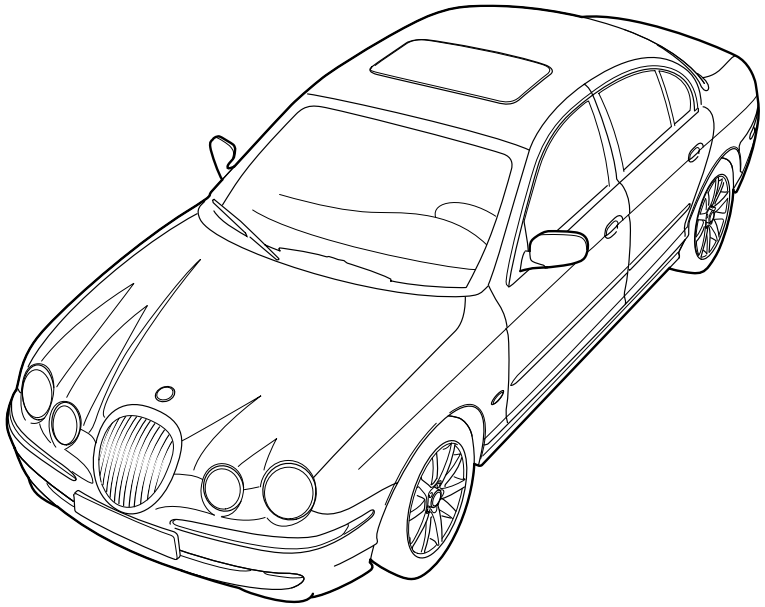
JAGUAR S-TYPE

2000 Model Year

Electrical Guide



JAGUAR

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Table of Contents

FIGURES

FIGURES

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

A/C	Air Conditioning
A/CCM	Air Conditioning Control Module
AAI VALVE	Air Assist Injection Valve
ABS	Anti-Lock Braking
ABS/TC	Anti-Lock Braking / Traction Control
ACP	Audio Control Protocol Network
APP SENSOR	Accelerator Pedal Position Sensor
AUTO	Automatic Transmission
B+	Battery Voltage
CHT SENSOR	Cylinder Head Temperature Sensor
CKP SENSOR	Crankshaft Position Sensor
CM	Control Module
CMP SENSOR 1	Camshaft Position Sensor – RH Bank
CMP SENSOR 2	Camshaft Position Sensor – LH Bank
DPFE SENSOR	Differential Pressure Feedback EGR Sensor
DSC	Dynamic Stability Control
ECT SENSOR	Engine Coolant Temperature Sensor
EFT SENSOR	Engine Fuel 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
FTP SENSOR	Fuel Tank Pressure Sensor
GECM	General Electronic Control Module
GPS	Global Positioning System
HO2 SENSOR 1 / 1	Heated Oxygen Sensor – RH Bank / Upstream
HO2 SENSOR 1 / 2	Heated Oxygen Sensor – RH Bank / Downstream
HO2 SENSOR 2 / 1	Heated Oxygen Sensor – LH Bank / Upstream
HO2 SENSOR 2 / 2	Heated Oxygen Sensor – LH Bank / Downstream
IAT SENSOR	Intake Air Temperature Sensor
ICE	In-Car Entertainment
IMT VALVE	Intake Manifold Tuning Valve
INST	Instrument Pack
IP SENSOR	Injection Pressure Sensor
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
MEM	Memory
N/A	Normally Aspirated
NAS	North American Specification
NAV	Navigation
PCM	Powertrain Control Module
PSP SWITCH	Power Steering Pressure Switch
PWM	Pulse Width Modulated
RECM	Rear Electronic Control Module
RH	Right Hand
RHD	Right Hand Drive
ROW	Rest Of World
SC	Supercharged
SCP	Standard Corporate Protocol Network
TEL	Telephone
TP SENSOR	Throttle Position Sensor
TURN	Turn Signal
V6	V6 Engine
V8	V8 Engine
VEMS	Vehicle Emergency Message System
VIN	Vehicle Identification Number
VOICE	Voice Control
VVT VALVE 1	Variable Valve Timing Valve – RH Bank
VVT VALVE 2	Variable Valve Timing Valve – LH Bank

Electrical Guide Format

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

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

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

Vehicle Identification Numbers (VIN)

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

→ VIN 123456 indicates “up to VIN 123456”; VIN 123456 → indicates “from VIN 123456 on”.

Jaguar S-TYPE Electrical System Architecture

The Jaguar S-TYPE electrical system is a supply-side switched system. The ignition switch directly carries much of the ignition switched power supply load. Power supply is provided via three methods: direct battery power supply, ignition switched power supply, and switched system power supply.

The switched system power supply is controlled via the GECM and the RECM from SCP messages. After ignition ON, four relays are activated by either the GECM or the RECM for as long as SCP messages remain on the SCP network. The relays will remain activated after ignition OFF, until all SCP messages are removed. Refer to Figure 01.5.

Engine management and transmission control are combined into a single Powertrain Control Module eliminating the need for a controller area network. The Jaguar S-TYPE employs an SCP network for all powertrain, chassis and body systems interface / control. An ACP network is employed for audio and communications systems interface / control.

Circuit ground connections are made at body studs located throughout the vehicle. There are no separate power and logic grounding systems.

The electrical harness incorporates hard-wired front and rear power distribution boxes and a serviceable primary junction box. All fuses and relays (except the trailer towing accessory kit) are located in the two power distribution boxes and the primary junction box.

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 14.

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.

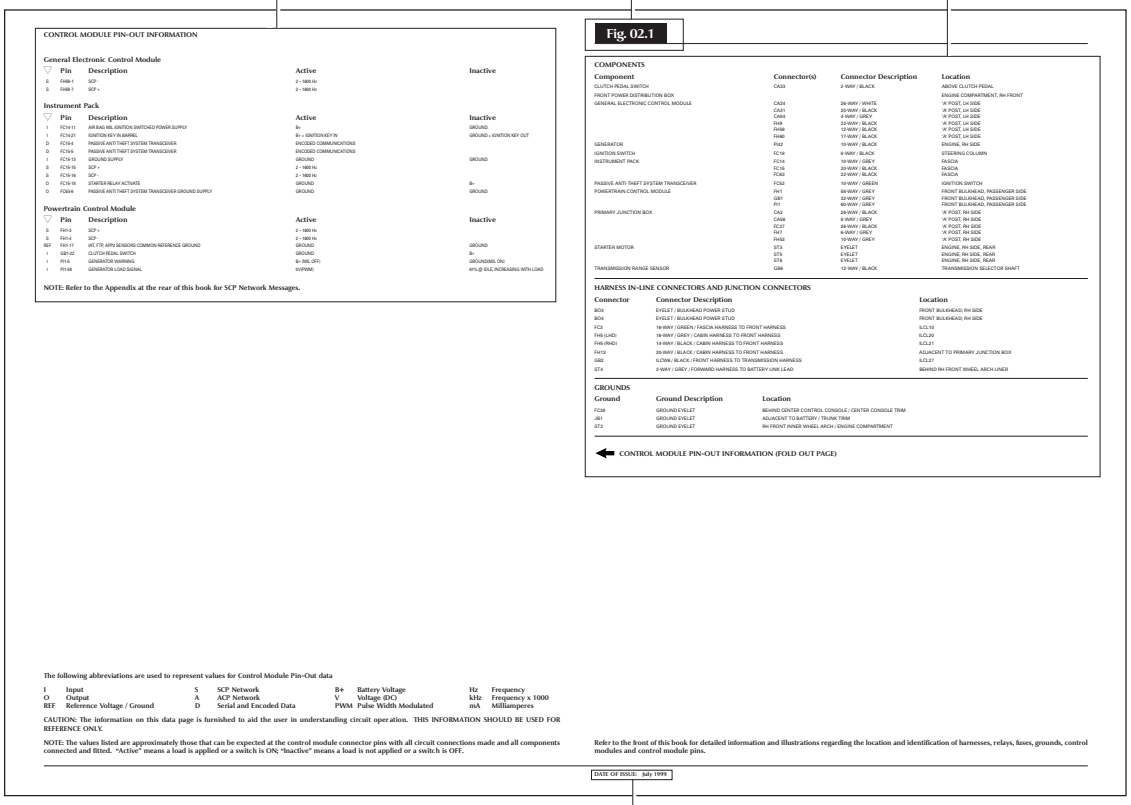
When network data is required for the understanding of a particular circuit, the user is directed to the Appendix.

Where circuits include a Control Module, Pin Out information is provided with values for “active” and “inactive” states. 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. “Active” means a load is applied or a switch is ON; “inactive” means a load is not applied or a switch is OFF. This information is provided to assist the user in understanding circuit operation and should be used FOR REFERENCE ONLY.

CONTROL MODULE PIN OUT INFORMATION

FIGURE NUMBER

COMPONENT, CONNECTOR AND GROUND INFORMATION



CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
S	FH88-1	SCP -	2 - 1800 Hz	
S	FH88-7	SCP +	2 - 1800 Hz	

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC16-11	AIR BAG MIL IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC16-21	IGNITION KEY IN BARREL	B+ = IGNITION KEY IN	GROUND = IGNITION KEY OUT
D	FC16-4	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
D	FC16-5	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
I	FC16-13	GROUND SUPPLY	GROUND	GROUND
S	FC16-15	SCP +	2 - 1800 Hz	
S	FC16-16	SCP -	2 - 1800 Hz	
O	FC16-18	STARTER RELAY ACTIVATE	GROUND	B+
D	FC24-8	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER GROUND SUPPLY	GROUND	GROUND

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 - 1800 Hz	
S	FH1-4	SCP -	2 - 1800 Hz	
REF	FH1-17	A/C, FTP, APPS SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
I	GB1-22	CLUTCH PEDAL SWITCH	GROUND	B+
I	FH1-6	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
I	FH1-10	GENERATOR LOAD SIGNAL	B(PWM)	41% @ IDLE, INCREASING WITH LOAD

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

Fig. 02.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CLUTCH PEDAL SWITCH	CA33	2-WAY / BLACK	ABOVE CLUTCH PEDAL
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA34	34-WAY / WHITE	'A' POST, LH SIDE
	CA31	26-WAY / BLACK	'A' POST, LH SIDE
	CA44	4-WAY / GREY	'A' POST, LH SIDE
	FA16	22-WAY / BLACK	'A' POST, LH SIDE
	FA18	12-WAY / BLACK	'A' POST, LH SIDE
	FA40	17-WAY / BLACK	'A' POST, LH SIDE
GENERATOR	FH2	10-WAY / BLACK	ENGINE, RH SIDE
IGNITION SWITCH	FC10	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14	10-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC60	22-WAY / BLACK	FASCIA
PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	FC52	10-WAY / GREEN	IGNITION SWITCH
POWERTRAIN CONTROL MODULE	FH1	68-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	FI1	48-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA94	8-WAY / GREY	'A' POST, RH SIDE
	FC37	24-WAY / BLACK	'A' POST, RH SIDE
	FH7	8-WAY / GREY	'A' POST, RH SIDE
	FH32	10-WAY / GREY	'A' POST, RH SIDE
STARTER MOTOR	ST3	EYELET	ENGINE, RH SIDE, REAR
	ST5	EYELET	ENGINE, RH SIDE, REAR
	ST4	EYELET	ENGINE, RH SIDE, REAR
TRANSMISSION RANGE SENSOR	GB8	12-WAY / BLACK	TRANSMISSION SELECTOR SHAFT

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
BO3	EYELET / BULKHEAD POWER STUD	FRONT BULKHEAD, RH SIDE
BO4	EYELET / BULKHEAD POWER STUD	FRONT BULKHEAD, RH SIDE
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	ILCL10
FH6 (LHD)	18-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	ILCL20
FH6 (RHD)	14-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ILCL21
FH10	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
GB2	ILCW6 / BLACK / FRONT HARNESS TO TRANSMISSION HARNESS	ILCL27
ST4	2-WAY / GREY / FORWARD HARNESS TO BATTERY LINK LEAD	BEHIND RH FRONT WHEEL ARCH LINER

GROUNDS

Ground	Ground Description	Location
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
JB1	GROUND EYELET	ADJACENT TO BATTERY / TRUNK TRIM
ST2	GROUND EYELET	RH FRONT INNER WHEEL ARCH / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

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: July 1999

DATA PAGE

DATE OF ISSUE

FIGURE

MODEL RANGE AND YEAR

TITLE

FIGURE NUMBER

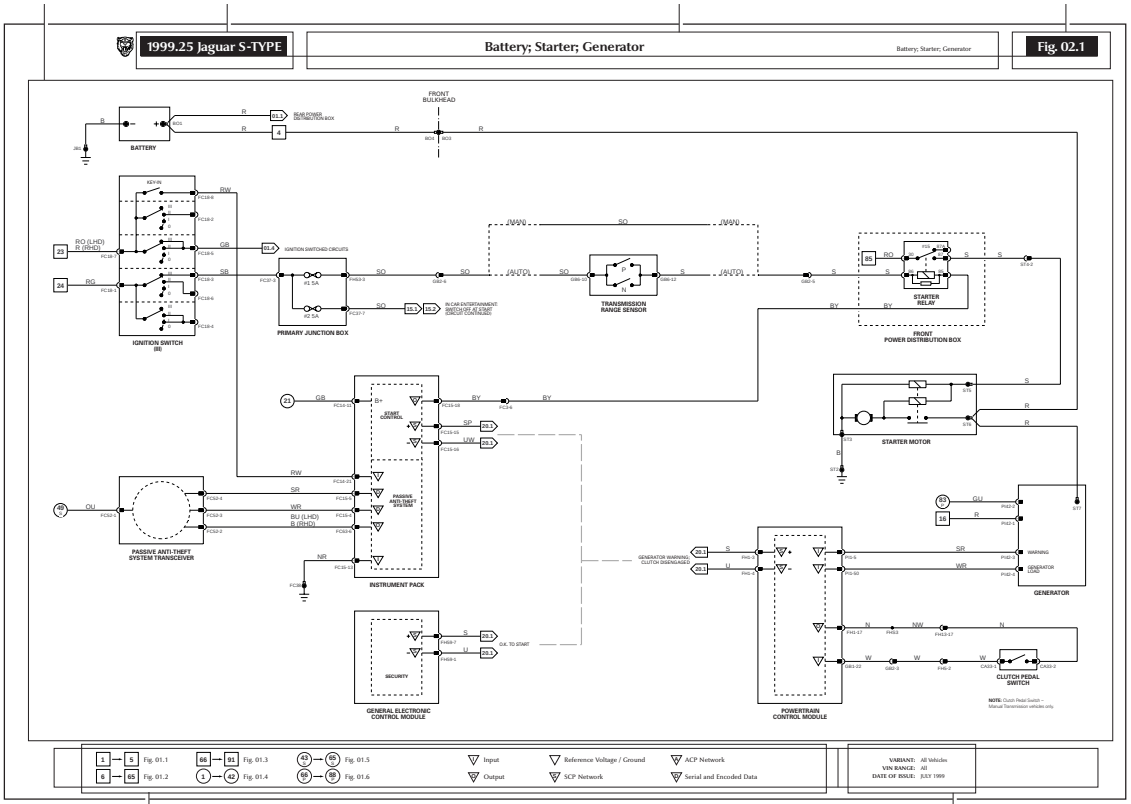


FIGURE PAGE

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 — Ignition switched power supply (key I, II, III)
- X S — Switched system power supply
- X P — Powertrain control system power supply
- XX.X — Figure number reference
- SCP — SCP network

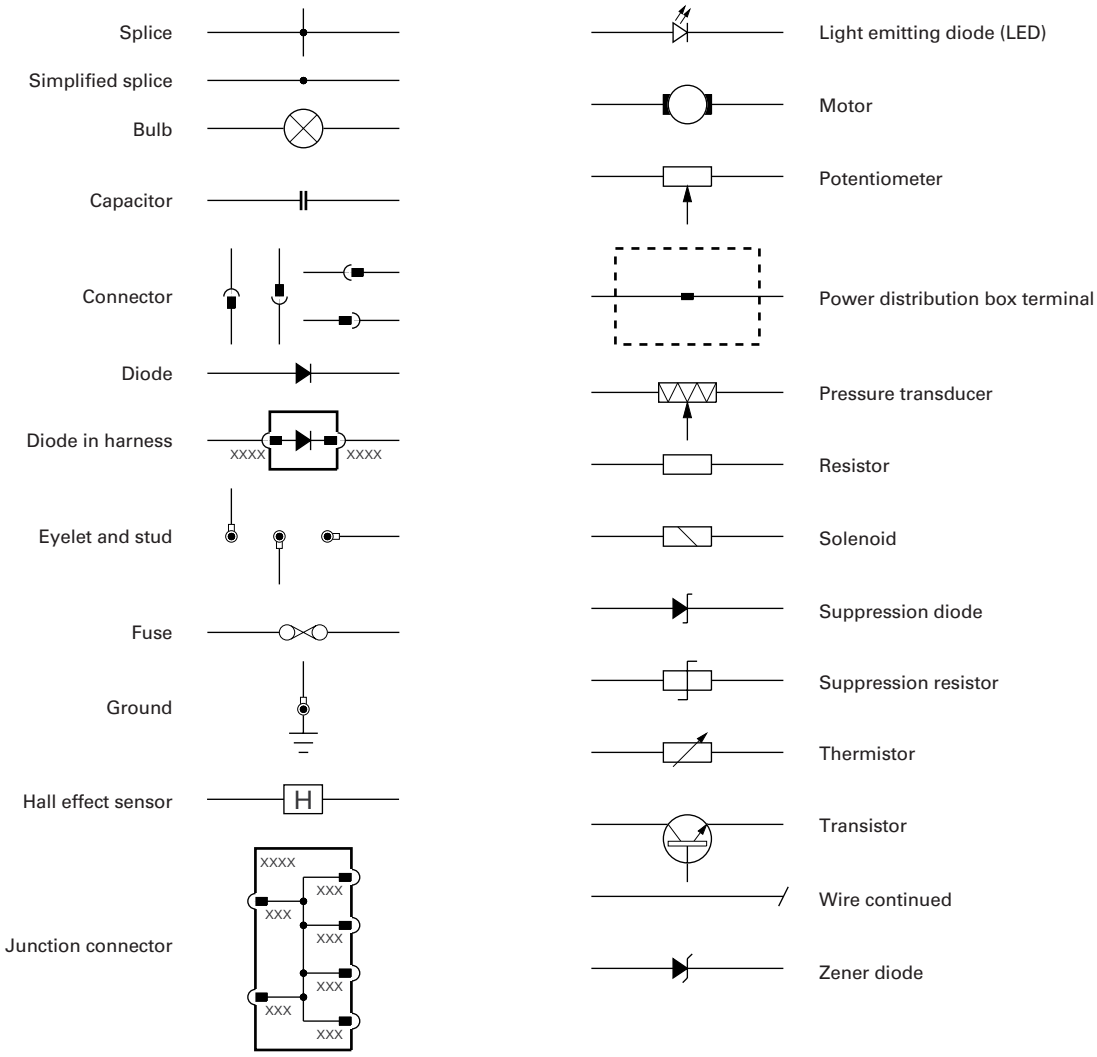
Wiring Color Codes

N	Brown	O	Orange
B	Black	S	Slate
W	White	L	Light
K	Pink	U	Blue
G	Green	P	Purple
R	Red	Y	Yellow
BRD	Braid		

Control Module Pin Symbols

- I — Input
- O — Output
- Reference voltage / ground
- S — SCP network
- A — ACP network
- D — Serial and encoded data

Wiring Symbols



Grounds

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

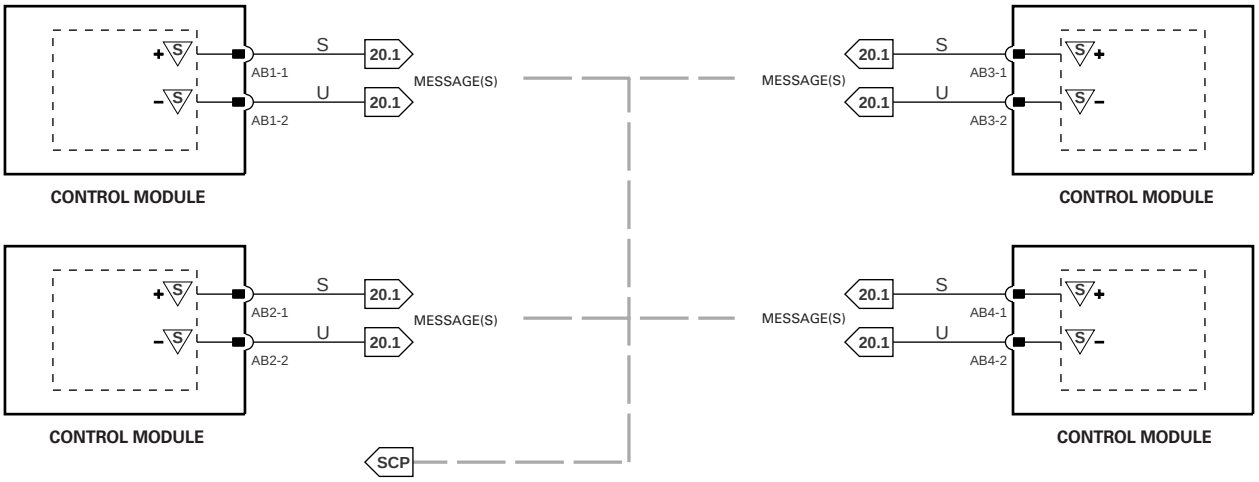
All relays are located in the power distribution boxes and the primary junction box. Relays do not have a separate relay connector (base). Standard relays (full size) use the DIN pin numbering system; micro relays use the ISO pin numbering system. The normally closed circuit (pin 87A or pin 4) is not used in Jaguar S-TYPE vehicles. The relay location number (#1, for example) and the pin numbers are shown inside each relay.

EXAMPLE:

SCP Network

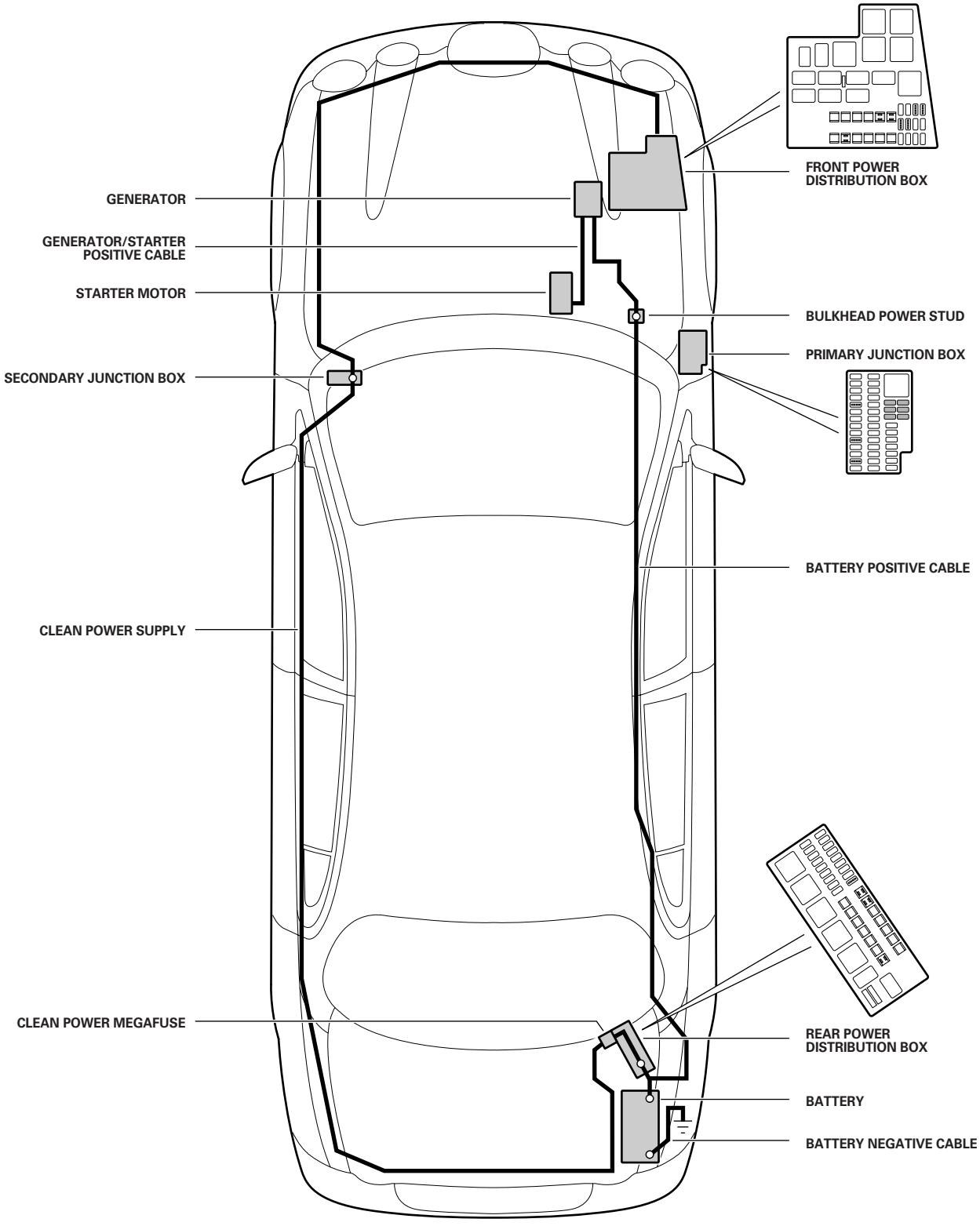
In most instances, the SCP Network is shown as a broken grey line to indicate that there is network communication between the depicted control modules. Refer to Fig. 20.1 for circuit details.

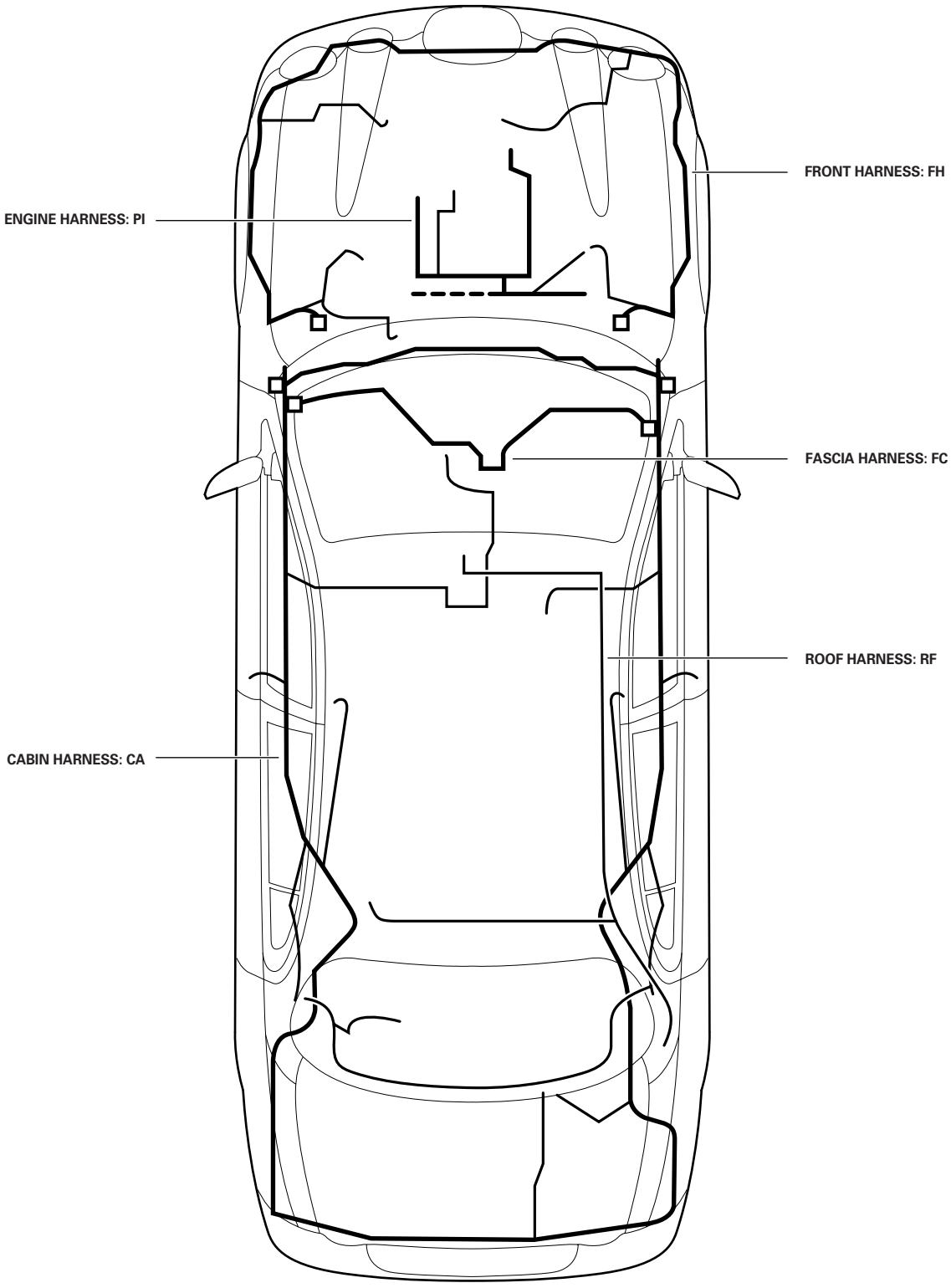
EXAMPLE:



Code Numbering

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


FRONT POWER DISTRIBUTION BOX
GENERATOR
GENERATOR/STARTER POSITIVE CABLE
STARTER MOTOR
BULKHEAD POWER STUD
PRIMARY JUNCTION BOX
SECONDARY JUNCTION BOX
BATTERY POSITIVE CABLE
CLEAN POWER SUPPLY
CLEAN POWER MEGAFUSE
REAR POWER DISTRIBUTION BOX
BATTERY
BATTERY NEGATIVE CABLE


FRONT HARNESS: FH
ENGINE HARNESS: PI
FASCIA HARNESS: FC
ROOF HARNESS: RF
CABIN HARNESS: CA

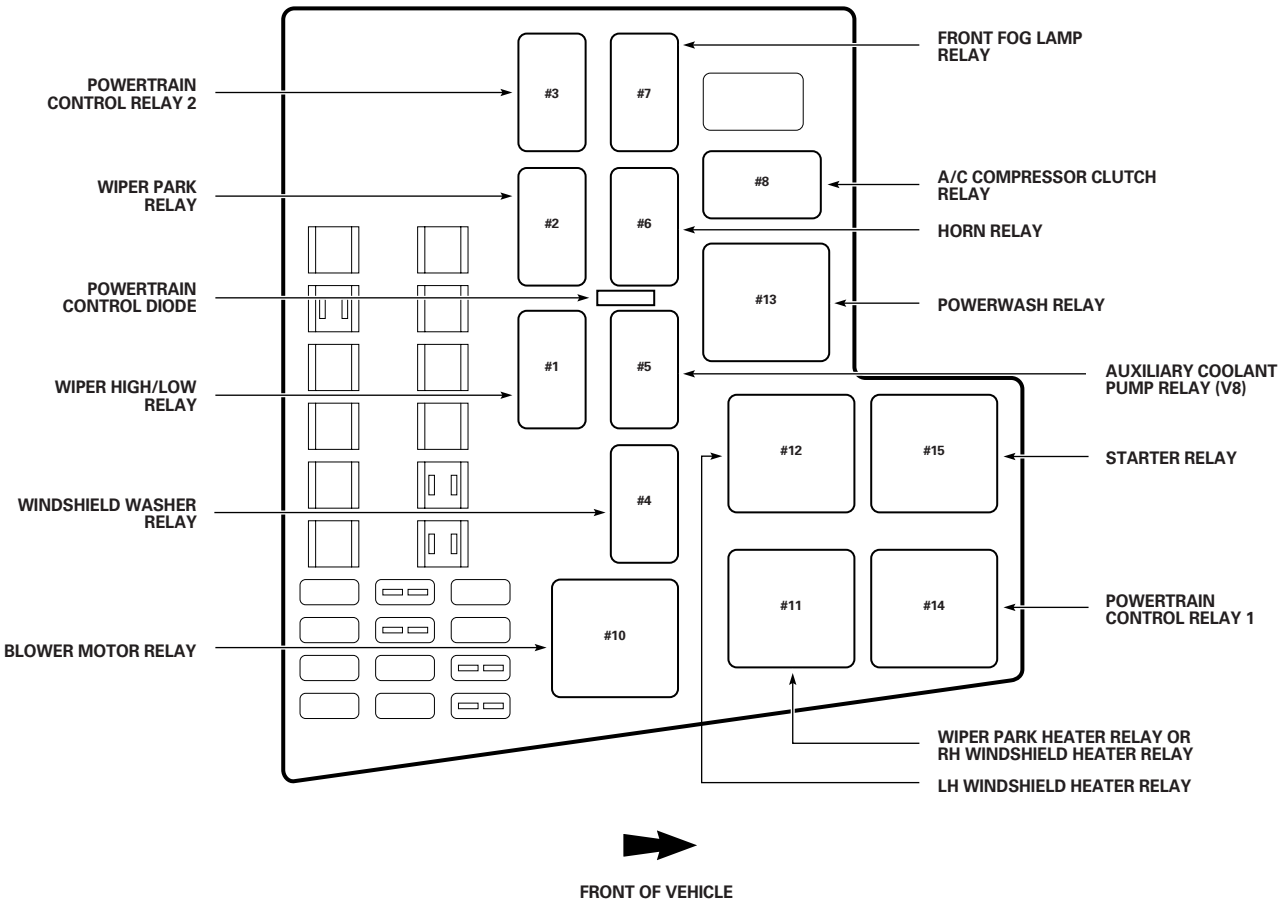
STANDARD RELAY

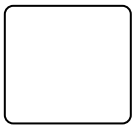
MICRO RELAY

NOT USED

DIODES

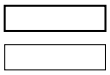
FRONT POWER DISTRIBUTION BOX





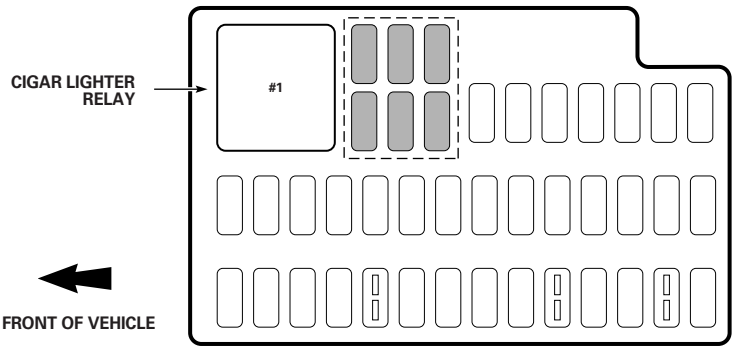
STANDARD RELAY

MICRO RELAY

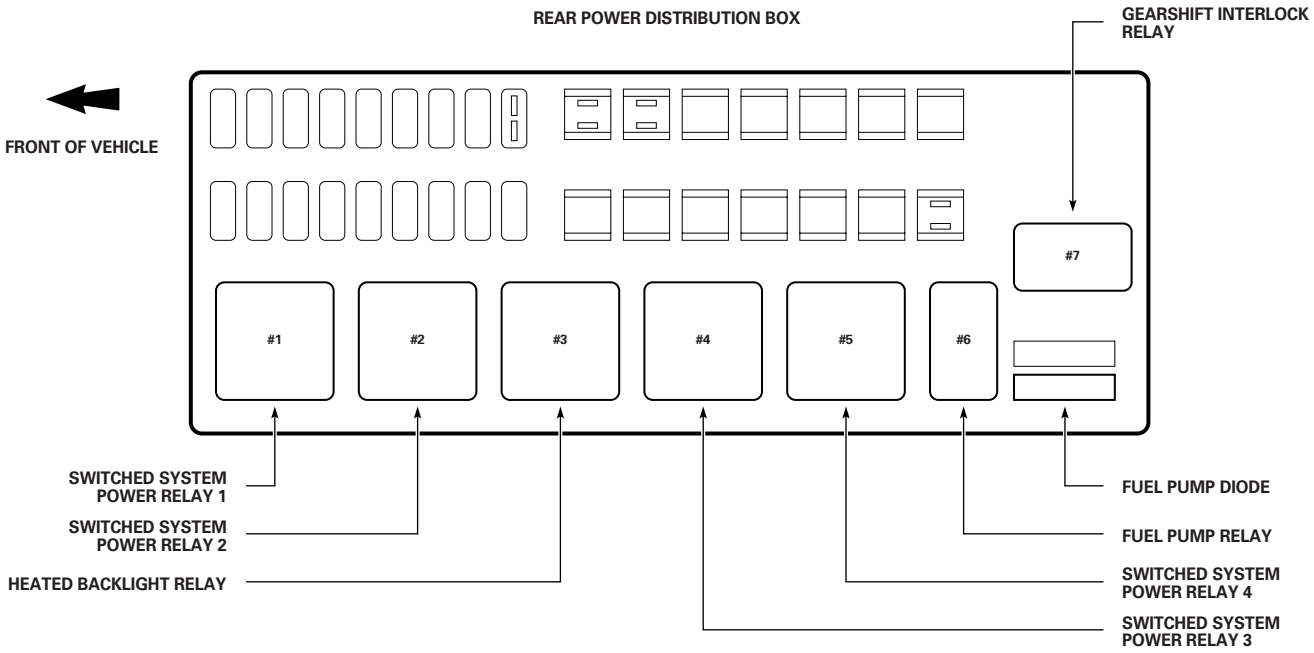


DIODES

PRIMARY JUNCTION BOX



REAR POWER DISTRIBUTION BOX



FRONT POWER DISTRIBUTION BOX

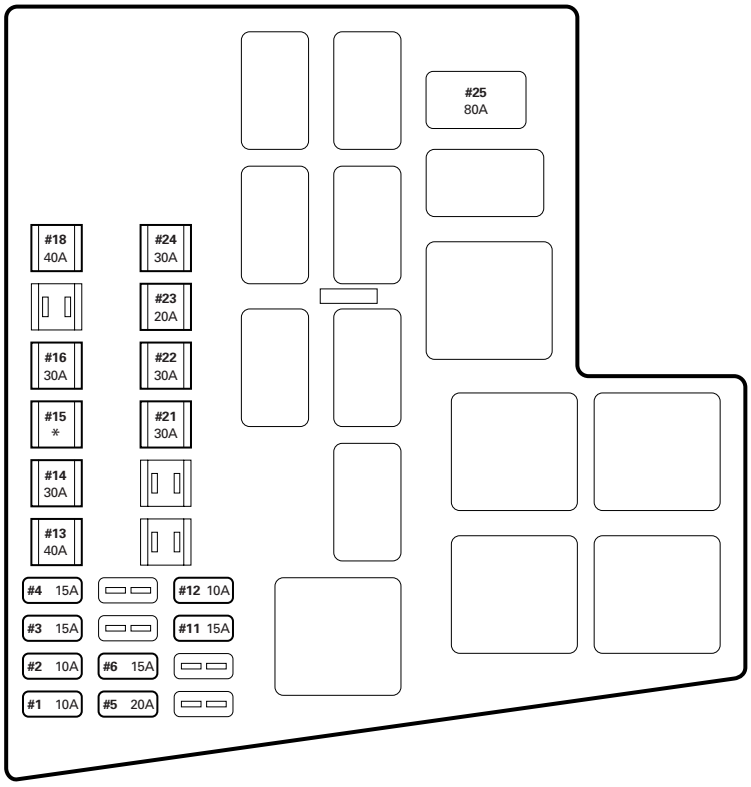
NOT USED

MINI-FUSES

NOT USED

CARTRIDGE FUSES

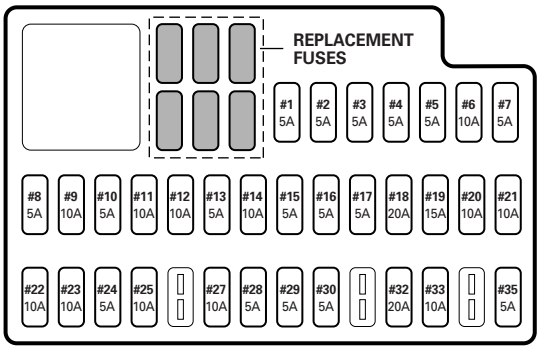
* 30A – WIPER PARK HEATER
40A – RH WINDSHIELD HEATER



FRONT OF VEHICLE

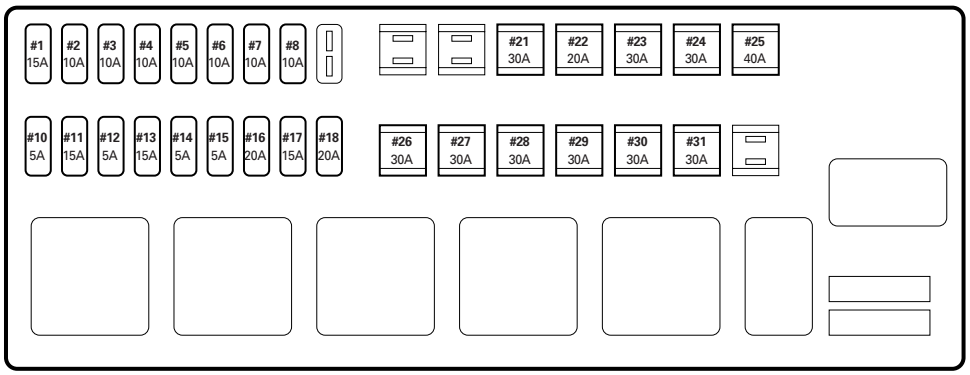
PRIMARY JUNCTION BOX

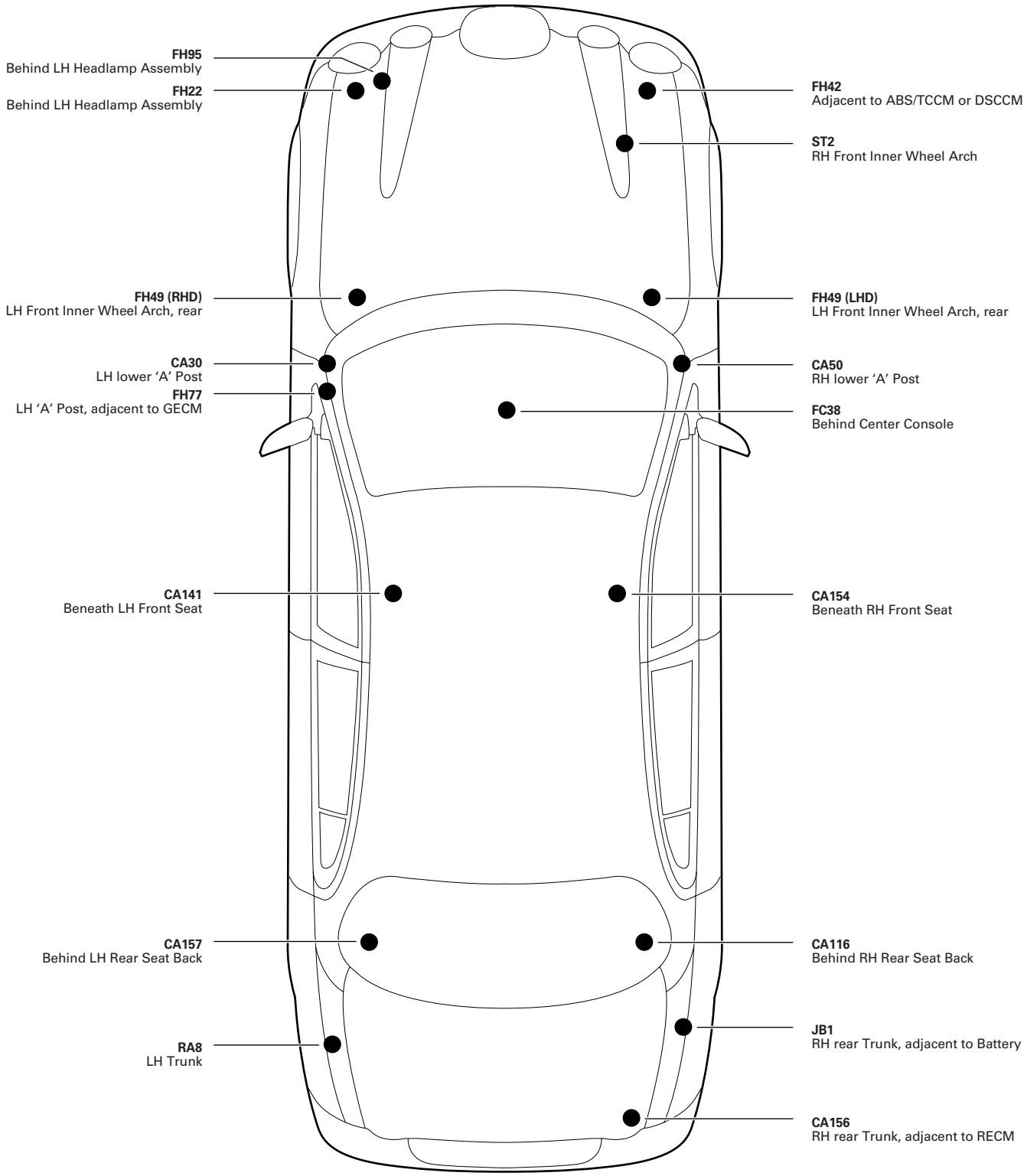
FRONT OF VEHICLE



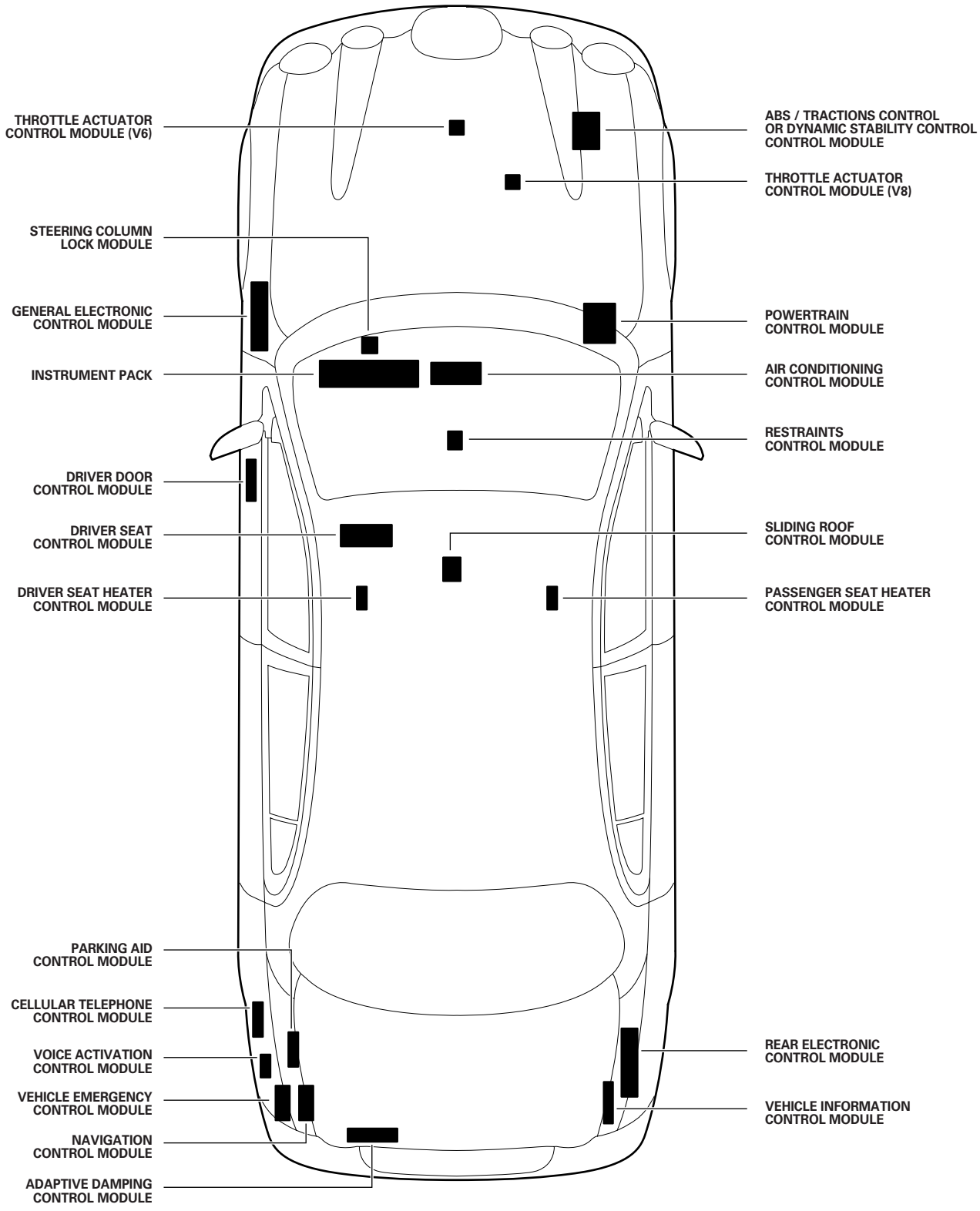
REAR POWER DISTRIBUTION BOX

FRONT OF VEHICLE

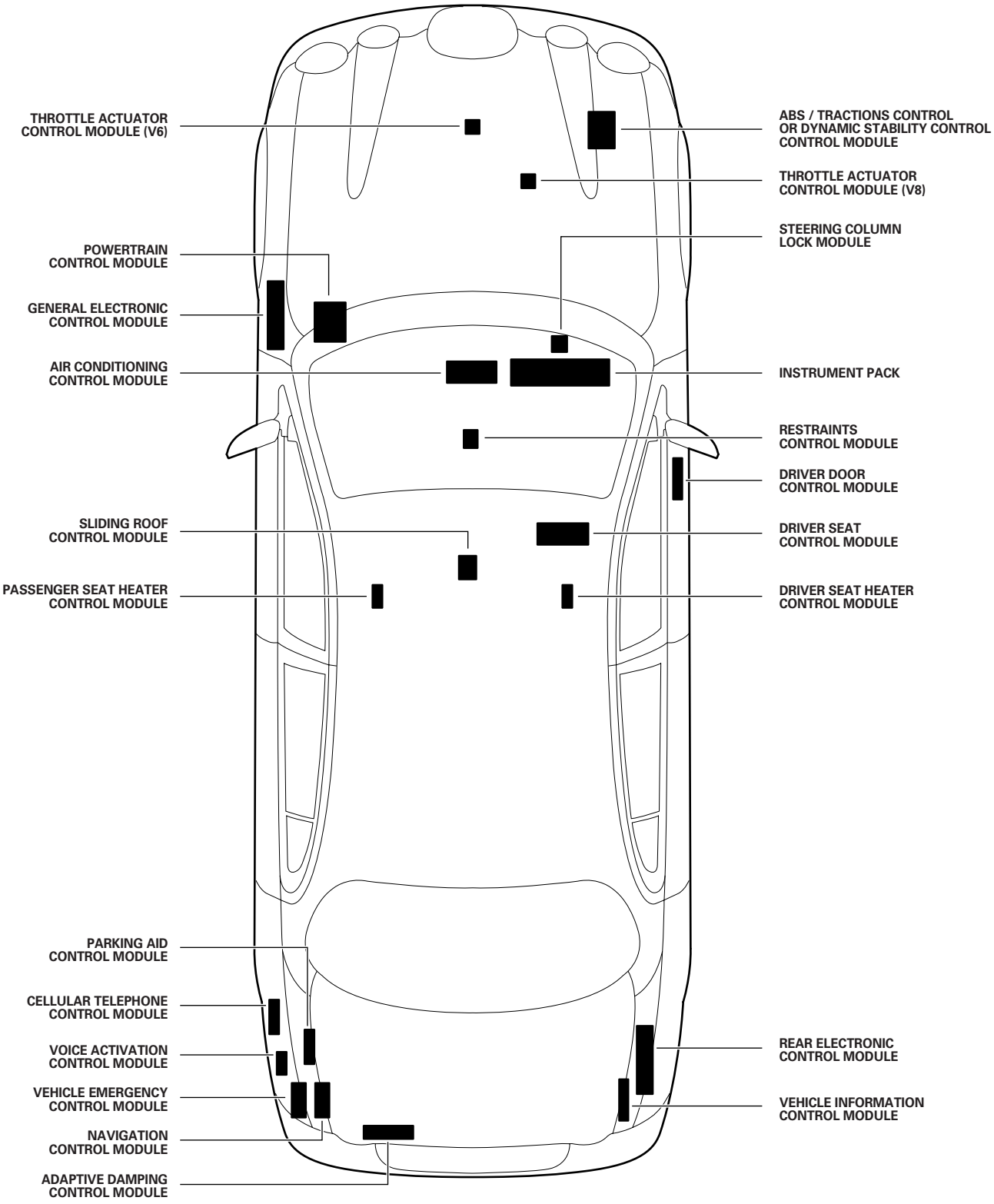



FH95
Behind LH Headlamp Assembly
FH22
Behind LH Headlamp Assembly
FH42
Adjacent to ABS/TCCM or DSCCM
ST2
RH Front Inner Wheel Arch
FH49 (RHD)
LH Front Inner Wheel Arch, rear
FH49 (LHD)
LH Front Inner Wheel Arch, rear
CA30
LH lower 'A' Post
FH77
LH 'A' Post, adjacent to GECM
CA50
RH lower 'A' Post
FC38
Behind Center Console
CA141
Beneath LH Front Seat
CA154
Beneath RH Front Seat
CA157
Behind LH Rear Seat Back
CA116
Behind RH Rear Seat Back
RA8
LH Trunk
JB1
RH rear Trunk, adjacent to Battery
CA156
RH rear Trunk, adjacent to RECM

LHD


THROTTLE ACTUATOR CONTROL MODULE (V6)
STEERING COLUMN LOCK MODULE
GENERAL ELECTRONIC CONTROL MODULE
INSTRUMENT PACK
DRIVER DOOR CONTROL MODULE
DRIVER SEAT CONTROL MODULE
DRIVER SEAT HEATER CONTROL MODULE
PARKING AID CONTROL MODULE
CELLULAR TELEPHONE CONTROL MODULE
VOICE ACTIVATION CONTROL MODULE
VEHICLE EMERGENCY CONTROL MODULE
NAVIGATION CONTROL MODULE
ADAPTIVE DAMPING CONTROL MODULE
ABS / TRACTIONS CONTROL OR DYNAMIC STABILITY CONTROL CONTROL MODULE
THROTTLE ACTUATOR CONTROL MODULE (V8)
POWERTRAIN CONTROL MODULE
AIR CONDITIONING CONTROL MODULE
RESTRAINTS CONTROL MODULE
SLIDING ROOF CONTROL MODULE
PASSENGER SEAT HEATER CONTROL MODULE
REAR ELECTRONIC CONTROL MODULE
VEHICLE INFORMATION CONTROL MODULE

RHD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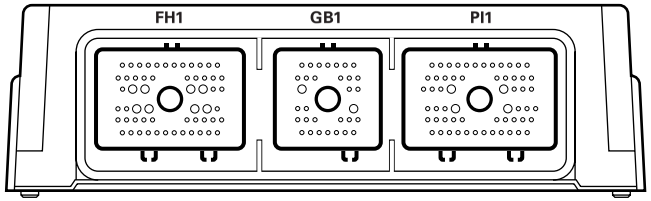
DRIVER SEAT HEATER CONTROL MODULE
REAR ELECTRONIC CONTROL MODULE
VEHICLE INFORMATION CONTROL MODULE

POWERTRAIN CONTROL MODULE: V8



V8 NAS

FH1 / GREY

1 WR	2 —	3 S	4 U	5 N	6 BO	7 W	8 WR	9 NU	10 NR	11 —	12 NR
13 YG	14 —	15 W	16 WU	17 N			18 —	19 —	20 Y	21 WU	22 —
	23 YR		24 B	25 B				26 B	27 B	28 OY	29 —
30 —	31 WU		32 GY	33 GO				34 —	35 —	36 NY	
37 W	38 NU	39 —	40 O	41 WG			42 WP	43 NY	44 OY	45 —	46 —
47 WU	48 WP	49 SP	50 —	51 WP	52 WP	53 —	54 —	55 YU	56 BO	57 YU	58 WP

GB1 / GREY

1 N	2 NR	3 NW	4 NY	5 NW	6 —	7 NG
8 —	9 W	10 WR		11 —	12 NW	13 NY
14 —					15 NU	16 NG
17 N	18 WU					19 —
20 —	21 WB	22 WG			23 WR	24 —	25 —
26 WR	27 WP	28 WU	29 WG	30 WU	31 —	32 —

PI1 / GREY

1 NR	2 NW	3 —	4 —	5 SR	6 —	7 N	8 NR	9 N	10 WB	11 NG	12 NW
13 NG	14 N	15 N	16 —	17 N			18 S	19 S	20 YB	21 NY	22 NU
23 NY	24 NR	25 W	26 —				27 —		28 —	29 NW	30 N
31 N	32 NU	33 WP	34 —					35 —	36 —	37 N	38 NR
39 WG	40 —	41 —	42 SB	43 SR			44 WR	45 W	46 W	47 WU	48 Y
49 WG	50 WR	51 WB	52 WR	53 WB	54 WP	55 SR	56 WR	57 W	58 W	59 WR	60 —

V8 ROW

FH1 / GREY

1 WR	2 —	3 S	4 U	5 N	6 —	7 W	8 WR	9 NU	10 NR	11 —	12 NR
13 YG	14 —	15 W	16 WU	17 N			18 —	19 —	20 Y	21 WU	22 —
	23 YR		24 B	25 B				26 B	27 B	28 OY	29 —
30 —	31 WU		32 GY	33 GO				34 —	35 —	36 NY	
37 W	38 NU	39 —	40 O	41 WG			42 WP	43 NY	44 OY	45 —	46 —
47 WU	48 WP	49 SP	50 —	51 WP	52 —	53 —	54 —	55 YU	56 BO	57 YU	58 WP

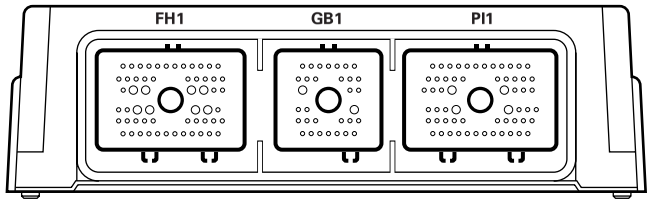
GB1 / GREY

1 N	2 NR	3 NW	4 NY	5 NW	6 —	7 NG
8 —	9 W	10 WR		11 —	12 NW	13 NY
14 —					15 NU	16 NG
17 N	18 WU					19 —
20 —	21 WB	22 WG			23 WR	24 —	25 —
26 WR	27 WP	28 WU	29 WG	30 WU	31 —	32 —

PI1 / GREY

1 NR	2 NW	3 —	4 —	5 SR	6 —	7 N	8 NR	9 N	10 WB	11 NG	12 NW
13 NG	14 N	15 N	16 —	17 N			18 S	19 S	20 YB	21 NY	22 NU
23 NY	24 NR	25 W	26 —				27 —		28 —	29 NW	30 N
31 N	32 NU	33 WP	34 —					35 —	36 —	37 N	38 NR
39 WG	40 —	41 —	42 SB	43 SR			44 WR	45 W	46 W	47 WU	48 Y
49 WG	50 WR	51 WB	52 WR	53 WB	54 WP	55 SR	56 WR	57 W	58 W	59 WR	60 —

POWERTRAIN CONTROL MODULE: V6



V6 NAS

FH1 / GREY

1 WR	2 —	3 S	4 U	5 N	6 NU	7 W	8 WR	9 —	10 NR	11 —	12 NR	
13 YG	14 —	15 W	16 WU	17 N			18 —	19 —	20 Y	21 WU	22 —	
23 YR		24 B	25 B				26 B	27 B		28 OY	29 —	
30 —	31 WU		32 GY	33 GO			34 —	35 —		36 NY		
37 W	38 NU	39 —	40 O	41 WG			42 WP	43 NY	44 OY	45 —	46 —	
47 WU	48 —	49 SP	50 —	51 WP	52 WP	53 —	54 —	55 YU	56 BO	57 YU	58 WP	

GB1 / GREY

1 N	2 NR	3 NW	4 NY	5 NW	6 —	7 NG
8 —	9 W	10 WR		11 —	12 NW	13 NY
14 —					15 NU	16 NG
17 N	18 WU				19 —	
20 —	21 WB	22 WG		23 WR	24 —	25 —
26 WR	27 WP	28 WU	29 WG	30 WU	31 —	32 —

PI1 / GREY

1 —	2 NW	3 —	4 —	5 SR	6 —	7 N	8 NR	9 —	10 WB	11 NG	12 NG	
13 NU	14 N	15 N	16 BG	17 N			18 S	19 S	20 YB	21 NY	22 NY	
23 NR	24 NR	25 W	26 —				27 —		28 —	29 NY	30 NW	
31 N	32 NU	33 WP	34 —					35 —	36 —	37 NG	38 —	
39 WG	40 WP	41 WU	42 SB	43 SR			44 WR	45 W	46 —	47 WU	48 Y	
49 WG	50 WR	51 WB	52 WR	53 WP	54 WB	55 SR	56 WR	57 W	58 W	59 WR	60 —	

V6 ROW AUTO

FH1 / GREY

1 WR	2 —	3 S	4 U	5 N	6 —	7 W	8 WR	9 NU	10 NR	11 —	12 NR	
13 YG	14 —	15 W	16 WU	17 N			18 —	19 —	20 Y	21 WU	22 —	
23 YR		24 B	25 B				26 B	27 B		28 OY	29 —	
30 —	31 WU		32 GY	33 GO			34 —	35 —		36 NY		
37 W	38 NU	39 —	40 O	41 WG			42 WP	43 NY	44 OY	45 —	46 —	
47 WU	48 —	49 SP	50 —	51 WP	52 —	53 —	54 —	55 YU	56 BO	57 YU	58 WP	

GB1 / GREY

1 N	2 NR	3 NW	4 NY	5 NW	6 —	7 NG
8 —	9 W	10 WR		11 —	12 NW	13 NY
14 —					15 NU	16 NG
17 N	18 WU				19 —	
20 —	21 WB	22 WG		23 WR	24 —	25 —
26 WR	27 WP	28 WU	29 WG	30 WU	31 —	32 —

PI1 / GREY

1 —	2 NW	3 —	4 —	5 SR	6 —	7 N	8 NR	9 —	10 WB	11 NG	12 NG	
13 NU	14 N	15 N	16 —	17 N			18 S	19 S	20 YB	21 NY	22 NY	
23 NR	24 NR	25 W	26 —				27 —		28 —	29 NY	30 NW	
31 N	32 NU	33 WP	34 —					35 —	36 —	37 NG	38 —	
39 WG	40 WP	41 —	42 SB	43 SR			44 WR	45 W	46 —	47 WU	48 Y	
49 WG	50 WR	51 WB	52 WR	53 WP	54 WB	55 SR	56 WR	57 W	58 W	59 WR	60 —	

V6 ROW MAN

FH1 / GREY

1 WR	2 —	3 S	4 U	5 N	6 —	7 W	8 WR	9 NU	10 NR	11 —	12 NR	
13 YG	14 —	15 W	16 WU	17 N			18 —	19 —	20 Y	21 WU	22 —	
23 YR		24 B	25 B				26 B	27 B		28 OY	29 —	
30 —	31 WU		32 GY	33 GO			34 —	35 —		36 NY		
37 W	38 NU	39 —	40 O	41 WG			42 WP	43 NY	44 OY	45 —	46 —	
47 WU	48 —	49 SP	50 —	51 WP	52 —	53 —	54 —	55 YU	56 BO	57 YU	58 WP	

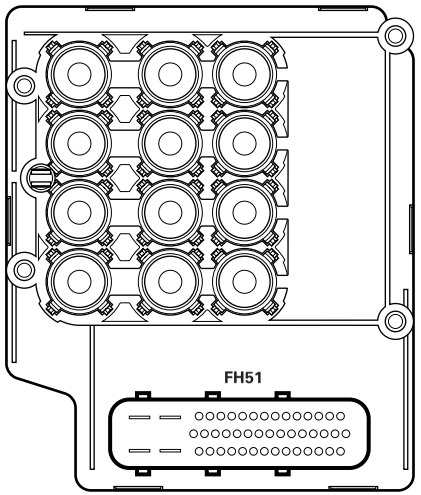
GB1 / GREY

1 —	2 —	3 —	4 —	5 —	6 —	7 —
8 —	9 —	10 WP		11 —	12 —	13 —
14 —					15 NU	16 NG
17 N	18 —				19 —	
20 —	21 —	22 W		23 —	24 —	25 —
26 WR	27 —	28 WU	29 WG	30 —	31 —	32 —

PI1 / GREY

1 —	2 NW	3 —	4 —	5 SR	6 —	7 N	8 NR	9 —	10 WB	11 NG	12 NG	
13 NU	14 N	15 N	16 —	17 N			18 S	19 S	20 YB	21 NY	22 NY	
23 NR	24 NR	25 W	26 —				27 —		28 —	29 NY	30 NW	
31 N	32 NU	33 WP	34 —					35 —	36 —	37 NG	38 —	
39 WG	40 WP	41 —	42 SB	43 SR			44 WR	45 W	46 —	47 WU	48 Y	
49 WG	50 WR	51 WB	52 WR	53 WP	54 WB	55 SR	56 WR	57 W	58 W	59 WR	60 —	

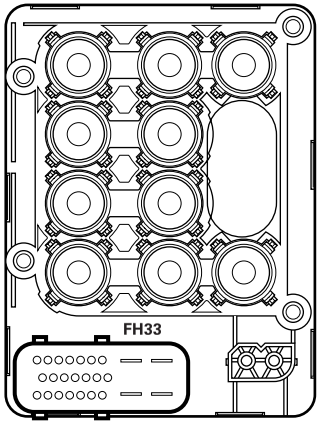
DYNAMIC STABILITY CONTROL CONTROL MODULE



FH51 / GREY

16 RY	15 B	14 S	13 NU	12 YP	11 NR	10 YB	9 WP	8 WR	7 SO	6 WG	5 YU	4 WU	3 —	2 W	1 Y
		31 —	30 NY	29 WU	28 WP	27 WR	26 WB	25 —	24 NR	23 —	22 KY	21 OY	20 OU	19 U	18 S	17 S
33 R	32 B	47 WR	46 YU	45 NW	44 YR	43 NY	42 —	41 —	40 NG	39 —	38 YG	37 WG	36 —	35 YR	34 WR

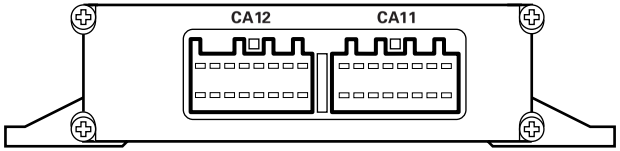
ABS / TRACTION CONTROL CONTROL MODULE



FH33 / BLACK

17 W	18 Y	19 —	20 KY	21 WU	22 YU	23 S	24 B	25 RY
10 U	11 S	12 —	13 —	14 WP	15 —	16 —		
1 —	2 OG	3 WR	4 YR	5 —	6 YG	7 WG	8 B	9 R

ADAPTIVE DAMPING CONTROL MODULE



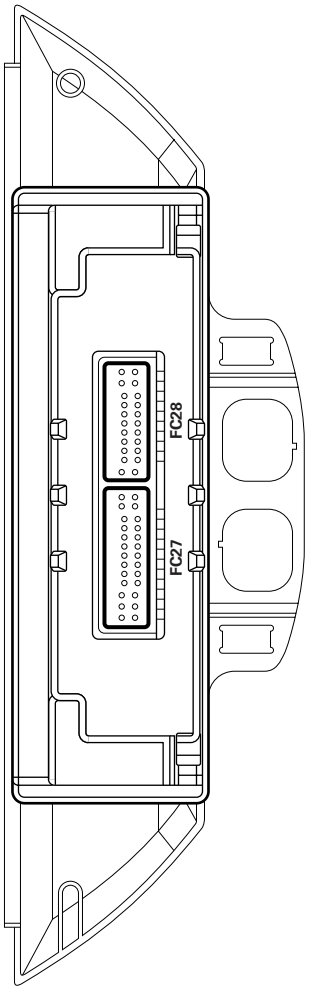
CA12 / GREY

1 KB	2 BG	3 K	4 BO	5 BY	6 KY	7 BU	8 KU
9 N	10 B	11 —	12 KY	13 UO	14 SW	15 —	16 RY

CA11 / BLUE

1 —	2 —	3 —	4 S	5 —	6 —	7 —	8 —
9 Y	10 SW	11 WB	12 S	13 —	14 —	15 —	16 —

AIR CONDITIONING CONTROL MODULE



LHD

FC27 / GREY

13 WB	12 YR	11 WR	10 WR	9 YR	8 SP	7 —	6 NG	5 NU	4 —	3 W	2 WR	15 WR	1 WB
26 YB	25 Y	24 W	23 YP	22 WP	21 —	20 NR	19 BU	18 NU	17 NR	16 WP			14 NG

FC28 / GREY

11 N			10 WR	9 WG	8 NW	7 WU	6 WB	5 WU	4 WB	3 KO	2 BR	13 —	1 UY
22 Y			21 —	20 SP	19 NU	18 WG	17 WP	16 NR	15 NU	14 OG			12 SB

RHD

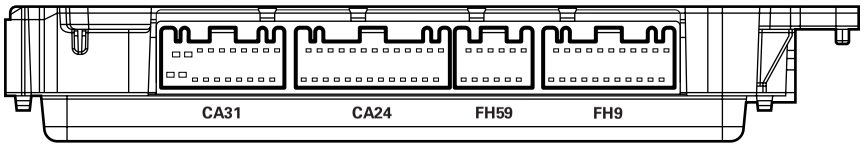
FC27 / GREY

13 WB	12 YR	11 WR	10 WR	9 YR	8 SP	7 —	6 NG	5 NU	4 —	3 W	2 WR	15 WR	1 WB
26 YB	25 Y	24 W	23 YP	22 WP	21 —	20 NR	19 BU	18 NU	17 NR	16 WP			14 NG

FC28 / GREY

11 N			10 WR	9 WG	8 NW	7 WU	6 WG	5 WU	4 WB	3 KO	2 BR	13 —	1 UY
22 Y			21 —	20 SP	19 NU	18 WB	17 WP	16 NR	15 NU	14 OG			12 SB

GENERAL ELECTRONIC CONTROL MODULE



CA31 / BLACK

1 OY	2 WR	3 KO	4 —	5 N	6 —	7 BG	8 BY	9 —	10 YG
11 UR	12 OU	13 SP	14 Y	15 —	16 UB	17 —	18 N	19 BG	20 —

CA24 / WHITE

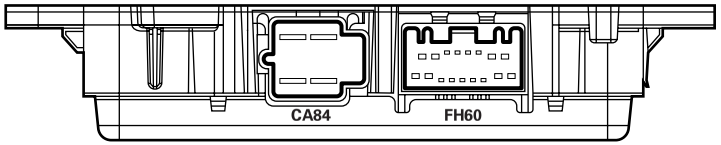
1 U	2 —	3 —	4 —	5 —	6 —	7 WR	8 YR	9 —	10 SW	11 SR	12 —	13 —	
14 —	15 BU	16 —	17 —	18 —	19 —	20 UO	21 PW	22 NR	23 WB	24 YB	25 WP	26 —	

FH59 / BLACK

1 U	2 BU	3 W	4 NR	5 BG	6 OG
7 S	8 NR	9 WG	10 BR	11 WR	12 —

FH9 / BLACK

1 NY	2 —	3 NG	4 —	5 —	6 —	7 BU	8 —	9 —	10 —	11 BW
12 —	13 BU	14 BW	15 WU	16 Y	17 —	18 —	19 BO	20 —	21 BW	22 BO



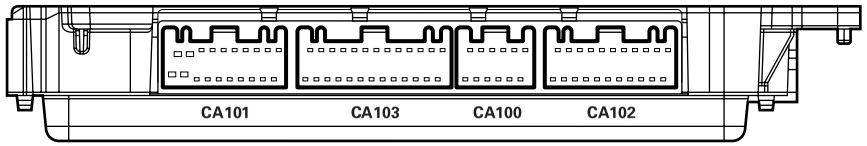
CA84 / GREY

1 YP	2 WP
3 RY	4 BY

FH60 / BLACK

1 OW	2 NG	3 WG	4 BY	5 BW	6 B	7 BW	8 BR
9 WG	10 BR	11 B	12 B	13 B	14 B	15 B	16 YB	17 BG

REAR ELECTRONIC CONTROL MODULE



LHD

CA101 / BLACK

1 GR	2 B	3 OB	4 BO	5 N	6 —	7 W	8 —	9 —	10 —
11 GO	12 BR	13 —	14 —	15 WR	16 WU	17 BG	18 BO	19 BG	20 S

CA103 / WHITE

1 —	2 —	3 —	4 YG	5 Y	6 W	7 WB	8 YP	9 YU	10 O	11 B	12 B	13 OB
14 UB	15 SO	16 BO	17 —	18 —	19 WP	20 —	21 —	22 SP	23 N	24 WU	25 B	26 B

CA100 / BLACK

1 YG	2 —	3 —	4 —	5 BG	6 BW
7 —	8 GB	9 WG	10 —	11 BU	12 BO

CA102 / BLACK

1 SW	2 UO	3 —	4 WU	5 Y	6 —	7 NW	8 —	9 —	10 —	11 —
12 B	13 O	14 WB	15 —	16 —	17 —	18 —	19 —	20 —	21 —	22 —

RHD

CA101 / BLACK

1 GR	2 B	3 OB	4 BO	5 N	6 —	7 W	8 —	9 —	10 —
11 GO	12 BR	13 —	14 —	15 WR	16 WU	17 BO	18 BO	19 BG	20 S

CA103 / WHITE

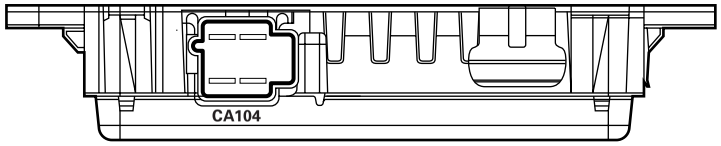
1 —	2 —	3 —	4 YG	5 Y	6 W	7 WB	8 YP	9 YU	10 O	11 B	12 B	13 OB
14 UB	15 SO	16 BG	17 —	18 —	19 WP	20 —	21 —	22 SP	23 N	24 WU	25 B	26 B

CA100 / BLACK

1 YG	2 —	3 —	4 —	5 BG	6 BW
7 —	8 GB	9 WG	10 —	11 BU	12 BO

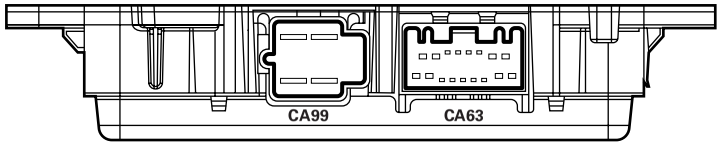
CA102 / BLACK

1 SW	2 UO	3 —	4 WU	5 Y	6 —	7 NW	8 —	9 —	10 —	11 —
12 B	13 O	14 WB	15 —	16 —	17 —	18 —	19 —	20 —	21 —	22 —



CA104 / BLACK

1 PW	2 BO
3 UO	4 RO



CA99 / GREY

1 UR	2 PU
3 BO	4 RO

CA63 / BLACK

1 BG	2 BO	3 BY	4 BU	5 BU	6 BY	7 BY	8 BY
9 BG	10 BR	11 —	12 —	13 WU	14 SP	15 —	16 —	17 BY

INSTRUMENT PACK

LHD

FC14 / GREY

1	2	3	4	5	6	7	8	9	10	11
O	YU	WU	PB	UB	BU	UR	NU	WU	SP	GB

12	13	14	15	16	17	18	19	20	21	22
NW	YP	—	—	—	—	WB	WU	—	RW	BG

FC15 / BLACK

1	2
—	—

3	4	5	6	7	8	9	10
OU	WR	SR	GR	YG	—	NW	SO

11	12
—	—

13	14	15	16	17	18	19	20
NR	WB	SP	UW	YG	BY	WU	WP

FC63 / BLACK

1	2	3	4	5	6	7	8	9	10	11
NG	YR	N	N	—	BU	—	—	NW	BW	—

12	13	14	15	16	17	18	19	20	21	22
WG	WB	SO	W	W	—	—	YP	WP	WB	—

RHD

FC14 / GREY

1	2	3	4	5	6	7	8	9	10	11
O	YU	WU	PB	UB	B	UR	NU	WU	SP	GB

12	13	14	15	16	17	18	19	20	21	22
NW	YP	—	—	—	—	WB	WU	—	RW	BG

FC15 / BLACK

1	2
—	—

3	4	5	6	7	8	9	10
OU	WR	SR	GR	YG	—	NW	SO

11	12
—	—

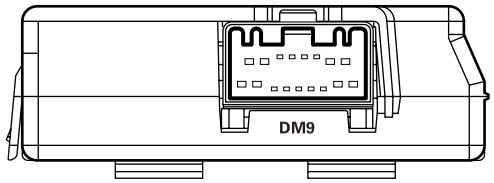
13	14	15	16	17	18	19	20
NR	WB	SP	UW	YG	BY	WU	WP

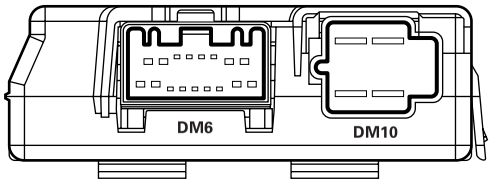
FC63 / BLACK

1	2	3	4	5	6	7	8	9	10	11
NG	YR	N	N	—	B	—	—	NW	BW	—

12	13	14	15	16	17	18	19	20	21	22
WG	WB	SO	W	W	—	—	YP	WP	WB	—

DRIVER SEAT CONTROL MODULE





DM9 / GREY

1 SW	2 NW	3 SO	4 SR	5 WB	6 SW	7 —	8 —
9 UO	10 OW	11 WG	12 WR	13 SB	14 WP	15 —	16 —	17 —

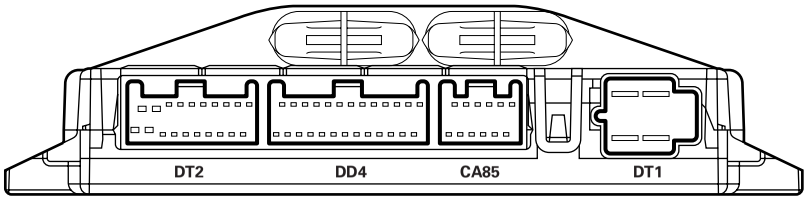
DM6 / BLACK

1 YG	2 WR	3 NU	4 WR	5 WB	6 YU	7 YB	8 YP
9 YR	10 WG	11 NW	12 —	13 WU	14 WG	15 YP	16 WP	17 WB

DM10 / BROWN

1 —	2 —
3 B	4 R

DRIVER DOOR CONTROL MODULE



LHD

DT2 / BLACK

1 WR	2 YR	3 UW	4 P	5 YB	6 Y	7 —	8 YB	9 WP	10 Y
11 —	12 —	13 W	14 WB	15 SB	16 BU	17 BW	18 S	19 NY	20 —

DD4 / WHITE

1 —	2 YB	3 YP	4 YR	5 Y	6 —	7 Y	8 YG	9 YU	10 WR	11 WU	12 YR	13 —
14 UO	15 WB	16 UW	17 WR	18 Y	19 YB	20 YG	21 YB	22 YU	23 —	24 —	25 W	26 —

CA85 / BLACK

1 —	2 —	3 SO	4 UB	5 —	6 BU
7 NU	8 BO	9 N	10 BO	11 O	12 OU

DT1 / GREY

1 W	2 Y
3 B	4 R

RHD

DT2 / BLACK

1 WR	2 YR	3 UW	4 P	5 YB	6 Y	7 —	8 YB	9 WP	10 Y
11 —	12 —	13 W	14 WB	15 SB	16 BU	17 BW	18 S	19 NY	20 —

DD4 / WHITE

1 —	2 YB	3 YG	4 YR	5 Y	6 —	7 Y	8 YG	9 YU	10 WR	11 WU	12 YR	13 —
14 UW	15 WR	16 UO	17 WB	18 Y	19 YB	20 YP	21 YB	22 YU	23 —	24 —	25 W	26 —

CA85 / BLACK

1 —	2 —	3 SO	4 UB	5 —	6 BU
7 NU	8 BO	9 N	10 BO	11 O	12 OU

DT1 / GREY

1 W	2 Y
3 B	4 R

Fig. 01.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BATTERY	VARIES		TRUNK, RH SIDE
CLEAN POWER FUSE	CA133	EYELET	REAR POWER DISTRIBUTION BOX
	CA135	EYELET	REAR POWER DISTRIBUTION BOX
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
TRANSIT ISOLATION RELAY	CA16	2-WAY / WHITE	ADJACENT TO BATTERY
	JB2	1-WAY / BLACK	ADJACENT TO BATTERY

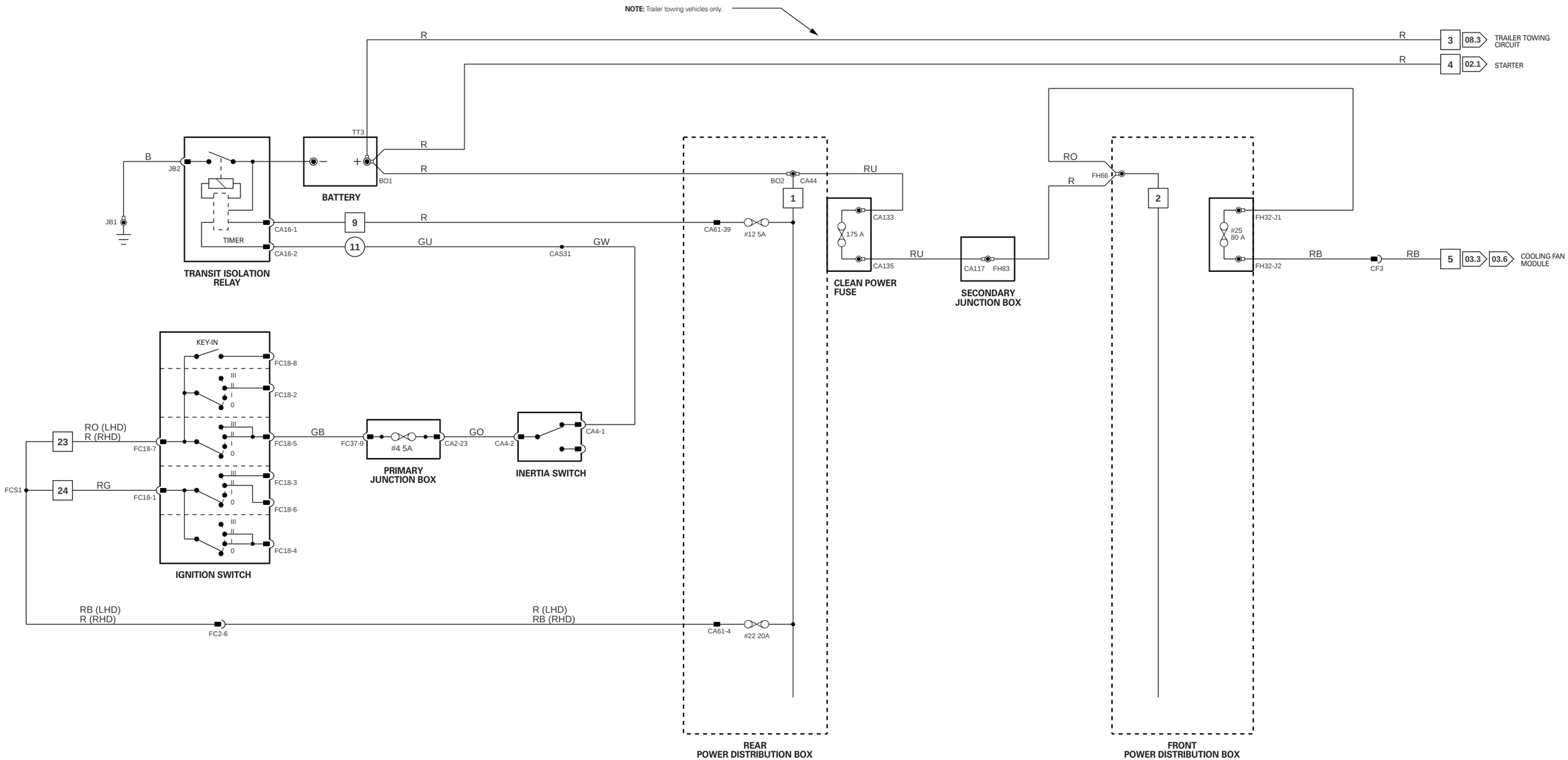
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CF3	1-WAY / BLACK / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF THE RADIATOR
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND THE FASCIA END PANEL

GROUNDS

Ground	Ground Description	Location
JB1	GROUND EYELET	ADJACENT TO BATTERY / TRUNK TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 01.2

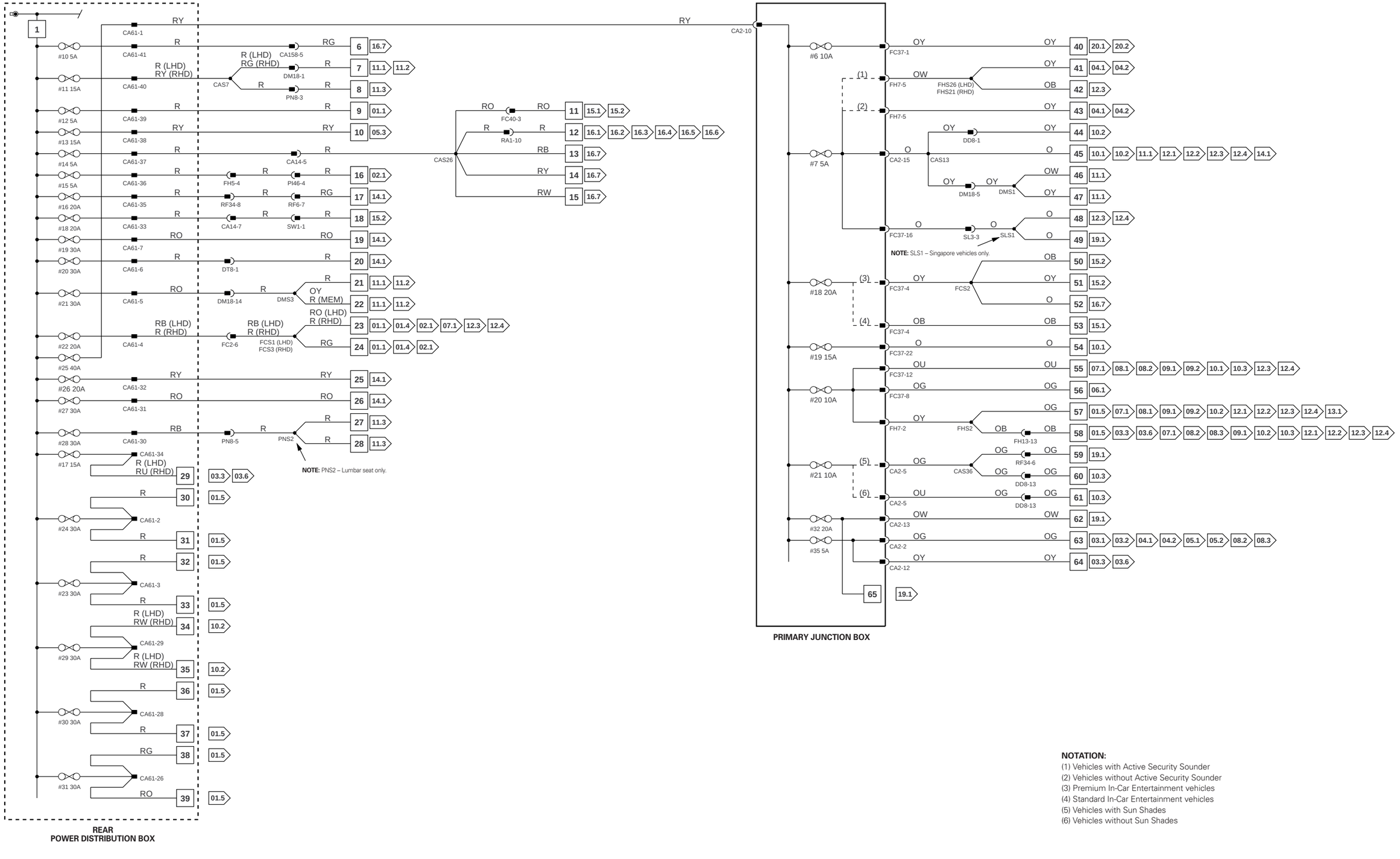
COMPONENTS

Component	Connector(s)	Connector Description	Location
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PN8	8-WAY / GREY / CABIN HARNESS TO PASSENGER SEAT HARNESS	BELOW SEAT CUSHION
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF6	8-WAY / BLACK / SLIDING ROOF LINK LEAD	HEADLINER, ABOVE ROOF CONSOLE
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE
SW1	6-WAY / GREY / SUBWOOFER LINK LEAD	BELOW PARCEL SHELF

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



NOTATION:
(1) Vehicles with Active Security Sounder
(2) Vehicles without Active Security Sounder
(3) Premium In-Car Entertainment vehicles
(4) Standard In-Car Entertainment vehicles
(5) Vehicles with Sun Shades
(6) Vehicles without Sun Shades

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 01.3

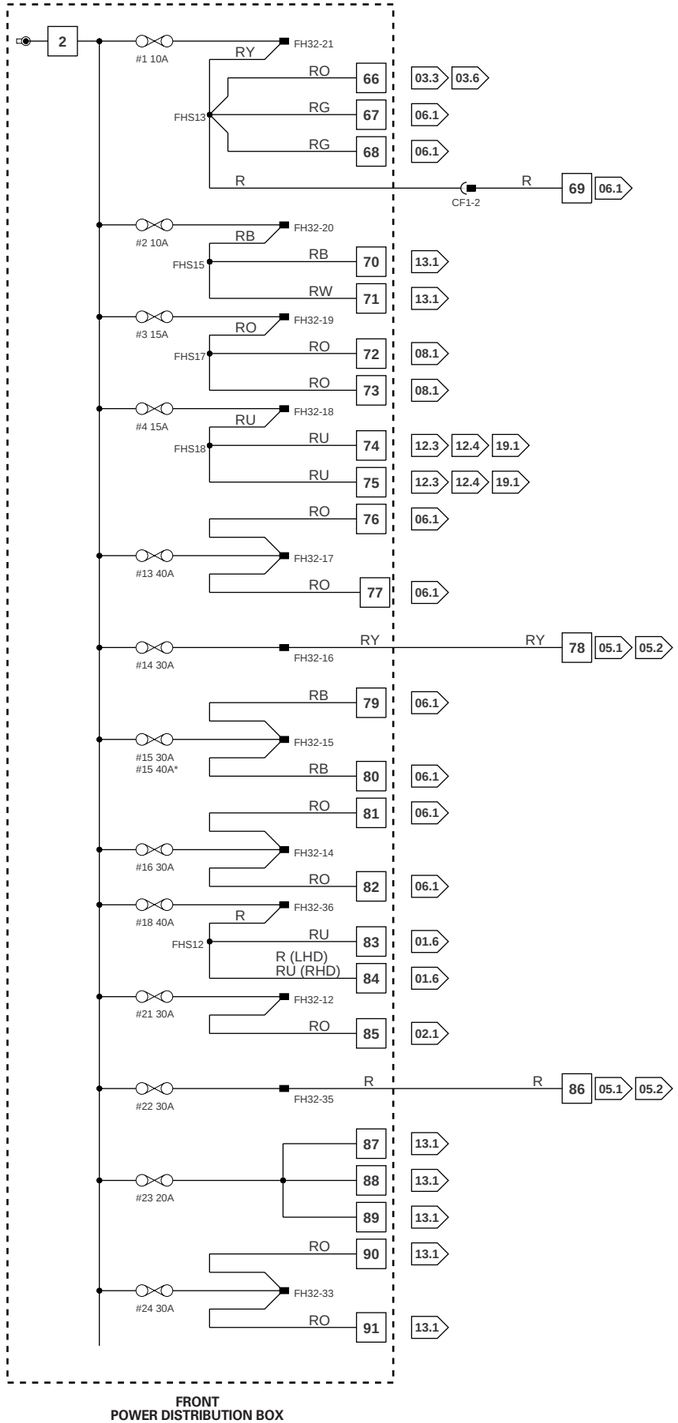
COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CF1	6-WAY / GREY / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR

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:** FUSE 15 – 30A Wiper Park Heater, 40A RH Windshield Heater.

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 01.4

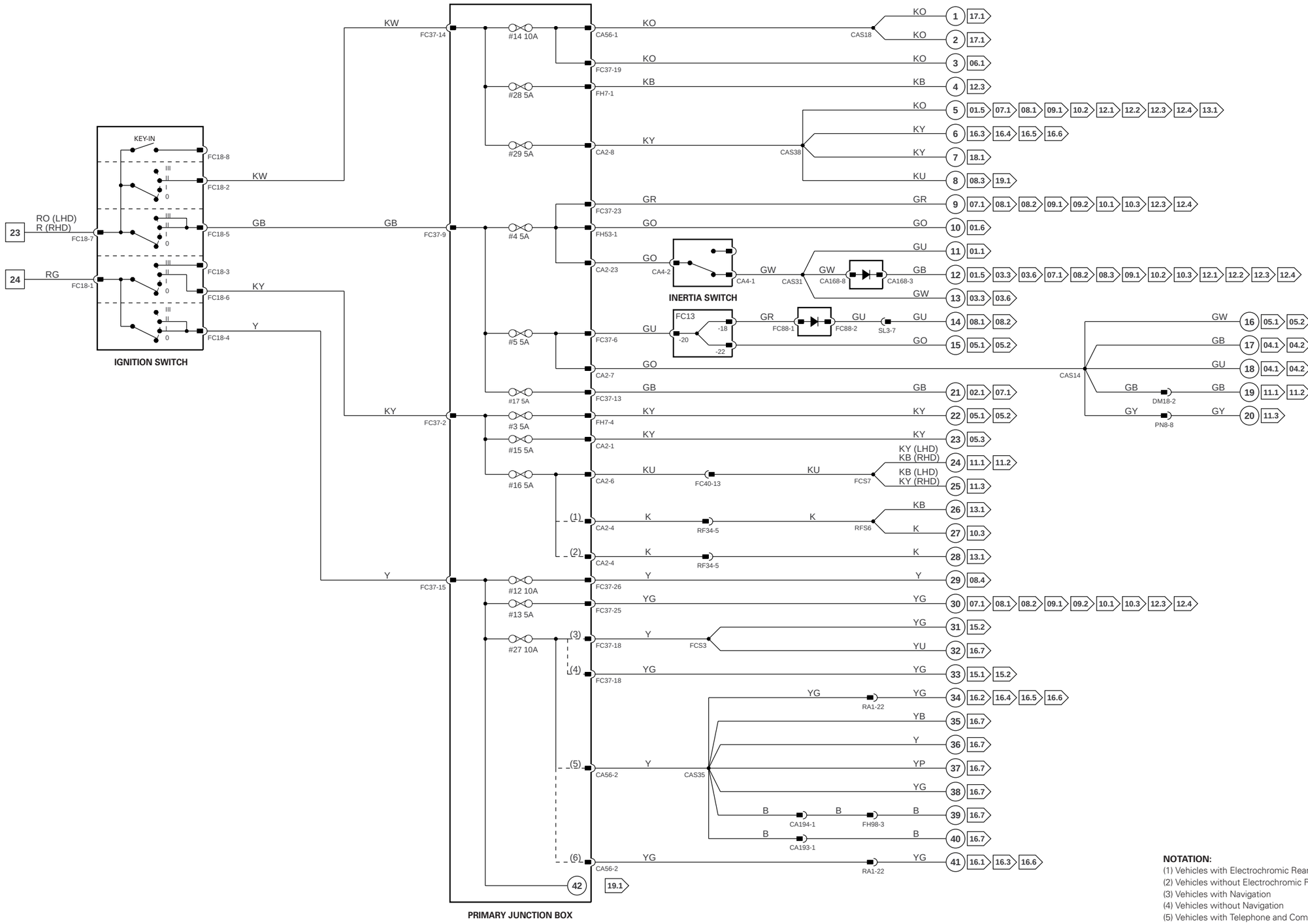
COMPONENTS

Component	Connector(s)	Connector Description	Location
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INERTIA SWITCH	CA4	3-WAY / GREY	'A' POST, LH SIDE
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA168	10-WAY / BLUE / DIODE MODULE	TRUNK, RH SIDE
CA193	2-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA194	2-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK; ABOVE WHEEL ARCH, LH SIDE
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC13	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FC88	2-WAY / BLACK / DIODE	BEHIND CENTER CONSOLE
FH98	10-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT
PN8	8-WAY / GREY / CABIN HARNESS TO PASSENGER SEAT HARNESS	BELOW SEAT CUSHION
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

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



NOTATION:
(1) Vehicles with Electrochromic Rear View Mirror
(2) Vehicles without Electrochromic Rear View Mirror
(3) Vehicles with Navigation
(4) Vehicles without Navigation
(5) Vehicles with Telephone and Communications
(6) Vehicles with Telephone only and Vehicles with Telephone and Voice only

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
O	FH9-21	SWITCHED SYSTEM POWER RELAYS ACTIVATE	GROUND	B+
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
O	CA101-4	SWITCHED SYSTEM POWER RELAYS ACTIVATE	GROUND	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 01.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA98	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ADJACENT TO RECM, RH SIDE
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

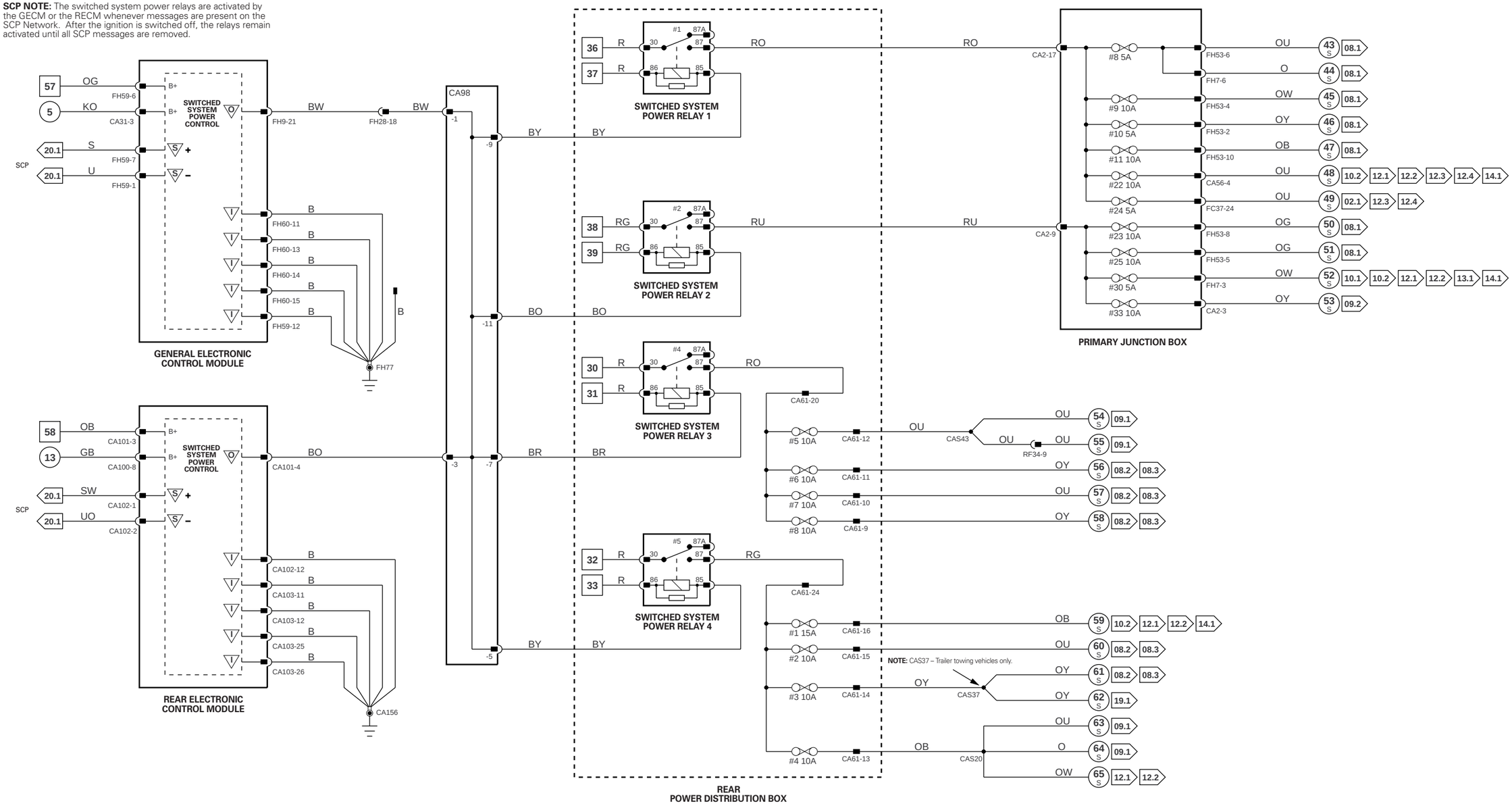
Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

Switched System Power Distribution

SCP NOTE: The switched system power relays are activated by the GECM or the RECM whenever messages are present on the SCP Network. After the ignition is switched off, the relays remain activated until all SCP messages are removed.



1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 01.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

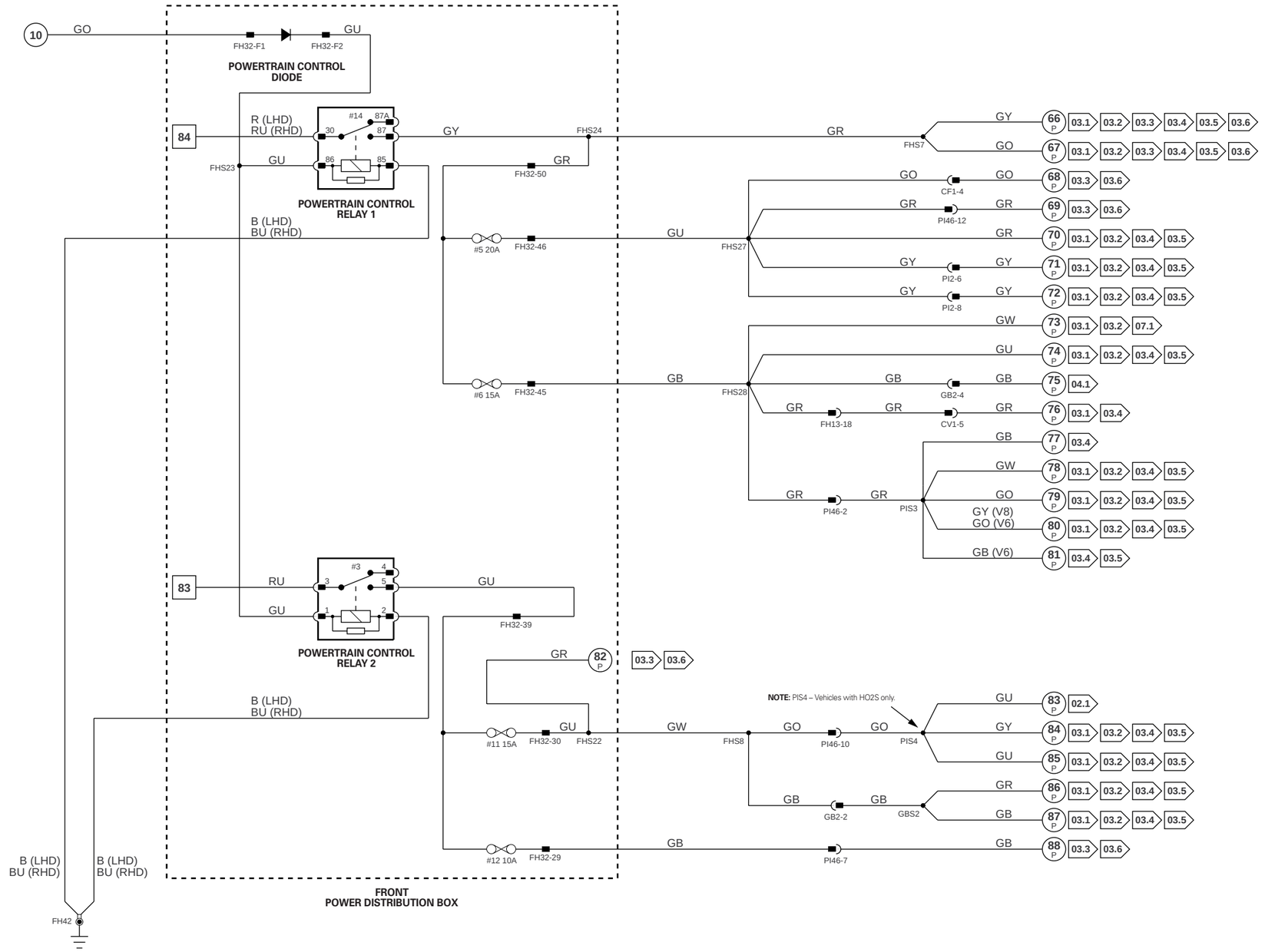
Connector	Connector Description	Location
CF1	6-WAY / GREY / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
CV1	6-WAY / GREY / CABIN HARNESS TO CANISTER CLOSE VALVE HARNESS	ABOVE REAR AXLE ASSEMBLY
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
GB2	6-WAY / BLACK / FRONT HARNESS TO TRANSMISSION HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT

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.

Powertrain Control System Switched Power Distribution



1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
S	FH59-1	SCP -	2 – 1600 Hz	
S	FH59-7	SCP +	2 – 1600 Hz	

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC14-11	AIR BAG MIL IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC14-21	IGNITION KEY IN BARREL	B+ = IGNITION KEY IN	GROUND = IGNITION KEY OUT
D	FC15-4	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
D	FC15-5	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
O	FC15-18	STARTER RELAY ACTIVATE	GROUND	B+
O	FC63-6	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER GROUND SUPPLY	GROUND	GROUND

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
I	GB1-22	CLUTCH PEDAL SWITCH	GROUND	B+
I	PI1-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND (MIL ON)
I	PI1-50	GENERATOR LOAD SIGNAL	0V (PWM)	61% @ IDLE, INCREASING WITH LOAD

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 02.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CLUTCH PEDAL SWITCH	CA33	2-WAY / BLACK	ABOVE CLUTCH PEDAL
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
GENERATOR	PI42	10-WAY / BLACK	ENGINE, RH SIDE
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	FC52	10-WAY / GREEN	IGNITION SWITCH
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
STARTER MOTOR	ST3	EYELET	ENGINE, RH SIDE, REAR
	ST5	EYELET	ENGINE, RH SIDE, REAR
	ST6	EYELET	ENGINE, RH SIDE, REAR
TRANSMISSION RANGE SENSOR	GB6	12-WAY / BLACK	TRANSMISSION SELECTOR SHAFT

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

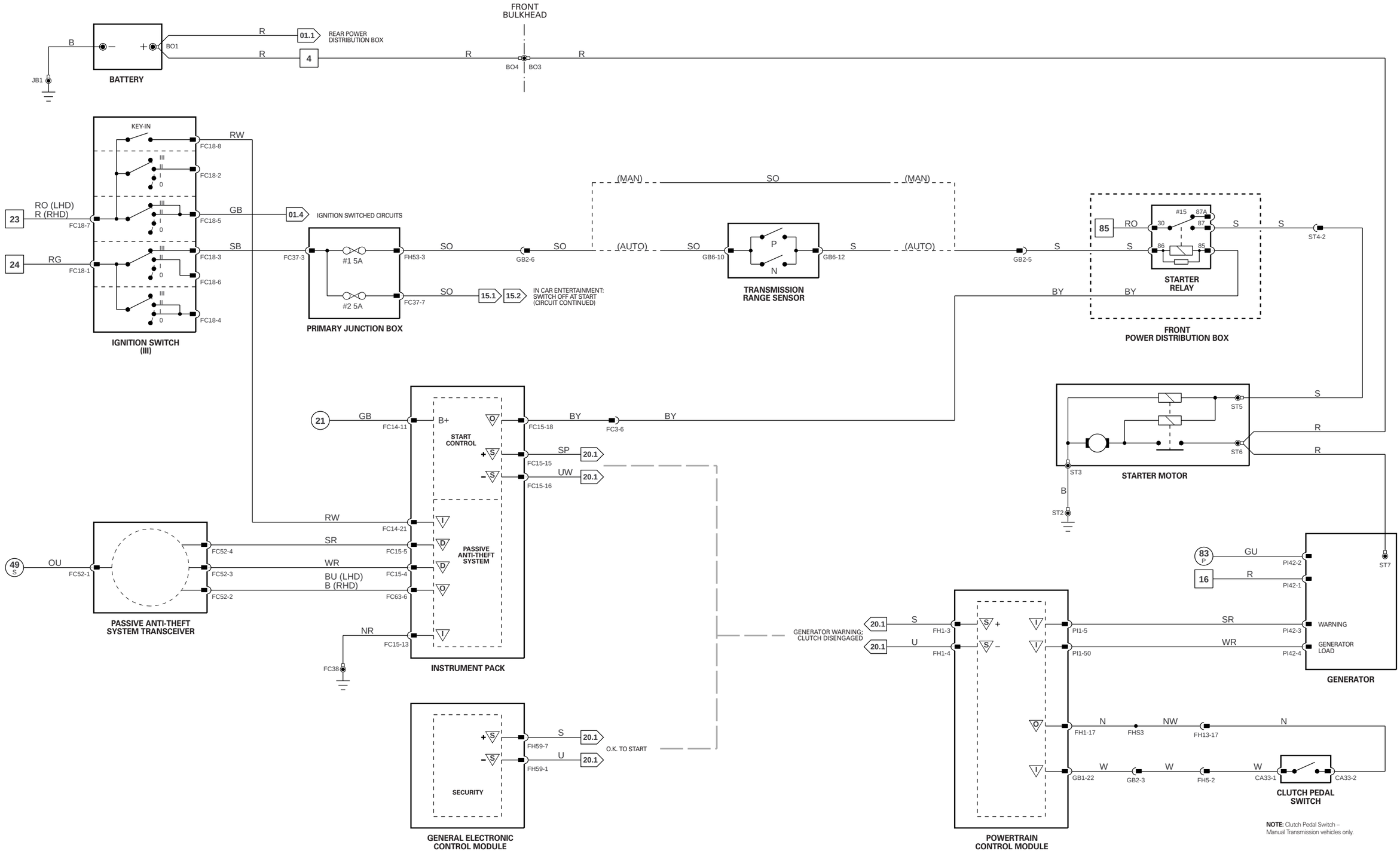
Connector	Connector Description	Location
BO3	EYELET / BULKHEAD POWER STUD	FRONT BULKHEAD; RH SIDE
BO4	EYELET / BULKHEAD POWER STUD	FRONT BULKHEAD; RH SIDE
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
GB2	6-WAY / BLACK / FRONT HARNESS TO TRANSMISSION HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
ST4	2-WAY / GREY / FORWARD HARNESS TO BATTERY LINK LEAD	BEHIND RH FRONT WHEEL ARCH LINER

GROUNDS

Ground	Ground Description	Location
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
JB1	GROUND EYELET	ADJACENT TO BATTERY / TRUNK TRIM
ST2	GROUND EYELET	RH FRONT INNER WHEEL ARCH / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: Clutch Pedal Switch – Manual Transmission vehicles only.

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Powertrain Control Module (V8)

▽	Pin	Description	Active	Inactive
I	FH1-1	APP2 FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
REF	FH1-5	APP1 REFERENCE GROUND	GROUND	GROUND
O	FH1-6	EVAP CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
REF	FH1-10	APP3 REFERENCE GROUND	GROUND	GROUND
O	FH1-12	EVAP CANISTER PURGE VALVE ACTIVATE	GROUND (PWM)	B+
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I	FH1-15	APP1 FEEDBACK	4.02V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	FH1-16	APP3 FEEDBACK	0.9V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
REF	FH1-23	APP1 REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-31	MAF SENSOR FEEDBACK	0V = IGNITION ON; ENGINE OFF	1V = IDLE
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-37	PSP SWITCH INPUT	GROUND	B+
REF	FH1-38	MAF SENSOR REFERENCE GROUND	GROUND	GROUND
I	FH1-40	BRAKE ON / OFF SIGNAL	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-47	AIRBAG DEPLOYMENT SIGNAL	ENCODED COMMUNICATIONS	
I	FH1-48	COOLANT LEVEL SENSOR	GROUND	B+
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
I	FH1-51	IAT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	FH1-52	FTP SENSOR FEEDBACK	4.9V = LOW PRESSURE	0.2V = HIGH PRESSURE
REF	FH1-55	APP3 SENSOR REFERENCE VOLTAGE	5V	5V
O	GB1-15	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
O	GB1-16	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-28	HO2 SENSOR, BANK 1 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	GB1-29	HO2 SENSOR, BANK 2 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND (MIL ON)
O	PI1-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND (PWM)	B+
O	PI1-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND (PWM)	B+
O	PI1-9	AIR ASSIST INJECTION CONTROL	GROUND(PWM)	B+
O	PI1-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF	PI1-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
REF	PI1-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O	PI1-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND (PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND (PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	PI1-25	ACTUAL THROTTLE ANGLE	0 – 20 mA	
O	PI1-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
I	PI1-39	EOT SENSOR FEEDBACK	O.61V @ 90°C INCR. w/ TEMP.	
REF	PI1-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF	PI1-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I	PI1-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-46	ECT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	PI1-47	EFT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	PI1-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I	PI1-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I	PI1-50	GENERATOR LOAD SIGNAL	0V (PWM)	61% @ IDLE, INCREASING WITH LOAD
I	PI1-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I	PI1-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I	PI1-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF	PI1-56	CKP SENSOR GROUND	GROUND	GROUND
I	PI1-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	PI1-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I	PI1-59	TP2 SENSOR FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AAI VALVE: AIR ASSIST INJECTION VALVE	PI18	2-WAY / BLACK	ABOVE INTAKE MANIFOLD
APP SENSOR: ACCELERATOR PEDAL POSITION SENSOR	CA88	10-WAY / BLACK	ABOVE ACCELERATOR PEDAL
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
CKP SENSOR: CRANKSHAFT POSITION SENSOR – V8	PI40	2-WAY / BLACK	ENGINE, FORWARD OF THE BELL HOUSING
CMP SENSOR: CAMSHAFT POSITION SENSOR 1 – V8	PI11	2-WAY / BLACK	ENGINE RH CAMSHAFT COVER
CMP SENSOR: CAMSHAFT POSITION SENSOR 2 – V8	PI10	2-WAY / BLACK	ENGINE LH CAMSHAFT COVER
COOLANT LEVEL SENSOR	FH94	3-WAY / BLACK	ON COOLANT RESERVOIR
ECT SENSOR: ENGINE COOLANT TEMPERATURE SENSOR	PI39	2-WAY / GREY	COOLANT OUTLET ELBOW
EFT SENSOR: ENGINE FUEL TEMPERATURE SENSOR – V8	PI9	2-WAY / GREY	ADJACENT TO THROTTLE HOUSING
EOT SENSOR: ENGINE OIL TEMPERATURE SENSOR	PI12	2-WAY / GREY	ADJACENT TO THE OIL FILTER
EVAP CANISTER CLOSE VALVE	CV4	2-WAY / BLACK	ABOVE REAR AXLE ASSEMBLY
EVAP CANISTER PURGE VALVE	FH3	2-WAY / BLACK	ADJACENT TO LH FRONT SUSPENSION TURRET
FTP SENSOR: FUEL TANK PRESSURE SENSOR	FP1	3-WAY / BLACK	BELOW THE LEFT FUEL PUMP COVER
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 1	PI7	4-WAY / GREEN	EXHAUST, RH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 2	GB3	4-WAY / BLUE	EXHAUST, RH, DOWNSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 1	PI6	4-WAY / GREEN	EXHAUST, LH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 2	GB4	4-WAY / BLUE	EXHAUST, LH, DOWNSTREAM
IAT SENSOR: INTAKE AIR TEMPERATURE SENSOR	FH68	2-WAY / BLACK	ENGINE AIR INTAKE DUCT
IP SENSOR: INJECTION PRESSURE SENSOR	PI15	3-WAY / BLACK	FUEL RAIL
KS: KNOCK SENSOR 1 – V8	PI26	2-WAY / BLACK	ADJACENT TO INTAKE MANIFOLD
KS: KNOCK SENSOR 2 – V8	PI27	2-WAY / BLACK	FORWARD OF STARTER MOTOR
MAF SENSOR: MASS AIR FLOW SENSOR	FH20	6-WAY / BLACK	ENGINE AIR INTAKE DUCT
POWERTRAIN CONTROL MODULE	FH1 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE
PSP SWITCH: POWER STEERING PRESSURE SWITCH	PI50	2-WAY / BLACK	HIGH PRESSURE PIPE, ADJACENT TO PUMP
THROTTLE ACTUATOR CONTROL MODULE	PI44	10-WAY / BLACK	ON THROTTLE BODY
TP SENSOR: THROTTLE POSITION SENSOR	PI16	10-WAY / BLACK	ON THROTTLE BODY
VVT VALVE: VARIABLE VALVE TIMING VALVE 1	PI5	2-WAY / BLACK	ON RH CYLINDER HEAD
VVT VALVE: VARIABLE VALVE TIMING VALVE 2	PI4	2-WAY / BLACK	ON LH CYLINDER HEAD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CV1	6-WAY / GREY / CABIN HARNESS TO CANISTER CLOSE VALVE HARNESS	ABOVE REAR AXLE ASSEMBLY
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FP2	8-WAY / GREY / CABIN HARNESS TO FUEL TANK LINK LEAD	REARWARD OF FUEL TANK
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

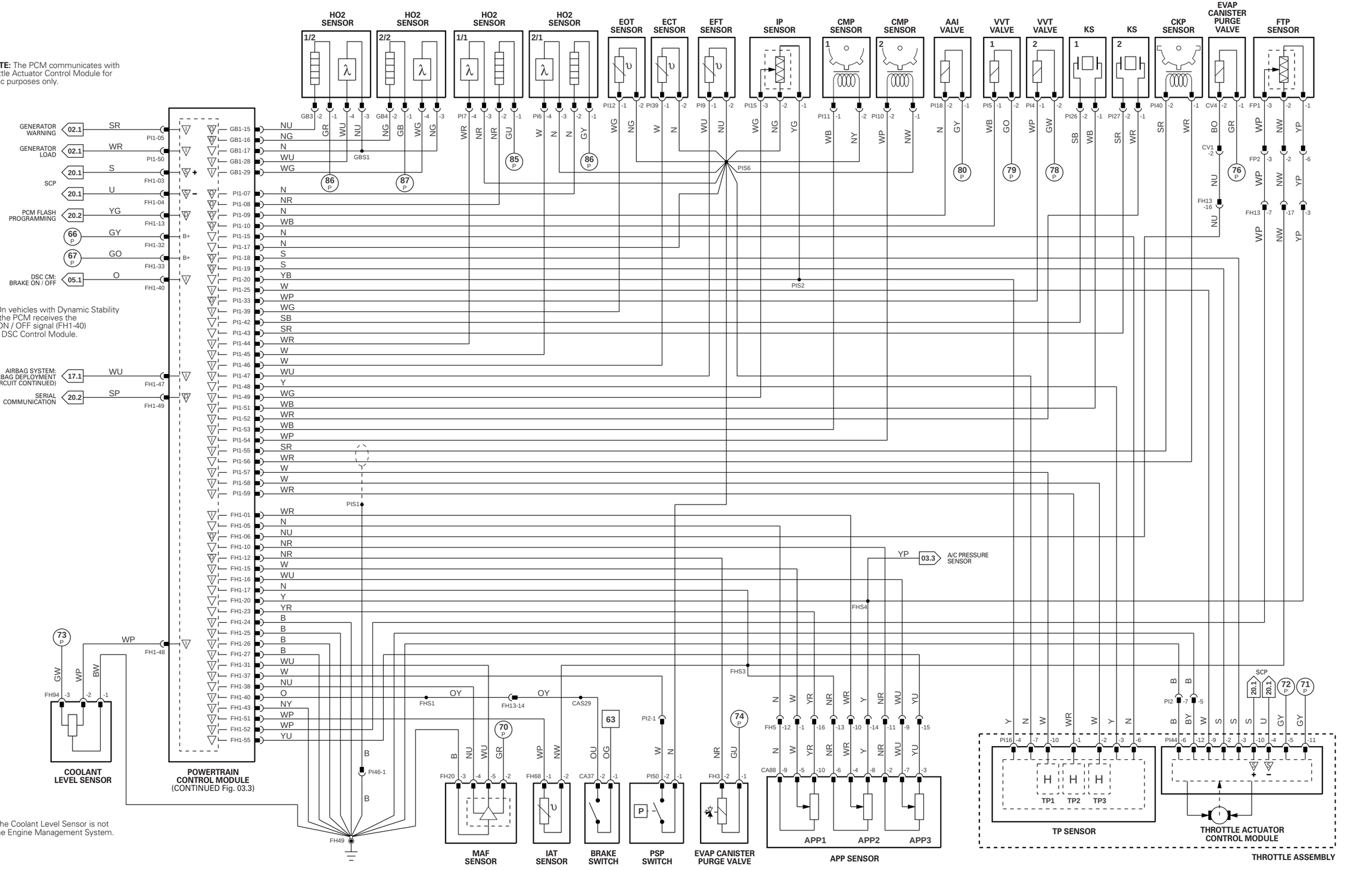
Ground	Ground Description	Location
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

V8 NAS Engine Management: Part 1

Fig. 03.1



SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

NOTE: On vehicles with Dynamic Stability Control, the PCM receives the BRAKE ON / OFF signal (FH1-40) from the DSC Control Module.

NOTE: The Coolant Level Sensor is not part of the Engine Management System.

1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: V8 NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Powertrain Control Module (V8)

▽	Pin	Description	Active	Inactive
I	FH1-1	APP2 FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
REF	FH1-5	APP1 REFERENCE GROUND	GROUND	GROUND
REF	FH1-10	APP3 REFERENCE GROUND	GROUND	GROUND
O	FH1-12	EVAP CANISTER PURGE VALVE ACTIVATE	GROUND (PWM)	B+
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I	FH1-15	APP1 FEEDBACK	4.02V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	FH1-16	APP3 FEEDBACK	0.9V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
REF	FH1-23	APP1 REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-31	MAF SENSOR FEEDBACK	0V = IGNITION ON; ENGINE OFF	1V = IDLE
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-37	PSP SWITCH INPUT	GROUND	B+
REF	FH1-38	MAF SENSOR REFERENCE GROUND	GROUND	GROUND
I	FH1-40	BRAKE ON / OFF SIGNAL	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-47	AIRBAG DEPLOYMENT SIGNAL	ENCODED COMMUNICATIONS	
I	FH1-48	COOLANT LEVEL SENSOR	GROUND	B+
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
I	FH1-51	IAT SENSOR FEEDBACK	0.61V @ 90° C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	FH1-55	APP3 SENSOR REFERENCE VOLTAGE	5V	5V
O	GB1-15	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
O	GB1-16	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-28	HO2 SENSOR, BANK 1 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	GB1-29	HO2 SENSOR, BANK 2 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
O	PI1-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-9	AIR ASSIST INJECTION CONTROL	GROUND(PWM)	B+
O	PI1-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF	PI1-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
REF	PI1-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O	PI1-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	PI1-25	ACTUAL THROTTLE ANGLE	0 – 20 mA	
O	PI1-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
I	PI1-39	EOT SENSOR FEEDBACK	O.61V @ 90°C INCR. w/ TEMP.	
REF	PI1-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF	PI1-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I	PI1-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-46	ECT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	PI1-47	EFT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	PI1-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I	PI1-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I	PI1-50	GENERATOR LOAD SIGNAL	0V (PWM)	61% @ IDLE, INCREASING WITH LOAD
I	PI1-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I	PI1-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I	PI1-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF	PI1-56	CKP SENSOR GROUND	GROUND	GROUND
I	PI1-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	PI1-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I	PI1-59	TP2 SENSOR FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AAI VALVE: AIR ASSIST INJECTION VALVE	PI18	2-WAY / BLACK	ABOVE INTAKE MANIFOLD
APP SENSOR: ACCELERATOR PEDAL POSITION SENSOR	CA88	10-WAY / BLACK	ABOVE ACCELERATOR PEDAL
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
CKP SENSOR: CRANKSHAFT POSITION SENSOR – V8	PI40	2-WAY / BLACK	ENGINE, FORWARD OF THE BELL HOUSING
CMP SENSOR: CAMSHAFT POSITION SENSOR 1 – V8	PI11	2-WAY / BLACK	ENGINE RH CAMSHAFT COVER
CMP SENSOR: CAMSHAFT POSITION SENSOR 2 – V8	PI10	2-WAY / BLACK	ENGINE LH CAMSHAFT COVER
COOLANT LEVEL SENSOR	FH94	3-WAY / BLACK	ON COOLANT RESERVOIR
ECT SENSOR: ENGINE COOLANT TEMPERATURE SENSOR	PI39	2-WAY / GREY	COOLANT OUTLET ELBOW
EFT SENSOR: ENGINE FUEL TEMPERATURE SENSOR – V8	PI9	2-WAY / GREY	ADJACENT TO THROTTLE HOUSING
EOT SENSOR: ENGINE OIL TEMPERATURE SENSOR	PI12	2-WAY / GREY	ADJACENT TO THE OIL FILTER
EVAP CANISTER PURGE VALVE	FH3	2-WAY / BLACK	ADJACENT TO LH FRONT SUSPENSION TURRET
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 1	PI7	4-WAY / GREEN	EXHAUST, RH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 2	GB3	4-WAY / BLUE	EXHAUST, RH, DOWNSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 1	PI6	4-WAY / GREEN	EXHAUST, LH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 2	GB4	4-WAY / BLUE	EXHAUST, LH, DOWNSTREAM
IAT SENSOR: INTAKE AIR TEMPERATURE SENSOR	FH68	2-WAY / BLACK	ENGINE AIR INTAKE DUCT
IP SENSOR: INJECTION PRESSURE SENSOR	PI15	3-WAY / BLACK	FUEL RAIL
KS: KNOCK SENSOR 1 – V8	PI26	2-WAY / BLACK	ADJACENT TO INTAKE MANIFOLD
KS: KNOCK SENSOR 2 – V8	PI27	2-WAY / BLACK	FORWARD OF STARTER MOTOR
MAF SENSOR: MASS AIR FLOW SENSOR	FH20	6-WAY / BLACK	ENGINE AIR INTAKE DUCT
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
PSP SWITCH: POWER STEERING PRESSURE SWITCH	PI50	2-WAY / BLACK	HIGH PRESSURE PIPE, ADJACENT TO PUMP
THROTTLE ACTUATOR CONTROL MODULE	PI44	10-WAY / BLACK	ON THROTTLE BODY
TP SENSOR: THROTTLE POSITION SENSOR	PI16	10-WAY / BLACK	ON THROTTLE BODY
VVT VALVE: VARIABLE VALVE TIMING VALVE 1	PI5	2-WAY / BLACK	ON RH CYLINDER HEAD
VVT VALVE: VARIABLE VALVE TIMING VALVE 2	PI4	2-WAY / BLACK	ON LH CYLINDER HEAD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FH97	14-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

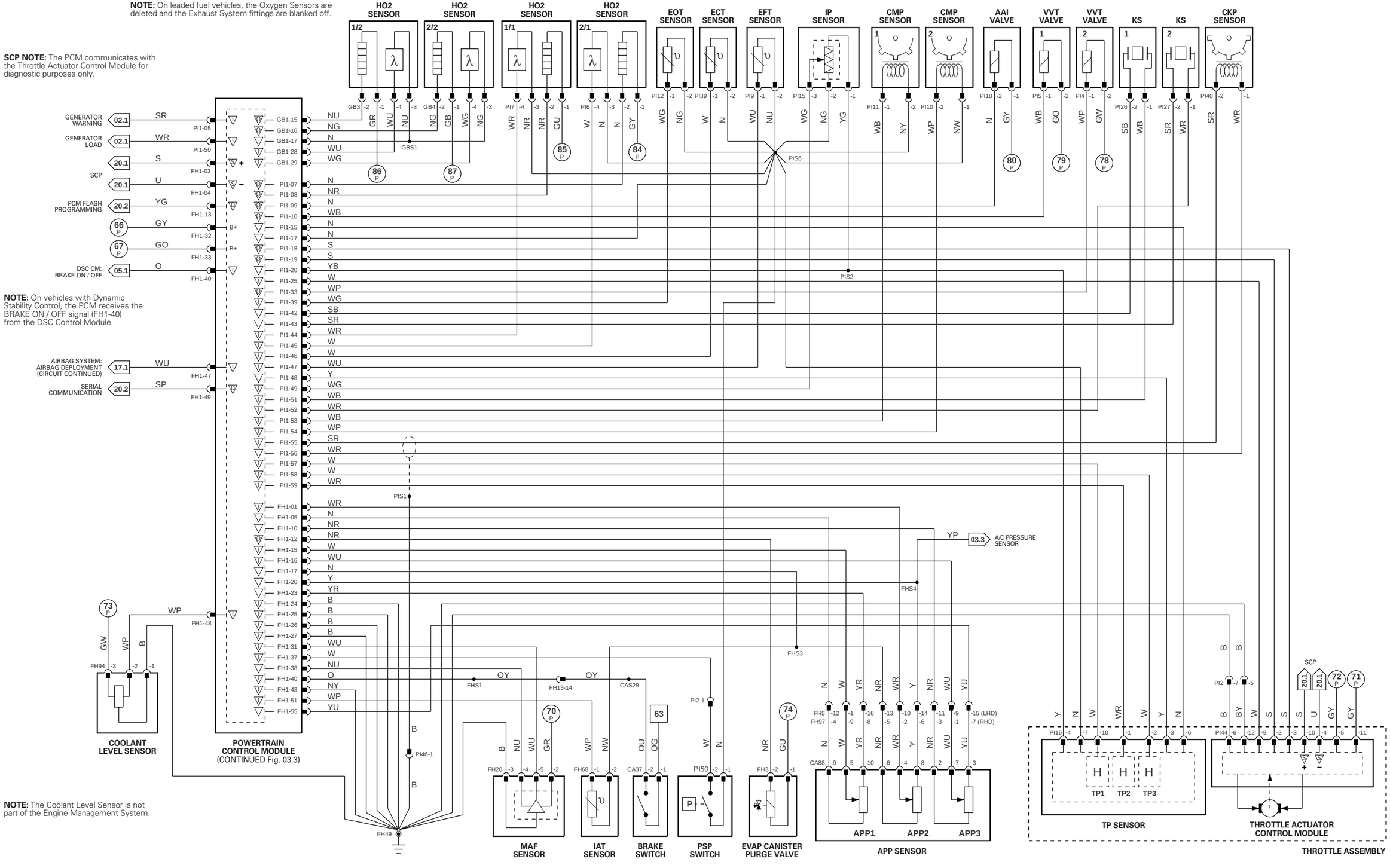
V8 ROW Engine Management: Part 1

NOTE: On leaded fuel vehicles, the Oxygen Sensors are deleted and the Exhaust System fittings are blanked off.

SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

NOTE: On vehicles with Dynamic Stability Control, the PCM receives the BRAKE ON / OFF signal (FH1-40) from the DSC Control Module

NOTE: The Coolant Level Sensor is not part of the Engine Management System.



1 → 5 Fig. 01.1 6 → 65 Fig. 01.2 66 → 91 Fig. 01.3 1 → 42 Fig. 01.4 43 S → 65 S Fig. 01.5 66 P → 88 P Fig. 01.6

I Input O Output Signal Ground (SG) S SCP Network A ACP Network D Serial and Encoded Data

VARIANT: V8 ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Air Conditioning Control Module

▽	Pin	Description	Active	Inactive
S	FC28-1	SCP -	2 – 1600 Hz	
O	FC28-4	ENGINE COOLING FAN REQUEST	GROUND = ON	B+ = OFF
S	FC28-12	SCP +	2 – 1600 Hz	

Powertrain Control Module (V8)

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
O	FH1-9	A/C COMPRESSOR CLUTCH RELAY ACTIVATE	GROUND	B+
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-28	BRAKE CANCEL SWITCH INPUT	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FH1-36	COOLING FAN ACTIVATE REQUEST	GROUND	B+
I	FH1-42	A/C PRESSURE SENSOR FEEDBACK	0 – 5V; DECREASING VOLTAGE WITH PRESSURE INCREASE	
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
REF	FH1-56	CRUISE CONTROL SWITCH PACK REFERENCE GROUND	GROUND	GROUND
I	FH1-57	CRUISE CONTROL SWITCH PACK MODE REQUEST	0V = ON, 1.4V = CANCEL, 2.4V = DECREASE, 3.2V = INCREASE, 3.8V = RESUME, 4.5V = ON	
O	FH1-58	FUEL PUMP CONTROL SIGNAL	4.5V (PWM @ 69%) = IDLE; 8.6V (PWM @ 25%) = IGNITION ON; ENGINE OFF	
O	PI1-1	IGNITION COIL 1/2 ACTIVATE	GROUND	B+
O	PI1-2	INJECTOR 1/1 ACTIVATE	GROUND (PULSED)	B+
O	PI1-11	INJECTOR 2/2 ACTIVATE	GROUND (PULSED)	B+
O	PI1-12	IGNITION COIL 2/1 ACTIVATE	GROUND	B+
O	PI1-13	IGNITION COIL 1/3 ACTIVATE	GROUND	B+
O	PI1-14	INJECTOR 1/2 ACTIVATE	GROUND (PULSED)	B+
O	PI1-21	INJECTOR 2/3 ACTIVATE	GROUND (PULSED)	B+
O	PI1-22	IGNITION COIL 2/2 ACTIVATE	GROUND	B+
O	PI1-23	IGNITION COIL 1/2 ACTIVATE	GROUND	B+
O	PI1-24	INJECTOR 1/3 ACTIVATE	GROUND (PULSED)	B+
O	PI1-29	INJECTOR 2/3 ACTIVATE	GROUND (PULSED)	B+
O	PI1-30	IGNITION COIL 2/3 ACTIVATE	GROUND	B+
O	PI1-31	IGNITION COIL 1/1 ACTIVATE	GROUND	B+
O	PI1-32	INJECTOR 1/4 ACTIVATE	GROUND (PULSED)	B+
O	PI1-37	INJECTOR 2/4 ACTIVATE	GROUND (PULSED)	B+
O	PI1-38	IGNITION COIL 2/4 ACTIVATE	GROUND	B+

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-1	FUEL PUMP POWER SUPPLY	B+	GROUND
I	CA101-2	FUEL PUMP POWER GROUND	GROUND	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
O	CA101-11	FUEL PUMP POWER SUPPLY	B+	GROUND
O	CA101-12	FUEL PUMP ACTIVATE	GROUND (PWM)	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-19	PCM TO RECM FUEL PUMP CONTROL DRIVE SIGNAL	4.5V (PWM @ 69%) = IDLE	8.6V (PWM @ 25%) = KEY ON / E OFF

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	PI41	2-WAY / BLACK	ADJACENT TO AIR CONDITIONING COMPRESSOR
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
AIR CONDITIONING PRESSURE SENSOR	FH6	4-WAY / BLACK	ADJACENT TO RADIATOR
BRAKE CANCEL SWITCH	CA36	2-WAY / GREY	TOP OF BRAKE PEDAL
COOLING FAN	CF6	2-WAY / BLACK	REARWARD OF RADIATOR
COOLING FAN MODULE	CF5	7-WAY / BLACK	REARWARD OF RADIATOR
FUEL INJECTOR 1 / 1	PI19	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 1 / 2	PI20	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 1 / 3	PI21	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 1 / 4	PI22	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 1	PI23	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 2	PI24	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 3	PI25	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 4	PI30	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL PUMP	FP4	4-WAY / BLACK	BELOW REAR SEAT CUSHION
IGNITION COIL 1 / 1 – V8	PI28	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 1 / 2 – V8	PI29	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 1 / 3 – V8	PI31	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 1 / 4 – V8	PI32	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 1 – V8	PI33	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 2 – V8	PI34	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 3 – V8	PI35	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 4 – V8	PI36	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION SUPPRESSION CAPACITOR 1	PI38	1-WAY / GREY	RH CYLINDER HEAD, REAR
IGNITION SUPPRESSION CAPACITOR 2	PI37	1-WAY / GREY	LH CYLINDER HEAD, REAR
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL CRUISE CONTROL SWITCHES	SQ2	10-WAY / WHITE	STEERING WHEEL

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

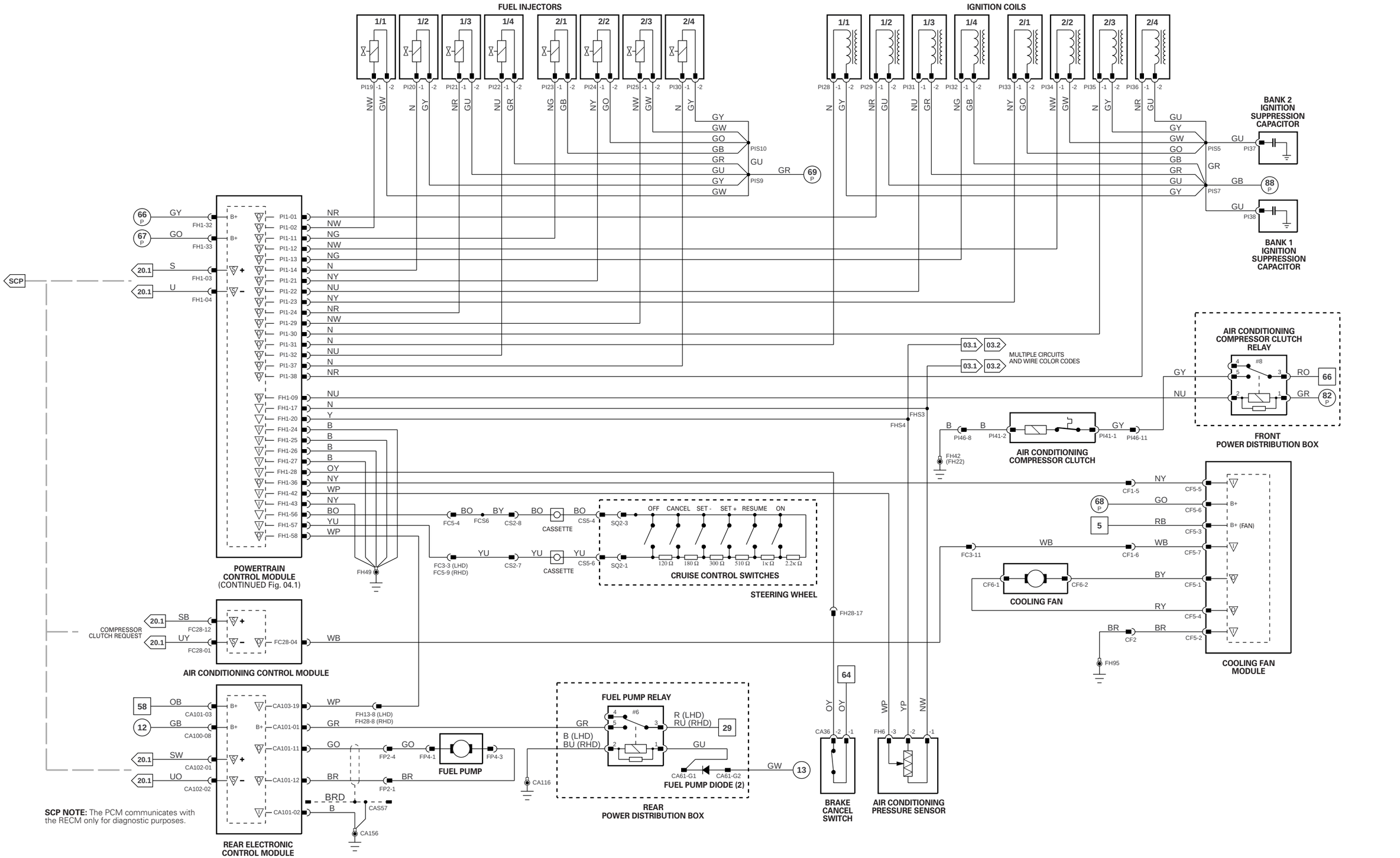
Connector	Connector Description	Location
CF1	6-WAY / GREY / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
CF2	1-WAY / BLACK / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FP2	8-WAY / GREY / CABIN HARNESS TO FUEL TANK LINK LEAD	REARWARD OF FUEL TANK
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT
FH95	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: V8 Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Powertrain Control Module (V6)

▽	Pin	Description	Active	Inactive
I	FH1-1	APP2 FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
REF	FH1-5	APP1 REFERENCE GROUND	GROUND	GROUND
O	FH1-6	EVAP CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
REF	FH1-10	APP3 REFERENCE GROUND	GROUND	GROUND
O	FH1-12	EVAP CANISTER PURGE VALVE ACTIVATE	GROUND (PWM)	B+
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I	FH1-15	APP1 FEEDBACK	4.02V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	FH1-16	APP3 FEEDBACK	0.9V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
REF	FH1-23	APP1 REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-31	MAF SENSOR FEEDBACK	0V = IGNITION ON / ENGINE OFF	1V = IDLE
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-37	PSP SWITCH INPUT	GROUND	B+
REF	FH1-38	MAF SENSOR REFERENCE GROUND	GROUND	GROUND
I	FH1-40	BRAKE ON / OFF SIGNAL	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-47	AIRBAG DEPLOYMENT SIGNAL	ENCODED COMMUNICATIONS	
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
I	FH1-51	IAT SENSOR FEEDBACK	0.61V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	FH1-52	FTP SENSOR FEEDBACK	4.9V = LOW PRESSURE	0.2V = HIGH PRESSURE
REF	FH1-55	APP3 SENSOR REFERENCE VOLTAGE	5V	5V
O	GB1-15	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
O	GB1-16	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-28	HO2 SENSOR, BANK 1 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	GB1-29	HO2 SENSOR, BANK 2 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
O	PI1-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF	PI1-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
O	PI1-16	EGR VACUUM REGULATOR ACTIVATE	GROUND(PWM)	B+
REF	PI1-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O	PI1-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	PI1-25	ACTUAL THROTTLE ANGLE	0 – 20 mA	
O	PI1-29	IMT BOTTOM VALVE ACTIVATE	GROUND	B+
O	PI1-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
O	PI1-37	IMT TOP VALVE ACTIVATE	GROUND	B+
I	PI1-39	EOT SENSOR FEEDBACK	O.61V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	PI1-40	CHT SENSOR FEEDBACK	O.60V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	PI1-41	DPFE SENSOR FEEDBACK	1V @ IDLE; 3.5V @ FULL LOAD	
REF	PI1-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF	PI1-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I	PI1-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-47	EFT SENSOR FEEDBACK	0.61V @ 90°; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	PI1-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I	PI1-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I	PI1-50	GENERATOR LOAD SIGNAL	0V(PWM)	61% @ IDLE, INCREASING WITH LOAD
I	PI1-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I	PI1-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I	PI1-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF	PI1-56	CKP SENSOR GROUND	GROUND	GROUND
I	PI1-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	PI1-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I	PI1-59	TP2 SENSOR FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
APP SENSOR: ACCELERATOR PEDAL POSITION SENSOR	CA88	10-WAY / BLACK	ABOVE ACCELERATOR PEDAL
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
CHT SENSOR: CYLINDER HEAD TEMPERATURE SENSOR	PI13	2-WAY / WHITE	CYLINDER HEAD, LH COVER PLATE
CKP SENSOR: CRANKSHAFT POSITION SENSOR – V6	PI40	2-WAY / BLACK	ENGINE, FORWARD OF GENERATOR
CMP SENSOR: CAMSHAFT POSITION SENSOR 1 – V6	PI11	2-WAY / BLACK	ENGINE RH CAMSHAFT COVER
CMP SENSOR: CAMSHAFT POSITION SENSOR 2 – V6	PI10	2-WAY / BLACK	ENGINE LH CAMSHAFT COVER
DPFE SENSOR: DIFFERENTIAL PRESSURE FEEDBACK EGR SENSOR	PI14	3-WAY / GREY	REAR OF INTAKE MANIFOLD
EFT SENSOR: ENGINE FUEL TEMPERATURE SENSOR – V6	IL9	2-WAY / BLACK	ADJACENT TO AIR INTAKE PIPE
EGR VACUUM REGULATOR	PI3	2-WAY / BLACK	INTAKE MANIFOLD, LH SIDE
EOT SENSOR: ENGINE OIL TEMPERATURE SENSOR	PI12	2-WAY / GREY	ADJACENT TO THE OIL FILTER
EVAP CANISTER CLOSE VALVE	CV4	2-WAY / BLACK	ABOVE REAR AXLE ASSEMBLY
EVAP CANISTER PURGE VALVE	FH3	2-WAY / BLACK	ADJACENT TO LH FRONT SUSPENSION TURRET
FTP SENSOR: FUEL TANK PRESSURE SENSOR	FP1	3-WAY / BLACK	BELOW THE LEFT FUEL PUMP COVER
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 1	PI7	4-WAY / GREEN	EXHAUST, RH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 2	GB3	4-WAY / BLUE	EXHAUST, RH, DOWNSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 1	PI6	4-WAY / GREEN	EXHAUST, LH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 2	GB4	4-WAY / BLUE	EXHAUST, LH, DOWNSTREAM
IAT SENSOR: INTAKE AIR TEMPERATURE SENSOR	FH68	2-WAY / BLACK	ENGINE AIR INTAKE DUCT
IMT VALVE: INTAKE MANIFOLD TUNING VALVE – BOTTOM	PI47	2-WAY / BLACK	ON INTAKE MANIFOLD
IMT VALVE: INTAKE MANIFOLD TUNING VALVE – TOP	PI48	2-WAY / BLACK	ON INTAKE MANIFOLD
IP SENSOR: INJECTION PRESSURE SENSOR	IL2	3-WAY / BLACK	FUEL RAIL
KS: KNOCK SENSOR 1 – V6	PI26	2-WAY / BLACK	FORWARD OF INTAKE MANIFOLD
KS: KNOCK SENSOR 2 – V6	PI27	2-WAY / BLACK	FORWARD OF INTAKE MANIFOLD
MAF SENSOR: MASS AIR FLOW SENSOR	FH20	6-WAY / BLACK	ENGINE AIR INTAKE DUCT
POWERTRAIN CONTROL MODULE	FH1 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE
PSP SWITCH: POWER STEERING PRESSURE SWITCH	PI50	2-WAY / BLACK	HIGH PRESSURE PIPE, ADJACENT TO PUMP
THROTTLE ACTUATOR CONTROL MODULE	PI44	10-WAY / BLACK	ON THROTTLE BODY
TP SENSOR: THROTTLE POSITION SENSOR	PI16	10-WAY / BLACK	ON THROTTLE BODY
VVT VALVE: VARIABLE VALVE TIMING VALVE 1	PI5	2-WAY / BLACK	ON RH CYLINDER HEAD
VVT VALVE: VARIABLE VALVE TIMING VALVE 2	PI4	2-WAY / BLACK	ON LH CYLINDER HEAD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CV1	6-WAY / GREY / CABIN HARNESS TO CANISTER CLOSE VALVE HARNESS	ABOVE REAR AXLE ASSEMBLY
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FP2	8-WAY / GREY / CABIN HARNESS TO FUEL TANK LINK LEAD	REARWARD OF FUEL TANK
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTION LINK LEAD	CENTER REAR OF ENGINE
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

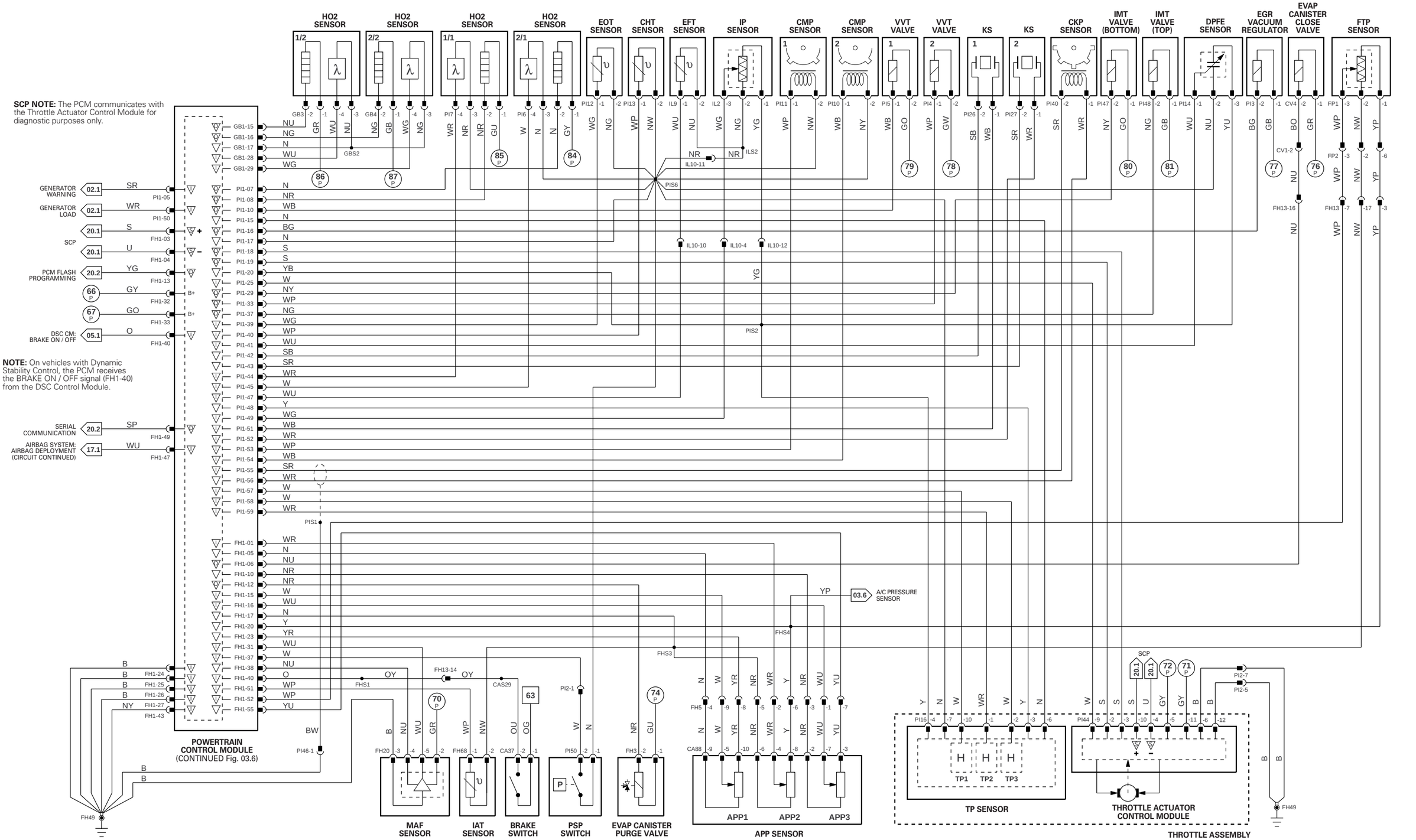
Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, fuses, grounds, control modules and control module pins.

DATE OF ISSUE: July 1999

V6 NAS Engine Management: Part 1

SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

NOTE: On vehicles with Dynamic Stability Control, the PCM receives the BRAKE ON / OFF signal (FH1-40) from the DSC Control Module.



1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input	Signal Ground (SG)	A ACP Network
O Output	S SCP Network	D Serial and Encoded Data

VARIANT: V6 NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Powertrain Control Module (V6)

▽	Pin	Description	Active	Inactive
I	FH1-1	APP2 FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
REF	FH1-5	APP1 REFERENCE GROUND	GROUND	GROUND
REF	FH1-10	APP3 REFERENCE GROUND	GROUND	GROUND
O	FH1-12	EVAP CANISTER PURGE VALVE ACTIVATE	GROUND (PWM)	B+
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I	FH1-15	APP1 FEEDBACK	4.02V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	FH1-16	APP3 FEEDBACK	0.9V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
REF	FH1-23	APP1 REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-31	MAF SENSOR FEEDBACK	0V = IGNITION ON / ENGINE OFF	1V = IDLE
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-37	PSP SWITCH INPUT	GROUND	B+
REF	FH1-38	MAF SENSOR REFERENCE GROUND	GROUND	GROUND
I	FH1-40	BRAKE ON / OFF SIGNAL	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-47	AIRBAG DEPLOYMENT SIGNAL	ENCODED COMMUNICATIONS	
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
I	FH1-51	IAT SENSOR FEEDBACK	0.61V @ 90∞C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	FH1-55	APP3 SENSOR REFERENCE VOLTAGE	5V	5V
O	GB1-15	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
O	GB1-16	HO2 SENSOR HEATER, BANK 1 DOWNSTREAM, CONTROL	GROUND (PWM)	
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-22	CLUTCH PEDAL SWITCH	GROUND	B+
I	GB1-28	HO2 SENSOR, BANK 1 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	GB1-29	HO2 SENSOR, BANK 2 DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
O	PI1-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND(PWM)	B+
O	PI1-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF	PI1-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
REF	PI1-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O	PI1-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O	PI1-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	PI1-25	ACTUAL THROTTLE ANGLE	0 – 20 mA	
O	PI1-29	IMT BOTTOM VALVE ACTIVATE	GROUND	B+
O	PI1-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
O	PI1-37	IMT TOP VALVE ACTIVATE	GROUND	B+
I	PI1-39	EOT SENSOR FEEDBACK	O.61V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	PI1-40	CHT SENSOR FEEDBACK	O.60V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	PI1-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF	PI1-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I	PI1-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	PI1-47	EFT SENSOR FEEDBACK	0.61V @ 90°; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	PI1-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I	PI1-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I	PI1-50	GENERATOR LOAD SIGNAL	0V(PWM)	61% @ IDLE, INCREASING WITH LOAD
I	PI1-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
I	PI1-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I	PI1-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I	PI1-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF	PI1-56	CKP SENSOR GROUND	GROUND	GROUND
I	PI1-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I	PI1-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I	PI1-59	TP2 SENSOR FEEDBACK	1.4V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
APP SENSOR: ACCELERATOR PEDAL POSITION SENSOR	CA88	10-WAY / BLACK	ABOVE ACCELERATOR PEDAL
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
CHT SENSOR: CYLINDER HEAD TEMPERATURE SENSOR	PI13	2-WAY / WHITE	CYLINDER HEAD, LH COVER PLATE
CKP SENSOR: CRANKSHAFT POSITION SENSOR – V6	PI40	2-WAY / BLACK	ENGINE, FORWARD OF GENERATOR
CMP SENSOR: CAMSHAFT POSITION SENSOR 1 – V6	PI11	2-WAY / BLACK	ENGINE RH CAMSHAFT COVER
CMP SENSOR: CAMSHAFT POSITION SENSOR 2 – V6	PI10	2-WAY / BLACK	ENGINE LH CAMSHAFT COVER
EFT SENSOR: ENGINE FUEL TEMPERATURE SENSOR – V6	IL9	2-WAY / BLACK	ADJACENT TO AIR INTAKE PIPE
EOT SENSOR: ENGINE OIL TEMPERATURE SENSOR	PI12	2-WAY / GREY	ADJACENT TO THE OIL FILTER
EVAP CANISTER PURGE VALVE	FH3	2-WAY / BLACK	ADJACENT TO LH FRONT SUSPENSION TURRET
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 1	PI7	4-WAY / GREEN	EXHAUST, RH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 1 / 2	GB3	4-WAY / BLUE	EXHAUST, RH, DOWNSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 1	PI6	4-WAY / GREEN	EXHAUST, LH, UPSTREAM
HO2 SENSOR: HEATED OXYGEN SENSOR 2 / 2	GB4	4-WAY / BLUE	EXHAUST, LH, DOWNSTREAM
IAT SENSOR: INTAKE AIR TEMPERATURE SENSOR	FH68	2-WAY / BLACK	ENGINE AIR INTAKE DUCT
IMT VALVE: INTAKE MANIFOLD TUNING VALVE – BOTTOM	PI47	2-WAY / BLACK	ON INTAKE MANIFOLD
IMT VALVE: INTAKE MANIFOLD TUNING VALVE – TOP	PI48	2-WAY / BLACK	ON INTAKE MANIFOLD
IP SENSOR: INJECTION PRESSURE SENSOR	IL2	3-WAY / BLACK	FUEL RAIL
KS: KNOCK SENSOR 1 – V6	PI26	2-WAY / BLACK	FORWARD OF INTAKE MANIFOLD
KS: KNOCK SENSOR 2 – V6	PI27	2-WAY / BLACK	FORWARD OF INTAKE MANIFOLD
MAF SENSOR: MASS AIR FLOW SENSOR	FH20	6-WAY / BLACK	ENGINE AIR INTAKE DUCT
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
PSP SWITCH: POWER STEERING PRESSURE SWITCH	PI50	2-WAY / BLACK	HIGH PRESSURE PIPE, ADJACENT TO PUMP
THROTTLE ACTUATOR CONTROL MODULE	PI44	10-WAY / BLACK	ON THROTTLE BODY
TP SENSOR: THROTTLE POSITION SENSOR	PI16	10-WAY / BLACK	ON THROTTLE BODY
VVT VALVE: VARIABLE VALVE TIMING VALVE 1	PI5	2-WAY / BLACK	ON RH CYLINDER HEAD
VVT VALVE: VARIABLE VALVE TIMING VALVE 2	PI4	2-WAY / BLACK	ON LH CYLINDER HEAD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTION LINK LEAD	CENTER REAR OF ENGINE
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: On leaded fuel vehicles, the Oxygen Sensors are deleted and the Exhaust System fittings are blanked off.

SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

NOTE: On vehicles with Dynamic Stability Control, the PCM receives the BRAKE ON / OFF signal (FH1-40) from the DSC Control Module.

HO2 SENSOR 1/2 · HO2 SENSOR 2/2 · HO2 SENSOR 1/1 · HO2 SENSOR 2/1 · EOT SENSOR · CHT SENSOR · EFT SENSOR · IP SENSOR · CMP SENSOR 1 · CMP SENSOR 2 · VVT VALVE 1 · VVT VALVE 2 · KS 1 · KS 2 · CKP SENSOR · IMT VALVE (BOTTOM) · IMT VALVE (TOP)

CLUTCH PEDAL SWITCH 02.1 W GB1-22
GENERATOR WARNING 02.1 SR PI1-05
GENERATOR LOAD 02.1 WR PI1-50
SCP 20.1 S FH1-03 (+)
SCP 20.1 U FH1-04 (−)
PCM FLASH PROGRAMMING 20.2 YG FH1-13
66 P GY FH1-32 (B+)
67 P GO FH1-33 (B+)
DSC CM: BRAKE ON / OFF 05.1 O FH1-40
SERIAL COMMUNICATION 20.2 SP FH1-49
AIRBAG SYSTEM: AIRBAG DEPLOYMENT (CIRCUIT CONTINUED) 17.1 WU FH1-47

POWERTRAIN CONTROL MODULE (CONTINUED Fig. 3.6)

GBS1 · PIS1 · PIS2 · PIS6 · FHS1 · FHS3 · FHS4 · IL10-10 · IL10-4 · IL10-12 · IL10-11 · ILS2 · FH13-14 · CAS29 · PI46-1 · FH49

03.6 A/C PRESSURE SENSOR
02.1 · 04.2 CLUTCH PEDAL SWITCH

MAF SENSOR · IAT SENSOR · BRAKE SWITCH · PSP SWITCH · EVAP CANISTER PURGE VALVE · APP SENSOR (APP1 APP2 APP3)

SCP 20.1 20.1 72 P 71 P
TP SENSOR (TP1 TP2 TP3) · THROTTLE ACTUATOR CONTROL MODULE · THROTTLE ASSEMBLY

1 → 5 Fig. 01.1 · 6 → 65 Fig. 01.2 · 66 → 91 Fig. 01.3 · 1 → 42 Fig. 01.4 · 43 S → 65 S Fig. 01.5 · 66 P → 88 P Fig. 01.6

I Input · O Output · Signal Ground (SG) · S SCP Network · A ACP Network · D Serial and Encoded Data

VARIANT: V6 ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Air Conditioning Control Module

▽	Pin	Description	Active	Inactive
S	FC28-1	SCP -	2 – 1600 Hz	
O	FC28-4	ENGINE COOLING FAN REQUEST	GROUND = ON	B+ = OFF
S	FC28-12	SCP +	2 – 1600 Hz	

Powertrain Control Module (V6)

▽	Pin	Description	Active	Inactive
S	FH1-4	SCP -	2 – 1600 Hz	
O	FH1-9	A/C COMPRESSOR CLUTCH RELAY ACTIVATE	GROUND	B+
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
REF	FH1-20	APP2, FTP, A/C PRESSURE SENSORS COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-28	BRAKE CANCEL SWITCH INPUT	GROUND = BRAKE OFF	B+ = BRAKE ON
I	FH1-32	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH1-33	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FH1-36	COOLING FAN ACTIVATE REQUEST	GROUND	B+
I	FH1-42	A/C PRESSURE SENSOR FEEDBACK	0 – 5 V DECREASING WITH PRESSURE	
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
REF	FH1-56	CRUISE CONTROL SWITCH PACK REFERENCE GROUND	GROUND	GROUND
I	FH1-57	CRUISE CONTROL SWITCH PACK MODE REQUEST	0V = ON, 1.4V = CANCEL, 2.4V = DECREASE, 3.2V = INCREASE, 3.8V = RESUME, 4.5V = ON	
O	FH1-58	FUEL PUMP CONTROL SIGNAL	4.5V (PWM @ 69%) = IDLE; 8.6V (PWM @ 25%) = IGNITION ON; ENGINE OFF	
O	PI1-2	INJECTOR 1/1 ACTIVATE	GROUND (PULSED)	B+
O	PI1-11	INJECTOR 2/2 ACTIVATE	GROUND (PULSED)	B+
O	PI1-12	IGNITION COIL 2/1 ACTIVATE	GROUND	B+
O	PI1-13	IGNITION COIL 1/3 ACTIVATE	GROUND	B+
O	PI1-14	INJECTOR 1/2 ACTIVATE	GROUND (PULSED)	B+
O	PI1-21	INJECTOR 2/3 ACTIVATE	GROUND(PULSED)	B+
O	PI1-22	IGNITION COIL 2/2 ACTIVATE	GROUND	B+
O	PI1-23	IGNITION COIL 1/2 ACTIVATE	GROUND	B+
O	PI1-24	INJECTOR 1/3 ACTIVATE	GROUND(PULSED)	B+
O	PI1-30	IGNITION COIL 2/3 ACTIVATE	GROUND	B+
O	PI1-31	IGNITION COIL 1/1 ACTIVATE	GROUND	B+
O	PI1-32	INJECTOR 2/1 ACTIVATE	GROUND(PULSED)	B+

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-1	FUEL PUMP POWER SUPPLY	B+	GROUND
I	CA101-2	FUEL PUMP POWER GROUND	GROUND	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
O	CA101-11	FUEL PUMP POWER SUPPLY	B+	GROUND
O	CA101-12	FUEL PUMP ACTIVATE	GROUND (PWM)	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-19	PCM TO RECM FUEL PUMP CONTROL DRIVE SIGNAL	4.5V (PWM @ 69%) = IDLE	8.6V (PWM @ 25%) = KEY ON / E OFF

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 03.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING COMPRESSOR CLUTCH	PI41	2-WAY / BLACK	ADJACENT TO AIR CONDITIONING COMPRESSOR
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
AIR CONDITIONING PRESSURE SENSOR	FH6	4-WAY / BLACK	ADJACENT TO RADIATOR
BRAKE CANCEL SWITCH	CA36	2-WAY / GREY	TOP OF BRAKE PEDAL
COOLING FAN	CF6	2-WAY / BLACK	REARWARD OF RADIATOR
COOLING FAN MODULE	CF5	7-WAY / BLACK	REARWARD OF RADIATOR
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
FUEL INJECTOR 1 / 1	IL3	1-WAY / GREY	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 1 / 2	IL4	1-WAY / GREY	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 1 / 3	IL5	1-WAY / GREY	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 1	IL6	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 2	IL7	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL INJECTOR 2 / 3	IL8	2-WAY / BLACK	INTAKE MANIFOLD, FUEL RAIL
FUEL PUMP	FP4	4-WAY / BLACK	BELOW REAR SEAT CUSHION
IGNITION COIL 1 / 1 – V6	PI28	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 1 / 2 – V6	PI29	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 1 / 3 – V6	PI31	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 1 – V6	PI32	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 2 – V6	PI33	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION COIL 2 / 3 – V6	PI34	2-WAY / BLACK	ON CYLINDER HEAD
IGNITION SUPPRESSION CAPACITOR 1	PI38	1-WAY / GREY	RH CYLINDER HEAD, REAR
IGNITION SUPPRESSION CAPACITOR 2	PI37	1-WAY / GREY	LH CYLINDER HEAD, REAR
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL CRUISE CONTROL SWITCHES	SQ2	10-WAY / WHITE	STEERING WHEEL

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

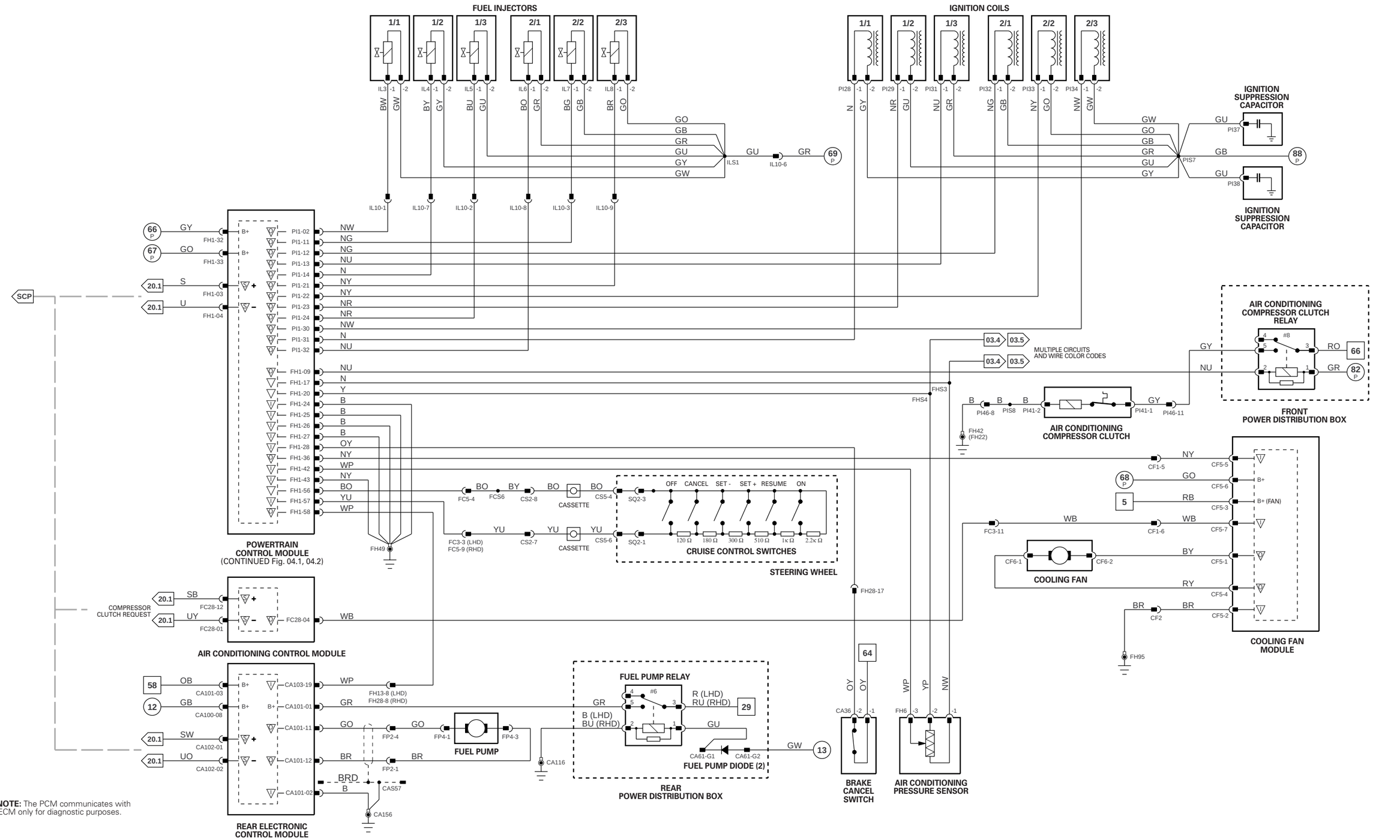
Connector	Connector Description	Location
CF1	6-WAY / GREY / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
CF2	1-WAY / BLACK / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FP2	8-WAY / GREY / CABIN HARNESS TO FUEL TANK LINK LEAD	REARWARD OF FUEL TANK
IL10	12-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTION LINK LEAD	CENTER REAR OF ENGINE
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT
FH95	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: V6 Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-10	TRANSMISSION MODE SELECT SWITCH	GROUND	B+
O	CA31-16	TRANSMISSION MODE SELECT SWITCH	9V = SPORT	GROUND = NORMAL
S	FH59-1	SCP -	2 – 1600 Hz	
S	FH59-7	SCP +	2 – 1600 Hz	

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
I	FH1-7	GEAR SELECTOR STATE	GROUND = P,R,N,4	B+ = D,3,2
I	FH1-8	GEAR SELECTOR STATE	GROUND = P,R,D,3	B+ = N,4,2
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I	FH1-21	GEAR SELECTOR STATE	GROUND = P,N,D,2	B+ = R,4,3
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-41	D – 4 J-GATE SWITCH	GROUND = D	4 = B+
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-44	BATTERY POWER SUPPLY	B+	B+
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
O	GB1-1	SHIFT SOLENOID VALVE 1 CONTROL	GROUND	B+
O	GB1-2	SHIFT SOLENOID VALVE 2 CONTROL	GROUND	B+
O	GB1-3	SHIFT SOLENOID VALVE 3 CONTROL	GROUND	B+
O	GB1-4	SHIFT SOLENOID VALVE 4 CONTROL	GROUND	B+
O	GB1-5	TCC SOLENOID VALVE CONTROL DRIVE	GROUND (PWM)	B+
O	GB1-7	PRESSURE REGULATOR 1 CONTROL DRIVE	GROUND (PWM); GROUND = MAXIMUM PRESSURE; B+ = NO PRESSURE	
I	GB1-9	TRANSMISSION RANGE 3A	GROUND	B+
I	GB1-10	TRANSMISSION RANGE 4	GROUND	B+
O	GB1-12	PRESSURE REGULATOR 2 CONTROL DRIVE	GROUND (PWM); GROUND = MAXIMUM PRESSURE; B+ = NO PRESSURE	
O	GB1-13	PRESSURE REGULATOR 3 CONTROL DRIVE	GROUND (PWM); GROUND = MAXIMUM PRESSURE; B+ = NO PRESSURE	
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-18	TRANSMISSION RANGE 2	GROUND	B+
I	GB1-21	INTERMEDIATE SPEED SENSOR SIGNAL	107 Hz @ 1000 rpm – P SELECTED	
I	GB1-22	TRANSMISSION RANGE 1	GROUND	B+
I	GB1-23	FLUID TEMPERATURE SENSOR FEEDBACK	1.2V @ 90° C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	GB1-26	OUTPUT SPEED SENSOR SIGNAL	140 Hz @ 10 mph (16 km/h); 280 Hz @ 20 mph (32 km/h)	
I	GB1-27	TURBINE SPEED SENSOR SIGNAL	540 Hz @ 10 mph (16 km/h); 1080 Hz @ 20 mph (32 km/h)	
I	GB1-30	PRESSURE SWITCH INPUT	GROUND	B+

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
INTERMEDIATE SPEED SENSOR	GB10	2-WAY / GREEN	TRANSMISSION, LH SIDE
J-GATE ASSEMBLY	CA41	16-WAY / GREEN	CENTER CONSOLE
OUTPUT SPEED SENSOR	GB9	2-WAY / BLACK	TRANSMISSION, LH SIDE
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
TRANSMISSION	GB5	16-WAY / GREY	VEHICLE, REARWARD OF ENGINE
TRANSMISSION MODE SWITCH	CA38	10-WAY / GREEN	CENTER CONSOLE
TRANSMISSION RANGE SENSOR	GB6	12-WAY / BLACK	TRANSMISSION SELECTOR SHAFT
TURBINE SPEED SENSOR	GB11	2-WAY / BLACK	TRANSMISSION, LH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

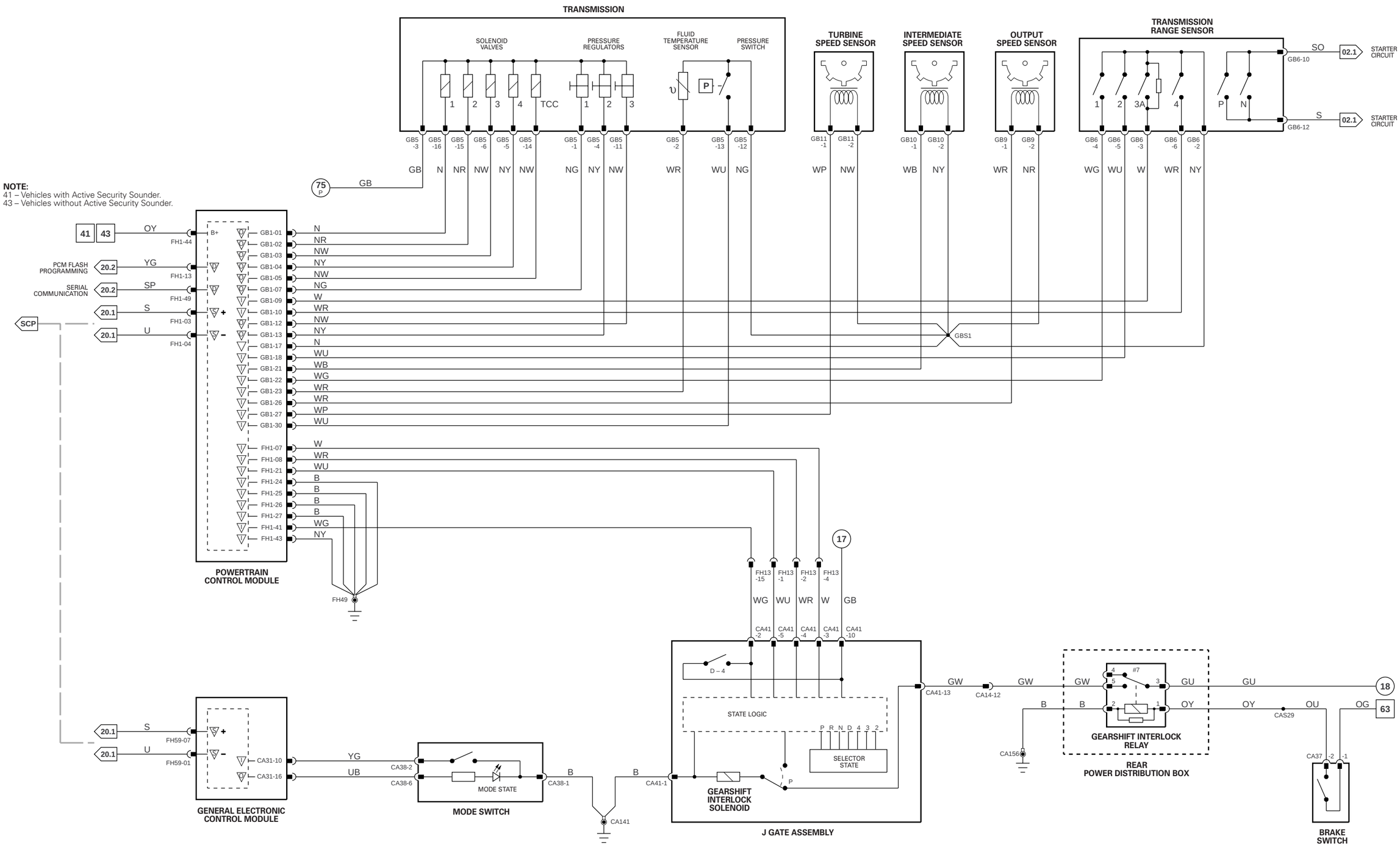
Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX

GROUNDS

Ground	Ground Description	Location
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Automatic Transmission Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-10	TRANSMISSION MODE SELECT SWITCH	GROUND	B+
O	CA31-16	TRANSMISSION MODE SELECT SWITCH	9V = SPORT	GROUND = NORMAL

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
I	FH1-7	GEAR SELECTOR STATE	GROUND = P,R,N,4	B+ = D,3,2
I	FH1-8	GEAR SELECTOR STATE	GROUND = P,R,D,3	B+ = N,4,2
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
REF	FH1-17	IAT, FTP, APP2 SENSORS COMMON REFERENCE GROUND	GROUND	GROUND
I	FH1-21	GEAR SELECTOR STATE	GROUND = P,N,D,2	B+ = R,4,3
I	FH1-24	GROUND SUPPLY	GROUND	GROUND
I	FH1-25	GROUND SUPPLY	GROUND	GROUND
I	FH1-26	GROUND SUPPLY	GROUND	GROUND
I	FH1-27	GROUND SUPPLY	GROUND	GROUND
I	FH1-41	D – 4 J-GATE SWITCH	GROUND = D	4 = B+
I	FH1-43	GROUND SUPPLY	GROUND	GROUND
I	FH1-44	BATTERY POWER SUPPLY	B+	B+
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
I	GB1-10	TRANSMISSION RANGE 4	GROUND	B+
REF	GB1-17	SENSOR SIGNAL GROUND	GROUND	GROUND
I	GB1-22	CLUTCH PEDAL SWITCH	GROUND	B+
I	GB1-26	OUTPUT SPEED SENSOR SIGNAL	140 Hz @ 10 mph (16 km/h); 280 Hz @ 20 mph (32 km/h)	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
CLUTCH PEDAL SWITCH	CA33	2-WAY / BLACK	ABOVE CLUTCH PEDAL
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
J-GATE ASSEMBLY	CA41	16-WAY / GREEN	CENTER CONSOLE
OUTPUT SPEED SENSOR	GB9	2-WAY / BLACK	TRANSMISSION, LH SIDE
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
REVERSE SWITCH	GB14	2-WAY / BLACK	TRANSMISSION, LH SIDE
TRANSMISSION MODE SWITCH	CA38	10-WAY / GREEN	CENTER CONSOLE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

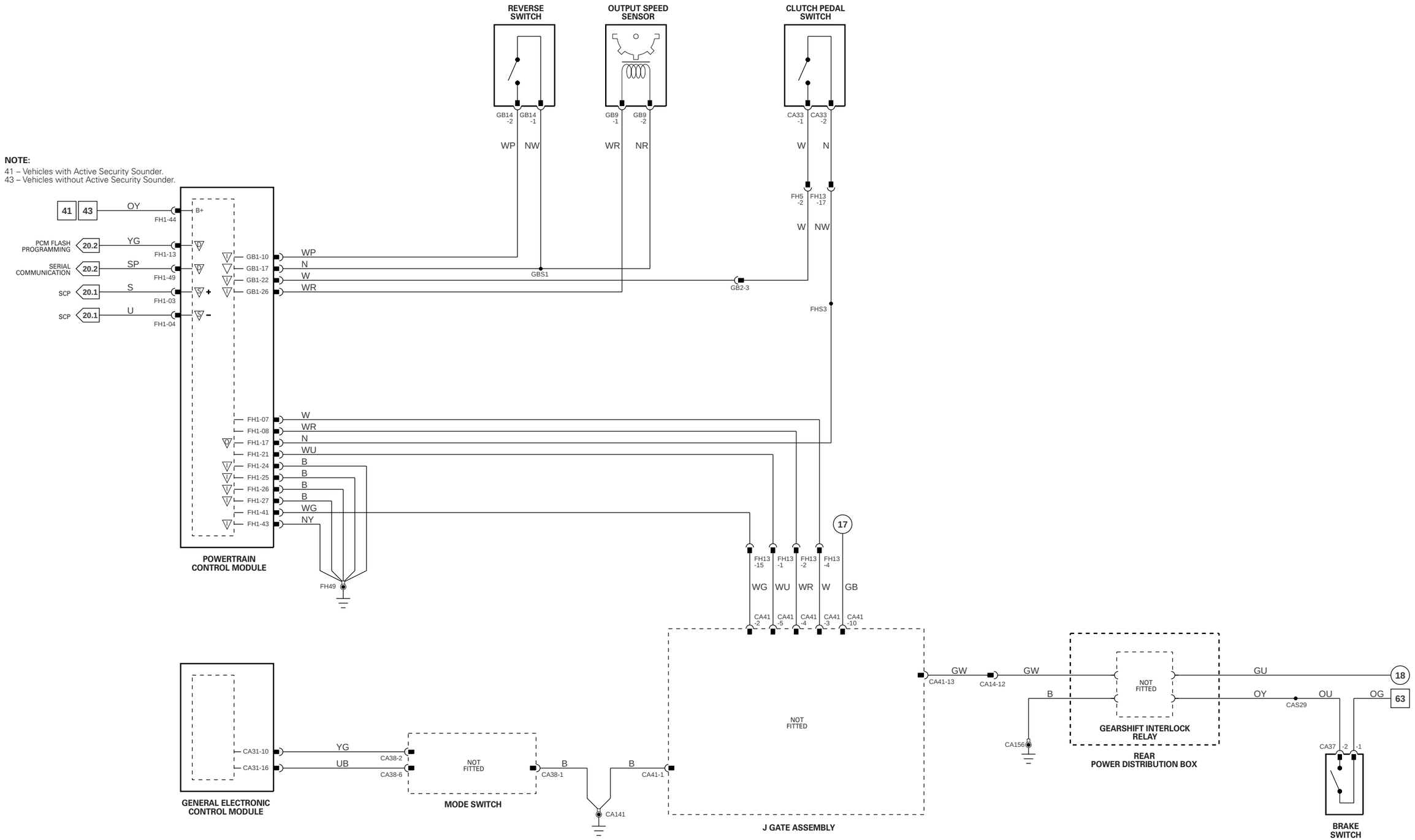
Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
GB2	6-WAY / BLACK / FRONT HARNESS TO TRANSMISSION HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

GROUNDS

Ground	Ground Description	Location
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FH49	GROUND EYELET	RH FRONT (LHD) OR LH FRONT (RHD) INNER WHEEL ARCH; REAR / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Manual Transmission Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Dynamic Stability Control Control Module

▽	Pin	Description	Active	Inactive
REF	FH51-1	LH FRONT WHEEL SPEED SENSOR REFERENCE VOLTAGE SUPPLY	B+	B+
I	FH51-2	LH FRONT WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
I	FH51-4	LH REAR WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH51-5	LH REAR WHEEL SPEED SENSOR REFERENCE VOLTAGE SUPPLY	B+	B+
I	FH51-6	ACTIVE BRAKE BOOSTER RELEASE SWITCH (NORMALLY CLOSED)	5V	GROUND
I	FH51-7	ACTIVE BRAKE BOOSTER RELEASE SWITCH (NORMALLY OPEN)	GROUND	5V
O	FH51-8	ACTIVE BRAKE BOOSTER SOLENOID	2.7V (PWM)	
I	FH51-9	TRACTION CONTROL ON / OFF SWITCH	B+ (MOMENTARY)	GROUND
O	FH51-10	PRIMARY BRAKE PRESSURE SENSOR REFERENCE VOLTAGE	5V	5V
REF	FH51-11	YAW VELOCITY SENSOR SIGNAL GROUND	GROUND	GROUND
O	FH51-12	SECONDARY BRAKE PRESSURE SENSOR REFERENCE VOLTAGE	5V	5V
REF	FH51-13	LATERAL ACCELEROMETER REFERENCE GROUND	GROUND	GROUND
I	FH51-14	STEERING ANGLE RATE SENSOR REFERENCE VOLTAGE	5V	5V
I	FH51-15	GROUND SUPPLY	GROUND	GROUND
I	FH51-16	BATTERY POWER SUPPLY	B+	B+
S	FH51-17	SCP +	2 – 1600 Hz	
D	FH51-18	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
S	FH51-19	SCP -	2 – 1600 Hz	
O	FH51-20	PCM BRAKE ON / OFF SIGNAL	GROUND	B+
I	FH51-21	BRAKE ON / OFF SWITCH	BRAKE ON: B+	BRAKE OFF: GROUND
I	FH51-22	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FH51-24	ACTIVE BRAKE BOOSTER SOLENOID	5V	5V
I	FH51-26	PRIMARY BRAKE PRESSURE SENSOR FEEDBACK	0 – 5V	
I	FH51-27	YAW VELOCITY SENSOR FEEDBACK	2.5V = AT REST	
I	FH51-28	SECONDARY BRAKE PRESSURE SENSOR FEEDBACK	0 – 5V	
I	FH51-29	LATERAL ACCELEROMETER FEEDBACK	2.5V = AT REST	
REF	FH51-30	STEERING ANGLE RATE SENSOR REFERENCE GROUND	GROUND	GROUND
I	FH51-32	GROUND SUPPLY	GROUND	GROUND
I	FH51-33	PRESSURE PUMP BATTERY POWER SUPPLY	B+	B+
I	FH51-34	RH FRONT WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH51-35	RH FRONT WHEEL SPEED SENSOR REFERENCE VOLTAGE SUPPLY	B+	B+
I	FH51-37	RH REAR WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH51-38	RH REAR WHEEL SPEED SENSOR REFERENCE VOLTAGE SUPPLY	B+	B+
REF	FH51-40	ACTIVE BRAKE BOOSTER RELEASE SWITCH REFERENCE VOLTAGE	5V	5V
REF	FH51-43	PRIMARY BRAKE PRESSURE SENSOR REFERENCE GROUND	GROUND	GROUND
O	FH51-44	YAW VELOCITY SENSOR REFERENCE VOLTAGE	5V	5V
REF	FH51-45	SECONDARY BRAKE PRESSURE SENSOR REFERENCE GROUND	GROUND	GROUND
REF	FH51-46	LATERAL ACCELEROMETER REFERENCE VOLTAGE	5V	5V
I	FH51-47	STEERING ANGLE RATE SENSOR FEEDBACK	GROUND (PULSED)	5V

Instrument Pack

▽	Pin	Description	Active	Inactive
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-13	BRAKE ON / OFF SIGNAL	B+ = BRAKE APPLIED	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 05.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCELEROMETER – REAR LATERAL	CA39	3-WAY / GREY	TRANSMISSION TUNNEL
ACTIVE BRAKE BOOSTER	FH56	6-WAY / BLACK	ON BRAKE SERVO
BRAKE PRESSURE SENSOR – PRIMARY	FH54	3-WAY / BLACK	ON BRAKE FLUID RESERVOIR
BRAKE PRESSURE SENSOR – SECONDARY	FH55	3-WAY / BLACK	ON BRAKE FLUID RESERVOIR
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
DYNAMIC STABILITY CONTROL CONTROL MODULE	FH51	47-WAY / GREY	ADJACENT TO ABS PUMP
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
TRACTION CONTROL SWITCH	CA45	8-WAY / BLUE	CENTER CONSOLE
WHEEL SPEED SENSOR – LH FRONT	FH19	2-WAY / BLACK	WHEEL HUB, LH FRONT
WHEEL SPEED SENSOR – LH REAR	CV3	2-WAY / BLACK	WHEEL HUB, LH REAR
WHEEL SPEED SENSOR – RH FRONT	FH44	2-WAY / BLACK	WHEEL HUB, RH FRONT
WHEEL SPEED SENSOR – RH REAR	CV6	2-WAY / BLACK	WHEEL HUB, RH REAR
YAW VELOCITY SENSOR	CA40	3-WAY / BLACK	TRANSMISSION TUNNEL

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CV1	6-WAY / GREY / CABIN HARNESS TO CANISTER CLOSE VALVE HARNESS	ABOVE REAR AXLE ASSEMBLY
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE

GROUNDS

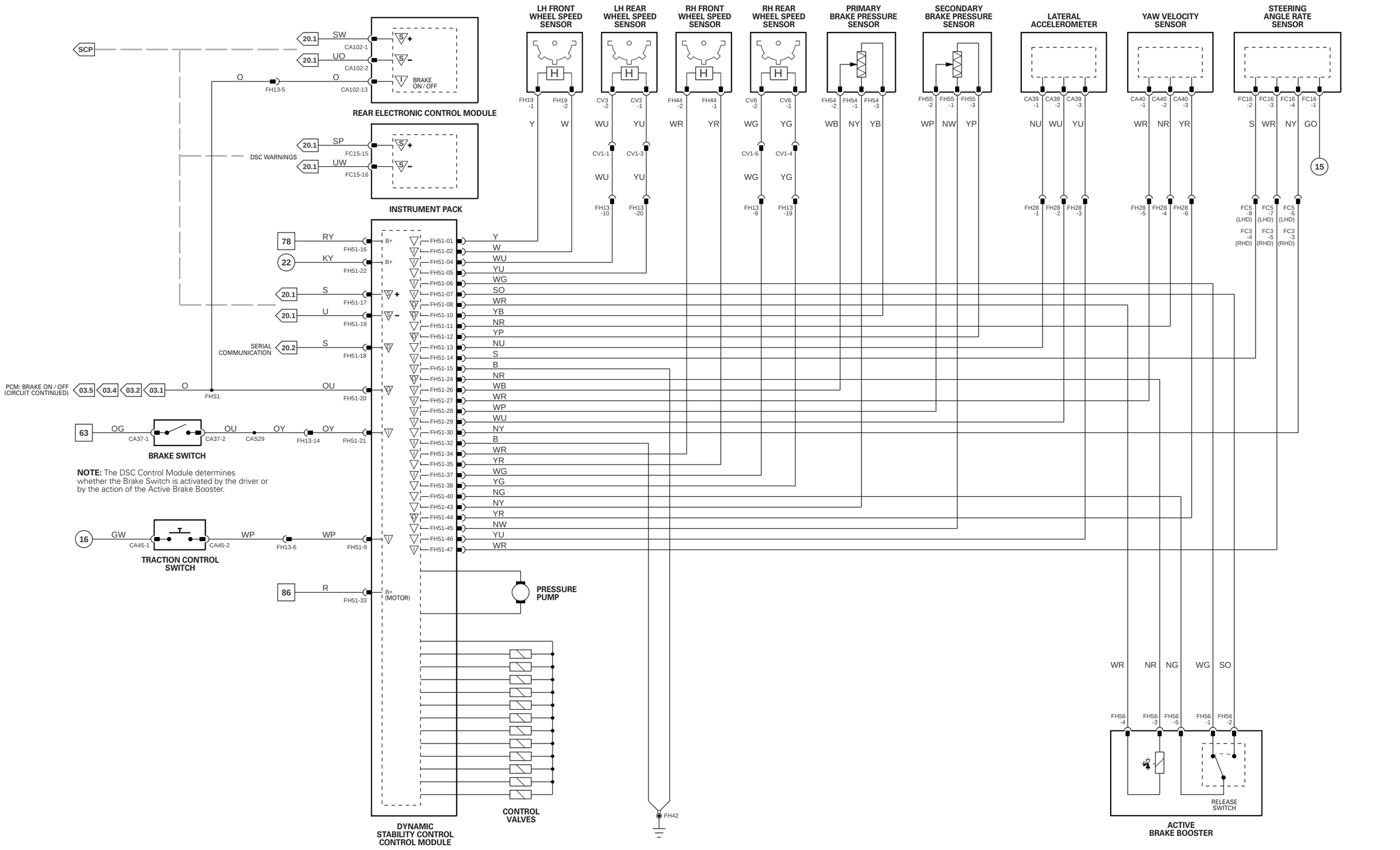
Ground	Ground Description	Location
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: July 1999

Dynamic Stability Control



NOTE: The DSC Control Module determines whether the Brake Switch is activated by the driver or by the action of the Active Brake Booster.

1 → 5 Fig. 01.1

6 → 65 Fig. 01.2

66 → 91 Fig. 01.3

1 → 42 Fig. 01.4

43 S → 65 S Fig. 01.5

66 P → 88 P Fig. 01.6

I Input

O Output

Signal Ground (SG)

S SCP Network

A ACP Network

D Serial and Encoded Data

VARIANT: DSC Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

ABS / Traction Control Control Module

▽	Pin	Description	Active	Inactive
I	FH33-2	BRAKE ON / OFF SWITCH	BRAKE ON: B+	BRAKE OFF: GROUND
I	FH33-3	RH FRONT WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH33-4	RH FRONT WHEEL SPEED SENSOR REFERENCE SUPPLY	B+	B+
REF	FH33-6	RH REAR WHEEL SPEED SENSOR REFERENCE SUPPLY	B+	B+
I	FH33-7	RH REAR WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
I	FH33-8	GROUND SUPPLY	GROUND	GROUND
I	FH33-9	PRESSURE PUMP BATTERY POWER SUPPLY	B+	GROUND
S	FH33-10	SCP -	2 – 1600 Hz	
S	FH33-11	SCP+	2 – 1600 Hz	
I	FH33-14	TRACTION CONTROL ON / OFF SWITCH	B+ (MOMENTARY)	GROUND
I	FH33-17	LH FRONT WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH33-18	LH FRONT WHEEL SPEED SENSOR REFERENCE SUPPLY	B+	B+
I	FH33-20	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FH33-21	LH REAR WHEEL SPEED SENSOR	82 Hz @ 10 mph: 164 Hz @ 20 mph (0.8 – 1.5 V)	
REF	FH33-22	LH REAR WHEEL SPEED SENSOR REFERENCE SUPPLY	B+	B+
D	FH33-23	SERIAL DATA LINK	ENCODED COMMUNICATIONS	
I	FH33-24	GROUND SUPPLY	GROUND	GROUND
I	FH33-25	BATTERY POWER SUPPLY	B+	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 05.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
ABS/TC CONTROL MODULE	FH33	25-WAY / BLACK	ADJACENT TO ABS PUMP
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
STEERING ANGLE RATE SENSOR	FC16	4-WAY / GREY	STEERING COLUMN
TRACTION CONTROL SWITCH	CA45	8-WAY / BLUE	CENTER CONSOLE
WHEEL SPEED SENSOR – LH FRONT	FH19	2-WAY / BLACK	WHEEL HUB, LH FRONT
WHEEL SPEED SENSOR – LH REAR	CV3	2-WAY / BLACK	WHEEL HUB, LH REAR
WHEEL SPEED SENSOR – RH FRONT	FH44	2-WAY / BLACK	WHEEL HUB, RH FRONT
WHEEL SPEED SENSOR – RH REAR	CV6	2-WAY / BLACK	WHEEL HUB, RH REAR

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

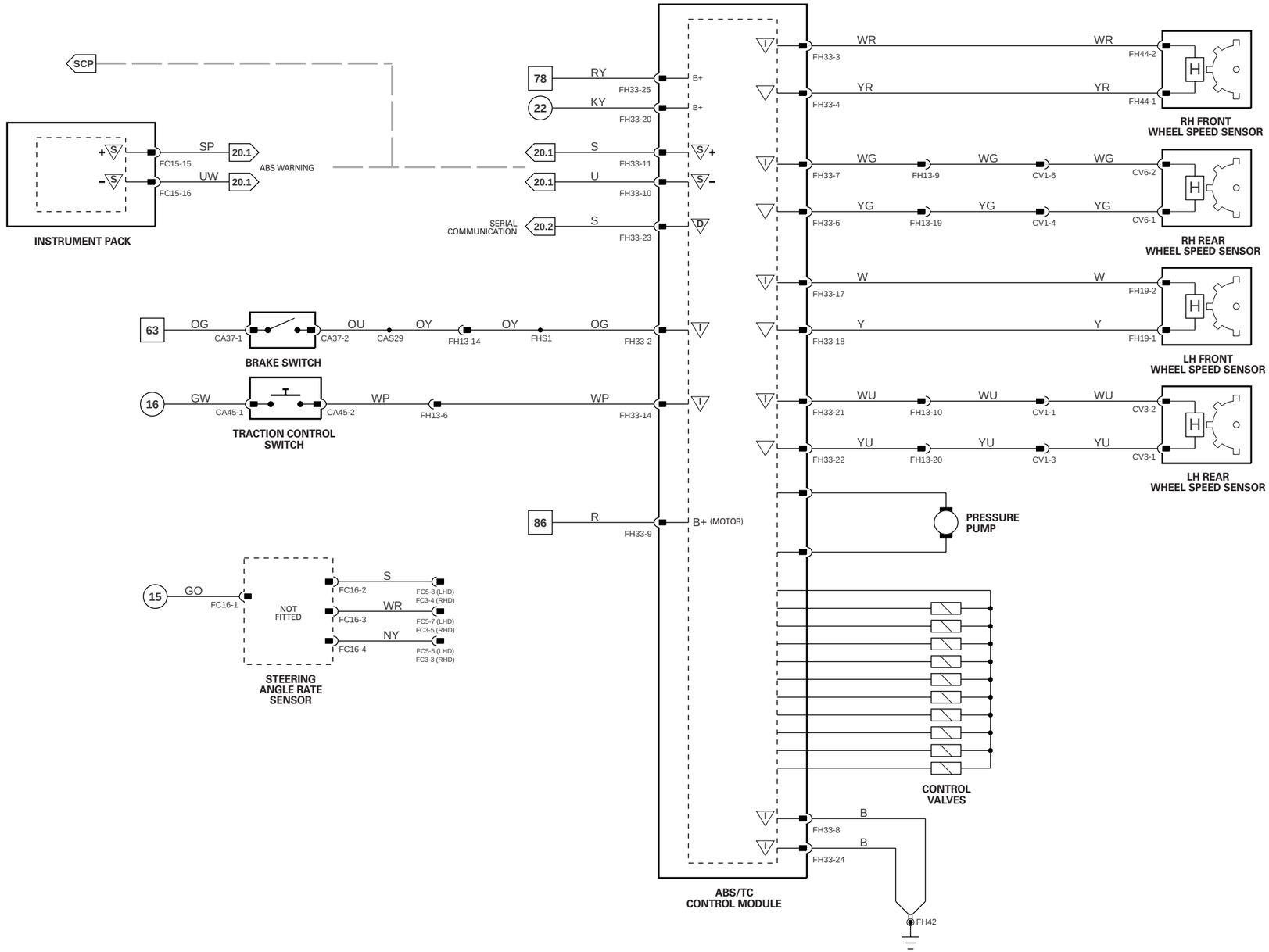
Connector	Connector Description	Location
CV1	6-WAY / GREY / CABIN HARNESS TO CANISTER CLOSE VALVE HARNESS	ABOVE REAR AXLE ASSEMBLY
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX

GROUNDS

Ground	Ground Description	Location
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6		

I Input	Signal Ground (SG)	A ACP Network
O Output	S SCP Network	D Serial and Encoded Data

VARIANT: ABS/TC Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

ABS / Traction Control Control Module

▽	Pin	Description	Active	Inactive
S	FH33-10	SCP -	2 – 1600 Hz	
S	FH33-11	SCP+	2 – 1600 Hz	

Adaptive Damping Control Module

▽	Pin	Description	Active	Inactive
O	CA11-1	RH REAR DAMPER SUPPLY VOLTAGE	B+	B+
O	CA11-2	RH REAR DAMPER ACTIVATE	GROUND	B+
O	CA11-3	LH REAR DAMPER SUPPLY VOLTAGE	B+	B+
O	CA11-4	LH REAR DAMPER ACTIVATE	GROUND	B+
O	CA11-5	LH FRONT DAMPER ACTIVATE	GROUND	B+
O	CA11-6	LH FRONT DAMPER SUPPLY VOLTAGE	B+	B+
O	CA11-7	RH FRONT DAMPER ACTIVATE	GROUND	B+
O	CA11-8	RH FRONT DAMPER SUPPLY VOLTAGE	B+	B+
REF	CA11-9	ACCELEROMETER COMMON REFERENCE GROUND	GROUND	GROUND
I	CA11-10	GROUND SUPPLY	GROUND	GROUND
I	CA11-12	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
S	CA11-13	SCP -	2 – 1600 Hz	
S	CA11-14	SCP +	2 – 1600 Hz	
I	CA11-16	BATTERY POWER SUPPLY	B+	B+
D	CA12-4	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	
REF	CA12-9	ACCELEROMETER COMMON REFERENCE VOLTAGE	5V	5V
I	CA12-10	REAR VERTICAL ACCELEROMETER FEEDBACK	<0.2V OR >4.8	2.3 – 2.7V = FIRM
I	CA12-11	LATERAL ACCELEROMETER FEEDBACK	<0.2V OR >4.8	2.3 – 2.7V = FIRM
I	CA12-12	FRONT VERTICAL ACCELEROMETER FEEDBACK	<0.2V OR >4.8	2.3 – 2.7V = FIRM

Dynamic Stability Control Control Module

▽	Pin	Description	Active	Inactive
S	FH51-17	SCP +	2 – 1600 Hz	
S	FH51-19	SCP -	2 – 1600 Hz	

Instrument Pack

▽	Pin	Description	Active	Inactive
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 05.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
ABS/TC CONTROL MODULE	FH33	25-WAY / BLACK	ADJACENT TO ABS PUMP
ACCELEROMETER – FRONT LATERAL	FH70	3-WAY / GREY	ADJACENT TO LH FRONT SUSPENSION TURRET
ACCELEROMETER – FRONT VERTICAL	FH63	3-WAY / GREY	ADJACENT TO LH FRONT SUSPENSION TURRET
ACCELEROMETER – REAR VERTICAL	CA17	3-WAY / GREY	TRUNK, BEHIND CARPET
ADAPTIVE DAMPING CONTROL MODULE	CA11 CA12	16-WAY / BLUE 16-WAY / GREY	IN THE SPARE WHEEL WELL IN THE SPARE WHEEL WELL
DAMPER SOLENOID – LH FRONT	AS2L	1-WAY / BLACK	ENGINE COMPARTMENT, LH FRONT DAMPER
DAMPER SOLENOID – LH REAR	CA140	1-WAY / BLACK	LH REAR DAMPER
DAMPER SOLENOID – RH FRONT	AS2R	1-WAY / BLACK	ENGINE COMPARTMENT, RH FRONT DAMPER
DAMPER SOLENOID – RH REAR	CA111	1-WAY / BLACK	RH REAR DAMPER
DYNAMIC STABILITY CONTROL CONTROL MODULE	FH51	47-WAY / GREY	ADJACENT TO ABS PUMP
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA FASCIA
POWERTRAIN CONTROL MODULE	FH1 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

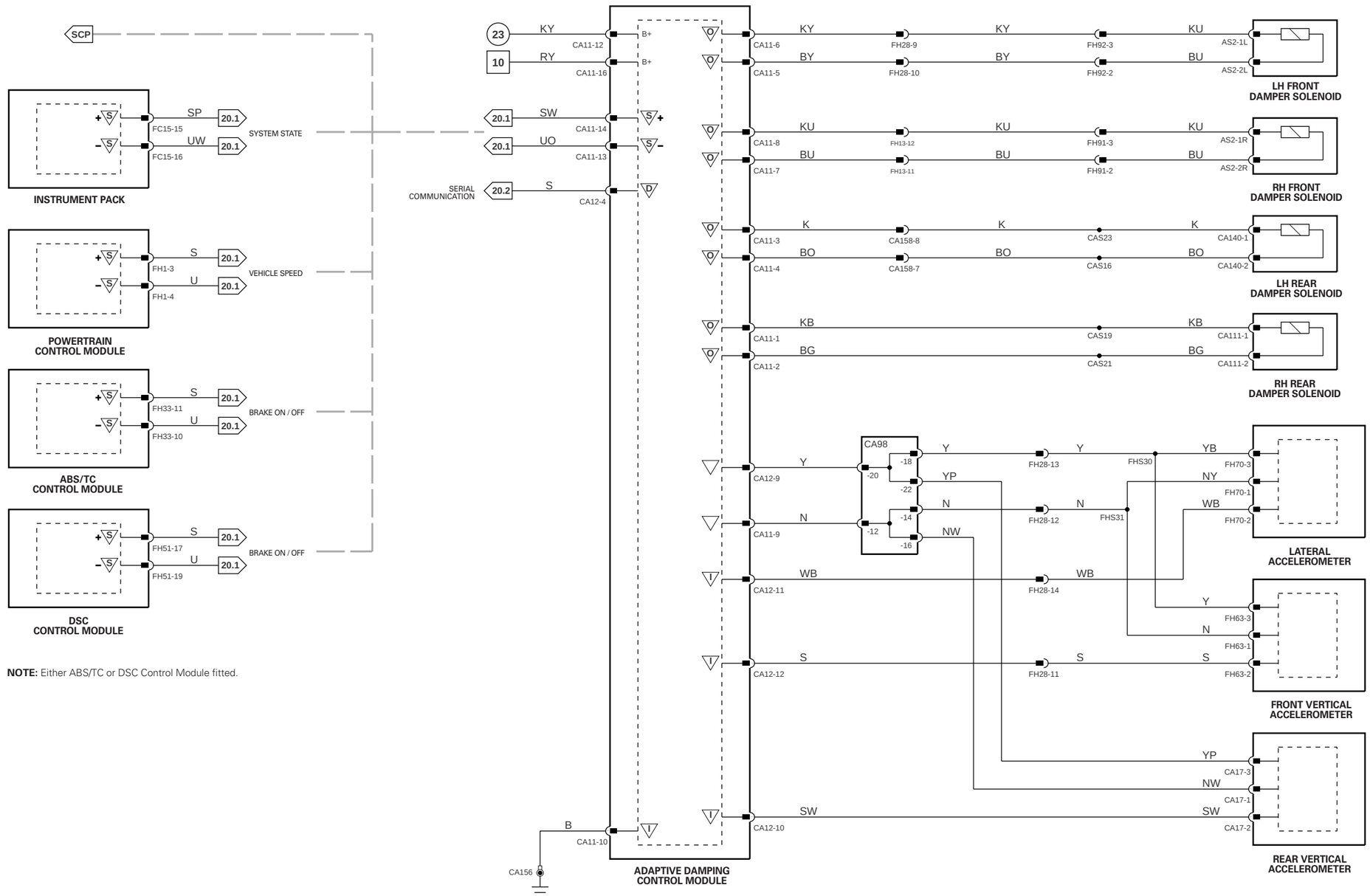
Connector	Connector Description	Location
CA98	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ADJACENT TO RECM, RH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH91	3-WAY / BLACK / FORWARD HARNESS TO ADAPTIVE DAMPING LINK LEAD	ADJACENT TO SUSPENSION TURRET, RH SIDE
FH92	3-WAY / BLACK / FORWARD HARNESS TO ADAPTIVE DAMPING LINK LEAD	ADJACENT TO SUSPENSION TURRET, LH SIDE

GROUNDS

Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 05.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Adaptive Damping Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Air Conditioning Control Module

▽	Pin	Description	Active	Inactive
I	FC27-1	DEFROST MODE ACTUATOR POSITION FEEDBACK	2.9V = OPEN	2.5V = CLOSED
I	FC27-2	COLD AIR BY-PASS ACTUATOR POSITION FEEDBACK	0.68V = HIGH TEMPERATURE; 3.89V = LOW TEMPERATURE	
I	FC27-3	PANEL MODE ACTUATOR POSITION FEEDBACK	2.2V = OPEN	1.1V = CLOSED
O	FC27-5	PASSENGER SIDE DUAL COOLANT CONTROL VALVE CONTROL DRIVE	GROUND = HIGH TEMPERATURE; PWM (GROUND) = VARIABLE TEMPERATURE; B+ = LOW TEMPERATURE	
O	FC27-6	DRIVER SIDE DUAL COOLANT CONTROL VALVE CONTROL DRIVE	GROUND = HIGH TEMPERATURE; PWM (GROUND) = VARIABLE TEMPERATURE; B+ = LOW TEMPERATURE	
O	FC27-8	BLOWER MOTOR CONTROLLER HIGH SPEED RELAY DRIVE	B+ = HIGH SPEED; < 0.2V = LOW SPEED	
O	FC27-9	RECIRCULATION ACTUATOR DRIVE – CLOSE	B+	GROUND
O	FC27-10	RECIRCULATION ACTUATOR DRIVE – OPEN	B+	GROUND
O	FC27-11	COLD AIR BY-PASS ACTUATOR DRIVE – CLOSE	B+	GROUND
O	FC27-12	COLD AIR BY-PASS ACTUATOR DRIVE – OPEN	B+	GROUND
O	FC27-13	DEFROST MODE ACTUATOR DRIVE – OPEN	B+	GROUND
REF	FC27-14	IN CAR TEMPERATURE SENSOR REFERENCE VOLTAGE	5V (NOMINAL)	5V (NOMINAL)
I	FC27-15	RECIRCULATION ACTUATOR POSITION FEEDBACK	0.3V = OPEN	3.6V = CLOSED
I	FC27-16	FLOOR MODE ACTUATOR POSITION FEEDBACK	3.4V = OPEN	1.2V = CLOSED
REF	FC27-17	ACTUATORS COMMON REFERENCE GROUND	GROUND	GROUND
O	FC27-18	AUXILIARY COOLANT PUMP RELAY ACTIVATE	GROUND	B+
O	FC27-19	BLOWER MOTOR RELAY ACTIVATE	GROUND	B+
O	FC27-20	HEATED WIPER PARK OR HEATED WINDSHIELD RELAY(S) ACTIVATE	GROUND	B+
O	FC27-22	FLOOR MODE ACTUATOR DRIVE – OPEN	B+	GROUND
O	FC27-23	FLOOR MODE ACTUATOR DRIVE – CLOSE	B+	GROUND
O	FC27-24	PANEL MODE ACTUATOR DRIVE – OPEN	B+	GROUND
O	FC27-25	PANEL MODE ACTUATOR DRIVE – CLOSE	B+	GROUND
O	FC27-26	DEFROST MODE ACTUATOR DRIVE – CLOSE	B+	GROUND
S	FC28-1	SCP -	2 – 1600 Hz	
I	FC28-2	GROUND SUPPLY	GROUND	GROUND
I	FC28-3	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FC28-4	ENGINE COOLING FAN REQUEST	GROUND = ON	B+ = OFF
I	FC28-5	BLOWER MOTOR CONTROLLER FEEDBACK	0.3V = HIGH	9V = LOW
I	FC28-6	PASSENGER DISCHARGE AIR TEMPERATURE SENSOR FEEDBACK	3.25V @ 0 °C (32 °F) DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	FC28-7	DUAL SOLAR SENSOR FEEDBACK – LH	4.5V = COVERED	4.4V = AMBIENT LIGHT
REF	FC28-8	AMBIENT TEMPERATURE SENSOR GROUND	GROUND	GROUND
I	FC28-9	IN CAR TEMPERATURE SENSOR FEEDBACK	3.25V @ 0 °C (32 °F) DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	FC28-10	EVAPORATOR TEMPERATURE SENSOR FEEDBACK	3.25V @ 0 °C (32 °F) DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	FC28-11	ACTUATORS COMMON REFERENCE GROUND	GROUND	GROUND
S	FC28-12	SCP +	2 – 1600 Hz	
I	FC28-14	BATTERY POWER SUPPLY	B+	B+
O	FC28-15	BLOWER MOTOR CONTROLLER DRIVE	0.7V = HIGH	1.2V = LOW
REF	FC28-16	EVAPORATOR DISCHARGE TEMPERATURE SENSOR REFERENCE GROUND	GROUND	GROUND
I	FC28-17	AMBIENT TEMPERATURE SENSOR FEEDBACK	3.25V @ 0 °C (32 °F) DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I	FC28-18	DRIVER DISCHARGE AIR TEMPERATURE SENSOR FEEDBACK	3.25V @ 0 °C (32 °F) DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF	FC28-19	SENSOR COMMON REFERENCE VOLTAGE	5V (NOMINAL)	5V (NOMINAL)
I	FC28-20	DUAL SOLAR SENSOR FEEDBACK – RH	4.5V = COVERED	4.4V = AMBIENT LIGHT
REF	FC28-22	ACTUATORS COMMON VOLTAGE REFERENCE	5V (NOMINAL)	5V (NOMINAL)

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 06.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
AMBIENT TEMPERATURE SENSOR	FH30	2-WAY / BLACK	FORWARD OF RADIATOR; RH SIDE
AUXILIARY COOLANT PUMP	FH74	1-WAY / BLACK	REARWARD OF RADIATOR
BLOWER MOTOR	AC1	5-WAY / BLACK	BLOWER HOUSING
BLOWER MOTOR	AC2	2-WAY / BLACK	BLOWER HOUSING
COOL AIR BYPASS SERVO MOTOR	AC4	6-WAY / BLACK	AIR DISTRIBUTION BOX
DEFROST MODE ACTUATOR	FC29	6-WAY / BLACK	AIR DISTRIBUTION BOX, LH SIDE
DISCHARGE TEMPERATURE SENSOR – LH	FC20	2-WAY / GREY	AIR DISTRIBUTION BOX, LH SIDE
DISCHARGE TEMPERATURE SENSOR – RH	FC30	2-WAY / GREY	AIR DISTRIBUTION BOX, RH SIDE
DUAL COOLANT CONTROL VALVE	CF4	3-WAY / BLACK	REARWARD OF RADIATOR
DUAL SOLAR SENSOR	SL1	4-WAY / BLACK	TOP OF FASCIA
EVAPORATOR DISCHARGE TEMPERATURE SENSOR	AC5	2-WAY / GREY	EVAPORATOR / HEATER CORE DUCT
FLOOR MODE ACTUATOR	FC21	6-WAY / BLACK	AIR DISTRIBUTION BOX, LH SIDE
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
IN-CAR TEMPERATURE SENSOR	FC24	2-WAY / GREEN	FASCIA DUCT, DRIVER SIDE
PANEL MODE ACTUATOR	FC22	6-WAY / BLACK	AIR DISTRIBUTION BOX, RH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
RECIRCULATION MODE SERVO MOTOR	AC3	6-WAY / BLACK	INTAKE AIR DUCT
WINDSHIELD HEATER – LH	CA121	1-WAY / BLACK	WINDSHIELD
	CA122	1-WAY / BLACK	WINDSHIELD
WIPER PARK HEATER OR RH WINDSHIELD HEATER	CA65	1-WAY / BLACK	WINDSHIELD
	CA71	1-WAY / BLACK	WINDSHIELD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

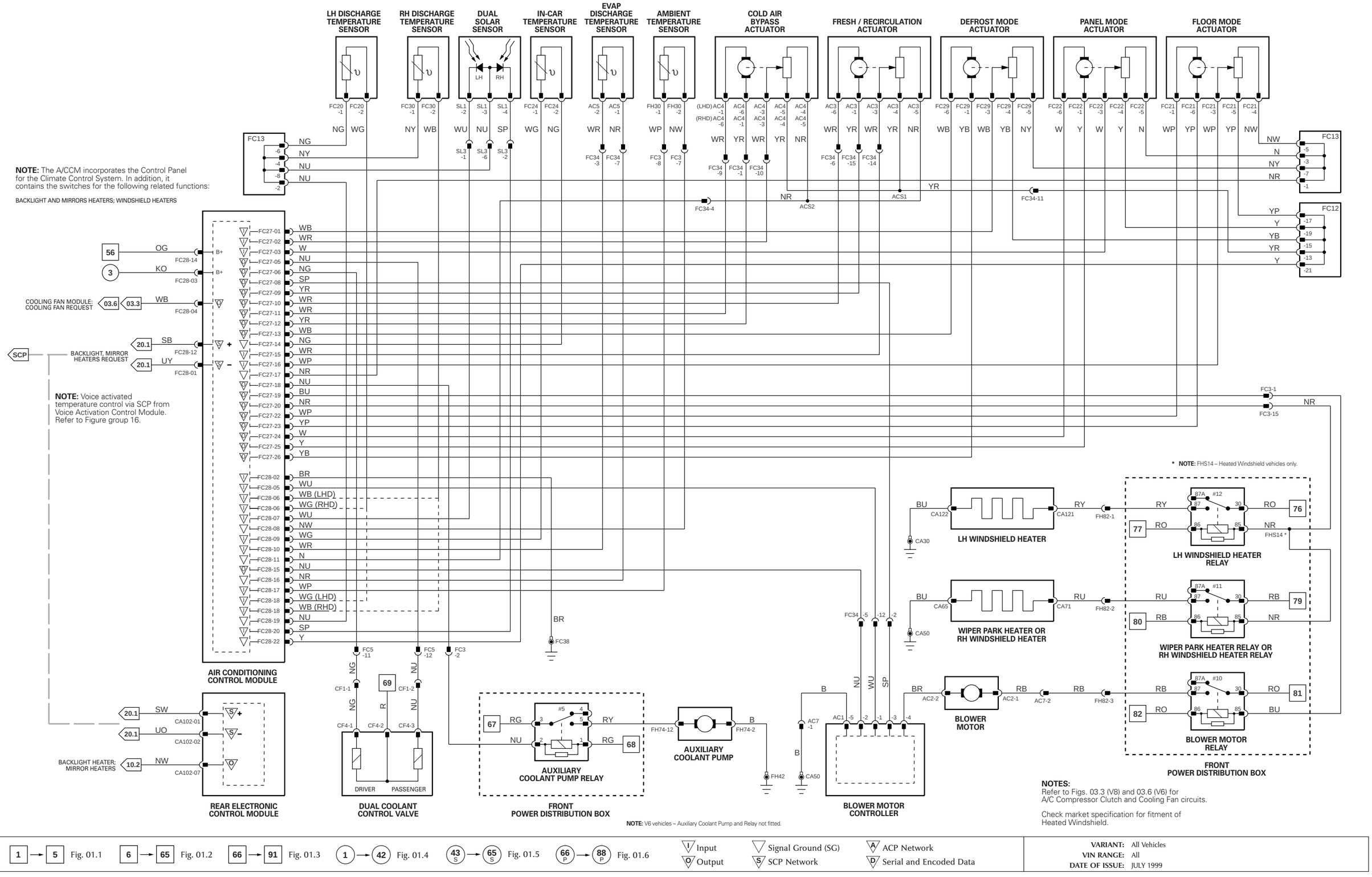
Connector	Connector Description	Location
AC7	2-WAY / GREY / CABIN HARNESS TO AIR CONDITIONING HARNESS	ABOVE BLOWER ASSEMBLY
CF1	6-WAY / GREY / FRONT HARNESS TO COOLING FANS LINK LEAD	REARWARD OF RADIATOR
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FC12	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC13	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC34	16-WAY / GREEN / FASCIA HARNESS TO A/C HARNESS	LH SIDE (LHD) OR RH SIDE (RHD) OF AIR DISTRIBUTION BOX
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

GROUNDS

Ground	Ground Description	Location
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-19	PARKING BRAKE SWITCH	GROUND = MIL ON	B+
I	FH9-15	WASHER FLUID LEVEL SWITCH	GROUND = FULL	B+ = EMPTY
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-9	OIL PRESSURE	GROUND = MIL OFF	B+ = MIL ON / NO PRESSURE
I	FH59-11	BRAKE FLUID LEVEL SENSOR	GROUND = MIL OFF	B+ MIL ON / LOW FLUID

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC14-6	GROUND SUPPLY	GROUND	GROUND
I	FC14-8	MESSAGE CENTER – 'CLEAR' AND 'MLS / KM' BUTTONS	2.3V= CLEAR; 3.7V = MLS/KM (MOMENTARY)	4.8V = AT REST
I	FC14-11	AIR BAG MIL IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC14-12	MESSAGE CENTER — 'TRIP' AND 'A / B' BUTTONS	2.8V = TRIP; 1.5V = A/B; 4.8V = AT REST	
REF	FC14-13	MESSAGE CENTER SWITCH PACK REFERENCE GROUND	GROUND	GROUND
I	FC14-18	SEAT BELT SWITCH	GROUND = BUCKLED	B+ = UNBUCKLED
I	FC14-21	IGNITION KEY IN BARREL	B+ = IGNITION KEY IN	GROUND = IGNITION KEY OUT
I	FC14-22	AIRBAG MIL	B+	GROUND
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
I	FC15-14	AIRBAG AUDIBLE WARNING (REDUNDANT IF AIRBAG MIL FAILED)	B+	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-19	MAIN BEAM FLASH REQUEST	3.2V (MOMENTARY)	4.8V = AT REST
I	FC15-20	TURN SIGNALS / HAZARD LAMP ACTIVATE	GROUND = HAZARD; 1.2V = LEFT; 3.2V = RIGHT	4.7V = AT REST
I	FC63-2	MESSAGE CENTER – HAZARD LAMP REQUEST	B+ (PWM) = ON	GROUND

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	
I	FH1-47	AIRBAG DEPLOYMENT SIGNAL	ENCODED COMMUNICATIONS	

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
I	CA101-15	RH FUEL LEVEL SENSOR FEEDBACK	GROUND = FULL	B+ = EMPTY
I	CA101-16	LH FUEL LEVEL SENSOR FEEDBACK	GROUND = FULL	B+ = EMPTY
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
REF	CA103-23	FUEL LEVEL SENSOR COMMON REFERENCE GROUND	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 07.1

COMPONENTS

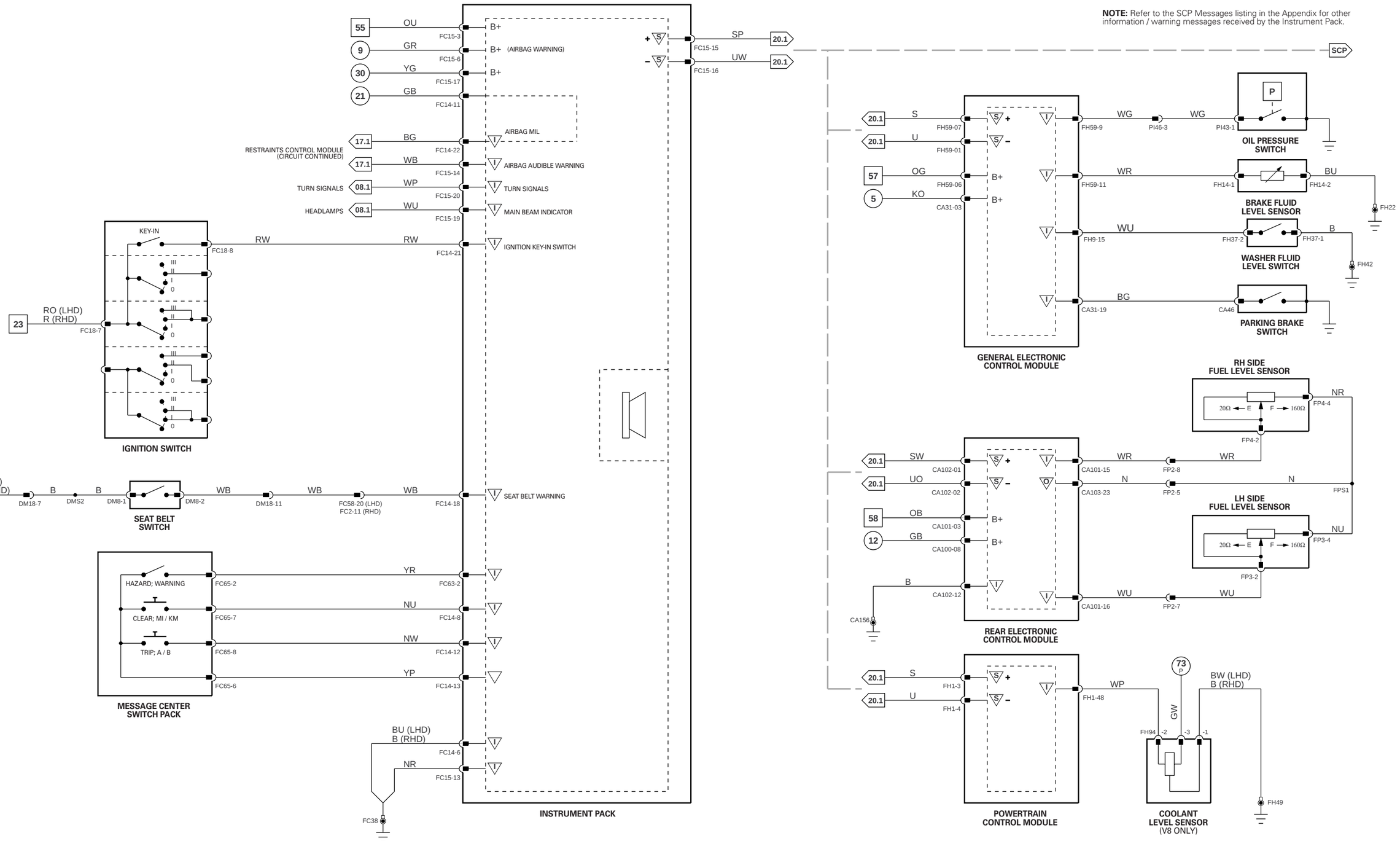
Component	Connector(s)	Connector Description	Location
BRAKE FLUID LEVEL SENSOR	FH14	2-WAY / BLACK	ON BRAKE FLUID RESERVOIR
COOLANT LEVEL SENSOR	FH94	3-WAY / BLACK	ON COOLANT RESERVOIR
FUEL LEVEL SENSOR – LH SIDE	FP3	4-WAY / BLACK	BELOW REAR SEAT CUSHION
FUEL LEVEL SENSOR – RH SIDE	FP4	4-WAY / BLACK	BELOW REAR SEAT CUSHION
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
MESSAGE CENTER SWITCH PACK	FC65	8-WAY / BLACK	FASCIA, ADJACENT TO INSTRUMENT PACK
OIL PRESSURE SWITCH – V6	PI43	1-WAY / BLACK	ADJACENT TO BASE OF DIPSTICK
OIL PRESSURE SWITCH – V8	PI43	1-WAY / BLACK	ADJACENT TO THE OIL FILTER
PARKING BRAKE SWITCH	CA46	1-WAY / BLACK	PARKING BRAKE LEVER, CENTER CONSOLE TRIM
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
SEAT BELT SWITCH – DRIVER	DM8	2-WAY / GREY	BELOW SEAT CUSHION
WASHER FLUID LEVEL SWITCH	FH37	2-WAY / BLACK	ADJACENT TO WASHER FLUID BOTTLE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FP2	8-WAY / GREY / CABIN HARNESS TO FUEL TANK LINK LEAD	REARWARD OF FUEL TANK
PI46	12-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
O	FH9-7	LH TURN SIGNAL REPEATER ACTIVATE	GROUND (PULSED)	B+
O	FH9-11	RH SIDE MARKER ACTIVATE	GROUND	B+
O	FH9-19	RH TURN SIGNAL REPEATER ACTIVATE	GROUND (PULSED)	B+
O	FH9-22	LH SIDE MARKER ACTIVATE	GROUND	B+
S	FH59-1	SCP -	2 – 1600 Hz	
O	FH59-2	LH FRONT PARK LAMP ACTIVATE	GROUND	B+
O	FH59-5	FRONT FOG LAMP RELAY ACTIVATE	GROUND	B+
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
O	FH59-10	RH FRONT PARK LAMP ACTIVATE	GROUND	B+
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
O	FH60-4	RH FRONT TURN SIGNAL LAMP ACTIVATE	GROUND (PULSED)	B+
O	FH60-5	LH FRONT TURN SIGNAL LAMP	GROUND (PULSED)	B+
O	FH60-7	RH DIPPED BEAM ACTIVATE	GROUND (PWM)	B+
O	FH60-8	LH DIPPED BEAM ACTIVATE	GROUND (PWM)	B+
O	FH60-10	RH MAIN BEAM ACTIVATE	GROUND (PWM)	B+
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND
O	FH60-17	LH MAIN BEAM ACTIVATE	GROUND (PWM)	B+

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC14-19	AUTO HEADLAMP SENSOR HEADLAMP ACTIVATION REQUEST	B+ = ON	GROUND = OFF
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC15-9	LIGHTING STALK SWITCHES REFERENCE VOLTAGE	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-19	MAIN BEAM FLASH REQUEST	3.2V (MOMENTARY)	4.8V = AT REST
I	FC15-20	TURN SIGNALS / HAZARD LAMP ACTIVATE	GROUND = HAZARD; 1.2V = LEFT; 3.2V = RIGHT	4.7V = AT REST
REF	FC63-1	LIGHTING SWITCH REFERENCE GROUND	GROUND	GROUND
I	FC63-12	EXTERIOR LIGHTING MODE SELECTION REQUEST	2.9V = SIDE LAMPS; 2.1V = HEADLAMPS; 0.8V = FOGLAMPS	
I	FC63-13	FRONT FOGLAMP ACTIVATION REQUEST	1.5V = ON	4.7V = OFF
I	FC63-14	AUTO HEADLAMP DELAY SETTING FEEDBACK	1.4V = 3 MINUTES	3.9V = SECONDS

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 08.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTOLAMP SENSOR	SL2	6-WAY / WHITE	TOP OF FASCIA
COLUMN SWITCHGEAR (LIGHTING STALK)	CS13	10-WAY / BLACK	STEERING COLUMN
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HEADLAMP UNIT – LH	HL2L	2-WAY / BLACK	ENGINE COMPARTMENT
	HL3L	2-WAY / BLACK	ENGINE COMPARTMENT
	HL4L	2-WAY / GREY	ENGINE COMPARTMENT
	HL5L	10-WAY / BLACK	ENGINE COMPARTMENT
HEADLAMP UNIT – RH	HL2R	2-WAY / BLACK	ENGINE COMPARTMENT
	HL3R	2-WAY / BLACK	ENGINE COMPARTMENT
	HL4R	2-WAY / GREY	ENGINE COMPARTMENT
	HL5R	10-WAY / BLACK	ENGINE COMPARTMENT
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
LIGHTING SWITCH	FC11	10-WAY / YELLOW	FASCIA, ADJACENT TO STEERING COLUMN
MESSAGE CENTER SWITCH PACK	FC65	8-WAY / BLACK	FASCIA, ADJACENT TO INSTRUMENT PACK
TURN SIGNAL REPEATER – LH	FH62	1-WAY / BLACK	FRONT FENDER, LH SIDE
TURN SIGNAL REPEATER – RH	FH76	1-WAY / BLACK	FRONT FENDER, RH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
BF1	6-WAY / GREY / FRONT HARNESS TO BUMPER LINK LEAD	BEHIND LH FRONT WHEEL ARCH LINER
CS3	10-WAY / GREY / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FH39	12-WAY / GREY / FRONT HARNESS TO HEADLAMP LINK LEAD	BEHIND HEADLAMP ASSEMBLY, RH SIDE
FH40	12-WAY / GREY / FRONT HARNESS TO HEADLAMP LINK LEAD	BEHIND HEADLAMP ASSEMBLY, LH SIDE
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

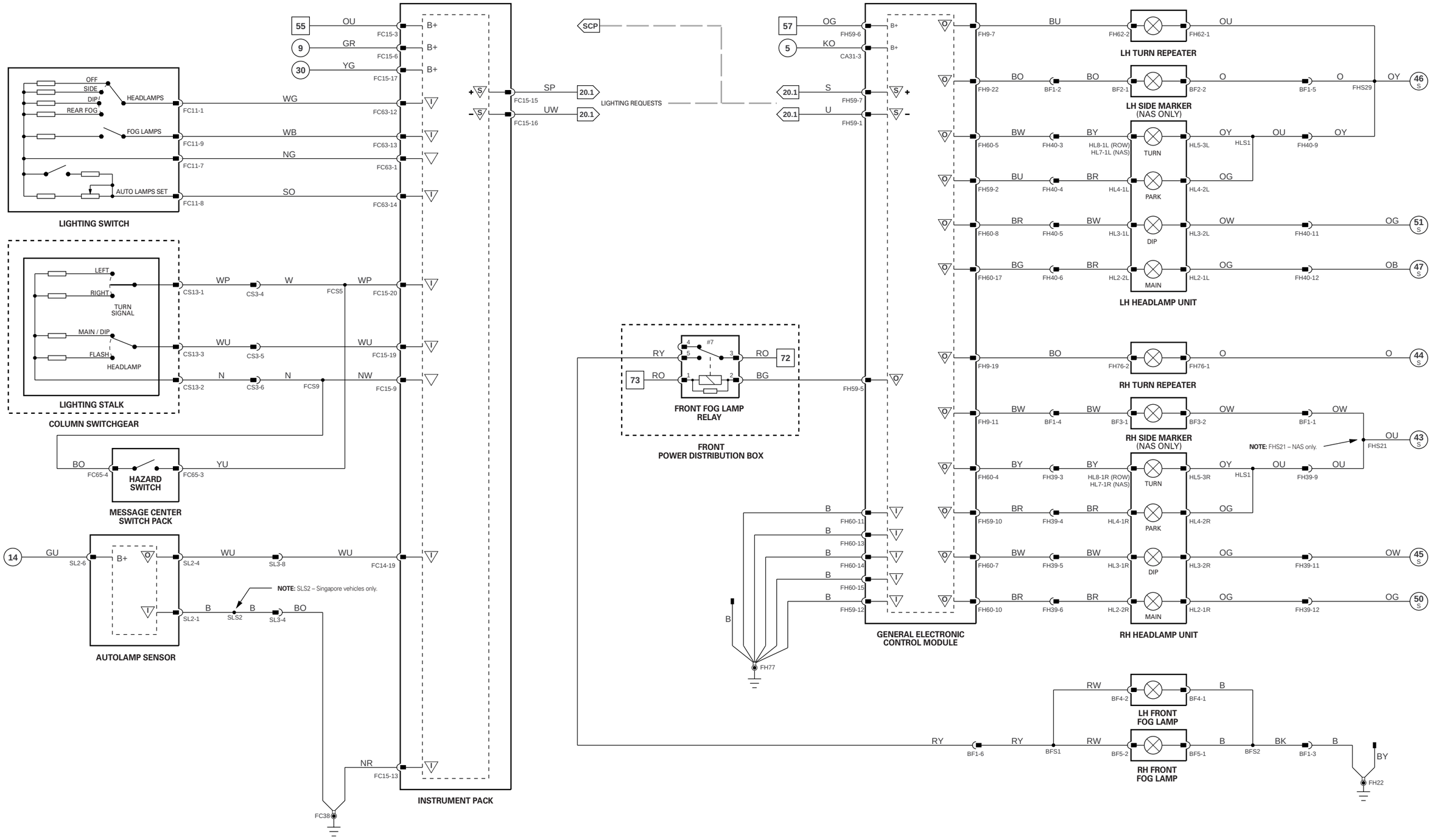
GROUNDS

Ground	Ground Description	Location
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: July 1999



1 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6	I Input	O Output	Signal Ground (SG)	S SCP Network	A ACP Network	D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC14-19	AUTO HEADLAMP SENSOR HEADLAMP ACTIVATION REQUEST	B+ = ON	GROUND = OFF
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC15-9	LIGHTING STALK SWITCHES REFERENCE VOLTAGE	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-19	MAIN BEAM FLASH REQUEST	3.2V (MOMENTARY)	4.8V = AT REST
I	FC15-20	TURN SIGNALS / HAZARD LAMP ACTIVATE	GROUND = HAZARD; 1.2V = LEFT; 3.2V = RIGHT	4.7V = AT REST
REF	FC63-1	LIGHTING SWITCH REFERENCE GROUND	GROUND	GROUND
I	FC63-12	EXTERIOR LIGHTING MODE SELECTION REQUEST	2.9V = SIDE LAMPS; 2.1V = HEADLAMPS; 0.8V = FOGLAMPS	
I	FC63-13	FRONT FOGLAMP ACTIVATION REQUEST	1.5V = ON	4.7V = OFF
I	FC63-14	AUTO HEADLAMP DELAY SETTING FEEDBACK	1.4V = 3 MINUTES	3.9V = SECONDS

Powertrain Control Module

▽	Pin	Description	Active	Inactive
S	FH1-3	SCP +	2 – 1600 Hz	
S	FH1-4	SCP -	2 – 1600 Hz	

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
O	CA63-1	RH STOP LAMP ACTIVATE	GROUND	B+
O	CA63-2	LH STOP LAMP ACTIVATE	GROUND	B+
O	CA63-3	LH REAR TURN SIGNAL ACTIVATE	GROUND (PULSED)	B+
O	CA63-4	RH REAR TURN SIGNAL ACTIVATE	GROUND (PULSED)	B+
O	CA63-5	RH TAIL LAMP ACTIVATE	GROUND	B+
O	CA63-6	LH TAIL LAMP ACTIVATE	GROUND	B+
O	CA63-7	LH REAR FOG LAMP ACTIVATE	GROUND	B+
O	CA63-8	RH REAR FOG LAMP ACTIVATE	GROUND	B+
O	CA63-9	LH REVERSE LAMP ACTIVATE	GROUND	B+
O	CA63-10	RH REVERSE LAMP ACTIVATE	GROUND	B+
O	CA63-17	HIGH MOUNTED STOP LAMP ACTIVATE	GROUND	B+
O	CA100-5	REAR NUMBER PLATE LAMP ACTIVATE	GROUND	B+
O	CA100-6	LH REAR SIDE MARKER LAMP ACTIVATE	GROUND	B+
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
O	CA100-12	RH REAR SIDE MARKER LAMP ACTIVATE	GROUND	B+
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA102-13	BRAKE ON / OFF SIGNAL	B+ = BRAKE APPLIED	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 08.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTOLAMP SENSOR	SL2	6-WAY / WHITE	TOP OF FASCIA
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
COLUMN SWITCHGEAR (LIGHTING STALK)	CS13	10-WAY / BLACK	STEERING COLUMN
HIGH MOUNTED STOP LAMP	CA18	3-WAY / GREY	PARCEL SHELF
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
LIGHTING SWITCH	FC11	10-WAY / YELLOW	FASCIA, ADJACENT TO STEERING COLUMN
MESSAGE CENTER SWITCH PACK	FC65	8-WAY / BLACK	FASCIA, ADJACENT TO INSTRUMENT PACK
NUMBER PLATE LAMP – LH	CA66	2-WAY / BLACK	BEHIND TRUNK LID LINER
NUMBER PLATE LAMP – RH	CA67	2-WAY / BLACK	BEHIND TRUNK LID LINER
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
SIDE MARKER LAMP – LH REAR	BR6	2-WAY / BLACK	REAR BUMPER, LH SIDE
SIDE MARKER LAMP – RH REAR	BR7	2-WAY / BLACK	REAR BUMPER, RH SIDE
TAIL LAMP UNIT – LH	CA10	7-WAY / BLACK	VEHICLE, LH REAR
TAIL LAMP UNIT – RH	CA68	7-WAY / BLACK	VEHICLE, RH REAR

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
BR1	10-WAY / GREY / CABIN HARNESS TO BUMPER HARNESS	BEHIND RH REAR QUARTER TRIM
CA98	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ADJACENT TO RECM, RH SIDE
CA168	10-WAY / BLUE / DIODE MODULE	TRUNK, RH SIDE
CA169	2-WAY / BLACK / DIODE	BELOW RH REAR LAMP ASSEMBLY
CA170	2-WAY / BLACK / DIODE	BELOW LH REAR LAMP ASSEMBLY
CS3	10-WAY / GREY / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

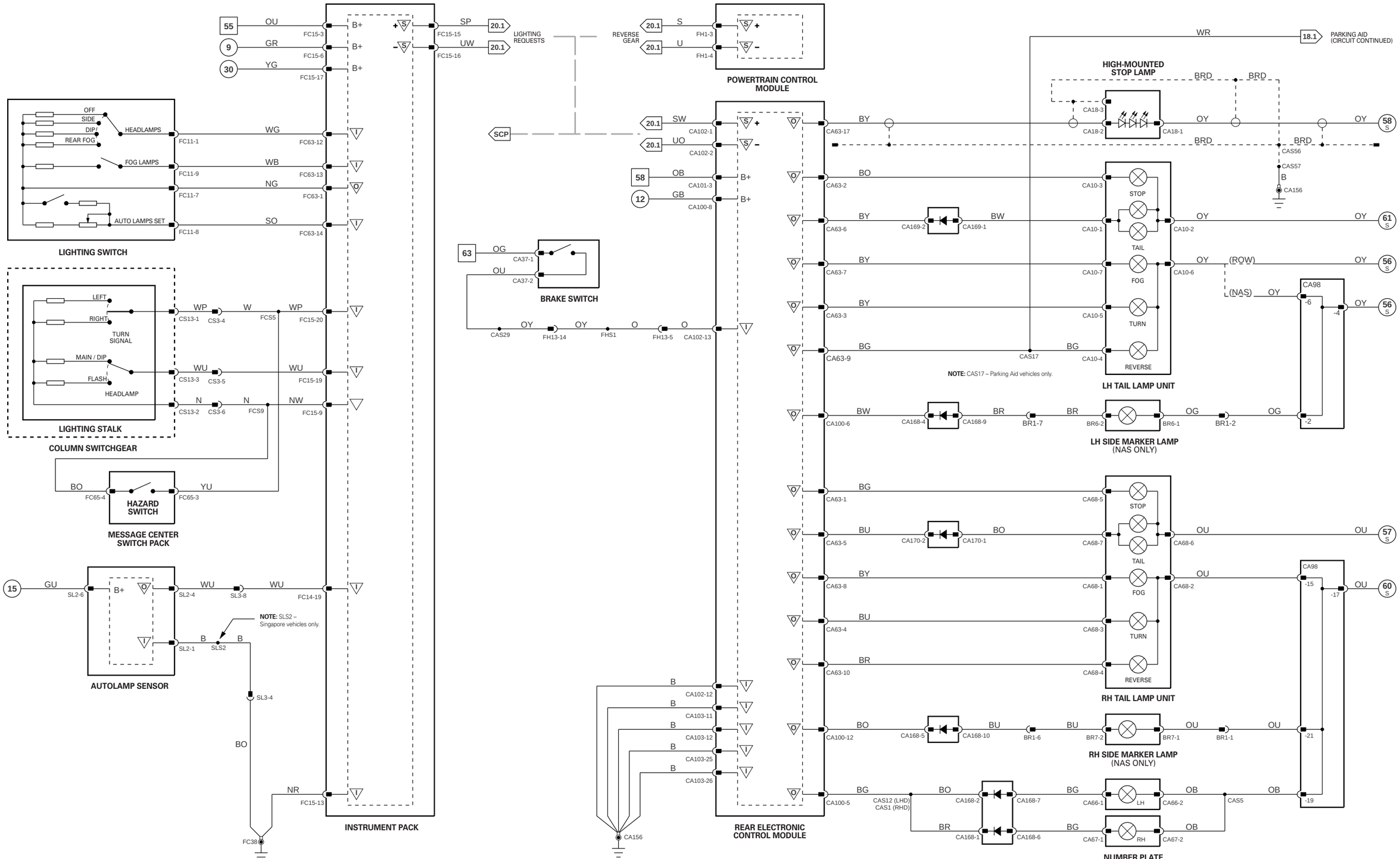
GROUNDS

Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

Exterior Lighting: Rear



NOTE: CAS17 – Parking Aid vehicles only.

NOTE: SLS2 – Singapore vehicles only.

1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
O	CA100-5	REAR NUMBER PLATE LAMP ACTIVATE	GROUND	B+
O	CA100-6	LH REAR SIDE MARKER LAMP ACTIVATE	GROUND	B+
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
O	CA100-12	RH REAR SIDE MARKER LAMP ACTIVATE	GROUND	B+
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA102-13	BRAKE ON / OFF SIGNAL	B+ = BRAKE APPLIED	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 08.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
BRAKE SWITCH	CA37	2-WAY / GREEN	TOP OF BRAKE PEDAL
HIGH MOUNTED STOP LAMP	CA18	3-WAY / GREY	PARCEL SHELF
NUMBER PLATE LAMP – LH	CA66	2-WAY / BLACK	BEHIND TRUNK LID LINER
NUMBER PLATE LAMP – RH	CA67	2-WAY / BLACK	BEHIND TRUNK LID LINER
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
SIDE MARKER LAMP – LH REAR	BR6	2-WAY / BLACK	REAR BUMPER, LH SIDE
SIDE MARKER LAMP – RH REAR	BR7	2-WAY / BLACK	REAR BUMPER, RH SIDE
TAIL LAMP UNIT – LH	CA10	7-WAY / BLACK	VEHICLE, LH REAR
TAIL LAMP UNIT – RH	CA68	7-WAY / BLACK	VEHICLE, RH REAR

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
BR1	10-WAY / GREY / CABIN HARNESS TO BUMPER HARNESS	BEHIND RH REAR QUARTER TRIM
CA98	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ADJACENT TO RECM, RH SIDE
CA168	10-WAY / BLUE / DIODE MODULE	TRUNK, RH SIDE
CA169	2-WAY / BLACK / DIODE	BELOW RH REAR LAMP ASSEMBLY
CA170	2-WAY / BLACK / DIODE	BELOW LH REAR LAMP ASSEMBLY
FH13	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ADJACENT TO PRIMARY JUNCTION BOX

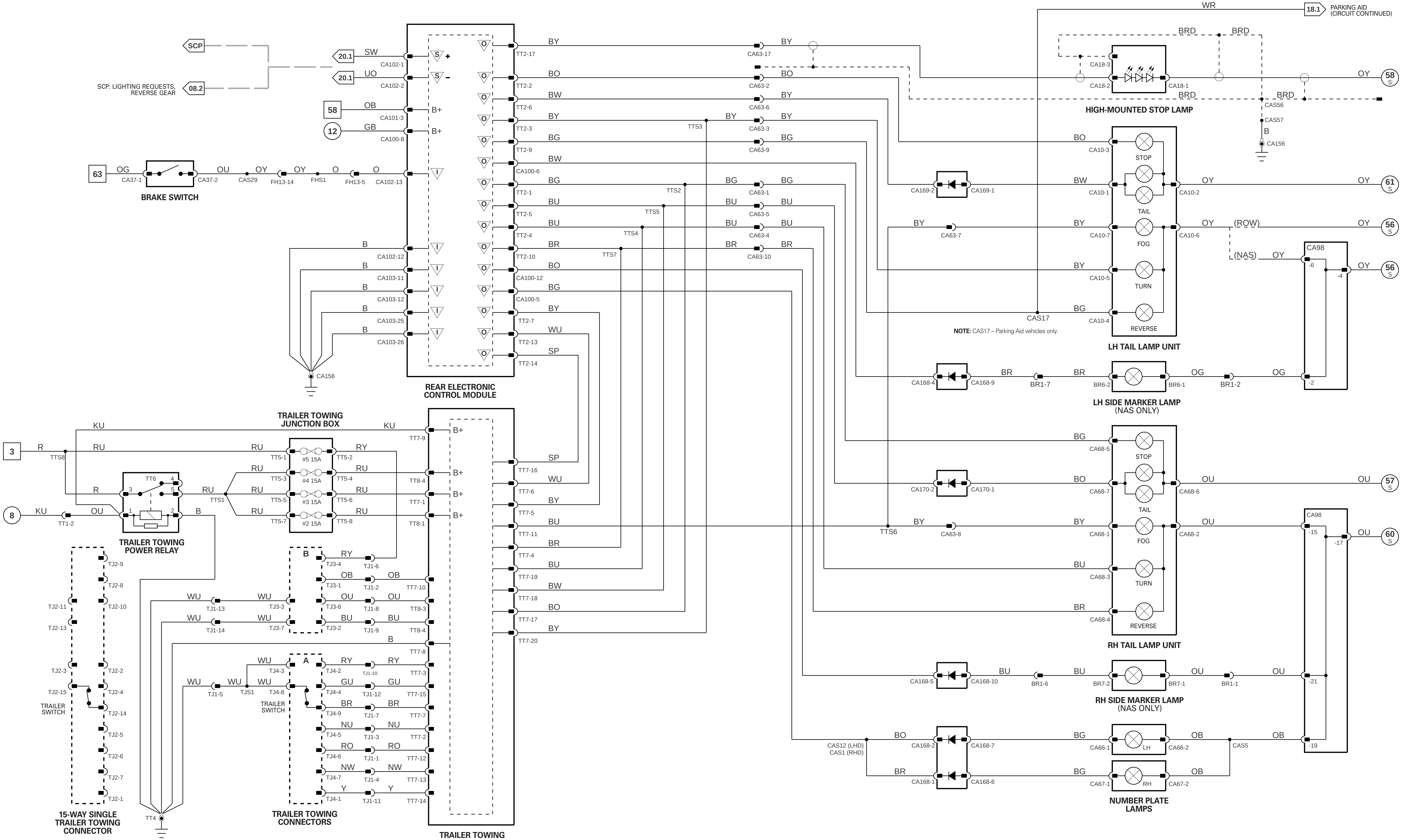
GROUNDS

Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

Exterior Lighting: Rear – Trailer Towing



NOTE: Refer to Fig. 09.2 for switching circuits.

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Trailer Towing Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 08.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
HEADLAMP LEVELING ACTUATOR – LH	HL1L	10-WAY / BLACK	BEHIND LH HEADLAMP ASSEMBLY
HEADLAMP LEVELING ACTUATOR – RH	HL1R	10-WAY / BLACK	BEHIND RH HEADLAMP ASSEMBLY
HEADLAMP LEVELING SWITCH	FC41	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN

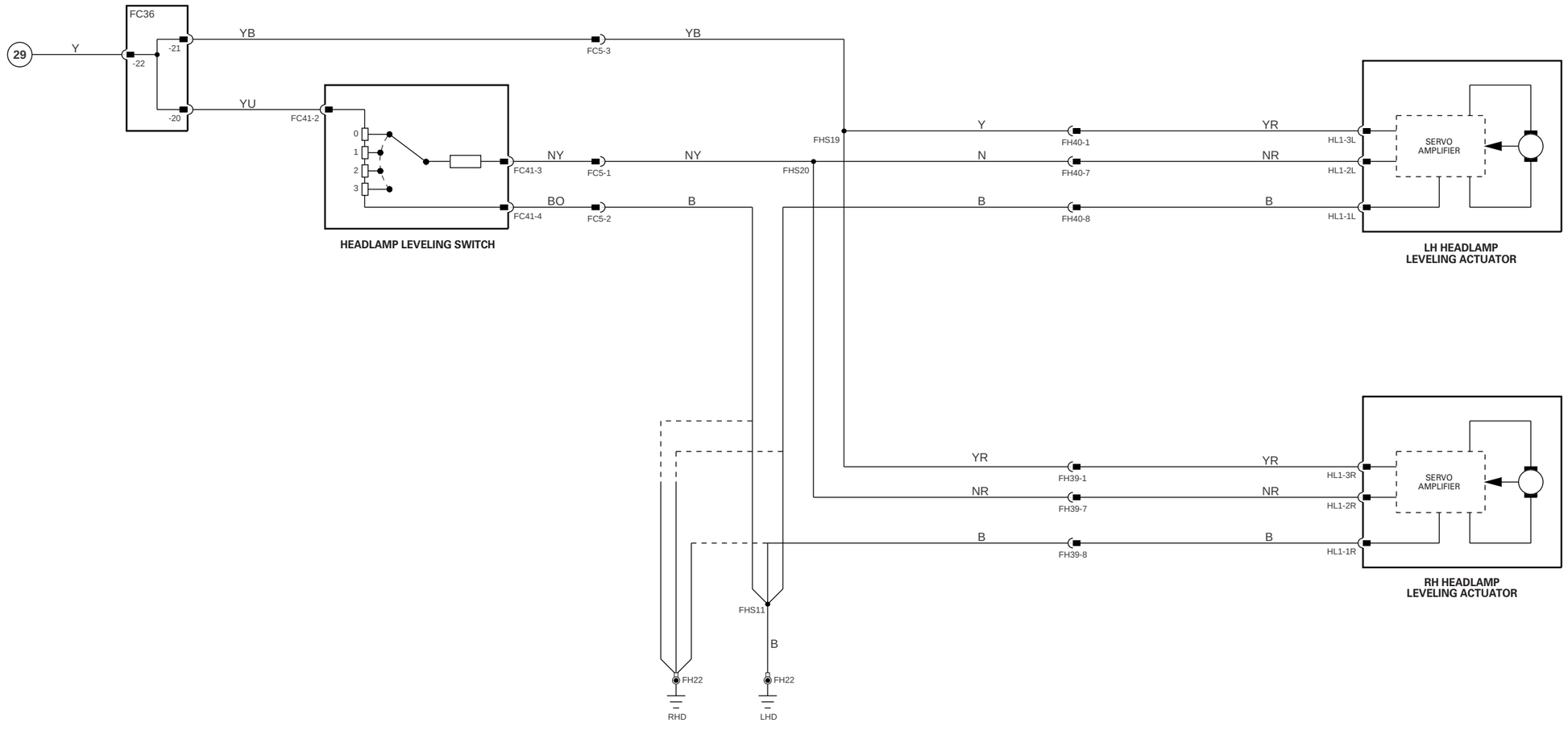
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FC36	22-WAY WHITE / JUNCTION CONNECTOR	BEHIND GLOVE BOX
FH39	12-WAY / GREY / FRONT HARNESS TO HEADLAMP LINK LEAD	BEHIND HEADLAMP ASSEMBLY, RH SIDE
FH40	12-WAY / GREY / FRONT HARNESS TO HEADLAMP LINK LEAD	BEHIND HEADLAMP ASSEMBLY, LH SIDE

GROUNDS

Ground	Ground Description	Location
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: Headlamp Leveling Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-15	PASSENGER DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-8	DRIVER DOOR AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
O	CA31-12	FASCIA, GLOVE BOX, DOOR COURTESY, MAP, SUN VISOR LIGHTING ACTIVATE	GROUND (PWM)	B+
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC63-4	MASTER INTERIOR LIGHTING SWITCH / DIMMER SWITCH REFERENCE GROUND	GROUND	GROUND
I	FC63-16	DIMMER SWITCH / MASTER INTERIOR LIGHTS ACTIVATE	1.9V = DIM; 4V = BRIGHT; 0V = MASTER INTERIOR LIGHTS ON	

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
O	CA100-11	TRUNK LAMP ACTIVATE	GROUND	B+
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA102-14	TRUNK AJAR SWITCH	GROUND = AJAR	B+
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 09.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR COURTESY LAMP – DRIVER	DD6	2-WAY / BLACK	DRIVER DOOR
DOOR COURTESY LAMP – PASSENGER	PD3	2-WAY / BLACK	PASSENGER DOOR
DOOR LATCH ASSEMBLY – DRIVER	DT5	10-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – LH REAR	CA81	10-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – PASSENGER	PT3	10-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – RH REAR	CA90	10-WAY / BLACK	RH REAR DOOR, TRIM PANEL
FASCIA LAMP – LH	FC44	1-WAY / WHITE	LH FOOTWELL
FASCIA LAMP – RH	FC51	1-WAY / WHITE	RH FOOTWELL
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
GLOVE BOX LAMP	FC31	2-WAY / BLACK	GLOVE BOX
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
MAP LAMP SWITCH – LH FRONT	RF13	6-WAY / BLACK	ROOF CONSOLE
MAP LAMP SWITCH – RH FRONT	RF15	6-WAY / BLACK	ROOF CONSOLE
MAP LAMP – LH FRONT	RF11	1-WAY / METALLIC	ROOF CONSOLE
MAP LAMP – LH FRONT	RF17	1-WAY / METALLIC	ROOF CONSOLE
MAP LAMP – LH REAR	RF20	4-WAY / BLACK	ABOVE GRAB HANDLE
MAP LAMP – RH FRONT	RF16	1-WAY / METALLIC	ROOF CONSOLE
MAP LAMP – RH FRONT	RF7	1-WAY / METALLIC	ROOF CONSOLE
MAP LAMP – RH REAR	RF23	4-WAY / BLACK	ABOVE GRAB HANDLE
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
ROOF CONSOLE SWITCH PACK	RF26	8-WAY / WHITE	ROOF CONSOLE
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
SUNVISOR LAMP – LH (AND GARAGE DOOR OPENER – NAS)	RF12	2-WAY / BLACK	WINDSHIELD, LH SIDE
SUNVISOR LAMP – RH	RF24	2-WAY / BLACK	WINDSHIELD, RH SIDE
TRUNK LAMP – LH	CA167	1-WAY / BLACK	TRUNK, LH SIDE
TRUNK LAMP – RH	CA96	1-WAY / BLACK	TRUNK, RH SIDE
TRUNK SWITCH	CA117	2-WAY / BLACK	TRUNK LID

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

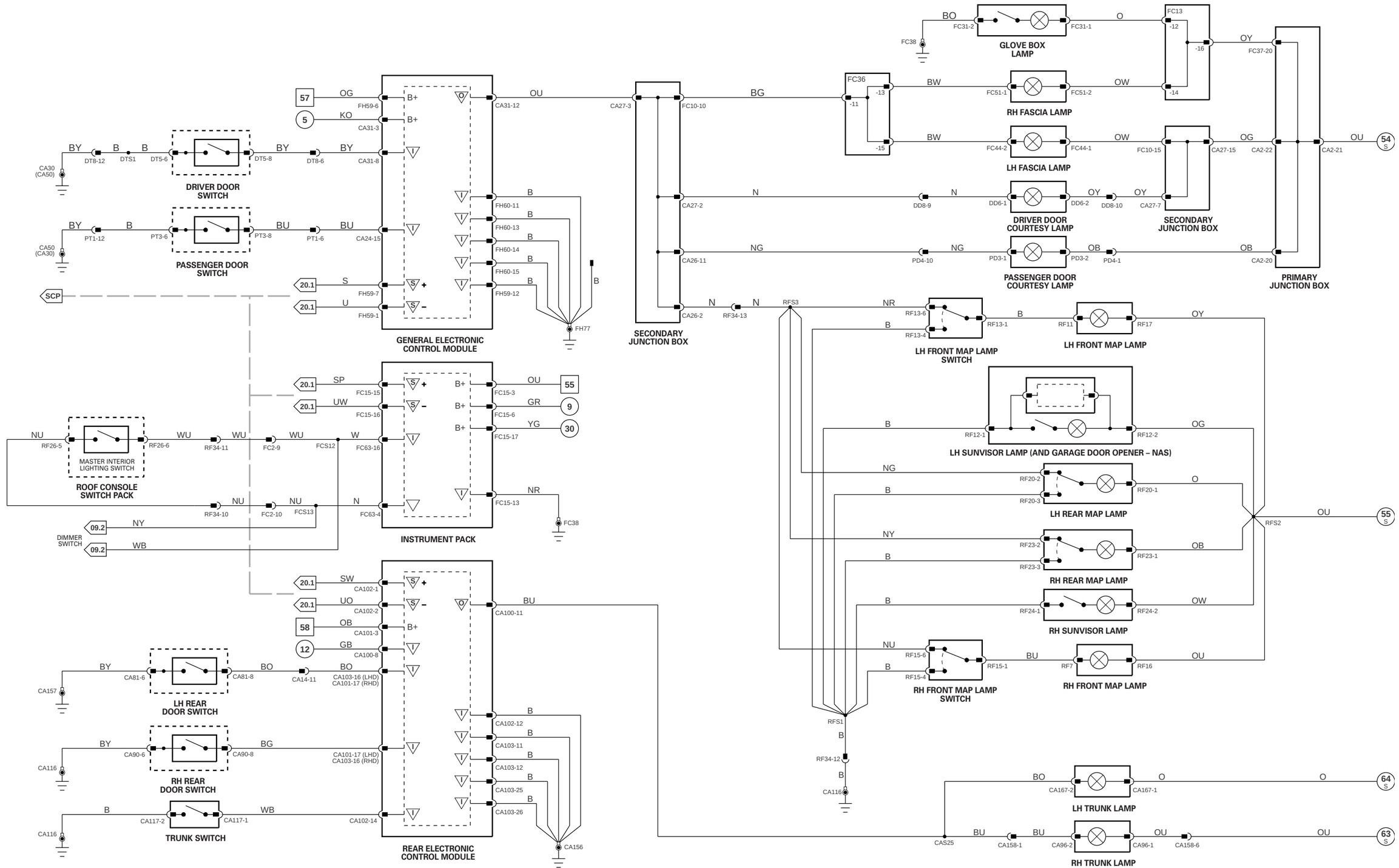
Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC13	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC36	22-WAY WHITE / JUNCTION CONNECTOR	BEHIND GLOVE BOX
PD4	10-WAY / GREY / PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

Input / Output | Signal Ground (SG) / SCP Network | ACP Network / Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Air Conditioning Control Module

▽	Pin	Description	Active	Inactive
S	FC28-1	SCP -	2 – 1600 Hz	
S	FC28-12	SCP +	2 – 1600 Hz	

General Electronic Control Module

▽	Pin	Description	Active	Inactive
O	CA24-1	LOCATE ILLUMINATION ACTIVATE	B+ (PWM)	GROUND
I	CA31-1	LOCATE ILLUMINATION POWER SUPPLY	B+	GROUND
O	CA31-11	LOCATE ILLUMINATION	B+ (PWM)	GROUND
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
O	FC14-7	SWITCH LOCATE LIGHTING ILLUMINATION	GROUND (PWM)	B+
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC63-1	LIGHTING SWITCH REFERENCE GROUND	GROUND	GROUND
REF	FC63-4	MASTER INTERIOR LIGHTING SWITCH / DIMMER SWITCH REFERENCE GROUND	GROUND	GROUND
I	FC63-12	EXTERIOR LIGHTING MODE SELECTION REQUEST	2.9V = SIDE LAMPS; 2.1V = HEADLAMPS; 0.8V = FOGLAMPS	
I	FC63-16	DIMMER SWITCH / MASTER INTERIOR LIGHTS ACTIVATE	1.9V = DIM; 4V = BRIGHT; 0V = MASTER INTERIOR LIGHTS ON	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 09.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
CIGAR LIGHTER	CA109	3-WAY / BROWN	CENTER CONSOLE
DIMMER SWITCH	FC60	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN
DOOR SWITCH PACK – DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HEADLAMP LEVELING SWITCH	FC41	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
J-GATE ASSEMBLY	CA41	16-WAY / GREEN	CENTER CONSOLE
LIGHTING SWITCH	FC11	10-WAY / YELLOW	FASCIA, ADJACENT TO STEERING COLUMN
MESSAGE CENTER SWITCH PACK	FC65	8-WAY / BLACK	FASCIA, ADJACENT TO INSTRUMENT PACK
NAVIGATION DISPLAY MODULE	FC67	20-WAY / WHITE	FASCIA, CENTER
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
SEAT HEATER SWITCH – LH FRONT	FC68	8-WAY / VIOLET	BELOW CLIMATE CONTROL PANEL
SEAT HEATER SWITCH – RH FRONT	FC69	8-WAY / WHITE	BELOW CLIMATE CONTROL PANEL
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL AUDIO CONTROL SWITCHES	SQ1	10-WAY / WHITE	STEERING WHEEL
STEERING WHEEL CRUISE CONTROL SWITCHES	SQ2	10-WAY / WHITE	STEERING WHEEL
TRACTION CONTROL SWITCH	CA45	8-WAY / BLUE	CENTER CONSOLE
TRANSMISSION MODE SWITCH	CA38	10-WAY / GREEN	CENTER CONSOLE
WINDOW SWITCH – LH REAR	CA78	5-WAY / GREEN	LH REAR DOOR ARM REST
WINDOW SWITCH – PASSENGER	PD1	5-WAY / GREEN	PASSENGER DOOR ARM REST
WINDOW SWITCH – RH REAR	CA95	5-WAY / GREEN	RH REAR DOOR ARM REST

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC12	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC36	22-WAY WHITE / JUNCTION CONNECTOR	BEHIND GLOVE BOX
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PD4	10-WAY / GREY / PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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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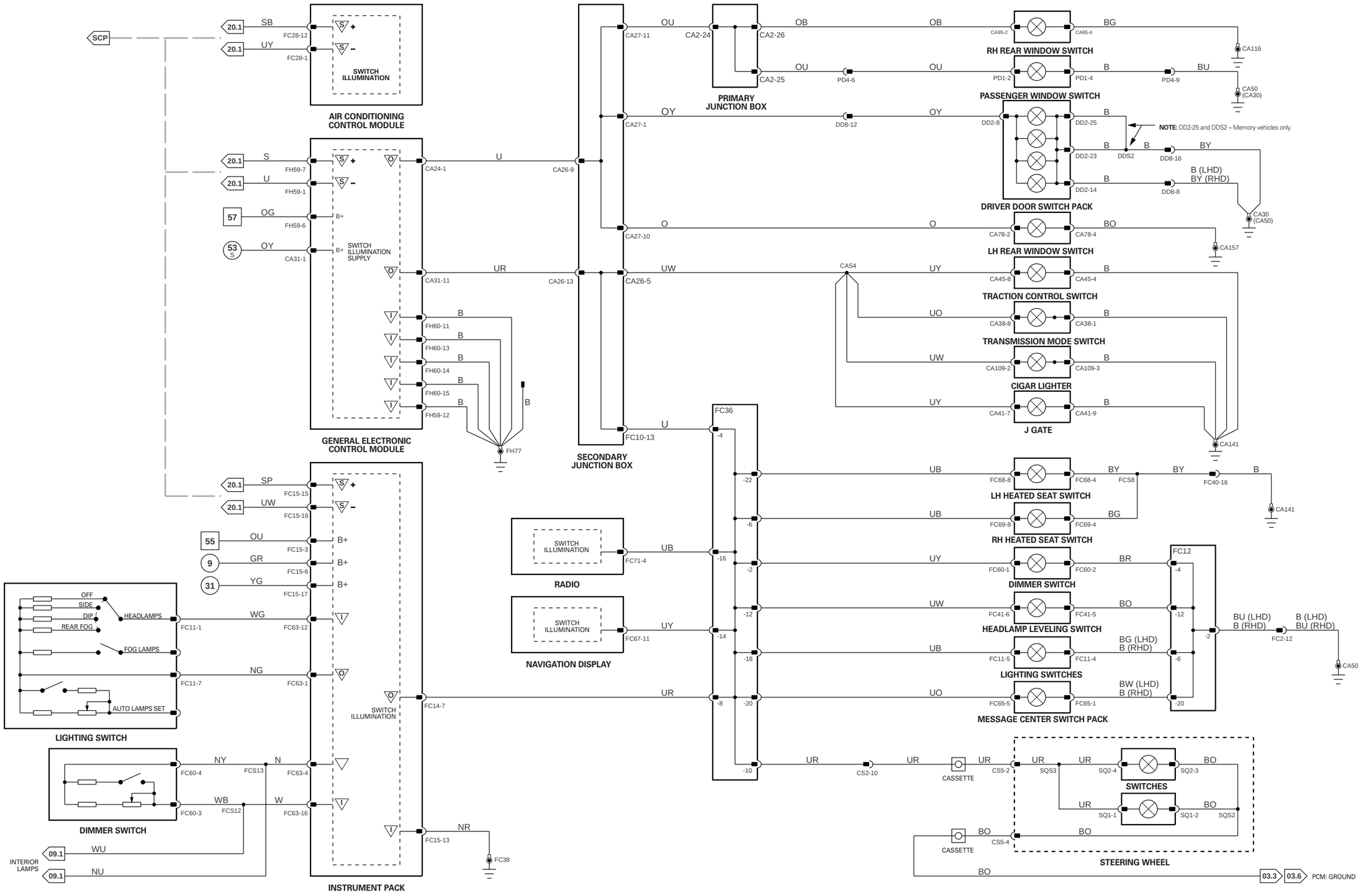

1 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6

I Input	Signal Ground (SG)	A ACP Network
O Output	S SCP Network	D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-7	GROUND SUPPLY	GROUND	GROUND
O	DD4-7	MEMORY SET INDICATOR LED	B+	GROUND
I	DD4-10	MEMORY '1' BUTTON INPUT	GROUND	B+
I	DD4-11	MEMORY '2' BUTTON INPUT	GROUND	B+
I	DD4-25	MEMORY 'SET' BUTTON INPUT	GROUND	B+

General Electronic Control Module

▽	Pin	Description	Active	Inactive
S	FH59-1	SCP -	2 – 1600 Hz	
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
O	FH60-2	VARIABLE ASSIST STEERING ACTUATOR NEGATIVE	2V @ IDLE; DECREASING WITH VEHICLE SPEED	
O	FH60-9	VARIABLE ASSIST STEERING ACTUATOR POSITIVE	9V @ IDLE; INCREASING WITH VEHICLE SPEED	
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC14-1	COLUMN MOTORS BATTERY POWER SUPPLY	B+	B+
O	FC14-2	STEERING COLUMN MOTOR UP SUPPLY	B+	GROUND
O	FC14-3	STEERING COLUMN MOTOR DOWN SUPPLY	B+	GROUND
O	FC14-4	STEERING COLUMN MOTOR IN SUPPLY	B+	GROUND
O	FC14-5	STEERING COLUMN MOTOR OUT SUPPLY	B+	GROUND
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC63-3	STEERING COLUMN ADJUSTMENT SWITCH REFERENCE GROUND	GROUND	
REF	FC63-9	STEERING COLUMN POSITION POTENTIOMETERS COMMON REFERENCE GROUND	GROUND	GROUND
I	FC63-10	STEERING COLUMN TILT AWAY FEATURE SELECTION	GROUND = ON	B+ = OFF
I	FC63-15	STEERING COLUMN MOVEMENT REQUEST	2.1V = UP; 1.1V = DOWN; 2.8V = IN; 3.2V = OUT	4.8V = AT REST
REF	FC63-19	STEERING COLUMN POSITION POTENTIOMETERS COMMON REFERENCE VOLTAGE	5V	5V
I	FC63-20	STEERING COLUMN UP / DOWN POSITION POTENTIOMETER FEEDBACK	1 – 4V	
I	FC63-21	STEERING COLUMN IN / OUT POSITION POTENTIOMETER FEEDBACK	1 – 4V	

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 10.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
COLUMN POSITION FEEDBACK POTENTIOMETERS	CS4	10-WAY / WHITE	STEERING COLUMN
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR SWITCH PACK – DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
STEERING COLUMN ADJUST SWITCH	CS12	10-WAY / BLACK	STEERING COLUMN
STEERING COLUMN MOTORS	FC17	4-WAY / WHITE	STEERING COLUMN
VARIABLE ASSIST STEERING ACTUATOR	FH16	2-WAY / BLACK	ON STEERING RACK ASSEMBLY

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
CS3	10-WAY / GREY / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL

GROUNDS

Ground	Ground Description	Location
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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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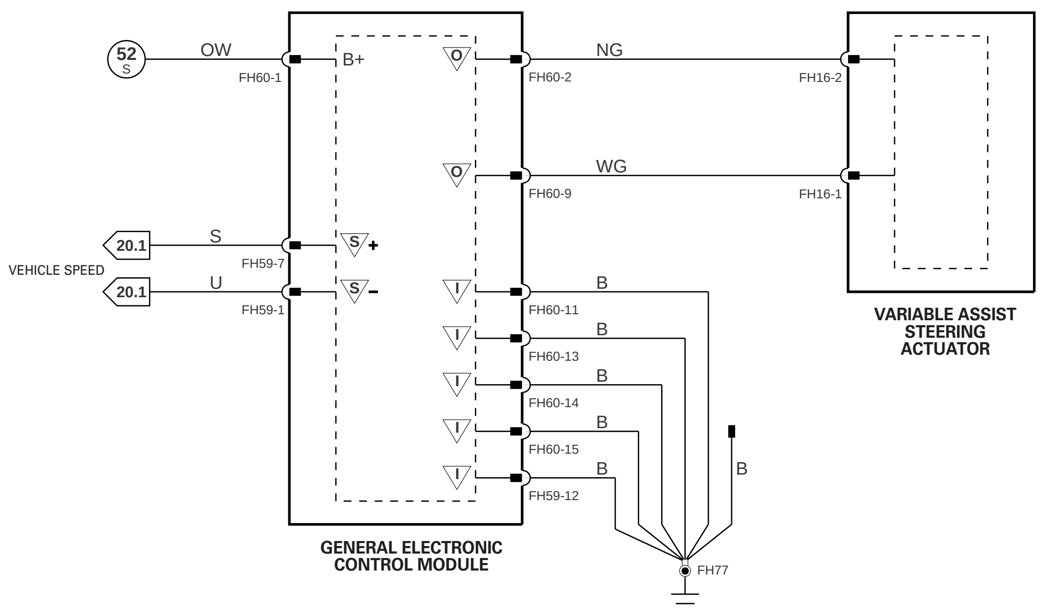
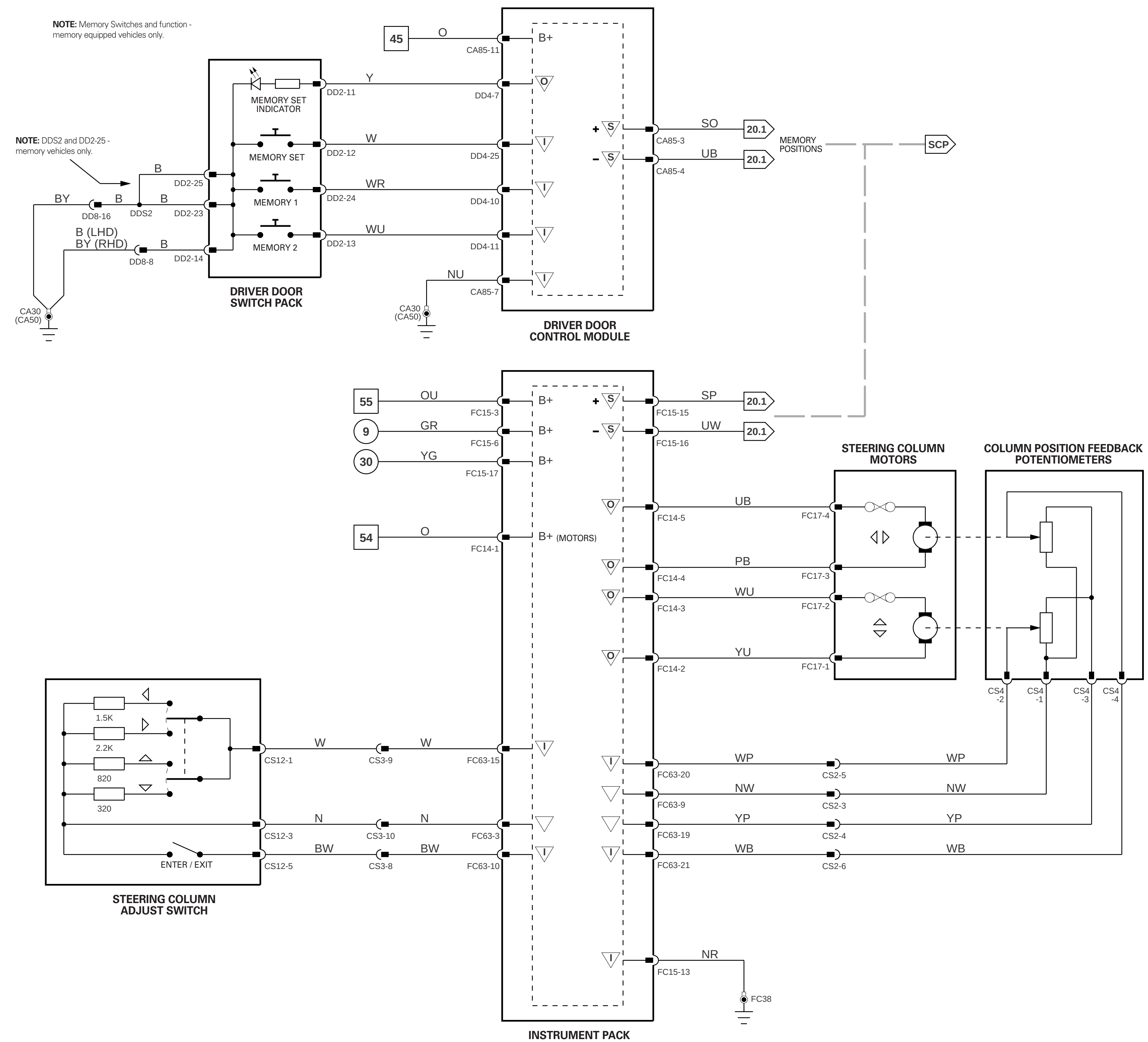
Variable Assist Steering; Steering Column Movement





I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Air Conditioning Control Module

▽	Pin	Description	Active	Inactive
S	FC28-1	SCP -	2 – 1600 Hz	
S	FC28-12	SCP +	2 – 1600 Hz	

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-7	GROUND SUPPLY	GROUND	GROUND
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
O	DD4-7	MEMORY SET INDICATOR LED	B+	GROUND
I	DD4-10	MEMORY '1' BUTTON INPUT	GROUND	B+
I	DD4-11	MEMORY '2' BUTTON INPUT	GROUND	B+
I	DD4-14	PASSENGER MIRROR UP / DOWN MOVEMENT REQUEST	B+	GROUND
I	DD4-15	PASSENGER MIRROR LEFT / RIGHT MOVEMENT REQUEST	B+	GROUND
I	DD4-16	DRIVER MIRROR UP / DOWN MOVEMENT REQUEST	B+	GROUND
I	DD4-17	DRIVER MIRROR LEFT / RIGHT MOVEMENT REQUEST	B+	GROUND
I	DD4-18	MIRROR MOVEMENT COMMON SUPPLY	B+	GROUND
I	DD4-25	MEMORY 'SET' BUTTON INPUT	GROUND	B+
O	DT2-1	DRIVER MIRROR OUT MOVEMENT SUPPLY	B+	GROUND
O	DT2-2	DRIVER MIRROR IN MOVEMENT SUPPLY	B+	GROUND
O	DT2-3	DRIVER MIRROR UP MOVEMENT SUPPLY	B+	GROUND
O	DT2-4	DRIVER MIRROR DOWN MOVEMENT SUPPLY	B+	GROUND
REF	DT2-5	MIRROR POSITION POTENTIOMETER REFERENCE VOLTAGE	B+	B+
I	DT2-14	MIRROR IN / OUT POSITION FEEDBACK	1 – 8V	
I	DT2-15	MIRROR UP / DOWN POSITION FEEDBACK	1 – 8V	
REF	DT2-19	MIRROR POSITION POTENTIOMETER REFERENCE GROUND	GROUND	GROUND

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-7	PASSENGER DOOR MIRROR HORIZONTAL POSITION FEEDBACK	1.9V = IN	6.3V = OUT
REF	CA24-8	PASSENGER DOOR MIRROR POTENTIOMETER REFERENCE VOLTAGE	9V	9V
I	CA24-11	PASSENGER DOOR MIRROR VERTICAL POSITION FEEDBACK	7V = UP	3V = DOWN
O	CA24-20	PASSENGER DOOR MIRROR UP MOVEMENT REQUEST	B+	GROUND
O	CA24-21	PASSENGER DOOR MIRROR DOWN MOVEMENT REQUEST	B+	GROUND
REF	CA24-22	PASSENGER DOOR MIRROR POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
O	CA24-23	PASSENGER DOOR MIRROR IN MOVEMENT REQUEST	B+	GROUND
O	CA24-24	PASSENGER DOOR MIRROR OUT MOVEMENT REQUEST	B+	GROUND
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
O	CA102-7	HEATED BACKLIGHT RELAY ACTIVATE	GROUND	B+
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-13	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 10.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR MIRROR ASSEMBLY – DRIVER	DT6	16-WAY / BLACK	DRIVER DOOR
	QQ5	10-WAY / BLUE	DRIVER DOOR
DOOR MIRROR ASSEMBLY – PASSENGER	CA19	16-WAY / BLACK	PASSENGER DOOR
	QQ4	10-WAY / BLUE	PASSENGER DOOR
DOOR SWITCH PACK – DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HEATED BACKLIGHT	HM1	10-WAY / BLACK	REAR WINDOW
	HM4	10-WAY / BLACK	REAR WINDOW
	HM5	10-WAY / BLACK	REAR WINDOW
HIDDEN ANTENNA MODULE	HM2	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	HM3	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA20	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA159	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL

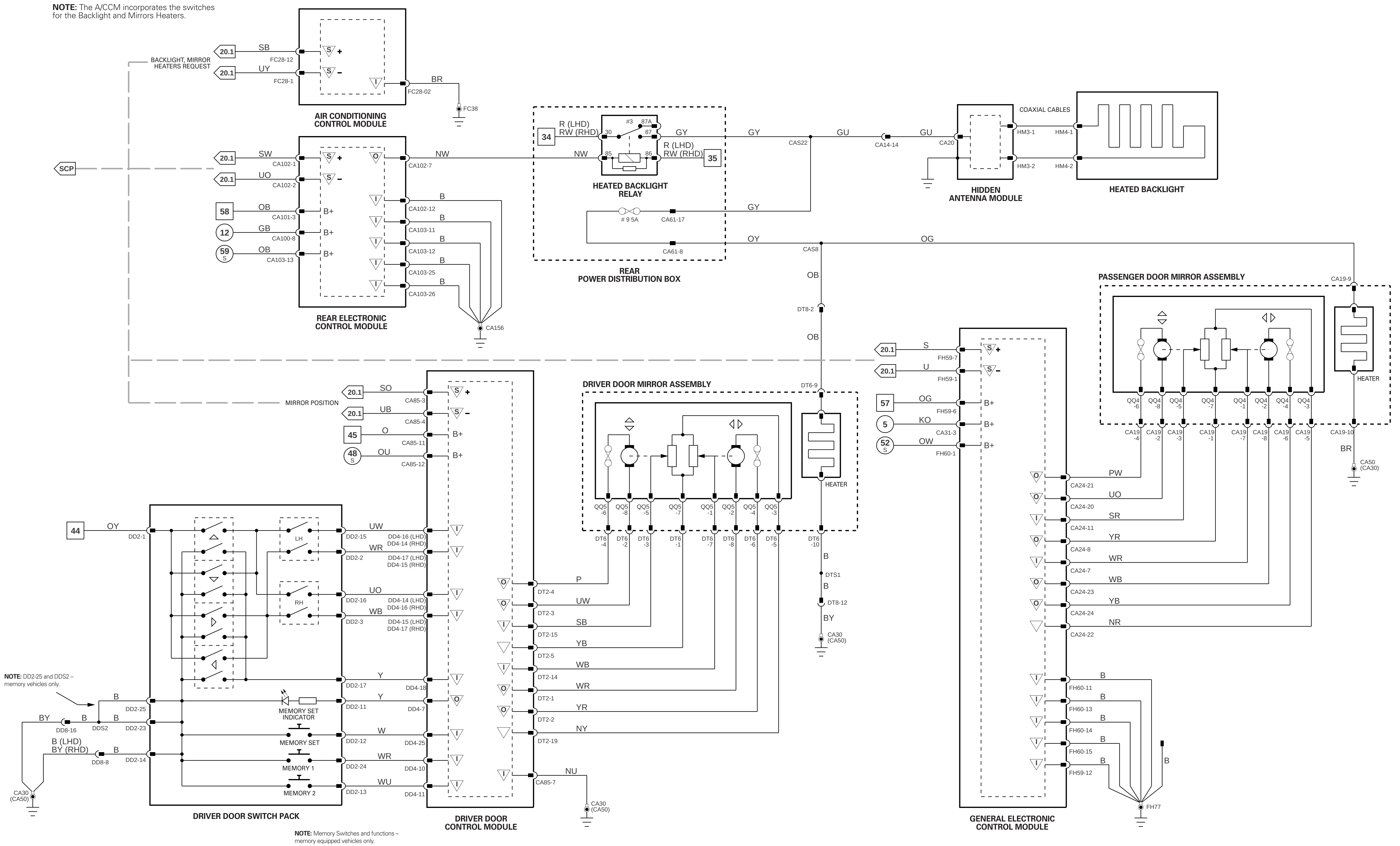
GROUNDS

Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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

Door Mirrors Movement and Heaters; Heated Backlight



1 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6

I Input — O Output — Signal Ground (SG) — S SCP Network — A ACP Network — D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
REF	FC63-1	LIGHTING SWITCH REFERENCE GROUND	GROUND	GROUND
I	FC63-12	EXTERIOR LIGHTING MODE SELECTION REQUEST	2.9V = SIDE LAMPS; 2.1V = HEADLAMPS; 0.8V = FOGLAMPS	
I	FC63-13	FRONT FOGLAMP ACTIVATION REQUEST	1.5V = ON	4.7V = OFF
I	FC63-14	AUTO HEADLAMP DELAY SETTING FEEDBACK	1.4V = 3 MINUTES	3.9V = SECONDS

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
O	CA102-4	ELECTROCHROMIC REAR VIEW MIRROR DIM REQUEST	B+	GROUND
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 10.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR MIRROR ASSEMBLY – DRIVER	DT6	16-WAY / BLACK	DRIVER DOOR
	QQ5	10-WAY / BLUE	DRIVER DOOR
DOOR MIRROR ASSEMBLY – PASSENGER	CA19	16-WAY / BLACK	PASSENGER DOOR
	QQ4	10-WAY / BLUE	PASSENGER DOOR
FOLD BACK MIRROR SWITCH	DD1	60-WAY / WHITE	DRIVER DOOR MAP POCKET
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
LIGHTING SWITCH	FC11	10-WAY / YELLOW	FASCIA, ADJACENT TO STEERING COLUMN
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
REAR VIEW MIRROR	RF35	3-WAY / BLACK	WINDSHIELD, CENTER

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

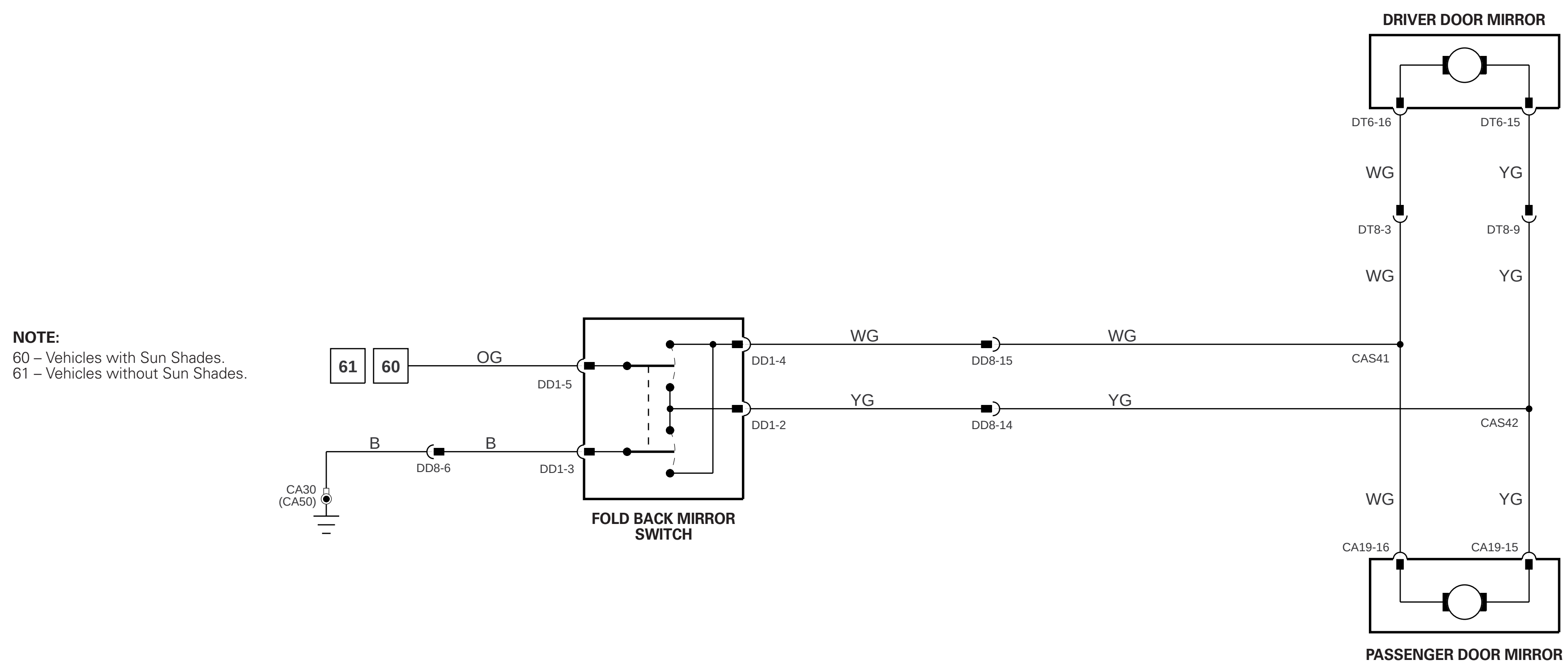
Connector	Connector Description	Location
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

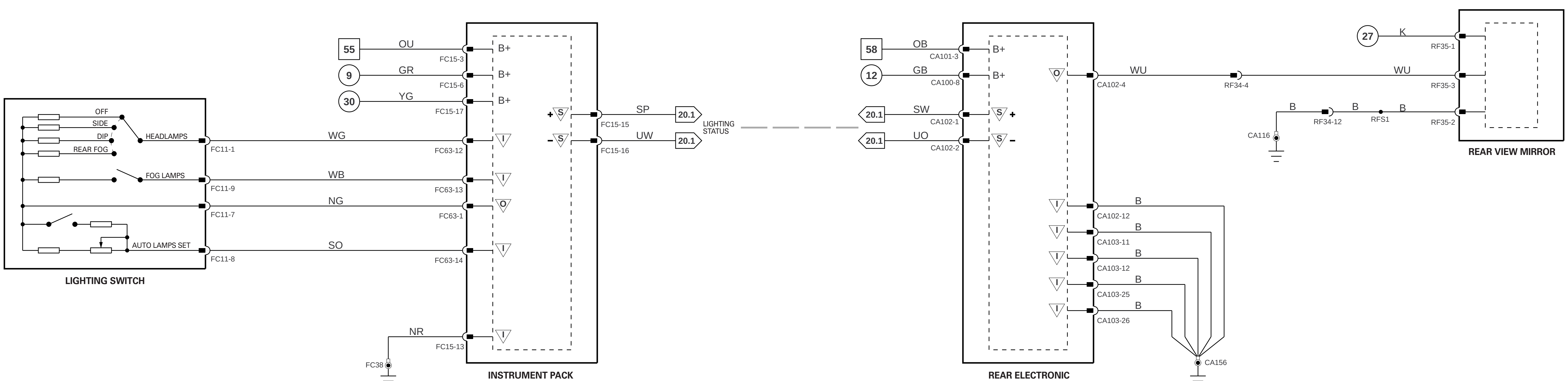
GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: Fold-Back Mirror Vehicles; All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-7	GROUND SUPPLY	GROUND	GROUND
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
O	DD4-7	MEMORY SET INDICATOR LED	B+	GROUND
I	DD4-10	MEMORY '1' BUTTON INPUT	GROUND	B+
I	DD4-11	MEMORY '2' BUTTON INPUT	GROUND	B+
I	DD4-25	MEMORY 'SET' BUTTON INPUT	GROUND	B+

Driver Seat Control Module

▽	Pin	Description	Active	Inactive
O	DM6-1	SEAT FORE / AFT MOTOR SUPPLY	B+	GROUND
O	DM6-2	SEAT BACK RECLINE MOTOR SUPPLY	B+	GROUND
REF	DM6-3	SEAT RECLINE POSITION POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
I	DM6-4	SEAT FORE / AFT POSITION POTENTIOMETER FEEDBACK	1 – 8V	
I	DM6-5	SEAT CUSHION FRONT POSITION POTENTIOMETER FEEDBACK	1 – 8V	
REF	DM6-6	SEAT BACK RECLINE POSITION POTENTIOMETER REFERENCE VOLTAGE	B+	B+
O	DM6-7	SEAT CUSHION FRONT MOTOR SUPPLY	B+	GROUND
O	DM6-8	SEAT CUSHION REAR MOTOR SUPPLY	B+	GROUND
O	DM6-9	SEAT BACK RECLINE MOTOR SUPPLY	B+	GROUND
O	DM6-10	SEAT FORE / AFT MOTOR SUPPLY	B+	GROUND
REF	DM6-11	SEAT POSITION POTENTIOMETER COMMON REFERENCE GROUND	GROUND	GROUND
I	DM6-13	SEAT BACK RECLINE POSITION POTENTIOMETER FEEDBACK	1 – 8V	
I	DM6-14	SEAT CUSHION REAR POSITION POTENTIOMETER FEEDBACK	1 – 8V	
REF	DM6-15	SEAT POSITION POTENTIOMETER COMMON REFERENCE VOLTAGE	B+	B+
O	DM6-16	SEAT CUSHION REAR MOTOR SUPPLY	B+	GROUND
O	DM6-17	SEAT CUSHION FRONT MOTOR SUPPLY	B+	GROUND
S	DM9-1	SCP +	2 – 1600 Hz	
I	DM9-2	GROUND SUPPLY	GROUND	GROUND
I	DM9-3	SEAT CUSHION REARWARD MOVEMENT REQUEST	B+	GROUND
I	DM9-4	SEAT BACK RECLINE REQUEST	B+	GROUND
I	DM9-5	SEAT CUSHION FRONT LOWER REQUEST	B+	GROUND
I	DM9-6	SEAT CUSHION REAR LOWER REQUEST	B+	GROUND
S	DM9-9	SCP -	2 – 1600 Hz	
I	DM9-10	BATTERY POWER SUPPLY	B+	B+
I	DM9-11	SEAT MOVEMENT FORWARD MOVEMENT REQUEST	B+	GROUND
I	DM9-12	SEAT BACK RAISE REQUEST	B+	GROUND
I	DM9-13	SEAT CUSHION FRONT RAISE REQUEST	B+	GROUND
I	DM9-14	SEAT CUSHION REAR RAISE REQUEST	B+	GROUND
I	DM10-3	GROUND SUPPLY	GROUND	GROUND
I	DM10-4	SEAT MOTORS BATTERY POWER SUPPLY	B+	B+

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 11.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CUSHION FRONT RAISE / LOWER MOTOR – DRIVER	DM4	2-WAY / GREY	BELOW SEAT CUSHION
	DM17	3-WAY / WHITE	BELOW SEAT CUSHION
CUSHION REAR RAISE / LOWER MOTOR – DRIVER	DM3	2-WAY / GREY	BELOW SEAT CUSHION
	DM14	3-WAY / WHITE	BELOW SEAT CUSHION
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR SWITCH PACK – DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
LUMBAR PUMP – DRIVER	DB5	2-WAY / GREY	BEHIND SEAT BACK FINISHER
LUMBAR SWITCH – DRIVER	DM2	6-WAY / GREY	DRIVER SEAT
SEAT BACK HEATER – DRIVER	DB7	1-WAY / BLACK	SEAT BACK
SEAT CONTROL MODULE – DRIVER	DM6	17-WAY / BLACK	BELOW SEAT CUSHION
	DM9	17-WAY / GREY	BELOW SEAT CUSHION
	DM10	4-WAY / BROWN	BELOW SEAT CUSHION
SEAT FORE / AFT MOTOR – DRIVER	DM1	2-WAY / GREY	BELOW SEAT CUSHION
	DM13	3-WAY / WHITE	BELOW SEAT CUSHION
SEAT HEATER CONTROL MODULE – DRIVER	DM15	10-WAY / YELLOW	BELOW SEAT CUSHION
SEAT HEATER SWITCH – LH FRONT	FC68	8-WAY / VIOLET	BELOW CLIMATE CONTROL PANEL
SEAT HEATER SWITCH – RH FRONT	FC69	8-WAY / WHITE	BELOW CLIMATE CONTROL PANEL
SEAT HEATER – DRIVER	DM16	4-WAY / BLACK	BELOW SEAT CUSHION
SEAT SWITCH PACK – DRIVER	DM7	12-WAY / GREY	DRIVER SEAT
SQUAB RECLINE MOTOR – DRIVER	DB3	2-WAY / BLACK	SEAT SQUAB
	DB6	3-WAY / WHITE	SEAT SQUAB

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
DB1	10-WAY / GREY / DRIVER SEAT HARNESS TO SEAT BACK LINK LEAD	BEHIND SEAT BACK FINISHER
DD8	16-WAY / BLUE / DRIVER DOOR HARNESS TO CABIN HARNESS	BEHIND DOOR TRIM PANEL
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE

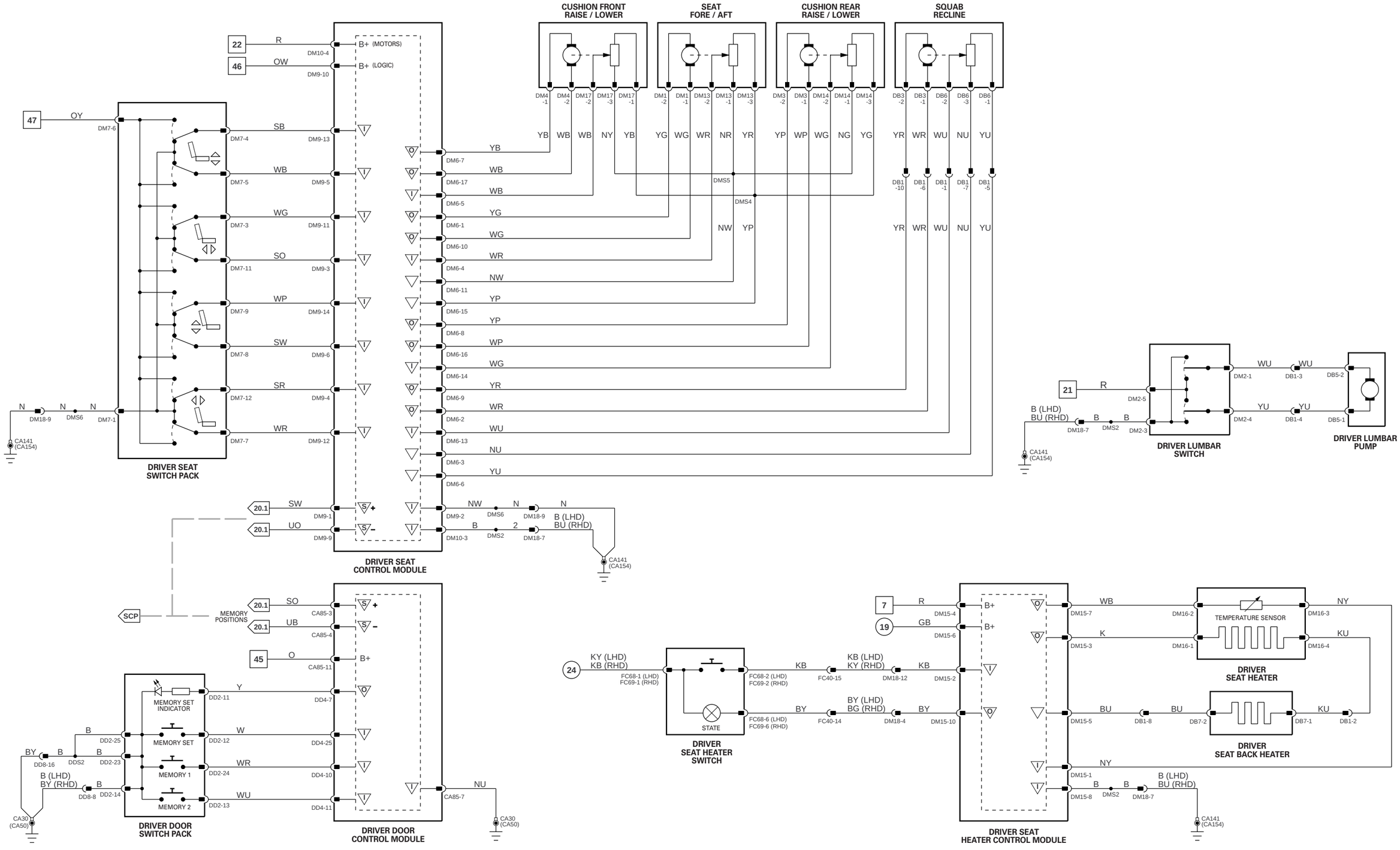
GROUNDS

Ground	Ground Description	Location
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA154	GROUND EYELET	BELOW FRONT SEAT; RH SIDE / UNDER SEAT
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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

Driver Seat: Memory



1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
① → ㊷ Fig. 01.4
㊸ S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: Memory Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 11.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
CUSHION FRONT RAISE / LOWER MOTOR – DRIVER	DM4	2-WAY / GREY	BELOW SEAT CUSHION
CUSHION REAR RAISE / LOWER MOTOR – DRIVER	DM3	2-WAY / GREY	BELOW SEAT CUSHION
LUMBAR PUMP – DRIVER	DB5	2-WAY / GREY	BEHIND SEAT BACK FINISHER
LUMBAR SWITCH – DRIVER	DM2	6-WAY / GREY	DRIVER SEAT
SEAT BACK HEATER – DRIVER	DB7	1-WAY / BLACK	SEAT BACK
SEAT FORE / AFT MOTOR – DRIVER	DM1	2-WAY / GREY	BELOW SEAT CUSHION
SEAT HEATER CONTROL MODULE – DRIVER	DM15	10-WAY / YELLOW	BELOW SEAT CUSHION
SEAT HEATER SWITCH – LH FRONT	FC68	8-WAY / VIOLET	BELOW CLIMATE CONTROL PANEL
SEAT HEATER SWITCH – RH FRONT	FC69	8-WAY / WHITE	BELOW CLIMATE CONTROL PANEL
SEAT HEATER – DRIVER	DM16	4-WAY / BLACK	BELOW SEAT CUSHION
SEAT SWITCH PACK – DRIVER	DM7	12-WAY / GREY	DRIVER SEAT
SQUAB RECLINE MOTOR – DRIVER	DB3	2-WAY / BLACK	SEAT SQUAB

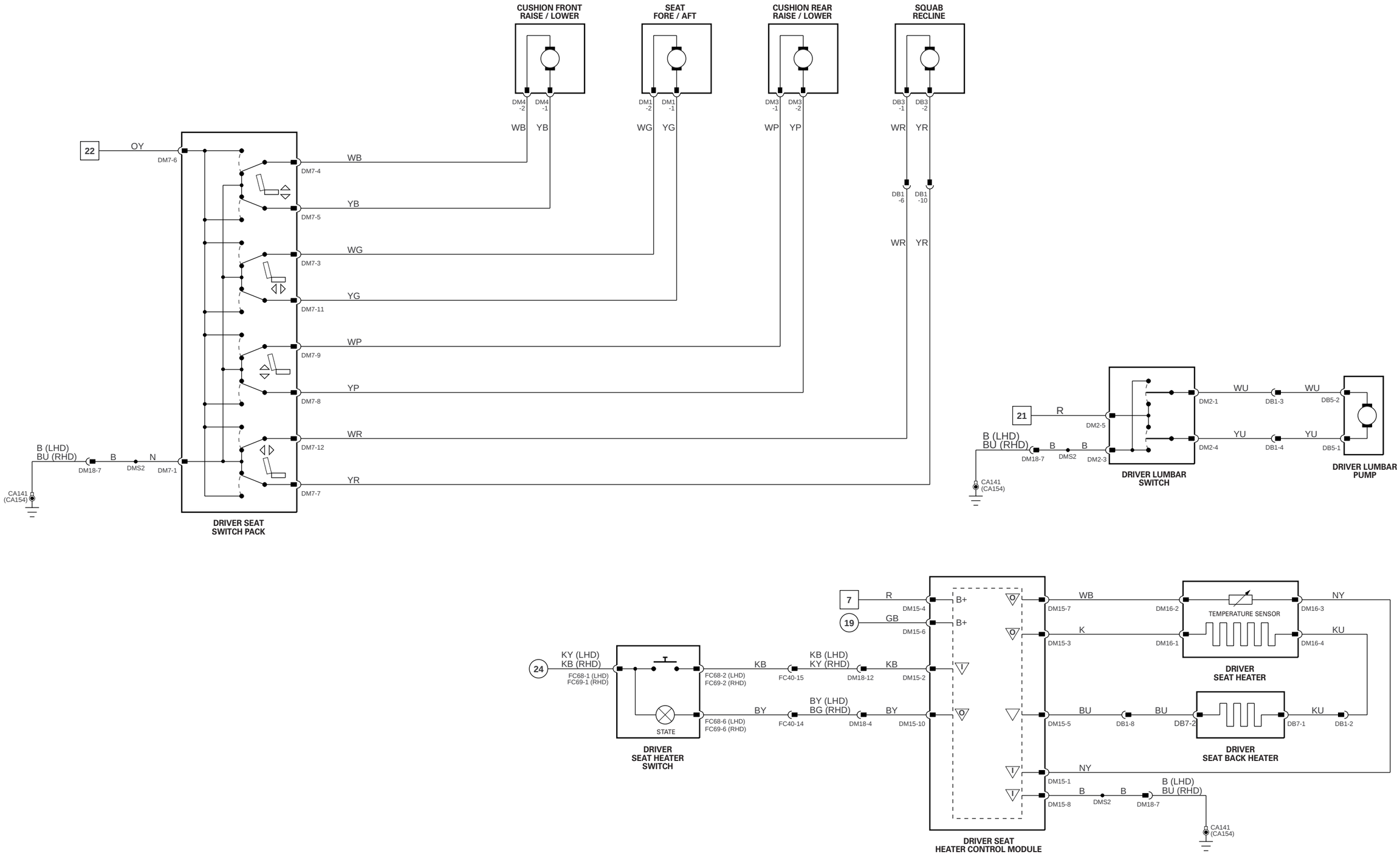
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
DB1	10-WAY / GREY / DRIVER SEAT HARNESS TO SEAT BACK LINK LEAD	BEHIND SEAT BACK FINISHER
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE

GROUNDS

Ground	Ground Description	Location
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA154	GROUND EYELET	BELOW FRONT SEAT; RH SIDE / UNDER 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 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6	I Input / O Output	Signal Ground (SG) / S SCP Network	A ACP Network / D Serial and Encoded Data	**VARIANT:** Non Memory Seat Vehicles **VIN RANGE:** All **DATE OF ISSUE:** JULY 1999		

Fig. 11.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
CUSHION FRONT RAISE / LOWER MOTOR – PASSENGER	PN10	2-WAY / GREY	BELOW SEAT CUSHION
CUSHION REAR RAISE / LOWER MOTOR – PASSENGER	PN3	2-WAY / GREY	BELOW SEAT CUSHION
LUMBAR PUMP – PASSENGER	PB5	2-WAY / GREY	BEHIND SEAT BACK FINISHER
LUMBAR SWITCH – PASSENGER	PN2	6-WAY / GREY	PASSENGER SEAT
SEAT BACK HEATER – PASSENGER	PB7	1-WAY / BLACK	SEAT BACK
SEAT FORE / AFT MOTOR – PASSENGER	PN1	2-WAY / GREY	BELOW SEAT CUSHION
SEAT HEATER CONTROL MODULE – PASSENGER	PN7	10-WAY / YELLOW	BELOW SEAT CUSHION
SEAT HEATER SWITCH – LH FRONT	FC68	8-WAY / VIOLET	BELOW CLIMATE CONTROL PANEL
SEAT HEATER SWITCH – RH FRONT	FC69	8-WAY / WHITE	BELOW CLIMATE CONTROL PANEL
SEAT HEATER – PASSENGER	PN12	4-WAY / BLACK	BELOW SEAT CUSHION
SEAT SWITCH PACK – PASSENGER	PN4	12-WAY / GREY	PASSENGER SWITCH
SQUAB RECLINE MOTOR – PASSENGER	PB3	2-WAY / BLACK	SEAT SQUAB

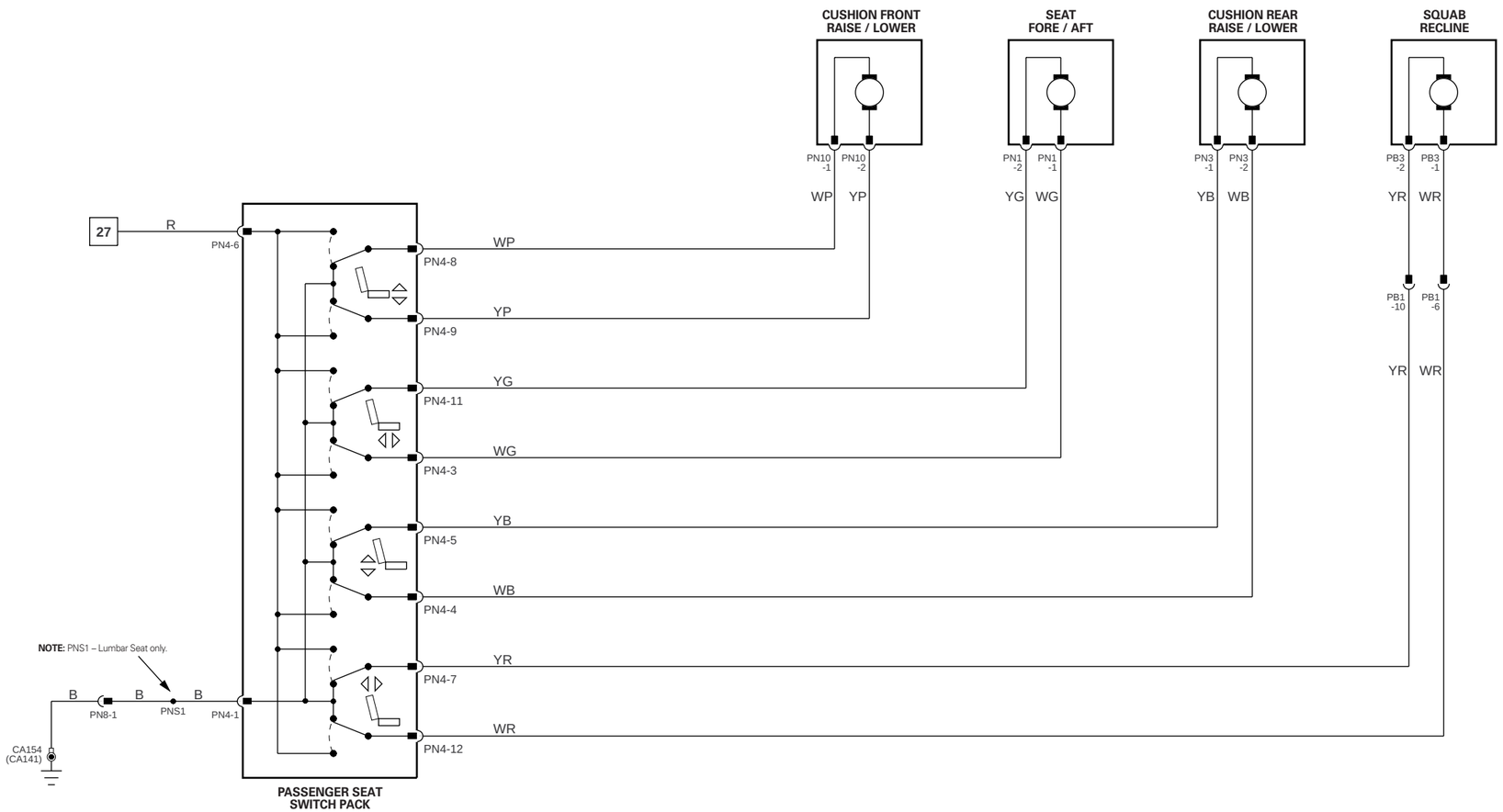
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

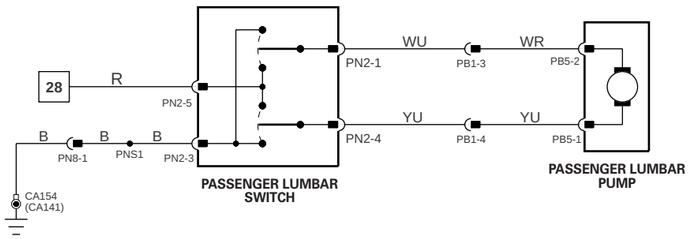
Connector	Connector Description	Location
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PB1	10-WAY / GREY / PASSENGER SEAT HARNESS TO SEAT BACK LINK LEAD	BEHIND SEAT BACK FINISHER
PN8	8-WAY / GREY / CABIN HARNESS TO PASSENGER SEAT HARNESS	BELOW SEAT CUSHION

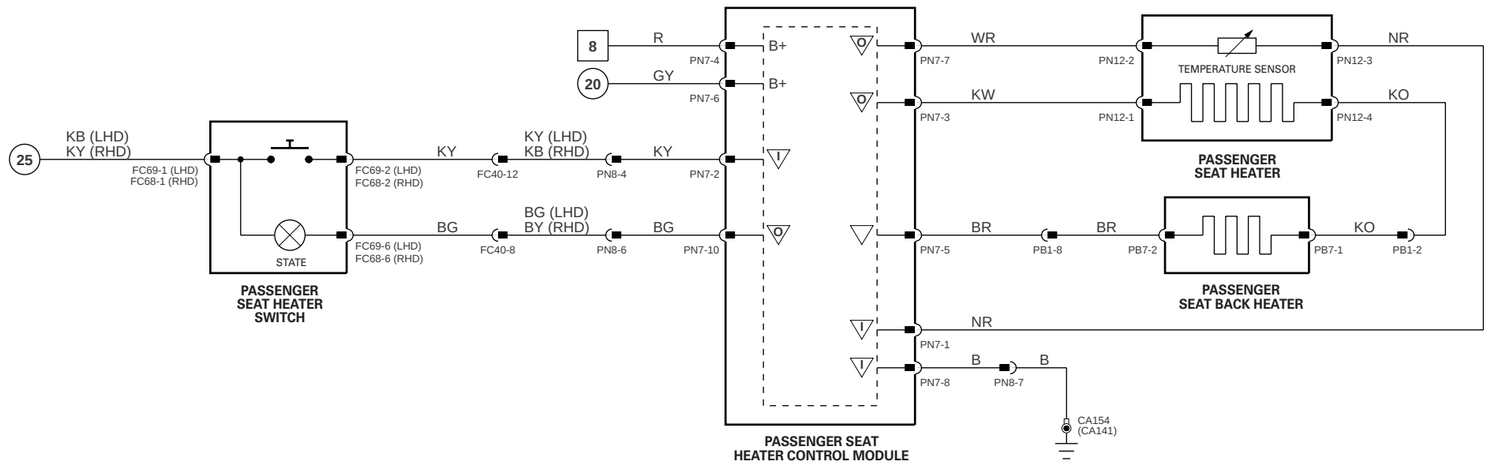
GROUNDS

Ground	Ground Description	Location
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA154	GROUND EYELET	BELOW FRONT SEAT; RH SIDE / UNDER 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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-6	UNLOCK STATUS SWITCH	GROUND = UNLOCKED	B+
I	CA85-8	GROUND SUPPLY	GROUND	GROUND
I	CA85-9	REMOTE KEYLESS ENTRY MODULE GROUND SUPPLY	GROUND	GROUND
I	CA85-10	LOCK STATUS SWITCH	GROUND = LOCK	B+
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
O	DT2-6	REMOTE KEYLESS ENTRY MODULE POWER SUPPLY	B+	B+
O	DT2-8	DOOR LOCK MOTOR LOCK SUPPLY	B+	GROUND
O	DT2-9	DOOR LOCK MOTOR UNLOCK SUPPLY	B+	GROUND
O	DT2-10	DOOR LOCK MOTOR DOUBLE LOCK SUPPLY	B+	GROUND
D	DT2-13	REMOTE KEYLESS ENTRY MODULE	ENCODED COMMUNICATIONS	
I	DT2-16	ALARM SET / LOCK SWITCH	GROUND	B+
I	DT2-17	ALARM RESET / UNLOCK SWITCH	GROUND	B+
D	DT2-18	REMOTE KEYLESS ENTRY MODULE	ENCODED COMMUNICATIONS	

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-15	PASSENGER DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-8	DRIVER DOOR AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA100-9	INTERNAL / EXTERNAL TRUNK RELEASE REQUEST	GROUND	B+
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA101-18	PASSENGER DOOR LOCK STATUS	GROUND = UNLOCKED	B+
I	CA101-19	PASSENGER DOOR UNLOCK STATUS	GROUND = LOCKED	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
O	CA103-4	LH REAR DOOR LOCK MOTOR – LOCK SUPPLY	B+	GROUND
O	CA103-5	PASSENGER AND RH REAR DOOR LOCK MOTORS – LOCK SUPPLY	B+	GROUND
O	CA103-6	PASSENGER AND RH REAR DOOR LOCK MOTORS – UNLOCK SUPPLY	B+	GROUND
O	CA103-7	LH REAR DOOR LOCK MOTOR – UNLOCK SUPPLY	B+	GROUND
O	CA103-8	LH REAR DOOR LOCK MOTOR – DOUBLE LOCK SUPPLY	B+	GROUND
O	CA103-9	PASSENGER AND RH REAR DOOR LOCK MOTORS – DOUBLE LOCK SUPPLY	B+	GROUND
O	CA103-10	TRUNK RELEASE MOTOR ACTIVATE	B+	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-13	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 12.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – DRIVER	DT5	10-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – LH REAR	CA81	10-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – PASSENGER	PT3	10-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – RH REAR	CA90	10-WAY / BLACK	RH REAR DOOR, TRIM PANEL
EXTERNAL TRUNK RELEASE SWITCH	CA97	1-WAY / BLACK	BEHIND TRUNK LID LINER
FUEL FILLER FLAP RELEASE	CA106	2-WAY / GREY	TRUNK, RH SIDE
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
REMOTE KEYLESS ENTRY MODULE	CA184	4-WAY / BLACK	BELOW CENTER CONSOLE ASSEMBLY
TRUNK / FUEL RELEASE SWITCH PACK	FC43	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN
TRUNK RELEASE	CA105	3-WAY / GREY	TRUNK LID

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

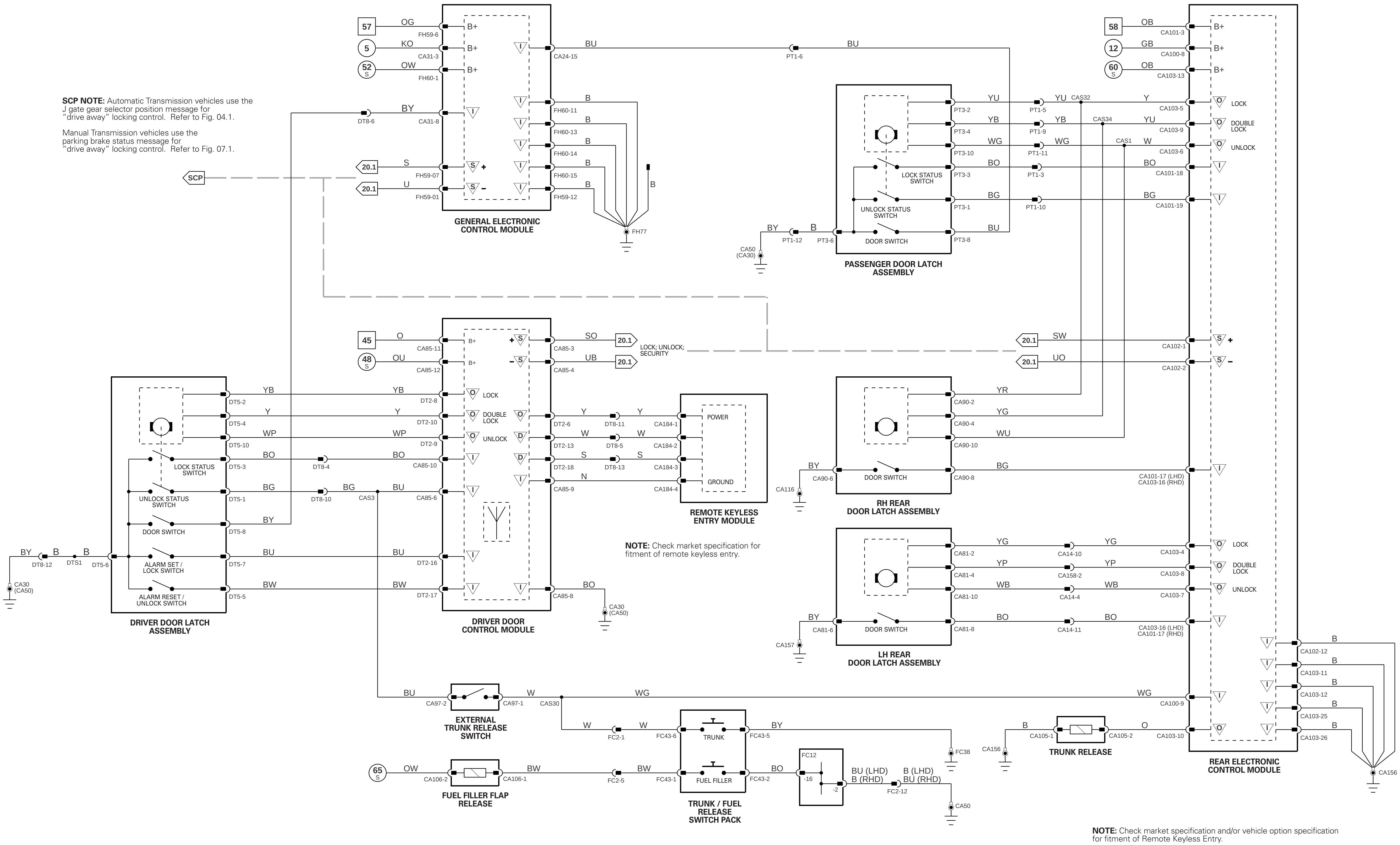
Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC12	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: Automatic Transmission vehicles use the J gate gear selector position message for "drive away" locking control. Refer to Fig. 04.1.
Manual Transmission vehicles use the parking brake status message for "drive away" locking control. Refer to Fig. 07.1.
SCP
GENERAL ELECTRONIC CONTROL MODULE
PASSENGER DOOR LATCH ASSEMBLY
LOCK STATUS SWITCH
UNLOCK STATUS SWITCH
DOOR SWITCH
REAR ELECTRONIC CONTROL MODULE
LOCK
DOUBLE LOCK
UNLOCK
LOCK; UNLOCK; SECURITY
DRIVER DOOR LATCH ASSEMBLY
ALARM SET / LOCK SWITCH
ALARM RESET / UNLOCK SWITCH
DRIVER DOOR CONTROL MODULE
POWER
GROUND
REMOTE KEYLESS ENTRY MODULE
NOTE: Check market specification for fitment of remote keyless entry.
RH REAR DOOR LATCH ASSEMBLY
LH REAR DOOR LATCH ASSEMBLY
EXTERNAL TRUNK RELEASE SWITCH
TRUNK
FUEL FILLER
TRUNK / FUEL RELEASE SWITCH PACK
FUEL FILLER FLAP RELEASE
TRUNK RELEASE
BU (LHD) B (RHD)
B (LHD) BU (RHD)
NOTE: Check market specification and/or vehicle option specification for fitment of Remote Keyless Entry.

1 → 5 Fig. 01.1; 6 → 65 Fig. 01.2; 66 → 91 Fig. 01.3; 1 → 42 Fig. 01.4; 43 S → 65 S Fig. 01.5; 66 P → 88 P Fig. 01.6	I Input; O Output; Signal Ground (SG); S SCP Network; A ACP Network; D Serial and Encoded Data

VARIANT: ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-6	UNLOCK STATUS SWITCH	GROUND = UNLOCKED	B+
I	CA85-8	GROUND SUPPLY	GROUND	GROUND
I	CA85-10	LOCK STATUS SWITCH	GROUND = LOCK	B+
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
O	DT2-8	DOOR LOCK MOTOR LOCK SUPPLY	B+	GROUND
O	DT2-9	DOOR LOCK MOTOR UNLOCK SUPPLY	B+	GROUND
I	DT2-16	ALARM SET / LOCK SWITCH	GROUND	B+
I	DT2-17	ALARM RESET / UNLOCK SWITCH	GROUND	B+

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-15	PASSENGER DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-8	DRIVER DOOR AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA100-9	INTERNAL / EXTERNAL TRUNK RELEASE REQUEST	GROUND	B+
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA101-18	PASSENGER DOOR LOCK STATUS	GROUND = UNLOCKED	B+
I	CA101-19	PASSENGER DOOR UNLOCK STATUS	GROUND = LOCKED	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
O	CA103-4	LH REAR DOOR LOCK MOTOR – LOCK SUPPLY	B+	GROUND
O	CA103-5	PASSENGER AND RH REAR DOOR LOCK MOTORS – LOCK SUPPLY	B+	GROUND
O	CA103-6	PASSENGER AND RH REAR DOOR LOCK MOTORS – UNLOCK SUPPLY	B+	GROUND
O	CA103-7	LH REAR DOOR LOCK MOTOR – UNLOCK SUPPLY	B+	GROUND
O	CA103-10	TRUNK RELEASE MOTOR ACTIVATE	B+	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-13	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 12.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – DRIVER	DT5	10-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – LH REAR	CA81	10-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – PASSENGER	PT3	10-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – RH REAR	CA90	10-WAY / BLACK	RH REAR DOOR, TRIM PANEL
EXTERNAL TRUNK RELEASE SWITCH	CA97	1-WAY / BLACK	BEHIND TRUNK LID LINER
FUEL FILLER FLAP RELEASE	CA106	2-WAY / GREY	TRUNK, RH SIDE
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
TRUNK / FUEL RELEASE SWITCH PACK	FC43	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN
TRUNK RELEASE	CA105	3-WAY / GREY	TRUNK LID

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC12	22-WAY / WHITE / JUNCTION CONNECTOR	ADJACENT TO STEERING COLUMN MOTOR
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL

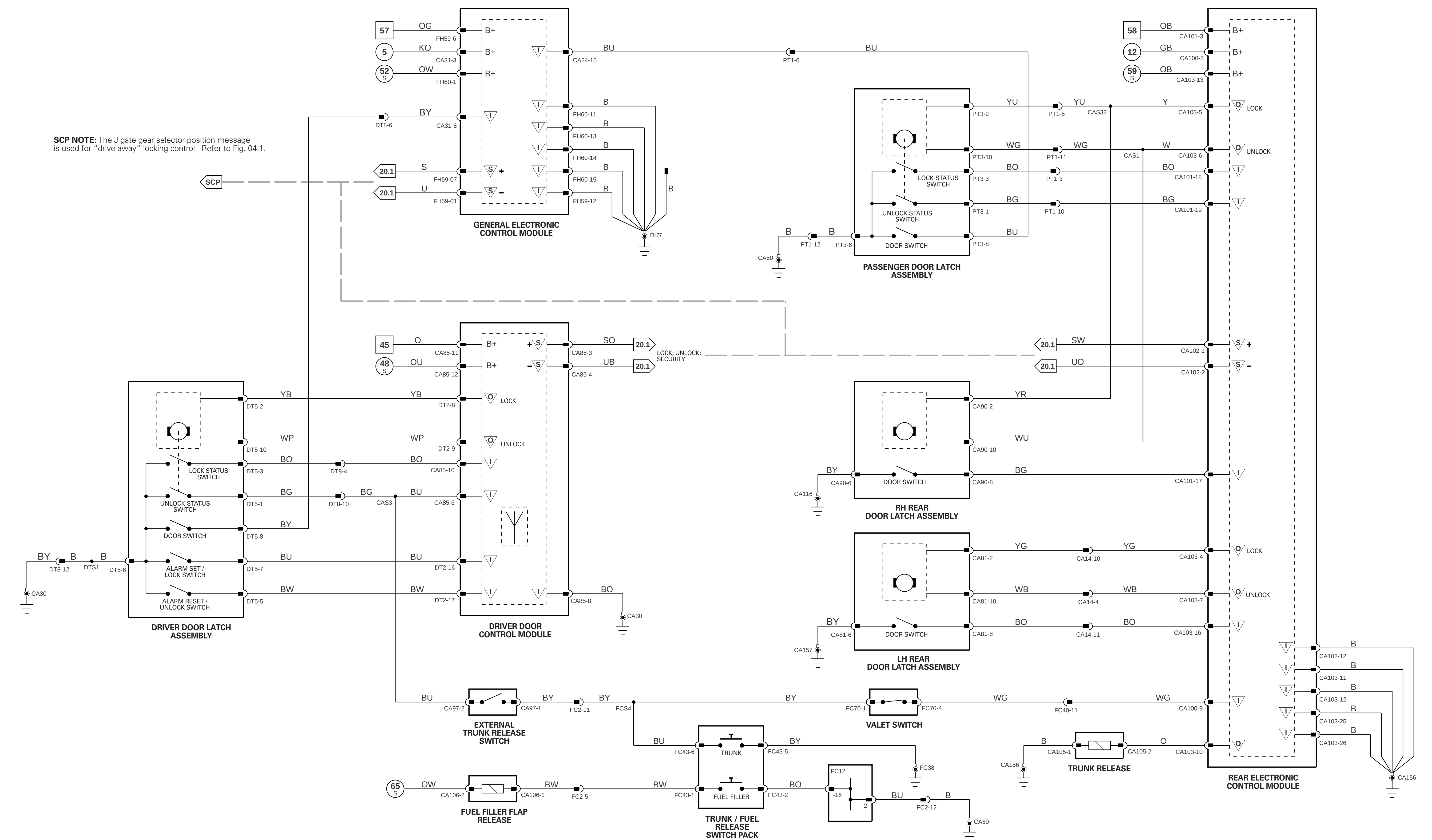
GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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: July 1999



1 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6	

I Input; O Output; Signal Ground (SG); S SCP Network; A ACP Network; D Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-6	UNLOCK STATUS SWITCH	GROUND = UNLOCKED	B+
I	CA85-8	GROUND SUPPLY	GROUND	GROUND
I	CA85-10	LOCK STATUS SWITCH	GROUND = LOCK	B+
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
O	DT2-8	DOOR LOCK MOTOR LOCK SUPPLY	B+	GROUND
O	DT2-9	DOOR LOCK MOTOR UNLOCK SUPPLY	B+	GROUND
O	DT2-10	DOOR LOCK MOTOR DOUBLE LOCK SUPPLY	B+	GROUND
I	DT2-16	ALARM SET / LOCK SWITCH	GROUND	B+
I	DT2-17	ALARM RESET / UNLOCK SWITCH	GROUND	B+

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-15	PASSENGER DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-5	RECM SECURITY SYSTEM GROUND SENSING	GROUND = RECM CONNECTED	B+ = RECM DISCONNECTED
I	CA31-7	RADIO HEAD UNIT SECURITY SYSTEM GROUND SENSING	GROUND = HEAD UNIT CONNECTED	B+ = HEAD UNIT DISCONNECTED
I	CA31-8	DRIVER DOOR AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
I	CA31-18	INCLINATION / INTRUSION SENSOR VIOLATION	GROUND(PULSE)	B+
O	FH9-16	INCLINATION / INTRUSION SENSOR POWER SUPPLY	B+	B+
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-3	HOOD AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
O	FH59-8	HORN RELAY ACTIVATE	GROUND	B+
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
O	FH60-3	ACTIVE SECURITY SOUNDER	ENCODED COMMUNICATIONS	
O	FH60-6	STEERING COLUMN LOCK MODULE GROUND SUPPLY	GROUND	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND
O	FH60-16	PASSIVE SECURITY SOUNDER ACTIVATE	B+	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
O	FC14-10	SECURITY ACTIVE INDICATOR	GROUND (PULSED)	B+
I	FC14-21	IGNITION KEY IN BARREL	B+ = IGNITION KEY IN	GROUND = IGNITION KEY OUT
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
D	FC15-4	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
D	FC15-5	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FC63-6	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
O	CA100-1	STEERING COLUMN LOCK MODULE POWER SUPPLY	B+	GROUND
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
O	CA101-5	RECM SECURITY SYSTEM GROUND SENSING	GROUND = RECM CONNECTED	B+ = RECM DISCONNECTED
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA102-14	TRUNK AJAR SWITCH	GROUND = AJAR	B+
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	**Input**	**S**	**SCP Network**	**B+**	**Battery Voltage**	**Hz**	**Frequency**
O	**Output**	**A**	**ACP Network**	**V**	**Voltage (DC)**	**kHz**	**Frequency x 1000**
REF	**Reference Voltage / Ground**	**D**	**Serial and Encoded Data**	**PWM**	**Pulse Width Modulated**	**mA**	**Milliamperes**

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 12.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACTIVE SECURITY SOUNDER	FH89	10-WAY / BLACK	BEHIND HEADLAMP RH ASSEMBLY
AUTOLAMP SENSOR	SL2	6-WAY / WHITE	TOP OF FASCIA
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – DRIVER	DT5	10-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – LH REAR	CA81	10-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – PASSENGER	PT3	10-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – RH REAR	CA90	10-WAY / BLACK	RH REAR DOOR, TRIM PANEL
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HOOD SWITCH	FH21	2-WAY / BLACK	ADJACENT TO AIR FILTER
HORNS	FH29	2-WAY / BLACK	FORWARD OF RADIATOR
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INCLINATION SENSOR	CA173	10-WAY / BLACK	ADJACENT TO REAR POWER DISTRIBUTION BOX
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
INTRUSION SENSOR – LH	CA82	16-WAY / BLACK	UPPER 'B/C' POST
INTRUSION SENSOR – RH	CA91	16-WAY / BLACK	UPPER 'B/C' POST
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	FC52	10-WAY / GREEN	IGNITION SWITCH
PASSIVE SECURITY SOUNDER	AT2	1-WAY / BLACK	BEHIND HEADLAMP RH ASSEMBLY
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
STEERING COLUMN LOCK MODULE	FC59	4-WAY / BLACK	STEERING COLUMN
TRUNK SWITCH	CA117	2-WAY / BLACK	TRUNK LID

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

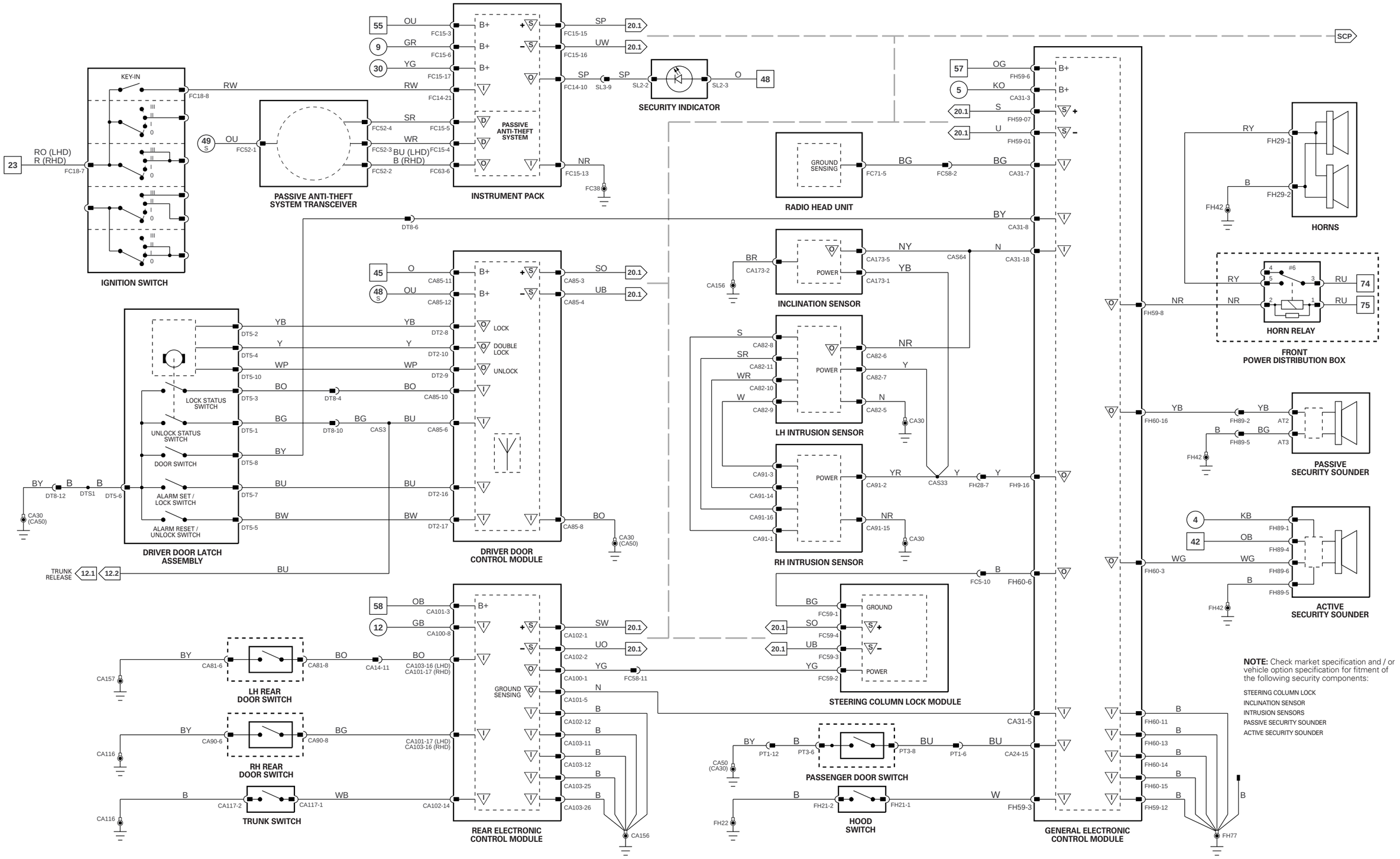
GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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

Security System: ROW



NOTE: Check market specification and / or vehicle option specification for fitment of the following security components:

STEERING COLUMN LOCK
INCLINATION SENSOR
INTRUSION SENSORS
PASSIVE SECURITY SOUNDER
ACTIVE SECURITY SOUNDER

1 → 5 Fig. 01.1
6 → 65 Fig. 01.2
66 → 91 Fig. 01.3
1 → 42 Fig. 01.4
43 S → 65 S Fig. 01.5
66 P → 88 P Fig. 01.6

I Input
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-6	UNLOCK STATUS SWITCH	GROUND = UNLOCKED	B+
I	CA85-8	GROUND SUPPLY	GROUND	GROUND
I	CA85-10	LOCK STATUS SWITCH	GROUND = LOCK	B+
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
O	DT2-8	DOOR LOCK MOTOR LOCK SUPPLY	B+	GROUND
O	DT2-9	DOOR LOCK MOTOR UNLOCK SUPPLY	B+	GROUND
O	DT2-10	DOOR LOCK MOTOR DOUBLE LOCK SUPPLY	B+	GROUND
I	DT2-16	ALARM SET / LOCK SWITCH	GROUND	B+
I	DT2-17	ALARM RESET / UNLOCK SWITCH	GROUND	B+

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-15	PASSENGER DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-5	RECM SECURITY SYSTEM GROUND SENSING	GROUND = RECM CONNECTED	B+ = RECM DISCONNECTED
I	CA31-7	RADIO HEAD UNIT SECURITY SYSTEM GROUND SENSING	GROUND = HEAD UNIT CONNECTED	B+ = HEAD UNIT DISCONNECTED
I	CA31-8	DRIVER DOOR AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
S	FH59-1	SCP -	2 – 1600 Hz	
I	FH59-3	HOOD AJAR SWITCH	GROUND = OPEN	B+ = CLOSED
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
O	FH59-8	HORN RELAY ACTIVATE	GROUND	B+
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Instrument Pack

▽	Pin	Description	Active	Inactive
O	FC14-10	SECURITY ACTIVE INDICATOR	GROUND (PULSED)	B+
I	FC14-21	IGNITION KEY IN BARREL	B+ = IGNITION KEY IN	GROUND = IGNITION KEY OUT
I	FC15-3	BATTERY POWER SUPPLY	B+	B+
D	FC15-4	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
D	FC15-5	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER	ENCODED COMMUNICATIONS	
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC15-13	GROUND SUPPLY	GROUND	GROUND
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O	FC63-6	PASSIVE ANTI THEFT SYSTEM TRANSCEIVER GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA100-8	IGNITION SWITCHED POWER SUPPLY – INERTIA SWITCH	B+	GROUND
I	CA101-3	BATTERY POWER SUPPLY – LOGIC	B+	B+
O	CA101-5	RECM SECURITY SYSTEM GROUND SENSING	GROUND = RECM CONNECTED	B+ = RECM DISCONNECTED
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
I	CA102-12	GROUND	GROUND	GROUND
I	CA102-14	TRUNK AJAR SWITCH	GROUND = AJAR	B+
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR	B+
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 12.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
AUTOLAMP SENSOR	SL2	6-WAY / WHITE	TOP OF FASCIA
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – DRIVER	DT5	10-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – LH REAR	CA81	10-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – PASSENGER	PT3	10-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR LATCH ASSEMBLY – RH REAR	CA90	10-WAY / BLACK	RH REAR DOOR, TRIM PANEL
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HOOD SWITCH	FH21	2-WAY / BLACK	ADJACENT TO AIR FILTER
HORNS	FH29	2-WAY / BLACK	FORWARD OF RADIATOR
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
PASSIVE ANTI-THEFT SYSTEM TRANSCEIVER	FC52	10-WAY / GREEN	IGNITION SWITCH
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
TRUNK SWITCH	CA117	2-WAY / BLACK	TRUNK LID

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

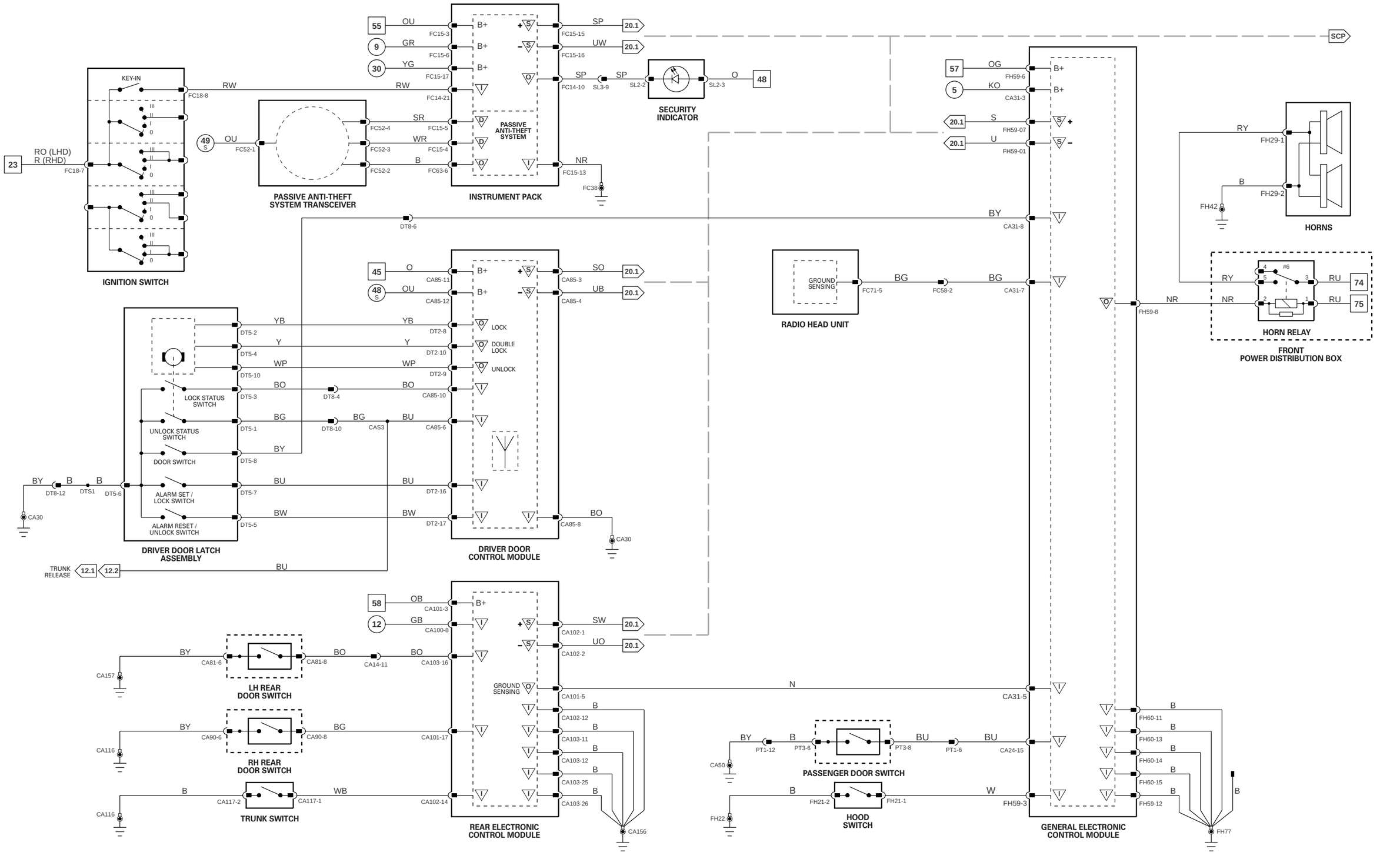
Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH22	GROUND EYELET	BEHIND LH HEADLAMP ASSEMBLY / ENGINE COMPARTMENT
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6	I Input	O Output	Signal Ground (SG)	S SCP Network	A ACP Network	D Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA31-2	WIPE / WASH MODE SELECTION REQUEST	GROUND = HIGH; 2.2V = LOW; 5.8V = DELAY; 2.2V = FLICK; 4V = OFF	
I	CA31-3	IGNITION SWITCHED POWER SUPPLY – LOGIC	B+	GROUND
I	CA31-13	WIPE VARIABLE SPEED SELECTION REQUEST	1.4V = MAXIMUM DELAY; 5.8V = MINIMUM DELAY; 6.6V = AUTO	
REF	CA31-14	WIPE / WASH REFERENCE VOLTAGE	9V	9V
O	FH9-1	WIPER PARK RELAY ACTIVATE	GROUND	B+
O	FH9-3	WIPER HIGH / LOW RELAY	GROUND	GROUND
I	FH9-13	WIPER MOTOR PARK SIGNAL	GROUND = PARKED	B+
O	FH9-14	WINDSHIELD WASHER RELAY ACTIVATE	GROUND	B+
I	FH9-15	WASHER FLUID LEVEL SWITCH	GROUND = FULL	B+ = EMPTY
S	FH59-1	SCP -	2 – 1600 Hz	
O	FH59-4	POWER WASH RELAY ACTIVATE	GROUND	B+
I	FH59-6	BATTERY POWER SUPPLY	B+	B+
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 13.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
POWERWASH PUMP	FH38	2-WAY / BLACK	ADJACENT TO WASHER FLUID BOTTLE
RAIN SENSING MODULE	RF14	6-WAY / BLACK	REAR VIEW MIRROR
WASHER FLUID LEVEL SWITCH	FH37	2-WAY / BLACK	ADJACENT TO WASHER FLUID BOTTLE
WINDSHIELD WASHER PUMP	FH36	2-WAY / BLACK	ADJACENT TO WASHER FLUID BOTTLE
WINDSHIELD WIPE / WASH SWITCH	CS11	10-WAY / WHITE	STEERING COLUMN
WIPER MOTOR ASSEMBLY	FH17	10-WAY / BLACK	FRONT BULKHEAD

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

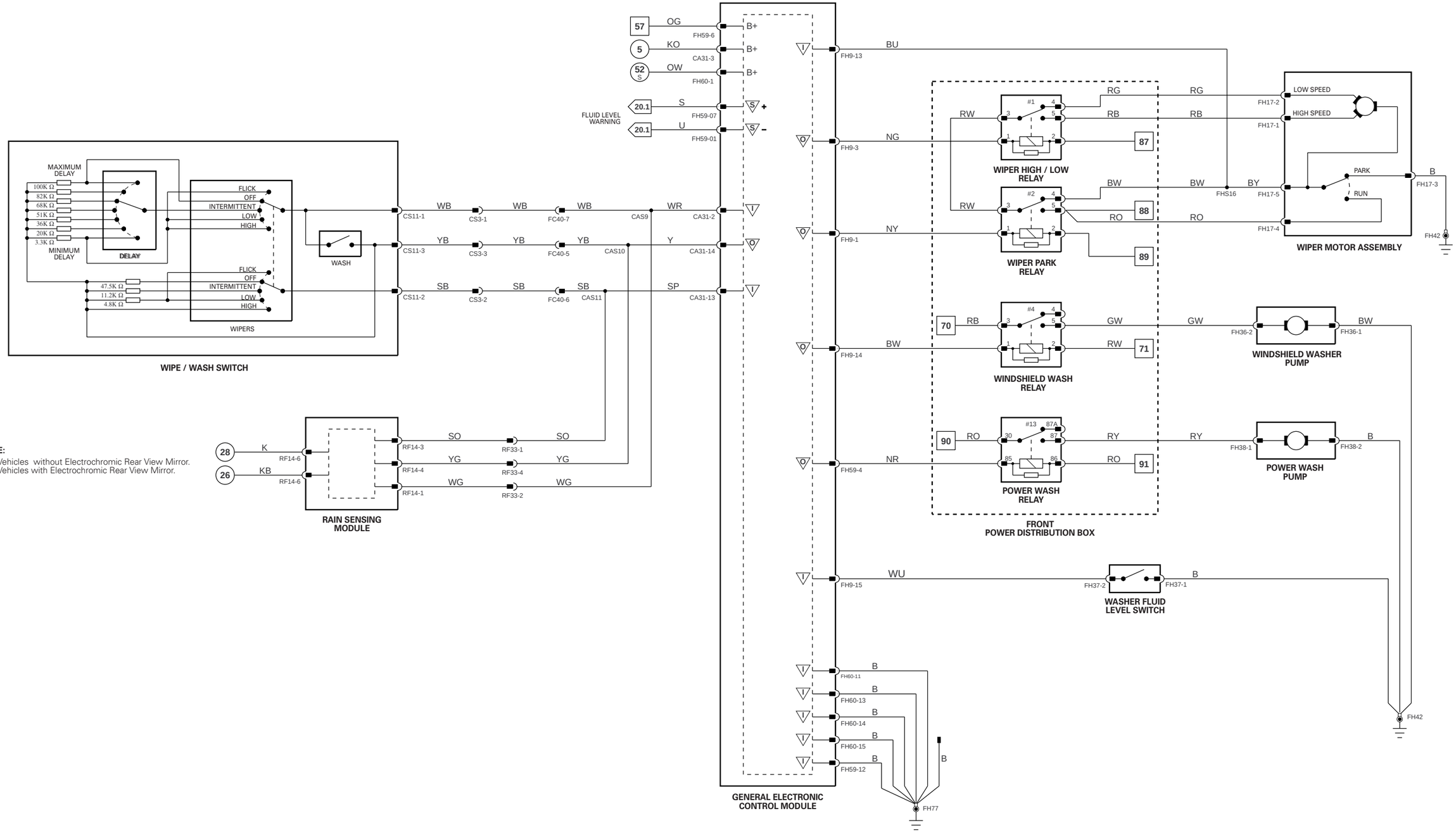
Connector	Connector Description	Location
CS3	10-WAY / GREY / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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:
28 – Vehicles without Electrochromic Rear View Mirror.
26 – Vehicles with Electrochromic Rear View Mirror.

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

Driver Door Control Module

▽	Pin	Description	Active	Inactive
S	CA85-3	SCP +	2 – 1600 Hz	
S	CA85-4	SCP -	2 – 1600 Hz	
I	CA85-7	GROUND SUPPLY	GROUND	GROUND
I	CA85-8	GROUND SUPPLY	GROUND	GROUND
I	CA85-11	BATTERY POWER SUPPLY	B+	B+
I	CA85-12	SWITCHED SYSTEM POWER SUPPLY	B+	B+
I	DD4-2	PASSENGER WINDOW RAISE REQUEST	B+	GROUND
I	DD4-3	PASSENGER WINDOW LOWER REQUEST	B+	GROUND
I	DD4-4	RH REAR WINDOW RAISE REQUEST	B+	GROUND
I	DD4-5	RH REAR WINDOW LOWER REQUEST	B+	GROUND
I	DD4-8	LH REAR WINDOW RAISE REQUEST	B+	GROUND
I	DD4-9	LH REAR WINDOW LOWER REQUEST	B+	GROUND
O	DD4-12	WINDOW SWITCH BIAS OUTPUT	B+	GROUND
I	DD4-19	DRIVER WINDOW RAISE REQUEST	B+	GROUND
I	DD4-20	DRIVER WINDOW LOWER REQUEST	B+	GROUND
I	DD4-21	DRIVER 'ONE TOUCH DOWN' REQUEST	B+	GROUND
I	DD4-22	WINDOW SWITCH ISOLATION SWITCH	B+	GROUND
O	DT1-1	DRIVER WINDOW MOTOR LOWER SUPPLY	B+	GROUND
O	DT1-2	DRIVER WINDOW MOTOR RAISE SUPPLY	B+	GROUND
I	DT1-3	DRIVER WINDOW GROUND SUPPLY	GROUND	GROUND
I	DT1-4	DRIVER WINDOW MOTOR BATTERY POWER SUPPLY	B+	B+

General Electronic Control Module

▽	Pin	Description	Active	Inactive
I	CA24-10	PASSENGER WINDOW LOWER REQUEST	B+	GROUND
I	CA24-25	PASSENGER WINDOW RAISE REQUEST	B+	GROUND
O	CA84-1	PASSENGER WINDOW MOTOR RAISE	B+	GROUND
O	CA84-2	PASSENGER WINDOW MOTOR LOWER	B+	GROUND
I	CA84-3	WINDOW LIFT MOTORS BATTERY POWER SUPPLY	B+	B+
I	CA84-4	GROUND SUPPLY	GROUND	GROUND
S	FH59-1	SCP -	2 – 1600 Hz	
S	FH59-7	SCP +	2 – 1600 Hz	
I	FH59-12	GROUND SUPPLY	GROUND	GROUND
I	FH60-1	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
I	FH60-11	GROUND SUPPLY	GROUND	GROUND
I	FH60-13	GROUND SUPPLY	GROUND	GROUND
I	FH60-14	GROUND SUPPLY	GROUND	GROUND
I	FH60-15	GROUND SUPPLY	GROUND	GROUND

Rear Electronic Control Module

▽	Pin	Description	Active	Inactive
O	CA99-1	LH REAR WINDOW MOTOR RAISE SUPPLY	B+	GROUND
I	CA99-2	LH REAR WINDOW MOTOR LOWER SUPPLY	B+	GROUND
O	CA99-3	GROUND SUPPLY	GROUND	GROUND
I	CA99-4	REAR WINDOW MOTORS BATTERY POWER SUPPLY	B+	B+
I	CA101-7	RH REAR WINDOW RAISE REQUEST	B+	GROUND
I	CA101-20	RH REAR WINDOW DOWN REQUEST	B+	GROUND
S	CA102-1	SCP +	2 – 1600 Hz	
S	CA102-2	SCP -	2 – 1600 Hz	
O	CA102-5	PASSENGER AND REAR DOOR WINDOW SWITCHES BIAS VOLTAGE	B+	GROUND
I	CA102-12	GROUND	GROUND	GROUND
I	CA103-11	GROUND SUPPLY	GROUND	GROUND
I	CA103-12	GROUND SUPPLY	GROUND	GROUND
I	CA103-13	SWITCHED SYSTEM POWER SUPPLY	B+	GROUND
O	CA103-14	SLIDING ROOF PANEL GLOBAL CLOSE COMMAND	GROUND	B+
O	CA103-15	SLIDING ROOF PANEL GLOBAL OPEN COMMAND	GROUND	B+
I	CA103-22	LH REAR WINDOW LOWER REQUEST	B+	GROUND
I	CA103-24	LH REAR WINDOW RAISE REQUEST	B+	GROUND
I	CA103-25	GROUND SUPPLY	GROUND	GROUND
I	CA103-26	GROUND SUPPLY	GROUND	GROUND
O	CA104-1	RH REAR WINDOW MOTOR RAISE SUPPLY	B+	GROUND
O	CA104-2	GROUND SUPPLY	GROUND	GROUND
I	CA104-3	RH REAR WINDOW MOTOR LOWER SUPPLY	B+	GROUND
I	CA104-4	RH WINDOW MOTOR BATTERY POWER SUPPLY	B+	B+

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 14.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR SWITCH PACK – DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
SLIDING ROOF CONTROL MODULE	SR2	4-WAY / BLACK	ABOVE ROOF CONSOLE
	SR3	8-WAY / WHITE	ABOVE ROOF CONSOLE
SLIDING ROOF MOTOR ASSEMBLY	SR1	2-WAY / WHITE	ABOVE ROOF CONSOLE
SLIDING ROOF SWITCH PACK	RF10	6-WAY / BLACK	ABOVE ROOF CONSOLE
WINDOW MOTOR – DRIVER	DT4	2-WAY / BLACK	DRIVER DOOR, TRIM PANEL
WINDOW MOTOR – LH REAR	CA79	2-WAY / BLACK	LH REAR DOOR, TRIM PANEL
WINDOW MOTOR – PASSENGER	PT4	2-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
WINDOW MOTOR – RH REAR	CA93	2-WAY / BLACK	RH REAR DOOR, TRIM PANEL
WINDOW SWITCH – LH REAR	CA78	5-WAY / GREEN	LH REAR DOOR ARM REST
WINDOW SWITCH – PASSENGER	PD1	5-WAY / GREEN	PASSENGER DOOR ARM REST
WINDOW SWITCH – RH REAR	CA95	5-WAY / GREEN	RH REAR DOOR ARM REST

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
PD4	10-WAY / GREY / PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
RF6	8-WAY / BLACK / SLIDING ROOF LINK LEAD	HEADLINER, ABOVE ROOF CONSOLE
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

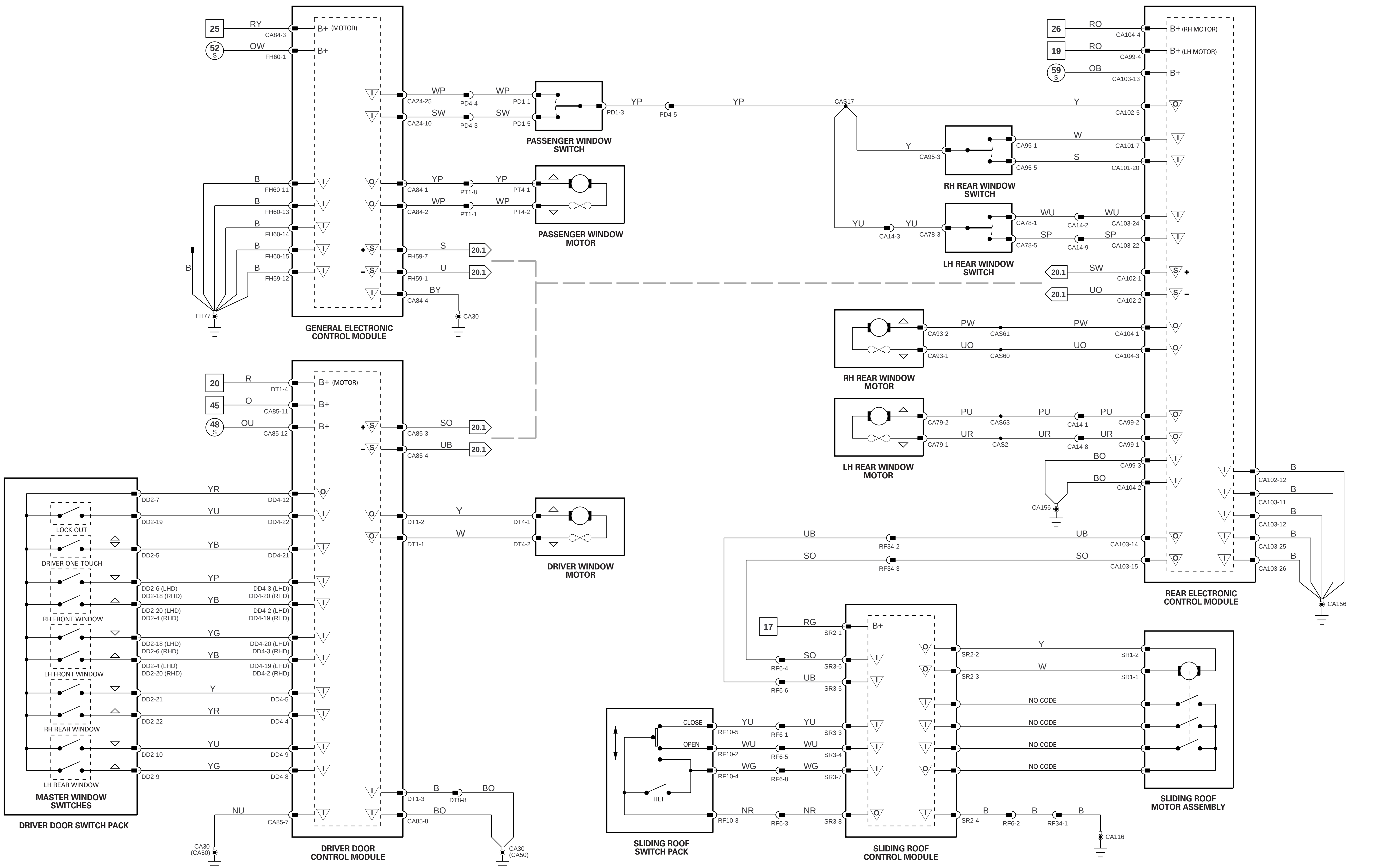
GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FH77	GROUND EYELET	'A' POST; LH SIDE; ADJACENT TO GECM / 'A' POST TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

Window Lifts; Sliding Roof



1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles; Sliding Roof Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 15.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CD AUTOCHANGER	FC50	12-WAY / BLACK	ABOVE GLOVE BOX
DOOR SPEAKER – DRIVER	DT3	2-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR SPEAKER – LH REAR	CA80	2-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR SPEAKER – PASSENGER	PT2	2-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR SPEAKER – RH REAR	CA92	2-WAY / BLACK	RH REAR DOOR, TRIM PANEL
HEATED BACKLIGHT	HM1	10-WAY / BLACK	REAR WINDOW
	HM4	10-WAY / BLACK	REAR WINDOW
	HM5	10-WAY / BLACK	REAR WINDOW
HIDDEN ANTENNA MODULE	HM2	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	HM3	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA20	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA159	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL AUDIO CONTROL SWITCHES	SQ1	10-WAY / WHITE	STEERING WHEEL

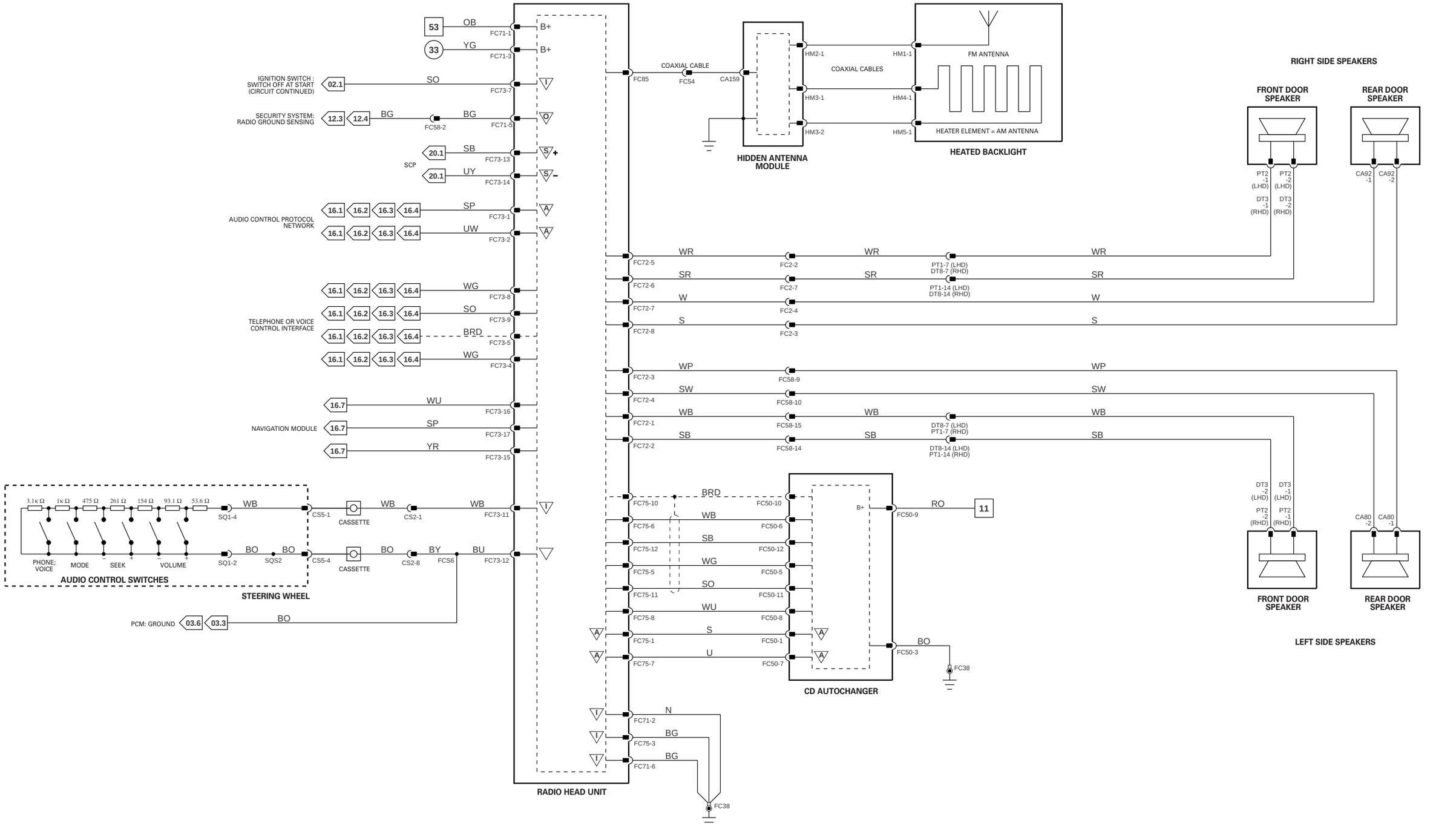
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC54	1-WAY / BLACK / RADIO ANTENNA COAXIAL CABLE	BEHIND FASCIA END PANEL, LH SIDE
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL

GROUNDS

Ground	Ground Description	Location
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Standard ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 15.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
CD AUTOCHANGER	FC50	12-WAY / BLACK	ABOVE GLOVE BOX
CENTER FILL AMPLIFIER	FC42	16-WAY / GREEN	ADJACENT TO STEERING COLUMN
CENTER SPEAKER – LH	FC49	1-WAY / BLACK	CENTER CONSOLE, LH FRONT
	FC87	1-WAY / BLACK	CENTER CONSOLE, LH FRONT
CENTER SPEAKER – RH	FC47	1-WAY / BLACK	CENTER CONSOLE, RH FRONT
	FC86	1-WAY / BLACK	CENTER CONSOLE, RH FRONT
DOOR SPEAKER – DRIVER	DT3	2-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DOOR SPEAKER – LH REAR	CA80	2-WAY / BLACK	LH REAR DOOR, TRIM PANEL
DOOR SPEAKER – PASSENGER	PT2	2-WAY / BLACK	PASSENGER DOOR, TRIM PANEL
DOOR SPEAKER – RH REAR	CA92	2-WAY / BLACK	RH REAR DOOR, TRIM PANEL
HEATED BACKLIGHT	HM1	10-WAY / BLACK	REAR WINDOW
	HM4	10-WAY / BLACK	REAR WINDOW
	HM5	10-WAY / BLACK	REAR WINDOW
HIDDEN ANTENNA MODULE	HM2	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	HM3	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA20	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
	CA159	COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL AUDIO CONTROL SWITCHES	SQ1	10-WAY / WHITE	STEERING WHEEL
SUBWOOFER AMPLIFIER	QQ3	10-WAY / GREY	BELOW PARCEL SHELF
	SW2	10-WAY / GREY	BELOW PARCEL SHELF

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

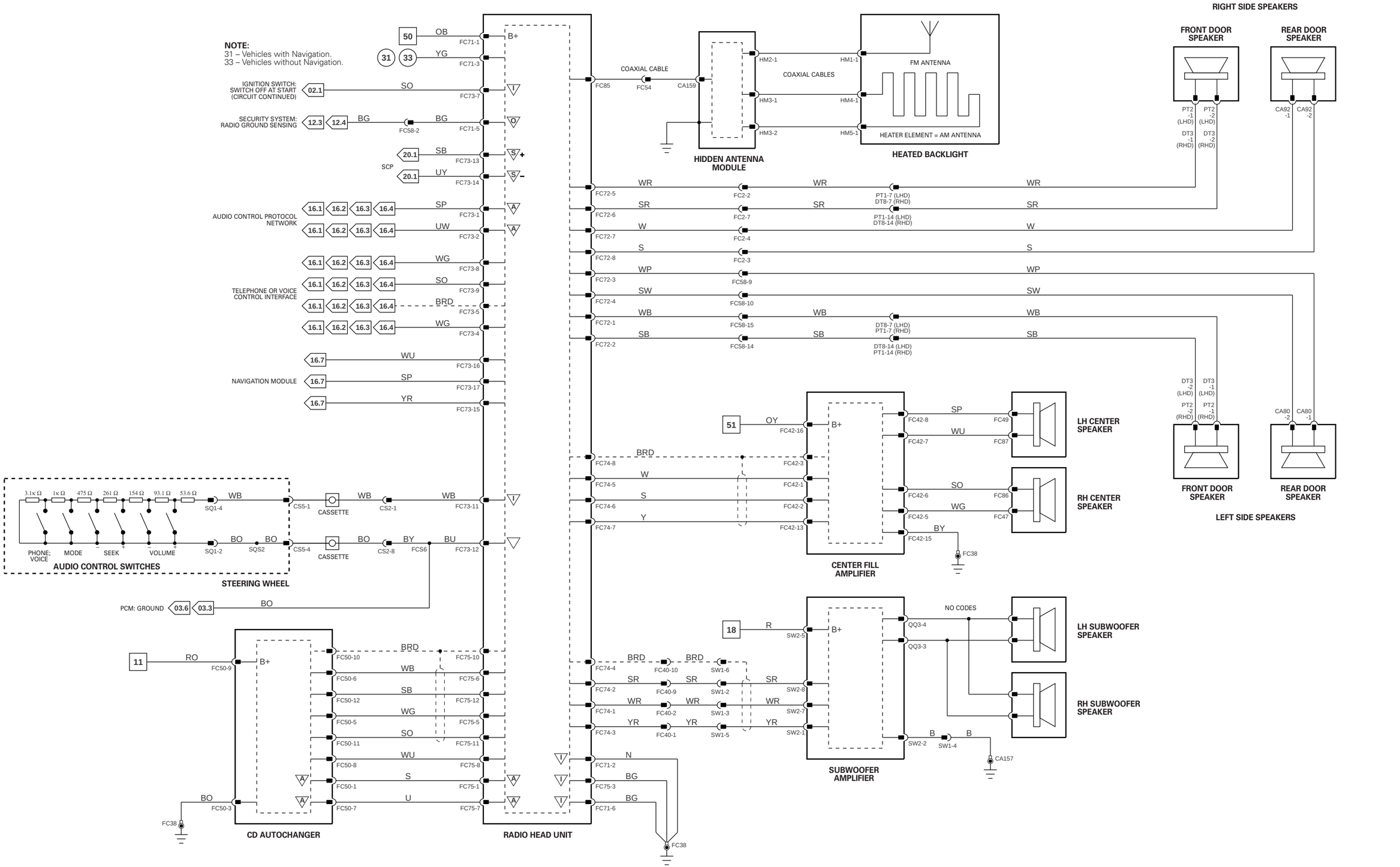
Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC40	16-WAY / GREEN / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FC54	1-WAY / BLACK / RADIO ANTENNA COAXIAL CABLE	BEHIND FASCIA END PANEL, LH SIDE
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNESS TO PASSENGER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
SW1	6-WAY / GREY / SUBWOOFER LINK LEAD	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

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: Premium



VARIANT: Premium ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
TELEPHONE HANDSET – NON-NAV	FC84	10-WAY / CLEAR	TELEPHONE PRESENTER
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE

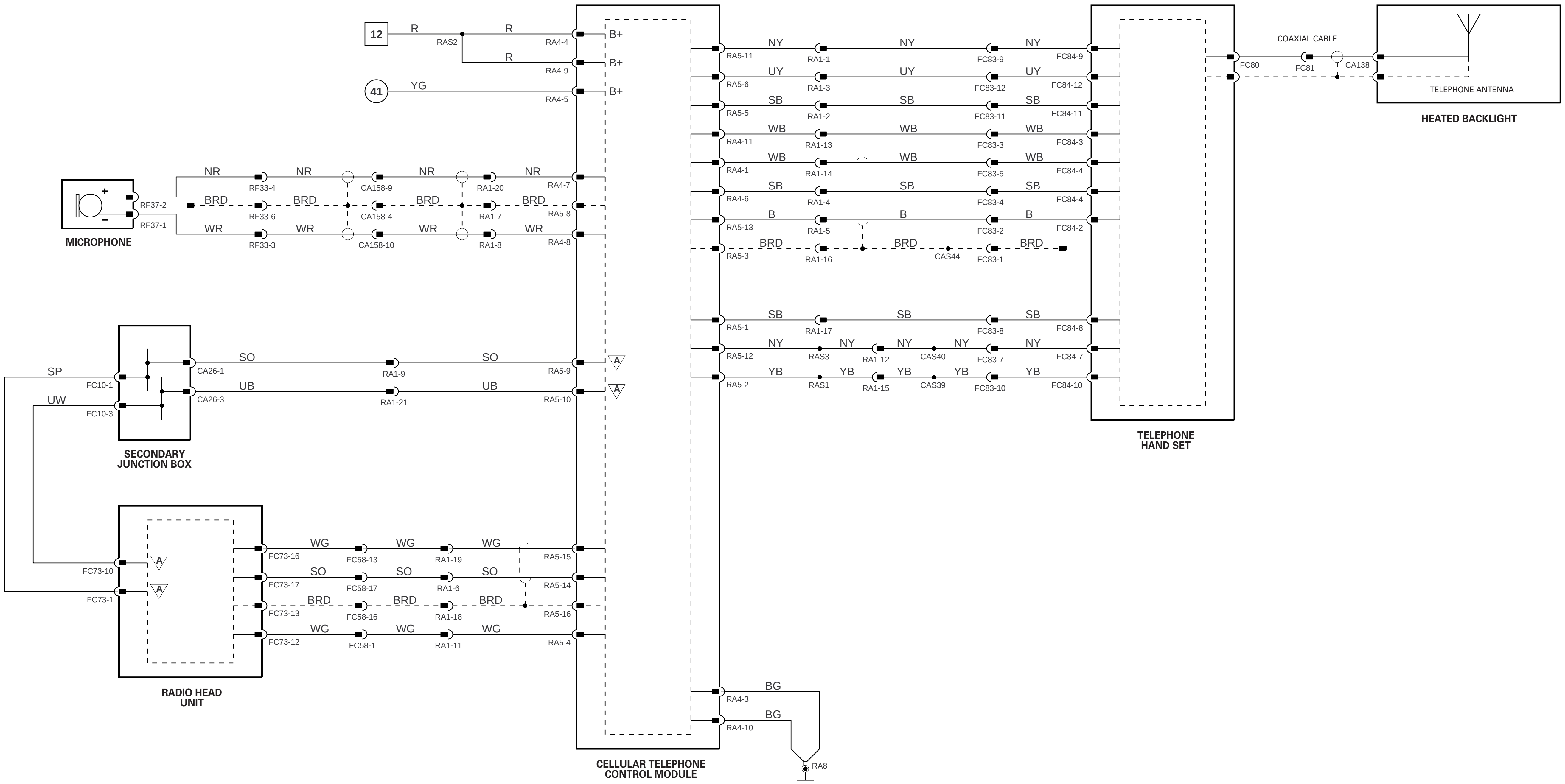
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FC81	1-WAY / BLACK / TELEPHONE ANTENNA COAXIAL CABLE	BEHIND FASCIA END PANEL, LH SIDE
FC83	12-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: Telephone only Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
TELEPHONE HANDSET – NAV	CA136	10-WAY / BLACK	CENTER CONSOLE
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE

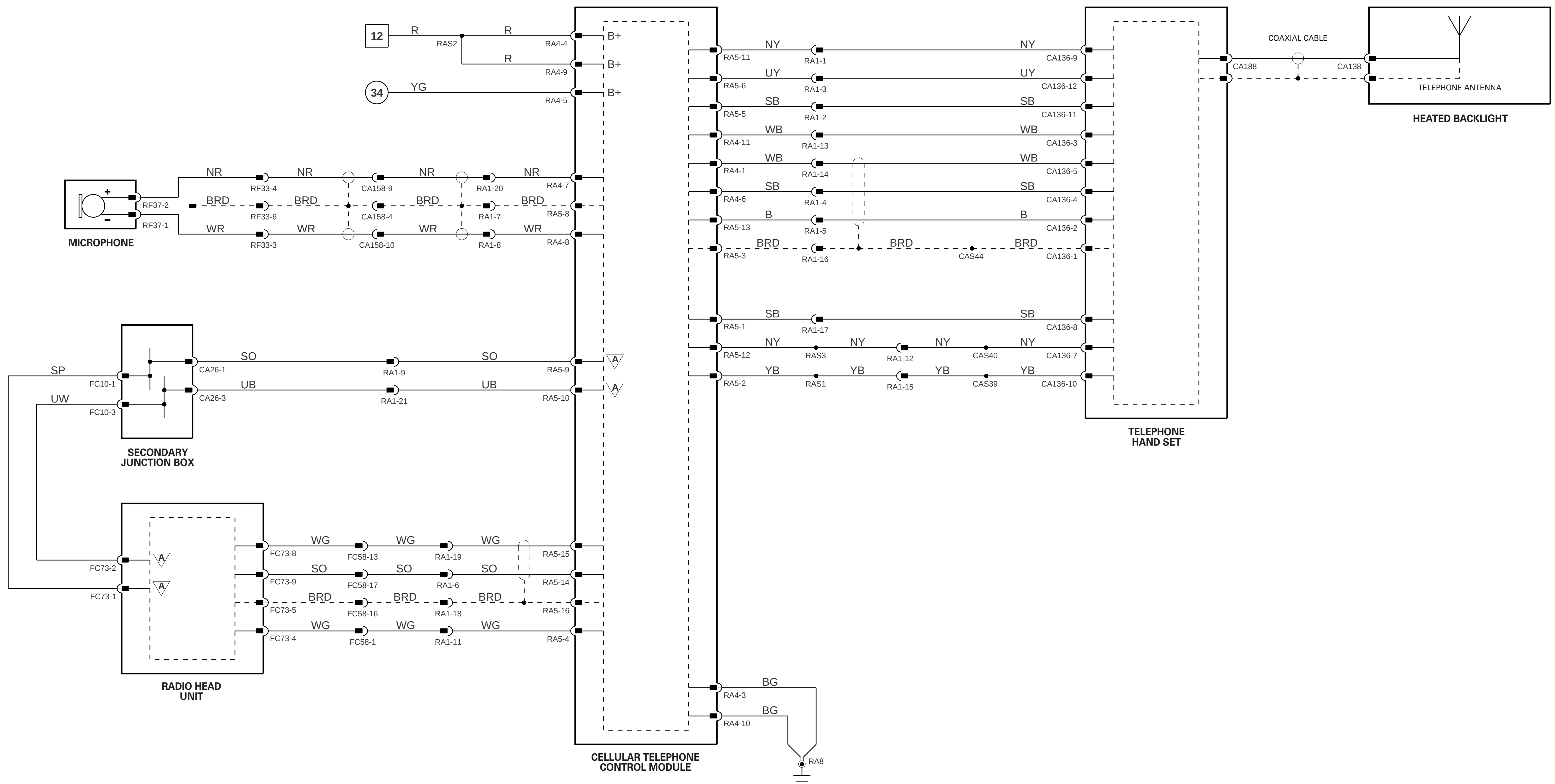
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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
O Output
Signal Ground (SG)
S SCP Network
A ACP Network
D Serial and Encoded Data

VARIANT: Telephone Vehicles with NAV only
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.3

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
TELEPHONE HANDSET – NON-NAV	FC84	10-WAY / CLEAR	TELEPHONE PRESENTER
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE

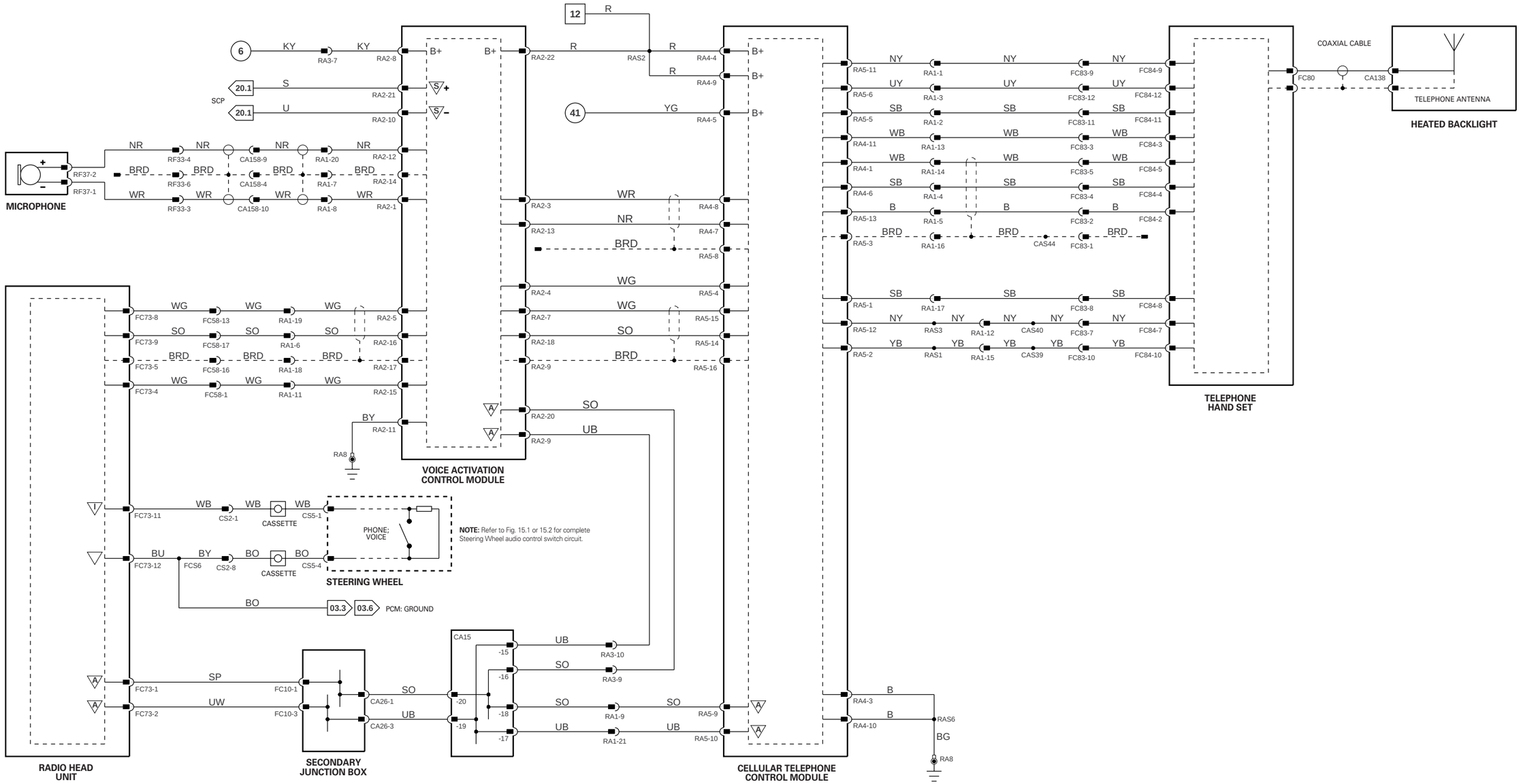
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FC83	12-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

Input / Output | Signal Ground (SG) | SCP Network | ACP Network | Serial and Encoded Data

VARIANT: Telephone Vehicles with VOICE only
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.4

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
TELEPHONE HANDSET – NAV	CA136	10-WAY / BLACK	CENTER CONSOLE
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE
VOICE ACTIVATION CONTROL MODULE	RA2	22-WAY / GREY	TRUNK, LH SIDE

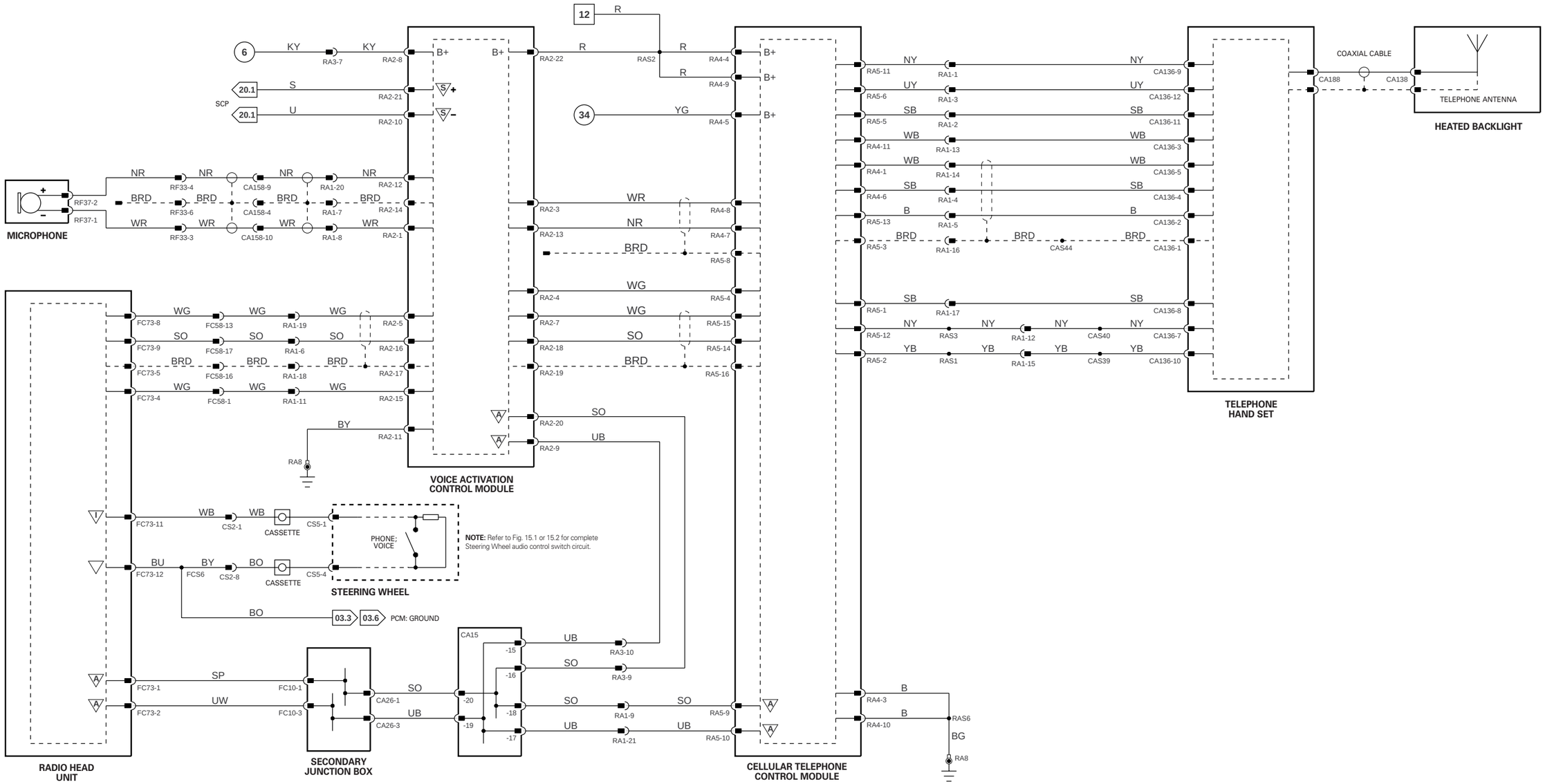
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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 → 5 Fig. 01.1	6 → 65 Fig. 01.2	66 → 91 Fig. 01.3	1 → 42 Fig. 01.4	43 S → 65 S Fig. 01.5	66 P → 88 P Fig. 01.6	I Input	O Output	Signal Ground (SG)	S SCP Network	A ACP Network	D Serial and Encoded Data

VARIANT: Telephone Vehicles with NAV and VOICE
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.5

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
TELEPHONE HANDSET	CA136	10-WAY / BLACK	CENTER CONSOLE
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE
VEHICLE EMERGENCY CONTROL MODULE	RA6	12-WAY / BLACK	TRUNK, LH SIDE
	RA7	16-WAY / BLACK	TRUNK, LH SIDE
VEMS GPS ANTENNA	CA134	10-WAY / GREY	PARCEL SHELF
VOICE ACTIVATION CONTROL MODULE	RA2	22-WAY / GREY	TRUNK, LH SIDE

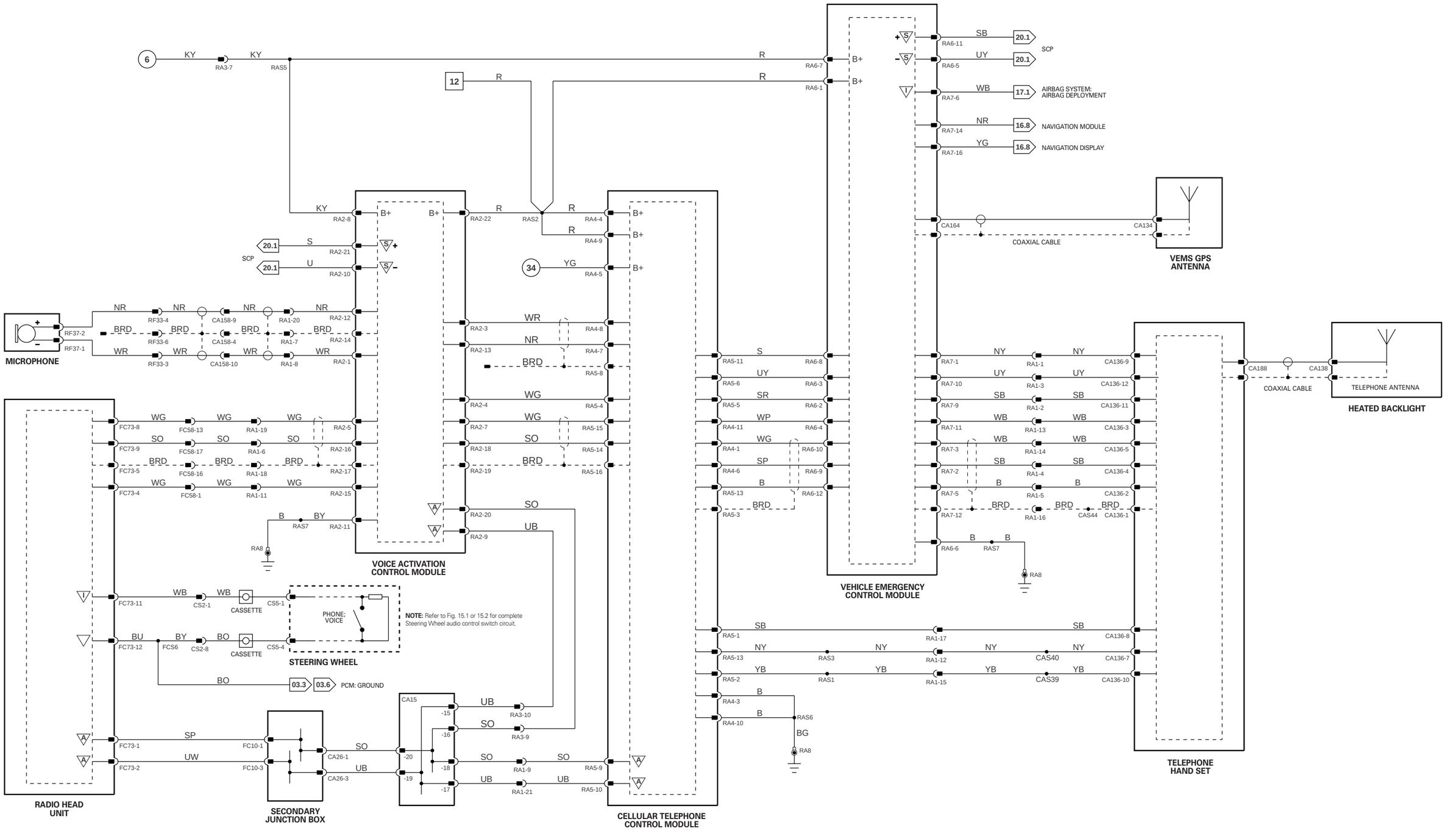
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | (1) → (42) Fig. 01.4 | (43 S) → (65 S) Fig. 01.5 | (66 P) → (88 P) Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Telephone Vehicles with VOICE and VEMS
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.6

COMPONENTS

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
TELEPHONE HANDSET – NAV	CA136	10-WAY / BLACK	CENTER CONSOLE
TELEPHONE HANDSET – NON-NAV	FC84	10-WAY / CLEAR	TELEPHONE PRESENTER
TELEPHONE MICROPHONE	RF37	2-WAY / BLACK	ADJACENT TO ROOF CONSOLE
VOICE ACTIVATION CONTROL MODULE	RA2	22-WAY / GREY	TRUNK, LH SIDE

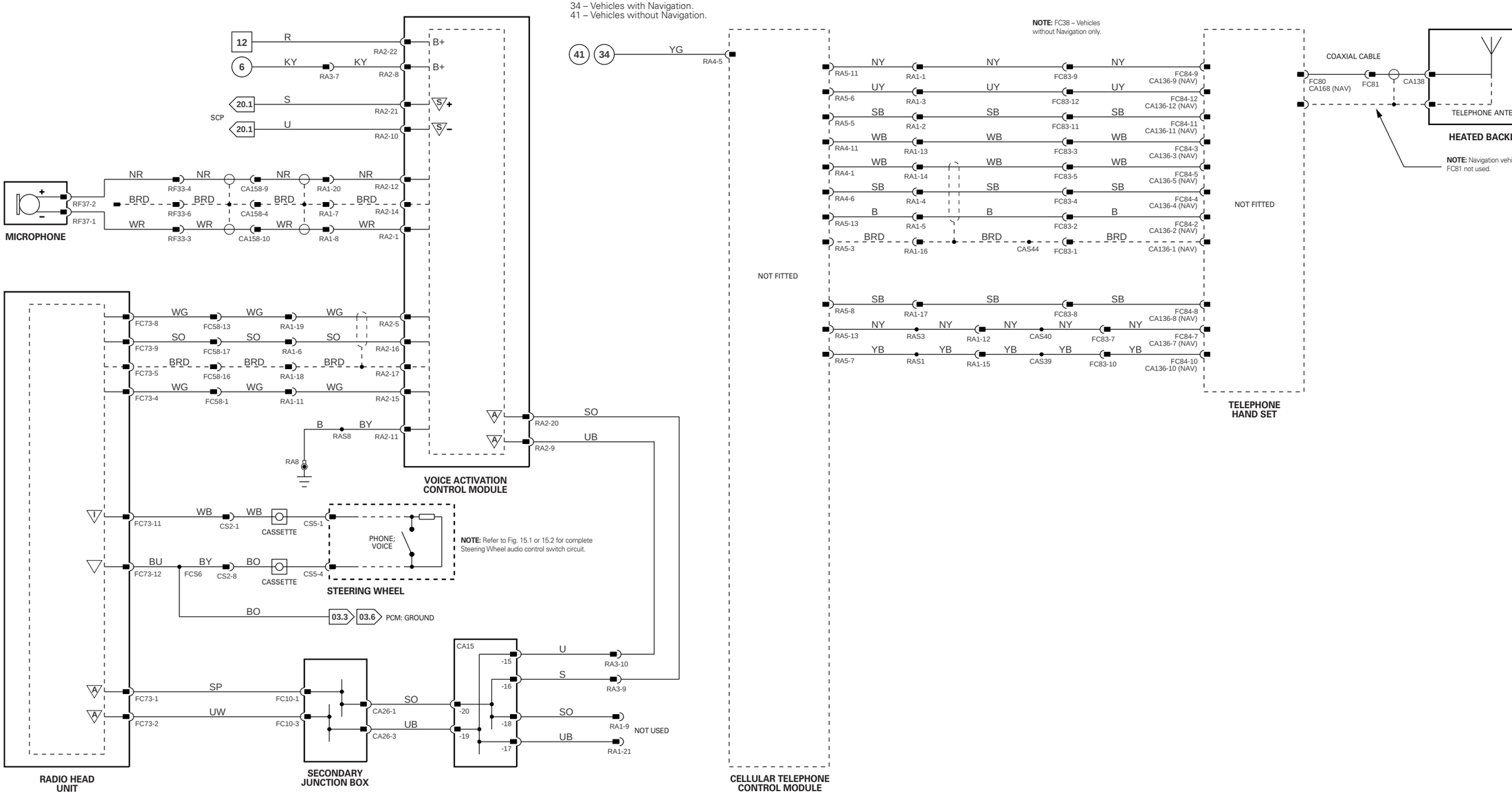
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FC81	1-WAY / BLACK / TELEPHONE ANTENNA COAXIAL CABLE	BEHIND FASCIA END PANEL, LH SIDE
FC83	12-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RF33	4-WAY / BLACK / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: VOICE only Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 16.7

COMPONENTS

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	CA107	10-WAY / WHITE	TRUNK, LH SIDE
	CA108	18-WAY / WHITE	TRUNK, LH SIDE
NAVIGATION DISPLAY MODULE	FC67	20-WAY / WHITE	FASCIA, CENTER
TELEVISION AMPLIFIER – FRONT	BF7	1-WAY / BLACK	FRONT BUMPER
	BF8	1-WAY / BLACK	FRONT BUMPER
	BF9	1-WAY / BLACK	FRONT BUMPER
	FH100	1-WAY / BLACK	FRONT BUMPER
	FH101	1-WAY / BLACK	FRONT BUMPER
TELEVISION AMPLIFIER – REAR	BR8	10-WAY / GREY	REAR BUMPER
TELEVISION MODULE	CA163	20-WAY / WHITE	BELOW PARCEL SHELF
TELEVISION MONITOR	FC90	18-WAY / WHITE	NAVIGATION DISPLAY
TRAFFIC MASTER ANTENNA	CA175	10-WAY / BLACK	TRUNK
	CA176	10-WAY / BLACK	TRUNK
TRAFFIC MASTER MODULE	CA174	5-WAY / GREEN	TRUNK
VEHICLE EMERGENCY CONTROL MODULE	RA6	12-WAY / BLACK	TRUNK, LH SIDE
	RA7	16-WAY / BLACK	TRUNK, LH SIDE
VEHICLE INFORMATION CONTROL MODULE	CA162	10-WAY / BLACK	TRUNK, RH SIDE
VEMS GPS ANTENNA	CA134	10-WAY / GREY	PARCEL SHELF

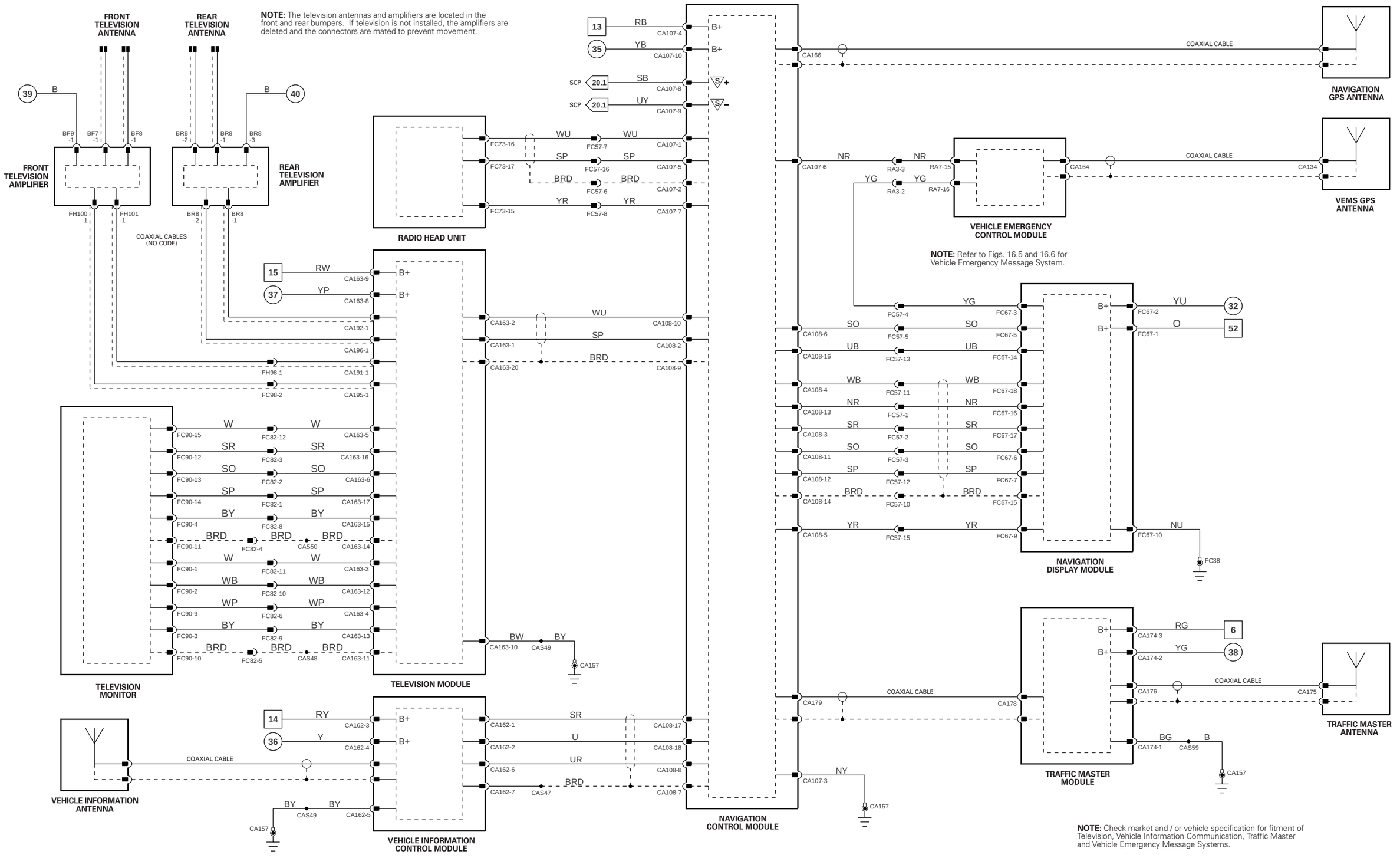
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
FC57	16-WAY / BLUE / CABIN HARNESS TO FASCIA HARNESS	BEHIND DRIVER SIDE DASH LINER
FC82	12-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FH98	10-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE

GROUNDS

Ground	Ground Description	Location
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

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: Check market and / or vehicle specification for fitment of Television, Vehicle Information Communication, Traffic Master and Vehicle Emergency Message Systems.

Fig. 17.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIRBAG – DRIVER	DB4	2-WAY / YELLOW	BEHIND SEAT BACK FINISHER
	CS6	10-WAY / BLACK	ON THE REAR OF THE DRIVER AIRBAG ASSEMBLY
AIRBAG – PASSENGER	FC32	2-WAY / BLACK	LH SIDE OF AIRBAG ASSEMBLY
	PB4	2-WAY / YELLOW	LH SIDE OF SEAT SQUAB
RESTRAINTS CONTROL MODULE	CA1	8-WAY / BLACK	TRANSMISSION TUNNEL
	CA114	26-WAY / BLACK	TRANSMISSION TUNNEL
SEAT BELT PRETENSIONER – DRIVER	CA23	3-WAY / BLACK	LOWER 'B/C' POST
SEAT BELT PRETENSIONER – PASSENGER	CA59	3-WAY / BLACK	LOWER 'B/C' POST
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
SIDE IMPACT SENSOR – DRIVER	CA22	2-WAY / BLACK	BELOW SEAT
SIDE IMPACT SENSOR – PASSENGER	CA58	2-WAY / BLACK	BELOW SEAT

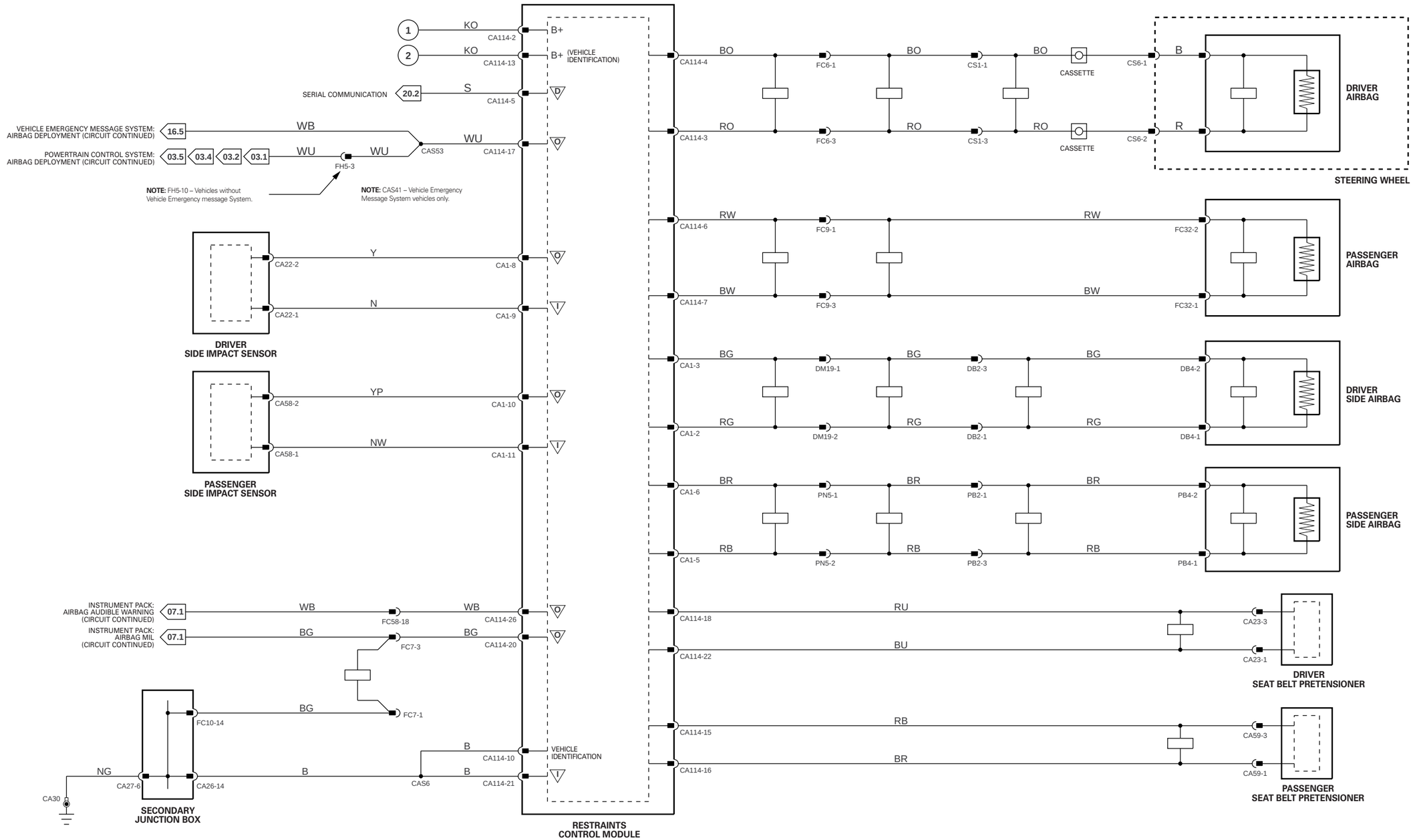
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CS1	3-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
DB2	3-WAY / BLACK / DRIVER SEAT HARNESS TO SEAT BACK LINK LEAD	BEHIND SEAT BACK FINISHER
DM19	2-WAY / YELLOW / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC6	3-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE (LHD) OR RH SIDE (RHD)
FC7	3-WAY / GREY / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FC9	3-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND FASCIA END PANEL, RH SIDE (LHD) OR LH SIDE (RHD)
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH5	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
PB2	3-WAY / BLACK / PASSENGER SEAT HARNESS TO SEAT BACK LINK LEAD	BEHIND SEAT BACK FINISHER
PN5	2-WAY / YELLOW / CABIN HARNESS TO PASSENGER SEAT HARNESS	BELOW SEAT CUSHION

GROUNDS

Ground	Ground Description	Location
CA30	GROUND EYELET	LOWER 'A' POST; LH SIDE / 'A' POST TRIM

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 18.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
PARKING AID CONTROL MODULE	CA112	26-WAY / BLACK	IN THE SPARE WHEEL WELL
PARKING AID SENSOR – CENTER LH	BR3	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – CENTER RH	BR4	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – LH	BR2	3-WAY / BLACK	REAR BUMPER
PARKING AID SENSOR – RH	BR5	3-WAY / BLACK	REAR BUMPER
PARKING AID SOUNDER	CA32	1-WAY / GREY	PARCEL SHELF
ROOF CONSOLE SWITCH PACK	RF26	8-WAY / WHITE	ROOF CONSOLE

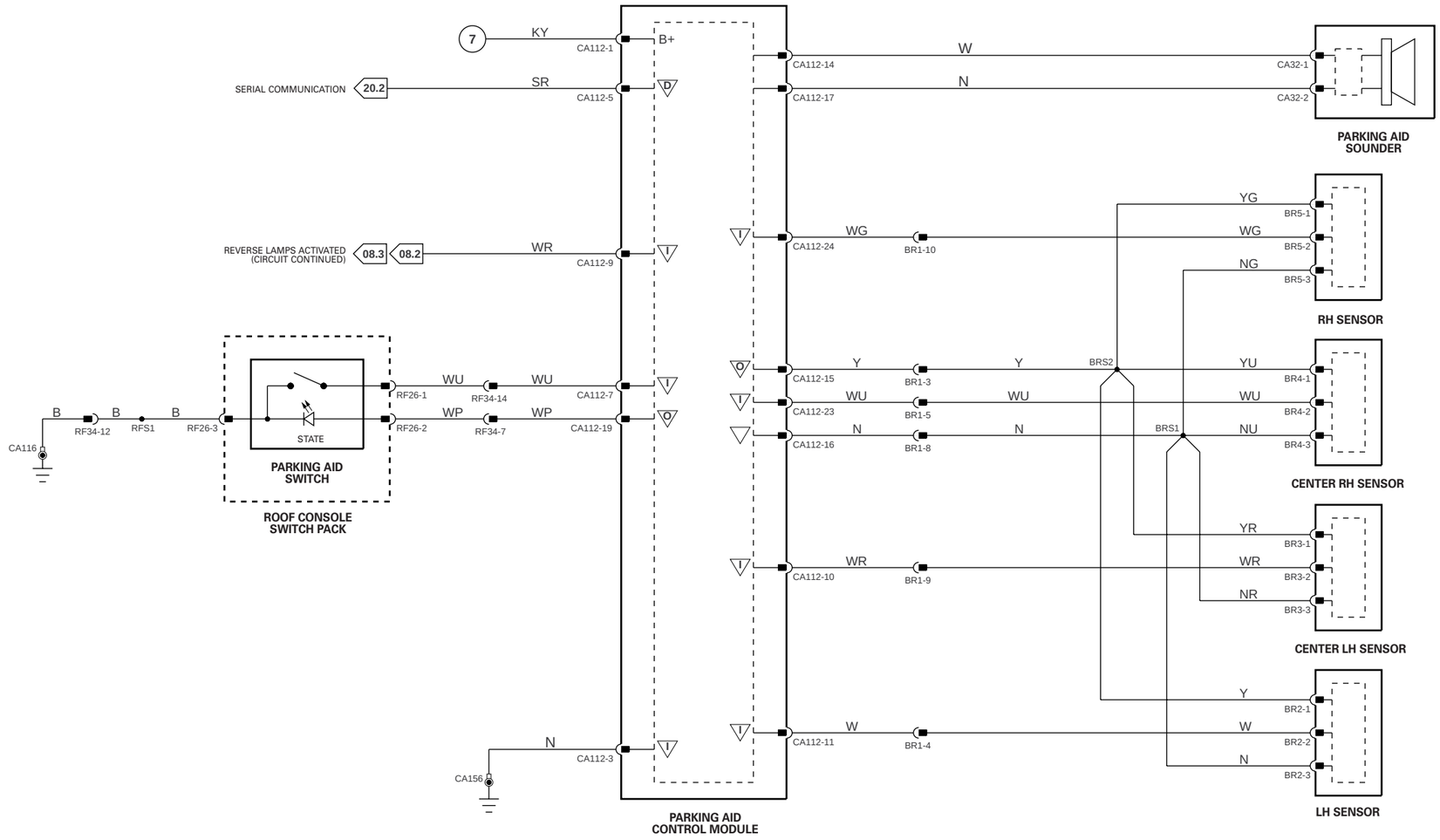
HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
BR1	10-WAY / GREY / CABIN HARNESS TO BUMPER HARNESS	BEHIND RH REAR QUARTER TRIM
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF

GROUNDS

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK

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 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: Parking Aid Equipped Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

General Electronic Control Module

▽	Pin	Description	Active	Inactive
S	FH59-1	SCP -	2 – 1600 Hz	
S	FH59-7	SCP +	2 – 1600 Hz	
O	FH59-8	HORN RELAY ACTIVATE	GROUND	B+

Instrument Pack

▽	Pin	Description	Active	Inactive
I	FC15-10	HORN SWITCH	GROUND (MOMENTARY)	B+
S	FC15-15	SCP +	2 – 1600 Hz	
S	FC15-16	SCP -	2 – 1600 Hz	

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

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 19.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ACCESSORY CONNECTOR	CA13	10-WAY / BLACK	ADJACENT TO FUEL FLAP SOLENOID
CIGAR LIGHTER	CA109	3-WAY / BROWN	CENTER CONSOLE
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
HORNS	FH29	2-WAY / BLACK	FORWARD OF RADIATOR
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
PRIMARY JUNCTION BOX	CA2	26-WAY / BLACK	'A' POST, RH SIDE
	CA56	8-WAY / GREY	'A' POST, RH SIDE
	FC37	26-WAY / BLACK	'A' POST, RH SIDE
	FH7	6-WAY / GREY	'A' POST, RH SIDE
	FH53	10-WAY / GREY	'A' POST, RH SIDE
ROOF CONSOLE SWITCH PACK	RF26	8-WAY / WHITE	ROOF CONSOLE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
SUNSHADE MOTOR ASSEMBLY	RF25	10-WAY / GREY	BELOW PARCEL SHELF

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

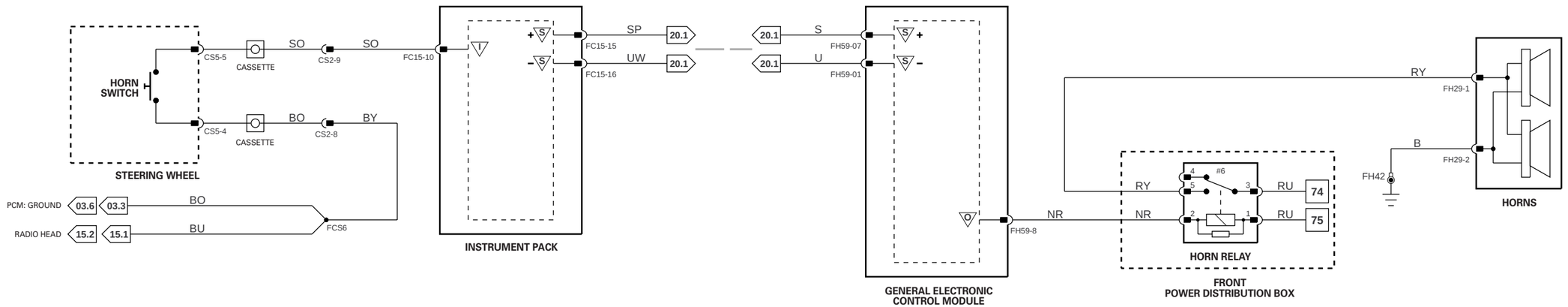
Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNESS TO COLUMN SWITCHGEAR HARNESS	BELOW STEERING COLUMN
RF34	14-WAY / GREY / CABIN HARNESS TO ROOF HARNESS	BELOW PARCEL SHELF
SL3	10-WAY / GREY / FASCIA HARNESS TO ROAD PRICING MODULE LINK LEAD	BEHIND FASCIA END PANEL, RH SIDE

GROUNDS

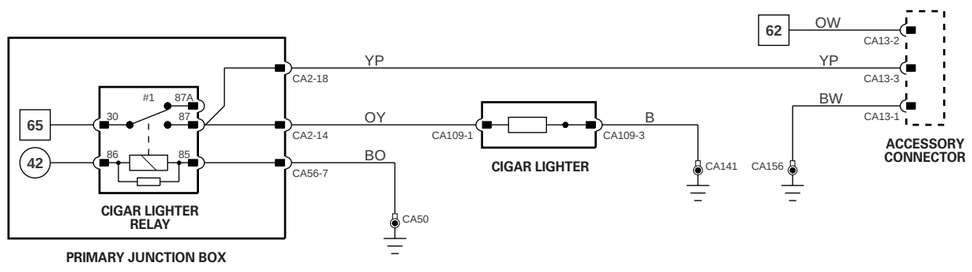
Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA141	GROUND EYELET	BELOW FRONT SEAT; LH SIDE / UNDER SEAT
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA50	GROUND EYELET	LOWER 'A' POST; RH SIDE / 'A' POST TRIM
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
FH42	GROUND EYELET	ADJACENT TO ABS/TC OR DSC CONTROL MODULE / ENGINE COMPARTMENT

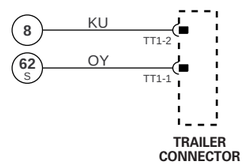
CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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.

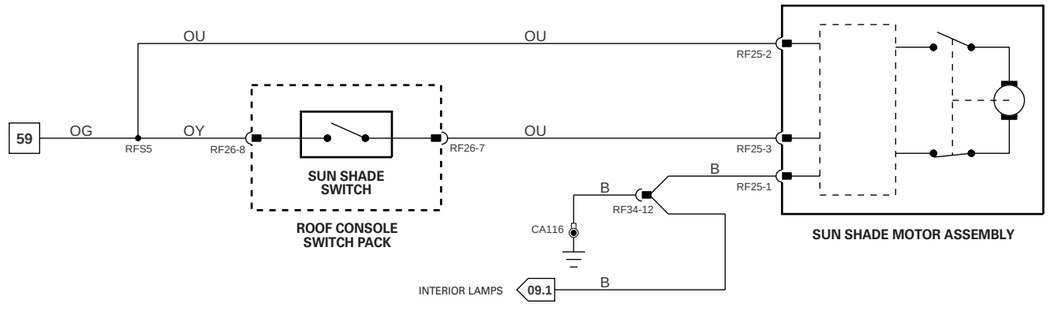


HORN

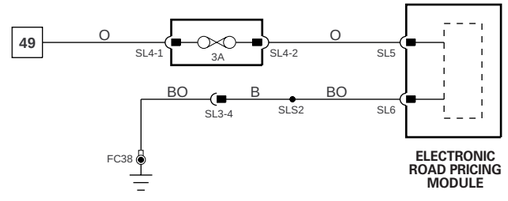




CIGAR LIGHTER; ACCESSORY AND TRAILER CONNECTORS



SUN SHADE



ELECTRONIC ROAD PRICING

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

Fig. 20.1

COMPONENTS

Component	Connector(s)	Connector Description	Location
ABS/TC CONTROL MODULE	FH33	25-WAY / BLACK	ADJACENT TO ABS PUMP
ADAPTIVE DAMPING CONTROL MODULE	CA11	16-WAY / BLUE	IN THE SPARE WHEEL WELL
	CA12	16-WAY / GREY	IN THE SPARE WHEEL WELL
AIR CONDITIONING CONTROL MODULE	FC27	26-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
	FC28	22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL
DOOR CONTROL MODULE – DRIVER	CA85	12-WAY / BLACK	DRIVER DOOR, TRIM PANEL
	DD4	26-WAY / WHITE	DRIVER DOOR, TRIM PANEL
	DT1	4-WAY / GREY	DRIVER DOOR, TRIM PANEL
	DT2	20-WAY / BLACK	DRIVER DOOR, TRIM PANEL
DYNAMIC STABILITY CONTROL CONTROL MODULE	FH51	47-WAY / GREY	ADJACENT TO ABS PUMP
GENERAL ELECTRONIC CONTROL MODULE	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
	CA84	4-WAY / GREY	'A' POST, LH SIDE
	FH9	22-WAY / BLACK	'A' POST, LH SIDE
	FH59	12-WAY / BLACK	'A' POST, LH SIDE
	FH60	17-WAY / BLACK	'A' POST, LH SIDE
INSTRUMENT PACK	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
NAVIGATION CONTROL MODULE	CA107	10-WAY / WHITE	TRUNK, LH SIDE
	CA108	18-WAY / WHITE	TRUNK, LH SIDE
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	TRUNK, RH REAR
	CA99	4-WAY / GREY	TRUNK, RH REAR
	CA100	12-WAY / BLACK	TRUNK, RH REAR
	CA101	20-WAY / BLACK	TRUNK, RH REAR
	CA102	22-WAY / BLACK	TRUNK, RH REAR
	CA103	26-WAY / WHITE	TRUNK, RH REAR
	CA104	4-WAY / BLACK	TRUNK, RH REAR
SEAT CONTROL MODULE – DRIVER	DM6	17-WAY / BLACK	BELOW SEAT CUSHION
	DM9	17-WAY / GREY	BELOW SEAT CUSHION
	DM10	4-WAY / BROWN	BELOW SEAT CUSHION
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING COLUMN LOCK MODULE	FC59	4-WAY / BLACK	STEERING COLUMN
THROTTLE ACTUATOR CONTROL MODULE	PI44	10-WAY / BLACK	ON THROTTLE BODY
VEHICLE EMERGENCY CONTROL MODULE	RA6	12-WAY / BLACK	TRUNK, LH SIDE
	RA7	16-WAY / BLACK	TRUNK, LH SIDE
VOICE ACTIVATION CONTROL MODULE	RA2	22-WAY / GREY	TRUNK, LH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA14	14-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
CA158	10-WAY / GREY / CABIN HARNESS TO CABIN HARNESS	TRUNK LATCH COVER; LH SIDE CARPET
DM18	14-WAY / GREY / CABIN HARNESS TO DRIVER SEAT HARNESS	BELOW SEAT CUSHION
FC1	16-WAY / BLACK / DATA LINK CONNECTOR	DRIVER SIDE OF TRANSMISSION TUNNEL
FC35	22-WAY / WHITE / JUNCTION CONNECTOR	BEHIND GLOVE BOX
PI2	10-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ADJACENT TO SUSPENSION TURRET, RH SIDE (LHD) OR LH SIDE (RHD)
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE

GROUNDS

Ground	Ground Description	Location
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO RECM / TRUNK RH TRIM
CA157	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM
RA8	GROUND EYELET	TRUNK; LH SIDE / TRUNK LH TRIM

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

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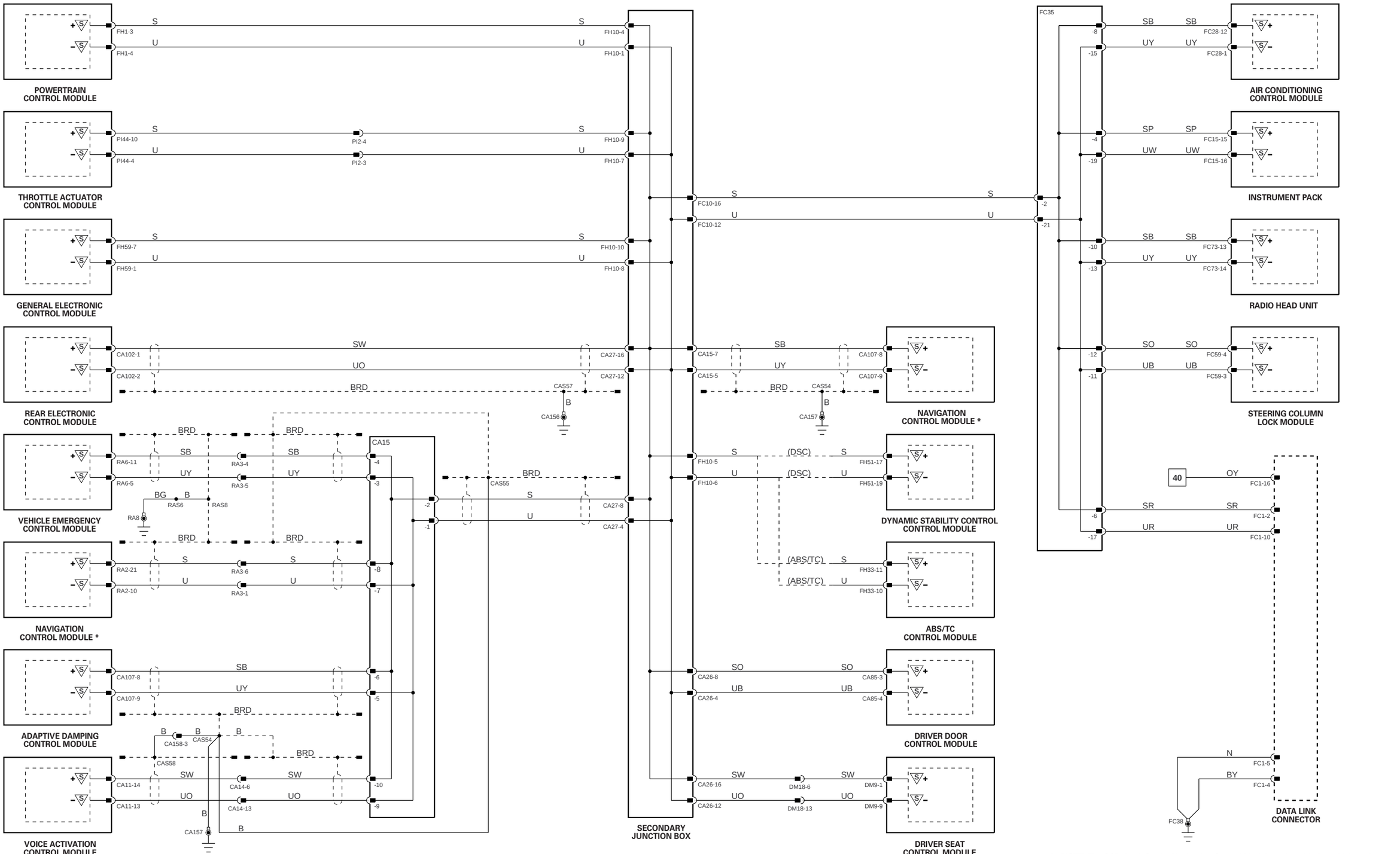

* **NOTE:** The SCP circuit for the Navigation Control Module varies with the vehicle option set.

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

CONTROL MODULE PIN-OUT INFORMATION

ABS / Traction Control Control Module

▽	Pin	Description	Active	Inactive
D	FH33-23	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	

Adaptive Damping Control Module

▽	Pin	Description	Active	Inactive
D	CA12-4	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	

Dynamic Stability Control Control Module

▽	Pin	Description	Active	Inactive
D	FH51-18	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	

Powertrain Control Module

▽	Pin	Description	Active	Inactive
D	FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
D	FH1-49	SERIAL COMMUNICATIONS	ENCODED COMMUNICATIONS	

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

I	Input	S	SCP Network	B+	Battery Voltage	Hz	Frequency
O	Output	A	ACP Network	V	Voltage (DC)	kHz	Frequency x 1000
REF	Reference Voltage / Ground	D	Serial and Encoded Data	PWM	Pulse Width Modulated	mA	Milliamperes

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. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 20.2

COMPONENTS

Component	Connector(s)	Connector Description	Location
ABS/TC CONTROL MODULE	FH33	25-WAY / BLACK	ADJACENT TO ABS PUMP
ADAPTIVE DAMPING CONTROL MODULE	CA11	16-WAY / BLUE	IN THE SPARE WHEEL WELL
	CA12	16-WAY / GREY	IN THE SPARE WHEEL WELL
CD AUTOCHANGER	FC50	12-WAY / BLACK	ABOVE GLOVE BOX
CELLULAR TELEPHONE CONTROL MODULE	RA4	12-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
	RA5	16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL
DYNAMIC STABILITY CONTROL CONTROL MODULE	FH51	47-WAY / GREY	ADJACENT TO ABS PUMP
PARKING AID CONTROL MODULE	CA112	26-WAY / BLACK	IN THE SPARE WHEEL WELL
POWERTRAIN CONTROL MODULE	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
RADIO HEAD UNIT	FC71	7-WAY / GREY	FASCIA, CENTER
	FC72	8-WAY / BLACK	FASCIA, CENTER
	FC73	17-WAY / BLACK	FASCIA, CENTER
	FC74	12-WAY / BLACK	FASCIA, CENTER
	FC75	12-WAY / BLACK	FASCIA, CENTER
	FC85	10-WAY / BLACK	FASCIA, CENTER
RESTRAINTS CONTROL MODULE	CA114	26-WAY / BLACK	TRANSMISSION TUNNEL
SECONDARY JUNCTION BOX	CA26	16-WAY / BLUE	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	CA27	8-WAY / GREY	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FC10	16-WAY / GREEN	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
	FH10	10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
VOICE ACTIVATION CONTROL MODULE	RA2	22-WAY / GREY	TRUNK, LH SIDE

HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS

Connector	Connector Description	Location
CA15	22-WAY / WHITE / JUNCTION CONNECTOR	TRUNK; ABOVE WHEEL ARCH, LH SIDE
FC1	16-WAY / BLACK / DATA LINK CONNECTOR	DRIVER SIDE OF TRANSMISSION TUNNEL
FC3	16-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE (LHD) OR RH SIDE (RHD)
FC5	12-WAY / GREY / FASCIA HARNESS TO FRONT HARNESS	BEHIND FASCIA END PANEL, LH SIDE
FC58	20-WAY / BLACK / CABIN HARNESS TO FASCIA HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
FH28	20-WAY / BLACK / FRONT HARNESS	BEHIND LOWER 'A' POST TRIM, LH SIDE
RA1	22-WAY / NATURAL / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE
RA3	10-WAY / GREY / CABIN HARNESS TO VOICE LINK LEAD	TRUNK; ABOVE WHEEL ARCH, LH SIDE

GROUNDS

Ground	Ground Description	Location
FC38	GROUND EYELET	BEHIND CENTER CONTROL CONSOLE / CENTER CONSOLE TRIM

CONTROL MODULE PIN-OUT INFORMATION (FOLD OUT PAGE)

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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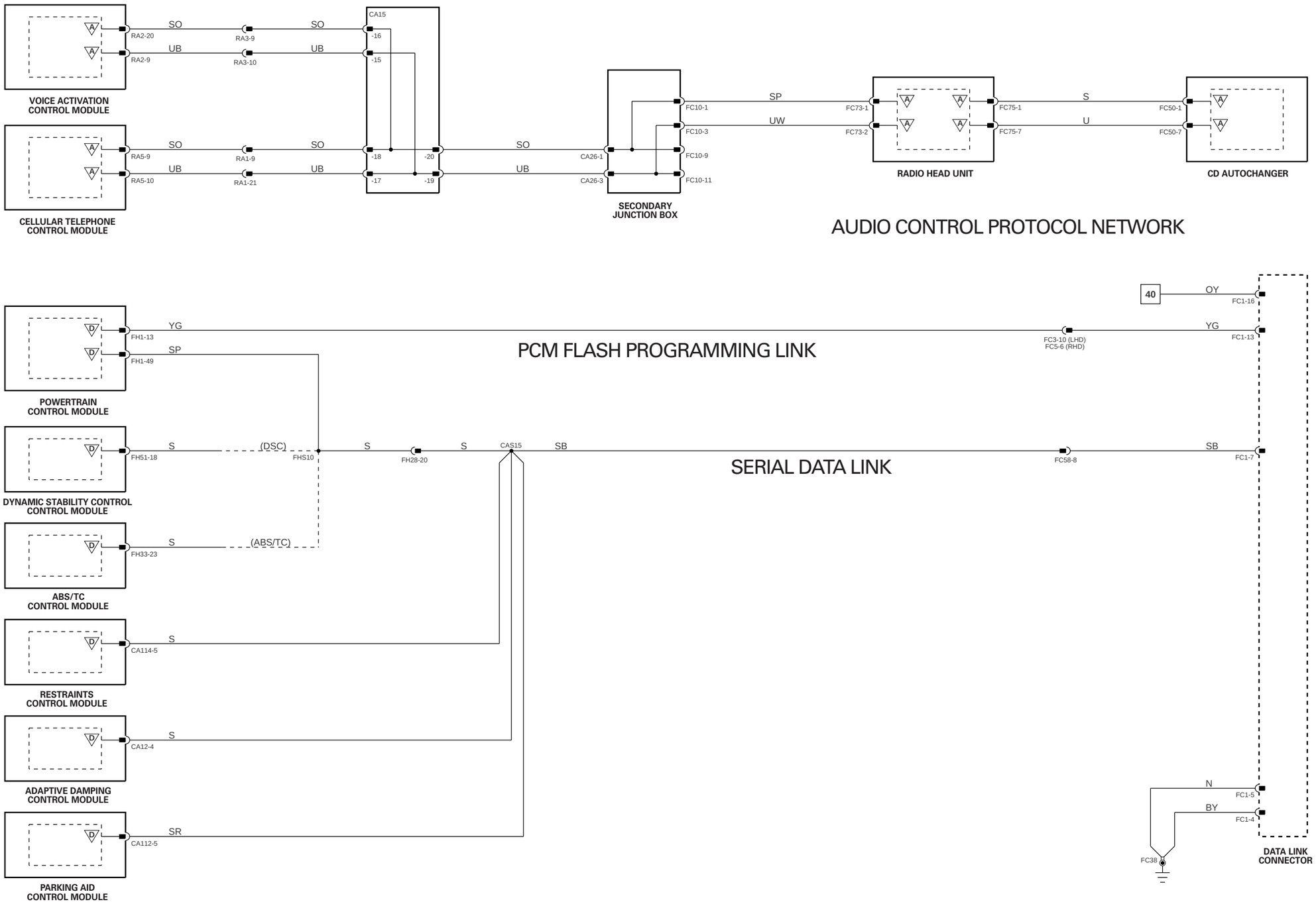

1 → 5 Fig. 01.1 | 6 → 65 Fig. 01.2 | 66 → 91 Fig. 01.3 | 1 → 42 Fig. 01.4 | 43 S → 65 S Fig. 01.5 | 66 P → 88 P Fig. 01.6

I Input | O Output | Signal Ground (SG) | S SCP Network | A ACP Network | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: JULY 1999

This Appendix contains a listing of SCP Network messages.

The following acronyms and abbreviations are used throughout this section:

A/C	Air conditioning
A/CCM	Air conditioning control module
ABS/TCCM	Anti-lock braking / traction control control module
ADCM	Adaptive damping control module
AUDIO	Radio head unit
DDCM	Driver door control module
DSC	Dynamic stability control
DSCCM	Dynamic stability control control module
DSCM	Driver seat control module
GECM	General electronic control module
INST	Instrument pack
MC	Message center (part of instrument pack)
NCM	Navigation control module
PCM	Powertrain control module
RECM	Rear electronic control module
SCLM	Steering column locking module
TACM	Throttle actuator control module
VACM	Voice activation control module
VECM	Vehicle emergency control module

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
1	A/C clutch required command: no (false)	A/CCM	X																
2	A/C clutch required command: yes (true)	A/CCM	X																
3	Actual axle torque with minimum/maximum available torque status	PCM				X	X												
4	All courtesy lamp switch status: active	INST							X										
5	All courtesy lamp switch status: inactive	INST							X										
6	All door lock command: lock/locked	DDCM						X											
7	All door lock command: lock/locked	RECM															X		
8	All door lock command: unlock/unlocked	DDCM						X											
9	All door lock command: unlock/unlocked	RECM															X		
10	All door lock motor enable command: disable/disabled	DDCM						X											
11	All front fog lamp command: off	INST							X										
12	All front fog lamp command: on	INST							X										
13	All front fog lamp status: off	GECM								X									
14	All front fog lamp status: on	GECM								X									
15	All front high beam lamp command: off	INST							X										
16	All front high beam lamp command: on	INST							X										
17	All front high beam lamp status: off	GECM								X									
18	All front high beam lamp status: on	GECM								X									
19	All headlamp command: off	INST							X										
20	All headlamp command: on	INST							X										
21	All climate control operating mode command	VACM												X					
22	All climate control set temperature command	VACM												X					
23	All park lamp command: off	INST						X	X			X							
24	All park lamp command: on	INST						X	X			X							
25	All rear brake lamp command: off	DSCCM						X											
26	All rear brake lamp command: on	DSCCM						X											

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
27	All rear fog lamp command: off	INST						X											
28	All rear fog lamp command: on	INST						X											
29	All rear fog lamp status: off	RECM								X									
30	All rear fog lamp status: on	RECM								X									
31	All rear park lamp command: off	GECM						X											
32	All rear park lamp command: on	GECM						X											
33	All rear window lockout switch status: active	DDCM						X											
34	All rear window lockout switch status: inactive	DDCM						X											
35	All remote door lock command: unlock	DDCM							X	X									
36	All remote door lock command: lock	DDCM							X	X									
37	All super / double door lock command: lock/locked	DDCM						X											
38	All turn lamp command: off	GECM						X											
39	All turn lamp command: on	GECM						X											
40	All turn lamp command: off	INST						X	X										
41	All turn lamp command: on	INST						X	X										
42	Anti-lock brake system failed telltale command: off	DSCCM								X									
43	Anti-lock brake system failed telltale command: off	ABS/TCCM								X									
45	Anti-lock brake system failed telltale command: on	DSCCM								X									
46	Anti-lock brake system failed telltale command: on	ABS/TCCM								X									
48	Autolamp delay command: disable/disabled	INST									X								
49	Autolamp delay command: enable/enabled	INST									X								
50	Backlighting intensity and dimming curve with headlamps command: off	INST							X		X		X	X					
51	Backlighting intensity and dimming curve with headlamps command: on	INST							X		X		X	X					
52	Battery saver command: off	GECM						X		X									
53	Battery saver command: on	GECM						X		X									
55	Brake system failed telltale command: off	DSCCM								X									

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
56	Brake system failed telltale command: off	ABS/TCCM								X									
58	Brake system failed telltale command: on	DSCCM								X									
59	Brake system failed telltale command: on	ABS/TCCM								X									
60	Brake lamp pedal switch status: active	RECM	X		X	X			X										
61	Brake lamp pedal switch status: inactive	RECM	X		X	X			X										
62	Brake system configuration status	DSCCM	X								X								
63	Brake system configuration status	ABS/TCCM	X								X								
65	Charging system state status	PCM								X	X								
66	CHECK ENGINE (MIL) telltale indicator mode command	PCM								X									
67	Chime configuration 1 command: enable/enabled	GECM								X									
68	Chime configuration 1 command: enable/enabled	VACM								X									
69	Chime configuration 1 command: enable/enabled	MC								X									
70	Chime configuration 2 command: enable/enabled	MC								X									
71	Chime configuration 2 command: enable/enabled	VACM								X									
72	Clutch pedal position status	PCM				X													
73	Trunk lid door ajar switch status: active	RECM							X		X						X		
74	Trunk lid door ajar switch status: inactive	RECM							X		X						X		
75	Trunk lid door open command: yes (true)	DDCM						X											
76	Delayed accessory command: off	DDCM						X	X										
77	Delayed accessory command: on	DDCM						X	X										
78	Desired axle torque command	DSCCM	X																
79	Desired axle torque command	ABS/TCCM	X																
80	Display access confirmation status: accept	MC											X			X			
81	Display access confirmation status: reject	MC											X			X			
82	Display access confirmation status: accept	NCM													X				
83	Display access confirmation status: reject	NCM													X				

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
84	Display access display string command: clear display	AUDIO									X								
85	Display access display string command: clear display	VACM									X								
86	Display access display string command: clear display	VECM										X							
87	Display access terminate command	AUDIO									X								
88	Display access terminate command	VACM									X								
89	Display access terminate command	VECM										X							
90	Download block to display command	AUDIO									X								
91	Download block to display command	VACM									X								
92	Download block to display command	VECM										X							
93	Driver assistance phone command	NCM													X				
94	Driver front door ajar switch status: active	GECM								X	X						X		
95	Driver front door ajar switch status: inactive	GECM								X	X						X		
96	Driver front door lock cylinder state status	DDCM							X	X									
97	Driver front door lock switch status: active	DDCM							X										
98	Driver front door unlock switch status: active	DDCM							X										
99	Driver rear door ajar switch status: active	RECM							X		X						X		
100	Driver rear door ajar switch status: inactive	RECM							X		X						X		
101	Driver rear master controller window close command: disable/disabled	DDCM						X											
102	Driver rear master controller window close command: enable/enabled	DDCM						X											
103	Driver rear master controller window open command: disable/disabled	DDCM						X											
104	Driver rear master controller window open command: enable/enabled	DDCM						X											
105	Driver rear window open command: disable/disabled	DDCM						X											
106	Driver rear window open command: enable/enabled	DDCM						X											
107	Driver rear window close command: disable/disabled	DDCM						X											
108	Driver rear window close command: enable/enabled	DDCM						X											
109	Electronic throttle control warning status	PCM									X								

No.	Message Name	Source	Receivers																
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
110	Emergency messaging status: active	VECM														X			
111	Emergency messaging status: inactive	VECM														X			
112	Engine configuration status	PCM				X	X												
113	Engine coolant temperature high status: no (false)	INST									X								
114	Engine coolant temperature high status: yes (true)	INST									X								
115	Engine coolant temperature status	PCM				X				X				X					
116	Engine coolant low level status: no (false)	PCM									X								
117	Engine coolant low level status: yes (true)	PCM									X								
118	Engine off elapsed time status	PCM												X					
119	Engine oil pressure low status: no (false)	GECM								X									
120	Engine oil pressure low status: yes (true)	GECM								X									
122	Engine RPM with throttle position status	PCM				X	X	X	X	X				X					
123	Engine vacuum status	PCM				X													
126	Fail safe cooling mode status	PCM								X	X								
127	Front sliding roof master controller window close command: disable/disabled	DDCM						X											
128	Front sliding roof master controller window close command: enable/enabled	DDCM						X											
129	Front sliding roof master controller window open command: disable/disabled	DDCM						X											
130	Front sliding roof master controller window open command: enable/enabled	DDCM						X											
131	Front windshield electric defrost status: off	A/CCM	X																
132	Front windshield electric defrost status: on	A/CCM	X																
133	Fuel flow	MC	X																
134	Fuel input/output status	RECM	X																
135	Fuel level: percent status	INST	X								X								
136	Fuel level: sensor analog/digital output status	RECM	X							X									
137	Hood ajar switch status: active	GECM															X		
138	Hood ajar switch status: inactive	GECM															X		

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
139	Horn configuration 1 command: disable/disabled	INST							X										
140	Horn configuration 1 command: enable/enabled	INST							X										
141	Horn configuration 3 command: enable/enabled	DDCM							X										
142	Ignition switch position with initialize status: no (false)	INST	X					X	X		X	X	X		X		X	X	
143	Ignition switch position with initialize status: yes (true)	INST	X					X	X		X	X	X		X		X	X	
144	DSC active telltale command: off	DSCCM								X									
145	DSC active telltale command: on	DSCCM								X									
146	Key-in-ignition status: no (false)	INST						X	X								X	X	
147	Key-in-ignition status: yes (true)	INST						X	X								X	X	
149	Language code status	NCM													X				
150	Left front turn lamp OK status: no (false)	GECM								X	X								
151	Left front turn lamp OK status: yes (true)	GECM								X	X								
152	Left rear brake lamp OK status: no (false)	RECM									X								
153	Left rear brake lamp OK status: yes (true)	RECM									X								
154	Left rear tail lamp OK status: no (false)	RECM									X								
155	Left rear tail lamp OK status: yes (true)	RECM									X								
156	Left rear turn lamp OK status: no (false)	RECM								X	X								
157	Left rear turn lamp OK status: yes (true)	RECM								X	X								
158	Left side mid vehicle turn lamp OK status: no (false)	GECM								X	X								
159	Left side mid vehicle turn lamp OK status: yes (true)	GECM								X	X								
160	Left side turn signal turn lamp command: off	INST						X	X										
161	Left side turn signal turn lamp command: on	INST						X	X										
162	Low brake fluid telltale command: off	GECM								X	X								
163	Low brake fluid telltale command: on	GECM								X	X								
164	Low washer fluid telltale command: off	GECM									X								
165	Low washer fluid telltale command: on	GECM									X								

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
166	Memory feature menu status	DDCM							X									X	
167	Memory feature menu status	INST							X								X	X	
169	Memory features 1 command: recall	DDCM							X	X	X							X	
170	Memory features 1 command: set / save	DDCM							X	X	X							X	
171	Memory features 2 command: recall	DDCM							X	X	X							X	
172	Memory features 2 command: set / save	DDCM							X	X	X							X	
173	Memory features recall cancel command: yes (true)	DDCM							X	X								X	
174	Memory features recall cancel command: yes (true)	DSCM							X	X							X		
175	Memory features recall cancel command: yes (true)	INST							X								X	X	
176	Network bus wake-up command: yes (true)	DDCM																	
177	Network bus wake-up command: yes (true)	DSCM																	
178	Network bus wake-up command: yes (true)	GECM																	
179	Network bus wake-up command: yes (true)	RECM																	
180	Network bus wake-up command: yes (true)	INST																	
181	Odometer rolling count status	DSCCM								X	X	X							
182	Odometer rolling count status	ABS/TCCM								X	X	X							
184	Outside air temperature status	A/CCM	X			X													
185	Parking brake switch status: active	GECM	X			X				X		X				X	X		
186	Parking brake switch status: inactive	GECM	X			X				X		X				X	X		
187	Passenger front door ajar switch status: active	GECM						X			X						X		
188	Passenger front door ajar switch status: inactive	GECM						X			X						X		
189	Passenger front door lock switch status: active	RECM							X										
190	Passenger front door unlock switch status: active	RECM							X										
191	Passenger front master controller window close command: disable/disabled	DDCM							X										
192	Passenger front master controller window close command: enable/enabled	DDCM							X										
193	Passenger front master controller window open command: disable/disabled	DDCM							X										

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
194	Passenger front master controller window open command: enable/enabled	DDCM							X										
195	Passenger front window open command: disable/disabled	DDCM							X										
196	Passenger front window open command: enable/enabled	DDCM							X										
197	Passenger front window open switch status: active	GECM															X		
198	Passenger front window close command: disable/disabled	DDCM							X										
199	Passenger front window close command: enable/enabled	DDCM							X										
200	Passenger mirror down motion command: enable/enabled	DDCM							X										
201	Passenger mirror left motion command: disable/disabled	DDCM							X										
202	Passenger mirror left motion command: enable/enabled	DDCM							X										
203	Passenger mirror right motion command: enable/enabled	DDCM							X										
204	Passenger mirror up motion command: enable/enabled	DDCM							X										
205	Passenger rear door ajar switch status: active	RECM							X		X						X		
206	Passenger rear door ajar switch status: inactive	RECM							X		X						X		
207	Passenger rear master controller window close command: disable/disabled	DDCM						X											
208	Passenger rear master controller window close command: enable/enabled	DDCM						X											
209	Passenger rear master controller window open command: disable/disabled	DDCM						X											
210	Passenger rear master controller window open command: enable/enabled	DDCM						X											
211	Passenger rear window open command: disable/disabled	DDCM						X											
212	Passenger rear window open command: enable/enabled	DDCM						X											
213	Passenger rear window open switch status: active	RECM															X		
214	Passenger rear window close command: disable/disabled	DDCM						X											
215	Passenger rear window close command: enable/enabled	DDCM						X											
216	Rear windshield electric defrost status: off	RECM												X					
217	Rear windshield electric defrost status: on	RECM												X					
218	Rear windshield electric defrost switch status: active	A/CCM						X											
219	Rear windshield electric defrost switch status: inactive	A/CCM						X											

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
220	Remote control #1 button status	AUDIO														X			
221	Remote panic command: disable/disabled	DDCM							X										
222	Remote panic command: enable/enabled	DDCM							X										
223	Request all courtesy lamp switch status	GECM								X									
224	Request all front fog lamp command	GECM								X									
225	Request all front fog lamp status	INST							X										
226	Request all front high beam lamp command	GECM								X									
227	Request all front high beam lamp status	INST							X										
228	Request all headlamp command	GECM								X									
229	Request all park lamp command	GECM								X									
230	Request all park lamp command	RECM								X									
231	Request all park lamp command	NCM								X									
232	Request all rear brake lamp command	RECM				X													
233	Request all rear fog lamp command	RECM								X									
234	Request all rear fog lamp status	INST						X											
235	Request all rear park lamp command	RECM							X										
236	Request all rear window lockout switch status	RECM															X		
237	Request anti-lock brake system failed telltale command	INST				X	X												
238	Request backlighting intensity and dimming curve with headlamps command	A/CCM								X									
239	Request backlighting intensity and dimming curve with headlamps command	GECM								X									
240	Request backlighting intensity and dimming curve with headlamps command	MC								X									
241	Request backlighting intensity and dimming curve with headlamps command	AUDIO								X									
242	Request battery saver command	INST							X										
243	Request battery saver command	RECM							X										
244	Request brake lamp pedal switch status	GECM						X											
245	Request brake lamp pedal switch status	DSCCM						X											

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
246	Request brake lamp pedal switch status	PCM						X											
247	Request brake lamp pedal switch status	ADCM						X											
248	Request brake system configuration status	MC				X	X												
249	Request brake system failed telltale command	INST				X	X												
250	Request charging system state status	INST	X																
251	Request charging system state status	MC	X																
252	Request CHECK ENGINE (MIL) telltale indicator mode command	INST	X																
253	Request clutch pedal position status	DSCCM	X																
254	Request trunk lid ajar switch status	DDCM						X											
255	Request trunk lid ajar switch status	GECM						X											
256	Request trunk lid ajar switch status	MC						X											
258	Request delayed accessory command	GECM															X		
259	Request delayed accessory command	RECM															X		
261	Request driver front door ajar switch status	DDCM							X										
262	Request driver front door ajar switch status	MC							X										
263	Request driver front door ajar switch status	INST							X										
264	Request driver rear door ajar switch status	DDCM						X											
265	Request driver rear door ajar switch status	GECM						X											
266	Request driver rear door ajar switch status	MC						X											
268	Request electronic throttle control warning status	MC	X																
269	Request emergency messaging status	VACM													X				
270	Request engine configuration status	DSCCM	X																
271	Request engine configuration status	ABS/TCCM	X																
272	Request engine coolant temperature high status	MC								X									
273	Request engine coolant temperature status	A/CCM	X																
274	Request engine coolant temperature status	INST	X																

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
275	Request engine off elapsed time status	A/CCM	X																
276	Request engine oil pressure low status	INST							X										
278	Request fail safe cooling mode status	MC	X																
279	Request fail safe cooling mode status	INST	X																
280	Request fuel input/output status	PCM						X											
281	Request hood ajar switch status	DDCM							X										
282	Request ignition switch position with initialize status	DDCM								X									
283	Request ignition switch position with initialize status	DSCM								X									
284	Request ignition switch position with initialize status	GECM								X									
285	Request ignition switch position with initialize status	MC								X									
286	Request ignition switch position with initialize status	NCM								X									
287	Request ignition switch position with initialize status	PCM								X									
288	Request ignition switch position with initialize status	RECM								X									
289	Request ignition switch position with initialize status	AUDIO								X									
290	Request ignition switch position with initialize status	VECM								X									
291	Request DSC active telltale command	INST				X													
292	Request key-in-ignition status	DDCM								X									
293	Request key-in-ignition status	DSCM								X									
294	Request key-in-ignition status	GECM								X									
295	Request key-in-ignition status	RECM								X									
296	Request left front turn lamp OK status	MC							X										
297	Request left front turn lamp OK status	INST							X										
298	Request left rear brake lamp OK status	MC						X											
300	Request left rear tail lamp OK status	MC						X											
302	Request left rear turn lamp OK status	MC						X											
303	Request left rear turn lamp OK status	INST						X											

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
304	Request left side mid vehicle turn lamp OK status	MC							X										
305	Request left side mid vehicle turn lamp OK status	INST							X										
306	Request low brake fluid telltale command	MC							X										
307	Request low brake fluid telltale command	INST							X										
308	Request low washer fluid telltale command	MC							X										
310	Request memory feature menu status	DSCM															X		
312	Request memory feature menu status	GECM															X		
314	Request parking brake switch status	DDCM							X										
315	Request parking brake switch status	INST							X										
316	Request parking brake switch status	NCM							X										
317	Request parking brake switch status	PCM							X										
318	Request parking brake switch status	VACM							X										
319	Request passenger front door ajar switch status	DDCM							X										
320	Request passenger front door ajar switch status	MC							X										
322	Request passenger front door ajar switch status	RECM							X										
323	Request passenger rear door ajar switch status	DDCM						X											
324	Request passenger rear door ajar switch status	GECM						X											
325	Request passenger rear door ajar switch status	MC						X											
327	Request rear windshield electric defrost switch status	RECM												X					
328	Request right front turn lamp OK status	MC							X										
329	Request right front turn lamp OK status	INST							X										
330	Request right rear brake lamp OK status	MC						X											
332	Request right rear tail lamp OK status	MC						X											
334	Request right rear turn lamp OK status	MC						X											
335	Request right rear turn lamp OK status	INST						X											
336	Request right side mid vehicle turn lamp OK status	MC							X										

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
337	Request right side mid vehicle turn lamp OK status	INST							X										
338	Request steering column lock system status	INST																	X
339	Request steering column lock warning command	MC								X									
340	Request throttle control unit fault status	PCM		X															
341	Request traction control active telltale command	INST					X												
342	Request traction control system state status	INST				X	X												
343	Request traction control system state status	MC				X	X												
345	Request transmission actual gear position with shift in progress status	DSCCM	X																
346	Request transmission actual gear position with shift in progress status	ABS/TCCM	X																
349	Request transmission configuration status	DSCCM	X																
350	Request transmission configuration status	ABS/TCCM	X																
352	Request transmission performance mode command	PCM							X										
353	Request transmission performance mode status	GECM	X																
355	Request transmission system state status	MC	X																
356	Request vehicle antitheft system status	DDCM							X										
357	Request vehicle antitheft system status	RECM							X										
359	Request vehicle security key status	GECM								X									
360	Request vehicle security key status	PCM								X									
361	Request vehicle security PCM identification status	INST	X																
362	Request vehicle security SCLM identification status	SCLM								X									
363	Request vehicle security system status	INST	X																
364	Request vehicle security visual indicator mode command	INST							X										
365	Request vehicle speed control set speed status	INST	X																
366	Right front turn lamp OK status: no (false)	GECM								X	X								
367	Right front turn lamp OK status: yes (true)	GECM								X	X								
368	Right rear brake lamp OK status: no (false)	RECM									X								

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
369	Right rear brake lamp OK status: yes (true)	RECM									X								
370	Right rear tail lamp OK status: no (false)	RECM									X								
371	Right rear tail lamp OK status: yes (true)	RECM									X								
372	Right rear turn lamp OK status: no (false)	RECM								X	X								
373	Right rear turn lamp OK status: yes (true)	RECM								X	X								
374	Right side mid vehicle turn lamp OK status: no (false)	GECM								X	X								
375	Right side mid vehicle turn lamp OK status: yes (true)	GECM								X	X								
376	Right side turn signal turn lamp command: off	INST						X	X										
377	Right side turn signal turn lamp command: on	INST						X	X										
378	Steering column lock command: lock	INST																	X
379	Steering column lock command: unlock	INST																	X
380	Steering column lock enable command: off	INST						X	X										
381	Steering column lock enable command: on	INST						X	X										
382	Steering column lock enable status: off	GECM								X									
383	Steering column lock enable status: on	GECM								X									
384	Steering column lock enable status: off	RECM								X									
385	Steering column lock enable status: on	RECM								X									
386	Steering column lock system status	SCLM								X									
387	Steering column lock warning command: no (false)	INST									X								
388	Steering column lock warning command: yes (true)	INST									X								
389	Suspension system state status	ADCM									X								
390	Terminate display confirmation status: accept	MC											X			X			
391	Terminate display confirmation status: reject	MC											X			X			
392	Terminate display confirmation status: accept	NCM													X				
393	Terminate display confirmation status: reject	NCM													X				
394	Terminate display definition command	AUDIO									X								

No.	Message Name	Source	Receivers																	
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
395	Terminate display definition command	VACM									X								
396	Terminate display definition command	VECM										X							
397	Throttle actuator control module fault status	TACM	X																
398	Traction control active telltale command: off	ABS/TCCM	X							X									
399	Traction control active telltale command: on	ABS/TCCM	X							X									
400	Traction control system state status	DSCCM								X	X								
401	Traction control system state status	ABS/TCCM								X	X								
402	Transmission actual gear position with shift in progress status: no (false)	PCM				X	X												
403	Transmission actual gear position with shift in progress status: yes (true)	PCM				X	X												
404	Transmission configuration status	PCM				X	X												
406	Transmission performance mode command	GECM	X																
407	Transmission performance mode status	PCM							X										
408	Transmission PRNDL range selected status	PCM				X		X	X			X					X		
409	Transmission system state status	PCM									X								
411	Vehicle antitheft system status	GECM						X									X		
413	Vehicle security challenge query status	PCM								X									
414	Vehicle security challenge query status	SCLM								X									
415	Vehicle security challenge response status	PCM								X									
416	Vehicle security challenge response status	INST	X																X
417	Vehicle security challenge response status	SCLM	X							X									
418	Vehicle security key status	INST	X						X										
419	Vehicle security PCM identification status	PCM								X									
420	Vehicle security SCLM identification status	INST																	X
421	Vehicle security system status: disable/disabled	PCM								X									
422	Vehicle security system status: enable/enabled	PCM								X									
423	Vehicle security visual indicator mode command	GECM								X									

No.	Message Name	Source	Receivers														
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
424	Vehicle speed – driven and undriven wheels: high resolution	DSCCM	X		X			X	X	X		X	X	X			X		
425	Vehicle speed – driven and undriven wheels: high resolution	ABS/TCCM	X		X			X	X	X		X	X	X			X		
427	Vehicle speed control set speed status: disable/disabled	PCM								X									
428	Vehicle speed control set speed status: enable/enabled	PCM								X									
429	Vehicle speed control system status: off	PCM									X								
430	Vehicle speed control system status: on	PCM									X								
433	Voice control mode status: off	VACM								X			X	X					
434	Voice control mode status: on	VACM								X			X	X					