



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



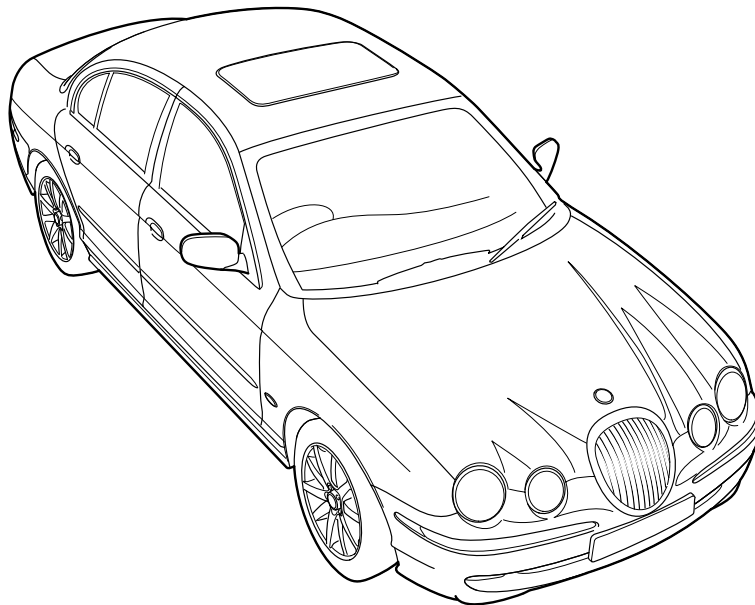
BY APPOINTMENT TO  
HER MAJESTY QUEEN ELIZABETH  
THE QUEEN MOTHER  
MANUFACTURERS OF DAIMLER AND JAGUAR CARS  
JAGUAR CARS LIMITED COVENTRY



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

# JAGUAR S-TYPE

## 1999.25 Model Year Electrical Guide



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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
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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.



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.....	Fig. 16.1	Relay – Wiper Park Heater .....	Fig. 06.1
.....	Fig. 16.2	Relays – Switched System Power .....	Fig. 01.5
.....	Fig. 16.3	Relays – Powertrain Control .....	Fig. 01.6
.....	Fig. 16.4	Relays – Windshield Heater .....	Fig. 06.1
.....	Fig. 16.5	Remote Keyless Entry Module .....	Fig. 12.1
.....	Fig. 16.6	Restraints Control Module .....	Fig. 17.1
.....	Fig. 16.7	.....	Fig. 20.2
.....	Fig. 20.1		
.....	Fig. 20.2		
Rain Sensing Module .....	Fig. 13.1		



Reverse Switch .....	Fig. 04.2	Steering Column Lock Module .....	Fig. 12.3
Roof Console Switch Pack .....	Fig. 09.1	.....	Fig. 20.1
.....	Fig. 18.1	Steering Column Motors .....	Fig. 10.1
.....	Fig. 19.1	Steering Wheel .....	Fig. 03.3
Seat Back Heater – Driver .....	Fig. 11.1	.....	Fig. 03.6
.....	Fig. 11.2	.....	Fig. 09.2
Seat Back Heater – Passenger .....	Fig. 11.3	.....	Fig. 15.1
Seat Belt Pretensioners .....	Fig. 17.1	.....	Fig. 15.2
Seat Belt Switch .....	Fig. 07.1	.....	Fig. 16.3
Seat Heater Control Module – Driver .....	Fig. 11.1	.....	Fig. 16.4
.....	Fig. 11.2	.....	Fig. 16.5
Seat Heater Control Module – Passenger .....	Fig. 11.3	.....	Fig. 16.6
Seat Heater Switch – Driver .....	Fig. 11.1	.....	Fig. 17.1
.....	Fig. 11.2	.....	Fig. 19.1
Seat Heater Switch – Passenger .....	Fig. 11.3	Sun Shade Motor Assembly .....	Fig. 19.1
Seat Heater – Driver .....	Fig. 11.1	Sun Shade Switch (Roof Console Switch Pack) .....	Fig. 19.1
.....	Fig. 11.2	Sunvisor Lamps .....	Fig. 09.1
Seat Heater – Passenger .....	Fig. 11.3	Tail Lamp Units .....	Fig. 08.2
Seat Motors – Driver .....	Fig. 11.1	.....	Fig. 08.3
.....	Fig. 11.2	Telephone Hand Set .....	Fig. 16.1
Seat Motors – Passenger .....	Fig. 11.3	.....	Fig. 16.2
Seat Switch Pack – Driver .....	Fig. 11.1	.....	Fig. 16.3
.....	Fig. 11.2	.....	Fig. 16.4
Seat Switch Pack – Passenger .....	Fig. 11.3	.....	Fig. 16.5
Secondary Junction Box .....	Fig. 01.1	.....	Fig. 16.6
.....	Fig. 09.1	Television Amplifiers .....	Fig. 16.7
.....	Fig. 09.2	Television Antennas .....	Fig. 16.7
.....	Fig. 16.1	Television Module .....	Fig. 16.7
.....	Fig. 16.2	Television Monitor .....	Fig. 16.7
.....	Fig. 16.3	Throttle Actuator Control Module (TACM) .....	Fig. 03.1
.....	Fig. 16.4	.....	Fig. 03.2
.....	Fig. 16.5	.....	Fig. 03.4
.....	Fig. 16.6	.....	Fig. 03.5
.....	Fig. 17.1	.....	Fig. 20.1
.....	Fig. 20.1	Throttle Assembly .....	Fig. 03.1
.....	Fig. 20.2	.....	Fig. 03.2
Security Indicator .....	Fig. 12.3	.....	Fig. 03.4
.....	Fig. 12.4	.....	Fig. 03.5
Side Marker Lamps – Front .....	Fig. 08.1	Throttle Position Sensor (TP Sensor) .....	Fig. 03.1
Side Marker Lamps – Rear .....	Fig. 08.2	.....	Fig. 03.2
.....	Fig. 08.3	.....	Fig. 03.4
Sliding Roof Control Module .....	Fig. 14.1	.....	Fig. 03.5
Sliding Roof Motor Assembly .....	Fig. 14.1	Traction Control Switch .....	Fig. 05.1
Sliding Roof Switch Pack .....	Fig. 14.1	.....	Fig. 05.2
Speakers – Center Fill .....	Fig. 15.2	.....	Fig. 09.2
Speakers – Door .....	Fig. 15.1	Traffic Master Antenna .....	Fig. 16.7
.....	Fig. 15.2	Traffic Master Module .....	Fig. 16.7
Speakers – Subwoofer .....	Fig. 15.2	Trailer Connector .....	Fig. 19.1
Starter Motor .....	Fig. 02.1	Trailer Towing Connectors .....	Fig. 08.3
Steering Angle Rate Sensor .....	Fig. 05.1	Trailer Towing Junction Box .....	Fig. 08.3
.....	Fig. 05.2	Trailer Towing Module .....	Fig. 08.3
Steering Column Adjust Switch .....	Fig. 10.1	Transmission .....	Fig. 04.1
		Transmission Mode Switch .....	Fig. 09.2



Transmission Range Sensor .....	Fig. 02.1
.....	Fig. 04.1
Trunk / Fuel Release Switch Pack .....	Fig. 12.1
.....	Fig. 12.2
Trunk Lamps .....	Fig. 09.1
Trunk Release .....	Fig. 12.1
.....	Fig. 12.2
Trunk Switch .....	Fig. 09.1
.....	Fig. 12.3
.....	Fig. 12.4
Turbine Speed Sensor .....	Fig. 04.1
Turn Signal Repeaters .....	Fig. 08.1
Valet Switch .....	Fig. 12.2
Variable Assist Steering Actuator .....	Fig. 10.1
Variable Valve Timing Valves (VVT Valve) .....	Fig. 03.1
.....	Fig. 03.2
.....	Fig. 03.4
.....	Fig. 03.5
Vehicle Emergency Control Module .....	Fig. 16.5
.....	Fig. 16.7
.....	Fig. 20.1
Vehicle Information Antenna .....	Fig. 16.7
Vehicle Information Control Module .....	Fig. 16.7
VEMS GPS Antenna .....	Fig. 16.5
.....	Fig. 16.7
Voice Activation Control Module .....	Fig. 16.3
.....	Fig. 16.4
.....	Fig. 16.5
.....	Fig. 16.6
.....	Fig. 20.1
.....	Fig. 20.2
Washer Fluid Level Switch .....	Fig. 07.1
.....	Fig. 13.1
Wheel Speed Sensors .....	Fig. 05.1
.....	Fig. 05.2
Window Motors .....	Fig. 14.1
Window Switch – Passenger .....	Fig. 09.2
.....	Fig. 14.1
Window Switches – Rear .....	Fig. 09.2
.....	Fig. 14.1
Windshield Heaters .....	Fig. 06.1
Windshield Washer Pump .....	Fig. 13.1
Windshield Wipe / Wash Switch .....	Fig. 13.1
Wiper Motor Assembly .....	Fig. 13.1
Wiper Park Heater .....	Fig. 06.1
Yaw Velocity Sensor .....	Fig. 05.1



## 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
1	IGN1	IGN	IGN1
2	IGN2	IGN	IGN2
3	IGN3	IGN	IGN3

**Instrument Pack**

Pin	Description	Active	Inactive
1	IGN1	IGN	IGN1
2	IGN2	IGN	IGN2
3	IGN3	IGN	IGN3

**Powertrain Control Module**

Pin	Description	Active	Inactive
1	IGN1	IGN	IGN1
2	IGN2	IGN	IGN2
3	IGN3	IGN	IGN3

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

**Fig. 02.1**

Component	Connector(s)	Connector Description	Location
CLUTCH PEDAL SWITCH	CA2	2-WAY BLACK	ABOUT CLUTCH PEDAL
FRONT POWER DISTRIBUTION BOX	CA1	20-WAY BLACK	ENGINE COMPARTMENT, RH FRONT
GENERAL ELECTRONIC CONTROL MODULE	CA1	20-WAY BLACK	A POST, LH SIDE
	CA2	2-WAY BLACK	A POST, LH SIDE
	CA3	2-WAY BLACK	A POST, LH SIDE
	CA4	2-WAY BLACK	A POST, LH SIDE
	CA5	2-WAY BLACK	A POST, LH SIDE
	CA6	2-WAY BLACK	A POST, LH SIDE
	CA7	2-WAY BLACK	A POST, LH SIDE
	CA8	2-WAY BLACK	A POST, LH SIDE
	CA9	2-WAY BLACK	A POST, LH SIDE
	CA10	2-WAY BLACK	A POST, LH SIDE
	CA11	2-WAY BLACK	A POST, LH SIDE
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	CA16	2-WAY BLACK	A POST, LH SIDE
	CA17	2-WAY BLACK	A POST, LH SIDE
	CA18	2-WAY BLACK	A POST, LH SIDE
	CA19	2-WAY BLACK	A POST, LH SIDE
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	CA86	2-WAY BLACK	A POST, LH SIDE
	CA87	2-WAY BLACK	A POST, LH SIDE
	CA88	2-WAY BLACK	A POST, LH SIDE
	CA89	2-WAY BLACK	A POST, LH SIDE
	CA90	2-WAY BLACK	A POST, LH SIDE
	CA91	2-WAY BLACK	A POST, LH SIDE
	CA92	2-WAY BLACK	A POST, LH SIDE
	CA93	2-WAY BLACK	A POST, LH SIDE
	CA94	2-WAY BLACK	A POST, LH SIDE
	CA95	2-WAY BLACK	A POST, LH SIDE
	CA96	2-WAY BLACK	A POST, LH SIDE
	CA97	2-WAY BLACK	A POST, LH SIDE
	CA98	2-WAY BLACK	A POST, LH SIDE
	CA99	2-WAY BLACK	A POST, LH SIDE
	CA100	2-WAY BLACK	A POST, LH SIDE

DATE OF ISSUE: July 1999

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	Milliamps

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, grounds, control modules and control module pins.

DATE OF ISSUE

### DATA PAGE

### FIGURE MODEL RANGE AND YEAR TITLE FIGURE NUMBER

**1999.25 Jaguar S-TYPE** **Battery; Starter; Generator** **Fig. 02.1**

NOTE: Check the Vehicle VIN Range at the rear of this book for the correct date of issue.

### KEY TO REFERENCE SYMBOLS

### FIGURE PAGE

### VARIANT, VIN RANGE AND DATE OF ISSUE







DATE OF ISSUE: July 1999

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


## Reference Symbols

-  Battery power supply
-  Ignition switched power supply (key I, II, III)
-  Switched system power supply
-  Powertrain control system power supply
-  Figure number reference
-  SCP network

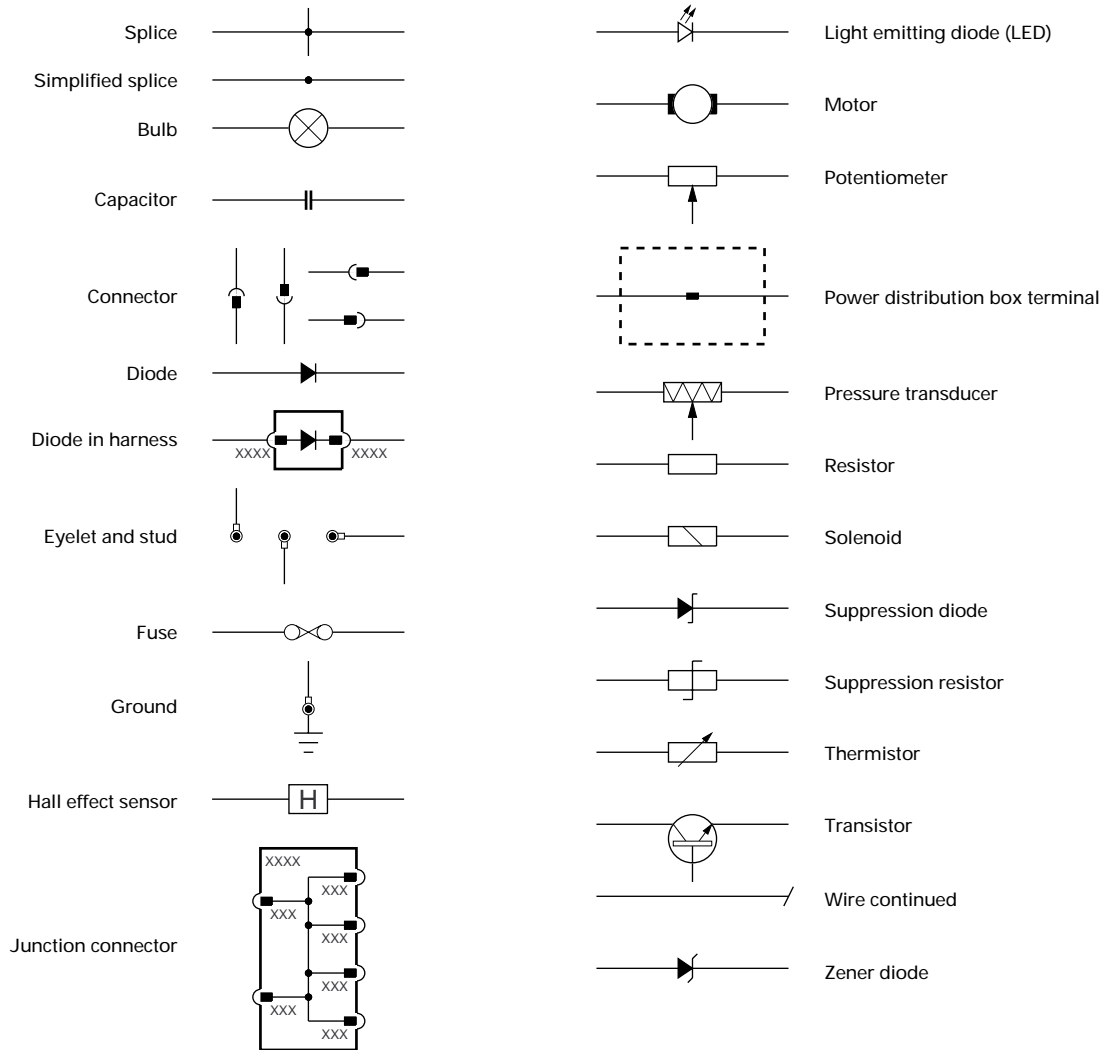
## Wiring Color Codes

- |     |       |   |        |
|-----|-------|---|--------|
| 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

-  Input
-  SCP network
-  Output
-  ACP network
-  Reference voltage / ground
-  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.

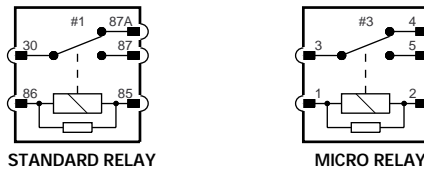
EXAMPLE:



### 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.

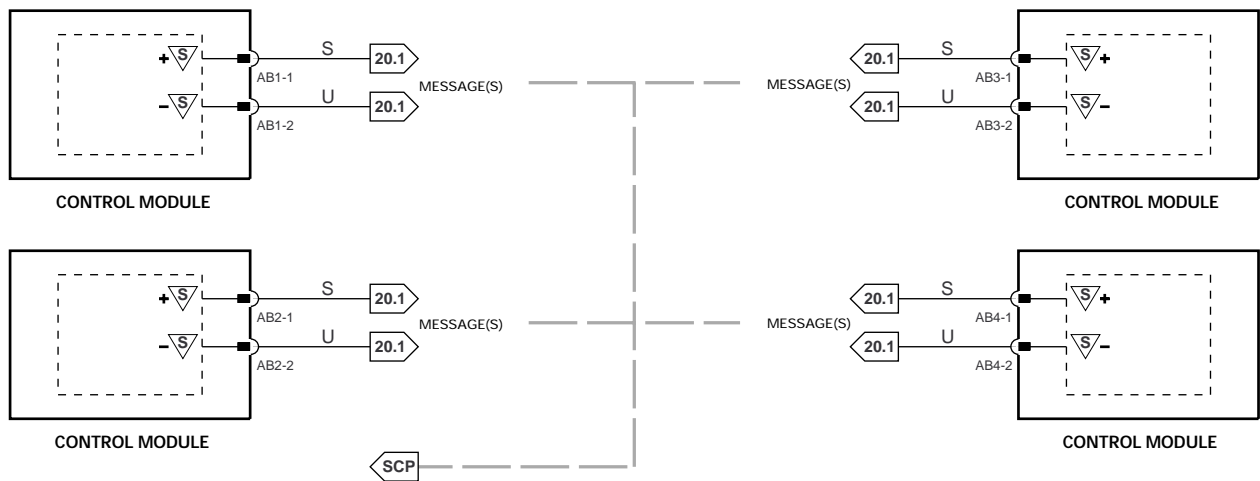
EXAMPLE:



### 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.

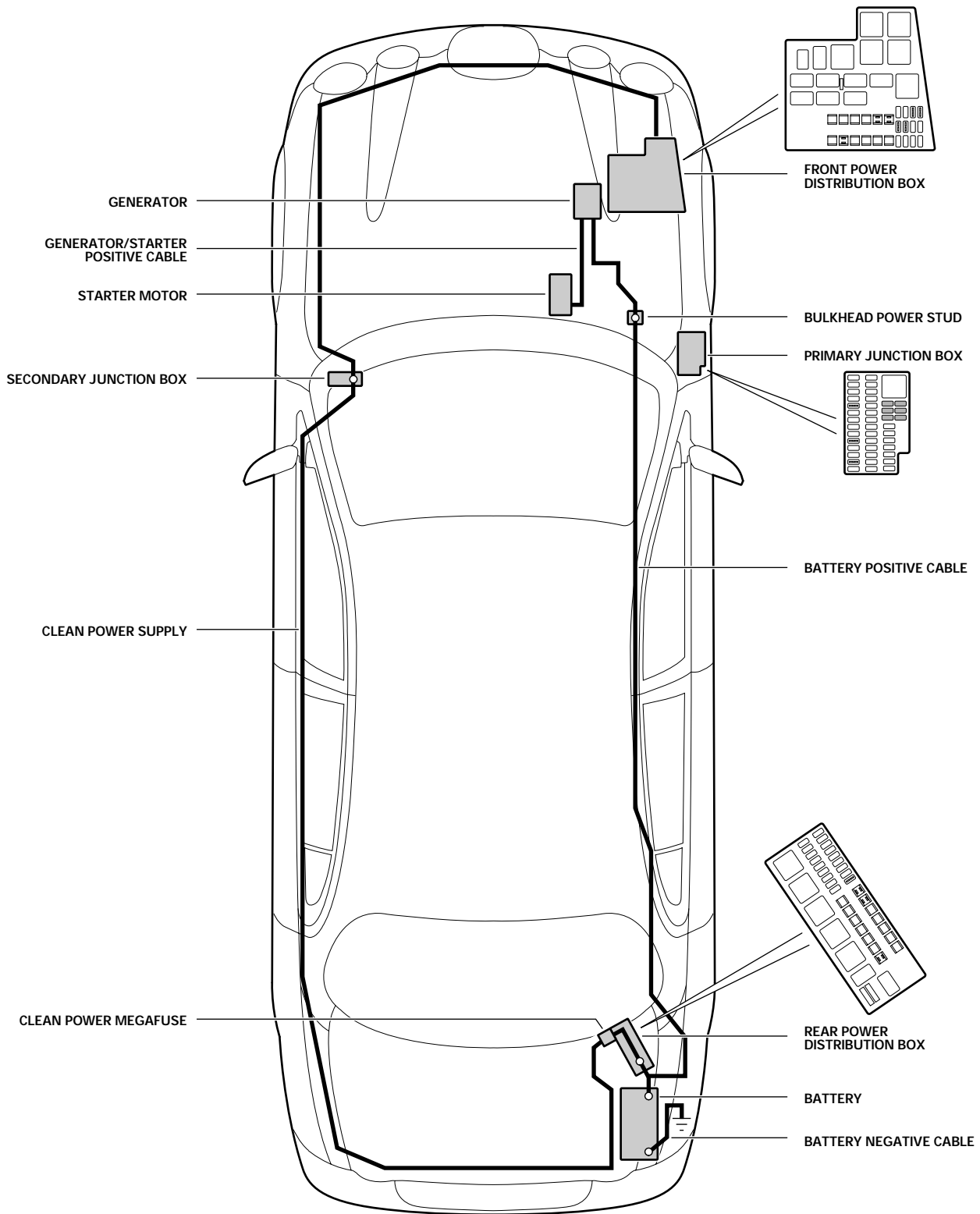
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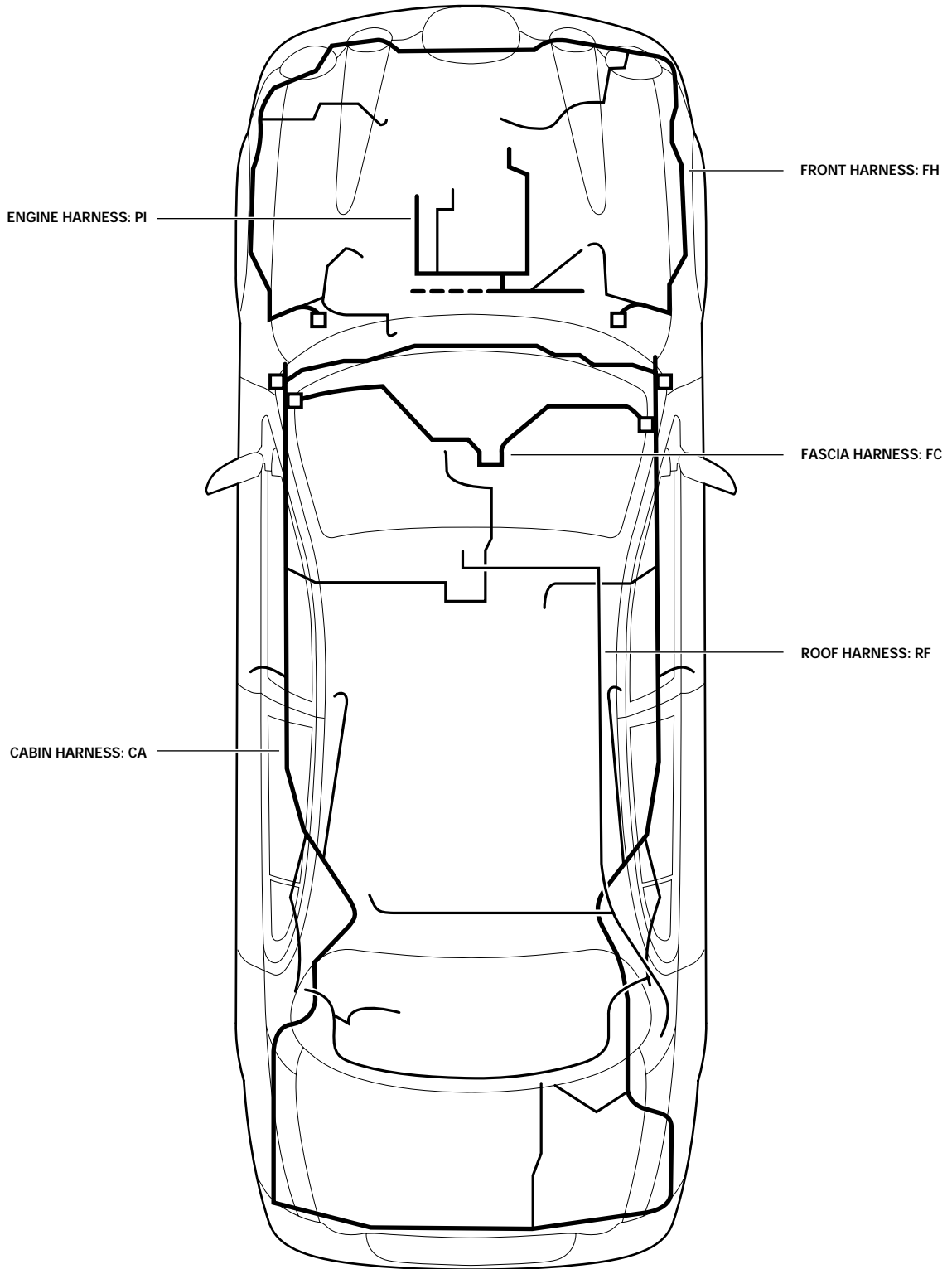


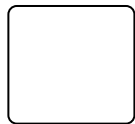
### Code Numbering

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.

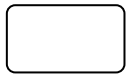




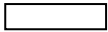




STANDARD RELAY



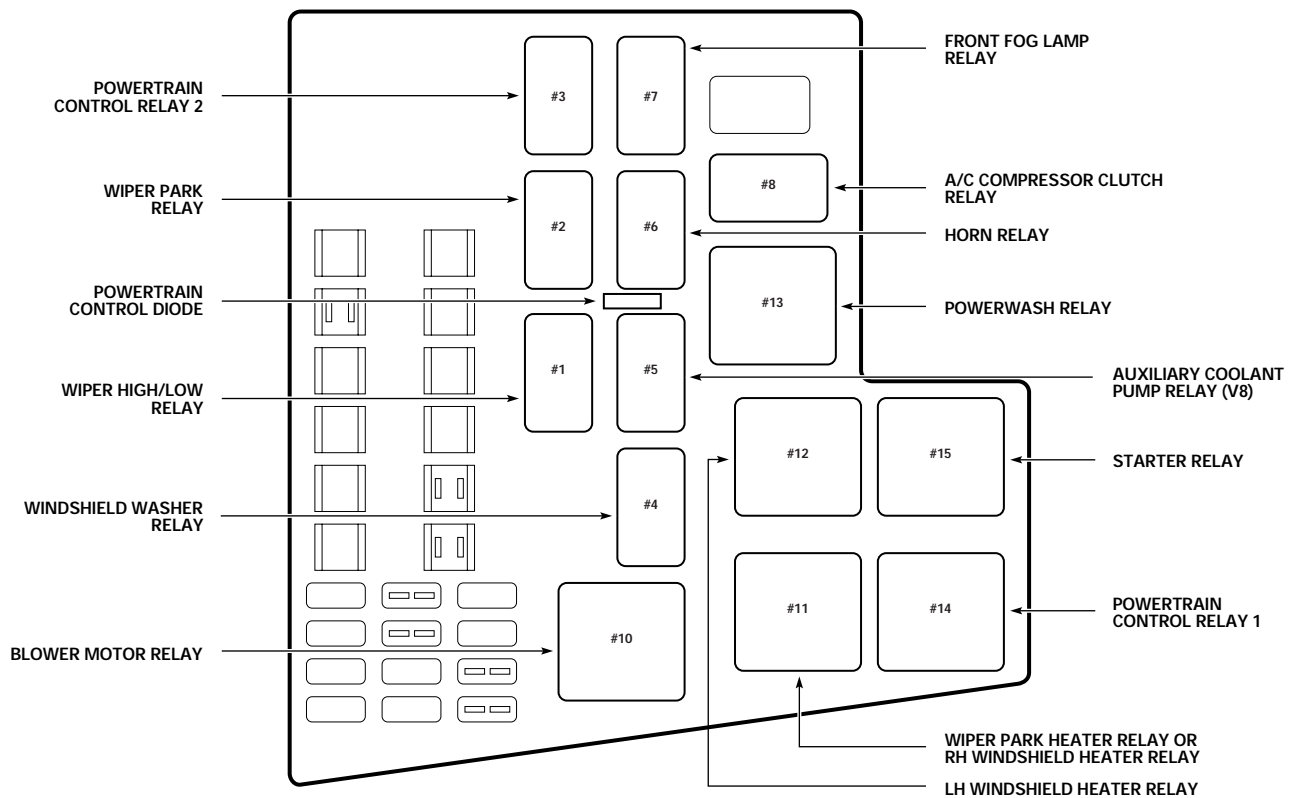
MICRO RELAY



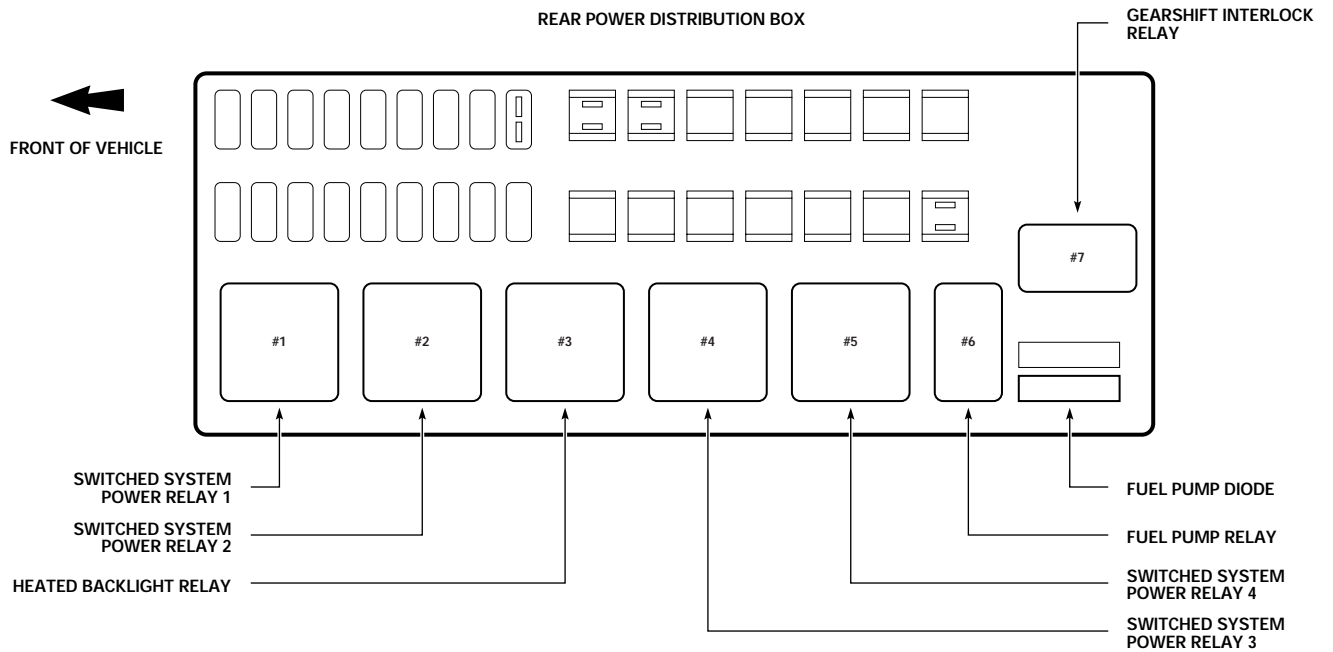
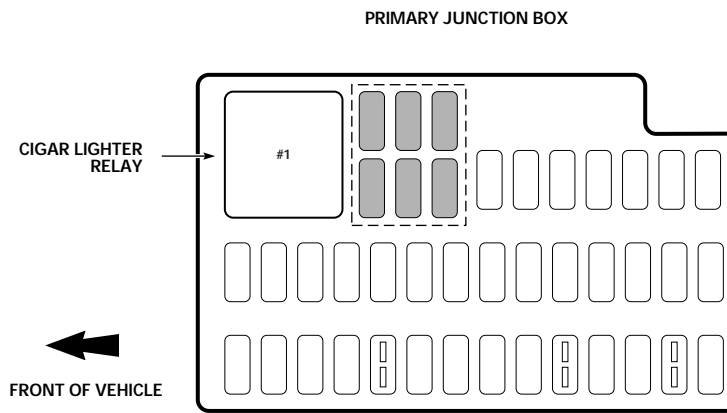
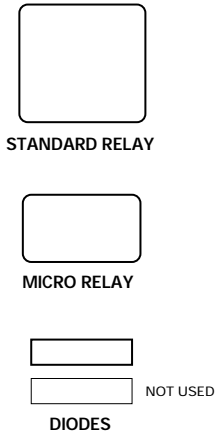
NOT USED

DIODES

## FRONT POWER DISTRIBUTION BOX

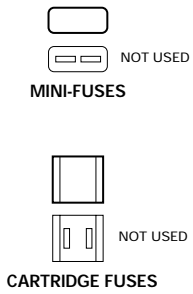


FRONT OF VEHICLE

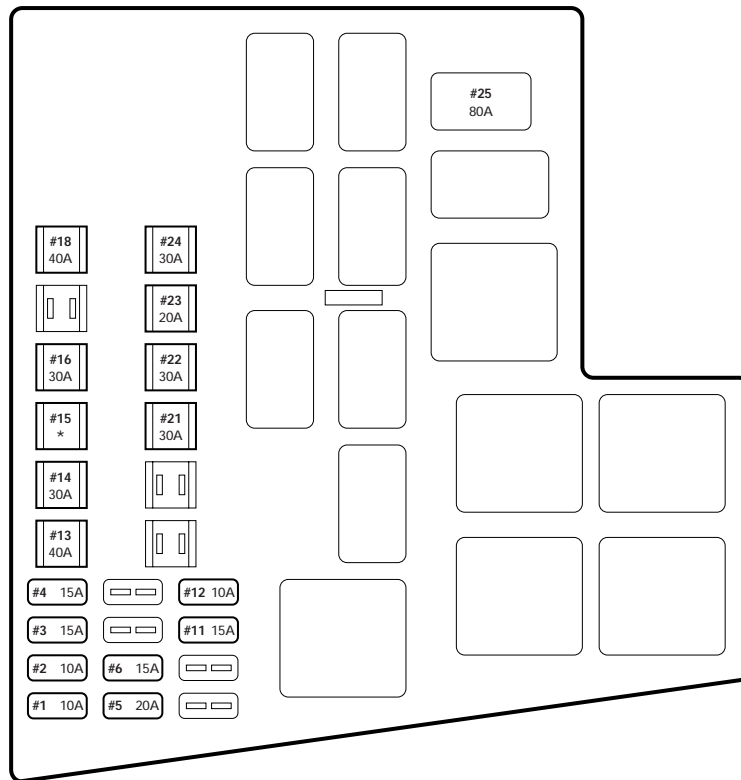




## FRONT POWER DISTRIBUTION BOX

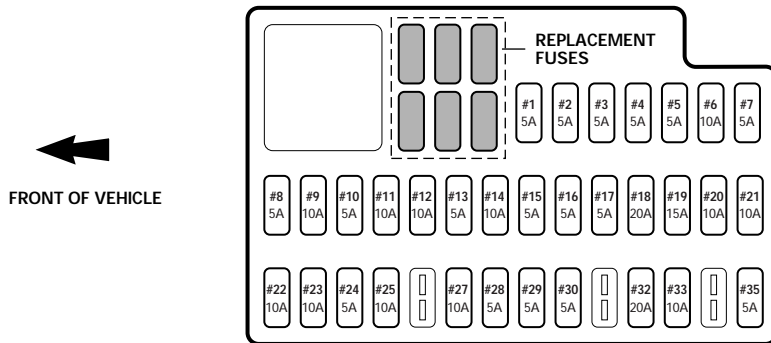


\* 30A - WIPER PARK HEATER  
40A - RH WINDSHIELD HEATER



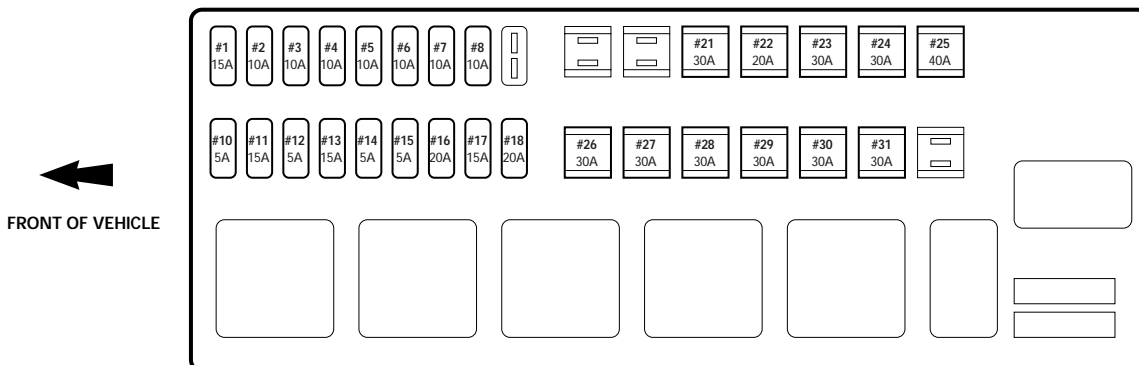
  
 FRONT OF VEHICLE

## PRIMARY JUNCTION BOX

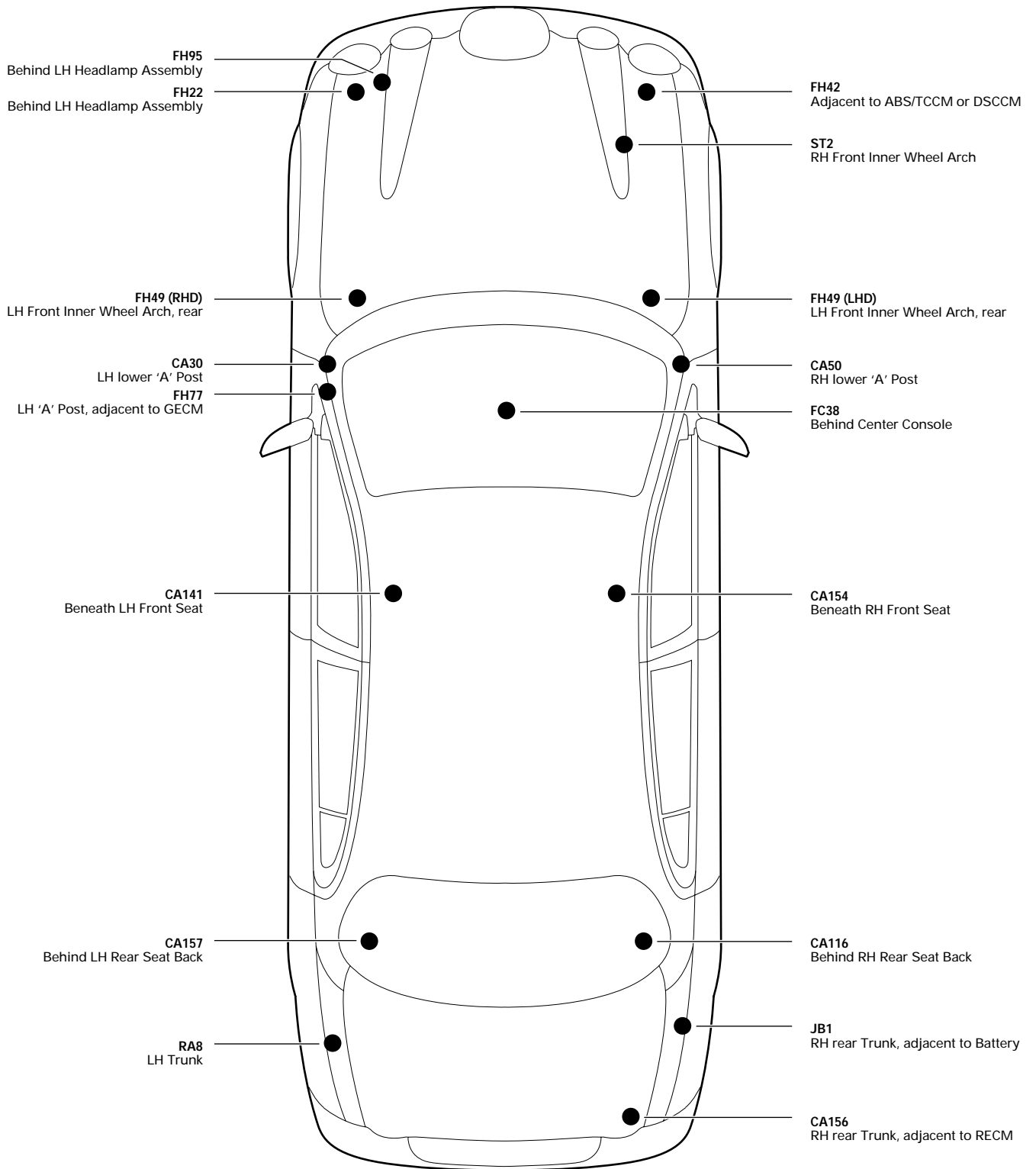


  
 FRONT OF VEHICLE

## REAR POWER DISTRIBUTION BOX

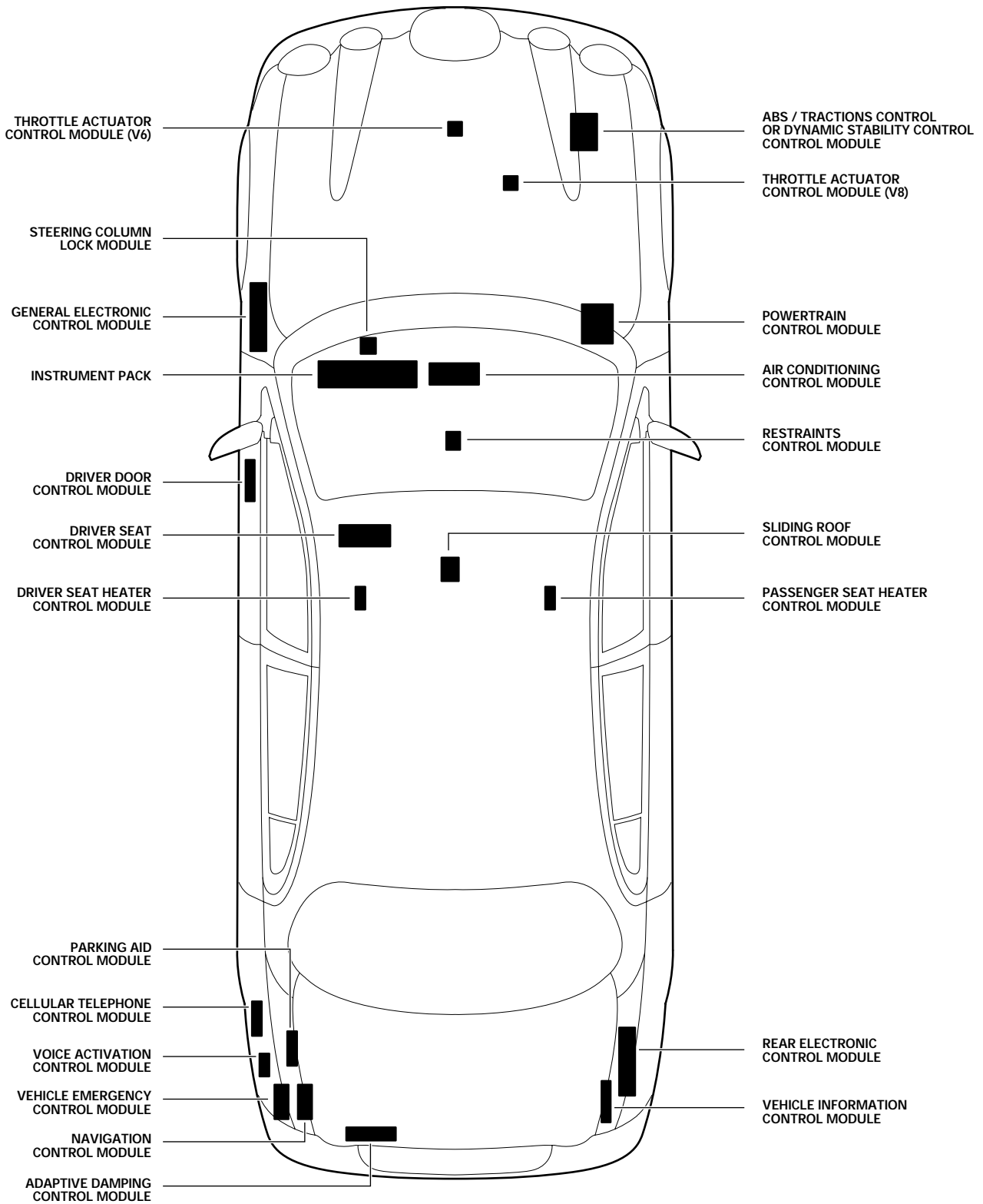


  
 FRONT OF VEHICLE



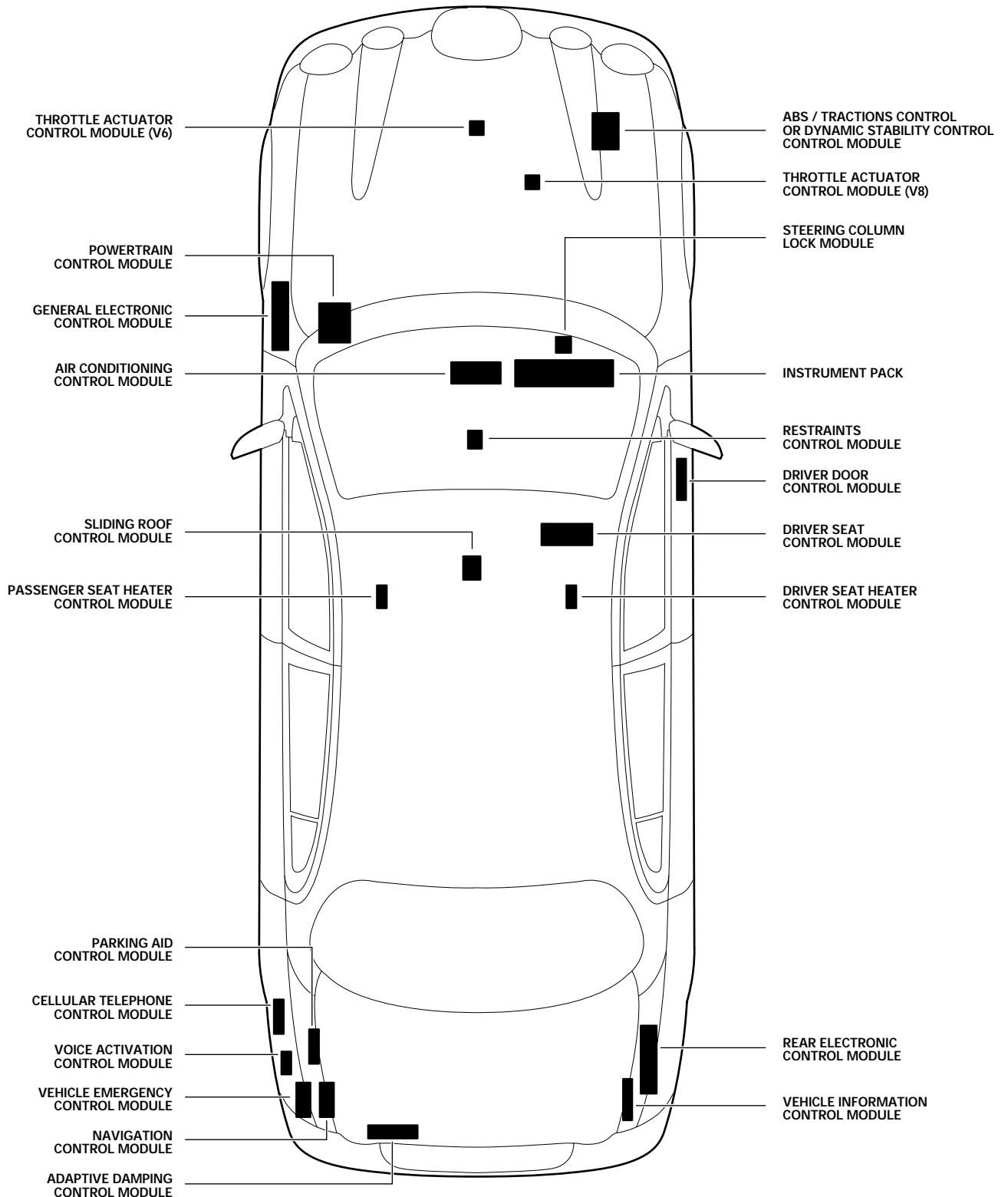


LHD



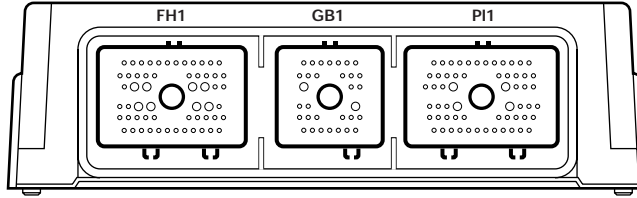


RHD





POWERTRAIN CONTROL MODULE: V8



V8 NAS

FH1 / GREY

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

GB1 / GREY

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

PI1 / GREY

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

V8 ROW

FH1 / GREY

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

GB1 / GREY

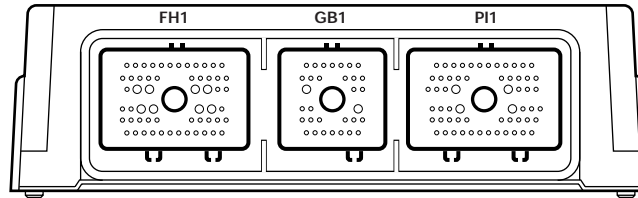
1	2	3	4	5	6	7	
N	NR	NW	NY	NW	—	NG	
8	9	10			11	12	13
—	W	WR			—	NW	NY
14					15	16	
—					NU	NG	
17	18				19		
N	WU				—		
20	21	22			23	24	25
—	WB	WG			WR	—	—
26	27	28	29	30	31	32	
WR	WP	WU	WG	WU	—	—	

PI1 / GREY

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

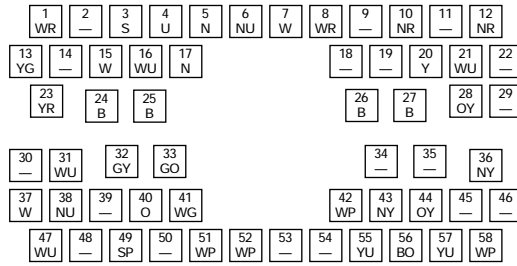


POWERTRAIN CONTROL MODULE: V6

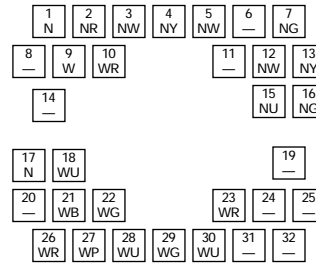


V6 NAS

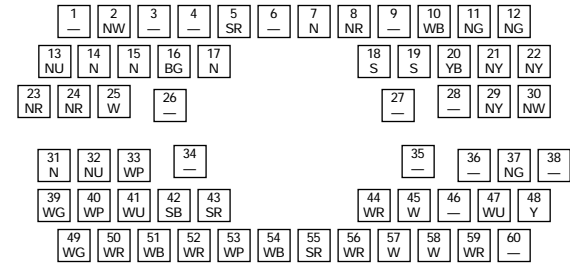
FH1 / GREY



GB1 / GREY

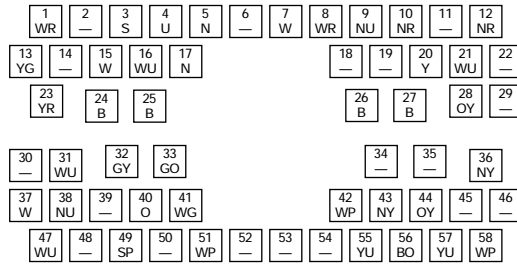


PI1 / GREY

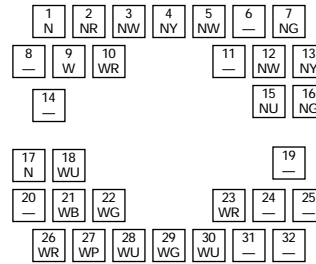


V6 ROW AUTO

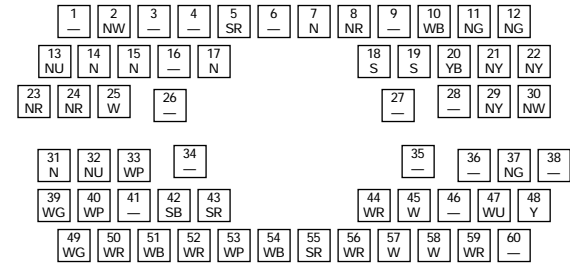
FH1 / GREY



GB1 / GREY

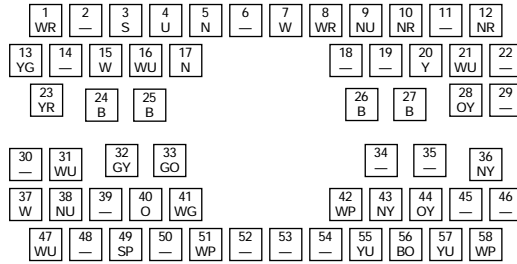


PI1 / GREY

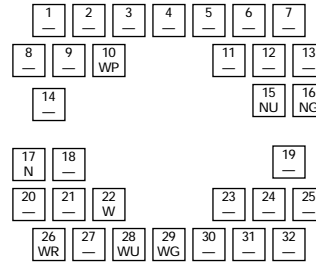


V6 ROW MAN

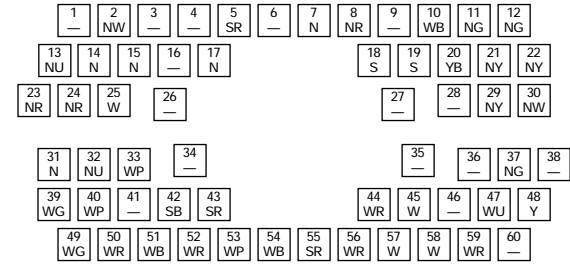
FH1 / GREY



GB1 / GREY

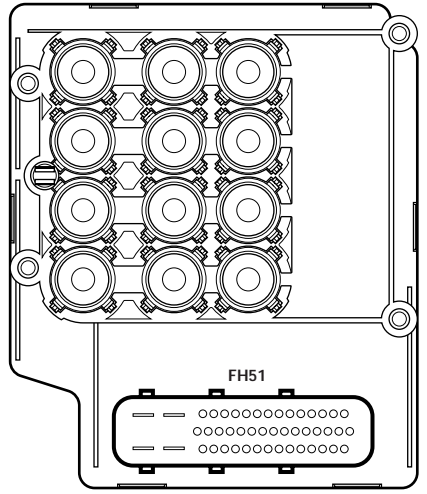


PI1 / GREY





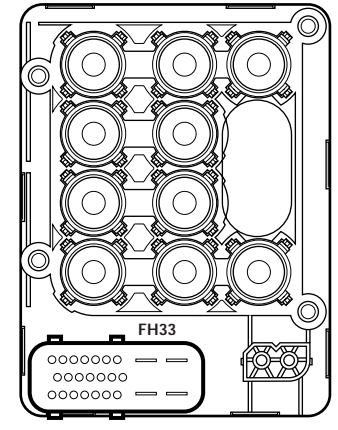
**DYNAMIC STABILITY CONTROL CONTROL MODULE**



**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

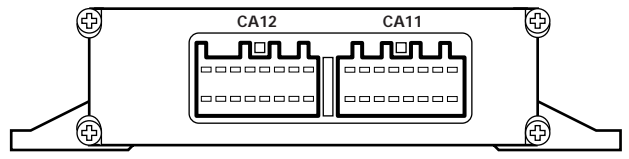
**ABS / TRACTION CONTROL CONTROL MODULE**



**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**

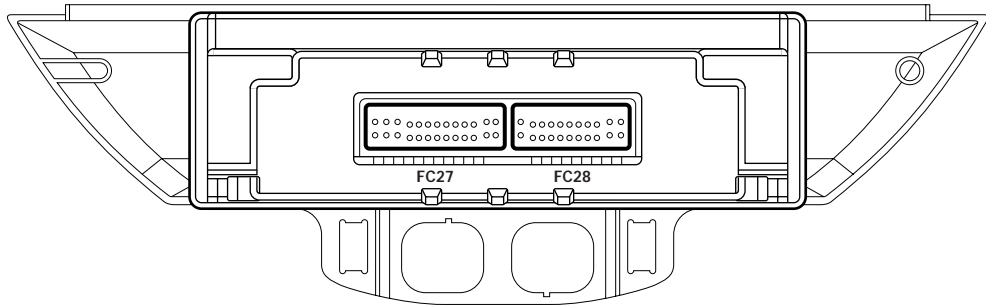
1 KB	2 BG	3 K	4 BO	5 BY	6 KY	7 BU	8 KU
9 N	10 B	11 —	12 KY	13 UO	14 SW	15 —	16 RY

**CA11 / BLUE**

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



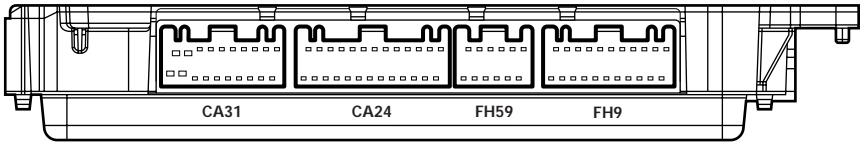
### AIR CONDITIONING CONTROL MODULE



		<b>FC27 / GREY</b>														<b>FC28 / GREY</b>													
<b>LHD</b>		13 WB	12 YR	11 WR	10 WR	9 YR	8 SP	7 —	6 NG	5 NU	4 —	3 W	2 WR	1 WB	11 N	10 WR	9 WG	8 NW	7 WU	6 WB	5 WU	4 WB	3 KO	2 BR	1 UY				
		26 YB	25 Y	24 W	23 YP	22 WP	21 —	20 NR	19 BU	18 NU	17 NR	16 WP	15 WR	14 NG	22 Y	21 —	20 SP	19 NU	18 WG	17 WP	16 NR	15 NU	14 OG	13 —	12 SB				
		<b>FC27 / GREY</b>														<b>FC28 / GREY</b>													
<b>RHD</b>		13 WB	12 YR	11 WR	10 WR	9 YR	8 SP	7 —	6 NG	5 NU	4 —	3 W	2 WR	1 WB	11 N	10 WR	9 WG	8 NW	7 WU	6 WB	5 WU	4 WB	3 KO	2 BR	1 UY				
		26 YB	25 Y	24 W	23 YP	22 WP	21 —	20 NR	19 BU	18 NU	17 NR	16 WP	15 WR	14 NG	22 Y	21 —	20 SP	19 NU	18 WG	17 WP	16 NR	15 NU	14 OG	13 —	12 SB				



GENERAL ELECTRONIC CONTROL MODULE



**CA31 / BLACKs**

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**

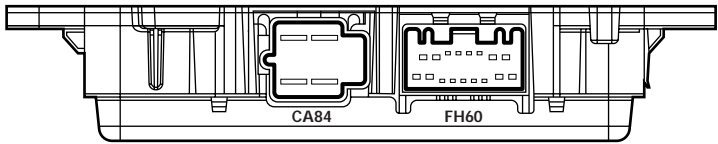
1 U	2 —	3 —	4 —	5 —	6 —	7 WR	8 YR	9 —	10 SW	11 SR	12 —	13 —
14 —	15 BU	16 —	17 —	18 —	19 —	20 UO	21 PW	22 NR	23 WB	24 YB	25 WP	26 —

**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



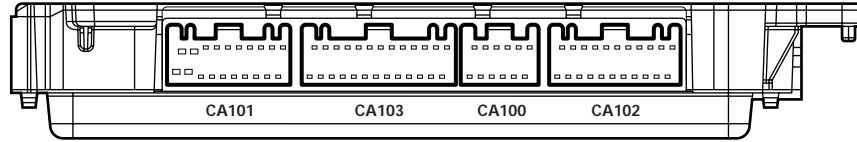
**CA84 / GREY**

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

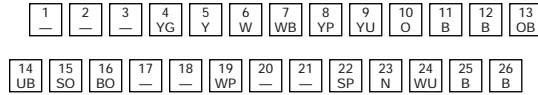


LHD

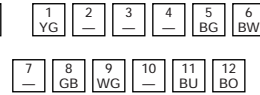
CA101 / BLACK



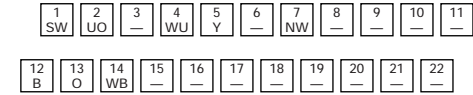
CA103 / WHITE



CA100 / BLACK



CA102 / BLACK



RHD

CA101 / BLACK



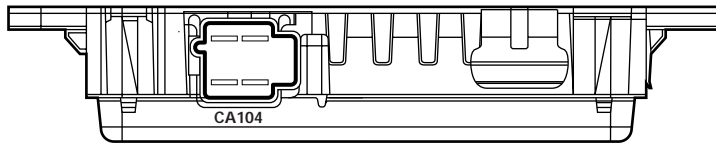
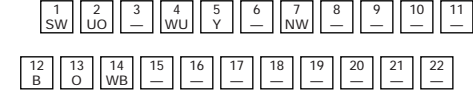
CA103 / WHITE



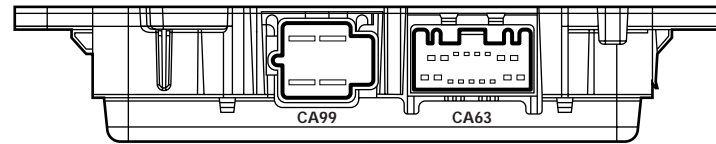
CA100 / BLACK



CA102 / BLACK



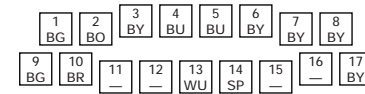
CA104 / BLACK



CA99 / GREY

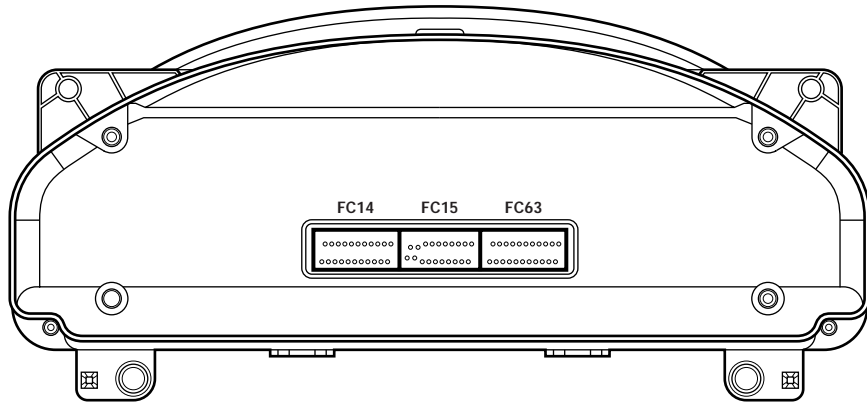


CA63 / BLACK





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

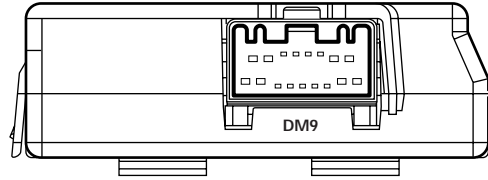
FC15 / BLACK

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

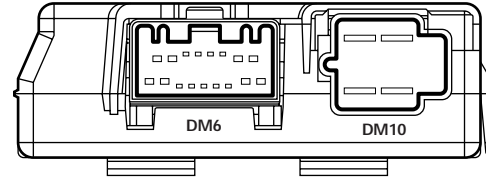
FC63 / BLACK

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



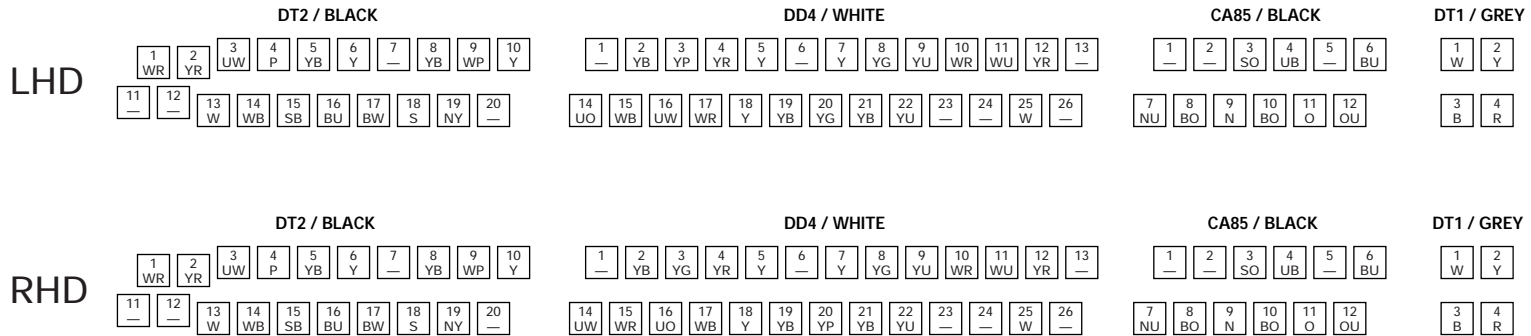
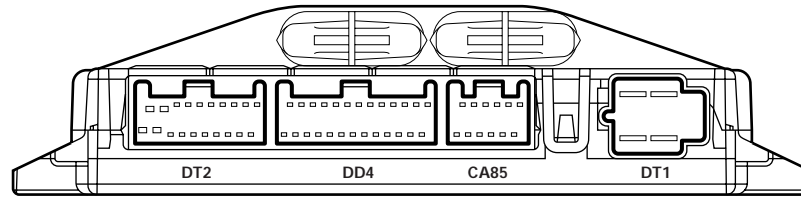
DM6 / BLACK



DM10 / BROWN



### DRIVER DOOR CONTROL MODULE





**Fig. 01.1****COMPONENTS**

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

**HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

<b>Connector</b>	<b>Connector Description</b>	<b>Location</b>
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**

<b>Ground</b>	<b>Ground Description</b>	<b>Location</b>
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.

**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.

**Fig. 01.3**

**COMPONENTS**

<b>Component</b>	<b>Connector(s)</b>	<b>Connector Description</b>	<b>Location</b>
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT

**HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

<b>Connector</b>	<b>Connector Description</b>	<b>Location</b>
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.

**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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 01.5**

**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	B+
I FH59-6	BATTERY POWER SUPPLY	B+	B+
S FH59-7	SCP +	2 - 1600 Hz	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

**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	B+
S CA102-2	SCP -	2 - 1600 Hz	B+
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.

**COMPONENTS**

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

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.

**Fig. 01.6****COMPONENTS**

<b>Component</b>	<b>Connector(s)</b>	<b>Connector Description</b>	<b>Location</b>
FRONT POWER DISTRIBUTION BOX			ENGINE COMPARTMENT, RH FRONT

**HARNESS IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

<b>Connector</b>	<b>Connector Description</b>	<b>Location</b>
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)

**GROUND(S)**

<b>Ground</b>	<b>Ground Description</b>	<b>Location</b>
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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 02.1**

**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 TRANSCIEVER	ENCODED COMMUNICATIONS	
D FC15-5	PASSIVE ANTI THEFT SYSTEM TRANSCIEVER	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 TRANSCIEVER 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.

**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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
GENERATOR	PI42	10-WAY / BLACK	ENGINE, RH SIDE
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA FASCIA
PASSIVE ANTI-THEFT SYSTEM TRANSCIEVER	FC52	10-WAY / GREEN	IGNITION SWITCH
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
PRIMARY JUNCTION BOX	CA2 CA56 FC37 FH7 FH53	26-WAY / BLACK 8-WAY / GREY 26-WAY / BLACK 6-WAY / GREY 10-WAY / GREY	'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE
STARTER MOTOR	ST3 ST5 ST6	EYELET EYELET EYELET	ENGINE, RH SIDE, REAR ENGINE, RH SIDE, REAR 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)

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.

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 P11-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND (MIL ON)
O P11-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND (PWM)	B+
O P11-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND (PWM)	B+
O P11-9	AIR ASSIST INJECTION CONTROL	GROUND(PWM)	B+
O P11-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF P11-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
REF P11-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O P11-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND (PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND (PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I P11-25	ACTUAL THROTTLE ANGLE	0 - 20 mA	
O P11-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
I P11-39	EOT SENSOR FEEDBACK	0.61V @ 90°C INCR. w/ TEMP.	
REF P11-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF P11-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I P11-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-46	ECT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I P11-47	EFT SENSOR FEEDBACK	0.61V @ 90 °C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF P11-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I P11-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I P11-50	GENERATOR LOAD SIGNAL	0V (PWM)	61% @ IDLE, INCREASING WITH LOAD
I P11-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I P11-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I P11-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF P11-56	CKP SENSOR GROUND	GROUND	GROUND
I P11-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I P11-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I P11-59	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.

COMPONENTS

Component	Connector(s)	Connector Description	Location
AAI VALVE: AIR ASSIST INJECTION VALVE	P118	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

HARNES 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.



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 P11-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
O P11-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND(PWM)	B+
O P11-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND(PWM)	B+
O P11-9	AIR ASSIST INJECTION CONTROL	GROUND(PWM)	B+
O P11-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF P11-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
REF P11-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O P11-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I P11-25	ACTUAL THROTTLE ANGLE	0 - 20 mA	
O P11-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
I P11-39	EOT SENSOR FEEDBACK	0.61V @ 90° C INCR. w/ TEMP.	
REF P11-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF P11-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I P11-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-46	ECT SENSOR FEEDBACK	0.61V @ 90° C. DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I P11-47	EFT SENSOR FEEDBACK	0.61V @ 90° C. DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF P11-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I P11-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi). INCREASING VOLTAGE WITH PRESSURE INCREASE	
I P11-50	GENERATOR LOAD SIGNAL	0V (PWM)	61% @ IDLE, INCREASING WITH LOAD
I P11-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I P11-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I P11-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF P11-56	CKP SENSOR GROUND	GROUND	GROUND
I P11-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I P11-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I P11-59	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.

COMPONENTS

Component	Connector(s)	Connector Description	Location
AAI VALVE: AIR ASSIST INJECTION VALVE	P118	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

HARNES 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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 03.3**

**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.

**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 FC28	26-WAY / GREY 22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL 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 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR
REAR POWER DISTRIBUTION BOX			TRUNK, RH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL CRUISE CONTROL SWITCHES	SO2	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)

**GROUND S**

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.

**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 P11-5	GENERATOR WARNING	B+ (MIL OFF)	GROUND(MIL ON)
O P11-7	HO2 SENSOR HEATER, BANK 2 UPSTREAM, CONTROL	GROUND(PWM)	B+
O P11-8	HO2 SENSOR HEATER, BANK 1 UPSTREAM, CONTROL	GROUND(PWM)	B+
O P11-10	VARIABLE VALVE TIMING, BANK 1, CONTROL	GROUND	B+
REF P11-15	TP SENSOR SIGNAL GROUND	GROUND	GROUND
O P11-16	EGR VACUUM REGULATOR ACTIVATE	GROUND(PWM)	B+
REF P11-17	SENSOR SIGNAL COMMON GROUND	GROUND	GROUND
O P11-18	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-19	THROTTLE MOTOR CONTROL SIGNAL	GROUND(PWM); 9.9%@IDLE INCREASING WITH THROTTLE OPENING	
O P11-20	IP, TP SENSOR COMMON REFERENCE VOLTAGE	NOMINAL 5V	NOMINAL 5V
I P11-25	ACTUAL THROTTLE ANGLE	0 - 20 mA	
O P11-29	IMT BOTTOM VALVE ACTIVATE	GROUND	B+
O P11-33	VARIABLE VALVE TIMING, BANK 2, CONTROL	GROUND	B+
O P11-37	IMT TOP VALVE ACTIVATE	GROUND	B+
I P11-39	EOT SENSOR FEEDBACK	0.61V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I P11-40	CHT SENSOR FEEDBACK	0.60V @ 90°C; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I P11-41	DPFE SENSOR FEEDBACK	1V @ IDLE; 3.5V @ FULL LOAD	
REF P11-42	KNOCK SENSOR 1 GROUND	GROUND	GROUND
REF P11-43	KNOCK SENSOR 2 GROUND	GROUND	GROUND
I P11-44	HO2 SENSOR, BANK 1 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-45	HO2 SENSOR, BANK 2 UPSTREAM	0.1 - 0.9 V @ IDLE (SWING)	
I P11-47	EFT SENSOR FEEDBACK	0.61V @ 90°; DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
REF P11-48	TP SENSOR REFERENCE VOLTAGE	B+	B+
I P11-49	IP SENSOR FEEDBACK	2.6V @ 2.48 bar (36 psi); INCREASING VOLTAGE WITH PRESSURE INCREASE	
I P11-50	GENERATOR LOAD SIGNAL	0V(PWM)	61% @ IDLE, INCREASING WITH LOAD
I P11-51	KNOCK SENSOR 1 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-52	KNOCK SENSOR 2 FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I P11-53	CMP SENSOR 1 SIGNAL	5 Hz @ IDLE	
I P11-54	CMP SENSOR 2 SIGNAL	5 Hz @ IDLE	
I P11-55	CKP SENSOR FEEDBACK	5 V @ 1000 rpm = 45 Hz; 2000 rpm = 90 Hz	
REF P11-56	CKP SENSOR GROUND	GROUND	GROUND
I P11-57	TP1 SENSOR FEEDBACK	4.1V @ IDLE (DECREASING VOLTAGE WITH ACCELERATION)	
I P11-58	TP3 SENSOR FEEDBACK	0.8V @ IDLE (INCREASING VOLTAGE WITH ACCELERATION)	
I P11-59	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.

**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	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

**HARNES 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.

**Fig. 03.5**

**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	0.61V @ 90°C, DECREASING VOLTAGE WITH TEMPERATURE INCREASE	
I PI1-40	CHT SENSOR FEEDBACK	0.60V @ 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°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.

**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

**HARNES 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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 03.6**

**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.

**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 FC28	26-WAY / GREY 22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL 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 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR 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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 04.1**

**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 = PR,N,4	B+ = D,3,2
I FH1-8	GEAR SELECTOR STATE	GROUND = PR,D,3	B+ = N,4,2
D FH1-13	PCM FLASH PROGRAMMING	ENCODED COMMUNICATIONS	
I FH1-21	GEAR SELECTOR STATE	GROUND = PN,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.

**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
	GB10	2-WAY / GREEN	TRANSMISSION, LH SIDE
	CA41	16-WAY / GREEN	CENTER CONSOLE
	GB9	2-WAY / BLACK	TRANSMISSION, LH SIDE
	FH1	58-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
POWERTRAIN CONTROL MODULE	GB1	32-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
	PI1	60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE
REAR POWER DISTRIBUTION BOX			
TRANSMISSION	GB5	16-WAY / GREY	TRUNK, RH SIDE
TRANSMISSION MODE SWITCH	CA38	10-WAY / GREEN	VEHICLE, REARWARD OF ENGINE
TRANSMISSION RANGE SENSOR	GB6	12-WAY / BLACK	CENTER CONSOLE
TURBINE SPEED SENSOR	GB11	2-WAY / BLACK	TRANSMISSION SELECTOR SHAFT
			TRANSMISSION, LH SIDE

**HARNES 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 REGM / 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)

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

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

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 04.2**

**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 = PR.N.4	B+ = D.3.2
I FH1-8	GEAR SELECTOR STATE	GROUND = PR.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 = PN.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.

**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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE '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 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE 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 REGM / 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)

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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 05.1**

**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

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

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.

**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

**GROUND**

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.



CONTROL MODULE PIN-OUT INFORMATION

**Fig. 05.2**

**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	GROUND
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.

**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
	FC16	4-WAY / GREY	STEERING COLUMN
STEERING ANGLE RATE SENSOR			
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

**GROUNDINGS**

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)

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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 05.3**

**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	GROUND
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.

**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	16-WAY / BLUE	IN THE SPARE WHEEL WELL
	CA12	16-WAY / GREY	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	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
	FC63	22-WAY / BLACK	FASCIA
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

**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

**GROUND S**

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)

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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 06.1**

**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.**

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING CONTROL MODULE	FC27 FC28	26-WAY / GREY 22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL 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 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR
RECIRCULATION MODE SERVO MOTOR	AC3	6-WAY / BLACK	INTAKE AIR DUCT
WINDSHIELD HEATER - LH	CA121 CA122	1-WAY / BLACK 1-WAY / BLACK	WINDSHIELD WINDSHIELD
WIPER PARK HEATER OR RH WINDSHIELD HEATER	CA65 CA71	1-WAY / BLACK 1-WAY / BLACK	WINDSHIELD 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

**GROUND**

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.

## CONTROL MODULE PIN-OUT INFORMATION

**Fig. 07.1**

### 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 'MILS / KM' BUTTONS	2.3V = CLEAR; 3.7V = MILS/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.

### 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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
IGNITION SWITCH	FC18	8-WAY / BLACK	STEERING COLUMN
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA 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 GB1 PI1	58-WAY / GREY 32-WAY / GREY 60-WAY / GREY	FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE FRONT BULKHEAD, PASSENGER SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR 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

### HARNES 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)

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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 08.1**

**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 = FOG LAMPS	
I FC63-13	FRONT FOG LAMP 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.

**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 CA31 CA84	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
	FH9 FH59 FH60	22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
HEADLAMP UNIT - LH	HL2L HL3L HL4L HL5L	2-WAY / BLACK 2-WAY / BLACK 2-WAY / GREY 10-WAY / BLACK	ENGINE COMPARTMENT ENGINE COMPARTMENT ENGINE COMPARTMENT ENGINE COMPARTMENT
HEADLAMP UNIT - RH	HL2R HL3R HL4R HL5R	2-WAY / BLACK 2-WAY / BLACK 2-WAY / GREY 10-WAY / BLACK	ENGINE COMPARTMENT ENGINE COMPARTMENT ENGINE COMPARTMENT ENGINE COMPARTMENT
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA 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

**HARNES IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

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

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 08.2**

**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 FOG LAMP 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.

**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
	FC11	10-WAY / YELLOW	FASCIA, ADJACENT TO STEERING COLUMN
LIGHTING SWITCH	FC65	8-WAY / BLACK	FASCIA, ADJACENT TO INSTRUMENT PACK
MESSAGE CENTER SWITCH PACK	CA66	2-WAY / BLACK	BEHIND TRUNK LID LINER
NUMBER PLATE LAMP - LH	CA67	2-WAY / BLACK	BEHIND TRUNK LID LINER
NUMBER PLATE LAMP - RH			
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

**GROUNDINGS**

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)

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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 08.3**

**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.

**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

**HARNES 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

**GROUND**

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)

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.

**Fig. 08.4****COMPONENTS**

<b>Component</b>	<b>Connector(s)</b>	<b>Connector Description</b>	<b>Location</b>
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

**HARNES IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

<b>Connector</b>	<b>Connector Description</b>	<b>Location</b>
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**

<b>Ground</b>	<b>Ground Description</b>	<b>Location</b>
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.



## CONTROL MODULE PIN-OUT INFORMATION

### General Electronic Control Module

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

### Instrument Pack

Pin	Description	Active	Inactive
I	FC15-3	BATTERY POWER SUPPLY	B+
I	FC15-6	IGNITION SWITCHED POWER SUPPLY	B+
I	FC15-13	GROUND SUPPLY	GROUND
S	FC15-15	SCP +	2 - 1600 Hz
S	FC15-16	SCP -	2 - 1600 Hz
I	FC15-17	IGNITION SWITCHED POWER SUPPLY	B+
REF	FC63-4	MASTER INTERIOR LIGHTING SWITCH / DIMMER SWITCH REFERENCE 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+
O	CA100-11	TRUNK LAMP ACTIVATE	GROUND
I	CA101-3	BATTERY POWER SUPPLY - LOGIC	B+
I	CA101-17	RH REAR (LHD) OR LH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR
S	CA102-1	SCP +	2 - 1600 Hz
S	CA102-2	SCP -	2 - 1600 Hz
I	CA102-12	GROUND	GROUND
I	CA102-14	TRUNK AJAR SWITCH	GROUND = AJAR
I	CA103-11	GROUND SUPPLY	GROUND
I	CA103-12	GROUND SUPPLY	GROUND
I	CA103-16	LH REAR (LHD) OR RH REAR (RHD) DOOR AJAR SWITCH	GROUND = AJAR
I	CA103-26	GROUND SUPPLY	GROUND

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

## 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 CA31 CA84 FH9 FH59 FH60 FC31	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK 2-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE GLOVE BOX
GLOVE BOX LAMP	FC14	22-WAY / GREY	FASCIA
INSTRUMENT PACK	FC15 FC63	20-WAY / BLACK 22-WAY / BLACK	FASCIA 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 CA56 FC37 FH7 FH53	26-WAY / BLACK 8-WAY / GREY 26-WAY / BLACK 6-WAY / GREY 10-WAY / GREY	'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR
ROOF CONSOLE SWITCH PACK	RF26	8-WAY / WHITE	ROOF CONSOLE
SECONDARY JUNCTION BOX	CA26 CA27 FC10 FH10	16-WAY / BLUE 8-WAY / GREY 16-WAY / GREEN 10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE 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

### HARNES 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

### GROUND

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 GEOM / 'A' POST TRIM

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.

← 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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 09.2**

**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 = FOG LAMPS	
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.

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
AIR CONDITIONING CONTROL MODULE	FC27 FC28	26-WAY / GREY 22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL 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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
HEADLAMP LEVELING SWITCH	FC41	6-WAY / BLACK	FASCIA, ADJACENT TO STEERING COLUMN
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA 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 CA56 FC37 FH7 FH53	26-WAY / BLACK 8-WAY / GREY 26-WAY / BLACK 6-WAY / GREY 10-WAY / GREY	'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE 'A' POST, RH SIDE
RADIO HEAD UNIT	FC71 FC72 FC73 FC74 FC75 FC85	7-WAY / GREY 8-WAY / BLACK 17-WAY / BLACK 12-WAY / BLACK 12-WAY / BLACK 10-WAY / BLACK	FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER 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 CA27 FC10 FH10	16-WAY / BLUE 8-WAY / GREY 16-WAY / GREEN 10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL AUDIO CONTROL SWITCHES	SO1	10-WAY / WHITE	STEERING WHEEL
STEERING WHEEL CRUISE CONTROL SWITCHES	SO2	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

**HARNES 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 GEOM / 'A' POST TRIM

← 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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 10.1**

**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	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.

**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
	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
	CA24	26-WAY / WHITE	'A' POST, LH SIDE
	CA31	20-WAY / BLACK	'A' POST, LH SIDE
DOOR SWITCH PACK - DRIVER	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
	FC14	22-WAY / GREY	FASCIA
	FC15	20-WAY / BLACK	FASCIA
GENERAL ELECTRONIC CONTROL MODULE	FC63	22-WAY / BLACK	FASCIA
	CS12	10-WAY / BLACK	STEERING COLUMN
	FC17	4-WAY / WHITE	STEERING COLUMN
INSTRUMENT PACK	FH16	2-WAY / BLACK	ON STEERING RACK ASSEMBLY

**HARNES 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

**GROUND S**

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)

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.

## CONTROL MODULE PIN-OUT INFORMATION

**Fig. 10.2**

### 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.

### COMPONENTS

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

### HARNES 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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 10.3**

**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.

**COMPONENTS**

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

**HARNES 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)

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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 11.1**

**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.

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
CUSHION FRONT RAISE / LOWER MOTOR - DRIVER	DM4 DM17	2-WAY / GREY 3-WAY / WHITE	BELOW SEAT CUSHION BELOW SEAT CUSHION
CUSHION REAR RAISE / LOWER MOTOR - DRIVER	DM3 DM14	2-WAY / GREY 3-WAY / WHITE	BELOW SEAT CUSHION BELOW SEAT CUSHION
DOOR CONTROL MODULE - DRIVER	CA85 DD4 DT1 DT2	12-WAY / BLACK 26-WAY / WHITE 4-WAY / GREY 20-WAY / BLACK	DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL 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 DM9 DM10	17-WAY / BLACK 17-WAY / GREY 4-WAY / BROWN	BELOW SEAT CUSHION BELOW SEAT CUSHION BELOW SEAT CUSHION
SEAT FORE / AFT MOTOR - DRIVER	DM1 DM13	2-WAY / GREY 3-WAY / WHITE	BELOW SEAT CUSHION 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 DB6	2-WAY / BLACK 3-WAY / WHITE	SEAT SQUAB 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)

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.

**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

**HARNES 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.

**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

**HARNES 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.



CONTROL MODULE PIN-OUT INFORMATION

Fig. 12.1

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.

COMPONENTS

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE - DRIVER	CA85 DD4 DT1 DT2	12-WAY / BLACK 26-WAY / WHITE 4-WAY / GREY 20-WAY / BLACK	DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL 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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR 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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 12.2**

**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.

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE - DRIVER	CA85 DD4 DT1 DT2	12-WAY / BLACK 26-WAY / WHITE 4-WAY / GREY 20-WAY / BLACK	DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL 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 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR 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

**HARNES 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

**GROUND S**

Ground	Ground Description	Location
CA116	GROUND EYELET	BEHIND REAR SEAT BACK; RH SIDE / SEAT BACK
CA156	GROUND EYELET	TRUNK; RH REAR SIDE; ADJACENT TO REGM / 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)

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.

**Fig. 13.1**

**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	GROUND
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.

**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

**HARNES 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 GEKM / 'A' POST TRIM

← 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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 14.1**

**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

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

**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.

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
DOOR CONTROL MODULE - DRIVER	CA85 DD4 DT1 DT2	12-WAY / BLACK 26-WAY / WHITE 4-WAY / GREY 20-WAY / BLACK	DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL
DOOR SWITCH PACK - DRIVER	DD2	26-WAY / YELLOW	DRIVER DOOR ARM REST
GENERAL ELECTRONIC CONTROL MODULE	CA24 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR
SLIDING ROOF CONTROL MODULE	SR2 SR3	4-WAY / BLACK 8-WAY / WHITE	ABOVE ROOF CONSOLE 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

**HARNES 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 REGM / 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.

**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

**GROUND**

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.

**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 FC87	1-WAY / BLACK 1-WAY / BLACK	CENTER CONSOLE, LH FRONT CENTER CONSOLE, LH FRONT
CENTER SPEAKER – RH	FC47 FC86	1-WAY / BLACK 1-WAY / BLACK	CENTER CONSOLE, RH FRONT 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 HM4 HM5	10-WAY / BLACK 10-WAY / BLACK 10-WAY / BLACK	REAR WINDOW REAR WINDOW REAR WINDOW
HIDDEN ANTENNA MODULE	HM2 HM3 CA20 CA159	COAXIAL CABLE COAXIAL CABLE COAXIAL CABLE COAXIAL CABLE	TRUNK, ABOVE LH REAR WHEEL ARCH TRUNK, ABOVE LH REAR WHEEL ARCH TRUNK, ABOVE LH REAR WHEEL ARCH TRUNK, ABOVE LH REAR WHEEL ARCH
RADIO HEAD UNIT	FC71 FC72 FC73 FC74 FC75 FC85	7-WAY / GREY 8-WAY / BLACK 17-WAY / BLACK 12-WAY / BLACK 12-WAY / BLACK 10-WAY / BLACK	FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER
STEERING WHEEL	CS5	10-WAY / BLACK	STEERING WHEEL
STEERING WHEEL AUDIO CONTROL SWITCHES	SQ1	10-WAY / WHITE	STEERING WHEEL
SUBWOOFER AMPLIFIER	QQ3 SW2	10-WAY / GREY 10-WAY / GREY	BELOW PARCEL SHELF BELOW PARCEL SHELF

**HARNES IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

Connector	Connector Description	Location
CS2	10-WAY / BLACK / FASCIA HARNES TO COLUMN SWITCHGEAR HARNES	BELOW STEERING COLUMN
DT8	14-WAY / GREY / DRIVER DOOR LOCK LINK LEAD	BEHIND DOOR TRIM PANEL
FC2	12-WAY / GREY / CABIN HARNES TO FASCIA HARNES	BEHIND LOWER 'A' POST TRIM, RH SIDE
FC40	16-WAY / GREEN / CABIN HARNES TO FASCIA HARNES	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 HARNES TO FASCIA HARNES	BEHIND LOWER 'A' POST TRIM, LH SIDE
PT1	14-WAY / GREY / CABIN HARNES 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.

**Fig. 16.1****COMPONENTS**

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

**GROUND**

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.

**Fig. 16.2**

**COMPONENTS**

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

**HARNES 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.



**Fig. 16.3**

**COMPONENTS**

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

**HARNES 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.

**Fig. 16.4**

**COMPONENTS**

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

**Fig. 16.5**

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
CELLULAR TELEPHONE CONTROL MODULE	RA4 RA5	12-WAY / BLACK 16-WAY / BLACK	INSIDE THE LH REAR QUARTER PANEL INSIDE THE LH REAR QUARTER PANEL
RADIO HEAD UNIT	FC71 FC72 FC73 FC74 FC75 FC85	7-WAY / GREY 8-WAY / BLACK 17-WAY / BLACK 12-WAY / BLACK 12-WAY / BLACK 10-WAY / BLACK	FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER
RADIO TELEPHONE ANTENNA	CA138	1-WAY / BLACK	BELOW PARCEL SHELF
SECONDARY JUNCTION BOX	CA26 CA27 FC10 FH10	16-WAY / BLUE 8-WAY / GREY 16-WAY / GREEN 10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE 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 RA7	12-WAY / BLACK 16-WAY / BLACK	TRUNK, LH SIDE 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.

**Fig. 16.6**

**COMPONENTS**

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

**HARNES 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.

**Fig. 16.7****COMPONENTS**

Component	Connector(s)	Connector Description	Location
NAVIGATION CONTROL MODULE	CA107 CA108	10-WAY / WHITE 18-WAY / WHITE	TRUNK, LH SIDE TRUNK, LH SIDE
NAVIGATION DISPLAY MODULE	FC67	20-WAY / WHITE	FASCIA, CENTER
TELEVISION AMPLIFIER - FRONT	BF7 BF8 BF9 FH100 FH101	1-WAY / BLACK 1-WAY / BLACK 1-WAY / BLACK 1-WAY / BLACK 1-WAY / BLACK	FRONT BUMPER FRONT BUMPER FRONT BUMPER FRONT BUMPER 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 CA176	10-WAY / BLACK 10-WAY / BLACK	TRUNK TRUNK
TRAFFIC MASTER MODULE	CA174	5-WAY / GREEN	TRUNK
VEHICLE EMERGENCY CONTROL MODULE	RA6 RA7	12-WAY / BLACK 16-WAY / BLACK	TRUNK, LH SIDE 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.

**Fig. 17.1****COMPONENTS**

Component	Connector(s)	Connector Description	Location
AIRBAG – DRIVER	DB4 CS6	2-WAY / YELLOW 10-WAY / BLACK	BEHIND SEAT BACK FINISHER ON THE REAR OF THE DRIVER AIRBAG ASSEMBLY
AIRBAG – PASSENGER	FC32 PB4	2-WAY / BLACK 2-WAY / YELLOW	LH SIDE OF AIRBAG ASSEMBLY LH SIDE OF SEAT SQUAB
RESTRAINTS CONTROL MODULE	CA1 CA114	8-WAY / BLACK 26-WAY / BLACK	TRANSMISSION TUNNEL 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 CA27 FC10 FH10	16-WAY / BLUE 8-WAY / GREY 16-WAY / GREEN 10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE 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

**HARNES IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

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

**Fig. 18.1****COMPONENTS**

<b>Component</b>	<b>Connector(s)</b>	<b>Connector Description</b>	<b>Location</b>
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

**HARNES IN-LINE CONNECTORS AND JUNCTION CONNECTORS**

<b>Connector</b>	<b>Connector Description</b>	<b>Location</b>
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**

<b>Ground</b>	<b>Ground Description</b>	<b>Location</b>
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.

CONTROL MODULE PIN-OUT INFORMATION

**Fig. 19.1**

**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)	
S	FC15-15 SCP +	2 - 1600 Hz	
S	FC15-16 SCP -	2 - 1600 Hz	B+

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

**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

**HARNES 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)

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.



**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 CA12	16-WAY / BLUE 16-WAY / GREY	IN THE SPARE WHEEL WELL IN THE SPARE WHEEL WELL
AIR CONDITIONING CONTROL MODULE	FC27 FC28	26-WAY / GREY 22-WAY / GREY	BEHIND AIR CONDITIONING CONTROL PANEL BEHIND AIR CONDITIONING CONTROL PANEL
DOOR CONTROL MODULE - DRIVER	CA85 DD4 DT1 DT2	12-WAY / BLACK 26-WAY / WHITE 4-WAY / GREY 20-WAY / BLACK	DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL DRIVER DOOR, TRIM PANEL
DYNAMIC STABILITY CONTROL CONTROL MODULE	FH51	47-WAY / GREY	ADJACENT TO ABS PUMP
GENERAL ELECTRONIC CONTROL MODULE	CA24 CA31 CA84 FH9 FH59 FH60	26-WAY / WHITE 20-WAY / BLACK 4-WAY / GREY 22-WAY / BLACK 12-WAY / BLACK 17-WAY / BLACK	'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE 'A' POST, LH SIDE
INSTRUMENT PACK	FC14 FC15 FC63	22-WAY / GREY 20-WAY / BLACK 22-WAY / BLACK	FASCIA FASCIA FASCIA
NAVIGATION CONTROL MODULE	CA107 CA108	10-WAY / WHITE 18-WAY / WHITE	TRUNK, LH SIDE TRUNK, LH SIDE
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
RADIO HEAD UNIT	FC71 FC72 FC73 FC74 FC75 FC85	7-WAY / GREY 8-WAY / BLACK 17-WAY / BLACK 12-WAY / BLACK 12-WAY / BLACK 10-WAY / BLACK	FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER FASCIA, CENTER
REAR ELECTRONIC CONTROL MODULE	CA63 CA99 CA100 CA101 CA102 CA103 CA104	17-WAY / BLACK 4-WAY / GREY 12-WAY / BLACK 20-WAY / BLACK 22-WAY / BLACK 26-WAY / WHITE 4-WAY / BLACK	TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR TRUNK, RH REAR
SEAT CONTROL MODULE - DRIVER	DM6 DM9 DM10	17-WAY / BLACK 17-WAY / GREY 4-WAY / BROWN	BELOW SEAT CUSHION BELOW SEAT CUSHION BELOW SEAT CUSHION
SECONDARY JUNCTION BOX	CA26 CA27 FC10 FH10	16-WAY / BLUE 8-WAY / GREY 16-WAY / GREEN 10-WAY / YELLOW	FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE FRONT BULKHEAD, FORWARD OF 'A' POST, LH SIDE 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 RA7	12-WAY / BLACK 16-WAY / BLACK	TRUNK, LH SIDE 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.

**CONTROL MODULE PIN-OUT INFORMATION**

**Fig. 20.2**

**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	

**COMPONENTS**

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

**HARNES 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)

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

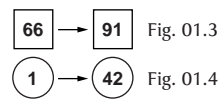
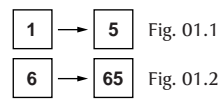
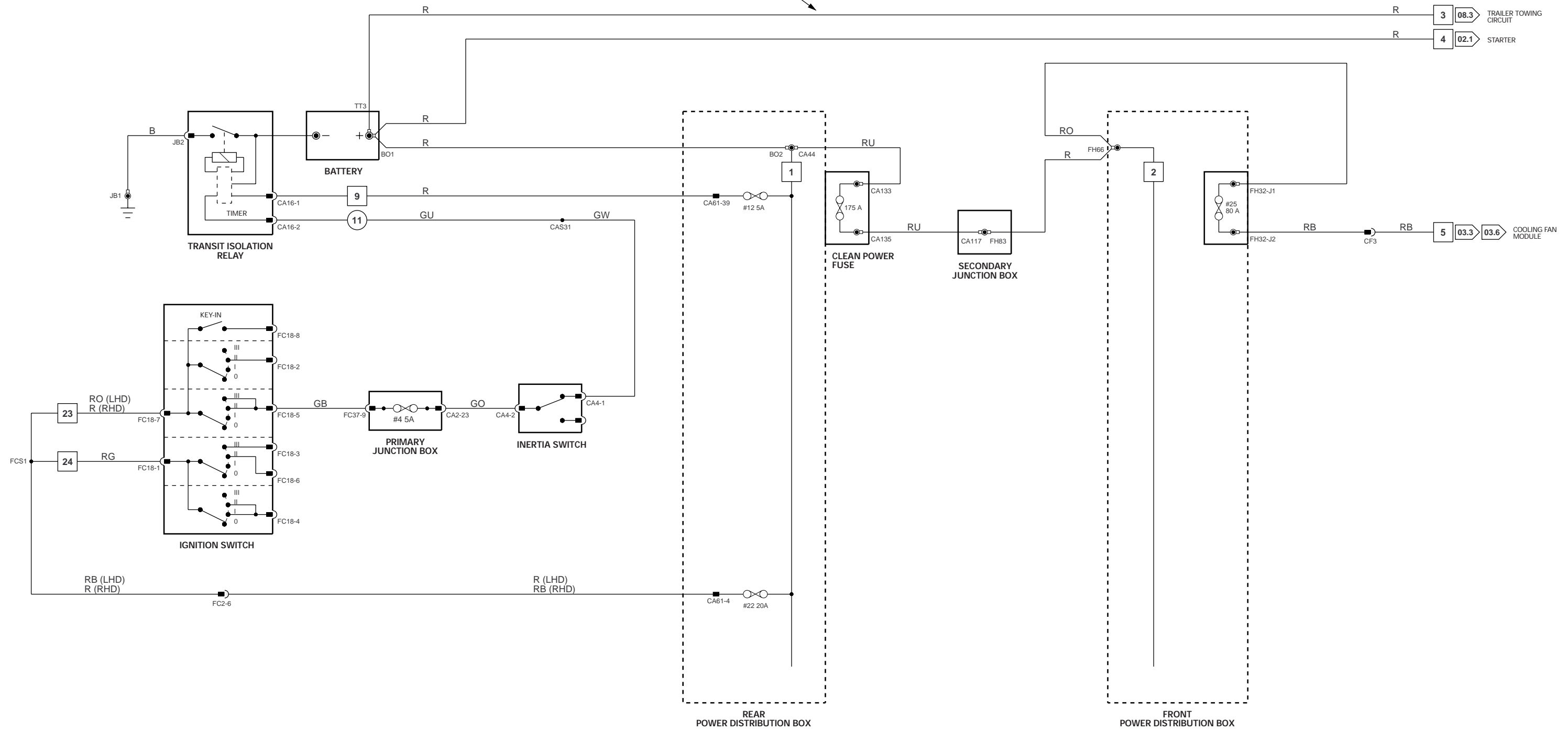
CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.

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.



NOTE: Trailer towing vehicles only.

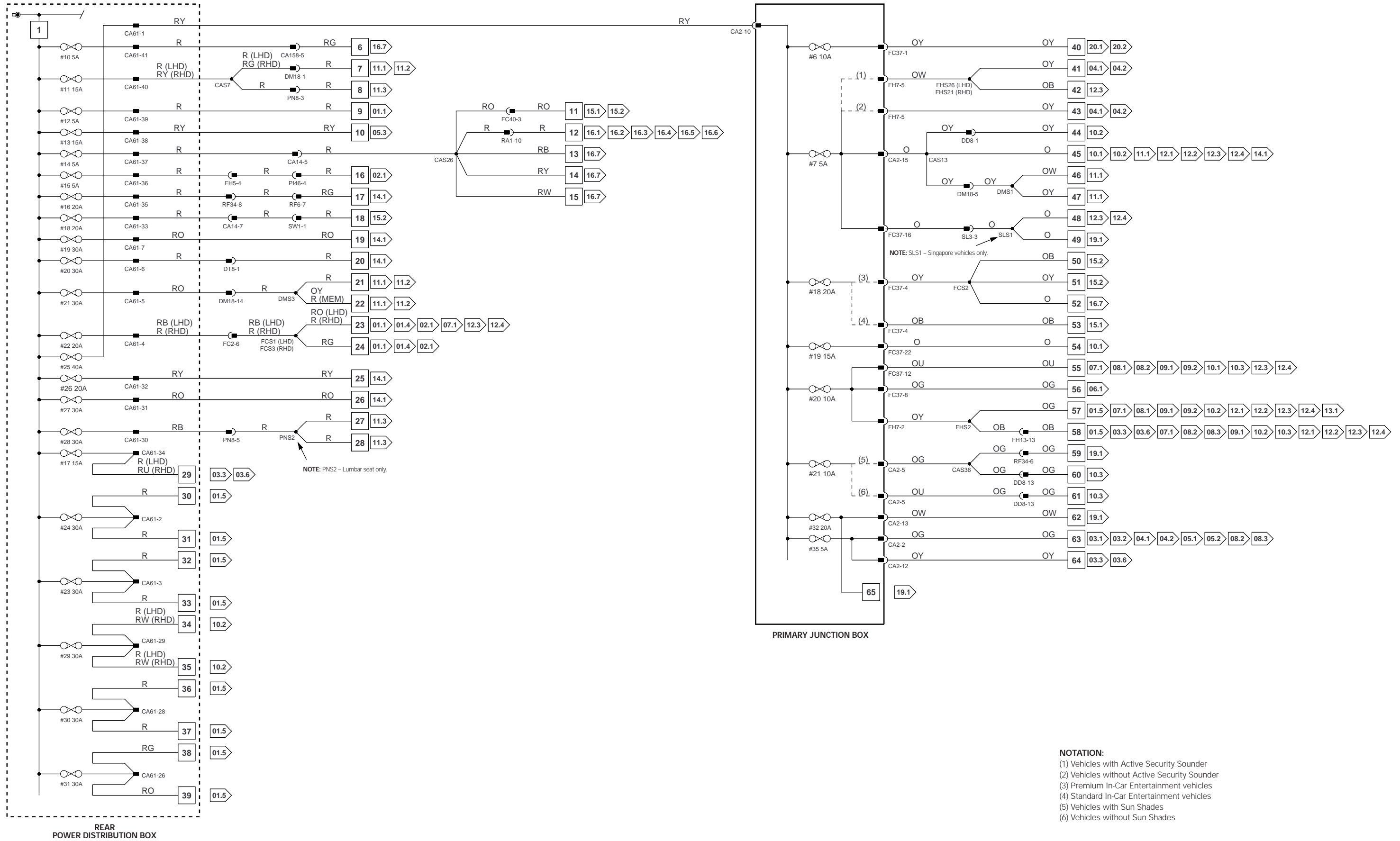


▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

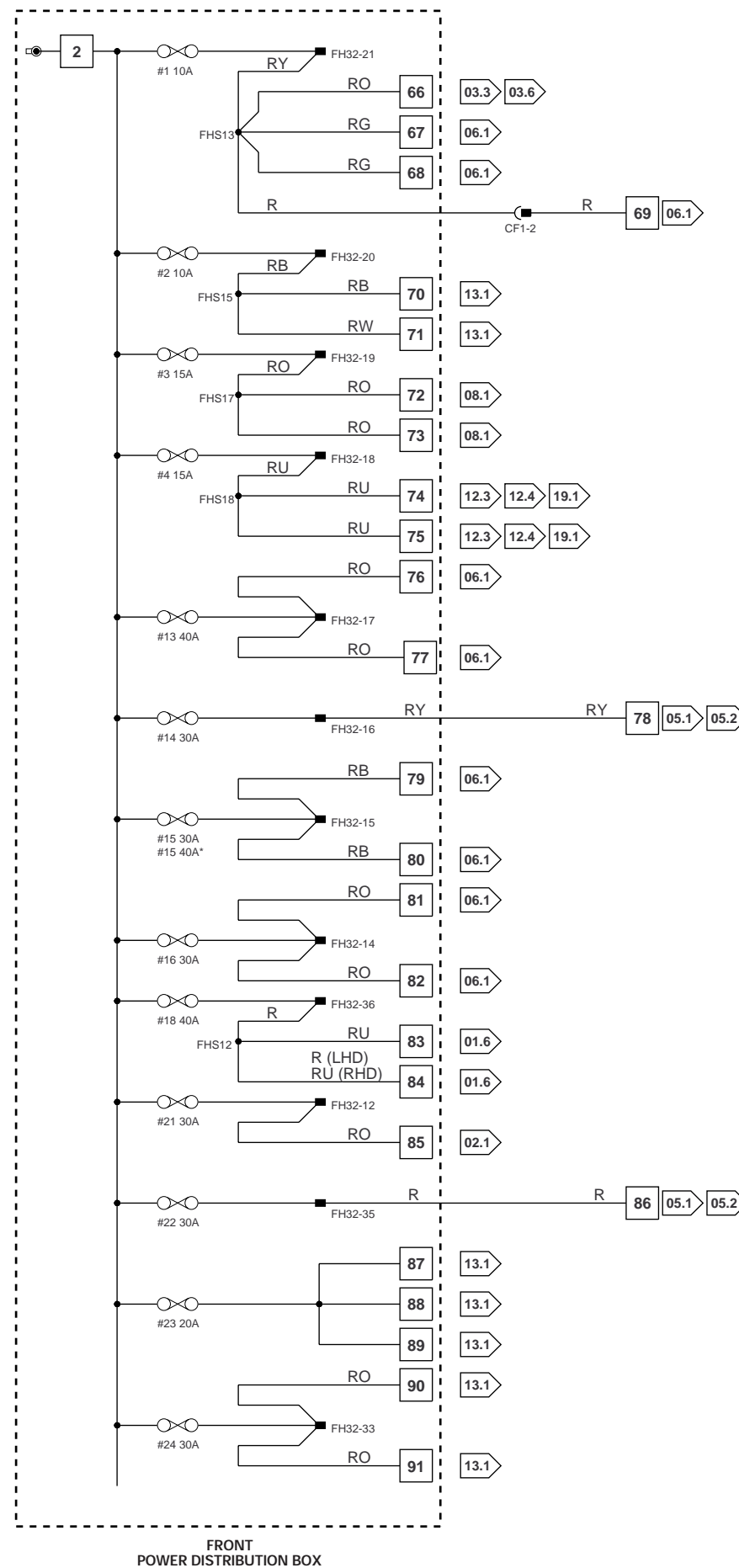
▽ ACP Network  
▽ Serial and Encoded Data

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



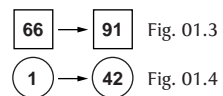
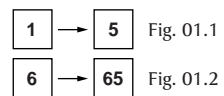
1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 <sub>S</sub> → 65 <sub>S</sub> Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 <sub>P</sub> → 88 <sub>P</sub> Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

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



\* NOTE: FUSE 15 - 30A Wiper Park Heater, 40A RH Windshield Heater.

FRONT POWER DISTRIBUTION BOX

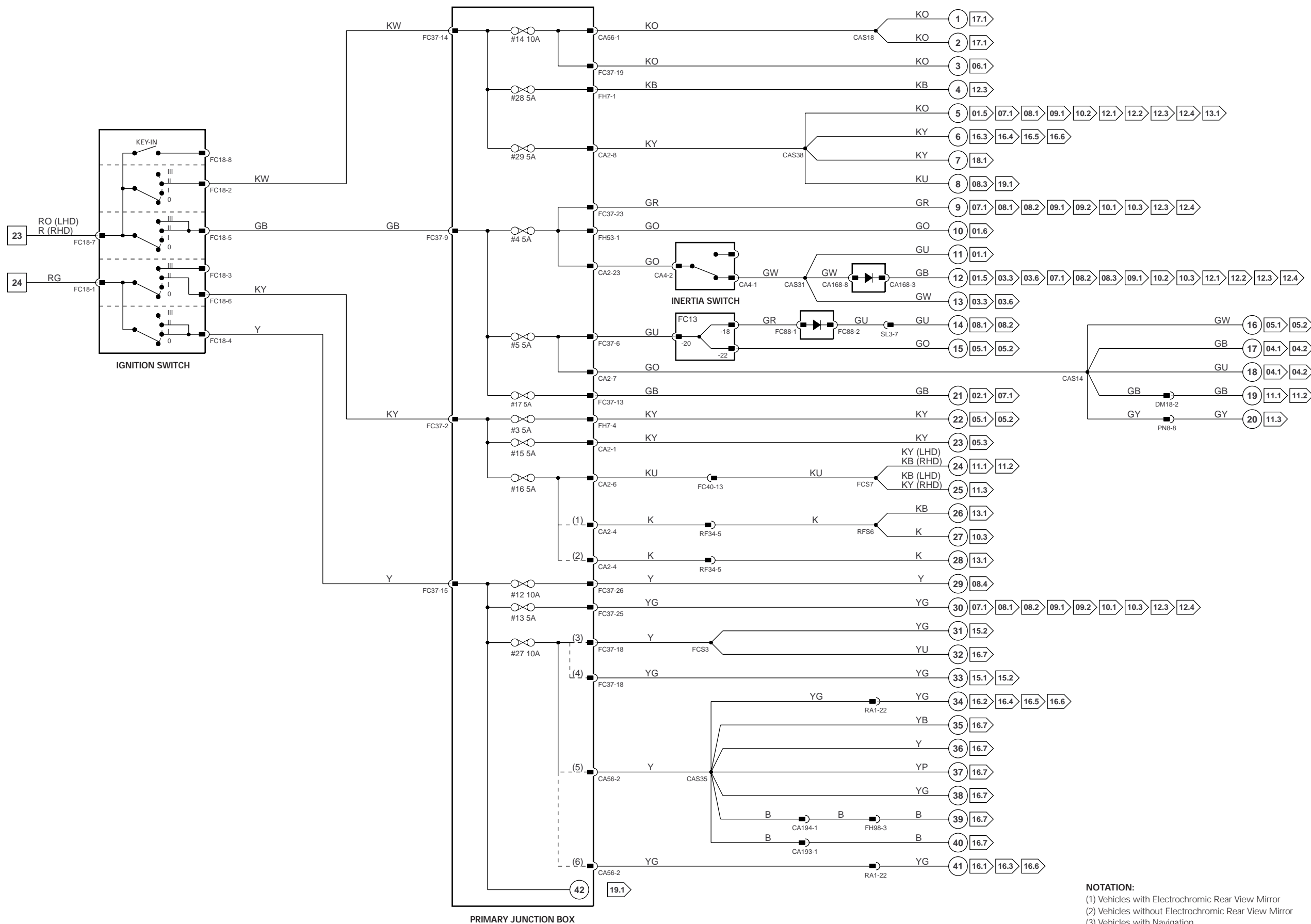


▽ Input  
▽ Output

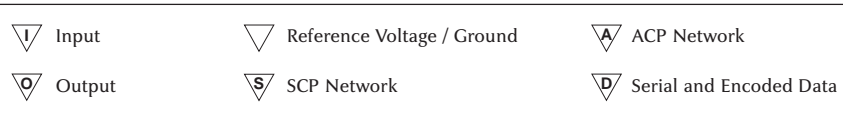
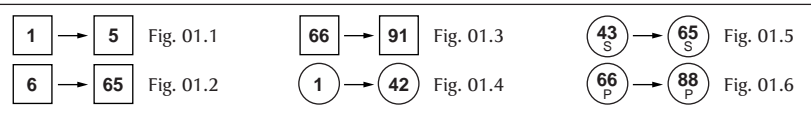
▽ Reference Voltage / Ground  
▽ SCP Network

▽ ACP Network  
▽ Serial and Encoded Data

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



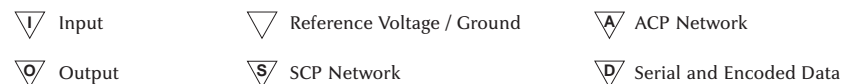
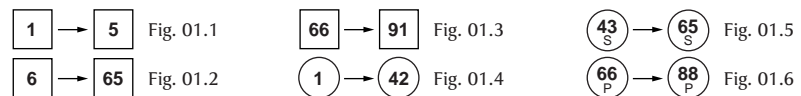
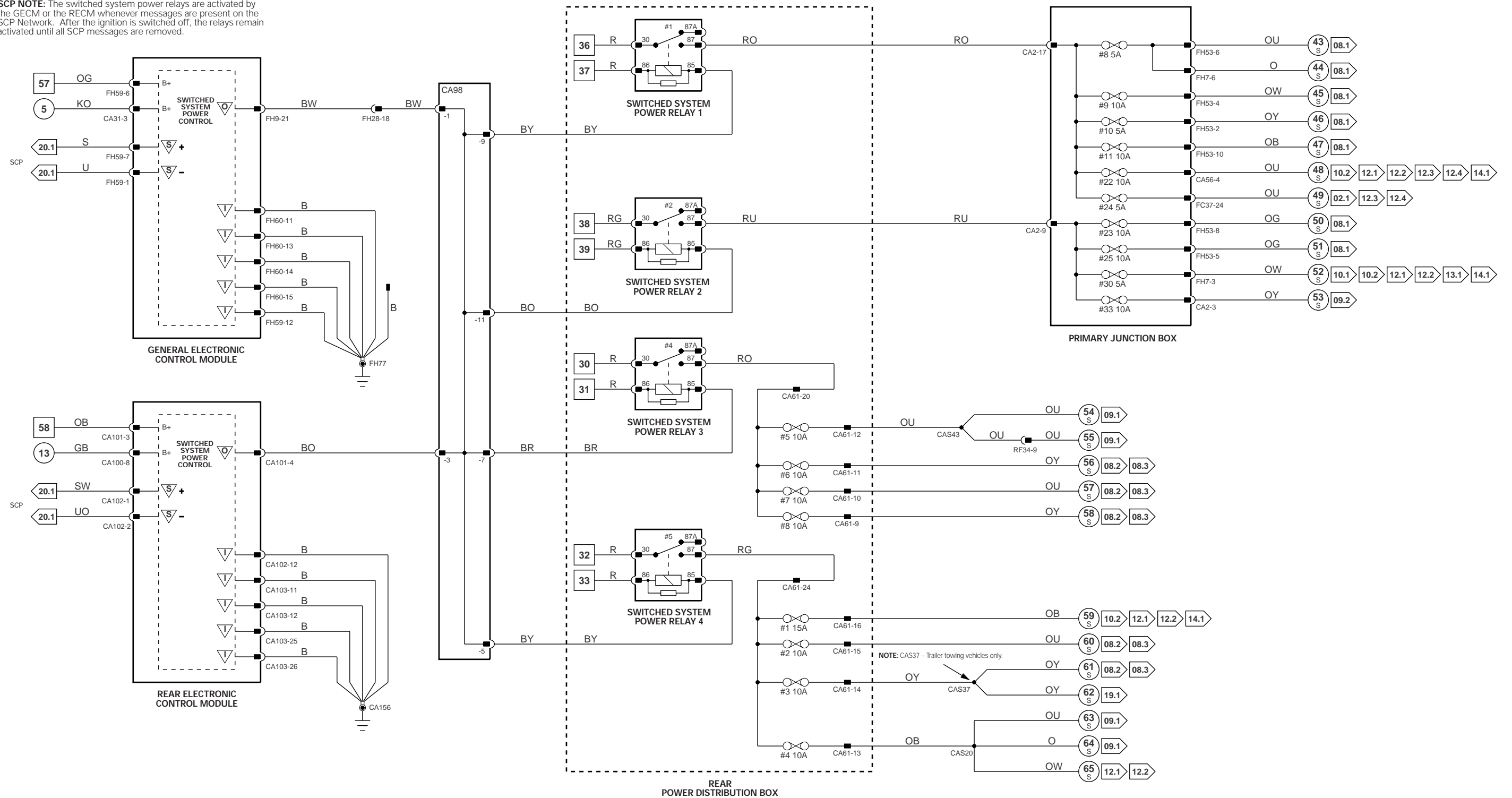
**NOTATION:**  
 (1) Vehicles with Electrochromic Rear View Mirror  
 (2) Vehicles without Electrochromic Rear View Mirror  
 (3) Vehicles with Navigation  
 (4) Vehicles without Navigation  
 (5) Vehicles with Telephone and Communications  
 (6) Vehicles with Telephone only and Vehicles with Telephone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



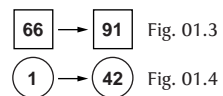
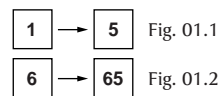
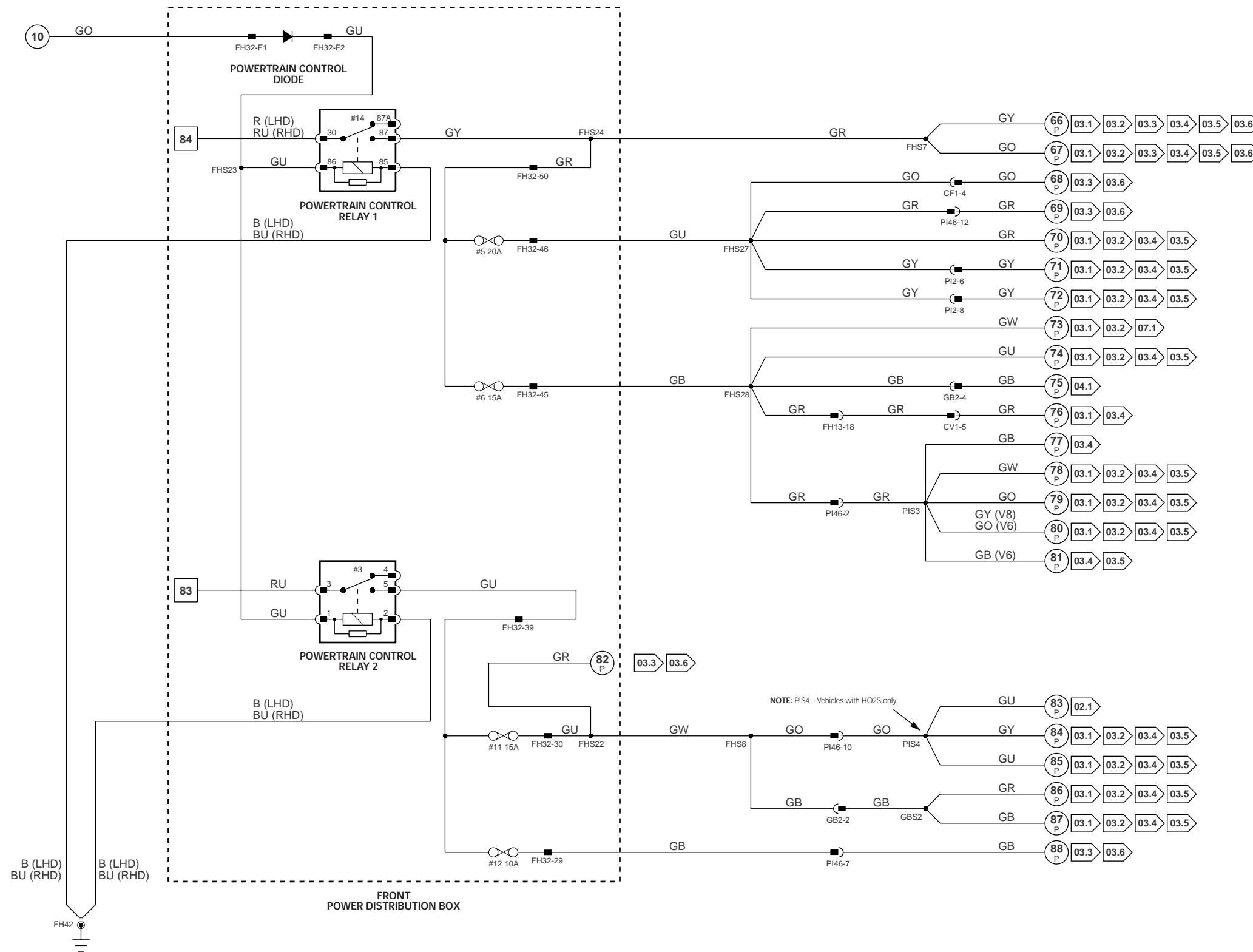
**VARIANT:** All Vehicles  
**VIN RANGE:** All  
**DATE OF ISSUE:** JULY 1999



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.



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



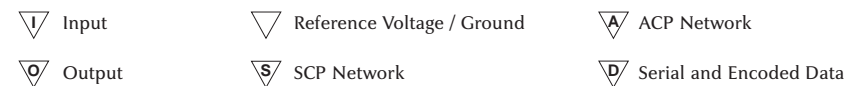
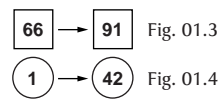
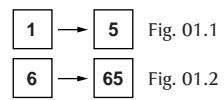
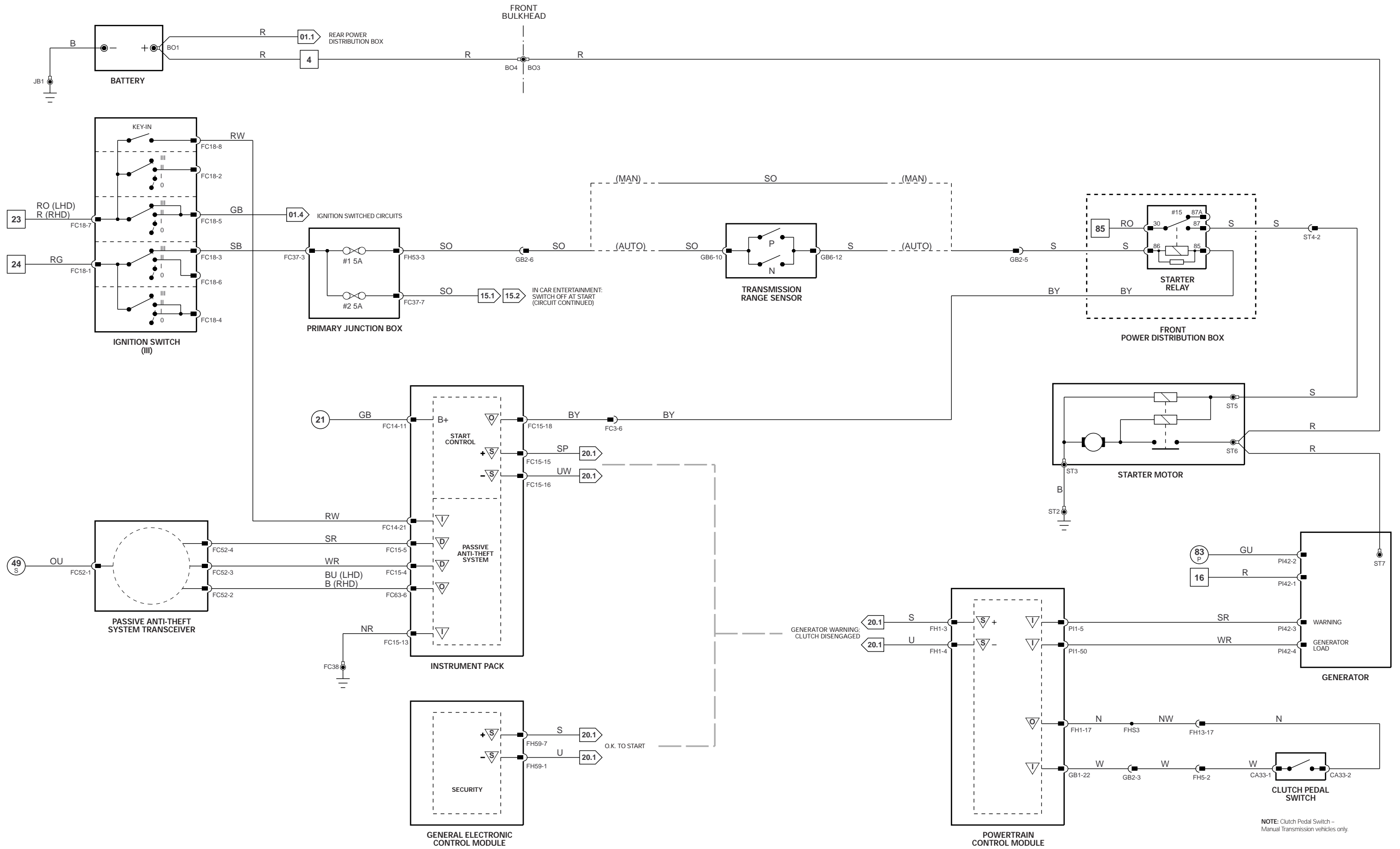
▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

▽ ACP Network  
▽ Serial and Encoded Data

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





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

NOTE: Clutch Pedal Switch - Manual Transmission vehicles only.





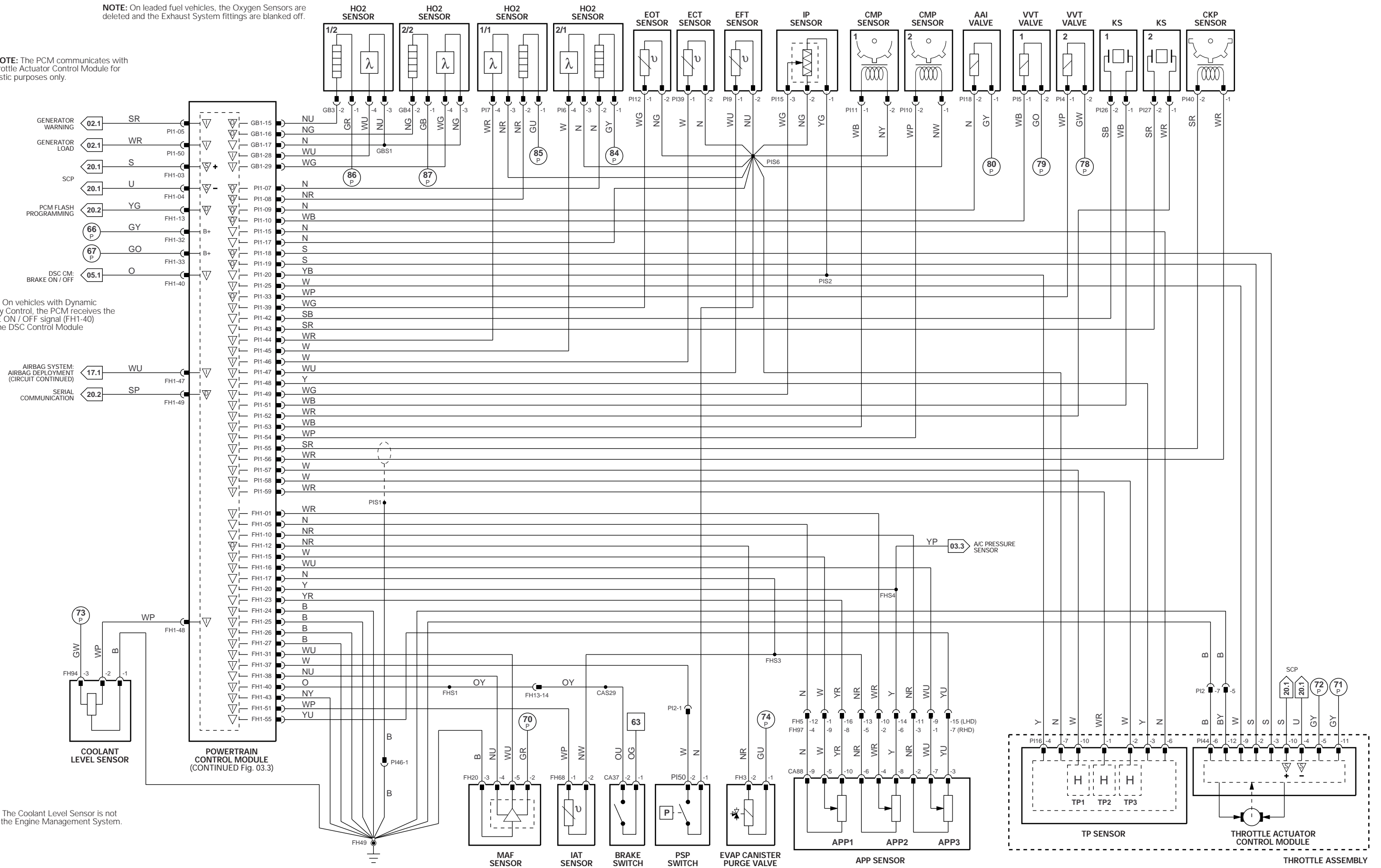
NOTE: On leaded fuel vehicles, the Oxygen Sensors are deleted and the Exhaust System fittings are blanked off.

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

AIRBAG SYSTEM: AIRBAG DEPLOYMENT (CIRCUIT CONTINUED) SERIAL COMMUNICATION

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



1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 <sub>S</sub> → 65 <sub>S</sub> Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 <sub>P</sub> → 88 <sub>P</sub> Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

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

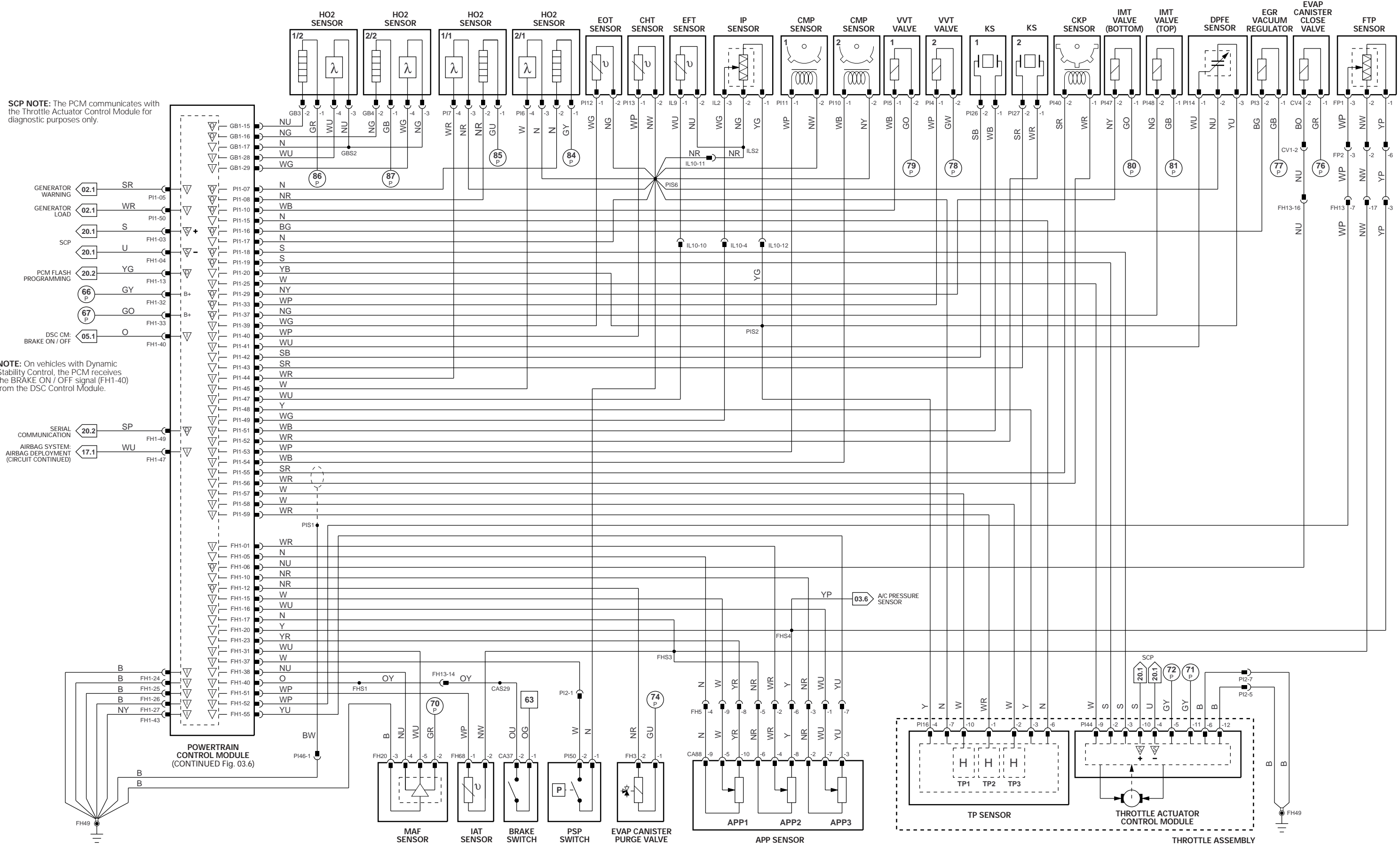




SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

- GENERATOR WARNING 02.1 SR
- GENERATOR LOAD 02.1 WR
- SCP 20.1 S
- PCM FLASH PROGRAMMING 20.1 U
- 66 P GY
- 67 P GO
- DSC CM: BRAKE ON / OFF 05.1 O
- SERIAL COMMUNICATION 20.2 SP
- AIRBAG SYSTEM: AIRBAG DEPLOYMENT (CIRCUIT CONTINUED) 17.1 WU

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	66 → 91 Fig. 01.3	43 S → 65 S Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 P → 88 P Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

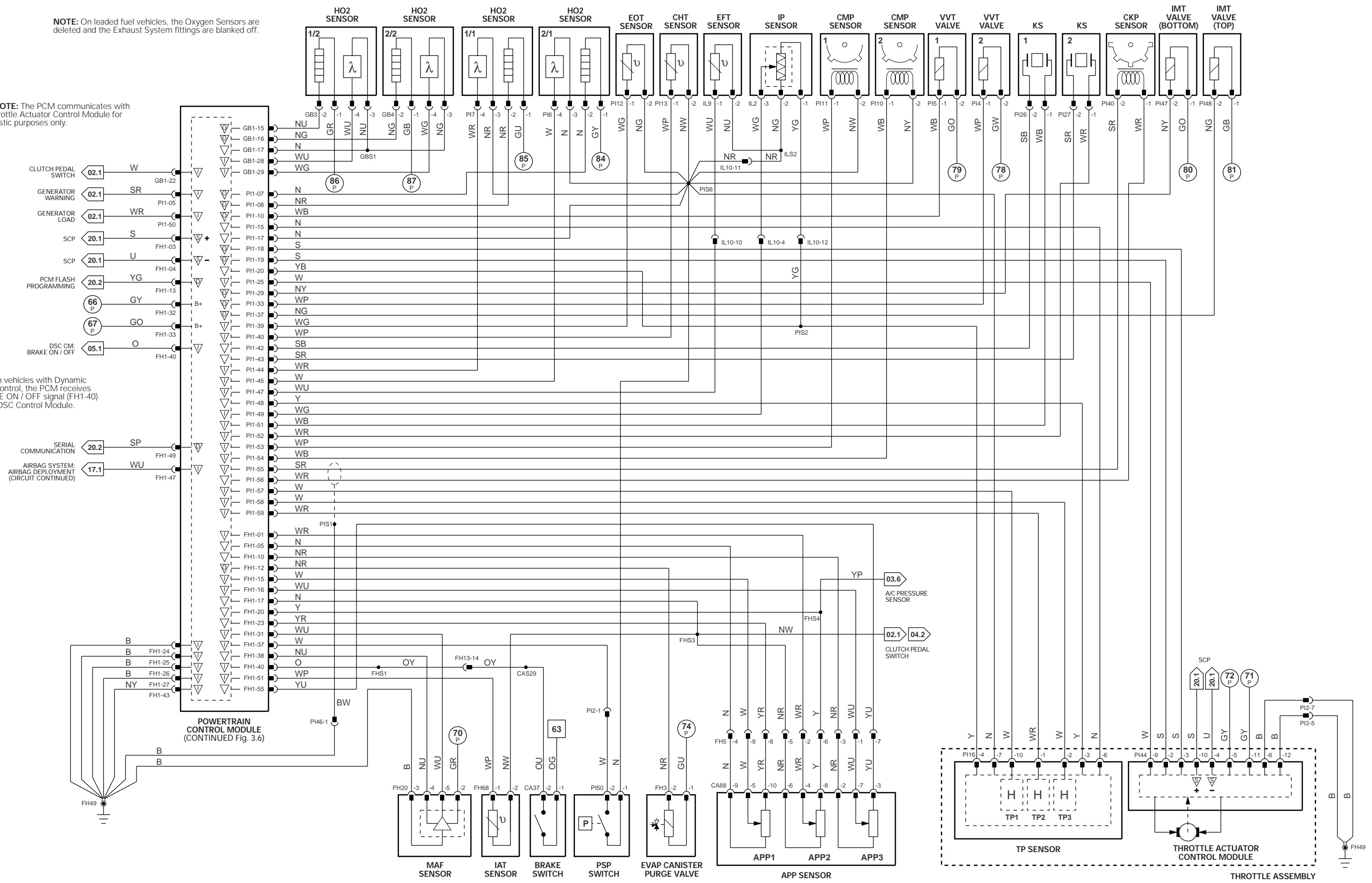
VARIANT: V6 NAS Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



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

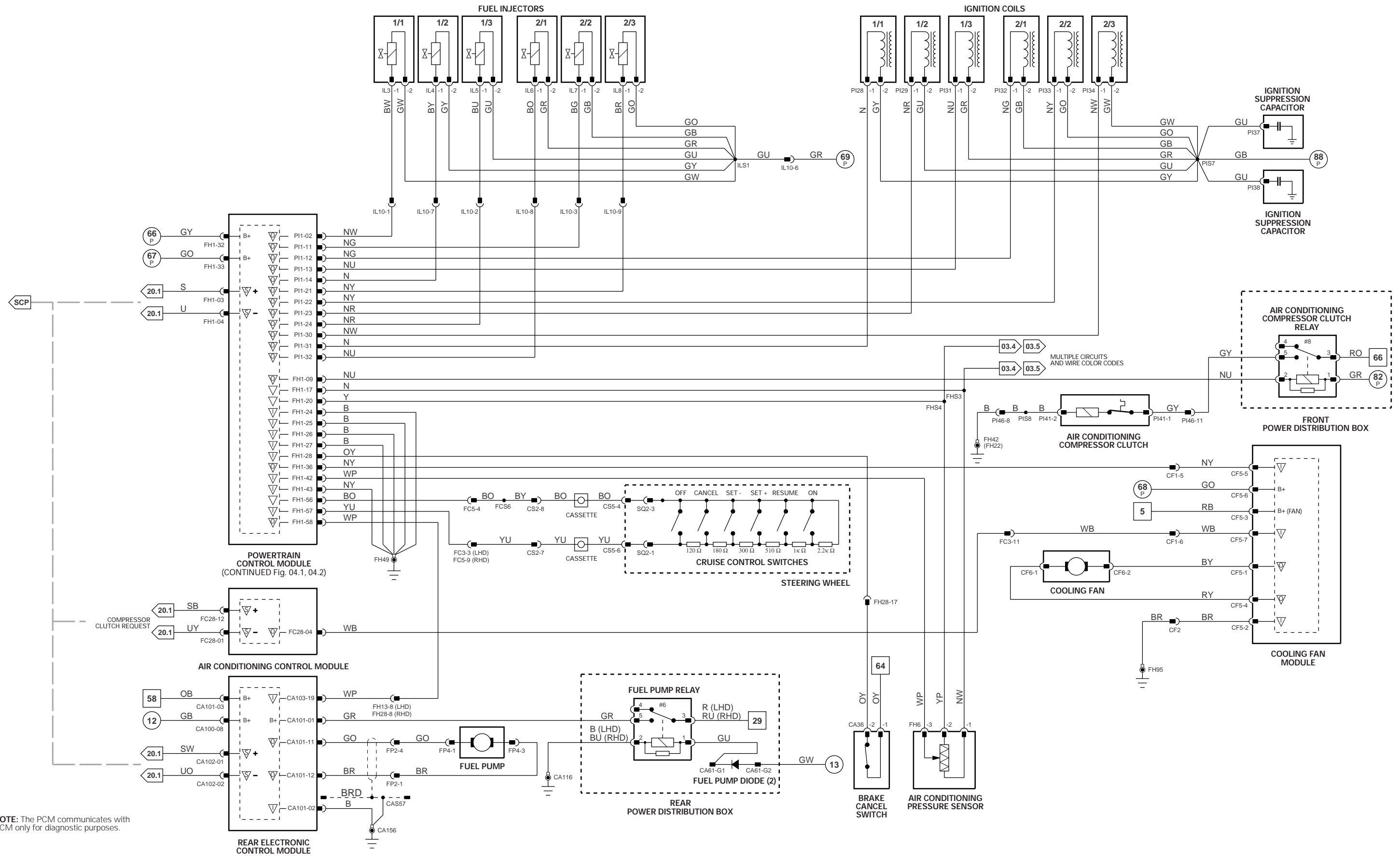
SCP NOTE: The PCM communicates with the Throttle Actuator Control Module for diagnostic purposes only.

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



1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 <sub>S</sub> → 65 <sub>S</sub> Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 <sub>P</sub> → 88 <sub>P</sub> Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

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



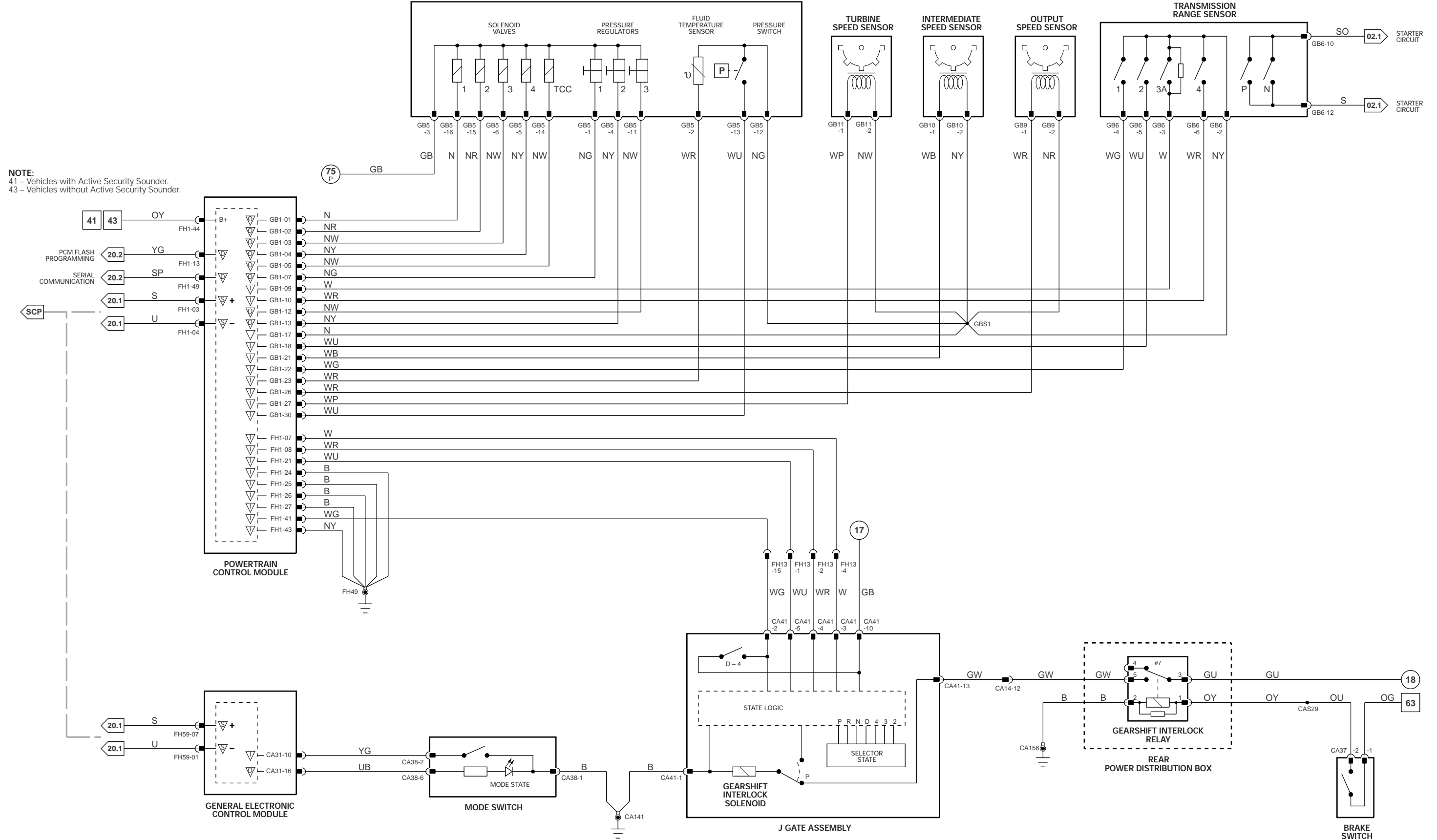
SCP NOTE: The PCM communicates with the RECM only for diagnostic purposes.



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



TRANSMISSION



**NOTE:**  
 41 - Vehicles with Active Security Sounder.  
 43 - Vehicles without Active Security Sounder.

1 → 5 Fig. 01.1

66 → 91 Fig. 01.3

43 → 65 Fig. 01.5

▽ Input

▽ Reference Voltage / Ground

▽ ACP Network

6 → 65 Fig. 01.2

1 → 42 Fig. 01.4

66 → 88 Fig. 01.6

▽ Output

▽ SCP Network

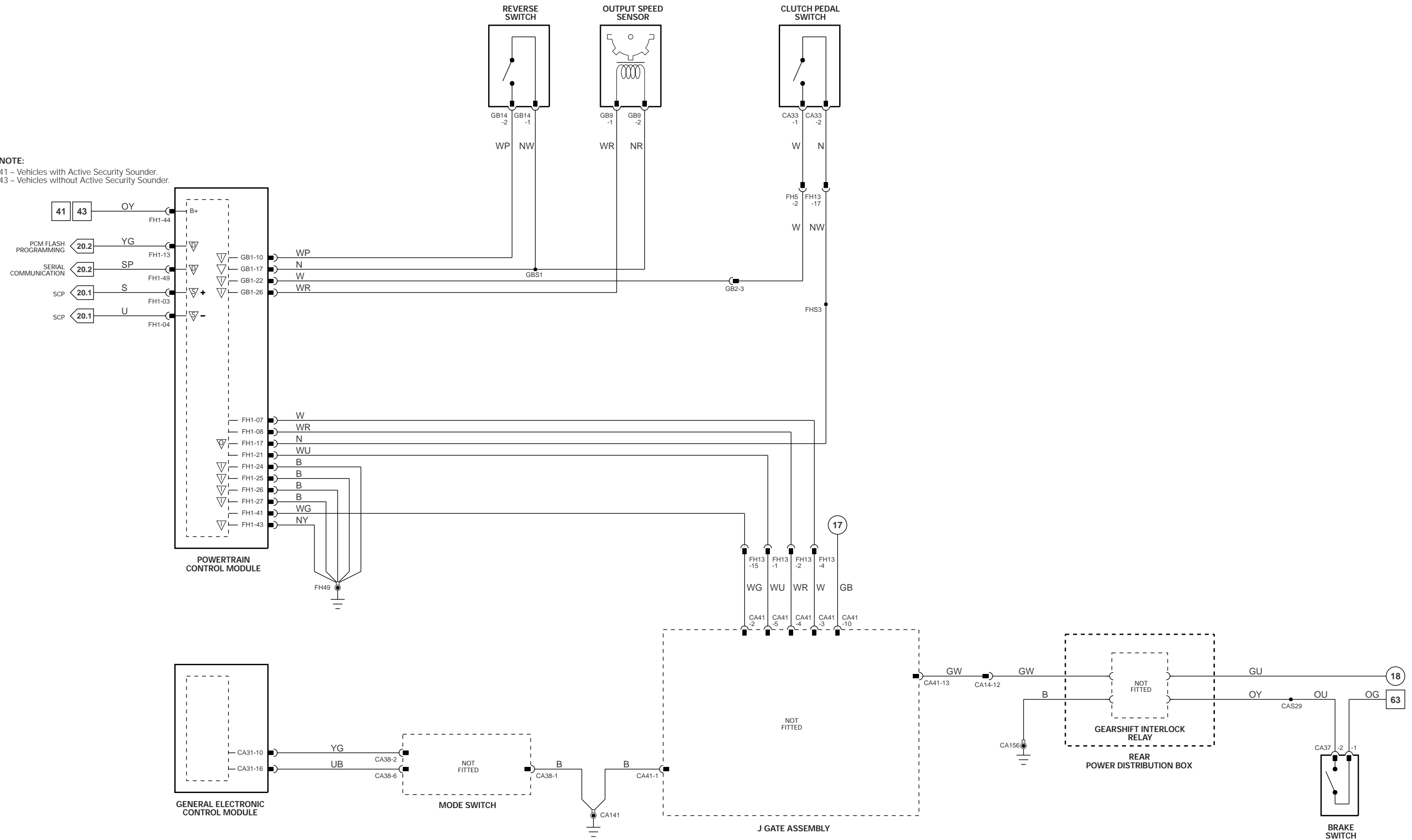
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VARIANT: Automatic Transmission Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999

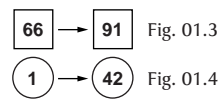
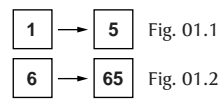
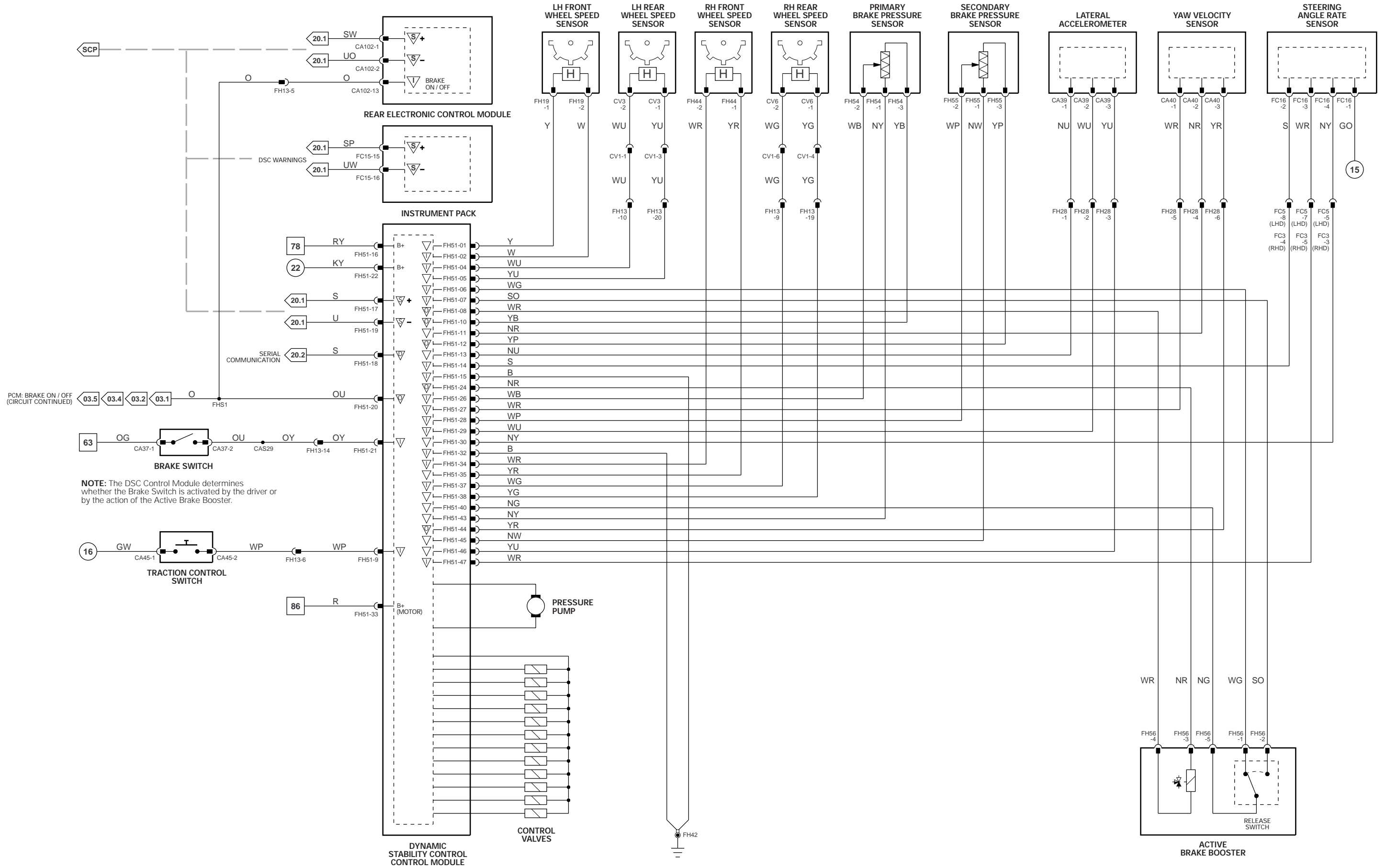




NOTE:  
41 - Vehicles with Active Security Sounder.  
43 - Vehicles without Active Security Sounder.

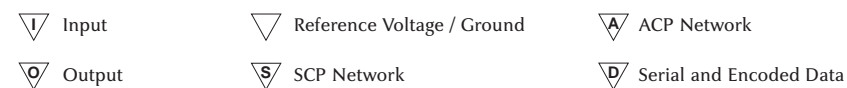
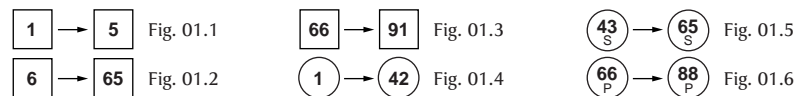
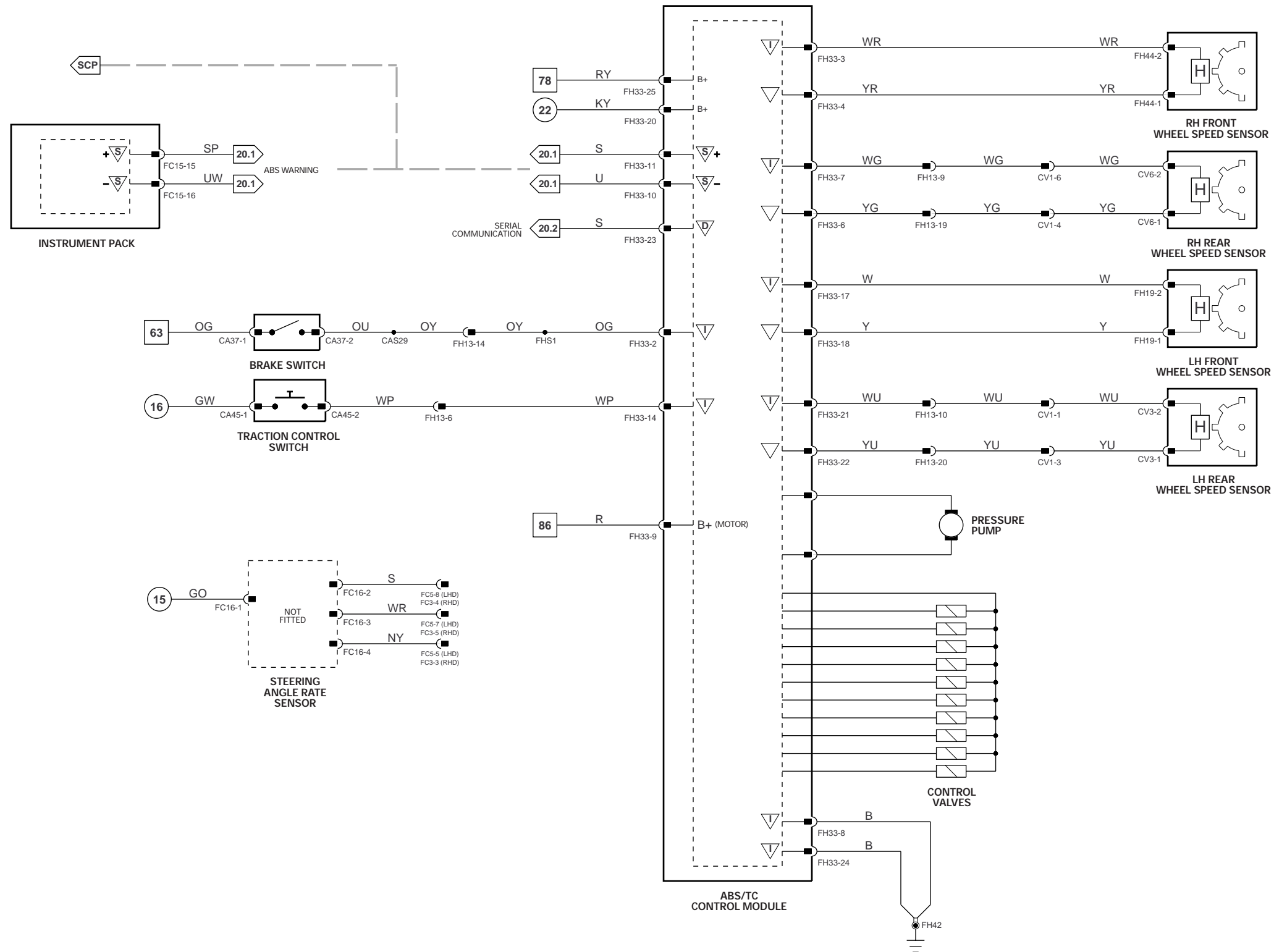


VARIANT: Manual Transmission Vehicles  
VIN RANGE: All  
DATE OF ISSUE: JULY 1999

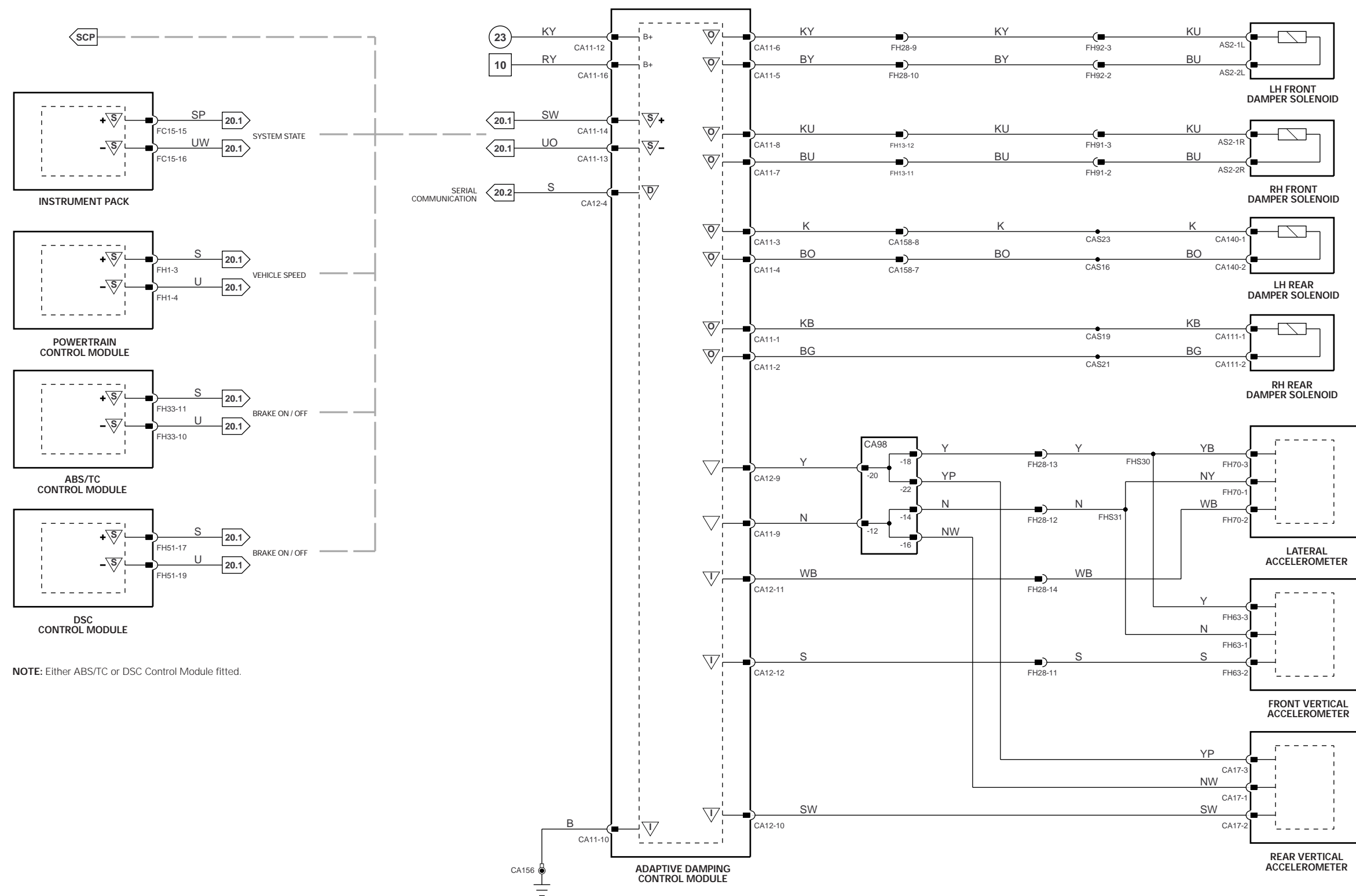


- ▽ Input
- ▽ Output
- ▽ Reference Voltage / Ground
- ▽ SCP Network
- ▽ ACP Network
- ▽ Serial and Encoded Data

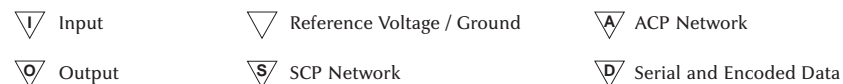
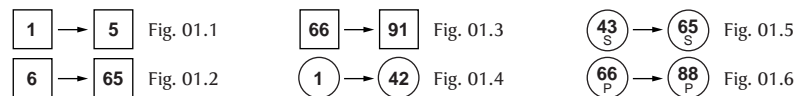
VARIANT: DSC Vehicles  
VIN RANGE: All  
DATE OF ISSUE: JULY 1999



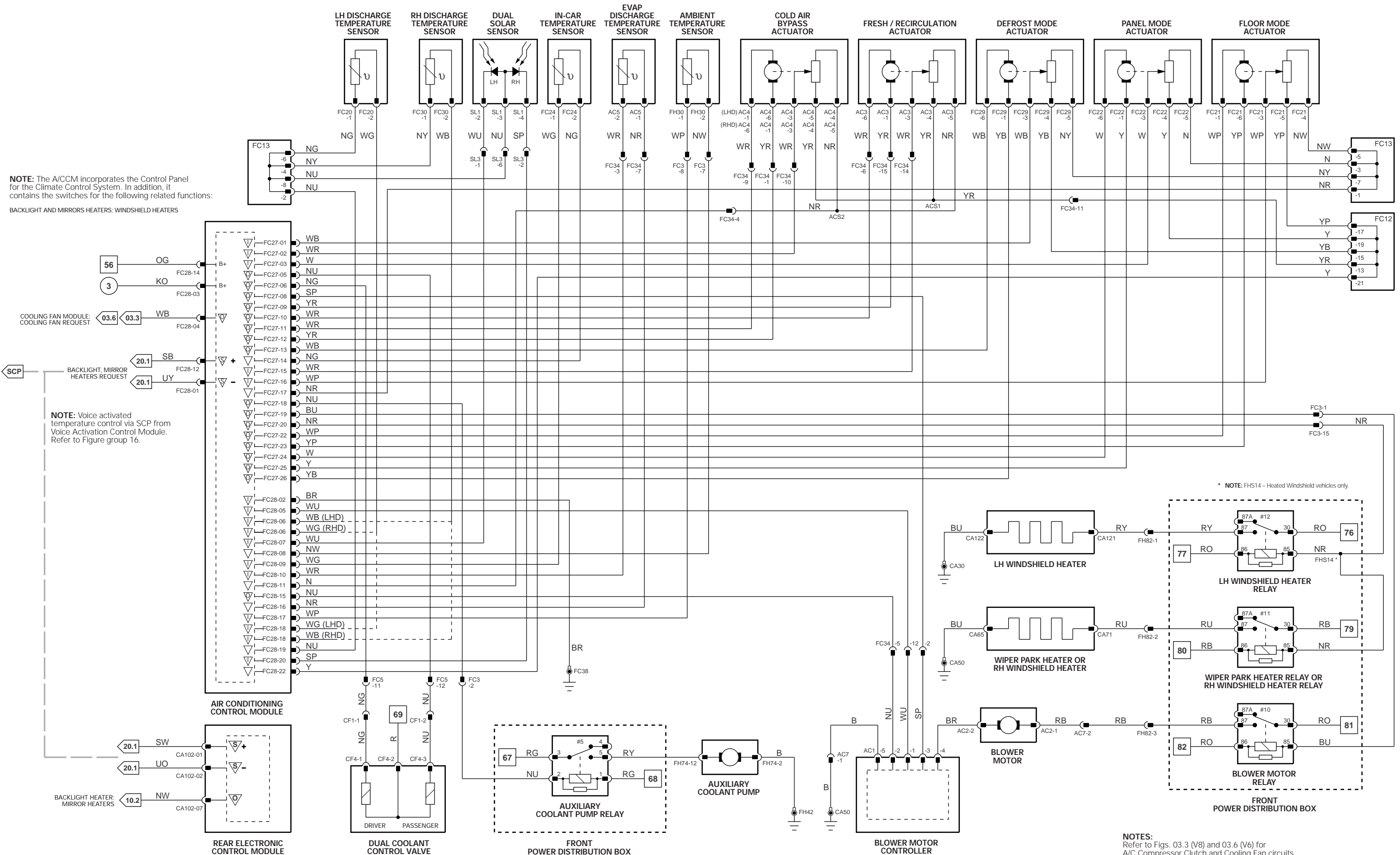
VARIANT: ABS/TC Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



NOTE: Either ABS/TC or DSC Control Module fitted.

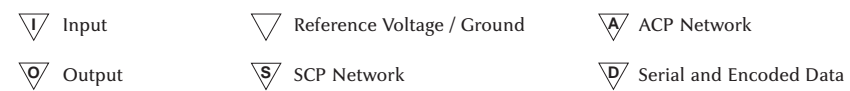
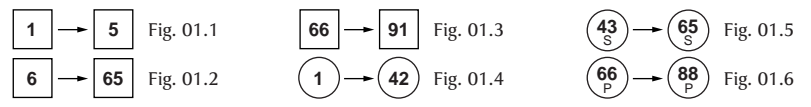
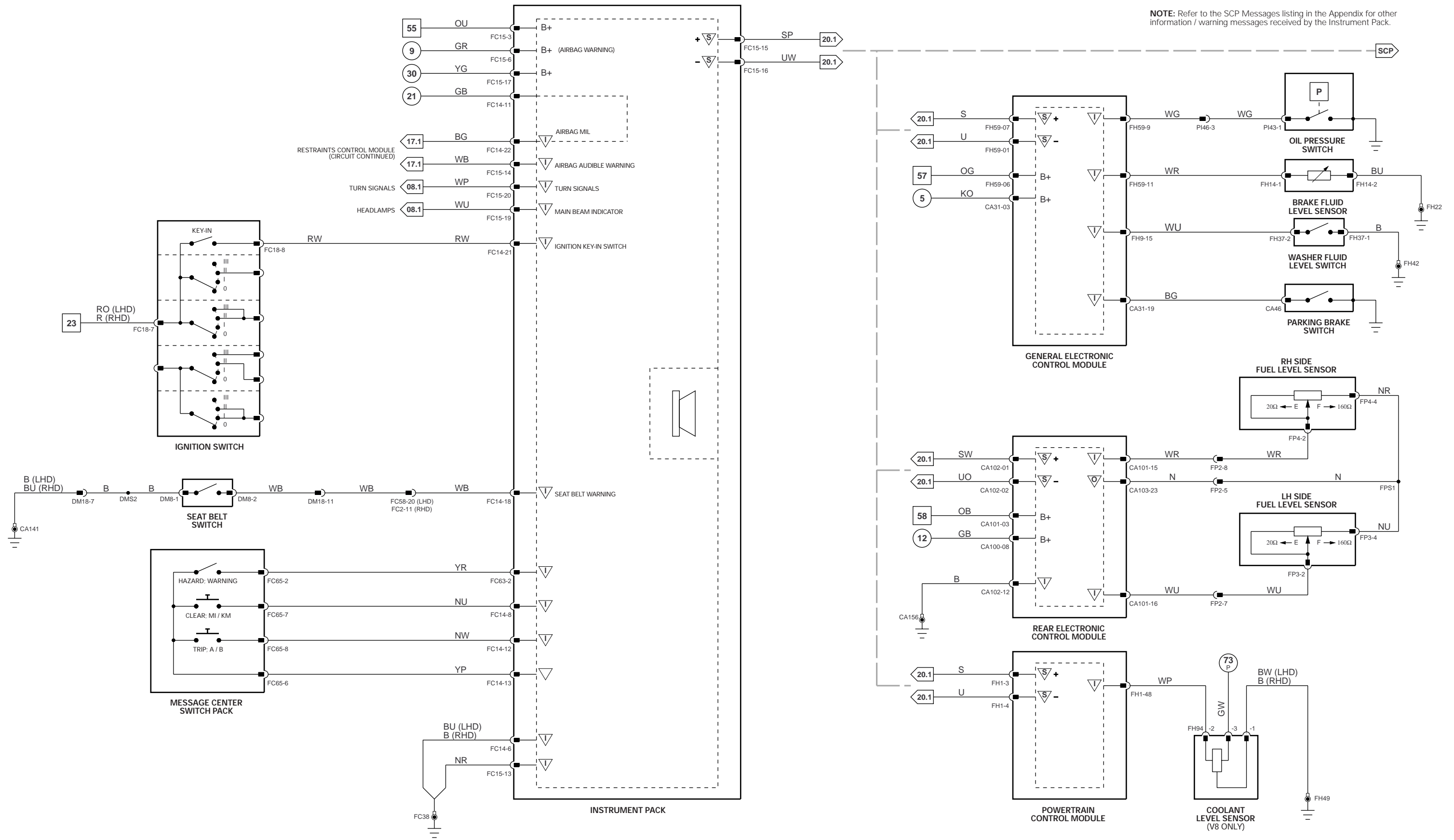


VARIANT: Adaptive Damping Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999

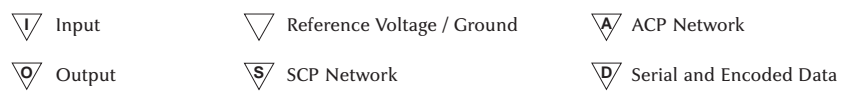
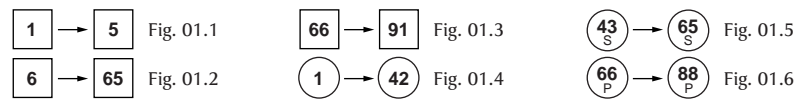
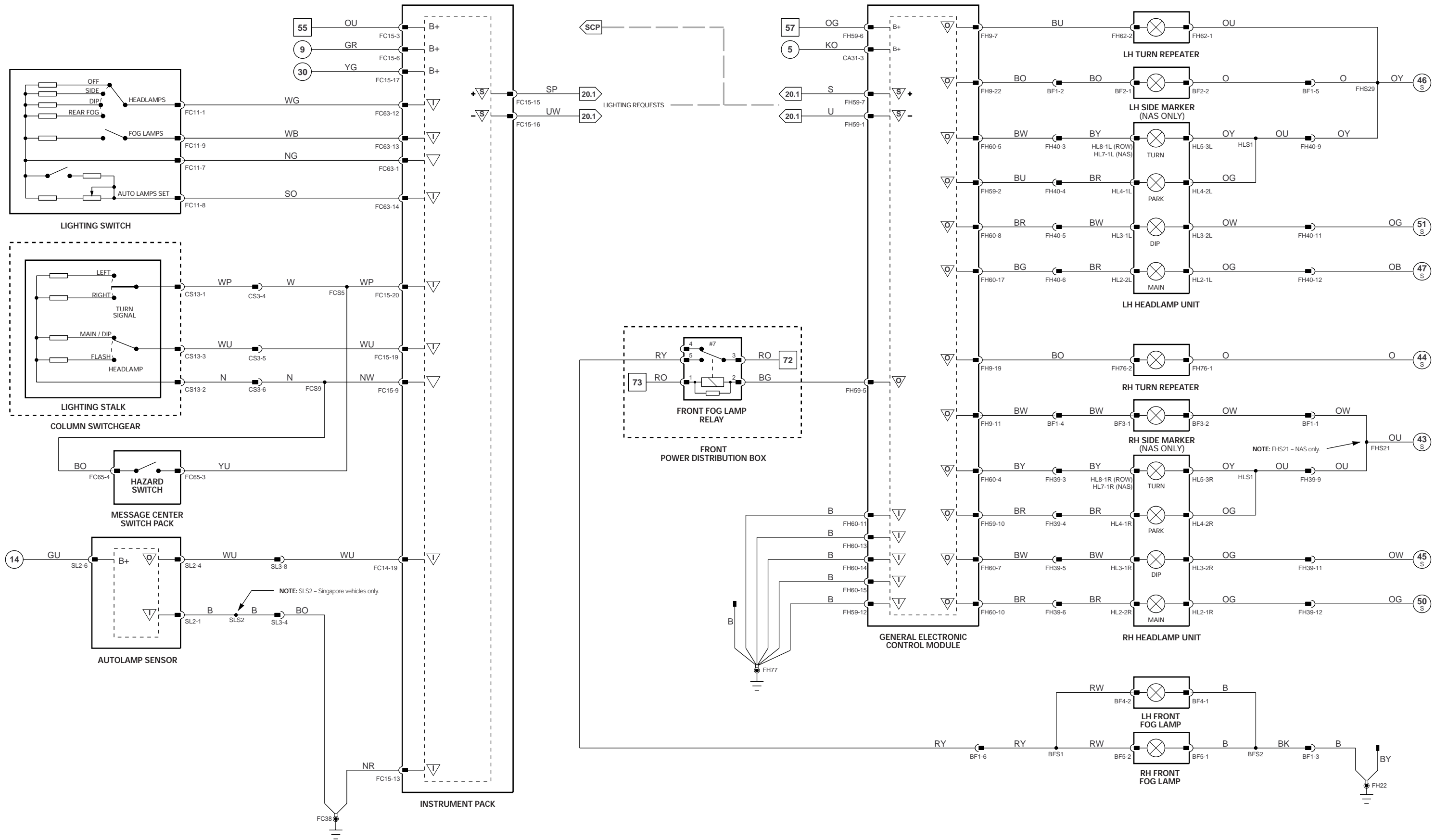


1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 S → 65 S Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 P → 88 P Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

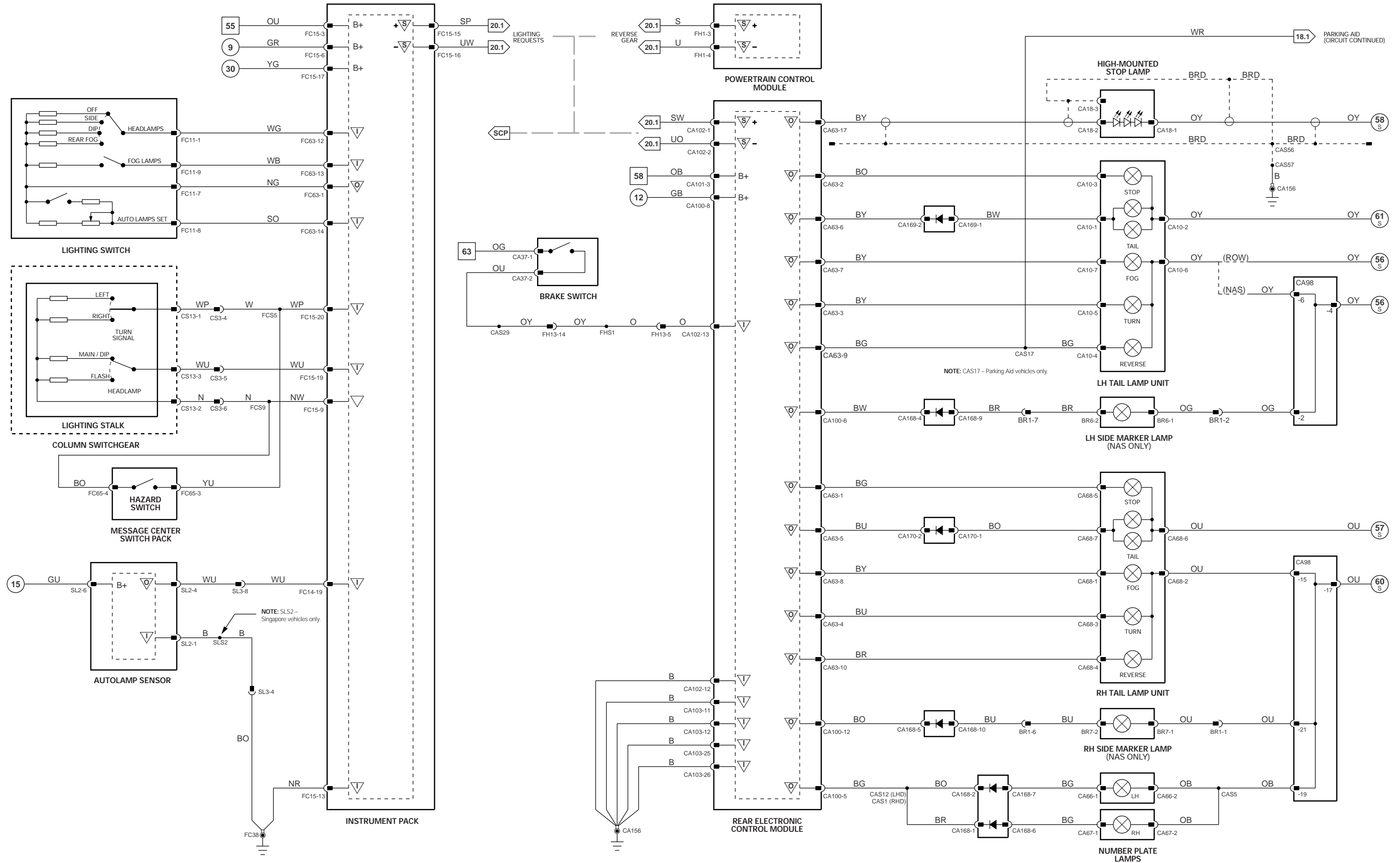
VARIANT: All Vehicles  
VIN RANGE: All  
DATE OF ISSUE: JULY 1999



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



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

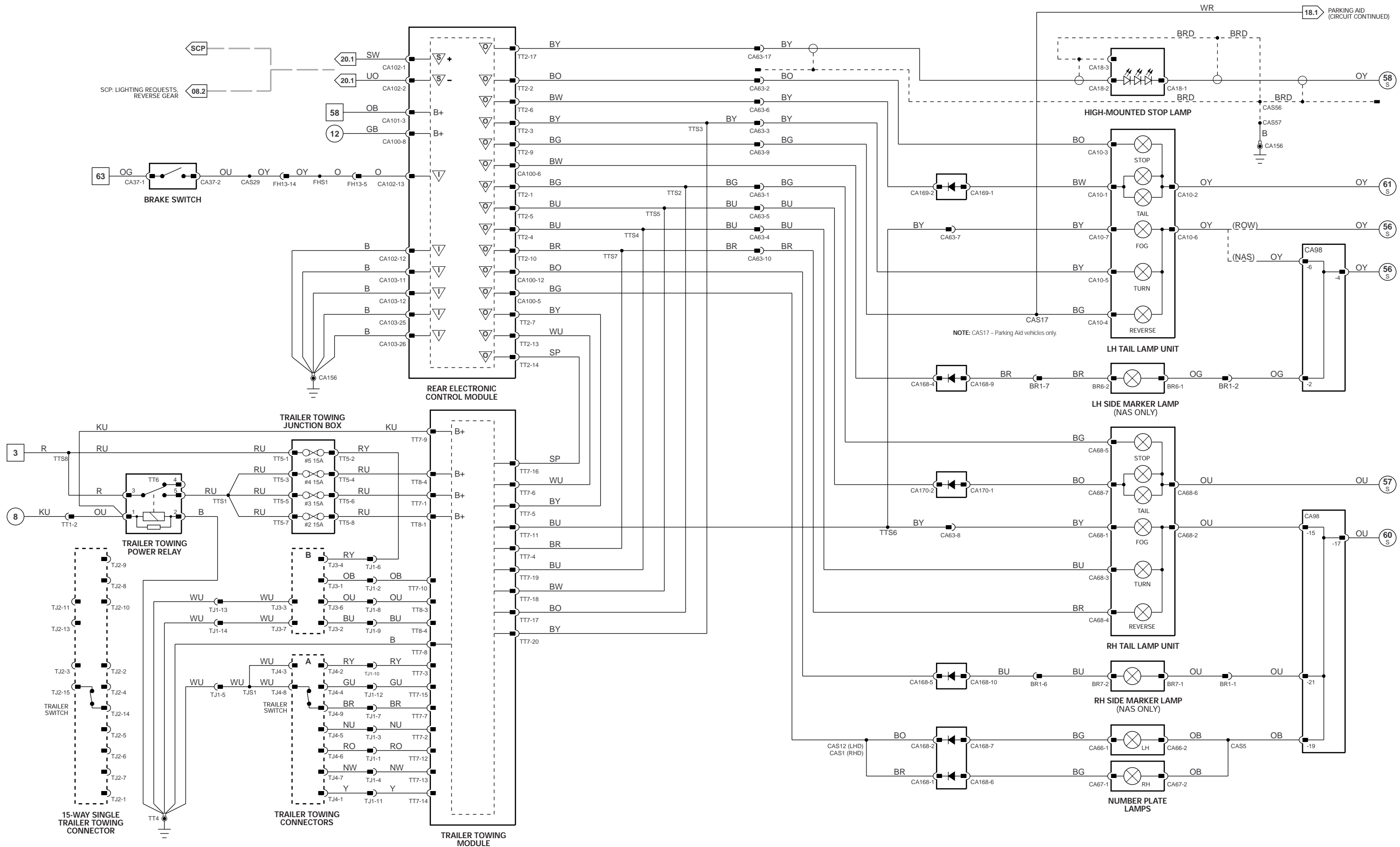


1 → 5	Fig. 01.1	66 → 91	Fig. 01.3	43 S → 65 S	Fig. 01.5
6 → 65	Fig. 01.2	1 → 42	Fig. 01.4	66 P → 88 P	Fig. 01.6

▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
▽ Output	▽ SCP Network	▽ Serial and Encoded Data

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



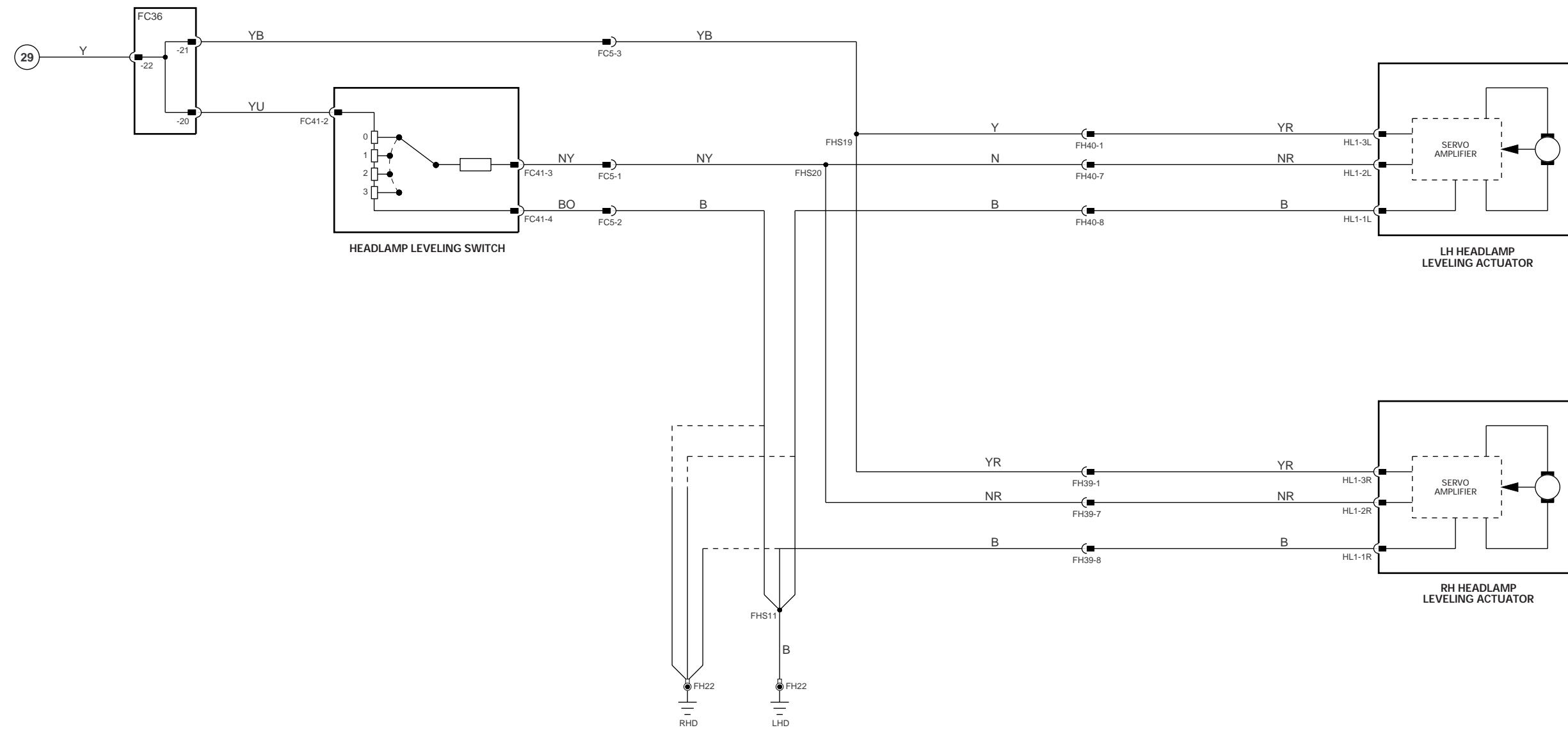


NOTE: CAS17 - Parking Aid vehicles only.

NOTE: Refer to Fig. 09.2 for switching circuits.

1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 → 65 Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	△ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 → 88 Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

VARIANT: Trailer Towing Vehicles  
 VIN RANGE: All  
 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

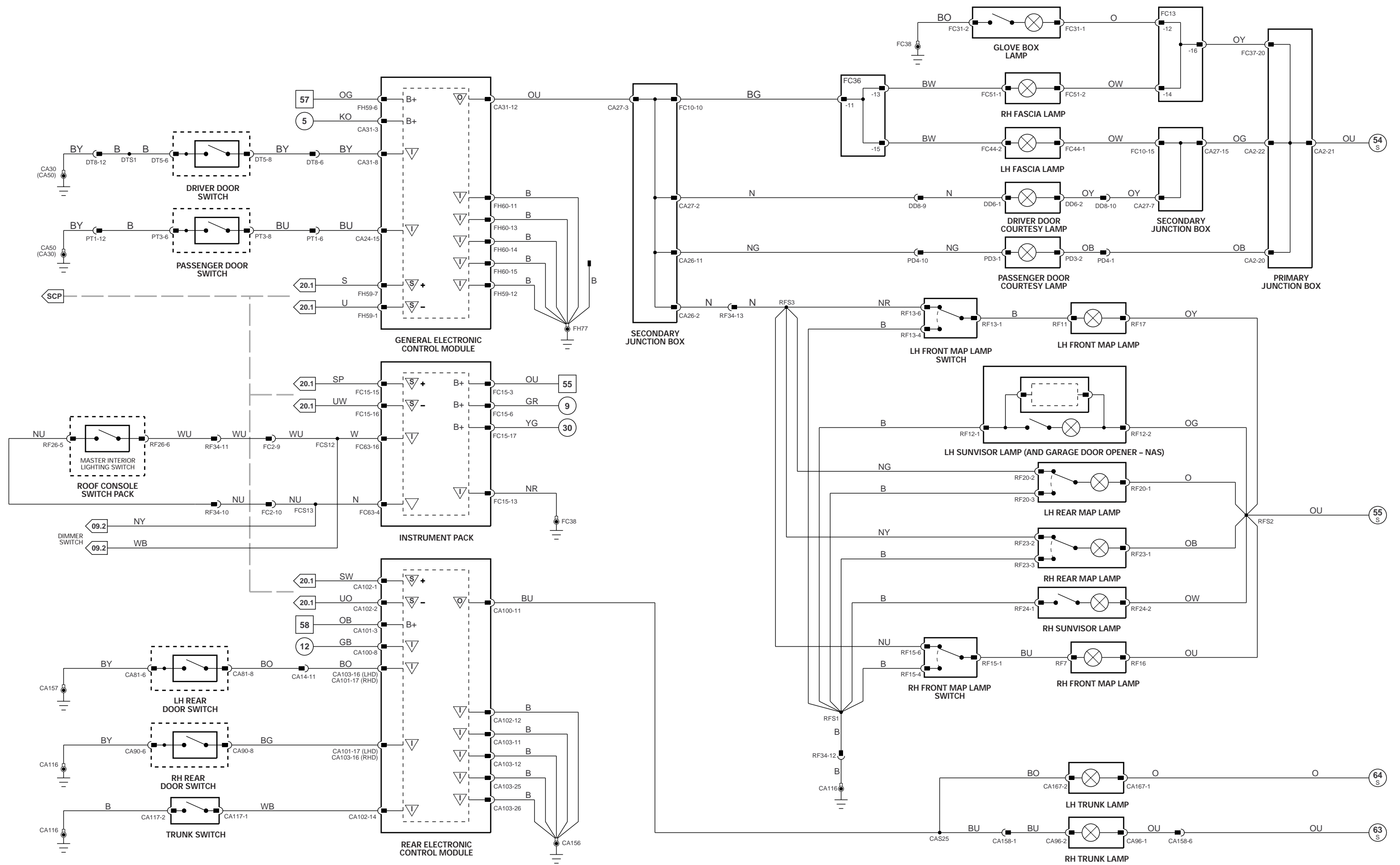
43<sub>S</sub> → 65<sub>S</sub> Fig. 01.5  
66<sub>P</sub> → 88<sub>P</sub> Fig. 01.6

▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

▽ ACP Network  
▽ Serial and Encoded Data

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

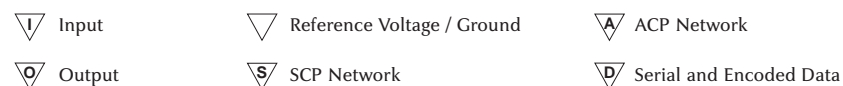
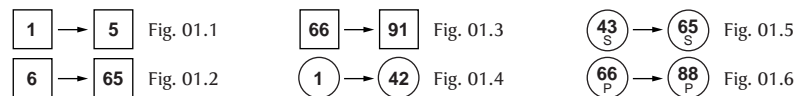
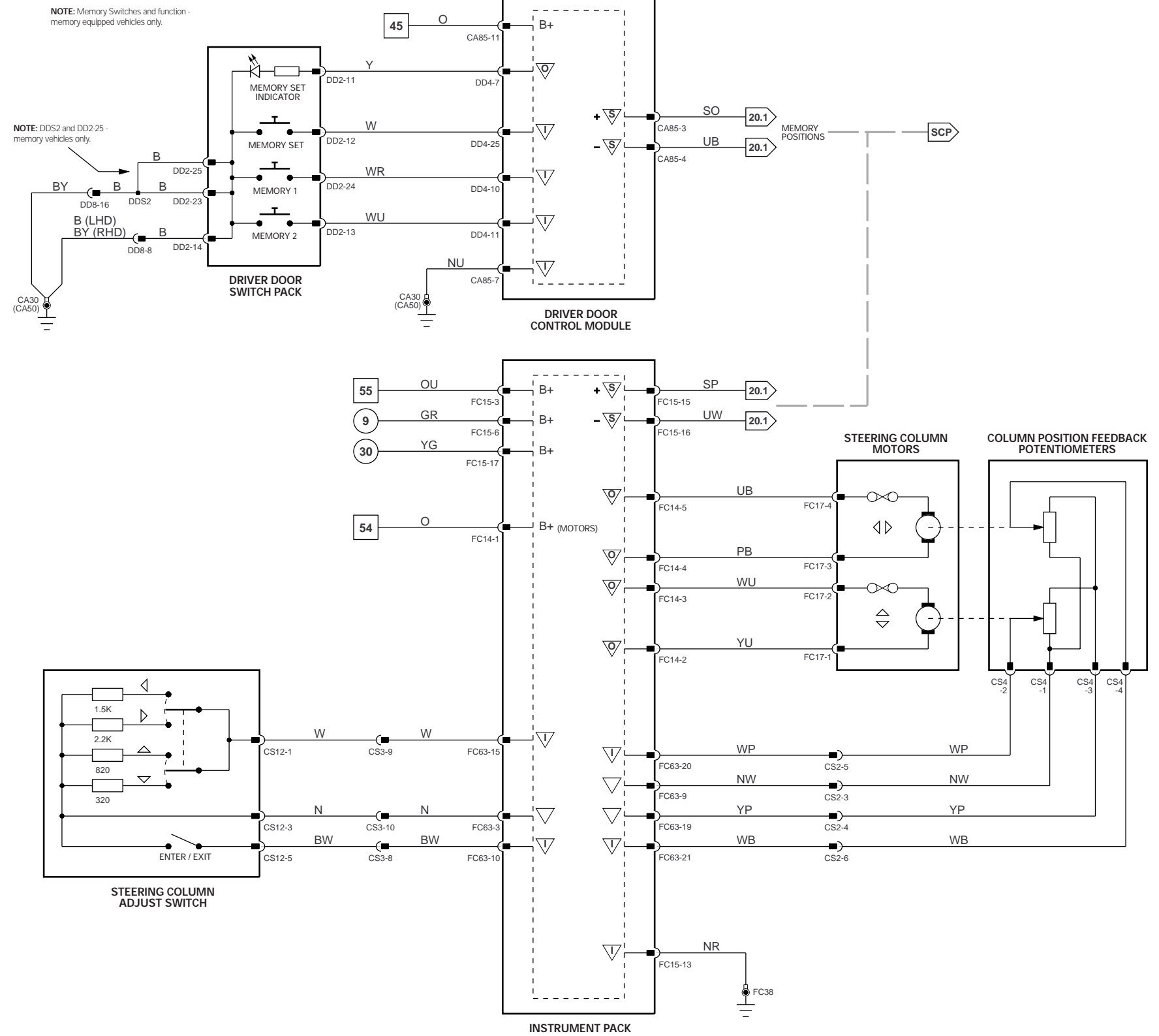
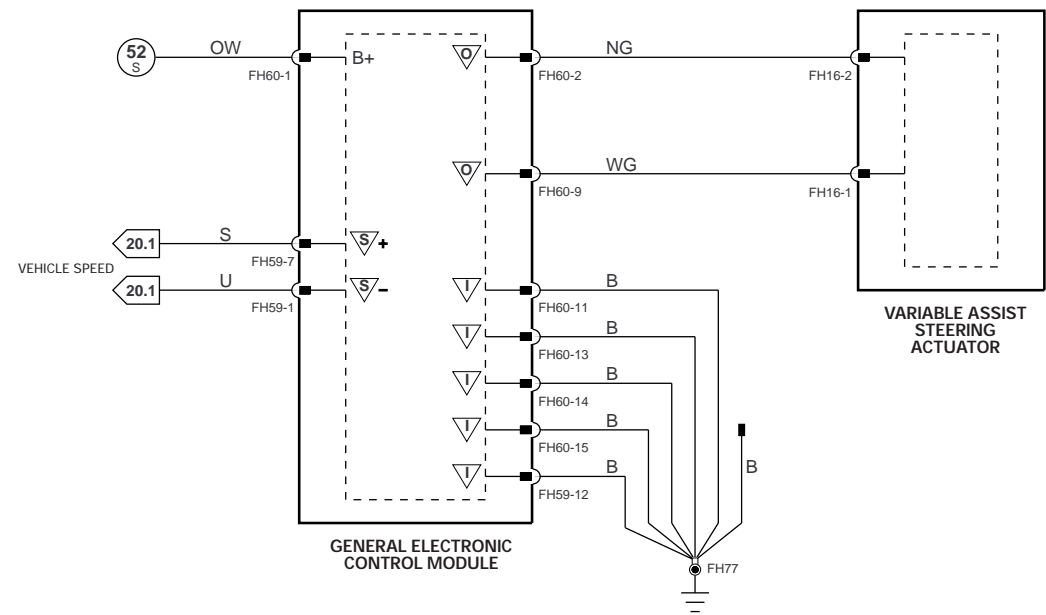


1	5	Fig. 01.1	66	91	Fig. 01.3	43	65	Fig. 01.5
6	65	Fig. 01.2	1	42	Fig. 01.4	66	88	Fig. 01.6

- Input
- Reference Voltage / Ground
- ACP Network
- Output
- SCP Network
- Serial and Encoded Data

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

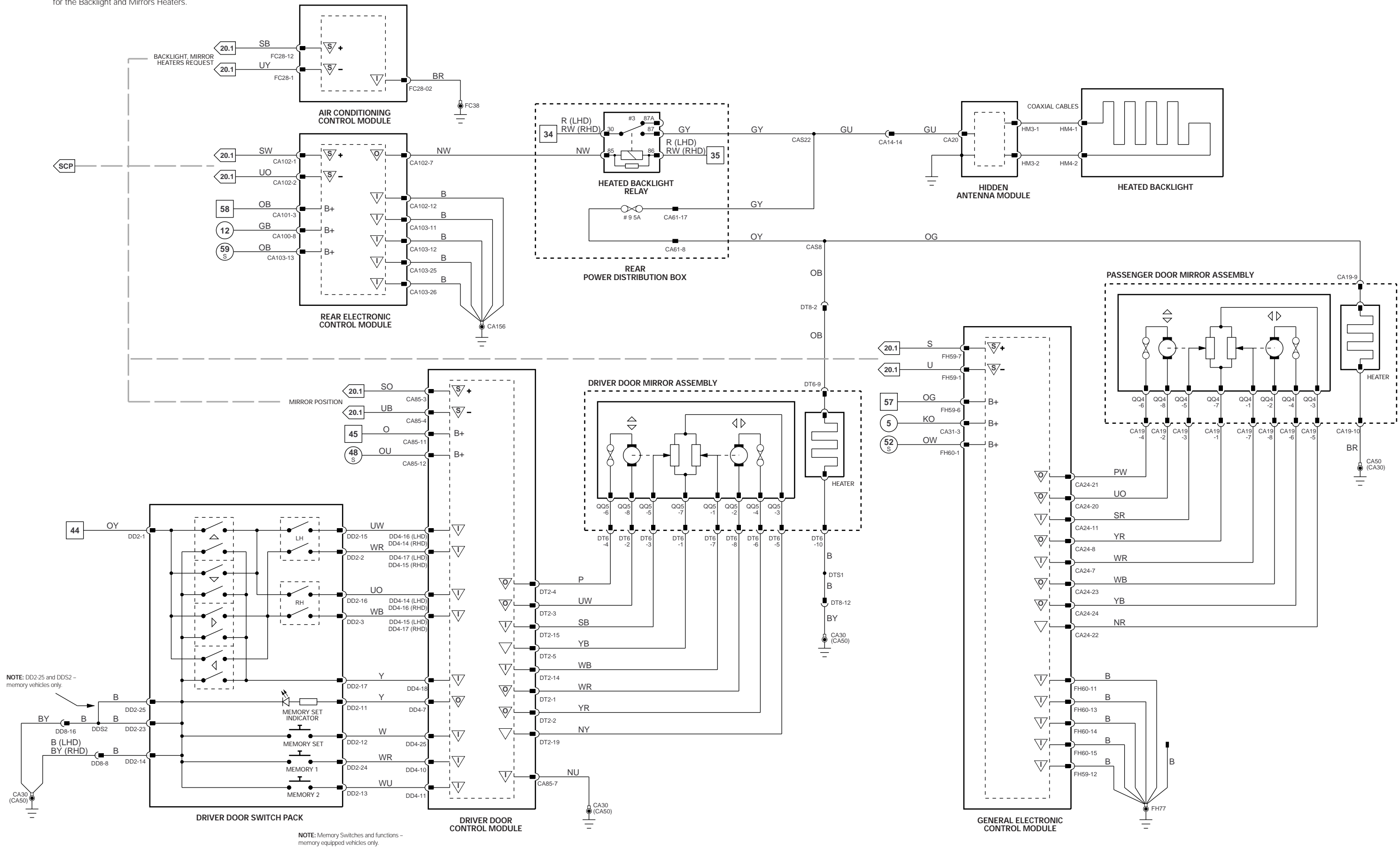




VARIANT: All Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



NOTE: The A/CCM incorporates the switches for the Backlight and Mirrors Heaters.



NOTE: DD2-25 and DDS2 - memory vehicles only.

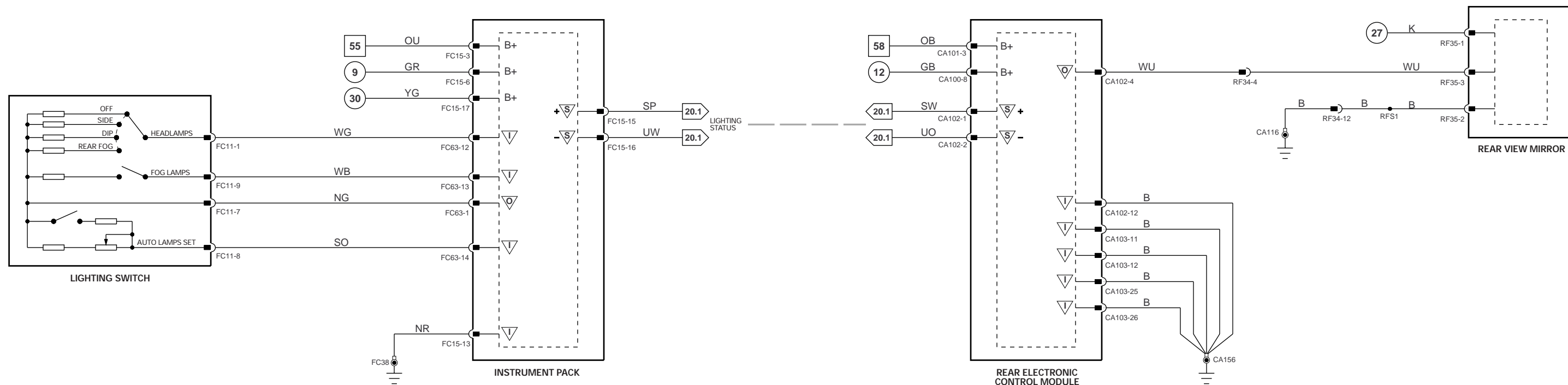
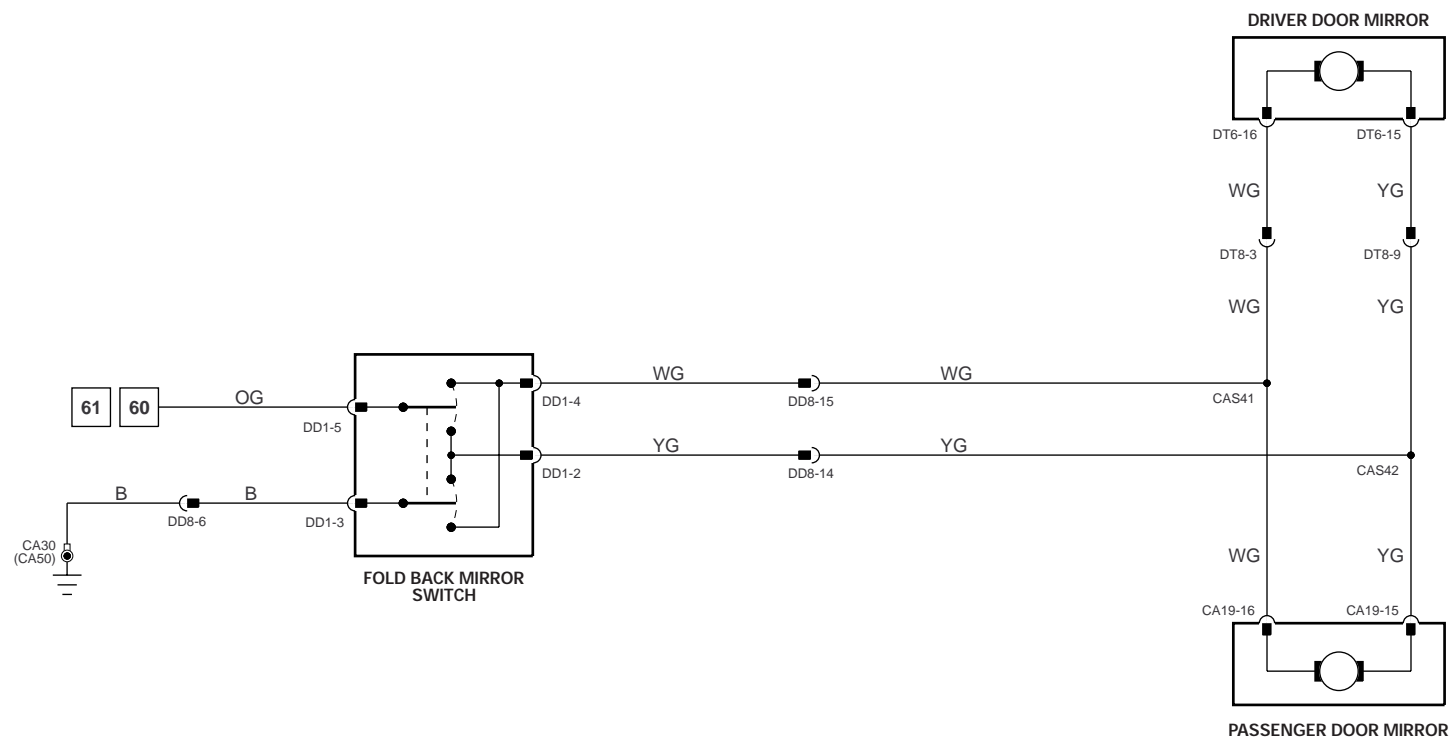
NOTE: Memory Switches and functions - memory equipped vehicles only.

1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 S → 65 S Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 P → 88 P Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

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



NOTE:  
60 - Vehicles with Sun Shades.  
61 - Vehicles without Sun Shades.



1 → 5 Fig. 01.1

66 → 91 Fig. 01.3

43 → 65 Fig. 01.5

▽ Input

▽ Reference Voltage / Ground

▽ ACP Network

6 → 65 Fig. 01.2

1 → 42 Fig. 01.4

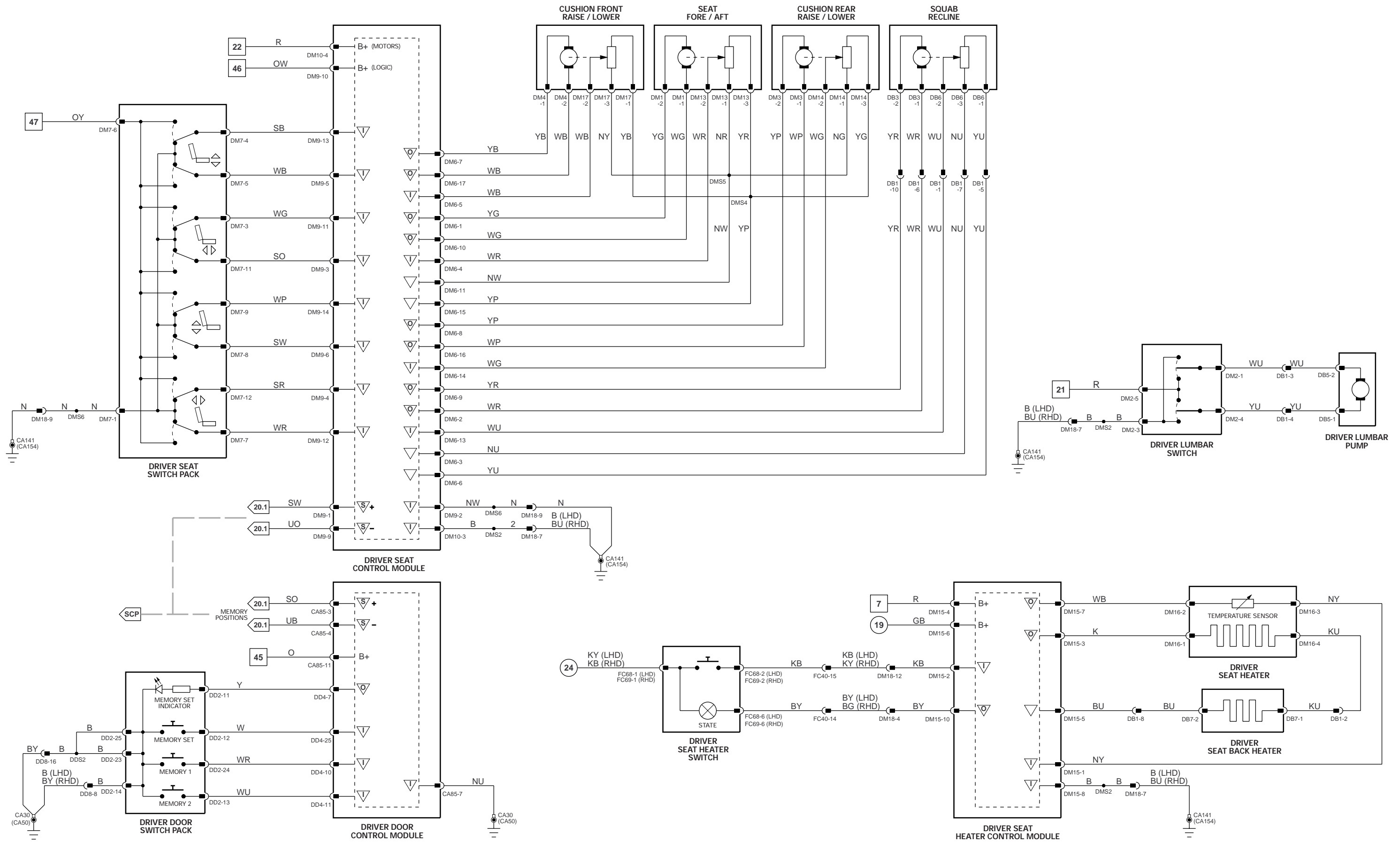
66 → 88 Fig. 01.6

▽ Output

▽ SCP Network

▽ Serial and Encoded Data

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

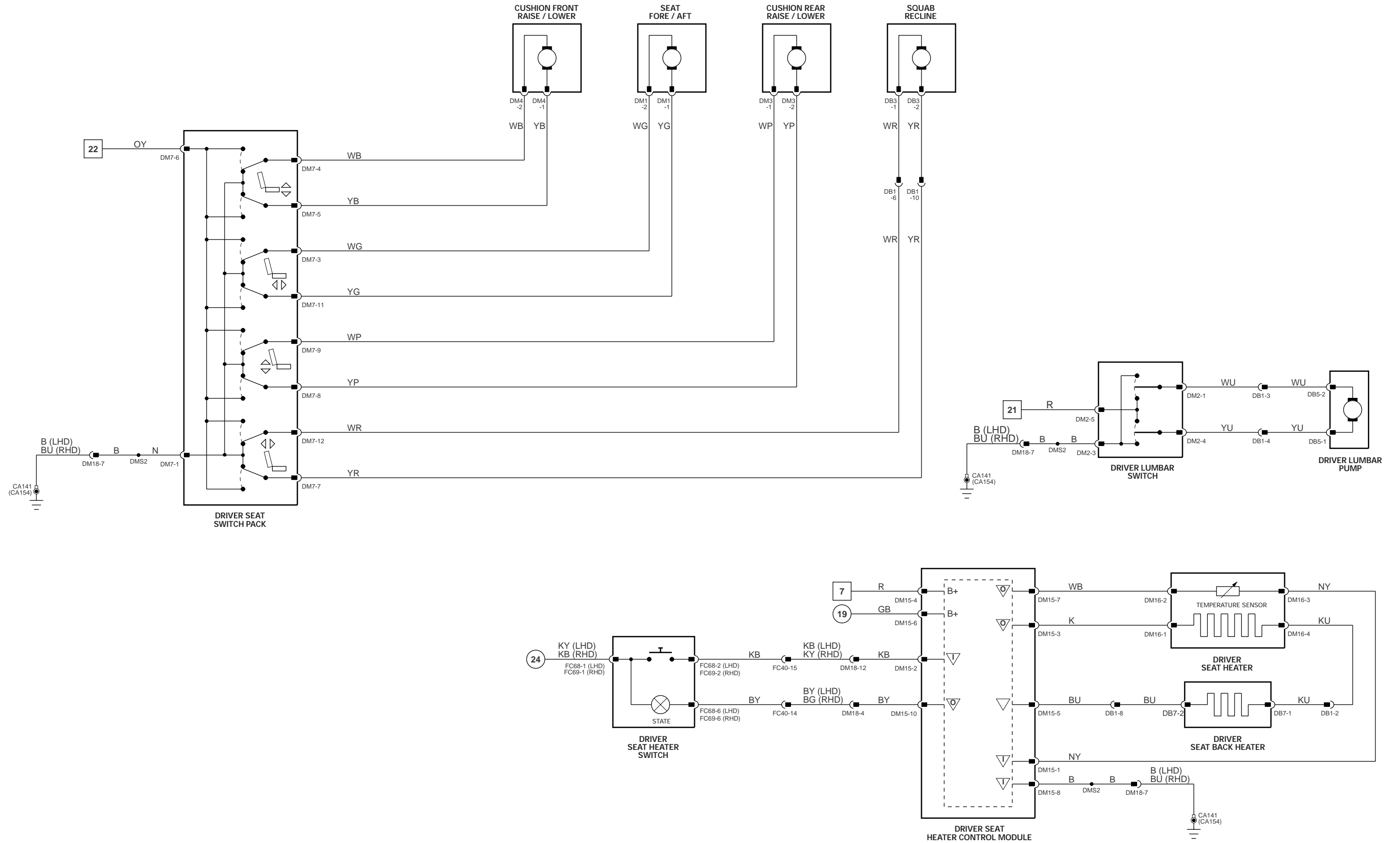


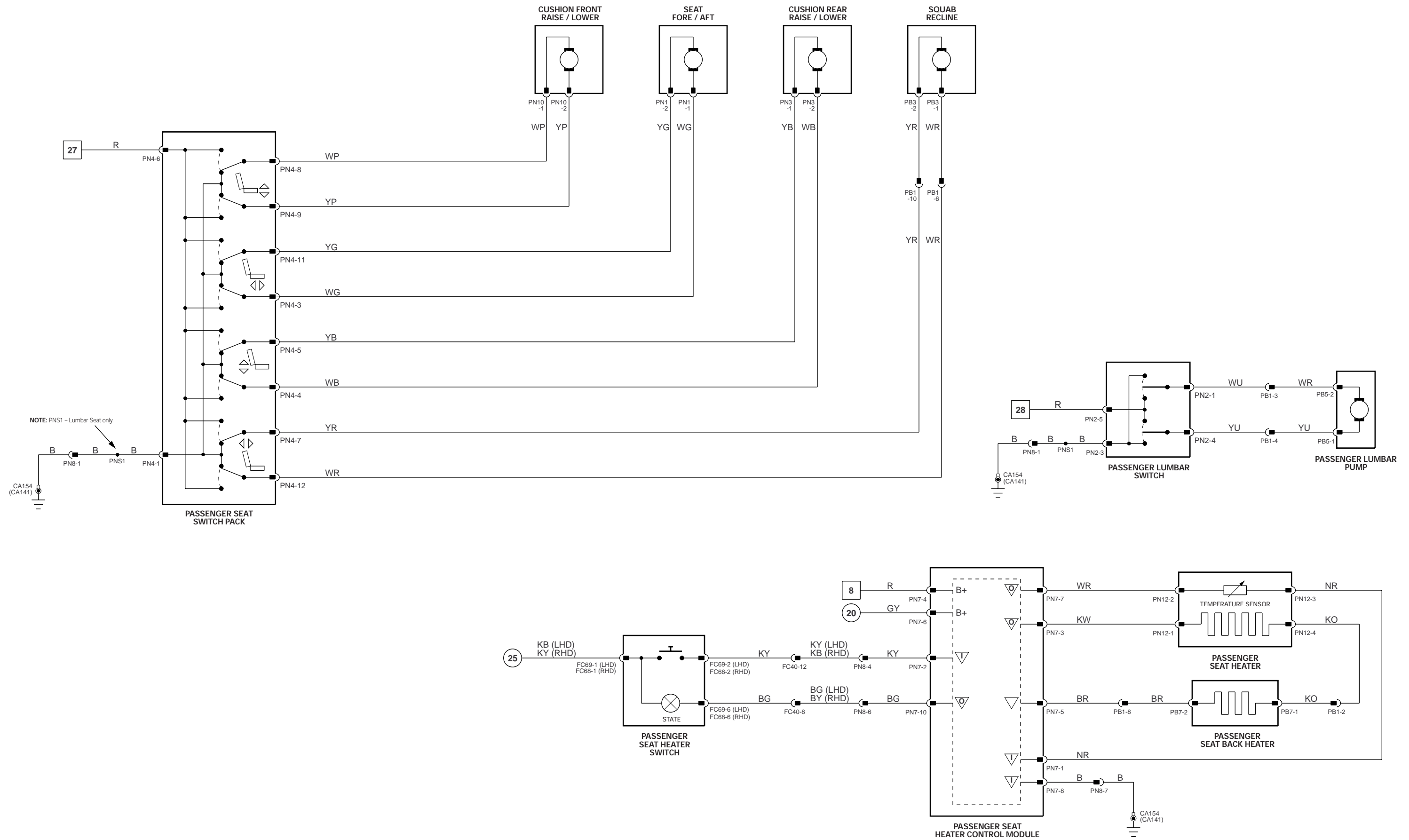
1	5	Fig. 01.1	66	91	Fig. 01.3	43	65	Fig. 01.5
6	65	Fig. 01.2	1	42	Fig. 01.4	66	88	Fig. 01.6

▽	Input	▽	Reference Voltage / Ground	▽	ACP Network
▽	Output	▽	SCP Network	▽	Serial and Encoded Data

VARIANT: Memory Seat Vehicles  
 VIN RANGE: All  
 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<sub>S</sub> → 65<sub>S</sub> Fig. 01.5  
66<sub>P</sub> → 88<sub>P</sub> Fig. 01.6

▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

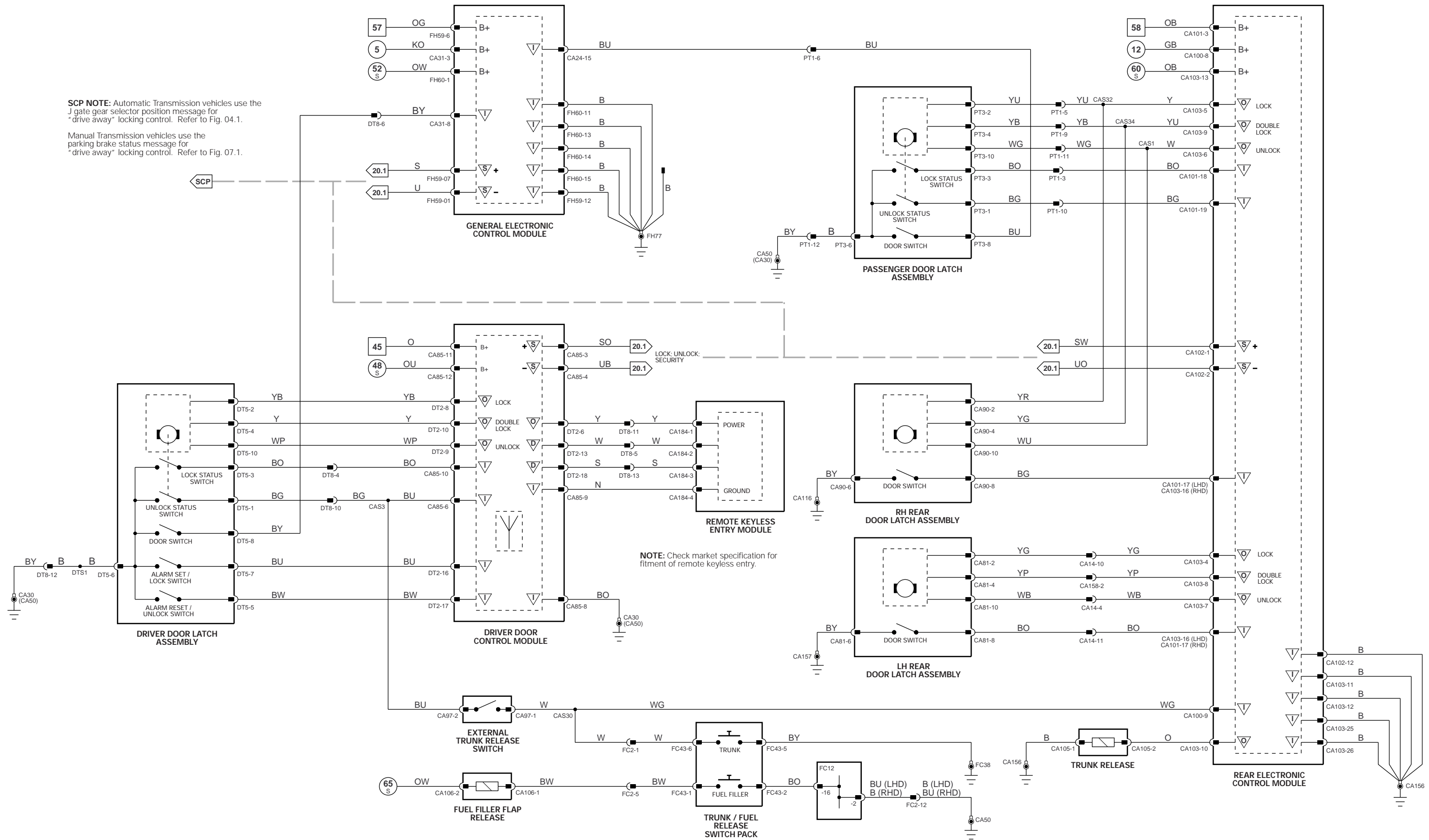
▽ ACP Network  
▽ Serial and Encoded Data

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



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.



NOTE: Check market specification for fitment of remote keyless entry.

NOTE: Check market specification and/or vehicle option specification for fitment of Remote Keyless Entry.

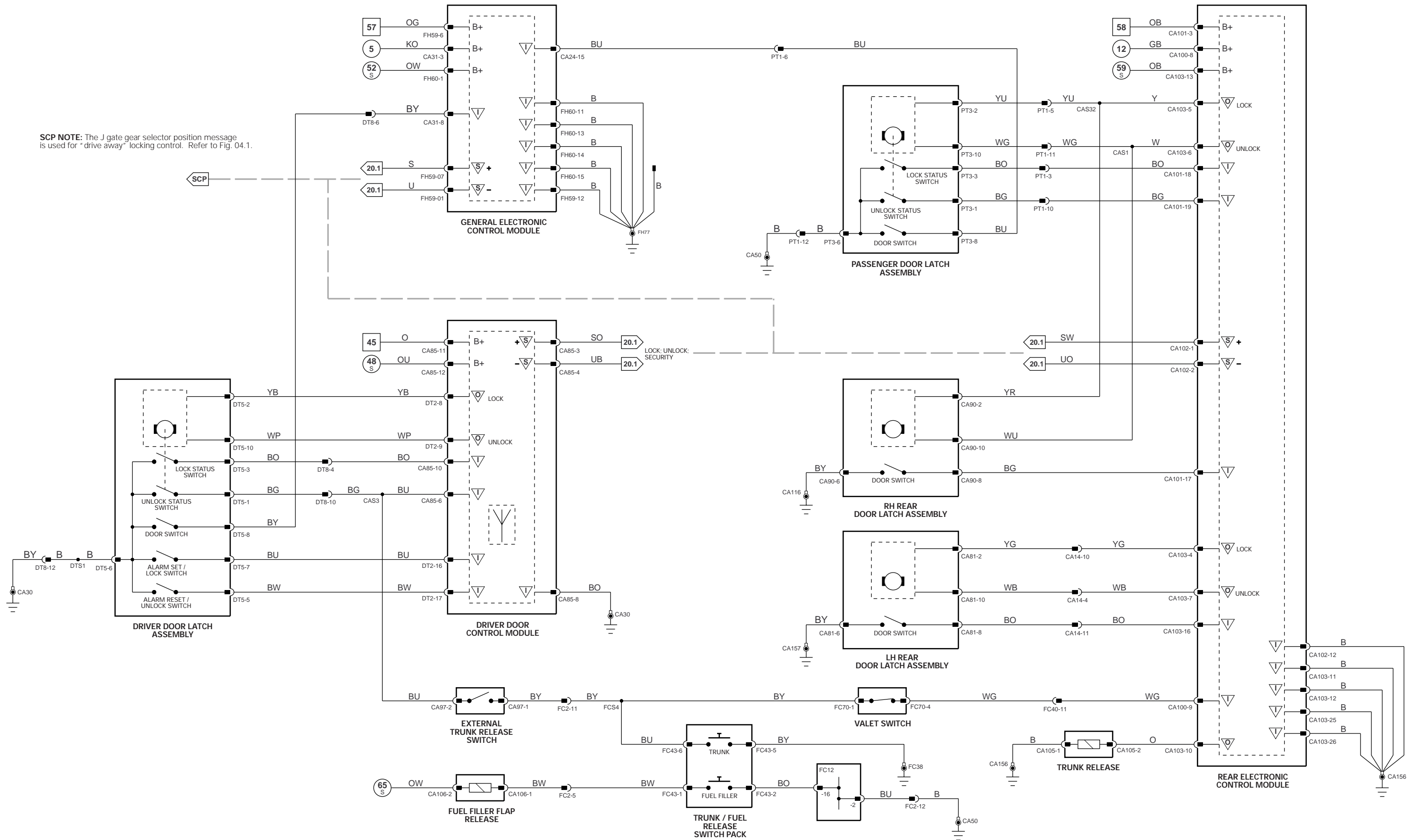
1	5	Fig. 01.1	66	91	Fig. 01.3	43	65	Fig. 01.5
6	65	Fig. 01.2	1	42	Fig. 01.4	66	88	Fig. 01.6

▽	Input	▽	Reference Voltage / Ground	▽	ACP Network
▽	Output	▽	SCP Network	▽	Serial and Encoded Data

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



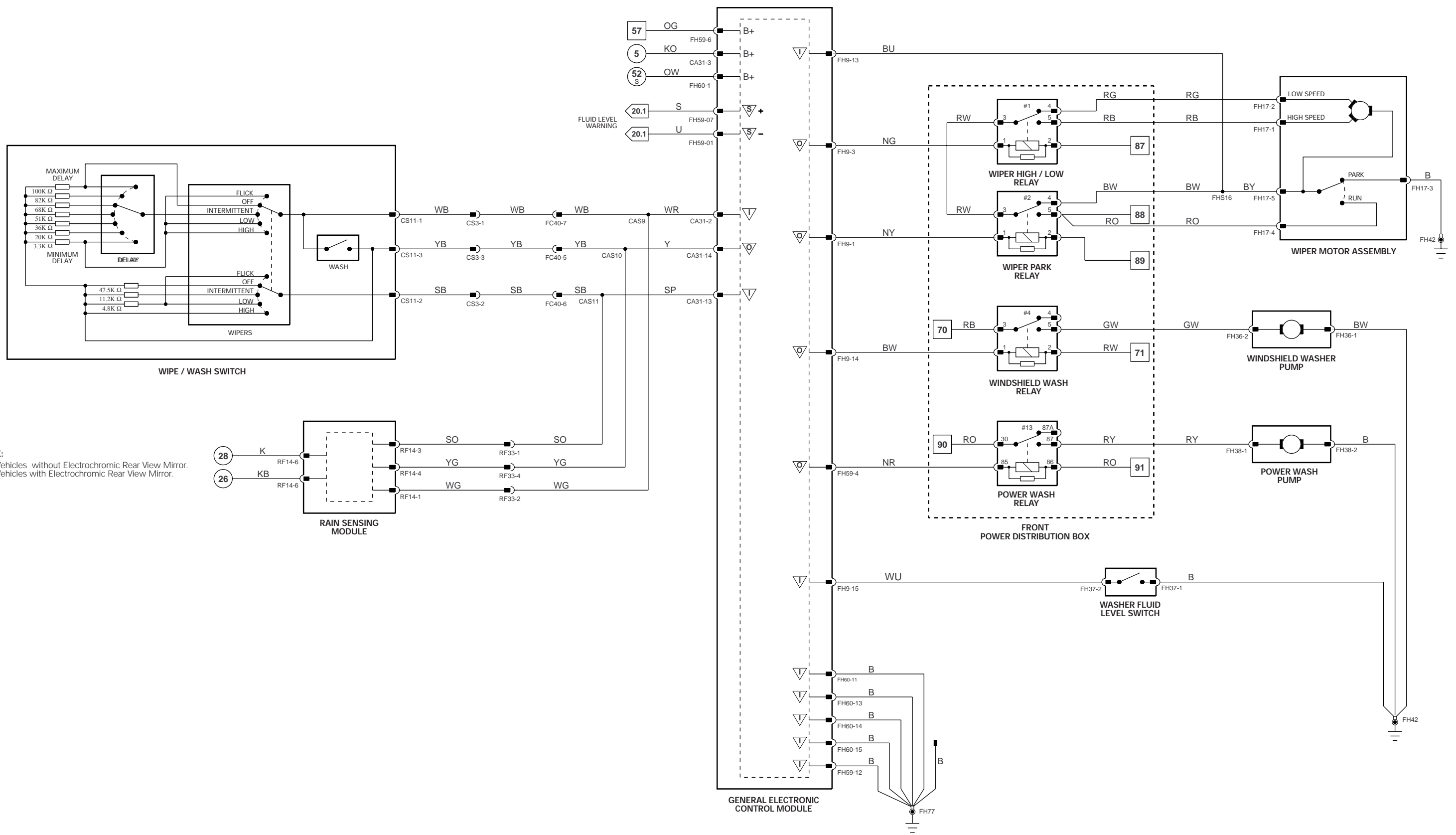
SCP NOTE: The J gate gear selector position message is used for "drive away" locking control. Refer to Fig. 04.1.



- 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
- ▽ Reference Voltage / Ground
- ▽ SCP Network
- ▽ ACP Network
- ▽ Serial and Encoded Data

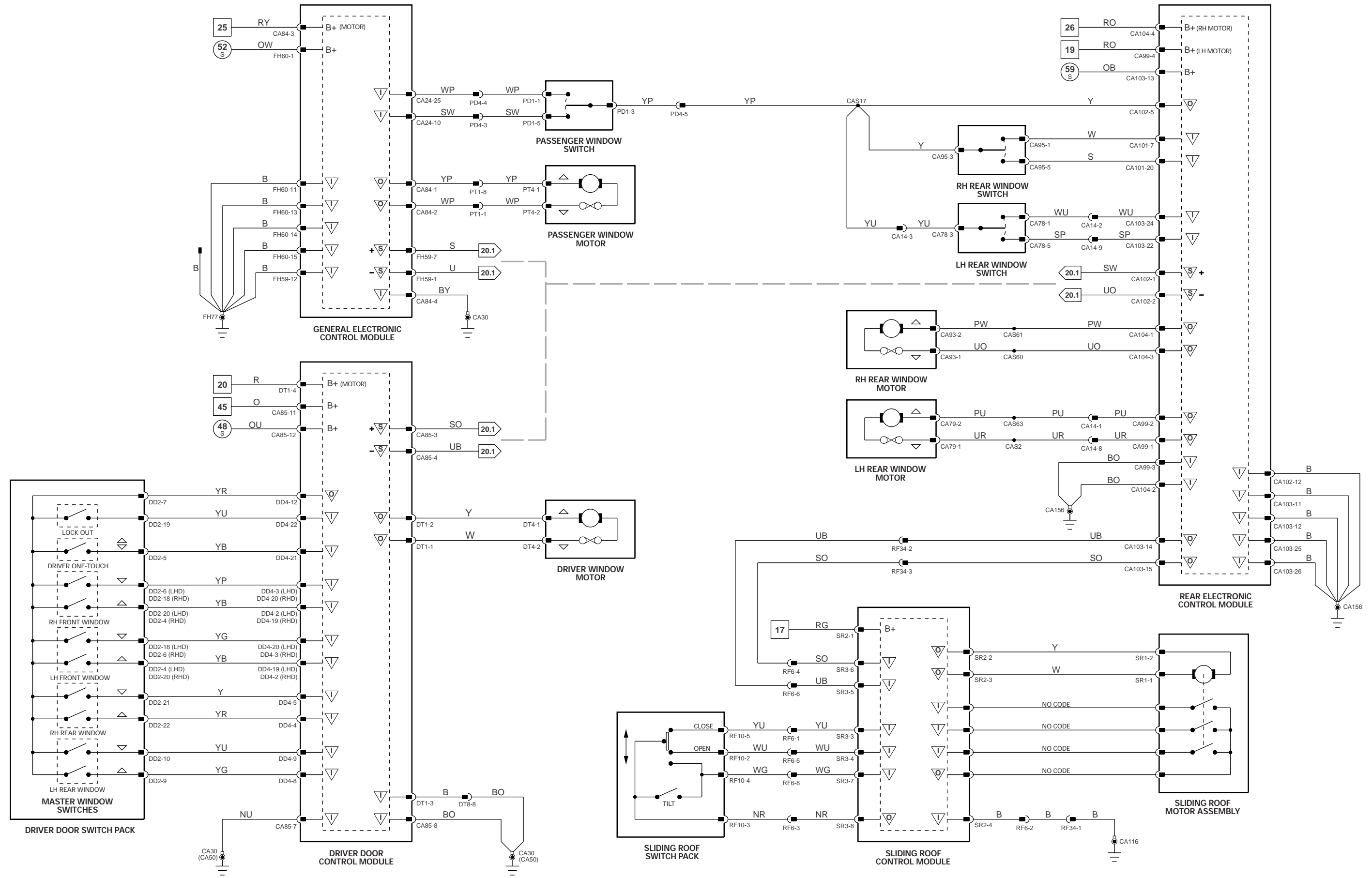
VARIANT: NAS Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



**NOTE:**  
 28 - Vehicles without Electrochromic Rear View Mirror.  
 26 - Vehicles with Electrochromic Rear View Mirror.



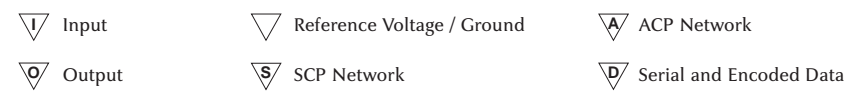
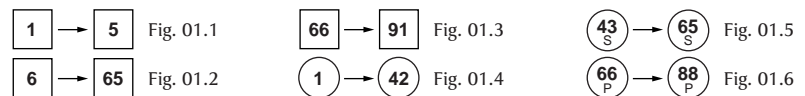
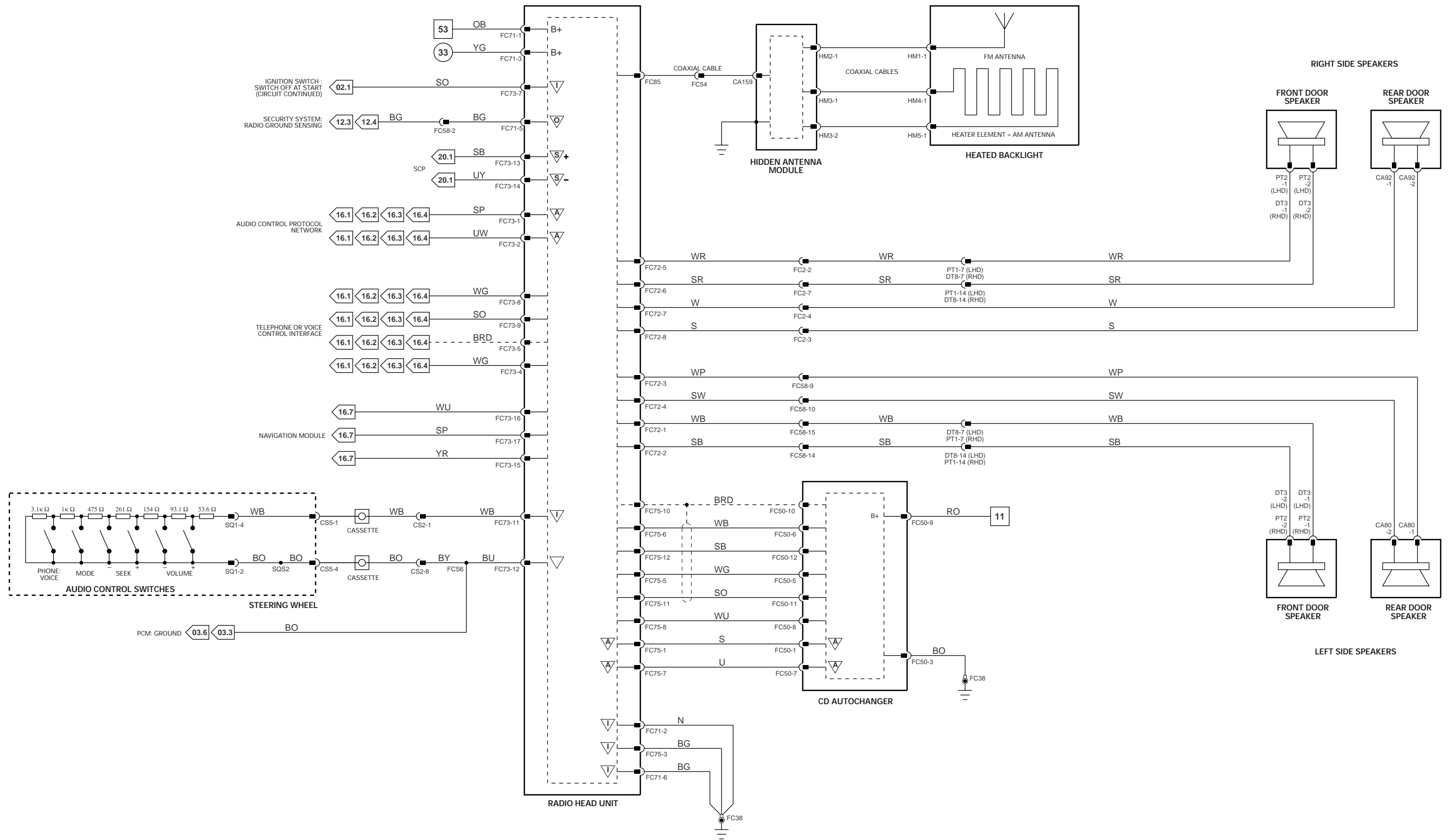
VARIANT: All Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



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

- Input
- Output
- Reference Voltage / Ground
- SCP Network
- ACP Network
- Serial and Encoded Data

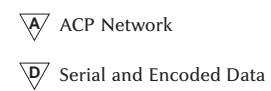
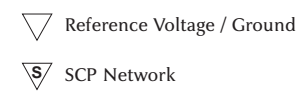
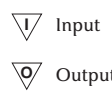
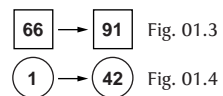
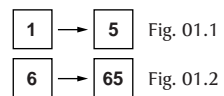
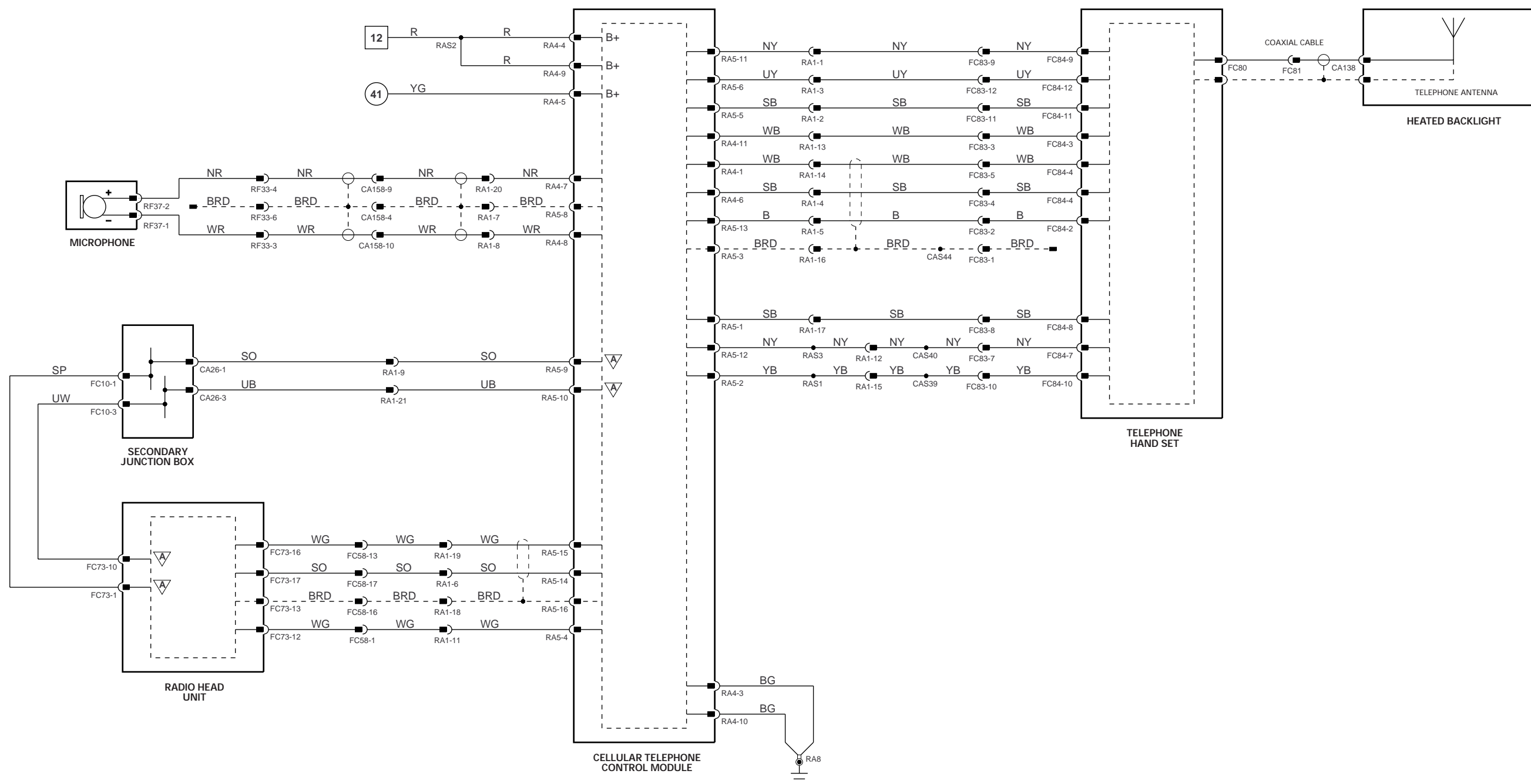
VARIANT: All Vehicles; Sliding Roof Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999



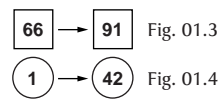
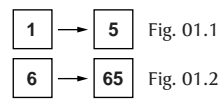
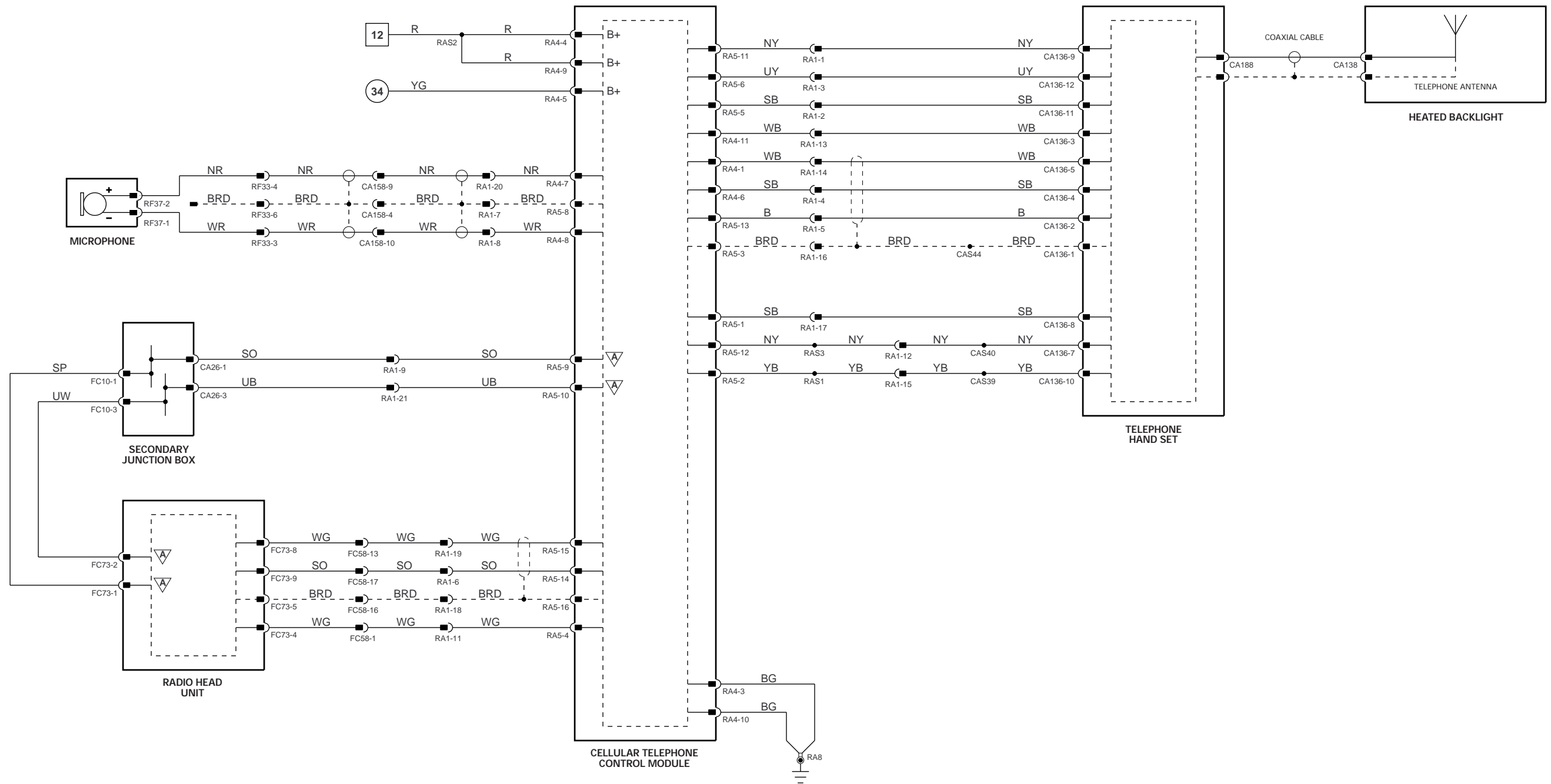
VARIANT: Standard ICE Vehicles  
 VIN RANGE: All  
 DATE OF ISSUE: JULY 1999







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

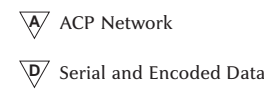
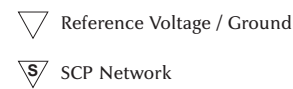
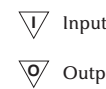
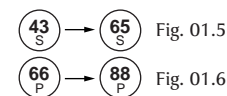
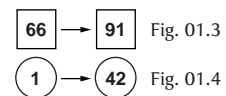
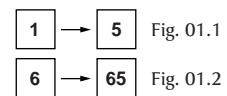
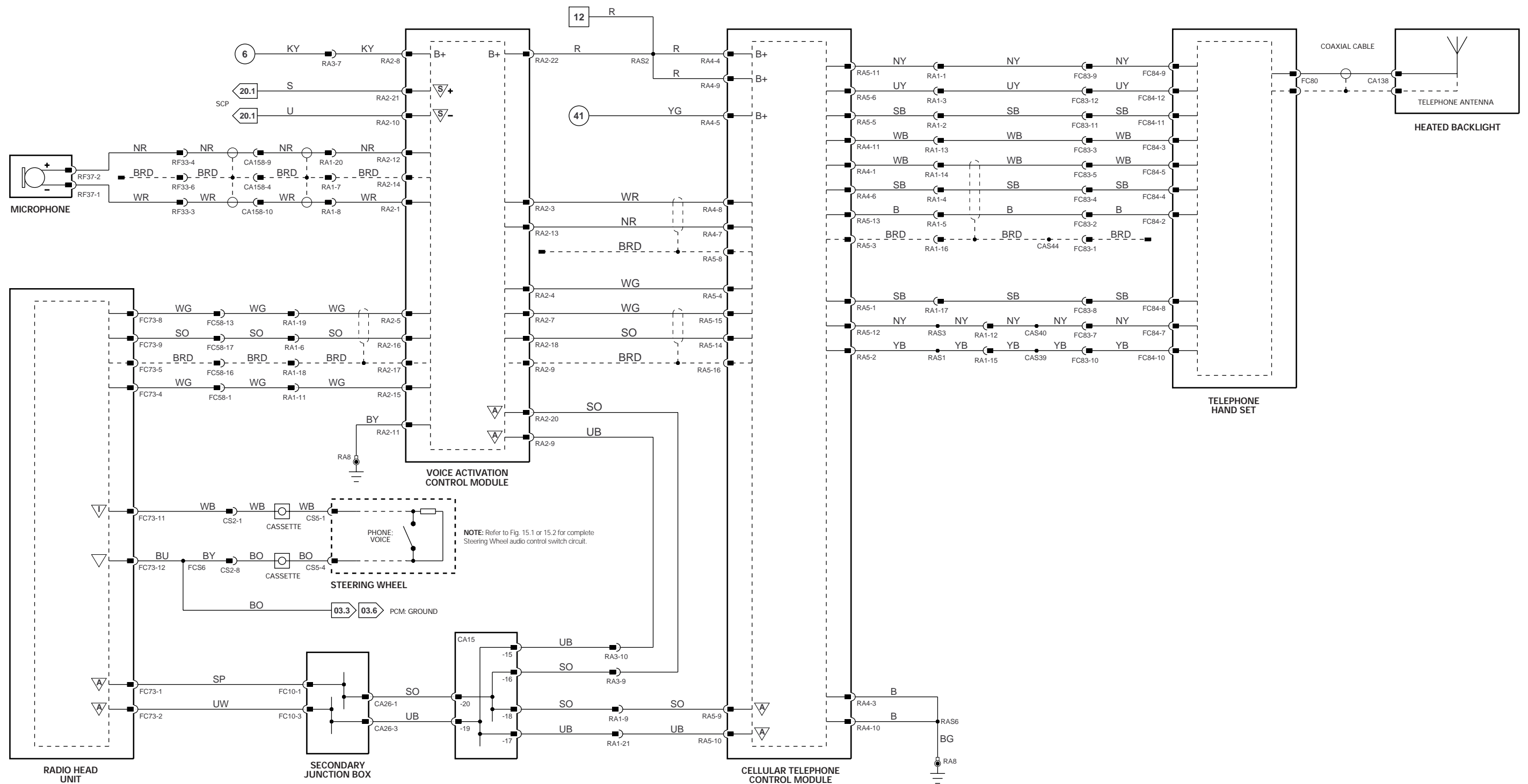


▽ Input  
▽ Output

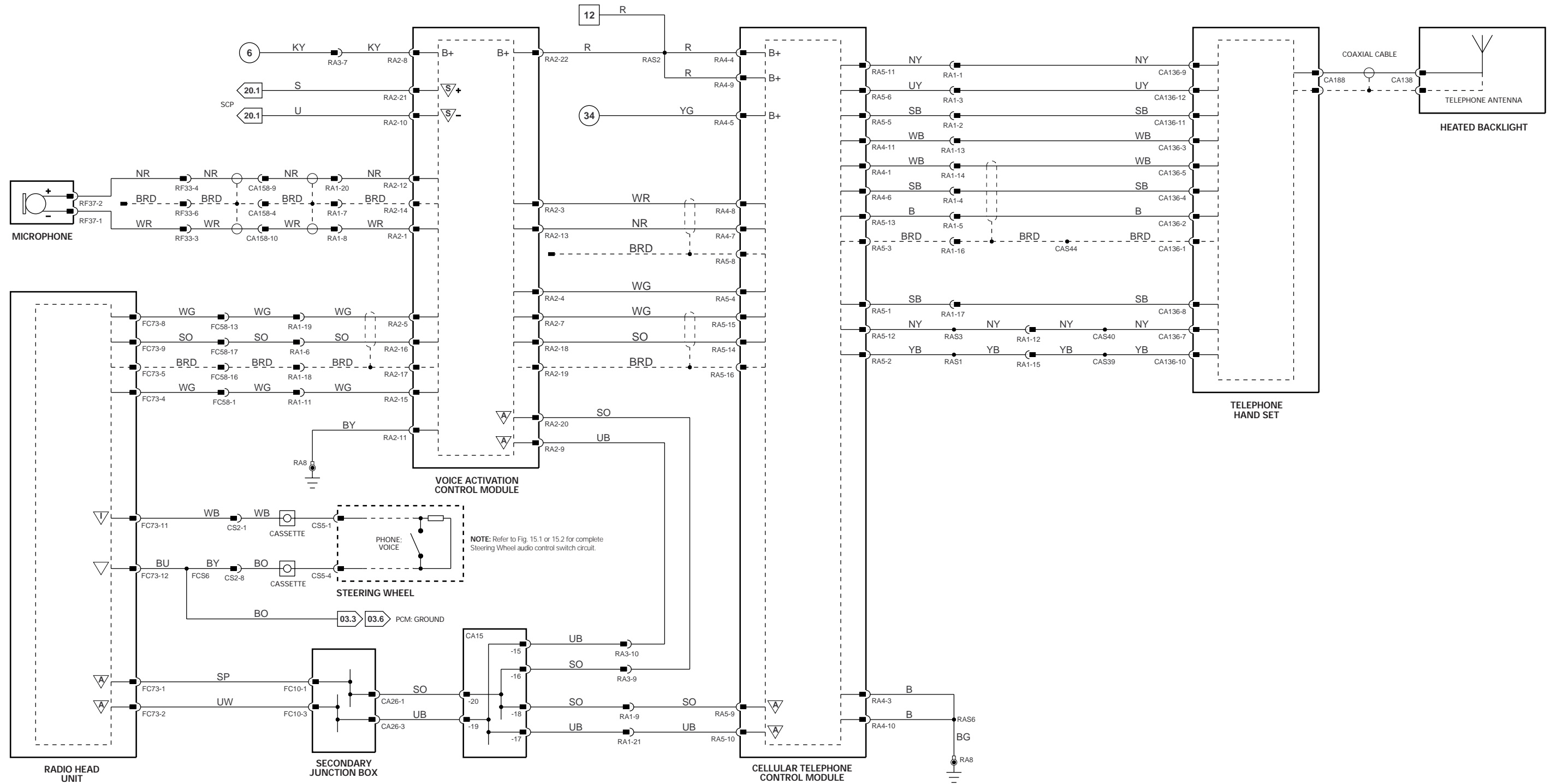
▽ Reference Voltage / Ground  
▽ SCP Network

▽ ACP Network  
▽ Serial and Encoded Data

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



VARIANT: Telephone Vehicles with VOICE only  
 VIN RANGE: All  
 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

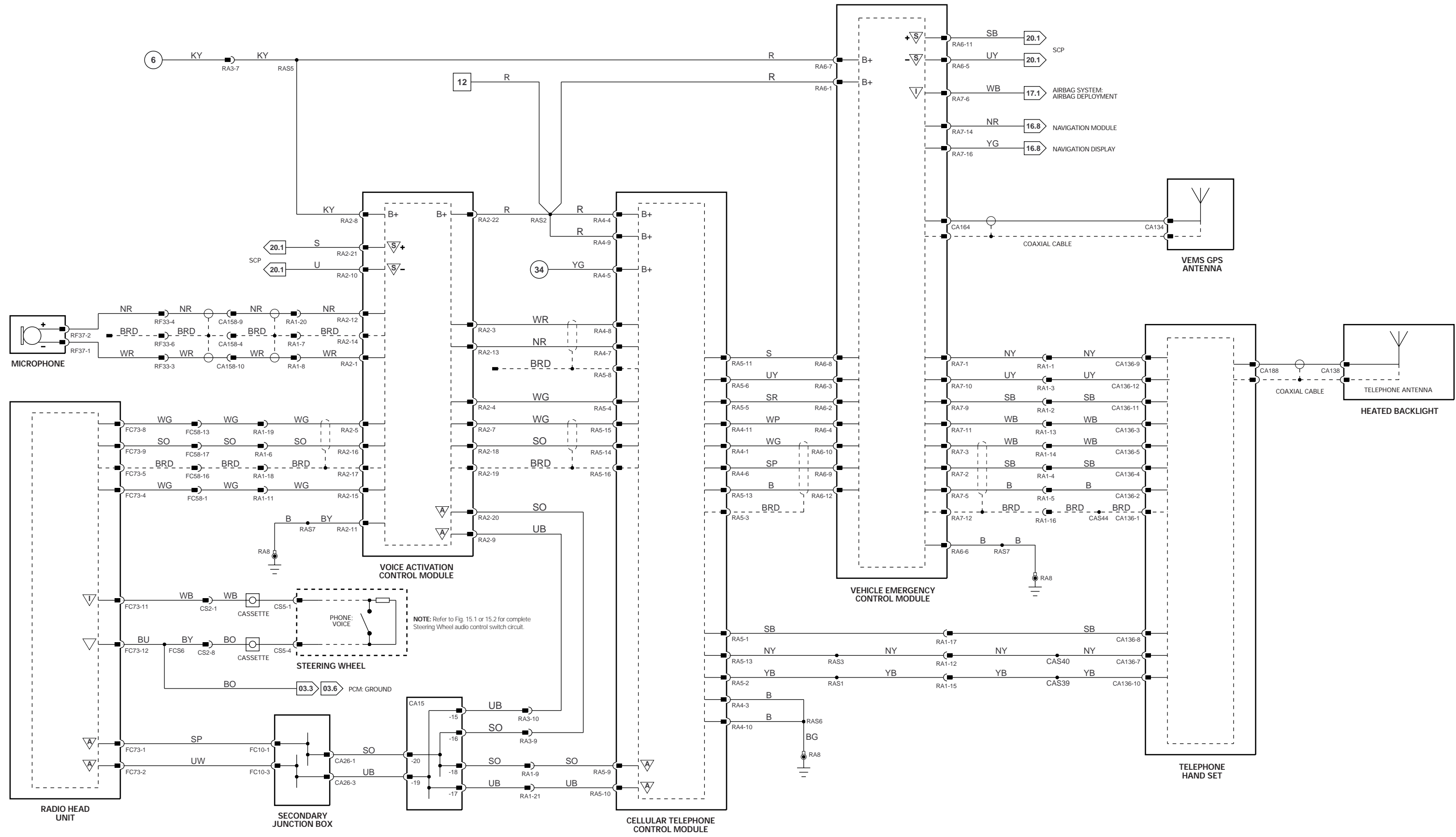
43<sub>S</sub> → 65<sub>S</sub> Fig. 01.5  
66<sub>P</sub> → 88<sub>P</sub> Fig. 01.6

▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

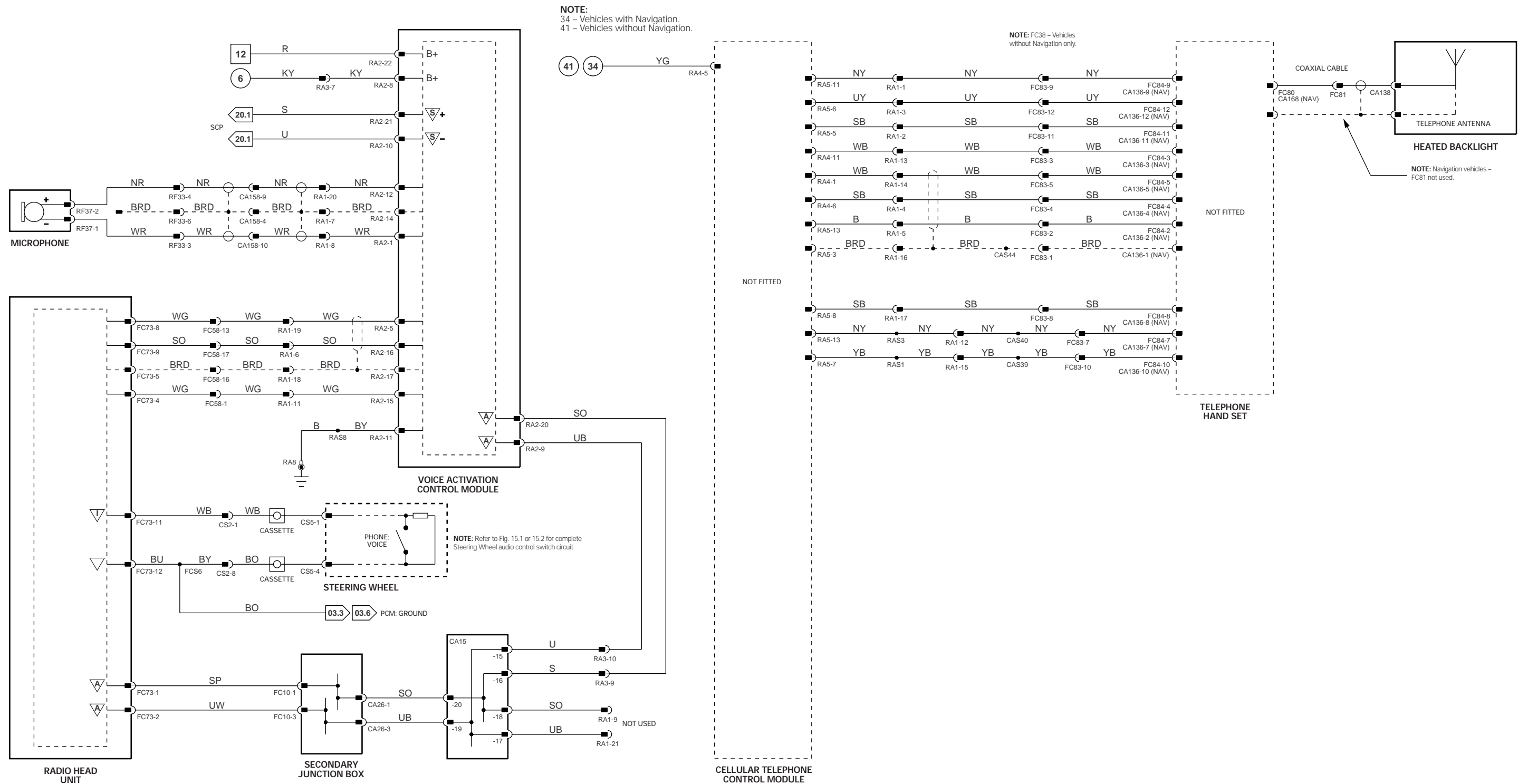
▽ ACP Network  
▽ Serial and Encoded Data

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



1 → 5 Fig. 01.1	66 → 91 Fig. 01.3	43 S → 65 S Fig. 01.5	▽ Input	▽ Reference Voltage / Ground	▽ ACP Network
6 → 65 Fig. 01.2	1 → 42 Fig. 01.4	66 P → 88 P Fig. 01.6	▽ Output	▽ SCP Network	▽ Serial and Encoded Data

VARIANT: Telephone Vehicles with VOICE and VEMS  
 VIN RANGE: All  
 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<sub>S</sub> → 65<sub>S</sub> Fig. 01.5  
66<sub>P</sub> → 88<sub>P</sub> Fig. 01.6

▽ Input  
▽ Output

▽ Reference Voltage / Ground  
▽ SCP Network

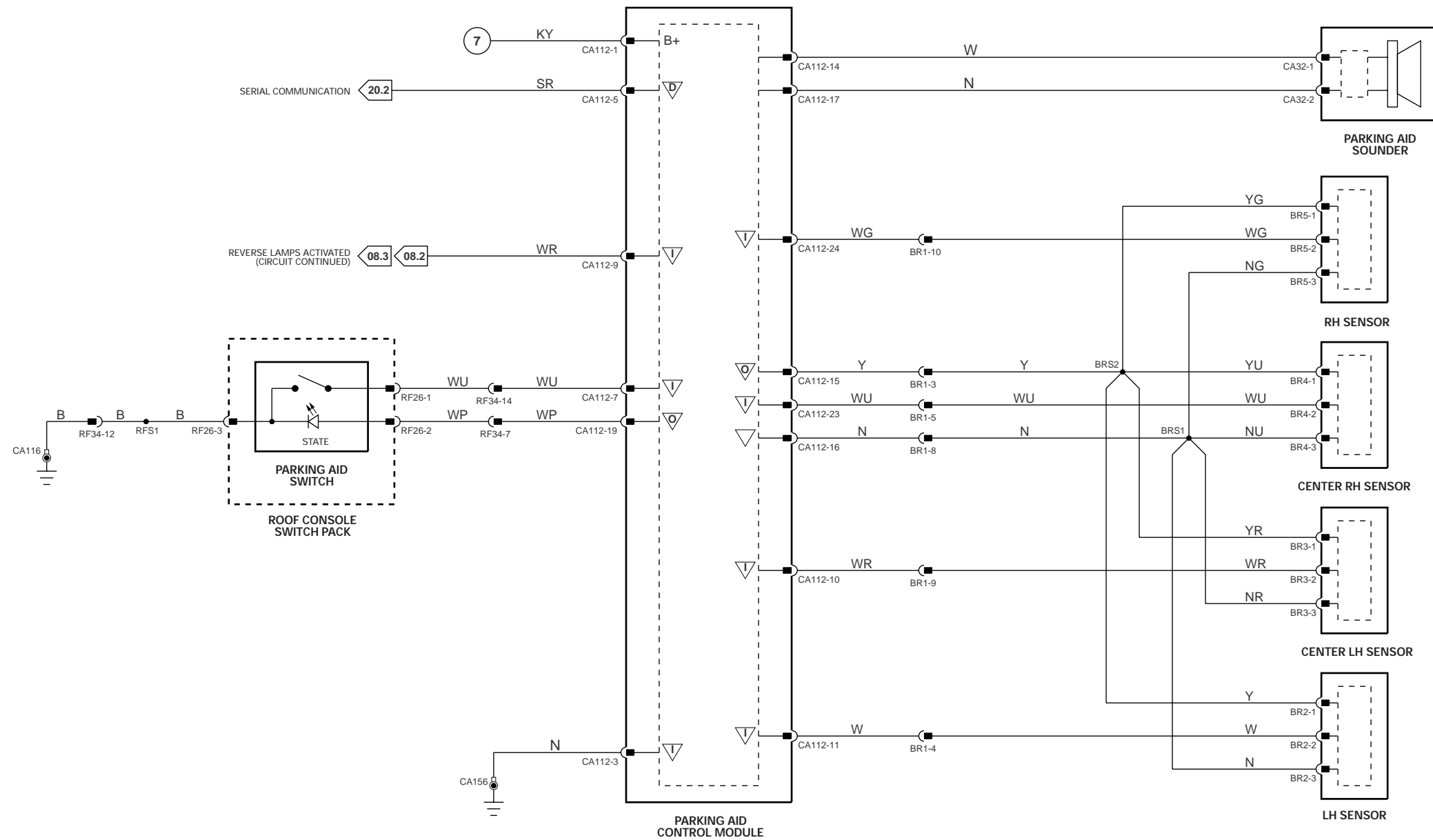
▽ ACP Network  
▽ Serial and Encoded Data

VARIANT: VOICE only Vehicles  
VIN RANGE: All  
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

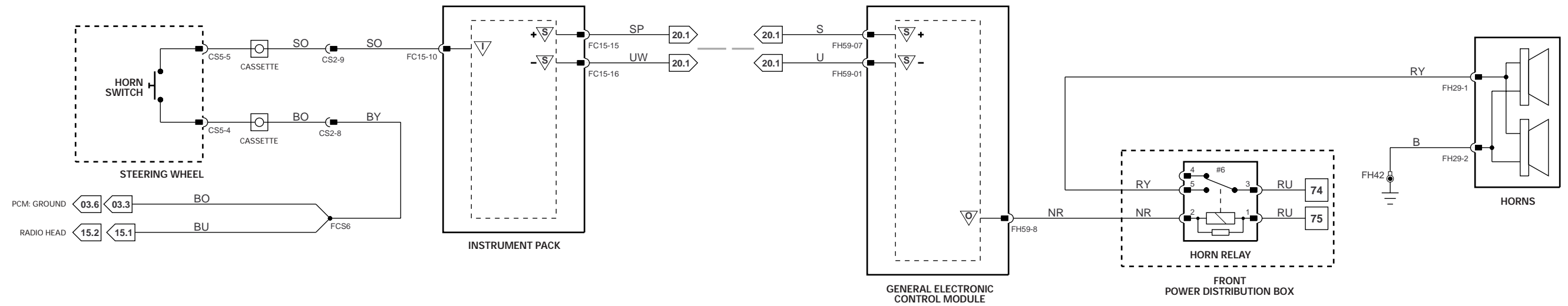
43<sub>S</sub> → 65<sub>S</sub> Fig. 01.5  
66<sub>P</sub> → 88<sub>P</sub> Fig. 01.6

▽ Input  
▽ Output

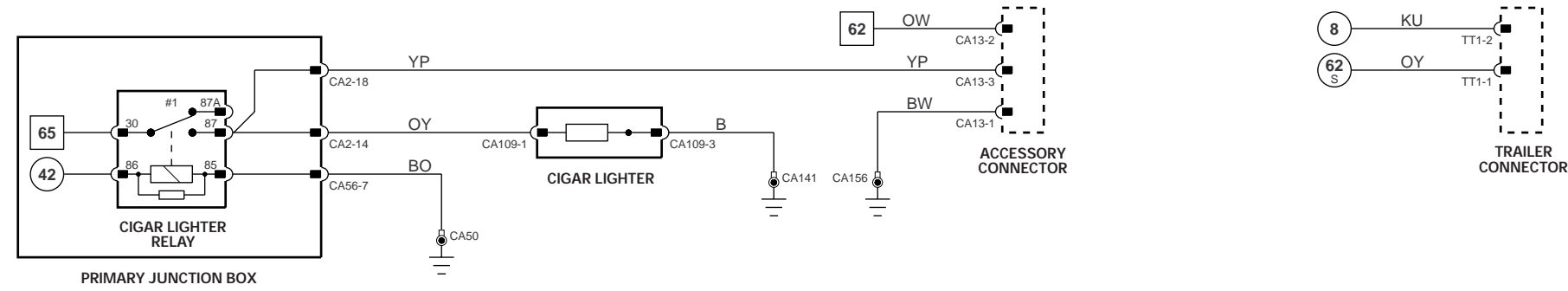
▽ Reference Voltage / Ground  
▽ SCP Network

▽ ACP Network  
▽ Serial and Encoded Data

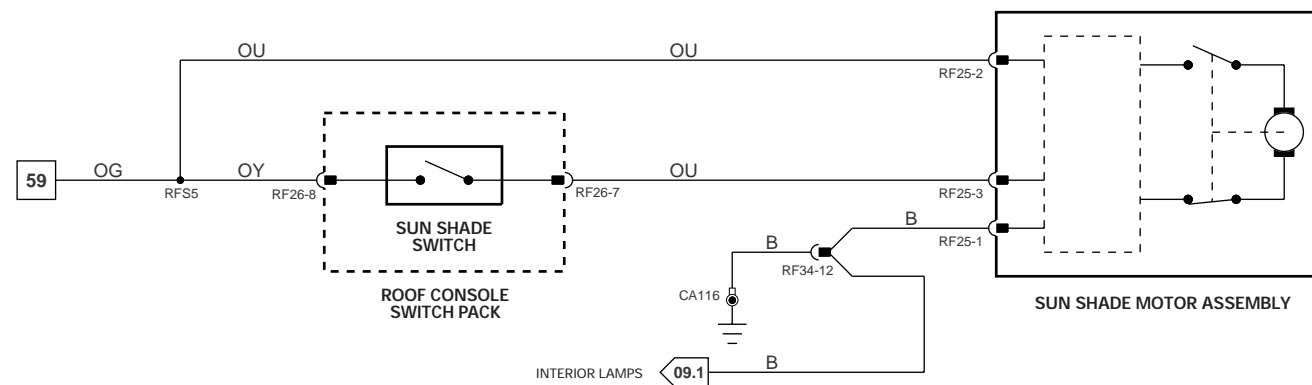
VARIANT: Parking Aid Equipped Vehicles  
VIN RANGE: All  
DATE OF ISSUE: JULY 1999



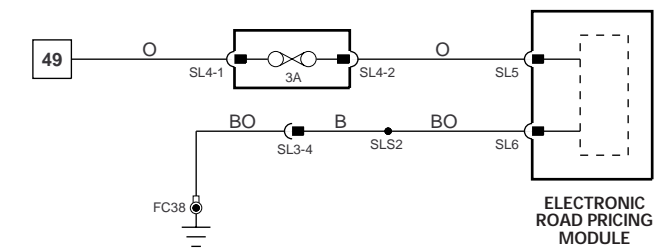
HORN



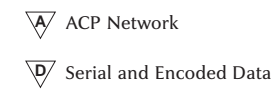
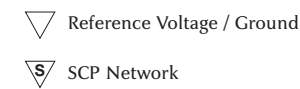
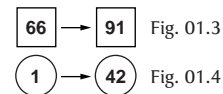
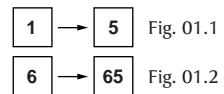
CIGAR LIGHTER; ACCESSORY AND TRAILER CONNECTORS



SUN SHADE

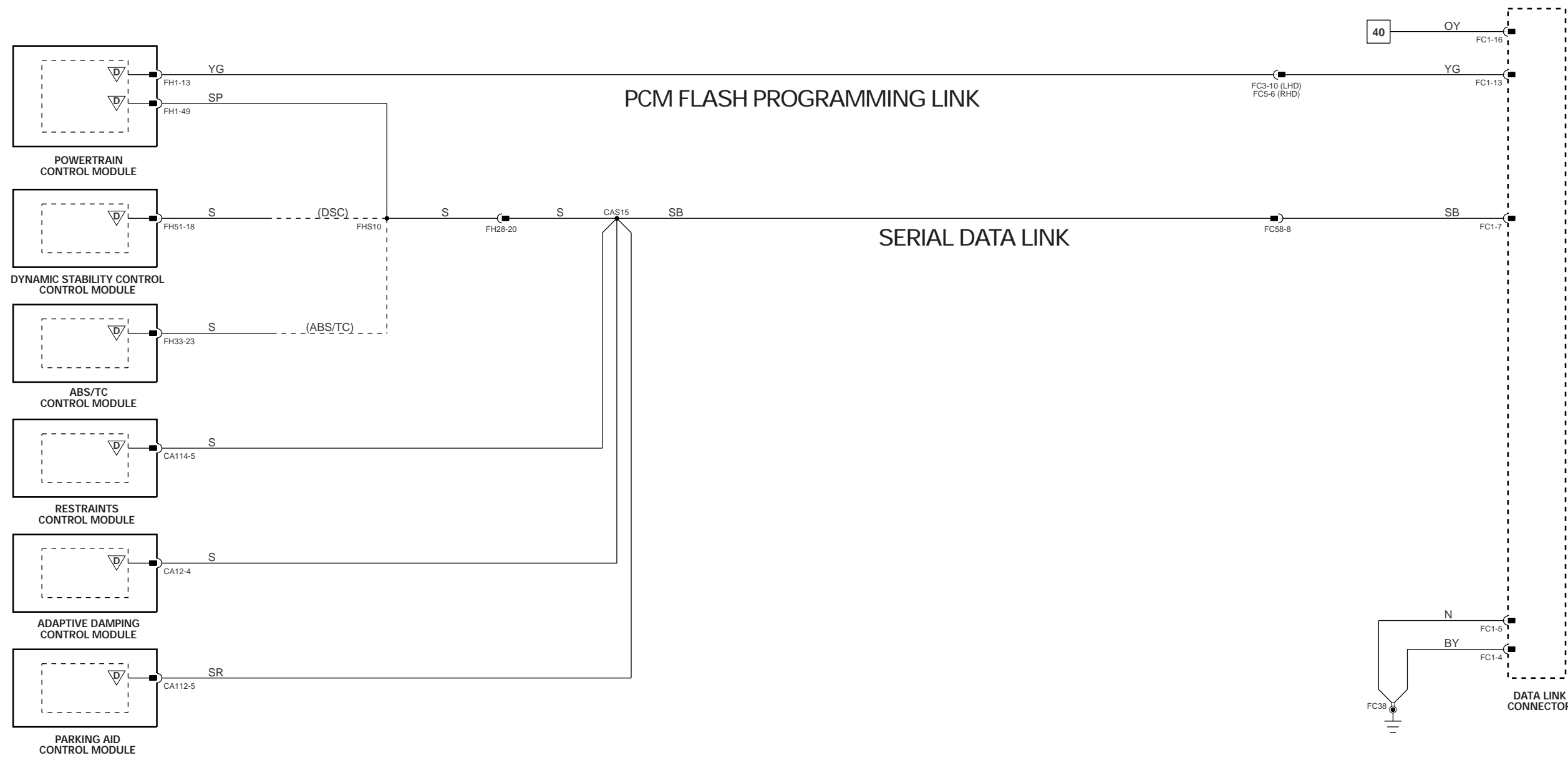
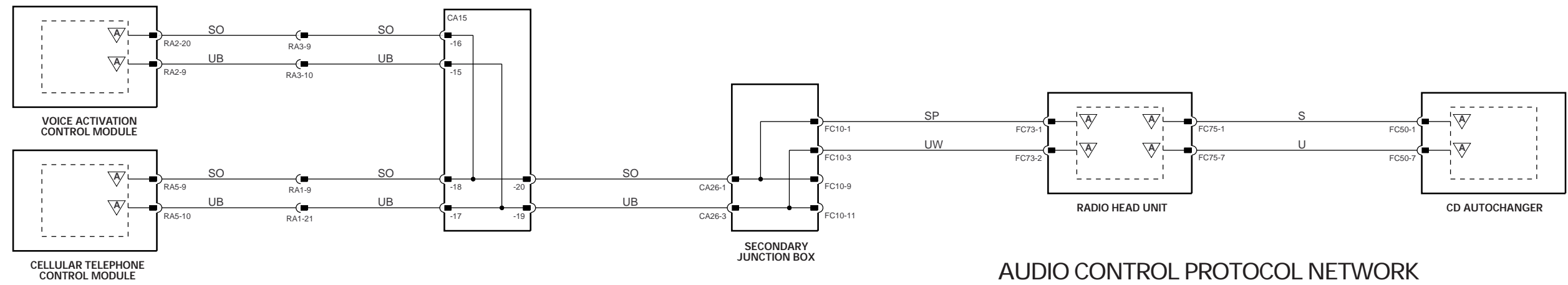


ELECTRONIC ROAD PRICING



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





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

- Input
- Output
- Reference Voltage / Ground
- SCP Network
- ACP Network
- 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															
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	
24	All park lamp command: on	INST								X								X	
25	All rear brake lamp 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
81	Display access confirmation status: reject	MC											X						
82	Display access confirmation status: accept	NCM												X					
83	Display access confirmation status: reject	NCM											X						
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		
95	Driver front door ajar switch status: inactive	GECM								X							X		
96	Driver front door lock cylinder state status	DDCM								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		
100	Driver rear door ajar switch status: inactive	RECM								X							X		
101	Driver rear master controller window close command: disable/disable	DDCM																	
102	Driver rear master controller window close command: enable/enabled	DDCM																	
103	Driver rear master controller window open command: disable/disable	DDCM																	
104	Driver rear master controller window open command: enable/enabled	DDCM																	
105	Driver rear window open command: disable/disable	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
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				
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		
143	Ignition switch position with initialize status: yes (true)	INST	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		
147	Key-in-ignition status: yes (true)	INST								X							X		
149	Language code status	NCM																	
150	Left front turn lamp OK status: no (false)	GECM											X						
151	Left front turn lamp OK status: yes (true)	GECM											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		
157	Left rear turn lamp OK status: yes (true)	RECM															X		
158	Left side mid vehicle turn lamp OK status: no (false)	GECM															X		
159	Left side mid vehicle turn lamp OK status: yes (true)	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
187	Passenger front door ajar switch status: active	GECM															X		
188	Passenger front door ajar switch status: inactive	GECM									X						X		
189	Passenger front door lock switch status: active	RECM																	
190	Passenger front door unlock switch status: active	RECM																	
191	Passenger front master controller window close command: disable/disable	DDCM																	
192	Passenger front master controller window close command: enable/enable	DDCM																	
193	Passenger front master controller window open command: disable/disable	DDCM																	
194	Passenger front master controller window open command: enable/enable	DDCM																	
195	Passenger front window open command: disable/disable	DDCM																	
196	Passenger front window open command: enable/enable	DDCM																	
197	Passenger front window open switch status: active	GECM															X		
198	Passenger front window close command: disable/disable	DDCM																	
199	Passenger front window close command: enable/enable	DDCM																	
200	Passenger mirror down motion command: enable/enable	DDCM																	
201	Passenger mirror left motion command: disable/disable	DDCM																	
202	Passenger mirror left motion command: enable/enable	DDCM																	
203	Passenger mirror right motion command: enable/enable	DDCM																	
204	Passenger mirror up motion command: enable/enable	DDCM																	
205	Passenger rear door ajar switch status: active	RECM																X	
206	Passenger rear door ajar switch status: inactive	RECM																X	
207	Passenger rear master controller window close command: disable/disable	DDCM																	
208	Passenger rear master controller window close command: enable/enable	DDCM																	
209	Passenger rear master controller window open command: disable/disable	DDCM																	
210	Passenger rear master controller window open command: enable/enable	DDCM																	
211	Passenger rear window open command: disable/disable	DDCM																	



No.	Message Name	Source	Receivers																
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
212	Passenger rear window open command: enable/enabled	DDCM																	
213	Passenger rear window open switch status: active	RECM	X													X			
214	Passenger rear window close command: disable/disabled	DDCM																	
215	Passenger rear window close command: enable/enabled	DDCM																	
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																	
219	Rear windshield electric defrost switch status: inactive	A/CCM																	
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																	
224	Request all front fog lamp command	GECM																	
225	Request all front fog lamp status	INST																	
226	Request all front high beam lamp command	GECM																	
227	Request all front high beam lamp status	INST																	
228	Request all headlamp command	GECM																	
229	Request all park lamp command	GECM																	
230	Request all park lamp command	RECM																	
231	Request all park lamp command	NCM																	
232	Request all rear brake lamp command	RECM															X		
233	Request all rear fog lamp command	RECM																	
234	Request all rear fog lamp status	INST																	
235	Request all rear park lamp command	RECM																	
236	Request all rear window lockout switch status	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
237	Request anti-lock brake system failed telltale command	INST																	
238	Request backlighting intensity and dimming curve with headlamps command	A/CCM																	
239	Request backlighting intensity and dimming curve with headlamps command	GECM																	
240	Request backlighting intensity and dimming curve with headlamps command	MC																	
241	Request backlighting intensity and dimming curve with headlamps command	AUDIO																	
242	Request battery saver command	INST																	
243	Request battery saver command	RECM																	
244	Request brake lamp pedal switch status	GECM																	
245	Request brake lamp pedal switch status	DSCCM																	
246	Request brake lamp pedal switch status	PCM																	
247	Request brake lamp pedal switch status	ADCM																	
248	Request brake system configuration status	MC																	
249	Request brake system failed telltale command	INST																	
250	Request charging system state status	INST																	
251	Request charging system state status	MC																	
252	Request CHECK ENGINE (MIL) telltale indicator mode command	INST																	
253	Request clutch pedal position status	DSCCM																	
254	Request trunk lid ajar switch status	DDCM																	
255	Request trunk lid ajar switch status	GECM																	
256	Request trunk lid ajar switch status	MC																	
258	Request delayed accessory command	GECM																	
259	Request delayed accessory command	RECM																	
261	Request driver front door ajar switch status	DDCM																	
262	Request driver front door ajar switch status	MC																	
263	Request driver front door ajar switch status	INST																	



No.	Message Name	Source	Receivers																
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
264	Request driver rear door ajar switch status	DDCM																	
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																	
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														
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									









No.	Message Name	Source	Receivers																
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
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									
367	Right front turn lamp OK status: yes (true)	GECM								X									
368	Right rear brake lamp OK status: no (false)	RECM									X								
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								
373	Right rear turn lamp OK status: yes (true)	RECM									X								
374	Right side mid vehicle turn lamp OK status: no (false)	GECM								X									
375	Right side mid vehicle turn lamp OK status: yes (true)	GECM								X									
376	Right side turn signal turn lamp command: off	INST										X							
377	Right side turn signal turn lamp command: on	INST										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



No.	Message Name	Source	Receivers																
			PCM	TACM	ADCM	DSCCM	ABS/TCCM	RECM	GECM	INST	MC	NCM	AUDIO	A/CCM	VECM	VACM	DDCM	DSCM	SCLM
381	Steering column lock enable command: on	INST																	
382	Steering column lock enable status: off	GECM																	
383	Steering column lock enable status: on	GECM																	
384	Steering column lock enable status: off	RECM																	
385	Steering column lock enable status: on	RECM																	
386	Steering column lock system status	SCLM																	
387	Steering column lock warning command: no (false)	INST																	
388	Steering column lock warning command: yes (true)	INST																	
389	Suspension system state status	ADCM																	
390	Terminate display confirmation status: accept	MC																	
391	Terminate display confirmation status: reject	MC																	
392	Terminate display confirmation status: accept	NCM																	
393	Terminate display confirmation status: reject	NCM																	
394	Terminate display definition command	AUDIO																	
395	Terminate display definition command	VACM																	
396	Terminate display definition command	VECM																	
397	Throttle actuator control module fault status	TACM																	
398	Traction control active telltale command: off	ABS/TCCM																	
399	Traction control active telltale command: on	ABS/TCCM																	
400	Traction control system state status	DSCCM																	
401	Traction control system state status	ABS/TCCM																	
402	Transmission actual gear position with shift in progress status: no (false)	PCM																	
403	Transmission actual gear position with shift in progress status: yes (true)	PCM																	
404	Transmission configuration status	PCM																	
406	Transmission performance mode command	GECM																	

