEMATICS HARNESS TO CENTER CONSOLE HARNESS	CABIN / BELOW CENTER CONSOLE
DB1	2-WAY / BLACK / TELEMATICS HARNESS TO D2B NETWORK HARNESS	TRUNK / LH SIDE
DB5	2-WAY / BLACK / D2B NETWORK HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	TRUNK / LH SIDE
RC2	8-WAY / BLACK / TELEMATICS HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
RC6	2-WAY / BLACK / D2B NETWORK HARNESS TO REAR IN-CAR ENTERTAINMENT CONTROLS HARNESS	CABIN / BELOW CENTER CONSOLE
TL95	2-WAY / BLACK / CENTER CONSOLE HARNESS TO D2B NETWORK HARNESS	CABIN / BELOW REAR CENTER CONSOLE

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 7-module D2B network shown depicts the greatest number of modules available. D2B networks containing less than 7 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 – Multimedia Control Panel
5 – Navigation Control Module
6 – 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 7 modules has a unique fiber optic and "wake up" circuit.

For D2B network diagnostics via SCP – refer to Figs. 20.2 and 20.3.

f20_4_35005

1 → 6 Fig. 01.1 | 7 → 63 Fig. 01.2 | 64 → 95 Fig. 01.3 | 1 (I) → 15 (I) Fig. 01.4 | 16 (E) → 52 (E) Fig. 01.5 | 53 (S) → 77 (S) Fig. 01.6 | 78 (S) → 105 (S) Fig. 01.7 | 106 (E) → 143 (E) Fig. 01.8

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

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: September 2004

The following pages contain a list of SCP and CAN Network messages.

NOTE: Passive Anti-Theft System and Security System messages are excluded.

Acronyms and abbreviations:

A/C	Air Conditioning
ADCM	Adaptive Damping Control Module
AIRCON	Climate Control
ASC	Adaptive Speed Control
ASM	Air Suspension Module
AT CMD	Commands for configuring and controlling telecommunication devices
AUDIO	Audio Unit
CAN	Controller Area Network
CCM	Climate Control Module
CM	Control Module
CONFIG	Configure
CPCM	Cellular Phone Control Module
D2B	Fiber Optic Network
D2B OPC	Instructions for translating and routing data for D2B use
DDM	Driver Door Module
DIAG	Diagnostics (WDS)
DPF	Diesel Particulate Filter
DSC	Dynamic Stability Control
DSCM	Dynamic Stability Control Module
DTC	Diagnostic Trouble Code
ECM	Engine Control Module
FEM	Front Electronic Module
FFHM	Fuel-fired Heater Module
FL	Front Left
FR	Front Right
Gateway	Device that converts messages between different types of networks
HLCM	Headlight Leveling Control Module
IC	Instrument Cluster
ID	Identification
JGM	J-Gate Module
MIL	Malfunction Indicator Lamp
NCM	Navigation Control Module
ODO	Odometer
PBM	Parking Brake Module
PCM	Powertrain Control Module (Diesel only)
PECUS	Programmable Electronic Control Units System
PTT	Push to Talk
REM	Rear Electronic Module
RF	Radio Frequency
RL	Rear Left
RPM	Revolutions Per Minute
RR	Rear Right
SCLM	Steering Column Lock Module
SCM	Speed Control Module
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
TPMM	Tire Pressure Monitoring Module
VAM	Voice Activation Module
VOICE	Voice Activation Control
WDS	Worldwide Diagnostic System

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
All Daytime Running Lamp Command: OFF	NCM			X							
All Daytime Running Lamp Command: ON	NCM			X							
All Daytime Running Lamp Status: OFF	FEM					X					
All Daytime Running Lamp Status: ON	FEM					X					
All Door Lock Status: Lock(ed)	REM			X				X			
All Door Lock Status: Unlock(ed)	REM			X				X			
All Door Lock Enable Command: Enable(d)	DDM		X								
All Floor Courtesy Lamp Command: OFF	FEM							X			
All Floor Courtesy Lamp Command: ON	FEM							X			
All Front Courtesy Lamp Command: OFF	REM							X			
All Front Courtesy Lamp Command: ON	REM							X			
All Front Fog Lamp Command: OFF	IC			X							
All Front Fog Lamp Command: ON	IC			X							
All Front Fog Lamp Status: OFF	FEM			X							
All Front Fog Lamp Status: ON	FEM			X							
All Front High Beam Lamp Command: OFF	IC	X									
All Front High Beam Lamp Command: ON	IC	X									
All Front High Beam Lamp Status: OFF	FEM			X							
All Front High Beam Lamp Status: ON	FEM			X							
All Front Window Operation Enable Command - Disable(d)	DDM			X							
All Front Window Operation Enable Command - Enable(d)	DDM			X							
All Headlamp Command: OFF	IC	X									
All Headlamp Command: ON	IC	X									
All Headlamp Status: OFF	FEM			X							
All Headlamp Status: ON	FEM			X							
All Master Controller Door Lock Switch Status - Active	FEM		X						X		
All Master Controller Door Lock Switch Status - Inactive	FEM		X						X		
All Mirror Extend Motion Status - Disable(d)	DDM		X								
All Mirror Retract Motion Command - Disable(d)	NCM		X								
All Mirror Retract Motion Command - Enable(d)	NCM			X							
All Mirror Retract Motion Status - Disable(d)	DDM			X							

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
All Mirror Retract Motion Status - Enable(d)	DDM		X								
All Park Lamp Command - Off	IC		X	X							
All Park Lamp Command - On	IC		X	X							
All Park Lamp Status - Off	FEM				X						
All Park Lamp Status - On	FEM				X						
All Photo Cell Dark Status - No (False)	IC			X							
All Photo Cell Dark Status - Yes (True)	IC			X							
All Rear Brake Lamp Command - Off	IC		X								
All Rear Brake Lamp Command - On	IC		X								
All Rear Courtesy Lamp Command - Off	FEM		X		X						
All Rear Courtesy Lamp Command - On	FEM		X		X						
All Rear Fog Lamp Command - Off	IC		X								
All Rear Fog Lamp Command - On	IC		X								
All Rear Fog Lamp Status - Off	REM				X						
All Rear Fog Lamp Status - On	REM				X						
All Rear Opera Lamp Command - Off	FEM		X		X						
All Rear Opera Lamp Command - On	FEM		X		X						
All Rear Park Lamp Command - Off	FEM		X								
All Rear Park Lamp Command - On	FEM		X								
All Rear Window Operation Enable Command - Disable(d)	DDM		X							X	
All Rear Window Operation Enable Command - Enable(d)	DDM		X							X	
All Remote Door Lock with Transmitter Id Status - Lock(ed))	DDM		X								
All Remote Door Lock with Transmitter Id Status - Unlock(ed)	DDM		X	X	X						
All Remote Headlamp Command - On	DDM			X							
All Super / Double Door Lock Status - Lock(ed)	REM							X			
All Turn Lamp Command: OFF	IC		X	X							
All Turn Lamp Command: OFF	IC		X	X							
All Window Close Command - Disable(d)	DDM			X							
All Window Close Command - Enable(d)	DDM			X							
All Window Open Command - Disable(d)	DDM			X							
All Window Open Command - Enable(d)	DDM			X							

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Alternator Failure Telltale Status - Off	IC		X	X							
Alternator Failure Telltale Status - On	IC		X	X							
Anti-Lock Brake System Active Status - No	IC	X									
Anti-Lock Brake System Active Status - Yes	IC	X									
Backlighting Intensity and Dimming Curve with Headlamps Command: OFF	IC			X		X	X				
Backlighting Intensity and Dimming Curve with Headlamps Command: ON	IC			X		X	X				
Brake Lamp Pedal Switch Status: Active	REM	X									
Brake Lamp Pedal Switch Status: Inactive	REM	X									
Cellular Phone in Use Status - No (False)	AUDIO				X						
Cellular Phone+A131 in Use Status - Yes (True)	AUDIO				X						
Chime Configuration 1 Command: Disable(d)	REM				X						
Chime Configuration 1 Command: Enable(d)	DDM				X						
Chime Configuration 1 Command: Enable(d)	REM				X						
Chime Configuration 2 Command: Enable(d)	REM				X						
Chime Configuration 3 Command: Enable(d)	REM				X						
Decklid Door Ajar Switch Status: Active	REM			X	X			X			
Decklid Door Ajar Switch Status: Inactive	REM			X	X			X			
Decklid Door Open Command: Yes (True)	FEM		X								
Decklid Door Unlock Enable Command - Disabled	FEM		X		X						
Decklid Remote Door Lock Command - Unlock(ed)	DDM		X								
Display Access Confirmation Status: Accept	IC					X	X				
Display Access Confirmation Status: Reject	IC					X	X				
Display Access String Command: Clear Display	AUDIO				X						
Display Access String Command: Clear Display	NCM				X						
Display Access String Command: Overwrite Display	AUDIO				X						
Display Access 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	DDM		X	X	X		X		X		

SCP Message Matrix

Message Name	Source	Receivers							
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Driver's Front Door Ajar Switch Status: Inactive	DDM		X	X	X		X		X		
Driver Front Door Lock Command - Lock(ed)	REM							X			
Driver Front Door Lock Command - Unlock(ed)	REM							X			
Driver Front Door Lock Cylinder State Status	DDM		X								
Driver Front Door Lock Status - Lock(ed)	DDM		X								
Driver Front Door Lock Status - Unlock(ed)	DDM		X								
Driver Front Door Unlock Enable Command - Disable(d)	NCM		X								
Driver Front Door Unlock Enable Command - Enable(d)	NCM		X								
Driver Front Door Unlock Enable Status - Disable(d)	REM					X					
Driver Front Door Unlock Enable Status - Enable(d)	REM					X					
Driver Front Seat Heater Command - Off	IC			X							
Driver Front Seat Heater Command - On	IC			X							
Driver Front Seat Heater Current Status	FEM				X						
Driver Front Super / Double Door Lock Command - Lock(ed)	REM							X			
Driver Front Super / Double Door Lock Command - Unlock(ed)	REM							X			
Driver Front Super / Double Door Lock Status - Lock(ed)	DDM		X								
Driver's Rear Door Ajar Switch Status: Active	REM			X	X		X	X			
Driver's Rear Door Ajar Switch Status: Inactive	REM			X	X		X	X			
Driver Rear Seat Heater Command - Off	IC		X								
Driver Rear Seat Heater Command - On	IC		X								
Driver Rear Seat Heater Current Status	REM				X						
Electric Park Brake Fault Status	PBM				X						
Engine RPM with High Resolution Rate-of-Change with Throttle Position Status	IC	X	X	X							
PBM Mode	PBM				X						
Front Windshield Wiper Mode Status	FEM				X						
Fuel Input / Output Status	REM				X						
Fuel Level: Sensor Analog / Digital Output Status	REM				X						
Gateway CCM to Display	IC					X					
Gateway CCM to VAM	IC						X		X		
Gateway AUDIO to NCM	AUDIO					X					
Gateway AUDIO to NCM (Multiframe)	AUDIO					X					

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Gateway Display to CCM	NCM				X						
Gateway NCM to AUDIO	NCM						X				
Gateway CPM to NCM (AT CMD) (continuation frame)	AUDIO					X					
Gateway CPM to NCM (AT CMD) (first frame)	AUDIO					X					
Gateway CPM to NCM (D2B OPC) (continuation frame)	AUDIO					X					
Gateway CPM to NCM (D2B OPC) (first frame)	AUDIO					X					
Gateway NCM to Audio	NCM						X				
Gateway NCM to CPM (AT CMD) (continuation frame)	NCM						X				
Gateway NCM to CPM (AT CMD) (first frame)	NCM						X				
Gateway NCM to CPM (D2B OPC) (continuation frame)	NCM						X				
Gateway NCM to CPM (D2B OPC) (first frame)	NCM						X				
Gateway NCM to SMS (SMS Data) (continuation frame)	NCM						X				
Gateway NCM to SMS (SMS Data) (first frame)	NCM						X				
Gateway NCM to VAM	NCM						X				
Gateway NCM to VEMS (AT CMD) (continuation frame)	NCM						X				
Gateway NCM to VEMS (AT CMD) (first frame)	NCM						X				
Gateway NCM to VEMS (D2B) (continuation frame)	NCM						X				
Gateway NCM to VEMS (D2B) (first frame)	NCM						X				
Gateway SMS to NCM (SMS Data) (continuation frame)	AUDIO					X					
Gateway SMS to NCM (SMS Data) (first frame)	AUDIO					X					
Gateway Telematics Display to CCM	NCM				X						
Gateway VAM to CCM	AUDIO				X	X					
Gateway VAM to NCM	AUDIO					X					
Gateway VEMS to NCM (AT CMD) (continuation frame)	AUDIO					X					
Gateway VEMS to NCM (AT CMD) (first frame)	AUDIO					X					
Gateway VEMS to NCM (D2B OPC) (continuation frame)	AUDIO					X					
Gateway VEMS to NCM (D2B OPC) (first frame)	AUDIO					X				X	
Heated Steering Wheel Current Status	FEM				X						
Heated Steering Wheel Command - Off	IC			X							
Heated Steering Wheel Command - On	IC			X							
Hood Door Ajar Switch Status: Active	FEM		X		X						

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Hood Door Ajar Switch Status: Inactive	FEM		X		X						
Horn Configuration 1 Command: Disable(d)	REM			X							
Horn Configuration 1 Command: Enable(d)	REM			X							
Horn Configuration 2 Command: Enable(d)	REM			X							
Horn Configuration 3 Command: Enable(d)	REM			X							
Ignition Switch Position with Initialize Status - No (False)	IC	X	X	X		X	X	X	X	X	
Ignition Switch Position with Initialize Status - Yes (True)	IC	X	X	X		X	X	X	X	X	
Illuminated Entry Command - Off	FEM							X			
Illuminated Entry Command - On	FEM							X			
Interior Component Theft Switch Status	FEM		X				X				
Key-in-Ignition Status: No (False)	IC	X	X	X				X	X		
Key-in-Ignition Status: Yes (True)	IC	X	X	X				X	X		
Left Front Turn Lamp OK Status: No (False)	FEM				X						
Left Front Turn Lamp OK Status: Yes (True)	FEM				X						
Left Rear Turn Lamp OK Status: No (False)	REM				X						
Left Rear Turn Lamp OK Status: Yes (True)	REM				X						
Left Side Mid Vehicle Turn Lamp OK Status: No (False)	FEM				X						
Left Side Mid Vehicle Turn Lamp OK Status: Yes (True)	FEM				X						
Left Side Turn Signal Turn Lamp Command: OFF	IC		X	X							
Left Side Turn Signal Turn Lamp Command: ON	IC		X	X							
Low Fuel Level Status: No (False)	IC					X					
Low Fuel Level Status: Yes (True)	IC					X					
Low Washer Fluid Tell Tale Command: OFF	FEM				X						
Low Washer Fluid Tell Tale Command: ON	FEM				X						
Memory Feature Menu Status	IC			X					X		
Memory Features 1 Command: Recall	DDM			X	X				X		
Memory Features 1 Command: Set / Save	DDM			X	X				X		
Memory Features 2 Command: Recall	DDM			X	X				X		
Memory Features 2 Command: Set / Save	DDM			X	X				X		
Memory Features 3 Command: Recall	DDM			X	X				X		
Memory Features 3 Command: Set / Save	DDM			X	X				X		

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Memory Features Recall Cancel Command: Yes (True)	DDM			X	X				X		
Memory Features Recall Cancel Command: Yes (True)	DSM			X	X			X			
Memory Features Recall Cancel Command: Yes (True)	FEM				X			X	X		
Memory Features Recall Cancel Command: Yes (True)	IC			X				X	X		
Network Bus Wake-up Command: Yes (True)	AUDIO										
Network Bus Wake-up Command: Yes (True)	DDM										
Network Bus Wake-up Command: Yes (True)	DSM										
Network Bus Wake-up Command: Yes (True)	PBM										
Network Bus Wake-up Command: Yes (True)	FEM										
Network Bus Wake-up Command: Yes (True)	IC										
Network Bus Wake-up Command: Yes (True)	REM										
Network Bus Wake-up Command: Yes (True)	RMM										
Odometer Rolling Count Status	IC					X					
Only or Rear Center Fuel Door Lock Command - Unlock(ed)	FEM		X								
Parking Brake Switch Status - Active	PBM			X			X				
Parking Brake Switch Status - Inactive	PBM			X			X				
Passenger's Front Door Ajar Switch Status: Active	FEM		X		X		X	X			
Passenger's Front Door Ajar Switch Status: Inactive	FEM		X		X		X	X			
Passenger's Front Seat Heater Command - Off	IC			X							
Passenger's Front Seat Heater Command - On	IC			X							
Passenger's Front Seat Heater Current Status	FEM				X						
Passenger's Glove Box Door Lock Status - Lock	REM			X							
Passenger's Glove Box Door Lock Status - Unlock	REM			X							
Passenger's Mirror Down Motion Command: Enable(d)	DDM			X							
Passenger's Mirror Left Motion Command: Disable(d)	DDM			X							
Passenger's Mirror Left Motion Command: Enable(d)	DDM			X							
Passenger's Mirror Right Motion Command: Enable(d)	DDM			X							
Passenger's Mirror Up Motion Command: Enable(d)	DDM			X							
Passenger's Rear Door Ajar Switch Status: Active	REM			X	X		X	X			
Passenger's Rear Door Ajar Switch Status: Inactive	REM			X	X		X	X			
Passenger's Rear Seat Heater Command - Off	IC		X								

SCP Message Matrix

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Passenger's Rear Seat Heater Command - On	IC		X								
Passenger's Rear Seat Heater Current Status	REM				X						
Pedal Adjustment Status - Disable(d)	FEM				X						
Remote All Door Super/Double Lock Command - Lock	DDM		X		X						
Remote All Door Super/Double Lock Command - Unlock	DDM		X		X						
Remote control #1 Button status: Button 2 (SEEK DOWN) Active	AUDIO					X					
Remote control #1 Button status: Button 3 (SEEK UP) Active	AUDIO					X					
Remote control #1 Button status: Button 4 (SELECT) Active	AUDIO					X					
Remote control #1 Button status: Button 5 (VOL –) Active	AUDIO					X					
Remote control #1 Button status: Button 6 (VOL +) Active	AUDIO					X					
Remote control #1 Button status: Button 7 (PTT) Active	AUDIO					X					
Remote control #1 Button status: Button Inactive	AUDIO					X					
Remote Panic Command - Enable(d)	DDM		X								
Request All Door Lock Status	DDM		X								
Request All Door Lock Status	FEM		X								
Request All Front Fog Lamp Command	FEM				X						
Request All Front Fog Lamp Status	IC			X							
Request All Front High Beam Lamp Command	FEM				X						
Request All Front High Beam Lamp Status	IC			X							
Request All Front Window Operation Enable Command	FEM							X			
Request All Headlamp Command	FEM				X						
Request All Park Lamp Command	FEM				X						
Request All Park Lamp Command	REM				X						
Request All Park Lamp Status	NCM										
Request All Photo Cell Dark Status	FEM				X						
Request All Rear Brake Lamp Command	REM				X						
Request All Rear Fog Lamp Command	REM				X						
Request All Rear Fog Lamp Status	IC		X								
Request All Rear Park Lamp Command	REM			X							
Request All Rear Window Operation Enable Command	DSM							X			
Request All Rear Window Operation Enable Command	REM							X			

SCP Message Matrix

Message Name	Source	Receivers								
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Request All Rear Window Operation Enable Command	RMM							X			
Request Alternator Failure Telltale Status	FEM				X						
Request Alternator Failure Telltale Status	REM				X						
Request Anti-Lock Brake System Active Status	PBM				X						
Request Backlighting Intensity and Dimming Curve with Headlamps Command	AUDIO				X						
Request Backlighting Intensity and Dimming Curve with Headlamps Command	FEM				X						
Request Backlighting Intensity and Dimming Curve with Headlamps Command	NCM				X						
Request Brake Lamp Pedal Switch Status	PBM		X								
Request Decklid Door Ajar Switch Status	DDM		X								
Request Decklid Door Ajar Switch Status	FEM		X								
Request Decklid Door Ajar Switch Status	IC		X								
Request Driver's Front Door Ajar Switch Status	AUDIO							X			
Request Driver's Front Door Ajar Switch Status	DSM							X			
Request Driver's Front Door Ajar Switch Status	IC							X			
Request Driver's Front Door Ajar Switch Status	REM							X			
Request Driver's Front Door Ajar Switch Status	FEM							X			
Request Driver's Front Door Ajar Switch Status	RMM							X			
Request Driver's Rear Door Ajar Switch Status	AUDIO		X								
Request Driver's Rear Door Ajar Switch Status	DDM		X								
Request Driver's Rear Door Ajar Switch Status	FEM		X								
Request Driver's Rear Door Ajar Switch Status	IC		X								
Request PBM Mode	IC	X									
Request Front Windshield Wiper Mode Status	IC			X							
Request Fuel Input / Output Status	IC		X								
Request Hood Door Ajar Switch Status	REM			X							
Request Hood Door Ajar Switch Status	IC			X							
Request Ignition Switch Position with Initialize Status	AUDIO				X						
Request Ignition Switch Position with Initialize Status	DDM				X						
Request Ignition Switch Position with Initialize Status	DSM				X						
Request Ignition Switch Position with Initialize Status	FEM				X						
Request Ignition Switch Position with Initialize Status	PBM				X						

SCP Message Matrix

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Request Ignition Switch Position with Initialize Status	RMM				X						
Request Ignition Switch Position with Initialize Status	NCM				X						
Request Ignition Switch Position with Initialize Status	REM				X						
Request Interior Component Theft Switch Status	REM			X							
Request Key-in-Ignition Status	DDM				X						
Request Key-in-Ignition Status	DSM				X						
Request Key-in-Ignition Status	RMM				X						
Request Key-in-Ignition Status	PBM				X						
Request Key-in-Ignition Status	FEM				X						
Request Key-in-Ignition Status	REM				X						
Request Left Front Turn Lamp OK Status	IC			X							
Request Left Rear Turn Lamp OK Status	IC		X								
Request Left Side Mid Vehicle Turn Lamp OK Status	IC			X							
Request Low Fuel Level Status	NCM				X						
Request Low Washer Fluid Telltale Command	IC			X							
Request Memory Feature Menu Status	DSM				X						
Request Memory Feature Menu Status	FEM				X						
Request Memory Feature Menu Status	RMM				X						
Request Parking Brake Switch Status	AUDIO	X									
Request Passenger's Front Door Ajar Switch Status	AUDIO			X							
Request Passenger's Front Door Ajar Switch Status	DDM			X							
Request Passenger's Front Door Ajar Switch Status	IC			X							
Request Passenger's Front Door Ajar Switch Status	REM			X							
Request Passenger's Glove Box Door Lock Status	FEM		X								
Request Passenger's Rear Door Ajar Switch Status	AUDIO		X								
Request Passenger's Rear Door Ajar Switch Status	DDM		X								
Request Passenger's Rear Door Ajar Switch Status	FEM		X								
Request Passenger's Rear Door Ajar Switch Status	IC		X								
Request Right Front Turn Lamp OK Status	IC			X							
Request Right Rear Turn Lamp OK Status	IC		X								
Request Right Side Mid Vehicle Turn Lamp OK Status	IC			X							

Message Name	Source	Receivers									
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Request Steering Column Lock System Status	IC										X
Request Transmission Park / Neutral Switch Status	REM				X						
Request Transmission Park / Neutral Switch Status	FEM				X						
Request Transmission Park / Neutral Switch Status	DDM				X						
Request Transmission Park / Neutral Switch Status	DSM				X						
Request Transmission Park / Neutral Switch Status	RMM				X						
Request Vehicle Configuration Status	NCM		X	X				X			
Request Vehicle Configuration Trailer Connected Status	IC		X								
Request Vehicle Configuration Valet Mode Status	DDM		X								
Request Vehicle Configuration Valet Mode Status	FEM		X								
Request Vehicle Inertia Switch #1 Status	DDM		X								
Request Vehicle Speed Control Active Status	FEM				X						
Right Front Turn Lamp OK Status: No (False)	FEM				X						
Right Front Turn Lamp OK Status: Yes (True)	FEM				X						
Right Rear Turn Lamp OK Status: No (False)	REM				X						
Right Rear Turn Lamp OK Status: Yes (True)	REM				X						
Right Side Mid Vehicle Turn Lamp OK Status: No (False)	FEM				X						
Right Side Mid Vehicle Turn Lamp OK Status: Yes (True)	FEM				X						
Right Side Turn Signal Turn Lamp Command: OFF	IC		X	X							
Right Side Turn Signal Turn Lamp Command: ON	IC		X	X							
Steering Column Lock Command: Lock	IC										X
Steering Column Lock Command: Unlock	IC										X
Steering Column Lock Enable Command: OFF	IC		X	X							
Steering Column Lock Enable Command: ON	IC		X	X							
Steering Column Lock Enable Status: OFF	FEM				X						
Steering Column Lock Enable Status: OFF	REM				X						
Steering Column Lock Enable Status: ON	FEM				X						
Steering Column Lock Enable Status: ON	REM				X						
Steering Column Lock System Status	SCLM				X						
Terminate Display Confirmation Status: Accept	IC					X	X				
Terminate Display Confirmation Status: Reject	IC					X	X				

SCP Message Matrix

Message Name	Source	Receivers								
		PBM	REM	FEM	IC	NCM	AUDIO	DDM	DSM	RMM	SCLM
Terminate Display Definition Command	AUDIO				X						
Terminate Display Definition Command	NCM				X						
Time of Day (with Mode) Status	AUDIO					X					
Transmission Park / Neutral Switch Status-Active	IC		X	X				X	X	X	
Transmission Park / Neutral Switch Status-Inactive	IC		X	X				X	X	X	
Transmission PRNDL Range Selected Status	IC	X	X	X		X		X	X		
Vehicle Configuration Module Programmed Status - No (False)	AUDIO				X						
Vehicle Configuration Module Programmed Status - No (False)	DDM				X						
Vehicle Configuration Module Programmed Status - No (False)	DSM				X						
Vehicle Configuration Module Programmed Status - No (False)	FEM				X						
Vehicle Configuration Module Programmed Status - No (False)	REM				X						
Vehicle Configuration Module Programmed Status - No (False)	RMM				X						
Vehicle Configuration Module Programmed Status - Yes (True)	DDM				X						
Vehicle Configuration Module Programmed Status - Yes (True)	DSM				X						
Vehicle Configuration Module Programmed Status - Yes (True)	FEM				X						
Vehicle Configuration Module Programmed Status - Yes (True)	REM				X						
Vehicle Configuration Module Programmed Status - Yes (True)	RMM				X						
Vehicle Configuration Trailer Connected Status - No	REM				X						
Vehicle Configuration Trailer Connected Status - Yes	REM				X						
Vehicle Configuration Valet Mode Status - Active	REM			X				X			
Vehicle Configuration Valet Mode Status - Inactive	REM			X				X			
Vehicle Inertia Switch #1 Status - Active	REM							X			
Vehicle Inertia Switch #1 Status - Inactive	REM							X			
Vehicle Speed Control Active Status - No (False)	IC			X							
Vehicle Speed Control Active Status - Yes (True)	IC			X							
Vehicle Speed - Driven and Undriven Wheels - High Resolution Status	IC	X	X	X							
Voice Control Mode Status - Off	AUDIO				X						
Voice Control Mode Status - On	AUDIO				X						
Voice Training Mode Entry	NCM						X				

CAN Message Matrix

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
A/C clutch inhibit command		T				R				
A/C load control		T				R				
A/C load status		R				T				
A/C status		R				T				
Accelerator pedal position	R	T	R		R					
Active brake booster enable	R				T					
Active brake booster status	T				R					
Actual engine torque	R	T	R						R	
Alternator status		T		R						
Ambient temperature		R	R			T			R	
ASCM config flag				R	T					
ASCM display commands				R	T					
ASCM status	R	R		R	T					
ASM compressor status		R							T	
ASM fault				R					T	
Backlight intensity				T	R			R		
Backlight status				T	R					
Barometric pressure		T	R						R	
Brake actual pressure	T		R		R					
Brake demand pressures	R				T					
Brake demand pressure acknowledge	T				R					
Brake line pressure	T		R						R	
Brake pedal pressed	R	T	R	R	R			R	R	
Cab rear to front climate control status						R	T			
Cancel request		T			R					
Cats fault				R					T	
Climate control display status				R		T				
Climate control voice status				R		T				
Configuration control		R				T				
Cooling fan feedback		T				R				
Cooling fan request		R				T				
Crank in progress	R	T	R	R	R	R	R	R	R	

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
Cruise status		T	R		R					
Damper status		R							T	
Diagnostic data in ASCM					R					T
Diagnostic data in ASM									R	T
Diagnostic data in DSCM	R									T
Diagnostic data in ECM		R								T
Diagnostic data in IC				R						T
Diagnostic data in RCCM						R				T
Diagnostic data in RCCP							R			T
Diagnostic data in TCM			R							T
Diagnostic data out ASCM					T					R
Diagnostic data out ASM									T	R
Diagnostic data out DSCM	T									R
Diagnostic data out ECM		T								R
Diagnostic data out IC				T						R
Diagnostic data out RCCM						T				R
Diagnostic data out RCCM							T			R
Diagnostic data out TCM			T							R
Dipped beam status		R		T						
Display climate control command				T		R	R			
Display set speed				R	T					
Driven wheel speed	T			R						
Driver demand torque	R	T	R							
Driver seat heat power save command		T		R						
Driver seat heat power status		R		T						
DSC configuration	T		R		R					
DSC fault code MIL status	T	R								
DSC fault codes	T	R								
DSC malfunction	T	R		R						
DSC status	T			R						
DSC switch status	T	R	R	R						
ECM ASC fail		T			R					

CAN Message Matrix

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
ECM configuration flag		T		R						
ECM fault code MIL status		T	R							
Electrical load management		T				R				
Engine acceleration	R	T								
Engine coolant temperature		T	R	R		R	R			
Engine drag torque request	T	R								
Engine fault codes		T								
Engine friction torque	R	T	R							
Engine intake temperature		T				R				
Engine OBDII MIL		T		R						
Engine oil temperature		T	R							
Engine speed	R	T	R	R	R	R	R		R	
Engine torque request	T	R								
Flash program ECM WDS		T								R
Flash program TCM WDS			T							R
Flash program WDS ECM		R								T
Flash program WDS TCM			R							T
Follow speed		R			T					
Follow warning light				R	T					
Front fog status		R		T						
Front passenger seat heat power status		R		T						
Front to rear climate control status						T	R			
Fuel cap warning		T		R						
Fuel level damped		R		T						
Fuel level raw 1		R		T						
Fuel level raw 2		R		T						
Fuel pump status		R		T						
Fuel used		T		R						
Gear position actual	R	R	T							
Gear position selected		R	T	R	R			R		
Gear position target	R	R	T							
Gear selection fault		R	T	R				R		

CAN Message Matrix

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
Headway increment		T			R					
Headway setting				R	T					
IC ASC enable		R		T	R					
Idle neutral control		R	T							
Ignition off timer		R		T		R				
Indicated engine torque	R	T	R							
Indicator left				T	R					
Indicator right				T	R					
Inhibit ASM compressor		T			R	R			R	
Intermediate position fault			R					T		
J-GATE fault		R	R					T		
J-GATE position selected			R					T		
J-GATE selection fault		R	T					R		
Kickdown		T	R							
Lateral acceleration signal	T		R		R				R	
LH front wheel speed	T	R	R		R	R				
LH rear seat heat power save command		T		R						
LH rear seat heat power status		R		T						
LH rear wheel speed	T	R	R		R	R				
Main beam status		R		T						
Natural light				T	R					
OBDII clear fault codes	R	T	R							
OBDII DSC clear acknowledge	T	R								
OBDII TCM clear acknowledge		R	T							
Odo rolling count	T			R						
Odometer reading		R	R	T		R				
Over gross vehicle weight				R					T	
Parkbrake status		R	R	T	R					
Passenger seat heat power save command		T		R						
Performance mode indication			T					R		
Performance mode switch			R					T		
Powertrain configuration	R	T	R							

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
Pressure transducer		T				R				
Rear climate control display status				R			T			
Rear fog status		R		T						
Rear to front climate control status						R	T			
Restricted climate control blowers				T		R				
RH front wheel speed	T	R	R		R	R				
RH rear seat heat power save command		T		R						
RH rear seat heat power status		R		T						
RH rear wheel speed	T	R	R		R	R				
Set speed		T	R		R					
Sidelight status		R		T						
Solenoid current		R				T				
Spare ASCM					T					
Steering wheel angle	T				R					
Steering wheel power save command		T		R						
Steering wheel power status		R		T						
Steering wheel speed	T				R					
Supercharged fuel pump warning		T		R						
Target speed		T			R					
TCM configuration flag			T	R						
TCM fault code MIL status		R	T							
TCS brake control	T	R		R						
TCS engine torque control	T	R		R						
Temporary torque request	T	R								
Throttle malfunction amber		T		R						
Throttle malfunction red		T		R						
Throttle position		T	R	R						
Torque conv mult	R		T							
Torque converter slip	R	R	T							
Torque converter status		R	T							
Torque reduction request		R	T							
Traction acknowledge	R	T								

CAN Message Matrix

CAN Message (R = Message Received; T = Message Transmitted)	DSCM	ECM	TCM	IC	ASCM	CCM	RCCM	JGM	ASM	DIAG
Traction mode switch	R							T		
Traction shift map	T		R							
Trailer connected				T					R	
Transmission fault codes		R	T							
Transmission input indicated torque	R	T	R							
Transmission input speed		R	T							
Transmission malfunction		R	T	R						
Transmission oil temperature		R	T							
Transmission output speed		R	T							
Transmission shift map		R	T		R					
Transmission torque limit		R	T							
Trip units		R		T	R					
Undriven wheel speed	T			R						
Vehicle reference speed	T	R		R		R			R	
Vehicle too low				R					T	
Voice climate control command				T		R	R			
Wheel speed sensor fault	T			R						
Wiper status		R		T	R	R				
Yaw control	T	R		R						
Yaw rate signal	T		R		R					

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Published by Technical Communications, **Jaguar Cars Limited**
Publication Part Number: S 2005 XJ, September 2004