



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

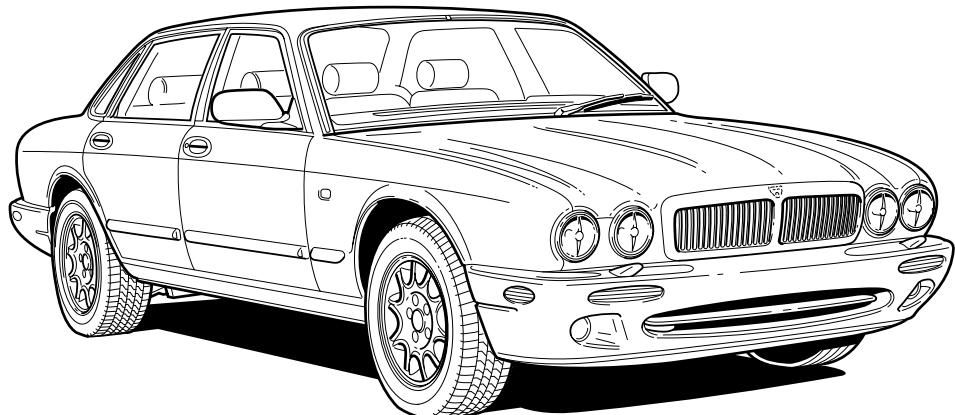


BY APPOINTMENT TO
HER MAJESTY QUEEN ELIZABETH
THE QUEEN MOTHER
MANUFACTURERS OF DAIMLER AND JAGUAR CARS
JAGUAR CARS LIMITED COVENTRY



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

XJ Series Sedan 1998 Electrical Guide



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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 XJ Series 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 on the following pages should help to guide the user.

Standard Abbreviations

The following abbreviations are used throughout this Electrical Guide:

B+	Battery Voltage
CAN	Controller Area Network
DI	Direction Indicator
LH	Left-Hand
LHD	Left-Hand Drive
LWB	Long Wheelbase
N/A	Normally Aspirated
NAS	North American Specification
RH	Right-Hand
RHD	Right-Hand Drive
ROW	Rest of World
SC	Supercharged
SCP	Standard Corporate Protocol Network
VIN	Vehicle Identification Number

Refer to the Vehicle Service Manual for a glossary of standard terms and their abbreviations.

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".

XJ Series Electrical System Architecture

The 1998 Model Year XJ Series uses an advanced electrical system architecture which features "multiplexing", first introduced in Jaguar vehicles with the XK8. Multiplexing allows for simplified wiring harnesses while providing greater flexibility in programming market variants. Two data networks are used in the system: a controller area network (CAN) for the engine, drive train and related systems, and a standard corporate protocol network (SCP) for the body systems. Any vehicle subsystem depicted on the figures with the CAN or SCP included uses data derived from the network, or transmits data via the network to achieve control. Messages for both networks are catalogued in the Appendix of this book. When appropriate, the user will be referred to the Appendix by a note on the Data page. In addition to the two networks, the XJ Series uses two serial data buses (ISO) for diagnostics, for the security system and for the programming of certain control modules.

The XJ Series uses both power and logic grounds; however, it does not use a common logic ground stud connection as in previous Sedan vehicles.



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SEAT MOTORS – PASSENGER		Fig. 12.4
.....		Fig. 12.5
SEAT RAISE RELAY		Fig. 12.3
SEAT SWITCH – PASSENGER FORE / AFT – REAR		Fig. 12.5
SEAT SWITCH – PASSENGER RECLINE – REAR		Fig. 12.5
SECURITY ACTIVE INDICATOR		Fig. 13.3
.....		Fig. 13.4



SECURITY AND LOCKING CONTROL MODULE	Fig. 09.3	Fig. 10.2
	Fig. 09.4	Fig. 15.1
	Fig. 13.1	Fig. 15.2
	Fig. 13.2	
	Fig. 13.3	
	Fig. 13.4	
	Fig. 15.1	
	Fig. 15.2	
SIDE AIRBAGS	Fig. 17.1	
SIDE DI REPEATERS	Fig. 09.2	
SIDE MARKERS – FRONT	Fig. 09.1	
SIDE MARKER AND NUMBER PLATE LAMP RELAY	Fig. 09.3	
	Fig. 09.4	
SLIDING ROOF CONTROL MODULE	Fig. 15.1	
	Fig. 15.2	
SLIDING ROOF MOTOR	Fig. 15.1	
	Fig. 15.2	
SLIDING ROOF SWITCH (ROOF CONSOLE)	Fig. 15.1	
	Fig. 15.2	
SOLAR SENSOR	Fig. 07.1	
SPEAKER, 'A' POST TWEETERS	Fig. 16.2	
SPEAKER, FRONT DOOR MID-BASS	Fig. 16.1	
	Fig. 16.2	
SPEAKER, FRONT DOOR TWEETER	Fig. 16.1	
SPEAKER, REAR DOOR MID-BASS	Fig. 16.1	
	Fig. 16.2	
SPEAKER, REAR DOOR TWEETER	Fig. 16.1	
	Fig. 16.2	
SQUAB HEATERS – DRIVER	Fig. 12.1	
	Fig. 12.2	
	Fig. 12.3	
	Fig. 12.6	
	Fig. 12.7	
SQUAB HEATERS – PASSENGER	Fig. 12.4	
	Fig. 12.5	
	Fig. 12.6	
	Fig. 12.7	
SQUAB HEATERS – REAR	Fig. 12.9	
	Fig. 12.10	
STABILITY / TRACTION CONTROL SWITCH	Fig. 06.1	
STARTER MOTOR	Fig. 03.1	
	Fig. 03.2	
STARTER RELAY	Fig. 03.1	
	Fig. 03.2	
STEERING COLUMN MOTORS	Fig. 11.2	
STOP LAMP RELAY	Fig. 09.3	
	Fig. 09.4	
SUBWOOFER	Fig. 16.2	
SUPPRESSION MODULE	Fig. 03.1	
	Fig. 03.2	
SWITCH PACK – DRIVER DOOR	Fig. 10.2	
SWITCH PACK – DRIVER REAR DOOR		Fig. 10.2
		Fig. 15.1
		Fig. 15.2
SWITCH PACK – DRIVER SEAT (RAISE / LOWER ONLY)	Fig. 12.3	
SWITCH PACK – DRIVER SEAT		Fig. 12.1
		Fig. 12.2
SWITCH PACK – PASSENGER DOOR		Fig. 10.2
		Fig. 15.1
		Fig. 15.2
SWITCH PACK – PASSENGER REAR DOOR		Fig. 10.2
		Fig. 15.1
		Fig. 15.2
SWITCH PACK – PASSENGER SEAT		Fig. 12.4
		Fig. 12.5
TAIL LAMP UNITS		Fig. 09.3
		Fig. 09.4
TELEPHONE ANTENNA		Fig. 16.3
TELEPHONE HANDSET		Fig. 16.3
TELEPHONE MICROPHONE		Fig. 16.3
TELEPHONE TRANSCEIVER		Fig. 16.3
THROTTLE MOTOR		Fig. 04.1
		Fig. 04.2
		Fig. 04.3
		Fig. 04.5
		Fig. 04.6
THROTTLE MOTOR POWER RELAY		Fig. 04.1
		Fig. 04.2
		Fig. 04.3
		Fig. 04.5
		Fig. 04.6
THROTTLE POSITION SENSOR		Fig. 04.1
		Fig. 04.2
		Fig. 04.3
		Fig. 04.5
		Fig. 04.6
TRAILER CONNECTOR		Fig. 09.3
		Fig. 09.4
TRANSIT ISOLATION DEVICE		Fig. 01.1
TRANSMISSION CONTROL MODULE: AJ26 N/A		Fig. 05.1
		Fig. 19.1
TRANSMISSION CONTROL MODULE: AJ26 SC		Fig. 05.2
		Fig. 19.1
TRANSMISSION ELECTRICAL CONNECTOR: AJ26 N/A		Fig. 05.1
TRANSMISSION ELECTRICAL CONNECTOR: AJ26 SC		Fig. 05.2
TRANSMISSION ROTARY SWITCH		Fig. 05.1
TRIP COMPUTER SWITCH PACK		Fig. 08.1
		Fig. 10.2
TRIP CYCLE SWITCH		Fig. 08.1
TRUNK ACCESSORY CONNECTOR		Fig. 18.1
TRUNK LAMPS		Fig. 10.1
TRUNK RELEASE ACTUATOR		Fig. 13.1
		Fig. 13.2



TRUNK RELEASE SWITCHES	Fig. 13.1
.....	Fig. 13.2
TRUNK SWITCH	Fig. 10.1
.....	Fig. 13.1
.....	Fig. 13.2
.....	Fig. 13.3
.....	Fig. 13.4
VACUUM SWITCHING VALVES	Fig. 04.1
.....	Fig. 04.2
.....	Fig. 04.3
.....	Fig. 04.5
.....	Fig. 04.6
VALET SWITCH	Fig. 13.1
.....	Fig. 13.2
.....	Fig. 13.3
.....	Fig. 13.4
VANITY LAMPS	Fig. 10.1
.....	Fig. 10.1
VARIABLE STEERING CONVERTER	Fig. 11.1
VARIABLE VALVE TIMING SOLENOID VALVES	Fig. 04.1
.....	Fig. 04.2
VENT ASSEMBLY	Fig. 07.1
WASH / WIPE STALK	Fig. 14.1
WHEEL SPEED SENSORS	Fig. 06.1
WINDOW LIFT MOTORS	Fig. 15.1
.....	Fig. 15.2
WINDOW LIFT SWITCHES	Fig. 15.1
.....	Fig. 15.2
WINDSHIELD HEATER RELAYS	Fig. 07.2
WINDSHIELD HEATERS	Fig. 07.2
WINDSHIELD WASH PUMP AND FLUID LEVEL SENSOR	Fig. 14.1
WIPER FAST / SLOW RELAY	Fig. 14.1
WIPER MOTOR	Fig. 14.1
WIPER RUN / STOP RELAY	Fig. 14.1



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 – Ground Distribution**, 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 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. Similarly, the Figure **02 – Ground Distribution** details the ignition switched ground distribution. 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.



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

Reference Symbols

Reference symbols are used for three purposes:

- to allow the user to complete the individual system circuit to power supply or ground
- to refer the user to a related circuit
- to identify control module inputs, outputs and signal grounds

Battery Power Supply

This symbol represents a direct battery power supply and refers the user to Figure 01.1, 01.2 or 01.3.

Ignition Switched Power Supply

This symbol represents ignition switched power supply and refers the user to Figure 01.1, 01.4 or 01.5.

The suffix I indicates auxiliary power. Power is supplied in ignition switch key positions I (AUXILIARY) and II (IGNITION).

The suffix II indicates ignition power. Power is supplied in ignition switch key positions II (IGNITION) and III (ENGINE CRANK).

The suffix E indicates engine management switched power. Power is supplied in ignition switch key positions II (IGNITION) and III (ENGINE CRANK) under ECM control.

Ignition Switched Ground

This symbol represents an ignition switched ground and refers the user to Figure 02.1.

This symbol without a suffix indicates CRANK. Ground is completed in ignition switch key position III (ENGINE CRANK).

The suffix I indicates auxiliary ground. Ground is completed in ignition switch key positions I (AUXILIARY) and II (IGNITION).

The suffix II indicates ignition ground. Ground is completed in ignition switch key positions II (IGNITION) and III (ENGINE CRANK).

Figure Number Reference Flag

This symbol refers the reader to a figure number only. It does not refer to a flag with the same number on a different figure.

As used in Figures 01.1 through 02.1, the reference flag refers the user to a continuation of the circuit. In this instance, the user matches the number to a Power Supply or Ground symbol to trace the circuit.

In most other cases, it is not necessary to refer to another figure for completion of a circuit, as the reference flags are used to indicate parallel circuits and circuits that share components. Most of the circuits where this situation occurs are overlapped to avoid the necessity for cross-referencing to another figure. Exceptions to this rule are instances where signals are transmitted to or received from other system circuits. When circuits are not overlapped, they are noted by (CIRCUIT CONTINUED).

BPM Because the Body Processor Module appears numerous times, the abbreviation BPM is used in the reference flags on Figures 01.2 and 02.1 in order to conserve space.

Control Module Input, Output, Data Link, Signal Ground and Network(s)

Input

Output

Serial and Encoded Communications

Signal Ground (SG)

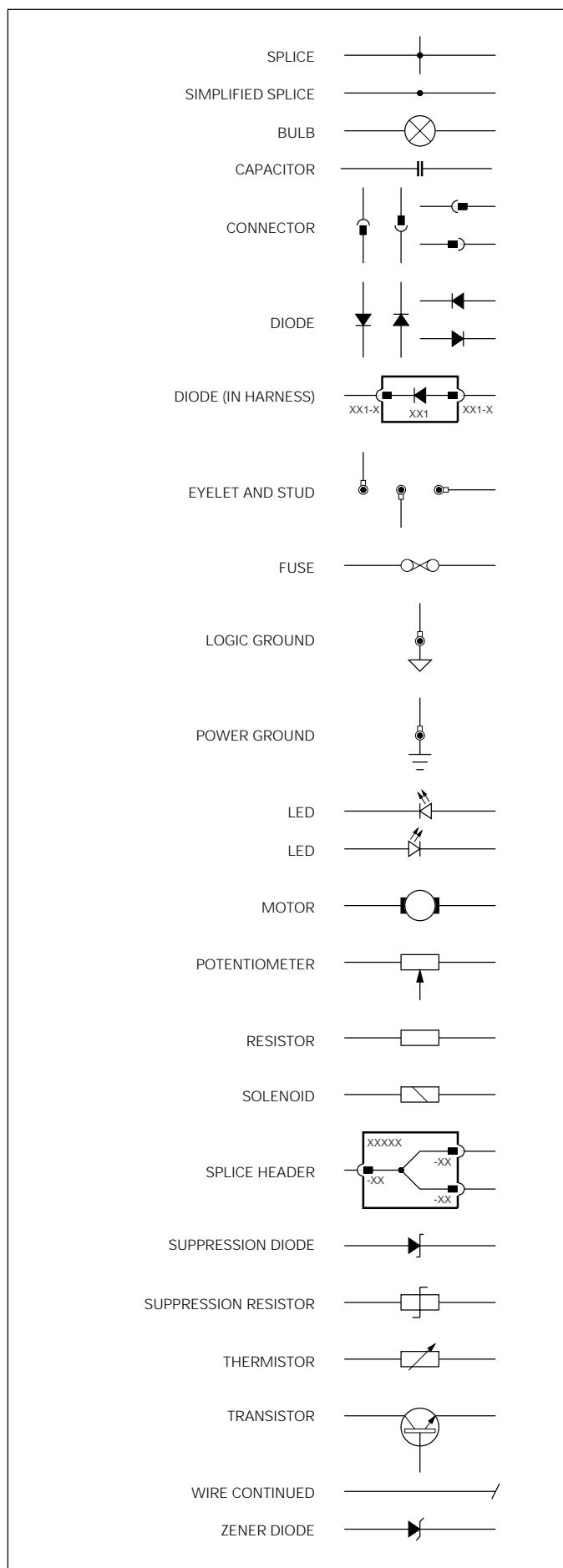
CAN (Network)

SCP Network

These six symbols are employed to assist the user in visualizing the 'logic' of circuits containing control modules. The symbols identify control module input, output, data link, signal ground and network pins. These symbols are also employed on the corresponding data page.



Wiring Symbols



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

When a wire has two or more color code letters, the first letter indicates the main color and the subsequent letter(s) indicate the tracer color(s).

Wiring Harness Codes

Code	Description
AN	Generator link harness
BB	Rear seat motors and heaters harness
BC	Rear seat center console harness
BL	Bumper harness – LH front
BR	Bumper harness – RH front
BS	Rear seat link harness
BT	Trunk harness
CA	Cabin harness
CC	Center console harness
CF	Radiator cooling fan harness
DD	Driver door harness
EM	Engine management harness
FC	Fascia harness
FL	Axle harness – LH front
FP	Fuel tank pressure sensor link harness
FR	Axle harness – RH front
GB	Transmission harness
HP	Steering wheel horn switch harness
IC	In-car entertainment harness
IJ	Fuel injector harness – supercharged
LA	Axle harness – LH rear
LL	Power steering link harness
LS	Forward harness
PD	Passenger door harness
PI	Engine harness
RA	Axle harness – RH rear
RD	Rear driver door harness
RP	Rear passenger door harness
RT	Radio telephone harness
SC	Steering column switchgear harness
SH	Windshield heater link harness
SM-D	Driver seat harness
SM-P	Passenger seat harness
SR	Sliding roof motor link harness
ST	Main power harness
SW	Steering wheel harness

Code Numbering

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



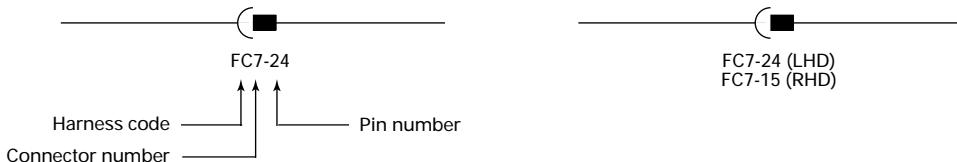
Harness Component Numbers

Connectors

HARNESS CODE + CONNECTOR NUMBER + PIN NUMBER

EXAMPLE: FC7-24 (pin number is separated by a dash)

Where the pin number differs from LHD to RHD, the connector number will be further identified by (LHD) or (RHD).

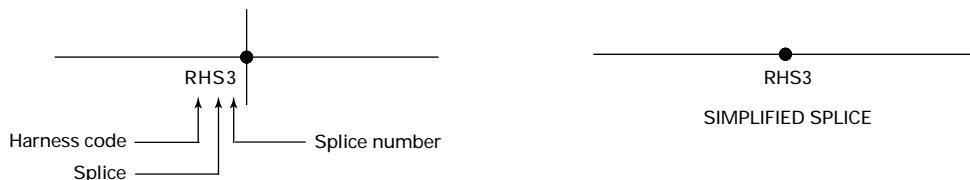


Splices

HARNESS CODE + S (SPLICE) + SPLICE NUMBER

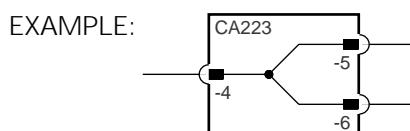
EXAMPLE: RHS3 (no dash is used)

NOTE: In order to avoid unnecessary circuit complication, multiple splices (more than two wires) within components, in wires leading from input components to multiple circuits and in harness 'ground' sides, are simplified so as not to show wires from other circuits.



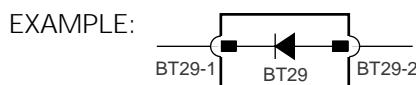
Splice Headers

Three non-serviceable splice headers are used in the system harness. Splice headers are depicted as components and identified by a connector number within the component. The splice header number appears at the upper left hand corner; pin numbers appear adjacent to each pin.



Diodes

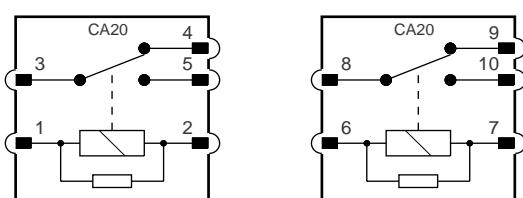
Harness diodes occur at connectors and are depicted as components and identified by a connector number.



Relay Connectors

Relay connector numbers are shown within the relay. The connector number is shown in the upper portion of the relay; the pin (terminal) number is shown adjacent to the pin. Certain relays are paired and share a modular connector. In this instance, the connector number remains the same for both relays while the pin numbers of the second relay are identified by numbers 6 – 10.

EXAMPLE:



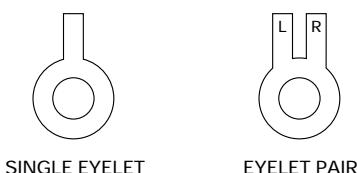


Grounds

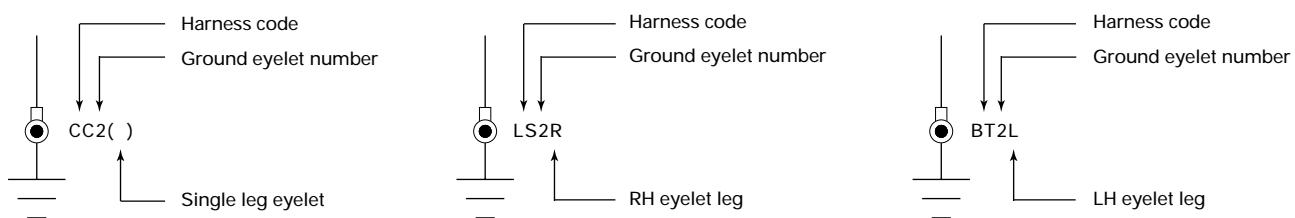
HARNESS CODE + GROUND EYELET NUMBER + EYELET DESIGNATION (L or R where applicable)

Eyelet designation

Two eyelet variations are used: a single eyelet and an eyelet pair. The single eyelet has a single 'leg' and can be identified by the absence of a suffix. The eyelet pair has two 'legs', identified by the suffix L (left) or R (right).



EXAMPLES:



Where the ground designation differs from LHD to RHD, the RHD ground is shown in parentheses. If the ground designation is the same for LHD and RHD, only one ground designation is used.

EXAMPLES:

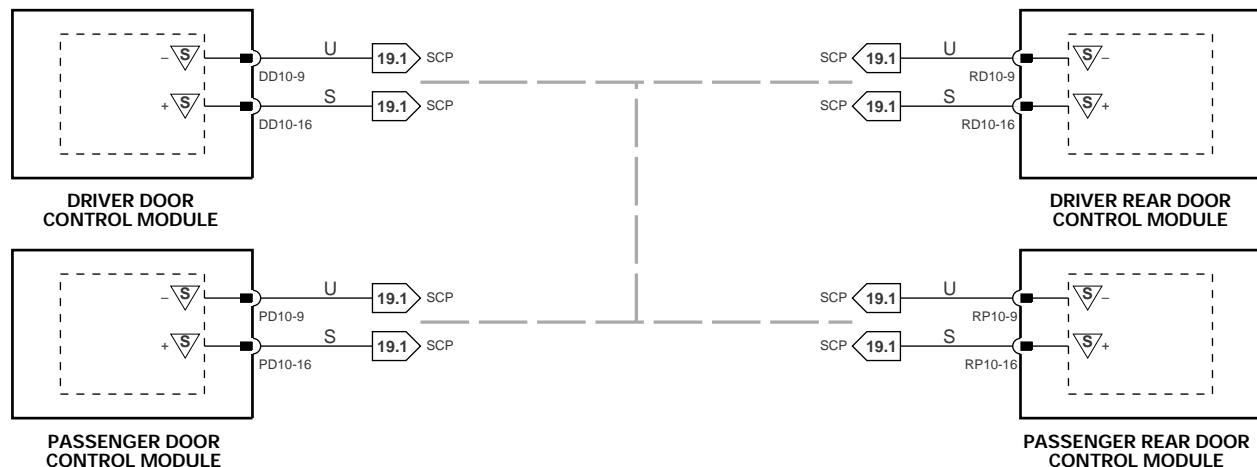


NOTE: The XJ Series ground studs are not identified by code. Therefore, multiple eyelets with different harness codes may be connected to a ground stud.

SCP Network

Due to circuit complexity and because space is limited, the SCP Network is, in most cases, shown as a broken grey line indicating that there is network communication between the depicted control modules. Refer to Fig. 19.1 for circuit details.

EXAMPLE:

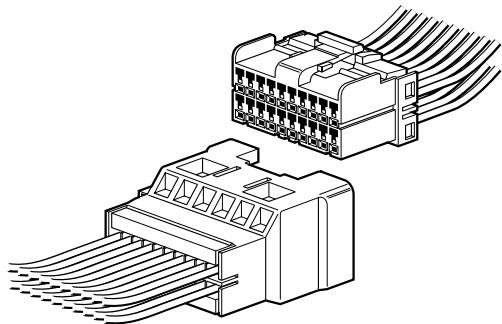




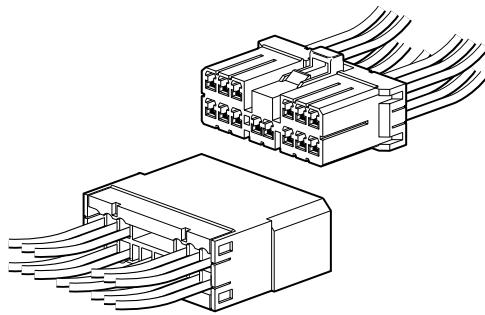
The following connectors are the common harness-to-harness connectors used throughout the vehicle.

Multilock 040

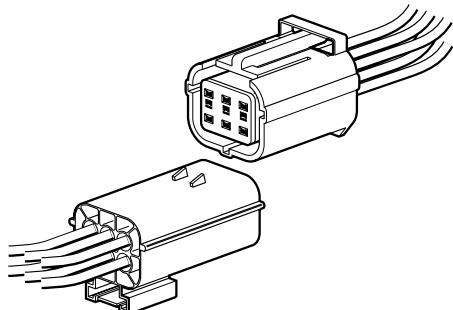
Low current (harness and 'direct' connection connector).

**Multilock 070**

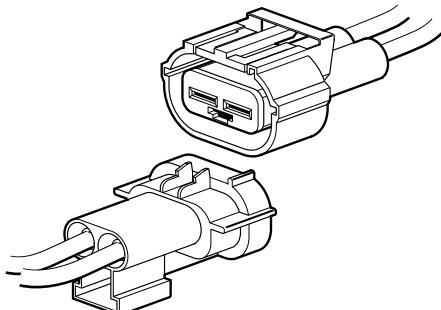
High current (harness and 'direct' connection connector).

**Econoseal III LC**

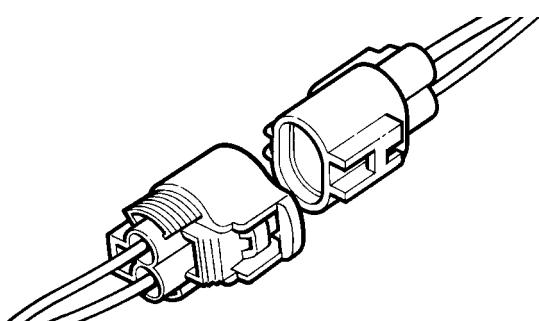
Low current sealed connector.

**Econoseal III HC**

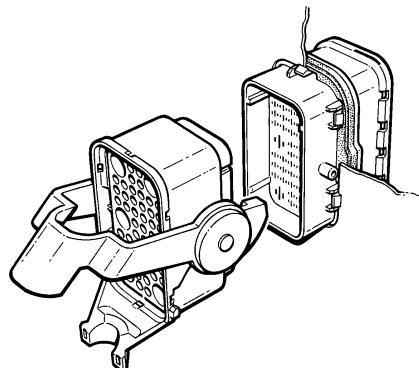
High current sealed connector.

**Ford Card**

Used for SRS only.

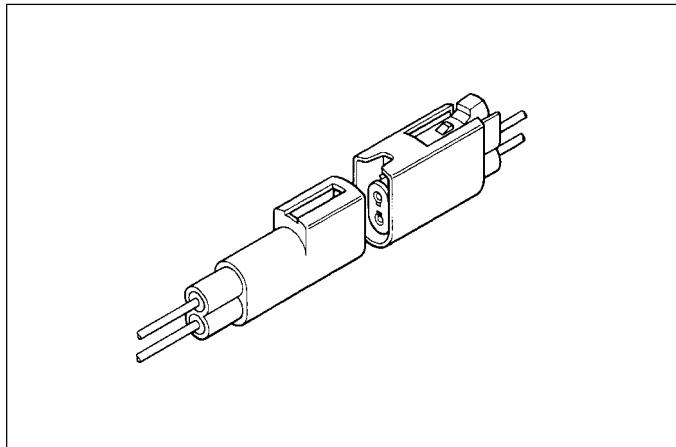
**Through Panel**

54-way connector.

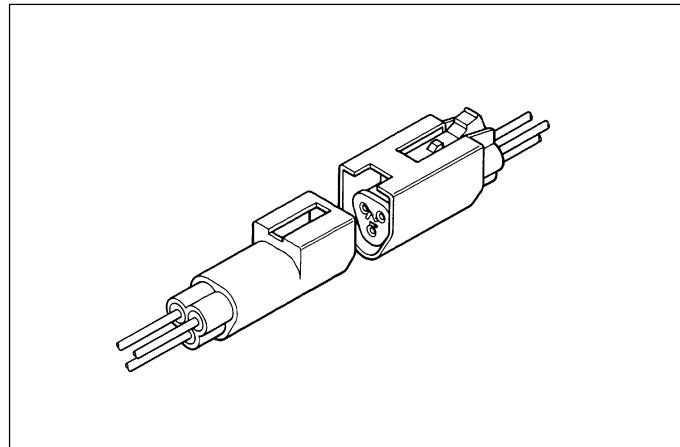


**Augat 1.6**

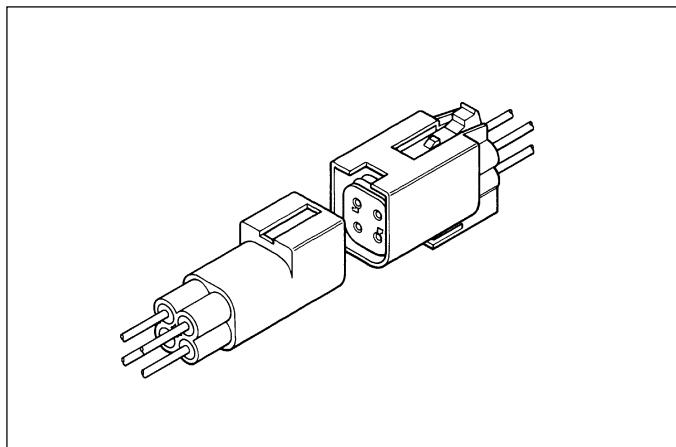
2-way connector.

**Augat 1.6**

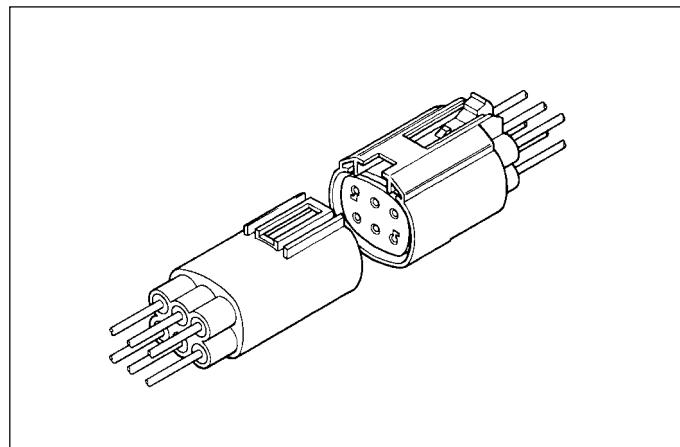
3-way connector.

**Augat 1.6**

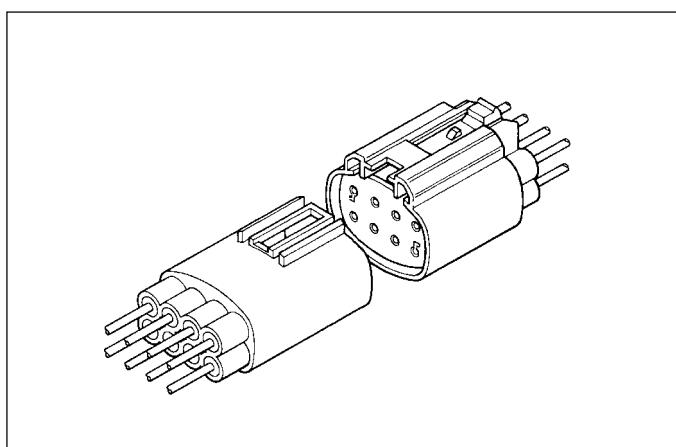
4-way connector.

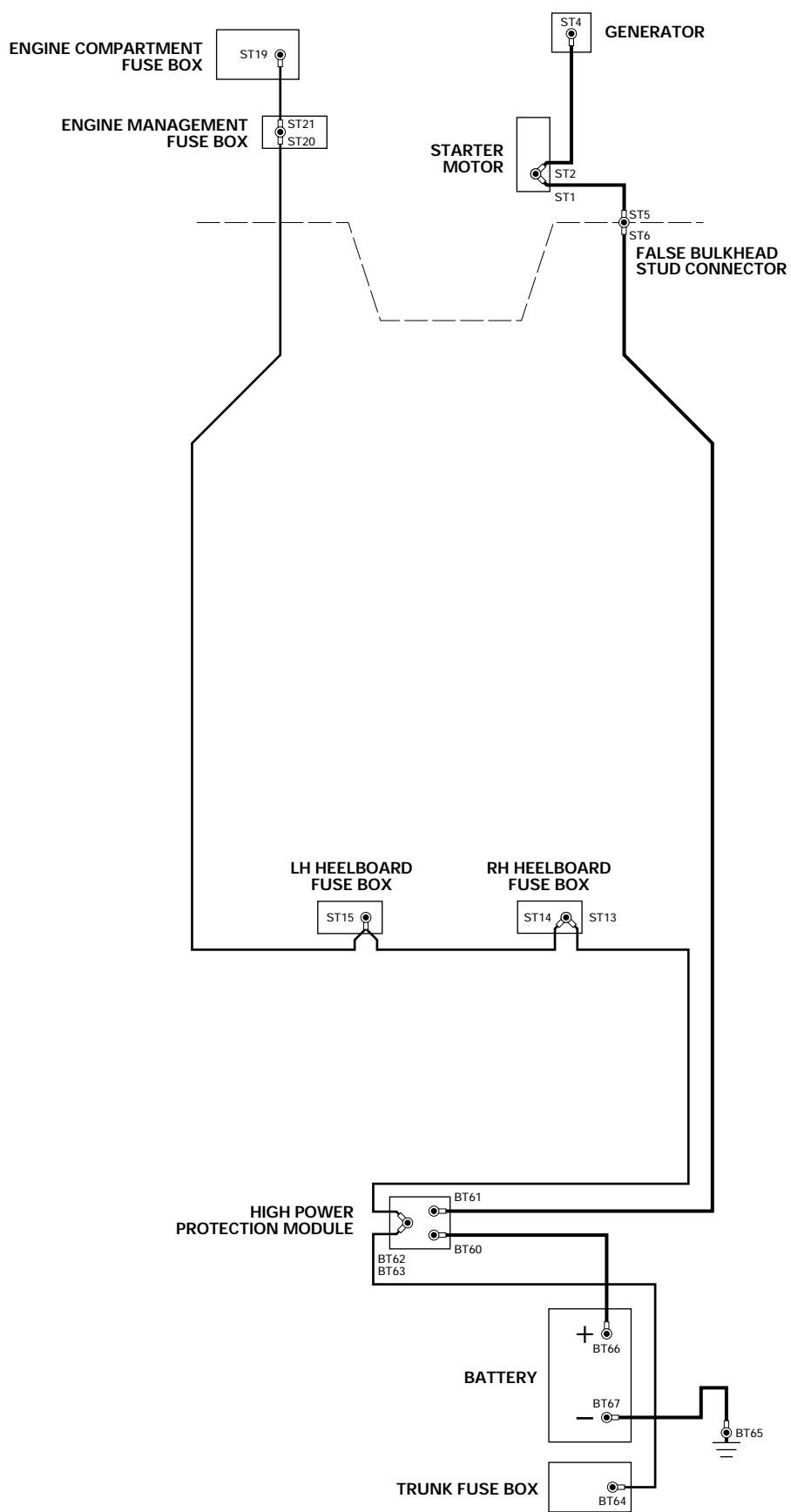
**Augat 1.6**

6-way connector.

**Augat 1.6**

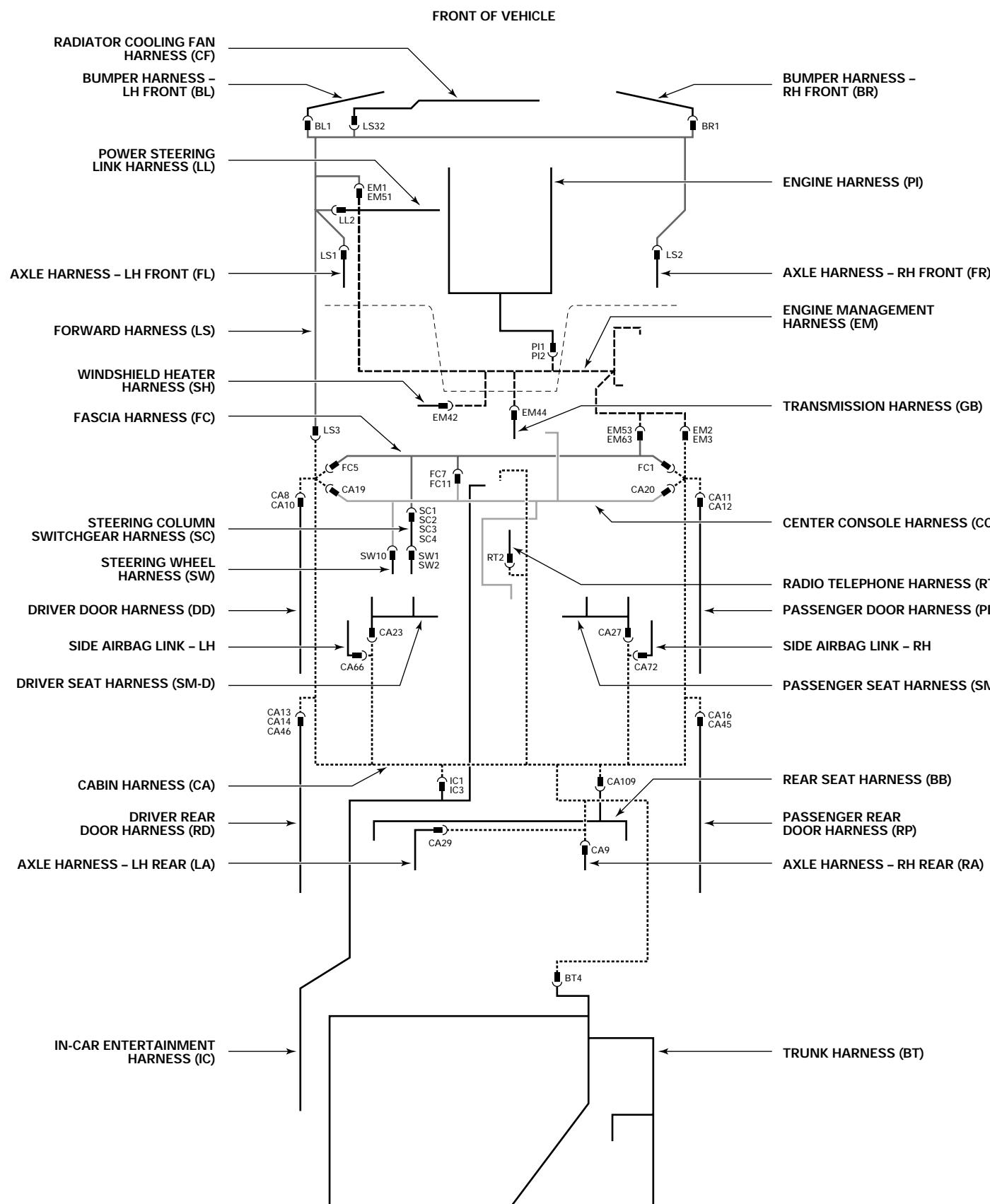
8-way connector.



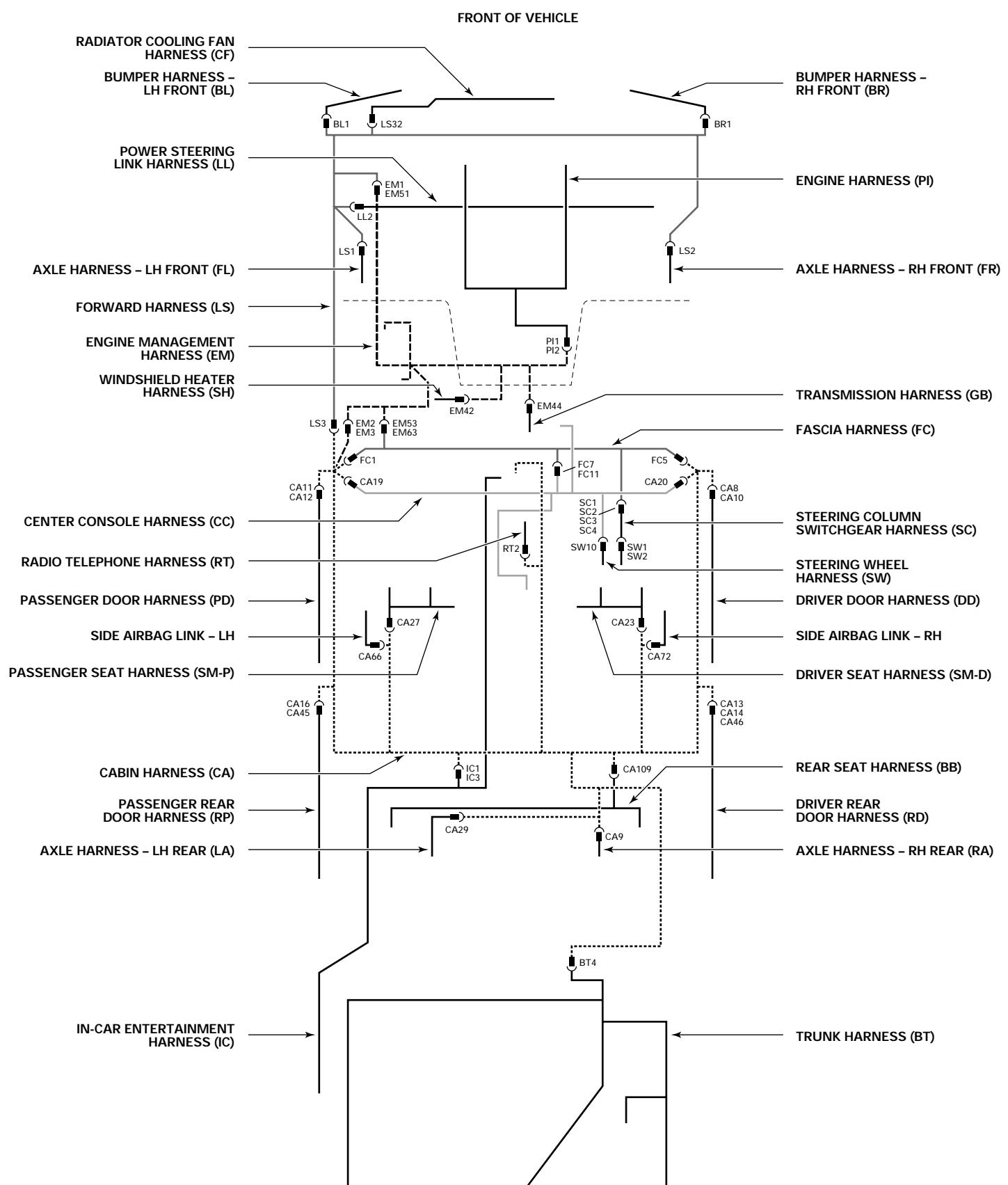


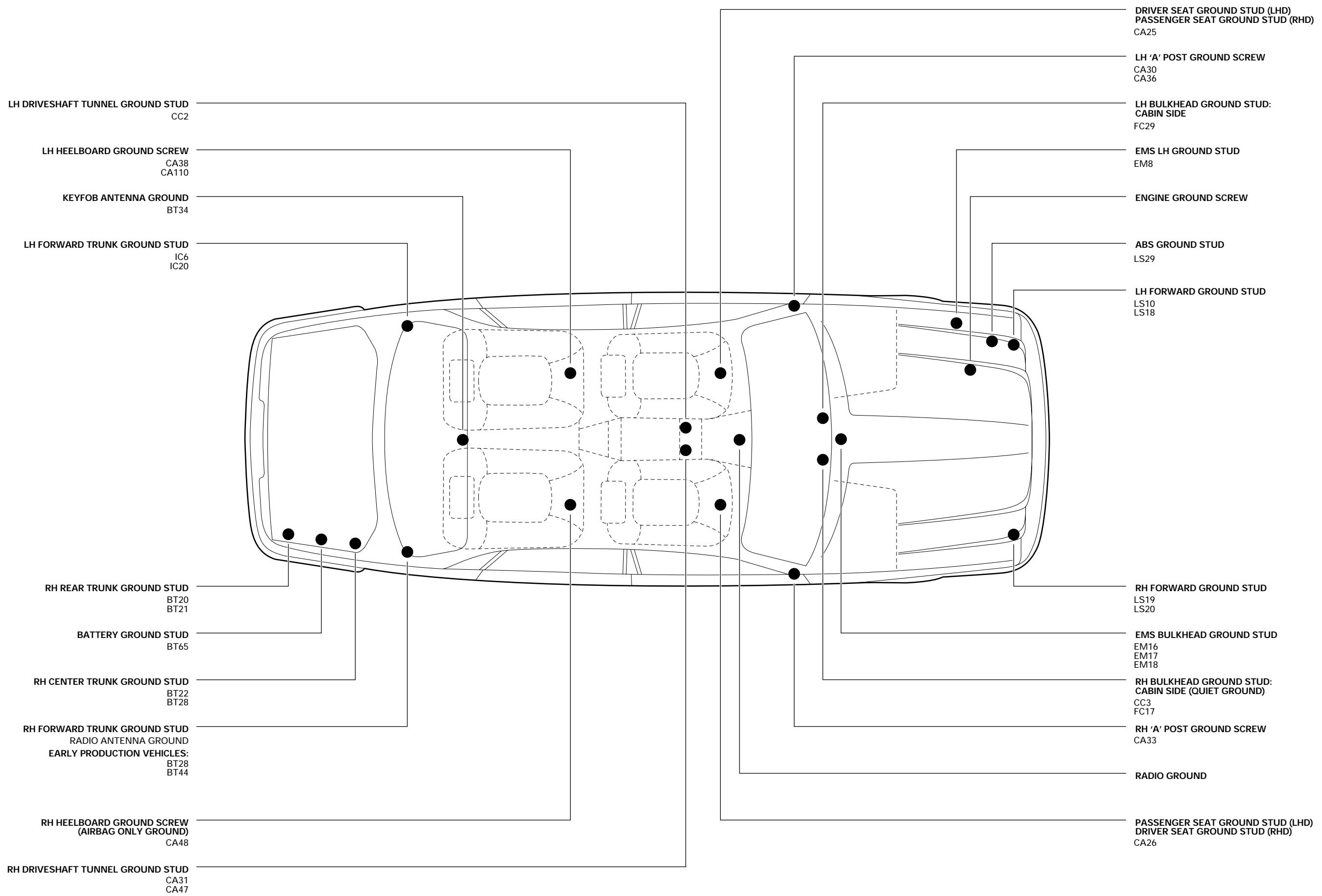


LHD



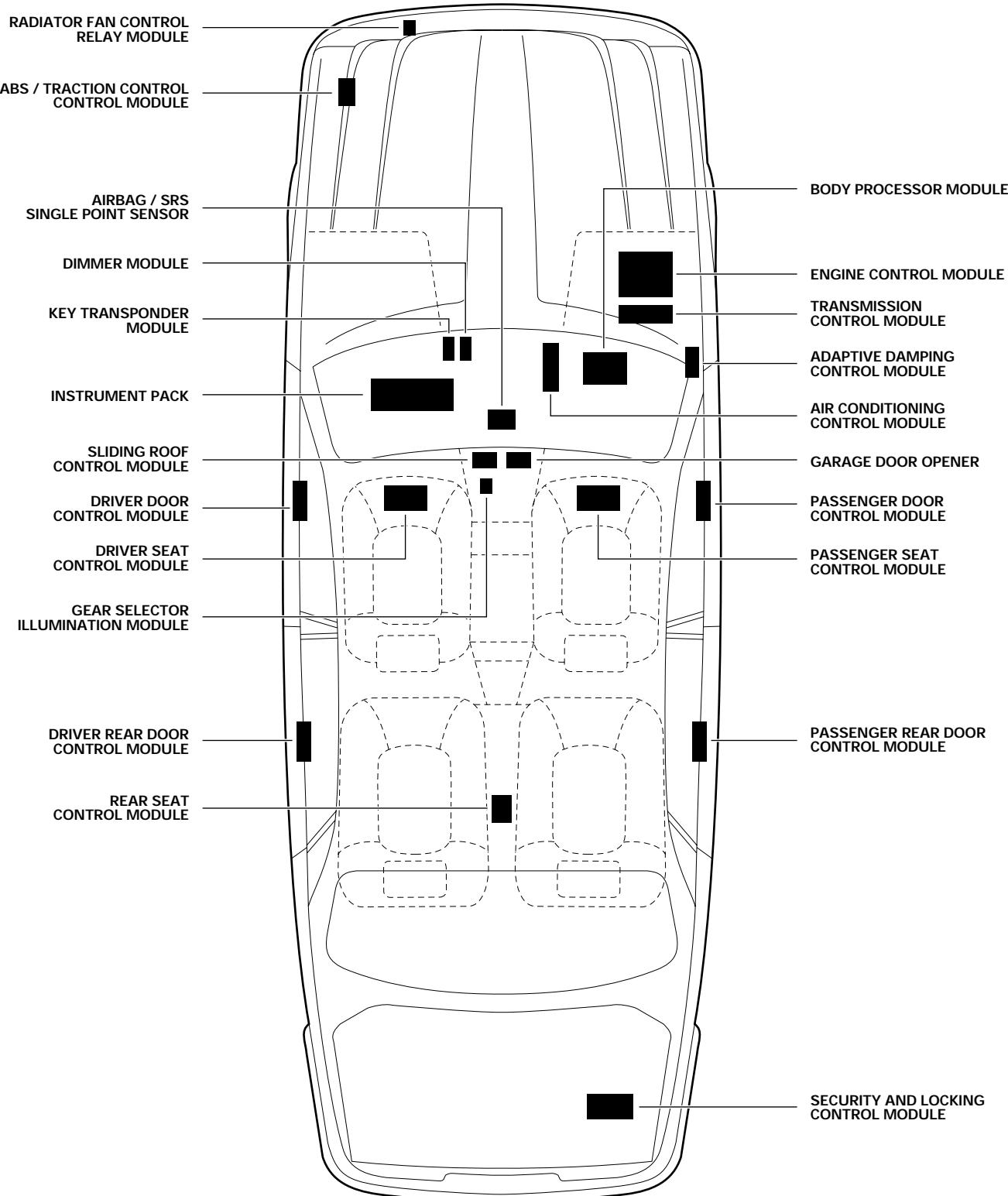
RHD



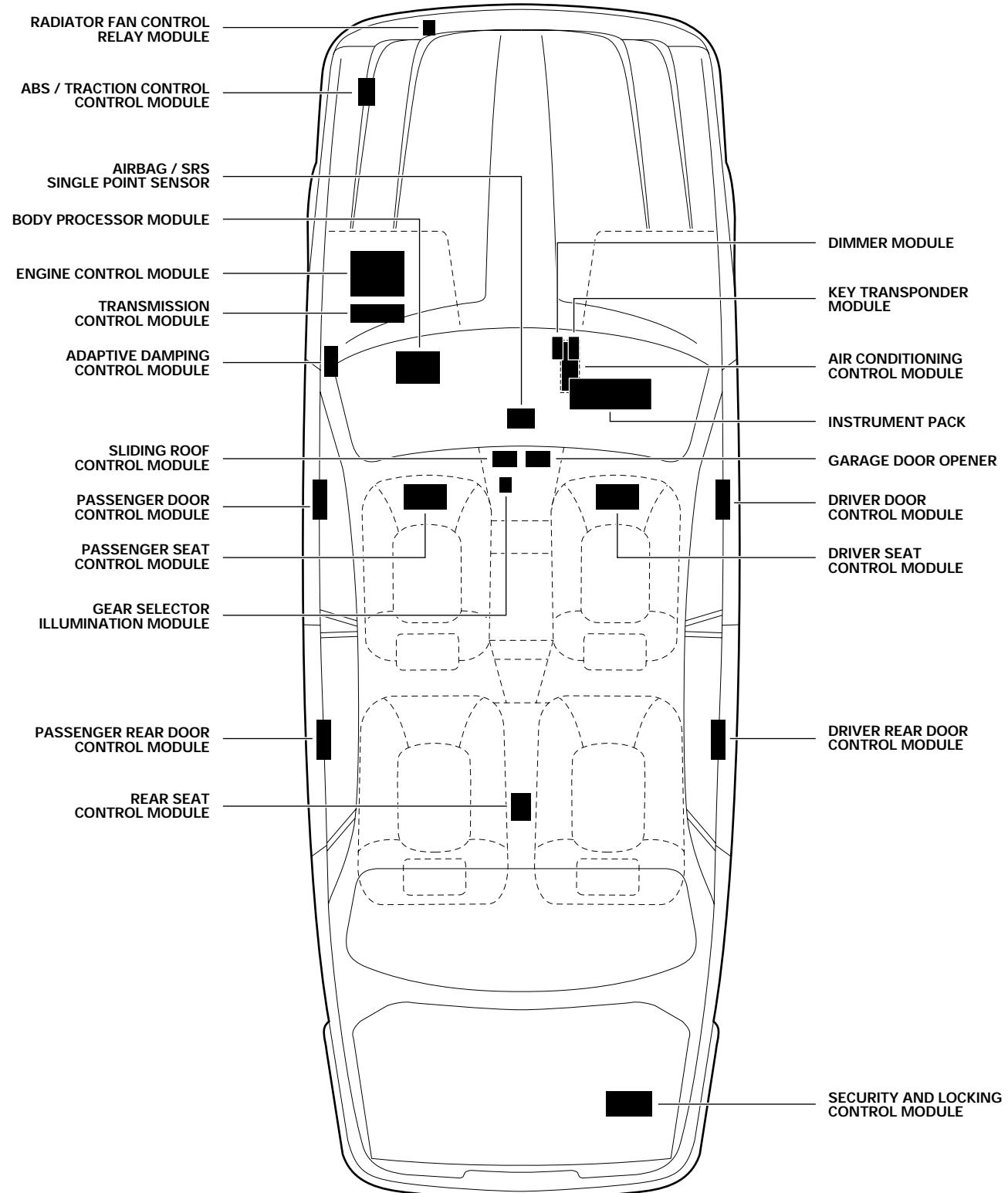




LHD



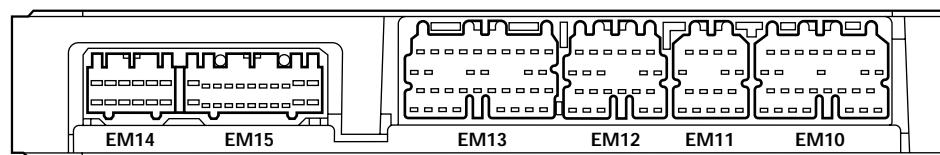
RHD





ENGINE CONTROL MODULE

* EARLY PRODUCTION VEHICLES: EM13-12 - PY; EM13-13 - RW



4.0 N/A NAS

EM14 / 12-WAY / WHITE

6 R	5 R	4 BK	3 WR	2 GY	1 GY
12 G	11 G	10 B	9 B	8 B	7 B

EM15 / 22-WAY / WHITE

11 B	10 —	9 RY	8 RG	7 BU	6 BW	5 BY	4 BO	3 PN	2 PU	1 PS
22 B	21 —	20 —	19 BS	18 BN	17 BG	16 BP	15 —	14 —	13 —	12 B

EM13 / 34-WAY / GREY

10 —	9 —	8 —	7 —	6 —	5 —	4 OK	3 SP	2 W	1 KN
16 WU	15 W	14 GR	13* PY	12* RW	11 PW	—	—	—	—
26 LGU	25 LGW	24 LGO	23 LGK	22 UB	21 —	20 B	19 Y	18 S	17 N
34 LGP	33 LGS	32 LGR	31 LGY	—	30 —	29 O	28 P	27 BG	—

EM12 / 22-WAY / GREY

6 RW	5 WU	4 —	3 —	2 —	1 —
11 —	10 RY	9 SG	8 SLG	7 —	—
17 —	16 —	15 R	14 G	13 GY	12 UP
22 BP	21 —	20 —	19 BY	18 BY	—

EM11 / 16-WAY / GREY

4 WU	3 P	2 —	1 SR
7 RG	6 GO	5 SG	—
11 U	10 G	9 UY	8 UW
16 K	15 R	14 BG	13 BY
24 —	23 BK	22 —	—

EM10 / 28-WAY / GREY

8 —	7 —	6 O	5 WK	4 UN	3 ULG	2 UG	1 WR
13 O	12 K	11 PG	10 US	9 NO	—	—	—
21 UW	20 BG	19 —	18 —	17 Y	16 PK	15 RU	14 OU
28 Y	27 G	26 Y	25 G	—	24 —	23 BK	22 —

4.0 N/A ROW; 3.2

EM14 / 12-WAY / WHITE

6 R	5 R	4 BK	3 WR	2 GY	1 GY
12 G	11 G	10 B	9 B	8 B	7 B

EM15 / 22-WAY / WHITE

11 B	10 —	9 RY	8 RG	7 BU	6 BW	5 BY	4 BO	3 PN	2 PU	1 PS
22 B	21 —	20 —	19 BS	18 BN	17 BG	16 BP	15 —	14 —	13 —	12 B

EM13 / 34-WAY / GREY

10 —	9 —	8 —	7 —	6 —	5 —	4 OK	3 SP	2 W	1 KN
16 WU	15 W	14 GR	13* PY	12* RW	11 PW	—	—	—	—
26 LGU	25 LGW	24 LGO	23 LGK	22 UB	21 —	20 B	19 Y	18 S	17 N
34 LGP	33 LGS	32 LGR	31 LGY	—	30 —	29 O	28 P	27 BG	—

EM12 / 22-WAY / GREY

6 RW	5 WU	4 —	3 —	2 —	1 —
11 —	10 RY	9 SG	8 SLG	7 —	—
17 —	16 —	15 R	14 G	13 GY	12 UP
22 BP	21 —	20 —	19 BY	18 BY	—

EM11 / 16-WAY / GREY

4 WU	3 P	2 —	1 SR
7 RG	6 GO	5 SG	—
11 U	10 G	9 UY	8 UW
16 K	15 R	14 BG	13 BY
24 —	23 BK	22 —	—

EM10 / 28-WAY / GREY

8 —	7 —	6 O	5 WK	4 UN	3 ULG	2 UG	1 WR
13 O	12 K	11 PG	10 US	9 NO	—	—	—
21 UW	20 BG	19 —	18 —	17 Y	16 PK	15 RU	14 OU
28 Y	27 G	26 Y	25 G	—	24 —	23 BK	22 —

4.0 SC NAS

EM14 / 12-WAY / WHITE

6 R	5 R	4 BK	3 WR	2 GY	1 GY
12 G	11 G	10 B	9 B	8 B	7 B

EM15 / 22-WAY / WHITE

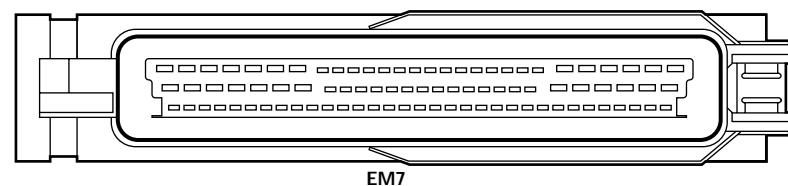
11 B	10 —	9 —	8 —	7 BU	6 BW	5 BY	4 BO	3 PN	2 PU	1 PS
22 B	21 —	20 —	19 BS	18 BN	17 BG	16 BP	15 —	14 —	13 —	12 B

EM13 / 34-WAY / GREY

10 RY	9 KB	8 —	7 —	6 —	5 —	4 OK	3 SP	2 W	1 KN
16 WU	15 W	14 GR	13* PY	12* RW	11 PW	—	—	—	—
26 LGU	25 LGW	24 LGO	23 LGK	22 UB	21 —	20 B	19 Y	18 S	17 N
34 LGP	33 LGS	32 LGR	31 LGY	—	30 —	29 O	28 P	27 BG</	



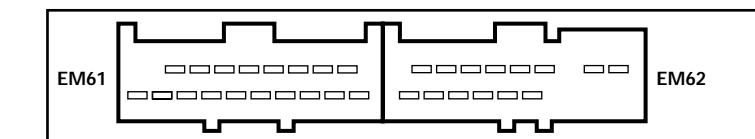
TRANSMISSION CONTROL MODULE: AJ26 N/A



EM7 / 88-WAY / BLACK

28 BY	27 —	26 NR	—	25 24	23 BRD	22 UY	21 BU	20 —	19 BS	18 —	17 U	16 BRD	15 N	14 US	13 RP	12 —	10 W	9 RB	8 —	7 —	6 B	5 OG	4 OK	3 —	2 RS	1 OU						
55 WB	54 WB	53 RU	52 RY	51 OB	50 —	49 —	48 —	47 —	46 —	45 RG	44 R	43 —	42 G	41 —	40 —	39 —	38 —	37 Y	36 S	35 —	34 B	33 YP	32 YU	31 —	30 YB	29 OR						
88 —	87 —	86 Y	85 G	84 —	83 Y	82 G	81 —	80 —	79 —	78 —	77 —	76 —	75 —	74 —	73 —	72 —	71 —	70 —	69 —	68 —	67 —	66 —	65 —	64 —	63 —	62 —	61 —	60 —	59 —	58 —	57 —	56 —

TRANSMISSION CONTROL MODULE: AJ26 SC



EM61 / 18-WAY / BLACK

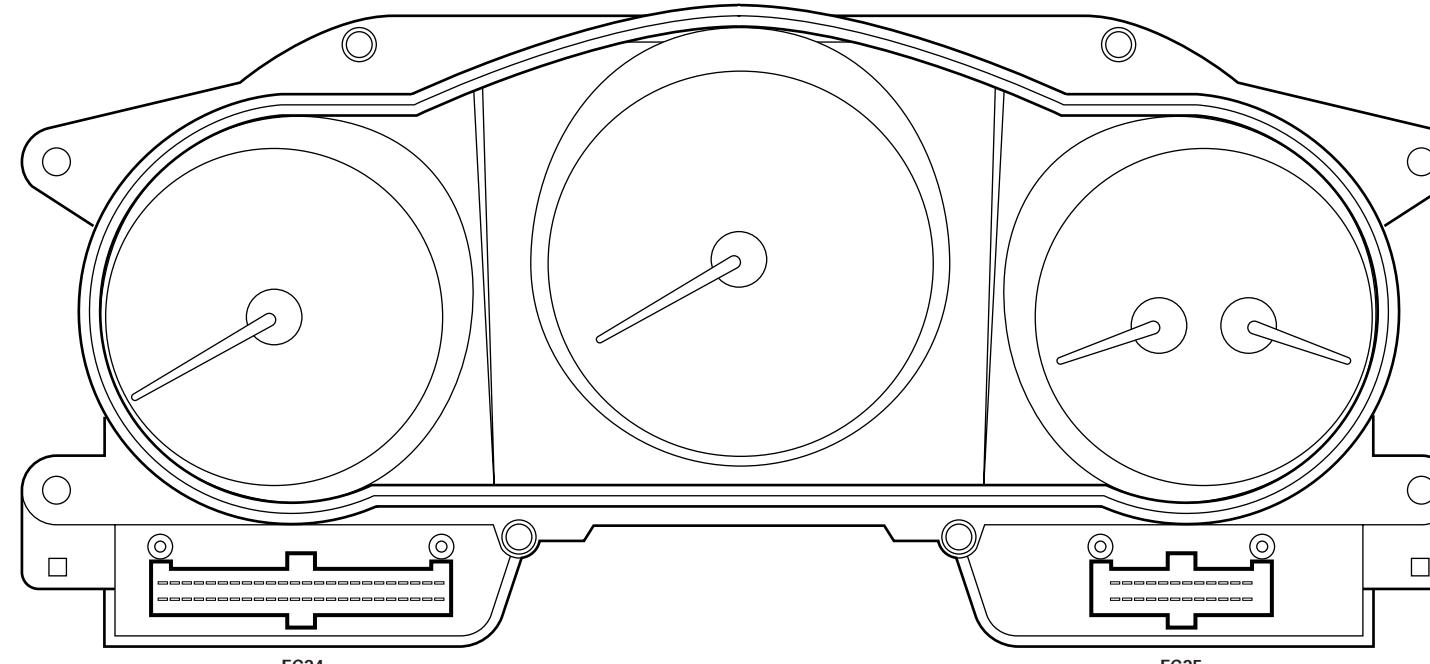
23 —	24 —	25 LGB	26 LGU	27 LGP	28 LGN	29 WB	30 B		
1 YU	2 BS	3 P	4 —	5 —	6 —	7 —	8 —	9 —	10 —

EM62 / 14-WAY / BLACK

33 B	34 BY	35 BU	36 BO	37 BN	38 BR
12 BG	13 BW	14 BK	15 BLG	16 BP	17 BS

L
G
H
Y

INSTRUMENT PACK



FC24 / 48-WAY / BLACK

1 BK	2 WG	3 —	4 —	5 —	6 SO	7 —	8 —	9 SU	10 —	11 —	12 —	13 UY	14 R	15 —	16 —	17 —	18 —	19 S	20 U	21 —	22 —	23 Y	24 Y
25 —	26 B	27 RO	28 —	29 —	30 —	31 —	32 —	33 BR	34 —	35 Y	36 O	37 —	38 —	39 —	40 —	41 —	42 —	43 —	44 —	45 —	46 —	47 G	48 G

FC25 / 24-WAY / BLACK

1 —	2 —	3 PY	4 SG	5 OU	6 UB	7 OB	8 —	9 —	10 —	11 —	12 —
13 BW	14 RW	15 —	16 YW	17 —	18 —	19 OS	20 UW	21 RLG	22 SW	23 OP	24 —

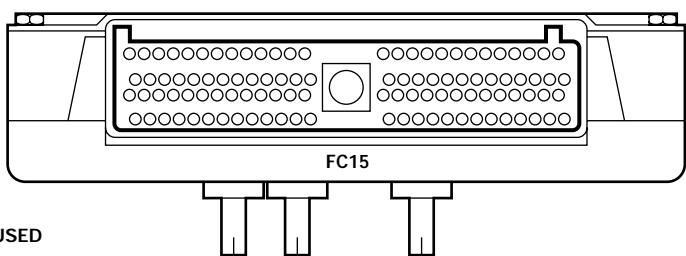
TOP

LS27 / 25-WAY / BLACK

17 W	18 R	19 UP	20 WU	21 P	22 U	23 —	24 B	25 NY
10 —	11 —	12 —	13 UB	14 R	15 G	16 RY	8 B	9 NR
1 UO	2 US	3 S	4 G	5 Y	6 Y	7 O	8 B	9 —



BODY PROCESSOR MODULE

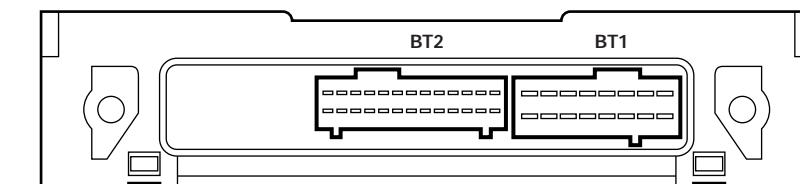


* NAS VEHICLES: FC15-56 NOT USED

FC15 / 104-WAY / GREY (LHD)

79 NG	80 NB	81 GR	82 GR	83 GB	84 U	85 S	86 OP	87 SK	88 YG	89 YW	90 BK	91 BK	92 SU	93 YK	94 LGO	95 RS	96 PW	97 —	98 —	99 PN	100 BR	101 PW	102 NB	103 —	104 NY
53 RK	54 RB	55 SP	56* UM	57 GR	58 SB	59 PY	60 RY	61 KG	62 —	63 SG	64 —	65 —	66 PU	67 UR	68 US	69 OK	70 GS	71 SR	72 YU	73 —	74 RW	75 GR	76 GK	77 RG	78 PG
27 YK	28 RW	29 —	30 U	31 GB	32 WN	33 WY	34 LGK	35 OU	36 —	37 LGR	38 OR	39 Y	40 WU	41 RW	42 UY	43 WLG	44 OY	45 UG	46 YB	47 YLG	48 OG	49 GO	50 GY	51 RW	52 BS
1 RY	2 GY	3 GK	4 GU	5 SO	6 YW	7 —	8 —	9 LGU	10 RW	11 YB	12 OP	13 —	14 UB	15 WO	16 RY	17 OY	18 YS	19 BLG	20 OG	21 SO	22 —	23 —	24 NW	25 B	26 YG

SECURITY AND LOCKING CONTROL MODULE



BT2 / 26-WAY / BLACK

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

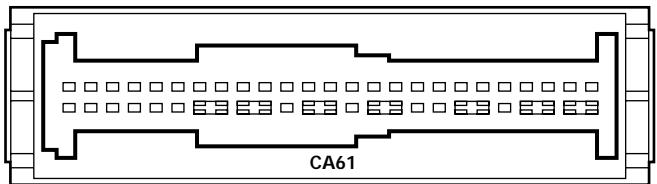
BT1 / 16-WAY / BLACK

8 S	7 RO	6 NK	5 YW	4 OG	3 UW	2 —	1 —
16 U	15 NY	14 BK	13 BK	12 —	11 —	10 —	9 UB

FC15 / 104-WAY / GREY (RHD)

79 NG	80 NB	81 GR	82 GR	83 GB	84 U	85 S	86 OP	87 SK	88 YG	89 YR	90 BK	91 —	92 SU	93 YK	94 LGO	95 RS	96 PW	97 —	98 —	99 PN	100 BR	101 PW	102 NB	103 —	104 NY
53 RK	54 RB	55 SP	56 UW	57 GR	58 SB	59 PY	60 RY	61 KG	62 —	63 SG	64 —	65 —	66 PU	67 UR	68 US	69 OK	70 GS	71 SR	72 YU	73 —	74 RW	75 GR	76 GK	77 RG	78 PG
27 YK	28 RW	29 —	30 U	31 GB	32 WN	33 WY	34 LGK	35 OU	36 —	37 LGR	38 OR	39 Y	40 WU	41 RW	42 UY	43 WLG	44 OY	45 UG	46 YB	47 YLG	48 OG	49 GO	50 GY	51 RW	52 BS
1 RY	2 GY	3 GK	4 GU	5 SO	6 YW	7 —	8 —	9 LGU	10 RW	11 YB	12 OP	13 —	14 UB	15 WO	16 RY	17 OY	18 YS	19 BLG	20 OG	21 SO	22 —	23 —	24 NW	25 B	26 YG

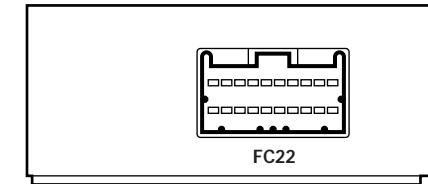
AIRBAG / SRS SINGLE POINT SENSOR



CA61 / 50-WAY / YELLOW

25 R	24 R	23 S	22 S	21 P	20 P	19 YR	18 Y	17 YU	16 Y	15 —	14 YR	13 Y	12 —	11 YU	10 Y	9 SO	8 6	7 YR	6 BK	5 WK	4 N	3 U	2 N	1 U
50 —	49 —	48 —	47 —	46 —	45 —	44 —	43 —	42 —	41 —	40 —	39 —	38 —	37 —	36 —	35 —	34 —	33 —	32 —	31 —	30 —	29 —	28 —	27 —	26 —

KEY TRANSPONDER MODULE



FC22 / 20-WAY / GREEN

10 R	9 SU	8 OG	7 OR	6 O	5 U	4 NR	3 BRD	2 BRD	1 —
20 RB	19 RW	18 UW	17 Y	16 O	15 UB	14 WO	13 WN	12 BK	11 SO

ADAPTIVE DAMPING CONTROL MODULE

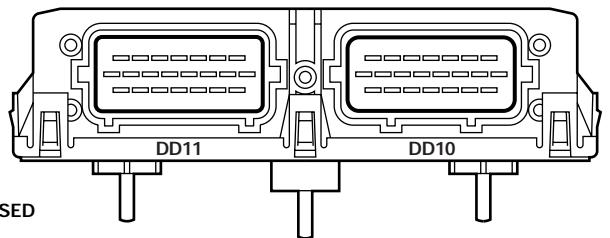


EM68 / 35-WAY / BLACK

19 —	20 PB	21 UB	22 RB	23 —	24 OB	25 U	26 NS	27 K	28 —	29 OS	30 OW	31 OW	32 OW	33 OY	34 OY	35 —	
1 SO	2 —	3 UW	4 —	5 —	6 —	7 —	8 —	9 —	10 O	11 WK	12 —	13 OB	14 OG	15 OP	16 —	17 —	18 B



DRIVER DOOR CONTROL MODULE



* ROW NON-MEMORY: DD11-2 NOT USED

DD11 / 22-WAY / BLACK (NAS)

7 BP	6 BY	5 OB	4 OU	3 OR	2 UG	1 BK
15 BW	—	13 OU	12 OY	11 —	10 YN	9 YR
22 BN	21 BS	20 G	19 —	18 BO	17 SN	16 —

DD10 / 22-WAY / BLUE (NAS)

7 UW	6 —	5 SY	4 ON	3 OG	2 Y	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 BG	9 U
22 OK	21 OU	20 WU	19 BR	18 B	17 B	16 S

DD11 / 22-WAY / BLACK (ROW LHD)

7 BP	6 BY	5 OB	4 OU	3 OR	2 ² UG	1 BK
15 BW	—	13 OU	12 OY	11 —	10 YN	9 YR
22 BN	21 BS	20 G	19 —	18 SN	17 —	16 —

DD10 / 22-WAY / BLUE (ROW LHD)

7 UW	6 SU	5 SY	4 ON	3 OG	2 Y	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 BG	9 U
22 OK	21 OU	20 WU	19 BR	18 BO	17 B	16 S

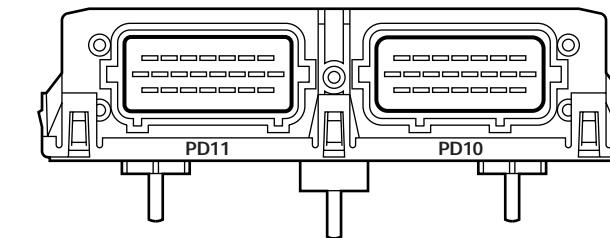
DD11 / 22-WAY / BLACK (ROW RHD)

7 BG	6 BN	5 OU	4 OU	3 OR	2 ² UG	1 BK
15 BS	—	13 OB	12 OY	11 —	10 YN	9 YR
22 BY	21 BW	20 G	19 —	18 —	17 SN	16 —

DD10 / 22-WAY / BLUE (ROW RHD)

7 UW	6 SU	5 SY	4 ON	3 OG	2 Y	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 BP	9 U
22 OK	21 OU	20 WU	19 BO	18 BR	17 B	16 S

PASSENGER DOOR CONTROL MODULE



PD11 / 22-WAY / BLACK (NAS)

7 UW	6 BO	5 —	4 —	3 —	2 —	1
15 OW	14 GW	13 —	12 —	11 —	10 —	9 —
22 —	21 BG	20 G	19 —	18 —	17 —	16 —

PD10 / 22-WAY / BLUE (NAS)

7 UW	6 —	5 SY	4 —	3 —	2 —	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 —	9 U
22 —	21 —	20 —	19 —	18 —	17 B	16 S

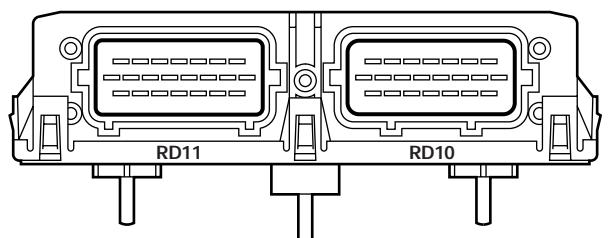
PD11 / 22-WAY / BLACK (ROW)

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

PD10 / 22-WAY / BLUE (ROW)

7 UW	6 SU	5 SY	4 —	3 —	2 —	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 —	9 U
22 —	21 —	20 —	19 —	18 —	17 B	16 S

DRIVER REAR DOOR CONTROL MODULE



RD11 / 22-WAY / BLACK (NAS)

7 BK	6 BO	5 UP	4 —	3 —	2 —	1
15 US	—	13 KS	—	11 —	10 —	9 —
22 UN	21 BG	20 G	19 —	18 —	17 —	16 —

RD10 / 22-WAY / BLUE (NAS)

7 UW	6 —	5 —	4 PN	3 PG	2 Y	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 —	9 BK
22 YK	21 PU	20 WU	19 BK	—	17 B	16 S

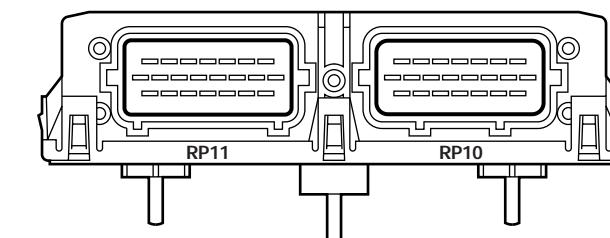
RD11 / 22-WAY / BLACK (ROW)

7 BK	6 BO	5 UP	4 —	3 —	2 —	1
15 US	—	13 KS	—	11 —	10 —	9 —
22 UN	21 BG	20 G	19 —	18 —	17 —	16 —

RD10 / 22-WAY / BLUE (ROW)

7 UW	6 —	5 —	4 PN	3 PG	2 Y	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 —	9 U
22 YK	21 PU	20 WU	19 BK	—	17 B	16 S

PASSENGER REAR DOOR CONTROL MODULE



RP11 / 22-WAY / BLACK (NAS)

7 UW	6 BO	5 —	4 —	3 —	2 —	1
15 U	—	13 KS	—	12 —	11 —	10 —
22 —	21 BG	20 G	—	18 —	17 —	16 —

RP10 / 22-WAY / BLUE (NAS)

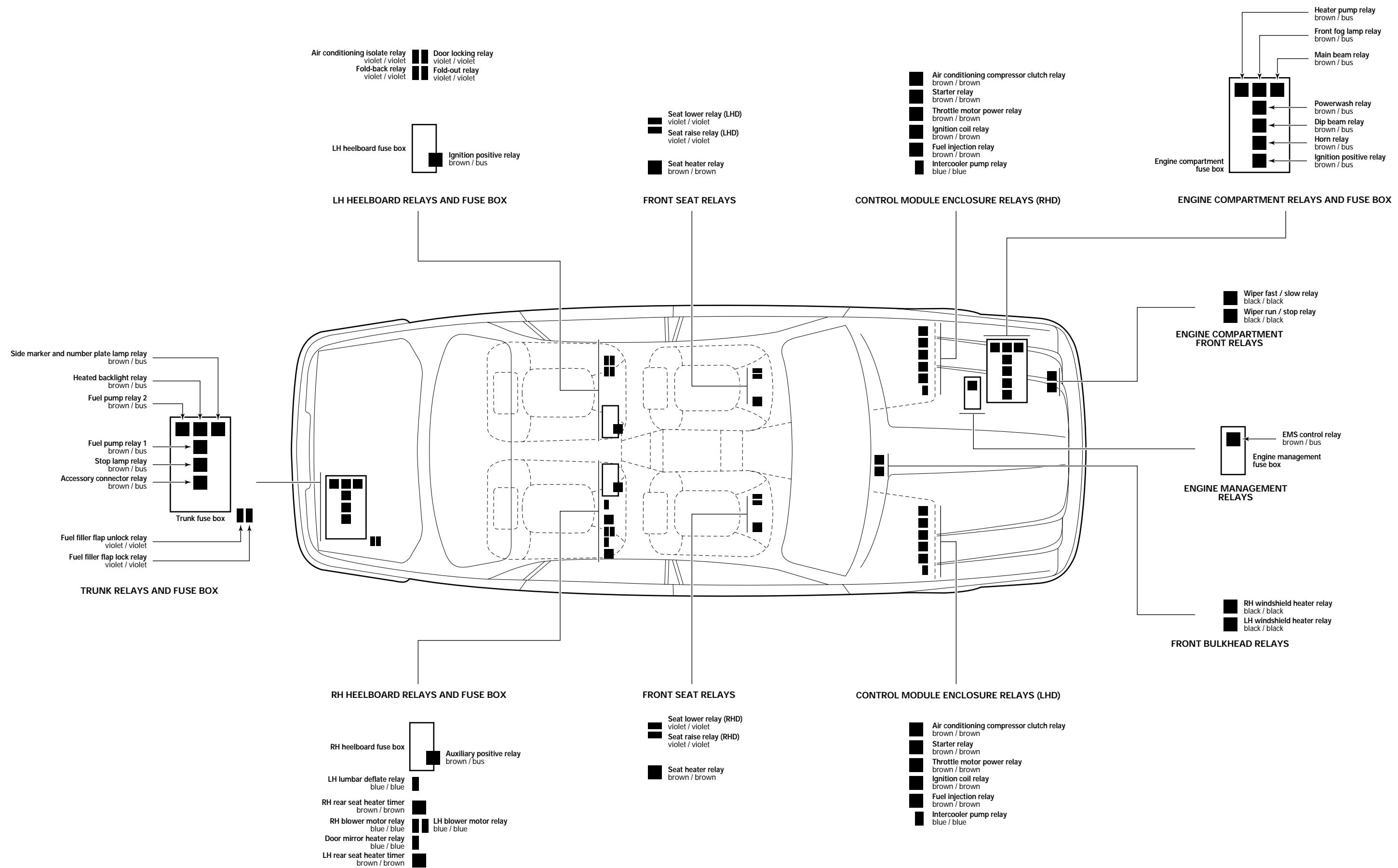
7 UW	6 —	5 —	4 —	3 —	2 —	1 NO
15 OW	14 GW	13 —	12 —	11 —	10 —	9 U
22 —	21 —	20 —	19 —	18 —	17 B	16 S

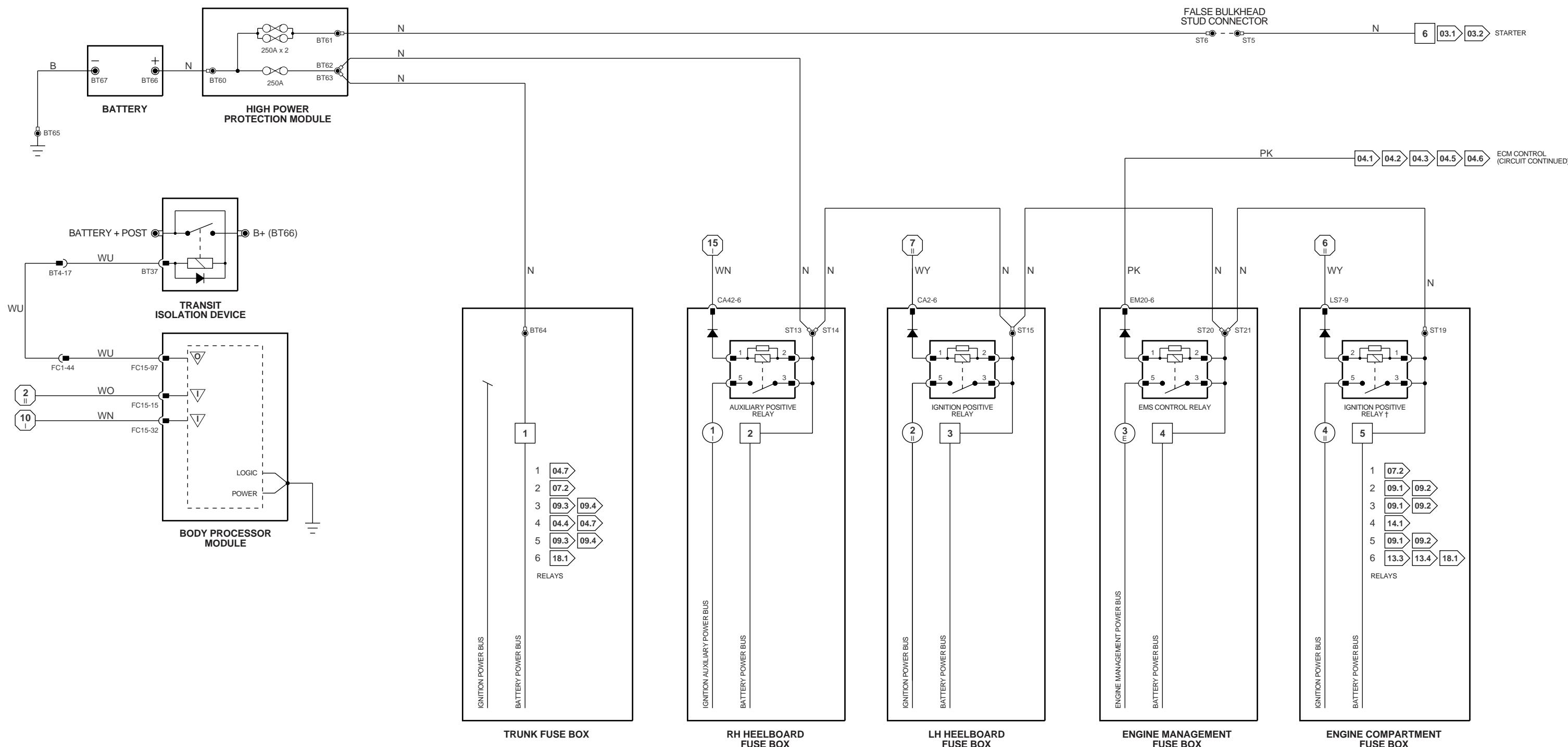
RP11 / 22-WAY / BLACK (ROW)

7 UW	6 BO	5 —	4 —	3 —	2 —	1
15 U	—	13 KS	—	12 —</td		



NOTE: RELAY COLORS ARE WRITTEN AS CASE COLOR / CONNECTOR COLOR. FOR EXAMPLE, BLACK / BLACK INDICATES A RELAY HAVING A BLACK CASE WITH A BLACK CONNECTOR. SOME RELAYS CONNECT DIRECTLY TO A FUSE BOX BUS; THE CONNECTOR COLOR FOR THESE RELAYS IS IDENTIFIED AS "BUS".





† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

{ 1 - 6 } Fig. 01.1
{ 1 - 4 } Fig. 01.1

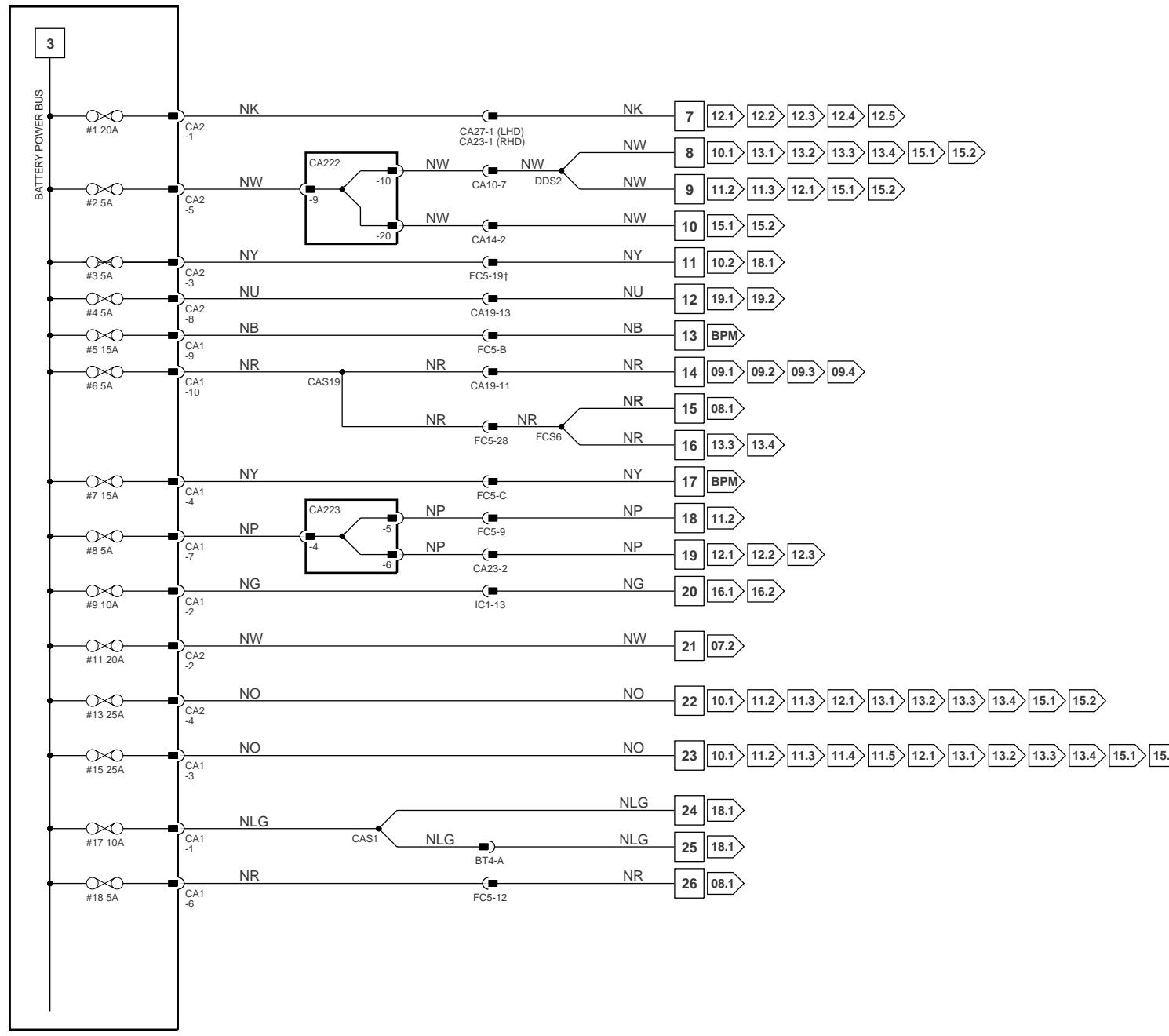
{ 7 - 47 } Fig. 01.2
{ 5 - 44 } Fig. 01.4
{ 48 - 82 } Fig. 01.3
{ 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

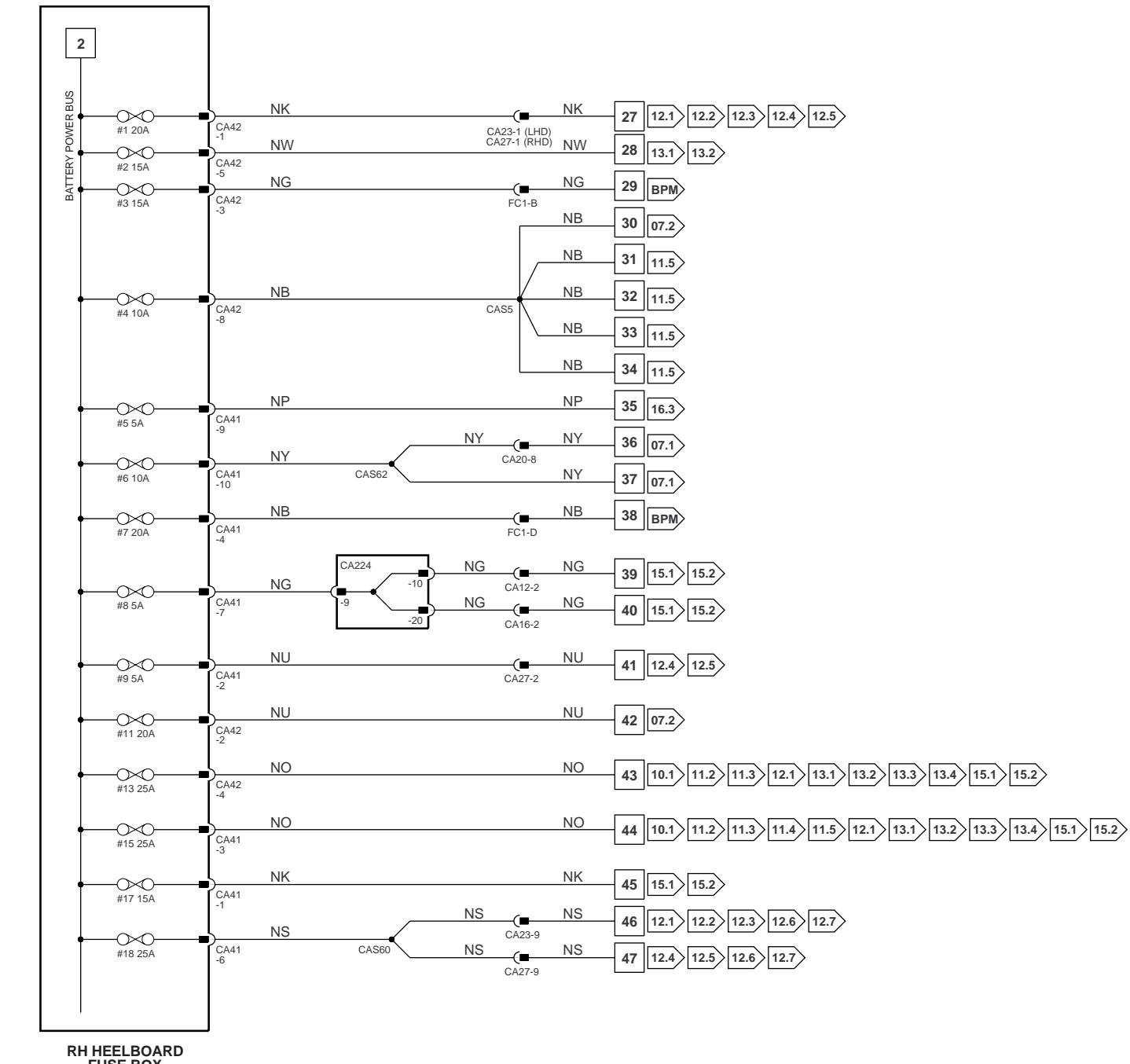
▽ Input
▽ Output
▽ Signal Ground (SG)
▽ CAN (Network)

▽ Serial and Encoded Communications
▽ SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



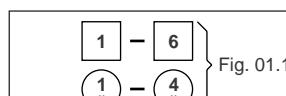
LH HEELBOARD
FUSE BOX



RH HEELBOA
FUSE BOX

BPM **NOTE:** Body Processor Module appears in numerous figures.

† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.



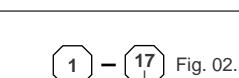
$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2}$$



48 - 82 Fig. 0



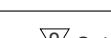
.3 - Fig. 01.5



1 – 17 Fig. 02



▽ Input
▽ Sign



▼ Out
▼ CAN



 Serial and Encoded Communications
 SCP Network

VARIANT: All Vehicles
VIN RANGE: All

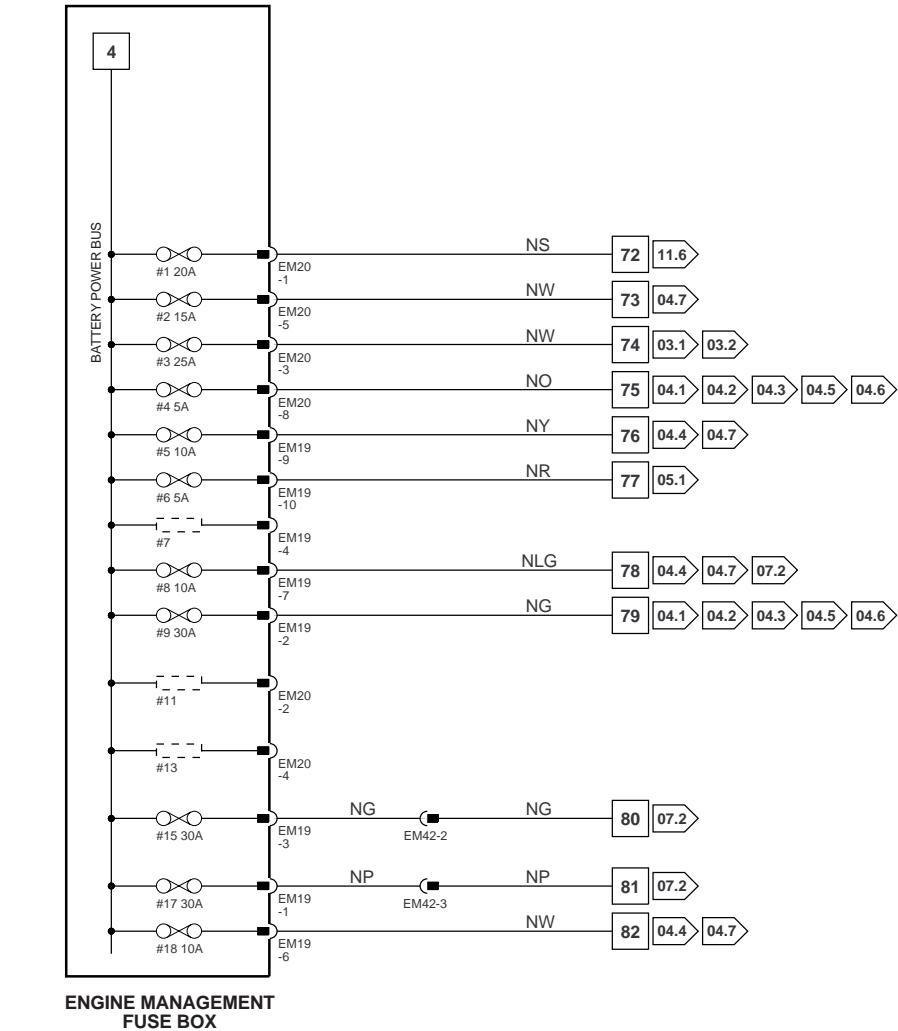
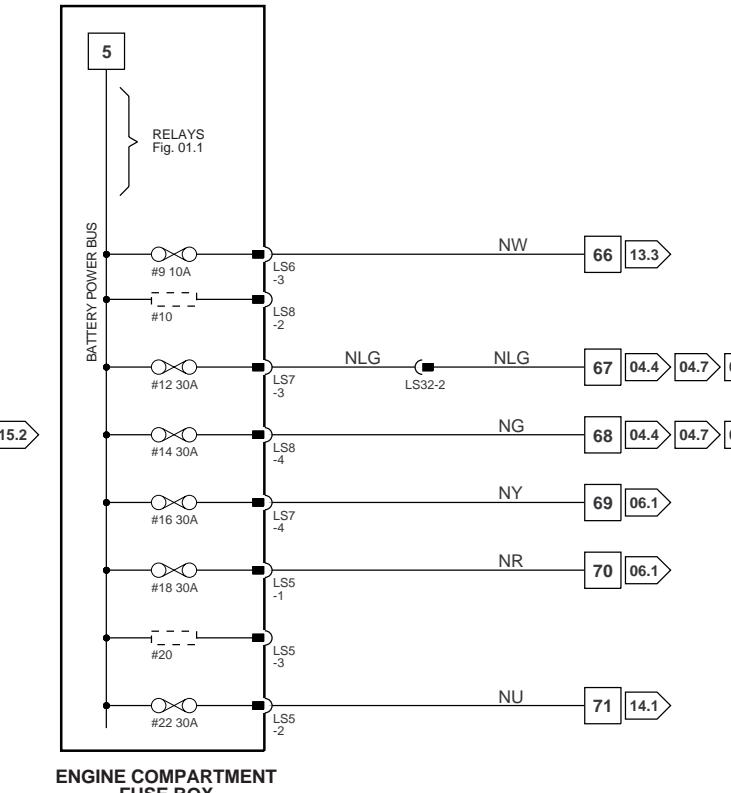
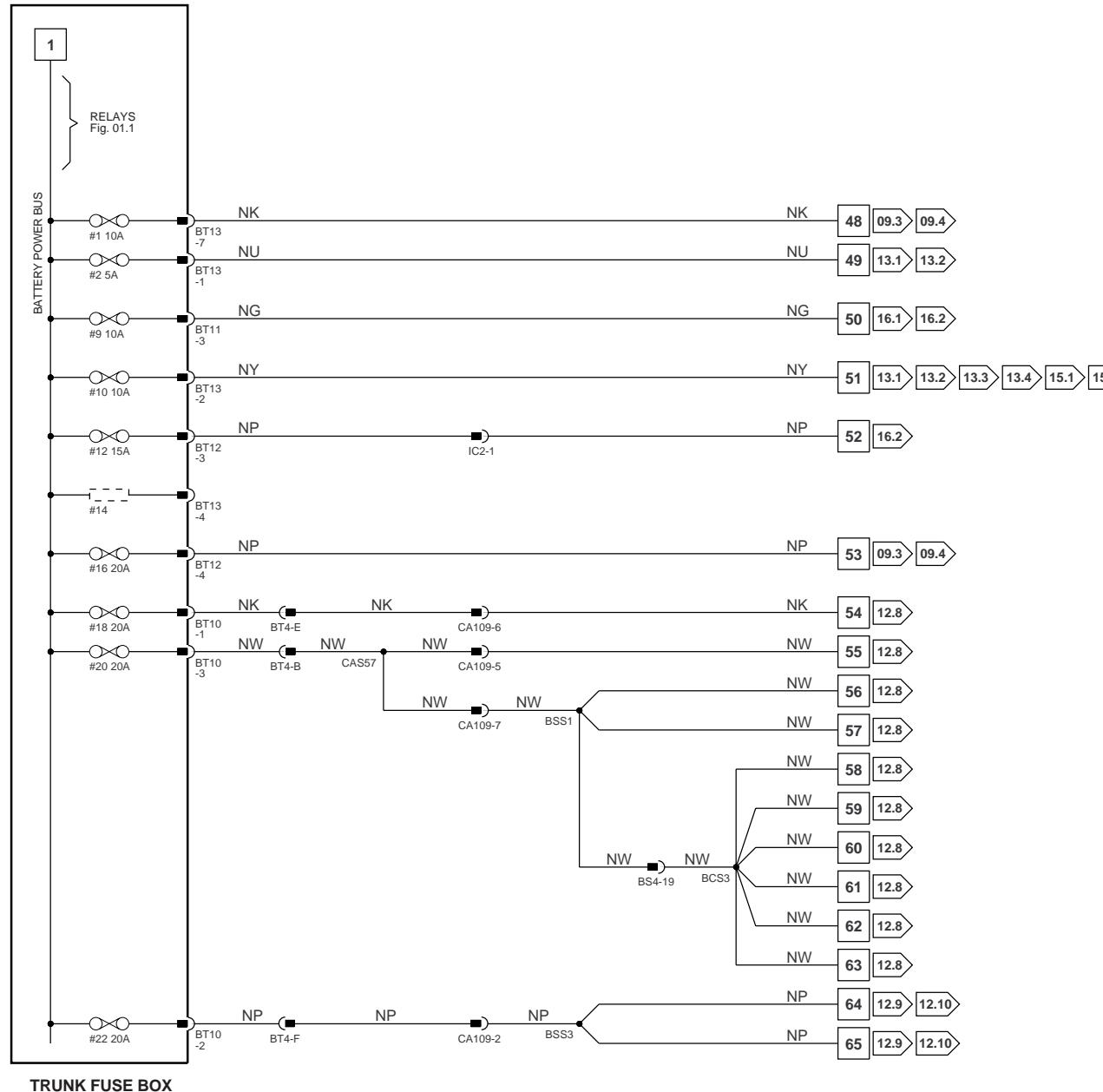


Fig. 01.1

Fig. 01.2
Fig. 01.3Fig. 01.4
Fig. 01.5

Input

Signal Ground (SG)

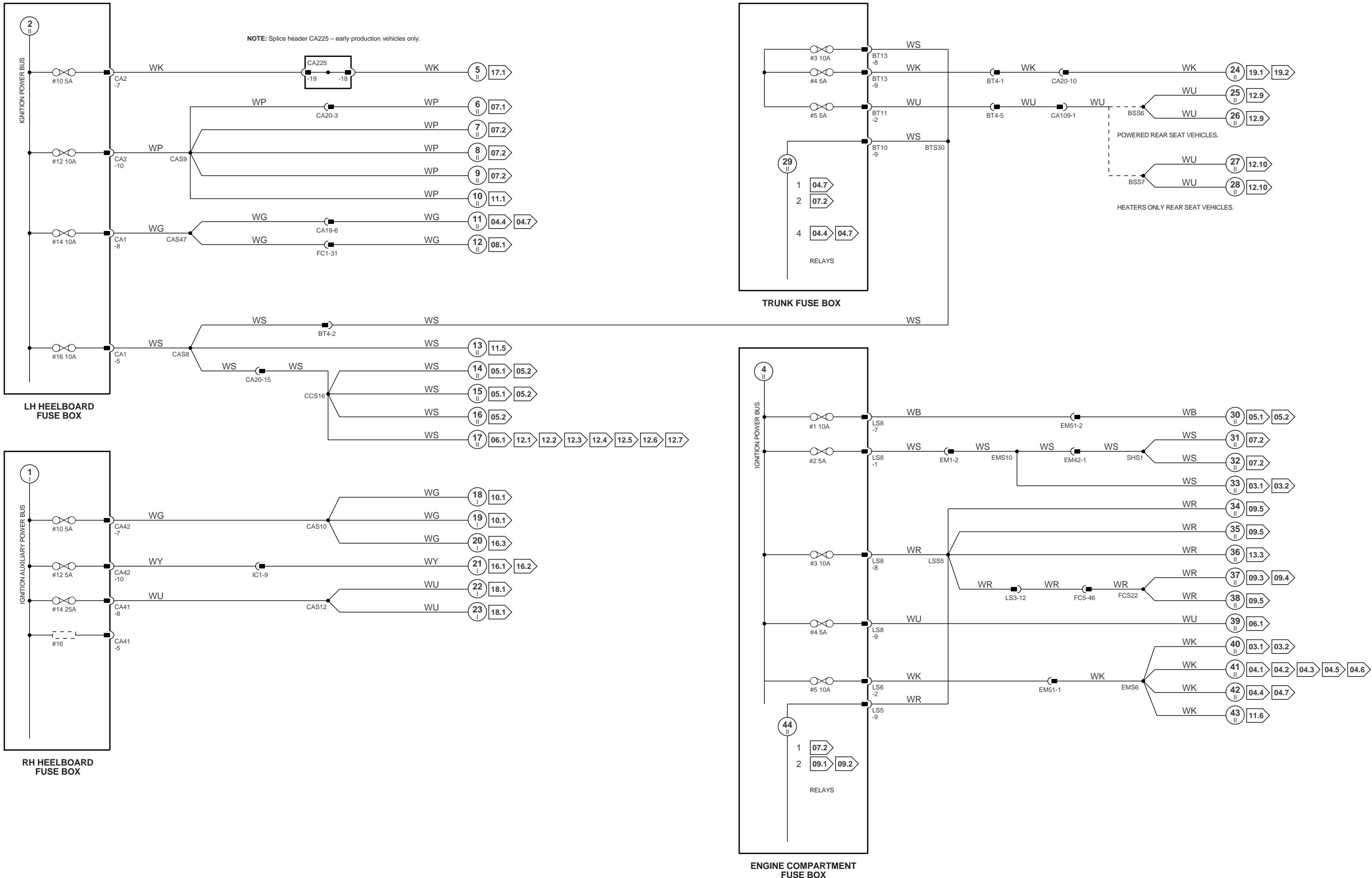
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



$$\left\{ \begin{array}{r} 1 \\ - 6 \\ \hline 1 \\ - 4 \\ \hline \end{array} \right.$$

Fig. 01.1

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2} \qquad \circled{5} - \circled{44} \quad \text{Fig. 01}$$

Fig. 02

Input

▽ Signal Ground (SG)

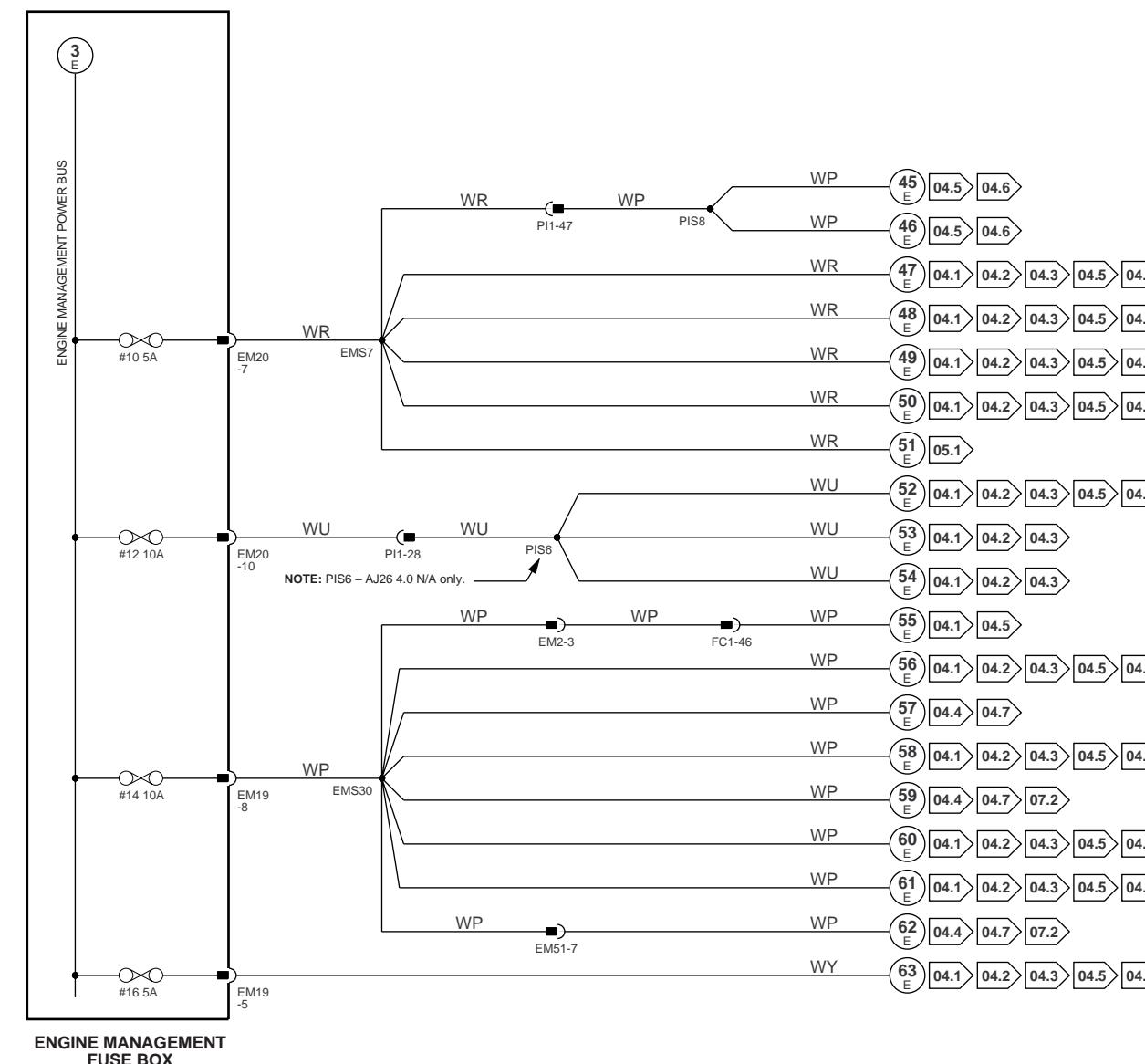
Out

CAN (Netwo

Serial and Encoding

SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



ENGINE MANAGEMENT FUSE BOX

$$\left\{ \begin{array}{r} 1 \\ - 6 \\ \hline 1 \\ - 4 \\ \hline \end{array} \right.$$

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2} \quad \boxed{5} - \boxed{44} \quad \text{Fig. 0}$$

1 - 17 Fig.

Imp

▽ Signal Ground (S)

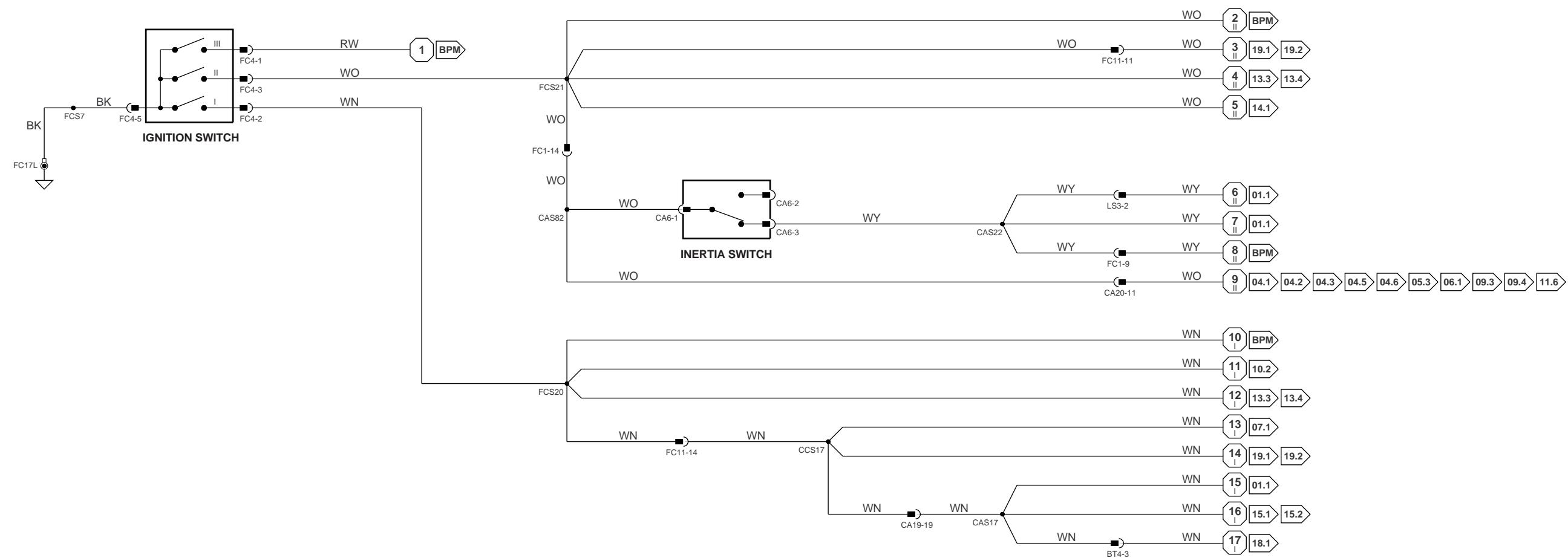
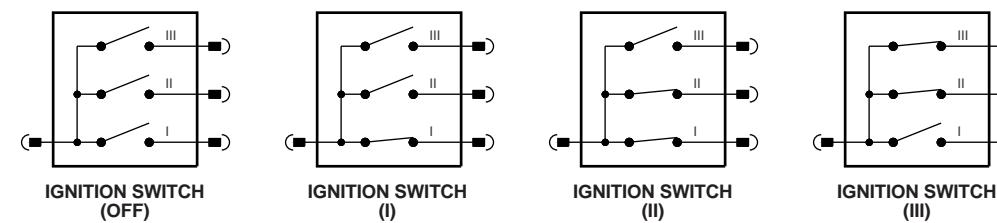
Out

▽ CAN (Netwo

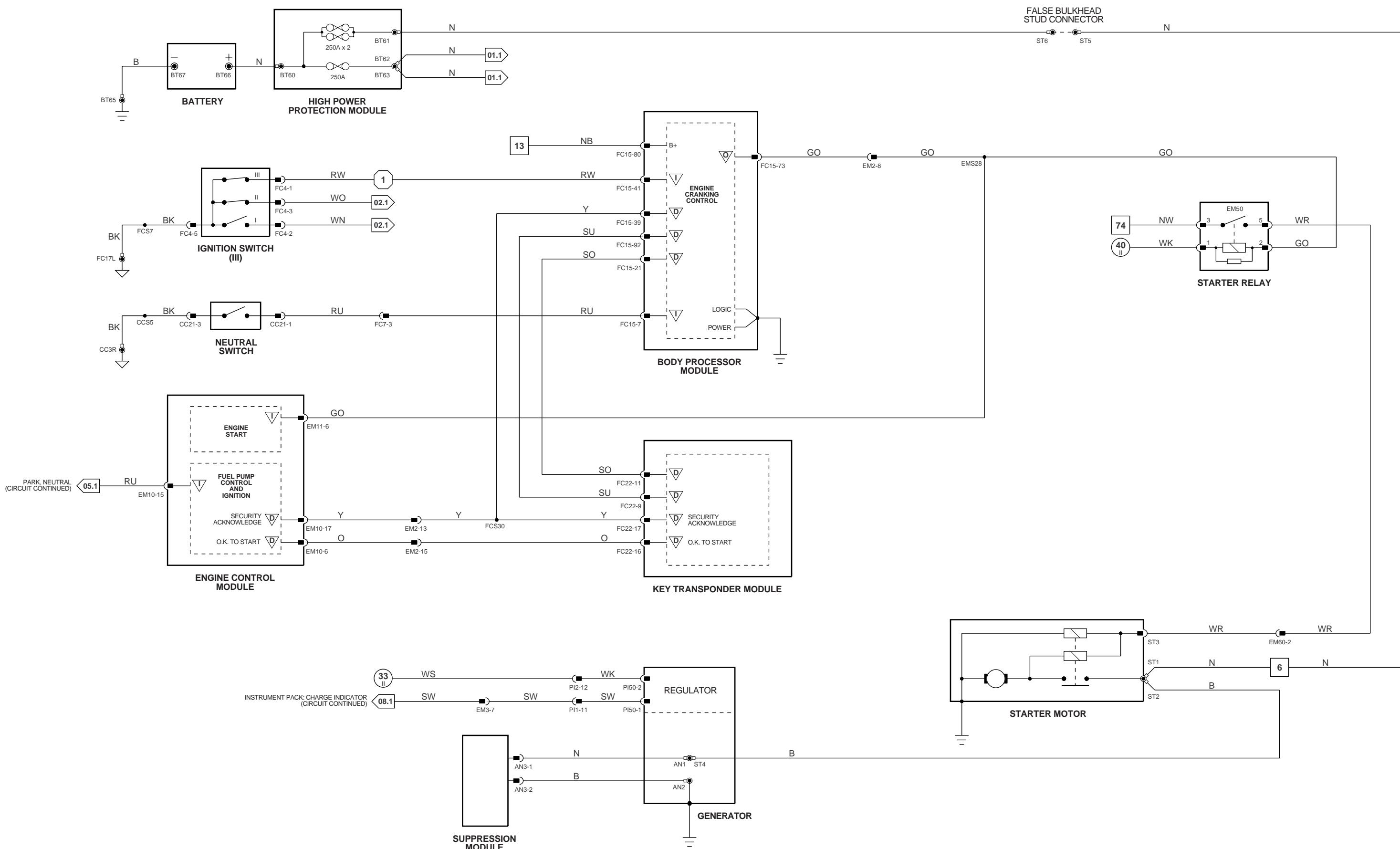
Serial and Encoding

SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



NOTE: Body Processor Module appears in numerous figures.



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.2

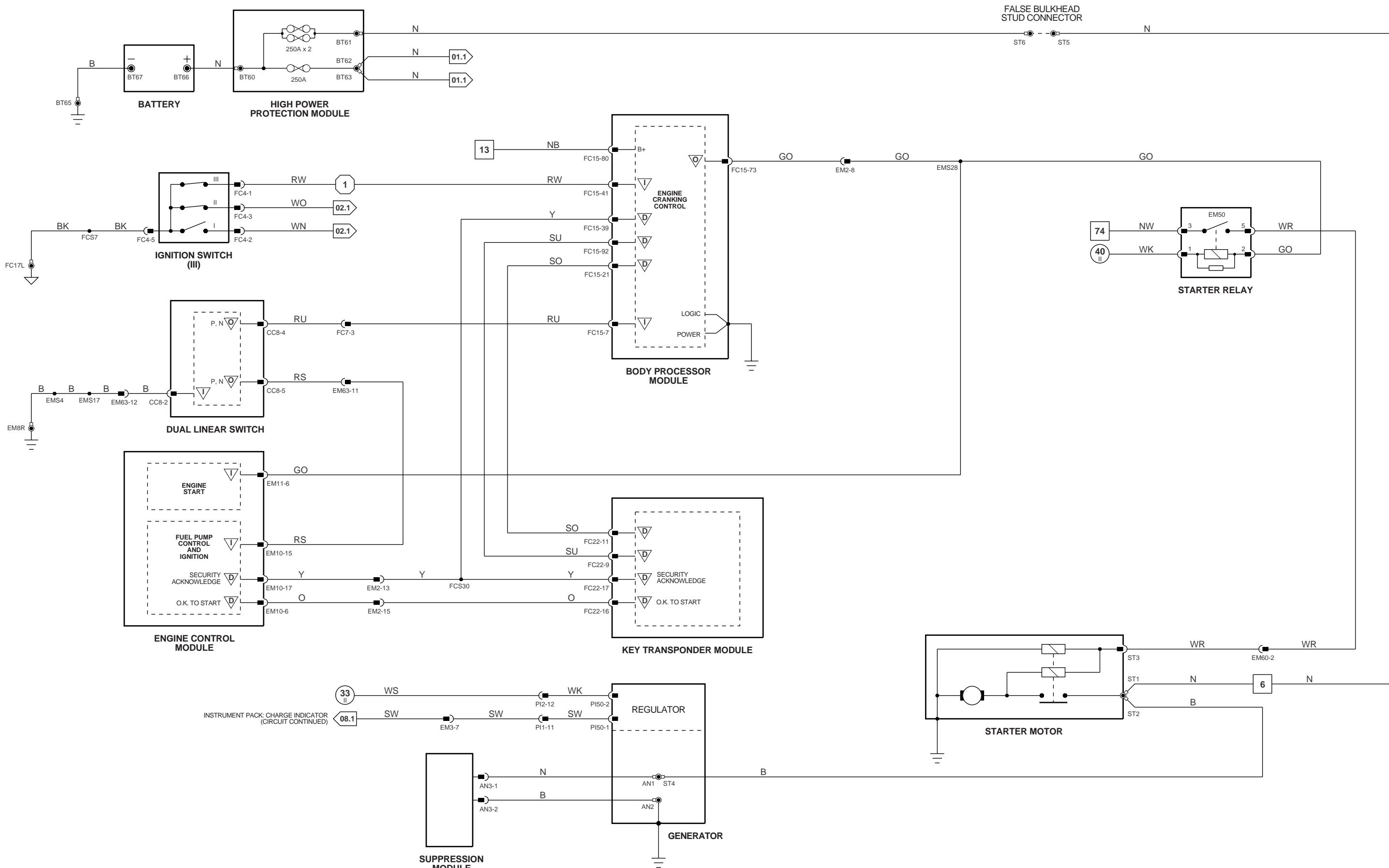
{ 7 - 47 } Fig. 01.3
 { 48 - 82 } Fig. 01.4
 { 5 - 44 } Fig. 01.5
 { 45 - 63 } Fig. 01.6

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: AJ26 N/A Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

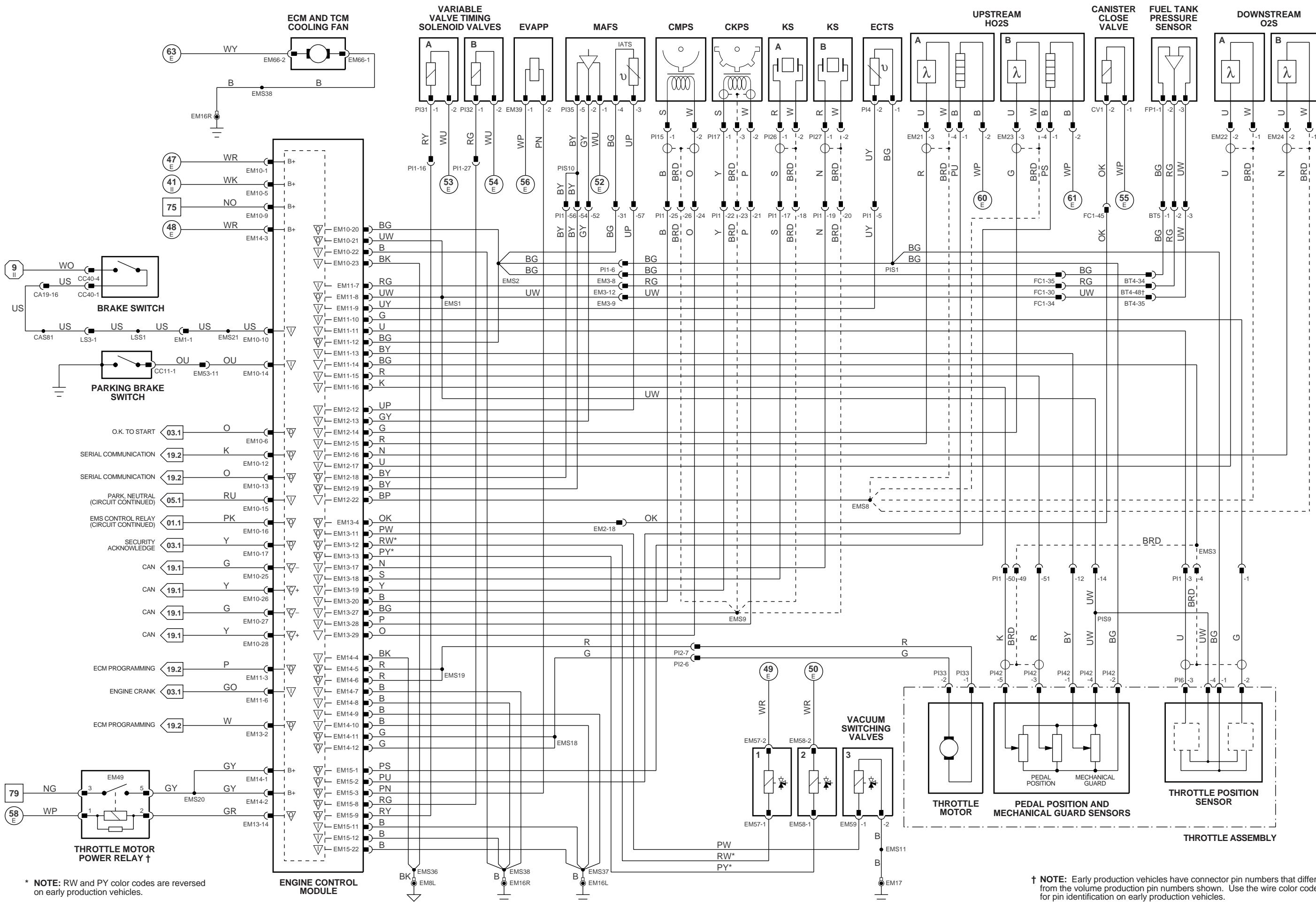
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

△ Input
 ▽ Output
 △ Serial and Encoded Communications
 △ Signal Ground (SG)
 ▽ CAN (Network)

△ Input
 ▽ Output
 △ Serial and Encoded Communications
 △ Signal Ground (SG)
 ▽ CAN (Network)

VARIANT: AJ26 SC Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

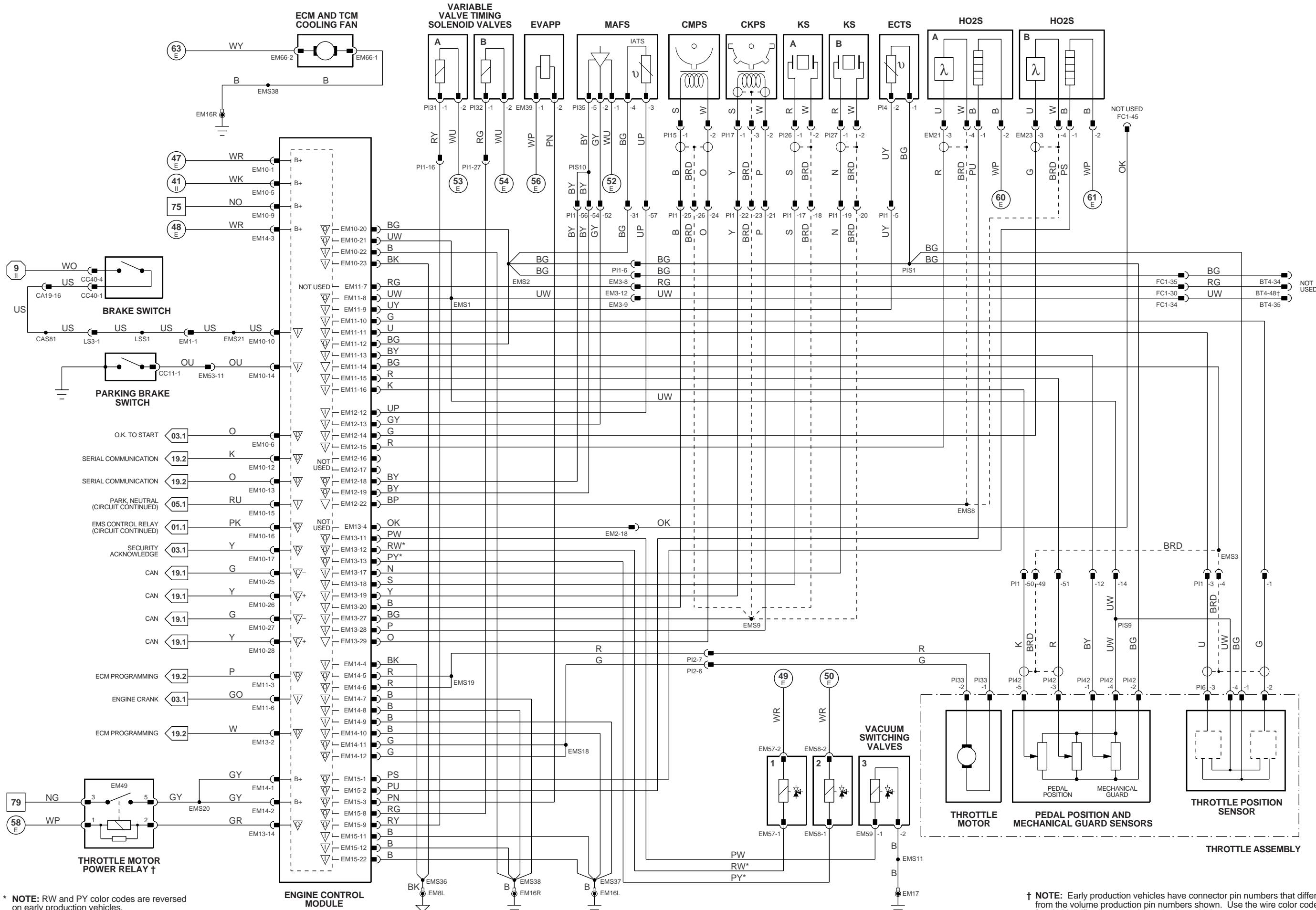
7 - 47 Fig. 01.2
48 - 82 Fig. 01.3
5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

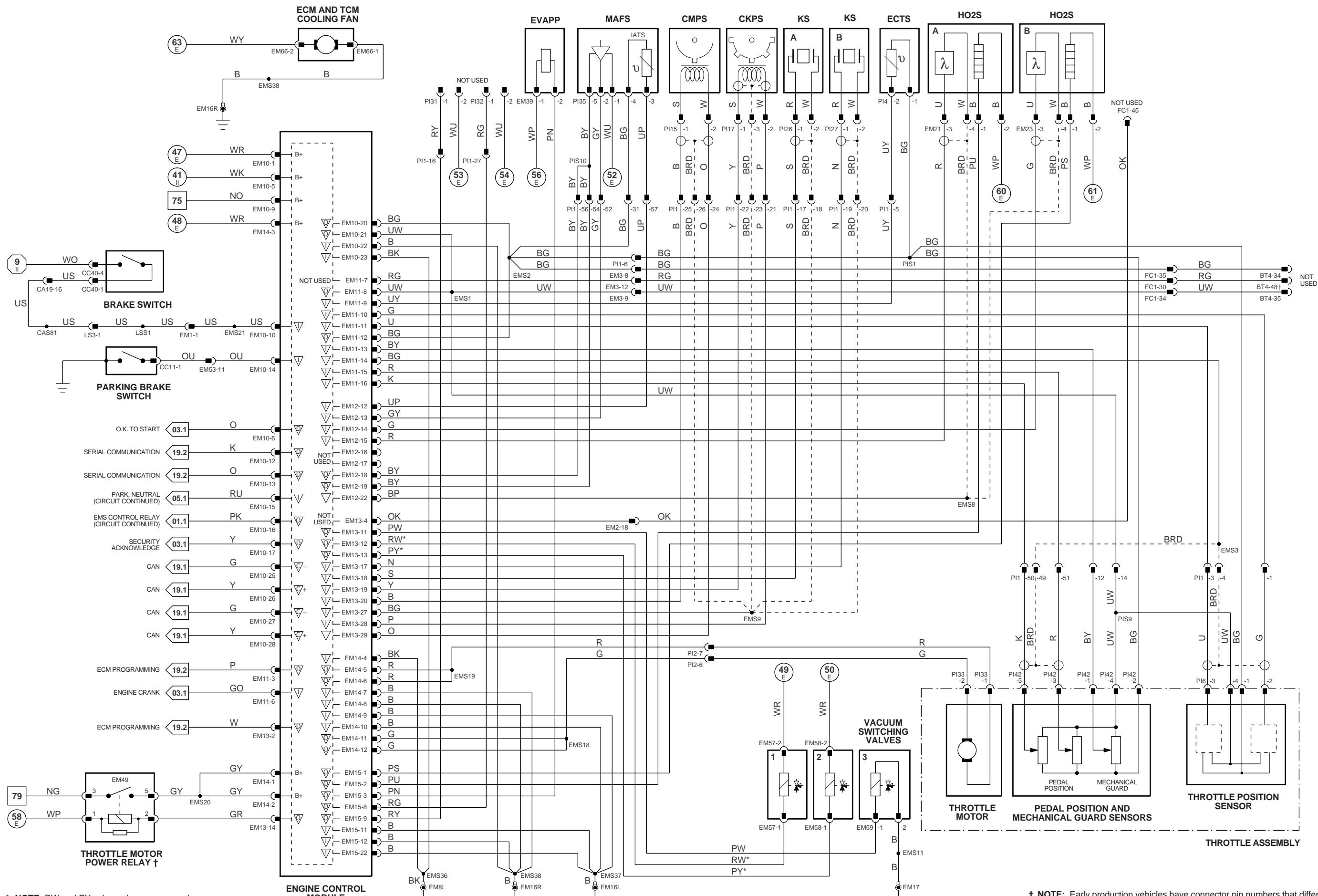
1 - 17 Fig. 02.1

Input
Output
Signal Ground (SG)
CAN (Network)

Serial and Encoded Communications
SCP Network

VARIANT: AJ26 4.0 N/A Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997

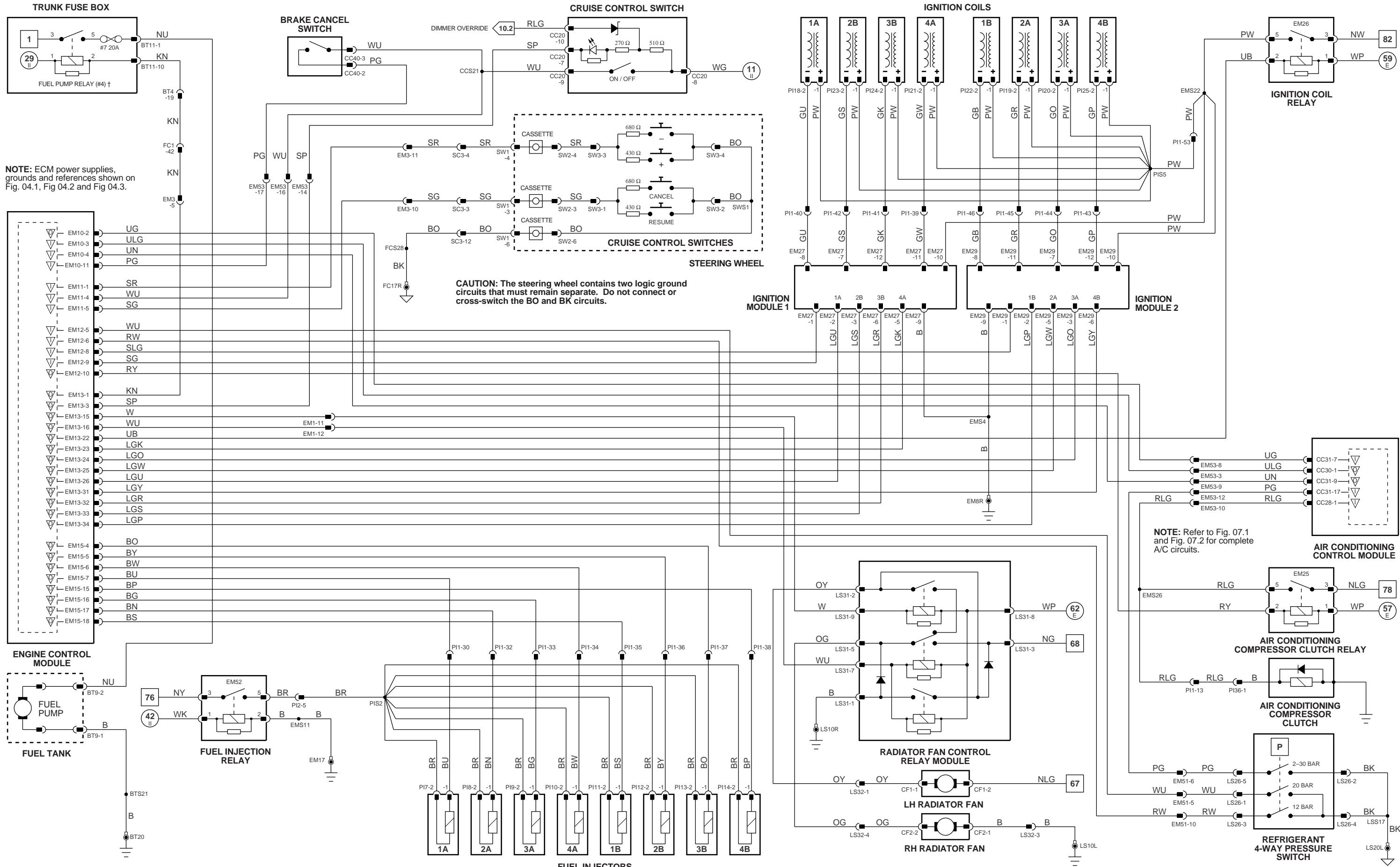




* **NOTE:** RW and PY color codes are reversed on early production vehicles.

† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.





† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

{ 1 - 6 } Fig. 01.1
{ 1 - 4 } Fig. 01.1

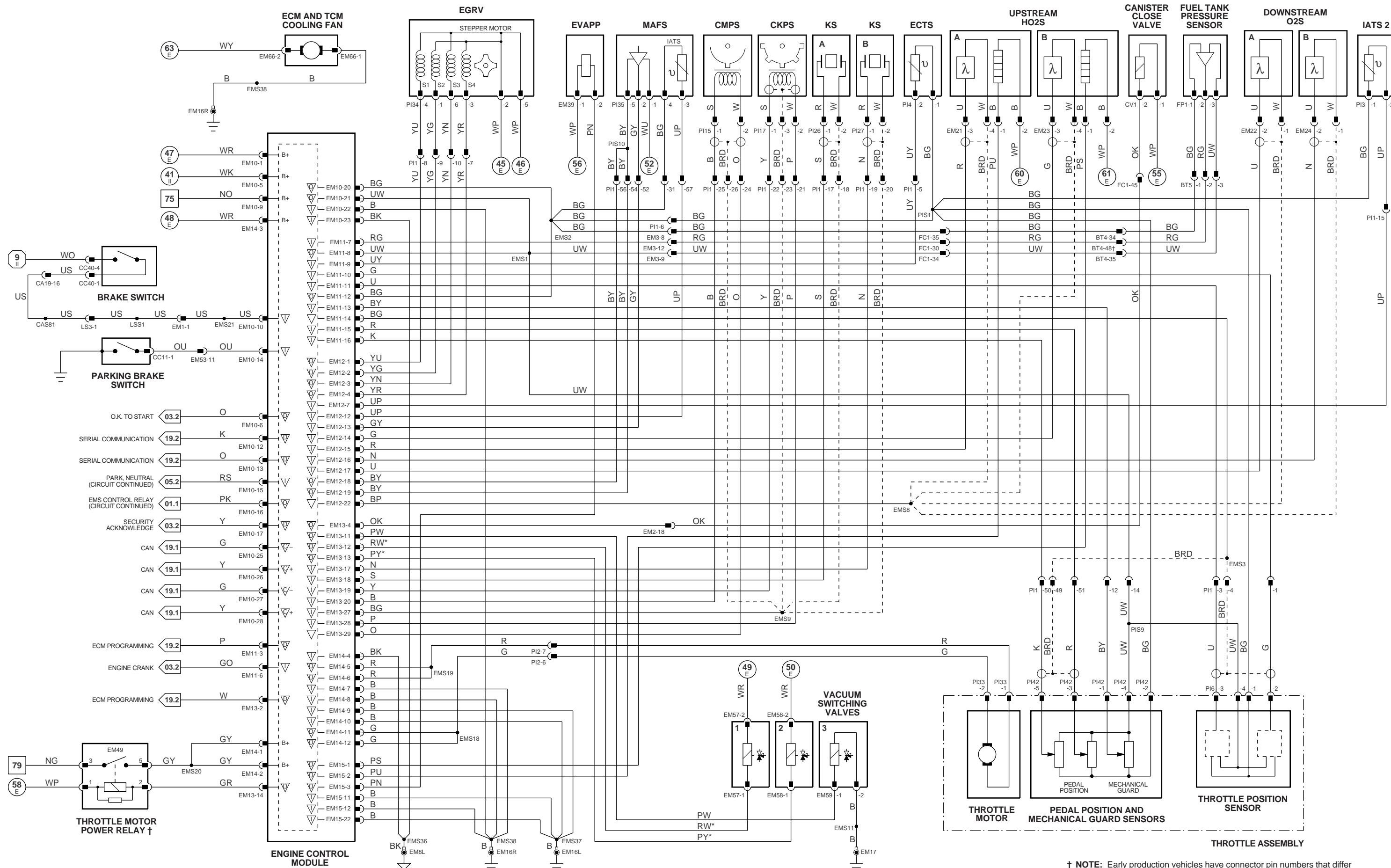
{ 7 - 47 } Fig. 01.2
{ 48 - 82 } Fig. 01.3
{ 5 - 44 } Fig. 01.4
{ 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
▽ Output
▽ Signal Ground (SG)
▽ CAN (Network)

▽ Serial and Encoded Communications
▽ SCP Network

VARIANT: AJ26 4.0 and 3.2 N/A Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

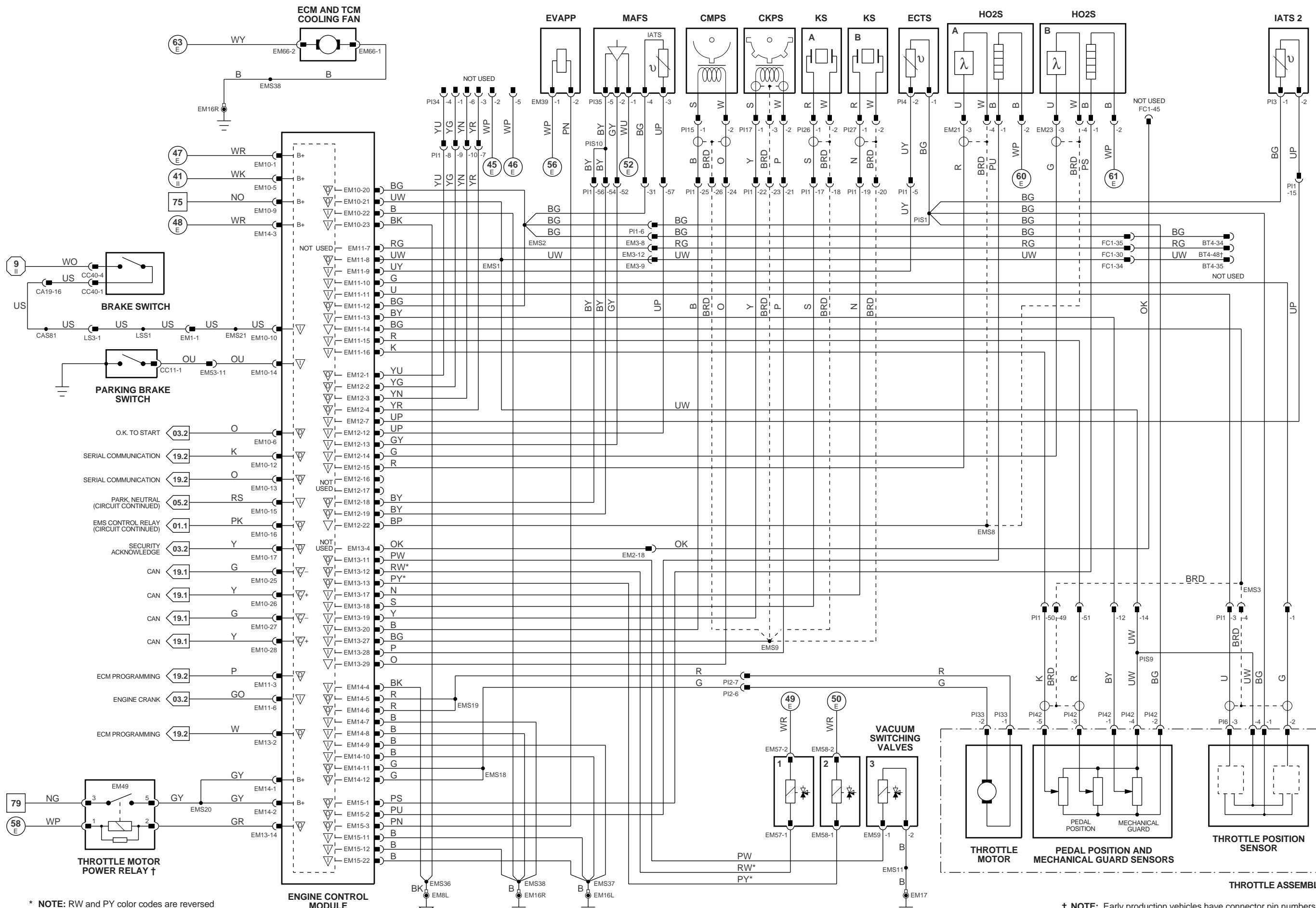
{ 7 - 47 } Fig. 01.2
 { 48 - 82 } Fig. 01.3
 { 5 - 44 } Fig. 01.4
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: AJ26 4.0 SC NAS Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

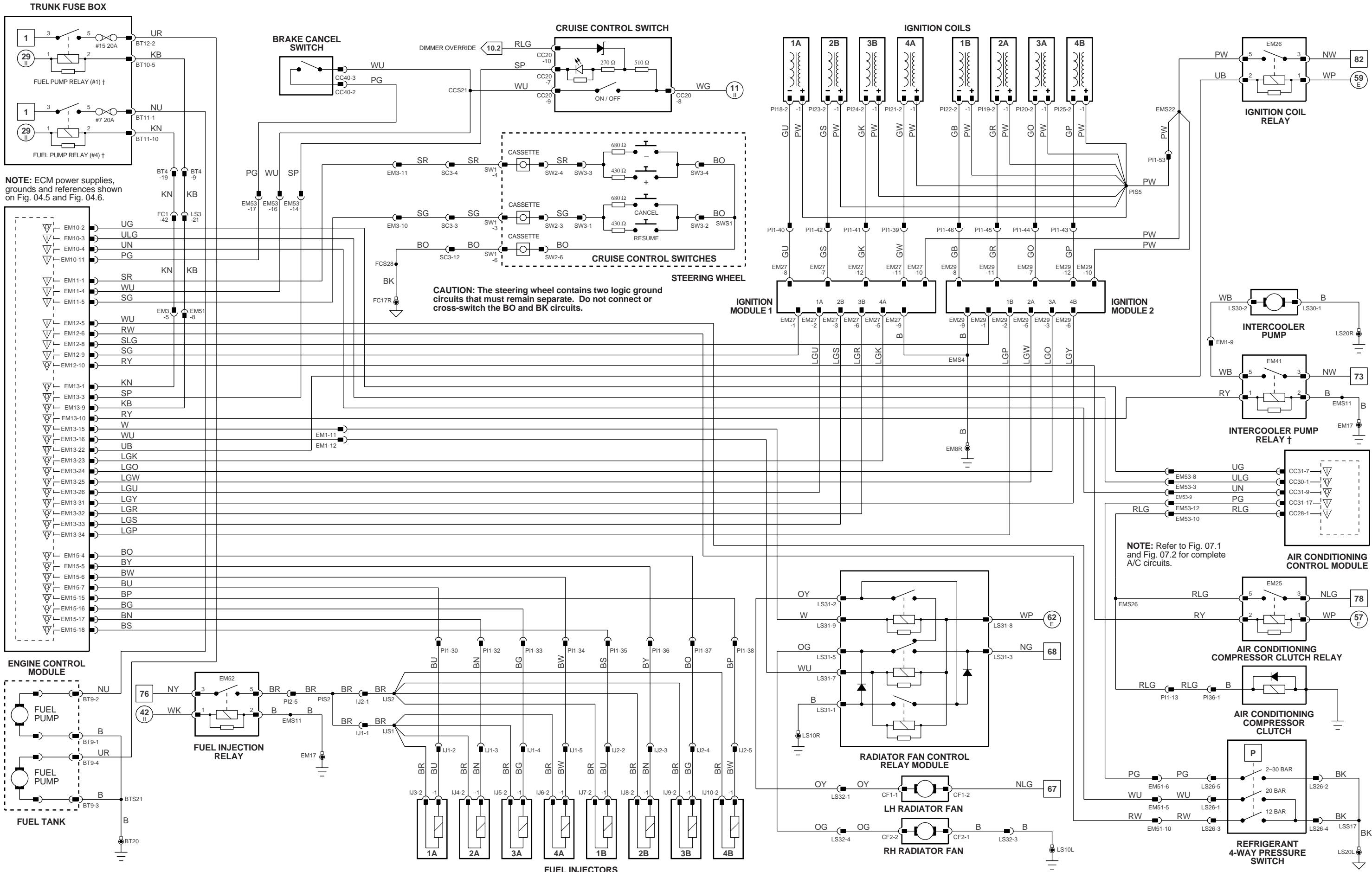
1 - 17 Fig. 02.1

Input
Output
Signal Ground (SG)

Serial and Encoded Communications
CAN (Network)

SCP Network

VARIANT: AJ26 4.0 SC ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
{ 1 - 4 } Fig. 01.1

{ 7 - 47 } Fig. 01.2
{ 48 - 82 } Fig. 01.3
{ 5 - 44 } Fig. 01.4
{ 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

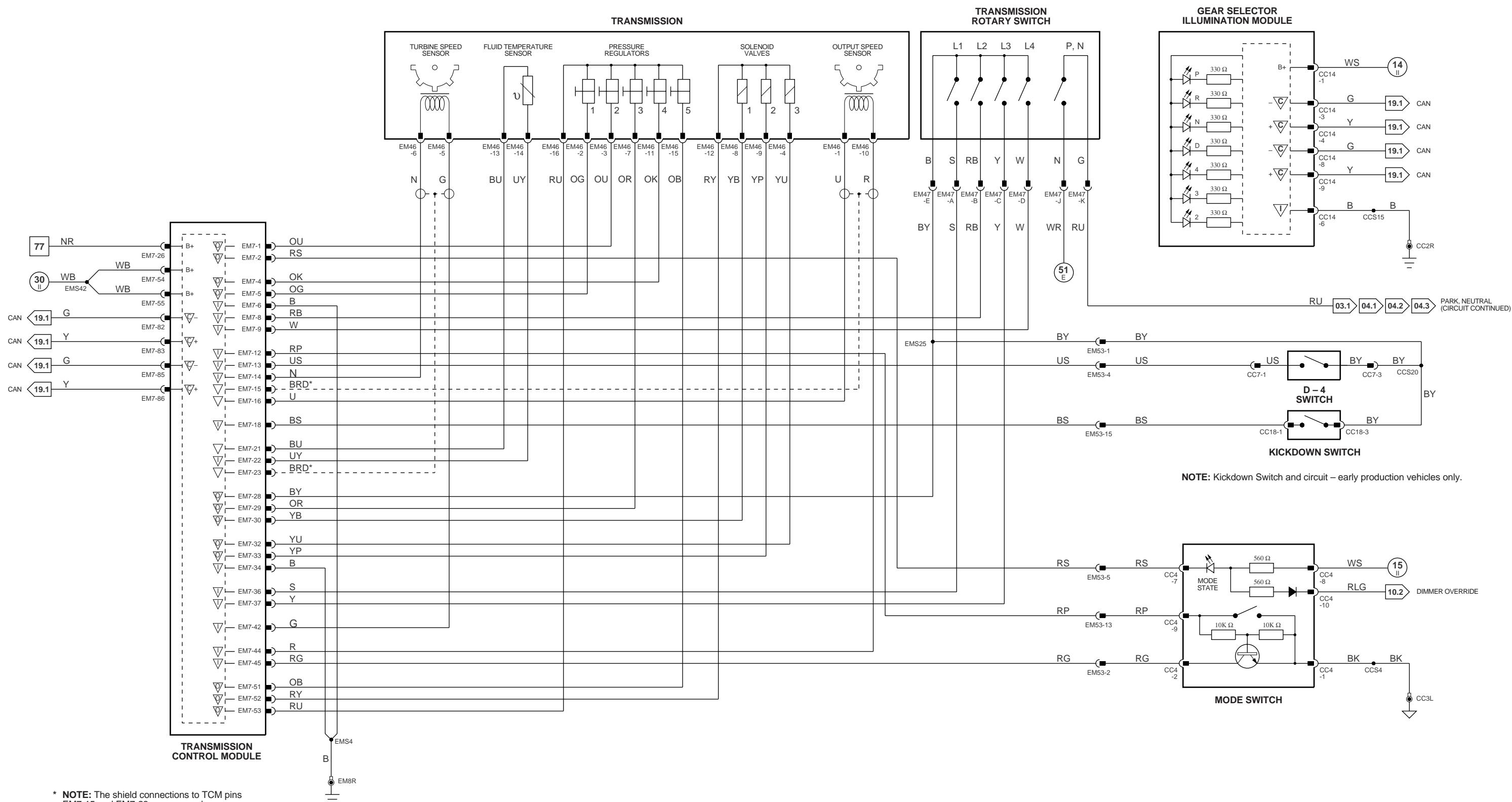
▽ Input
▽ Output
▽ Signal Ground (SG)
▽ CAN (Network)

▽ Serial and Encoded Communications
▽ SCP Network

VARIANT: AJ26 4.0 SC Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



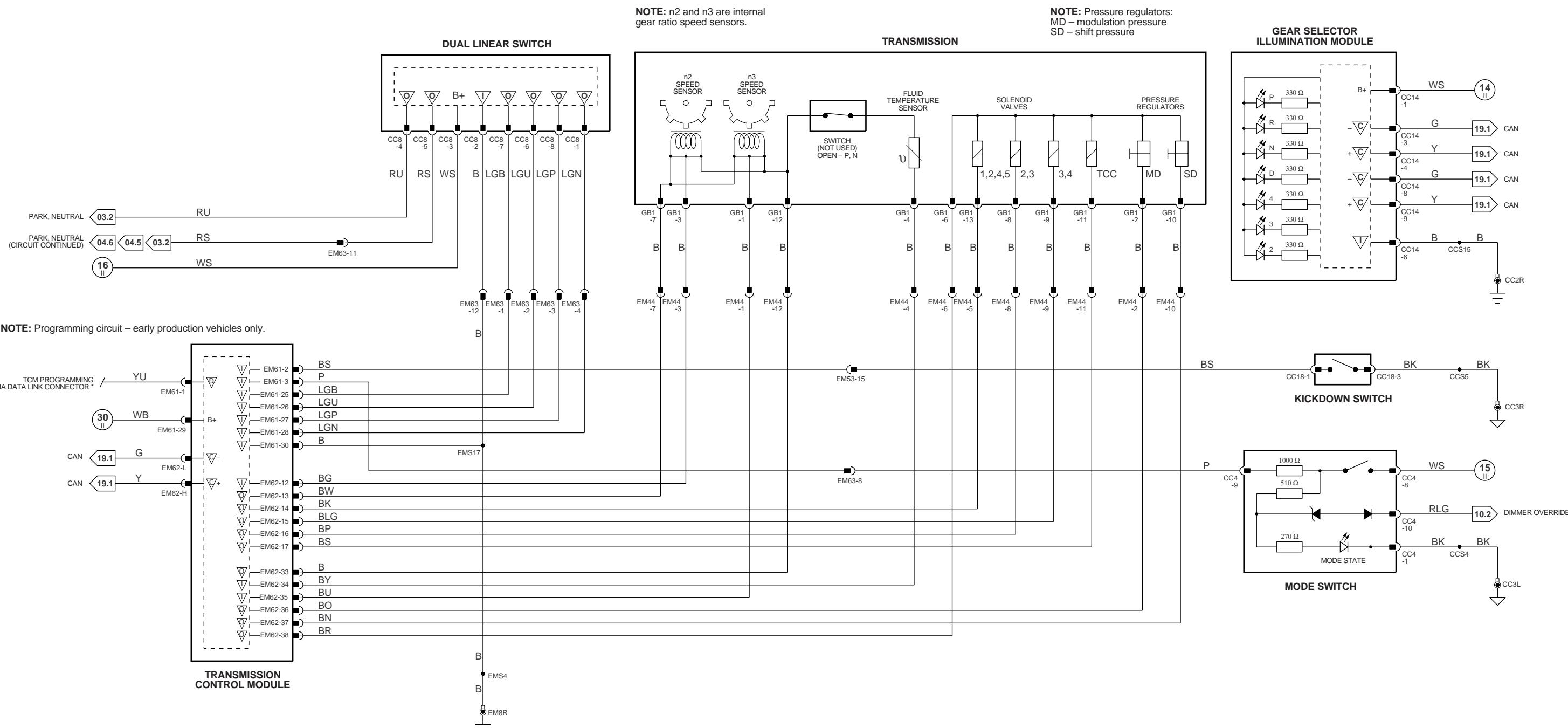
NOTE: Gear Selector Illumination Module – CAN “listen only” node for gear selector position indicators.

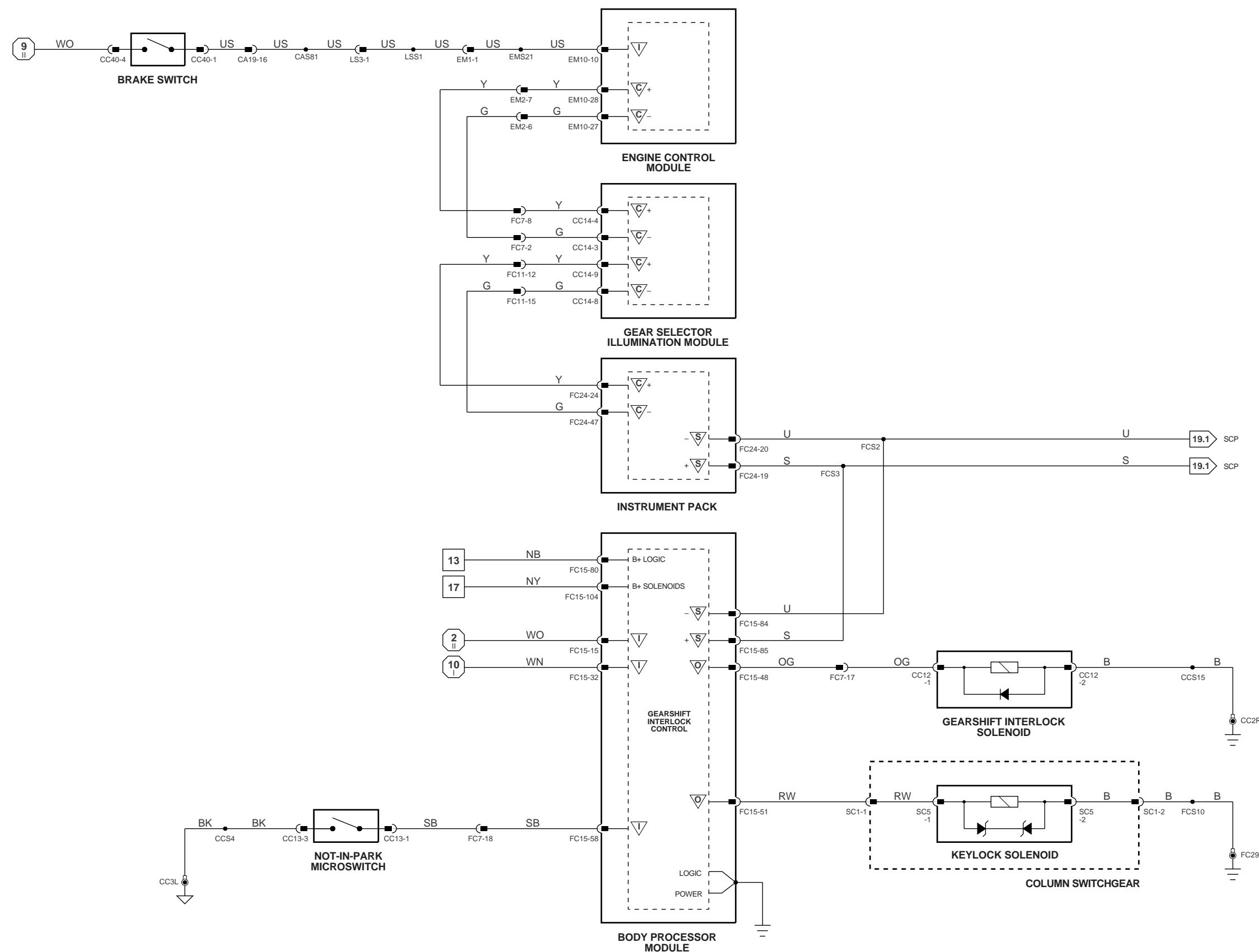


* **NOTE:** The shield connections to TCM pins EM7-15 and EM7-23 are reversed on early production vehicles.



NOTE: Gear Selector Illumination Module – CAN "listen only" node for gear selector position indicators.





{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

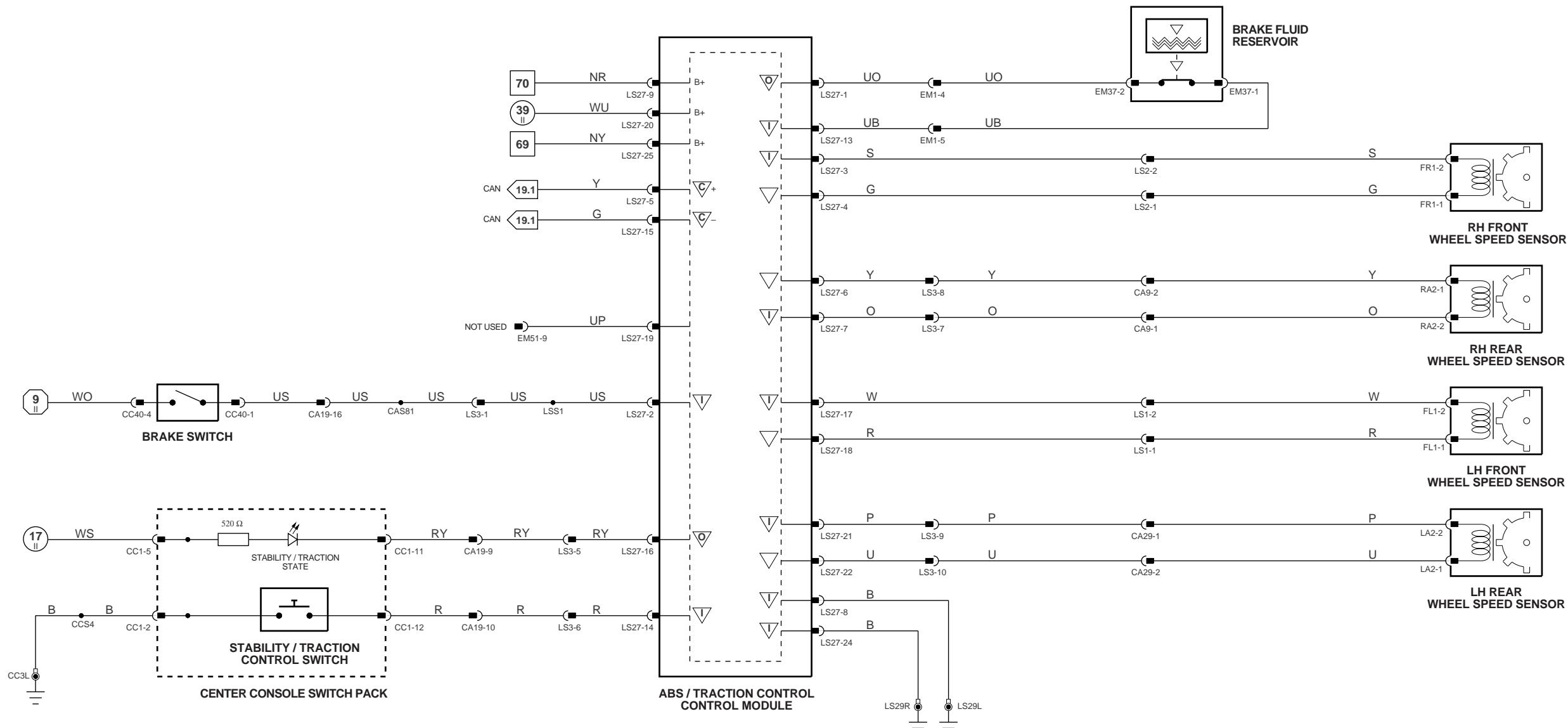
{ 7 - 47 } Fig. 01.2
 { 48 - 82 } Fig. 01.3
 { 5 - 44 } Fig. 01.4
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▀ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: All Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



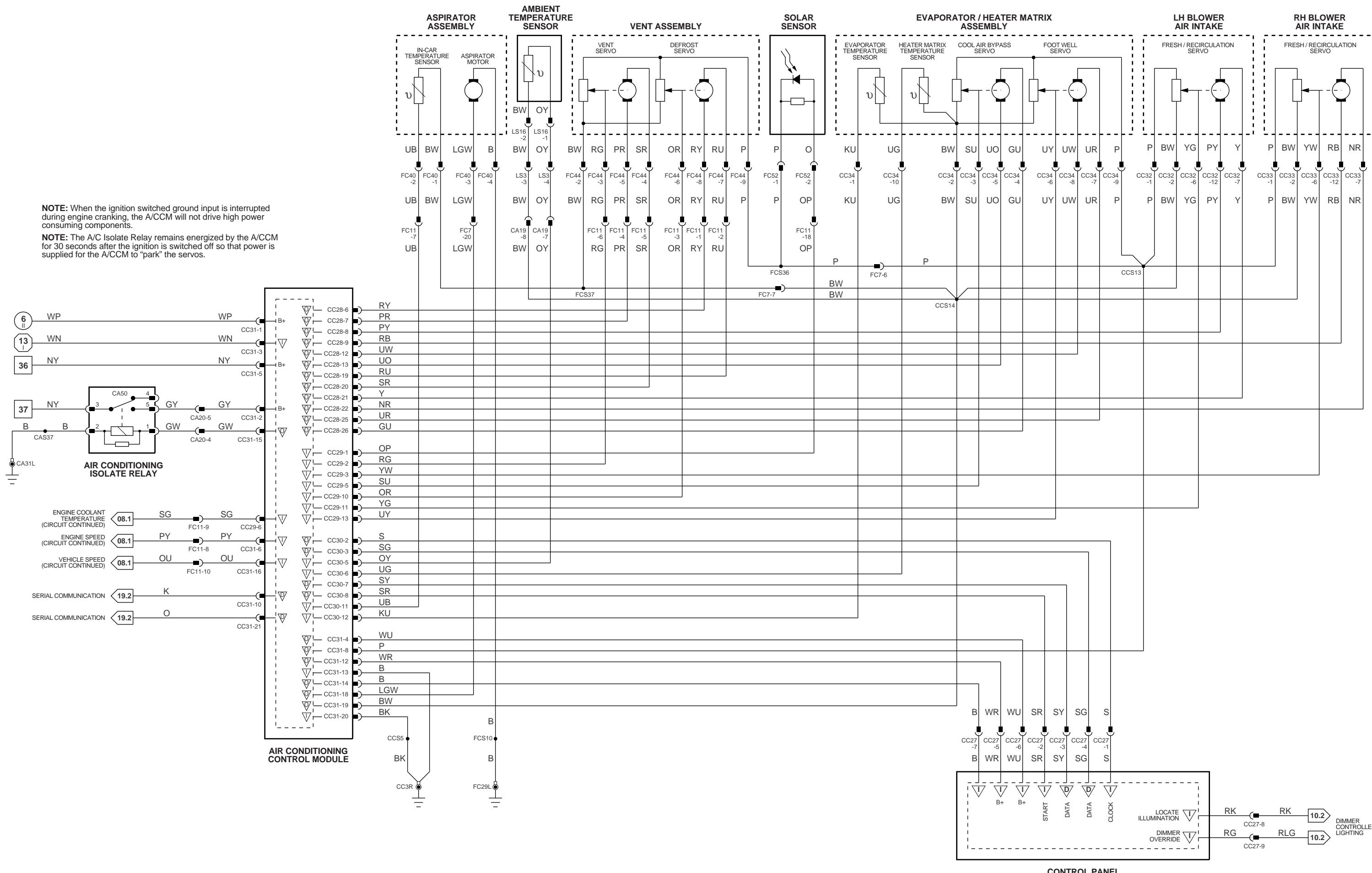
{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.2

{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3

{ 1 - 17 } Fig. 02.1
 { 45 - 63 } Fig. 01.5

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ Serial and Encoded Communications
 ▽ CAN (Network)
 ▽ SCP Network

VARIANT: All Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

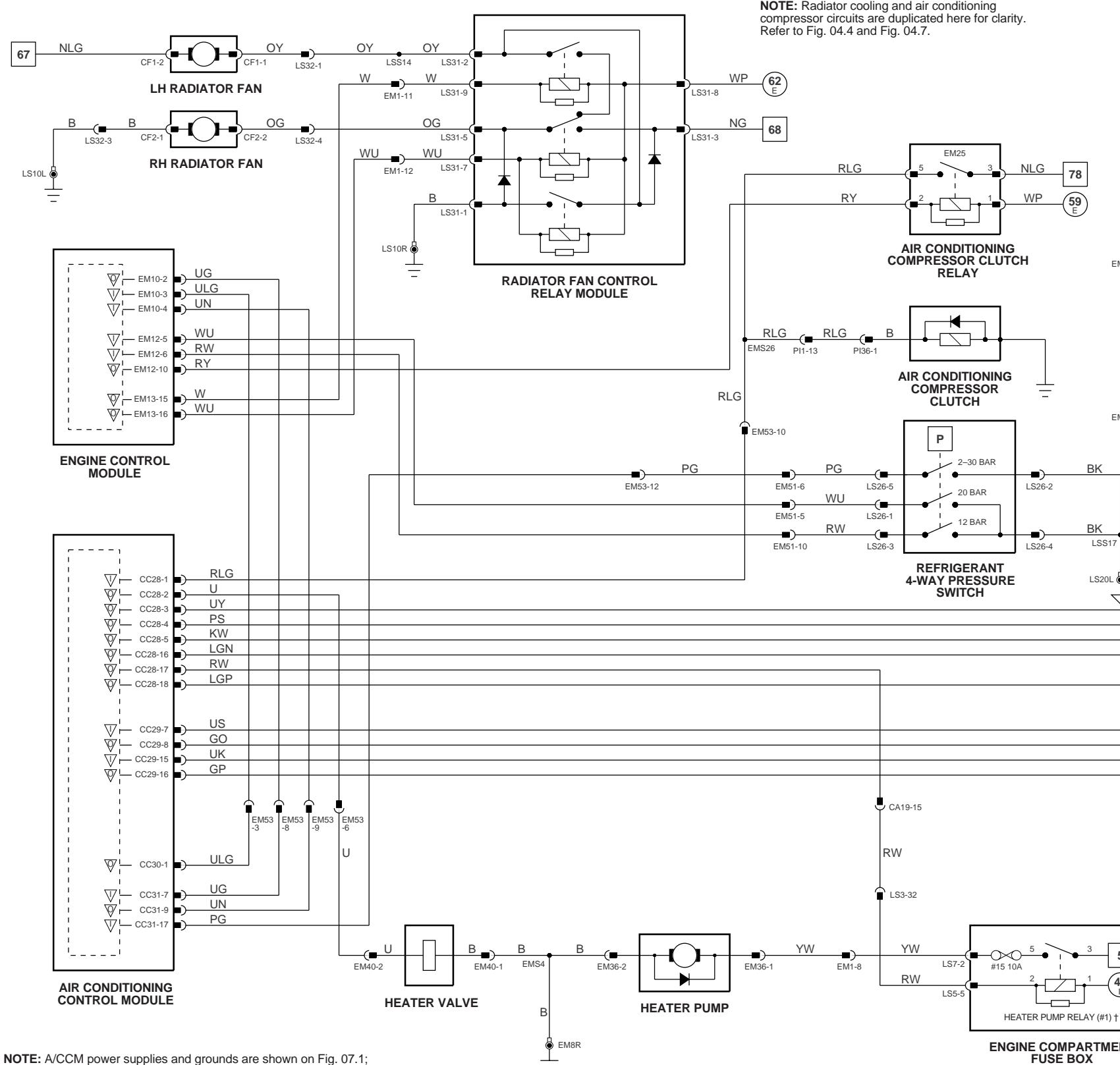
{ 7 - 47 } Fig. 01.2
 { 48 - 82 } Fig. 01.3
 { 5 - 44 } Fig. 01.4
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

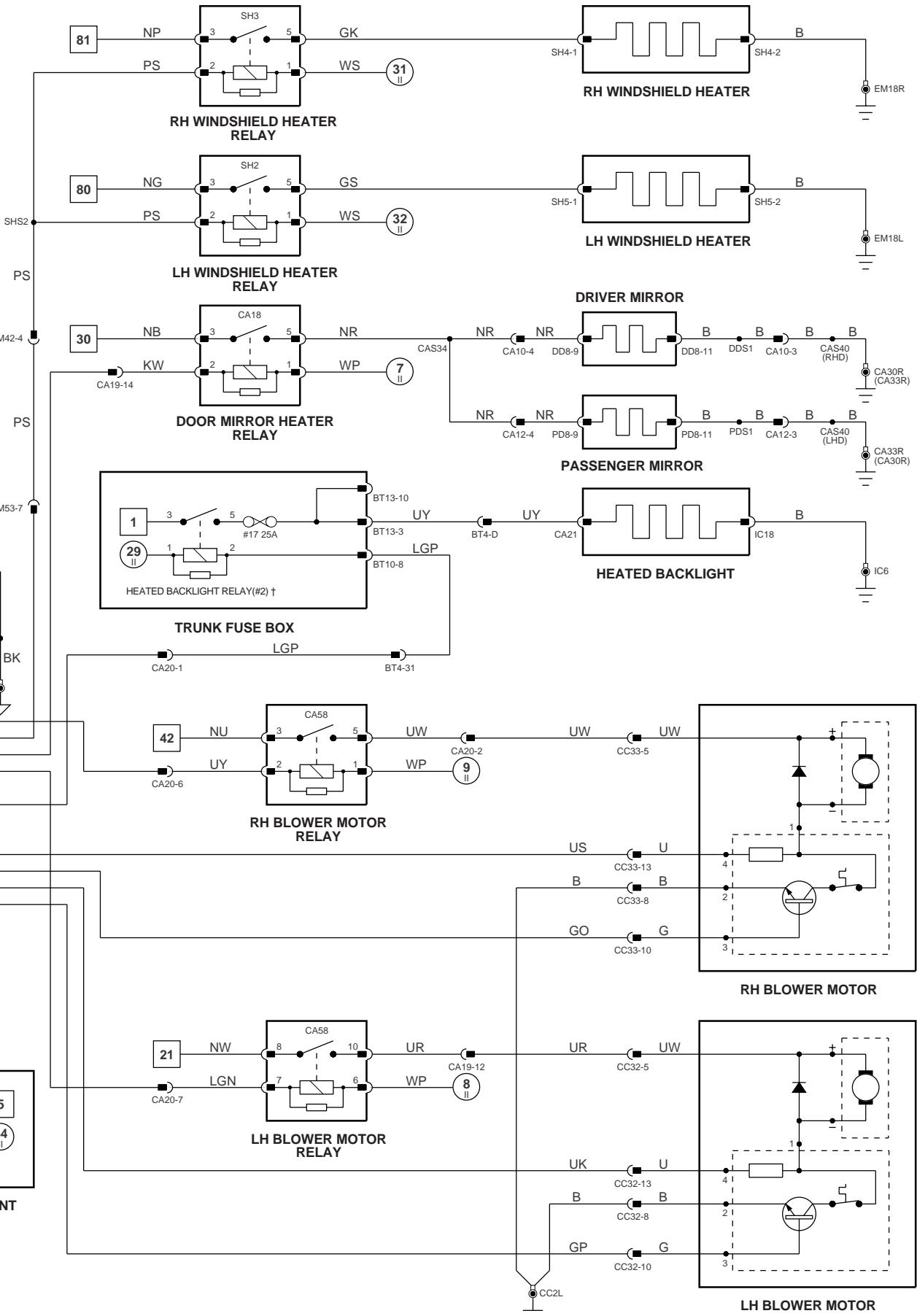
▀ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▀ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: All Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



NOTE: A/CCM power supplies and grounds are shown on Fig. 07.1; ECM power supplies and grounds are shown on Fig. 04.1 – Fig. 04.6.



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

Fig. 01.1
1 - 6
1 - 4

Fig. 01.2
7 - 47
48 - 82

Fig. 01.4
5 - 44
45 - 63

Fig. 01.5

Fig. 02.1

Input
Output
Signal Ground (SG)
CAN (Network)

Serial and Encoded Communications
SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997

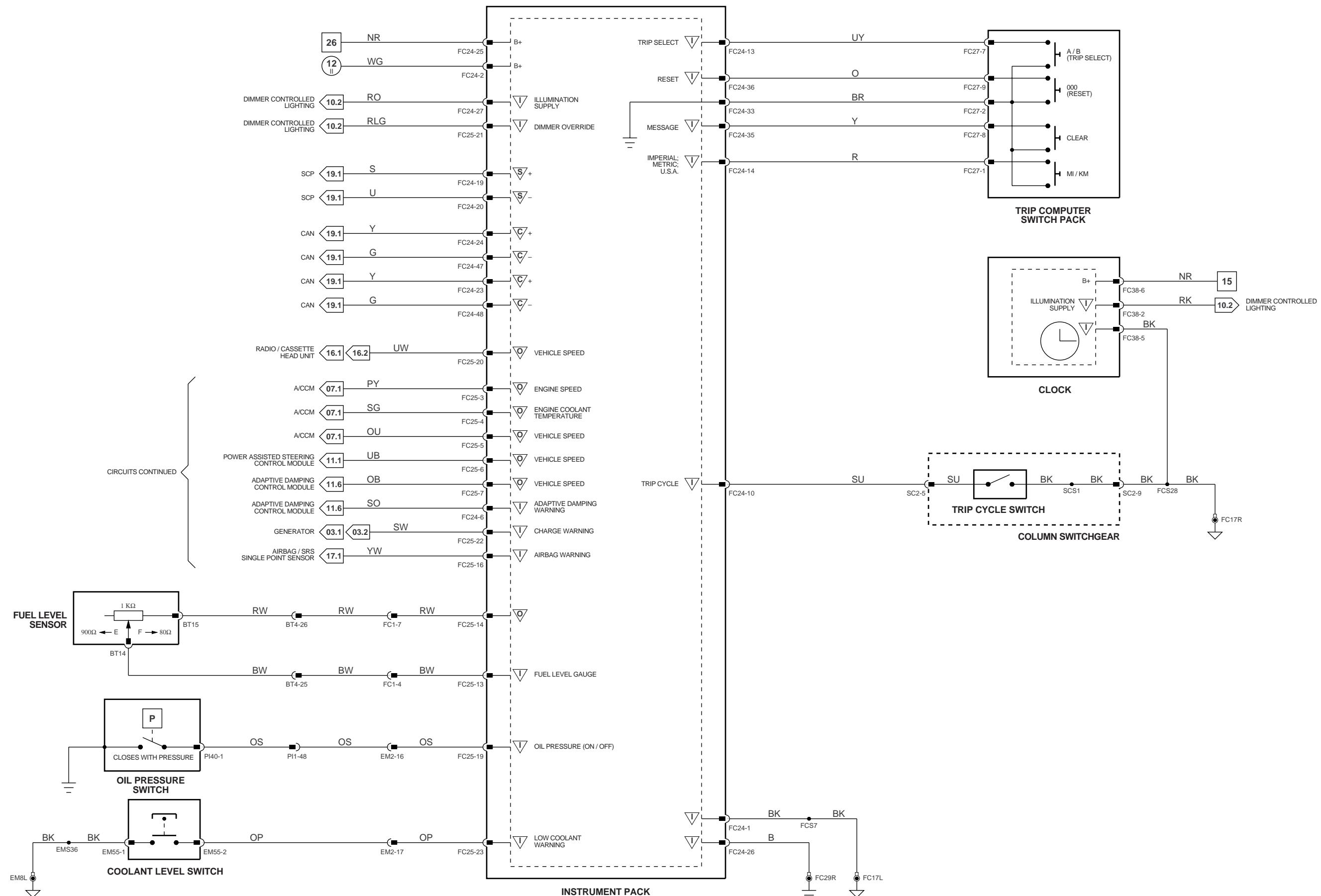


Fig. 01.1

Fig. 01.2

Fig. 02.1

Fig. 01.3

Fig. 01.4

Fig. 01.5

Fig. 01.6

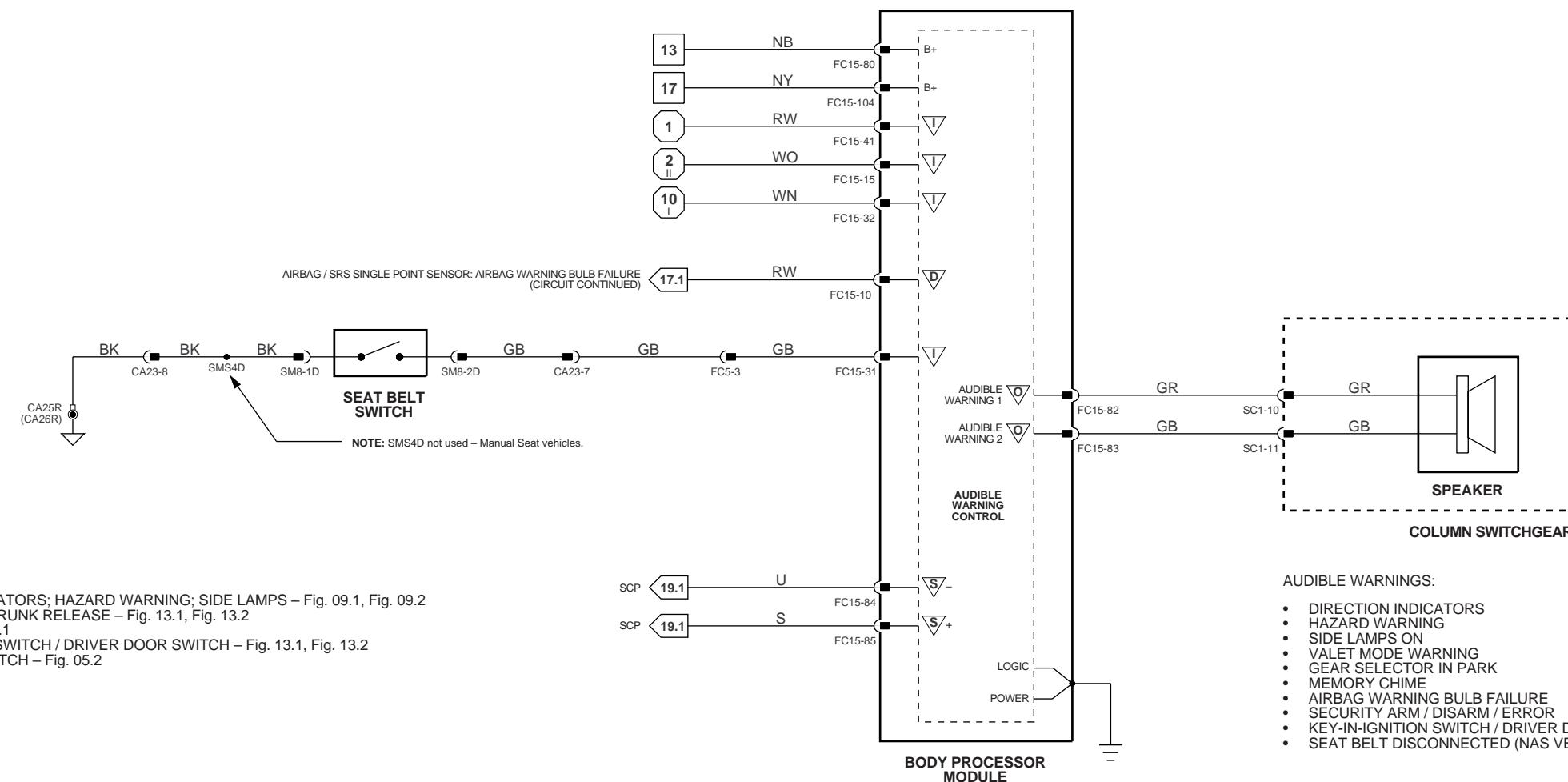
Input

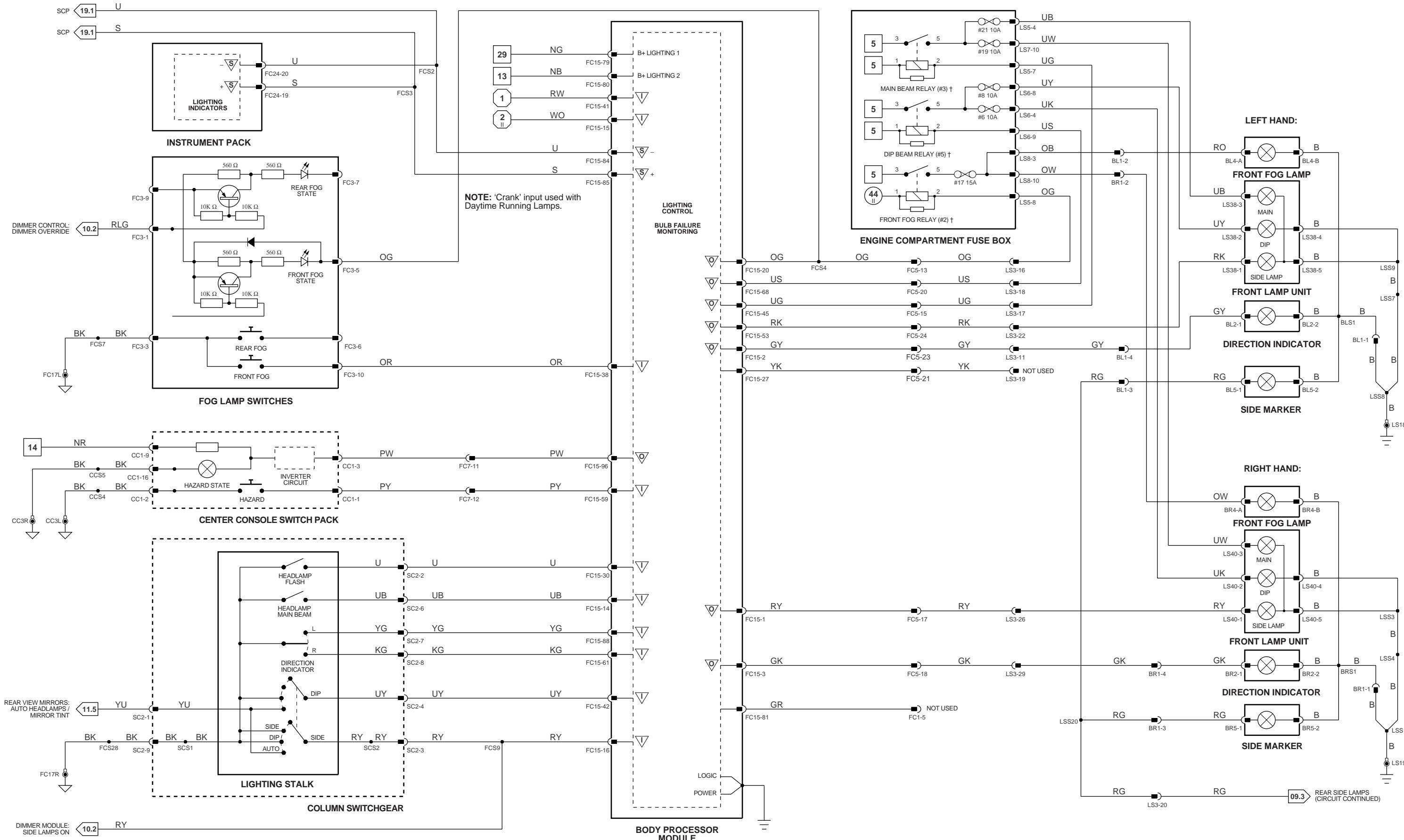
Signal Ground (SG)

Output

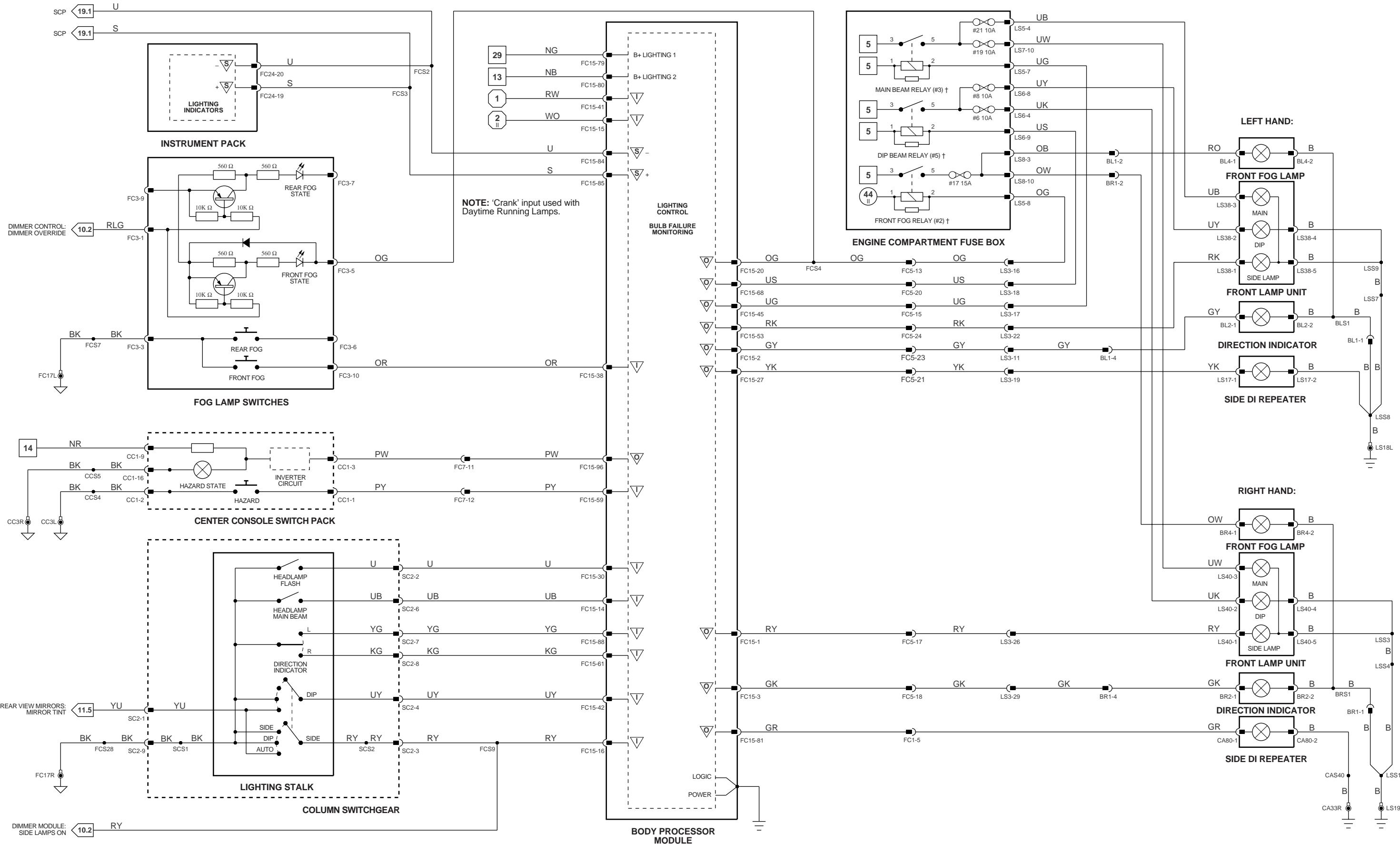
CAN (Network)

Serial and Encoded Communications
SCP NetworkVARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997





† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.



NOTES:
DI bulb failure – BPM internal function.
Daytime running lamps – BPM programmed function

† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

$$\left\{ \begin{array}{l} 1 - 6 \\ 1 - 4 \end{array} \right.$$

7	—	47	Fig. 01.2	5 	—	44 	Fig. 01.4
48	—	82	Fig. 01.3	45	—	63	Fig. 01.5

1 - 17 Fig. 02.

Input

▽ Signal Ground (SG)

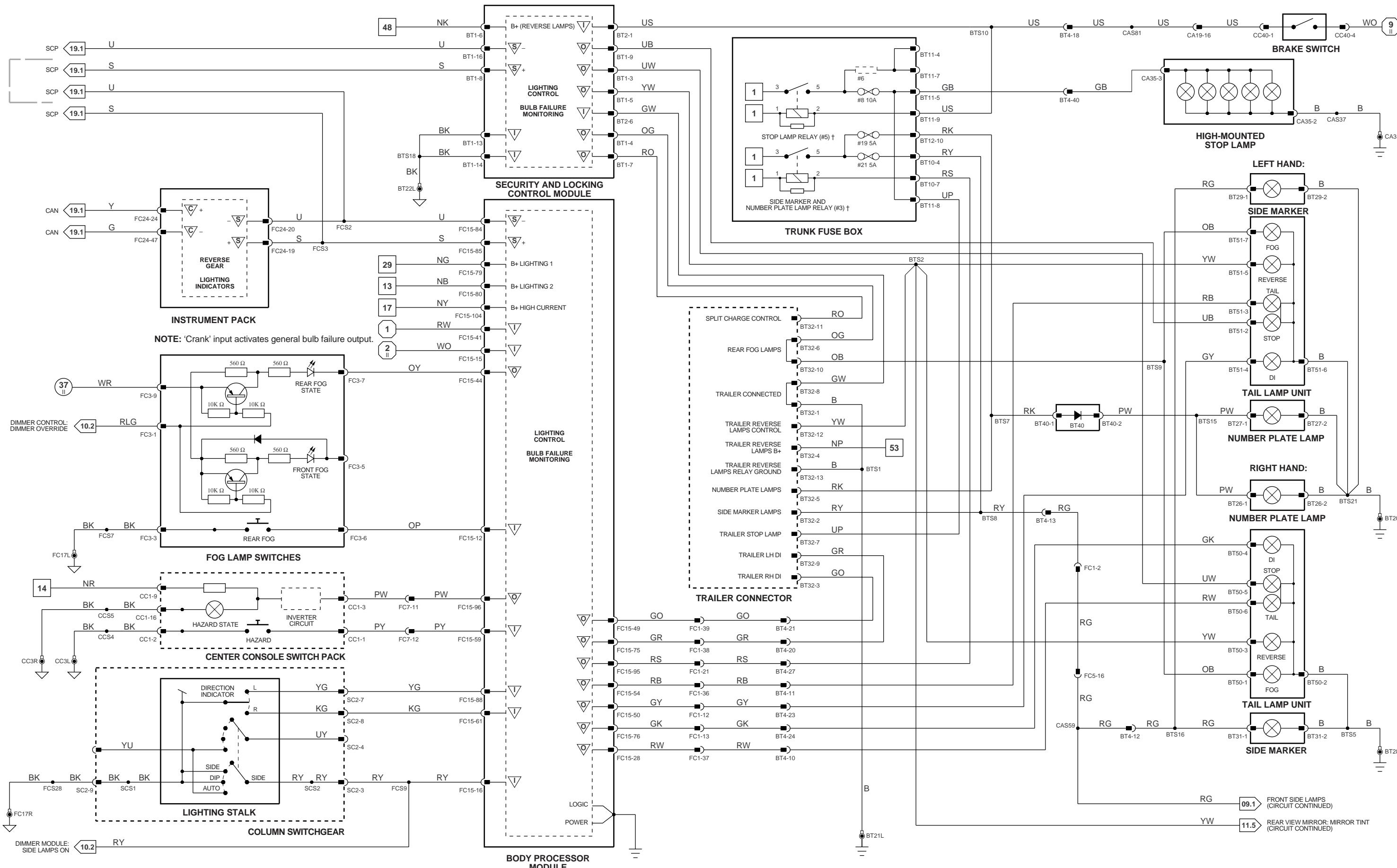
Output

▼ Output

Serial and Encoded

▼ Communication
▼ SCP Network

VARIANT: ROW Vehicles
VIN RANGE: AII
DATE OF ISSUE: SEPTEMBER 1997



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

$$\left\{ \begin{array}{r} 1 \\ - 6 \\ \hline 1 \\ - 4 \\ \hline \end{array} \right. \quad \text{Fig. 01.1}$$

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2}$$

1 - 17 Fig. 02

▼ Inpi

▼ Input

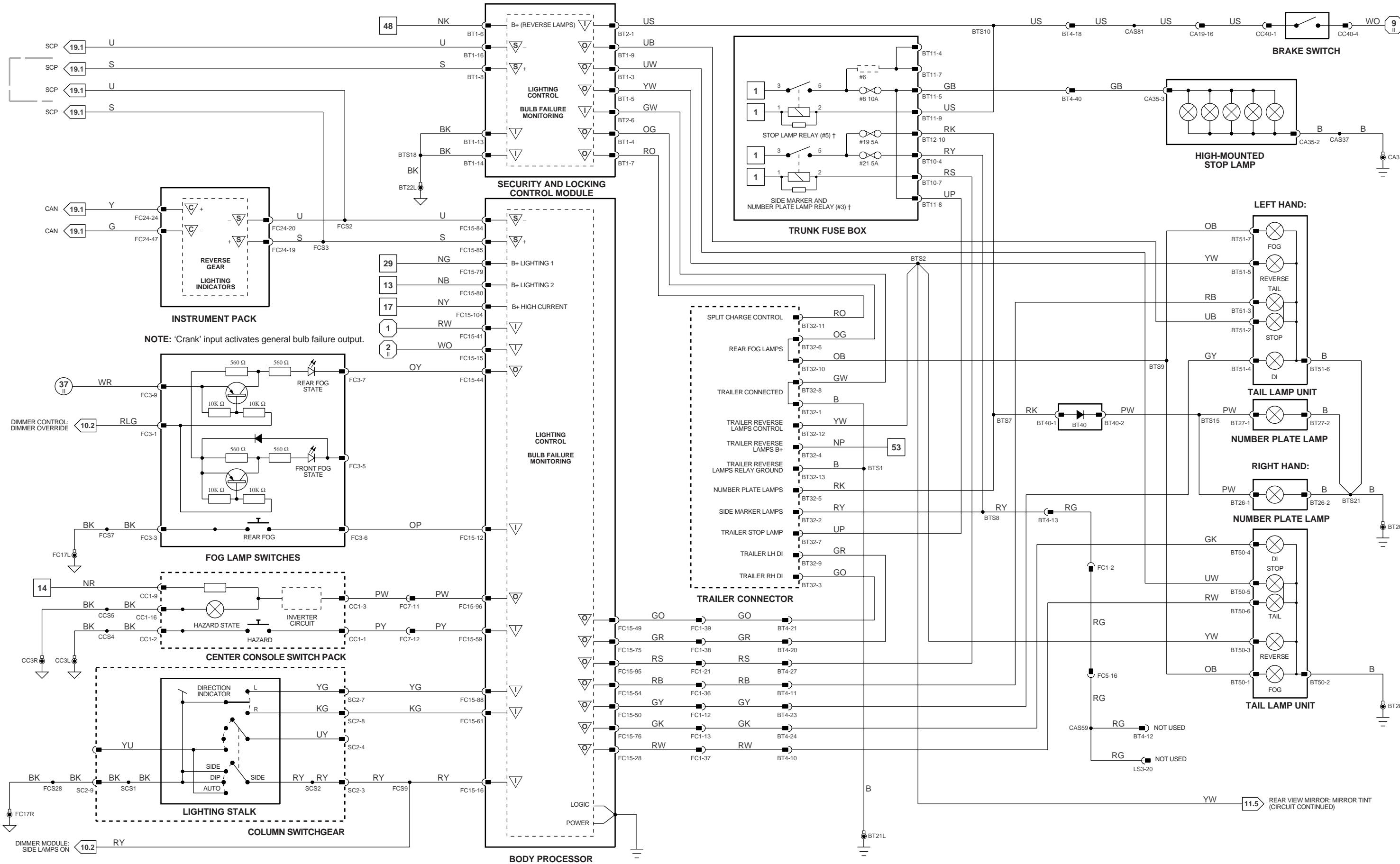
Output

▼ Output

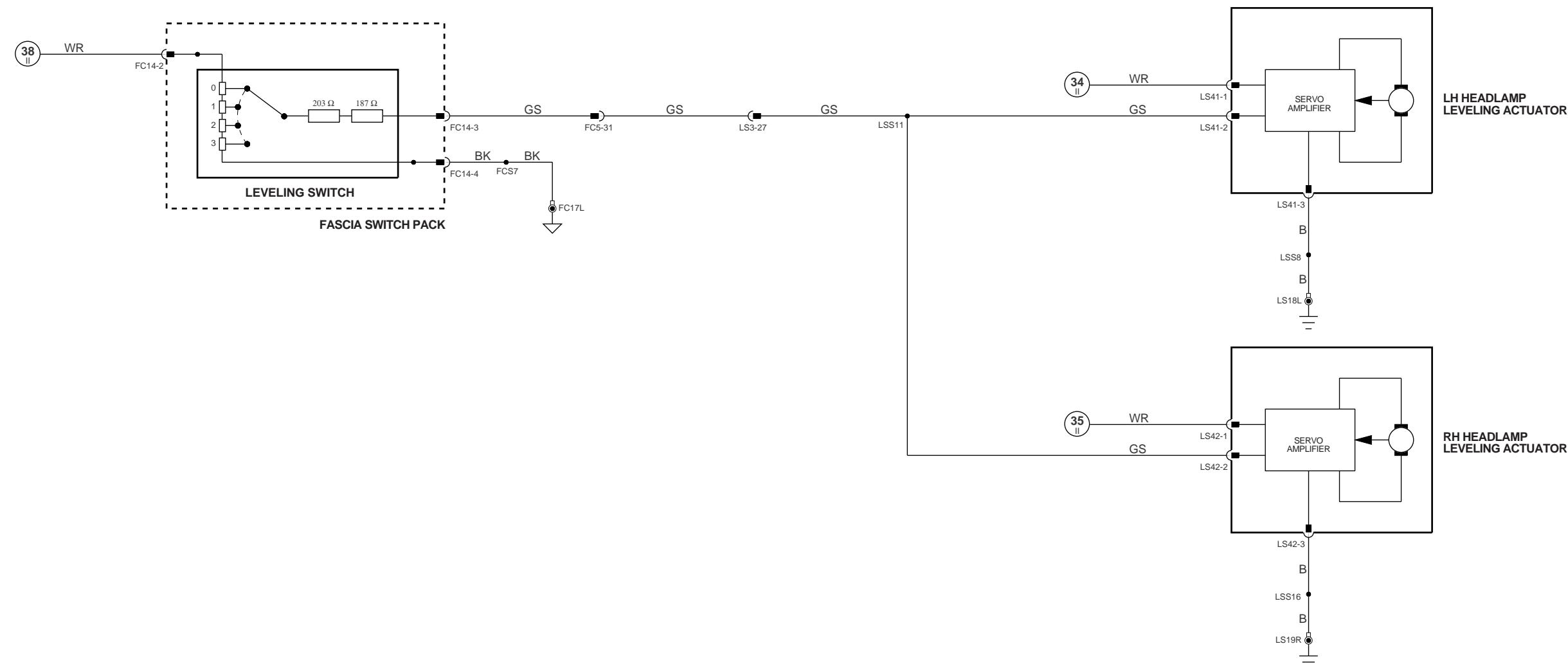
Serial and Encoded

- ▼ Communication
- ▼ SCP Network

VARIANT: NAS Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.



{
1 - 6
1 - 4} Fig. 01.1

{
7 - 47
48 - 82} Fig. 01.2 Fig. 01.4
Fig. 01.3

{
5 - 44
45 - 63} Fig. 01.4
Fig. 01.5

{
1 - 17} Fig. 02.1

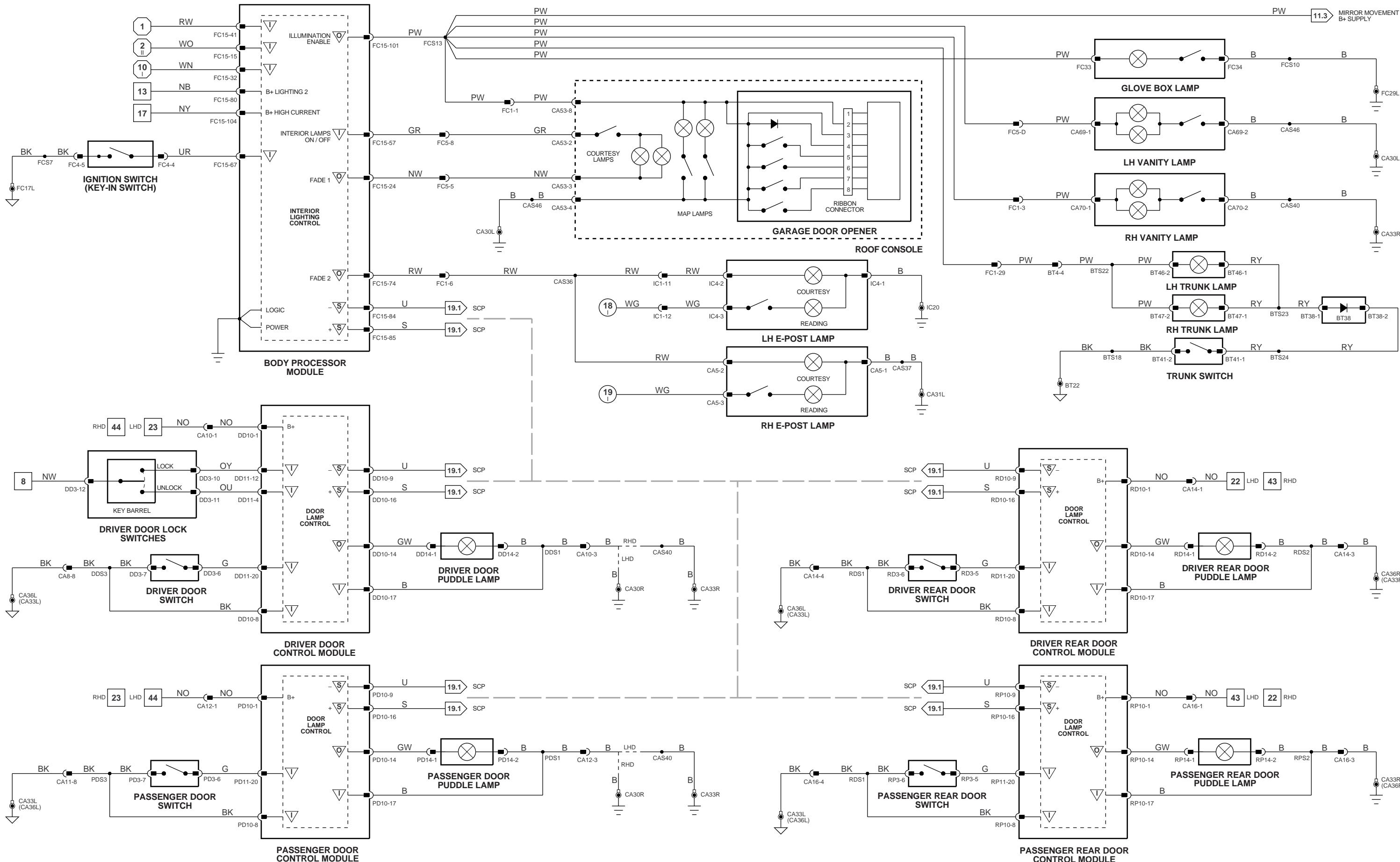
▽ Input
▽ Output
▽ Signal Ground (SG)
▽ CAN (Network)

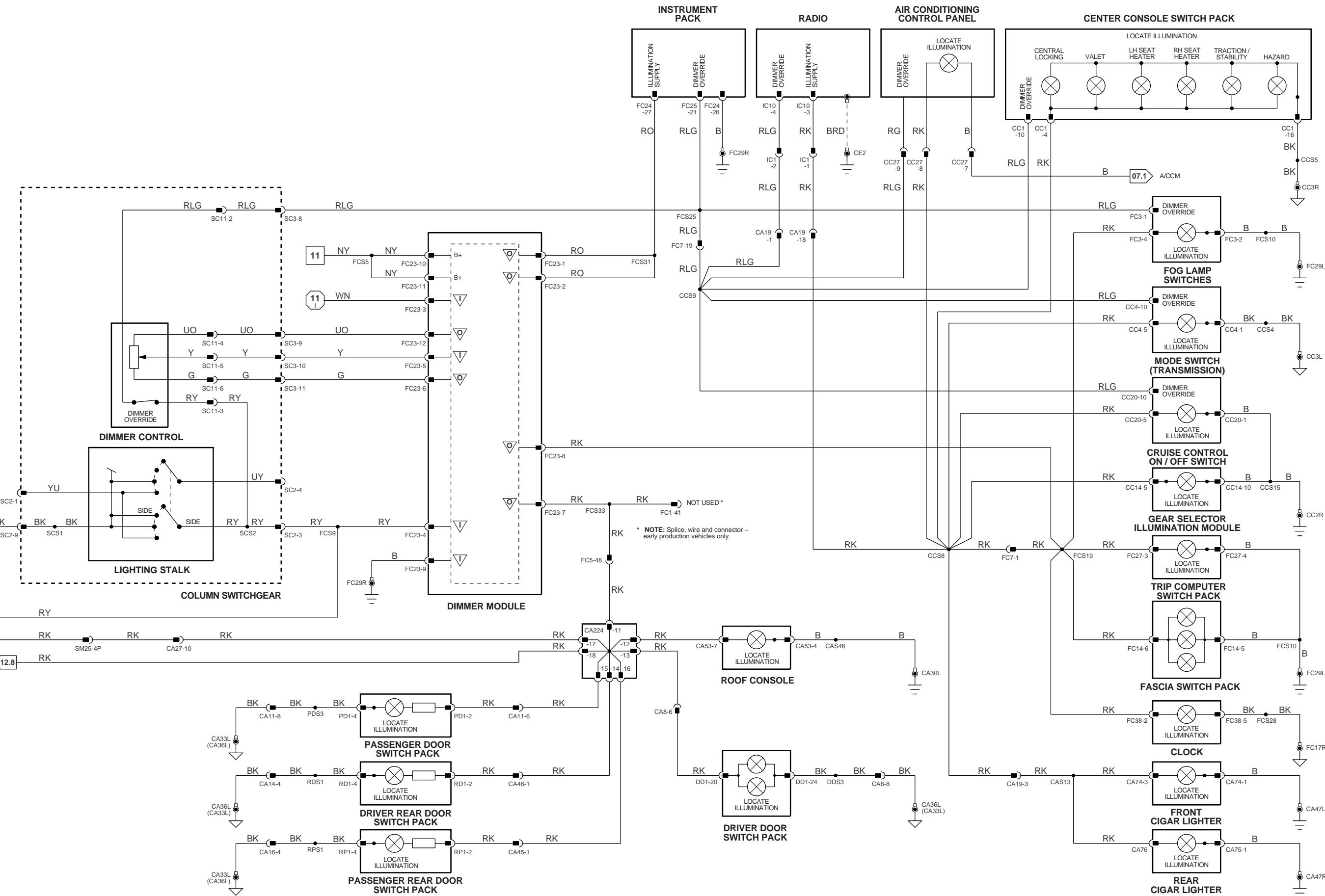
▽ Serial and Encoded Communications
▽ SCP Network

VARIANT: Headlamp Leveling Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



NOTE: 'Crank' input is used to switch off interior lamps during engine cranking.





{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.2

{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

Input

Signal Ground (SG)

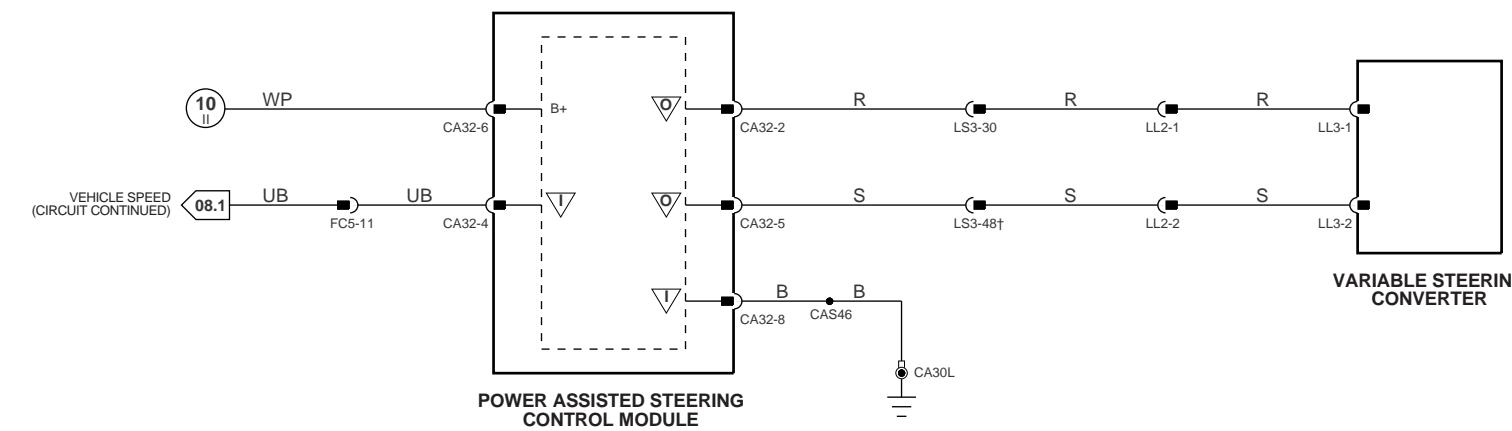
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: All Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997

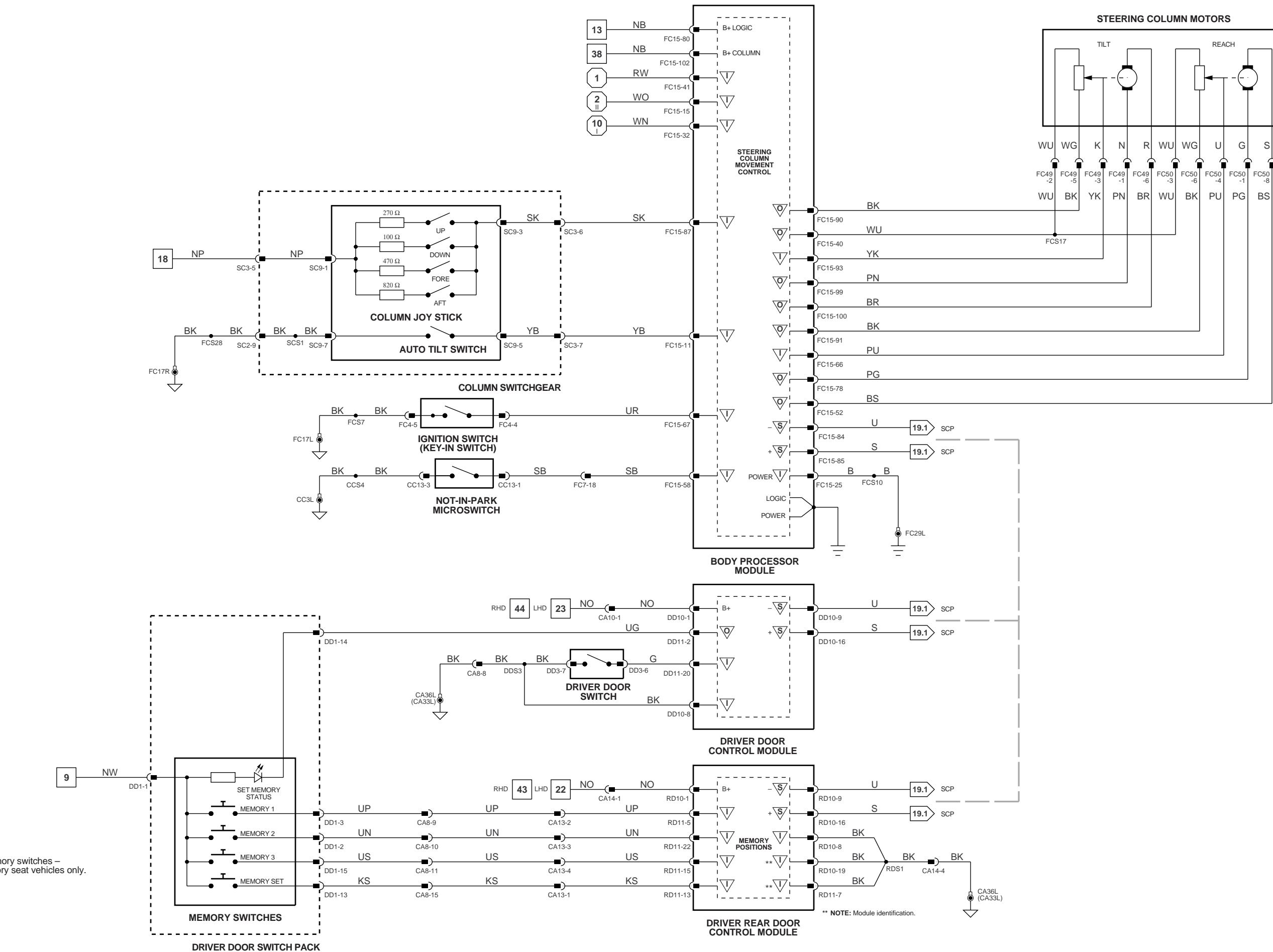


† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

{ 1 - 6 } Fig. 01.1 { 7 - 47 } Fig. 01.2 { 5 - 44 } Fig. 01.4
{ 1 - 4 } Fig. 01.3 { 48 - 82 } Fig. 01.3 { 45 - 63 } Fig. 01.5 { 1 - 17 } Fig. 02.1

▽ Input ▽ Output ▽ Serial and Encoded Communications
▽ Signal Ground (SG) ▽ CAN (Network) ▽ SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

1 - 17 Fig. 02.1

Input

Signal Ground (SG)

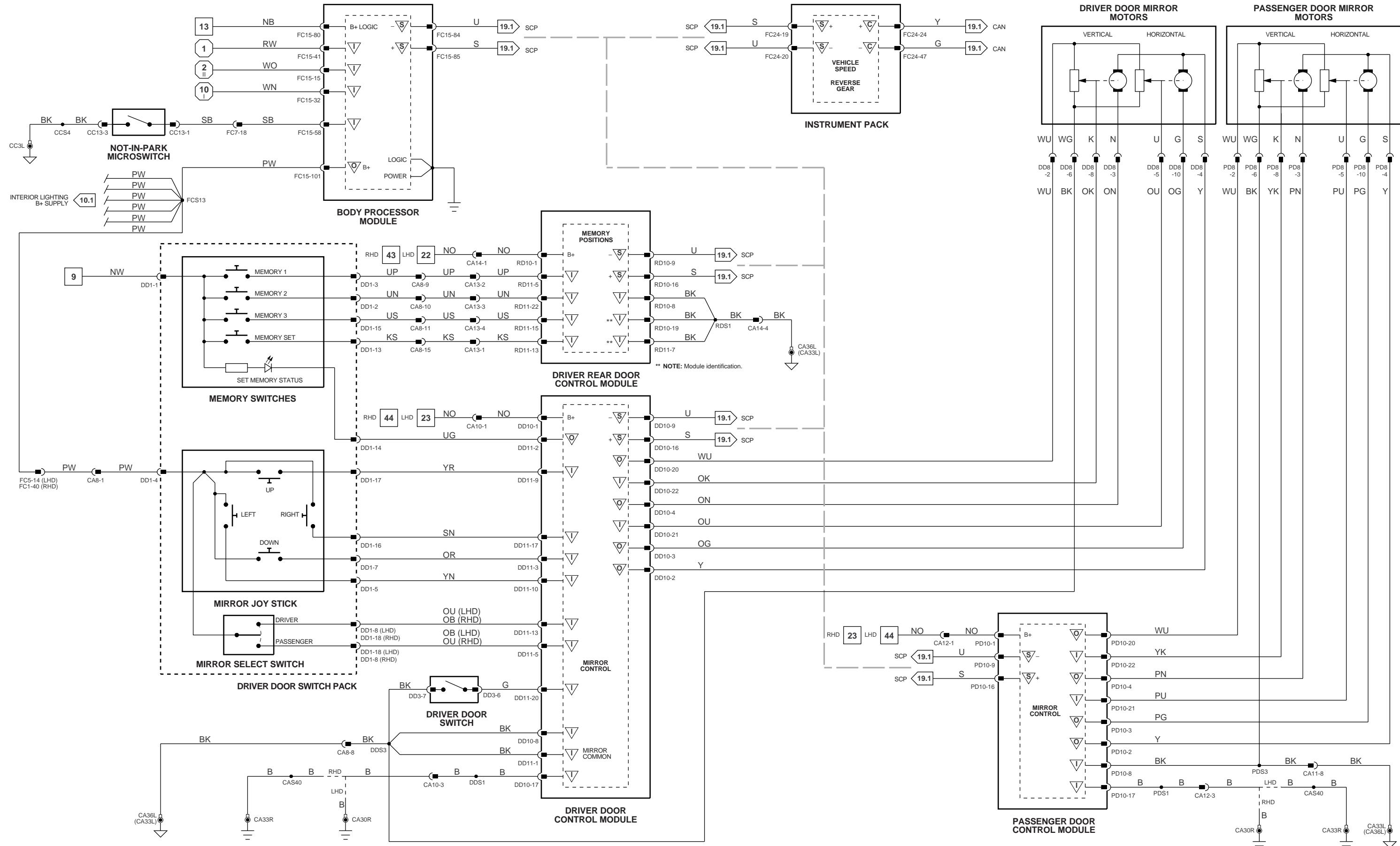
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: Powered Column Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

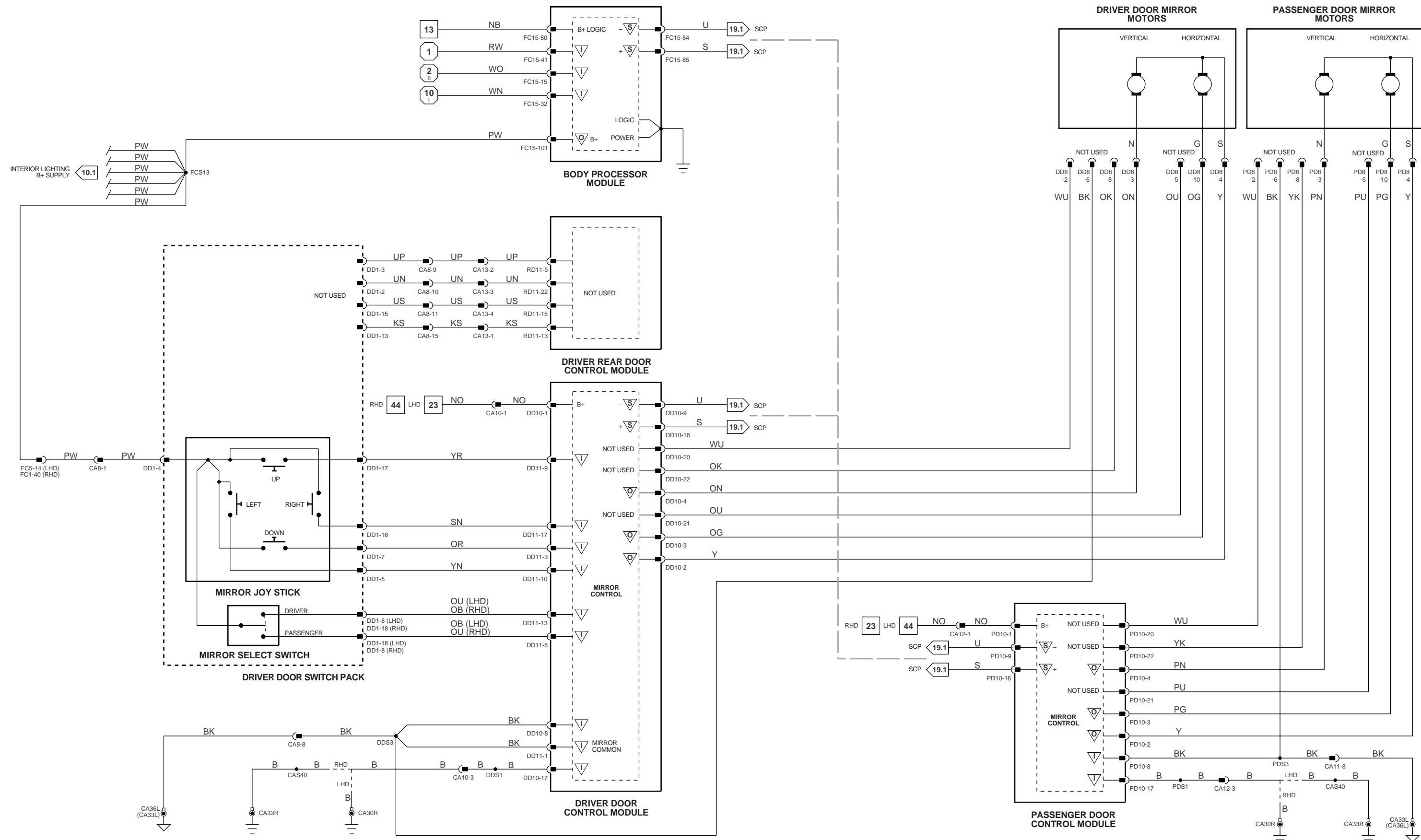
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: Memory Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



$$\left\{ \begin{array}{r} 1 \\ - 6 \\ \hline 1 \\ - 4 \\ \hline \end{array} \right.$$

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2}$$

1 - 17 Fig. 02

Input

▽ Signal Ground (SG)

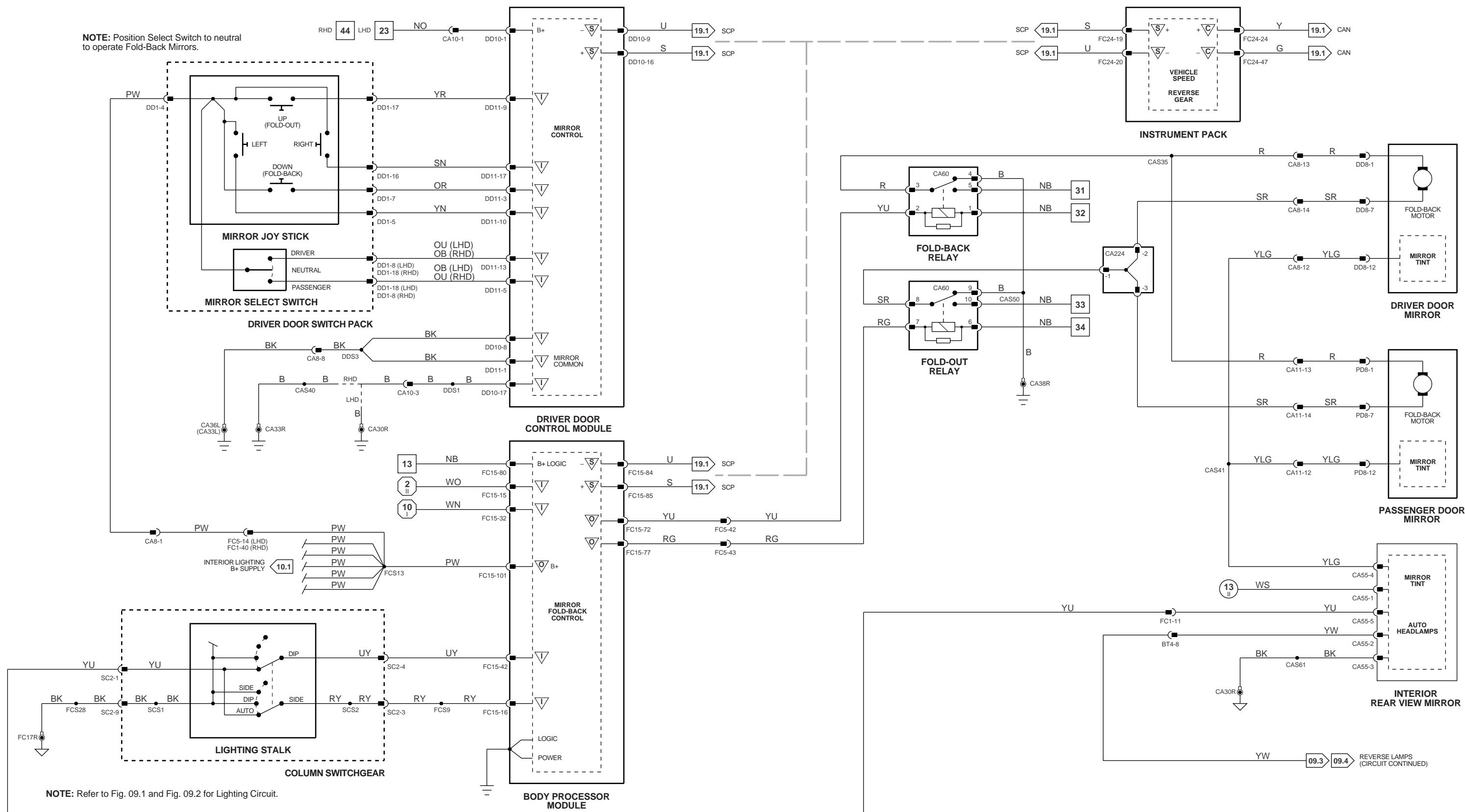
Outp

CAN (Netwo

Serial and Encoder
Communication

SCP Network

VARIANT: Non-Memory Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

1 - 17 Fig. 02.1

Input

Signal Ground (SG)

Output

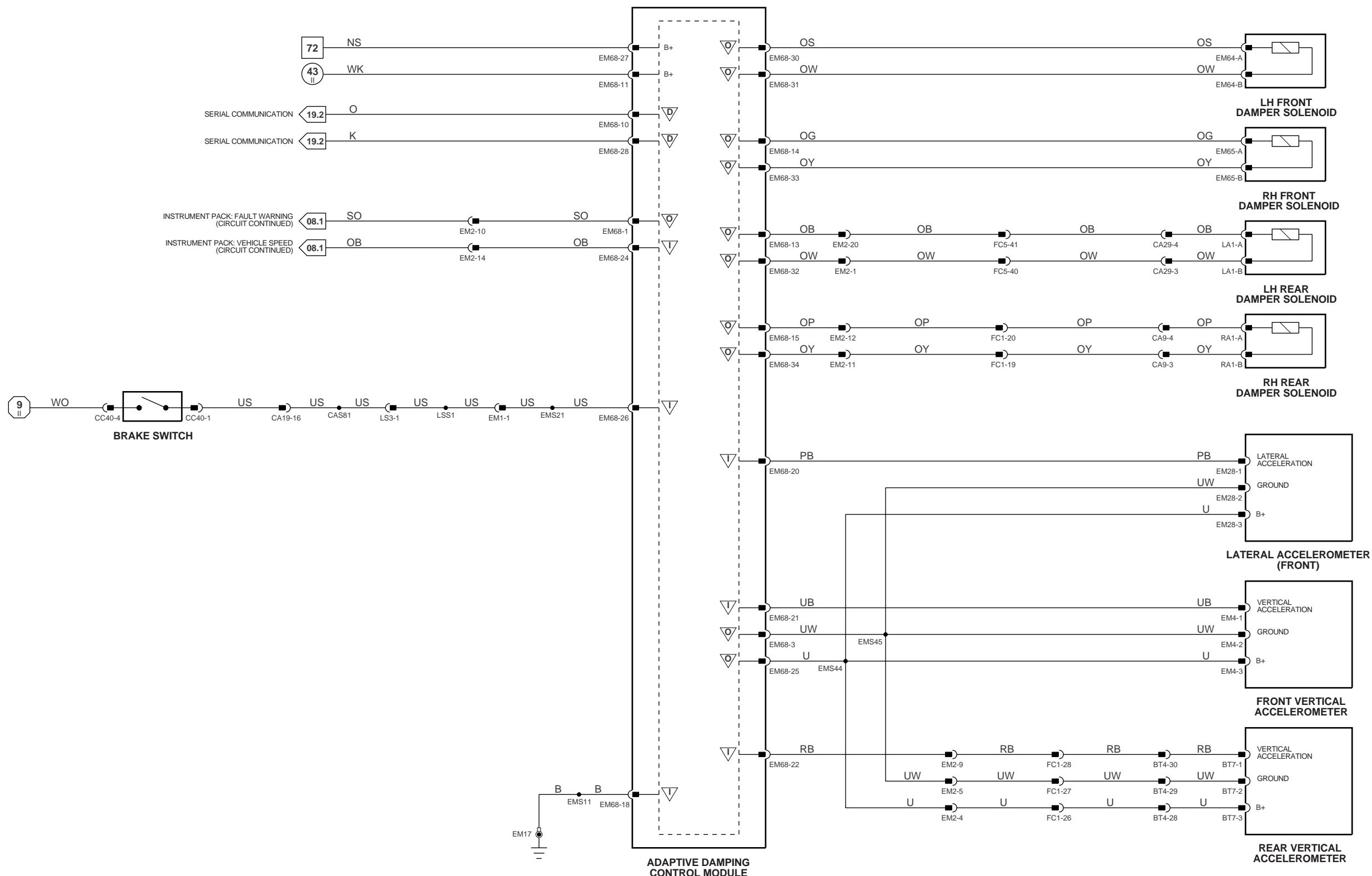
CAN (Network)

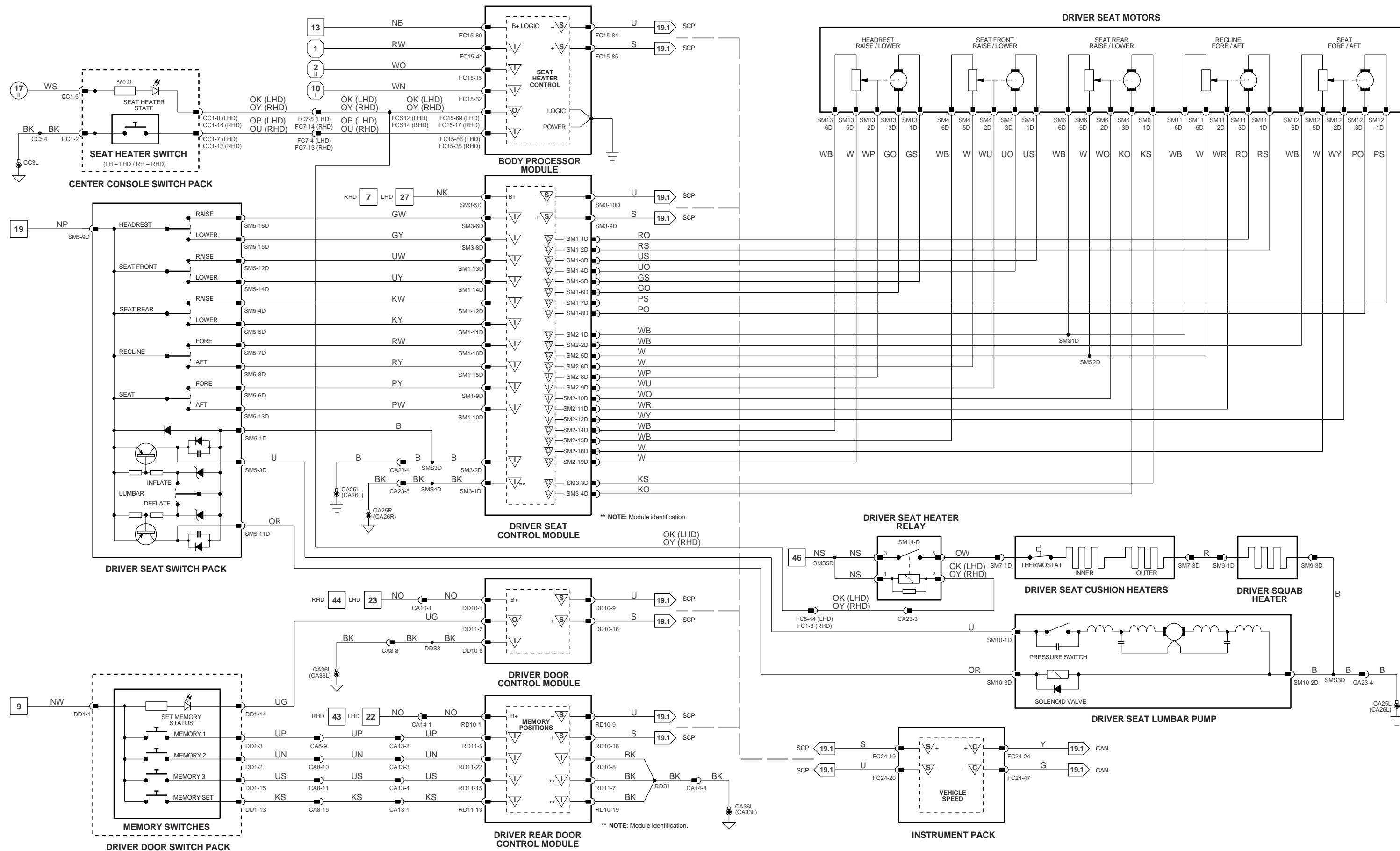
Serial and Encoded Communications

SCP Network

VARIANT: All Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997

09.3 09.4 REVERSE LAMPS (CIRCUIT CONTINUED)





{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

Input

Signal Ground (SG)

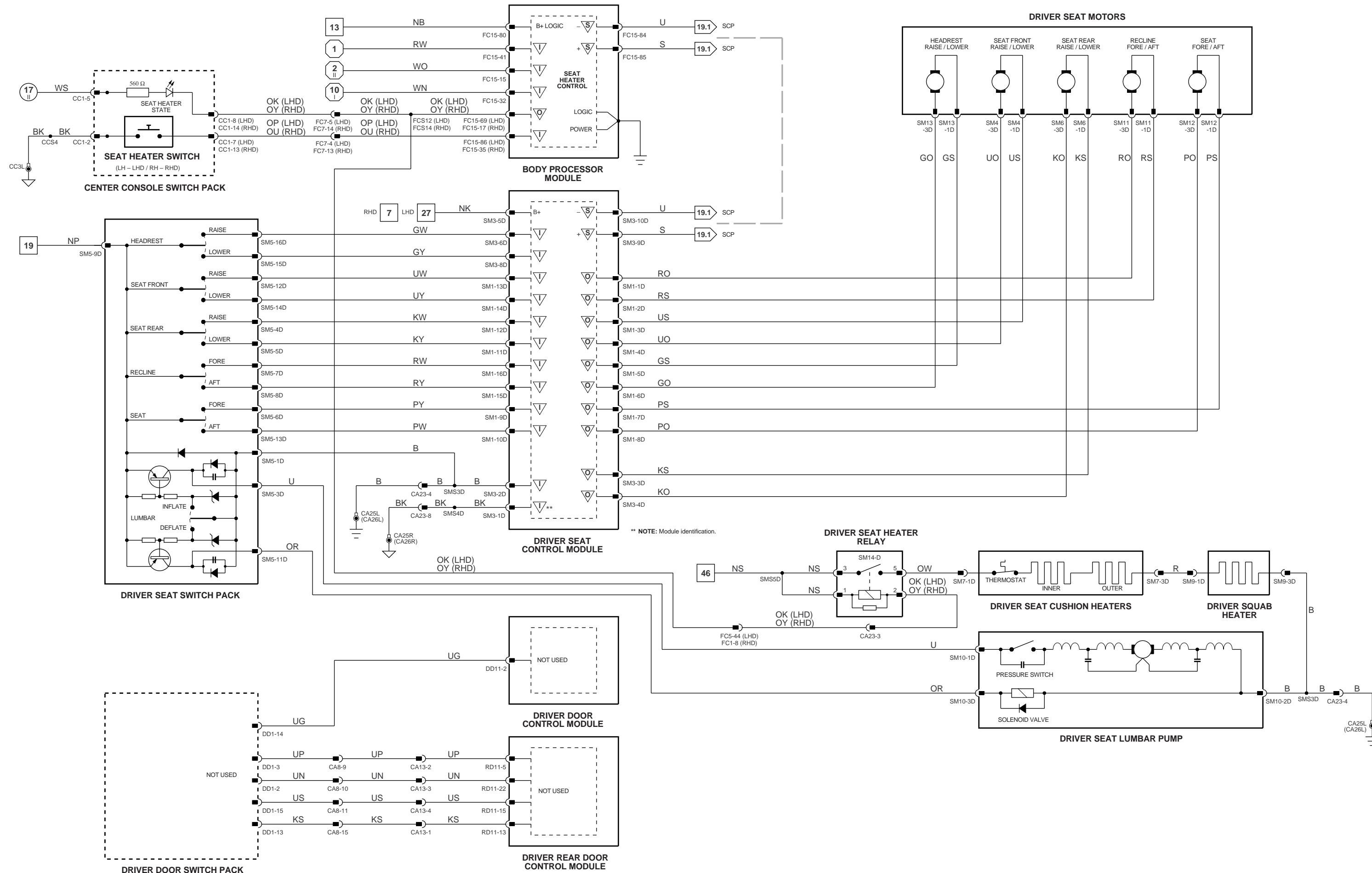
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: Driver Memory Seat Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44
45 - 63 Fig. 01.4
Fig. 01.5

1 - 17 Fig. 02.1

Input

Signal Ground (SG)

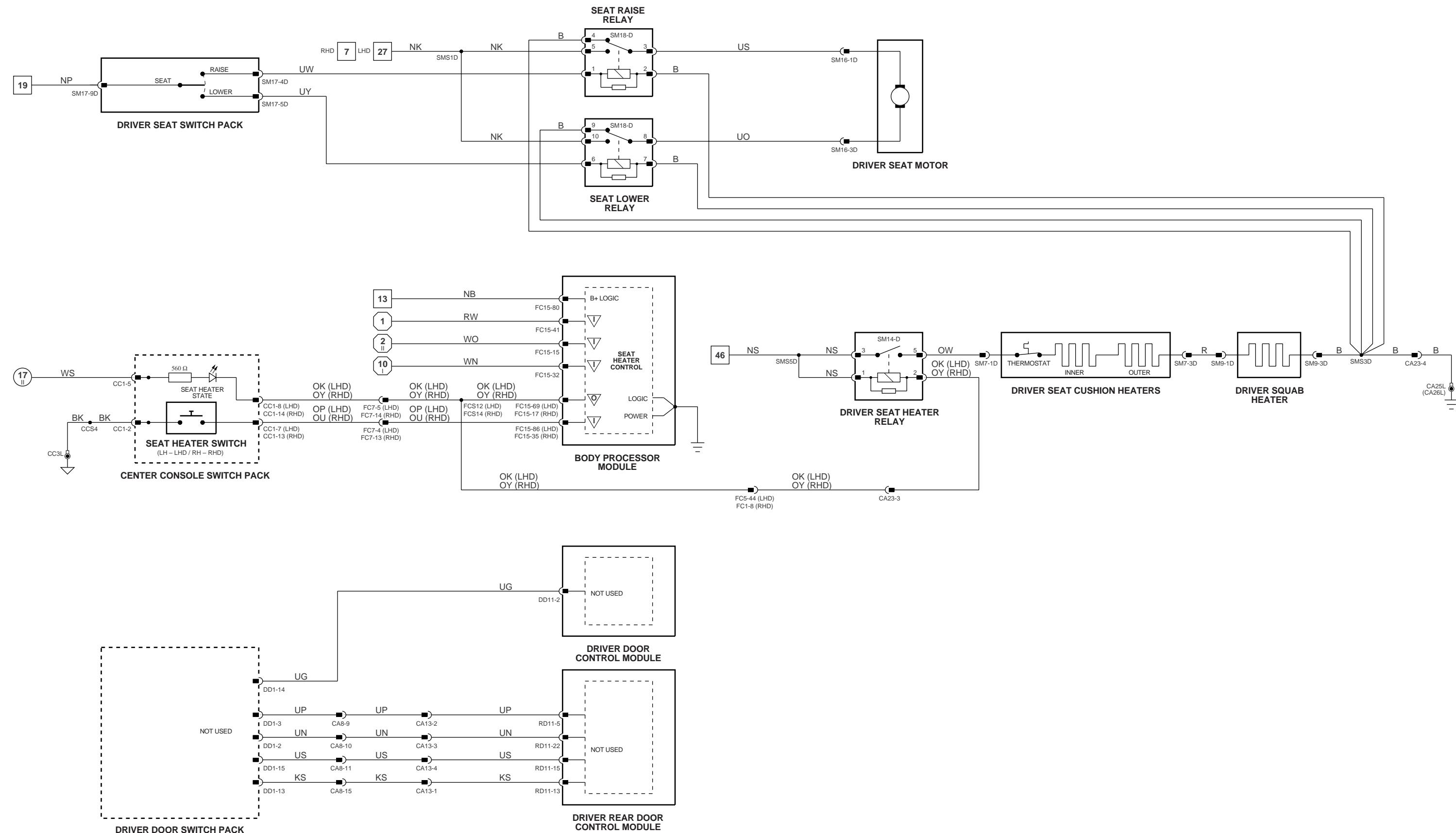
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: Driver 5-Way Powered Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



$$\left\{ \begin{array}{r} 1 \\ - 6 \\ \hline 1 \\ - 4 \\ \hline \end{array} \right.$$

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2} \qquad \circled{5}_{\text{II}} - \circled{44}_{\text{II}} \quad \text{Fig. 01.4}$$

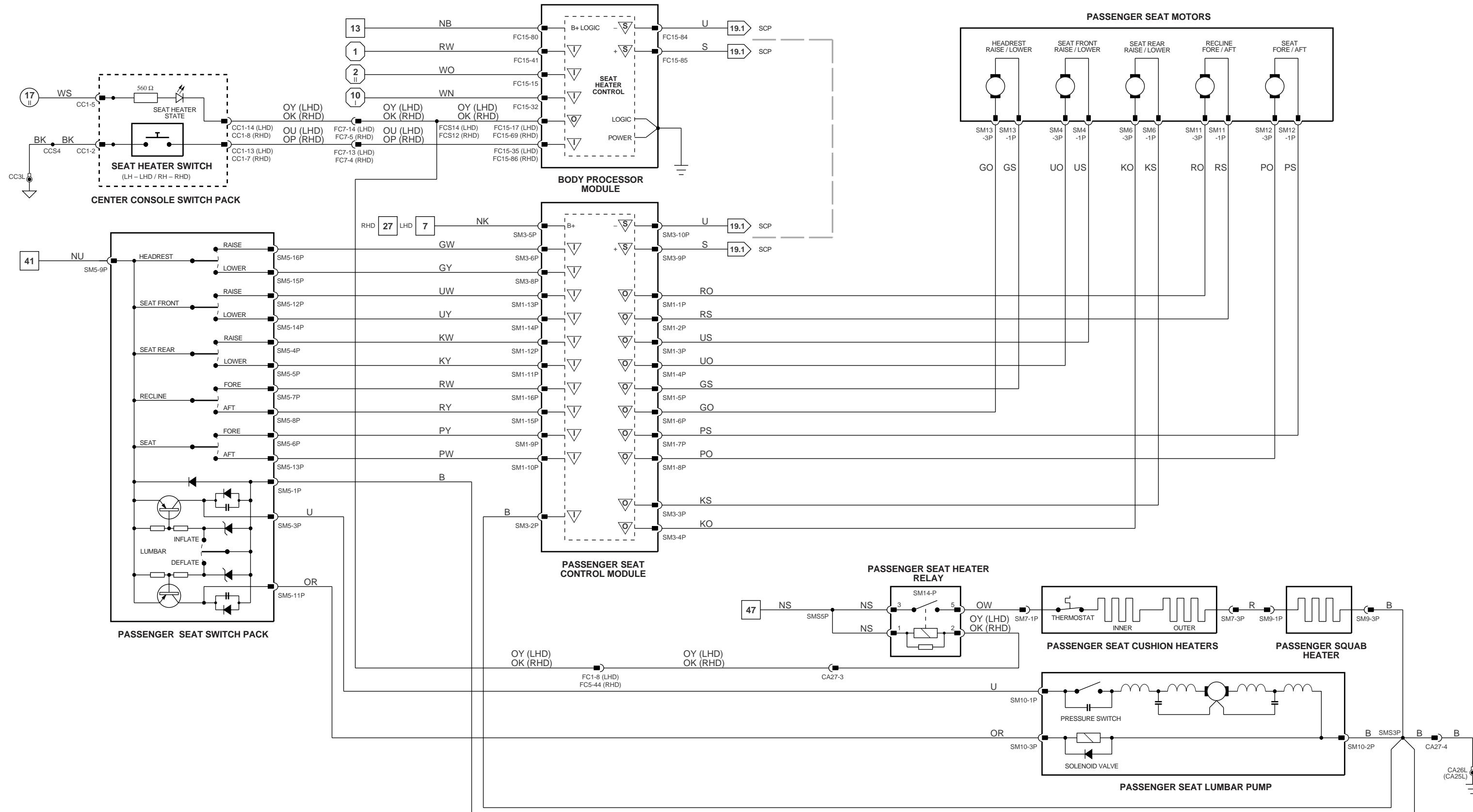
1 - 17 Fig. 6

▽ In
▽ Si

Output

 Serial and Encoder Communications
 SCP Network

VARIANT: Driver Raise / Lower Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

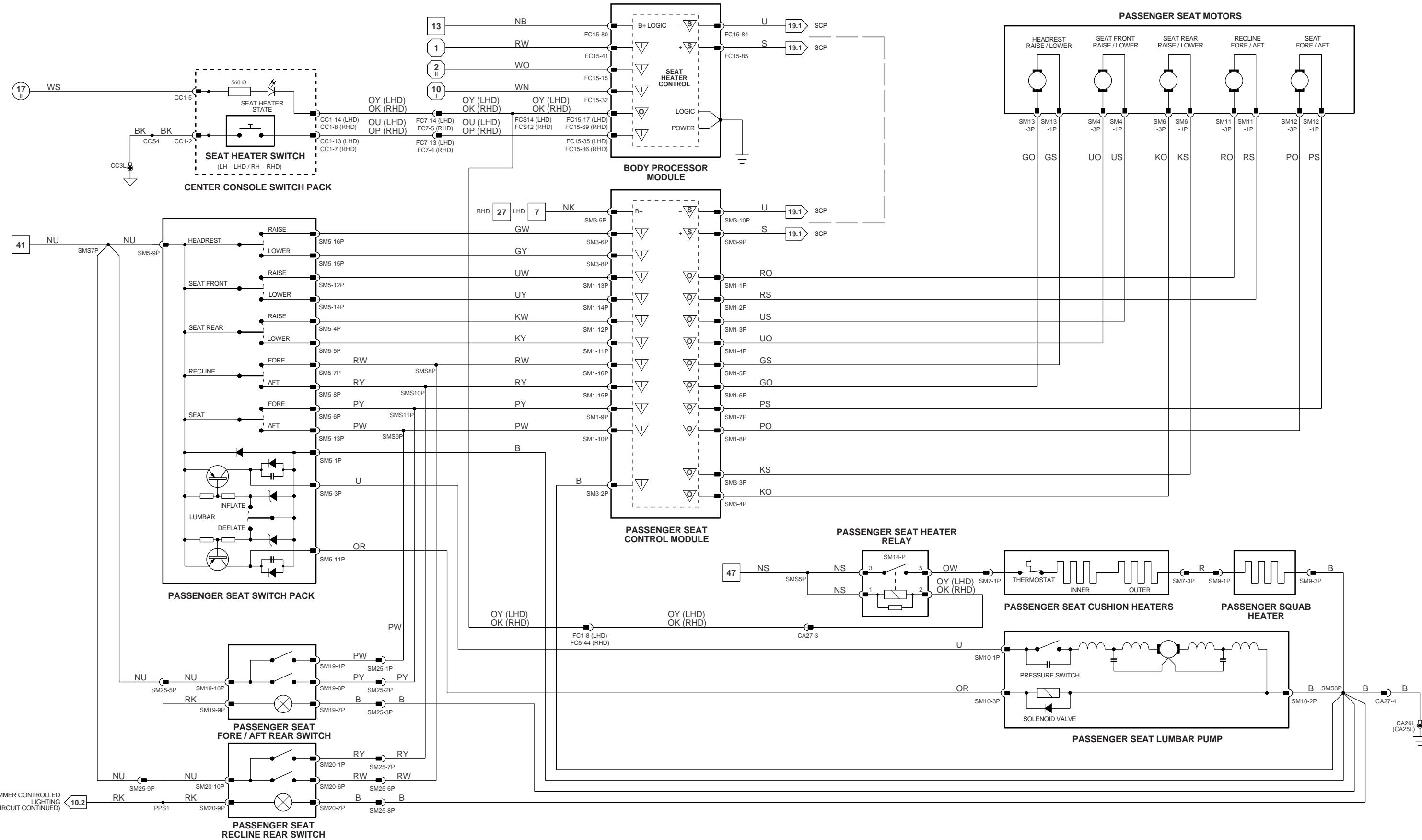
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: Passenger 5-Way Powered Seat Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



DIMMER CONTROLLED
LIGHTING
(CIRCUIT CONTINUED)  10.

$$\left\{ \begin{array}{l} 1 - 6 \\ 1 - 4 \end{array} \right. \quad \text{Fig. 01}$$

$$\boxed{7} - \boxed{47} \quad \text{Fig. 01.2} \qquad \circled{5}_{\text{II}} - \circled{44}_{\text{II}} \quad \text{Fig. 01}$$

Fig. 02

Fig. 02

Input

▽ Signal Ground (SG)

Output

CAN (Network)

Serial and Encoder Communications

SCP Network

VARIANT: LWB Powered Rear Seat Vehicles
VIN RANGE: All

DATE OF ISSUE: SEPTEMBER 1997

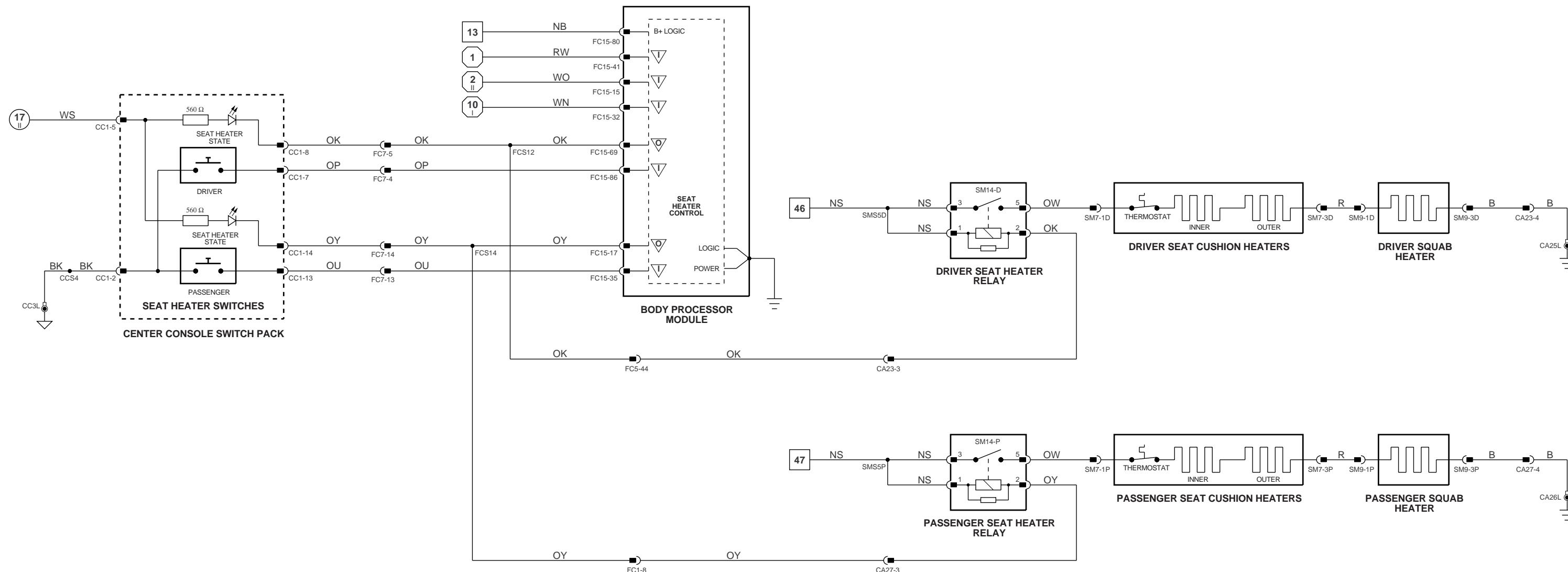


Fig. 01.1
 1 - 6
 1 - 4

Fig. 01.2
 7 - 47
 48 - 82

Fig. 01.4
 5 - 44
 45 - 63

Fig. 01.5

Fig. 02.1

Input

Signal Ground (SG)

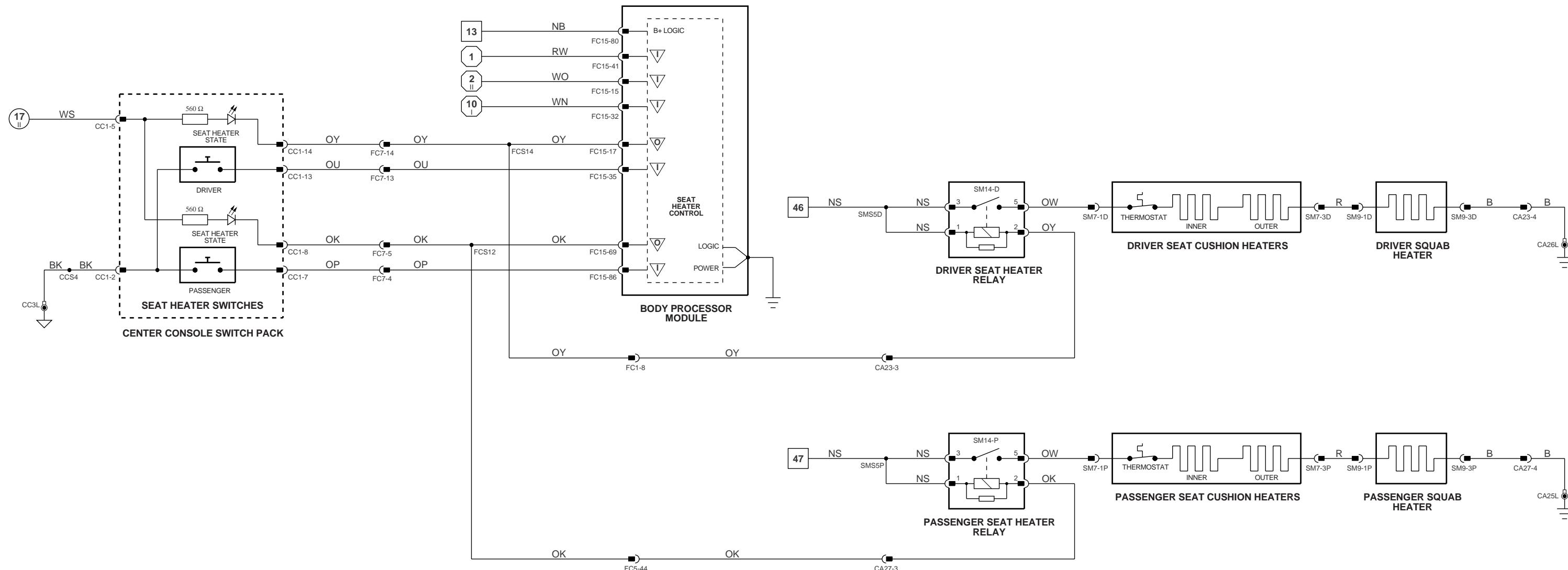
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: Heaters Only Front Seats LHD Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

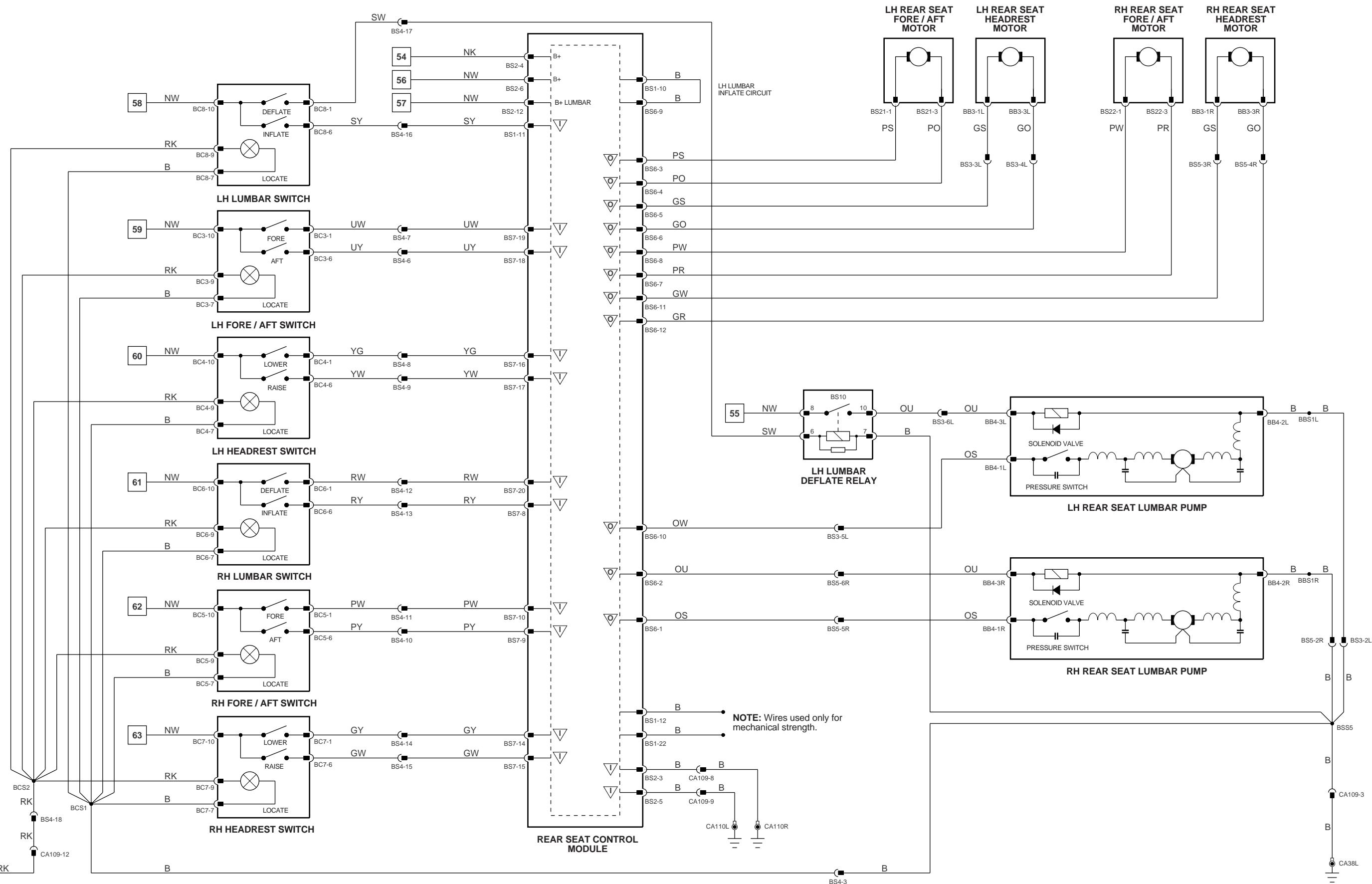
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

Input
 Output
 Signal Ground (SG)

Serial and Encoded Communications
 CAN (Network)
 SCP Network

VARIANT: Heaters Only Front Seats RHD Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

17

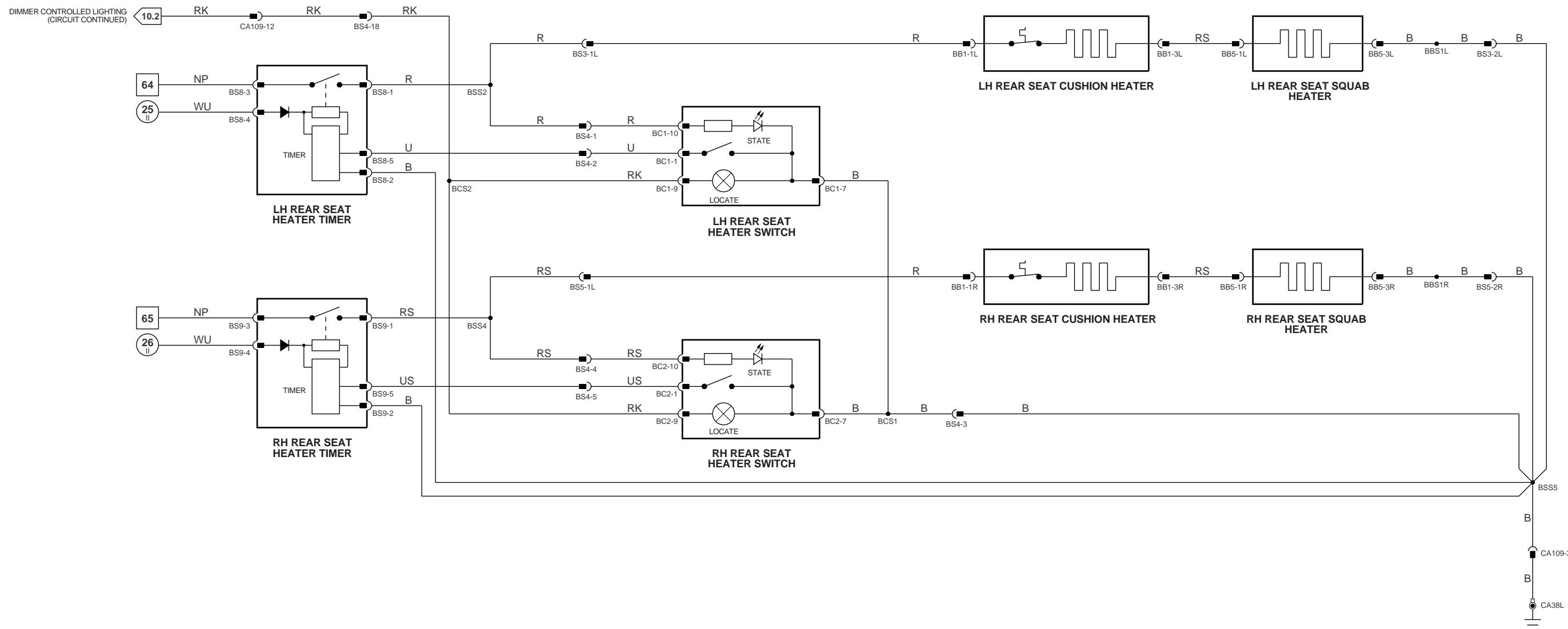
Fig. 02.1

Input
Signal Ground (SG)

Output
CAN (Network)

Serial and Encoded Communications
SCP Network

VARIANT: LWB / Powered Rear Seat Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.3

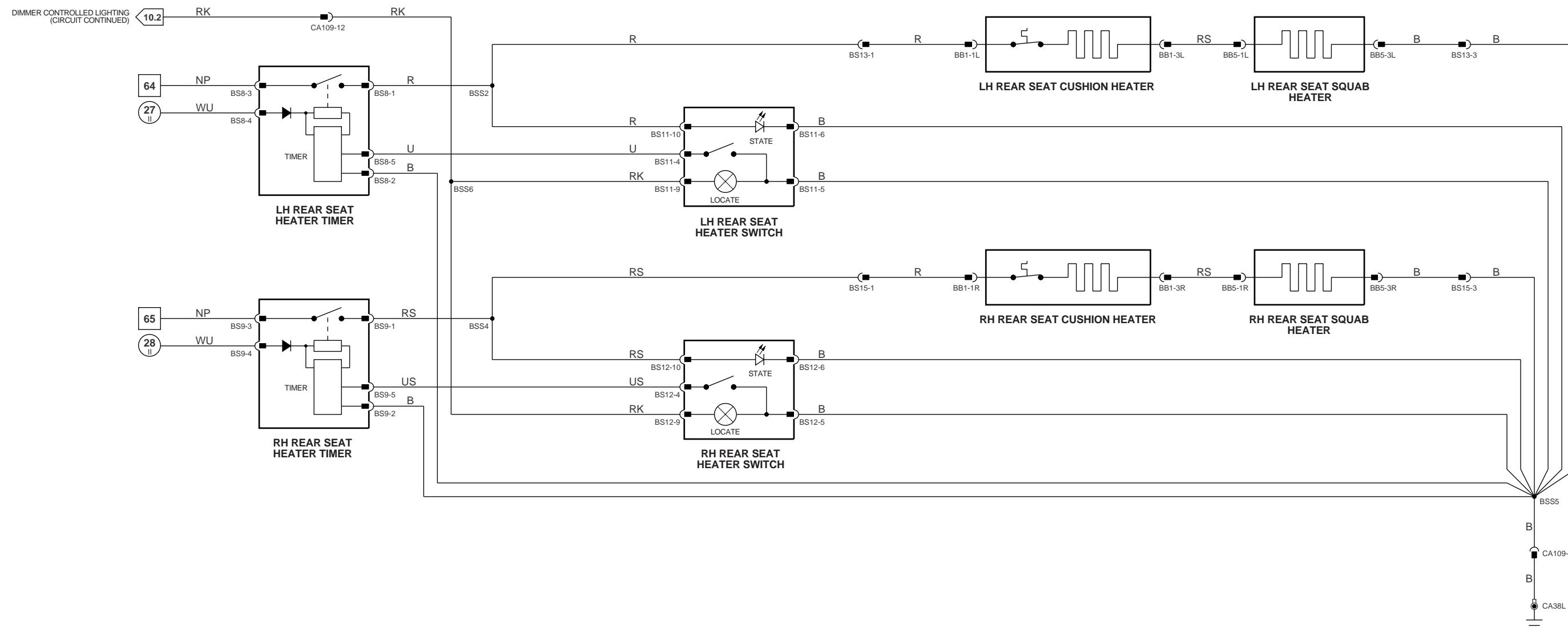
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.5
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)

▽ Serial and Encoded Communications
 ▽ CAN (Network)
 ▽ SCP Network

VARIANT: LWB / Powered Rear Seat Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 }
 { 1 - 4 } Fig. 01.1

{ 7 - 47 } Fig. 01.2
 { 48 - 82 } Fig. 01.3

{ 5 - 44 } Fig. 01.4
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input

▽ Signal Ground (SG)

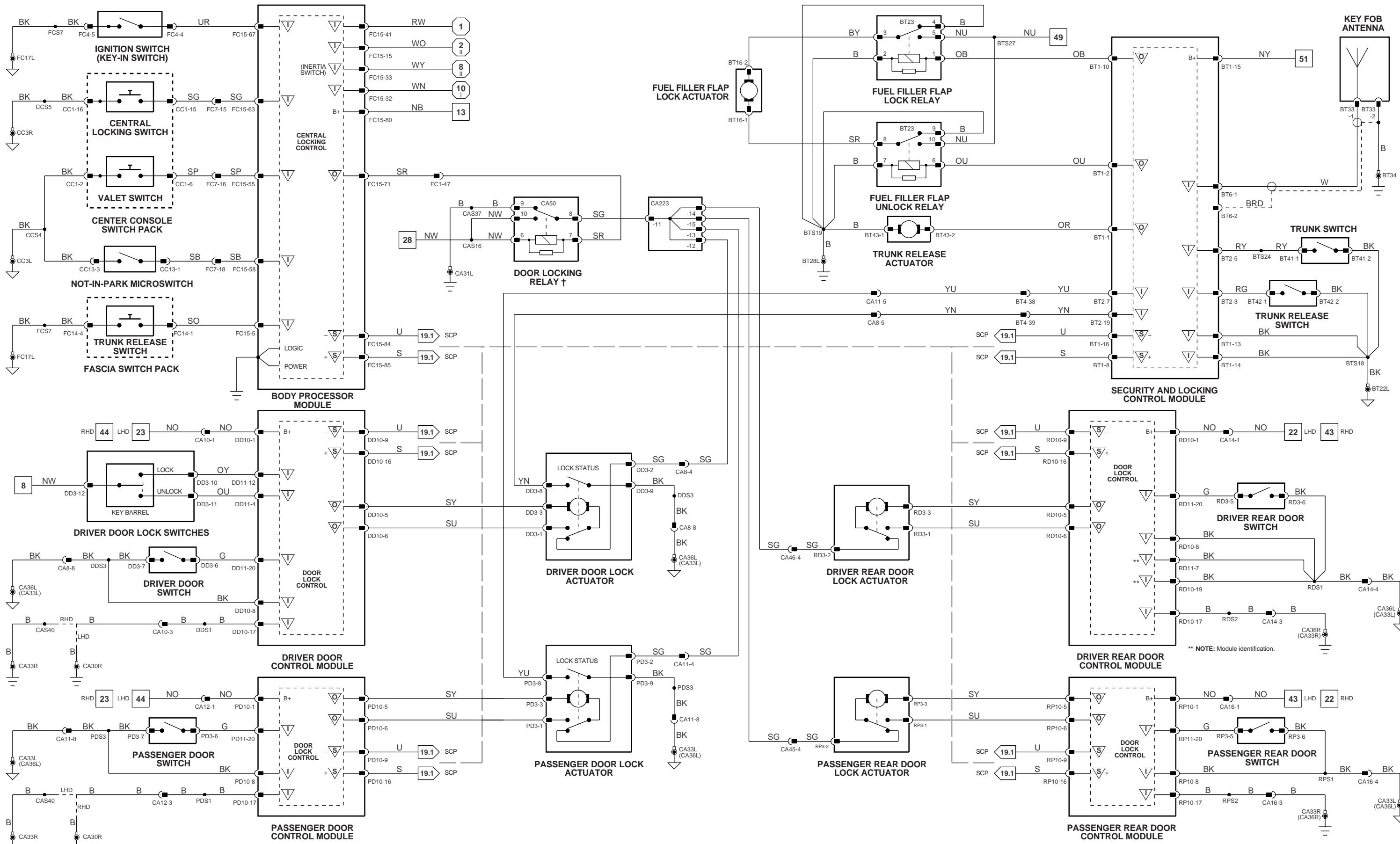
▽ Output

▽ CAN (Network)

▽ Serial and Encoded Communications

▽ SCP Network

VARIANT: Heaters Only Rear Seat Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

Fig. 01.1
1 - 6
1 - 4

Fig. 01.2
7 - 47
48 - 82

Fig. 01.4
5 - 44
45 - 63

Fig. 01.5

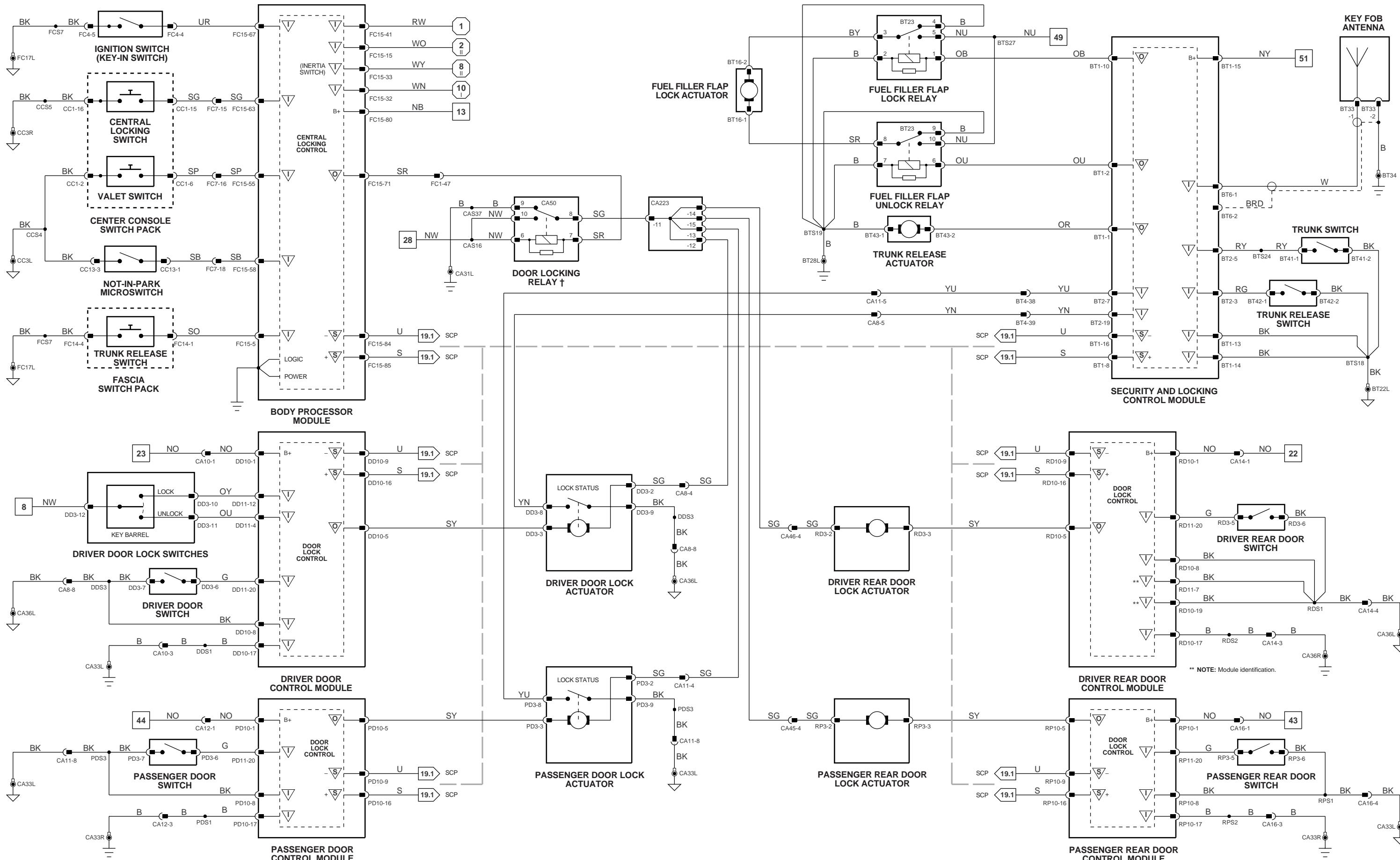
Fig. 02.1
1 - 17

Input
Signal Ground (SG)

Output
CAN (Network)

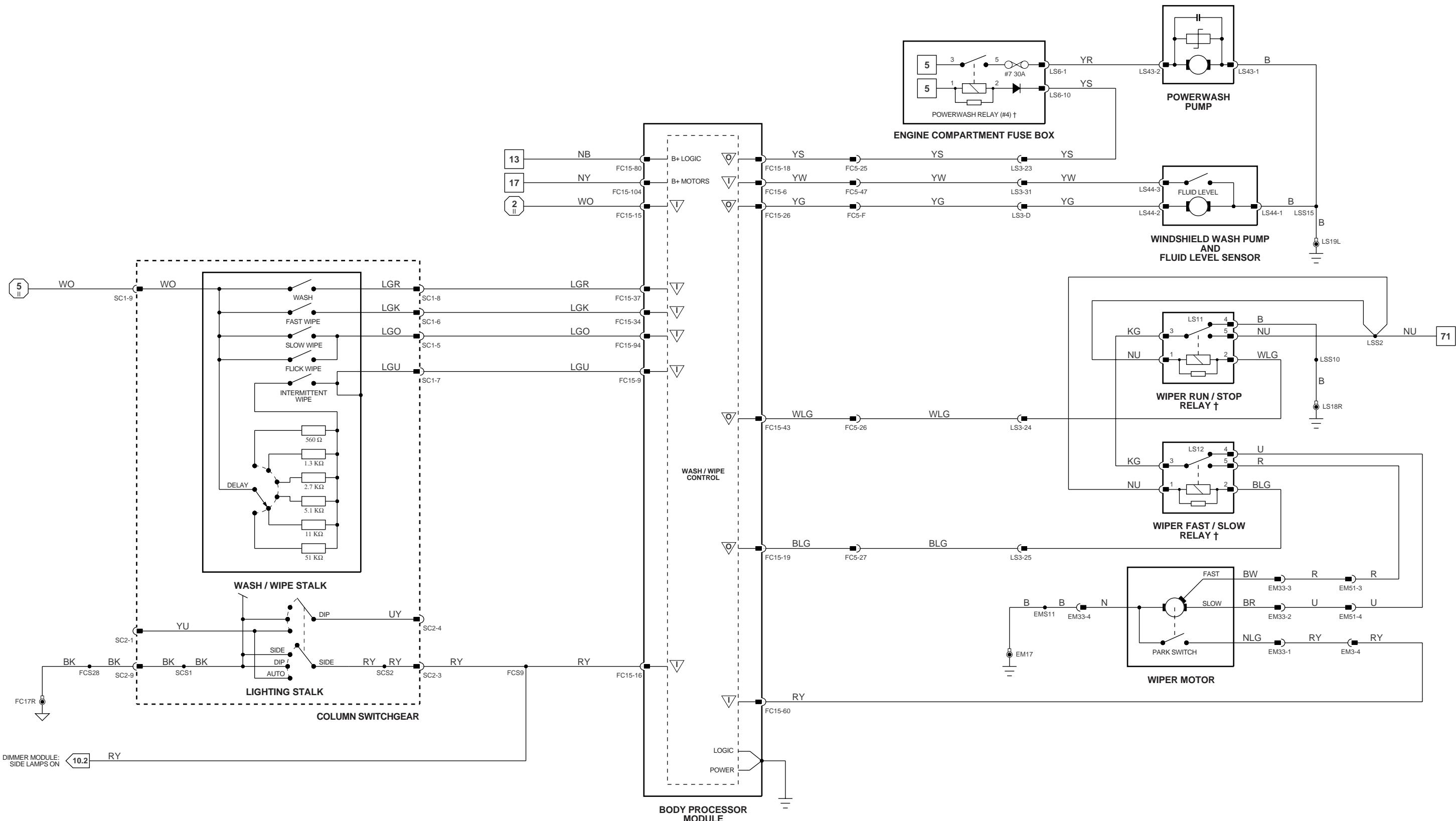
Serial and Encoded Communications
SCP Network

VARIANT: ROW Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



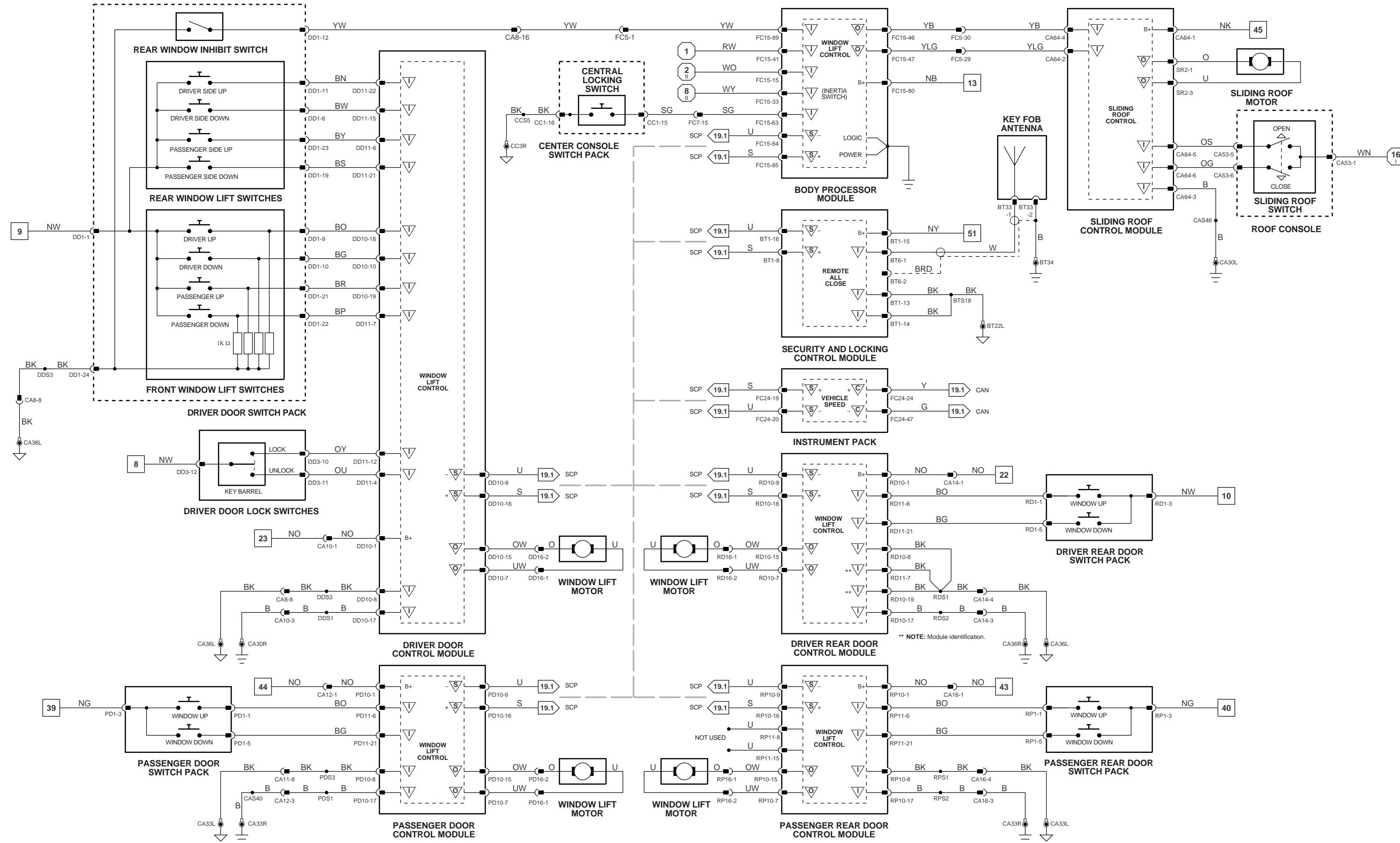
† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

1 - 6 1 - 4	Fig. 01.1	7 - 47 48 - 82	Fig. 01.2 Fig. 01.3	5 - 44 45 - 63	Fig. 01.4 Fig. 01.5	1 - 17	Fig. 02.1	Input	Output	Serial and Encoded Communications	VARIANT: NAS Vehicles
								SG	CAN (Network)	SCP Network	VIN RANGE: All DATE OF ISSUE: SEPTEMBER 1997



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

{ 1 - 6 } Fig. 01.1	{ 7 - 47 } Fig. 01.2	{ 5 - 44 } Fig. 01.4	{ 1 - 17 } Fig. 02.1	▽ Input	▽ Output	▽ Serial and Encoded Communications	VARIANT: All Vehicles
{ 1 - 4 } Fig. 01.3	{ 48 - 82 } Fig. 01.5	{ 45 - 63 } Fig. 01.5		▽ Signal Ground (SG)	▽ CAN (Network)	▽ SCP Network	VIN RANGE: All DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

1 - 17 Fig. 02.1

Input

Signal Ground (SG)

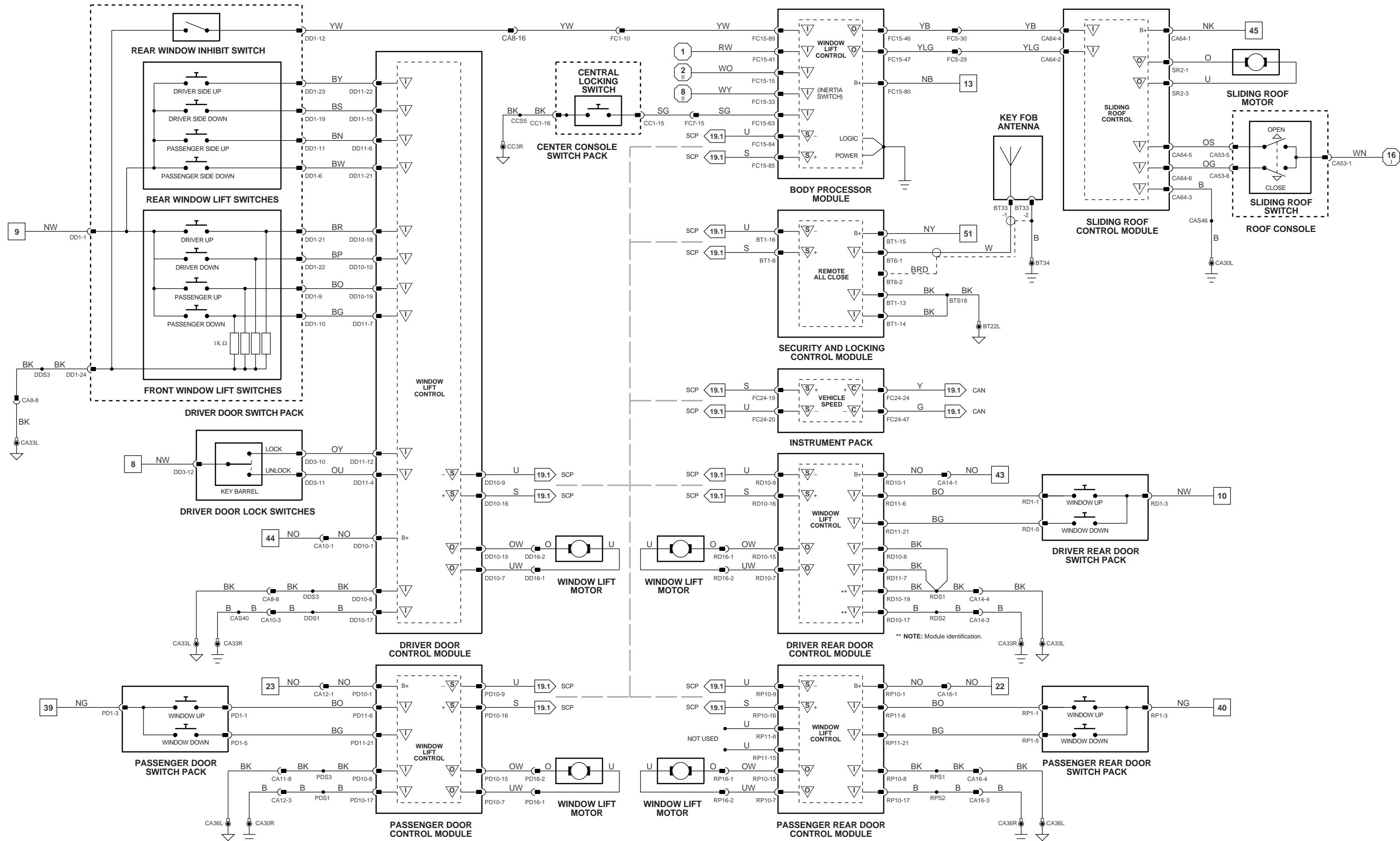
Output

CAN (Network)

Serial and Encoded Communications

SCP Network

VARIANT: LHD Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

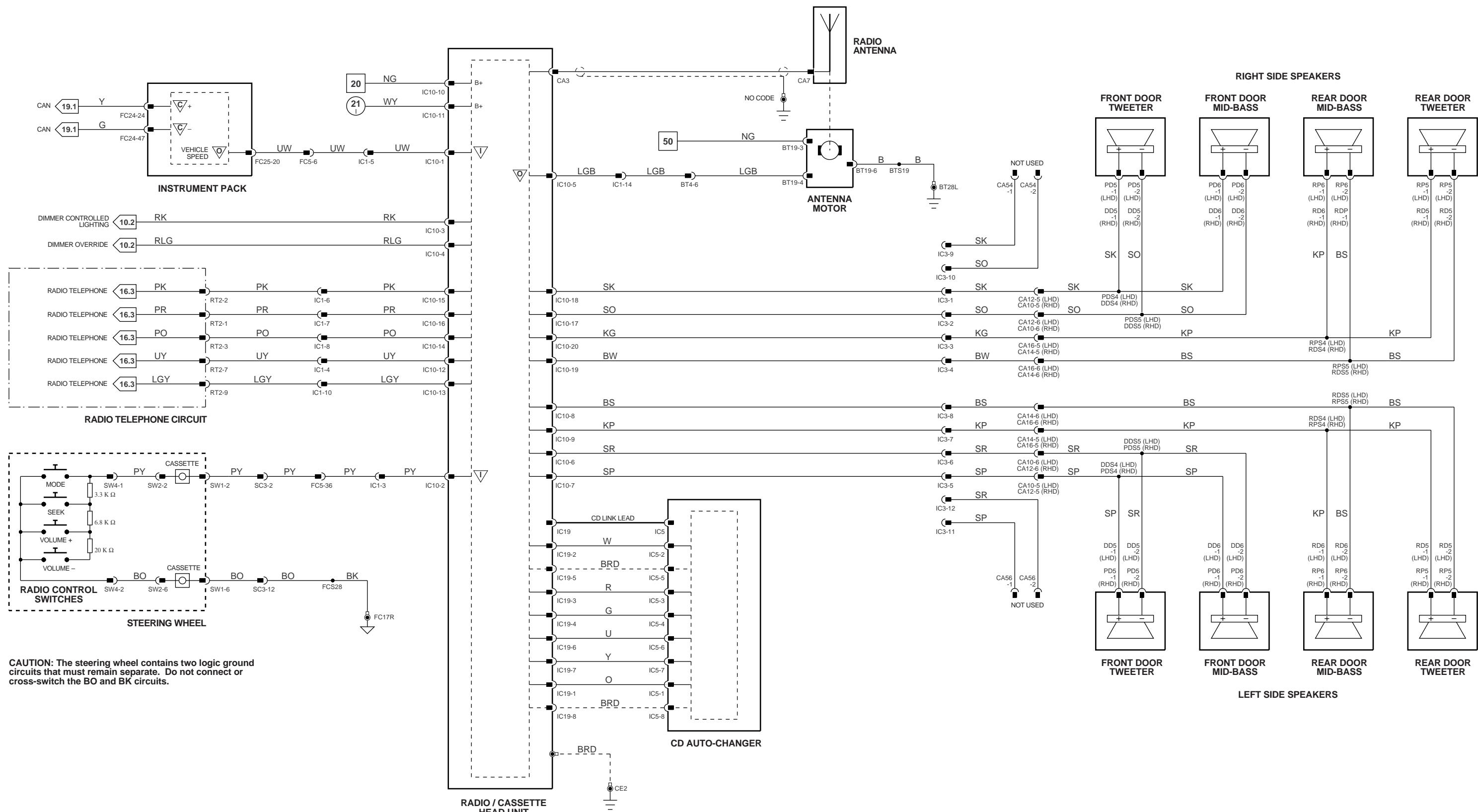
{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

Input
Output
Serial and Encoded Communications
Signal Ground (SG)
CAN (Network)

NOT USED
Input
Output
Serial and Encoded Communications
Signal Ground (SG)
CAN (Network)

VARIANT: RHD Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



1 - 6
1 - 4

7 - 47 Fig. 01.2
48 - 82 Fig. 01.3

5 - 44 Fig. 01.4
45 - 63 Fig. 01.5

1 - 17 Fig. 02.1

Input

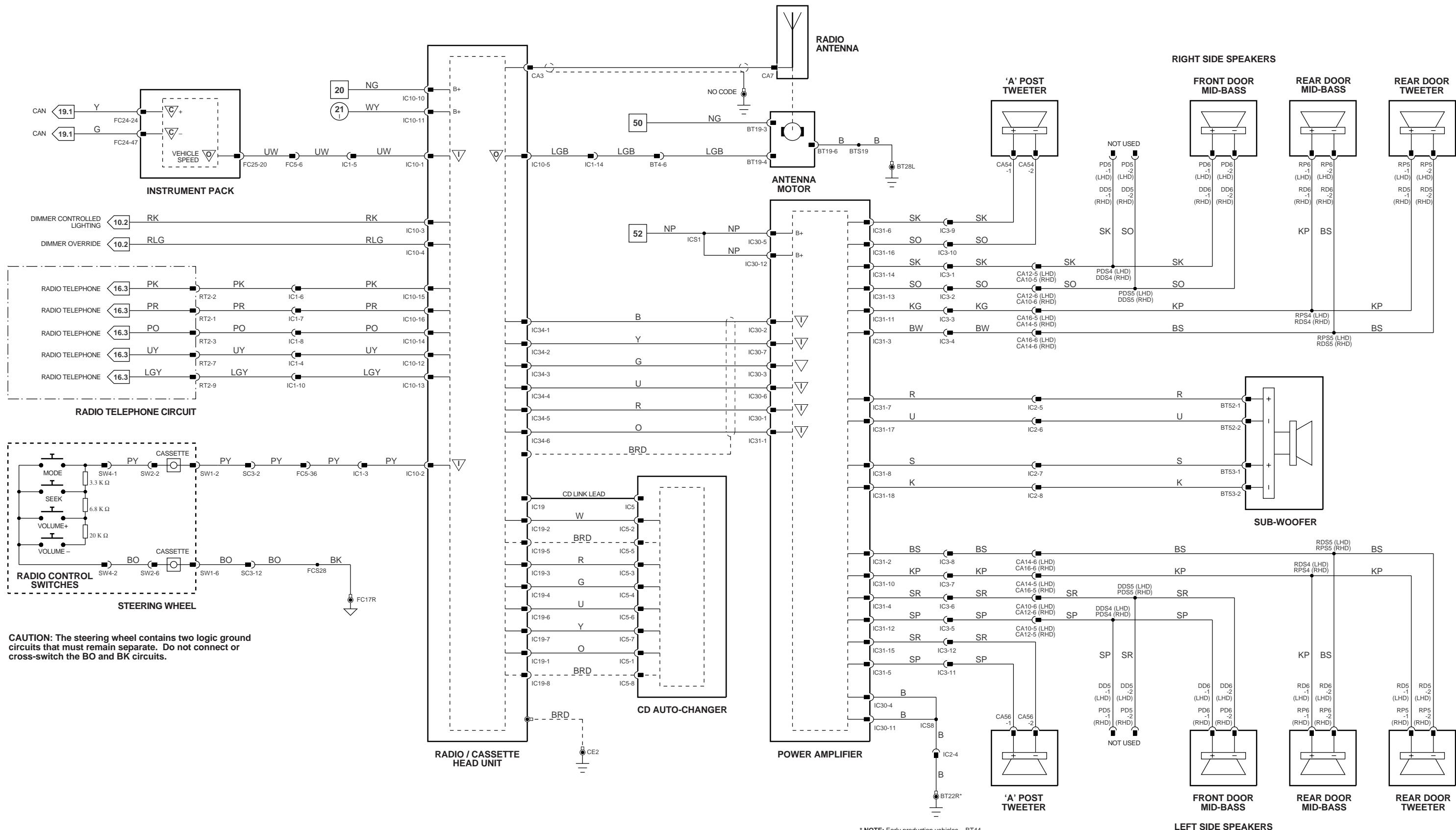
Signal Ground (SG)

Output

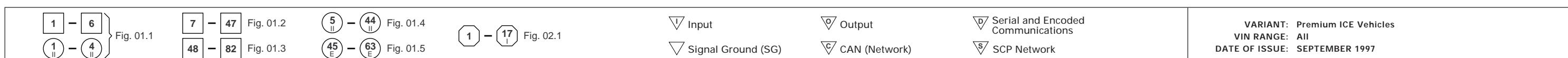
Serial and Encoded Communications
CAN (Network)

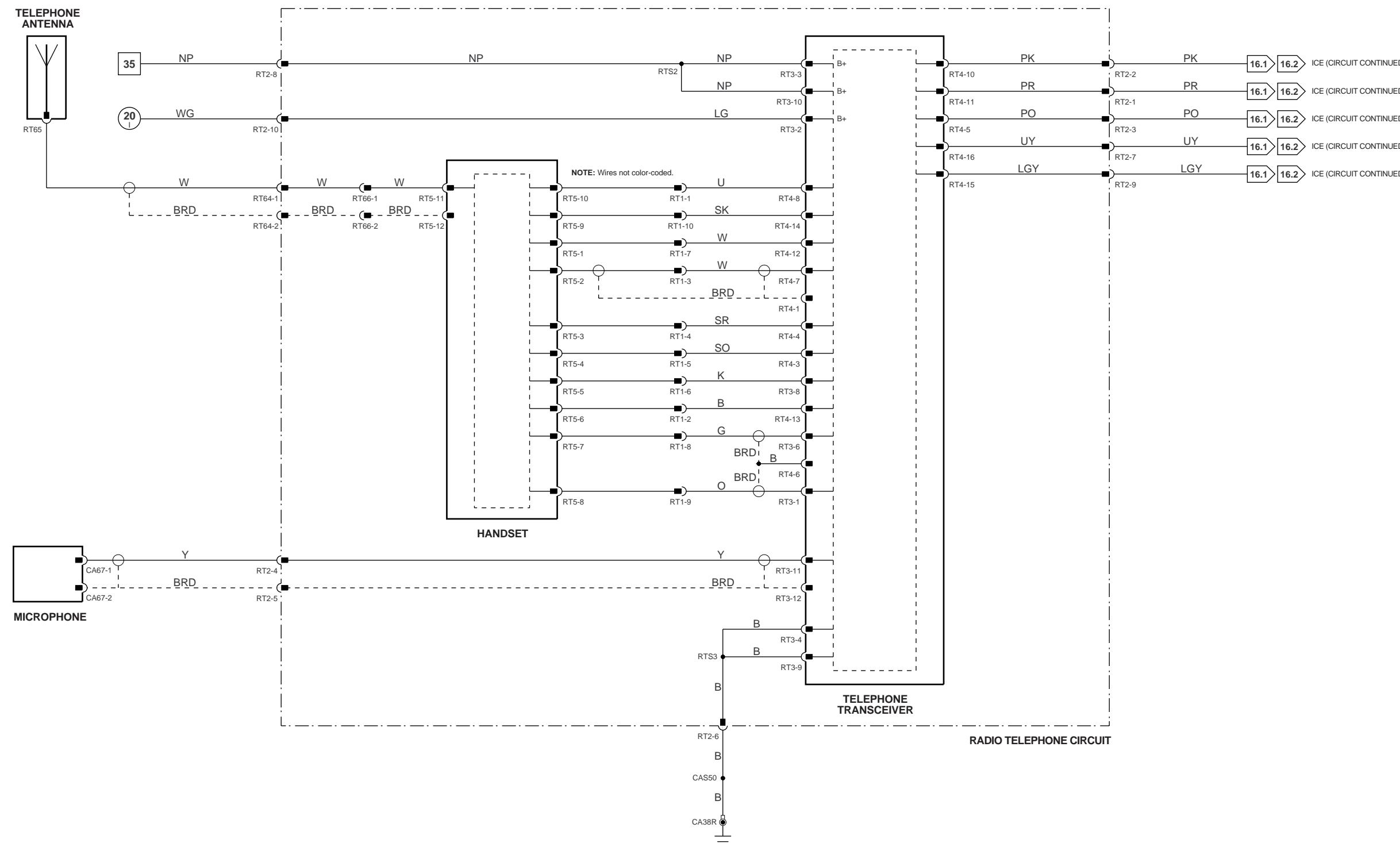
SCP Network

VARIANT: Standard ICE Vehicles
VIN RANGE: All
DATE OF ISSUE: SEPTEMBER 1997



* NOTE: Early production vehicles – BT44.

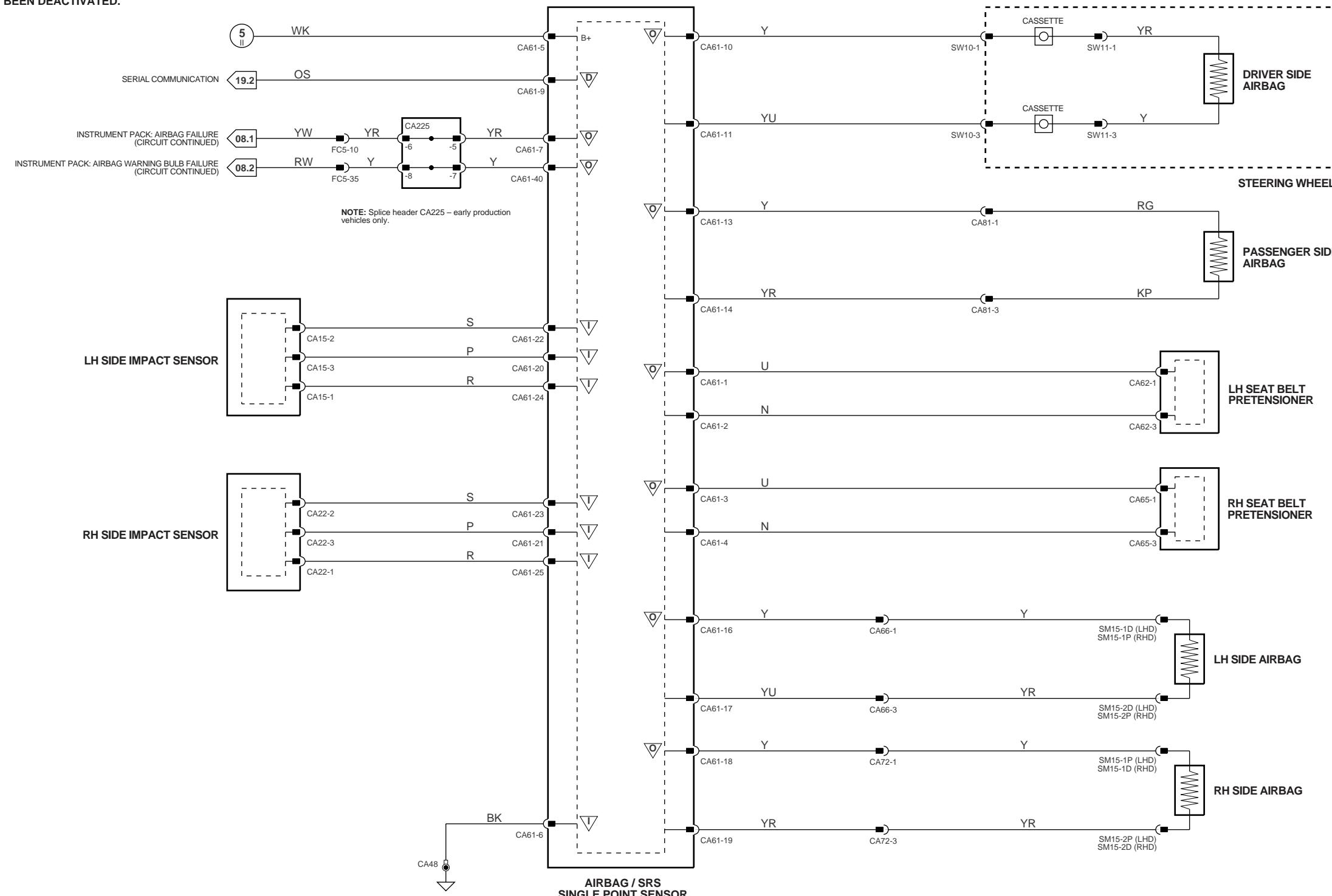




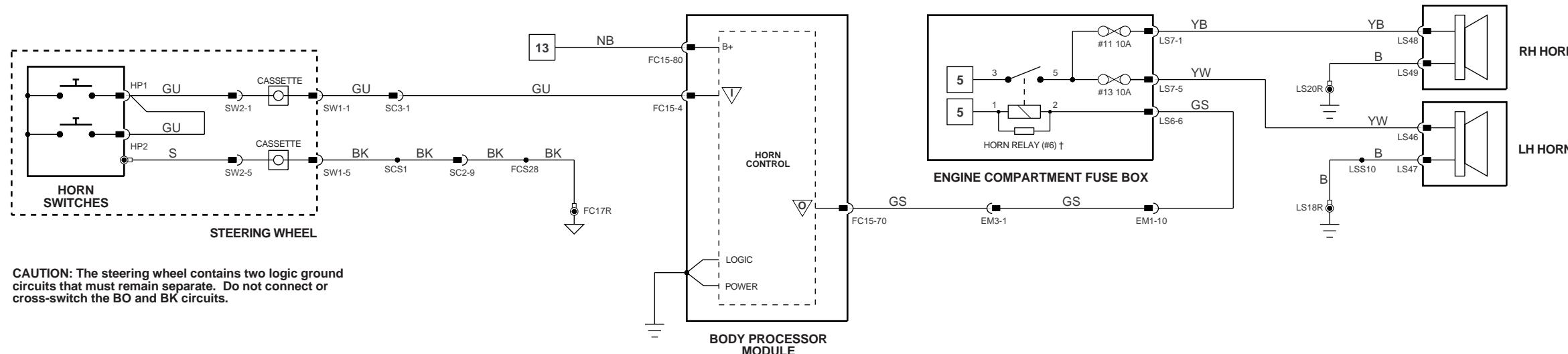


CAUTION: Do not substitute another fuse value for the 10A battery fuse.

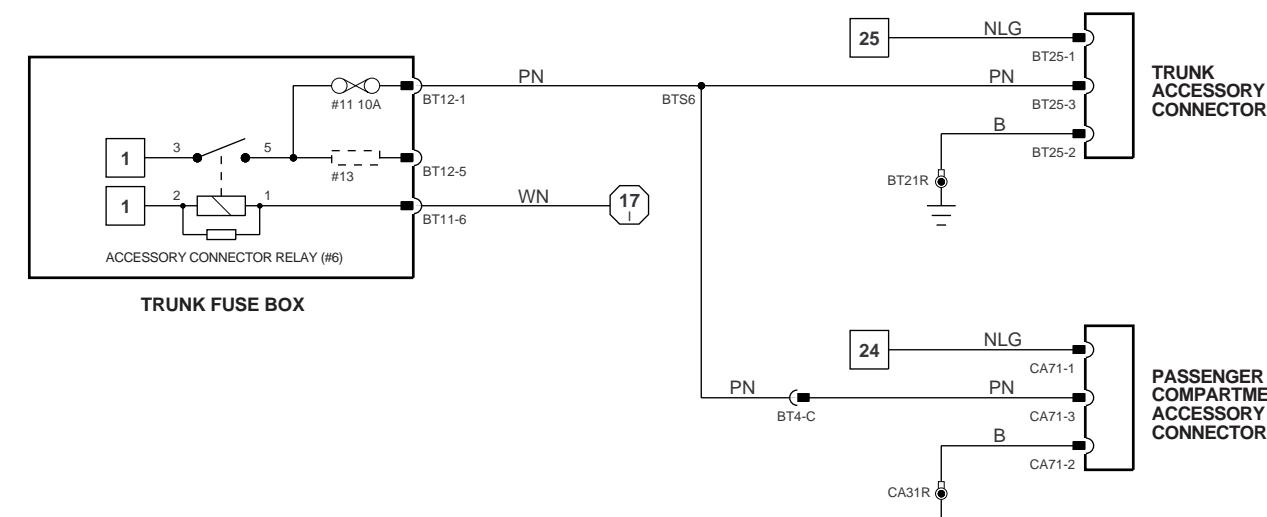
WARNING: DO NOT ATTEMPT TO REPLACE THE 10A BATTERY FUSE UNLESS THE AIRBAG SYSTEM HAS FIRST BEEN DEACTIVATED.



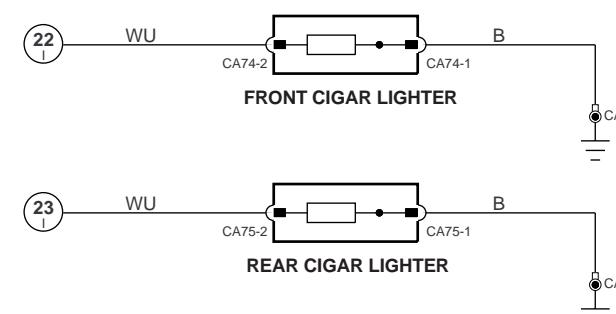
WARNING: DO NOT ATTEMPT TO MEASURE THE RESISTANCE THROUGH THE AIRBAG ASSEMBLY. DOING SO MAY TRIGGER AIRBAG DEPLOYMENT AND POSSIBLY RESULT IN PERSONAL INJURY.



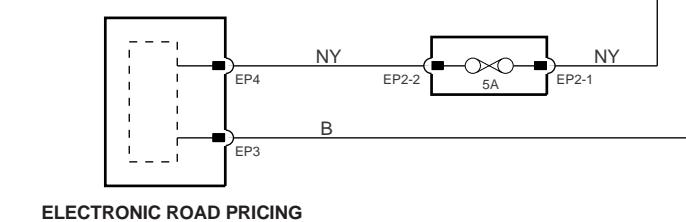
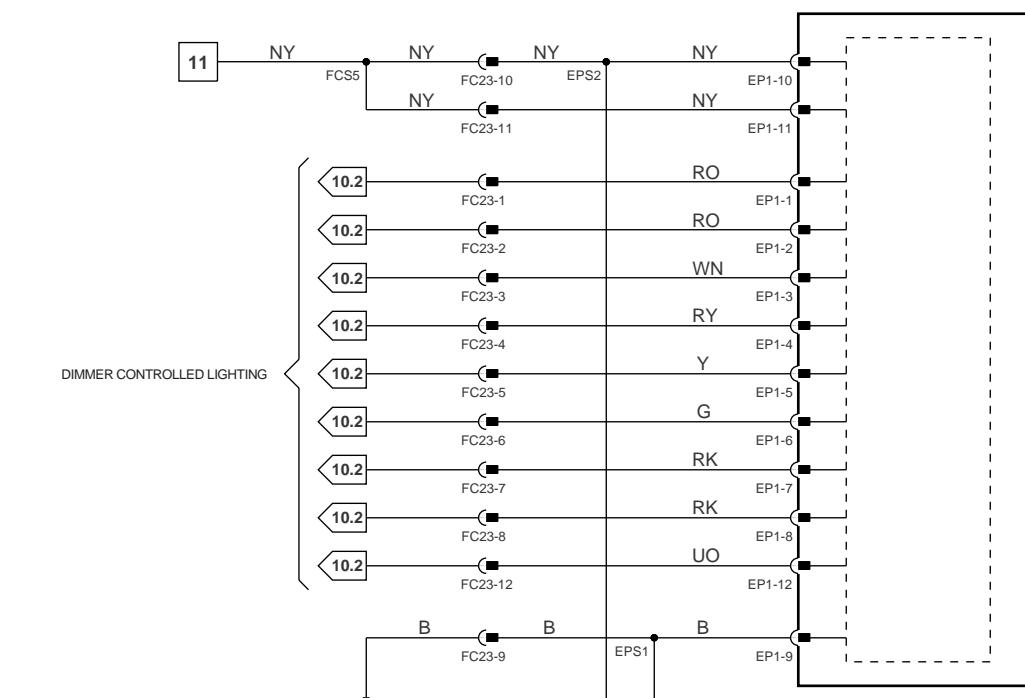
HORNS



ACCESSORY CONNECTORS



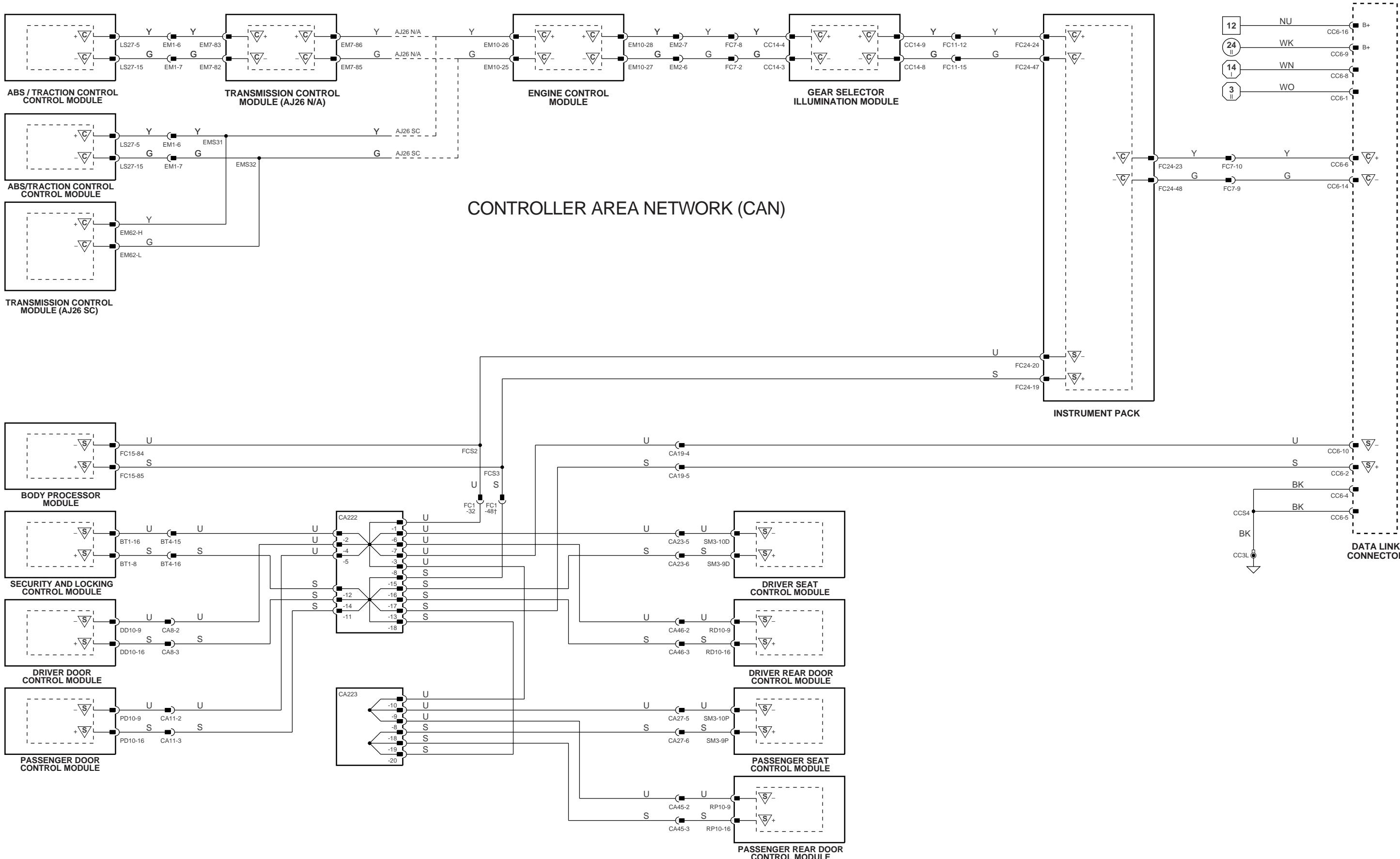
CIGAR LIGHTERS



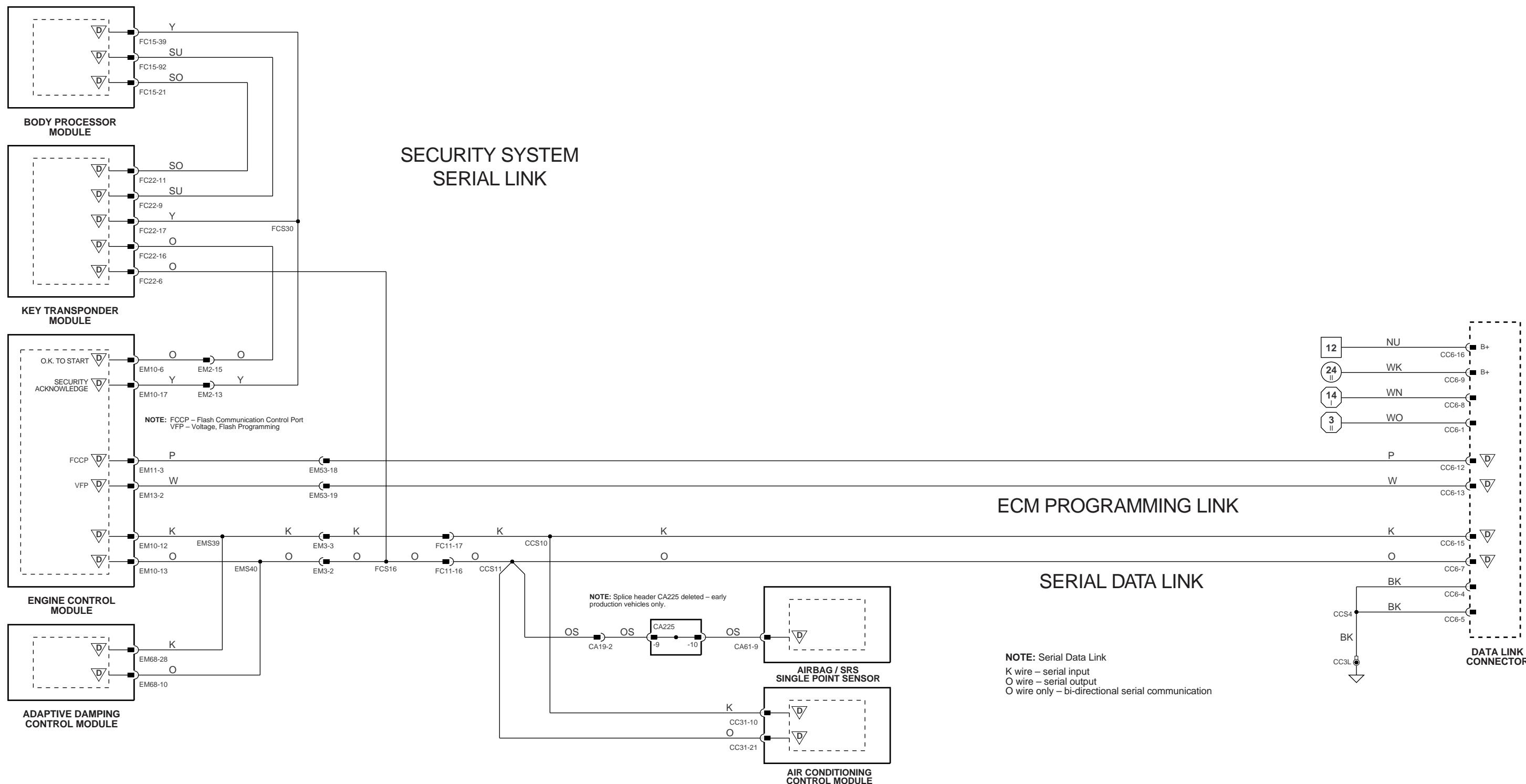
ELECTRONIC ROAD PRICING

† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.

{ 1 - 6 } Fig. 01.1	{ 7 - 47 } Fig. 01.2	{ 5 - 44 } Fig. 01.4	{ 1 - 17 } Fig. 02.1	▽ Input	▽ Output	▽ Serial and Encoded Communications	VARIANT: All Vehicles
{ 1 - 4 } Fig. 01.3	{ 48 - 82 } Fig. 01.5	{ 45 - 63 } Fig. 01.5		▽ Signal Ground (SG)	▽ CAN (Network)	▽ SCP Network	VIN RANGE: All DATE OF ISSUE: SEPTEMBER 1997



† NOTE: Early production vehicles have connector pin numbers that differ from the volume production pin numbers shown. Use the wire color code for pin identification on early production vehicles.



{ 1 - 6 } Fig. 01.1
 { 1 - 4 } Fig. 01.1

{ 7 - 47 } Fig. 01.2
 { 5 - 44 } Fig. 01.4
 { 48 - 82 } Fig. 01.3
 { 45 - 63 } Fig. 01.5

{ 1 - 17 } Fig. 02.1

▽ Input
 ▽ Output
 ▽ Signal Ground (SG)
 ▽ CAN (Network)

▽ Serial and Encoded Communications
 ▽ SCP Network

VARIANT: All Vehicles
 VIN RANGE: All
 DATE OF ISSUE: SEPTEMBER 1997

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
I FC15-32	IGNITION SWITCHED GROUND
O FC15-97	RELAY COIL DRIVE

Active

GROUND
GROUND

Inactive

B+
B+

Fig. 01.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BATTERY	BT66 / BATTERY CABLE CLAMP BT67 / BATTERY CABLE CLAMP	TRUNK / BATTERY COVER
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL LS6 / 10-WAY U.T.A. FUSE BOX / BLACK LS7 / 10-WAY U.T.A. FUSE BOX / GREEN LS8 / 10-WAY U.T.A. FUSE BOX / BLUE	ENGINE COMPARTMENT / LH FRONT
FUSE BOX - ENGINE MANAGEMENT	EM19 / 10-WAY U.T.A. FUSE BOX / NATURAL EM20 / 10-WAY U.T.A. FUSE BOX / BLACK ST20 / EYELET ST21 / EYELET	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
FUSE BOX - LH HEELBOARD	CA1 / 10-WAY U.T.A. FUSE BOX / NATURAL CA2 / 10-WAY U.T.A. FUSE BOX / BLACK ST15 / EYELET	LH HEELBOARD / HEELBOARD COVER
FUSE BOX - RH HEELBOARD	CA41 / 10-WAY U.T.A. FUSE BOX / NATURAL CA42 / 10-WAY U.T.A. FUSE BOX / BLACK ST13 / EYELET ST14 / EYELET	RH HEELBOARD / HEELBOARD COVER
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE BT16 / EYELET	TRUNK ELECTRICAL CARRIER
HIGH POWER PROTECTION MODULE	BT60 / EYELET BT61 / EYELET BT62 / EYELET BT63 / EYELET	TRUNK / ADJACENT TO BATTERY
TRANSIT ISOLATION DEVICE	BT37 / LUCAR - STRAIGHT BT66 / BATTERY CABLE CLAMP	ADJACENT TO BATTERY / BATTERY COVER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
AUXILIARY POSITIVE RELAY (RH HEELBOARD FUSE BOX)	BROWN	BUS	RH HEELBOARD FUSE BOX / HEELBOARD COVER
EMS CONTROL RELAY (ENGINE MANAGEMENT FUSE BOX)	BROWN	BUS	ENGINE MANAGEMENT FUSE BOX / ENGINE COMPARTMENT
IGNITION POSITIVE RELAY (ENGINE COMPARTMENT FUSE BOX)	BROWN	BUS	ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
IGNITION POSITIVE RELAY (LH HEELBOARD FUSE BOX)	BROWN	BUS	LH HEELBOARD FUSE BOX / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
ST5	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD
ST6	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD

GROUNDS

Ground	Location / Type
BT65	EYELET (SINGLE) - BATTERY GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 01.2

COMPONENTS

Component

FUSE BOX - LH HEELBOARD

FUSE BOX - RH HEELBOARD

SPLICE HEADER - CA222

SPLICE HEADER - CA223

SPLICE HEADER - CA224

Connector / Type / Color

CA1 / 10-WAY U.T.A. FUSE BOX / NATURAL
CA2 / 10-WAY U.T.A. FUSE BOX / BLACK
ST15 / EYELET

CA41 / 10-WAY U.T.A. FUSE BOX / NATURAL
CA42 / 10-WAY U.T.A. FUSE BOX / BLACK
ST13 / EYELET
ST14 / EYELET

CA222 / 20-WAY SUMITOMO SPLICE HEADER / GREY
CA223 / 20-WAY SUMITOMO SPLICE HEADER / BLACK
CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN

Location / Access

LH HEELBOARD / HEELBOARD COVER

RH HEELBOARD / HEELBOARD COVER

RH HEELBOARD / HEELBOARD COVER

RH HEELBOARD / HEELBOARD COVER

LH HEELBOARD / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

BT4	54-WAY THROUGH PANEL / BLACK
CA10	8-WAY MULTILOCK 070 / YELLOW
CA12	8-WAY MULTILOCK 070 / YELLOW
CA14	6-WAY MULTILOCK 070 / WHITE
CA16	6-WAY MULTILOCK 070 / WHITE
CA19	20-WAY MULTILOCK 070 / YELLOW
CA20	20-WAY MULTILOCK 070 / YELLOW
CA23	10-WAY MULTILOCK 070 / WHITE
CA27	10-WAY MULTILOCK 070 / WHITE
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK
IC1	14-WAY MULTILOCK 070 / WHITE

Location / Access

BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
DRIVER 'A' POST / DOOR HARNESS GAITER
PASSENGER 'A' POST / DOOR HARNESS GAITER
DRIVER 'B/C' POST / DOOR HARNESS GAITER
PASSENGER 'B/C' POST / DOOR HARNESS GAITER
LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
BELOW DRIVER SEAT
BELOW PASSENGER SEAT
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
BELOW DRIVER SIDE AIR VENT / COIN TRAY
LH HEELBOARD

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 01.3

COMPONENTS

Component

FUSE BOX - ENGINE COMPARTMENT

Connector / Type / Color

LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL
LS6 / 10-WAY U.T.A. FUSE BOX / BLACK
LS7 / 10-WAY U.T.A. FUSE BOX / GREEN
LS8 / 10-WAY U.T.A. FUSE BOX / BLUE
ST19 / EYELET

Location / Access

ENGINE COMPARTMENT / LH FRONT

FUSE BOX - ENGINE MANAGEMENT

EM19 / 10-WAY U.T.A. FUSE BOX / NATURAL
EM20 / 10-WAY U.T.A. FUSE BOX / BLACK
ST20 / EYELET
ST21 / EYELET

ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE

FUSE BOX - TRUNK

BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL
BT11 / 10-WAY U.T.A. FUSE BOX / BLACK
BT12 / 10-WAY U.T.A. FUSE BOX / GREEN
BT13 / 10-WAY U.T.A. FUSE BOX / BLUE
BT64 / EYELET

TRUNK ELECTRICAL CARRIER

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

BS4 20-WAY MULTILOCK 070 / WHITE
BT4 54-WAY THROUGH PANEL / BLACK
CA109 12-WAY MULTILOCK 070 / WHITE
EM42 4-WAY YAZAKI / GREY
IC2 8-WAY MULTILOCK 070 / WHITE
LS32 4-WAY YAZAKI / GREY

Location / Access

BELOW REAR CENTER CONSOLE SEAT SWITCHES
BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
BELOW REAR SEAT CUSHION
BULKHEAD / REAR OF ENGINE
REARWARD OF FUEL TANK / BATTERY COVER
FORWARD OF LH FRONT SUSPENSION ARM

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 01.4

COMPONENTS		
Component	Connector / Type / Color	Location / Access
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL LS6 / 10-WAY U.T.A. FUSE BOX / BLACK LS7 / 10-WAY U.T.A. FUSE BOX / GREEN LS8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
FUSE BOX - LH HEELBOARD	CA1 / 10-WAY U.T.A. FUSE BOX / NATURAL CA2 / 10-WAY U.T.A. FUSE BOX / BLACK ST15 / EYELET	LH HEELBOARD / HEELBOARD COVER
FUSE BOX - RH HEELBOARD	CA41 / 10-WAY U.T.A. FUSE BOX / NATURAL CA42 / 10-WAY U.T.A. FUSE BOX / BLACK ST13 / EYELET ST14 / EYELET	RH HEELBOARD / HEELBOARD COVER
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE BT64 / EYELET	TRUNK ELECTRICAL CARRIER
SPLICE HEADER - CA225	CA225 / 20-WAY SUMITOMO SPLICE HEADER / NATURAL	LH HEELBOARD / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54 WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20 WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA20	20 WAY MULTILOCK 070 / YELLOW	RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA109	12 WAY MULTILOCK 070 / WHITE	BELOW REAR SEAT CUSHION
EM1	12 WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM42	4 WAY YAZAKI / GREY	BULKHEAD / REAR OF ENGINE
EM51	12 WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
FC1	54 WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54 WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14 WAY MULTILOCK 070 / WHITE	LH HEELBOARD
LS3	54 WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 01.5

COMPONENTS

Component

FUSE BOX – ENGINE MANAGEMENT

Connector / Type / Color

EM19 / 10-WAY U.T.A. FUSE BOX / NATURAL
EM20 / 10-WAY U.T.A. FUSE BOX / BLACK
ST20 / EYELET
ST21 / EYELET

Location / Access

ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

EM2 20-WAY MULTILOCK 070 / GREY
EM51 12-WAY AUGAT 1.6 / GREY
FC1 54-WAY THROUGH PANEL CONNECTOR / BLACK
PI1 57-WAY SUMITOMO TS090 / BLACK

Location / Access

PASSENGER 'A' POST / LOWER 'A' POST FINISHER
ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 02.1

COMPONENTS

Component

IGNITION SWITCH
INERTIA SWITCH

Connector / Type / Color

FC4 / 8-WAY MULTILOCK 070 / WHITE
CA6 / 3-WAY ECONOSEAL III LC / BLACK

Location / Access

STEERING COLUMN
RH 'A' POST / LOWER 'A' POST FINISHER

HARNESS-TO-HARNESS CONNECTORS

Connector

BT4
CA19
CA20
FC1
FC11
LS3

Type / Color

54-WAY THROUGH PANEL / BLACK
20-WAY MULTILOCK 070 / YELLOW
20-WAY MULTILOCK 070 / YELLOW
54-WAY THROUGH PANEL CONNECTOR / BLACK
18-WAY MULTILOCK 070 / WHITE
54-WAY THROUGH PANEL CONNECTOR / BLACK

Location / Access

BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
ABOVE DIMMER MODULE / COIN TRAY
LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground

FC17L

Location / Type

EYELET (PAIR) - EMS BULKHEAD GROUND STUD

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-7	NEUTRAL SWITCH STATUS	GROUND (N)	B+ (P, R, D, 4, 3, 2)
D FC15-21	SERIAL COMMUNICATION - KEY TRANSPONDER	ENCODED COMMUNICATION	
D FC15-39	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O FC15-73	STARTER RELAY ACTIVATE	GROUND (CRANKING)	B+
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
D FC15-92	ENCODED COMMUNICATIONS		

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
D EM10-6	OK TO START - ENCODED COMMUNICATIONS	B+ (P, N)	GROUND (R,D,4,3,2)
I EM10-15	PARK / NEUTRAL CONFIRMATION	ENCODED COMMUNICATIONS	
D EM10-17	SECURITY ACKNOWLEDGE		

KEY TRANSPONDER MODULE

Pin	Description	Active	Inactive
D FC22-9	SERIAL COMMUNICATION (ENCODED COMMUNICATION)		
D FC22-11	SERIAL COMMUNICATION BPM	ENCODED COMMUNICATION	
D FC22-16	OK TO START (ENCODED COMMUNICATION)		
D FC22-17	SECURITY ACKNOWLEDGE (ENCODED COMMUNICATION)		

Fig. 03.1

COMPONENTS			
Component		Connector / Type / Color	Location / Access
BATTERY		BT66 / BATTERY CABLE CLAMP BT67 / BATTERY CABINET CLAMP	TRUNK / BATTERY COVER
BODY PROCESSOR MODULE		FC15 / 14-WAY AMP EEC / GREY	BULKHEAD / BEHIND GLOVE BOX
ENGINE CONTROL MODULE		EM10 / 28-WAY MULTILOCK 040 / GREY EM11 / 16-WAY MULTILOCK 040 / GREY EM12 / 22-WAY MULTILOCK 040 / GREY EM13 / 34-WAY MULTILOCK 040 / GREY EM14 / 12-WAY MULTILOCK 47 / WHITE EM15 / 22-WAY MULTILOCK 47 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
GENERATOR		AN1 / EYELET AN2 / EYELET ST4 / EYELET	ENGINE COMPARTMENT / RH FRONT
HIGH POWER PROTECTION MODULE		BT60 / EYELET BT61 / EYELET BT62 / EYELET BT63 / EYELET	TRUNK / ADJACENT TO BATTERY
IGNITION SWITCH		FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
KEY TRANSPONDER MODULE		FC22 / 20-WAY MULTILOCK 040 / GREEN	BELOW INSTRUMENT PACK
NEUTRAL SWITCH		CC21 / 3-WAY MULTILOCK 070 / GREY	GEAR SELECTOR ASSEMBLY / CENTER CONSOLE
REGULATOR (GENERATOR)		P150 / 3-WAY SUMITOMO 92 / BLACK	ENGINE COMPARTMENT / RH FRONT
STARTER MOTOR		ST1 / EYELET ST2 / EYELET ST3 / EYELET	ENGINE COMPARTMENT / ENGINE BLOCK / RH SIDE
SUPPRESSION MODULE		AN3 / 3-WAY ECONOSEAL III LC / RED	ENGINE COMPARTMENT / RIGHT FRONT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
STARTER RELAY	BROWN	EM50 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM60	2-WAY ECONOSEAL III HC / GREY	ENGINE COMPARTMENT / ADJACENT RH TO FALSE BULKHEAD
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
P11	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
P12	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ST5	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD
ST6	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD

GROUNDS

Ground	Location / Type
BT65	EYELET (SINGLE) - BATTERY GROUND STUD
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 03.2

BODY PROCESSOR MODULE

Pin	Description
I FC15-7	NEUTRAL SWITCH STATUS
D FC15-21	SERIAL COMMUNICATION - KEY TRANSPONDER
D FC15-39	SECURITY ACKNOWLEDGE
I FC15-41	STARTER ENGAGE REQUEST
O FC15-73	STARTER RELAY ACTIVATE
I FC15-80	BATTERY SUPPLY VOLTAGE
D FC15-92	ENCODED COMMUNICATIONS

Active
GROUND (N)
ENCODED COMMUNICATION
ENCODED COMMUNICATIONS
GROUND (CRANKING)
GROUND (CRANKING)
B+

Inactive
B+ (P, R, D, 4, 3, 2)
B+
B+
B+

ENGINE CONTROL MODULE

Pin	Description
D EM10-6	OK TO START - ENCODED COMMUNICATIONS
I EM10-15	PARK / NEUTRAL CONFIRMATION
D EM10-17	SECURITY ACKNOWLEDGE
I EM11-6	ENGINE CRANK

Active
B- (P, N)
ENCODED COMMUNICATIONS
GROUND (CRANKING)

Inactive
GROUND (R,D,4,3,2)
B+

COMPONENTS

Component	Connector / Type / Color	Location / Access
BATTERY	BT66 / BATTERY CABLE CLAMP BT67 / BATTERY CABLE CLAMP	TRUNK / BATTERY COVER
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DUAL LINEAR SWITCH	CC8 / 12-WAY MULTILOCK 070 / WHITE	RIGHT HAND SIDE OF GEAR SELECTOR / CENTER CONSOLE
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY EM11 / 16-WAY MULTILOCK 040 / GREY EM12 / 22-WAY MULTILOCK 040 / GREY EM13 / 34-WAY MULTILOCK 040 / GREY EM14 / 12-WAY MULTILOCK 47 / WHITE EM15 / 22-WAY MULTILOCK 47 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
GENERATOR	AN1 / EYELET AN2 / EYELET ST4 / EYELET	ENGINE COMPARTMENT / RH FRONT
HIGH POWER PROTECTION MODULE	BT60 / EYELET BT61 / EYELET BT62 / EYELET BT63 / EYELET	TRUNK / ADJACENT TO BATTERY
IGNITION SWITCH	FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
KEY TRANSPONDER MODULE	FC22 / 20-WAY MULTILOCK 040 / GREEN	BELLOW INSTRUMENT PACK
REGULATOR (GENERATOR)	PI50 / 3-WAY SUMITOMO 92 / BLACK	ENGINE COMPARTMENT / RH FRONT
STARTER MOTOR	ST1 / EYELET ST2 / EYELET ST3 / EYELET	ENGINE COMPARTMENT / ENGINE BLOCK / RH SIDE
SUPPRESSION MODULE	AN3 / 3-WAY ECONOSEAL III LC / RED	ENGINE COMPARTMENT / RIGHT FRONT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
STARTER RELAY	BROWN	EM50 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM60	2-WAY ECONOSEAL III HC / GREY	ENGINE COMPARTMENT / ADJACENT RH TO FALSE BULKHEAD
EM63	14-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ST5	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD
ST6	EYELET	ENGINE COMPARTMENT / RH FALSE BULKHEAD

GROUNDS

Ground	Location / Type
BT65	EYELET (SINGLE) - BATTERY GROUND STUD
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM8R	EYELET (PAIR) - EMS LH GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
I	EM10-1 IGNITION SWITCHED POWER SUPPLY	B+	0 V
I	EM10-5 IGNITION SWITCHED POWER SUPPLY	B-	B+
D	EM10-6 OK TO START - ENCODED COMMUNICATIONS	B+	B-
I	EM10-9 BATTERY POWER SUPPLY	GROUND	B+
I	EM10-10 BRAKE SWITCH	GROUND	B-
D	EM10-12 SERIAL COMMUNICATIONS	GROUND (APPLIED)	B+
D	EM10-13 SERIAL COMMUNICATIONS	GROUND	GND (R.D.4.3.2)
I	EM10-14 PARKING BRAKE SWITCH	GROUND (APPLIED)	B+
I	EM10-15 PARK / NEUTRAL CONFIRMATION	GROUND	B+
O	EM10-16 EMS CONTROLLED RELAY ACTIVATE	ENCODED COMMUNICATIONS	GROUND
D	EM10-17 SECURITY ACKNOWLEDGE	GROUND	GROUND
O	EM10-20 IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION COMMON REFERENCE GROUND	GROUND	ECTS: ENGINE COOLANT TEMPERATURE SENSOR
O	EM10-21 MECHANICAL GUARD POSITION / PEDAL POSITION / TPS COMMON REFERENCE VOLTAGE	5 V	EVAPP: EVAP CANISTER PURGE VALVE
I	EM10-22 GROUND	GROUND	FUEL TANK PRESSURE SENSOR
I	EM10-23 GROUND	GROUND	HO2S: HEATED OXYGEN SENSOR (UPSTREAM) - A
C	EM10-25 CAN NETWORK	15 - 1500 Hz	HO2S: HEATED OXYGEN SENSOR (UPSTREAM) - B
C	EM10-26 CAN NETWORK	15 - 1500 Hz	IAT: INTAKE AIR TEMPERATURE SENSOR
C	EM10-27 CAN NETWORK	15 - 1500 Hz	KS: KNOCK SENSOR - 'A' BANK
C	EM10-28 CAN NETWORK	15 - 1500 Hz	KS: KNOCK SENSOR - 'B' BANK
D	EM11-3 ECM PROGRAMMING	B-	MAFS: MASS AIR FLOW SENSOR
I	EM11-6 ENGINE CRANK	GROUND (CRANKING)	O2S: OXYGEN SENSOR (DOWNSTREAM) - A
I	EM11-7 FUEL TANK PRESSURE SENSOR FEEDBACK	4.9 V - LOW PRESSURE, 0.2 V - HIGH PRESSURE	O2S: OXYGEN SENSOR (DOWNSTREAM) - B
O	EM11-8 MECHANICAL GUARD POSITION / PEDAL POSITION / TPS / FUEL TANK PRESSURE SENSOR COMMON REFERENCE VOLTAGE	5 V	PARKING BRAKE SWITCH
I	EM11-9 ECT FEEDBACK	0.41 V @ 195°F (DECREASING WITH TEMPERATURE)	PEDAL POSITION AND MECHANICAL GUARD SENSORS
I	EM11-10 TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	THROTTLE MOTOR
I	EM11-11 TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	THROTTLE POSITION SENSOR
O	EM11-12 IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION FUEL TANK PRESSURE SENSOR COMMON REFERENCE GROUND	GROUND	VACUUM SWITCHING VALVE - 1
I	EM11-13 MECHANICAL GUARD POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VACUUM SWITCHING VALVE - 2
SG	EM11-14 MECHANICAL GUARD POSITION / PEDAL POSITION / TPS SHIELD	GROUND	VACUUM SWITCHING VALVE - 3
I	EM11-15 PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VARIABLE VALVE TIMING SOLENOID VALVE - 'A' BANK
I	EM11-16 PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VARIABLE VALVE TIMING SOLENOID VALVE - 'B' BANK
I	EM12-12 IATS FEEDBACK	0.98 V @ 10°C, DECREASING WITH TEMPERATURE	
I	EM12-13 MAFS FEEDBACK	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I	EM12-14 UPSTREAM 'B' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I	EM12-15 UPSTREAM 'A' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I	EM12-16 DOWNSTREAM 'B' BANK O2S	0.1 - 0.9 V @ IDLE (SWING)	
I	EM12-17 DOWNSTREAM 'A' BANK O2S	0.1 - 0.9 V @ IDLE (SWING)	
O	EM12-18 MAFS REFERENCE GROUND	GROUND	
O	EM12-19 MAFS REFERENCE GROUND	GROUND	
SG	EM12-22 O2S / HO2S COMMON SHIELD	GROUND	
D	EM13-2 ECM PROGRAMMING	GROUND	B+
O	EM13-4 CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
O	EM13-11 VACUUM SWITCHING VALVE #3 ACTIVATE	GROUND	B+
O	EM13-12 VACUUM SWITCHING VALVE #1 ACTIVATE	GROUND	B+
O	EM13-13 VACUUM SWITCHING VALVE #2 ACTIVATE	GROUND	B+
EM	EM13-14 THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	B+
I	EM13-17 'B' BANK KNOCK SENSOR FEEDBACK	0 KHz = NO KNOCK, 2 - 20 KHz = KNOCK	GROUND
I	EM13-18 'A' BANK KNOCK SENSOR FEEDBACK	0 KHz = NO KNOCK, 2 - 20 KHz = KNOCK	GROUND
I	EM13-19 CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	GROUND
I	EM13-20 CMPS SIGNAL	5 Hz @ IDLE	GROUND
I	EM13-27 CMPS / CKPS / KNOCK SENSORS COMMON SHIELD	GROUND	GROUND
I	EM13-28 CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	GROUND
SG	EM13-29 CMPS SIGNAL GROUND	GROUND	GROUND
I	EM14-1 THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM14-2 THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM14-3 IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	EM14-4 GROUND	GROUND	GROUND
O	EM14-5 THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM14-6 THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM14-7 GROUND	GROUND	GROUND
I	EM14-8 GROUND	GROUND	GROUND
I	EM14-9 GROUND	GROUND	GROUND
I	EM14-10 GROUND	GROUND	GROUND
O	EM14-11 THROTTLE MOTOR POWER SUPPLY	GROUND	GROUND
O	EM14-12 THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM15-1 UPSTREAM 'B' BANK HO2S HEATER GROUND	GROUND	GROUND
O	EM15-2 UPSTREAM 'A' BANK HO2S HEATER GROUND	GROUND	GROUND
O	EM15-3 EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	B+
O	EM15-8 VARIABLE VALVE TIMING SOLENOID 'B' BANK	GROUND	B+
O	EM15-9 VARIABLE VALVE TIMING SOLENOID 'A' BANK	GROUND	B+
I	EM15-11 GROUND	GROUND	GROUND
I	EM15-12 GROUND	GROUND	GROUND
I	EM15-22 GROUND	GROUND	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CANISTER CLOSE VALVE	CV1 / 2-WAY YAZAKI 90 / BLACK	UNDER VEHICLE / RH REAR
CKPS: CRANKSHAFT POSITION SENSOR	PI17 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE / REAR OF BED PLATE
CMPS: CAMSHAFT POSITION SENSOR	PI15 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ECM AND TCM COOLING FAN	EM66 / 2-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
	EM11 / 16-WAY MULTILOCK 040 / GREY	
	EM12 / 22-WAY MULTILOCK 040 / GREY	
	EM13 / 34-WAY MULTILOCK 040 / GREY	
	EM14 / 12-WAY MULTILOCK 47 / WHITE	
	EM15 / 22-WAY MULTILOCK 47 / WHITE	
ECTS: ENGINE COOLANT TEMPERATURE SENSOR	PI4 / 2-WAY ECONOSEAL E J2 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EVAPP: EVAP CANISTER PURGE VALVE	EM39 / 2-WAY ECONOSEAL J2- / BLACK	ENGINE COMPARTMENT / BULKHEAD
FUEL TANK PRESSURE SENSOR	BT5 / 3-WAY MULTILOCK 070 / WHITE	TOP OF FUEL TANK / TRUNK CARPET
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) - A	EM21 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) - B	EM23 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
IAT: INTAKE AIR TEMPERATURE SENSOR	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
KS: KNOCK SENSOR - 'A' BANK	PI26 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
KS: KNOCK SENSOR - 'B' BANK	PI27 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
MAFS: MASS AIR FLOW SENSOR	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
O2S: OXYGEN SENSOR (DOWNSTREAM) - A	EM22 / 2-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
O2S: OXYGEN SENSOR (DOWNSTREAM) - B	EM24 / 2-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
PARKING BRAKE SWITCH	CC11 / 2-WAY MULTILOCK 040 / BLACK	CENTER CONSOLE ASSEMBLY
PEDAL POSITION AND MECHANICAL GUARD SENSORS	PI42 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
THROTTLE MOTOR	PI33 / 2-WAY TWIN CLIP / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
THROTTLE POSITION SENSOR	PI6 / 4-WAY SUMITOMO TS90 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
VACUUM SWITCHING VALVE - 1	EM57 / 2-WAY SUMITOMO 90 DC / BLUE	ENGINE COMPARTMENT / BULKHEAD
VACUUM SWITCHING VALVE - 2	EM58 / 2-WAY SUMITOMO 90 DC / BROWN	ENGINE COMPARTMENT / BULKHEAD
VACUUM SWITCHING VALVE - 3	EM59 / 2-WAY YAZAKI 90 / GREY	ENGINE COMPARTMENT / BULKHEAD
VARIABLE VALVE TIMING SOLENOID VALVE - 'A' BANK	PI31 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / 'A' BANK CYLINDER HEAD / FRONT
VARIABLE VALVE TIMING SOLENOID VALVE - 'B' BANK	PI32 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD / FRONT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR)

CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

	Pin	Description
I	EM10-1	IGNITION SWITCHED POWER SUPPLY
I	EM10-5	IGNITION SWITCHED POWER SUPPLY
D	EM10-6	OK TO START - ENCODED COMMUNICATIONS
I	EM10-9	BATTERY POWER SUPPLY
I	EM10-10	Brake Switch
D	EM10-12	SERIAL COMMUNICATIONS
D	EM10-13	SERIAL COMMUNICATIONS
I	EM10-14	PARKING BRAKE SWITCH
I	EM10-15	PARK / NEUTRAL CONFIRMATION
O	EM10-16	EMS CONTROLLED RELAY ACTIVATE
D	EM10-17	SECURITY ACKNOWLEDGE
O	EM10-20	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION COMMON REFERENCE GROUND
O	EM10-21	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS COMMON REFERENCE VOLTAGE
I	EM10-22	GROUND
I	EM10-23	GROUND
C	EM10-25	CAN NETWORK
C	EM10-26	CAN NETWORK
C	EM10-27	CAN NETWORK
C	EM10-28	CAN NETWORK
D	EM11-3	ECM PROGRAMMING
I	EM11-6	ENGINE CRANK
O	EM11-8	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS / FUEL TANK PRESSURE SENSOR COMMON REFERENCE VOLTAGE
I	EM11-9	ECT FEEDBACK
I	EM11-10	TPS FEEDBACK
I	EM11-11	TPS FEEDBACK
O	EM11-12	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION FUEL TANK PRESSURE SENSOR COMMON REFERENCE GROUND
I	EM11-13	MECHANICAL GUARD POSITION FEEDBACK
SG	EM11-14	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS SHIELD
I	EM11-15	PEDAL POSITION FEEDBACK
I	EM11-16	PEDAL POSITION FEEDBACK
I	EM12-12	IATS FEEDBACK
I	EM12-13	MAFS FEEDBACK
I	EM12-14	UPSTREAM 'B' BANK HO2S
I	EM12-15	UPSTREAM 'A' BANK HO2S
O	EM12-18	MAFS REFERENCE GROUND
O	EM12-19	MAFS REFERENCE GROUND
SG	EM12-22	02S / HO2S COMMON SHIELD
D	EM13-2	ECM PROGRAMMING
O	EM13-11	VACUUM SWITCHING VALVE #3 ACTIVATE
O	EM13-12	VACUUM SWITCHING VALVE #1 ACTIVATE
O	EM13-13	VACUUM SWITCHING VALVE #2 ACTIVATE
O	EM13-14	THROTTLE MOTOR POWER RELAY ACTIVATE
I	EM13-17	'B' BANK KNOCK SENSOR FEEDBACK
I	EM13-18	'A' BANK KNOCK SENSOR FEEDBACK
I	EM13-19	CKPS SIGNAL
I	EM13-20	CMPS SIGNAL
I	EM13-27	CMPS / CKPS / KNOCK SENSORS COMMON SHIELD
I	EM13-28	CKPS SIGNAL
SG	EM13-29	CMPS SIGNAL GROUND
I	EM14-1	THROTTLE MOTOR POWER SUPPLY
I	EM14-2	THROTTLE MOTOR POWER SUPPLY
I	EM14-3	IGNITION SWITCHED POWER SUPPLY
I	EM14-4	GROUND
O	EM14-5	THROTTLE MOTOR POWER SUPPLY
O	EM14-6	THROTTLE MOTOR POWER SUPPLY
I	EM14-7	GROUND
I	EM14-8	GROUND
I	EM14-9	GROUND
I	EM14-10	GROUND
O	EM14-11	THROTTLE MOTOR POWER SUPPLY
O	EM14-12	THROTTLE MOTOR POWER SUPPLY
O	EM15-1	UPSTREAM 'B' BANK HO2S HEATER GROUND
O	EM15-2	UPSTREAM 'A' BANK HO2S HEATER GROUND
O	EM15-3	EVAP VALVE ACTIVATE
O	EM15-8	VARIABLE VALVE TIMING SOLENOID 'B' BANK
O	EM15-9	VARIABLE VALVE TIMING SOLENOID 'A' BANK
I	EM15-11	GROUND
I	EM15-12	GROUND
I	EM15-22	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.2

COMPONENTS

Component
BRAKE SWITCH
CKPS: CRANKSHAFT POSITION SENSOR
CMPS: CAMSHAFT POSITION SENSOR
ECM AND TCM COOLING FAN
ENGINE CONTROL MODULE
EM10 / 28-WAY MULTILOCK 070 / WHITE
EM10 / 18-WAY MULTILOCK 040 / GREY
EM11 / 18-WAY MULTILOCK 040 / GREY
EM12 / 22-WAY MULTILOCK 040 / GREY
EM13 / 34-WAY MULTILOCK 040 / GREY
EM14 / 12-WAY MULTILOCK 47 / WHITE
EM15 / 22-WAY MULTILOCK 47 / WHITE
ECTS: ENGINE COOLANT TEMPERATURE SENSOR
EVAPP: EVAP CANISTER PURGE VALVE
HO2S: HEATED OXYGEN SENSOR - A
HO2S: HEATED OXYGEN SENSOR - B
IATS: INTAKE AIR TEMPERATURE SENSOR
KS: KNOCK SENSOR - 'A' BANK
KS: KNOCK SENSOR - 'B' BANK
MAFS: MASS AIR FLOW SENSOR
PARKING BRAKE SWITCH
PEDAL POSITION AND MECHANICAL GUARD SENSORS
THROTTLE MOTOR
THROTTLE POSITION SENSOR
VACUUM SWITCHING VALVE - 1
VACUUM SWITCHING VALVE - 2
VACUUM SWITCHING VALVE - 3
VARIABLE VALVE TIMING SOLENOID VALVE - 'A' BANK
VARIABLE VALVE TIMING SOLENOID VALVE - 'B' BANK

Connector / Type / Color

CC40 / 4-WAY MULTILOCK 070 / WHITE
PI17 / 2-WAY ECONOSEAL III HC / BLACK
PI15 / 2-WAY ECONOSEAL III HC / BLACK
EM66 / 2-WAY MULTILOCK 070 / WHITE
EM10 / 28-WAY MULTILOCK 040 / GREY
FM11 / 18-WAY MULTILOCK 040 / GREY
EM12 / 22-WAY MULTILOCK 040 / GREY
EM13 / 34-WAY MULTILOCK 040 / GREY
EM14 / 12-WAY MULTILOCK 47 / WHITE
EM15 / 22-WAY MULTILOCK 47 / WHITE
PI4 / 2-WAY ECONOSEAL E J2 / GREY
EM39 / 2-WAY ECONOSEAL J2+ / BLACK
EM21 / 4-WAY SUMITOMO 90 II / GREY
EM23 / 4-WAY SUMITOMO 90 II / GREY
PI35 / 5-WAY YAZAKI 92 / BLACK
PI26 / 2-WAY ECONOSEAL III LC / BLACK
PI27 / 2-WAY ECONOSEAL III LC / BLACK
PI35 / 5-WAY YAZAKI 92 / BLACK
CC11 / 2-WAY MULTILOCK 040 / BLACK
PI42 / 5-WAY YAZAKI 92 / BLACK
PI33 / 2-WAY TWIN CLIP / BLACK
PI6 / 4-WAY SUMITOMO TS90 / BLACK
EM57 / 2-WAY SUMITOMO 90 DC / BLUE
EM58 / 2-WAY SUMITOMO 90 DC / BROWN
EM59 / 2-WAY YAZAKI 90 / GREY
PI31 / 2-WAY AMP JUNIOR POWER TIMER / BLACK
PI32 / 2-WAY AMP JUNIOR POWER TIMER / BLACK

Location / Access

ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
ENGINE / REAR OF BED PLATE
ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
ENGINE VEE / UNDER INTAKE MANIFOLD
ENGINE VEE / UNDER INTAKE MANIFOLD
ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
CENTER CONSOLE ASSEMBLY
ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
ENGINE COMPARTMENT / THROTTLE ASSEMBLY
ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR) - EMS LH GROUND STUD
EM16L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM16R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
I EM10-1	IGNITION SWITCHED POWER SUPPLY	B+	0 V
I EM10-5	IGNITION SWITCHED POWER SUPPLY	B+	B+
D EM10-6	OK TO START - ENCODED COMMUNICATIONS	B+	B+
I EM10-9	BATTERY POWER SUPPLY	B+	B+
I EM10-10	Brake Switch	GROUND	B+
I EM10-14	Parking Brake Switch	GROUND (APPLIED)	B-
D EM10-12	SERIAL COMMUNICATIONS	B- (P, N)	GROUND (R,D,4,3,2)
D EM10-13	SERIAL COMMUNICATIONS	GROUND	B+
I EM10-15	PARK / NEUTRAL CONFIRMATION	ENCODED COMMUNICATIONS	GROUND
O EM10-16	EMS CONTROLLED RELAY ACTIVATE	GROUND	ECTS: ENGINE COOLANT TEMPERATURE SENSOR
D EM10-17	SECURITY ACKNOWLEDGE	GROUND	EVAPP: EVAP CANISTER PURGE VALVE
O EM10-20	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION COMMON REFERENCE GROUND	5 V	HO2S: HEATED OXYGEN SENSOR - A
O EM10-21	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS COMMON REFERENCE VOLTAGE	GROUND	HO2S: HEATED OXYGEN SENSOR - B
I EM10-22	GROUND	GROUND	IATS: INTAKE AIR TEMPERATURE SENSOR
I EM10-23	GROUND	GROUND	KS: KNOCK SENSOR - 'A' BANK
C EM10-25	CAN NETWORK	15 - 1500 Hz	KS: KNOCK SENSOR - 'B' BANK
C EM10-26	CAN NETWORK	15 - 1500 Hz	MAFS: MASS AIR FLOW SENSOR
C EM10-27	CAN NETWORK	15 - 1500 Hz	PARKING BRAKE SWITCH
C EM10-28	CAN NETWORK	15 - 1500 Hz	PEDAL POSITION AND MECHANICAL GUARD SENSORS
D EM11-3	ECM PROGRAMMING	B+	PI42 / 5-WAY YAZAKI 92 / BLACK
I EM11-6	ENGINE CRANK	GROUND (CRANKING)	PI33 / 2-WAY TWIN CLIP / BLACK
O EM11-8	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS / FUEL TANK PRESSURE SENSOR COMMON REFERENCE VOLTAGE	5 V	PI6 / 4-WAY SUMITOMO TS90 / BLACK
I EM11-9	ECT FEEDBACK	0.41 V @ 195°F (DECREASING WITH TEMPERATURE)	VACUUM SWITCHING VALVE - 1
I EM11-10	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VACUUM SWITCHING VALVE - 2
I EM11-11	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VACUUM SWITCHING VALVE - 3
O EM11-12	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION FUEL TANK PRESSURE SENSOR COMMON REFERENCE GROUND	GROUND	PI57 / 2-WAY SUMITOMO 90 DC / BLUE
I EM11-13	MECHANICAL GUARD POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	EM58 / 2-WAY SUMITOMO 90 DC / BROWN
SG EM11-14	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS SHIELD	GROUND	EM59 / 2-WAY YAZAKI 90 / GREY
I EM11-15	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
I EM11-16	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
I EM12-12	IATS FEEDBACK	0.98 V @ 10°C, DECREASING WITH TEMPERATURE	
I EM12-13	MAFS FEEDBACK	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I EM12-14	UPSTREAM 'B' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-15	UPSTREAM 'A' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
O EM12-18	MAFS REFERENCE GROUND	GROUND	GROUND
O EM12-19	MAFS REFERENCE GROUND	GROUND	GROUND
SG EM12-22	02S / HO2S COMMON SHIELD	GROUND	GROUND
D EM13-2	ECM PROGRAMMING	GROUND	BT4 54-WAY THROUGH PANEL / BLACK
O EM13-11	VACUUM SWITCHING VALVE #3 ACTIVATE	GROUND	CA19 20-WAY MULTILOCK 070 / YELLOW
O EM13-12	VACUUM SWITCHING VALVE #1 ACTIVATE	GROUND	EM1 12-WAY AUGAT 1.6 / BLACK
O EM13-13	VACUUM SWITCHING VALVE #2 ACTIVATE	GROUND	EM2 20-WAY MULTILOCK 070 / GREY
O EM13-14	THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	EM3 14-WAY MULTILOCK 070 / WHITE
I EM13-17	'B' BANK KNOCK SENSOR FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	EM53 20-WAY MULTILOCK 070 / WHITE
I EM13-18	'A' BANK KNOCK SENSOR FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	FC1 54-WAY THROUGH PANEL CONNECTOR / BLACK
I EM13-19	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	LS3 54-WAY THROUGH PANEL CONNECTOR / BLACK
I EM13-20	CMPs SIGNAL	5 Hz @ IDLE	PI1 57 WAY SUMITOMO TS090 / BLACK
I EM13-27	CMPs / CKPS / KNOCK SENSORS COMMON SHIELD	GROUND	PI2 13-WAY ECONOSEAL III LC / BLACK
I EM13-28	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
SG EM13-29	CMPs SIGNAL GROUND	GROUND	
I EM14-1	THROTTLE MOTOR POWER SUPPLY	B+	
I EM14-2	THROTTLE MOTOR POWER SUPPLY	B+	
I EM14-3	IGNITION SWITCHED POWER SUPPLY	B-	
I EM14-4	GROUND	GROUND	
O EM14-5	THROTTLE MOTOR POWER SUPPLY	B+	
O EM14-6	THROTTLE MOTOR POWER SUPPLY	B-	
I EM14-7	GROUND	GROUND	
I EM14-8	GROUND	GROUND	
I EM14-9	GROUND	GROUND	
I EM14-10	GROUND	GROUND	
O EM14-11	THROTTLE MOTOR POWER SUPPLY	GROUND	
O EM14-12	THROTTLE MOTOR POWER SUPPLY	B+	
O EM15-1	UPSTREAM 'B' BANK HO2S HEATER GROUND	GROUND	
O EM15-2	UPSTREAM 'A' BANK HO2S HEATER GROUND	GROUND	
O EM15-3	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	
O EM15-8	VARIABLE VALVE TIMING SOLENOID 'B' BANK	GROUND	
O EM15-9	VARIABLE VALVE TIMING SOLENOID 'A' BANK	GROUND	
I EM15-11	GROUND	GROUND	
I EM15-12	GROUND	GROUND	
I EM15-22	GROUND	GROUND	

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.
NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.3

COMPONENTS

Component

Component	Connector / Type / Color	Location / Access
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CKPS: CRANKSHAFT POSITION SENSOR	P117 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE / REAR OF BED PLATE
CMPS: CAMSHAFT POSITION SENSOR	P115 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ECM AND TCM COOLING FAN	EM66 / 2-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
	EM11 / 16-WAY MULTILOCK 040 / GREY	
	EM12 / 22-WAY MULTILOCK 040 / GREY	
	EM13 / 34-WAY MULTILOCK 040 / GREY	
	EM14 / 12-WAY MULTILOCK 47 / WHITE	
	EM15 / 22-WAY MULTILOCK 47 / WHITE	
EECTS: ENGINE COOLANT TEMPERATURE SENSOR	PI4 / 2-WAY ECONOSEAL E J2 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EVAPP: EVAP CANISTER PURGE VALVE	EM39 / 2-WAY ECONOSEAL J2+ / BLACK	ENGINE COMPARTMENT / BULKHEAD
HO2S: HEATED OXYGEN SENSOR - A	EM21 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR - B	EM23 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
IATS: INTAKE AIR TEMPERATURE SENSOR	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
KS: KNOCK SENSOR - 'A' BANK	PI26 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
KS: KNOCK SENSOR - 'B' BANK	PI27 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
MAFS: MASS AIR FLOW SENSOR	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
PARKING BRAKE SWITCH	CC11 / 2-WAY MULTILOCK 040 / BLACK	CENTER CONSOLE ASSEMBLY
PEDAL POSITION AND MECHANICAL GUARD SENSORS	PI42 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
THROTTLE MOTOR	PI33 / 2-WAY TWIN CLIP / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
THROTTLE POSITION SENSOR	PI6 / 4-WAY SUMITOMO TS90 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
VACUUM SWITCHING VALVE - 1	EM57 / 2-WAY SUMITOMO 90 DC / BLUE	ENGINE COMPARTMENT / BULKHEAD
VACUUM SWITCHING VALVE - 2	EM58 / 2-WAY SUMITOMO 90 DC / BROWN	ENGINE COMPARTMENT / BULKHEAD
VACUUM SWITCHING VALVE - 3	EM59 / 2-WAY YAZAKI 90 / GREY	ENGINE COMPARTMENT / BULKHEAD

RELAYS

Relay

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
PI1	57 WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

GROUNDS

Ground

Ground	Location / Type
EM8L	EYELET (PAIR) - EMS LH GROUND STUD
EM16L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM16R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

Fig. 04.4

AIR CONDITIONING CONTROL MODULE

Pin	Description	Active	Inactive
I CC28-1	COMPRESSOR CLUTCH STATUS	B+ (ON)	0 V
O CC30-1	AIR CONDITIONING ELECTRICAL LOAD SIGNAL	B+	0 V
I CC31-7	LOAD INHIBIT	0 V	B+
O CC31-9	COMPRESSOR CLUTCH ON REQUEST	B+	0 V
I CC31-17	REFRIGERANT 4 WAY PRESSURE SWITCH	0 V (2 - 30 BAR)	B+ (OUT OF ACTIVE RANGE)

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
O EM10-2	A/CCM LOAD INHIBIT	GROUND	B+
I EM10-3	A/CCM ELECTRICAL LOAD SIGNAL	B+	GROUND
I EM10-4	A/CCM COMPRESSOR CLUTCH REQUEST	GROUND	B+
I EM10-11	CRUISE CONTROL BRAKE CANCEL REQUEST	GROUND (APPLIED)	B+
I EM11-1	CRUISE CONTROL SET +/-	7.3 V = (+), 8.8 V = (-)	B+
I EM11-4	CRUISE CONTROL ON REQUEST	B+	GROUND
I EM11-5	CRUISE CONTROL CANCEL / RESUME	7.3 V = RESUME, 8.8 V = CANCEL B+	B+
I EM12-5	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	
I EM12-6	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	
I EM12-8	IGNITION MODULE 2 SWITCHING FEEDBACK	23 Hz @ IDLE (5 V)	
I EM12-9	IGNITION MODULE1 SWITCHING FEEDBACK	23 Hz @ IDLE (5 V)	
O EM12-10	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND	B+
O EM13-1	FUEL PUMP RELAY ACTIVATE	GROUND	B+
O EM13-3	CRUISE CONTROL ON STATUS LED	GROUND	B+
O EM13-15	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	B+
O EM13-16	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	B+
O EM13-22	IGNITION COIL RELAY ACTIVATE	GROUND	B+
O EM13-23	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-24	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	
O EM13-25	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	
O EM13-26	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-31	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	
O EM13-32	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-33	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-34	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM15-4	INJECTOR '3B' ACTIVATE	GROUND	B+
O EM15-5	INJECTOR '2B' ACTIVATE	GROUND	B+
O EM15-6	INJECTOR '4A' ACTIVATE	GROUND	B+
O EM15-7	INJECTOR '1A' ACTIVATE	GROUND	B+
O EM15-15	INJECTOR '4B' ACTIVATE	GROUND	B+
O EM15-16	INJECTOR '3A' ACTIVATE	GROUND	B+
O EM15-17	INJECTOR '2A' ACTIVATE	GROUND	B+
O EM15-18	INJECTOR '1B' ACTIVATE	GROUND	B+

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH	P136 / 1-WAY SUMITOMO 90 A TYPE / BLACK	ENGINE COMPARTMENT / A/C COMPRESSOR
AIR CONDITIONING CONTROL MODULE	CC28 / 26-WAY MULTILOCK 47 / GREY CC29 / 16-WAY MULTILOCK 47 / GREY CC30 / 12-WAY MULTILOCK 47 / GREY CC31 / 22-WAY MULTILOCK 47 / GREY	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
BRAKE CANCEL SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CRUISE CONTROL ON / OFF SWITCH	CC20 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	CENTER CONSOLE ASSEMBLY
CRUISE CONTROL SWITCHES (STEERING WHEEL)	SW3 / 3-WAY EPC / BLACK / WHITE	CENTER OF STEERING WHEEL
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY EM11 / 16-WAY MULTILOCK 040 / GREY EM12 / 22-WAY MULTILOCK 040 / GREY EM13 / 34-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
FUEL INJECTOR - 1A	PI7 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 1B	PI11 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 2A	PI8 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 2B	PI12 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 3A	PI9 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 3B	PI13 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 4A	PI10 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL INJECTOR - 4B	PI14 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL
FUEL PUMP	BT9 / 4-WAY SUMITOMO DL90 / NATURAL	TOP OF FUEL TANK / TRUNK CARPET
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE	TRUNK ELECTRICAL CARRIER
IGNITION COIL - 1A	PI18 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 1B	PI22 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 2A	PI19 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 2B	PI23 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 3A	PI20 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 3B	PI24 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 4A	PI21 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 4B	PI25 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION MODULE - 1	EM27 / 12-WAY IGNITION POWER MODULE / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
IGNITION MODULE - 2	EM28 / 12-WAY IGNITION POWER MODULE / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
RADIATOR FAN CONTROL RELAY MODULE	LS31 / 8-WAY TRW / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH CRUSH TUBE
RADIATOR FAN - LH	CF1 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW LH FAN
RADIATOR FAN - RH	CF2 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW RH FAN
REFRIGERANT 4-WAY PRESSURE SWITCH	LS26 / 6-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH SIDE OF RADIATOR

RELAYS

Relay	Case Color	Connector / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	BROWN	EM25 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL INJECTION RELAY	BROWN	EM52 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL PUMP RELAY	BROWN	BUS	RELAY #4, TRUNK FUSE BOX / TRUNK
IGNITION COIL RELAY	BROWN	EM26 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS32	4-WAY YAZAKI / GREY	FORWARD OF LH FRONT SUSPENSION ARM
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR
SW1	12-WAY MULTILOCK 040 / BLACK	INSIDE STEERING COLUMN COWL
SW2	6-WAY JST / WHITE	CENTER OF STEERING WHEEL

GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD
EM8R	EYELET (PAIR) - EMS LH GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS10L	EYELET (PAIR) - LH FORWARD GROUND STUD
LS10R	EYELET (PAIR) - LH FORWARD GROUND STUD
LS20L	EYELET (PAIR) - RH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
I EM10-1	IGNITION SWITCHED POWER SUPPLY	B+	0 V
I EM10-5	IGNITION SWITCHED POWER SUPPLY	B+	B+
D EM10-6	OK TO START – ENCODED COMMUNICATIONS	B+	B+
I EM10-9	BATTERY POWER SUPPLY	GROUND	B+
I EM10-10	BRAKE SWITCH	GROUND	B+
D EM10-12	SERIAL COMMUNICATIONS	GROUND (APPLIED)	B+
D EM10-13	SERIAL COMMUNICATIONS	B+ (P, N)	GROUND (R,D,4,3,2)
I EM10-14	PARKING BRAKE SWITCH	GROUND	B-
I EM10-15	PARK / NEUTRAL CONFIRMATION	GROUND	GROUND
O EM10-16	ECM CONTROLLED RELAY ACTIVATE	ENCODED COMMUNICATIONS	GROUND
D EM10-17	SECURITY ACKNOWLEDGE	GROUND	GROUND
O EM10-20	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION COMMON REFERENCE GROUND	5 V	5 V
O EM10-21	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS COMMON REFERENCE VOLTAGE	GROUND	GROUND
I EM10-22	GROUND	15 - 1500 Hz	15 - 1500 Hz
I EM10-23	GROUND	15 - 1500 Hz	15 - 1500 Hz
C EM10-25	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
C EM10-26	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
C EM10-27	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
C EM10-28	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
D EM11-3	ECM PROGRAMMING	B+	B+
I EM11-6	ENGINE CRANK	GROUND (CRANKING)	B+
I EM11-7	FUEL TANK PRESSURE SENSOR FEEDBACK	4.9 V = LOW PRESSURE, 0.2 V = HIGH PRESSURE	B+
O EM11-8	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS / FUEL TANK PRESSURE SENSOR COMMON REFERENCE VOLTAGE	5 V	5 V
I EM11-9	ECT FEEDBACK	0.41 V @ 195°F (DECREASING WITH TEMPERATURE)	
I EM11-10	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
I EM11-11	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
O EM11-12	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION FUEL TANK PRESSURE SENSOR COMMON REFERENCE GROUND	GROUND	GROUND
I EM11-13	MECHANICAL GUARD POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
SG EM11-14	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS SHIELD	GROUND	GROUND
I EM11-15	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
I EM11-16	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
O EM12-1	EGR STEPPER MOTOR 'S1' WINDING SUPPLY	GROUND	B+
O EM12-2	EGR STEPPER MOTOR 'S2' WINDING SUPPLY	GROUND	B+
O EM12-3	EGR STEPPER MOTOR 'S3' WINDING SUPPLY	GROUND	B+
O EM12-4	EGR STEPPER MOTOR 'S4' WINDING SUPPLY	GROUND	B+
I EM12-7	MANIFOLD IATS FEEDBACK	0.98 V @ 10°C, DECREASING WITH TEMPERATURE	
I EM12-12	IATS FEEDBACK	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I EM12-13	MAFS FEEDBACK	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-14	UPSTREAM 'B' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-15	UPSTREAM 'A' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-16	DOWNSTREAM 'B' BANK O2S	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-17	DOWNSTREAM 'A' BANK O2S	0.1 - 0.9 V @ IDLE (SWING)	
O EM12-18	MAFS REFERENCE GROUND	GROUND	GROUND
O EM12-19	MAFS REFERENCE GROUND	GROUND	GROUND
SG EM12-22	02S / HO2S COMMON SHIELD	GROUND	GROUND
D EM13-2	ECM PROGRAMMING	GROUND	B+
O EM13-4	CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
O EM13-11	VACUUM SWITCHING VALVE #3 ACTIVATE	GROUND	B+
O EM13-12	VACUUM SWITCHING VALVE #1 ACTIVATE	GROUND	B+
O EM13-13	VACUUM SWITCHING VALVE #2 ACTIVATE	GROUND	B+
O EM13-14	THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	B+
I EM13-17	'B' BANK KNOCK SENSOR FEEDBACK	0 kHz - NO KNOCK, 2 - 20 kHz - KNOCK	
I EM13-18	'A' BANK KNOCK SENSOR FEEDBACK	0 kHz - NO KNOCK, 2 - 20 kHz - KNOCK	
I EM13-19	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
I EM13-20	CMPMS SIGNAL	5 Hz @ IDLE	
I EM13-27	CMPMS / CKPS / KNOCK SENSORS COMMON SHIELD	GROUND	GROUND
I EM13-28	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
SG EM13-29	CMPMS SIGNAL GROUND	GROUND	GROUND
I EM14-1	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I EM14-2	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I EM14-3	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I EM14-4	GROUND	GROUND	GROUND
O EM14-5	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O EM14-6	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I EM14-7	GROUND	GROUND	GROUND
I EM14-8	GROUND	GROUND	GROUND
I EM14-9	GROUND	GROUND	GROUND
I EM14-10	GROUND	GROUND	GROUND
O EM14-11	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O EM14-12	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O EM15-1	UPSTREAM 'B' BANK HO2S HEATER GROUND	GROUND	GROUND
O EM15-2	UPSTREAM 'A' BANK HO2S HEATER GROUND	GROUND	GROUND
O EM15-3	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	B+
I EM15-11	GROUND	GROUND	GROUND
I EM15-12	GROUND	GROUND	GROUND
I EM15-22	GROUND	GROUND	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.5

COMPONENTS

Component	Connector / Type / Color	Location / Access
Brake Switch	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
Canister Close Valve	CV1 / 2-WAY YAZAKI 90 / BLACK	UNDER VEHICLE / RH REAR
CKPS: Crankshaft Position Sensor	PI17 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE / REAR OF BED PLATE
CMPS: Camshaft Position Sensor	PI15 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ECM and TCM Cooling Fan	EM66 / 2-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
EGRV: EGR Valve	PI34 / 6-WAY SUMITOMO 92 / GREY	ENGINE COMPARTMENT / REAR OF THROTTLE ASSEMBLY
Engine Control Module	EM10 / 28-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ECTS: Engine Coolant Temperature Sensor	EM11 / 16-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EVAPP: EVAP Canister Purge Valve	EM12 / 22-WAY MULTILOCK 040 / GREY	ENGINE COMPARTMENT / BULKHEAD
Fuel Tank Pressure Sensor	FP1 / 3-WAY ECONOSEAL III LC / BLACK	TOP OF FUEL TANK / TRUNK CARPET
HO2S: Heated Oxygen Sensor (Upstream) - A	EM21 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: Heated Oxygen Sensor (Upstream) - B	EM23 / 4-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
IATS: Intake Air Temperature Sensor 1	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
IATS 2: Intake Air Temperature Sensor 2	PI3 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / 'A' BANK INTERCOOLER / REAR
KS: Knock Sensor - 'A' Bank	PI26 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
KS: Knock Sensor - 'B' Bank	PI27 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
MAFS: Mass Air Flow Sensor	PI35 / 5-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
O2S: Oxygen Sensor (Downstream) - A	EM22 / 2-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
O2S: Oxygen Sensor (Downstream) - B	EM24 / 2-WAY SUMITOMO 90 II / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
Parking Brake Switch	CC11 / 2-WAY MULTILOCK 040 / BLACK	CENTER CONSOLE ASSEMBLY
Pedal Position and Mechanical Guard Sensors	PI42 / 6-WAY YAZAKI 92 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
Throttle Motor	PI33 / 2-WAY TWIN CLIP / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
Throttle Position Sensor	PI6 / 4-WAY SUMITOMO TS90 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
Vacuum Switching Valve - 1	EM57 / 2-WAY SUMITOMO 90 DC / BLUE	ENGINE COMPARTMENT / BULKHEAD
Vacuum Switching Valve - 2	EM58 / 2-WAY SUMITOMO 90 DC / BROWN	ENGINE COMPARTMENT / BULKHEAD
Vacuum Switching Valve - 3	EM59 / 2-WAY YAZAKI 90 / GREY	ENGINE COMPARTMENT / BULKHEAD

RELAYS

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR) - EMS LH GROUND STUD
EM16L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM16R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
I EM10-1	IGNITION SWITCHED POWER SUPPLY	B+	0 V
I EM10-5	IGNITION SWITCHED POWER SUPPLY	B+	B+
D EM10-6	O/I TO START - ENCODED COMMUNICATIONS	B+	B+
I EM10-9	BATTERY POWER SUPPLY	GROUND	B+
I EM10-10	BRAKE SWITCH	GROUND	B+
D EM10-12	SERIAL COMMUNICATIONS	GROUND (APPLIED)	B+
D EM10-13	SERIAL COMMUNICATIONS	B+ (P, N)	GROUND (R,D,4,3,2)
I EM10-14	PARKING BRAKE SWITCH	GROUND	B+
I EM10-15	PARK / NEUTRAL CONFIRMATION	ENCODED COMMUNICATIONS	B+
O EM10-16	EMS CONTROLLED RELAY ACTIVATE	GROUND	GROUND
D EM10-17	SECURITY ACKNOWLEDGE	GROUND	ECTS: ENGINE COOLANT TEMPERATURE SENSOR
O EM10-20	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION COMMON REFERENCE GROUND	GROUND	EVAPP: EVAP CANISTER PURGE VALVE
O EM10-21	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS COMMON REFERENCE VOLTAGE	5 V	HO2S: HEATED OXYGEN SENSOR - A
I EM10-22	GROUND	GROUND	HO2S: HEATED OXYGEN SENSOR - B
I EM10-23	GROUND	GROUND	IATS: INTAKE AIR TEMPERATURE SENSOR 1
C EM10-25	CAN NETWORK	15 - 1500 Hz	IATS 2: INTAKE AIR TEMPERATURE SENSOR 2
C EM10-26	CAN NETWORK	15 - 1500 Hz	KS: KNOCK SENSOR - 'A' BANK
C EM10-27	CAN NETWORK	15 - 1500 Hz	KS: KNOCK SENSOR - 'B' BANK
C EM10-28	CAN NETWORK	15 - 1500 Hz	MAFS: MASS AIR FLOW SENSOR
D EM11-3	ECM PROGRAMMING	B+	PARKING BRAKE SWITCH
I EM11-6	ENGINE CRANK	GROUND (CRANKING)	PEDAL POSITION AND MECHANICAL GUARD SENSORS
O EM11-8	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS / FUEL TANK PRESSURE SENSOR COMMON REFERENCE VOLTAGE	5 V	THROTTLE MOTOR
I EM11-9	ECT FEEDBACK	0.41 V @ 195°F (DECREASING WITH TEMPERATURE)	THROTTLE POSITION SENSOR
I EM11-10	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VACUUM SWITCHING VALVE - 1
I EM11-11	TPS FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	VACUUM SWITCHING VALVE - 2
O EM11-12	IATS / ECTS / TPS / MECHANICAL GUARD POSITION / PEDAL POSITION FUEL TANK PRESSURE SENSOR COMMON REFERENCE GROUND	GROUND	VACUUM SWITCHING VALVE - 3
I EM11-13	MECHANICAL GUARD POSITION FEEDBACK	0.5 V - IDLE; 4.75 V = WOT	
SG EM11-14	MECHANICAL GUARD POSITION / PEDAL POSITION / TPS SHIELD	GROUND	
I EM11-15	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
I EM11-16	PEDAL POSITION FEEDBACK	0.5 V = IDLE; 4.75 V = WOT	
O EM12-1	EGR STEPPER MOTOR 'S1' WINDING SUPPLY	GROUND	
O EM12-2	EGR STEPPER MOTOR 'S2' WINDING SUPPLY	GROUND	
O EM12-3	EGR STEPPER MOTOR 'S3' WINDING SUPPLY	GROUND	
O EM12-4	EGR STEPPER MOTOR 'S4' WINDING SUPPLY	GROUND	
I EM12-7	MANIFOLD IATS FEEDBACK	B+	
I FM12-12	IATS FEEDBACK	0.98 V @ 10°C, DECREASING WITH TEMPERATURE	
I EM12-13	MAFS FEEDBACK	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I EM12-14	UPSTREAM 'B' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
I EM12-15	UPSTREAM 'A' BANK HO2S	0.1 - 0.9 V @ IDLE (SWING)	
O EM12-18	MAFS REFERENCE GROUND	GROUND	
O EM12-19	MAFS REFERENCE GROUND	GROUND	
SG EM12-22	02S / HO2S COMMON SHIELD	GROUND	
D EM13-2	ECM PROGRAMMING	GROUND	
O EM13-11	VACUUM SWITCHING VALVE #3 ACTIVATE	GROUND	
O EM13-12	VACUUM SWITCHING VALVE #1 ACTIVATE	GROUND	
O EM13-13	VACUUM SWITCHING VALVE #2 ACTIVATE	GROUND	
O EM13-14	THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	
I EM13-17	'B' BANK KNOCK SENSOR FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I EM13-18	'A' BANK KNOCK SENSOR FEEDBACK	0 kHz = NO KNOCK, 2 - 20 kHz = KNOCK	
I EM13-19	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
I EM13-20	CMPS SIGNAL	5 Hz @ IDLE	
I EM13-27	CMPS / CKPS / KNOCK SENSORS COMMON SHIELD	GROUND	
I EM13-28	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
SG EM13-29	CMPS SIGNAL GROUND	GROUND	
I EM14-1	THROTTLE MOTOR POWER SUPPLY	B+	
I EM14-2	THROTTLE MOTOR POWER SUPPLY	B+	
I EM14-3	IGNITION SWITCHED POWER SUPPLY	B+	
I EM14-4	GROUND	GROUND	
O EM14-5	THROTTLE MOTOR POWER SUPPLY	B+	
O EM14-6	THROTTLE MOTOR POWER SUPPLY	B+	
I EM14-7	GROUND	GROUND	
I EM14-8	GROUND	GROUND	
I EM14-9	GROUND	GROUND	
I EM14-10	GROUND	GROUND	
O EM14-11	THROTTLE MOTOR POWER SUPPLY	GROUND	
O EM14-12	THROTTLE MOTOR POWER SUPPLY	B+	
O EM15-1	UPSTREAM 'B' BANK HO2S HEATER GROUND	GROUND	
O EM15-2	UPSTREAM 'A' BANK HO2S HEATER GROUND	GROUND	
O EM15-3	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	B+
I EM15-11	GROUND	GROUND	GROUND
I EM15-12	GROUND	GROUND	GROUND
I EM15-22	GROUND	GROUND	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 04.6

COMPONENTS

Component	Connector / Type / Color
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE
CKPS: CRANKSHAFT POSITION SENSOR	P117 / 2-WAY ECONOSEAL III HC / BLACK
CMPS: CAMSHAFT POSITION SENSOR	P115 / 2-WAY ECONOSEAL III HC / BLACK
ECM AND TCM COOLING FAN	EM66 / 2-WAY MULTILOCK 070 / WHITE
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY
	EM11 / 16-WAY MULTILOCK 040 / GREY
	EM12 / 22-WAY MULTILOCK 040 / GREY
	EM13 / 34-WAY MULTILOCK 040 / GREY
	EM14 / 12-WAY MULTILOCK 47 / WHITE
	EM15 / 22-WAY MULTILOCK 47 / WHITE
ECTS: ENGINE COOLANT TEMPERATURE SENSOR	P14 / 2-WAY ECONOSEAL E J2 / GREY
EVAPP: EVAP CANISTER PURGE VALVE	EM39 / 2-WAY ECONOSEAL J2- / BLACK
HO2S: HEATED OXYGEN SENSOR - A	EM21 / 4-WAY SUMITOMO 90 II / GREY
HO2S: HEATED OXYGEN SENSOR - B	EM23 / 4-WAY SUMITOMO 90 II / GREY
IATS: INTAKE AIR TEMPERATURE SENSOR 1	P135 / 5-WAY YAZAKI 92 / BLACK
IATS 2: INTAKE AIR TEMPERATURE SENSOR 2	P13 / 2-WAY AMP JUNIOR POWER TIMER / BLACK
KS: KNOCK SENSOR - 'A' BANK	P126 / 2-WAY ECONOSEAL III LC / BLACK
KS: KNOCK SENSOR - 'B' BANK	P127 / 2-WAY ECONOSEAL III LC / BLACK
MAFS: MASS AIR FLOW SENSOR	P136 / 5-WAY YAZAKI 92 / BLACK
PARKING BRAKE SWITCH	CC11 / 2-WAY MULTILOCK 040 / BLACK
PEDAL POSITION AND MECHANICAL GUARD SENSORS	P142 / 5-WAY YAZAKI 92 / BLACK
THROTTLE MOTOR	P133 / 2-WAY TWIN CLIP / BLACK
THROTTLE POSITION SENSOR	P16 / 4-WAY SUMITOMO TS90 / BLACK
VACUUM SWITCHING VALVE - 1	EM57 / 2-WAY SUMITOMO 90 DC / BLUE
VACUUM SWITCHING VALVE - 2	EM58 / 2-WAY SUMITOMO 90 DC / BROWN
VACUUM SWITCHING VALVE - 3	EM59 / 2-WAY YAZAKI 90 / GREY

LOCATION / ACCESS

ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
ENGINE / REAR OF BED PLATE
ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
ENGINE COMPARTMENT / 'A' BANK INTERCOOLER / REAR
ENGINE VEE / UNDER INTAKE MANIFOLD
ENGINE VEE / UNDER INTAKE MANIFOLD
ENGINE COMPARTMENT / REARWARD OF AIR CLEANER
CENTER CONSOLE ASSEMBLY
ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
ENGINE COMPARTMENT / THROTTLE ASSEMBLY
ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BULKHEAD
ENGINE COMPARTMENT / BULKHEAD

RELAYS

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA19	20 WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
P1	57-WAY SUMITOMO TS90 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
P12	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR) - EMS LH GROUND STUD
EM16L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM16R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

Fig. 04.7

AIR CONDITIONING CONTROL MODULE

Pin	Description	Active	Inactive
I CC28-1	COMPRESSOR CLUTCH STATUS	B+ (ON)	0 V
O CC30-1	AIR CONDITIONING ELECTRICAL LOAD SIGNAL	B+	0 V
I CC31-7	LOAD INHIBIT	0 V	B+
O CC31-9	COMPRESSOR CLUTCH ON REQUEST	B+	0 V
I CC31-17	REFRIGERANT 4 WAY PRESSURE SWITCH	0 V (2 - 30 BAR)	B+ (OUT OF ACTIVE RANGE)

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
O EM10-2	A/CCM LOAD INHIBIT	GROUND	B+
I EM10-3	A/CCM ELECTRICAL LOAD SIGNAL	B+	GROUND
I EM10-4	A/CCM COMPRESSOR CLUTCH REQUEST	B+	GROUND
I EM10-11	CRUISE CONTROL BRAKE CANCEL REQUEST	GROUND (APPLIED)	B+
I EM11-1	CRUISE CONTROL SET +/-	7.3 V = (+), 8.8 V = (-)	B-
I EM11-4	CRUISE CONTROL ON REQUEST	B+	GROUND
I EM11-5	CRUISE CONTROL CANCEL / RESUME	7.3 V = RESUME, 8.8 V = CANCEL B+	B-
I EM12-5	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	B+
I EM12-6	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	IGNITION COIL - 1A
I EM12-8	IGNITION MODULE 2 SWITCHING FEEDBACK	23 Hz @ IDLE (5 V)	IGNITION COIL - 1B
I EM12-9	IGNITION MODULE 1 SWITCHING FEEDBACK	23 Hz @ IDLE (5 V)	IGNITION COIL - 2A
O EM12-10	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND	IGNITION COIL - 2B
O EM13-1	FUEL PUMP RELAY ACTIVATE	GROUND	IGNITION COIL - 3A
O EM13-3	CRUISE CONTROL ON STATUS LED	GROUND	IGNITION COIL - 3B
O EM13-9	FUEL PUMP RELAY ACTIVATE	GROUND	IGNITION COIL - 4A
O EM13-10	INTERCOOLER PUMP RELAY ACTIVATE	GROUND	IGNITION COIL - 4B
O EM13-15	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	IGNITION MODULE - 1
O EM13-16	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	IGNITION MODULE - 2
O EM13-22	IGNITION COIL RELAY ACTIVATE	GROUND	INTERCOOLER PUMP
O EM13-23	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	RADIATOR FAN CONTROL RELAY MODULE
O EM13-24	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	RADIATOR FAN - LH
O EM13-25	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	RADIATOR FAN - RH
O FM13-26	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	REFRIGERANT 4-WAY PRESSURE SWITCH
O EM13-31	IGNITION MODULE 2 SWITCHING	5 Hz @ IDLE	
O EM13-32	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-33	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM13-34	IGNITION MODULE 1 SWITCHING	5 Hz @ IDLE	
O EM15-4	INJECTOR '3B' ACTIVATE	GROUND	
O EM15-5	INJECTOR '2B' ACTIVATE	GROUND	
O EM15-6	INJECTOR '4A' ACTIVATE	GROUND	
O EM15-7	INJECTOR '1A' ACTIVATE	GROUND	
O EM15-15	INJECTOR '4B' ACTIVATE	GROUND	
O EM15-16	INJECTOR '3A' ACTIVATE	GROUND	
O EM15-17	INJECTOR '2A' ACTIVATE	GROUND	
O EM15-18	INJECTOR '1B' ACTIVATE	GROUND	

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH	PI36 / 1-WAY SUMITOMO 90 A TYPE / BLACK	ENGINE COMPARTMENT / A/C COMPRESSOR
AIR CONDITIONING CONTROL MODULE	CC28 / 26-WAY MULTILOCK 47 / GREY	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
BRAKE CANCEL SWITCHES	CC29 / 16-WAY MULTILOCK 47 / GREY	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CRUISE CONTROL ON / OFF SWITCH	CC30 / 12-WAY MULTILOCK 47 / GREY	CENTER CONSOLE ASSEMBLY
CRUISE CONTROL SWITCHES (STEERING WHEEL)	CC31 / 22-WAY MULTILOCK 47 / GREY	CENTER OF STEERING WHEEL
ENGINE CONTROL MODULE	CC40 / 4-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
	CC20 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	
	SW3 / 3-WAY EPC / BLACK / WHITE	
	EM10 / 28-WAY MULTILOCK 040 / GREY	
	EM11 / 16-WAY MULTILOCK 040 / GREY	
	EM12 / 22-WAY MULTILOCK 040 / GREY	
	EM13 / 34-WAY MULTILOCK 040 / GREY	
	EM14 / 12-WAY MULTILOCK 47 / WHITE	
	EM15 / 22-WAY MULTILOCK 47 / WHITE	
FUEL INJECTOR - 1A	IJ3 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 1B	IJ7 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 2A	IJ4 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 2B	IJ8 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 3A	IJ5 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 3B	IJ9 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 4A	IJ6 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL INJECTOR - 4B	IJ10 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / INTAKE MANIFOLD
FUEL PUMPS	BT9 / 4-WAY SUMITOMO DL90 / NATURAL	TOP OF FUEL TANK / TRUNK CARPET
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL	TRUNK ELECTRICAL CARRIER
	BT11 / 10-WAY U.T.A. FUSE BOX / BLACK	
	BT12 / 10-WAY U.T.A. FUSE BOX / GREEN	
	BT13 / 10-WAY U.T.A. FUSE BOX / BLUE	
	BT64 / EYELET	
IGNITION COIL - 1A	PI18 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 1B	PI22 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 2A	PI19 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 2B	PI23 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 3A	PI20 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 3B	PI24 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 4A	PI21 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL - 4B	PI25 / 2-WAY YAZAKI 90 / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION MODULE - 1	EM27 / 12-WAY IGNITION POWER MODULE / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
IGNITION MODULE - 2	EM29 / 12-WAY IGNITION POWER MODULE / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
INTERCOOLER PUMP	LS30 / 2-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO RH CRUSH TUBE
RADIATOR FAN CONTROL RELAY MODULE	LS31 / 8-WAY TRW / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH CRUSH TUBE
RADIATOR FAN - LH	CF1 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW LH FAN
RADIATOR FAN - RH	CF2 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW RH FAN
REFRIGERANT 4-WAY PRESSURE SWITCH	LS26 / 6-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH SIDE OF RADIATOR

RELAYS

Relay	Case Color	Connector / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	BROWN	EM25 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL INJECTION RELAY	BROWN	EM52 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL PUMP RELAY 2	BROWN	BUS	RELAY #1, TRUNK FUSE BOX / TRUNK
FUEL PUMP RELAY 1	BROWN	BUS	RELAY #4, TRUNK FUSE BOX / TRUNK
IGNITION COIL RELAY	BROWN	EM26 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
INTERCOOLER PUMP RELAY	BLUE	EM41 / BLUE	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
IJ1	6-WAY AUGAT 1.6 / BLACK	ENGINE / FORWARD OF INTAKE MANIFOLD
IJ2	6-WAY AUGAT 1.6 / BLACK	ENGINE / FORWARD OF INTAKE MANIFOLD
LS32	4-WAY YAZAKI / GREY	FORWARD OF LH FRONT SUSPENSION ARM
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
PI2	13-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR
SW1	12-WAY MULTILOCK 040 / BLACK	INSIDE STEERING COLUMN COWL
SW2	6-WAY JST / WHITE	CENTER OF STEERING WHEEL

GROUNDS

Ground	Location / Type	Ground	Location / Type
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD	LS10L	EYELET (PAIR) - LH FORWARD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD	LS10R	EYELET (PAIR) - LH FORWARD GROUND STUD
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD	LS20L	EYELET (PAIR) - RH FORWARD GROUND STUD
EM8R	EYELET (PAIR) - EMS LH GROUND STUD	LS20R	EYELET (PAIR) - RH FORWARD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD		

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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

CONTROL MODULE PIN OUT INFORMATION

GEAR SELECTOR ILLUMINATION MODULE

Pin	Description
I CC14-1	IGNITION SWITCHED POWER SUPPLY
C CC14-3	CAN NETWORK
C CC14-4	CAN NETWORK
I CC14-6	GROUND
C CC14-8	CAN NETWORK
C CC14-9	CAN NETWORK

TRANSMISSION CONTROL MODULE: AJ26 N/A

Pin	Description	Active	Inactive
O EM7-1	PRESSURE REGULATOR #2	GROUND (MAXIMUM PRESSURE)	B+ (NO PRESSURE)
O EM7-2	SPORT MODE SWITCH STATUS LED	GROUND = LED ON	B+
O EM7-4	PRESSURE REGULATOR #4	GROUND (MAXIMUM PRESSURE)	B+ (NO PRESSURE)
O EM7-5	PRESSURE REGULATOR #1	GROUND (MAXIMUM PRESSURE)	B+ (NO PRESSURE)
I EM7-6	GROUND	GROUND	GROUND
I EM7-8	ROTARY SWITCH 'L2' CONTACTS	B+	GROUND
I EM7-9	ROTARY SWITCH 'L4' CONTACTS	B+	GROUND
I EM7-12	SPORT MODE SWITCH STRATEGY SELECT	GROUND = SPORT	9 V = NORMAL
I EM7-13	D - 4 SWITCH	GROUND	B+
I EM7-14	TURBINE SPEED SENSOR	300 Hz @ IDLE (2.5 V)	GROUND
SG EM7-15	OUTPUT SPEED SENSOR SHIELD	GROUND	GROUND
SG EM7-16	OUTPUT SPEED SENSOR	GROUND	GROUND
I EM7-18	KICKDOWN SWITCH	GROUND	B+
SG EM7-21	FLUID TEMPERATURE SENSOR	1.31 V	GROUND
I EM7-22	FLUID TEMPERATURE SENSOR FEEDBACK	1.15 V @ 90°C	B+
I EM7-23	TURBINE SPEED SENSOR SHIELD	GROUND	GROUND
I EM7-26	BATTERY POWER SUPPLY	B+	GROUND
O EM7-28	ROTARY / D - 4 / KICK DOWN SWITCHES COMMON GROUND	GROUND	B+
O EM7-29	PRESSURE REGULATOR #3	GROUND (MAXIMUM PRESSURE)	B+ (NO PRESSURE)
O EM7-30	SOLENOID VALVE #1	GROUND	B+
O EM7-32	SOLENOID VALVE #3	GROUND	B+
O EM7-33	SOLENOID VALVE #2	GROUND	B+
I EM7-34	GROUND	GROUND	GROUND
I EM7-36	ROTARY SWITCH 'L1' CONTACTS	B+	GROUND
I EM7-37	ROTARY SWITCH 'L3' CONTACTS	B+	GROUND
I EM7-42	TURBINE SPEED SENSOR	1.51 V @ 10 MPH (16 KM/H) = 250 Hz, 20 MPH (32 KM/H) = 500 Hz	GROUND = NORMAL
I EM7-44	OUTPUT SPEED SENSOR	1.51 V @ 10 MPH (16 KM/H) = 223 Hz, 20 MPH (32 KM/H) = 446 Hz	B+ (NO PRESSURE)
I EM7-45	SPORT MODE SWITCH STRATEGY SELECT	10 V = SPORT	GROUND
O EM7-51	PRESSURE REGULATOR #5	GROUND (MAXIMUM PRESSURE)	B+
O EM7-52	SOLENOID VALVES COMMON SUPPLY	B+	GROUND
O EM7-53	PRESSURE REGULATORS COMMON SUPPLY	B+	GROUND
I EM7-54	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I EM7-55	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
C EM7-82	CAN NETWORK	15 - 1500 Hz	GROUND
C EM7-83	CAN NETWORK	15 - 1500 Hz	GROUND
C EM7-85	CAN NETWORK	15 - 1500 Hz	GROUND
C EM7-86	CAN NETWORK	15 - 1500 Hz	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 05.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
D - 4 SWITCH	CC7 / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE ASSEMBLY
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
KICKDOWN SWITCH	CC18 / 2-WAY ECONOSEAL III / BLACK	UNDER ACCELERATOR PEDAL
MODE SWITCH (TRANSMISSION)	CC4 / 10 WAY AMP MICRO QUAD LOCK / BLACK	CENTER CONSOLE ASSEMBLY
TRANSMISSION CONTROL MODULE: AJ26 N/A	EM7 / 88-WAY BOSCH / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
TRANSMISSION ELECTRICAL CONNECTOR: AJ26 N/A	EM46 / 16-WAY KOSTAL TRANSMISSION CONNECTOR / BLACK	LEFT HAND REAR OF TRANSMISSION
TRANSMISSION ROTARY SWITCH	EM47 / 10-WAY METRI-PACK 150 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CC2R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - LH SIDE
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
EM8R	EYELET (PAIR) - EMS LH GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

GEAR SELECTOR ILLUMINATION MODULE

Pin	Description
I CC14-1	IGNITION SWITCHED POWER SUPPLY
C CC14-3	CAN NETWORK
C CC14-4	CAN NETWORK
I CC14-6	GROUND
C CC14-8	CAN NETWORK
C CC14-9	CAN NETWORK

TRANSMISSION CONTROL MODULE: AJ26 SC

Pin	Description	Active	Inactive
D EM61-1	SERIAL COMMUNICATIONS	GROUND (= WOT)	B+ (< WOT)
I EM61-2	KICKDOWN SWITCH	0 V = SPORT; 0 V = NORMAL	
I EM61-3	SPORT MODE SWITCH	GROUND = R, D, 4, 3	B+ = P, N, 2
I EM61-25	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = N, D, 4, 2	B+ = P, R, 3
I EM61-26	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = N, 4, 3, 2	B+ = P
I EM61-27	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	8 V = R, D	B+ = R, N, 4
I EM61-28	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND	GROUND
I EM61-29	IGNITION SUPPLIED VOLTAGE	B+	GROUND
I EM61-30	TCM / DUAL LINEAR SWITCH COMMON GROUND SUPPLY	GROUND	GROUND
C EM62-L	CAN NETWORK	5 - 1500 Hz	
C EM62-H	CAN NETWORK	5 - 1500 Hz	
I EM62-12	n2 SPEED SENSOR FEEDBACK	6V = 900 Hz @ 10 MPH (16 KPH); 1800 Hz @ 20 MPH (32 KPH) ('2' SELECTED - '1' ENGAGED)	
O EM62-13	SPEED SENSOR COMMON VOLTAGE SUPPLY	5V	
O EM62-14	'1-2 / 4-5' SOLENOID ACTIVATE	GROUND	B+
O EM62-15	'3-4' SOLENOID ACTIVATE	GROUND	B+
O EM62-16	'2-3' SOLENOID ACTIVATE	GROUND	B+
O FM62-17	TCC SOLENOID ACTIVATE	GROUND - LOCKED	B- = UNLOCKED
O EM62-33	SPEED SENSOR / FLUID TEMP. SENSOR COMMON GROUND	GROUND	GROUND
I EM62-34	FLUID TEMP. SENSOR FEEDBACK	1.75 V @ 90° C = R, D, 4, 3, 2	5 V = P, N
I EM62-35	n3 SPEED SENSOR FEEDBACK	6 V = 85 Hz @ 10 MPH (16 KPH); 170 Hz @ 20 MPH (32 KPH) ('2' SELECTED - '2' ENGAGED)	
O EM62-36	MODULATION PRESSURE REGULATOR ACTIVATE	GROUND (42% PWM @ IDLE)	B+
O EM62-37	SHIFT PRESSURE REGULATOR ACTIVATE	GROUND (39% PWM @ IDLE)	B+
O EM62-38	SOLENOID VALVE / PRESSURE REGULATOR COMMON VOLTAGE SUPPLY	B+	GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 05.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
DUAL LINEAR SWITCH	CCR / 12-WAY MULTILOCK 070 / WHITE	RIGHT HAND SIDE OF GEAR SELECTOR / CENTER CONSOLE
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
KICKDOWN SWITCH	CC18 / 2-WAY ECONOSEAL III / BLACK	UNDER ACCELERATOR PEDAL
MODE SWITCH (TRANSMISSION)	CC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	CENTER CONSOLE ASSEMBLY
TRANSMISSION CONTROL MODULE: AJ26 SC	EM61 / 18-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
	EM62 / 14 WAY AMP JUNIOR POWER TIMER / BLACK	
	GB1 / 12-WAY KOSTAL 1.5 / BLACK	TRANSMISSION
TRANSMISSION ELECTRICAL CONNECTOR: AJ26 SC		

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
EM44	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM63	14-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CC2R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - LH SIDE
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
EM8R	EYELET (PAIR) - EMS LH GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
O FC15-48	GEARSHIFT INTERLOCK SOLENOID ACTIVATE	B+ (UNLOCKED)	GROUND (LOCKED)
O FC15-51	COLUMN SWITCHGEAR KEYLOCK SOLENOID ACTIVATE	B+ (LOCKED)	GROUND (UNLOCKED)
I FC15-58	NOT IN PARK MICROSWITCH STATUS	GROUND (PARK)	B+ (NOT IN PARK)
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S FC15-84	SCP NETWORK	2 - 1600 Hz	2 - 1600 Hz
S FC15-85	SCP NETWORK	2 - 1600 Hz	B+
I FC15-104	BATTERY SUPPLY VOLTAGE	B+	

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
I EM10-10	BRAKE SWITCH	GROUND	B+
C EM10-27	CAN NETWORK	15 - 1500 Hz	
C EM10-28	CAN NETWORK	15 - 1500 Hz	

GEAR SELECTOR ILLUMINATION MODULE

Pin	Description	Active	Inactive
C CC14-3	CAN NETWORK	15 - 1500 Hz @ 2.5 V	
C CC14-4	CAN NETWORK	15 - 1500 Hz @ 2.5 V	
C CC14-8	CAN NETWORK	15 - 1500 Hz @ 2.5 V	
C CC14-9	CAN NETWORK	15 - 1500 Hz @ 2.5 V	

INSTRUMENT PACK

Pin	Description	Active	Inactive
S FC24-19	SCP NETWORK	2 - 1600 Hz	
S FC24-20	SCP NETWORK	2 - 1600 Hz	
C FC24-24	CAN NETWORK	15 - 1500 Hz	
C FC24-47	CAN NETWORK	15 - 1500 Hz	

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 05.3

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	RUI KHAD / BEHIND GLOVE BOX
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY EM11 / 16-WAY MULTILOCK 040 / GREY EM12 / 22-WAY MULTILOCK 040 / GREY EM13 / 34-WAY MULTILOCK 040 / GREY EM14 / 12-WAY MULTILOCK 47 / WHITE EM15 / 22-WAY MULTILOCK 47 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
GEARSHIFT INTERLOCK SOLENOID	CC12 / 2 WAY MULTILOCK 070 / WHITE	GEAR SELECTOR ASSEMBLY / CENTER CONSOLE
INSTRUMENT PACK	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
KEYLOCK SOLENOID (COLUMN SWITCHGEAR)	SC5 / 2-WAY MULTILOCK 040 / BLUE	COLUMN SWITCHGEAR
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE ASSEMBLY

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
SC1	12-WAY MULTILOCK 070 / WHITE	COLUMN SWITCHGEAR

GROUNDS

Ground	Location / Type
CC2R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - LH SIDE
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC29L	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

ABS / TRACTION CONTROL CONTROL MODULE

Pin	Description	Active	Inactive
O LS27-1	BRAKE FLUID RESERVOIR LEVEL SWITCH REFERENCE	B+	B+
I LS27-2	BRAKE SWITCH	GROUND	B+
I LS27-3	RH FRONT WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG LS27-4	RH FRONT WHEEL SPEED SENSOR	2.5 V @ REST	
C LS27-5	CAN NETWORK	15 – 1500 Hz	
SG LS27-6	RH REAR WHEEL SPEED SENSOR	2.5 V @ REST	
I LS27-7	RH REAR WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
I LS27-8	POWER GROUND	GROUND	
I LS27-9	BATTERY POWER SUPPLY	B+	
I LS27-13	BRAKE FLUID RESERVOIR LEVEL SWITCH	GROUND	
I LS27-14	STABILITY / TRACTION CONTROL SWITCH	GROUND (MOMENTARY)	
C LS27-15	CAN NETWORK	15 – 1500 Hz	
O LS27-16	STABILITY / TRACTION CONTROL SWITCH STATE LED	GROUND	B+
I LS27-17	LH FRONT WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG LS27-18	LH FRONT WHEEL SPEED SENSOR	2.5 V @ REST	
LS27-19	NOT USED		
I LS27-20	IGNITION SWITCHED SUPPLY	B+	
I LS27-21	LH REAR WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG LS27-22	LH REAR WHEEL SPEED SENSOR	2.5 V @ REST	
I LS27-24	POWER GROUND	GROUND	
I LS27-25	BATTERY POWER SUPPLY	B+	

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 06.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ABS / TRACTION CONTROL CONTROL MODULE	LS27 / 25-WAY AMP / FORD / BLACK	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
BRAKE FLUID RESERVOIR	FM37 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / ON BRAKE FLUID RESERVOIR
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
STABILITY / TRACTION CONTROL SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
WHEEL SPEED SENSOR - LH FRONT	FL1 / 2-WAY REINSHAGEN METRI 630 / BLACK	LH FRONT HUB ASSEMBLY
WHEEL SPEED SENSOR - LH REAR	LA2 / 2-WAY REINSHAGEN METRI 630 / BLACK	REAR AXLE / LH WHFFL HUB
WHEEL SPEED SENSOR - RH FRONT	FR1 / 2-WAY REINSHAGEN METRI 630 / BLACK	RH FRONT HUB ASSEMBLY
WHEEL SPEED SENSOR - RH REAR	RA2 / 2-WAY REINSHAGEN METRI 630 / BLACK	REAR AXLE / RH WHEEL HUB

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA9	6-WAY MULTILOCK 070 / WHITE	BELLOW REAR SEAT CUSHION
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA29	4-WAY MULTILOCK 070 / WHITE	BELLOW REAR SEAT CUSHION
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
LS1	2-WAY AUGAT 1.6 / NATURAL	BELLOW CHASSIS RAIL / LH SIDE
LS2	2-WAY AUGAT 1.6 / NATURAL	BELLOW CHASSIS RAIL / RH SIDE
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
LS29L	EYELET (PAIR) - ABS GROUND STUD
LS29R	EYELET (PAIR) - ABS GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

AIR CONDITIONING CONTROL MODULE

Pin	Description	Active	Inactive
O CC28-6	DEFROST VENT SERVO MOTOR	B+	0 V
O CC28-7	CENTER VENT SERVO MOTOR	B+	0 V
O CC28-8	LH FRESH / RECIRCULATION VENT MOTOR	B+	0 V
O CC28-9	RH FRESH / RECIRCULATION VENT MOTOR	B+	0 V
O CC28-12	FOOTWELL VENT SERVO MOTOR	B+	0 V
O CC28-13	COOL AIR BYPASS VENT SERVO MOTOR	B+	0 V
O CC28-19	DEFROST VENT SERVO MOTOR	B+	0 V
O CC28-20	CENTER VENT SERVO MOTOR	B+	0 V
O CC28-21	LH FRESH / RECIRCULATION VENT SERVO MOTOR	B+	0 V
O CC28-22	RH FRESH / RECIRCULATION VENT SERVO MOTOR	B+	0 V
O CC28-25	FOOTWELL SERVO MOTOR	B+	0 V
O CC28-26	COOL AIR BYPASS SERVO MOTOR	B+	0 V
I CC29-1	SOLAR SENSOR FEEDBACK	0.75 V - 4.75 V; INCREASING WITH SOLAR LOAD	
I CC29-2	CENTER VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
I CC29-3	RH FRESH / RECIRCULATION VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
I CC29-5	COOL AIR BYPASS VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
I CC29-6	ENGINE COOLANT TEMPERATURE	2.5 V @ 90° C; DECREASING WITH TEMPERATURE	
I CC29-10	DEFROST VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
I CC29-11	LH FRESH / RECIRCULATION VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
I CC29-13	FOOTWELL VENT POTENTIOMETER FEEDBACK	> 3.5 V = OPEN	< 1 V = CLOSED
O CC30-2	CLOCK	B+ (1.45 Hz)	
D CC30-3	SERIAL DATA OUTPUT TO CONTROL PANEL	2.18 V @ 25° C; DECREASING WITH TEMPERATURE	
I CC30-5	AMBIENT TEMPERATURE SENSOR FEEDBACK	2.25 V @ 20° C; DECREASING WITH TEMPERATURE	
I CC30-6	HEATER MATRIX TEMPERATURE SENSOR FEEDBACK		
D CC30-7	SERIAL DATA INPUT FROM CONTROL PANEL		
O CC30-8	START	B+ (MOMENTARY)	0 V
I CC30-11	IN CAR TEMPERATURE SENSOR FEEDBACK	3.25 V @ 0° C; DECREASING WITH TEMPERATURE	
I CC30-12	EVAPORATOR TEMPERATURE SENSOR FEEDBACK	3.25 V @ 0° C; DECREASING WITH TEMPERATURE	
I CC31-1	IGNITION SWITCHED POWER SUPPLY	B+	0 V
I CC31-2	ISOLATE RELAY CONTROLLED BATTERY POWER SUPPLY	B+	0 V
I CC31-3	IGNITION SWITCHED GROUND	0 V	B+
O CC31-4	CONTROL PANEL BATTERY POWER SUPPLY	B+	0 V
I CC31-5	BATTERY POWER SUPPLY	B+	B+
I CC31-6	ENGINE SPEED SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	5 V
O CC31-8	POTENTIOMETER COMMON REFERENCE VOLTAGE	5 V	
D CC31-10	SERIAL COMMUNICATIONS INPUT		
O CC31-12	CONTROL PANEL BATTERY POWER SUPPLY	B+	B+
I CC31-13	GROUND	0 V	0 V
O CC31-14	CONTROL PANEL GROUND SUPPLY	0 V	0 V
O CC31-15	ISOLATE RELAY ACTIVE	B+	0 V
I CC31-16	VEHICLE SPEED SIGNAL	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
O CC31-18	ASPIRATOR MOTOR POWER SUPPLY	B+	0 V
O CC31-19	POTENTIOMETER COMMON REFERENCE GROUND	0 V	0 V
I CC31-20	GROUND	0 V	0 V
D CC31-21	SERIAL COMMUNICATIONS OUTPUT		

AIR CONDITIONING CONTROL PANEL

Pin	Description	Active	Inactive
I CC27-1	CLOCK	B+ (1.45 KHz)	
I CC27-2	START	B+	GROUND
D CC27-3	SERIAL DATA OUTPUT TO A/C CONTROL MODULE		
D CC27-4	SERIAL DATA INPUT FROM A/C CONTROL MODULE		
I CC27-5	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I CC27-6	BATTERY POWER SUPPLY	B+	GROUND
I CC27-7	CONTROL PANEL GROUND SUPPLY	GROUND	GROUND
I CC27-8	LOCATE ILLUMINATION SUPPLY	B+	GROUND
I CC27-9	DIMMER OVERRIDE REQUEST	GROUND	B+

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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.

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Fig. 07.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING CONTROL MODULE	CC28 / 26-WAY MULTILOCK 47 / GREY CC29 / 16-WAY MULTILOCK 47 / GREY CC30 / 12-WAY MULTILOCK 47 / GREY CC31 / 22-WAY MULTILOCK 47 / GREY	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
AIR CONDITIONING CONTROL PANEL	CC27 / 12-WAY MULTILOCK 040 / BLUE	CENTER CONSOLE
AIR INTAKE - LH BLOWER	CC32 / 15-WAY SUMITOMO 90 HYBRID / GREEN	LH SIDE FASCIA GLOVE BOX
AIR INTAKE - RH BLOWER	CC33 / 15-WAY SUMITOMO 90 HYBRID / GREEN	RH SIDE FASCIA GLOVE BOX
AMBIENT TEMPERATURE SENSOR	LS16 / 2-WAY YAZAKI 92 / BLACK	ADJACENT TO RADIATOR / BUMPER UNDER TRAY
ASPIRATOR ASSEMBLY	FC40 / 4-WAY MULTILOCK 070 / WHITE	DRIVER SIDE KNEE BOLSTER
EVAPORATOR / HEATER MATRIX ASSEMBLY	CC34 / 12-WAY MULTILOCK 040 / BLACK	LH SIDE OF TRANSMISSION TUNNEL / LH DASH LINER
SOLAR SENSOR	FC52 / 2-WAY MULTILOCK 070 / GREY	WINDSHIELD CENTER VENT
VENT ASSEMBLY	FC44 / 12-WAY MULTILOCK 040 / BLACK	FASCIA - CENTER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
AIR CONDITIONING ISOLATE RELAY	VIOLET	CA50 / VIOLET	LH HEELBOARD RELAYS / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA20	20-WAY MULTILOCK 070 / YELLOW	RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CA31L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC29L	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

AIR CONDITIONING CONTROL MODULE

Pin	Description	Active	Inactive
I CC28-1	COMPRESSOR CLUTCH STATUS	B+ (ON)	0 V
O CC28-2	HEATER VALVE ACTIVE	B+	0 V
O CC28-3	RH BLOWER MOTOR RELAY ACTIVE	0 V	B+
O CC28-4	LH / RH WINDSHIELD HEATER RELAYS ACTIVE	0 V	B+
O CC28-5	DOOR MIRROR HEATER RELAY ACTIVE	0 V	B+
O CC28-16	LH BLOWER MOTOR RELAY ACTIVE	B+	0 V
O CC28-17	HEATER PUMP RELAY ACTIVE	0 V	B+
O CC28-18	HEATED BACKLIGHT RELAY ACTIVE	0 V	B+
I CC29-7	RH BLOWER SPEED FEEDBACK	7.6 V = LOW SPEED	0.83 V = HIGH SPEED
O CC29-8	RH BLOWER SPEED CONTROL DRIVE SIGNAL	1.3 V = LOW SPEED	0 V = HIGH SPEED
I CC29-15	LH BLOWER SPEED FEEDBACK	7.6 V = LOW SPEED	0.83 V = HIGH SPEED
O CC29-16	LH BLOWER SPEED CONTROL DRIVE SIGNAL	1.3 V = LOW SPEED	0 V = HIGH SPEED
O CC30-1	AIR CONDITIONING ELECTRICAL LOAD SIGNAL	B+	0 V
I CC31-7	LOAD INHIBIT	0 V	B+
O CC31-9	COMPRESSOR CLUTCH ON REQUEST	B+	0 V
I CC31-17	REFRIGERANT 4 WAY PRESSURE SWITCH	0 V (2 - 30 BAR)	B+ (OUT OF ACTIVE RANGE)

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
O EM10-2	A/CCM LOAD INHIBIT	GROUND	B+
I EM10-3	A/CCM ELECTRICAL LOAD SIGNAL	B+	GROUND
I EM10-4	A/CCM COMPRESSOR CLUTCH REQUEST	B+	GROUND
I EM12-5	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	HEATED BACKLIGHT
I EM12-6	4 WAY REFRIGERANT SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	HEATER PUMP
O EM12-10	AIR CONDITIONING COMPRESSOR RELAY ACTIVE	GROUND	HEATER VALVE
O EM13-15	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	RADIATOR FAN CONTROL RELAY MODULE
O EM13-16	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	RADIATOR FAN - LH
			RADIATOR FAN - RH
			REFRIGERANT 4-WAY PRESSURE SWITCH
			WINDSHIELD HEATER - LH
			WINDSHIELD HEATER - RH

Fig. 07.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH	PI36 / 1-WAY SUMITOMO 90 A TYPE / BLACK	ENGINE COMPARTMENT / A/C COMPRESSOR
AIR CONDITIONING CONTROL MODULE	CC28 / 26-WAY MULTILOCK 47 / GREY CC29 / 16-WAY MULTILOCK 47 / GREY CC30 / 12-WAY MULTILOCK 47 / GREY CC31 / 22-WAY MULTILOCK 47 / GREY	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
AIR CONDITIONING CONTROL PANEL	CC27 / 12-WAY MULTILOCK 040 / BLUE	CENTER CONSOLE
BLOWER MOTOR - LH	CC32 / 15-WAY SUMITOMO 90 HYBRID / GREEN	LH SIDE FASCIA GLOVE BOX
BLOWER MOTOR - RH	CC33 / 15-WAY SUMITOMO 90 HYBRID / GREEN	RH SIDE FASCIA GLOVE BOX
DOOR MIRROR - DRIVER	DD8 / 12-WAY MULTILOCK 040 / BLACK	DRIVER DOOR
DOOR MIRROR - PASSENGER	PD8 / 12-WAY MULTILOCK 040 / BLACK	PASSENGER DOOR
ENGINE CONTROL MODULE	EM10 / 28-WAY MULTILOCK 040 / GREY EM11 / 16-WAY MULTILOCK 040 / GREY EM12 / 22-WAY MULTILOCK 040 / GREY EM13 / 34-WAY MULTILOCK 040 / GREY EM14 / 12-WAY MULTILOCK 47 / WHITE EM15 / 22-WAY MULTILOCK 47 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL LS6 / 10-WAY U.T.A. FUSE BOX / BLACK LS7 / 10-WAY U.T.A. FUSE BOX / GREEN LS8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE BT64 / EYELET	TRUNK ELECTRICAL CARRIER
HEATED BACKLIGHT	CA21 / LUCAR - LOCKING POSILOCK MKI IC18 / LUCAR	INSIDE 'E' POST / 'E' POST UPPER TRIM BEHIND LEFT HAND REAR QUARTER PANEL
HEATER PUMP	EM36 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / LEFT HAND REAR
HEATER VALVE	EM40 / 2-WAY ECONOSEAL III LC / WHITE	ENGINE COMPARTMENT / LEFT HAND REAR
RADIATOR FAN CONTROL RELAY MODULE	LS31 / 8-WAY TRW / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH CRUSH TUBE
RADIATOR FAN - LH	CF1 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW LH FAN
RADIATOR FAN - RH	CF2 / 2-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / BELOW RH FAN
REFRIGERANT 4-WAY PRESSURE SWITCH	LS26 / 6-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / ADJACENT TO LH SIDE OF RADIATOR
WINDSHIELD HEATER - LH	SH4 / 2-WAY AMP SERIES 187C / GREY	CONNECTOR ADJACENT TO HOOD LATCH
WINDSHIELD HEATER - RH	SH5 / 2-WAY AMP SERIES 187C / GREY	CONNECTOR ADJACENT TO HOOD LATCH

RELAYS

Relay	Case Color	Connector / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	BROWN	EM25 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
BLOWER MOTOR RELAY - LH	BLUE	CA58 / BLUE	RH HEELBOARD RELAYS / HEELBOARD COVER
BLOWER MOTOR RELAY - RH	BLUE	CA58 / BLUE	RH HEELBOARD RELAYS / HEELBOARD COVER
DOOR MIRROR HEATER RELAY	BLUE	CA18 / BLUE	RH HEELBOARD RELAYS / HEELBOARD COVER
HEATED BACKLIGHT RELAY (#2)	BROWN	BUS	RELAY #2, TRUNK FUSE BOX / TRUNK
HEATER PUMP RELAY (#1)	BROWN	BUS	RELAY #1, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
WINDSHIELD HEATER RELAY - LH	BLACK	SH2 / BLACK	FRONT BULKHEAD RELAYS / ENGINE COMPARTMENT
WINDSHIELD HEATER RELAY - RH	BLACK	SH3 / BLACK	FRONT BULKHEAD RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA12	8-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA20	20-WAY MULTILOCK 070 / YELLOW	RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM42	4-WAY YAZAKI / GREY	BULKHEAD / REAR OF ENGINE
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER
LS32	4-WAY YAZAKI / GREY	FORWARD OF LH FRONT SUSPENSION ARM
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE

GROUNDS

Ground	Location / Type
CA30R	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA33R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CC2L	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - LH SIDE
EM8R	EYELET (PAIR) - EMS LH GROUND STUD
EM18L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
EM18R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
IC6	EYELET (SINGLE) - TRUNK / LH FORWARD GROUND STUD
LS10L	EYELET (PAIR) - LH FORWARD GROUND STUD
LS10R	EYELET (PAIR) - LH FORWARD GROUND STUD
LS20L	EYELET (PAIR) - RH FORWARD GROUND STUD

The following symbols are used to represent values for Control Module Pin Out data:

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SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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CONTROL MODULE PIN OUT INFORMATION

INSTRUMENT PACK

	Pin	Description	Active	Inactive
I	FC24-1	GROUND	GROUND	GROUND
I	FC24-2	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC24-6	ADAPTIVE DAMPENING WARNING	GROUND	GROUND
I	FC24-10	TRIP CYCLE	GROUND (MOMENTARY)	B+
I	FC24-13	'A/B' TRIP SELECT	GROUND (MOMENTARY)	GROUND (MOMENTARY)
I	FC24-14	'ML/KM' SELECT	GROUND (MOMENTARY)	GROUND (MOMENTARY)
S	FC24-19	SCP NETWORK	2 - 1600 Hz	2 - 1600 Hz
S	FC24-20	SCP NETWORK	2 - 1600 Hz	2 - 1600 Hz
C	FC24-23	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
C	FC24-24	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
I	FC24-25	BATTERY POWER SUPPLY	B+	B+
I	FC24-26	GROUND	GROUND	GROUND
I	FC24-27	ILLUMINATION SUPPLY	B+	GROUND
O	FC24-33	GROUND REFERENCE	GROUND	GROUND
I	FC24-35	'CLEAR' SELECT	GROUND (MOMENTARY)	GROUND (MOMENTARY)
I	FC24-36	'000' SELECT	GROUND (MOMENTARY)	GROUND (MOMENTARY)
C	FC24-47	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
C	FC24-48	CAN NETWORK	15 - 1500 Hz	15 - 1500 Hz
O	FC25-3	ENGINE SPEED	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
O	FC25-4	ENGINE COOLANT TEMPERATURE	6 V = 90° C	
O	FC25-5	VEHICLE SPEED - ACCM	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
O	FC25-6	VEHICLE SPEED - PAS	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
O	FC25-7	VEHICLE SPEED - ADAPTIVE DAMPING CONTROL MODULE	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
I	FC25-13	FUEL LEVEL GAUGE FEEDBACK	B+ = EMPTY	0 V = FULL
O	FC25-14	FUEL LEVEL GAUGE REFERENCE GROUND	GROUND	GROUND
I	FC25-16	AIRBAG MIL	GROUND (ON)	B+
I	FC25-19	LOW OIL PRESSURE WARNING	> 3 V = > 3 PSI	B+
O	FC25-20	VEHICLE SPEED	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
I	FC25-21	DIMMER OVERRIDE	GROUND	B+
I	FC25-22	CHARGE WARNING	B+	GROUND
I	FC25-23	LOW COOLANT WARNING	GROUND	B+

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 08.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ANALOG CLOCK	FC38 / 6-WAY AMP MICRO QUADLOCK / BLACK	CENTER AIR VENT
COOLANT LEVEL SWITCH	EM55 / 2-WAY AMP JUNIOR POWER TIMER / BROWN	ENGINE COMPARTMENT / ON COOLANT RESERVOIR
FUEL LEVEL SENSOR	BT14 / LUCAR - LOCKING POSILOCK MKI	FUEL TANK SENDER UNIT / TRUNK CARPET
INSTRUMENT PACK	BT15 / LUCAR - LOCKING POSILOCK MKI	
FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA	
FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	ENGINE BLACK / BELOW GENERATOR	
OIL PRESSURE SWITCH	PI40 / 1-WAY ECONOSEAL EC J2 / BLACK	FASCIA
TRIP COMPUTER SWITCH PACK	FC27 / 10-WAY AMP MICRO QUAD LOCK / BLACK	COLUMN SWITCHGEAR HARNESS /
TRIP CYCLE SWITCH (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	ADJACENT TO STEERING COLUMN MOTOR

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR) - EMS LH GROUND STUD
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC29R	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
D FC15-10	SRS AUDIBLE BACKUP
I FC15-15	IGNITION SWITCHED GROUND
I FC15-31	SEAT BELT SWITCH STATUS
I FC15-32	IGNITION SWITCHED GROUND
I FC15-41	STARTER ENGAGE REQUEST
I FC15-80	BATTERY SUPPLY VOLTAGE
O FC15-82	AUDIBLE WARNING SPEAKER
O FC15-83	AUDIBLE WARNING SPEAKER
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-104	BATTERY SUPPLY VOLTAGE

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 08.2

COMPONENTS

Component	Connector / Type / Color
AUDIBLE WARNING SPEAKER (COLUMN SWITCHGEAR)	SC1 / 12-WAY MULTILOCK 070 / WHITE
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY
SEAT BELT SWITCH	SM8-D / 2-WAY MULTILOCK 070 / BLACK

Location / Access
COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
BULKHEAD / BEHIND GLOVE BOX
DRIVER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
SC1	12-WAY MULTILOCK 070 / WHITE	COLUMN SWITCHGEAR

GROUNDS

Ground	Location / Type
CA25R	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26R	EYELET (PAIR) - DRIVER SEAT GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
O FC15-1	RH FRONT SIDE LAMP SUPPLY
O FC15-2	LH FRONT DI LAMP SUPPLY
O FC15-3	RH FRONT DI LAMP SUPPLY
I FC15-14	HEADLAMP MAIN BEAM REQUEST
I FC15-15	IGNITION SWITCHED GROUND
I FC15-16	SIDE LAMP REQUEST
O FC15-20	FRONT FOG LAMP RELAY ACTIVATE
I FC15-30	HEADLAMP FLASH REQUEST
I FC15-38	FRONT FOG LAMP REQUEST
I FC15-41	STARTER ENGAGE REQUEST
I FC15-42	HEADLAMP DIP REQUEST
O FC15-45	MAIN BEAM RELAY ACTIVATE
O FC15-53	LH FRONT SIDE LAMP SUPPLY
I FC15-59	HAZARD LAMP REQUEST
I FC15-61	RH DI REQUEST
O FC15-68	DIP BEAM RELAY ACTIVATE
I FC15-79	BATTERY SUPPLY VOLTAGE
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-88	LH DI REQUEST
O FC15-96	HAZARD LAMP STATUS

INSTRUMENT PACK

Pin	Description
S FC24-19	SCP NETWORK
S FC24-20	SCP NETWORK

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 09.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CENTER CONSOLE SWITCH PACK	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DIRECTION INDICATOR LAMP - LH FRONT	BL2 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - LH SIDE
DIRECTION INDICATOR LAMP - RH FRONT	BR2 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - RH SIDE
FOG LAMP SWITCHES	FC3 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	FASCIA / OUTBOARD OF STEERING COLUMN
FOG LAMP - LH FRONT	RI 4 / 2-WAY DELPHI / PACKARD METRIPACK 280 / GREY	FRONT BUMPER - LH SIDE
FOG LAMP - RH FRONT	BR4 / 2-WAY DELPHI / PACKARD METRIPACK 280 / GREY	FRONT BUMPER - RH SIDE
LAMP UNIT - LH FRONT	LS38 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / LH FRONT
LAMP UNIT - RH FRONT	LS40 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / RH FRONT
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL	ENGINE COMPARTMENT / LH FRONT
	LS6 / 10-WAY U.T.A. FUSE BOX / BLACK	
	LS7 / 10-WAY U.T.A. FUSE BOX / GREEN	
	LS8 / 10-WAY U.T.A. FUSE BOX / BLUE	
ST19 / EYELET		
INSTRUMENT PACK	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
	FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
SIDE MARKER - LH FRONT	BL5 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - LH SIDE
SIDE MARKER - RH FRONT	BR5 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - RH SIDE

RELAYS

Relay	Case Color	Connector / Color	Location / Access
DIP BEAM RELAY	BROWN	BUS	RELAY #5, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
FRONT FOG RELAY	BROWN	BUS	RELAY #2, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
MAIN BEAM RELAY	BROWN	BUS	RELAY #3, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BL1	4-WAY AUGAT 1.6 / BLACK	BEHIND LEFT HAND WHEEL ARCH LINER
BR1	4-WAY AUGAT 1.6 / BLACK	ADJACENT TO BOTTOM OF WASHER FLUID RESERVOIR
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS18L	EYELET (PAIR) - LH FORWARD GROUND STUD
LS19R	EYELET (PAIR) - RH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 09.2

BODY PROCESSOR MODULE

Pin	Description
O FC15-1	RH FRONT SIDE LAMP SUPPLY
O FC15-2	LH FRONT DI LAMP SUPPLY
O FC15-3	RH FRONT DI LAMP SUPPLY
I FC15-14	HEADLAMP MAINBEAM REQUEST
I FC15-15	IGNITION SWITCHED GROUND
I FC15-16	SIDE LAMP REQUEST
O FC15-20	FRONT FOG LAMP RELAY ACTIVATE
O FC15-27	LH SIDE DI REPEATER LAMP SUPPLY (ROW ONLY)
I FC15-30	HEADLAMP FLASH REQUEST
I FC15-38	FRONT FOG LAMP REQUEST
I FC15-41	STARTER ENGAGE REQUEST
I FC15-42	HEADLAMP DIP REQUEST
O FC15-45	MAIN BEAM RELAY ACTIVATE
O FC15-53	LH FRONT SIDE LAMP SUPPLY
I FC15-59	HAZARD LAMP REQUEST
I FC15-61	RH DI REQUEST
O FC15-68	DIP BEAM RELAY ACTIVATE
I FC15-79	BATTERY SUPPLY VOLTAGE
I FC15-80	BATTERY SUPPLY VOLTAGE
O FC15-81	RH SIDE DI REPEATER LAMP SUPPLY (ROW ONLY)
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-88	LH DI REQUEST
O FC15-96	HAZARD LAMP STATUS

INSTRUMENT PACK

Pin	Description
S FC24-19	SCP NETWORK
S FC24-20	SCP NETWORK

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Active		Inactive	
B+	GROUND	B+	GROUND
B+ (PULSED)	GROUND	B+	GROUND
B+ (PULSED)	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
B+ (PULSED)	GROUND	B+	GROUND
GROUND (MOMENTARY)	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND (CRANKING)	GROUND	B+	GROUND
GROUND (MOMENTARY)	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
B+	GROUND	B+	GROUND
GROUND (MOMENTARY)	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
B+	GROUND	B+	GROUND
GROUND	GROUND	B+	GROUND
2 - 1600 Hz		B+	
2 - 1600 Hz		B+	
2 - 1600 Hz		B+	
B+ (PULSED)	GROUND	B+	GROUND

Active		Inactive	
2 - 1600 Hz		B+	
2 - 1600 Hz		B+	

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CENTER CONSOLE SWITCH PACK	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DIRECTION INDICATOR LAMP - LH FRONT	BL2 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - LH SIDE
DIRECTION INDICATOR LAMP - RH FRONT	BR2 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER - RH SIDE
FOG LAMP SWITCHES	FC3 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	FASCIA / OUTBOARD OF STEERING COLUMN
FOG LAMP - LH FRONT	BL4 / 2-WAY DELPHI / PACKARD METRIPACK 280 / GREY	FRONT BUMPER - LH SIDE
FOG LAMP - RH FRONT	BR4 / 2-WAY DELPHI / PACKARD METRIPACK 280 / GREY	FRONT BUMPER - RH SIDE
FRONT LAMP UNIT - LH	LS38 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / LH FRONT
FRONT LAMP UNIT - RH	LS40 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / RH FRONT
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL	ENGINE COMPARTMENT / LH FRONT
	LS6 / 10-WAY U.T.A. FUSE BOX / BLACK	
	LS7 / 10-WAY U.T.A. FUSE BOX / GREEN	
	LS8 / 10-WAY U.T.A. FUSE BOX / BLUE	
INSTRUMENT PACK	ST19 / EYELET	
	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
	FC25 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
SIDE DI REPEATER - LH	LS17 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	BEHIND LEFT HAND WHEEL ARCH LINER
SIDE DI REPEATER - RH	CA80 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	BEHIND RIGHT HAND WHEEL ARCH LINER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
DIP BEAM RELAY	BROWN	BUS	RELAY #5, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
FRONT FOG RELAY	BROWN	BUS	RELAY #2, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
MAIN BEAM RELAY	BROWN	BUS	RELAY #3, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BL1	4-WAY AUGAT 1.6 / BLACK	BEHIND LEFT HAND WHEEL ARCH LINER
BR1	4-WAY AUGAT 1.6 / BLACK	ADJACENT TO BOTTOM OF WASHER FLUID RESERVOIR
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CA33R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS18L	EYELET (PAIR) - LH FORWARD GROUND STUD
LS19R	EYELET (PAIR) - RH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-12	REAR FOG LAMP REQUEST
I FC15-15	IGNITION SWITCHED GROUND
I FC15-16	SIDE LAMP REQUEST
O FC15-28	RH TAIL LAMP SUPPLY
I FC15-41	STARTER ENGAGE REQUEST
O FC15-44	REAR FOG LAMP STATUS
O FC15-49	TRAILER RH DI LAMP SUPPLY
O FC15-50	LH DI LAMP SUPPLY
O FC15-54	LH TAIL LAMP SUPPLY
I FC15-58	HAZARD LAMP REQUEST
I FC15-61	RH DI REQUEST
O FC15-75	TRAILER LH DI LAMP SUPPLY
O FC15-76	RH DI LAMP SUPPLY
I FC15-79	BATTERY SUPPLY VOLTAGE
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-88	LH DI REQUEST
O FC15-95	SIDE MARKER & NUMBER PLATE LAMP RELAY ACTIVATE
O FC15-96	HAZARD LAMP STATUS
I FC15-104	BATTERY SUPPLY VOLTAGE

INSTRUMENT PACK

Pin	Description
S FC24-19	SCP NETWORK
S FC24-20	SCP NETWORK
C FC24-24	CAN NETWORK
C FC24-47	CAN NETWORK

SECURITY AND LOCKING CONTROL MODULE

Pin	Description
O BT1-3	RH STOP LAMP SUPPLY
O BT1-4	REAR FOG LAMP SUPPLY
O BT1-5	REVERSE LAMP SUPPLY
I BT1-6	BATTERY SUPPLY
O BT1-7	SPLIT CHARGE CONTROL
S BT1-8	SCP NETWORK
O BT1-9	LH STOP LAMP SUPPLY
I BT1-13	LOGIC GROUND
I BT1-14	LOGIC GROUND
S BT1-16	SCP NETWORK
I BT2-1	BRAKE SWITCH STATUS
I BT2-6	TRAILER CONNECTION STATUS

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 09.3

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CENTER CONSOLE SWITCH PACK	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DIODE (BT40) - NUMBER PLATE	BT40 / 2-WAY DIODE MODULE ASSEMBLY	ADJACENT TO BATTERY / BATTERY COVER
FOG LAMP SWITCHES	FC3 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	FASCIA / OUTBOARD OF STEERING COLUMN
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE BT64 / EYELET	TRUNK ELECTRICAL CARRIER
HIGH MOUNTED STOP LAMP	CA35 / 2-WAY YAZAKI / NATURAL	BACKLIGHT
INSTRUMENT PACK	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
NUMBER PLATE LAMP - LH	BT27 / 2-WAY AMP POSILOCK II / BLACK	BEHIND TRUNK LID LINER
NUMBER PLATE LAMP - RH	BT26 / 2-WAY AMP POSILOCK II / BLACK	BEHIND TRUNK LID LINER
REAR SIDE MARKER - LH	BT29 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	TRUNK LH SIDE / TRUNK CARPET
REAR SIDE MARKER - RH	BT31 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	TRUNK RH SIDE / TRUNK CARPET
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK BT2 / 26-WAY FORD IDC / BLACK BT6 / 1-WAY COAXIAL CONNECTOR	BELOW TRUNK FUSE BOX
TAIL LAMP UNIT - LH	BT51 / 7-WAY FRAM - FORD 2.8 TIMER / BLACK	TRUNK LH SIDE / REAR LAMP COVER
TAIL LAMP UNIT - RH	BT50 / 7-WAY FRAM - FORD 2.8 TIMER / BLACK	TRUNK RH SIDE / REAR LAMP COVER
TRAILER CONNECTOR	BT32 / 14-WAY MULTILOCK 070 / YELLOW	ABOVE TRUNK FUSE BOX

RELAYS

Relay	Case Color	Connector / Color	Location / Access
STOP LAMP RELAY	BROWN	BUS	RELAY #5, TRUNK FUSE BOX / TRUNK
SIDE MARKER AND NUMBER PLATE LAMP RELAY	BROWN	BUS	RELAY #3, TRUNK FUSE BOX / TRUNK

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD
BT21L	EYELET (PAIR) - TRUNK / RH REAR GROUND STUD
BT22L	EYELET (PAIR) - TRUNK / RH CENTER GROUND STUD
CA31L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 09.4

BODY PROCESSOR MODULE

Pin	Description	Active
I FC15-12	REAR FOG LAMP REQUEST	GROUND
I FC15-15	IGNITION SWITCHED GROUND	GROUND
I FC15-16	SIDE LAMP REQUEST	GROUND
O FC15-28	RH TAIL LAMP SUPPLY	B+
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)
O FC15-44	REAR FOG LAMP STATUS	GROUND
O FC15-49	TRAILER RH DI LAMP SUPPLY	B+ (PULSED)
O FC15-50	LH DI LAMP SUPPLY	B+ (PULSED)
O FC15-54	LH TAIL LAMP SUPPLY	B+
I FC15-59	HAZARD LAMP REQUEST	GROUND (MOMENTARY)
I FC15-61	RH DI REQUEST	GROUND
O FC15-75	TRAILER LH DI LAMP SUPPLY	B+ (PULSED)
O FC15-76	RH DI LAMP SUPPLY	B+ (PULSED)
I FC15-79	BATTERY SUPPLY VOLTAGE	B+
I FC15-80	BATTERY SUPPLY VOLTAGE	B+
S FC15-84	SCP NETWORK	2 – 1600 Hz
S FC15-95	SCP NETWORK	2 – 1600 Hz
I FC15-88	LH DI REQUEST	GROUND
O FC15-95	SIDE MARKER & NUMBER PLATE LAMP RELAY ACTIVATE	GROUND
O FC15-96	HAZARD LAMP STATUS	GROUND (PULSE)
I FC15-104	BATTERY SUPPLY VOLTAGE	B+

INSTRUMENT PACK

Pin	Description	Active
S	FC24-19	SCP NETWORK
S	FC24-20	SCP NETWORK
C	FC24-24	CAN NETWORK
C	FC24-47	CAN NETWORK

SECURITY AND LOCKING CONTROL MODULE

Pin	Description	Active
O	BT1-3	RH STOP LAMP SUPPLY
O	BT1-4	REAR FOG LAMP SUPPLY
O	BT1-5	REVERSE LAMP SUPPLY
I	BT1-6	BATTERY SUPPLY
O	BT1-7	SPLIT CHARGE CONTROL
S	BT1-8	SCP NETWORK
O	BT1-9	LH STOP LAMP SUPPLY
I	BT1-13	LOGIC GROUND
I	BT1-14	LOGIC GROUND
S	BT1-16	SCP NETWORK
I	BT2-1	BRAKE SWITCH STATUS
I	BT2-6	TRAILER CONNECTION STATUS

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

COMPONENTS

Component

BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE
CENTER CONSOLE SWITCH PACK	CC1 / 16-WAY FORD IDC S.U. / BLACK
DIODE (BT40) - NUMBER PLATE	BT40 / 2-WAY DIODE MODULE ASSEMBLY
FOG LAMP SWITCHES	FC3 / 10-WAY AMP MICRO QUAD LOCK / NATURAL
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL
HIGH MOUNTED STOP LAMP	BT11 / 10-WAY U.T.A. FUSE BOX / BLACK
INSTRUMENT PACK	BT12 / 10-WAY U.T.A. FUSE BOX / GREEN
LIGHTING STALK (COLUMN SWITCHGEAR)	BT13 / 10-WAY U.T.A. FUSE BOX / BLUE
NUMBER PLATE LAMP - LH	BT64 / EYELET
NUMBER PLATE LAMP - RH	CA35 / 2-WAY YAZAKI / NATURAL
SECURITY AND LOCKING CONTROL MODULE	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK
TAIL LAMP UNIT - LH	FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK
TAIL LAMP UNIT - RH	SC2 / 10-WAY MULTILOCK 070 / YELLOW
TRAILER CONNECTOR	
	BT27 / 2-WAY AMP POSILOCK II / BLACK
	BT26 / 2-WAY AMP POSILOCK II / BLACK
	BT1 / 16-WAY FORD 2.8 TIMER / BLACK
	BT2 / 26-WAY FORD IDC / BLACK
	BT6 / 1-WAY COAXIAL CONNECTOR
	BT51 / 7-WAY FRAM - FORD 2.8 TIMER / BLACK
	BT50 / 7-WAY FRAM - FORD 2.8 TIMER / BLACK
	BT32 / 14-WAY MULTILOCK 070 / YELLOW

RELAYS

Relay	Case Color	Connector / Color	Location / Access
STOP LAMP RELAY	BROWN	BUS	RELAY #5, TRUNK FUSE BOX / TRUNK
SIDE MARKER AND NUMBER PLATE LAMP RELAY	BROWN	BUS	RELAY #3, TRUNK FUSE BOX / TRUNK

Harness-to-Harness Connectors

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD
BT20	EYELET (SINGLE) - TRUNK / RH REAR GROUND STUD
BT21L	EYELET (PAIR) - TRUNK / RH REAR GROUND STUD
BT22L	EYELET (PAIR) - TRUNK / RH CENTER GROUND STUD
CA31L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery
O	Output	C	CAN (Network)	V	Voltage
SG	Signal Ground	S	SCP Network	Hz	Frequency

KHz Frequency x 1000
MS Milliseconds
MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 09.5

COMPONENTS

Component

HEADLAMP LEVELING ACTUATOR - LH
HEADLAMP LEVELING ACTUATOR - RH
HEADLAMP LEVELING SWITCH
(FASCIA SWITCH PACK)

Connector / Type / Color

LF41 / 3-WAY REINSHAGEN / BLACK
LF42 / 3-WAY REINSHAGEN / BLACK
FC14 / 6-WAY JAE IL-AG5 / GREEN

Location / Access

ENGINE COMPARTMENT / LH HEADLAMP
ENGINE COMPARTMENT / RH HEADLAMP
FASCIA SWITCH PACK

HARNESS-TO-HARNESS CONNECTORS

Connector

FC5 54-WAY THROUGH PANEL CONNECTOR / BLACK
LS3 54-WAY THROUGH PANEL CONNECTOR / BLACK

Location / Access

BELOW DRIVER SIDE AIR VENT / COIN TRAY
LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground

FC17L EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS18L EYELET (PAIR) - LH FORWARD GROUND STUD
LS19R EYELET (PAIR) - RH FORWARD GROUND STUD

Location / Type

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

DRIVER DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I DD10-1	BATTERY POWER SUPPLY	B+	GROUND
I DD10-8	LOGIC GROUND	GROUND	2 - 1600 Hz
S DD10-9	SCP NETWORK	2 - 1600 Hz	B+
O DD10-14	DRIVER DOOR PUDDLE LAMP SUPPLY	B+	2 - 1600 Hz
S DD10-16	SCP NETWORK	GROUND	GROUND
I DD10-17	POWER GROUND	GROUND	GROUND
I DD11-4	DRIVER DOOR LOCK BARREL UNLOCK REQUEST	B+ (MOMENTARY)	GROUND
I DD11-12	DRIVER DOOR LOCK BARREL LOCK REQUEST	B- (MOMENTARY)	GROUND
I DD11-20	DRIVER DOOR SWITCH	GROUND (DOOR OPEN)	B+

DRIVER REAR DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I RD10-1	BATTERY POWER SUPPLY	B+	GROUND
I RD10-8	LOGIC GROUND	GROUND	2 - 1600 Hz
S RD10-9	SCP NETWORK	2 - 1600 Hz	B+ (LIGHT ON)
O RD10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	2 - 1600 Hz
S RD10-16	SCP NETWORK	GROUND	GROUND
I RD10-17	POWER GROUND	GROUND	GROUND
I RD11-20	DRIVER REAR DOOR SWITCH	GROUND (DOOR OPEN)	B+

PASSENGER DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I PD10-1	BATTERY POWER SUPPLY	B+	GROUND
I PD10-8	LOGIC GROUND	GROUND	2 - 1600 Hz
S PD10-9	SCP NETWORK	2 - 1600 Hz	B+ (LIGHT ON)
O PD10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	2 - 1600 Hz
S PD10-16	SCP NETWORK	GROUND	GROUND
I PD10-17	POWER GROUND	GROUND	GROUND
I PD11-20	PASSENGER DOOR SWITCH	GROUND (DOOR OPEN)	B+

PASSENGER REAR DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I RP10-1	BATTERY POWER SUPPLY	B+	GROUND
I RP10-8	LOGIC GROUND	GROUND	2 - 1600 Hz
S RP10-9	SCP NETWORK	2 - 1600 Hz	B+ (LIGHT ON)
O RP10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	2 - 1600 Hz
S RP10-16	SCP NETWORK	GROUND	GROUND
I RP10-17	POWER GROUND	GROUND	GROUND
I RP11-20	PASSENGER REAR DOOR SWITCH	GROUND (DOOR OPEN)	B+

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I FC15-24	COURTESY LAMP SUPPLY	B-	GROUND
I FC15-32	IGNITION SWITCHED GROUND	GROUND	2 - 1600 Hz
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O FC15-57	COURTESY LAMP ACTIVATE REQUEST	GROUND (MOMENTARY)	B+
I FC15-67	KEY IN IGNITION	GROUND (KEY IN)	B+ (KEY OUT)
O FC15-74	COURTESY LAMP SUPPLY	B-	GROUND
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S FC15-84	SCP NETWORK	2 - 1600 Hz	B+
S FC15-85	SCP NETWORK	2 - 1600 Hz	B+
O FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE	B-	B+
I FC15-104	BATTERY SUPPLY VOLTAGE	B+	B+

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 10.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER	RD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER REAR	RD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK SWITCHES - DRIVER	RP10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER	RP11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER REAR	RD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER	RD3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER REAR	RD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER REAR	RP3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
'E' POST LAMP - LH	IC4 / 4-WAY MULTILOCK 040 / BLACK	LH 'E' POST / 'E' POST TRIM
'E' POST LAMP - RH	CA6 / 4-WAY MULTILOCK 040 / BLACK	RH 'E' POST / 'E' POST TRIM
GARAGE DOOR OPENER	CA53 / 8-WAY MULTILOCK 040 / BLACK	ROOF CONSOLE
GLOVE BOX LAMP	FC33 / LUCAR - STRAIGHT - 2.8	GLOVE BOX
IGNITION SWITCH (KEY-IN SWITCH)	FC34 / LUCAR - STRAIGHT - 2.8	STEERING COLUMN
PUDDLE LAMP - DRIVER REAR DOOR	RD14 / 2-WAY AMP JUNIOR TIMER / BLACK	DOOR CASING / TRIM PANEL
PUDDLE LAMP - DRIVER DOOR	DD14 / 2-WAY AMP JUNIOR TIMER / BLACK	DOOR CASING / TRIM PANEL
PUDDLE LAMP - DRIVER PASSENGER	PD14 / 2-WAY AMP JUNIOR TIMER / BLACK	DOOR CASING / TRIM PANEL
PUDDLE LAMP - PASSENGER REAR DOOR	RP14 / 2-WAY AMP JUNIOR TIMER / BLACK	DOOR CASING / TRIM PANEL
TRUNK LAMP - LH	BT46 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	TRUNK LH SIDE / TRUNK CARPET
TRUNK LAMP - RH	BT47 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	TRUNK RH SIDE / TRUNK CARPET
TRUNK SWITCH	BT41 / 2-WAY AUGAT 1.6 / BLACK	BEHIND TRUNK LID LINER
VANITY LAMP - LH	CA69 / 2-WAY MULTILOCK 070 / WHITE	LH SUN VISOR
VANITY LAMP - RH	CA70 / 2-WAY MULTILOCK 070 / WHITE	RH SUN VISOR

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA12	8-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA16	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD

GROUNDS

Ground	Location / Type
CA30L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA30R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA31L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA33R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA36R	EYELET (PAIR) - LH 'A' POST GROUND SCREW
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC29L	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE
IC20	EYELET (SINGLE) - TRUNK / LH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 10.2

DIMMER MODULE

Pin	Description	Active	Inactive
O FC23-1	INSTRUMENT PACK ILLUMINATION BULB SUPPLY	B+ (LIGHTS ON)	GROUND
O FC23-2	INSTRUMENT PACK ILLUMINATION BULB SUPPLY	B- (LIGHTS ON)	GROUND
I FC23-3	IGNITION SWITCHED GROUND SUPPLY	GROUND	GROUND
I FC23-4	SIDE LAMPS ON REQUEST	GROUND	GROUND
I FC23-5	DIMMER POTENTIOMETER FEEDBACK VOLTAGE	1.3 V = DIM; 4 V = BRIGHT	GROUND
O FC23-6	DIMMER POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
O FC23-7	GENERAL ILLUMINATION BULB SUPPLY	B+ (LIGHTS ON)	GROUND
O FC23-8	GENERAL ILLUMINATION BULB SUPPLY	B- (LIGHTS ON)	GROUND
I FC23-9	GROUND SUPPLY	GROUND	GROUND
I FC23-10	BATTERY POWER SUPPLY	B+	B+
I FC23-11	BATTERY POWER SUPPLY	B+	B+
O FC23-12	DIMMER POTENTIOMETER REFERENCE VOLTAGE	4 V	0 V

INSTRUMENT PACK

Pin	Description	Active	Inactive
I FC24-26	GROUND	GROUND	GROUND
I FC24-27	ILLUMINATION SUPPLY	B+	GROUND
I FC25-21	DIMMER OVERRIDE	GROUND	B+

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING CONTROL PANEL	CC27 / 12-WAY MULTILOCK 040 / BLUE	CENTER CONSOLE
CENTER CONSOLE SWITCH PACK	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
CIGAR LIGHTER - FRONT	CA74 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
CIGAR LIGHTER - REAR	CA75 / 2-WAY CIGAR LIGHTER / YELLOW	REAR CENTER CONSOLE VENT
ANALOG CLOCK	FC38 / 6-WAY AMP MICRO QUADLOCK / BLACK	CENTER AIR VENT
CRUISE CONTROL ON / OFF SWITCH	CC20 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	CENTER CONSOLE ASSEMBLY
DIMMER CONTROL	SC11 / 6-WAY MULTILOCK 070 / WHITE	COLUMN SWITCHGEAR
DIMMER MODULE	FC23 / 12-WAY MULTILOCK 040 / BLACK	BELOW INSTRUMENT PACK
FASCIA SWITCH PACK	FC14 / 6-WAY JAE IL-AG5 / GREEN	FASCIA SWITCH PACK
FOG LAMP SWITCHES	FC3 / 10-WAY AMP MICRO QUAD LOCK / NATURAL	FASCIA / OUTBOARD OF STEERING COLUMN
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
INSTRUMENT PACK	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
	FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	
	SC2 / 10-WAY MULTILOCK 070 / YELLOW	
LIGHTING STALK (COLUMN SWITCHGEAR)	CC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
MODE SWITCH (TRANSMISSION)	CA3 / COAXIAL CONNECTOR	CENTER CONSOLE ASSEMBLY
RADIO / CASSETTE HEAD UNIT	IC10 / 20-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE
	IC19 / CD AUTOCHANGER DATA CABLE	
ROOF CONSOLE	CA53 / 8-WAY MULTILOCK 040 / BLACK	ROOF CONSOLE
SPLICE HEADER - CA224	CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN	LHHEELBOARD / HEELBOARD COVER
SWITCH PACK - DRIVER DOOR	DD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANF1
SWITCH PACK - DRIVER REAR DOOR	RD1 / 5-WAY LAG / GREEN	DOOR TRIM PANEL
SWITCH PACK - PASSENGER DOOR	PD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANEL
SWITCH PACK - PASSENGER REAR DOOR	RP1 / 5-WAY LAG / GREEN	DOOR TRIM PANEL
TRIP COMPUTER SWITCH PACK	FC27 / 10-WAY AMP MICRO QUAD LOCK / BLACK	FASCIA

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA16	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA27	10-WAY MULTILOCK 070 / WHITE	BELLOW PASSENGER SEAT
CA45	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
CA46	4-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR
SM25-P	10-WAY MULTILOCK 070 / WHITE	BEHIND PASSENGER SEAT BACK FINISHER

GROUNDS

Ground	Location / Type
CA30L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA47L	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - RH SIDE
CA47R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - RH SIDE
CC2R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - LH SIDE
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC29L	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE
FC29R	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

POWER ASSISTED STEERING CONTROL MODULE

Pin	Description	Active	Inactive
O CA32-2	TRANSDUCER NEGATIVE	2 V @ IDLE DECREASING WITH VEHICLE SPEED	
I CA32-4	VEHICLE SPEED	B+ @ 10 MPH (16 KM/H) = 20 Hz, 20 MPH (32 KM/H) = 40 Hz	
O CA32-5	TRANSDUCER POSITIVE	9 V @ IDLE INCREASING WITH VEHICLE SPEED	
I CA32-6	IGNITION SWITCHED POWER SUPPLY	B-	0 V
I CA32-8	GROUND	0 V	0 V

Fig. 11.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
POWER ASSISTED STEERING CONTROL MODULE VARIABLE STEERING CONVERTER	CA32 / 9-WAY RISTS / BLACK / RED LL3 / 2-WAY AMP JUNIOR POWER TIMER / NATURAL	LOWER LH 'A' POST / LOWER 'A' POST FINISHER STEERING RACK / CONTROL VALVE

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LL2	2-WAY AUGAT 1.6 / BLACK	BELOW CHASSIS RAIL / LH SIDE
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CA30L	EYELET (PAIR) - LH 'A' POST GROUND SCREW

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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.

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CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I	FC15-11 AUTO TILT REQUEST
I	FC15-15 IGNITION SWITCHED GROUND
I	FC15-25 GROUND SUPPLY
I	FC15-32 IGNITION SWITCHED GROUND
O	FC15-40 COLUMN MOTOR POTENTIOMETER REFERENCE VOLTAGE
I	FC15-41 STARTER ENGAGE REQUEST
O	FC15-52 COLUMN REACH MOTOR SUPPLY
I	FC15-58 NOT IN PARK MICROSWITCH STATUS
I	FC15-66 COLUMN REACH MOTOR POTENTIOMETER FEEDBACK
I	FC15-67 KEY IN IGNITION
O	FC15-78 COLUMN REACH MOTOR SUPPLY
I	FC15-80 BATTERY SUPPLY VOLTAGE
S	SCP NETWORK
S	SCP NETWORK
I	FC15-87 COLUMN MOVEMENT REQUEST
O	FC15-90 COLUMN TILT MOTOR POTENTIOMETER REFERENCE GROUND
O	FC15-91 COLUMN REACH MOTOR POTENTIOMETER REFERENCE GROUND
I	FC15-93 COLUMN TILT MOTOR POTENTIOMETER FEEDBACK
O	FC15-99 COLUMN TILT MOTOR SUPPLY
O	FC15-100 COLUMN TILT MOTOR SUPPLY
I	FC15-102 BATTERY SUPPLY VOLTAGE

DRIVER DOOR CONTROL MODULE

Pin	Description
I	DD10-1 BATTERY POWER SUPPLY
I	DD10-8 LOGIC GROUND
S	SCP NETWORK
S	SCP NETWORK
O	DD11-2 SEAT MEMORY STATUS LED
I	DD11-20 DRIVER DOOR SWITCH

DRIVER REAR DOOR CONTROL MODULE

Pin	Description
I	RD10-1 BATTERY POWER SUPPLY
I	RD10-8 LOGIC GROUND
S	RD10-9 SCP NETWORK
S	RD10-16 SCP NETWORK
I	RD10-19 MODULE IDENTIFICATION
I	RD11-5 MEMORY 1
I	RD11-7 MODULE IDENTIFICATION
I	RD11-13 MEMORY SET
I	RD11-15 MEMORY 3
I	RD11-22 MEMORY 2

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 11.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
AUTO TILT SWITCH (COLUMN SWITCHGEAR)	SC9 / 8-WAY GROTE AND HARTMAN MDK / BLACK	COLUMN SWITCHGEAR
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
COLUMN JOYSTICK (COLUMN SWITCHGEAR)	SC9 / 8-WAY GROTE AND HARTMAN MDK / BLACK	COLUMN SWITCHGEAR
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER	RD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
IGNITION SWITCH (KEY-IN SWITCH)	RD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
MEMORY SWITCHES (DRIVER DOOR SWITCH PACK)	DD3 / 13-WAY ECONOSEAL III LC / BLACK	STEERING COLUMN
NOT-IN-PARK MICROSWITCH	FC4 / 8-WAY MULTILOCK 070 / WHITE	DOOR TRIM PANEL
STEERING COLUMN MOTORS	DD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANEL
	CC13 / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE ASSEMBLY
	FC49 / 6-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
	FC50 / 8-WAY MULTILOCK 070 / YELLOW	STEERING COLUMN

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA13	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
FC29L	EYELET (PAIR) - LH BULKHEAD GROUND STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
I FC15-32	IGNITION SWITCHED GROUND
I FC15-41	STARTER ENGAGE REQUEST
I FC15-58	NOT IN PARK MICROSWITCH STATUS
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
O FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE

DRIVER DOOR CONTROL MODULE

Pin	Description
I DD10-1	BATTERY POWER SUPPLY
O DD10-2	DRIVER DOOR MIRROR VERTICAL / HORIZONTAL MOTOR COMMON SUPPLY
O DD10-3	DRIVER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR
O DD10-4	DRIVER DOOR MIRROR VERTICAL MOVEMENT MOTOR
I DD10-8	LOGIC GROUND
S DD10-9	SCP NETWORK
S DD10-16	SCP NETWORK
I DD10-17	POWER GROUND
O DD10-20	DRIVER DOOR MIRROR POTENTIOMETER COMMON REFERENCE VOLTAGE
I DD10-21	DRIVER DOOR MIRROR POTENTIOMETER HORIZONTAL POSITION FEEDBACK
I DD10-22	DRIVER DOOR MIRROR POTENTIOMETER VERTICAL POSITION FEEDBACK
I DD11-1	MIRROR COMMON GROUND
O DD11-2	SEAT MEMORY STATUS LED
I DD11-3	LH VERTICAL MOVEMENT REQUEST
I DD11-5	PASSENGER MIRROR SELECT
I DD11-9	RH VERTICAL MOVEMENT REQUEST
I DD11-10	LH HORIZONTAL MOVEMENT REQUEST
I DD11-13	DRIVER MIRROR SELECT
I DD11-17	RH HORIZONTAL MOVEMENT REQUEST
I DD11-20	DRIVER DOOR SWITCH

DRIVER REAR DOOR CONTROL MODULE

Pin	Description
I RD10-1	BATTERY POWER SUPPLY
I RD10-8	LOGIC GROUND
S RD10-9	SCP NETWORK
S RD10-16	SCP NETWORK
1 RD10-19	MODULE IDENTIFICATION
I RD11-5	MEMORY 1
I RD11-7	MODULE IDENTIFICATION
I RD11-13	MEMORY SET
I RD11-15	MEMORY 3
I RD11-22	MEMORY 2

INSTRUMENT PACK

Pin	Description
S FC24-19	SCP NETWORK
S FC24-20	SCP NETWORK
C FC24-24	CAN NETWORK
C FC24-47	CAN NETWORK

PASSENGER DOOR CONTROL MODULE

Pin	Description
I PD10-1	BATTERY POWER SUPPLY
O PD10-2	PASSENGER DOOR MIRROR VERTICAL / HORIZONTAL MOVEMENT MOTORS COMMON
O PD10-3	PASSENGER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR
O PD10-4	PASSENGER DOOR MIRROR VERTICAL MOVEMENT MOTOR
I PD10-8	LOGIC GROUND
S PD10-9	SCP NETWORK
S PD10-16	SCP NETWORK
I PD10-17	POWER GROUND
O PD10-20	PASSENGER DOOR MIRROR POTENTIOMETER COMMON REFERENCE VOLTAGE
I PD10-21	PASSENGER DOOR MIRROR POTENTIOMETER HORIZONTAL POSITION FEEDBACK VOLTAGE
I PD10-22	PASSENGER DOOR MIRROR POTENTIOMETER VERTICAL POSITION FEEDBACK VOLTAGE

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 11.3

COMPONENTS

Component

BODY PROCESSOR MODULE

DOOR CONTROL MODULE - DRIVER REAR

DOOR CONTROL MODULE - DRIVER

DOOR CONTROL MODULE - PASSENGER

DOOR MIRROR MOTORS - DRIVER

DOOR MIRROR MOTORS - PASSENGER

DOOR SWITCH - DRIVER

INSTRUMENT PACK

MEMORY SWITCHES
(DRIVER DOOR SWITCH PACK)

MIRROR JOYSTICK
(DRIVER DOOR SWITCH PACK)

MIRROR SELECT SWITCH
(DRIVER DOOR SWITCH PACK)

NOT-IN-PARK MICROSWITCH

FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK

FC28 / 24-WAY AMP MODULE PCB SIGNAL / BLACK

DD1 / 26-WAY MOS-26 / YELLOW

DD1 / 26-WAY MQS-26 / YELLOW

DD1 / 26-WAY MQS-26 / YELLOW

CC13 / 3-WAY MULTILOCK 070 / YELLOW

Location / Access

BULKHEAD / BEHIND GLOVE BOX

DOOR CASING / TRIM PANEL

DOOR CASING / TRIM PANEL

DRIVER DOOR

PASSENGER DOOR

DOOR CASING / TRIM PANEL

FASCIA

DOOR TRIM PANEL

DOOR TRIM PANEL

DOOR TRIM PANEL

CENTER CONSOLE ASSEMBLY

HARNESS-TO-HARNESS CONNECTORS

Connector

Type / Color

CAR 20-WAY MULTILOCK 070 / WHITE

CA10 8-WAY MULTILOCK 070 / YELLOW

CA11 20-WAY MULTILOCK 070 / WHITE

CA12 8-WAY MULTILOCK 070 / YELLOW

CA13 6-WAY MULTILOCK 070 / WHITE

CA14 6-WAY MULTILOCK 070 / WHITE

FC1 54-WAY THROUGH PANEL CONNECTOR / BLACK

FC5 54-WAY THROUGH PANEL CONNECTOR / BLACK

FC7 20-WAY MULTILOCK 070 / WHITE

Location / Access

DRIVER 'A' POST / DOOR HARNESS GAITER

DRIVER 'A' POST / DOOR HARNESS GAITER

PASSENGER 'A' POST / DOOR HARNESS GAITER

PASSENGER 'A' POST / DOOR HARNESS GAITER

DRIVER 'B/C' POST / DOOR HARNESS GAITER

DRIVER 'B/C' POST / DOOR HARNESS GAITER

BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY

BELOW DRIVER SIDE AIR VENT / COIN TRAY

ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground

Location / Type

CA30R EYELET (PAIR) - LH 'A' POST GROUND SCREW

CA33L EYELET (PAIR) - RH 'A' POST GROUND SCREW

CA33R EYELET (PAIR) - RH 'A' POST GROUND SCREW

CA36L EYELET (PAIR) - LH 'A' POST GROUND SCREW

CC3L EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
I FC15-32	IGNITION SWITCHED GROUND
I FC15-41	STARTER ENGAGE REQUEST
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC16-84	SCP NETWORK
S FC15-85	SCP NETWORK
O FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE

DRIVER DOOR CONTROL MODULE

Pin	Description
I DD10-1	BATTERY POWER SUPPLY
O DD10-2	DRIVER DOOR MIRROR VERTICAL / HORIZONTAL MOTOR COMMON SUPPLY
O DD10-3	DRIVER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR
O DD10-4	DRIVER DOOR MIRROR VERTICAL MOVEMENT MOTOR
I DD10-8	LOGIC GROUND
S DD10-9	SCP NETWORK
S DD10-16	SCP NETWORK
I DD10-17	POWER GROUND
I DD11-1	MIRROR COMMON GROUND
I DD11-3	LH VERTICAL MOVEMENT REQUEST
I DD11-5	PASSENGER MIRROR SELECT
I DD11-9	RH VERTICAL MOVEMENT REQUEST
I DD11-10	LH HORIZONTAL MOVEMENT REQUEST
I DD11-13	DRIVER MIRROR SELECT
I DD11-17	RH HORIZONTAL MOVEMENT REQUEST

PASSENGER DOOR CONTROL MODULE

Pin	Description
I PD10-1	BATTERY POWER SUPPLY
O PD10-2	PASSENGER DOOR MIRROR VERTICAL / HORIZONTAL MOVEMENT MOTORS COMMON
O PD10-3	PASSENGER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR
O PD10-4	PASSENGER DOOR MIRROR VERTICAL MOVEMENT MOTOR
I PD10-8	LOGIC GROUND
S PD10-9	SCP NETWORK
S PD10-16	SCP NETWORK
I PD10-17	POWER GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 11.4

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE - DRIVER REAR	RD10 / 22-WAY FORD 2.8 TIMER / BLUE RD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER	PD10 / 22-WAY FORD 2.8 TIMER / BLUE PD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR MIRROR MOTORS - DRIVER	DD8 / 12-WAY MULTILOCK 040 / BLACK	DRIVER DOOR
DOOR MIRROR MOTORS - PASSENGER	PD8 / 12-WAY MULTILOCK 040 / BLACK	PASSENGER DOOR
MIRROR JOYSTICK (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANEL
MIRROR SELECT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANEL

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA12	8-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA13	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY

GROUNDS

Ground	Location / Type
CA30R	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA33R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
I FC15-16	SIDE LAMP REQUEST
I FC15-32	IGNITION SWITCHED GROUND
I FC15-42	HEADLAMP DIP REQUEST
O FC15-72	MIRROR FOLDBACK RELAY ACTIVATE
O FC15-77	MIRROR FOLD OUT RELAY ACTIVATE
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-86	SCP NETWORK
O FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE

Active
GROUND
GROUND
GROUND
GROUND (MOMENTARY)
GROUND
GROUND
B+
2 - 1600 Hz
2 - 1600 Hz
B+

Inactive
B+

DRIVER DOOR CONTROL MODULE

Pin	Description
I DD10-1	BATTERY POWER SUPPLY
I DD10-8	LOGIC GROUND
S DD10-9	SCP NETWORK
S DD10-16	SCP NETWORK
I DD10-17	POWER GROUND
I DD11-1	MIRROR COMMON GROUND
I DD11-3	FOLD-BACK REQUEST
I DD11-5	PASSENGER MIRROR SELECT
I DD11-9	FOLD-OUT REQUEST
I DD11-10	LH HORIZONTAL MOVEMENT REQUEST
I DD11-13	DRIVER MIRROR SELECT
I DD11-17	RH HORIZONTAL MOVEMENT REQUEST

Active
B+
GROUND
2 - 1600 Hz
2 - 1600 Hz
GROUND
GROUND
B+ = DOWN
B+ = UP
B+
B+ = DOWN
B+ = LEFT
B+
B+ = LEFT

Inactive
B+
GROUND
GROUND = UP
GROUND = UP
GROUND
GROUND = RIGHT
GROUND
GROUND = RIGHT

INSTRUMENT PACK

Pin	Description
S FC24-19	SCP NETWORK
S FC24-20	SCP NETWORK
C FC24-24	CAN NETWORK
C FC24-47	CAN NETWORK

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 11.5

COMPONENTS

Component

BODY PROCESSOR MODULE
DOOR CONTROL MODULE - DRIVER

DOOR MIRROR - DRIVER
DOOR MIRROR - PASSENGER

INSTRUMENT PACK

INTERIOR REAR VIEW MIRROR
LIGHTING STALK (COLUMN SWITCHGEAR)

MIRROR JOYSTICK
(DRIVER DOOR SWITCH PACK)
MIRROR SELECT SWITCH
(DRIVER DOOR SWITCH PACK)

SPLICE HEADER - CA224

Connector / Type / Color

FC15 / 14-WAY AMP EEEC / GREY
DD10 / 22-WAY FORD 2.8 TIMER / BLUE
DD11 / 22-WAY FORD 2.8 TIMER / BLACK
DD8 / 12-WAY MULTILOCK 040 / BLACK
PD8 / 12-WAY MULTILOCK 040 / BLACK
FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK
FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK
CA55 / 6-WAY MULTILOCK 070 / YELLOW
SC2 / 10-WAY MULTILOCK 070 / YELLOW
DD1 / 26-WAY MQS-26 / YELLOW
DD1 / 26-WAY MQS-26 / YELLOW
CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN

Location / Access

BULKHEAD / BEHIND GLOVE BOX
DOOR CASING / TRIM PANEL
DRIVER DOOR
PASSENGER DOOR
FASCIA
WINDSHIELD / IN FRONT OF ROOF CONSOLE
COLUMN SWITCHGEAR HARNESS /
ADJACENT TO STEERING COLUMN MOTOR
DOOR TRIM PANEL
DOOR TRIM PANEL
LHHEELBOARD /HEELBOARD COVER

RELAYS

Relay

FOLD-BACK RELAY
FOLD-OUT RELAY

Case Color

VIOLET
VIOLET
CA60 / VIOLET
CA60 / VIOLET

Connector / Color

CA60 / VIOLET
CA60 / VIOLET

LHHEELBOARD RELAYS /HEELBOARD COVER
LHHEELBOARD RELAYS /HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector

BT4
CA8
CA10
CA11
FC1
FC5

Type / Color

54-WAY THROUGH PANEL / BLACK
20-WAY MULTILOCK 070 / WHITE
8-WAY MULTILOCK 070 / YELLOW
20-WAY MULTILOCK 070 / WHITE
54-WAY THROUGH PANEL CONNECTOR / BLACK
54-WAY THROUGH PANEL CONNECTOR / BLACK

Location / Access

BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
DRIVER 'A' POST / DOOR HARNESS GAITER
DRIVER 'A' POST / DOOR HARNESS GAITER
PASSENGER 'A' POST / DOOR HARNESS GAITER
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
BELOW DRIVER SIDE AIR VENT / COIN TRAY

GROUNDS

Ground

CA30R
CA33L
CA33R
CA36L
CA38R
FC17R

Location / Type

EYELET (PAIR) - LH 'A' POST GROUND SCREW
EYELET (PAIR) - RH 'A' POST GROUND SCREW
EYELET (PAIR) - RH 'A' POST GROUND SCREW
EYELET (PAIR) - LH 'A' POST GROUND SCREW
EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW
EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input
O Output
SG Signal Ground
D Serial and encoded communications
C CAN (Network)
S SCP Network
B+ Battery voltage
V Voltage (DC)
Hz Frequency
KHz Frequency x 1000
MS Milliseconds
MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

ADAPTIVE DAMPING CONTROL MODULE

Pin	Description	Active	Inactive
O EM68-1	INSTRUMENT PACK ADAPTIVE DAMPENING MIL	GROUND	B+
O EM68-3	ACCELEROMETER COMMON GROUND SUPPLY	GROUND	GROUND
D EM68-10	SERIAL COMMUNICATIONS		
I EM68-11	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
O EM68-13	LH REAR DAMPER BATTERY POWER SUPPLY	B+	B+
O EM68-14	RH FRONT DAMPER BATTERY POWER SUPPLY	B+	B+
O EM68-15	RH REAR DAMPER BATTERY POWER SUPPLY	B+	B+
I EM68-18	GROUND	GROUND	GROUND
I EM68-20	FRONT LATERAL ACCELEROMETER FEEDBACK	< 0.2 V OR > 4.8 V	2.3 – 2.7 V = HARD
I EM68-21	FRONT VERTICAL ACCELEROMETER FEEDBACK	< 0.2 V OR > 4.8 V	2.3 – 2.7 V = HARD
I EM68-22	REAR VERTICAL ACCELEROMETER FEEDBACK	< 0.2 V OR > 4.8 V	2.3 – 2.7 V = HARD
I EM68-24	VEHICLE SPEED SIGNAL	22 Hz @ 10 MPH (16 KM / H); 44 Hz @ 20 MPH (32 KM / H) @ B+	
O EM68-25	ACCELEROMETER COMMON VOLTAGE SUPPLY	5 V	5 V
I EM68-26	BRAKE SWITCH	GROUND	B+
I EM68-27	BATTERY POWER SUPPLY	B+	B+
D EM68-28	SERIAL COMMUNICATIONS		
O EM68-30	LH FRONT DAMPER BATTERY POWER SUPPLY	B+	B+
O EM68-31	LH FRONT DAMPER	GROUND	B+
O EM68-32	LH REAR DAMPER	GROUND	B+
O EM68-33	RH FRONT DAMPER	GROUND	B+
O EM68-34	RH REAR DAMPER	GROUND	B+

Fig. 11.6

COMPONENTS

Component

ACCELEROMETER – FRONT LATERAL	EM28 / 3-WAY AMP MICRO QUAD LOCK / BLACK	LOCATION / ACCESS
ACCELEROMETER – FRONT VERTICAL	EM4 / 3-WAY AMP MICRO QUAD LOCK / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ACCELEROMETER – REAR VERTICAL	BT7 / 3-WAY AMP MICRO QUAD LOCK / BLACK	BELOW FUEL TANK / TRUNK CARPET
ADAPTIVE DAMPING CONTROL MODULE	EM68 / 35-WAY AMP JUNIOR POWER TIMER / BLACK	ADJACENT TO PASSENGER SIDE BLOWER / GLOVE BOX ASSEMBLY
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
DAMPER SOLENOID – LH FRONT	EM64 / 2-WAY DELPHI / REINSHAGEN / BLACK	ENGINE COMPARTMENT / LEFT HAND SIDE
DAMPER SOLENOID – LH REAR	LA1 / 2-WAY DELPHI / REINSHAGEN / BLACK	REAR AXLE / LH REAR DAMPER SOLENOID
DAMPER SOLENOID – RH FRONT	EM65 / 2-WAY DELPHI / REINSHAGEN / BLACK	ENGINE COMPARTMENT / RIGHT HAND SIDE
DAMPER SOLENOID – RH REAR	RA1 / 2-WAY DELPHI / REINSHAGEN / BLACK	REAR AXLE / RH REAR DAMPER SOLENOID

HARNESS-TO-HARNESS CONNECTORS

Connector

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA9	6-WAY MULTILOCK 070 / WHITE	BELOW REAR SEAT CUSHION
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA29	4-WAY MULTILOCK 070 / WHITE	BELOW REAR SEAT CUSHION
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground

Ground	Location / Type
EM17	EYELET (SINGLE) – EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 12.1

BODY PROCESSOR MODULE

Pin	Description	Active
I FC15-15	IGNITION SWITCHED GROUND	GROUND
I FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)	GROUND
I FC15-32	IGNITION SWITCHED GROUND	GROUND
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)	GROUND (MOMENTARY)
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)	GROUND
I FC15-80	BATTERY SUPPLY VOLTAGE	B+
S FC15-84	SCP NETWORK	2 - 1600 Hz
S FC15-85	SCP NETWORK	2 - 1600 Hz
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)	GROUND (MOMENTARY)

DRIVER DOOR CONTROL MODULE

Pin	Description	Active
I DD10-1	BATTERY POWER SUPPLY	B+
I DD10-8	LOGIC GROUND	GROUND
S DD10-9	SCP NETWORK	2 - 1600 Hz
S DD10-16	SCP NETWORK	2 - 1600 Hz
O DD11-2	SEAT MEMORY STATUS LED	GROUND (LED ON)

DRIVER REAR DOOR CONTROL MODULE

Pin	Description	Active
I RD10-1	BATTERY POWER SUPPLY	B+
I RD10-8	LOGIC GROUND	GROUND
S RD10-9	SCP NETWORK	2 - 1600 Hz
S RD10-16	SCP NETWORK	2 - 1600 Hz
I RD10-19	MODULE IDENTIFICATION	GROUND
I RD11-5	MEMORY 1	B+
I RD11-7	MODULE IDENTIFICATION	GROUND
I RD11-13	MEMORY SET	B+
I RD11-15	MEMORY 3	B-
I RD11-22	MEMORY 2	B+

DRIVER SEAT CONTROL MODULE

Pin	Description	Active
O SM1-1D	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B-
O SM1-2D	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B-
O SM1-3D	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+
O SM1-4D	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+
O SM1-5D	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+
O SM1-6D	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+
O SM1-7D	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+
O SM1-8D	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+
I SM1-9D	DRIVER SEAT CUSHION FORE MOVEMENT REQUEST	B+
I SM1-10D	DRIVER SEAT CUSHION AFT MOVEMENT REQUEST	B+
I SM1-11D	DRIVER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+
I SM1-12D	DRIVER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+
I SM1-13D	DRIVER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+
I SM1-14D	DRIVER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+
I SM1-15D	DRIVER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+
I SM1-16D	DRIVER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+
O SM2-1D	DRIVER SEAT CUSHION REAR / SQUAB RECLINE MOTOR POT. REF. GROUND	GROUND
O SM2-2D	DRIVER SEAT CUSHION FORE / AFT MOTOR POT. REFERENCE GROUND	GROUND
O SM2-5D	DRIVER SEAT CUSHION REAR / SQUAB RECLINE MOTOR POT. REF. VOLTAGE	5V
O SM2-6D	DRIVER SEAT CUSHION FRONT MOTOR POT. REFERENCE VOLTAGE	5V
I SM2-8D	DRIVER SEAT HEADREST MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN
I SM2-9D	DRIVER SEAT CUSHION FRONT MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN
I SM2-10D	DRIVER SEAT CUSHION REAR MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN
I SM2-11D	DRIVER SEAT SQUAB RECLINE MOTOR POTENTIOMETER FEEDBACK	9 V = FORE, 2 V = AFT
I SM2-12D	DRIVER SEAT CUSHION FORE / AFT MOTOR POTENTIOMETER FEEDBACK	2 V = FORE, 10 V = AFT
O SM2-14D	DRIVER SEAT HEADREST MOTOR POTENTIOMETER REFERENCE GROUND	GROUND
O SM2-15D	DRIVER SEAT CUSHION FRONT MOTOR POTENTIOMETER REFERENCE GROUND	GROUND
O SM2-18D	DRIVER SEAT CUSHION FORE / AFT MOTOR POT. REFERENCE VOLTAGE	5V
O SM2-19D	DRIVER SEAT HEADREST MOTOR POTENTIOMETER REFERENCE VOLTAGE	5V
I SM3-1D	MODULE IDENTIFICATION	GROUND (DRIVER)
I SM3-2D	POWER GROUND	GROUND
O SM3-3D	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+
O SM3-4D	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+
I SM3-5D	BATTERY POWER SUPPLY	B+
I SM3-6D	DRIVER SEAT HEADREST RAISE MOVEMENT REQUEST	B+
I SM3-8D	DRIVER SEAT HEADREST LOWER MOVEMENT REQUEST	B+
S SM3-9D	SCP NETWORK	2 - 1600 Hz
S SM3-10D	SCP NETWORK	2 - 1600 Hz

INSTRUMENT PACK

 Pin	Description	Active
S FC24-19	SCP NETWORK	2 ~ 1600 Hz
S FC24-20	SCP NETWORK	2 ~ 1600 Hz
C FC24-24	CAN NETWORK	15 ~ 1500 Hz
C FC24-47	CAN NETWORK	15 ~ 1500 Hz

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
INSTRUMENT PACK	RD10 / 22-WAY FORD 2.8 TIMER / BLUE	FASCIA
MEMORY SWITCHES (DRIVER DOOR SWITCH PACK)	RD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR TRIM PANEL
SEAT CONTROL MODULE - DRIVER	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	DRIVER SEAT / UNDER
SEAT CUSHION HEATERS - DRIVER	FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	DRIVER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	DD1 / 26-WAY MQS-26 / YELLOW	DRIVER SEAT
SEAT LUMBAR PUMP - DRIVER	SM1-D / 16-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT
SEAT MOTORS - DRIVER	SM2-D / 26-WAY FORD IDC / BLACK	DRIVER SEAT / UNDER
SEAT SQUAB HEATERS - DRIVER	SM3-D / 10-WAY FORD 2.8 TIMER / BLACK	
SWITCH PACK - DRIVER SEAT	SM7-D / 3-WAY MULTILOCK 070 / YELLOW	
	CC1 / 16-WAY FORD IDC S.U. / BLACK	
	SM10-D / 3-WAY MULTILOCK 070 / YELLOW	
	SM4-D / 6-WAY MULTILOCK 070 / GREY	
	SM6-D / 6-WAY MULTILOCK 070 / YELLOW	
	SM11-D / 6-WAY MULTILOCK 070 / WHITE	
	SM12-D / 6-WAY MULTILOCK 070 / WHITE	
	SM13-D / 6-WAY MULTILOCK 070 / YELLOW	
	SM9-D / 3-WAY MULTILOCK 070 / GREY	DRIVER SEAT
	SM5-D / 16-WAY MULTILOCK 040 / BLACK	DRIVER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – DRIVER	BROWN	SM14-D / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA13	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GOALS

Ground	Location / Type
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA25R	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CA26R	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
O FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)
I FC15-32	IGNITION SWITCHED GROUND
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)
I FC15-41	STARTER ENGAGE REQUEST
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC16-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)

DRIVER SEAT CONTROL MODULE

Pin	Description
O SM1-1D	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY
O SM1-2D	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY
O SM1-3D	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY
O SM1-4D	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY
O SM1-5D	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY
O SM1-6D	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY
O SM1-7D	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY
O SM1-8D	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY
I SM1-9D	DRIVER SEAT CUSHION FORE MOVEMENT REQUEST
I SM1-10D	DRIVER SEAT CUSHION AFT MOVEMENT REQUEST
I SM1-11D	DRIVER SEAT CUSHION LOWER REAR MOVEMENT REQUEST
I SM1-12D	DRIVER SEAT CUSHION RAISE REAR MOVEMENT REQUEST
I SM1-13D	DRIVER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST
I SM1-14D	DRIVER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST
I SM1-15D	DRIVER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST
I SM1-16D	DRIVER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST
I SM3-1D	MODULE IDENTIFICATION
I SM3-2D	POWER GROUND
O SM3-3D	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY
O SM3-4D	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY
I SM3-5D	BATTERY POWER SUPPLY
I SM3-6D	DRIVER SEAT HEADREST RAISE MOVEMENT REQUEST
I SM3-8D	DRIVER SEAT HEADREST LOWER MOVEMENT REQUEST
S SM3-9D	SCP NETWORK
S SM3-10D	SCP NETWORK

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 12.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
SEAT CONTROL MODULE - DRIVER	RD10 / 22-WAY FORD 2.8 TIMER / BLUE	DRIVER SEAT / UNDER
SEAT CUSHION HEATERS - DRIVER	SM1-D / 16-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	SM2-D / 26-WAY FORD IDC / BLACK	CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP - DRIVER	SM3-D / 10-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT
SEAT MOTORS - DRIVER	SM7-D / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SM10-D / 3-WAY MULTILOCK 070 / YELLOW	CC1 / 16-WAY FORD IDC S.U. / BLACK	DRIVER SEAT
SM4-D / 6-WAY MULTILOCK 070 / GREY		DRIVER SEAT
SM6-D / 6-WAY MULTILOCK 070 / YELLOW		DRIVER SEAT
SM11-D / 6-WAY MULTILOCK 070 / WHITE		DRIVER SEAT
SM12-D / 6-WAY MULTILOCK 070 / WHITE		DRIVER SEAT
SM13-D / 6-WAY MULTILOCK 070 / YELLOW		DRIVER SEAT
SM9-D / 3-WAY MULTILOCK 070 / GREY		DRIVER SEAT
SM5-D / 16-WAY MULTILOCK 040 / BLACK		DRIVER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY - DRIVER	BROWN	SM14-D / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA13	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA25R	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CA26R	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT RULKHEAD STUD / CARIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
O FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)
I FC15-32	IGNITION SWITCHED GROUND
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)
I FC15-41	STARTER ENGAGE REQUEST
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)
I FC15-80	BATTERY SUPPLY VOLTAGE
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)

Active
GROUND
GROUND
GROUND
GROUND (MOMENTARY)
GROUND (CRANKING)
GROUND
B+
GROUND (MOMENTARY)

Inactive
B+

Fig. 12.3

COMPONENTS

Component

BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK
SEAT CUSHION HEATERS - DRIVER	RD10 / 22-WAY FORD 2.8 TIMER / BLUE
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	RD11 / 22-WAY FORD 2.8 TIMER / BLACK
SEAT MOTOR - DRIVER (RAISE / LOWER ONLY)	SM7-D / 3-WAY MULTILOCK 070 / YELLOW
SEAT SQUAB HEATERS - DRIVER	SM9-D / 3-WAY MULTILOCK 070 / GREY
SWITCH PACK - DRIVER SEAT (RAISE / LOWER ONLY)	CC1 / 16-WAY FORD IDC S.U. / BLACK
	SM16-D / 6-WAY MULTILOCK 070 / GREY
	SM9-D / 3-WAY MULTILOCK 070 / GREY
	SM17-D / 16-WAY MULTILOCK 040 / BLACK

Location / Access
BULKHEAD / BEHIND GLOVE BOX
DOOR CASING / TRIM PANEL
DOOR CASING / TRIM PANEL
DRIVER SEAT
CENTER CONSOLE SWITCH PACK
DRIVER SEAT / UNDER
DRIVER SEAT
DRIVER SEAT / UNDER

RELAYS

Relay

SEAT HEATER RELAY - DRIVER	BROWN
SEAT RAISE RELAY	VIOLET
SEAT LOWER RELAY	VIOLET

Case Color

SM14-D / BROWN
SM18-D / VIOLET
SM18-D / VIOLET

Location / Access
FRONT SEAT RELAYS / UNDER SEAT
FRONT SEAT RELAYS / UNDER SEAT
FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector

CA8	20-WAY MULTILOCK 070 / WHITE
CA13	6-WAY MULTILOCK 070 / WHITE
CA23	10-WAY MULTILOCK 070 / WHITE
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK
FC7	20-WAY MULTILOCK 070 / WHITE

Type / Color

DRIVER 'A' POST / DOOR HARNESS GAITER
DRIVER 'B/C' POST / DOOR HARNESS GAITER
BELOW DRIVER SEAT
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
BELOW DRIVER SIDE AIR VENT / COIN TRAY
ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground

Ground	Location / Type
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I	FC15-15	IGNITION SWITCHED GROUND	GROUND
O	FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)	GROUND
I	FC15-32	IGNITION SWITCHED GROUND	GROUND
I	FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)	GROUND (MOMENTARY)
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)
O	FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)	GROUND
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+
S	FC15-84	SCP NETWORK	2 - 1600 Hz
S	FC15-85	SCP NETWORK	2 - 1600 Hz
I	FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)	GROUND (MOMENTARY)

PASSENGER SEAT CONTROL MODULE

Pin	Description	Active	Inactive
O	SM1-1P	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+
O	SM1-2P	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+
O	SM1-3P	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B-
O	SM1-4P	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+
O	SM1-5P	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B-
O	SM1-6P	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B+
O	SM1-7P	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B-
O	SM1-8P	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+
I	SM1-9P	PASSENGER SEAT CUSHION FORE MOVEMENT REQUEST	B-
I	SM1-10P	PASSENGER SEAT CUSHION AFT MOVEMENT REQUEST	B-
I	SM1-11P	PASSENGER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+
I	SM1-12P	PASSENGER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+
I	SM1-13P	PASSENGER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+
I	SM1-14P	PASSENGER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+
I	SM1-15P	PASSENGER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+
I	SM1-16P	PASSENGER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+
I	SM3-2P	COMMON GROUND SUPPLY	GROUND
O	SM3-3P	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+
O	SM3-4P	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+
I	SM3-5P	BATTERY SUPPLY	B-
I	SM3-6P	PASSENGER SEAT HEADREST RAISE MOVEMENT REQUEST	B+
I	SM3-8P	PASSENGER SEAT HEADREST LOWER MOVEMENT REQUEST	B+
S	SM3-9P	SCP NETWORK	2 - 1600 Hz
S	SM3-10P	SCP NETWORK	2 - 1600 Hz

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 12.4

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
SEAT CONTROL MODULE - PASSENGER	SM1-P / 16-WAY FORD 2.8 TIMER / BLACK	PASSENGER SEAT / UNDER
SEAT CUSHION HEATERS - PASSENGER	SM3-P / 10-WAY FORD 2.8 TIMER / BLACK	PASSENGER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	SM7-P / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP - PASSENGER	CC1 / 16-WAY FORD IDC S.U. / BLACK	PASSENGER SEAT
SEAT MOTORS - PASSENGER	SM10-P / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT SQUAB HEATERS - PASSENGER	SM4-P / 6-WAY MULTILOCK 070 / GREY	PASSENGER SEAT
SWITCH PACK - PASSENGER SEAT	SM6-P / 6-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
	SM11-P / 6-WAY MULTILOCK 070 / WHITE	PASSENGER SEAT
	SM12-P / 6-WAY MULTILOCK 070 / WHITE	PASSENGER SEAT
	SM13-P / 6-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
	SM9-P / 3-WAY MULTILOCK 070 / GREY	PASSENGER SEAT
	SM5-P / 16-WAY MULTILOCK 040 / BLACK	PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY - PASSENGER	BROWN	SM14-P / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW PASSENGER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
O FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)
I FC15-32	IGNITION SWITCHED GROUND
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)
I FC15-41	STARTER ENGAGE REQUEST
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)

PASSENGER SEAT CONTROL MODULE

Pin	Description
O SM1-1P	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY
O SM1-2P	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY
O SM1-3P	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY
O SM1-4P	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY
O SM1-5P	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY
O SM1-6P	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY
O SM1-7P	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY
O SM1-8P	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY
I SM1-9P	PASSENGER SEAT CUSHION FORE MOVEMENT REQUEST
I SM1-10P	PASSENGER SEAT CUSHION AFT MOVEMENT REQUEST
I SM1-11P	PASSENGER SEAT CUSHION LOWER REAR MOVEMENT REQUEST
I SM1-12P	PASSENGER SEAT CUSHION RAISE REAR MOVEMENT REQUEST
I SM1-13P	PASSENGER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST
I SM1-14P	PASSENGER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST
I SM1-15P	PASSENGER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST
I SM1-16P	PASSENGER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST
I SM3-2P	COMMON GROUND SUPPLY
O SM3-3P	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY
O SM3-4P	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY
I SM3-5P	BATTERY SUPPLY
I SM3-6P	PASSENGER SEAT HEADREST RAISE MOVEMENT REQUEST
I SM3-8P	PASSENGER SEAT HEADREST LOWER MOVEMENT REQUEST
S SM3-9P	SCP NETWORK
S SM3-10P	SCP NETWORK

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 12.5

COMPONENTS

Component

Component	Connector / Type / Color
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY
FORE / AFT SWITCH - PASSENGER REAR	SM19-P / 10-WAY AMP MICRO QUAD LOCK / BLACK
RECLINE SWITCH - PASSENGER REAR	SM20-P / 10-WAY AMP MICRO QUAD LOCK / BLACK
SEAT CONTROL MODULE - PASSENGER	SM1-P / 16-WAY FORD 2.8 TIMER / BLACK
SEAT CUSHION HEATERS - PASSENGER	SM3-P / 10-WAY FORD 2.8 TIMER / BLACK
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	SM7-P / 3-WAY MULTILOCK 070 / YELLOW
SEAT LUMBAR PUMP - PASSENGER	CC1 / 16-WAY FORD IDC S.U. / BLACK
SEAT MOTORS - PASSENGER	SM10-P / 3-WAY MULTILOCK 070 / YELLOW
	SM4-P / 6-WAY MULTILOCK 070 / GREY
	SM6-P / 6-WAY MULTILOCK 070 / YELLOW
	SM11-P / 6-WAY MULTILOCK 070 / WHITE
	SM12-P / 6-WAY MULTILOCK 070 / WHITE
	SM13-P / 6-WAY MULTILOCK 070 / YELLOW

RELAYS
Relay

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY - PASSENGER	BROWN	SM14-P / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW PASSENGER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
SM25-P	10-WAY MULTILOCK 070 / WHITE	BEHIND PASSENGER SEAT BACK FINISHER

GROUNDS

Ground	Location / Type
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
O FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)	GROUND	B+
I FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)	GROUND (MOMENTARY)	B+
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)	GROUND	B+
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)	GROUND (MOMENTARY)	B+

Fig. 12.6

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
SEAT CUSHION HEATERS - DRIVER	SM7-D / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT CUSHION HEATERS - PASSENGER	SM7-P / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT HEATER SWITCHES (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
SEAT SQUAB HEATERS - DRIVER	SM9-D / 3-WAY MULTILOCK 070 / GREY	DRIVER SEAT
SEAT SQUAB HEATERS - PASSENGER	SM9-P / 3-WAY MULTILOCK 070 / GREY	PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY - DRIVER	BROWN	SM14-D / BROWN	FRONT SEAT RELAYS / UNDER SEAT
SEAT HEATER RELAY - PASSENGER	BROWN	SM14-P / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW PASSENGER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
O FC15-17	SEAT HEATER STATUS (LHD = PASSENGER, RHD = DRIVER)	GROUND	B+
I FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I FC15-35	SEAT HEATER REQUEST (LHD = PASSENGER, RHD = DRIVER)	GROUND (MOMENTARY)	B+
I FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O FC15-69	SEAT HEATER STATUS (LHD = DRIVER, RHD = PASSENGER)	GROUND	B+
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
I FC15-86	SEAT HEATER REQUEST (LHD = DRIVER, RHD = PASSENGER)	GROUND (MOMENTARY)	B+

Fig. 12.7

COMPONENTS

Component	Connector / Type / Color
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY
SEAT CUSHION HEATERS - DRIVER	SM7-D / 3-WAY MULTILOCK 070 / YELLOW
SEAT CUSHION HEATERS - PASSENGER	SM7-P / 3-WAY MULTILOCK 070 / YELLOW
SEAT HEATER SWITCHES (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK
SFAT SQUAB HEATERS - DRIVER	SM9-D / 3-WAY MULTILOCK 070 / GREY
SFAT SQUAB HEATERS - PASSENGER	SM9-P / 3-WAY MULTILOCK 070 / GREY

Location / Access
BULKHEAD / BEHIND GLOVE BOX
DRIVER SEAT
PASSENGER SEAT
CENTER CONSOLE SWITCH PACK
DRIVER SEAT
PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY - DRIVER	BROWN	SM14-D / BROWN	FRONT SEAT RELAYS / UNDER SEAT
SEAT HEATER RELAY - PASSENGER	BROWN	SM14-P / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW PASSENGER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CA25L	EYELET (PAIR) - PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) - DRIVER SEAT GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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.

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CONTROL MODULE PIN OUT INFORMATION

REAR SEAT CONTROL MODULE

Pin	Description	Active	Inactive
I BS1-11	LH LUMBAR SWITCH INFLATE	B+	0 V
I BS2-3	GROUND	GROUND	GROUND
I BS2-4	BATTERY POWER SUPPLY	B+	B+
I BS2-5	GROUND	GROUND	GROUND
I BS2-6	BATTERY POWER SUPPLY	B+	B+
I BS2-12	BATTERY POWER SUPPLY	B+	B+
O BS6-1	RH REAR SEAT LUMBAR PUMP FEED	B+	B+
O BS6-2	RH REAR SEAT LUMBAR DEFLATE SOLENOID VALVE	B+	0 V
O BS6-3	LH REAR SEAT MOTOR - FORE / AFT MOTOR	B+	0 V
O BS6-4	LH REAR SEAT MOTOR - FORE / AFT MOTOR	B+	0 V
O BS6-5	LH REAR SEAT - HEADREST MOTOR	B+	0 V
O BS6-6	LH REAR SEAT - HEADREST MOTOR	B+	0 V
O BS6-7	RH REAR SEAT MOTOR - FORE / AFT MOTOR	B+	0 V
O BS6-8	RH REAR SEAT MOTOR - FORE / AFT MOTOR	B+	0 V
O BS6-10	LH REAR SEAT LUMBAR PUMP FEED	B+	B+
O BS6-11	RH REAR SEAT - HEADREST MOTOR	B+	0 V
O BS6-12	RH REAR SEAT - HEADREST MOTOR	B+	0 V
I BS7-8	RH LUMBAR SWITCH - INFLATE REQUEST	B+	0 V
I BS7-9	RH FORE / AFT SWITCH - AFT REQUEST	B+	0 V
I BS7-10	RH FORE / AFT SWITCH - FORE REQUEST	B+	0 V
I BS7-14	RH HEADREST SWITCH - LOWER REQUEST	B+	0 V
I BS7-15	RH HEADREST SWITCH - RAISE REQUEST	B+	0 V
I BS7-16	LH HEADREST SWITCH - LOWER REQUEST	B+	0 V
I BS7-17	LH HEADREST SWITCH - RAISE REQUEST	B+	0 V
I BS7-18	LH FORE / AFT SWITCH - AFT REQUEST	B+	0 V
I BS7-19	LH FORE / AFT SWITCH - FORE REQUEST	B+	0 V
I BS7-20	RH LUMBAR SWITCH - DEFLECT REQUEST	B+	0 V

Fig. 12.8

COMPONENTS

Component	Connector / Type / Color	Location / Access
SEAT CONTROL MODULE - REAR	BS1 / 22-WAY MULTILOCK 47 / BLUE BS2 / 12-WAY MULTILOCK 47 / BLUE BS6 / 12-WAY MULTILOCK 47 / WHITE BS7 / 22-WAY MULTILOCK 47 / WHITE	BELLOW REAR CENTER CONSOLE
SEAT FORE / AFT MOTOR - LH REAR	BS21 / 3-WAY MULTILOCK 070 / WHITE	BELLOW SEAT CUSHION
SEAT FORE / AFT MOTOR - RH REAR	BS22 / 3-WAY MULTILOCK 070 / WHITE	BELLOW SEAT CUSHION
SEAT FORE / AFT SWITCH - LH REAR	BS3 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT FORE / AFT SWITCH - RH REAR	BS5 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEADREST MOTOR - LH REAR	BB3-L / 6-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT HEADREST MOTOR - RH REAR	BB3-R / 6-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT HEADREST SWITCH - LH REAR	BC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEADREST SWITCH - RH REAR	BC7 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP - LH REAR	BB4-L / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT LUMBAR PUMP - RH REAR	BB4-R / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT LUMBAR SWITCH - LH REAR	BC8 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT LUMBAR SWITCH - RH REAR	BC6 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK

RELAYS

Relay	Case Color	Connector / Color	Location / Access
LUMBAR DEFLECT RELAY - LH	BLUE	BS10 / BLUE	RH HEELBOARD RELAYS / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BS3	6-WAY MULTILOCK 070 / WHITE	BELLOW REAR SEAT CUSHION
BS4	20-WAY MULTILOCK 070 / WHITE	BELLOW REAR CENTER CONSOLE SEAT SWITCHES
BS5	6-WAY MULTILOCK 070 / WHITE	BELLOW REAR SEAT CUSHION
CA109	12-WAY MULTILOCK 070 / WHITE	BELLOW REAR SEAT CUSHION

GROUNDS

Ground	Location / Type
CA38L	EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW
CA110L	EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW
CA110R	EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 12.9

COMPONENTS

Component

SEAT CUSHION HEATER - LH REAR
SEAT CUSHION HEATER - RH REAR
SEAT HEATER SWITCH - LH REAR (LWB VEHICLES)
SEAT HEATER SWITCH - RH REAR (LWB VEHICLES)
SEAT HEATER TIMER - LH REAR
SEAT HEATER TIMER - RH REAR
SQUAB HEATER - LH REAR
SQUAB HEATER - RH REAR

Connector / Type / Color

BB1-L / 3-WAY MULTILOCK 070 / YELLOW
BB1-R / 3-WAY MULTILOCK 070 / YELLOW
BC1 / 10-WAY AMP MICRO QUAD LOCK / BLACK
BC2 / 10-WAY AMP MICRO QUAD LOCK / BLACK
BS8 / 5-WAY RELAY BASE / BROWN
BS9 / 5-WAY RELAY BASE / BROWN
BB5-L / 3-WAY MULTILOCK 070 / GREY
BB5-R / 3-WAY MULTILOCK 070 / GREY

Location / Access

REAR SEAT
REAR SEAT
REAR CENTER CONSOLE SWITCH PACK
REAR CENTER CONSOLE SWITCH PACK
RH HEELBOARD / HEELBOARD COVER
RH HEELBOARD / HEELBOARD COVER
REAR SEAT
REAR SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector **Type / Color**

BS3 6-WAY MULTILOCK 070 / WHITE
BS4 20-WAY MULTILOCK 070 / WHITE
BS5 6-WAY MULTILOCK 070 / WHITE
CA109 12-WAY MULTILOCK 070 / WHITE

Location / Access

BELOW REAR SEAT CUSHION
BELLOW REAR CENTER CONSOLE SEAT SWITCHES
BELLOW REAR SEAT CUSHION
BELLOW REAR SEAT CUSHION

GROUNDS

Ground **Location / Type**

CA38L EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 12.10

COMPONENTS

Component

SEAT CUSHION HEATER - LH REAR
SEAT CUSHION HEATER - RH REAR
SEAT HEATER SWITCH - LH REAR
SEAT HEATER SWITCH - RH REAR
SEAT HEATER TIMER - LH REAR
SEAT HEATER TIMER - RH REAR
SQUAB HEATER - LH REAR
SQUAB HEATER - RH REAR

Connector / Type / Color

BB1-L / 3-WAY MULTILOCK 070 / YELLOW
BB1-R / 3-WAY MULTILOCK 070 / YELLOW
BS11 / 10-WAY AMP MICRO QUAD LOCK / BLACK
BS12 / 10-WAY AMP MICRO QUAD LOCK / NATURAL
BS8 / 5-WAY RELAY BASE / BROWN
BS9 / 5-WAY RELAY BASE / BROWN
BB5-L / 3-WAY MULTILOCK 070 / GREY
BB5-R / 3-WAY MULTILOCK 070 / GREY

Location / Access

REAR SEAT
REAR SEAT
BEHIND REAR CENTER CONSOLE SWITCH PACK
BEHIND REAR CENTER CONSOLE SWITCH PACK
RH HEELBOARD / HEELBOARD COVER
RH HEELBOARD / HEELBOARD COVER
REAR SEAT
REAR SEAT

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

BS13 3-WAY MULTILOCK 070 / WHITE
BS15 3-WAY MULTILOCK 070 / WHITE
CA109 12-WAY MULTILOCK 070 / WHITE

Location / Access

BELOW REAR SEAT CUSHION
BELLOW REAR SEAT CUSHION
BELLOW REAR SEAT CUSHION

GROUNDS

Ground

Location / Type

CA38L EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I	FC15-5	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)
I	FC15-15	IGNITION SWITCHED GROUND	GROUND
I	FC15-32	IGNITION SWITCHED GROUND	GROUND
I	FC15-33	IGNITION SWITCHED GROUND	GROUND
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)
I	FC15-55	VALET REQUEST	GROUND (MOMENTARY)
I	FC15-58	NOT IN PARK MICROSWITCH STATUS	GROUND (PARK)
I	FC15-63	CENTRAL LOCKING REQUEST	GROUND (MOMENTARY)
I	FC15-67	KEY IN IGNITION	GROUND (KEY IN)
O	FC15-71	DOOR LOCKING RELAY ACTIVATE	GROUND (PULSE)
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+
S	FC15-84	SCP NETWORK	2 - 1600 Hz
S	FC15-85	SCP NETWORK	2 - 1600 Hz

DRIVER DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+
O	DD10-5	DRIVERS DOOR LOCK ACTUATOR MOTOR UNLOCK	GROUND
O	DD10-6	DRIVERS DOOR LOCK ACTUATOR MOTOR LOCK	GROUND
I	DD10-8	LOGIC GROUND	GROUND
S	DD10-9	SCP NETWORK	2 - 1600 Hz
S	DD10-10	SCP NETWORK	2 - 1600 Hz
I	DD10-16	POWER GROUND	GROUND
I	DD10-17	POWER GROUND	B+ (MOMENTARY)
I	DD11-4	DRIVER DOOR LOCK BARREL UNLOCK REQUEST	B+ (MOMENTARY)
I	DD11-12	DRIVER DOOR LOCK BARREL LOCK REQUEST	GROUND (DOOR OPEN)
I	DD11-20	DRIVER DOOR SWITCH	

DRIVER REAR DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I	RD10-1	BATTERY POWER SUPPLY	B+
O	RD10-5	DRIVER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	GROUND
O	RD10-6	DRIVER REAR DOOR LOCK ACTUATOR MOTOR LOCK	GROUND
I	RD10-8	LOGIC GROUND	GROUND
S	RD10-9	SCP NETWORK	2 - 1600 Hz
S	RD10-10	SCP NETWORK	2 - 1600 Hz
I	RD10-17	POWER GROUND	GROUND
I	RD10-19	MODULE IDENTIFICATION	GROUND
I	RD11-7	MODULE IDENTIFICATION	GROUND
I	RD11-20	DRIVER REAR DOOR SWITCH	GROUND (DOOR OPEN)

PASSENGER DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I	PD10-1	BATTERY POWER SUPPLY	B+
O	PD10-5	PASSENGER DOOR LOCK ACTUATOR MOTOR UNLOCK	GROUND
O	PD10-6	PASSENGER DOOR LOCK ACTUATOR MOTOR LOCK	GROUND
I	PD10-8	LOGIC GROUND	GROUND
S	PD10-9	SCP NETWORK	2 - 1600 Hz
S	PD10-10	SCP NETWORK	2 - 1600 Hz
I	PD10-17	POWER GROUND	GROUND
I	PD11-20	PASSENGER DOOR SWITCH	GROUND (DOOR OPEN)

PASSENGER REAR DOOR CONTROL MODULE

Pin	Description	Active	Inactive
I	RP10-1	BATTERY POWER SUPPLY	B+
O	RP10-5	PASSENGER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	GROUND
O	RP10-6	PASSENGER REAR DOOR LOCK ACTUATOR MOTOR LOCK	GROUND
I	RP10-8	LOGIC GROUND	GROUND
S	RP10-9	SCP NETWORK	2 - 1600 Hz
S	RP10-10	SCP NETWORK	2 - 1600 Hz
I	RP10-17	POWER GROUND	GROUND
I	RP11-20	PASSENGER REAR DOOR SWITCH	GROUND (DOOR OPEN)

SECURITY AND LOCKING CONTROL MODULE

Pin	Description	Active	Inactive
O	BT1-1	TRUNK RELEASE ACTUATOR ACTIVATE	B+ (PULSE)
O	BT1-2	FUEL FILLER FLAP UNLOCK RELAY ACTIVATE	B+ (PULSE)
S	BT1-8	SCP NETWORK	2 - 1600 Hz
O	BT1-10	FUEL FILLER FLAP LOCK RELAY ACTIVATE	B+
I	BT1-13	LOGIC GROUND	GROUND
I	BT1-14	LOGIC GROUND	GROUND
I	BT1-15	BATTERY POWER SUPPLY	B+
S	BT1-16	SCP NETWORK	2 - 1600 Hz
I	BT2-3	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)
I	BT2-5	TRUNK SECURITY SWITCH STATUS	GROUND (INTRUSION)
I	BT2-7	DRIVER DOOR LOCK STATUS	
I	BT2-19	PASSENGER DOOR LOCK STATUS	
I	BT6-1	KEY FOB ANTENNA	GROUND
I	BT6-2	KEY FOB ANTENNA SHIELD	

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 13.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CENTRAL LOCKING SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	RD10 / 22-WAY FORD 2.8 TIMER / BLUE RD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER	PD10 / 22-WAY FORD 2.8 TIMER / BLUE PD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER REAR	RP10 / 22-WAY FORD 2.8 TIMER / BLUE RP11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - DRIVER REAR	RD3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - PASSENGER	PD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - PASSENGER REAR	RP3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK SWITCHES - DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER	RD3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER REAR	PD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER	RP3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER REAR	BT16 / 2-WAY LABINAL / NATURAL	TRUNK / LH FRONT
FUEL FILLER FLAP LOCK ACTUATOR	FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
IGNITION SWITCH (KEY-IN SWITCH)	BT33 / 1-WAY COAXIAL CONNECTOR	TOP OF BACKLIGHT
KEY FOB ANTENNA	CC13 / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE ASSEMBLY
NOT-IN-PARK MICROSWITCH	BT1 / 16-WAY FORD 2.8 TIMER / BLACK	BELOW TRUNK FUSE BOX
SECURITY AND LOCKING CONTROL MODULE	RT2 / 26-WAY FORD IDC / BLACK	
	BT6 / 1-WAY COAXIAL CONNECTOR	
SPLICE HEADER - CA223	CA223 / 20-WAY SUMITOMO SPLICE HEADER / BLACK	RH HEELBOARD / HEELBOARD COVER
TRUNK RELEASE ACTUATOR	BT43 / 2-WAY LABINAL / BROWN	BEHIND TRUNK LID LINER
TRUNK RELEASE SWITCH	BT42 / 2-WAY MULTILOCK 040 / GREEN	BEHIND TRUNK LID LINER
TRUNK RELEASE SWITCH (FASCIA SWITCH PACK)	FC14 / 6-WAY JAE IL AGS / GREEN	FASCIA SWITCH PACK
TRUNK SWITCH	BT41 / 2-WAY AUGAT 1.6 / BLACK	BEHIND TRUNK LID LINER
VALET SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK

RELAYS

Relay	Case Color	Connector / Color	Location / Access
DOOR LOCKING RELAY	VIOLET	CA50 / VIOLET	LH HEELBOARD RELAYS / HEELBOARD COVER
FUEL FILLER FLAP LOCK RELAY	VIOLET	BT23 / VIOLET	TRUNK RELAYS / TRUNK
FUEL FILLER FLAP UNLOCK RELAY	VIOLET	BT23 / VIOLET	TRUNK RELAYS / TRUNK

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DO

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I	FC15-5 TRUNK RELEASE REQUEST
I	FC15-15 IGNITION SWITCHED GROUND
I	FC15-32 IGNITION SWITCHED GROUND
I	FC15-33 IGNITION SWITCHED GROUND
I	FC15-41 STARTER ENGAGE REQUEST
I	FC15-66 VALET REQUEST
I	FC15-58 NOT IN PARK MICROSWITCH STATUS
I	FC15-63 CENTRAL LOCKING REQUEST
I	FC15-67 KEY IN IGNITION
O	FC15-71 DOOR LOCKING RELAY ACTIVATE
I	FC15-80 BATTERY SUPPLY VOLTAGE
S	FC15-84 SCP NETWORK
S	FC15-85 SCP NETWORK

DRIVER DOOR CONTROL MODULE

Pin	Description
I	DD10-1 BATTERY POWER SUPPLY
O	DD10-5 DRIVERS DOOR LOCK ACTUATOR MOTOR UNLOCK
I	DD10-8 LOGIC GROUND
S	DD10-9 SCP NETWORK
S	DD10-16 SCP NETWORK
I	DD10-17 POWER GROUND
I	DD11-4 DRIVER DOOR LOCK BARREL UNLOCK REQUEST
I	DD11-12 DRIVER DOOR LOCK BARREL LOCK REQUEST
I	DD11-20 DRIVER DOOR SWITCH

DRIVER REAR DOOR CONTROL MODULE

Pin	Description
I	RD10-1 BATTERY POWER SUPPLY
O	RD10-5 DRIVER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK
I	RD10-8 LOGIC GROUND
S	RD10-9 SCP NETWORK
S	RD10-16 SCP NETWORK
I	RD10-17 POWER GROUND
I	RD10-19 MODULE IDENTIFICATION
I	RD11-7 MODULE IDENTIFICATION
I	RD11-20 DRIVER REAR DOOR SWITCH

PASSENGER DOOR CONTROL MODULE

Pin	Description
I	PD10-1 BATTERY POWER SUPPLY
O	PD10-5 PASSENGER DOOR LOCK ACTUATOR MOTOR UNLOCK
I	PD10-8 LOGIC GROUND
S	PD10-9 SCP NETWORK
S	PD10-16 SCP NETWORK
I	PD10-17 POWER GROUND
I	PD11-20 PASSENGER DOOR SWITCH

PASSENGER REAR DOOR CONTROL MODULE

Pin	Description
I	RP10-1 BATTERY POWER SUPPLY
O	RP10-5 PASSENGER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK
I	RP10-8 LOGIC GROUND
S	RP10-9 SCP NETWORK
S	RP10-16 SCP NETWORK
I	RP10-17 POWER GROUND
I	RP11-20 PASSENGER REAR DOOR SWITCH

SECURITY AND LOCKING CONTROL MODULE

Pin	Description
O	BT1-1 TRUNK RELEASE ACTUATOR ACTIVATE
O	BT1-2 FUEL FILLER FLAP UNLOCK RELAY ACTIVATE
S	BT1-8 SCP NETWORK
O	BT1-10 FUEL FILLER FLAP LOCK RELAY ACTIVATE
I	BT1-12 LOGIC GROUND
I	BT1-14 LOGIC GROUND
I	BT1-15 BATTERY POWER SUPPLY
S	BT1-16 SCP NETWORK
I	BT2-3 TRUNK RELEASE REQUEST
I	BT2-5 TRUNK SECURITY SWITCH STATUS
I	BT2-7 DRIVER DOOR LOCK STATUS
I	BT2-19 PASSENGER DOOR LOCK STATUS
I	BT6-1 KEY FOB ANTENNA
I	BT6-2 KEY FOB ANTENNA SHIELD

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 13.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CENTRAL LOCKING SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER	PD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER REAR	PD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - DRIVER	RP10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - DRIVER REAR	RP11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - PASSENGER	RD3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK ACTUATOR - PASSENGER REAR	RP3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR LOCK SWITCHES - DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - DRIVER REAR	RD3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER	PD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH - PASSENGER REAR	RP3 / 6-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
FUEL FILLER FLAP LOCK ACTUATOR	BT16 / 2-WAY LABINOL / NATURAL	TRUNK / LH FRONT
IGNITION SWITCH (KEY-IN SWITCH)	FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
KEY FOB ANTENNA	BT33 / 1-WAY COAXIAL CONNECTOR	TOP OF BACKLIGHT
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / YELLOW	CENTER CONSOLE ASSEMBLY
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK	BELLOW TRUNK FUSE BOX
	BT2 / 26-WAY FORD IDC / BLACK	
	BT16 / 1-WAY COAXIAL CONNECTOR	
SPLICE HEADER - CA223	CA223 / 20-WAY SUMITOMO SPLICE HEADER / BLACK	RH HEELBOARD / HEELBOARD COVER
TRUNK RELEASE ACTUATOR	BT43 / 2-WAY LABINOL / BROWN	BEHIND TRUNK LID LINER
TRUNK RELEASE SWITCH	BT42 / 2-WAY MULTILOCK 040 / GREEN	BEHIND TRUNK LID LINER
TRUNK RELEASE SWITCH (FASCIA SWITCH PACK)	FC14 / 6-WAY JAE IL-AG5 / GREEN	FASCIA SWITCH PACK
TRUNK SWITCH	BT41 / 2-WAY AUGAT 1.6 / BLACK	BEHIND TRUNK LID LINER
VALET SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK

RELAYS

Relay	Case Color	Connector / Color	Location / Access
DOOR LOCKING RELAY	VIOLET	CA50 / VIOLET	LH HEELBOARD RELAYS / HEELBOARD COVER
FUEL FILLER FLAP LOCK RELAY	VIOLET	BT23 / VIOLET	TRUNK RELAYS / TRUNK
FUEL FILLER FLAP UNLOCK RELAY	VIOLET	BT23 / VIOLET	TRUNK RELAYS / TRUNK

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA12	8-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA14	6 WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA16	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
CA45	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
CA46	4-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
FC1	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELLOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT22L	EYELET (PAIR) - TRUNK / RH CENTER GROUND STUD
BT28L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD (RH FORWARD - EARLY PRODUCTION VEHICLES)
BT34	EYELET (SINGLE) - KEY FOB ANTENNA GROUND / BACKLIGHT / CENTER
CA30R	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA31L	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA33R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA36R	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CC3L	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

Fig. 14.1

BODY PROCESSOR MODULE

Pin	Description	Active	Inactive
I FC15-6	WASHER FLUID LEVEL SENSOR	GROUND (FULL)	B+ (EMPTY)
I FC15-9	VARIABLE INTERMITTENT WIPE REQUEST		
I FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I FC15-16	SIDE LAMP REQUEST	GROUND	B+
O FC15-18	POWER WASH RELAY ACTIVATE	GROUND	B+
O FC15-19	WIPER FAST / SLOW RELAY ACTIVATE	GROUND (FAST)	B+ (SLOW)
O FC15-26	WINSHIELD WASHER PUMP ACTIVATE	B+	GROUND
I FC15-34	FAST WIPE SPEED REQUEST	GROUND	B+
I FC15-37	PROGRAMMED WASH REQUEST	GROUND (MOMENTARY)	B+
O FC15-43	WIPER RUN / STOP RELAY ACTIVATE	GROUND	B+
I FC15-60	WIPER MOTOR PARK SWITCH STATUS	GROUND (PARKED)	B+ (NOT PARKED)
I FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
I FC15-94	SLOW / FLICK WIPE REQUEST	GROUND	B+
I FC15-104	BATTERY SUPPLY VOLTAGE	B+	B+

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
FUSE BOX - ENGINE COMPARTMENT	LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL LS6 / 10-WAY U.T.A. FUSE BOX / BLACK LS7 / 10-WAY U.T.A. FUSE BOX / GREEN LS8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
POWER WASH PUMP	LS43 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	RIGHT FRONT QUARTER PANEL / WASHER FLUID CONTAINER
WASH / WIPE STALK (COLUMN SWITCHGEAR)	SC1 / 12-WAY MULTILOCK 070 / WHITE	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
WINDSHIELD WASH PUMP AND FLUID LEVEL SENSOR	LS44 / 3-WAY AUGAT 1.6 / BLACK	RIGHT FRONT QUARTER PANEL / WASHER FLUID CONTAINER
WIPER MOTOR	EM33 / 4-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / BULKHEAD

RELAYS

Relay	Case Color	Connector / Color	Location / Access
WIPER RUN / STOP RELAY	BLACK	LS11 / BLACK	ENGINE COMPARTMENT FRONT RELAYS / ENGINE COMPARTMENT
WIPER FAST / SLOW RELAY	BLACK	LS11 / BLACK	ENGINE COMPARTMENT FRONT RELAYS / ENGINE COMPARTMENT
POWERWASH RELAY	BROWN	BUS	RELAY #4, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM61	12 WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LS3	54-WAY THROUGH PANEL CONNECTOR / BLACK	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
EM17	EYELET (SINGLE) - EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS18R	EYELET (PAIR) - LH FORWARD GROUND STUD
LS19L	EYELET (PAIR) - RH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
I FC15-23	IGNITION SWITCHED GROUND
O FC15-41	STARTER ENGAGE REQUEST
O FC15-46	DRIVER DOOR - SLIDING ROOF GLOBAL CLOSE REQUEST
O FC15-47	CENTRAL LOCKING SWITCH - SLIDING ROOF GLOBAL OPEN REQUEST
I FC15-53	CENTRAL LOCKING REQUEST
S FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-89	REAR WINDOW INHIBIT REQUEST

DRIVER DOOR CONTROL MODULE

Pin	Description
I DD10-1	BATTERY POWER SUPPLY
O DD10-7	WINDOW LIFT MOTOR DOWN SUPPLY
D DD10-8	LOGIC GROUND
S DD10-9	SCP NETWORK
I DD10-10	DRIVER DOOR SWITCH PACK DRIVER WINDOW DOWN REQUEST
S DD10-15	DRIVER DOOR WINDOW LIFT MOTOR UP SUPPLY
I DD10-16	SCP NETWORK
DD10-17	POWER GROUND
I DD10-18	DRIVER DOOR SWITCH PACK DRIVER WINDOW UP REQUEST
I DD10-19	DRIVER DOOR SWITCH PACK PASSENGER WINDOW UP REQUEST
I DD11-4	DRIVER DOOR LOCK BARREL UNLOCK REQUEST
I DD11-6	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW UP REQUEST
I DD11-7	DRIVER DOOR SWITCH PACK PASSENGER WINDOW DOWN REQUEST
I DD11-12	DRIVER DOOR LOCK BARREL LOCK REQUEST
I DD11-15	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW DOWN REQUEST
I DD11-21	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW DOWN REQUEST
I DD11-22	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW UP REQUEST

DRIVER REAR DOOR CONTROL MODULE

Pin	Description
I RD10-1	BATTERY POWER SUPPLY
O RD10-7	DRIVER REAR WINDOW LIFT MOTOR DOWN SUPPLY
I RD10-8	LOGIC GROUND
S RD10-9	SCP NETWORK
O RD10-15	DRIVER REAR WINDOW LIFT MOTOR UP SUPPLY
S RD10-16	SCP NETWORK
I RD10-17	POWER GROUND
I RD10-19	MODULE IDENTIFICATION
I RD11-6	DRIVER REAR DOOR SWITCH PACK WINDOW UP REQUEST
I RD11-7	MODULE IDENTIFICATION
I RD11-21	DRIVER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST

PASSENGER DOOR CONTROL MODULE

Pin	Description
I PD10-1	BATTERY POWER SUPPLY
O PD10-7	PASSENGER WINDOW LIFT MOTOR DOWN SUPPLY
I PD10-8	LOGIC GROUND
S PD10-9	SCP NETWORK
O PD10-15	PASSENGER WINDOW LIFT MOTOR UP SUPPLY
S PD10-16	SCP NETWORK
I PD10-17	POWER GROUND
I PD11-6	PASSENGER DOOR SWITCH PACK WINDOW UP REQUEST
I PD11-21	PASSENGER DOOR SWITCH PACK WINDOW DOWN REQUEST

PASSENGER REAR DOOR CONTROL MODULE

Pin	Description
I RP10-1	BATTERY POWER SUPPLY
O RP10-7	PASSENGER REAR WINDOW LIFT MOTOR DOWN SUPPLY
I RP10-8	LOGIC GROUND
S RP10-9	SCP NETWORK
O RP10-15	PASSENGER REAR WINDOW LIFT MOTOR UP SUPPLY
S RP10-16	SCP NETWORK
I RP10-17	POWER GROUND
I RP11-6	PASSENGER REAR DOOR SWITCH PACK WINDOW UP REQUEST
I RP11-21	PASSENGER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST

SECURITY AND LOCKING CONTROL MODULE

Pin	Description
S BT1-8	SCP NETWORK
I BT1-13	LOGIC GROUND
I BT1-14	LOGIC GROUND
I BT1-15	BATTERY POWER SUPPLY
S BT1-16	SCP NETWORK
I BT6-1	KEY FOB ANTENNA
I BT6-2	KEY FOB ANTENNA SHIELD

SLIDING ROOF CONTROL MODULE

Pin	Description
I CA64-1	BATTERY SUPPLY
I CA64-2	CENTRAL LOCKING SWITCH - SLIDING ROOF GLOBAL CLOSE REQUEST
I CA64-3	GROUND SUPPLY
I CA64-4	DRIVER DOOR - SLIDING ROOF GLOBAL CLOSE REQUEST
I CA64-5	SLIDING ROOF SWITCH OPEN REQUEST
I CA64-6	SLIDING ROOF SWITCH CLOSE REQUEST
O SR2-1	SLIDING ROOF MOTOR SUPPLY
O SR2-3	SLIDING ROOF MOTOR SUPPLY

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 15.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CENTRAL LOCKING SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
DOOR CONTROL MODULE - DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - DRIVER REAR	RD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER	PD10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR CONTROL MODULE - PASSENGER REAR	RP10 / 22-WAY FORD 2.8 TIMER / BLUE	DOOR CASING / TRIM PANEL
DOOR LOCK SWITCHES - DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
INSTRUMENT PACK	FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK	FASCIA
KEY FOB ANTENNA	FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK	TOP OF BACKLIGHT
REAR WINDOW INHIBIT SWITCH (DRIVER DOOR SWITCH PACK)	BT33 / 1-WAY COAXIAL CONNECTOR	DOOR TRIM PANEL
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK	BELLOW TRUNK FUSE BOX
SLIDING ROOF CONTROL MODULE	BT2 / 25-WAY FORD IDC / BLACK	ROOF CONSOLE
SLIDING ROOF MOTOR	CA64 / 6-WAY MULTILOCK 070 / WHITE	ROOF CONSOLE
SLIDING ROOF SWITCH (ROOF CONSOLE)	SR2 / 3-WAY MULTILOCK 070 / WHITE	ROOF CONSOLE
SWITCH PACK - DRIVER REAR DOOR	CA53 / 8-WAY MULTILOCK 040 / BLACK	DOOR TRIM PANEL
SWITCH PACK - PASSENGER DOOR	RD1 / 5-WAY LAG / GREEN	DOOR TRIM PANEL
SWITCH PACK - PASSENGER REAR DOOR	PD1 / 26-WAY MQS-26 / YELLOW	DOOR TRIM PANEL
WINDOW LIFT MOTOR - DRIVER	RP1 / 5-WAY LAG / GREEN	DOOR CASING / TRIM PANEL
WINDOW LIFT MOTOR - DRIVER REAR	DD16 / 2-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
WINDOW LIFT MOTOR - PASSENGER	RD16 / 2-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
WINDOW LIFT MOTOR - PASSENGER REAR	RP16 / 2-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
WINDOW LIFT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26 WAY MQS 26 / YELLOW	DOOR TRIM PANEL

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8 WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA12	8-WAY MULTILOCK 070 / YELLOW	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA16	6-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT22L	EYELET (PAIR) - TRUNK / RH CENTER GROUND STUD
BT34	EYELET (SINGLE) - KEY FOB ANTENNA GROUND / BACKLIGHT / CENTER
CA30L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CA30R	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA33L	EYELET (PAIR) - RH 'A' POST GROUND SCREW
CA33R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE
CA36L	EYELET (PAIR) - LH 'A' POST GROUND SCREW
CC3R	EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

Pin	Description
I FC15-15	IGNITION SWITCHED GROUND
O FC15-33	IGNITION SWITCHED GROUND
O FC15-41	DRIVER DOOR SLIDING ROOF GLOBAL CLOSE REQUEST
O FC15-46	CENTRAL LOCKING SWITCH - SLIDING ROOF GLOBAL OPEN REQUEST
I FC15-47	CENTRAL LOCKING SWITCH
I FC15-63	CENTRAL LOCKING REQUEST
I FC15-80	BATTERY SUPPLY VOLTAGE
S FC15-84	SCP NETWORK
S FC15-85	SCP NETWORK
I FC15-89	REAR WINDOW INHIBIT REQUEST

DRIVER DOOR CONTROL MODULE

Pin	Description
I DD10-1	BATTERY POWER SUPPLY
O DD10-7	WINDOW LIFT MOTOR DOWN SUPPLY
I DD10-8	LOGIC GROUND
S DD10-9	SCP NETWORK
I DD10-10	DRIVER DOOR SWITCH PACK DRIVER WINDOW DOWN REQUEST
O DD10-15	DRIVER DOOR WINDOW LIFT MOTOR UP SUPPLY
S DD10-16	SCP NETWORK
I DD10-17	POWER GROUND
I DD10-18	DRIVER DOOR SWITCH PACK DRIVER WINDOW UP REQUEST
I DD10-19	DRIVER DOOR SWITCH PACK PASSENGER WINDOW UP REQUEST
I DD11-4	DRIVER DOOR LOCK BARREL UNLOCK REQUEST
I DD11-6	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW UP REQUEST
I DD11-7	DRIVER DOOR SWITCH PACK PASSENGER WINDOW DOWN REQUEST
I DD11-12	DRIVER DOOR LOCK BARREL LOCK REQUEST
I DD11-15	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW DOWN REQUEST
I DD11-21	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW DOWN REQUEST
I DD11-22	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW UP REQUEST

DRIVER REAR DOOR CONTROL MODULE

Pin	Description
I RD10-1	BATTERY POWER SUPPLY
O RD10-7	DRIVER REAR WINDOW LIFT MOTOR DOWN SUPPLY
I RD10-8	LOGIC GROUND
S RD10-9	SCP NETWORK
O RD10-15	DRIVER REAR WINDOW LIFT MOTOR UP SUPPLY
S RD10-16	POWER GROUND
I RD10-17	MODULE IDENTIFICATION
I RD11-6	DRIVER REAR DOOR SWITCH PACK WINDOW UP REQUEST
I RD11-7	MODULE IDENTIFICATION
I RD11-21	DRIVER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST

PASSENGER DOOR CONTROL MODULE

Pin	Description
I PD10-1	BATTERY POWER SUPPLY
O PD10-7	PASSENGER WINDOW LIFT MOTOR DOWN SUPPLY
I PD10-8	LOGIC GROUND
S PD10-9	SCP NETWORK
O PD10-15	PASSENGER WINDOW LIFT MOTOR UP SUPPLY
S PD10-16	SCP NETWORK
I PD10-17	POWER GROUND
I PD11-6	PASSENGER DOOR SWITCH PACK WINDOW UP REQUEST
I PD11-21	PASSENGER DOOR SWITCH PACK WINDOW DOWN REQUEST

PASSENGER REAR DOOR CONTROL MODULE

Pin	Description
I RP10-1	BATTERY POWER SUPPLY
O RP10-7	PASSENGER REAR WINDOW LIFT MOTOR DOWN SUPPLY
I RP10-8	LOGIC GROUND
S RP10-9	SCP NETWORK
O RP10-15	PASSENGER REAR WINDOW LIFT MOTOR UP SUPPLY
S RP10-16	SCP NETWORK
I RP10-17	POWER GROUND
I RP11-6	PASSENGER REAR DOOR SWITCH PACK WINDOW UP REQUEST
I RP11-21	PASSENGER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST

SECURITY AND LOCKING CONTROL MODULE

Pin	Description
S BT1-8	SCP NETWORK
BT1-13	LOGIC GROUND
BT1-14	LOGIC GROUND
BT1-15	BATTERY POWER SUPPLY
S BT1-16	SCP NETWORK
BT6-1	KEY FOB ANTENNA
BT6-2	KEY FOB ANTENNA SHIELD

SLIDING ROOF CONTROL MODULE

Pin	Description
I CA64-1	BATTERY SUPPLY
CA64-2	CENTRAL LOCKING SWITCH - SLIDING ROOF GLOBAL CLOSE REQUEST
CA64-3	GROUND SUPPLY
CA64-4	DRIVER DOOR - SLIDING ROOF GLOBAL CLOSE REQUEST
CA64-5	SLIDING ROOF SWITCH OPEN REQUEST
CA64-6	SLIDING ROOF SWITCH CLOSE REQUEST
O SR2-1	SLIDING ROOF MOTOR SUPPLY
O SR2-3	SLIDING ROOF MOTOR SUPPLY

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 15.2

COMPONENTS

Component

BODY PROCESSOR MODULE

CENTRAL LOCKING SWITCH

(CENTER CONSOLE SWITCH PACK)

DOOR CONTROL MODULE - DRIVER

DOOR CONTROL MODULE - DRIVER REAR

DOOR CONTROL MODULE - PASSENGER

DOOR CONTROL MODULE - PASSENGER REAR

DOOR LOCK SWITCHES - DRIVER

INSTRUMENT PACK

KEY FOB ANTENNA

REAR WINDOW INHIBIT SWITCH

(DRIVER DOOR SWITCH PACK)

SECURITY AND LOCKING CONTROL MODULE

SLIDING ROOF CONTROL MODULE

SLIDING ROOF MOTOR

SLIDING ROOF SWITCH

(ROOF CONSOLE)

SWITCH PACK - DRIVER REAR DOOR

SWITCH PACK - PASSENGER DOOR

WINDOW LIFT MOTOR - DRIVER

WINDOW LIFT MOTOR - DRIVER REAR

WINDOW LIFT MOTOR - PASSENGER

WINDOW LIFT MOTOR - PASSENGER REAR

WINDOW LIFT SWITCH

(DRIVER DOOR SWITCH PACK)

RD1 / 5-WAY LAG / GREEN

RD1 / 26-WAY MQS-26 / YELLOW

RP1 / 5-WAY LAG / GREEN

DD16 / 2-WAY ECONOSEAL III LC / BLACK

RD16 / 2-WAY ECONOSEAL III LC / BLACK

RP16 / 2-WAY ECONOSEAL III LC / BLACK

DD1 / 26-WAY MQS-26 / YELLOW

Connector / Type / Color

FC15 / 14-WAY AMP EEEC / GREY

CC1 / 16-WAY FORD IDC S.U. / BLACK

DD10 / 22-WAY FORD 2.8 TIMER / BLUE

DD11 / 22-WAY FORD 2.8 TIMER / BLACK

RD10 / 22-WAY FORD 2.8 TIMER / BLUE

RD11 / 22-WAY FORD 2.8 TIMER / BLACK

RP10 / 22-WAY FORD 2.8 TIMER / BLUE

RP11 / 22-WAY FORD 2.8 TIMER / BLACK

DD3 / 13-WAY ECONOSEAL III LC / BLACK

FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK

FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK

BT33 / 1-WAY COAXIAL CONNECTOR

DD1 / 26-WAY MOS-26 / YELLOW

BT1 / 16-WAY FORD 2.8 TIMER / BLACK

BT2 / 26-WAY FORD IDC / BLACK

BT6 / 1-WAY COAXIAL CONNECTOR

CA64 / 6-WAY MULTILOCK 070 / WHITE

SR2 / 3-WAY MULTILOCK 070 / WHITE

CA63 / 8-WAY MULTILOCK 040 / BLACK

RD1 / 5-WAY LAG / GREEN

RD1 / 26-WAY MQS-26 / YELLOW

RP1 / 5-WAY LAG / GREEN

DD16 / 2-WAY ECONOSEAL III LC / BLACK

RD16 / 2-WAY ECONOSEAL III LC / BLACK

RP16 / 2-WAY ECONOSEAL III LC / BLACK

DD1 / 26-WAY MQS-26 / YELLOW

DRIVER 'A' POST / DOOR HARNESS GAITER

DRIVER 'B/C' POST / DOOR HARNESS GAITER

PASSENGER 'A' POST / DOOR HARNESS GAITER

PASSENGER 'B/C' POST / DOOR HARNESS GAITER

BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY

BELOW DRIVER SIDE AIR VENT / COIN TRAY

ABOVE DIMMER MODULE / COIN TRAY

CONTROL MODULE PIN OUT INFORMATION

INSTRUMENT PACK

Pin	Description
C FC24-24	CAN NETWORK
C FC24-47	CAN NETWORK

RADIO / CASSETTE HEAD UNIT

Pin	Description
I IC10-1	VEHICLE SPEED
I IC10-2	STEERING WHEEL AUDIO CONTROLS
O IC10-5	ANTENNA UP

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 16.1

COMPONENTS

Component

ANTENNA MOTOR
CD AUTO-CHANGER
INSTRUMENT PACK

RADIO / CASSETTE HEAD UNIT

Radio Antenna

RADIO CONTROL SWITCHES (STEERING WHEEL)
RADIO TELEPHONE CONNECTOR
SPEAKER, 'A' POST TWEETER - LH
SPEAKER, 'A' POST TWEETER - RH
SPEAKER, REAR DOOR MID-BASS - DRIVER SIDE
SPEAKER, REAR DOOR MID-BASS - PASSENGER SIDE
SPEAKER, REAR DOOR TWEETER - DRIVER SIDE
SPEAKER, REAR DOOR TWEETER - PASSENGER SIDE
SPEAKER, FRONT DOOR MID-BASS - DRIVER SIDE
SPEAKER, FRONT DOOR MID-BASS - PASSENGER SIDE
SPEAKER, FRONT DOOR TWEETER - DRIVER SIDE
SPEAKER, FRONT DOOR TWEETER - PASSENGER SIDE

HARNESS-TO-HARNESS CONNECTORS

Connector

BT4
CA10
CA12
CA14
CA16
FC5
IC1
IC3
SC3

54-WAY THROUGH PANEL / BLACK
8-WAY MULTILOCK 070 / YELLOW
8-WAY MULTILOCK 070 / YELLOW
6-WAY MULTILOCK 070 / WHITE
6-WAY MULTILOCK 070 / WHITE
54-WAY THROUGH PANEL CONNECTOR / BLACK
14-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / GREY

Type / Color

54-WAY THROUGH PANEL / BLACK
8-WAY MULTILOCK 070 / YELLOW
8-WAY MULTILOCK 070 / YELLOW
6-WAY MULTILOCK 070 / WHITE
6-WAY MULTILOCK 070 / WHITE
54-WAY THROUGH PANEL CONNECTOR / BLACK
14-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / GREY

Location / Access

BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
DRIVER 'A' POST / DOOR HARNESS GAITER
PASSENGER 'A' POST / DOOR HARNESS GAITER
DRIVER 'B/C' POST / DOOR HARNESS GAITER
PASSENGER 'B/C' POST / DOOR HARNESS GAITER
BELOW DRIVER SIDE AIR VENT / COIN TRAY
LH HEELBOARD
LH HEELBOARD
ADJACENT TO STEERING COLUMN MOTOR

GROUNDS

Ground

BT28L
CE2
FC17R

Location / Type

EYELET (PAIR) - TRUNK / RH CENTER GROUND STUD (RH FORWARD - EARLY PRODUCTION VEHICLES)
EYELET (SINGLE) - RADIO GROUND STUD / TRANSMISSION TUNNEL / CENTER
EYELET (PAIR) - EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 16.2

INSTRUMENT PACK

Pin	Description
C FC24-24	CAN NETWORK
C FC24-47	CAN NETWORK
O FC25-20	VEHICLE SPEED

Active
15 – 1500 Hz
15 – 1500 Hz

Inactive
22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+

POWER AMPLIFIER

Pin	Description
I IC30-1	RH REAR CHANNEL LOW LEVEL INPUT
I IC30-2	RH FRONT CHANNEL LOW LEVEL INPUT
SG IC30-3	SIGNAL GROUND
I IC30-6	LH REAR CHANNEL LOW LEVEL INPUT
I IC30-7	LH FRONT CHANNEL LOW LEVEL INPUT
I IC31-1	AMPLIFIER TRIGGER ON SIGNAL

Active
0 – 30 mV
0 – 30 mV
GROUND
0 – 30 mV
0 – 30 mV
B+

Inactive
0 mV
0 mV
GROUND
0 mV
0 mV
GROUND

RADIO / CASSETTE HEAD UNIT

Pin	Description
I IC10-1	VEHICLE SPEED
I IC10-2	STEERING WHEEL AUDIO CONTROLS
O IC10-5	ANTENNA UP

Active
22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+
0 V = MODE, 1.2 V = SEEK, 2.4 V = VOLUME '+', 3.7 V = VOLUME '-'
B+

Inactive
5V
GROUND

NOTE: REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

COMPONENTS

Component

ANTENNA MOTOR
CD AUTO-CHANGER
INSTRUMENT PACK

POWER AMPLIFIER

RADIO / CASSETTE HEAD UNIT

RADIO ANTENNA

RADIO CONTROL SWITCHES (STEERING WHEEL)

RADIO TELEPHONE CONNECTOR

SPEAKER, 'A' POST TWEETER – LH

SPEAKER, 'A' POST TWEETER – RH

SPEAKER, REAR DOOR MID-BASS – DRIVER SIDE

SPEAKER, REAR DOOR MID-BASS – PASSENGER SIDE

SPEAKER, REAR DOOR TWEETER – DRIVER SIDE

SPEAKER, REAR DOOR TWEETER – PASSENGER SIDE

SPEAKER, FRONT DOOR MID-BASS – DRIVER SIDE

SPEAKER, FRONT DOOR MID-BASS – PASSENGER SIDE

SUBWOOFER

HARNESS-TO-HARNESS CONNECTORS

Connector

BT4

CA10

CA12

CA14

CA16

FC5

IC1

IC3

SC3

54-WAY THROUGH PANEL / BLACK
8-WAY MULTILOCK 070 / YELLOW
8-WAY MULTILOCK 070 / YELLOW
6-WAY MULTILOCK 070 / WHITE
6-WAY MULTILOCK 070 / WHITE
54-WAY THROUGH PANEL CONNECTOR / BLACK
14-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / WHITE
12-WAY MULTILOCK 070 / GREY

LOCATION / ACCESS

BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
DRIVER 'A' POST / DOOR HARNESS GAITER
PASSENGER 'A' POST / DOOR HARNESS GAITER
DRIVER 'B/C' POST / DOOR HARNESS GAITER
PASSENGER 'B/C' POST / DOOR HARNESS GAITER
BELOW DRIVER SIDE AIR VENT / COIN TRAY
LH HEELBOARD
LH HEELBOARD
ADJACENT TO STEERING COLUMN MOTOR

GROUNDS

Ground

Location / Type

BT22R
BT28L
CE2
FC17R
EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (RH FORWARD – EARLY PRODUCTION VEHICLES)
EYELET (SINGLE) – RADIO GROUND STUD / TRANSMISSION TUNNEL / CENTER
EYELET (PAIR) – EMS BULKHEAD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input
O Output
SG Signal Ground
D Serial and encoded communications
C CAN (Network)
S SCP Network

B+ Battery voltage
V Voltage (DC)
Hz Frequency

KHz Frequency x 1000
MS Milliseconds
MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

Fig. 16.3

COMPONENTS

Component

TELEPHONE ANTENNA

TELEPHONE HANDSET

TELEPHONE MICROPHONE

TELEPHONE TRANSCEIVER

Connector / Type / Color

RT64 / COAXIAL CONNECTOR

RT65 / COAXIAL CONNECTOR

RT66 / COAXIAL CONNECTOR

RT5 / TELEPHONE / PROPRIETARY

CA67 / 2-WAY MULTILOCK 040 / BLUE

RT3 / TELEPHONE / PROPRIETARY

RT4 / TELEPHONE / PROPRIETARY

Location / Access

BELOW CENTER CONSOLE GLOVE BOX
HEATED BACKLIGHT / HEADLINING / REAR
CENTER CONSOLE

CENTER CONSOLE

ROOF CONSOLE

CENTER CONSOLE

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

RT1 TELEPHONE / PROPRIETARY

RT2 10-WAY MULTILOCK 070 / WHITE

Location / Access

CENTER CONSOLE

BELOW CENTER CONSOLE GLOVE BOX

GROUNDS

Ground

Location / Type

CA38R EYELET (PAIR) - LH HEELBOARD POST GROUND SCREW

REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS,
CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 17.1

AIRBAG / SRS SINGLE POINT SENSOR

Pin	Description	Active
O CA61-1	LH SEAT BELT PRETENSIONER POWER SUPPLY	B+
O CA61-2	LH SEAT BELT PRETENSIONER GROUND SUPPLY	GROUND
O CA61-3	RH SEAT BELT PRETENSIONER POWER SUPPLY	B+
O CA61-4	RH SEAT BELT PRETENSIONER GROUND SUPPLY	GROUND
I CA61-5	IGNITION SUPPLY VOLTAGE	B+
I CA61-6	GROUND SUPPLY	GROUND
O CA61-7	INSTRUMENT PACK 'SRS' MIL	GROUND (NO FAULT)
D CA61-9	DIAGNOSTIC OUTPUT SERIAL OUTPUT	ENCODED COMMUNICATION
O CA61-10	STEERING WHEEL AIRBAG POWER SUPPLY	B+
O CA61-11	STEERING WHFFL AIRBAG GROUND SUPPLY	GROUND
O CA61-13	PASSENGER FASCIA AIRBAG POWER SUPPLY	B+
O CA61-14	PASSENGER FASCIA AIRBAG GROUND SUPPLY	GROUND
O CA61-16	DRIVER SIDE AIRBAG POWER SUPPLY	B+
O CA61-17	DRIVER SIDE AIRBAG GROUND SUPPLY	GROUND
O CA61-18	PASSENGER SIDE AIRBAG POWER SUPPLY	B+
O CA61-19	PASSENGER SIDE AIRBAG GROUND SUPPLY	GROUND
I CA61-20	LH SIDE IMPACT SENSOR GROUND SUPPLY	GROUND
I CA61-21	RH SIDE IMPACT SENSOR GROUND SUPPLY	GROUND
I CA61-22	LH SIDE IMPACT SENSOR STATUS	GROUND (SHORTED)
I CA61-23	RH SIDE IMPACT SENSOR STATUS	GROUND (SHORTED)
I CA61-24	LH SIDE IMPACT SENSOR GROUND SUPPLY STATUS	GROUND (NO FAULT)
I CA61-25	RH SIDE IMPACT SENSOR GROUND SUPPLY STATUS	GROUND (NO FAULT)
O CA61-40	SRS AUDIBLE BACKUP	ENCODED COMMUNICATIONS

Inactive

OPEN CIRCUIT
OPEN CIRCUIT
OPEN CIRCUIT
OPEN CIRCUIT
GROUND
GROUND
B+

OPEN CIRCUIT
B+
B+
B+
B+
GROUND
GROUND

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIRBAG / SRS SINGLE POINT SENSOR	CA61 / 50-WAY ELO50 / YELLOW	BELLOW CENTER CONSOLE ASSEMBLY
AIRBAG - DRIVER SIDE	SW11 / 3-WAY EPC / BLACK	CENTER OF STEERING WHEEL
AIRBAG - PASSENGER SIDE	CA61 / 3 WAY CARDEL / FORD / GREY	PASSENGER AIR BAG
SEAT BELT PRETENSIONER - LH	CA62 / 2-WAY FORD AIRBAG / YELLOW	INSIDE LH 'B/C POST / 'B/C' POST TRIM
SEAT BELT PRETENSIONER - RH	CA65 / 2-WAY FORD AIRBAG / YELLOW	INSIDE RH 'B/C POST / 'B/C' POST TRIM
SIDE AIRBAG - DRIVER	SM15-D / 2-WAY AMPHENOL / YELLOW	DRIVER SEAT / SIDE
SIDE AIRBAG - PASSENGER	SM15-P / 2-WAY AMPHENOL / YELLOW	PASSENGER SEAT / SIDE
SIDE IMPACT SENSOR - LH	CA15 / 3-WAY MOLEX C-GRID / BLACK	INSIDE 'B/C' POST / 'B/C' POST TRIM
SIDE IMPACT SENSOR - RH	CA22 / 3-WAY MOLEX C-GRID / BLACK	INSIDE 'B/C' POST / 'B/C' POST TRIM
SPLICER HEADER - CA225	CA225 / 20-WAY SUMITOMO SPLICE HEADER / NATURAL	LH HEELBOARD / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CA66	3-WAY FORD / CARD / BLACK	BELOW SEAT
CA72	3-WAY FORD / CARD / BLACK	BELOW SEAT
FC5	54-WAY THROUGH PANEL CONNECTOR / BLACK	BELOW DRIVER SIDE AIR VENT / COIN TRAY
SW10	3-WAY EPC / BLACK	CENTER OF STEERING WHEEL

GROUNDS

Ground	Location / Type
C448	EYELET (SINGLE) – RH HEEL BOARD POST GROUND SCREW (AIRBAG ONLY GROUND)

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I	Input	D	Serial and encoded communications	B+	Battery voltage	KHz	Frequency x 1000
O	Output	C	CAN (Network)	V	Voltage (DC)	MS	Milliseconds
SG	Signal Ground	S	SCP Network	Hz	Frequency	MV	Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

Fig. 18.1

BODY PROCESSOR MODULE

Pin	Description
I FC15-4	HORN ACTIVATE REQUEST
O FC15-70	HORN RELAY ACTIVATE
I FC15-80	BATTERY SUPPLY VOLTAGE

Active	Inactive
GROUND (MOMENTARY)	B+
GROUND (MOMENTARY)	B+
BATTERY SUPPLY VOLTAGE	B+

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
CIGAR LIGHTER - FRONT	CA74 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
CIGAR LIGHTER - REAR	CA75 / 2-WAY CIGAR LIGHTER / YELLOW	REAR CENTER CONSOLE VENT
FUSE BOX - ENGINE COMPARTMENT	CA76 / LUCAR - LOCKING POSILOCK MKI LS5 / 10-WAY U.T.A. FUSE BOX / NATURAL LS6 / 10-WAY U.T.A. FUSE BOX / BLACK LS7 / 10-WAY U.T.A. FUSE BOX / GREEN LS8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
FUSE BOX - TRUNK	BT10 / 10-WAY U.T.A. FUSE BOX / NATURAL BT11 / 10-WAY U.T.A. FUSE BOX / BLACK BT12 / 10-WAY U.T.A. FUSE BOX / GREEN BT13 / 10-WAY U.T.A. FUSE BOX / BLUE BT84 / EYELET	TRUNK ELECTRICAL CARRIER
HORN SWITCHES (STEERING WHEEL)	HP1 / 1-WAY BLADE HP2 / 1-WAY BLADE	CENTER OF STEERING WHEEL
HORN - LH	LS46 / LUCAR - LOCKING POSILOCK MKI LS47 / LUCAR - LOCKING POSILOCK MKI	FORWARD OF RADIATOR - LH SIDE / RADIATOR GRILLE
HORN - RH	LS48 / LUCAR - LOCKING POSILOCK MKI LS49 / LUCAR - LOCKING POSILOCK MKI	FORWARD OF RADIATOR - RH SIDE / RADIATOR GRILLE
PASSENGER COMPARTMENT ACCESSORY CONNECTOR	CA71 / 3-WAY AMP SERIES 250 PIN / BLACK	RH HEELBOARD / HEELBOARD COVER
TRUNK ACCESSORY CONNECTOR	BT25 / 3-WAY AMP SERIES 250 PIN / BLACK	ADJACENT TO BATTERY / BATTERY COVER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
HORN RELAY	BROWN	BUS	RELAY #6, ENGINE COMPARTMENT FUSE BOX / ENGINE COMPARTMENT
ACCESSORY CONNECTOR RELAY	BROWN	BUS	RELAY #6, TRUNK FUSE BOX / TRUNK

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / BLACK	BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	14-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
SC2	10-WAY MULTILOCK 070 / YELLOW	ADJACENT TO STEERING COLUMN MOTOR
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR
SW1	12-WAY MULTILOCK 040 / BLACK	INSIDE STEERING COLUMN COWL
SW2	6-WAY JST / WHITE	CENTER OF STEERING WHEEL

GROUNDS

Ground	Location / Type
BT21R	EYELET (PAIR) - TRUNK / RH REAR GROUND STUD
CA31R	EYELET (PAIR) - RH DRIVE SHAFT TUNNEL GROUND STUD
CA47L	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - RH SIDE
CA47R	EYELET (PAIR) - DRIVE SHAFT TUNNEL GROUND STUD - RH SIDE
FC17R	EYELET (PAIR) - EMS BULKHEAD GROUND STUD
LS18R	EYELET (PAIR) - LH FORWARD GROUND STUD
LS20R	EYELET (PAIR) - RH FORWARD GROUND STUD

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



The following symbols are used to represent values for Control Module Pin Out data:

I Input	D Serial and encoded communications	B+ Battery voltage	KHz Frequency x 1000
O Output	C CAN (Network)	V Voltage (DC)	MS Milliseconds
SG Signal Ground	S SCP Network	Hz Frequency	MV Millivolts

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 THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 19.1

COMPONENTS

Component

ABS / TRACTION CONTROL CONTROL MODULE
BODY PROCESSOR MODULE
DATA LINK CONNECTOR
DOOR CONTROL MODULE - DRIVER
DOOR CONTROL MODULE - DRIVER REAR
DOOR CONTROL MODULE - PASSENGER
DOOR CONTROL MODULE - PASSENGER REAR
ENGINE CONTROL MODULE
GEAR SELECTOR ILLUMINATION MODULE
INSTRUMENT PACK
SEAT CONTROL MODULE - DRIVER
SEAT CONTROL MODULE - PASSENGER
SPLICER HEADER - CA222
SPLICER HEADER - CA223
TRANSMISSION CONTROL MODULE: AJ26 N/A
TRANSMISSION CONTROL MODULE: AJ26 SC

Connector / Type / Color

LS27 / 25-WAY AMP / FORD / BLACK
FC15 / 14-WAY AMP EEEC / GREY
CC6 / 16-WAY AMP (OBD2) / BLACK
DD10 / 22-WAY FORD 2.8 TIMER / BLUE
DD11 / 22-WAY FORD 2.8 TIMER / BLACK
RD10 / 22-WAY FORD 2.8 TIMER / BLUE
RD11 / 22-WAY FORD 2.8 TIMER / BLACK
PD10 / 22-WAY FORD 2.8 TIMER / BLUE
PD11 / 22-WAY FORD 2.8 TIMER / BLACK
RP10 / 22-WAY FORD 2.8 TIMER / BLUE
RP11 / 22-WAY FORD 2.8 TIMER / BLACK
EM10 / 28-WAY MULTILOCK 040 / GREY
EM11 / 16-WAY MULTILOCK 040 / GREY
EM12 / 22-WAY MULTILOCK 040 / GREY
EM13 / 34-WAY MULTILOCK 040 / GREY
EM14 / 12-WAY MULTILOCK 47 / WHITE
EM15 / 22-WAY MULTILOCK 47 / WHITE
CC14 / 10-WAY MULTILOCK 070 / WHITE
FC24 / 48-WAY AMP MODULE PCB SIGNAL / BLACK
FC25 / 24-WAY AMP MODULE PCB SIGNAL / BLACK
SM1-D / 16-WAY FORD 2.8 TIMER / BLACK
SM2-D / 26-WAY FORD IDC / BLACK
SM3-D / 10-WAY FORD 2.8 TIMER / BLACK
SM1-P / 16-WAY FORD 2.8 TIMER / BLACK
SM3-P / 10-WAY FORD 2.8 TIMER / BLACK
CA222 / 20-WAY SUMITOMO SPLICER HEADER / GREY
CA223 / 20-WAY SUMITOMO SPLICER HEADER / BLACK
EM7 / 88-WAY BOSCH / BLACK
EM61 / 18-WAY AMP JUNIOR POWER TIMER / BLACK
EM62 / 14-WAY AMP JUNIOR POWER TIMER / BLACK

Location / Access

ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
BULKHEAD / BEHIND GLOVE BOX
TRANSMISSION TUNNEL
DOOR CASING / TRIM PANEL
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
CENTER CONSOLE ASSEMBLY
FASCIA
DRIVER SEAT / UNDER
PASSENGER SEAT / UNDER
RH HEELBOARD / HEELBOARD COVER
RH HEELBOARD / HEELBOARD COVER
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

BT4 54-WAY THROUGH PANEL / BLACK
CA8 20-WAY MULTILOCK 070 / WHITE
CA11 20-WAY MULTILOCK 070 / WHITE
CA19 20-WAY MULTILOCK 070 / YELLOW
CA23 10-WAY MULTILOCK 070 / WHITE
CA27 10-WAY MULTILOCK 070 / WHITE
CA45 6-WAY MULTILOCK 070 / WHITE
CA46 4-WAY MULTILOCK 070 / WHITE
EM1 12-WAY AUGAT 1.6 / BLACK
EM2 20-WAY MULTILOCK 070 / GREY
FC1 54-WAY THROUGH PANEL CONNECTOR / BLACK
FC7 20-WAY MULTILOCK 070 / WHITE
FC11 18-WAY MULTILOCK 070 / WHITE

Location / Access

BELLOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
DRIVER 'A' POST / DOOR HARNESS GAITER
PASSENGER 'A' POST / DOOR HARNESS GAITER
LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
BELOW DRIVER SEAT
BELOW PASSENGER SEAT
PASSENGER 'B/C' POST / DOOR HARNESS GAITER
DRIVER 'B/C' POST / DOOR HARNESS GAITER
ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
PASSENGER 'A' POST / LOWER 'A' POST FINISHER
BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
ABOVE DIMMER MODULE / COIN TRAY
ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground Location / Type

CC3L EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESSSES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.

CONTROL MODULE PIN OUT INFORMATION

REFER TO THE APPENDIX AT THE REAR OF THIS BOOK FOR CAN AND SCP NETWORK MESSAGES.

Fig. 19.2

COMPONENTS

Component

ADAPTIVE DAMPING CONTROL MODULE

AIR CONDITIONING CONTROL MODULE

AIR CONDITIONING CONTROL PANEL

AIRBAG / SRS SINGLE POINT SENSOR

BODY PROCESSOR MODULE

DATA LINK CONNECTOR

ENGINE CONTROL MODULE

KEY TRANSPONDER MODULE

SPLICER HEADER - CA225

Connector / Type / Color

EM68 / 35-WAY AMP JUNIOR POWER TIMER / BLACK

CC28 / 26-WAY MULTILOCK 47 / GREY

CC29 / 16-WAY MULTILOCK 47 / GREY

CC30 / 12-WAY MULTILOCK 47 / GREY

CC31 / 22-WAY MULTILOCK 47 / GREY

CC27 / 12-WAY MULTILOCK 040 / BLUE

CA61 / 50-WAY ELO50 / YELLOW

FC15 / 14-WAY AMP EEEC / GREY

CC6 / 16-WAY AMP (OBD2) / BLACK

EM10 / 28-WAY MULTILOCK 040 / GREY

EM11 / 16-WAY MULTILOCK 040 / GREY

EM12 / 22-WAY MULTILOCK 040 / GREY

EM13 / 34-WAY MULTILOCK 040 / GREY

EM14 / 12-WAY MULTILOCK 47 / WHITE

EM15 / 22-WAY MULTILOCK 47 / WHITE

FC22 / 20-WAY MULTILOCK 040 / GREEN

CA225 / 20-WAY SUMITOMO SPLICE HEADER / NATURAL

Location / Access

ADJACENT TO PASSENGER SIDE BLOWER /

GLOVE BOX ASSEMBLY

RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY

CENTER CONSOLE

BELLOW CENTER CONSOLE ASSEMBLY

BULKHEAD / BEHIND GLOVE BOX

TRANSMISSION TUNNEL

ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE

BELLOW INSTRUMENT PACK

LH HEELBOARD / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector Type / Color

CA19 20-WAY MULTILOCK 070 / YELLOW

EM2 20-WAY MULTILOCK 070 / GREY

EM3 14-WAY MULTILOCK 070 / WHITE

EM53 20-WAY MULTILOCK 070 / WHITE

FC11 18-WAY MULTILOCK 070 / WHITE

Location / Access

LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER

PASSENGER 'A' POST / LOWER 'A' POST FINISHER

PASSENGER 'A' POST / LOWER 'A' POST FINISHER

PASSENGER 'A' POST / LOWER 'A' POST FINISHER

ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground Location / Type

CC3L EYELET (PAIR) - RH FRONT BULKHEAD STUD / CABIN SIDE

CONTROL MODULE PIN OUT INFORMATION (FOLD OUT PAGE)



REFER TO THE FRONT OF THE BOOK FOR ILLUSTRATIONS DETAILING THE LOCATION AND IDENTIFICATION OF COMPONENTS, RELAYS, CONNECTORS, HARNESES, GROUNDS, VEHICLE CONTROL MODULES AND CONTROL MODULE PINS.



This Appendix contains a listing of CAN and SCP Network messages.

Abbreviations

The following abbreviations are used throughout this Appendix

BPM	Body Processor Module
DIAG	Diagnostics
DDCM	Driver Door Control Module
DRDCM	Driver Rear Door Control Module
DSCM	Driver Seat Control Module
INST	Instrument Pack
PDCM	Passenger Door Control Module
PRDCM	Passenger Rear Door Control Module
PSCM	Passenger Seat Control Module
R	Receive
T	Transmit
SLCM	Security and Locking Control Module



CAN Messages by Node

Node: Engine Control Module**Transmitted by ECM**

Message	Usage
CAN traction acknowledge	Confirms torque reduction for traction control
CAN traction control estimated engine torque	Derived from map of engine characteristics
CAN shift energy management estimated engine torque	Derived from map of engine characteristics
CAN throttle position	Throttle valve position
CAN pedal position	Accelerator pedal position, throttle demand
CAN torque reduction acknowledge	Confirms torque reduction for shift energy management
CAN engine speed	Engine speed
CAN brake pedal pressed	Brake switch status
CAN cruise status	Cruise control system status
CAN park brake status	Indicates whether the parking brake is on
CAN OBDII clear fault codes	Request for ABS and TCM to clear their OBDII DTCs
CAN engine coolant temperature	Engine coolant temperature in Celsius
CAN engine OBDII MIL	MIL control for OBDII DTCs
CAN throttle malfunction red	Red throttle malfunction warnings
CAN throttle malfunction amber	Amber throttle malfunction warnings
CAN ECM fault code MIL status	Indicates whether the ECM DTC should switch MIL on
CAN ECM PECUS flag	PECUS programmed status of ECM
CAN engine fault codes	ECM DTCs, including OBDII P and C codes
CAN fuel used	Derived from injector pulse duration
CAN NWM token – ECM	Message for monitoring network status
CAN diagnostic data out – ECM	To external diagnostics device only



CAN Messages by Node

Node: Engine Control Module

Received by ECM

Message	Usage	Source
CAN torque reduction throttle	For traction control – throttle intervention	ABS
CAN fast torque reduction ignition	Fast stability control response – ignition retard	ABS
CAN fast torque reduction cylinder	Fast stability control response – cylinder fuel cut off	ABS
CAN torque reduction request	For shift energy management	TCM
CAN transmission overload	Protects transmission against excessive torque	TCM
CAN transmission input speed	Transmission input shaft speed	TCM
CAN transmission output speed	Transmission output shaft speed	TCM
CAN torque converter slip	Percentage of torque converter slip	TCM
CAN kickdown	Kickdown status	TCM
CAN traction status	Indicates if the traction algorithm is functioning	ABS
CAN vehicle reference speed	Vehicle speed based on a standard wheel size	ABS
CAN ABS fault codes	ABS DTCs, including OBDII P and C codes	ABS
CAN OBDII ABS clear acknowledge	Acknowledgment that OBDII DTCs have been cleared	ABS
CAN ABS fault code MIL status	Indicates whether the ABS DTC should switch MIL on	ABS
CAN ABS malfunction	Malfunction information for ABS and brake systems	ABS
CAN sidelamp status	Side lamp state for idle speed control	INST
CAN dipped beam status	Dipped beam state for idle speed control	INST
CAN main beam status	Main beam state for idle speed control	INST
CAN oil pressure low	Indicates low engine oil pressure	INST
CAN fuel level damped	Indicates 'damped' level of fuel in tank	INST
CAN fuel level raw	Indicates 'raw – undamped' level of fuel in tank	INST
CAN gear position actual	Actual transmission gear state	TCM
CAN torque converter status	Indicates torque converter lockup	TCM
CAN gear position selected	Position of transmission rotary switch	TCM
CAN gear selection fault	Indicates validity of Can gear position selected	TCM
CAN transmission shift map	Dynamic shift program currently selected	TCM
CAN transmission oil temperature	Transmission fluid temperature	TCM
CAN transmission malfunction	Transmission malfunction warning	TCM
CAN TCM fault code MIL status	Indicates whether the TCM DTC should switch MIL on	TCM
CAN OBDII TCM clear acknowledge	Acknowledgment that OBDII DTCs have been cleared	TCM
CAN transmission fault codes	TCM DTCs, including OBDII P and C codes	TCM
CAN left front wheel speed	Left front wheel speed	ABS
CAN right front wheel speed	Right front wheel speed	ABS
CAN left rear wheel speed	Left rear wheel speed	ABS
CAN right rear wheel speed	Right rear wheel speed	ABS
CAN NWM token – TCM	Message for monitoring network status	TCM
CAN NWM token – INST	Message for monitoring network status	INST
CAN NWM token – ABS	Message for monitoring network status	ABS
CAN diagnostic data in – ECM	From external diagnostics device only	DIAG



CAN Messages by Node

Node: Transmission Control Module**Transmitted by TCM**

Message	Usage
CAN torque reduction request	For shift energy management
CAN transmission overload	Protects transmission against excessive torque
CAN transmission input speed	Transmission input shaft speed
CAN transmission output speed	Transmission output shaft speed
CAN torque converter slip	Percentage of torque converter slip
CAN kickdown	Kickdown status
CAN gear position actual	Actual transmission gear state
CAN torque converter status	Indicates torque converter lockup
CAN gear position selected	Position of transmission rotary switch
CAN gear selection fault	Indicates validity of CAN gear position selected
CAN transmission shift map	Dynamic shift program currently selected
CAN transmission oil temperature	Transmission fluid temperature
CAN transmission malfunction	Transmission malfunction warning
CAN TCM PECUS flag	PECUS programmed status of TCM
CAN gear position target	Target gear position for next shift
CAN torque transfer in progress	Indicates torque transfer in progress during gearshift
CAN TCM fault code MIL status	Indicates whether the TCM DTCs should switch MIL on
CAN OBDII TCM clear acknowledge	Acknowledgment that OBDII DTCs have been cleared
CAN transmission fault codes	TCM DTCs, including OBDII P and C codes
CAN NWM token – TCM	Message for monitoring network status
CAN diagnostic data out – TCM	To external diagnostics device only

Received by TCM

Message	Usage	Source
CAN traction status	Indicates if the traction control algorithm is functioning	ABS
CAN shift energy management estimated engine torque	Derived from map of engine characteristics	ECM
CAN throttle position	Throttle valve position	ECM
CAN pedal position	Accelerator pedal position, throttle demand	ECM
CAN torque reduction acknowledge	Confirms torque reduction for shift energy management	ECM
CAN engine speed	Engine speed	ECM
CAN brake pedal pressed	Brake switch status	ECM
CAN cruise status	Cruise control system status	ECM
CAN OBDII clear fault codes	Request for ABS and TCM to clear their OBDII DTCs	ECM
CAN engine coolant temperature	Engine coolant temperature in Celsius	ECM
CAN left front wheel speed	Left front wheel speed	ABS
CAN right front wheel speed	Right front wheel speed	ABS
CAN left rear wheel speed	Left rear wheel speed	ABS
CAN right rear wheel speed	Right rear wheel speed	ABS
CAN NWM token– ECM	Message for monitoring network status	ECM
CAN NWM token – INST	Message for monitoring network status	INST
CAN NWM token – ABS	Message for monitoring network status	ABS
CAN diagnostic data in – TCM	From external diagnostics device only	DIAG



CAN Messages by Node

Node: Instrument Pack

Transmitted by INST

Message	Usage
CAN side lamp status	Sidelamp status for idle speed control
CAN dipped beam status	Dipped beam state for idle speed control
CAN main beam status	Main beam state for idle speed control
CAN oil pressure low	Indicates low engine oil pressure
CAN fuel level damped	Indicates 'damped' level of fuel in tank
CAN fuel level raw	Indicates 'raw – undamped' level of fuel in tank
CAN NWM token INST	Message for monitoring network status
CAN diagnostic data out INST	To external diagnostics device only

Received by INST

Message	Usage	Source
CAN traction status	Indicates if the traction algorithm is functioning	ABS
CAN ABS PECUS flag	PECUS programmed status of ABS / TC CM	ABS
CAN vehicle reference speed	Vehicle speed based on a standard wheel size	ABS
CAN reference distance traveled	Rolling count – based on a standard wheel size	ABS
CAN ABS malfunction	Malfunction information for ABS and brake systems	ABS
CAN engine speed	Engine speed	ECM
CAN brake pedal pressed	Brake switch status	ECM
CAN park brake status	Indicates whether the parking brake is on	ECM
CAN gear position selected	Position of transmission rotary switch	TCM
CAN gear selection fault	Indicates validity of CAN gear position selected	TCM
CAN transmission oil temperature	Transmission fluid temperature	TCM
CAN transmission malfunction	Transmission malfunction warning	TCM
CAN TCM PECUS flag	PECUS programmed status of TCM	TCM
CAN engine coolant temperature	Engine coolant temperature in Celsius	ECM
CAN engine OBDII MIL	MIL control for OBDII DTCs	ECM
CAN throttle malfunction red	Red throttle malfunction warnings	ECM
CAN throttle malfunction amber	Amber throttle malfunction warnings	ECM
CAN ECM PECUS flag	PECUS programmed status of ECM	ECM
CAN fuel used	Derived from the injector pulse duration	ECM
CAN right rear wheel speed	Rear right wheel speed	ABS
CAN NWM token – ECM	Message for monitoring network status	ECM
CAN NWM token – TCM	Message for monitoring network status	TCM
CAN NWM token – ABS	Message for monitoring network status	ABS
CAN diagnostic data in – INST	From external diagnostics device only	DIAG



CAN Messages by Node

Node: ABS / Traction Control Control Module**Transmitted by ABS / TCCM**

Message	Usage
CAN torque reduction throttle	For traction control – throttle intervention
CAN fast torque reduction ignition	For fast stability control response – ignition retard
CAN fast torque reduction cylinder	For fast stability control response – cylinder fuel cut off
CAN traction status	Indicates if the traction control algorithm is functioning
CAN ABS PECUS flag	PECUS programmed status of ABS / TCCM
CAN vehicle reference speed	Vehicle speed based on a standard wheel size
CAN reference distance traveled	Rolling count – based on a standard wheel size
CAN ABS fault codes	ABS DTCs, including OBDII P and C codes
CAN OBDII ABS clear acknowledge	Acknowledgment that OBDII DTCs have been cleared
CAN ABS fault code MIL status	Indicates whether the ABS DTC should switch MIL on
CAN ABS malfunction	Malfunction information for ABS and brake systems
CAN ABS status	Indicates whether ABS is operating
CAN left front wheel speed	Left front wheel speed
CAN right front wheel speed	Right front wheel speed
CAN left rear wheel speed	Left rear wheel speed
CAN right rear wheel speed	Right rear wheel speed
CAN NWM token – ABS	Message for monitoring network status
CAN diagnostic data out – ABS	From external diagnostics device only

Received by ABS / TC CM

Message	Usage	Source
CAN traction acknowledge	Confirms torque reduction for traction control	ECM
CAN traction estimated engine torque	Derived from map of engine characteristics	ECM
CAN transmission input speed	Transmission input shaft speed	TCM
CAN transmission output speed	Transmission output shaft speed	TCM
CAN torque converter slip	Percentage of torque converter slop	TCM
CAN kickdown	Kickdown status	TCM
CAN throttle position	Throttle valve position	ECM
CAN pedal position	Accelerator pedal position, throttle demand	ECM
CAN engine speed	Engine speed	ECM
CAN brake pedal pressed	Brake switch status	ECM
CAN OBDII clear fault codes	Request for ABS and TCM to clear their OBDII DTCs	ECM
CAN gear position actual	Actual transmission gear state	TCM
CAN torque converter status	Indicates torque converter lockup	TCM
CAN transmission shift map	Dynamic shift program currently selected	TCM
CAN transmission malfunction	Transmission malfunction warning	TCM
CAN gear position target	Target gear position for next shift	TCM
CAN torque transfer in progress	Indicates torque transfer in progress during gearshift	TCM
CAN transmission fault codes	TCM DTCs, including OBDII P and C codes	TCM
CAN engine OBDII MIL	MIL control for OBDII DTCs	ECM
CAN throttle malfunction red	Red throttle malfunction warnings	ECM
CAN throttle malfunction amber	Amber throttle malfunction warnings	ECM
CAN ECM fault code MIL status	Indicates whether the ECM DTCs should switch MIL on	ECM
CAN engine DTCs	ECM DTCs, including OBDII P and C codes	ECM
CAN NWM token – ECM	Message for monitoring network status	ECM
CAN NWM token – TCM	Message for monitoring network status	TCM
CAN NWM token – INST	Message for monitoring network status	INST
CAN diagnostic data in – ABS	From external diagnostics device only	DIAG



CAN Messages by Node

Node: Gear Selector Illumination Module (listen Only)**Received by Gear Selector Illumination Module**

Message	Usage	Source
CAN gear position selected	Gear selector indicator illumination	TCM
CAN gear selection fault		TCM



CAN Message Matrix

T = Transmit; R = Receive

Message	ABS	ECM	TCM	INST	Gear Selector	DIAG
CAN torque reduction throttle	T	R				
CAN fast torque reduction ignition	T	R				
CAN fast torque reduction cylinder	T	R				
CAN traction acknowledge	R	T				
CAN traction control estimated engine torque	R	T				
CAN torque reduction request		R	T			
CAN transmission overload		R	T			
CAN transmission input speed	R	R	T			
CAN transmission output speed	R	R	T			
CAN torque converter slip	R	R	T			
CAN kickdown	R	R	T			
CAN traction status	T	R	R	R		
CAN ABS PECUS flag	T			R		
CAN vehicle reference speed	T	R		R		
CAN reference distance traveled	T			R		
CAN ABS fault codes	T	R				
CAN OBDII ABS clear acknowledge	T	R				
CAN ABS fault code MIL status	T	R				
CAN ABS malfunction	T	R		R		
CAN ABS status	T					
CAN shift energy management estimated engine torque			T	R		
CAN throttle position	R	T	R			
CAN pedal position	R	T	R			
CAN torque reduction acknowledge			T	R		
CAN engine speed	R	T	R	R		
CAN brake pedal pressed	R	T	R	R		
CAN cruise status			T	*R		
CAN park brake status			T	*R		
CAN OBDII clear fault codes	R	T	R			
CAN side lamp status		R		T		
CAN dipped beam status		R		T		
CAN main beam status		R		T		
CAN oil pressure low		R		T		
CAN fuel level raw		R		T		
CAN fuel level damped		R		T		
CAN gear position actual	R	R	T			
CAN torque converter status	R	R	T			
CAN gear position selected	R	R	T	R	R	
CAN gear selection fault	R	R	T	R	R	
CAN transmission shift map	R	R	T			
CAN transmission oil temperature		R	T	R		
CAN transmission malfunction	R	R	T	R		
CAN TCM PECUS flag			T	R		
CAN gear position target **	R		T			
CAN torque transfer in progress **	R		T			
CAN TCM fault code MIL status			R	T		
CAN OBDII TCM clear acknowledge			R	T		
CAN transmission fault codes	R	R	T			
CAN engine coolant temperature			T	R	R	
CAN engine OBDII MIL	R	T		R		

* NA engines only

** SC engines only



Message	ABS	ECM	TCM	INST	Gear Selector	DIAG
CAN throttle malfunction red	R	T		R		
CAN throttle malfunction amber	R	T		R		
CAN ECM fault code MIL status	R	T				
CAN ECM PECUS flag			T	R		
CAN engine fault codes	R	T				
CAN fuel used			T	R		
CAN left front wheel speed	T	R	R			
CAN right front wheel speed	T	R	R			
CAN left rear wheel speed	T	R	R			
CAN right rear wheel speed	T	R	R	R		
CAN NWM token – ECM	R	T	R	R		
CAN NWM token – TCM	R	R	T	R		
CAN NWM token – INST	R	R	R	T		
CAN NWM token – ABS	T	R	R	R		
CAN diagnostic data in – ECM			R		T	
CAN diagnostic data in – TCM				R		T
CAN diagnostic data in – INST					R	T
CAN diagnostic data in – ABS	R					T
CAN diagnostic data out – ECM			T			R
CAN diagnostic data out – TCM				T		R
CAN diagnostic data out – INST					T	R
CAN diagnostic data out – ABS	T					R



SCP Message Matrix

T = Transmit; R = Receive

#	Message Name	INST	BPM	DDCM	PDCM	DSCM	PSCM	DRDCM	PRDCM	SLCM
1	Vehicle speed	T	R	R						
2	Brake pedal pressed	T	R							R
3	Module not programmed	R	T							
4	Left hand drive vehicle		T	R						R
5	Valet mode OFF		T							R
6	Non-superlocking vehicle		T	R						
7	Trailer disconnected		R							T
8	Right hand drive vehicle		T	R						R
9	Valet mode ON		T							R
10	Superlocking ON		T	R						
11	Trailer connected		R							T
12	Reverse gear selected	T		R						R
13	Not-in-park switch - inactive		T	R	R	R			R	
14	Not-in-park switch - active		T	R	R	R			R	
15	Engine running	T	R							
16	Charging OK	T								R
17	Inertia switch - inactive		T	R	R					
18	Inertia switch - active		T	R	R					
19	Ignition switch status	R	T	R						
20	Key not-in-ignition		T	R						
21	Key in-ignition		T	R						
22	Seatbelt telltale OFF	R	T							
23	Low washer fluid warning OFF	R	T							
24	Seatbelt telltale ON	R	T							
25	Low washer fluid warning ON	R	T							
26	Security audible indication		R	T	T					T
27	Remote panic enabled		R	R	R					T
28	Intrusion sensing disabled									
29	Security disarm		R	R	R					T
30	Ignition key invalid			T						R
31	Intrusion breach			T						R
32	Intrusion self-check failure			T						R
33	Intrusion sensing enabled									
34	Security armed		R	R	R					T
35	Ignition key valid			T						R
36	Memory set chime		R							T
37	Recall memory 1		R	R	R	R				T
38	Recall memory 2		R	R	R	R				T
39	Recall memory 3		R	R	R	R				T
40	Set memory 1		R	R	R	R				T
41	Set memory 2		R	R	R	R				T
42	Set memory 3		R	R	R	R				T
43	Stop memory recall		R	R	R	R				T
44	Memory LED OFF			R						T
45	Memory recall cancelled			T	T	T	T			R
46	Memory LED ON				R					T
47	Mirror fold-flat			R	T					
48	Mirror fold-out			R	T					
49	Stop mirror				T	R				
50	Driver mirror up				T	R				
51	Passenger mirror up				T	R				
52	Driver mirror down				T	R				
53	Passenger mirror down				T	R				
54	Passenger mirror right				T	R				



#	Message Name	INST	BPM	DDCM	PDCM	DSCM	PSCM	DRDCM	PRDCM	SLCM
55	Passenger mirror left			T	R					
56	Unlock all doors			T / R	T / R			R	R	
57	Unlock fuel filler flap			T						R
58	Remote unlock			R	R	R		R		T
59	Remote trunk release			R						T
60	Lock all doors			R	T	T				
61	Lock fuel filler flap			T						R
62	Superlock all doors			T / R	T / R			R	R	
63	Remote superlock			R	R					T
64	Remote lock			R	R					T
65	Vehicle unlocked			R	T					R
66	Driver front door unlocked			R	R					T
67	Passenger front door unlocked			R	R					T
68	Exterior trunk release disabled			R	T					
69	Driver door lock cylinder status			R	T	R	R	R	R	R
70	Passenger door lock cylinder status			R	R	T	R	R	R	R
71	Remote transmitter ID							R		T
72	Vehicle locked			R	T					R
73	Driver front door locked			R	R					T
74	Passenger front door locked			R	R					T
75	Exterior trunk release enabled			R	T					
76	Central locking switch active			T	R	R				R
77	Open trunk			T						R
78	Hood closed	R	T	R	R					R
79	Driver front door closed	R	R	T	R	R	R	R	R	R
80	Passenger front door closed	R	R	R	T		R			R
81	Driver rear door closed	R	R	R	R			T		R
82	Passenger rear door closed	R	R	R	R				T	R
83	Trunk closed	R	R	R	R					T
84	Hood ajar	R	T	R	R					R
85	Driver front door ajar	R	R	T	R	R	R	R	R	R
86	Passenger front door ajar	R	R	R	T	R	R			R
87	Driver rear door ajar	R	R	R	R					R
88	Passenger rear door ajar	R	R	R	R			T		R
89	Trunk ajar	R	R	R	R					T
90	Exterior trunk release active			R						T
91	Driver seat exit position			T			R			
92	Driver seat entry / exit mode initiated			T			R			
93	Sunroof position status			R	T					
94	Stop global window close			T	R	R		R	R	R
95	Stop sunroof close			R	T					
96	Stop passenger front window			T	R					
97	Stop driver rear window			T		R				R
98	Stop passenger rear window			T						R
99	Rear window switches – enable			T				R	R	R
100	Open passenger front window			T		R				
101	Open driver rear window			T				R		
102	Open passenger rear window			T					R	
103	Global close windows			T	R	R		R	R	
104	Close driver front window			T						
105	Close sunroof			R	T					
106	Close passenger front window			T		R				
107	Close driver rear window			T				R		

(continued)



SCP Message Matrix

T = Transmit; R = Receive

#	Message Name	INST	BPM	DDCM	PDCM	DSCM	PSCM	DRDCM	PRDCM	SLCM
108	Close passenger rear window			T					R	
109	Inhibit rear window switches		 T					R	R
110	Tail lamp failure	R	T							T
111	Stop lamp failure	R								T
112	Tail lamps OK	R	T							
113	Stop lamps OK	R								T
114	Rear fog lamps OFF			T						R
115	Remote headlamps OFF			R						T
116	Rear fog lamps ON			T						R
117	Remote headlamps ON			R						T
118	Dip beam OFF	R	T							
119	Side lamps OFF	R	T							
120	Hazard lamps OFF	R	T							
121	Left DI lamps OFF	R	T							
122	Right DI lamps OFF	R	T							
123	Main beam OFF	R	T							
124	Rear fog lamps OFF			R						T
125	Main beam flash disabled			T						R
126	Dip beam ON	R	T							
127	Side lamps ON	R	T							
128	Hazard lamps ON	R	T							
129	Left DI lamps ON	R	T							
130	Right DI lamps ON	R	T							
131	Main beam ON	R	T							
132	Rear fogs status – ON			R						T
133	Main beam flash enabled			T						R
134	Interior lights OFF	R	T							
135	Interior lights ON	R	T							
136	Valet mode message OFF	R	T							
137	Valet mode message	R	T							
138	Wake-up network	T								
139	Network status – awake	T/R								
140	Entering sleep mode	T/R								