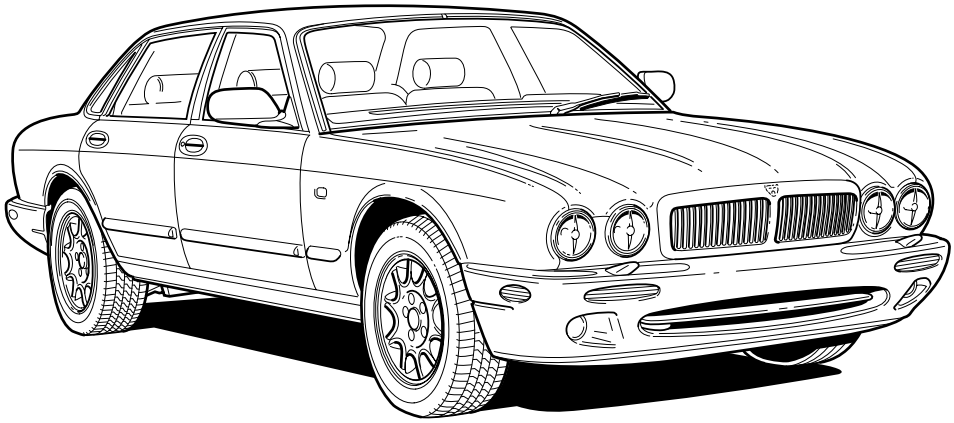
BY APPOINTMENT TO
HER MAJESTY QUEEN ELIZABETH II
MANUFACTURERS OF DAIMLER AND JAGUAR CARS
JAGUAR CARS LIMITED COVENTRY

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 2001 Electrical Guide



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JAGUAR

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:

ACP	Audio Control Protocol Network
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

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

The vehicle electrical system is a ground side switched system. The ignition switch switches ground circuits on / off to complete system circuits and apply power. Circuits that require ignition switch position control are supplied with "ignition switched grounds". Both power grounds (high current consumers) and logic grounds (electronic switching circuits) are used throughout the system.

Three data networks are employed in the vehicle: a high speed Controller Area Network (CAN) for the engine, drive train and related systems, a Standard Corporate Protocol network (SCP) for the body systems, and an Audio Control Protocol network (ACP) for certain In-Car Entertainment and Telephone functions. 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 cataloged in the Appendix of this book. In addition to the two networks, the vehicle uses a serial data bus (ISO) for diagnostics, security sounder operation and for the programming of certain control modules.

FIGURES

FIGURES

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.

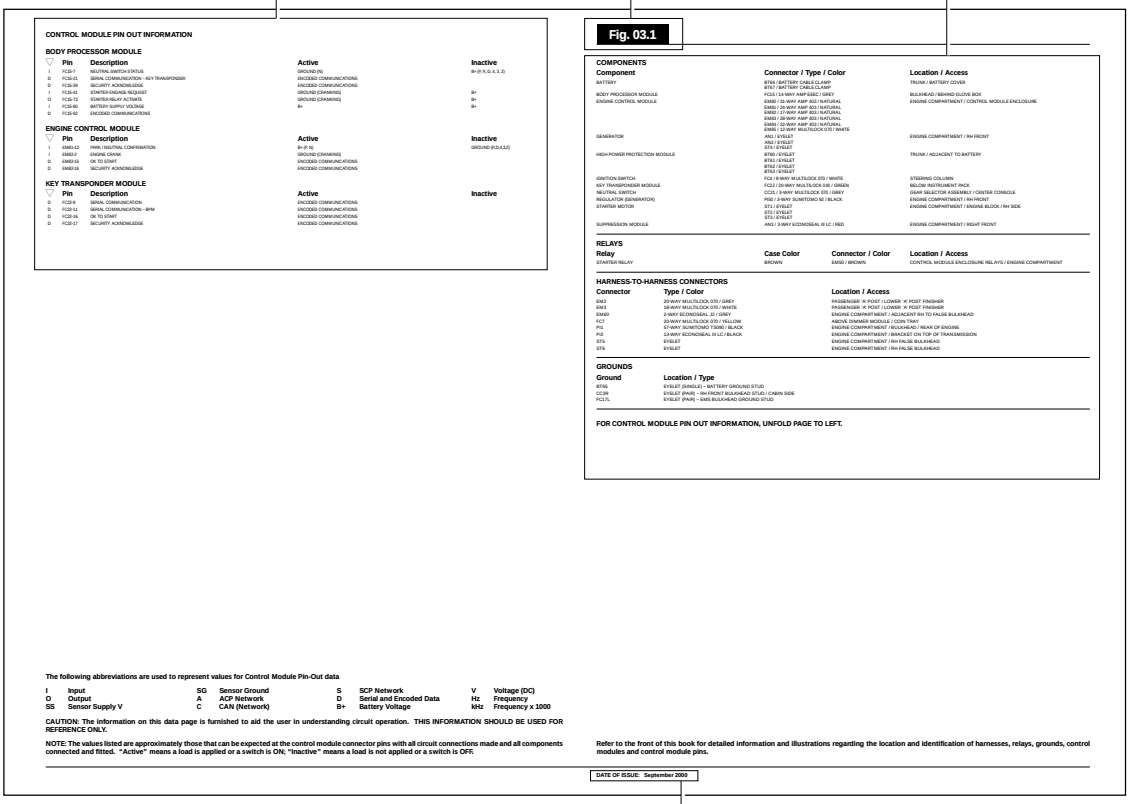
When network data is required for the understanding of a particular circuit, the user is directed to the Appendix.

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.

CONTROL MODULE PIN OUT INFORMATION

FIGURE NUMBER

COMPONENT, RELAY, CONNECTOR AND GROUND INFORMATION



CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC30-7	NEUTRAL SWITCH STATUS	GROUND (N)	B+ (P, R, D, 4, 3, 2)
D	FC33-15	SERIAL COMMUNICATION – KEY TRANSPONDER	ENCODED COMMUNICATIONS	
D	FC32-09	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	
I	FC33-01	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O	FC32-73	STARTER RELAY ACTIVATE	GROUND (CRANKING)	B+
I	FC33-60	BATTERY SUPPLY VOLTAGE	B+	B+
D	FC32-02	ENCODED COMMUNICATIONS		

ENGINE CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	EM93-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R,D,3,2)
I	EM92-2	ENGINE CRANK	GROUND (CRANKING)	
D	EM93-15	OK TO START	ENCODED COMMUNICATIONS	
D	EM92-16	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	

KEY TRANSPONDER MODULE

▽	Pin	Description	Active	Inactive
D	FC22-9	SERIAL COMMUNICATION	ENCODED COMMUNICATIONS	
D	FC22-11	SERIAL COMMUNICATION – RPM	ENCODED COMMUNICATIONS	
D	FC22-16	OK TO START	ENCODED COMMUNICATIONS	
D	FC22-17	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	

Fig. 03.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BATTERY	BT60 / BATTERY CABLE CLAMP BT67 / BATTERY CABLE CLAMP	TRUNK / BATTERY COVER
BODY PROCESSOR MODULE	FC33 / 34-WAY AMP 6382 / GREY	BULKHEAD / BEHIND GLOVE BOX
ENGINE CONTROL MODULE	EM92 / 23-WAY AMP 4023 / NATURAL EM93 / 23-WAY AMP 4023 / NATURAL EM22 / 27-WAY AMP 4023 / NATURAL EM02 / 29-WAY AMP 4023 / NATURAL EM59 / 23-WAY AMP 4023 / NATURAL EM35 / 33-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
GENERATOR	AN2 / EYELET AN3 / EYELET ST2 / EYELET	ENGINE COMPARTMENT / RH FRONT
HIGH POWER PROTECTION MODULE	BT60 / EYELET BT61 / EYELET BT62 / EYELET BT63 / EYELET	TRUNK / ADJACENT TO BATTERY
IGNITION SWITCH	FC9 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
KEY TRANSPONDER MODULE	FC22 / 20-WAY MULTILOCK 040 / GREEN	BELOW INSTRUMENT PACK
NEUTRAL SWITCH	CC33 / 3-WAY MULTILOCK 070 / GREY	GEAR SELECTOR ASSEMBLY / CENTER CONSOLE
REGULATOR (GENERATOR)	R62 / 3-WAY SUMITOMO 90 / BLACK	ENGINE COMPARTMENT / RH FRONT
STARTER MOTOR	ST1 / EYELET ST2 / EYELET ST3 / EYELET	ENGINE COMPARTMENT / ENGINE BLOCK / RH SIDE
SUPPRESSION MODULE	AN2 / 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
EM3	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM13	19-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM50	2-WAY ECONOSEAL J2 / GREY	ENGINE COMPARTMENT / ADJACENT RH TO FALSE BULKHEAD
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / CDIN TRAY
P01	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE
P02	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
BT66	EYELET (SINGLE) – BATTERY GROUND STUD
CC38	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD

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

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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

DATE OF ISSUE: September 2000

DATE OF ISSUE

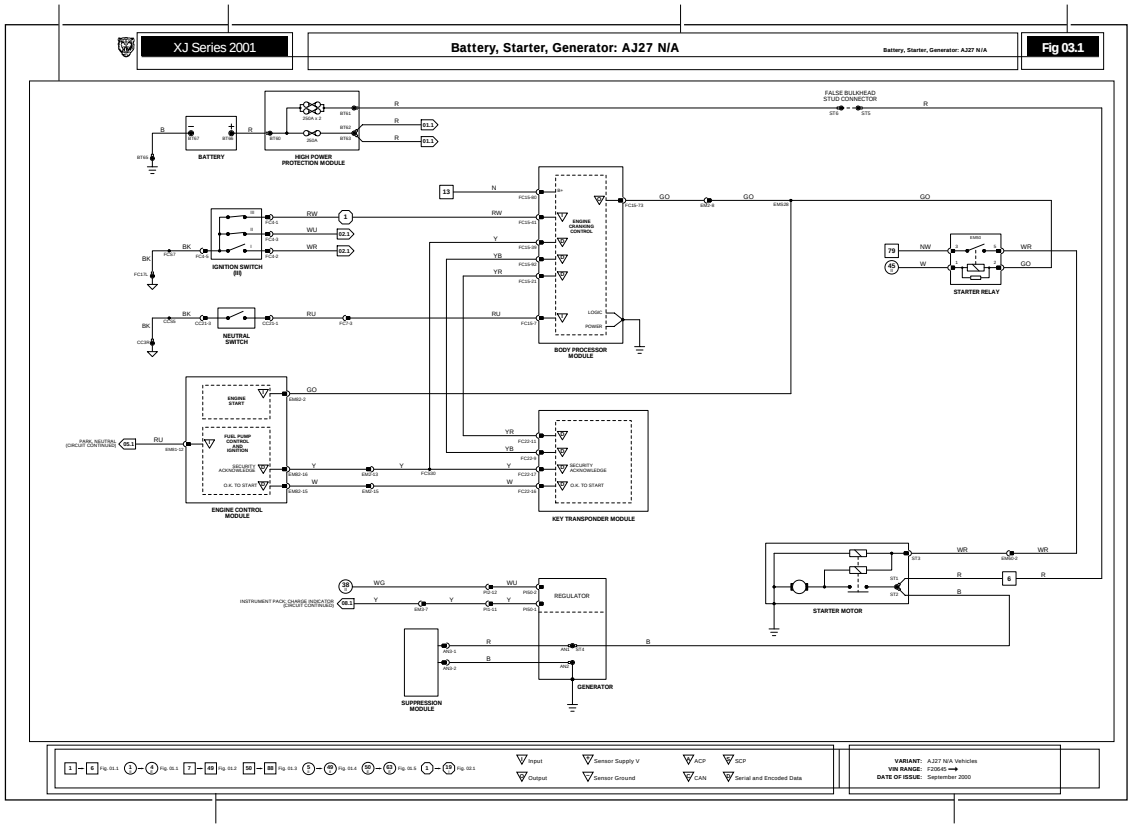
DATA PAGE

FIGURE

MODEL RANGE AND YEAR

TITLE

FIGURE NUMBER



KEY TO REFERENCE SYMBOLS

VARIANT, VIN RANGE AND DATE OF ISSUE

FIGURE PAGE

NOTE: In the examples 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

X Battery Power Supply

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

X I X II X E 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.

X XX I XX II 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).

XX.X BPM 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).

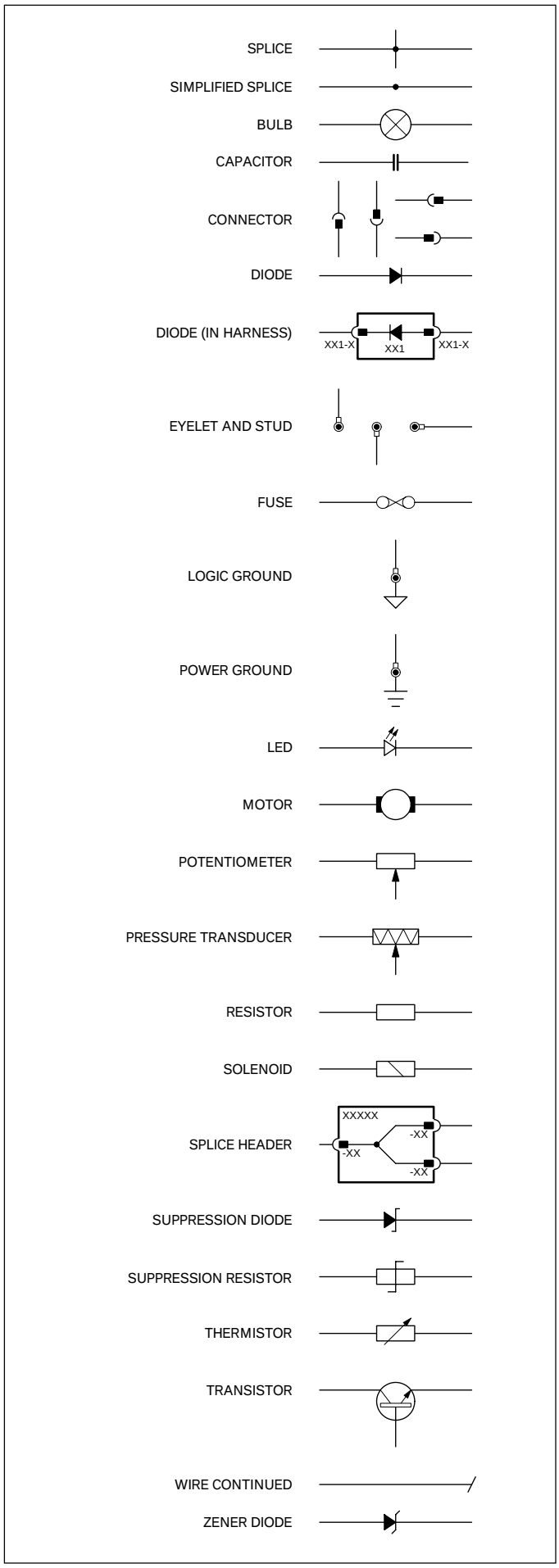
BPM Because the Body Processor Module appears numerous times, the abbreviation BPM is used in the reference flags on Figures 01.2 and 02.1 in order to conserve space.

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

I Input	+ Sensor Supply V	A ACP	S SCP
O Output	– Sensor Ground	C CAN	D Serial and Encoded Data

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



Wiring Color Codes

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

When a wire has two color code letters, the first letter indicates the main color and the subsequent letter indicates the tracer color.

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
LF	Forward harness
LL	Power steering link 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
SD	Driver seat harness
SH	Windshield heater link harness
SP	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.

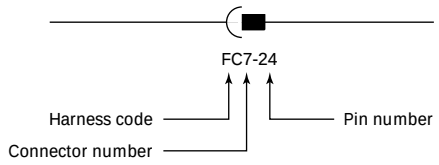
Harness Component Numbers

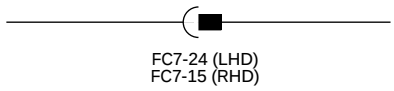
Connectors

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).



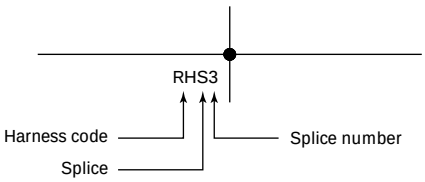


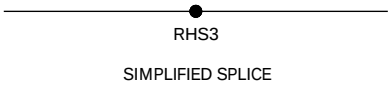
Splices

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.

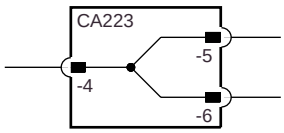




Splice Headers

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.

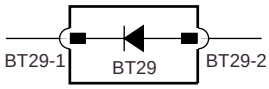
EXAMPLE:



Diodes

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

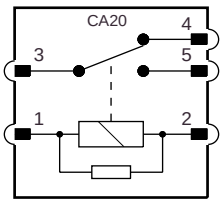
EXAMPLE:

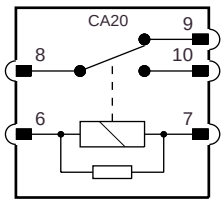


Relay Connectors

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:





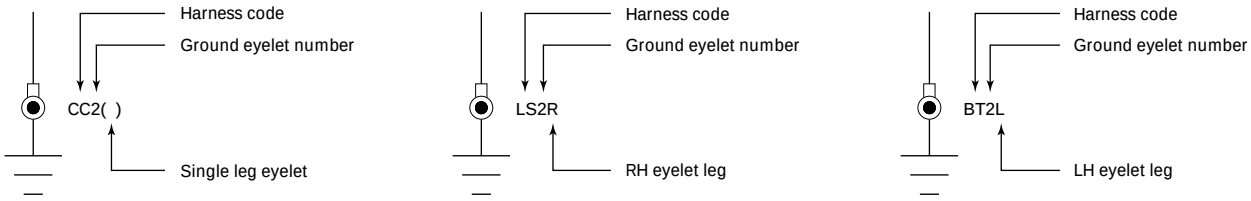
Grounds

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

Eyelet designation

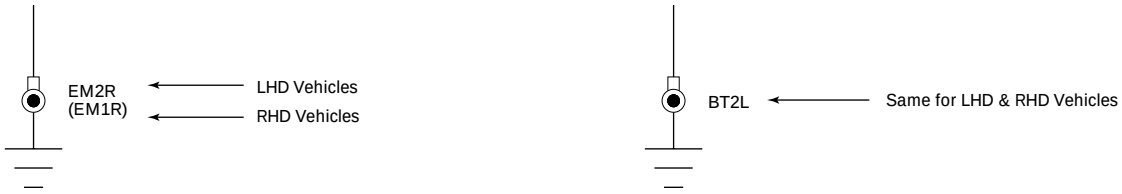
Two eyelet variations are used: a single eyelet and an eyelet pair. The single eyelet has a single 'leg' and can be identified by the absence of a suffix. The eyelet pair has two 'legs', identified by the suffix L (left) or R (right).

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:

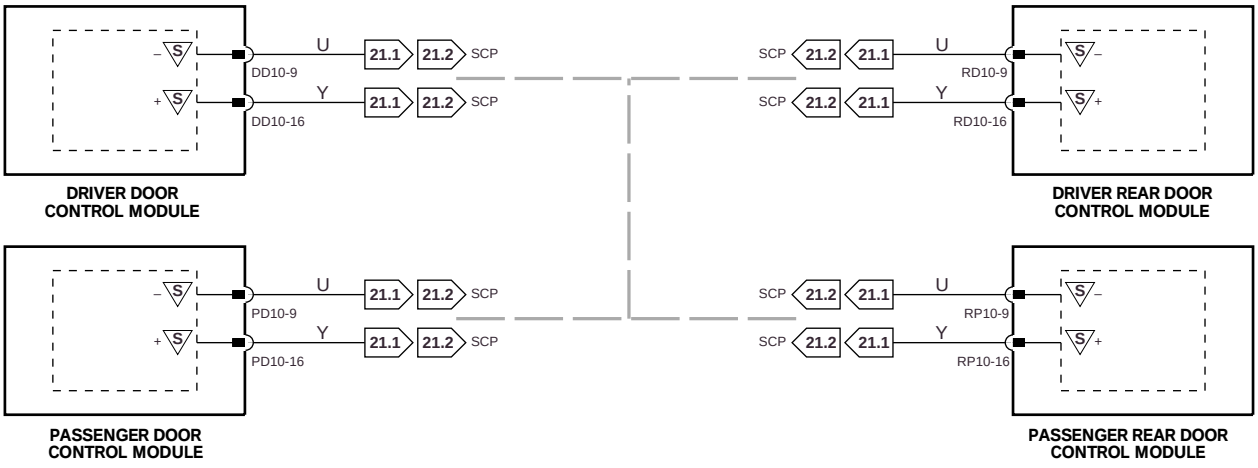


NOTE: The XJ Series ground studs are not identified by code. Therefore, multiple eyelets with different harness codes may be connected to a ground stud.

SCP Network

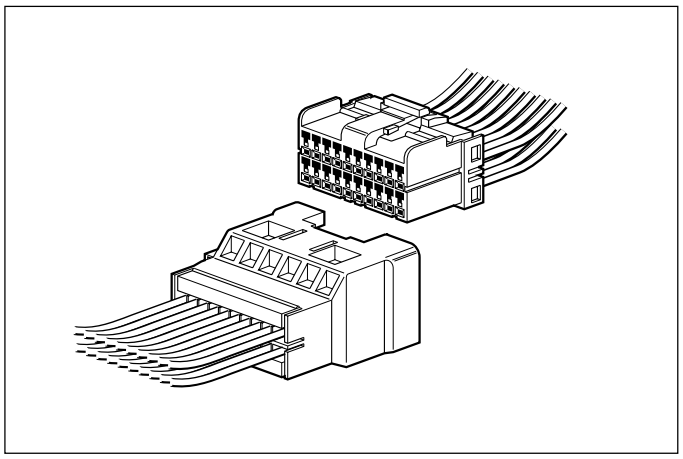
Due to circuit complexity and because space is limited, the SCP Network is, in most cases, shown as a broken grey line indicating that there is network communication between the depicted control modules. Refer to Fig. 21.1 for circuit details.

EXAMPLE:

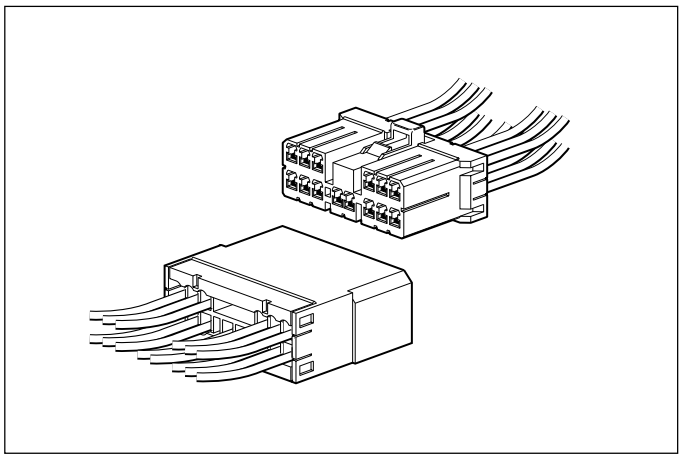


The following connectors are the common harness-to-harness connectors used throughout the vehicle.

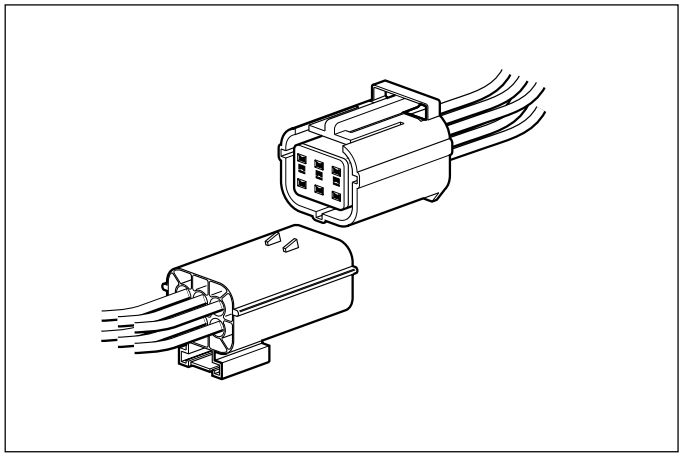
Multilock 040
Low current (harness and 'direct' connection connector).



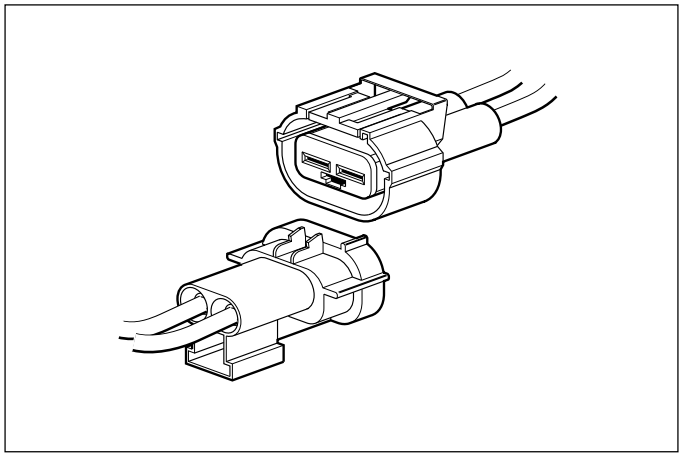
Multilock 070
High current (harness and 'direct' connection connector).



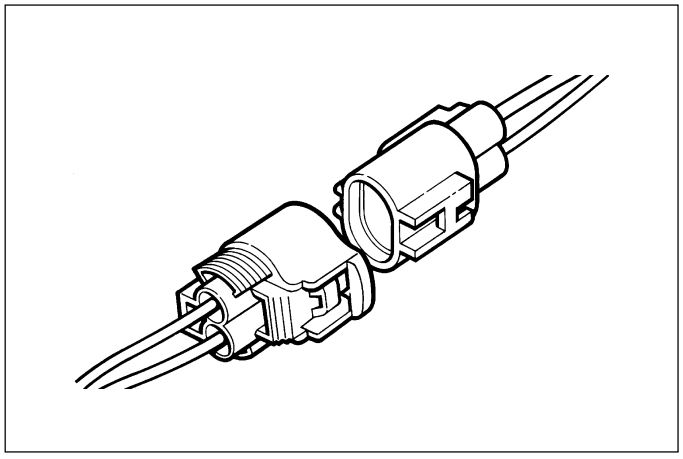
Econoseal III LC
Low current sealed connector.



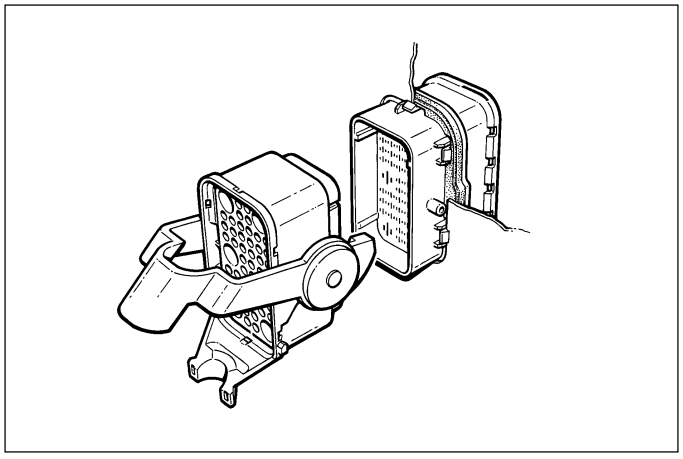
Econoseal III HC
High current sealed connector.



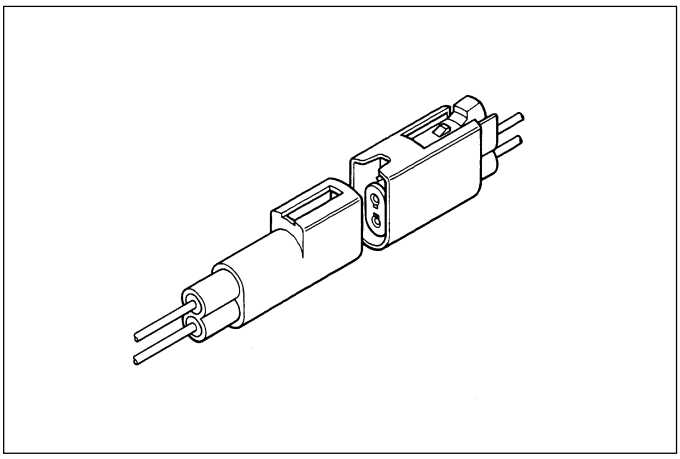
Ford Card
Used for SRS only.



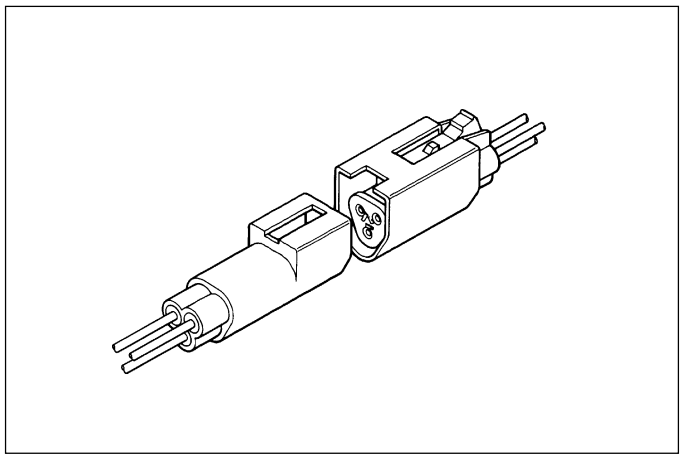
Through Panel
54-way connector.



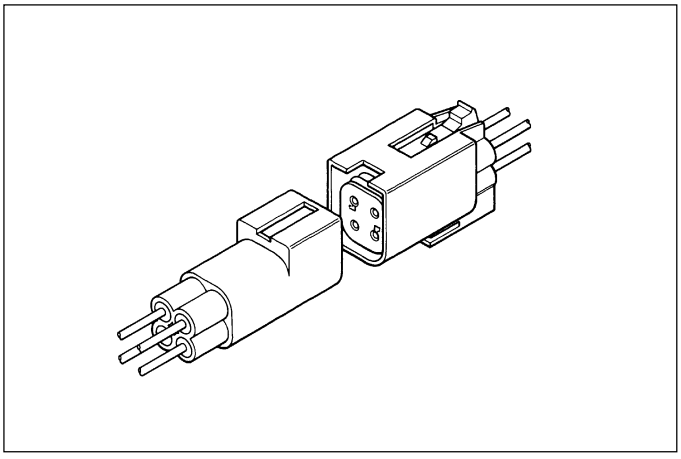
Augat 1.6
2-way connector.



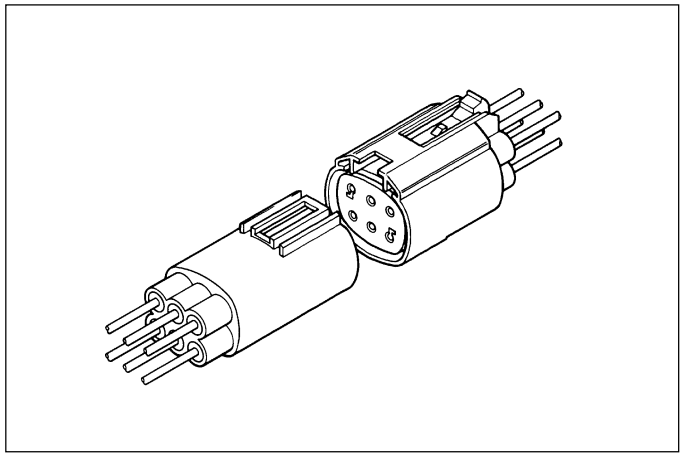
Augat 1.6
3-way connector.



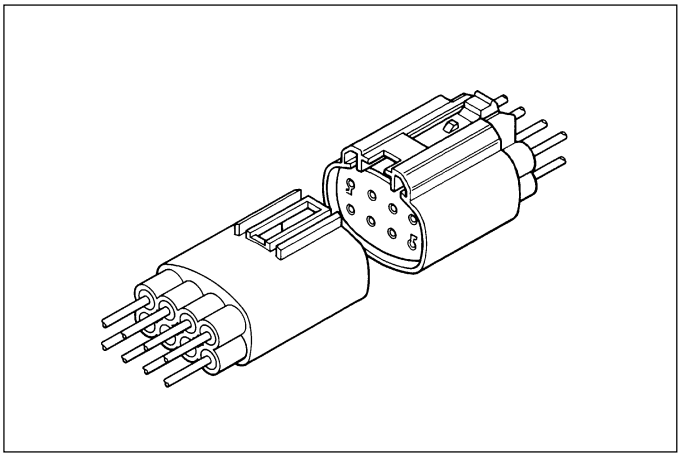
Augat 1.6
4-way connector.

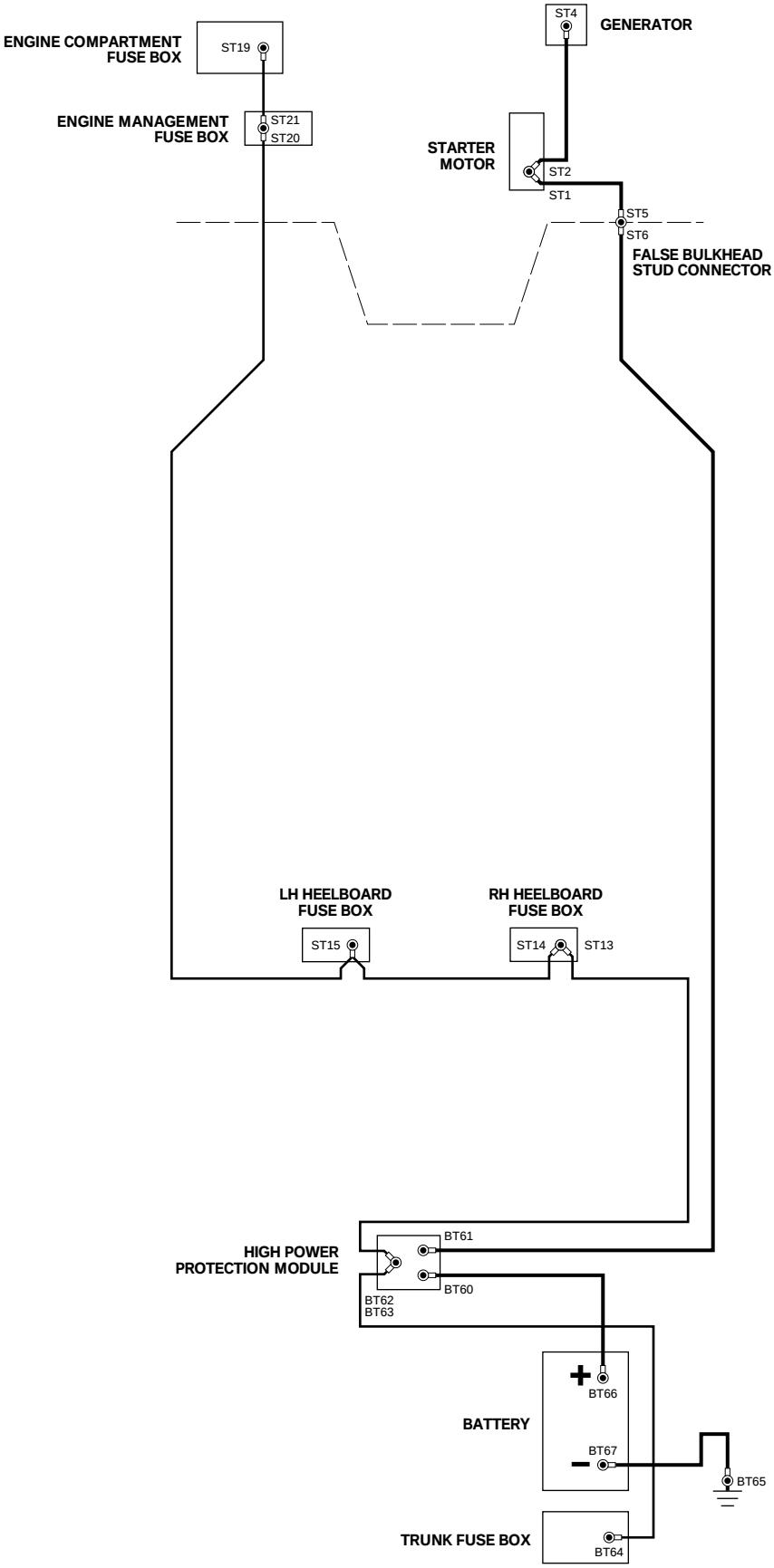


Augat 1.6
6-way connector.

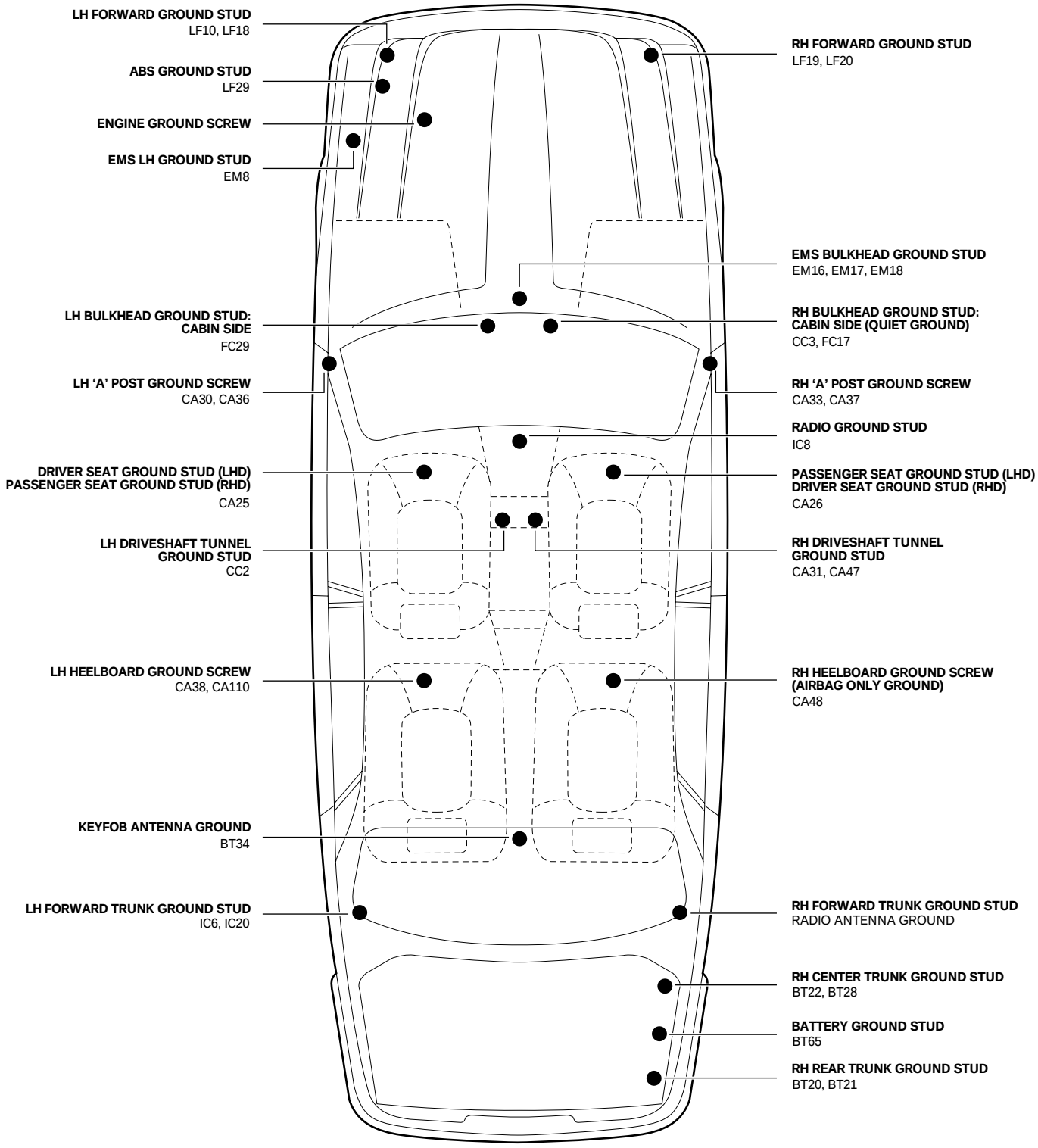


Augat 1.6
8-way connector.

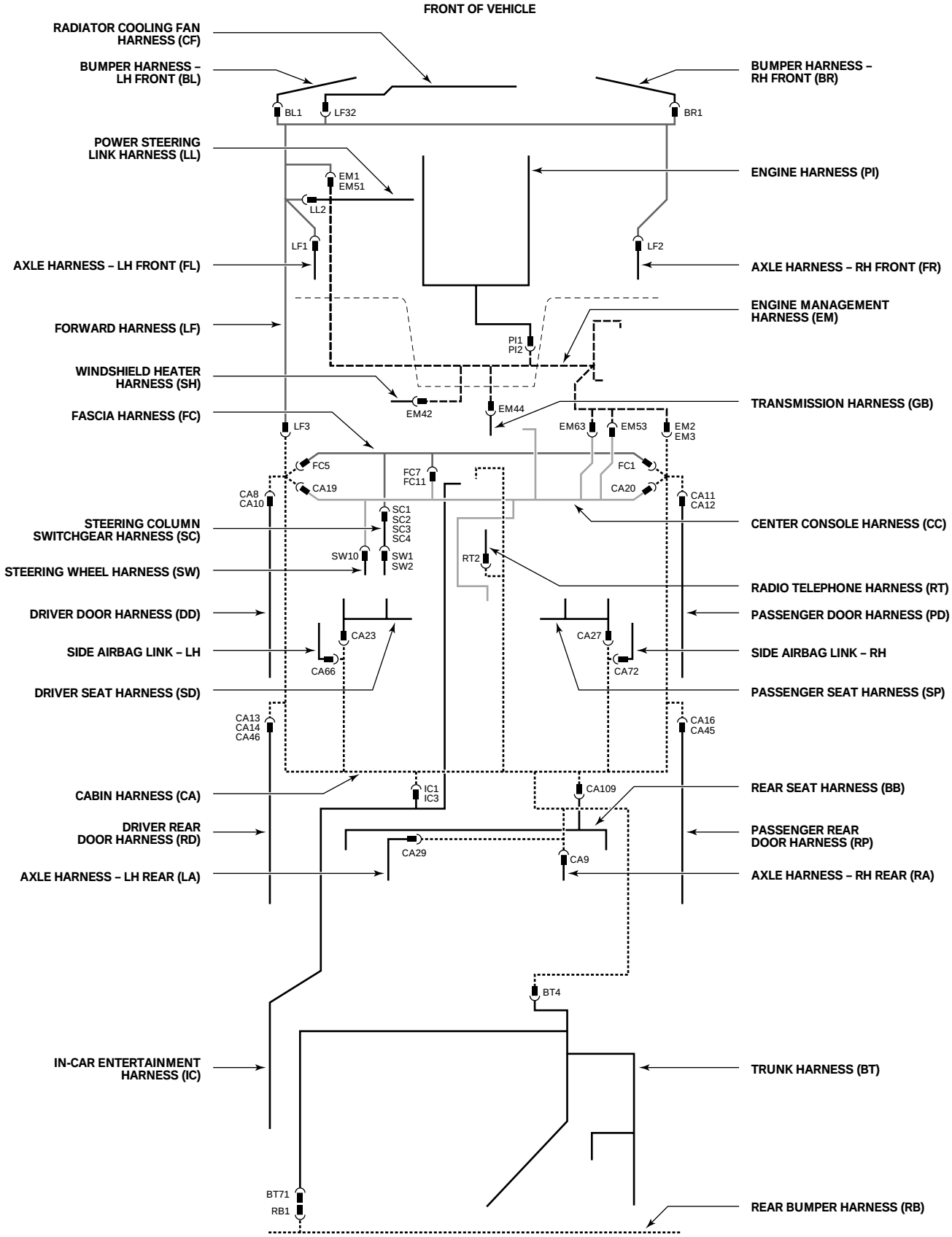



ENGINE COMPARTMENT FUSE BOX
ST19
ENGINE MANAGEMENT FUSE BOX
ST21
ST20
ST4
GENERATOR
STARTER MOTOR
ST2
ST1
ST5
ST6
FALSE BULKHEAD STUD CONNECTOR
LH HEELBOARD FUSE BOX
ST15
RH HEELBOARD FUSE BOX
ST14
ST13
HIGH POWER PROTECTION MODULE
BT61
BT60
BT62
BT63
BT66
BATTERY
BT67
BT65
TRUNK FUSE BOX
BT64

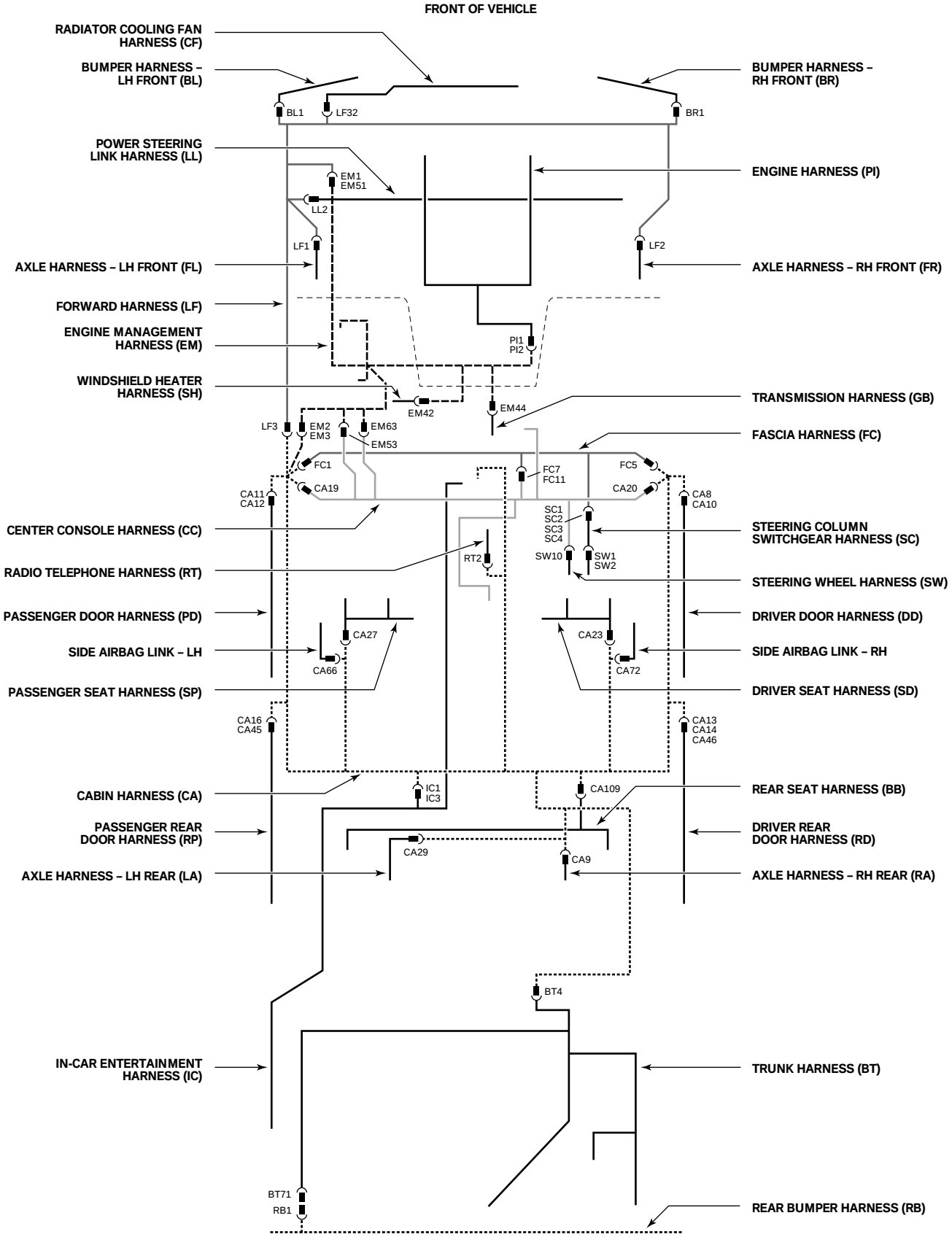
Ground Point Location



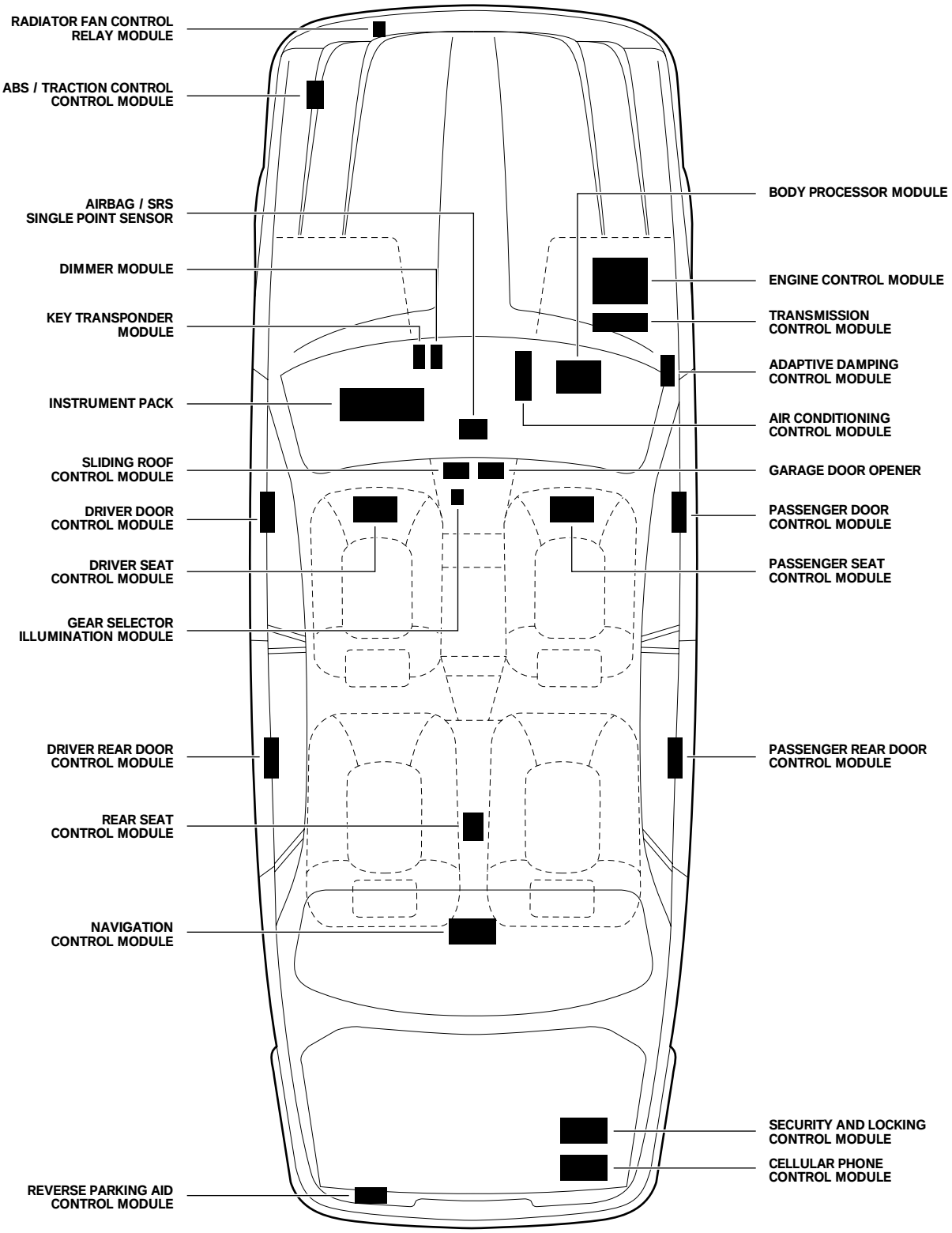
LHD


FRONT OF VEHICLE
RADIATOR COOLING FAN HARNESS (CF)
BUMPER HARNESS – LH FRONT (BL)
BUMPER HARNESS – RH FRONT (BR)
BL1
LF32
BR1
POWER STEERING LINK HARNESS (LL)
ENGINE HARNESS (PI)
EM1
EM51
LL2
LF1
LF2
AXLE HARNESS – LH FRONT (FL)
AXLE HARNESS – RH FRONT (FR)
ENGINE MANAGEMENT HARNESS (EM)
FORWARD HARNESS (LF)
PI1
PI2
WINDSHIELD HEATER HARNESS (SH)
EM42
EM44
TRANSMISSION HARNESS (GB)
FASCIA HARNESS (FC)
LF3
EM63
EM53
EM2
EM3
FC5
FC7
FC11
FC1
CA8
CA10
CA19
CA20
CA11
CA12
SC1
SC2
SC3
SC4
STEERING COLUMN SWITCHGEAR HARNESS (SC)
CENTER CONSOLE HARNESS (CC)
SW10
SW1
SW2
STEERING WHEEL HARNESS (SW)
RT2
RADIO TELEPHONE HARNESS (RT)
DRIVER DOOR HARNESS (DD)
PASSENGER DOOR HARNESS (PD)
CA23
CA27
SIDE AIRBAG LINK – LH
SIDE AIRBAG LINK – RH
CA66
CA72
DRIVER SEAT HARNESS (SD)
PASSENGER SEAT HARNESS (SP)
CA13
CA14
CA46
CA16
CA45
CABIN HARNESS (CA)
IC1
IC3
CA109
REAR SEAT HARNESS (BB)
DRIVER REAR DOOR HARNESS (RD)
PASSENGER REAR DOOR HARNESS (RP)
CA29
CA9
AXLE HARNESS – LH REAR (LA)
AXLE HARNESS – RH REAR (RA)
BT4
IN-CAR ENTERTAINMENT HARNESS (IC)
TRUNK HARNESS (BT)
BT71
RB1
REAR BUMPER HARNESS (RB)

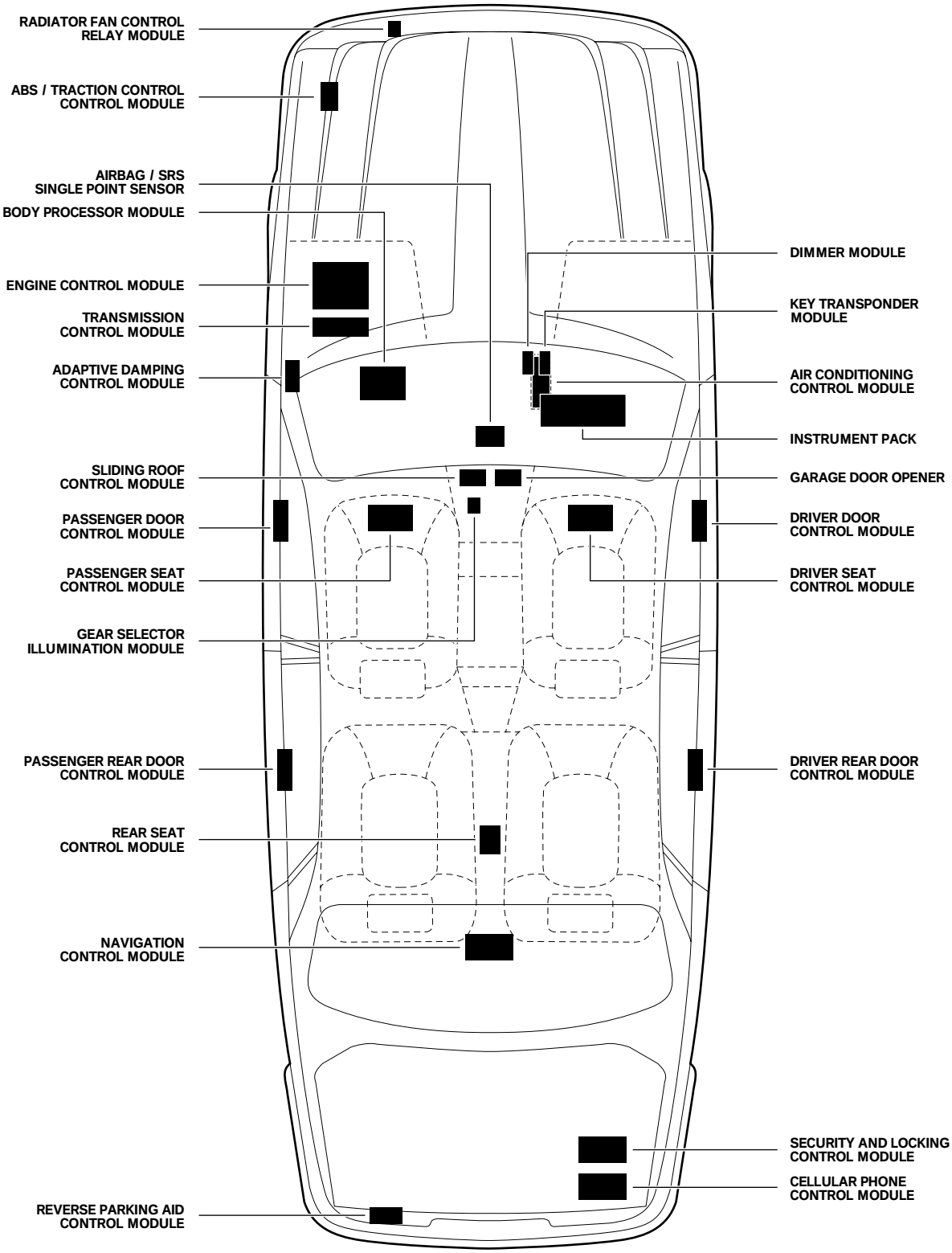
RHD


FRONT OF VEHICLE
RADIATOR COOLING FAN HARNESS (CF)
BUMPER HARNESS – LH FRONT (BL)
BUMPER HARNESS – RH FRONT (BR)
BL1
LF32
BR1
POWER STEERING LINK HARNESS (LL)
ENGINE HARNESS (PI)
EM1
EM51
LL2
LF1
LF2
AXLE HARNESS – LH FRONT (FL)
AXLE HARNESS – RH FRONT (FR)
FORWARD HARNESS (LF)
ENGINE MANAGEMENT HARNESS (EM)
PI1
PI2
WINDSHIELD HEATER HARNESS (SH)
TRANSMISSION HARNESS (GB)
EM42
EM44
LF3
EM2
EM3
EM63
EM53
FASCIA HARNESS (FC)
FC1
FC7
FC11
FC5
CA19
CA20
CA11
CA12
CA8
CA10
SC1
SC2
SC3
SC4
CENTER CONSOLE HARNESS (CC)
STEERING COLUMN SWITCHGEAR HARNESS (SC)
RADIO TELEPHONE HARNESS (RT)
RT2
SW10
SW1
SW2
STEERING WHEEL HARNESS (SW)
PASSENGER DOOR HARNESS (PD)
DRIVER DOOR HARNESS (DD)
CA27
CA23
SIDE AIRBAG LINK – LH
SIDE AIRBAG LINK – RH
CA66
CA72
PASSENGER SEAT HARNESS (SP)
DRIVER SEAT HARNESS (SD)
CA16
CA45
CA13
CA14
CA46
CABIN HARNESS (CA)
IC1
IC3
CA109
REAR SEAT HARNESS (BB)
PASSENGER REAR DOOR HARNESS (RP)
DRIVER REAR DOOR HARNESS (RD)
CA29
CA9
AXLE HARNESS – LH REAR (LA)
AXLE HARNESS – RH REAR (RA)
BT4
IN-CAR ENTERTAINMENT HARNESS (IC)
TRUNK HARNESS (BT)
BT71
RB1
REAR BUMPER HARNESS (RB)

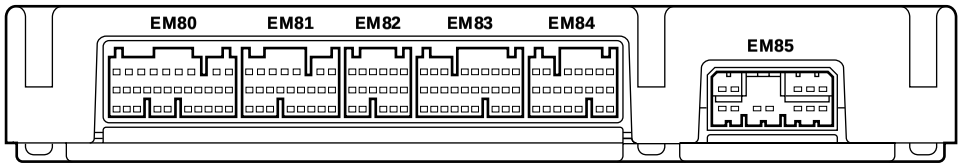
LHD


RADIATOR FAN CONTROL RELAY MODULE
ABS / TRACTION CONTROL CONTROL MODULE
AIRBAG / SRS SINGLE POINT SENSOR
DIMMER MODULE
KEY TRANSPONDER MODULE
INSTRUMENT PACK
SLIDING ROOF CONTROL MODULE
DRIVER DOOR CONTROL MODULE
DRIVER SEAT CONTROL MODULE
GEAR SELECTOR ILLUMINATION MODULE
DRIVER REAR DOOR CONTROL MODULE
REAR SEAT CONTROL MODULE
NAVIGATION CONTROL MODULE
REVERSE PARKING AID CONTROL MODULE
BODY PROCESSOR MODULE
ENGINE CONTROL MODULE
TRANSMISSION CONTROL MODULE
ADAPTIVE DAMPING CONTROL MODULE
AIR CONDITIONING CONTROL MODULE
GARAGE DOOR OPENER
PASSENGER DOOR CONTROL MODULE
PASSENGER SEAT CONTROL MODULE
PASSENGER REAR DOOR CONTROL MODULE
SECURITY AND LOCKING CONTROL MODULE
CELLULAR PHONE CONTROL MODULE

RHD


RADIATOR FAN CONTROL RELAY MODULE
ABS / TRACTION CONTROL CONTROL MODULE
AIRBAG / SRS SINGLE POINT SENSOR
BODY PROCESSOR MODULE
ENGINE CONTROL MODULE
TRANSMISSION CONTROL MODULE
ADAPTIVE DAMPING CONTROL MODULE
SLIDING ROOF CONTROL MODULE
PASSENGER DOOR CONTROL MODULE
PASSENGER SEAT CONTROL MODULE
GEAR SELECTOR ILLUMINATION MODULE
PASSENGER REAR DOOR CONTROL MODULE
REAR SEAT CONTROL MODULE
NAVIGATION CONTROL MODULE
REVERSE PARKING AID CONTROL MODULE
DIMMER MODULE
KEY TRANSPONDER MODULE
AIR CONDITIONING CONTROL MODULE
INSTRUMENT PACK
GARAGE DOOR OPENER
DRIVER DOOR CONTROL MODULE
DRIVER SEAT CONTROL MODULE
DRIVER REAR DOOR CONTROL MODULE
SECURITY AND LOCKING CONTROL MODULE
CELLULAR PHONE CONTROL MODULE

ENGINE CONTROL MODULE: AJ27 N/A



EM80 / 31-WAY / NATURAL

9 GW	8 GW	7 R	6 R	5 G	4 G	3 B			2 GU*	1 UY
21 B	20 U	19 W	18 W	17 O	16 YU	15 YG	14 —	13 —	12 U	11 UY	10 WU
31 B	30 —	29 BK		28 —	27 U		26 —	25 RW	24 —	23 UY	22 RW

EM81 / 24-WAY / NATURAL

7 RG†	6 OG†	5 W	4 WU	3 U					2 RW†	1 OY†	
16 RG*	15 YG	14 YR	13 WU	12 RU	11 —	10 N	9 B	8 B			
24 BG	23 —	22 OY		21 BK	20 —	19 G	18 O	17 WR			

EM82 / 17-WAY / NATURAL

6 GR	5 N	4 R	3 —	2 GO	1 OY
12 GU	11 G	10 Y	9 W	8 OG	7 BG
17 O	16 Y		15 W	14 UY	13 WR

EM83 / 28-WAY / NATURAL

9 N	8 Y	7 P			6 BG	5 OY	4 WR	3 RU	2 —	1 —		
19 G	18 B	17 O	16 G	15 G	14 N	13 BG	12 BR	11 YG	10 YG			
28 GW	27 BW	26 BW	25 Y	24 Y	23 N		22 N	21 N	20 NR			

EM84 / 22-WAY / NATURAL

7 U	6 BW		5 BW	4 BW	3 BO	2 BG	1 B				
15 UY	14 BG	13 BR	12 GU	11 GR	10 GO	9 GW	8 —				
22 B	21 BO	20 GB	19 GW	18 GO		17 GU	16 B				

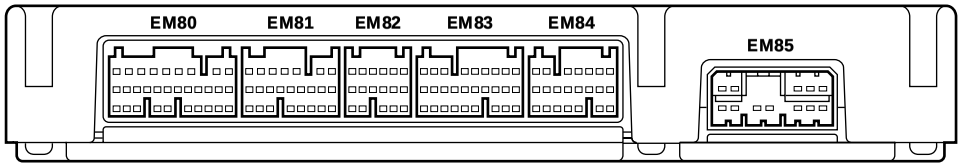
* Not used – ROW vehicles.

† Not used – 3.2L vehicles.

EM85 / 12-WAY / WHITE

5 U	4 —			3 —	2 UY	1 RU
12 —	11 —	10 —	9 —	8 WG	7 B	6 B

ENGINE CONTROL MODULE: AJ27 SC



EM80 / 31-WAY / NATURAL

9 GW	8 GW	7 R	6 R	5 G	4 G	3 B			2 GU*	1 UY
21 B	20 U	19 W	18 W	17 O	16 YU	15 YG	14 RW	13 —	12 U	11 UY	10 WU
31 B	30 —	29 BK		28 BW*	27 U		26 —	25 RW	24 —	23 UY	22 RW

EM81 / 24-WAY / NATURAL

7 —	6 —	5 W	4 WU	3 U					2 —	1 —	
16 RG*	15 YG	14 YR	13 WU	12 RU	11 —	10 N	9 B	8 B			
24 BG	23 O	22 OY		21 BK	20 —	19 G	18 O	17 WR			

EM82 / 17-WAY / NATURAL

6 GR	5 N	4 R	3 WB	2 GO	1 OY
12 GU	11 G	10 Y	9 W	8 OG	7 BG
17 O	16 Y		15 W	14 UY	13 WR

EM83 / 28-WAY / NATURAL

9 N	8 Y	7 P			6 BG	5 OY	4 WR	3 —	2 —	1 —		
19 G	18 B	17 O	16 G	15 G	14 S	13 BG	12 BR	11 YG	10 YG			
28 GW	27 BW	26 BW	25 Y	24 Y	23 N		22 N	21 N	20 NR			

EM84 / 22-WAY / NATURAL

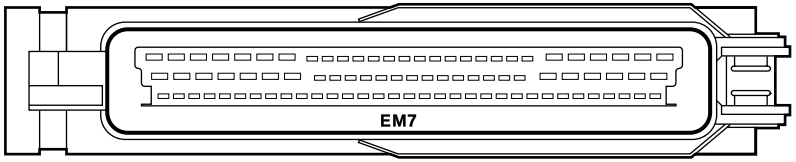
7 U	6 BW		5 BW	4 BW	3 BO	2 BG	1 B				
15 UY	14 BG	13 BR	12 GU	11 GR	10 GO	9 GW	8 —				
22 B	21 BO	20 GB	19 GW	18 GO		17 GU	16 B				

* Not used – ROW vehicles.

EM85 / 12-WAY / WHITE

5 U	4 YG			3 YU	2 UY	1 RU
12 —	11 —	10 YR	9 YR	8 WG	7 B	6 B

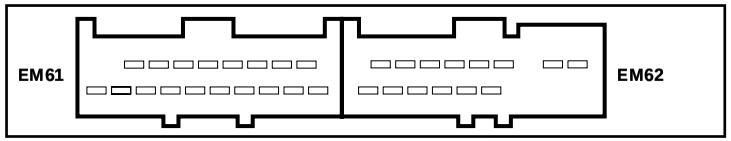
TRANSMISSION CONTROL MODULE: AJ27 N/A



EM7 / 88-WAY / BLACK

1 OY	2 RU	3 —	4 O	5 OG	6 B	7 —	8 R	9 W	10 —	11 —	12 RU	13 OG	14 N	15 W	16 B	17 —	18 —	19 —	20 —	21 BG	22 UY	23 W	24 —	25 —	26 NR	27 —	28 BW					
	29 O	30 YB	31 —	32 YU	33 YU	34 B	35 —	36 Y	37 Y	38 —	39 —	40 —	41 —	42 G	43 —	44 O	45 RG	46 —	47 —	48 —	49 —		50 —	51 O	52 RU	53 RW	54 WB	55 WB				
56 —	57 —	58 —	59 —	60 —	61 —	62 —	63 —	64 —	65 —	66 —	67 —	68 —	69 —	70 —	71 —	72 —	73 —	74 —	75 —	76 —	77 —	78 —	79 —	80 —	81 —	82 G	83 Y	84 —	85 G	86 Y	87 —	88 —

TRANSMISSION CONTROL MODULE: AJ27 SC



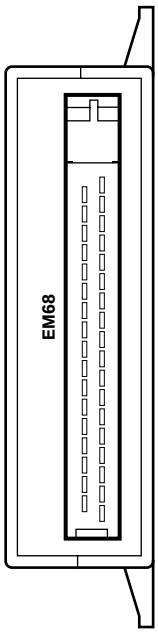
EM61 / 18-WAY / BLACK

23 —	24 —	25 GB	26 GU	27 GU	28 GR	29 WB	30 B	
1 —	2 BW	3 U	4 —	5 —	6 —	7 —	8 —	9 —	10 —

EM62 / 14-WAY / BLACK

33 B	34 BW	35 BG	36 BO	37 BO	38 BR	L G	H Y
12 BG	13 BW	14 BK	15 BG	16 BR	17 BW		

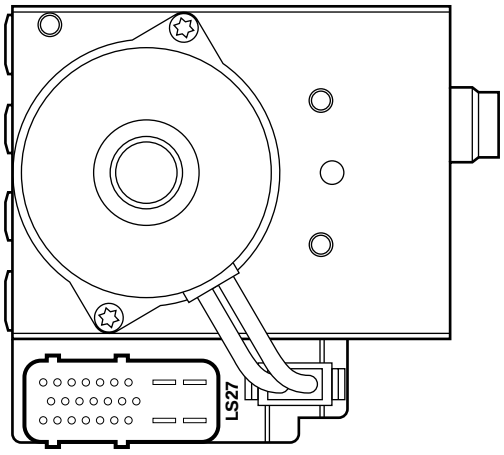
ADAPTIVE DAMPING CONTROL MODULE



EM68 / 35-WAY / BLACK

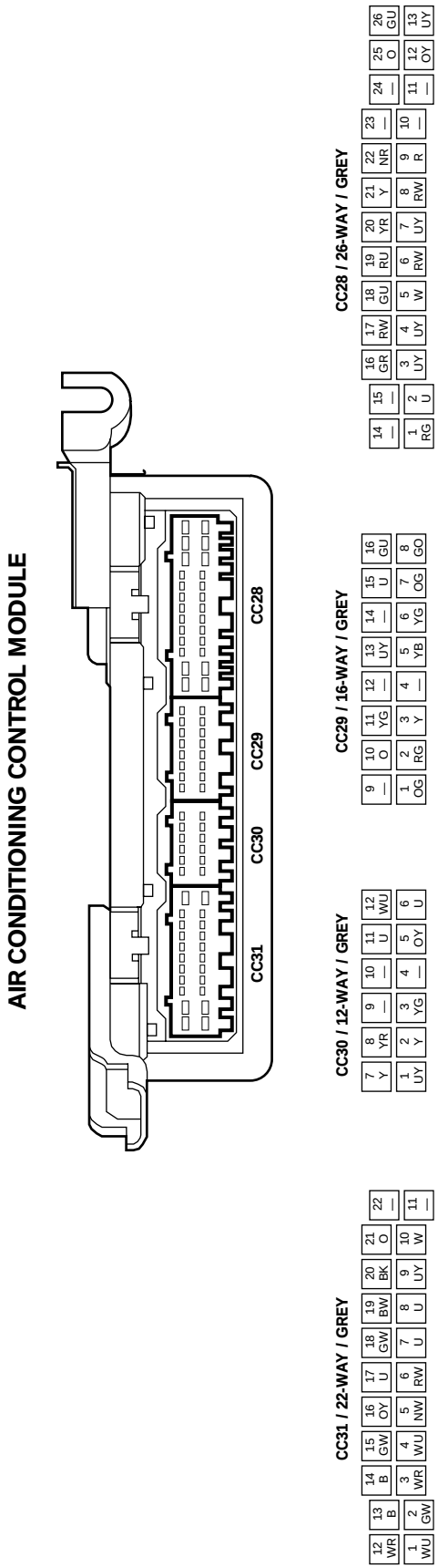
19 —	20 —	21 —	22 —	23 —	24 —	25 —	26 —	27 —	28 —	29 —	30 —	31 —	32 —	33 —	34 —	35 —		
1 YR	2 —	3 Y	4 —	5 —	6 —	7 —	8 —	9 —	10 O	11 W	12 —	13 O	14 OG	15 OG	16 —	17 —	18 B	

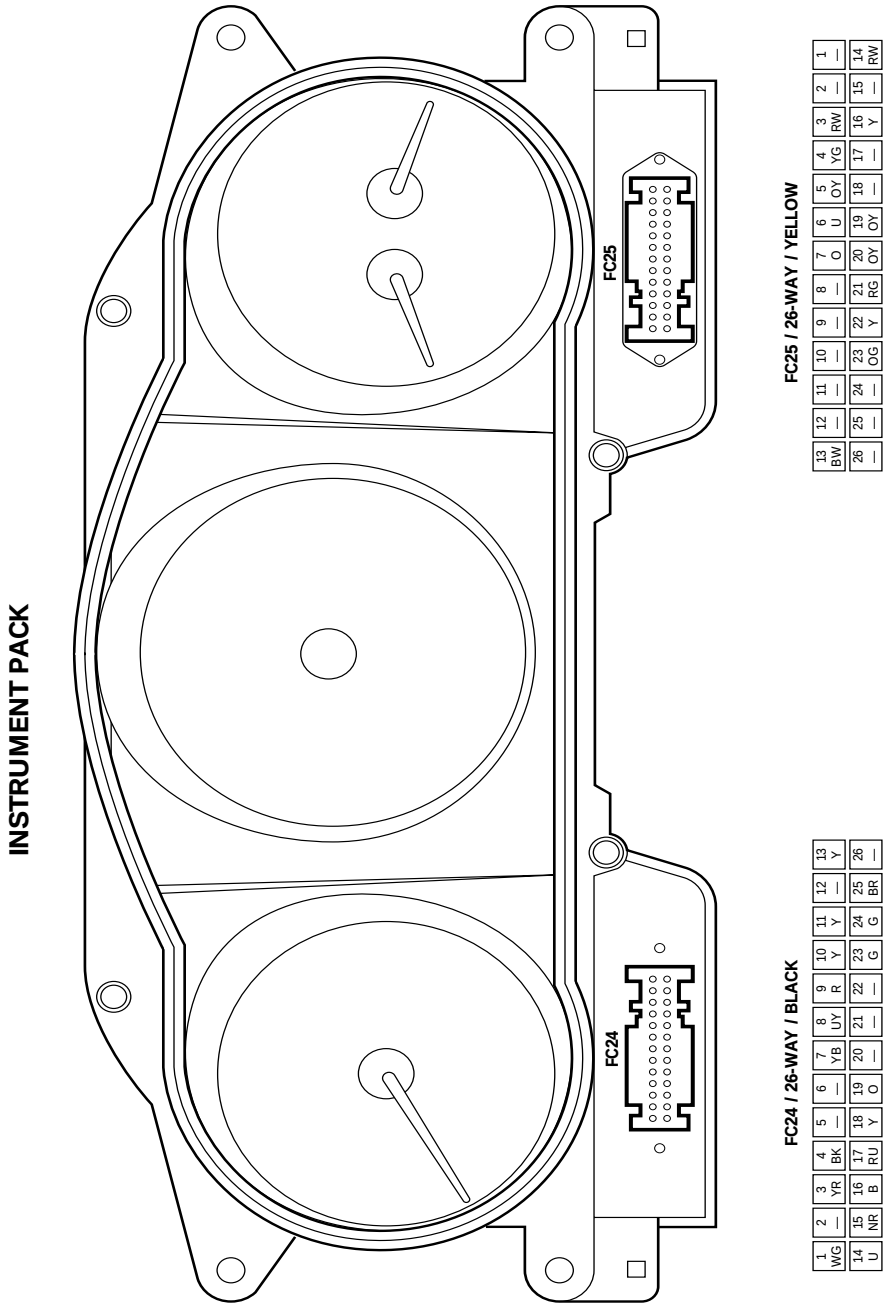
ABS / TRACTION CONTROL CONTROL MODULE



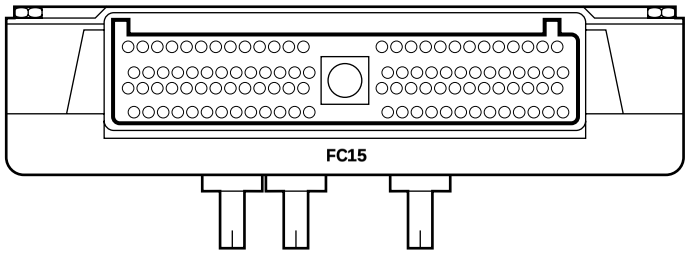
LS27 / 25-WAY / BLACK

1 UY	2 OG	3 Y	4 G	5 Y	6 Y	7 O	8 B	9 NR	10 —	11 —	12 —	13 U	14 R	15 G	16 RW	17 W	18 R	19 O	20 WU	21 U	22 U	23 —	24 B	25 NW


AIR CONDITIONING CONTROL MODULE
CC31
CC30
CC29
CC28
CC28 / 26-WAY / GREY
CC29 / 16-WAY / GREY
CC30 / 12-WAY / GREY
CC31 / 22-WAY / GREY


INSTRUMENT PACK
FC25
FC24
FC25 / 26-WAY / YELLOW
1 —
2 —
3 RW
4 YG
5 OY
6 U
7 O
8 —
9 —
10 —
11 —
12 —
13 BW
14 RW
15 —
16 Y
17 —
18 —
19 OY
20 OY
21 RG
22 Y
23 OG
24 —
25 —
26 —
FC24 / 26-WAY / BLACK
1 WG
2 —
3 YR
4 BK
5 —
6 —
7 YB
8 UY
9 R
10 Y
11 Y
12 —
13 Y
14 U
15 NR
16 B
17 RU
18 Y
19 O
20 —
21 —
22 —
23 G
24 G
25 BR
26 —

BODY PROCESSOR MODULE



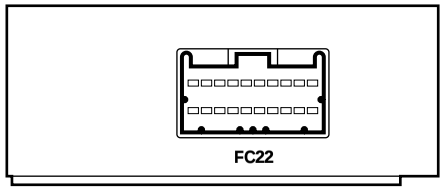
FC15 / 104-WAY / GREY

79 NG	80 N	81 GR*	82 GR	83 GB	84 U	85 Y	86 OG	87 Y	88 YG	89 Y	90 BK	91 BK
53 R	54 R	55 YU	56 OY*	57 GR	58 YB	59 RW	60 RW	61 WG	62 —	63 YG	64 —	65 —
27 Y*	28 RW	29 Y	30 U	31 GB	32 WR	33 W	34 GO	35 OY	36 —	37 GR	38 O	39 Y
1 RW	2 GW	3 GO	4 GU	5 YR	6 Y	7 RU	8 —	9 GU	10 RW	11 YB	12 OG	13 GO*

92 YB	93 Y	94 GO	95 RU	96 RW	97 WU	98 —	99 UY	100 BR	101 RW	102 N	103 —	104 NW
66 RU	67 O	68 OG	69 O	70 GW	71 YR	72 YU	73 GO	74 RW	75 GR	76 GO	77 RG	78 U
40 WU	41 RW	42 UY	43 WG	44 OY	45 U	46 YB	47 YG	48 OG	49 GO	50 GW	51 RW	52 BW
14 U	15 WU	16 RW	17 OY	18 YB	19 BG	20 OG	21 YR	22 WB	23 WU	24 NW	25 B	26 YG

*** Not used – NAS vehicles.**

KEY TRANSPONDER MODULE

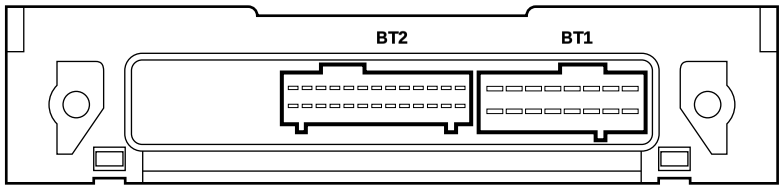


FC22 / 20-WAY / GREEN

10 R*	9 YB	8 OG	7 O	6 O	5 U*	4 NR	3 BRD*	2 BRD*	1 —
20 R*	19 RW*	18 OY*	17 Y	16 O	15 U*	14 WU	13 WR	12 BK	11 YR

*** Not used – NAS vehicles.**

SECURITY AND LOCKING CONTROL MODULE



BT2 / 26-WAY / BLACK

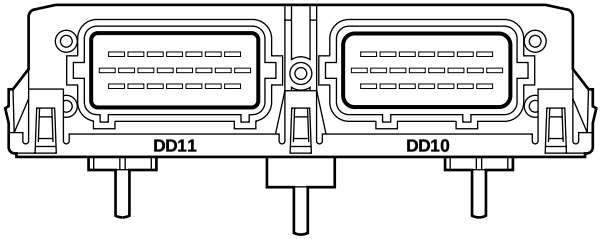
13 —	12 —	11 —	10 —	9 —	8 GW*	7 YU	6 GW	5 RW	4 —	3 RG	2 —	1 OG
26 YR*	25 —	24 —	23 —	22 —	21 —	20 —	19 YR	18 —	17 —	16 —	15 —	14 —

BT1 / 16-WAY / BLACK

8 Y	7 RU	6 NR	5 Y	4 OG	3 OY	2 OY	1 O
16 U	15 NW	14 BK	13 BK	12 —	11 —	10 O	9 U

*** Not used – NAS vehicles.**

DRIVER DOOR CONTROL MODULE



DD11 / 22-WAY / BLACK

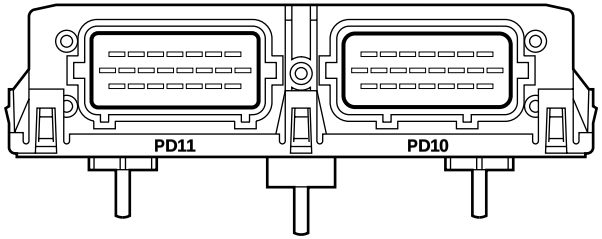
7 BR	6 BW	5 O	4 OY	3 O	2 U	1 BK
15 BW	14 —	13 OY	12 OY	11 —	10 YR	9 YR	8 —
22 BO	21 BW	20 G	19 —	18 —	17 YR	16 —

DD10 / 22-WAY / BLUE

7 OY	6 YB*	5 Y	4 OG	3 OG	2 Y	1 NR
15 OY	14 GW	13 —	12 —	11 —	10 BG	9 U	8 BK
22 O	21 OY	20 WU	19 BR	18 BO	17 B	16 Y

*** Not used – NAS vehicles.**

PASSENGER DOOR CONTROL MODULE



PD11 / 22-WAY / BLACK

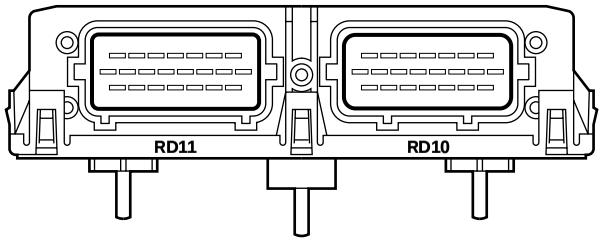
7 —	6 BO	5 —	4 —	3 —	2 —	1 —
15 U	14 —	13 —	12 —	11 —	10 —	9 —	8 U
22 —	21 BG	20 G	19 —	18 —	17 —	16 —

PD10 / 22-WAY / BLUE

7 OY	6 YB*	5 Y	4 UY	3 U	2 Y	1 NR
15 OY	14 GW	13 —	12 —	11 —	10 —	9 U	8 BK
22 Y	21 RU	20 WU	19 —	18 —	17 B	16 Y

*** Not used – NAS vehicles.**

DRIVER REAR DOOR CONTROL MODULE



RD11 / 22-WAY / BLACK

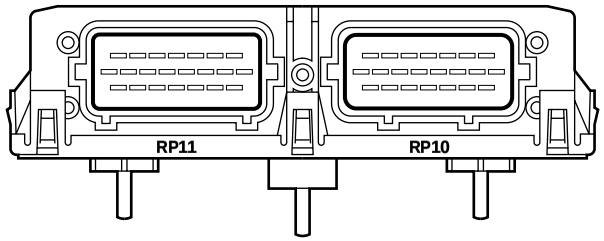
7 BK	6 BO	5 O	4 —	3 —	2 —	1 —
15 OG	14 —	13 WU	12 —	11 —	10 —	9 —	8 —
22 UY	21 BG	20 B	19 —	18 —	17 —	16 —

RD10 / 22-WAY / BLUE

7 OY	6 YB*	5 Y	4 —	3 —	2 —	1 NR
15 OY	14 GW	13 —	12 —	11 —	10 —	9 U	8 BK
22 —	21 —	20 —	19 BK	18 —	17 B	16 Y

*** Not used – NAS vehicles.**

PASSENGER REAR DOOR CONTROL MODULE



RP11 / 22-WAY / BLACK

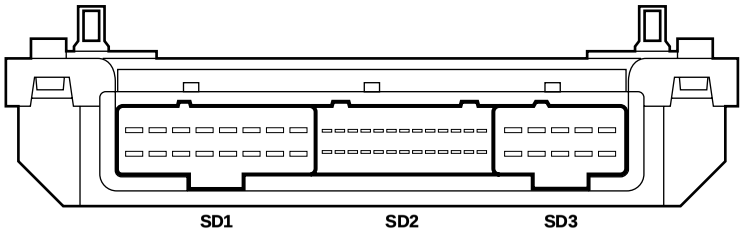
7 —	6 BO	5 —	4 —	3 —	2 —	1 —
15 U	14 —	13 —	12 —	11 —	10 —	9 —	8 U
22 —	21 BG	20 G	19 —	18 —	17 —	16 —

RP10 / 22-WAY / BLUE

7 OY	6 YB*	5 Y	4 —	3 —	2 —	1 NR
15 OY	14 GW	13 —	12 —	11 —	10 —	9 U	8 BK
22 —	21 —	20 —	19 —	18 —	17 B	16 Y

*** Not used – NAS vehicles.**

DRIVER SEAT CONTROL MODULE: MEMORY



SD1 / 16-WAY / BLACK

9 RW	10 RW	11 WG	12 W	13 OY	14 UY	15 RW	16 RW
1 RU	2 RU	3 OG	4 UY	5 GW	6 GO	7 UY	8 UY

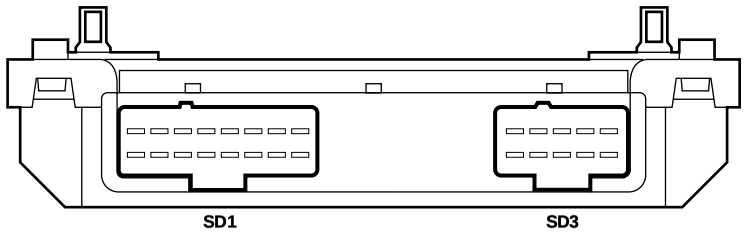
SD2 / 26-WAY / BLACK

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

SD3 / 10-WAY / BLACK

6 GW	7 —	8 GW	9 Y	10 U
1 BK	2 B	3 WU	4 WR	5 NR

DRIVER SEAT CONTROL MODULE: NON-MEMORY



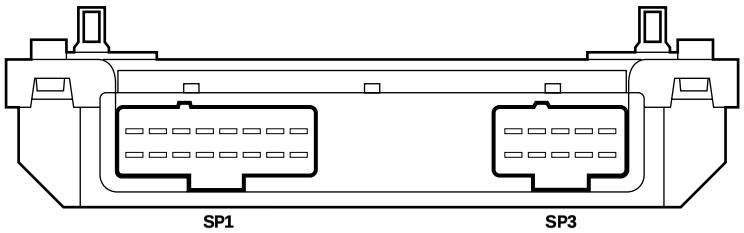
SD1 / 16-WAY / BLACK

9 RW	10 RW	11 WG	12 W	13 OY	14 UY	15 RW	16 RW
1 RU	2 RU	3 OG	4 UY	5 GW	6 GO	7 UY	8 UY

SD3 / 10-WAY / BLACK

6 GW	7 —	8 GW	9 Y	10 U
1 BK	2 B	3 WU	4 WR	5 NR

PASSENGER SEAT CONTROL MODULE



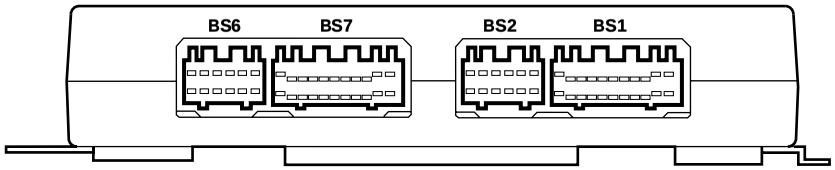
SP1 / 16-WAY / BLACK

9 RW	10 RW	11 WG	12 W	13 OY	14 UY	15 RW	16 RW
1 RU	2 RU	3 OG	4 UY	5 GW	6 GO	7 UY	8 UY

SP3 / 10-WAY / BLACK

6 GW	7 —	8 GW	9 Y	10 U
1 —	2 B	3 WU	4 WR	5 NR

REAR SEAT CONTROL MODULE



BS6 / 12-WAY / WHITE

6 GO	5 GW	4 UY	3 UY	2 OY	1 OY
12 GR	11 GW	10 OY	9 B	8 PW	7 PR

BS7 / 22-WAY / WHITE

11 —	10 RW	9 RW	8 RW	7 —	6 —	5 —	4 —	3 —	2 —	1 —
22 —	21 —	20 RW	19 OY	18 UY	17 Y	16 YG	15 GW	14 GW	13 —	12 —

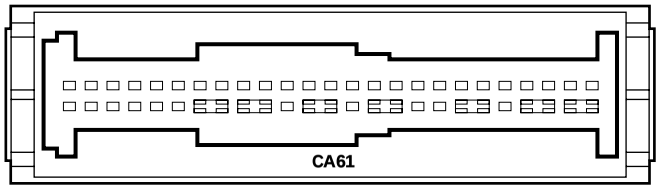
BS2 / 12-WAY / BLUE

6 NW	5 B	4 NR	3 B	2 —	1 —
12 NW	11 —	10 —	9 —	8 —	7 —

BS1 / 22-WAY / BLUE

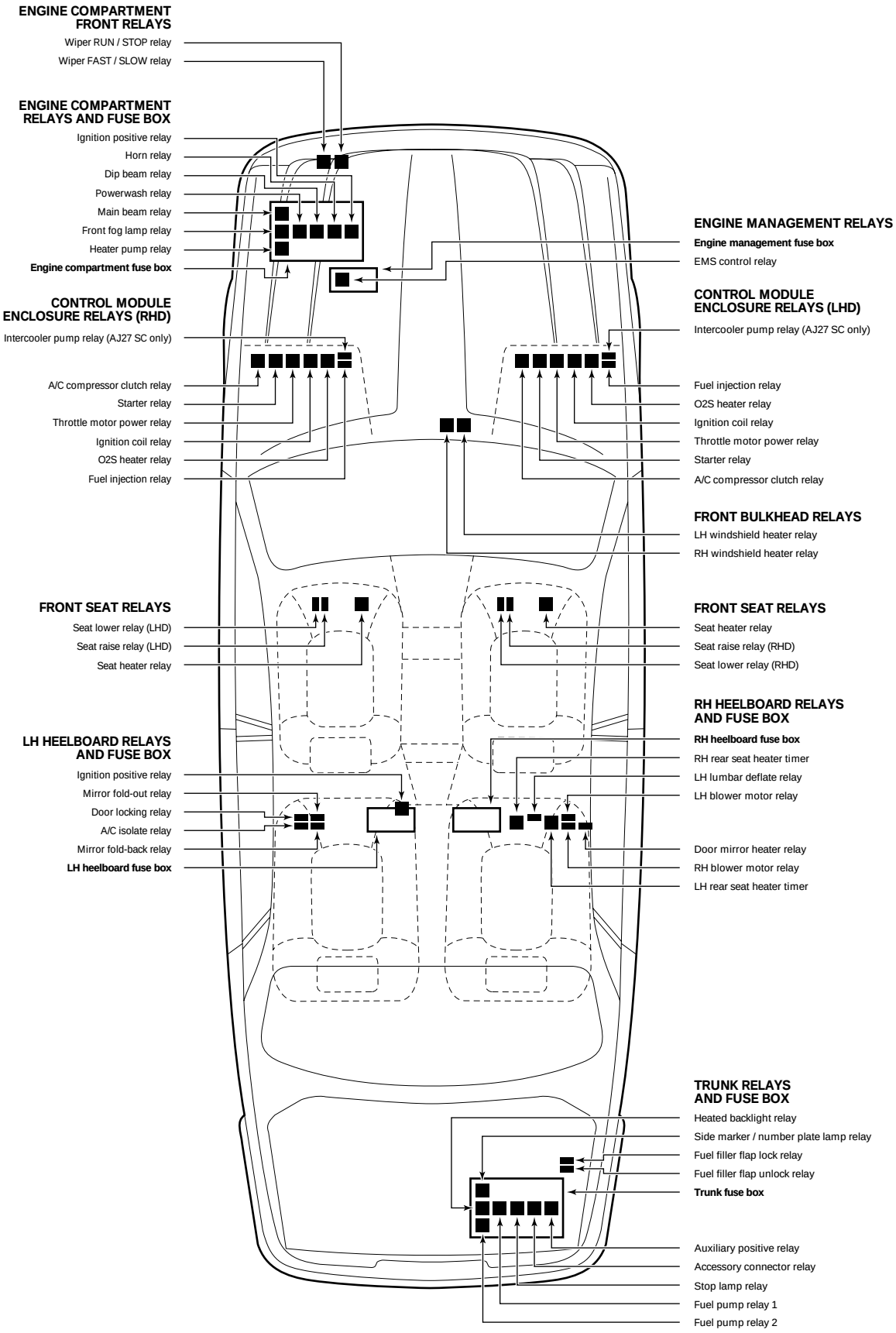
11 Y	10 B	9 —	8 —	7 —	6 —	5 —	4 —	3 —	2 —	1 —
22 B	21 —	20 —	19 —	18 —	17 —	16 —	15 —	14 —	13 —	12 B

AIRBAG / SRS SINGLE POINT SENSOR



CA61 / 50-WAY / YELLOW

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



NOTE: All relays are brown, with the exception of the microrelays, which are black.

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	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	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 BT64 / EYELET	TRUNK ELECTRICAL CARRIER
HIGH POWER PROTECTION MODULE	BT60 / EYELET BT61 / EYELET BT62 / EYELET BT63 / EYELET	TRUNK / ADJACENT TO BATTERY
TRANSIT ISOLATION DEVICE	BT37 / 1-WAY LUCAR STRAIGHT / METALLIC 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	TRUNK 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

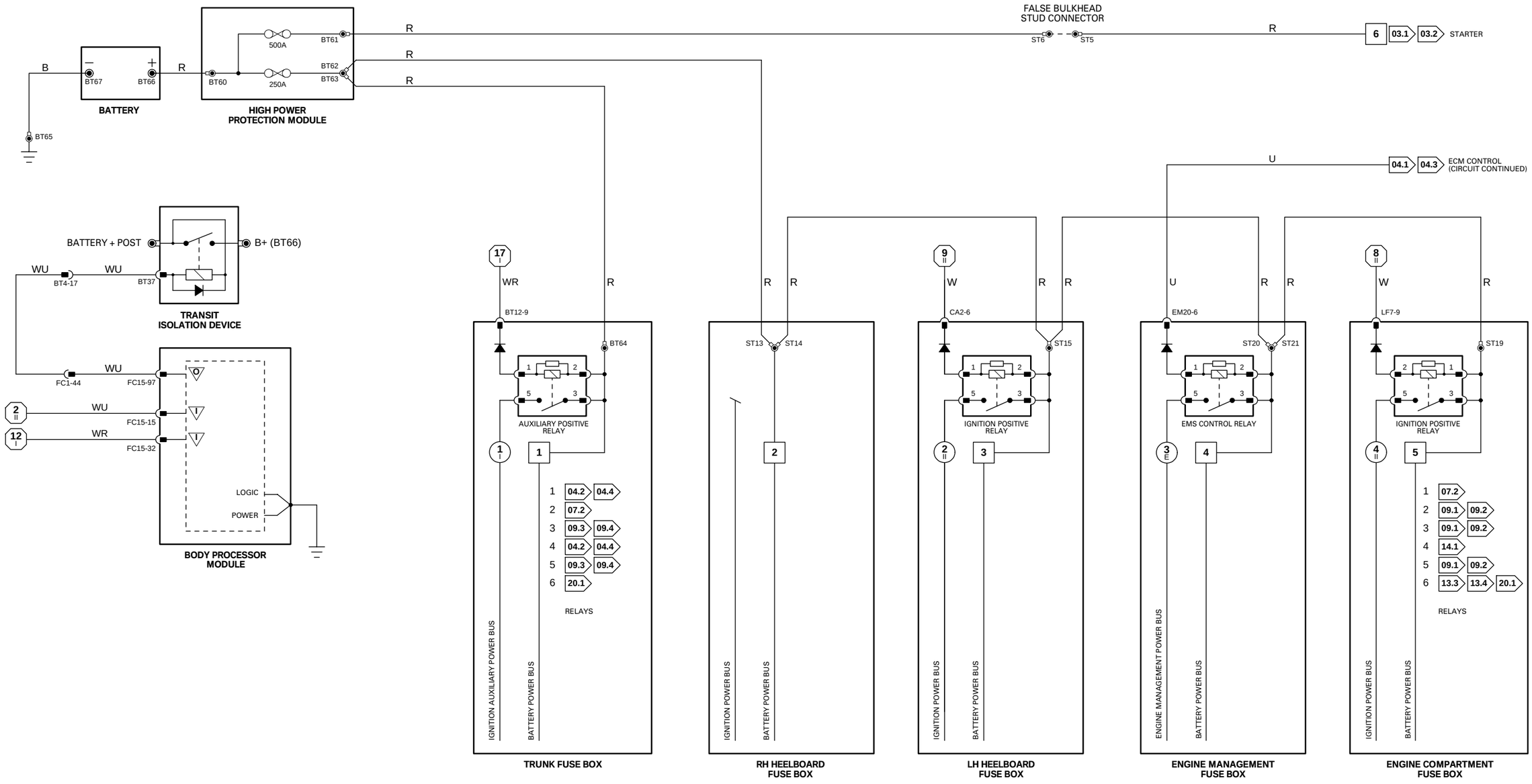
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	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

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



1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 01.2

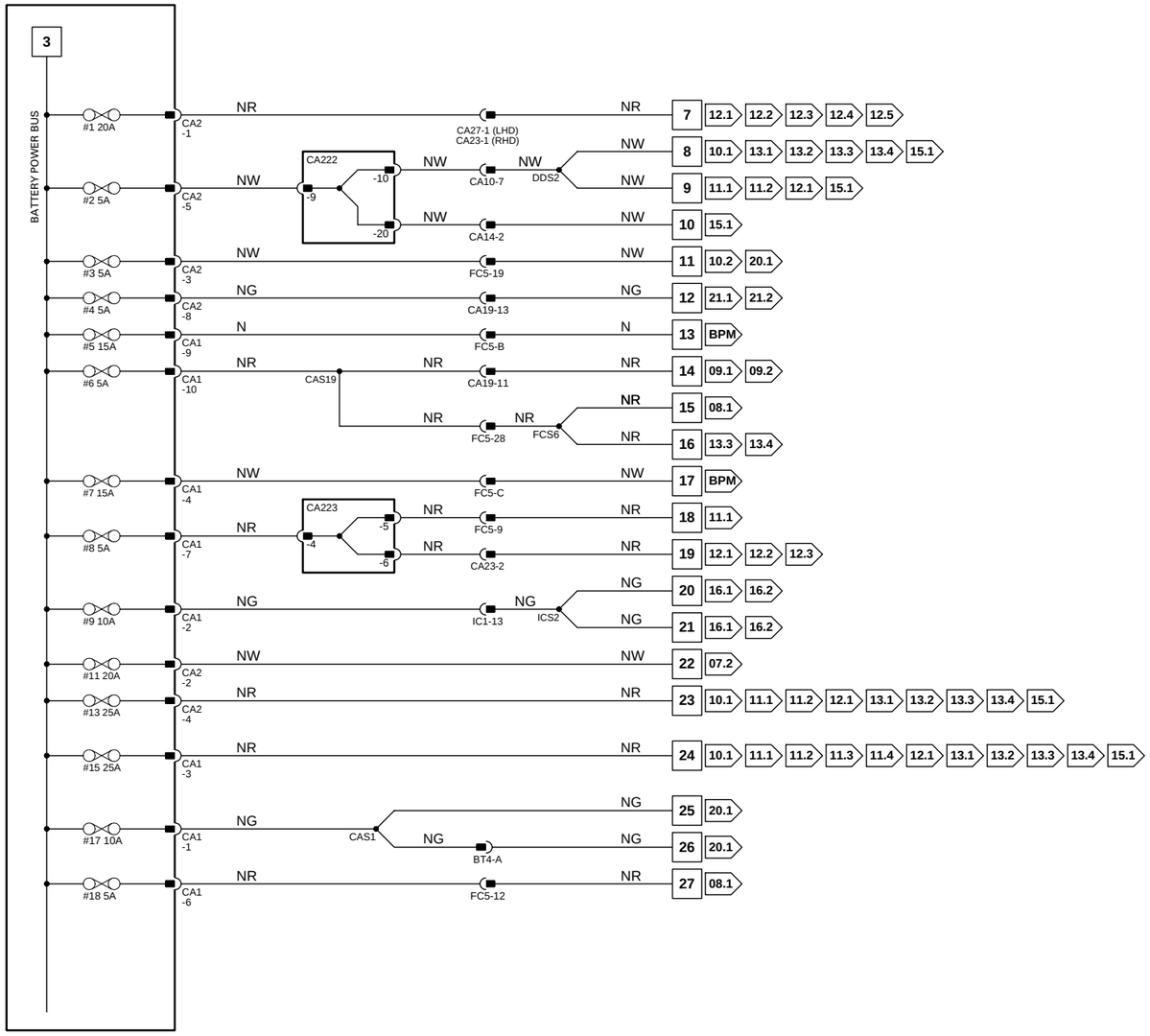
COMPONENTS

Component	Connector / Type / Color	Location / Access
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
SPLICE HEADER – CA222	CA222 / 20-WAY SUMITOMO SPLICE HEADER / GREY	RH HEELBOARD / HEELBOARD COVER
SPLICE HEADER – CA223	CA223 / 20-WAY SUMITOMO SPLICE HEADER / BLACK	RH HEELBOARD / HEELBOARD COVER
SPLICE HEADER – CA224	CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN	LH HEELBOARD / HEELBOARD COVER

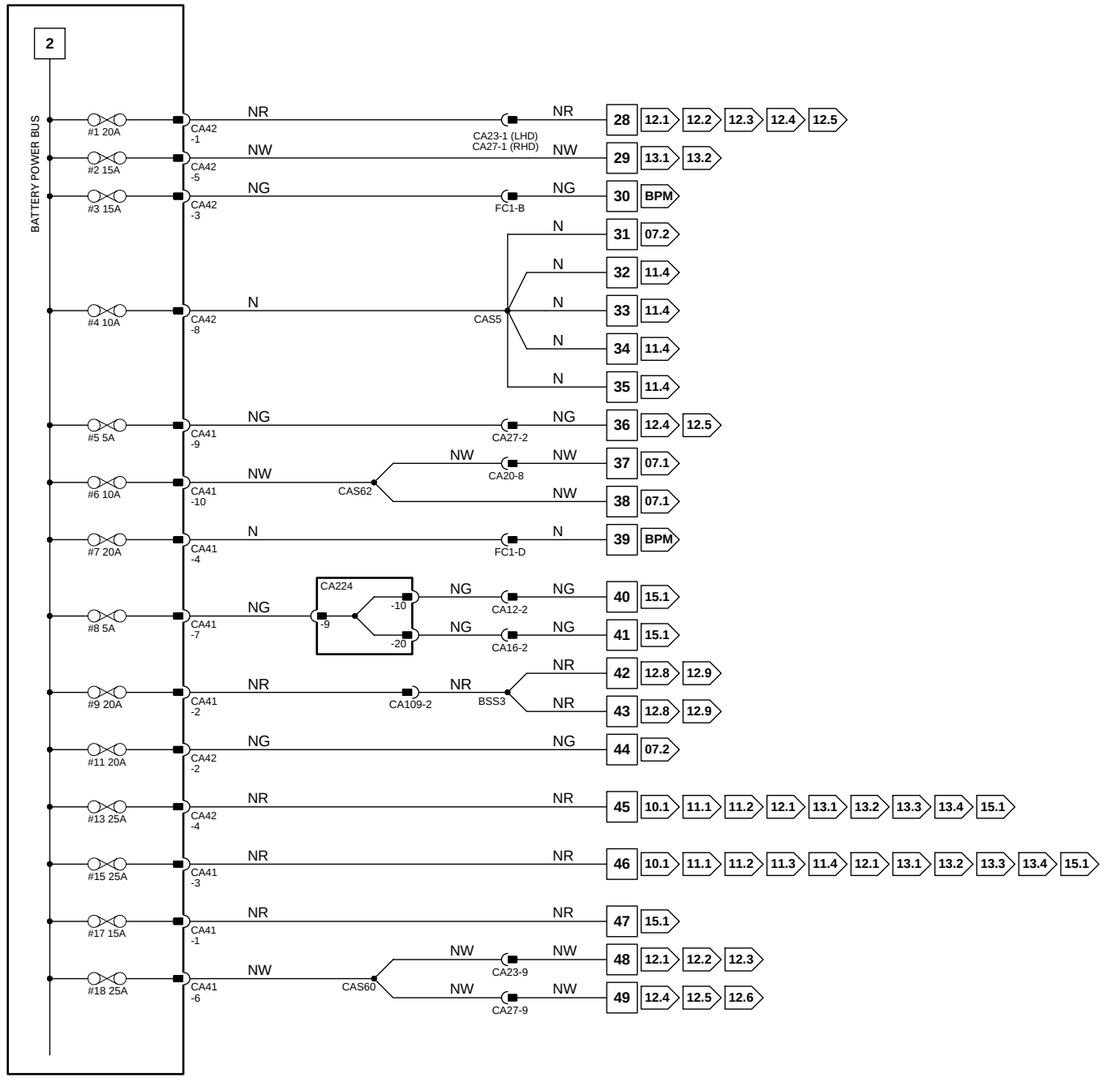
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
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
CA20	20-WAY MULTILOCK 070 / YELLOW	RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW PASSENGER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD

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



LH HEELBOARD FUSE BOX



RH HEELBOARD FUSE BOX

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

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 01.3

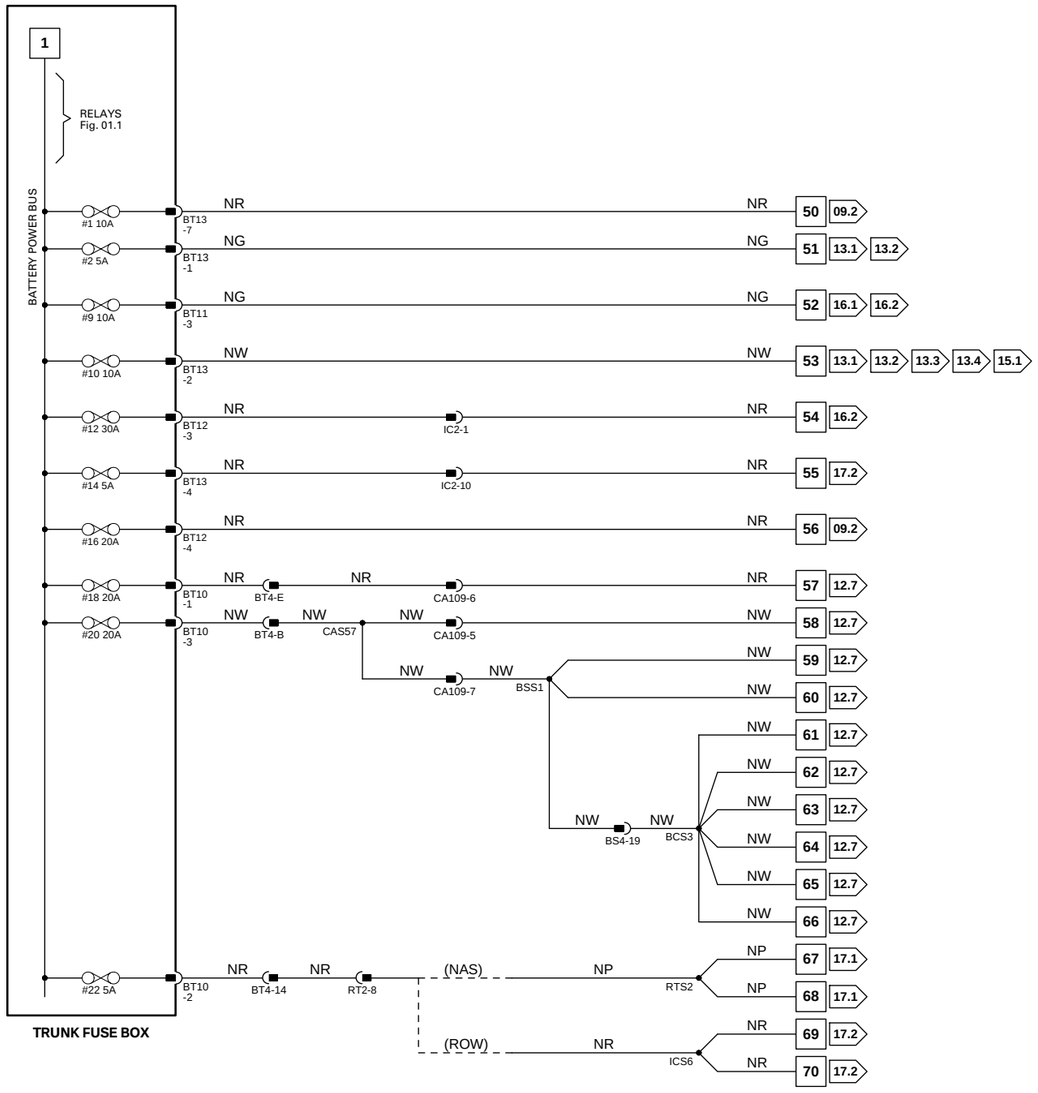
COMPONENTS

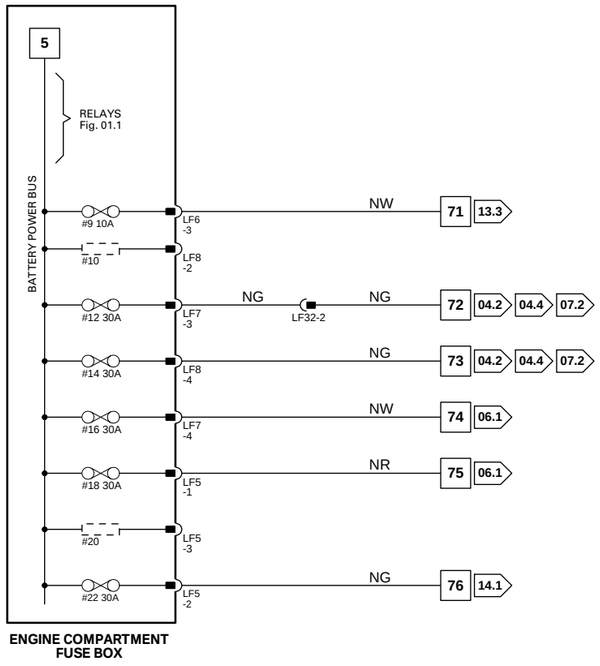
Component	Connector / Type / Color	Location / Access
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
FUSE BOX – ENGINE MANAGEMENT	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

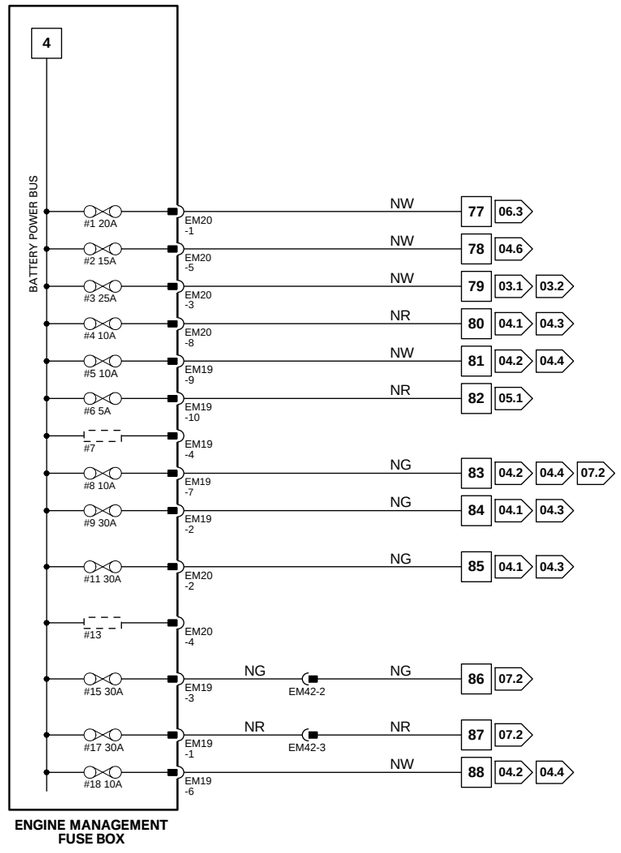
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BS4	20-WAY MULTILOCK 070 / WHITE	BELOW REAR CENTER CONSOLE SEAT SWITCHES
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA109	12-WAY MULTILOCK 070 / WHITE	BELOW REAR SEAT CUSHION
EM42	4-WAY YAZAKI / GREY	BULKHEAD / REAR OF ENGINE
IC2	8-WAY MULTILOCK 070 / WHITE	REARWARD OF FUEL TANK / BATTERY COVER
LF32	4-WAY YAZAKI / GREY	FORWARD OF LH FRONT SUSPENSION ARM
RT2	10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX

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







1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 01.4

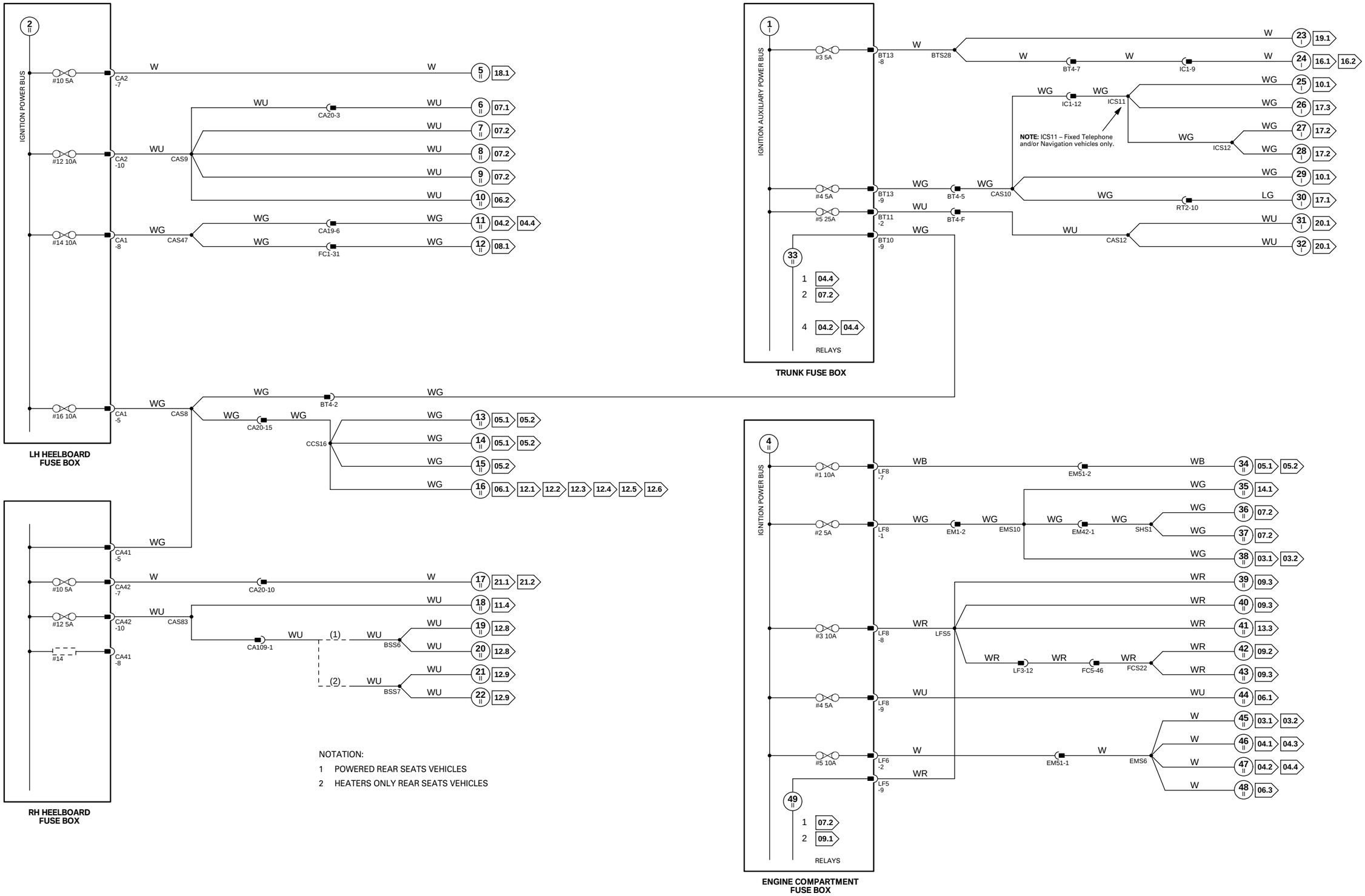
COMPONENTS

Component	Connector / Type / Color	Location / Access
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 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

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD
IC2	8-WAY MULTILOCK 070 / WHITE	REARWARD OF FUEL TANK / BATTERY COVER
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER
RT2	10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX

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



NOTATION:

1 POWERED REAR SEATS VEHICLES

2 HEATERS ONLY REAR SEATS VEHICLES

1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 01.5

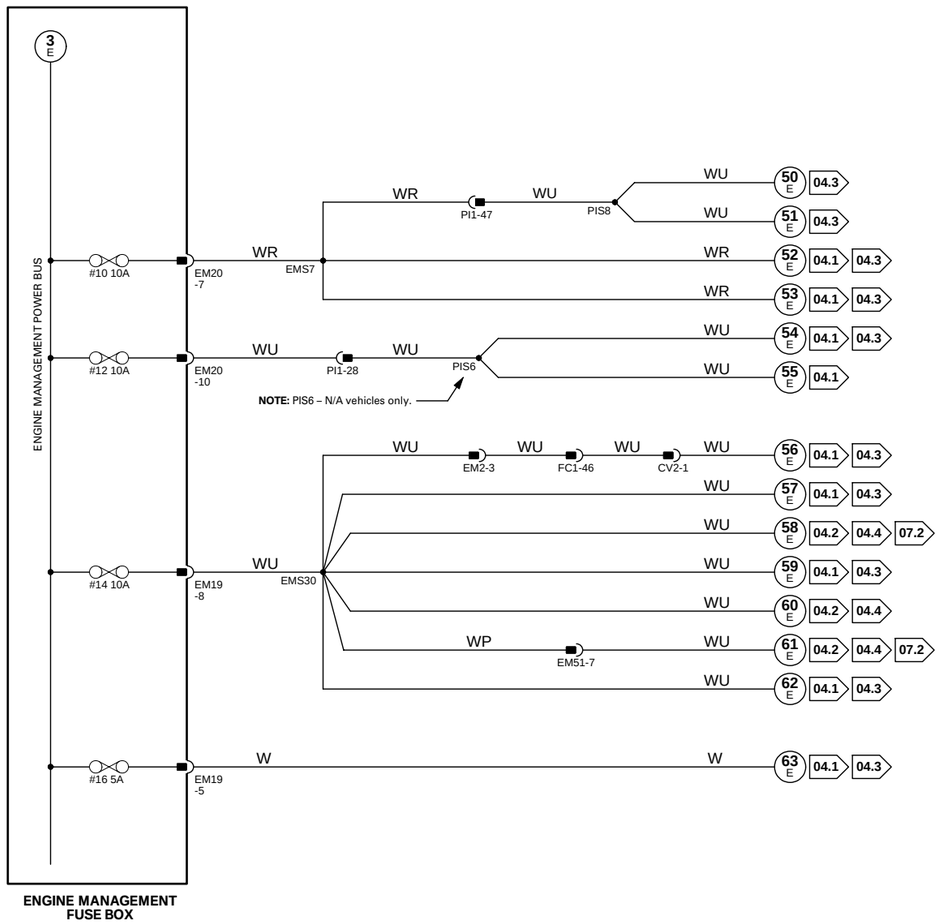
COMPONENTS

Component	Connector / Type / Color	Location / Access
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

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
CV2	3-WAY MULTILOCK 070 / WHITE	UNDER REAR SEAT
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE

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



1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 02.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
IGNITION SWITCH	FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
INERTIA SWITCH	CA6 / 3-WAY ECONOSEAL III LC / BLACK	RH 'A' POST / LOWER 'A' POST FINISHER

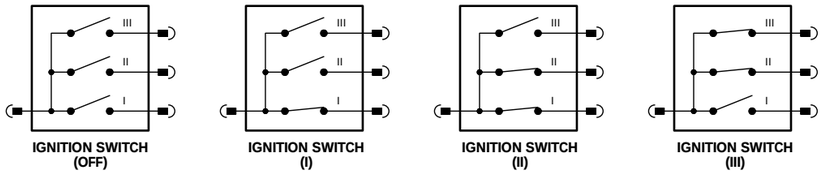
HARNESS-TO-HARNESS CONNECTORS

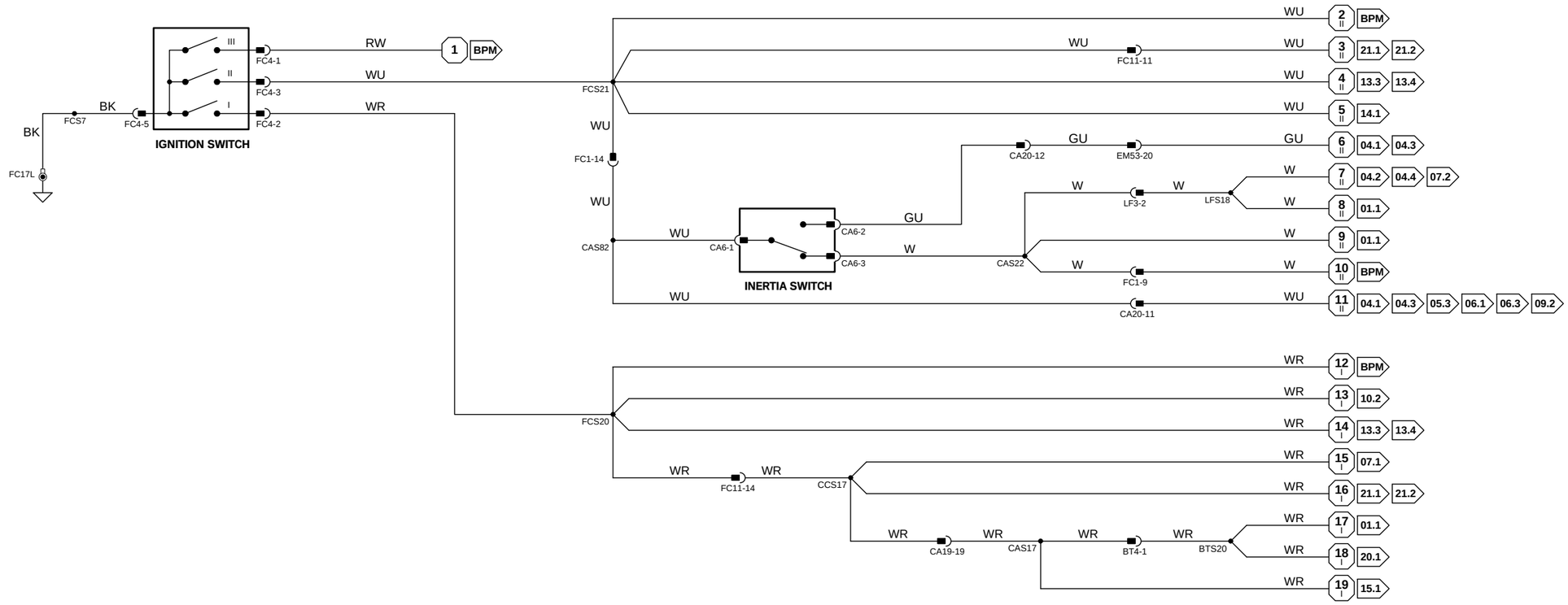
Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA20	20-WAY MULTILOCK 070 / YELLOW	RH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	RH 'A' POST / LOWER 'A' POST FINISHER
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD

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





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

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 02.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | − Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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 COMMUNICATIONS	
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
I	EM81-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R,D,4,3,2)
I	EM82-2	ENGINE CRANK	GROUND (CRANKING)	
D	EM82-15	OK TO START	ENCODED COMMUNICATIONS	
D	EM82-16	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	

KEY TRANSPONDER MODULE

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

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 03.1

COMPONENTS

Component	Connector / 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
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / 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)	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	18-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM60	2-WAY ECONOSEAL J2 / GREY	ENGINE COMPARTMENT / ADJACENT RH TO FALSE BULKHEAD
FC7	20-WAY MULTILOCK 070 / YELLOW	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
CC3R	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD

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

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

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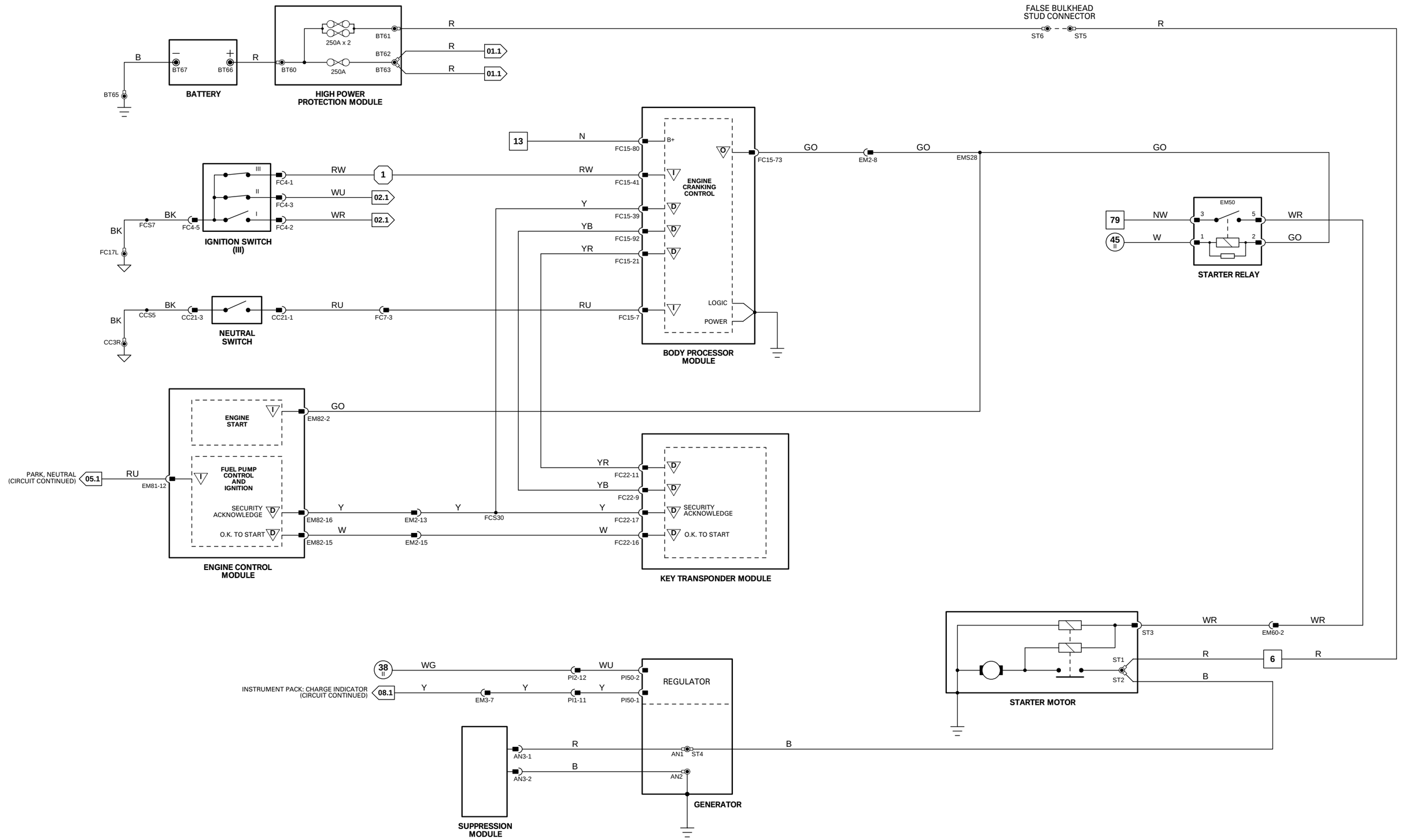

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input · O Output · + Sensor Supply V · − Sensor Ground · A ACP · C CAN · S SCP · D Serial and Encoded Data

VARIANT: AJ27 N/A Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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 COMMUNICATIONS	
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
I	EM81-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R,D,4,3,2)
I	EM82-2	ENGINE CRANK	GROUND (CRANKING)	
D	EM82-15	OK TO START	ENCODED COMMUNICATIONS	
D	EM82-16	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	

KEY TRANSPONDER MODULE

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

DUAL LINEAR SWITCH

▽	Pin	Description	Active	Inactive
I	CC8-2	TCM / DUAL LINEAR SWITCH COMMON GROUND SUPPLY	GROUND	GROUND
O	CC8-4	NEUTRAL SWITCH STATUS	GROUND (N)	B+ (P, R, D, 4, 3, 2)
O	CC8-11	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R, D, 4, 3, 2)

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 03.2

COMPONENTS

Component	Connector / 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 / GREY	RIGHT HAND SIDE OF GEAR SELECTOR / CENTER CONSOLE
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / 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
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	18-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM60	2-WAY ECONOSEAL J2 / 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 / YELLOW	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

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

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

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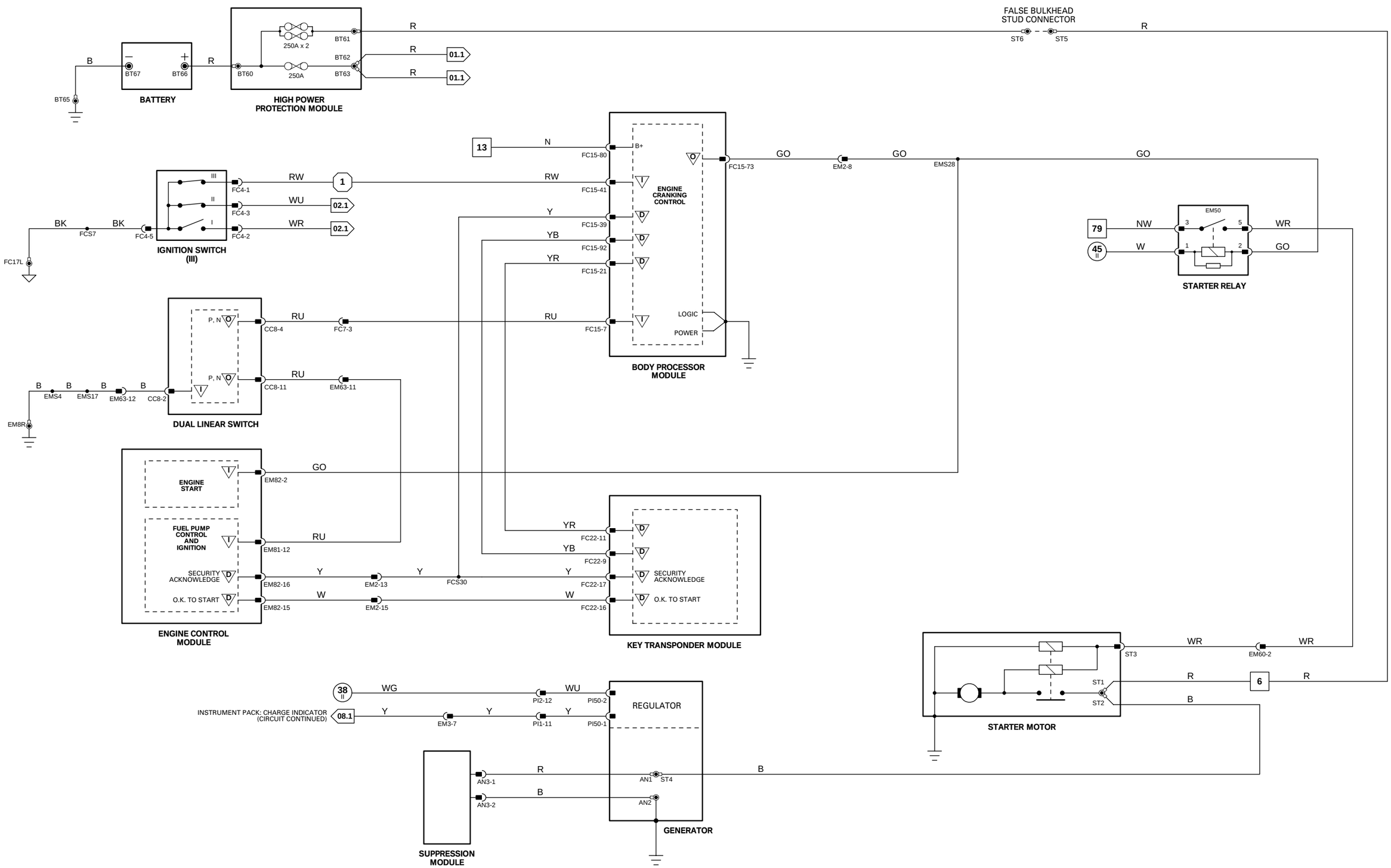


1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

Input | Output | Sensor Supply V | Sensor Ground | ACP | CAN | SCP | Serial and Encoded Data

VARIANT: AJ27 SC Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	EM80-01	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	B+
O	EM80-02	CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
I	EM80-03	GROUND (POWER)	GROUND	GROUND
O	EM80-04	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-05	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-06	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-07	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-08	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-09	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-15	EOT SIGNAL	2.5 V @ 34 °C; 0.5 V @ 90 °C; (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
D	EM80-17	SERIAL COMMUNICATIONS		
D	EM80-18	SERIAL COMMUNICATIONS		
D	EM80-19	ECM PROGRAMMING		
I	EM80-21	GROUND (THROTTLE MOTOR 1)	GROUND	GROUND
D	EM80-27	ECM PROGRAMMING		
I	EM80-29	GROUND (LOGIC 2)	GROUND	GROUND
I	EM80-31	GROUND (THROTTLE MOTOR 2)	GROUND	GROUND
O	EM81-01	VARIABLE VALVE TIMING SOLENOID + 'A' BANK	B+ (12% DUTY CYCLE @ IDLE) (INCREASING WITH ADVANCE)	GROUND
O	EM81-02	VARIABLE VALVE TIMING SOLENOID – 'A' BANK	GROUND	GROUND
O	EM81-03	EMS CONTROLLED RELAY ACTIVATE	GROUND	B+
O	EM81-06	VARIABLE VALVE TIMING SOLENOID + 'B' BANK	B+ (12% DUTY CYCLE @ IDLE) (INCREASING WITH ADVANCE)	GROUND
O	EM81-07	VARIABLE VALVE TIMING SOLENOID – 'B' BANK	GROUND	GROUND
I	EM81-08	GROUND (POWER)	GROUND	GROUND
I	EM81-09	PEDAL POSITION SIGNAL (PPS/1)	0.6 V = FOOT OFF; 3.8 V = PEDAL FULLY DEPRESSED	
I	EM81-10	TPS SIGNAL (TPS/1)	0.5 V = IDLE; 4.75 V = WOT	
I	EM81-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R,D,4,3,2)
I	EM81-16	FUEL TANK PRESSURE SENSOR SIGNAL	4.9 V = LOW PRESSURE, 0.2 V = HIGH PRESSURE	
I	EM81-17	EMS SWITCHED POWER SUPPLY 1	B+	0 V
I	EM81-18	PEDAL POSITION SIGNAL (PPS/2)	0.8 V = FOOT OFF; 2.4 V = PEDAL FULLY DEPRESSED	
I	EM81-19	TPS SIGNAL (TPS/2)	0.6 V = IDLE; 4.85 V = WOT	
I	EM81-21	GROUND (LOGIC 1)	GROUND	GROUND
I	EM81-22	PARKING BRAKE SWITCH	GROUND (APPLIED)	B+
SG	EM81-24	PEDAL POSITION / THROTTLE POSITION SENSORS SHIELD	GROUND	GROUND
SS	EM82-01	SENSOR SUPPLY VOLTAGE 1	5 V	5 V
I	EM82-02	ENGINE CRANK	GROUND (CRANKING)	
I	EM82-04	HO2S, UPSTREAM 'A' BANK – VARIABLE CURRENT (µA)	3.5 V	
I	EM82-05	HO2S, UPSTREAM 'B' BANK – VARIABLE CURRENT (µA)	3.5 V	
O	EM82-06	THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	B+
SG	EM82-07	SENSORS SIGNAL GROUND 1	GROUND	GROUND
I	EM82-08	BRAKE SWITCH	GROUND	B+
I	EM82-09	IGNITION SWITCHED POWER SUPPLY	B+	B+
SS	EM82-10	HO2S, UPSTREAM 'A' BANK – CONSTANT	3.8 V	
SS	EM82-11	HO2S, UPSTREAM 'B' BANK – CONSTANT	3.8 V	
I	EM82-12	INERTIA SWITCH ACTIVATED (VEHICLE IMPACT)	GROUND	B+
I	EM82-13	EMS SWITCHED POWER SUPPLY 2	B+	0 V
I	EM82-14	ECT SIGNAL	0.41 V @ 90 °C (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
D	EM82-15	OK TO START	ENCODED COMMUNICATIONS	
D	EM82-16	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	
I	EM82-17	IATS SIGNAL	0.98 V @ 10 °C (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
O	EM83-03	AIR ASSIST CLOSE VALVE ACTIVATE	8 V @ IDLE (78% DUTY CYCLE)	
SS	EM83-05	SENSOR SUPPLY VOLTAGE 2	5 V	5 V
SG	EM83-06	SENSOR SHIELD	GROUND	GROUND
SG	EM83-07	CKPS SIGNAL GROUND	GROUND	GROUND
I	EM83-08	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
SG	EM83-09	CMPS, 'A' BANK SIGNAL GROUND	GROUND	GROUND
SG	EM83-12	HO2S SHIELD	GROUND	GROUND
SG	EM83-13	SENSORS SIGNAL GROUND 2	GROUND	GROUND
I	EM83-14	KNOCK SENSOR, 'A' BANK SIGNAL	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
C	EM83-15	CAN NETWORK	15 – 1500 Hz	
C	EM83-16	CAN NETWORK	15 – 1500 Hz	
SG	EM83-17	CMPS, 'B' BANK SIGNAL GROUND	GROUND	GROUND
I	EM83-18	CMPS, 'B' BANK SIGNAL	0.7 – 1 VAC @ 1000 RPM = 43 Hz; 2000 RPM = 72 Hz	
I	EM83-19	CMPS, 'A' BANK SIGNAL	0.7 – 1 VAC @ 1000 RPM = 43 Hz; 2000 RPM = 72 Hz	
I	EM83-20	BATTERY POWER SUPPLY	B+	B+
I	EM83-21	HO2S, 'A' BANK DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	EM83-22	HO2S, 'B' BANK DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	EM83-23	KNOCK SENSOR, 'B' BANK SIGNAL	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
C	EM83-24	CAN NETWORK	15 – 1500 Hz	
C	EM83-25	CAN NETWORK	15 – 1500 Hz	
SG	EM83-26	MAFS REFERENCE GROUND	GROUND	GROUND
SG	EM83-27	MAFS REFERENCE GROUND	GROUND	GROUND
I	EM83-28	MAFS SIGNAL	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I	EM84-01	GROUND (DOWNSTREAM HO2S HEATERS)	GROUND	GROUND
O	EM84-07	HO2S HEATER, 'A' BANK DOWNSTREAM CONTROL	GROUND (20 – 60% DUTY CYCLE)	B+
O	EM84-15	HO2S HEATER, 'B' BANK DOWNSTREAM CONTROL	GROUND (20 – 60% DUTY CYCLE)	B+
I	EM84-16	GROUND (INJECTORS 1A, 2B, 3B, 4A)	GROUND	GROUND
I	EM84-22	GROUND (INJECTORS 1B, 2A, 3A, 4B)	GROUND	GROUND
O	EM85-01	HO2S HEATER, 'A' BANK UPSTREAM CONTROL	GROUND (85 – 90% DUTY CYCLE AT IDLE)	B+
O	EM85-02	HO2S HEATER, 'B' BANK UPSTREAM CONTROL	GROUND (85 – 90% DUTY CYCLE AT IDLE)	B+
O	EM85-05	"COOL BOX" COOLING FAN ACTIVATE	GROUND	B+
I	EM85-06	GROUND (HO2S A UPSTREAM HEATER)	GROUND	GROUND
I	EM85-07	GROUND (HO2S B UPSTREAM HEATER)	GROUND	GROUND
I	EM85-08	HO2S HEATERS OBD MONITOR	HEATERS ACTIVE = B+ V	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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
AIR ASSIST CLOSE VALVE	PI29 / 3-WAY SUMITOMO SS / GREY	THROTTLE ASSEMBLY
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CCV: 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 – 'A' BANK	PI16 / 2-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / 'A' BANK CYLINDER HEAD, REAR
CMPS: CAMSHAFT POSITION SENSOR – 'B' BANK	PI15 / 2-WAY YAZAKI / 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	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ECTS: ENGINE COOLANT TEMPERATURE SENSOR	PI4 / 2-WAY ECONOSEAL E J2 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EOTS: ENGINE OIL TEMPERATURE SENSOR	PI38 / 2-WAY ECONOSEAL EC J2 / GREY	ENGINE BLOCK / BELOW GENERATOR
EVAPP: EVAP CANISTER PURGE VALVE	EM39 / 2-WAY ECONOSEAL J2+ / BLACK	ENGINE COMPARTMENT / BULKHEAD
FTPS: FUEL TANK PRESSURE SENSOR	FP1 / 3-WAY ECONOSEAL III LC / BLACK	TOP OF FUEL TANK / TRUNK CARPET
HO2S: HEATED OXYGEN SENSOR (DOWNSTREAM) – 'A' BANK	EM22 / 2-WAY SUMITOMO 0902 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (DOWNSTREAM) – 'B' BANK	EM24 / 2-WAY SUMITOMO 0902 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) – 'A' BANK	EM21 / 4-WAY SUMITOMO 0902 / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) – 'B' BANK	EM23 / 4-WAY SUMITOMO 0902 / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
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
PPS: PEDAL POSITION SENSORS	PI42 / 5-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
THROTTLE MOTOR	PI33 / 2-WAY SUMITOMO HM250 / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
TPS: THROTTLE POSITION SENSORS	PI6 / 4-WAY ECONOSEAL J2T / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
VVT SOLENOID VALVE – 'A' BANK	PI31 / 2-WAY YAZAKI 0902 / BLACK	ENGINE COMPARTMENT / 'A' BANK CYLINDER HEAD / FRONT
VVT SOLENOID VALVE – 'B' BANK	PI32 / 2-WAY YAZAKI 0902 / 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
O2S HEATERS RELAY	BROWN	EM75 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
BT5	3-WAY MULTILOCK 070 / WHITE	TOP OF FUEL TANK / TRUNK CARPET
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CV2	3-WAY MULTILOCK 070 / WHITE	UNDER REAR SEAT
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	18-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	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

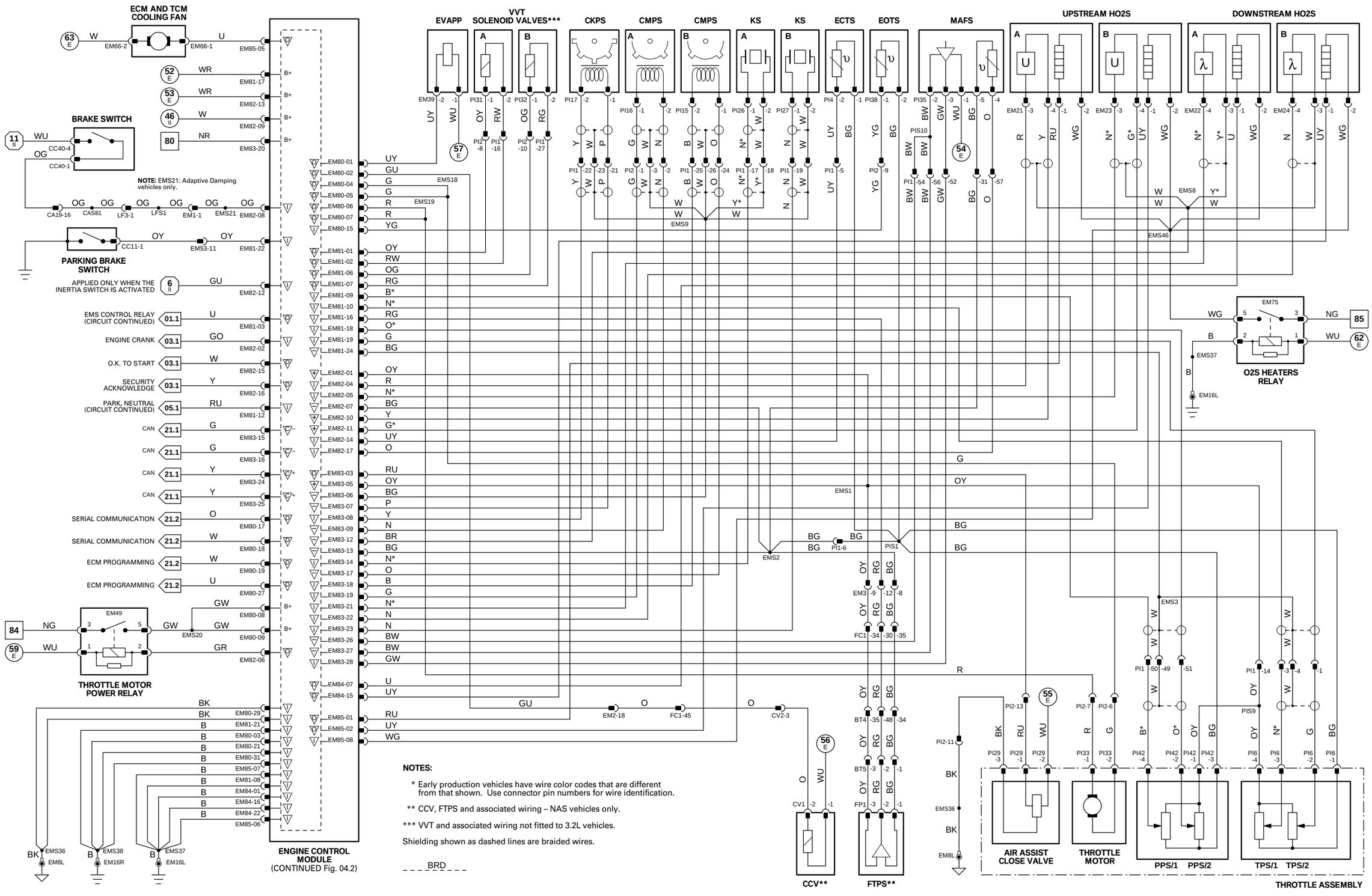
GROUNDS

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

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

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

DATE OF ISSUE: September 2000



NOTES:

* Early production vehicles have wire color codes that are different from that shown. Use connector pin numbers for wire identification.

** CCV, FTPS and associated wiring – NAS vehicles only.

*** VVT and associated wiring not fitted to 3.2L vehicles.

Shielding shown as dashed lines are braided wires.

_ _ _ BRD _ _ _

1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: AJ27 N/A Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

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
I	EM80-10	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	
I	EM80-11	A/CCM COMPRESSOR CLUTCH REQUEST	B+	GROUND
O	EM80-12	ELECTRICAL LOAD INHIBIT	GROUND	B+
O	EM80-16	CRUISE CONTROL ON STATUS LED	GROUND	B+
D	EM80-17	SERIAL COMMUNICATIONS		
D	EM80-18	SERIAL COMMUNICATIONS		
D	EM80-19	ECM PROGRAMMING		
I	EM80-20	CRUISE CONTROL BRAKE CANCEL REQUEST	GROUND	B+
I	EM80-22	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	
I	EM80-23	A/CCM ELECTRICAL LOAD REQUEST (HEATED WINDSHIELD)	B+	GROUND
O	EM80-25	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND	B+
O	EM81-04	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	B+
O	EM81-05	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	B+
I	EM81-13	CRUISE CONTROL ON REQUEST	B+	GROUND
I	EM81-14	CRUISE CONTROL SET +/-	7.3 V = (+), 8.8 V = (–)B+	
I	EM81-15	CRUISE CONTROL CANCEL / RESUME	7.3 V = RESUME, 8.8 V = CANCEL B+	
I	EM83-04	FUEL PUMP RELAY ACTIVATE	GROUND	B+
I	EM83-10	IGNITION MODULES 1A, 2B, 3B, 4A OBD MONITOR	23 Hz @ IDLE (5 V)	
I	EM83-11	IGNITION MODULES 1B, 2A, 3A, 4B OBD MONITOR	23 Hz @ IDLE (5 V)	
O	EM84-02	INJECTOR 1A ACTIVATE	GROUND	B+
O	EM84-03	INJECTOR 3B ACTIVATE	GROUND	B+
O	EM84-04	INJECTOR 2B ACTIVATE	GROUND	B+
O	EM84-05	INJECTOR 4A ACTIVATE	GROUND	B+
O	EM84-06	INJECTOR 1B ACTIVATE	GROUND	B+
O	EM84-09	IGNITION MODULE 4A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-10	IGNITION MODULE 3A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-11	IGNITION MODULE 2A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-12	IGNITION MODULE 1A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
I	EM84-13	INJECTOR 4B ACTIVATE	GROUND	B+
I	EM84-14	INJECTOR 3A ACTIVATE	GROUND	B+
O	EM84-17	IGNITION MODULE 4B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-18	IGNITION MODULE 3B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-19	IGNITION MODULE 2B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-20	IGNITION MODULE 1B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-21	INJECTOR 2A ACTIVATE	GROUND	B+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 04.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH	PI36 / 1-WAY SUMITOMO 90 A TYPE / BLACK	ENGINE COMPARTMENT / A/C COMPRESSOR
A/CCM: 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	CENTER OF STEERING WHEEL
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	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	BT17 / 6-WAY SUMITOMO DL090 / NATURAL	EVAPORATIVE FLANGE / TOP OF FUEL TANK
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
IGNITION COIL – 1A	PI51 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 1B	PI55 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 2A	PI52 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 2B	PI56 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 3A	PI53 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 3B	PI57 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 4A	PI54 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 4B	PI58 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
RADIATOR FAN CONTROL RELAY MODULE	LF31 / 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	LF26 / 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	EM52 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL INJECTION RELAY	BLACK	EM25 / BLACK	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 / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	18-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LF32	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 / BLACK	CENTER OF STEERING WHEEL

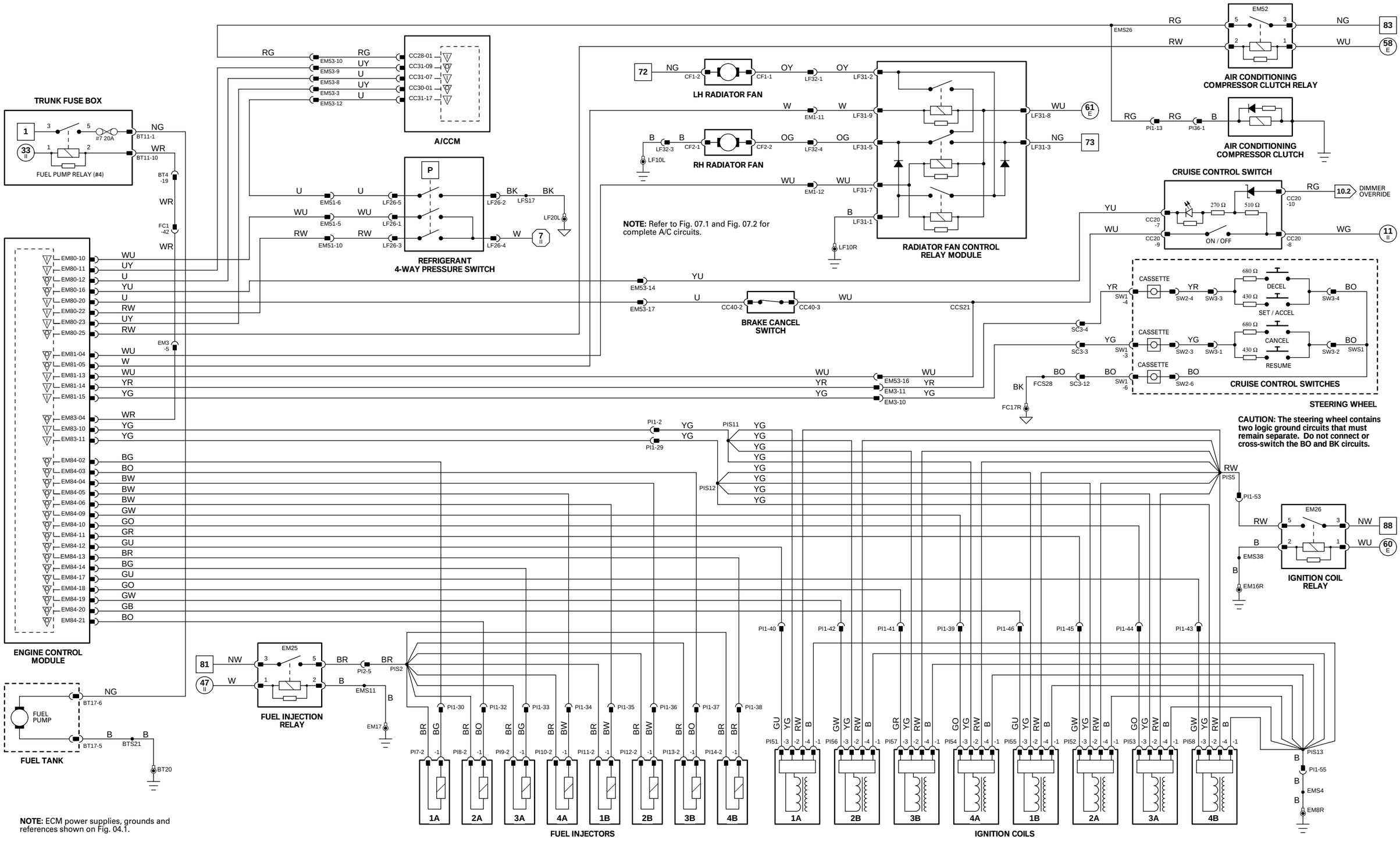
GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) – TRUNK / RH REAR GROUND STUD
EM8R	EYELET (PAIR) – EMS LH GROUND STUD
EM16R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) – EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
LF10L	EYELET (PAIR) – LH FORWARD GROUND STUD
LF10R	EYELET (PAIR) – LH FORWARD GROUND STUD
LF20L	EYELET (PAIR) – RH FORWARD GROUND STUD

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

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

DATE OF ISSUE: September 2000



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 T Fig. 02.1

Input · Output · Sensor Supply V · Sensor Ground · ACP · CAN · SCP · Serial and Encoded Data

VARIANT: AJ27 N/A Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

ENGINE CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	EM80-01	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)	B+
O	EM80-02	CANISTER CLOSE VALVE ACTIVATE	GROUND	B+
I	EM80-03	GROUND (POWER)	GROUND	GROUND
O	EM80-04	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-05	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-06	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
O	EM80-07	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-08	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-09	THROTTLE MOTOR POWER SUPPLY	B+	GROUND
I	EM80-15	EOT SIGNAL	2.5 V @ 34 °C; 0.5 V @ 90 °C; (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
D	EM80-17	SERIAL COMMUNICATIONS		
D	EM80-18	SERIAL COMMUNICATIONS		
D	EM80-19	ECM PROGRAMMING		
I	EM80-21	GROUND (THROTTLE MOTOR 1)	GROUND	GROUND
D	EM80-27	ECM PROGRAMMING		
I	EM80-28	MAPS SIGNAL	1.2 V = IDLE; 3.6 V = ENGINE SWITCHED OFF	
I	EM80-29	GROUND (LOGIC 2)	GROUND	GROUND
I	EM80-31	GROUND (THROTTLE MOTOR 2)	GROUND	GROUND
O	EM81-03	EMS CONTROLLED RELAY ACTIVATE	GROUND	B+
I	EM81-08	GROUND (POWER)	GROUND	GROUND
I	EM81-09	PEDAL POSITION SIGNAL (PPS/1)	0.6 V = FOOT OFF; 3.8 V = PEDAL FULLY DEPRESSED	
I	EM81-10	TPS SIGNAL (TPS/1)	0.5 V = IDLE; 4.75 V = WOT	
I	EM81-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)	GROUND (R,D,4,3,2)
I	EM81-16	FUEL TANK PRESSURE SENSOR SIGNAL	4.9 V = LOW PRESSURE, 0.2 V = HIGH PRESSURE	
I	EM81-17	EMS SWITCHED POWER SUPPLY 1	B+	0 V
I	EM81-18	PEDAL POSITION SIGNAL (PPS/2)	0.8 V = FOOT OFF; 2.4 V = PEDAL FULLY DEPRESSED	
I	EM81-19	TPS SIGNAL (TPS/2)	0.6 V = IDLE; 4.85 V = WOT	
I	EM81-21	GROUND (LOGIC 1)	GROUND	GROUND
I	EM81-22	PARKING BRAKE SWITCH	GROUND (APPLIED)	B+
I	EM81-23	IATS 2 SIGNAL	2.38 V @ 20 °C, (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
SG	EM81-24	PEDAL POSITION / THROTTLE POSITION SENSORS SHIELD	GROUND	GROUND
SS	EM82-01	SENSOR SUPPLY VOLTAGE 1	5 V	5 V
I	EM82-02	ENGINE CRANK	GROUND (CRANKING)	
I	EM82-04	HO2S, UPSTREAM 'A' BANK – VARIABLE CURRENT (µA)	3.5 V	
I	EM82-05	HO2S, UPSTREAM 'B' BANK – VARIABLE CURRENT (µA)	3.5 V	
O	EM82-06	THROTTLE MOTOR POWER RELAY ACTIVATE	GROUND	B+
SG	EM82-07	SENSORS SIGNAL GROUND 1	GROUND	GROUND
I	EM82-08	BRAKE SWITCH	GROUND	B+
I	EM82-09	IGNITION SWITCHED POWER SUPPLY	B+	B+
SS	EM82-10	HO2S, UPSTREAM 'A' BANK – CONSTANT	3.8 V	
SS	EM82-11	HO2S, UPSTREAM 'B' BANK – CONSTANT	3.8 V	
I	EM82-12	INERTIA SWITCH ACTIVATED (VEHICLE IMPACT)	GROUND	B+
I	EM82-13	EMS SWITCHED POWER SUPPLY 2	B+	0 V
I	EM82-14	ECT SIGNAL	0.41 V @ 90 °C (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
D	EM82-15	OK TO START	ENCODED COMMUNICATIONS	
D	EM82-16	SECURITY ACKNOWLEDGE	ENCODED COMMUNICATIONS	
I	EM82-17	IATS SIGNAL	0.98 V @ 10 °C (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)	
SS	EM83-05	SENSOR SUPPLY VOLTAGE 2	5 V	5 V
SG	EM83-06	SENSOR SHIELD	GROUND	GROUND
SG	EM83-07	CKPS SIGNAL GROUND	GROUND	GROUND
I	EM83-08	CKPS SIGNAL	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
SG	EM83-09	CMPS, 'A' BANK SIGNAL GROUND	GROUND	GROUND
SG	EM83-12	HO2S SHIELD	GROUND	GROUND
SG	EM83-13	SENSORS SIGNAL GROUND 2	GROUND	GROUND
I	EM83-14	KNOCK SENSOR, 'A' BANK SIGNAL	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
C	EM83-15	CAN NETWORK	15 – 1500 Hz	
C	EM83-16	CAN NETWORK	15 – 1500 Hz	
SG	EM83-17	CMPS, 'B' BANK SIGNAL GROUND	GROUND	GROUND
I	EM83-18	CMPS, 'B' BANK SIGNAL	0.7 – 1 VAC @ 1000 RPM = 43 Hz; 2000 RPM = 72 Hz	
I	EM83-19	CMPS, 'A' BANK SIGNAL	0.7 – 1 VAC @ 1000 RPM = 43 Hz; 2000 RPM = 72 Hz	
I	EM83-20	BATTERY POWER SUPPLY	B+	B+
I	EM83-21	HO2S, 'A' BANK DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	EM83-22	HO2S, 'B' BANK DOWNSTREAM	0.1 – 0.9 V @ IDLE (SWING)	
I	EM83-23	KNOCK SENSOR, 'B' BANK SIGNAL	0 kHz = NO KNOCK, 2 – 20 kHz = KNOCK	
C	EM83-24	CAN NETWORK	15 – 1500 Hz	
C	EM83-25	CAN NETWORK	15 – 1500 Hz	
SG	EM83-26	MAFS REFERENCE GROUND	GROUND	GROUND
SG	EM83-27	MAFS REFERENCE GROUND	GROUND	GROUND
I	EM83-28	MAFS SIGNAL	1.2 V @ IDLE, INCREASING WITH RPM INCREASE	
I	EM84-01	GROUND (DOWNSTREAM HO2S HEATERS)	GROUND	GROUND
O	EM84-07	HO2S HEATER, 'A' BANK DOWNSTREAM CONTROL	GROUND (20 – 60% DUTY CYCLE)	B+
O	EM84-15	HO2S HEATER, 'B' BANK DOWNSTREAM CONTROL	GROUND (20 – 60% DUTY CYCLE)	B+
I	EM84-16	GROUND (INJECTORS 1A, 2B, 3B, 4A)	GROUND	GROUND
I	EM84-22	GROUND (INJECTORS 1B, 2A, 3A, 4B)	GROUND	GROUND
O	EM85-01	HO2S HEATER, 'A' BANK UPSTREAM CONTROL	GROUND (85 – 90% DUTY CYCLE AT IDLE)	B+
O	EM85-02	HO2S HEATER, 'B' BANK UPSTREAM CONTROL	GROUND (85 – 90% DUTY CYCLE AT IDLE)	B+
O	EM85-03	EGR STEPPER MOTOR 'S1' WINDING SUPPLY	GROUND	B+
O	EM85-04	EGR STEPPER MOTOR 'S2' WINDING SUPPLY	GROUND	B+
O	EM85-05	"COOL BOX" COOLING FAN ACTIVATE	GROUND	B+
I	EM85-06	GROUND (HO2S A UPSTREAM HEATER)	GROUND	GROUND
I	EM85-07	GROUND (HO2S B UPSTREAM HEATER)	GROUND	GROUND
I	EM85-08	HO2S HEATERS OBD MONITOR	HEATERS ACTIVE = B+ V	
O	EM85-09	EGR STEPPER MOTOR 'S3' WINDING SUPPLY	GROUND	B+
O	EM85-10	EGR STEPPER MOTOR 'S4' WINDING SUPPLY	GROUND	B+

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

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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	Connector / Type / Color	Location / Access
BRAKE SWITCH	CC40 / 4-WAY MULTILOCK 070 / WHITE	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CCV: 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 – 'A' BANK	PI16 / 2-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / 'A' BANK CYLINDER HEAD, REAR
CMPS: CAMSHAFT POSITION SENSOR – 'B' BANK	PI15 / 2-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / 'B' BANK CYLINDER HEAD, REAR
ECM AND TCM COOLING FAN	EM66 / 2-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
EGR VALVE	PI34 / 6-WAY SUMITOMO 0902 / GREY	ENGINE COMPARTMENT / REAR OF THROTTLE ASSEMBLY
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ECTS: ENGINE COOLANT TEMPERATURE SENSOR	PI4 / 2-WAY ECONOSEAL E J2 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EOTS: ENGINE OIL TEMPERATURE SENSOR	PI38 / 2-WAY ECONOSEAL EC J2 / GREY	ENGINE BLOCK / BELOW GENERATOR
EVAPP: EVAP CANISTER PURGE VALVE	EM39 / 2-WAY ECONOSEAL J2+ / BLACK	ENGINE COMPARTMENT / BULKHEAD
FTPS: FUEL TANK PRESSURE SENSOR	FP1 / 3-WAY ECONOSEAL III LC / BLACK	TOP OF FUEL TANK / TRUNK CARPET
HO2S: HEATED OXYGEN SENSOR (DOWNSTREAM) – 'A' BANK	EM22 / 2-WAY SUMITOMO 0902 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (DOWNSTREAM) – 'B' BANK	EM24 / 2-WAY SUMITOMO 0902 / BLACK	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) – 'A' BANK	EM21 / 4-WAY SUMITOMO 0902 / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
HO2S: HEATED OXYGEN SENSOR (UPSTREAM) – 'B' BANK	EM23 / 4-WAY SUMITOMO 0902 / GREY	ENGINE COMPARTMENT / BRACKET ON TOP OF TRANSMISSION
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
MAPS: MANIFOLD ABSOLUTE PRESSURE SENSOR	EM10 / 3-WAY SUMITOMO / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
PARKING BRAKE SWITCH	CC11 / 2-WAY MULTILOCK 040 / BLACK	CENTER CONSOLE ASSEMBLY
PPS: PEDAL POSITION SENSORS	PI42 / 5-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
THROTTLE MOTOR	PI33 / 2-WAY SUMITOMO HM250 / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
TPS: THROTTLE POSITION SENSORS	PI6 / 4-WAY ECONOSEAL J2T / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY

RELAYS

Relay	Case Color	Connector / Color	Location / Access
THROTTLE MOTOR POWER RELAY	BROWN	EM49 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
O2S HEATERS RELAY	BROWN	EM75 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
BT5	3-WAY MULTILOCK 070 / WHITE	TOP OF FUEL TANK / TRUNK CARPET
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CV2	3-WAY MULTILOCK 070 / WHITE	UNDER REAR SEAT
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	18-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	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

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

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

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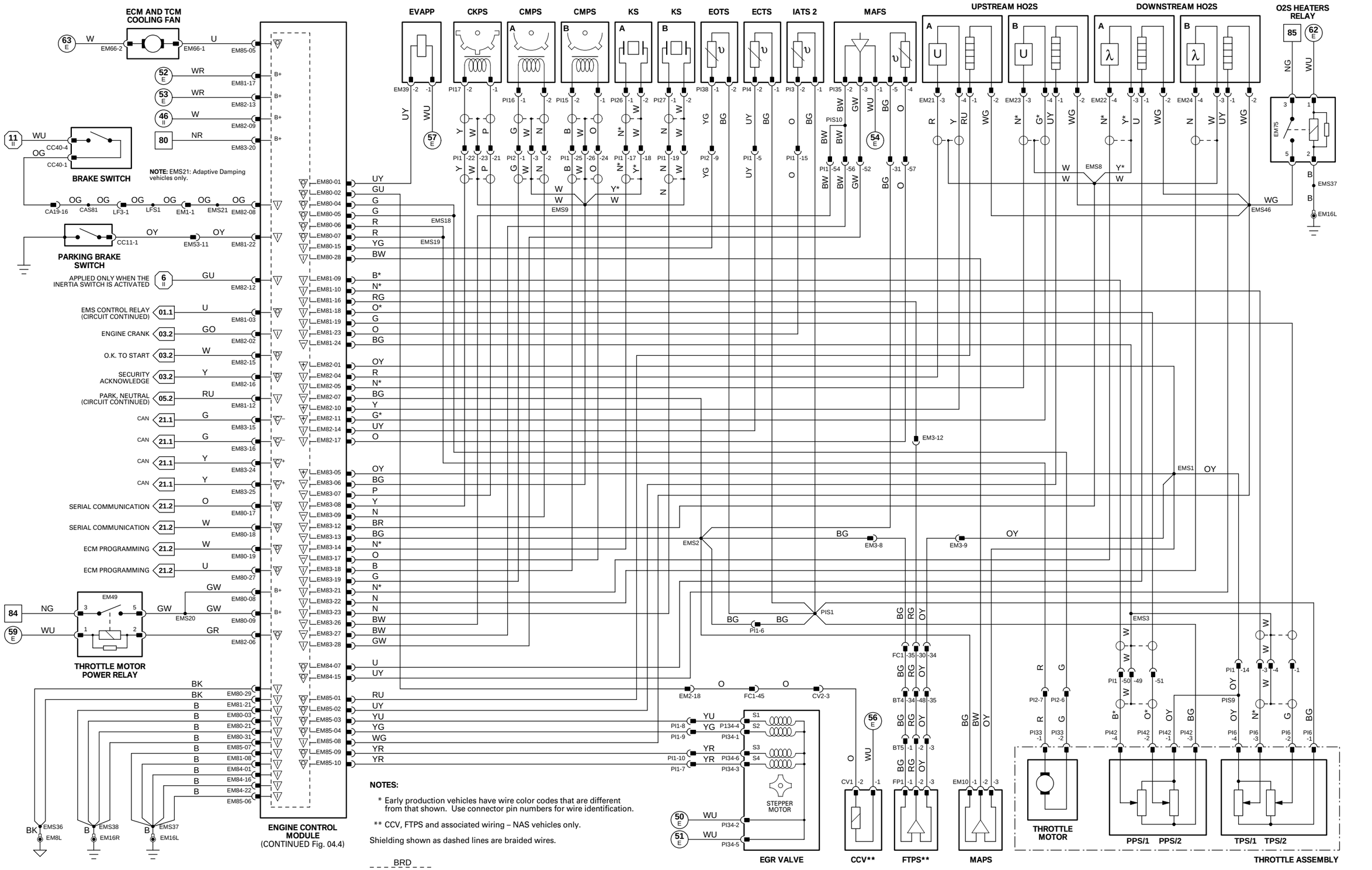

NOTES:

* Early production vehicles have wire color codes that are different from that shown. Use connector pin numbers for wire identification.

** CCV, FTPS and associated wiring – NAS vehicles only.

Shielding shown as dashed lines are braided wires.

_ _ _ BRD _ _ _

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 (1 → 19 T) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: AJ27 SC Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

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
I	EM80-10	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	
I	EM80-11	A/CCM COMPRESSOR CLUTCH REQUEST	B+	GROUND
O	EM80-12	ELECTRICAL LOAD INHIBIT	GROUND	B+
O	EM80-14	INTERCOOLER PUMP RELAY ACTIVATE	GROUND	B+
O	EM80-16	CRUISE CONTROL ON STATUS LED	GROUND	B+
I	EM80-20	CRUISE CONTROL BRAKE CANCEL REQUEST	GROUND	B+
I	EM80-22	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	
I	EM80-23	A/CCM ELECTRICAL LOAD REQUEST (HEATED WINDSHIELD)	B+	GROUND
O	EM80-25	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND	B+
O	EM81-04	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	B+
O	EM81-05	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	B+
I	EM81-13	CRUISE CONTROL ON REQUEST	B+	GROUND
I	EM81-14	CRUISE CONTROL SET +/-	7.3 V = (+), 8.8 V = (–)B+	
I	EM81-15	CRUISE CONTROL CANCEL / RESUME	7.3 V = RESUME, 8.8 V = CANCEL B+	
O	EM82-03	FUEL PUMP RELAY 2 ACTIVATE	GROUND	B+
I	EM83-04	FUEL PUMP RELAY ACTIVATE	GROUND	B+
I	EM83-10	IGNITION MODULES 1A, 2B, 3B, 4A OBD MONITOR	23 Hz @ IDLE (5 V)	
I	EM83-11	IGNITION MODULES 1B, 2A, 3A, 4B OBD MONITOR	23 Hz @ IDLE (5 V)	
O	EM84-02	INJECTOR 1A ACTIVATE	GROUND	B+
O	EM84-03	INJECTOR 3B ACTIVATE	GROUND	B+
O	EM84-04	INJECTOR 2B ACTIVATE	GROUND	B+
O	EM84-05	INJECTOR 4A ACTIVATE	GROUND	B+
O	EM84-06	INJECTOR 1B ACTIVATE	GROUND	B+
O	EM84-09	IGNITION MODULE 4A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-10	IGNITION MODULE 3A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-11	IGNITION MODULE 2A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-12	IGNITION MODULE 1A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
I	EM84-13	INJECTOR 4B ACTIVATE	GROUND	B+
I	EM84-14	INJECTOR 3A ACTIVATE	GROUND	B+
O	EM84-17	IGNITION MODULE 4B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-18	IGNITION MODULE 3B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-19	IGNITION MODULE 2B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-20	IGNITION MODULE 1B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)	B+
O	EM84-21	INJECTOR 2A ACTIVATE	GROUND	B+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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. 04.4

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIR CONDITIONING COMPRESSOR CLUTCH	PI36 / 1-WAY SUMITOMO 90 A TYPE / BLACK	ENGINE COMPARTMENT / A/C COMPRESSOR
A/CCM: 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	CENTER OF STEERING WHEEL
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	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 PUMPS	BT17 / 6-WAY SUMITOMO DL090 / NATURAL	EVAPORATIVE FLANGE / TOP OF FUEL TANK
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
IGNITION COIL – 1A	PI51 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 1B	PI55 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 2A	PI52 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 2B	PI56 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 3A	PI53 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 3B	PI57 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 4A	PI54 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
IGNITION COIL – 4B	PI58 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
INTERCOOLER PUMP	LF30 / 2-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO RH CRUSH TUBE
RADIATOR FAN CONTROL RELAY MODULE	LF31 / 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	LF26 / 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	EM52 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL INJECTION RELAY	BLACK	EM25 / BLACK	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
FUEL PUMP 1 RELAY	BROWN	BUS	RELAY #4, TRUNK FUSE BOX / TRUNK
FUEL PUMP 2 RELAY	BROWN	BUS	RELAY #1, TRUNK FUSE BOX / TRUNK
IGNITION COIL RELAY	BROWN	EM26 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
INTERCOOLER PUMP RELAY	BLACK	EM25 / BLACK	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	18-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
LF32	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 / BLACK	CENTER OF STEERING WHEEL

GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) – TRUNK / RH REAR GROUND STUD
EM8R	EYELET (PAIR) – EMS LH GROUND STUD
EM16R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
EM17	EYELET (SINGLE) – EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
LF10L	EYELET (PAIR) – LH FORWARD GROUND STUD
LF10R	EYELET (PAIR) – LH FORWARD GROUND STUD
LF20L	EYELET (PAIR) – RH FORWARD GROUND STUD
LF20R	EYELET (PAIR) – RH FORWARD GROUND STUD

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

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

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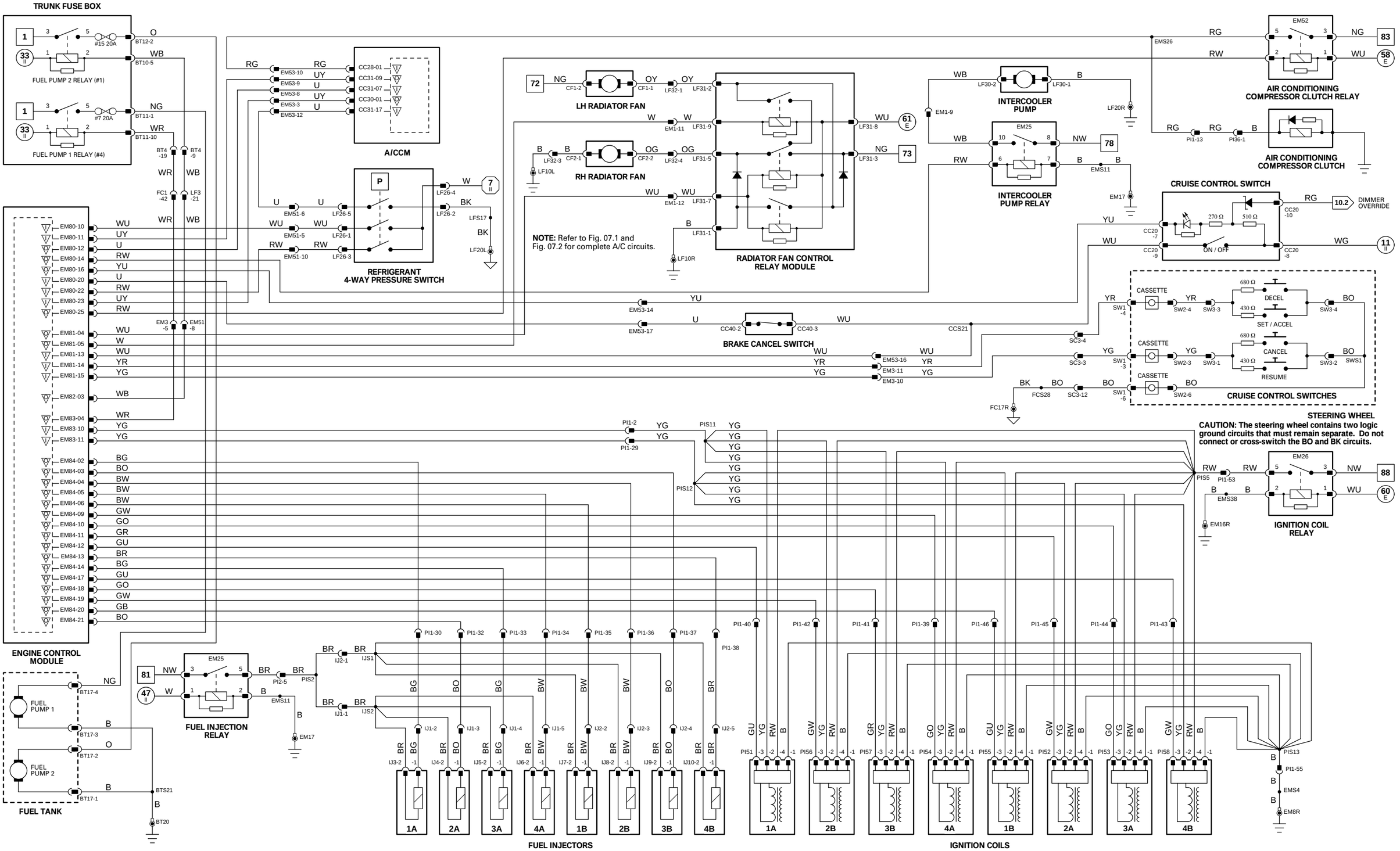

NOTE: ECM power supplies, grounds and references shown on Fig. 04.3.

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input — + Sensor Supply V — A ACP — S SCP

O Output — − Sensor Ground — C CAN — D Serial and Encoded Data

VARIANT: AJ27 SC Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

GEAR SELECTOR ILLUMINATION MODULE

▽	Pin	Description	Active	Inactive
I	CC14-1	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
C	CC14-3	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
C	CC14-4	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
I	CC14-6	GROUND	GROUND	GROUND
C	CC14-8	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
C	CC14-9	CAN NETWORK	15 – 1500 Hz @ 2.5 V	

TRANSMISSION CONTROL MODULE: AJ27 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+
SG	EM7-14	TURBINE SPEED SENSOR	300 Hz @ IDLE (2.5 V)	
SG	EM7-15	OUTPUT SPEED SENSOR SHIELD	GROUND	GROUND
SG	EM7-16	OUTPUT SPEED SENSOR	GROUND	GROUND
SG	EM7-21	FLUID TEMPERATURE SENSOR	1.31 V	
I	EM7-22	FLUID TEMPERATURE SENSOR FEEDBACK	1.15 V @ 90°C	
SG	EM7-23	TURBINE SPEED SENSOR SHIELD	GROUND	GROUND
I	EM7-26	BATTERY POWER SUPPLY	B+	B+
SG	EM7-28	ROTARY / D – 4 / KICK DOWN SWITCHES COMMON GROUND	GROUND	GROUND
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	
I	EM7-44	OUTPUT SPEED SENSOR	1.51 V @ 10 MPH (16 KM/H) = 223 Hz, 20 MPH (32 KM/H) = 446 Hz	
I	EM7-45	SPORT MODE SWITCH STRATEGY SELECT	10 v = SPORT	GROUND = NORMAL
O	EM7-51	PRESSURE REGULATOR #5	GROUND (MAXIMUM PRESSURE)	B+ (NO PRESSURE)
O	EM7-52	SOLENOID VALVES COMMON SUPPLY	B+	B+
O	EM7-53	PRESSURE REGULATORS COMMON SUPPLY	B+	B+
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	
C	EM7-83	CAN NETWORK	15 – 1500 Hz	
C	EM7-85	CAN NETWORK	15 – 1500 Hz	
C	EM7-86	CAN NETWORK	15 – 1500 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 05.1

COMPONENTS

Component	Connector / 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
MODE SWITCH (TRANSMISSION)	CC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	CENTER CONSOLE ASSEMBLY
TRANSMISSION CONTROL MODULE: AJ27 N/A	EM7 / 88-WAY BOSCH / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
TRANSMISSION ELECTRICAL CONNECTOR: AJ27 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

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

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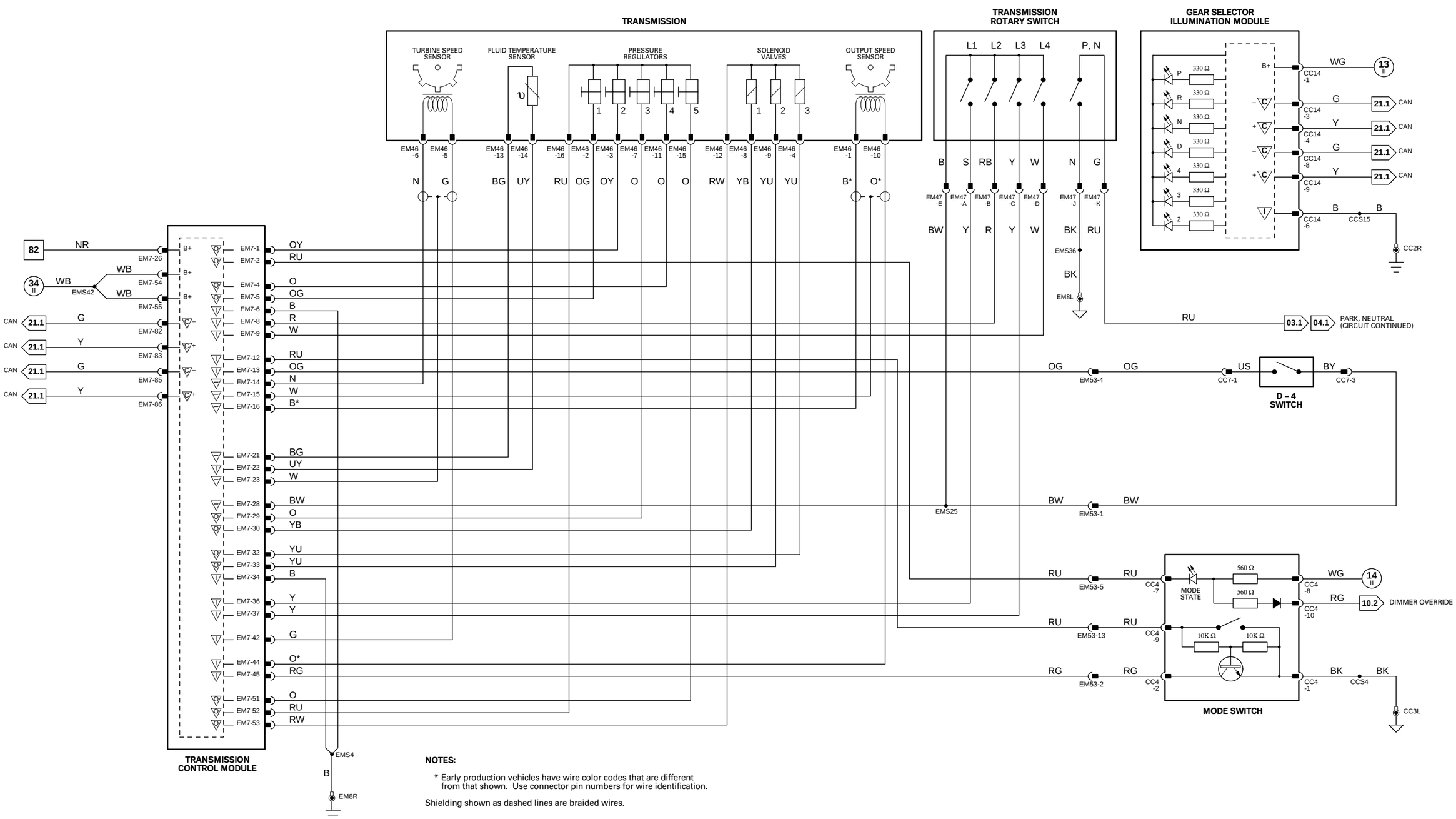
NOTE: Gear Selector Illumination Module – CAN "listen only" node for gear selector position indicators.



NOTES:

* Early production vehicles have wire color codes that are different from that shown. Use connector pin numbers for wire identification.

Shielding shown as dashed lines are braided wires.

BRD

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 T Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | – Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: AJ27 N/A Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

GEAR SELECTOR ILLUMINATION MODULE

▽	Pin	Description	Active	Inactive
I	CC14-1	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
C	CC14-3	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
C	CC14-4	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
I	CC14-6	GROUND	GROUND	GROUND
C	CC14-8	CAN NETWORK	15 – 1500 Hz @ 2.5 V	
C	CC14-9	CAN NETWORK	15 – 1500 Hz @ 2.5 V	

TRANSMISSION CONTROL MODULE: AJ27 SC

▽	Pin	Description	Active	Inactive
I	EM61-2	KICKDOWN SWITCH	GROUND (= WOT)	B+ (< WOT)
I	EM61-3	SPORT MODE SWITCH	0 V = SPORT; 0 V = NORMAL	
I	EM61-25	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = R, D, 4, 3	B+ = P, N, 2
I	EM61-26	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = N, D, 4, 2	B+ = P, R, 3
I	EM61-27	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = N, 4, 3, 2 8 V = R, D	B+ = P
I	EM61-28	DUAL LINEAR SWITCH VOLTAGE ENCODED GEAR RECOGNITION	GROUND = P, D, 3, 2	B+ = R, N, 4
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 KH) ('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	EM62-17	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.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

Fig. 05.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
DUAL LINEAR SWITCH	CC8 / 12-WAY MULTILOCK 070 / GREY	RIGHT HAND SIDE OF GEAR SELECTOR / CENTER CONSOLE
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
KICKDOWN SWITCH	CC35 / 1-WAY LUCAR RIGHT ANGLE / CLEAR CC36 / 1-WAY LUCAR RIGHT ANGLE / CLEAR	BELOW ACCELERATOR PEDAL
MODE SWITCH (TRANSMISSION)	CC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	CENTER CONSOLE ASSEMBLY
TRANSMISSION CONTROL MODULE: AJ27 SC	EM61 / 18-WAY AMP JUNIOR POWER TIMER / BLACK EM62 / 14-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
TRANSMISSION ELECTRICAL CONNECTOR: AJ27 SC	GB1 / 13-WAY KOSTAL 1.5 / BLACK	TRANSMISSION

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

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

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

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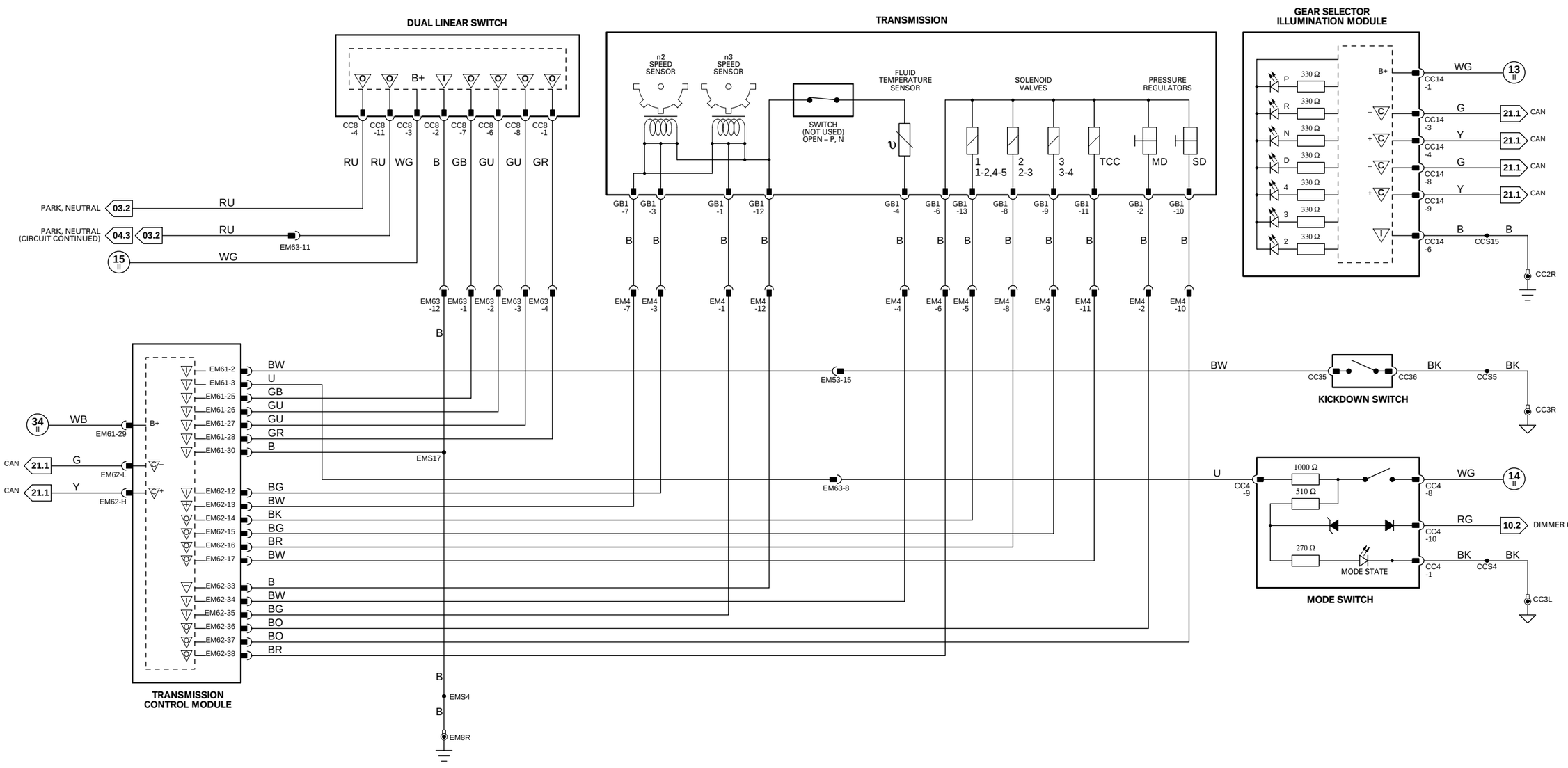
NOTE: n2 and n3 are internal gear ratio speed sensors.

NOTE: Pressure regulators:
MD – modulation pressure
SD – shift pressure

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



1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | O Output | + Sensor Supply V | – Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: AJ27 SC Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
I	FC15-104	BATTERY SUPPLY VOLTAGE	B+	B+

ENGINE CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	EM82-08	BRAKE SWITCH	GROUND	B+
C	EM83-16	CAN NETWORK	15 – 1500 Hz	
C	EM83-25	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
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

Fig. 05.3

COMPONENTS

Component	Connector / 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
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / 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 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
KEYLOCK SOLENOID (COLUMN SWITCHGEAR)	SC5 / 2-WAY MULTILOCK 040 / BLUE	COLUMN SWITCHGEAR
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / WHITE	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 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	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

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

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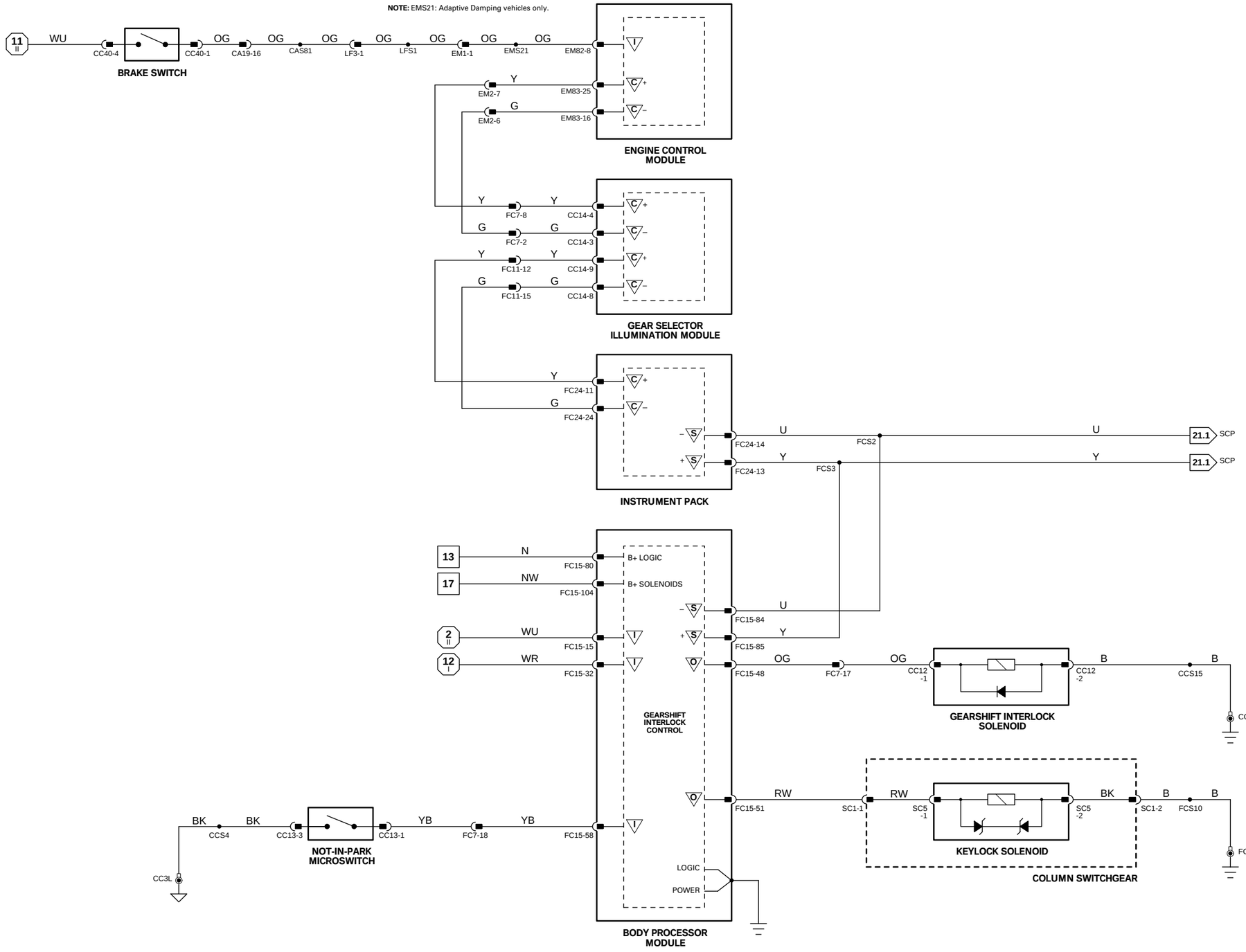

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | – Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

ABS / TRACTION CONTROL CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	LF27-1	BRAKE FLUID RESERVOIR LEVEL SWITCH REFERENCE	B+	B+
I	LF27-2	BRAKE SWITCH	GROUND	B+
I	LF27-3	RH FRONT WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG	LF27-4	RH FRONT WHEEL SPEED SENSOR	2.5 V @ REST	
C	LF27-5	CAN NETWORK	15 – 1500 Hz	
SG	LF27-6	RH REAR WHEEL SPEED SENSOR	2.5 V @ REST	
I	LF27-7	RH REAR WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
I	LF27-8	POWER GROUND	GROUND	GROUND
I	LF27-9	BATTERY POWER SUPPLY	B+	B+
I	LF27-13	BRAKE FLUID RESERVOIR LEVEL SWITCH	GROUND	B+
I	LF27-14	STABILITY / TRACTION CONTROL SWITCH	GROUND (MOMENTARY)	B+
C	LF27-15	CAN NETWORK	15 – 1500 Hz	
O	LF27-16	STABILITY / TRACTION CONTROL SWITCH STATE LED	GROUND	B+
I	LF27-17	LH FRONT WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG	LF27-18	LH FRONT WHEEL SPEED SENSOR	2.5 V @ REST	
	LF27-19	NOT USED		
I	LF27-20	IGNITION SWITCHED SUPPLY	B+	GROUND
I	LF27-21	LH REAR WHEEL SPEED SENSOR	2.5 V @ 10 MPH (16 KM/H) = 100 Hz; 20 MPH (32 KM/H) = 200 Hz	
SG	LF27-22	LH REAR WHEEL SPEED SENSOR	2.5 V @ REST	
I	LF27-24	POWER GROUND	GROUND	GROUND
I	LF27-25	BATTERY POWER SUPPLY	B+	B+

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

Fig. 06.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ABS / TRACTION CONTROL CONTROL MODULE	LF27 / 25-WAY AMP / FORD / BLACK	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
BRAKE FLUID RESERVOIR	EM37 / 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 WHEEL 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	4-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
LF1	2-WAY AUGAT 1.6 / NATURAL	BELOW CHASSIS RAIL / LH SIDE
LF2	2-WAY AUGAT 1.6 / NATURAL	BELOW CHASSIS RAIL / RH SIDE
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE
LF29L	EYELET (PAIR) – ABS GROUND STUD
LF29R	EYELET (PAIR) – ABS GROUND STUD

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

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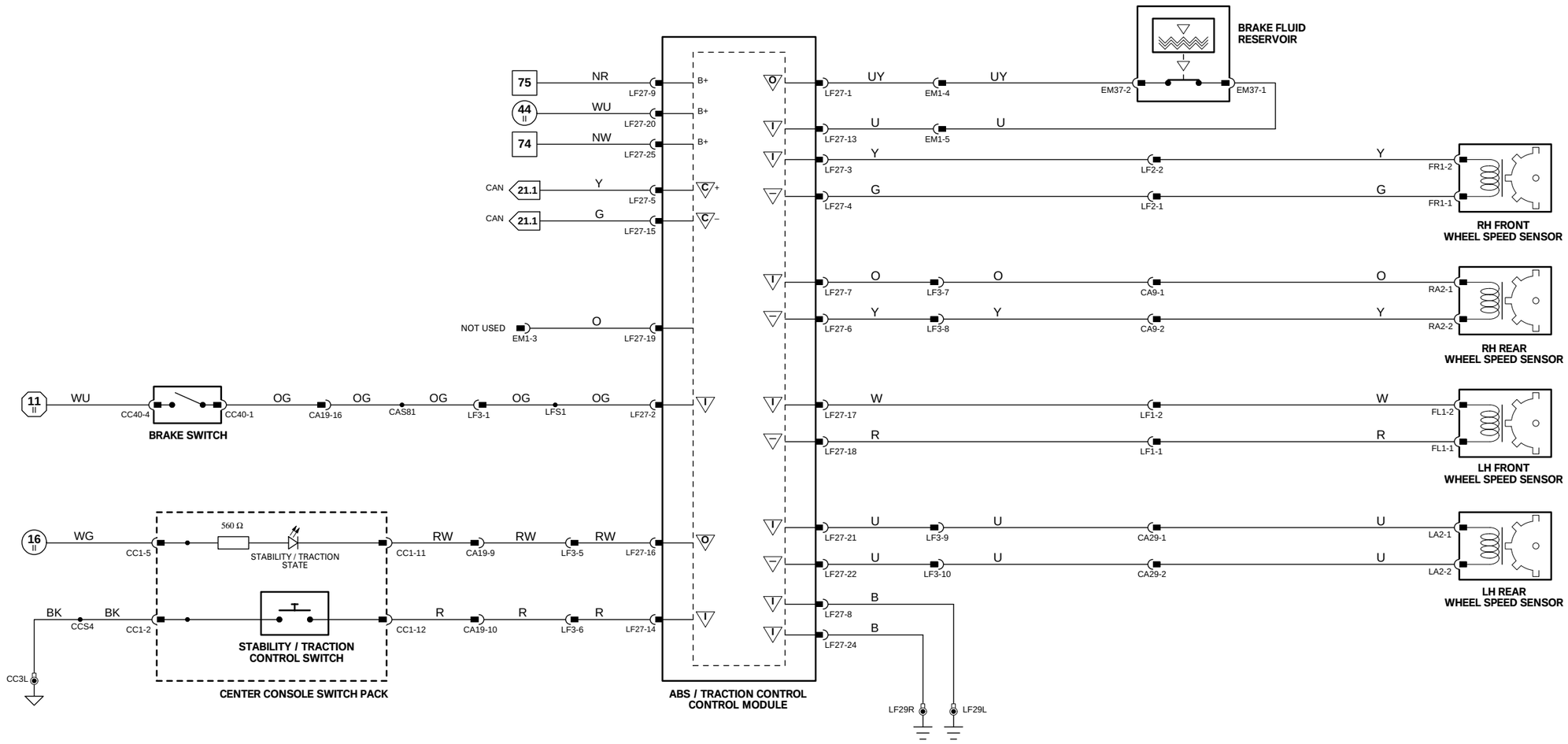

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | – Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 06.2

COMPONENTS

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

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LL2	2-WAY AUGAT 1.6 / BLACK	BELOW CHASSIS RAIL / LH SIDE
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

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

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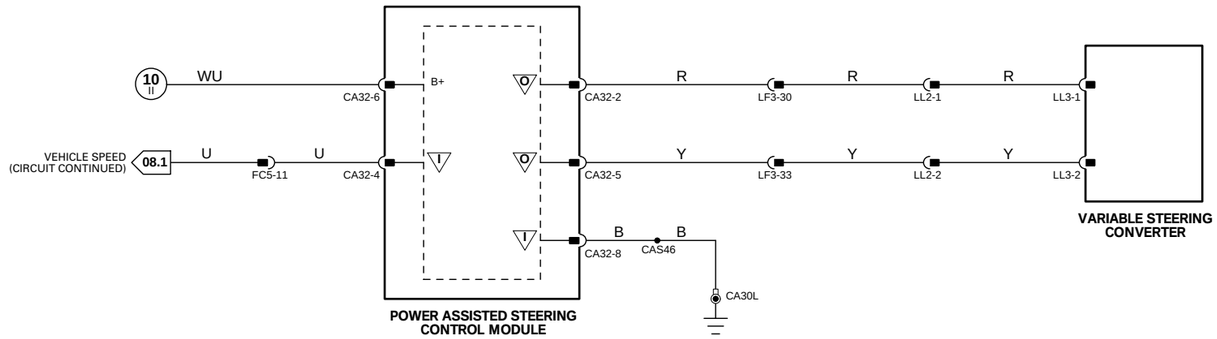

1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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. 06.3

COMPONENTS

Component	Connector / Type / Color	Location / Access
ACCELEROMETER – FRONT LATERAL	EM28 / 3-WAY AMP MICRO QUAD LOCK / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
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	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA9	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

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

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

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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

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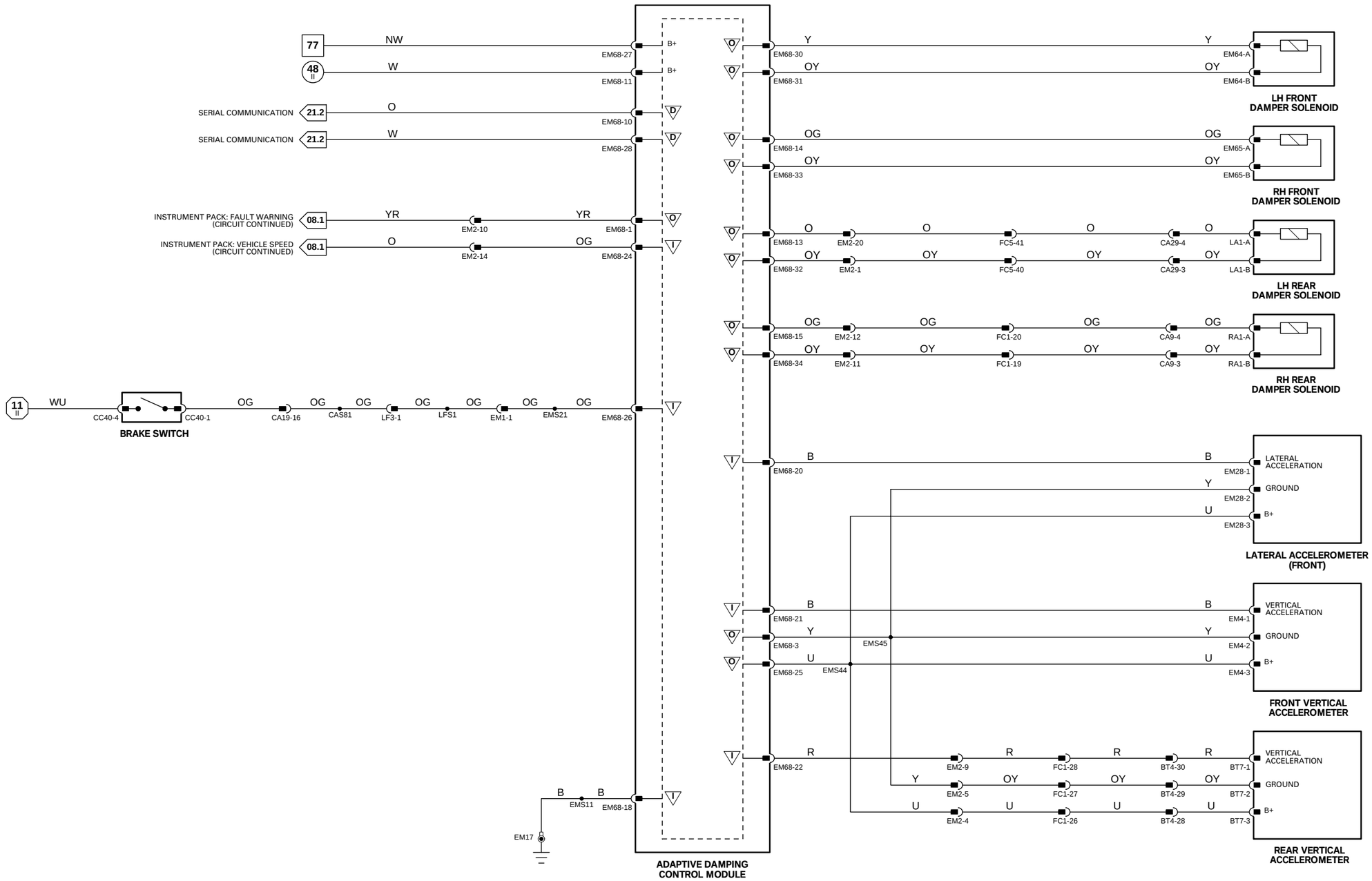

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Adaptive Damping Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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, VOLTAGE DECREASING WITH TEMPERATURE INCREASE	
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		
I	CC30-5	AMBIENT TEMPERATURE SENSOR FEEDBACK	2.18 V @ 25° C, VOLTAGE DECREASING WITH TEMPERATURE INCREASE	
I	CC30-6	HEATER MATRIX TEMPERATURE SENSOR FEEDBACK	2.25 V @ 20° C, VOLTAGE DECREASING WITH TEMPERATURE INCREASE	
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, VOLTAGE DECREASING WITH TEMPERATURE INCREASE	
I	CC30-12	EVAPORATOR TEMPERATURE SENSOR FEEDBACK	3.25 V @ 0° C, VOLTAGE DECREASING WITH TEMPERATURE INCREASE	
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	
SG	CC31-8	POTENTIOMETER COMMON REFERENCE VOLTAGE	5 V	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
SG	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)	B+
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+	B+
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 abbreviations are used to represent values for Control Module Pin-Out data

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 07.1

COMPONENTS

Component	Connector / 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	LF16 / 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	BLACK	CA50 / BLACK	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 / YELLOW	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

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

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

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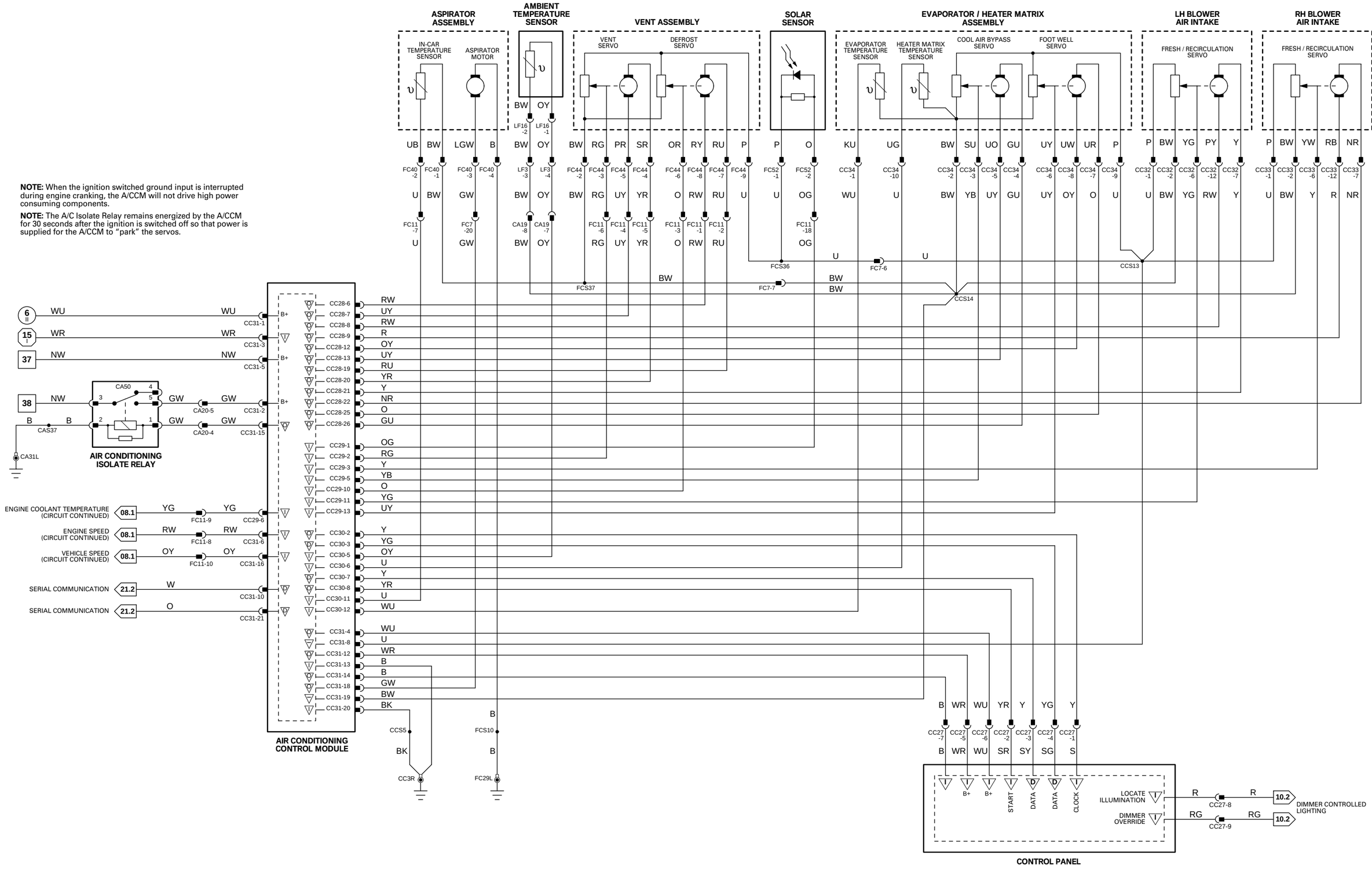
NOTE: When the ignition switched ground input is interrupted during engine cranking, the A/CCM will not drive high power consuming components.

NOTE: The A/C Isolate Relay remains energized by the A/CCM for 30 seconds after the ignition is switched off so that power is supplied for the A/CCM to "park" the servos.



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

Input · Output · Sensor Supply V · Sensor Ground · ACP · CAN · SCP · Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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 ACTIVATE	0 V	B+
O	CC28-5	DOOR MIRROR HEATER RELAY ACTIVATE	0 V	B+
O	CC28-16	LH BLOWER MOTOR RELAY ACTIVATE	B+	0 V
O	CC28-17	HEATER PUMP RELAY ACTIVATE	0 V	B+
O	CC28-18	HEATED BACKLIGHT RELAY ACTIVATE	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
I	EM80-10	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 20 BAR (290 PSI)	
I	EM80-11	A/CCM COMPRESSOR CLUTCH REQUEST	B+	GROUND
O	EM80-12	ELECTRICAL LOAD INHIBIT	GROUND	B+
I	EM80-22	REFRIGERANT 4-WAY PRESSURE SWITCH HIGH PRESSURE	GROUND @ 12 BAR (174 PSI)	
I	EM80-23	A/CCM ELECTRICAL LOAD REQUEST (HEATED WINDSHIELD)	B+	GROUND
O	EM80-25	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND	B+
O	EM81-04	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND	B+
O	EM81-05	SERIES (LOW) SPEED FAN ACTIVATE	GROUND	B+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 07.2

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	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 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 / 1-WAY LUCAR POSILOCK MKI / BLACK 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	LF31 / 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	LF26 / 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	EM52 / BROWN	CONTROL MODULE ENCLOSURE RELAYS / ENGINE COMPARTMENT
BLOWER MOTOR RELAY – LH	BLACK	CA58 / BLACK	RH HEELBOARD RELAYS / HEELBOARD COVER
BLOWER MOTOR RELAY – RH	BLACK	CA58 / BLACK	RH HEELBOARD RELAYS / HEELBOARD COVER
DOOR MIRROR HEATER RELAY	BLACK	CA18 / BLACK	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 / GREY	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
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER
LF32	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
LF10L	EYELET (PAIR) – LH FORWARD GROUND STUD
LF10R	EYELET (PAIR) – LH FORWARD GROUND STUD
LF20L	EYELET (PAIR) – RH FORWARD GROUND STUD

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

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

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NOTE: Radiator cooling and air conditioning compressor circuits are duplicated here for clarity. Refer to Fig. 04.3 and Fig. 04.6.

72 NG CF1-2 CF1-1 OY LF32-1 OY LF31-2
LH RADIATOR FAN
B LF32-3 B CF2-1 CF2-2 OG LF32-4 OG LF31-5
RH RADIATOR FAN
LF10L
W EM1-11 W LF31-9 WU LF31-8 61 E
WU EM1-12 WU LF31-7 NG LF31-3 73
B LF31-1
LF10R
RADIATOR FAN CONTROL RELAY MODULE

EM52 RG 5 3 NG 83
RW 2 1 WU 58 E
AIR CONDITIONING COMPRESSOR CLUTCH RELAY

RG EMS26 RG PI1-13 B PI36-1
AIR CONDITIONING COMPRESSOR CLUTCH

P
U EM53-12 U EM51-6 U LF26-5 BK LF26-2 BK LFS17 LF20L
WU EM51-5 LF26-1
RW EM51-10 LF26-3 WY LF26-4 7 II
REFRIGERANT 4-WAY PRESSURE SWITCH
RG EM53-10 RG

EM80-10 WU
EM80-11 UY
EM80-12 U
EM80-22 RW
EM80-23 UY
EM80-25 RW
EM81-04 WU
EM81-05 W
ENGINE CONTROL MODULE

CC28-1 RG
CC28-2 U
CC28-3 UY
CC28-4 UY
CC28-5 W
CC28-16 GR
CC28-17 RW
CC28-18 GU
CC29-7 OG
CC29-8 GO
CC29-15 U
CC29-16 GU
CC30-1 UY
CC31-7 U
CC31-9 UY
CC31-17 U
AIR CONDITIONING CONTROL MODULE

EM53-3 EM53-8 EM53-9 EM53-6 U
CA19-15 RW LF3-32
EM40-2 U HEATER VALVE B EM40-1 B EMS4 B EM36-2 HEATER PUMP EM36-1 Y EM1-8 Y LF7-2 RW LF5-5
#15 10A 5 3 5 2 1 49 II HEATER PUMP RELAY (#1)
ENGINE COMPARTMENT FUSE BOX
B EM8R

NOTE: A/CCM power supplies and grounds are shown on Fig. 07.1; ECM power supplies and grounds are shown on Fig. 04.1, 04.2, 04.4 and 04.5.

87 NR SH3 3 5 GO
YU 2 1 WG 36 II
RH WINDSHIELD HEATER RELAY
SH4-1 RH WINDSHIELD HEATER SH4-2 B EM18R

86 NG SH2 3 5 GW
SHS2 UY 2 1 WG 37 II
LH WINDSHIELD HEATER RELAY
SH5-1 LH WINDSHIELD HEATER SH5-2 B EM18L

UY
EM42-4 31 N CA18 3 5 NR
CA19-14 W 2 1 WU 7 II
DOOR MIRROR HEATER RELAY
CAS34 NR CA10-4 NR DD8-9 DRIVER MIRROR DD8-11 B DDS1 B CA10-3 B CAS40 (RHD) B CA30R (CA33R)
NR CA12-4 NR PD8-9 PASSENGER MIRROR PD8-11 B PDS1 B CA12-3 B CAS40 (LHD) B CA33R (CA30R)

UY
EM53-7 1 3 5 #17 25A BT13-10 UY BT13-3 UY BT4-D UY CA21 HEATED BACKLIGHT B IC18 IC6
33 II 1 2 GU BT10-8
HEATED BACKLIGHT RELAY (#2)
TRUNK FUSE BOX
GU CA20-1 GU BT4-31

44 NG CA58 3 5 OY CA20-2 OY CC33-5 UW
CA20-6 UY 2 1 WP 9 II
RH BLOWER MOTOR RELAY
OG CC33-13 U
B CC33-8 B
GO CC33-10 G
RH BLOWER MOTOR

22 NW CA58 8 10 O CA19-12 O CC32-5 UW
CA20-7 GR 7 6 WU 8 II
LH BLOWER MOTOR RELAY
U CC32-13 U
B CC32-8 B
GU CC32-10 G
CC2L
LH BLOWER MOTOR

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP
O Output | − Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
I	FC24-01	IGNITION SWITCHED POWER SUPPLY	B+	GROUND
I	FC24-03	ADAPTIVE DAMPING WARNING	GROUND	B+
I	FC24-04	GROUND	GROUND	GROUND
I	FC24-06	ILLUMINATION SUPPLY	B+	GROUND
I	FC24-07	TRIP CYCLE	GROUND (MOMENTARY)	
I	FC24-08	'A/B' TRIP SELECT	GROUND (MOMENTARY)	
I	FC24-09	'ML/KM' SELECT	GROUND (MOMENTARY)	
C	FC24-10	CAN NETWORK	15 – 1500 Hz	
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
I	FC24-15	BATTERY POWER SUPPLY	B+	B+
I	FC24-16	GROUND	GROUND	GROUND
I	FC24-18	'CLEAR' SELECT	GROUND (MOMENTARY)	
I	FC24-19	'000' SELECT	GROUND (MOMENTARY)	
C	FC24-23	CAN NETWORK	15 – 1500 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	
O	FC24-25	GROUND REFERENCE	GROUND	GROUND
O	FC25-03	ENGINE SPEED	5 V @ 1000 RPM = 45 Hz; 2000 RPM = 90 Hz	
O	FC25-04	ENGINE COOLANT TEMPERATURE	6 V = 90˚ C	
O	FC25-05	VEHICLE SPEED – A/CCM	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
O	FC25-06	VEHICLE SPEED – PAS	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
O	FC25-07	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	AIR BAG 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.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 08.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ANALOG CLOCK	FC38 / 6-WAY AMP MICRO QUAD LOCK / BLACK	CENTER AIR VENT
COOLANT LEVEL SWITCH	EM55 / 2-WAY AMP JUNIOR POWER TIMER / BROWN	ENGINE COMPARTMENT / ON COOLANT RESERVOIR
FUEL LEVEL SENSOR	BT17 / 6-WAY SUMITOMO DL090 / NATURAL	EVAPORATIVE FLANGE / TOP OF FUEL TANK
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
OIL PRESSURE SWITCH	PI40 / 1-WAY ECONOSEAL EC J2 / BLACK	ENGINE BLACK / BELOW GENERATOR
TRIP COMPUTER SWITCH PACK	FC27 / 10-WAY AMP MICRO QUAD LOCK / BLACK	FASCIA
TRIP CYCLE SWITCH (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
PI1	57-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / BULKHEAD / REAR OF ENGINE

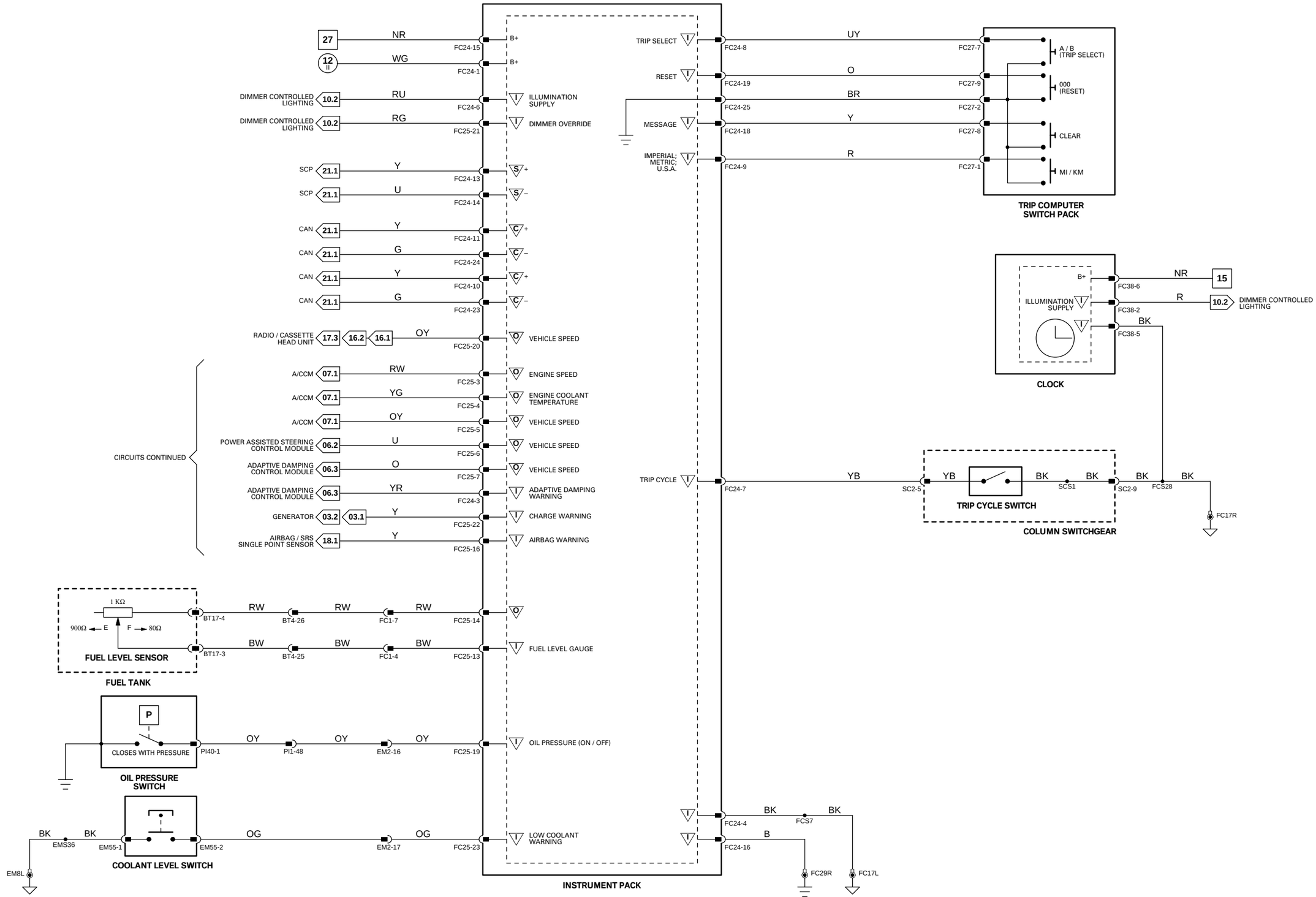
GROUNDS

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

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

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

DATE OF ISSUE: September 2000



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
D	FC15-10	SRS AUDIBLE BACKUP	ENCODED COMMUNICATIONS	
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-31	SEAT BELT SWITCH STATUS	GROUND (UNFASTENED)	B+ (FASTENED)
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
O	FC15-82	AUDIBLE WARNING SPEAKER	AUDIO OUTPUT	
O	FC15-83	AUDIBLE WARNING SPEAKER	AUDIO OUTPUT	
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
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 abbreviations are used to represent values for Control Module Pin-Out data

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 08.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
AUDIBLE WARNING SPEAKER (COLUMN SWITCHGEAR)	SC7 / HARDWIRED	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
SEAT BELT SWITCH	SD8 / 2-WAY MULTILOCK 070 / BLACK	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 / GREY	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

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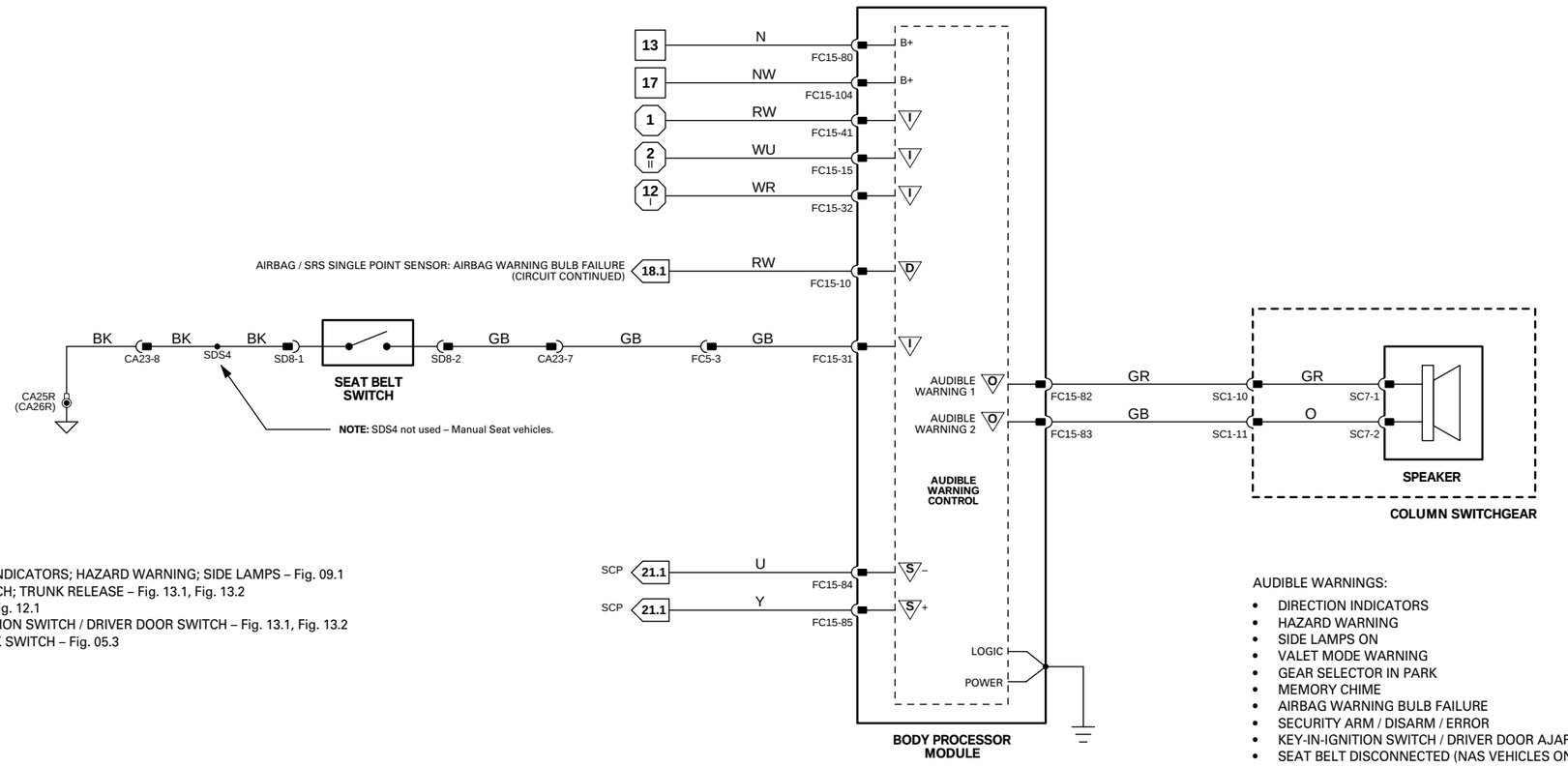

SCP SOURCES:

- DIRECTION INDICATORS; HAZARD WARNING; SIDE LAMPS – Fig. 09.1
- VALET SWITCH; TRUNK RELEASE – Fig. 13.1, Fig. 13.2
- MEMORY – Fig. 12.1
- KEY-IN IGNITION SWITCH / DRIVER DOOR SWITCH – Fig. 13.1, Fig. 13.2
- NOT-IN-PARK SWITCH – Fig. 05.3

AUDIBLE WARNINGS:

- DIRECTION INDICATORS
- HAZARD WARNING
- SIDE LAMPS ON
- VALET MODE WARNING
- GEAR SELECTOR IN PARK
- MEMORY CHIME
- AIRBAG WARNING BULB FAILURE
- SECURITY ARM / DISARM / ERROR
- KEY-IN-IGNITION SWITCH / DRIVER DOOR AJAR (NAS VEHICLES ONLY)
- SEAT BELT DISCONNECTED (NAS VEHICLES ONLY)

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 02.1 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
O	FC15-1	RH FRONT SIDE LAMP SUPPLY	B+	GROUND
O	FC15-2	LH FRONT DI LAMP SUPPLY	B+ (PULSED)	GROUND
O	FC15-3	RH FRONT DI LAMP SUPPLY	B+ (PULSED)	GROUND
I	FC15-14	HEADLAMP MAIN BEAM REQUEST	GROUND	B+
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-16	SIDE LAMP REQUEST	GROUND	B+
O	FC15-20	FRONT FOG LAMP RELAY ACTIVATE	GROUND	B+
O	FC15-27	LH SIDE DI REPEATER LAMP SUPPLY (ROW ONLY)	B+ (PULSED)	GROUND
I	FC15-30	HEADLAMP FLASH REQUEST	GROUND (MOMENTARY)	B+
I	FC15-38	FRONT FOG LAMP REQUEST	GROUND	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
I	FC15-42	HEADLAMP DIP REQUEST	GROUND (MOMENTARY)	B+
O	FC15-45	MAIN BEAM RELAY ACTIVATE	GROUND	B+
O	FC15-53	LH FRONT SIDE LAMP SUPPLY	B+	GROUND
I	FC15-59	HAZARD LAMP REQUEST	GROUND (MOMENTARY)	B+
I	FC15-61	RH DI REQUEST	GROUND	B+
O	FC15-68	DIP BEAM RELAY ACTIVATE	GROUND	B+
I	FC15-79	BATTERY SUPPLY VOLTAGE	B+	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
O	FC15-81	RH SIDE DI REPEATER LAMP SUPPLY (ROW ONLY)	B+ (PULSED)	GROUND
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
I	FC15-88	LH DI REQUEST	GROUND	B+
O	FC15-96	HAZARD LAMP STATUS	GROUND (PULSE)	B+

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

Fig. 09.1

COMPONENTS

Component	Connector / 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
LAMP UNIT – LH FRONT	LF38 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / LH FRONT
LAMP UNIT – RH FRONT	LF40 / 6-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / RH FRONT
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
SIDE DI REPEATER – LH (ROW ONLY)	LF17 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	BEHIND LEFT HAND WHEEL ARCH LINER
SIDE DI REPEATER – RH (ROW ONLY)	CA80 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	BEHIND RIGHT HAND WHEEL ARCH LINER
SIDE MARKER – LH FRONT (NAS ONLY)	BL5 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	FRONT BUMPER – LH SIDE
SIDE MARKER – RH FRONT (NAS ONLY)	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 / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	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	
LF18L	EYELET (PAIR) – LH FORWARD GROUND STUD	
LF19R	EYELET (PAIR) – RH FORWARD GROUND STUD	

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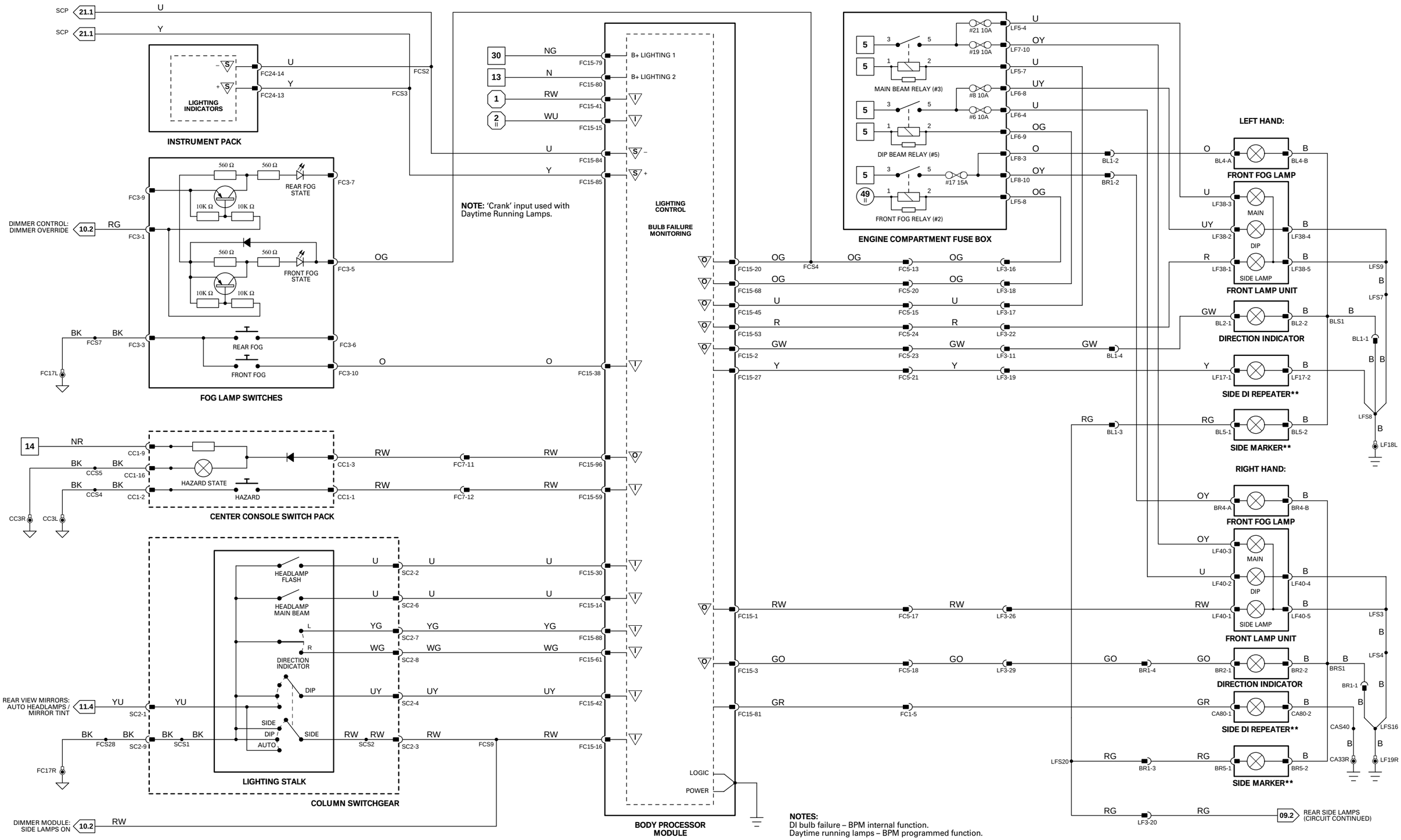

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I Input · O Output · + Sensor Supply V · − Sensor Ground · A ACP · C CAN · S SCP · D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-12	REAR FOG LAMP REQUEST	GROUND	B+
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-16	SIDE LAMP REQUEST	GROUND	B+
O	FC15-28	RH TAIL LAMP SUPPLY	B+	GROUND
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O	FC15-44	REAR FOG LAMP STATUS	GROUND	B+
O	FC15-49	TRAILER RH DI LAMP SUPPLY	B+ (PULSED)	GROUND
O	FC15-50	LH DI LAMP SUPPLY	B+ (PULSED)	GROUND
O	FC15-54	LH TAIL LAMP SUPPLY	B+	GROUND
I	FC15-59	HAZARD LAMP REQUEST	GROUND (MOMENTARY)	B+
I	FC15-61	RH DI REQUEST	GROUND	B+
O	FC15-75	TRAILER LH DI LAMP SUPPLY	B+ (PULSED)	GROUND
O	FC15-76	RH DI LAMP SUPPLY	B+ (PULSED)	GROUND
I	FC15-79	BATTERY SUPPLY VOLTAGE	B+	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
I	FC15-88	LH DI REQUEST	GROUND	B+
O	FC15-95	SIDE MARKER & NUMBER PLATE LAMP RELAY ACTIVATE	GROUND	B+
O	FC15-96	HAZARD LAMP STATUS	GROUND (PULSE)	B+
I	FC15-104	BATTERY SUPPLY VOLTAGE	B+	B+

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	

SECURITY AND LOCKING CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	BT1-3	RH STOP LAMP SUPPLY	B+	GROUND
O	BT1-4	REAR FOG LAMP SUPPLY	B+	GROUND
O	BT1-5	REVERSE LAMP SUPPLY	B+	GROUND
I	BT1-6	BATTERY SUPPLY	B+	B+
O	BT1-7	SPLIT CHARGE CONTROL		
S	BT1-8	SCP NETWORK	2 – 1600 Hz	
O	BT1-9	LH STOP LAMP SUPPLY	B+	GROUND
I	BT1-13	LOGIC GROUND	GROUND	GROUND
I	BT1-14	LOGIC GROUND	GROUND	GROUND
S	BT1-16	SCP NETWORK	2 – 1600 Hz	
I	BT2-1	BRAKE SWITCH STATUS	GROUND (BRAKE ON)	B+
I	BT2-6	TRAILER CONNECTION STATUS	GROUND (TRAILER PRESENT)	B+ (NO TRAILER)

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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. 09.2

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 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	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 (NAS ONLY)	BT29 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	TRUNK LH SIDE / TRUNK CARPET
REAR SIDE MARKER – RH (NAS ONLY)	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 / 2-WAY MINI UHF / METALLIC	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 / GREY	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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT20	EYELET (SINGLE) – TRUNK / RH REAR GROUND STUD
BT21L	EYELET (PAIR) – TRUNK / RH REAR GROUND STUD
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)
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

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

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

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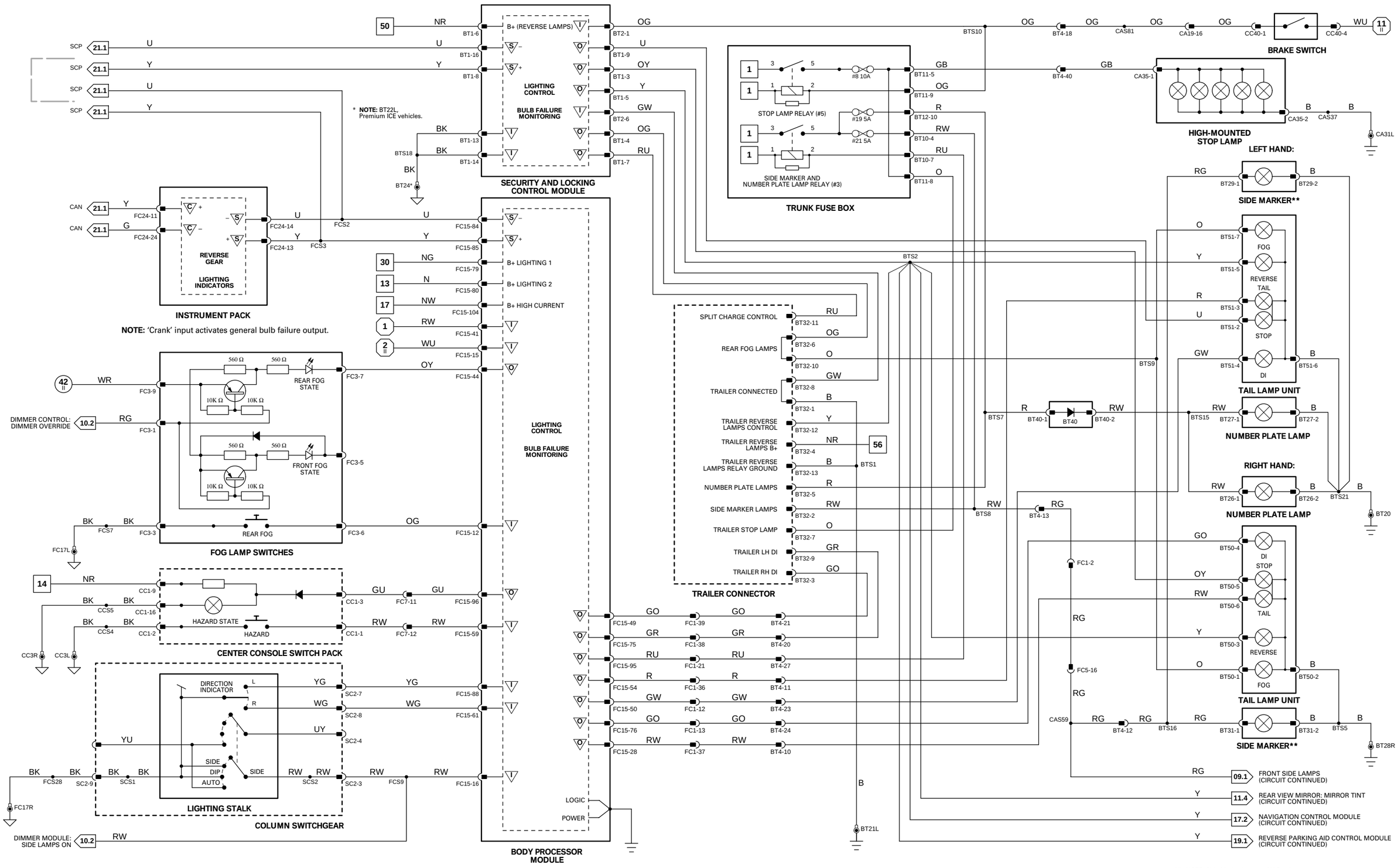


** **NOTE:** Side Marker Lamps – NAS only.

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 02.1 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 09.3

COMPONENTS

Component	Connector / Type / Color	Location / Access
HEADLAMP LEVELING ACTUATOR – LH	LF41 / 3-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / LH HEADLAMP
HEADLAMP LEVELING ACTUATOR – RH	LF42 / 3-WAY REINSHAGEN / BLACK	ENGINE COMPARTMENT / RH HEADLAMP
HEADLAMP LEVELING SWITCH (FASCIA SWITCH PACK)	FC14 / 6-WAY JAE IL-AG5 / GREEN	FASCIA SWITCH PACK

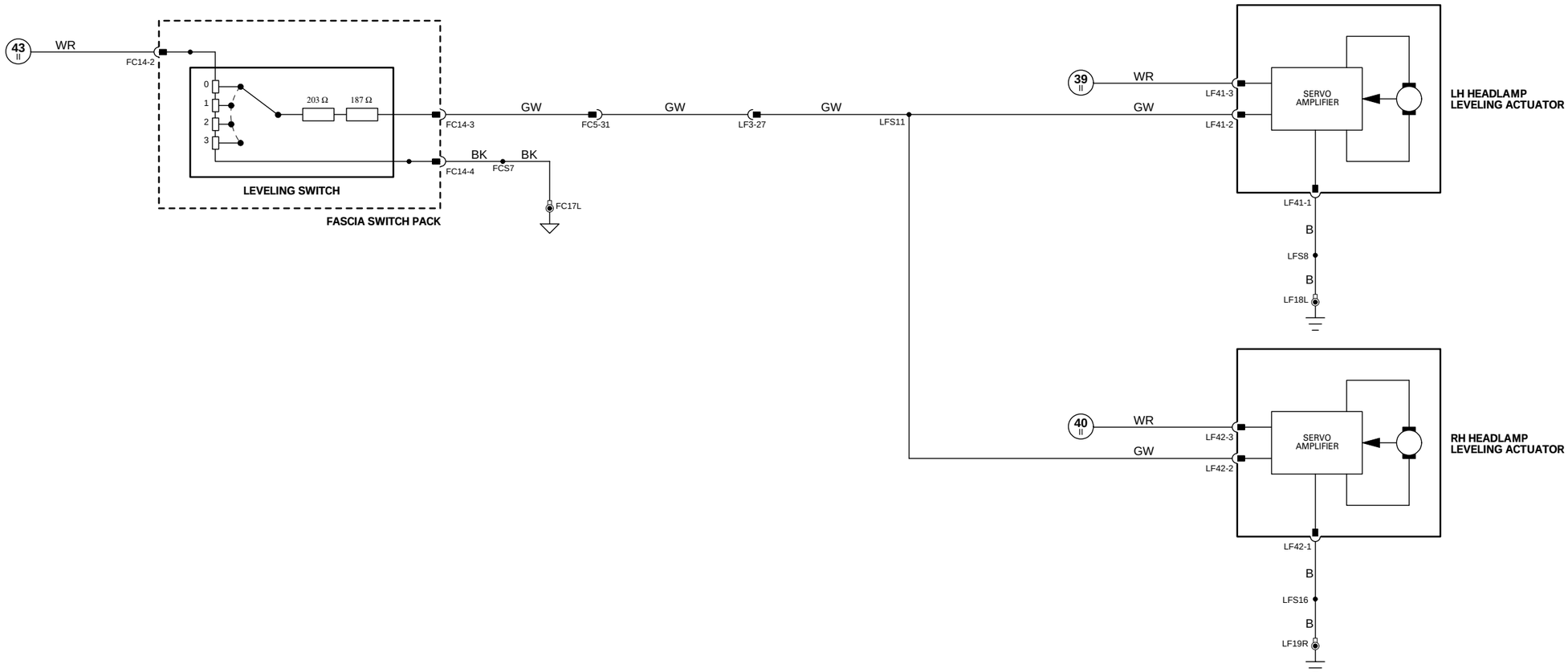
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
LF18L	EYELET (PAIR) – LH FORWARD GROUND STUD
LF19R	EYELET (PAIR) – RH FORWARD GROUND STUD

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



1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → (19 T) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Headlamp Leveling Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
O	DD10-14	DRIVER DOOR PUDDLE LAMP SUPPLY	B+	GROUND
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
O	RD10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	GROUND
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
O	PD10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	GROUND
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
I	RP10-8	LOGIC GROUND	GROUND	GROUND
S	RP10-9	SCP NETWORK	2 – 1600 Hz	
O	RP10-14	PASSENGER DOOR PUDDLE LAMP SUPPLY	B+ (LIGHT ON)	GROUND
S	RP10-16	SCP NETWORK	2 – 1600 Hz	
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	B+
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	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
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 abbreviations are used to represent values for Control Module Pin-Out data

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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 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 SWITCHES – DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
DOOR SWITCH – 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
'E' POST LAMP – LH	IC4 / 4-WAY MULTILOCK 040 / BLACK	LH 'E' POST / 'E' POST TRIM
'E' POST LAMP – RH	CA5 / 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 / 1-WAY LUCAR 02 / CLEAR FC34 / 1-WAY LUCAR 02 / CLEAR	GLOVE BOX
IGNITION SWITCH (KEY-IN SWITCH)	FC4 / 8-WAY MULTILOCK 070 / WHITE	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 / GREY	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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD

GROUNDS

Ground	Location / Type
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)
CA30L	EYELET (PAIR) – LH 'A' POST GROUND SCREW
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
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
FC29L	EYELET (PAIR) – LH BULKHEAD GROUND STUD / CABIN SIDE
IC20	EYELET (SINGLE) – TRUNK / LH FORWARD GROUND STUD

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

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

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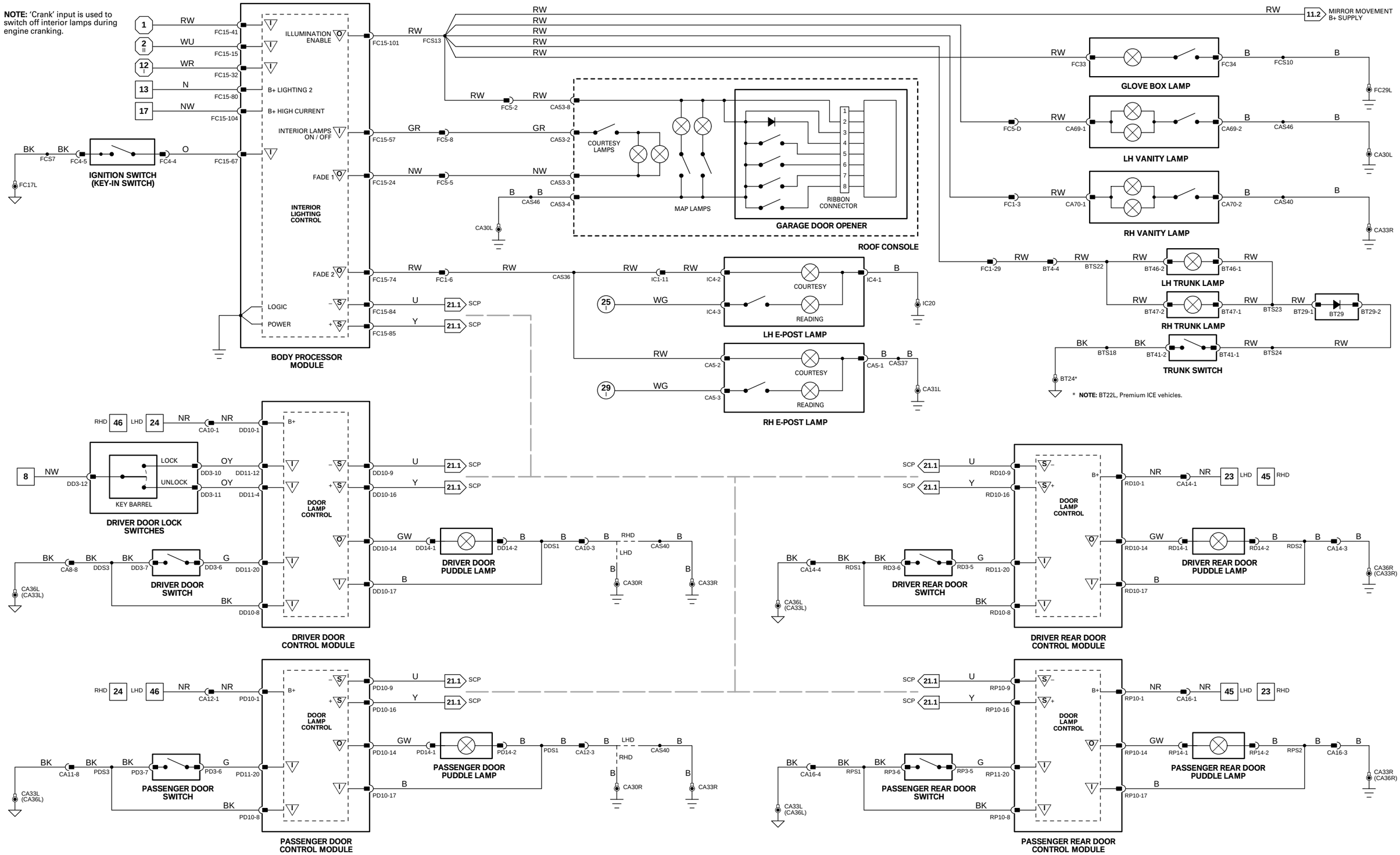
NOTE: 'Crank' input is used to switch off interior lamps during engine cranking.



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

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	
I	FC23-4	SIDE LAMPS ON REQUEST	GROUND	
I	FC23-5	DIMMER POTENTIOMETER FEEDBACK VOLTAGE	1.3 V = DIM; 4 V = BRIGHT	
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	FC24-16	GROUND	GROUND	GROUND
I	FC24-6	ILLUMINATION SUPPLY	B+	GROUND
I	FC25-21	DIMMER OVERRIDE	GROUND	B+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 10.2

COMPONENTS

Component	Connector / 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 AMP / METALLIC CA76 / 1-WAY LUCAR POSILOCK MKI / BLACK	REAR CENTER CONSOLE VENT
ANALOG CLOCK	FC38 / 6-WAY AMP MICRO QUAD LOCK / 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 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
MODE SWITCH (TRANSMISSION)	CC4 / 10-WAY AMP MICRO QUAD LOCK / BLACK	CENTER CONSOLE ASSEMBLY
RADIO / CASSETTE HEAD UNIT	CA3 / COAXIAL CONNECTOR IC10 / 20-WAY MULTILOCK 070 / WHITE IC11 / 26-WAY AMP MICRO QUAD LOCK / YELLOW IC19 / 8-WAY ALPINE / BLACK	CENTER CONSOLE
ROOF CONSOLE	CA53 / 8-WAY MULTILOCK 040 / BLACK	ROOF CONSOLE
SPLICE HEADER – CA224	CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN	LH HEELBOARD / HEELBOARD COVER
SWITCH PACK – DRIVER DOOR	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
SWITCH PACK – DRIVER REAR DOOR	RD1 / 5-WAY JAE IL-AG5 / GREEN	DOOR TRIM PANEL
SWITCH PACK – PASSENGER DOOR	PD1 / 5-WAY JAE IL-AG5 / GREEN	DOOR TRIM PANEL
SWITCH PACK – PASSENGER REAR DOOR	RP1 / 5-WAY JAE IL-AG5 / 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	BELOW PASSENGER SEAT
CA45	4-WAY MULTILOCK 070 / WHITE	PASSENGER 'B/C' POST / DOOR HARNESS GAITER
CA46	4-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR
SP25	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
FC29L	EYELET (PAIR) – LH BULKHEAD GROUND STUD / CABIN SIDE
FC29R	EYELET (PAIR) – LH BULKHEAD GROUND STUD / CABIN SIDE
IC8	EYELET (SINGLE) – RADIO GROUND STUD / REARWARD OF GEAR SELECTOR ASSEMBLY

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

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

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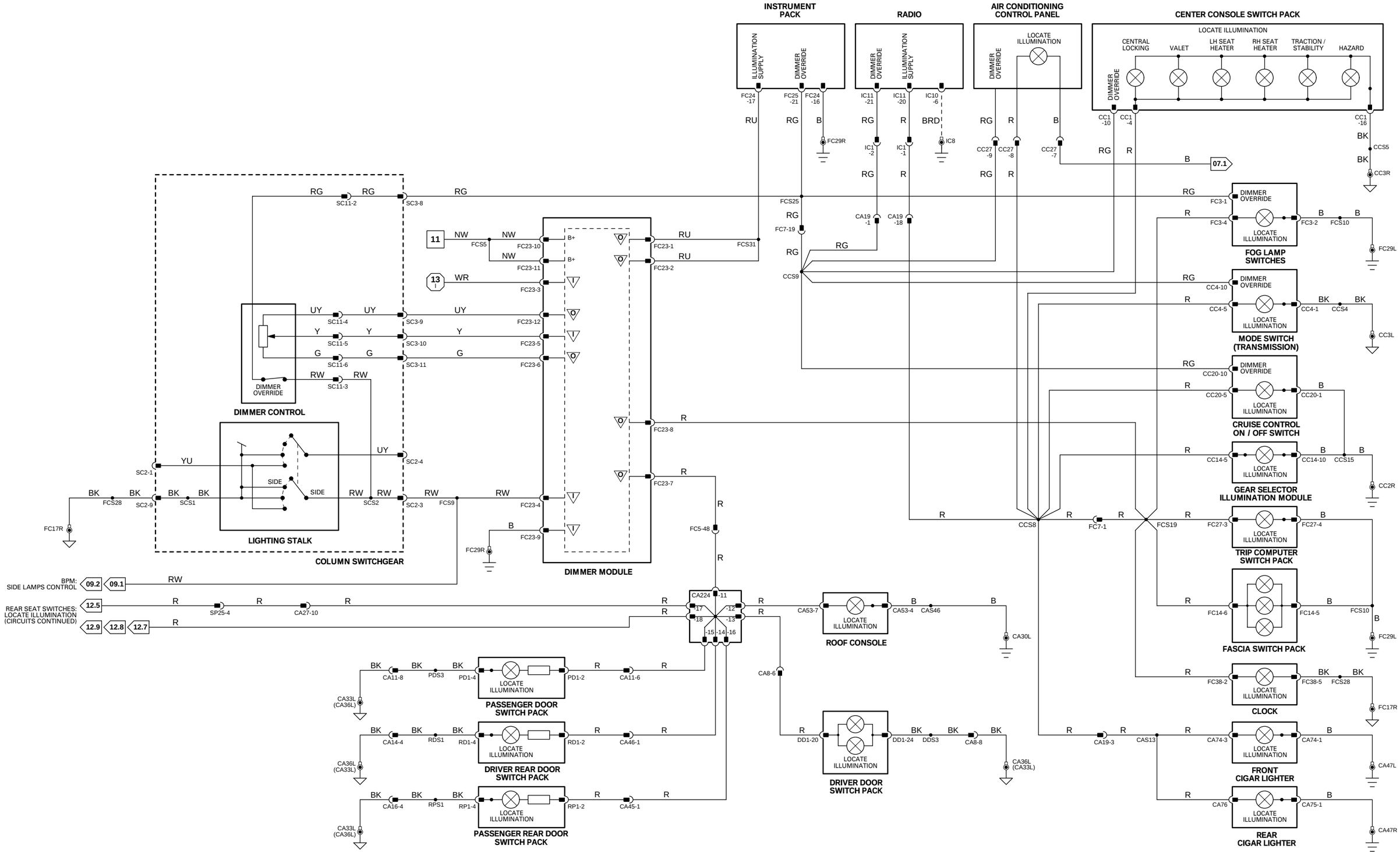

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-11	AUTO TILT REQUEST	GROUND	B+
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-25	GROUND SUPPLY	GROUND	GROUND
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
O	FC15-40	COLUMN MOTOR POTENTIOMETER REFERENCE VOLTAGE	5V	
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O	FC15-52	COLUMN REACH MOTOR SUPPLY	B+	GROUND
I	FC15-58	NOT IN PARK MICROSWITCH STATUS	GROUND (PARK)	B+ (NOT IN PARK)
I	FC15-66	COLUMN REACH MOTOR POTENTIOMETER FEEDBACK	0.5 V = OUT, 4 V = IN	
I	FC15-67	KEY IN IGNITION	GROUND (KEY IN)	B+ (KEY OUT)
O	FC15-78	COLUMN REACH MOTOR SUPPLY	B+	GROUND
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
I	FC15-87	COLUMN MOVEMENT REQUEST	UP = 10.1V, DOWN = 12.1V, RETRACT = 8.5V, EXTEND = 6.8V	
O	FC15-90	COLUMN TILT MOTOR POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
O	FC15-91	COLUMN REACH MOTOR POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
I	FC15-93	COLUMN TILT MOTOR POTENTIOMETER FEEDBACK	UP = 4V, DOWN = 0.5V	
O	FC15-99	COLUMN TILT MOTOR SUPPLY	B+	GROUND
O	FC15-100	COLUMN TILT MOTOR SUPPLY	B+	GROUND
I	FC15-102	BATTERY SUPPLY VOLTAGE	B+	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
I	DD10-8	LOGIC GROUND	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)	B+
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+	B+
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
I	RD10-19	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-5	MEMORY 1	B+	GROUND
I	RD11-7	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-13	MEMORY SET	B+	GROUND
I	RD11-15	MEMORY 3	B+	GROUND
I	RD11-22	MEMORY 2	B+	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 11.1

COMPONENTS

Component	Connector / 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 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 SWITCH – DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
IGNITION SWITCH (KEY-IN SWITCH)	FC4 / 8-WAY MULTILOCK 070 / WHITE	STEERING COLUMN
MEMORY SWITCHES (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
STEERING COLUMN MOTORS	FC49 / 6-WAY MULTILOCK 070 / WHITE 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	4-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 / YELLOW	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

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

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

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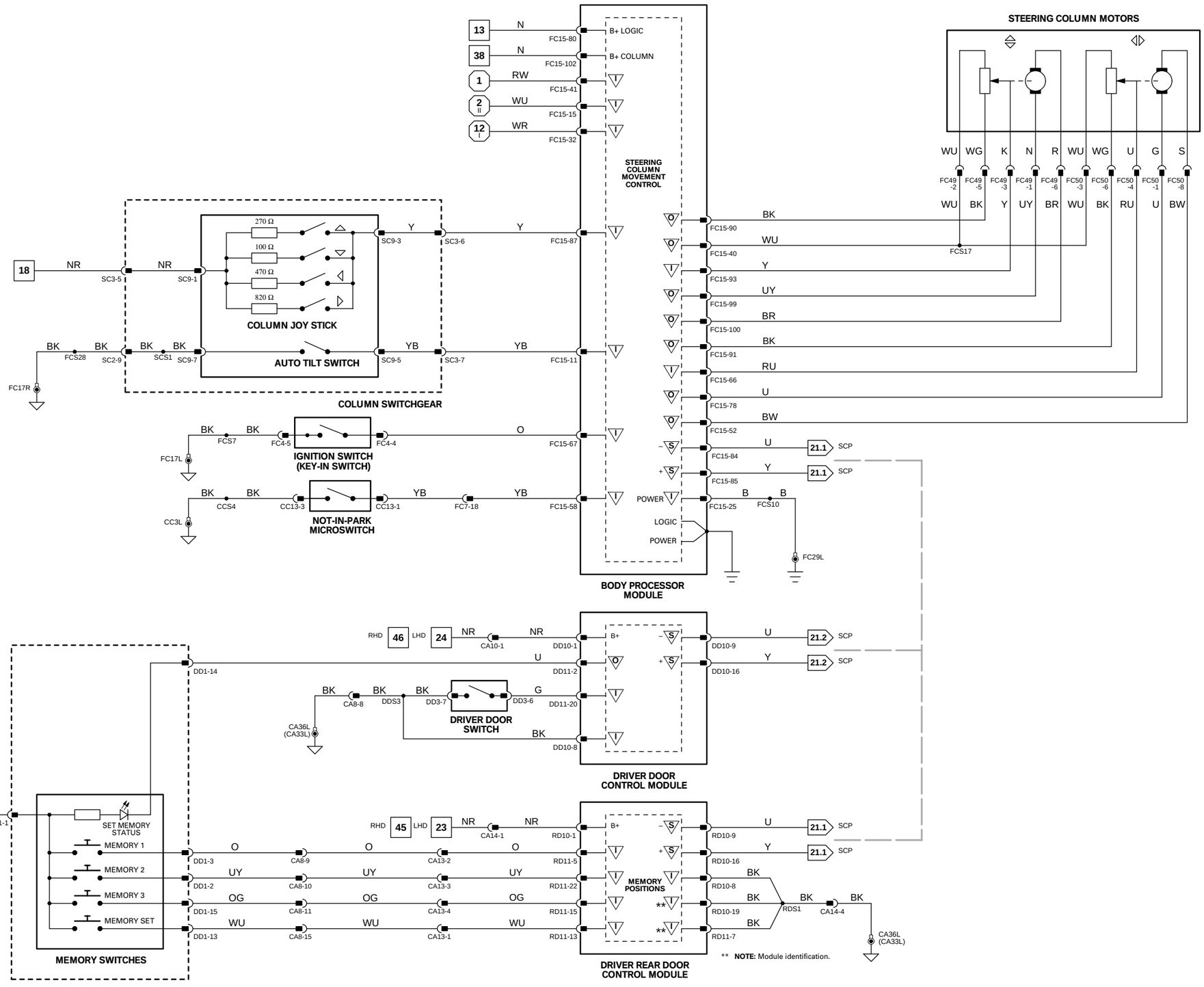

NOTE: Memory switches – driver memory seat vehicles only.

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Powered Column Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
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	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
O	FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE	B+	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
O	DD10-2	DRIVER DOOR MIRROR VERTICAL / HORIZONTAL MOTOR COMMON SUPPLY	B+ = LEFT / DOWN; GROUND = RIGHT / UP	
O	DD10-3	DRIVER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR	B+ = RIGHT	GROUND = LEFT
O	DD10-4	DRIVER DOOR MIRROR VERTICAL MOVEMENT MOTOR	B+ = UP	GROUND = DOWN
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
I	DD10-17	POWER GROUND	GROUND	GROUND
O	DD10-20	DRIVER DOOR MIRROR POTENTIOMETER COMMON REFERENCE VOLTAGE	B+	B+
I	DD10-21	DRIVER DOOR MIRROR POTENTIOMETER HORIZONTAL POSITION FEEDBACK	1 V = LEFT; 8 V = RIGHT	
I	DD10-22	DRIVER DOOR MIRROR POTENTIOMETER VERTICAL POSITION FEEDBACK	1 V = DOWN; 8 V = UP	
I	DD11-1	MIRROR COMMON GROUND	GROUND	GROUND
O	DD11-2	SEAT MEMORY STATUS LED	GROUND (LED ON)	B+
I	DD11-3	LH VERTICAL MOVEMENT REQUEST	B+ = DOWN	GROUND = UP
I	DD11-5	PASSENGER MIRROR SELECT	B+	GROUND
I	DD11-9	RH VERTICAL MOVEMENT REQUEST	B+ = DOWN	GROUND = UP
I	DD11-10	LH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT
I	DD11-13	DRIVER MIRROR SELECT	B+	GROUND
I	DD11-17	RH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT
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+	B+
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
I	RD10-19	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-5	MEMORY 1	B+	GROUND
I	RD11-7	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-13	MEMORY SET	B+	GROUND
I	RD11-15	MEMORY 3	B+	GROUND
I	RD11-22	MEMORY 2	B+	GROUND

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	

PASSENGER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	PD10-1	BATTERY POWER SUPPLY	B+	B+
O	PD10-2	PASSENGER DOOR MIRROR VERTICAL / HORIZONTAL MOVEMENT MOTORS COMMON	B+ = LEFT / DOWN	GROUND = RIGHT / UP
O	PD10-3	PASSENGER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR	B+ = RIGHT	GROUND
O	PD10-4	PASSENGER DOOR MIRROR VERTICAL MOVEMENT MOTOR	B+ = UP	GROUND
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
I	PD10-17	POWER GROUND	GROUND	GROUND
O	PD10-20	PASSENGER DOOR MIRROR POTENTIOMETER COMMON REFERENCE VOLTAGE	B+	B+
I	PD10-21	PASSENGER DOOR MIRROR POTENTIOMETER HORIZONTAL POSITION FEEDBACK VOLTAGE	1 V = LEFT; 8 V = RIGHT	
I	PD10-22	PASSENGER DOOR MIRROR POTENTIOMETER VERTICAL POSITION FEEDBACK VOLTAGE	1 V = DOWN; 8 V = UP	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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. 11.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE – DRIVER 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
DOOR SWITCH – DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
MEMORY SWITCHES (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
MIRROR JOYSTICK (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
MIRROR SELECT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY

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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	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

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

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

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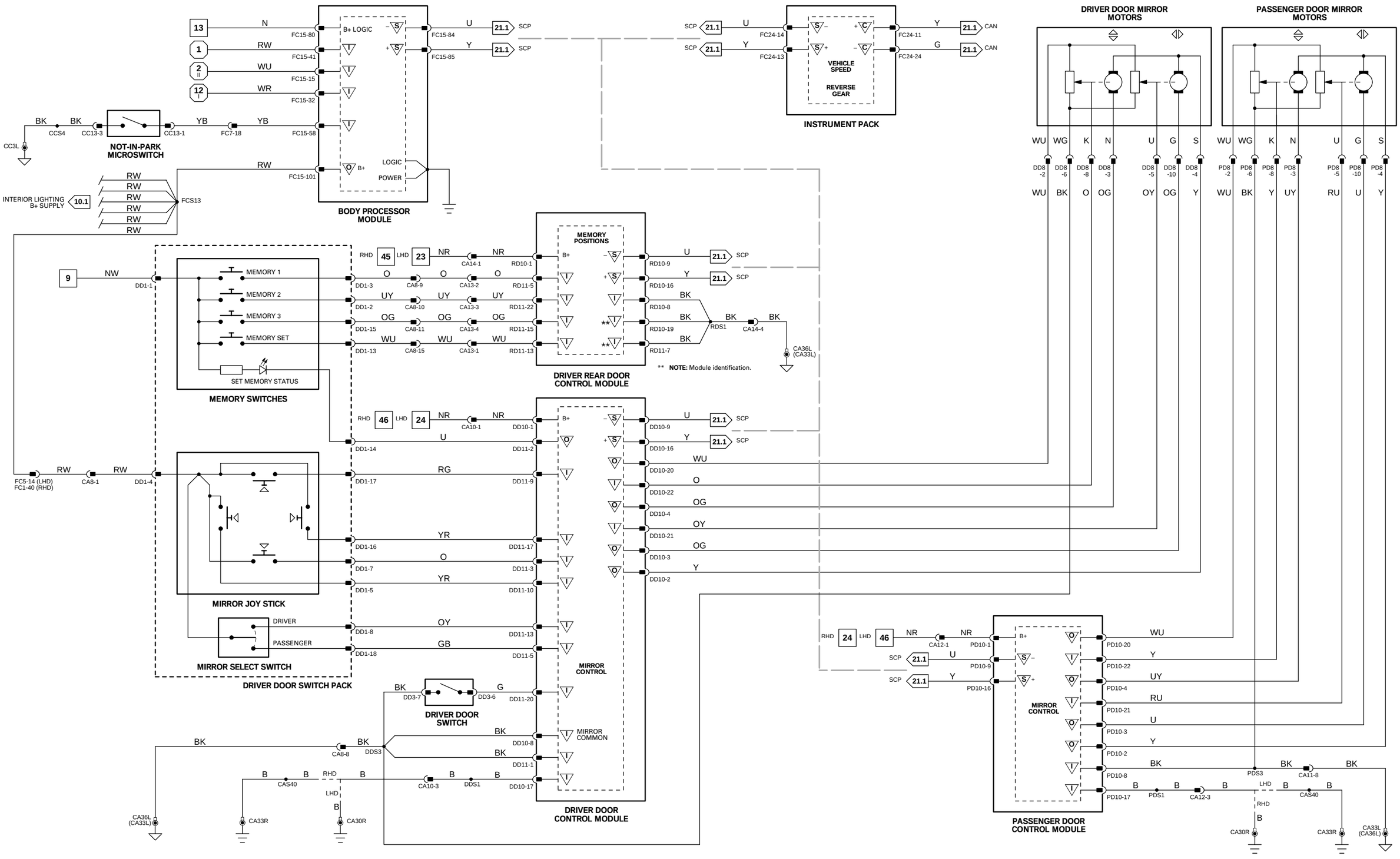

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: Memory Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
O	FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE	B+	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
O	DD10-2	DRIVER DOOR MIRROR VERTICAL / HORIZONTAL MOTOR COMMON SUPPLY	B+ = LEFT / DOWN; GROUND = RIGHT / UP	
O	DD10-3	DRIVER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR	B+ = RIGHT	GROUND = LEFT
O	DD10-4	DRIVER DOOR MIRROR VERTICAL MOVEMENT MOTOR	B+ = UP	GROUND = DOWN
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
I	DD10-17	POWER GROUND	GROUND	GROUND
I	DD11-1	MIRROR COMMON GROUND	GROUND	GROUND
I	DD11-3	LH VERTICAL MOVEMENT REQUEST	B+ = DOWN	GROUND = UP
I	DD11-5	PASSENGER MIRROR SELECT	B+	GROUND
I	DD11-9	RH VERTICAL MOVEMENT REQUEST	B+ = DOWN	GROUND = UP
I	DD11-10	LH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT
I	DD11-13	DRIVER MIRROR SELECT	B+	GROUND
I	DD11-17	RH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT

PASSENGER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	PD10-1	BATTERY POWER SUPPLY	B+	B+
O	PD10-2	PASSENGER DOOR MIRROR VERTICAL / HORIZONTAL MOVEMENT MOTORS COMMON	B+ = LEFT / DOWN	GROUND = RIGHT / UP
O	PD10-3	PASSENGER DOOR MIRROR HORIZONTAL MOVEMENT MOTOR	B+ = RIGHT	GROUND
O	PD10-4	PASSENGER DOOR MIRROR VERTICAL MOVEMENT MOTOR	B+ = UP	GROUND
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
I	PD10-17	POWER GROUND	GROUND	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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	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 AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
MIRROR SELECT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / 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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	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

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

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

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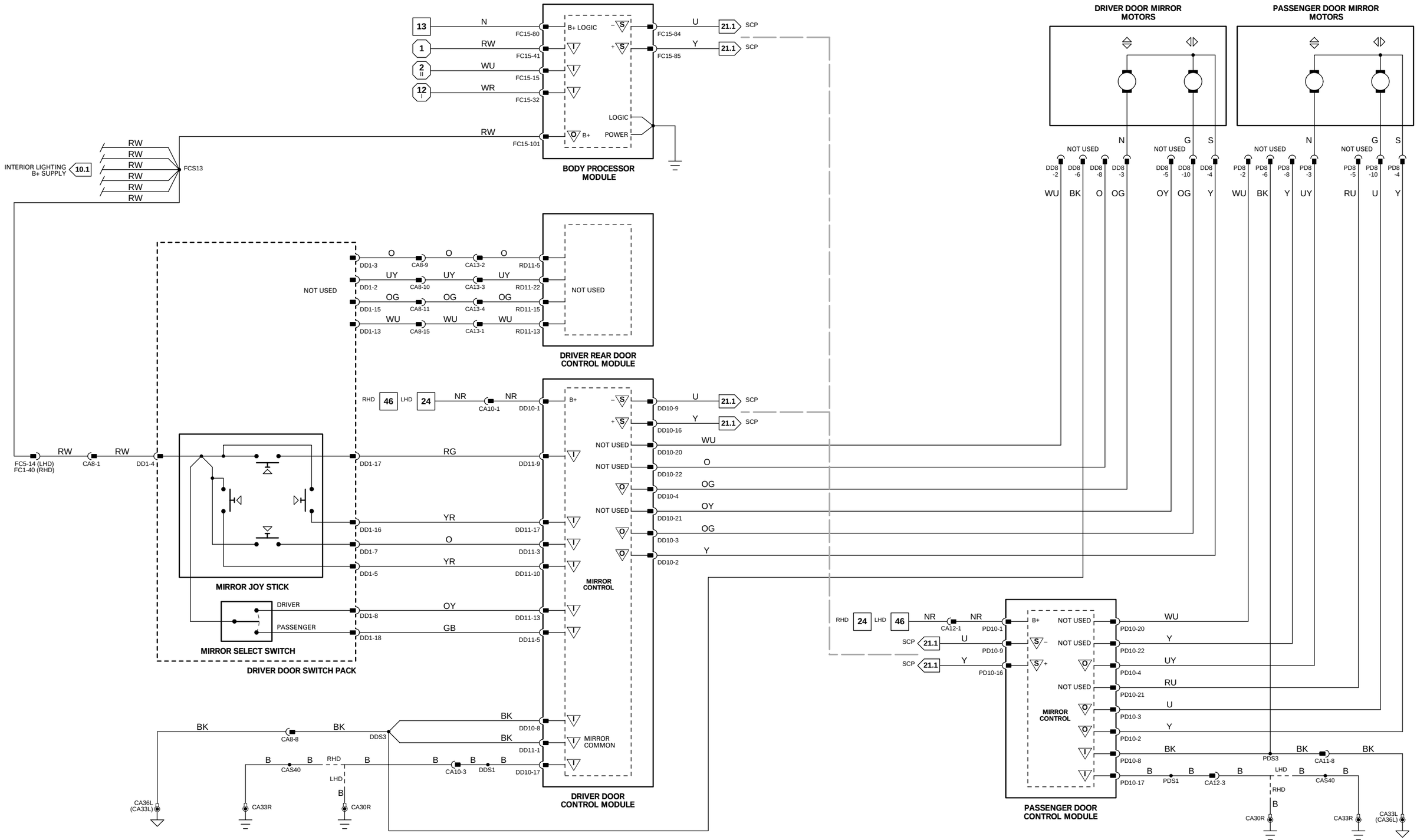

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Non-Memory Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-16	SIDE LAMP REQUEST	GROUND	B+
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-42	HEADLAMP DIP REQUEST	GROUND (MOMENTARY)	B+
O	FC15-72	MIRROR FOLDBACK RELAY ACTIVATE	GROUND	B+
O	FC15-77	MIRROR FOLD OUT RELAY ACTIVATE	GROUND	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
O	FC15-101	ILLUMINATION BATTERY SUPPLY VOLTAGE	B+	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
I	DD10-17	POWER GROUND	GROUND	GROUND
I	DD11-1	MIRROR COMMON GROUND	GROUND	GROUND
I	DD11-3	FOLD-BACK REQUEST	B+ = DOWN	GROUND = UP
I	DD11-5	PASSENGER MIRROR SELECT	B+	GROUND
I	DD11-9	FOLD-OUT REQUEST	B+ = DOWN	GROUND = UP
I	DD11-10	LH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT
I	DD11-13	DRIVER MIRROR SELECT	B+	GROUND
I	DD11-17	RH HORIZONTAL MOVEMENT REQUEST	B+ = LEFT	GROUND = RIGHT

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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. 11.4

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DOOR CONTROL MODULE – DRIVER	DD10 / 22-WAY FORD 2.8 TIMER / BLUE DD11 / 22-WAY FORD 2.8 TIMER / BLACK	DOOR CASING / TRIM PANEL
DOOR MIRROR – DRIVER	DD8 / 12-WAY MULTILOCK 040 / BLACK	DRIVER DOOR
DOOR MIRROR – PASSENGER	PD8 / 12-WAY MULTILOCK 040 / BLACK	PASSENGER DOOR
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
INTERIOR REAR VIEW MIRROR	CA55 / 8-WAY MULTILOCK 070 / YELLOW	WINDSHIELD / IN FRONT OF ROOF CONSOLE
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
MIRROR JOYSTICK (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
MIRROR SELECT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
SPLICE HEADER – CA224	CA224 / 20-WAY SUMITOMO SPLICE HEADER / GREEN	LH HEELBOARD / HEELBOARD COVER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
FOLD-BACK RELAY	BLACK	CA60 / BLACK	LH HEELBOARD RELAYS / HEELBOARD COVER
FOLD-OUT RELAY	BLACK	CA60 / BLACK	LH HEELBOARD RELAYS / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	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
CA38R	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD

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

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

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NOTE: Position Select Switch to neutral to operate Fold-Back Mirrors.

RHD 46 LHD 24 NR CA10-1 NR DD10-1 B+ S U DD10-9 21.1 SCP S Y DD10-16 21.1 SCP

RW DD1-4 (FOLD-OUT) (FOLD-BACK) MIRROR JOY STICK

YR DD1-17 DD11-9 MIRROR CONTROL

YR DD1-16 DD11-17

O DD1-7 DD11-3

YR DD1-5 DD11-10

DRIVER NEUTRAL PASSENGER MIRROR SELECT SWITCH

OY DD1-8 DD11-13

O DD1-18 DD11-5

DRIVER DOOR SWITCH PACK

BK CA8-8 BK DDS3 BK DD10-8

BK DD11-1 MIRROR COMMON

B CAS40 B RHD B CA10-3 B DDS1 B DD10-17

LHD B

CA36L (CA33L) CA33R CA30R

DRIVER DOOR CONTROL MODULE

13 N FC15-80 B+ LOGIC S U FC15-84 21.1 SCP

2 II WU FC15-15 I S Y FC15-85 21.1 SCP

12 I WR FC15-32 I

O YU FC15-72 YU FC5-42

O RG FC15-77 RG FC5-43

RW CA8-1 RW FC5-14 (LHD) FC1-40 (RHD) RW

INTERIOR LIGHTING B+ SUPPLY 10.1 FCS13 RW FC15-101 O B+

MIRROR FOLD-BACK CONTROL

YU SC2-1 YU DIP UY SC2-4 UY FC15-42 I

SIDE DIP / AUTO SIDE

BK FCS28 BK SC2-9 BK SCS1 BK RW SCS2 RW SC2-3 RW FCS9 RW FC15-16 I

FC17R LIGHTING STALK

COLUMN SWITCHGEAR

LOGIC POWER

BODY PROCESSOR MODULE

NOTE: Refer to Fig. 09.1 and Fig. 09.2 for Lighting Circuit.

SCP 21.1 U FC24-14 S – C + Y FC24-11 21.1 CAN

SCP 21.1 Y FC24-13 S + C – G FC24-24 21.1 CAN

VEHICLE SPEED REVERSE GEAR

INSTRUMENT PACK

CAS35

R CA60 4 5 B N 32

YU 3 2 1 N 33

FOLD-BACK RELAY

YR CA60 9 10 B CAS50 N 34

RG 8 7 6 N 35

FOLD-OUT RELAY

B CA38R

CA224 -2 -1 -3

R CA8-13 R DD8-1 FOLD-BACK MOTOR

YR CA8-14 YR DD8-7

YG CA8-12 YG DD8-12 MIRROR TINT

DRIVER DOOR MIRROR

R CA11-13 R PD8-1

YR CA11-14 YR PD8-7 FOLD-BACK MOTOR

CAS41 YG CA11-12 YG PD8-12 MIRROR TINT

PASSENGER DOOR MIRROR

YG CA55-4

18 II WU CA55-1 MIRROR TINT

YU FC1-11 YU CA55-5 AUTO HEADLAMPS

BT4-8 Y CA55-2

B CAS40 B CA55-3

CA33R

INTERIOR REAR VIEW MIRROR

Y 09.2 REVERSE LAMPS (CIRCUIT CONTINUED)

1 → 6 Fig. 01.1 (1 II) → (4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II) → (49 II) Fig. 01.4 (50 E) → (63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input O Output + Sensor Supply V – Sensor Ground A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
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)	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
I	DD10-8	LOGIC GROUND	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)	B+

DRIVER REAR DOOR CONTROL MODULE

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

DRIVER SEAT CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	SD1-1	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-2	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-3	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-4	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-5	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-6	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-7	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
O	SD1-8	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
I	SD1-9	DRIVER SEAT CUSHION FORE MOVEMENT REQUEST	B+	GROUND
I	SD1-10	DRIVER SEAT CUSHION AFT MOVEMENT REQUEST	B+	GROUND
I	SD1-11	DRIVER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-12	DRIVER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-13	DRIVER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-14	DRIVER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-15	DRIVER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+	GROUND
I	SD1-16	DRIVER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+	GROUND
O	SD2-1	DRIVER SEAT CUSHION REAR / SQUAB RECLINE MOTOR POT. REF. GROUND	GROUND	GROUND
O	SD2-2	DRIVER SEAT CUSHION FORE / AFT MOTOR POT. REFERENCE GROUND	GROUND	GROUND
O	SD2-5	DRIVER SEAT CUSHION REAR / SQUAB RECLINE MOTOR POT. REF. VOLTAGE	5V	
O	SD2-6	DRIVER SEAT CUSHION FRONT MOTOR POT. REFERENCE VOLTAGE	5V	
I	SD2-8	DRIVER SEAT HEADREST MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN	
I	SD2-9	DRIVER SEAT CUSHION FRONT MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN	
I	SD2-10	DRIVER SEAT CUSHION REAR MOTOR POTENTIOMETER FEEDBACK	10 V = UP, 1 V = DOWN	
I	SD2-11	DRIVER SEAT SQUAB RECLINE MOTOR POTENTIOMETER FEEDBACK	9 V = FORE, 2 V = AFT	
I	SD2-12	DRIVER SEAT CUSHION FORE / AFT MOTOR POTENTIOMETER FEEDBACK	2 V = FORE, 10 V = AFT	
O	SD2-14	DRIVER SEAT HEADREST MOTOR POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
O	SD2-15	DRIVER SEAT CUSHION FRONT MOTOR POTENTIOMETER REFERENCE GROUND	GROUND	GROUND
O	SD2-18	DRIVER SEAT CUSHION FORE / AFT MOTOR POT. REFERENCE VOLTAGE	5V	
O	SD2-19	DRIVER SEAT HEADREST MOTOR POTENTIOMETER REFERENCE VOLTAGE	5V	
I	SD3-1	MODULE IDENTIFICATION	GROUND (DRIVER)	
I	SD3-2	POWER GROUND	GROUND	GROUND
O	SD3-3	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD3-4	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+	GROUND
I	SD3-5	BATTERY POWER SUPPLY	B+	B+
I	SD3-6	DRIVER SEAT HEADREST RAISE MOVEMENT REQUEST	B+	GROUND
I	SD3-8	DRIVER SEAT HEADREST LOWER MOVEMENT REQUEST	B+	GROUND
S	SD3-9	SCP NETWORK	2 – 1600 Hz	
S	SD3-10	SCP NETWORK	2 – 1600 Hz	

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
S	FC24-13	SCP NETWORK	2 – 1600 Hz	
S	FC24-14	SCP NETWORK	2 – 1600 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 12.1

COMPONENTS

Component	Connector / 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 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
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
MEMORY SWITCHES (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
SEAT CONTROL MODULE – DRIVER	SD1 / 16-WAY FORD 2.8 TIMER / BLACK SD2 / 26-WAY FORD IDC / BLACK SD3 / 10-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT / UNDER
SEAT CUSHION HEATERS – DRIVER	SD7 / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	
SEAT LUMBAR PUMP – DRIVER	SD10 / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT MOTORS – DRIVER	SD4 / 6-WAY MULTILOCK 070 / GREY SD6 / 6-WAY MULTILOCK 070 / YELLOW SD11 / 6-WAY MULTILOCK 070 / WHITE SD12 / 6-WAY MULTILOCK 070 / WHITE SD13 / 6-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT / UNDER
SEAT SQUAB HEATERS – DRIVER	SD9 / 3-WAY MULTILOCK 070 / GREY	DRIVER SEAT
SWITCH PACK – DRIVER SEAT	SD5 / 16-WAY MULTILOCK 040 / BLACK	DRIVER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – DRIVER	BROWN	SD14 / BROWN	FRONT SEAT RELAYS / UNDER SEAT

HARNESS-TO-HARNESS CONNECTORS

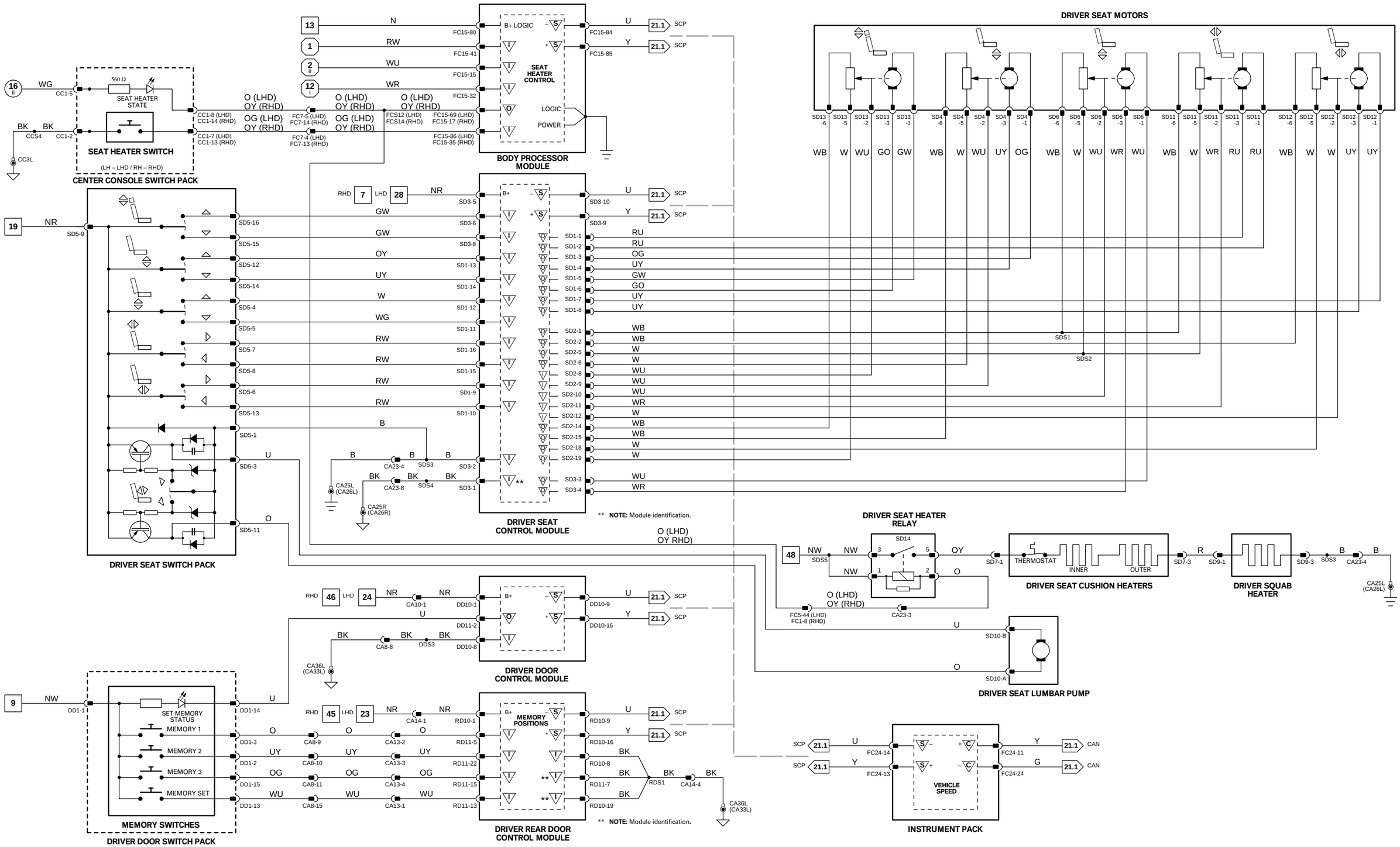
Connector	Type / Color	Location / Access
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA10	8-WAY MULTILOCK 070 / YELLOW	DRIVER 'A' POST / DOOR HARNESS GAITER
CA13	4-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA14	6-WAY MULTILOCK 070 / WHITE	DRIVER 'B/C' POST / DOOR HARNESS GAITER
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	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
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

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

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



1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 02.1 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP
O Output | − Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: Driver Memory Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
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)	B+

DRIVER SEAT CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	SD1-1	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-2	DRIVER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-3	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-4	DRIVER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-5	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-6	DRIVER HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-7	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
O	SD1-8	DRIVER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
I	SD1-9	DRIVER SEAT CUSHION FORE MOVEMENT REQUEST	B+	GROUND
I	SD1-10	DRIVER SEAT CUSHION AFT MOVEMENT REQUEST	B+	GROUND
I	SD1-11	DRIVER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-12	DRIVER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-13	DRIVER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-14	DRIVER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-15	DRIVER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+	GROUND
I	SD1-16	DRIVER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+	GROUND
I	SD3-1	MODULE IDENTIFICATION	GROUND (DRIVER)	
I	SD3-2	POWER GROUND	GROUND	GROUND
O	SD3-3	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD3-4	DRIVER SEAT RAISE / LOWER MOTOR SUPPLY	B+	GROUND
I	SD3-5	BATTERY POWER SUPPLY	B+	B+
I	SD3-6	DRIVER SEAT HEADREST RAISE MOVEMENT REQUEST	B+	GROUND
I	SD3-8	DRIVER SEAT HEADREST LOWER MOVEMENT REQUEST	B+	GROUND
S	SD3-9	SCP NETWORK	2 – 1600 Hz	
S	SD3-10	SCP NETWORK	2 – 1600 Hz	

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 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
SEAT CONTROL MODULE – DRIVER	SD1 / 16-WAY FORD 2.8 TIMER / BLACK SD2 / 26-WAY FORD IDC / BLACK SD3 / 10-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT / UNDER
SEAT CUSHION HEATERS – DRIVER	SD7 / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP – DRIVER	SD10 / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT MOTORS – DRIVER	SD4 / 6-WAY MULTILOCK 070 / GREY SD6 / 6-WAY MULTILOCK 070 / YELLOW SD11 / 6-WAY MULTILOCK 070 / WHITE SD12 / 6-WAY MULTILOCK 070 / WHITE SD13 / 6-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT / UNDER
SEAT SQUAB HEATERS – DRIVER	SD9 / 3-WAY MULTILOCK 070 / GREY	DRIVER SEAT
SWITCH PACK – DRIVER SEAT	SD5 / 16-WAY MULTILOCK 040 / BLACK	DRIVER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – DRIVER	BROWN	SD14 / 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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	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 BULKHEAD STUD / CABIN SIDE

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

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

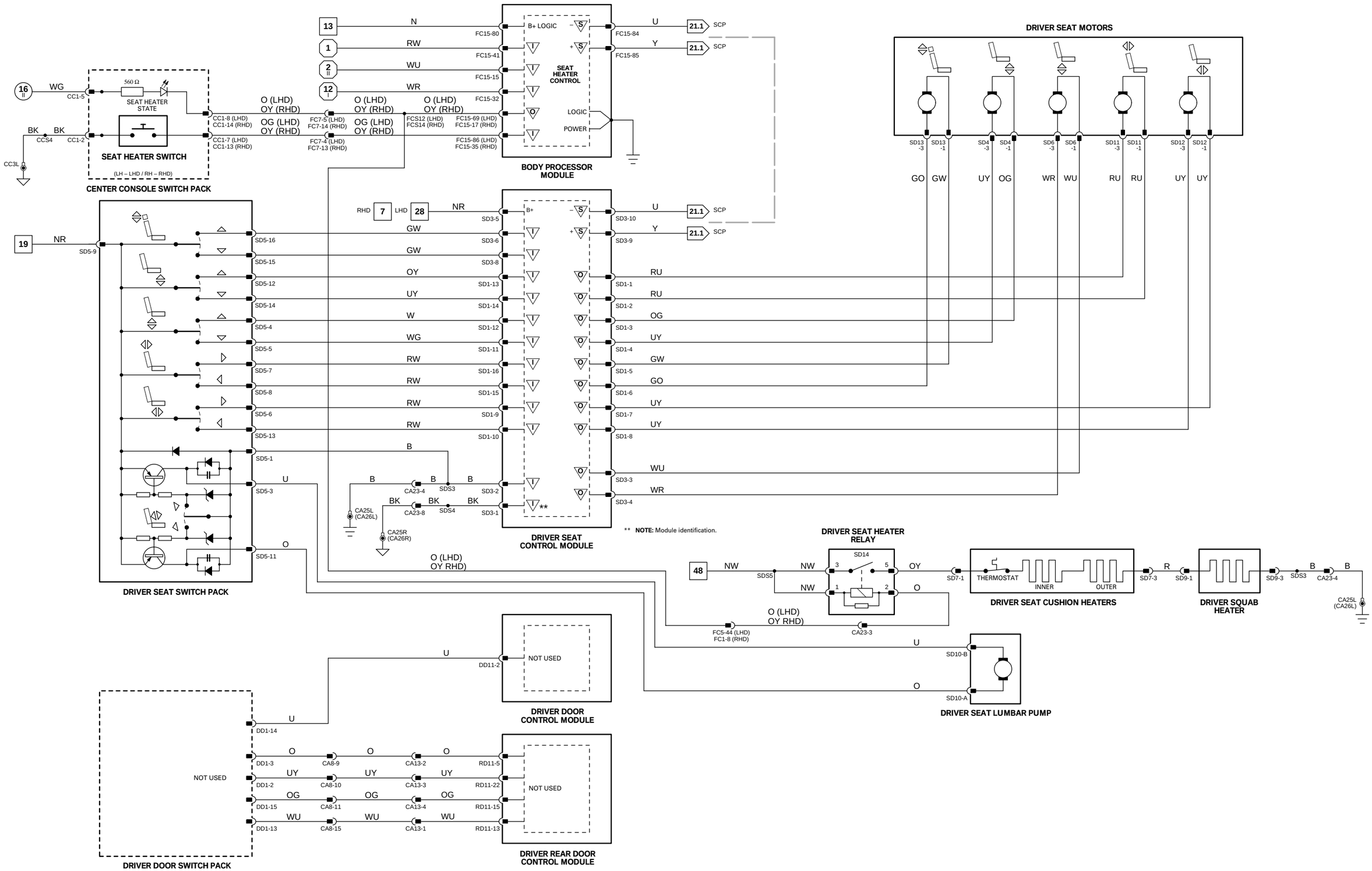
I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

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

DATE OF ISSUE: September 2000



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input · O Output · + Sensor Supply V · − Sensor Ground · A ACP · C CAN · S SCP · D Serial and Encoded Data

VARIANT: Driver 5-Way Powered Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 12.3

COMPONENTS

Component	Connector / 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 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
SEAT CUSHION HEATERS – DRIVER	SD7 / 3-WAY MULTILOCK 070 / YELLOW	DRIVER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
SEAT MOTOR – DRIVER (RAISE / LOWER ONLY)	SD16 / 6-WAY MULTILOCK 070 / GREY	DRIVER SEAT / UNDER
SEAT SQUAB HEATERS – DRIVER	SD9 / 3-WAY MULTILOCK 070 / GREY	DRIVER SEAT
SWITCH PACK – DRIVER SEAT (RAISE / LOWER ONLY)	SD17 / 16-WAY MULTILOCK 040 / BLACK	DRIVER SEAT / UNDER

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – DRIVER	BROWN	SD14 / BROWN	FRONT SEAT RELAYS / UNDER SEAT
SEAT RAISE RELAY	BLACK	SD18 / BLACK	FRONT SEAT RELAYS / UNDER SEAT
SEAT LOWER RELAY	BLACK	SD18 / BLACK	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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY

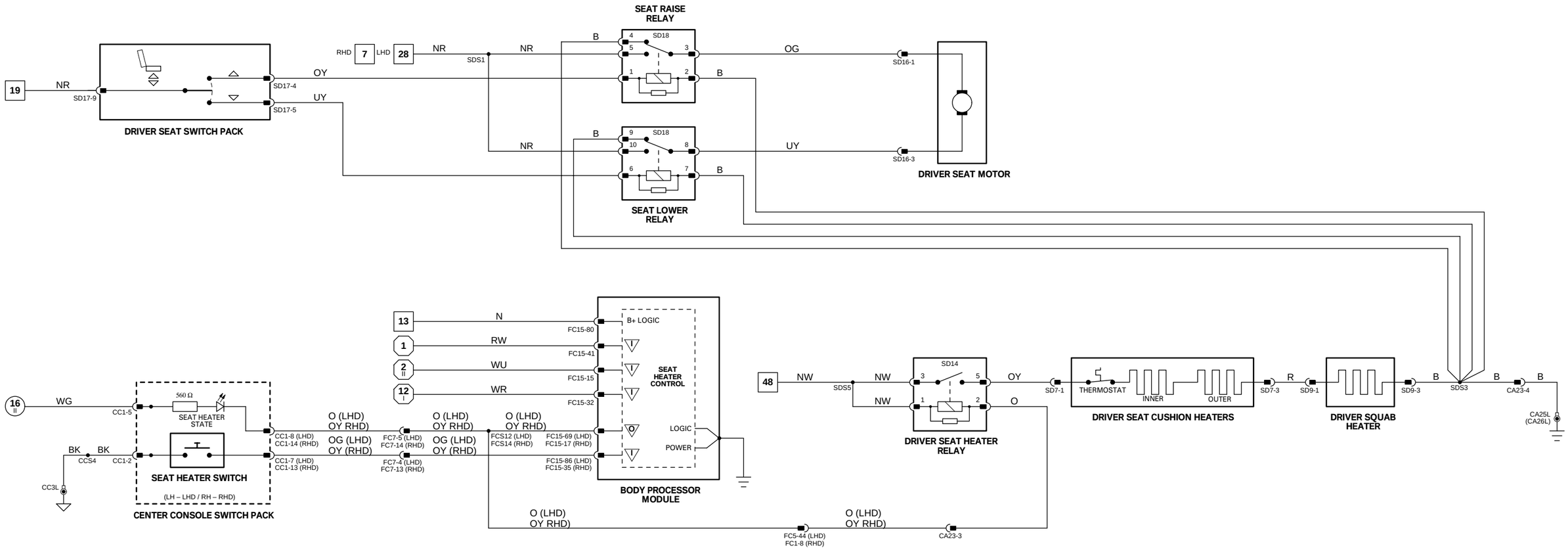
GROUNDS

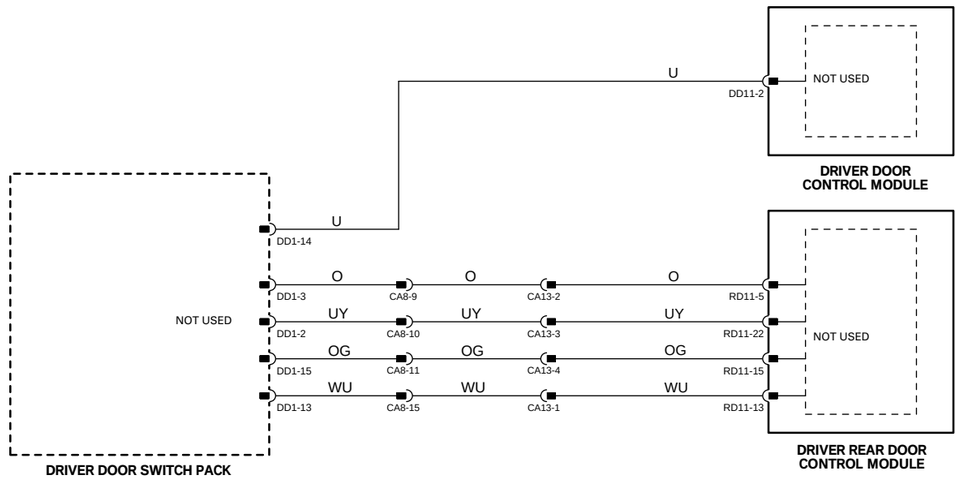
Ground	Location / Type
CA25L	EYELET (PAIR) – PASSENGER SEAT GROUND STUD
CA26L	EYELET (PAIR) – DRIVER SEAT GROUND STUD
CC3L	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE

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

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

DATE OF ISSUE: September 2000





1 → 6 Fig. 01.1	(1 II) → (4 E) Fig. 01.1	7 → 49 Fig. 01.2	50 → 88 Fig. 01.3
(5 II) → (49 II) Fig. 01.4	(50 E) → (63 E) Fig. 01.5	(1) → (19 I) Fig. 02.1	

I Input	+ Sensor Supply V	A ACP	S SCP
O Output	– Sensor Ground	C CAN	D Serial and Encoded Data

VARIANT: Driver Raise / Lower Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
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)	B+

PASSENGER SEAT CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	SD1-1	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-2	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SD1-3	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-4	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SD1-5	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-6	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SD1-7	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
O	SD1-8	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
I	SD1-9	PASSENGER SEAT CUSHION FORE MOVEMENT REQUEST	B+	GROUND
I	SD1-10	PASSENGER SEAT CUSHION AFT MOVEMENT REQUEST	B+	GROUND
I	SD1-11	PASSENGER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-12	PASSENGER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+	GROUND
I	SD1-13	PASSENGER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-14	PASSENGER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+	GROUND
I	SD1-15	PASSENGER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+	GROUND
I	SD1-16	PASSENGER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+	GROUND
I	SD3-2	COMMON GROUND SUPPLY	GROUND	GROUND
O	SD3-3	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+	GROUND
O	SD3-4	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+	GROUND
I	SD3-5	BATTERY SUPPLY	B+	B+
I	SD3-6	PASSENGER SEAT HEADREST RAISE MOVEMENT REQUEST	B+	GROUND
I	SD3-8	PASSENGER SEAT HEADREST LOWER MOVEMENT REQUEST	B+	GROUND
S	SD3-9	SCP NETWORK	2 – 1600 Hz	
S	SD3-10	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	SP1 / 16-WAY FORD 2.8 TIMER / BLACK SP3 / 10-WAY FORD 2.8 TIMER / BLACK	PASSENGER SEAT / UNDER
SEAT CUSHION HEATERS – PASSENGER	SP7 / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP – PASSENGER	SP10 / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT MOTORS – PASSENGER	SP4 / 6-WAY MULTILOCK 070 / GREY SP6 / 6-WAY MULTILOCK 070 / YELLOW SP11 / 6-WAY MULTILOCK 070 / WHITE SP12 / 6-WAY MULTILOCK 070 / WHITE SP13 / 6-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT / UNDER
SEAT SQUAB HEATERS – PASSENGER	SP9 / 3-WAY MULTILOCK 070 / GREY	PASSENGER SEAT
SWITCH PACK – PASSENGER SEAT	SP5 / 16-WAY MULTILOCK 040 / BLACK	PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – PASSENGER	BROWN	SP14 / 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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	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

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

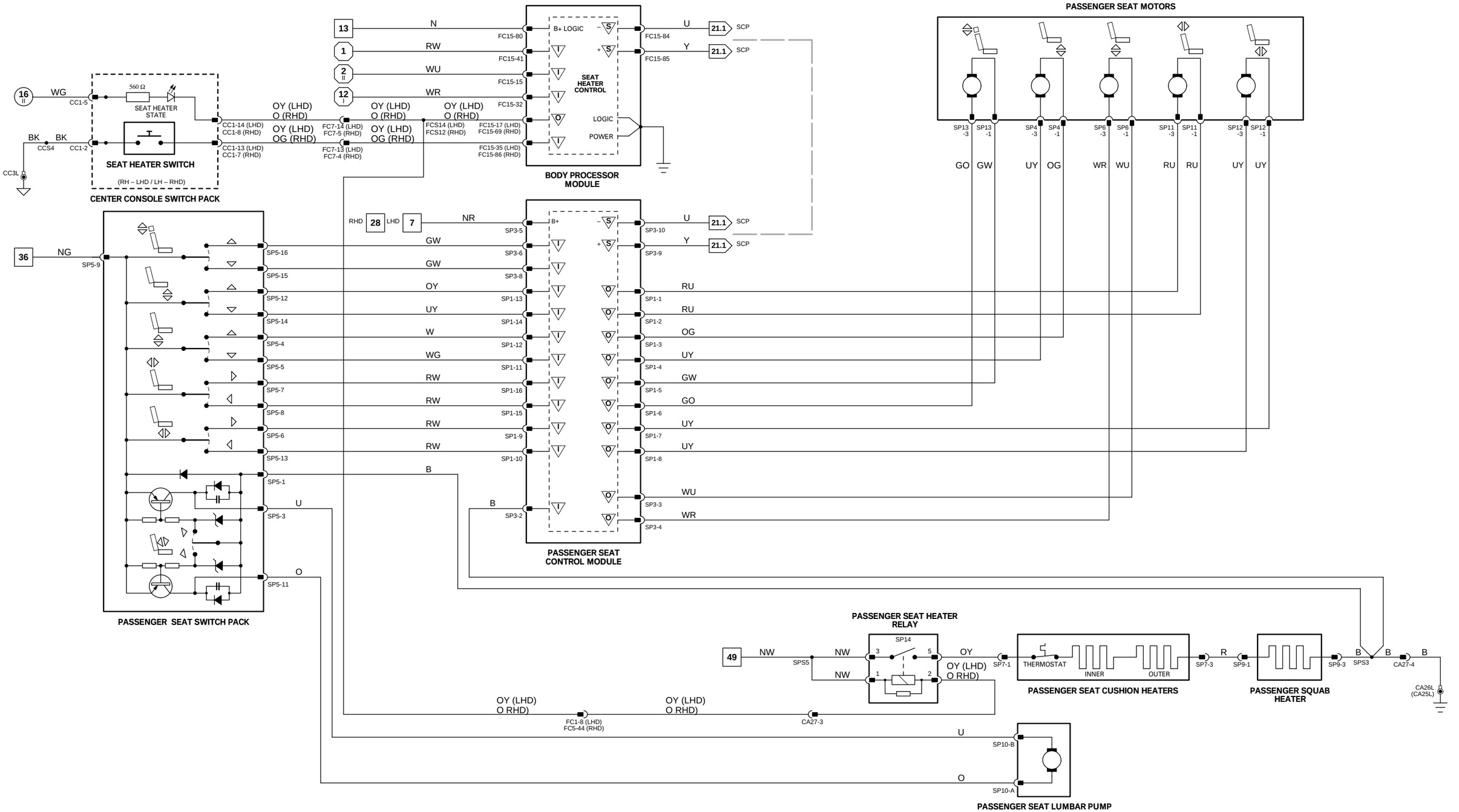
The following abbreviations are used to represent values for Control Module Pin-Out data

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 02.1 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Passenger 5-Way Powered Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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+
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)	B+

PASSENGER SEAT CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	SP1-1	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SP1-2	PASSENGER SEAT SQUAB FORE / AFT RECLINE MOTOR SUPPLY	B+	GROUND
O	SP1-3	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SP1-4	PASSENGER SEAT CUSHION RAISE / LOWER FRONT MOTOR SUPPLY	B+	GROUND
O	SP1-5	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SP1-6	PASSENGER SEAT HEADREST RAISE / LOWER MOTOR SUPPLY	B+	GROUND
O	SP1-7	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
O	SP1-8	PASSENGER SEAT CUSHION FORE / AFT MOTOR SUPPLY	B+	GROUND
I	SP1-9	PASSENGER SEAT CUSHION FORE MOVEMENT REQUEST	B+	GROUND
I	SP1-10	PASSENGER SEAT CUSHION AFT MOVEMENT REQUEST	B+	GROUND
I	SP1-11	PASSENGER SEAT CUSHION LOWER REAR MOVEMENT REQUEST	B+	GROUND
I	SP1-12	PASSENGER SEAT CUSHION RAISE REAR MOVEMENT REQUEST	B+	GROUND
I	SP1-13	PASSENGER SEAT CUSHION RAISE FRONT MOVEMENT REQUEST	B+	GROUND
I	SP1-14	PASSENGER SEAT CUSHION LOWER FRONT MOVEMENT REQUEST	B+	GROUND
I	SP1-15	PASSENGER SEAT SQUAB AFT RECLINE MOVEMENT REQUEST	B+	GROUND
I	SP1-16	PASSENGER SEAT SQUAB FORE RECLINE MOVEMENT REQUEST	B+	GROUND
I	SP3-2	COMMON GROUND SUPPLY	GROUND	GROUND
O	SP3-3	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+	GROUND
O	SP3-4	PASSENGER SEAT CUSHION RAISE / LOWER REAR MOTOR SUPPLY	B+	GROUND
I	SP3-5	BATTERY SUPPLY	B+	B+
I	SP3-6	PASSENGER SEAT HEADREST RAISE MOVEMENT REQUEST	B+	GROUND
I	SP3-8	PASSENGER SEAT HEADREST LOWER MOVEMENT REQUEST	B+	GROUND
S	SP3-9	SCP NETWORK	2 – 1600 Hz	
S	SP3-10	SCP NETWORK	2 – 1600 Hz	

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

Fig. 12.5

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
FORE / AFT SWITCH – PASSENGER REAR	SP19 / 10-WAY AMP MICRO QUAD LOCK / BLACK	PASSENGER SEAT / REAR
RECLINE SWITCH – PASSENGER REAR	SP20 / 10-WAY AMP MICRO QUAD LOCK / BLACK	PASSENGER SEAT / REAR
SEAT CONTROL MODULE – PASSENGER	SP1 / 16-WAY FORD 2.8 TIMER / BLACK SP3 / 10-WAY FORD 2.8 TIMER / BLACK	PASSENGER SEAT / UNDER
SEAT CUSHION HEATERS – PASSENGER	SP7 / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT HEATER SWITCH (CENTER CONSOLE SWITCH PACK)	CC1 / 16-WAY FORD IDC S.U. / BLACK	CENTER CONSOLE SWITCH PACK
SEAT LUMBAR PUMP – PASSENGER	SP10 / 3-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT
SEAT MOTORS – PASSENGER	SP4 / 6-WAY MULTILOCK 070 / GREY SP6 / 6-WAY MULTILOCK 070 / YELLOW SP11 / 6-WAY MULTILOCK 070 / WHITE SP12 / 6-WAY MULTILOCK 070 / WHITE SP13 / 6-WAY MULTILOCK 070 / YELLOW	PASSENGER SEAT / UNDER
SEAT SQUAB HEATERS – PASSENGER	SP9 / 3-WAY MULTILOCK 070 / GREY	PASSENGER SEAT
SWITCH PACK – PASSENGER SEAT	SP5 / 16-WAY MULTILOCK 040 / BLACK	PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – PASSENGER	BROWN	SP14 / 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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY
SP25	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

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

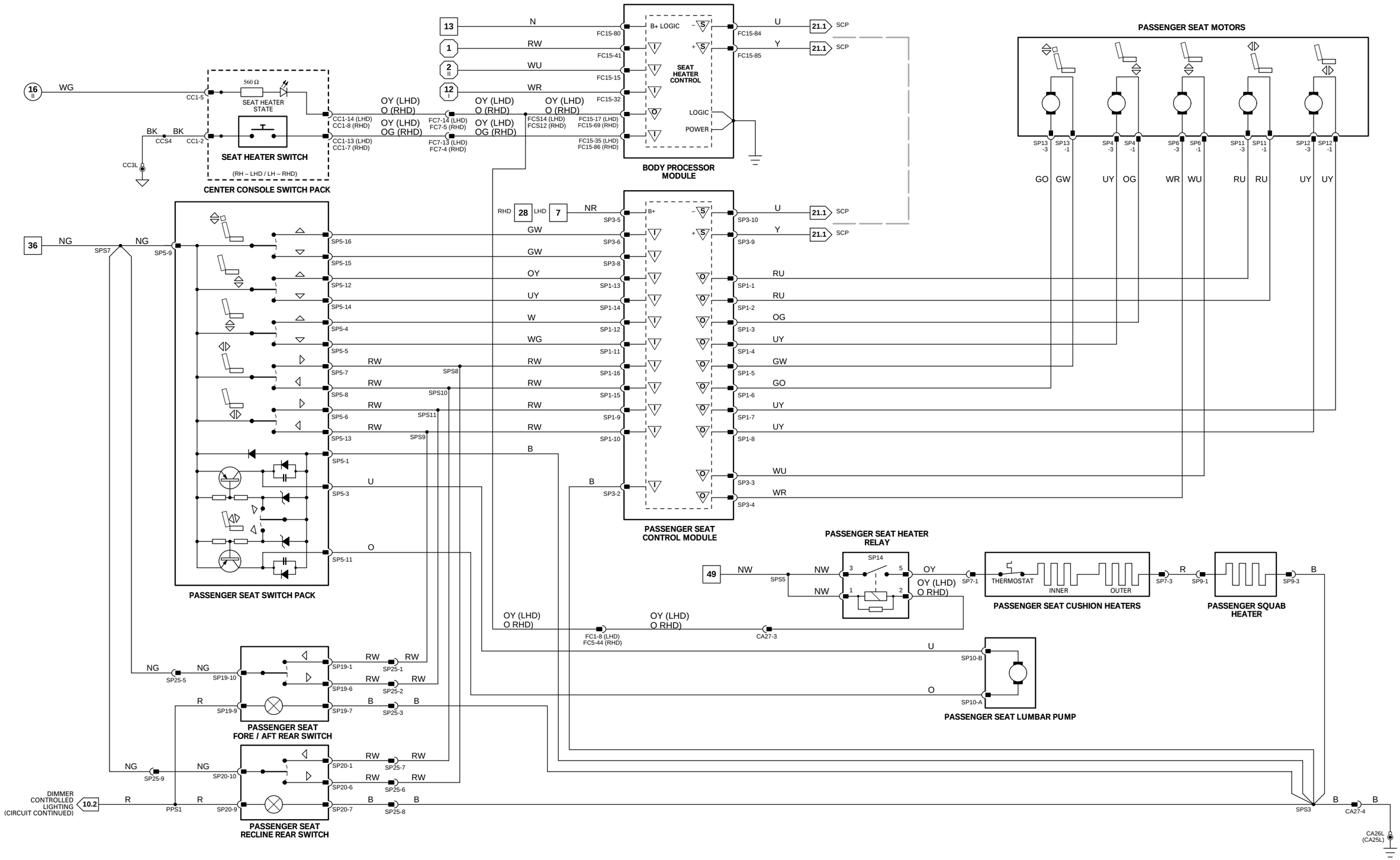
The following abbreviations are used to represent values for Control Module Pin-Out data

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: LWB Powered Rear Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
O	FC15-17	RH SEAT HEATER STATUS	GROUND	B+
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-35	RH SEAT HEATER REQUEST	GROUND (MOMENTARY)	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O	FC15-69	LH SEAT HEATER STATUS	GROUND	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
I	FC15-86	LH SEAT HEATER REQUEST	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 – PASSENGER	SP7 / 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 – PASSENGER	SP9 / 3-WAY MULTILOCK 070 / GREY	PASSENGER SEAT

RELAYS

Relay	Case Color	Connector / Color	Location / Access
SEAT HEATER RELAY – PASSENGER	BROWN	SP14 / 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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	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

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

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

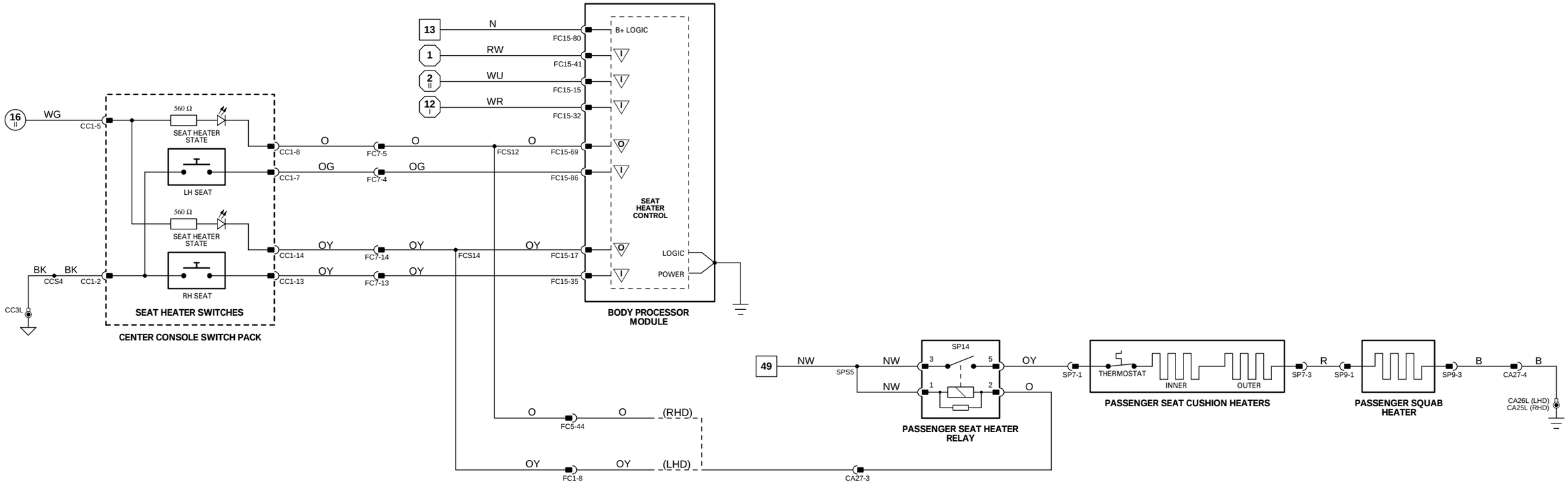
I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

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

DATE OF ISSUE: September 2000



1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: Heaters Only Front Passenger Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

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 LUMBER 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 – DEFLATE REQUEST	B+	0 V

Fig. 12.7

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	BELOW REAR CENTER CONSOLE
SEAT FORE / AFT MOTOR – LH REAR	BS21 / 3-WAY MULTILOCK 070 / WHITE	BELOW SEAT CUSHION
SEAT FORE / AFT MOTOR – RH REAR	BS22 / 3-WAY MULTILOCK 070 / WHITE	BELOW SEAT CUSHION
SEAT FORE / AFT SWITCH – LH REAR	BC3 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT FORE / AFT SWITCH – RH REAR	BC5 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEADREST MOTOR – LH REAR	BB3 / 6-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT HEADREST MOTOR – RH REAR	BX3 / 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 / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT LUMBAR PUMP – RH REAR	BX4 / 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 DEFLATE RELAY – LH	BLACK	BS10 / BLACK	RH HEELBOARD RELAYS / HEELBOARD COVER

HARNESS-TO-HARNESS CONNECTORS

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

GROUNDS

Ground	Location / Type
CA38L	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW
CA39L	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW
CA39R	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW

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

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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

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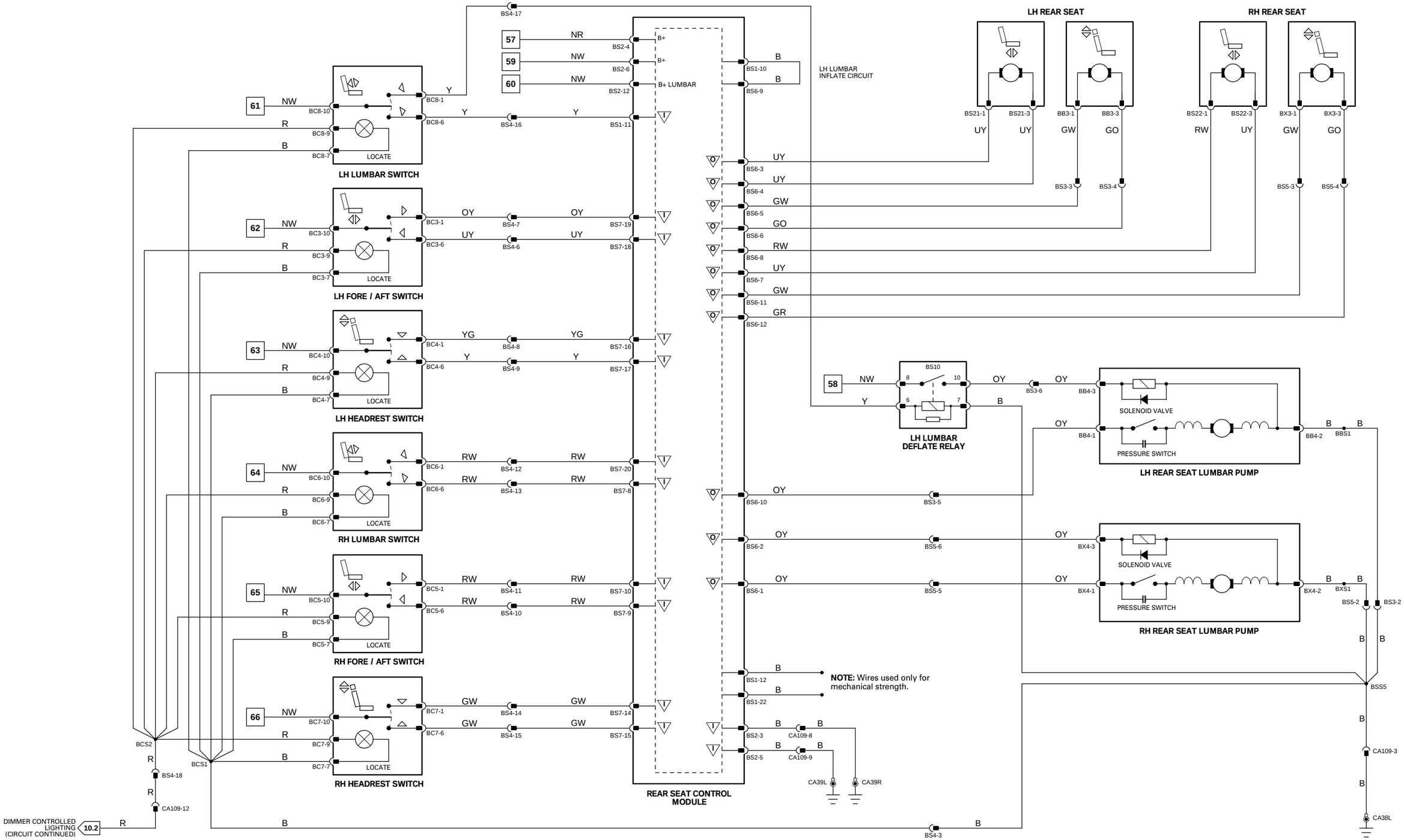


1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | (5 II → 49 II) Fig. 01.4 | (50 E → 63 E) Fig. 01.5 | 1 → (19 T) Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: LWB / Powered Rear Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 12.8

COMPONENTS

Component	Connector / Type / Color	Location / Access
SEAT CUSHION HEATER – LH REAR	BB1 / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT CUSHION HEATER – RH REAR	BX1 / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT HEATER SWITCH – LH REAR (LWB VEHICLES)	BC1 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEATER SWITCH – RH REAR (LWB VEHICLES)	BC2 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEATER TIMER – LH REAR	BS8 / 5-WAY RELAY BASE / BROWN	RH HEELBOARD / HEELBOARD COVER
SEAT HEATER TIMER – RH REAR	BS9 / 5-WAY RELAY BASE / BROWN	RH HEELBOARD / HEELBOARD COVER
SQUAB HEATER – LH REAR	BB5 / 3-WAY MULTILOCK 070 / GREY	REAR SEAT
SQUAB HEATER – RH REAR	BX5 / 3-WAY MULTILOCK 070 / GREY	REAR SEAT

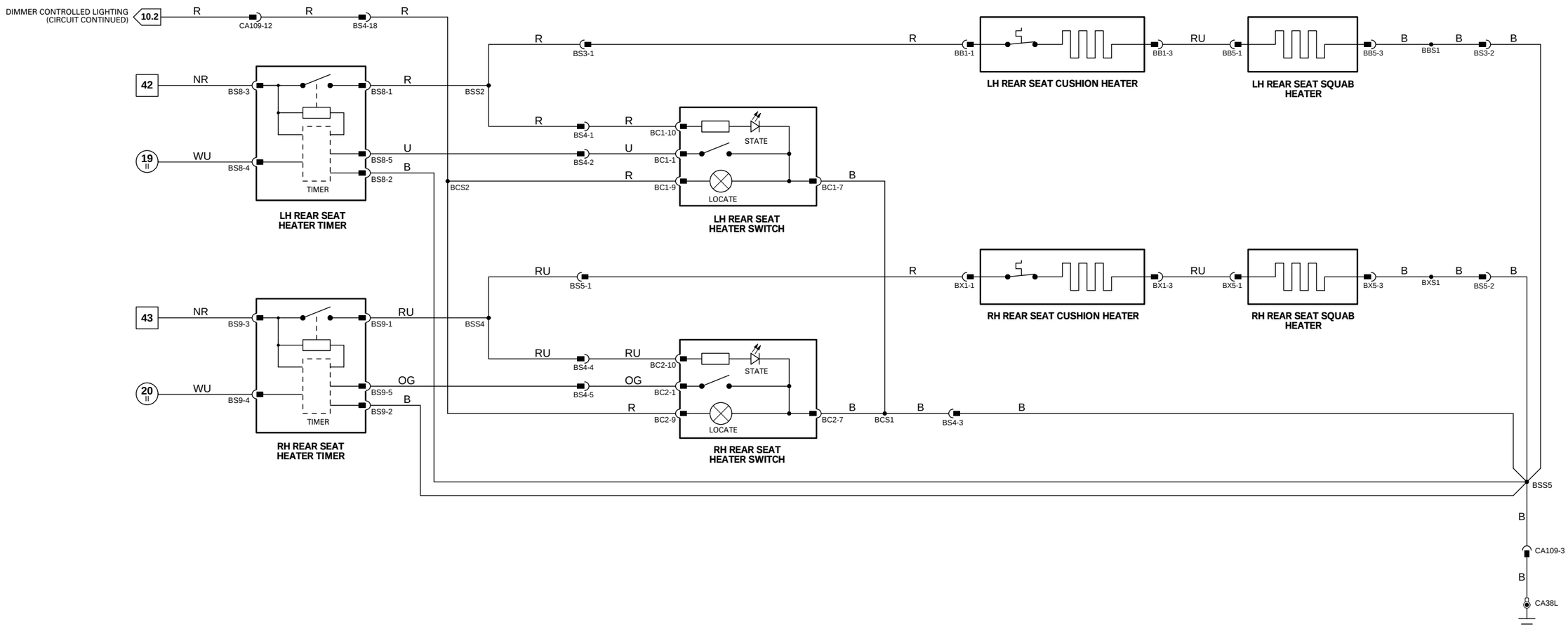
HARNESS-TO-HARNESS CONNECTORS

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

GROUNDS

Ground	Location / Type
CA38L	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Powered / Heated Rear Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 12.9

COMPONENTS

Component	Connector / Type / Color	Location / Access
SEAT CUSHION HEATER – LH REAR	BB1 / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT CUSHION HEATER – RH REAR	BX1 / 3-WAY MULTILOCK 070 / YELLOW	REAR SEAT
SEAT HEATER SWITCH – LH REAR (LWB VEHICLES)	BC1 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEATER SWITCH – RH REAR (LWB VEHICLES)	BC2 / 10-WAY AMP MICRO QUAD LOCK / BLACK	REAR CENTER CONSOLE SWITCH PACK
SEAT HEATER TIMER – LH REAR	BS8 / 5-WAY RELAY BASE / BROWN	RH HEELBOARD / HEELBOARD COVER
SEAT HEATER TIMER – RH REAR	BS9 / 5-WAY RELAY BASE / BROWN	RH HEELBOARD / HEELBOARD COVER
SQUAB HEATER – LH REAR	BB5 / 3-WAY MULTILOCK 070 / GREY	REAR SEAT
SQUAB HEATER – RH REAR	BX5 / 3-WAY MULTILOCK 070 / GREY	REAR SEAT

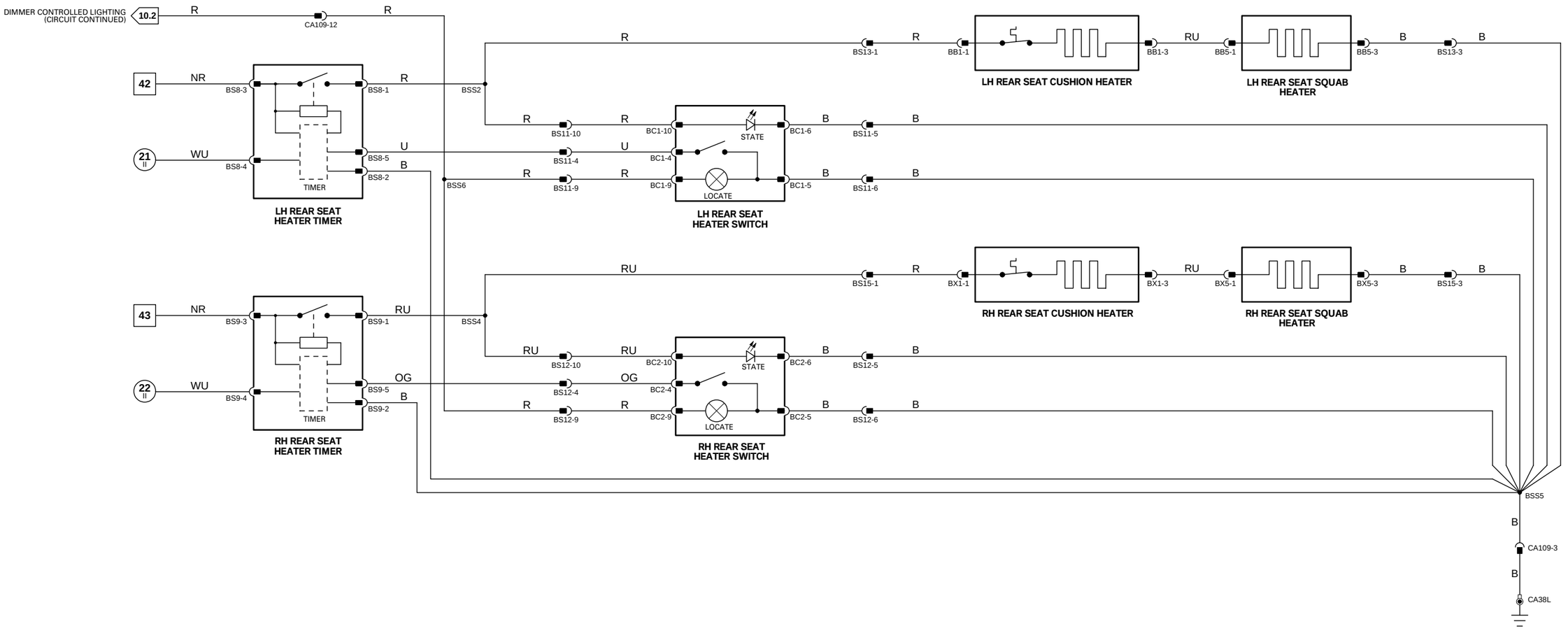
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BS11	10-WAY AMP MICRO QUAD LOCK / BLACK	BEHIND REAR CENTER CONSOLE SWITCH PACK
BS12	10-WAY AMP MICRO QUAD LOCK / NATURAL	BEHIND REAR CENTER CONSOLE SWITCH PACK
BS13	3-WAY MULTILOCK 070 / YELLOW	BELOW REAR SEAT CUSHION
BS15	3-WAY MULTILOCK 070 / YELLOW	BELOW REAR SEAT CUSHION
CA109	12-WAY MULTILOCK 070 / WHITE	BELOW REAR SEAT CUSHION

GROUNDS

Ground	Location / Type
CA38L	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Heaters Only Rear Seat Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-5	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)	B+
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-33	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
I	FC15-55	VALET REQUEST	GROUND (MOMENTARY)	B+
I	FC15-58	NOT IN PARK MICROSWITCH STATUS	GROUND (PARK)	B+ (NOT IN PARK)
I	FC15-63	CENTRAL LOCKING REQUEST	GROUND (MOMENTARY)	B+
I	FC15-67	KEY IN IGNITION	GROUND (KEY IN)	B+ (KEY OUT)
O	FC15-71	DOOR LOCKING RELAY ACTIVATE	GROUND (PULSE)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	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+	B+
O	DD10-5	DRIVERS DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
O	DD10-6	DRIVERS DOOR LOCK ACTUATOR MOTOR LOCK	B+	GROUND
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
O	RD10-5	DRIVER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
O	RD10-6	DRIVER REAR DOOR LOCK ACTUATOR MOTOR LOCK	B+	GROUND
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
I	RD10-17	POWER GROUND	GROUND	GROUND
I	RD10-19	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-7	MODULE IDENTIFICATION	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+	B+
O	PD10-5	PASSENGER DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
O	PD10-6	PASSENGER DOOR LOCK ACTUATOR MOTOR LOCK	B+	GROUND
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
O	RP10-5	PASSENGER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
O	RP10-6	PASSENGER REAR DOOR LOCK ACTUATOR MOTOR LOCK	B+	GROUND
I	RP10-8	LOGIC GROUND	GROUND	GROUND
S	RP10-9	SCP NETWORK	2 – 1600 Hz	
S	RP10-16	SCP NETWORK	2 – 1600 Hz	
I	RP10-17	POWER GROUND	GROUND	GROUND
I	RP11-20	PASSENGER REAR DOOR SWITCH	GROUND (DOOR OPEN)	B+

SECURITY AND LOCKING CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	BT1-1	TRUNK RELEASE ACTUATOR ACTIVATE	B+ (PULSE)	GROUND
O	BT1-2	FUEL FILLER FLAP UNLOCK RELAY ACTIVATE	B+ (PULSE)	GROUND
S	BT1-8	SCP NETWORK	2 – 1600 Hz	
O	BT1-10	FUEL FILLER FLAP LOCK RELAY ACTIVATE	B+	GROUND
I	BT1-13	LOGIC GROUND	GROUND	GROUND
I	BT1-14	LOGIC GROUND	GROUND	GROUND
I	BT1-15	BATTERY POWER SUPPLY	B+	B+
S	BT1-16	SCP NETWORK	2 – 1600 Hz	
I	BT2-3	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)	B+
I	BT2-5	TRUNK SECURITY SWITCH STATUS	GROUND (INTRUSION)	B+ (SECURE)
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	GROUND	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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	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 LABINAL / 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 / BLACK	TOP OF BACKLIGHT
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK BT2 / 26-WAY FORD IDC / BLACK BT6 / 2-WAY MINI UHF / METALLIC	BELOW TRUNK FUSE BOX
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-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	BLACK	CA50 / BLACK	LH HEELBOARD RELAYS / HEELBOARD COVER
FUEL FILLER FLAP LOCK RELAY	BLACK	BT23 / BLACK	TRUNK RELAYS / TRUNK
FUEL FILLER FLAP UNLOCK RELAY	BLACK	BT23 / BLACK	TRUNK RELAYS / TRUNK

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)
BT28L	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
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

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

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

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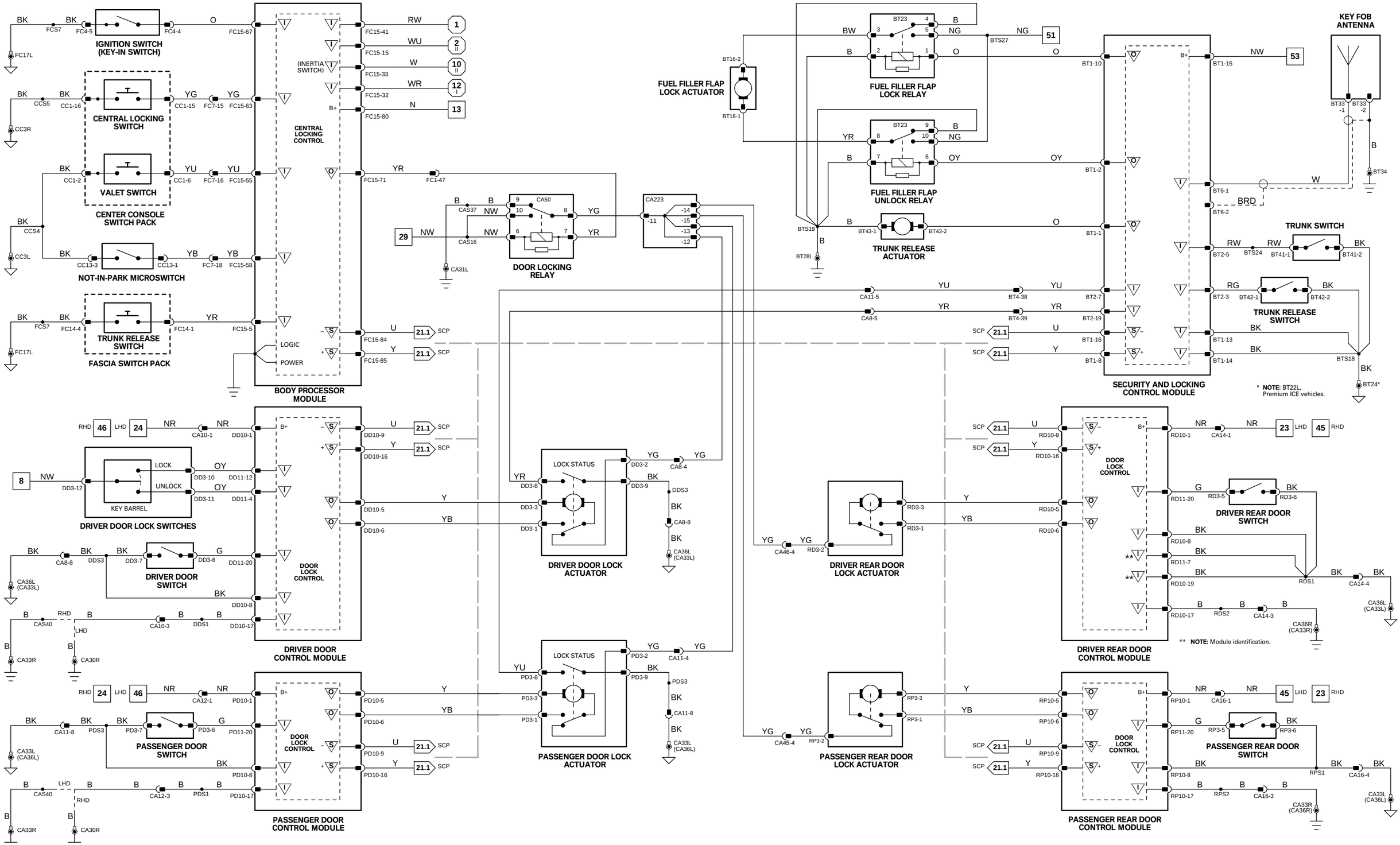

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: ROW Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-5	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)	B+
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-32	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-33	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
I	FC15-55	VALET REQUEST	GROUND (MOMENTARY)	B+
I	FC15-58	NOT IN PARK MICROSWITCH STATUS	GROUND (PARK)	B+ (NOT IN PARK)
I	FC15-63	CENTRAL LOCKING REQUEST	GROUND (MOMENTARY)	B+
I	FC15-67	KEY IN IGNITION	GROUND (KEY IN)	B+ (KEY OUT)
O	FC15-71	DOOR LOCKING RELAY ACTIVATE	GROUND (PULSE)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	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+	B+
O	DD10-5	DRIVERS DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
O	RD10-5	DRIVER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
I	RD10-17	POWER GROUND	GROUND	GROUND
I	RD10-19	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-7	MODULE IDENTIFICATION	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+	B+
O	PD10-5	PASSENGER DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
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+	B+
O	RP10-5	PASSENGER REAR DOOR LOCK ACTUATOR MOTOR UNLOCK	B+	GROUND
I	RP10-8	LOGIC GROUND	GROUND	GROUND
S	RP10-9	SCP NETWORK	2 – 1600 Hz	
S	RP10-16	SCP NETWORK	2 – 1600 Hz	
I	RP10-17	POWER GROUND	GROUND	GROUND
I	RP11-20	PASSENGER REAR DOOR SWITCH	GROUND (DOOR OPEN)	B+

SECURITY AND LOCKING CONTROL MODULE

▽	Pin	Description	Active	Inactive
O	BT1-1	TRUNK RELEASE ACTUATOR ACTIVATE	B+ (PULSE)	GROUND
O	BT1-2	FUEL FILLER FLAP UNLOCK RELAY ACTIVATE	B+ (PULSE)	GROUND
S	BT1-8	SCP NETWORK	2 – 1600 Hz	
O	BT1-10	FUEL FILLER FLAP LOCK RELAY ACTIVATE	B+	GROUND
I	BT1-13	LOGIC GROUND	GROUND	GROUND
I	BT1-14	LOGIC GROUND	GROUND	GROUND
I	BT1-15	BATTERY POWER SUPPLY	B+	B+
S	BT1-16	SCP NETWORK	2 – 1600 Hz	
I	BT2-3	TRUNK RELEASE REQUEST	GROUND (MOMENTARY)	B+
I	BT2-5	TRUNK SECURITY SWITCH STATUS	GROUND (INTRUSION)	B+ (SECURE)
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	GROUND	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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 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	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 LABINAL / 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 / BLACK	TOP OF BACKLIGHT
NOT-IN-PARK MICROSWITCH	CC13 / 3-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK BT2 / 26-WAY FORD IDC / BLACK BT6 / 2-WAY MINI UHF / METALLIC	BELOW TRUNK FUSE BOX
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-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	BLACK	CA50 / BLACK	LH HEELBOARD RELAYS / HEELBOARD COVER
FUEL FILLER FLAP LOCK RELAY	BLACK	BT23 / BLACK	TRUNK RELAYS / TRUNK
FUEL FILLER FLAP UNLOCK RELAY	BLACK	BT23 / BLACK	TRUNK RELAYS / TRUNK

HARNESS-TO-HARNESS CONNECTORS

CONNector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
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	4-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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)
BT28L	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
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

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

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

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IGNITION SWITCH (KEY-IN SWITCH)
CENTRAL LOCKING SWITCH
VALET SWITCH
CENTER CONSOLE SWITCH PACK
NOT-IN-PARK MICROSWITCH
TRUNK RELEASE SWITCH
FASCIA SWITCH PACK
BODY PROCESSOR MODULE
CENTRAL LOCKING CONTROL
(INERTIA SWITCH)
DOOR LOCKING RELAY
FUEL FILLER FLAP LOCK ACTUATOR
FUEL FILLER FLAP LOCK RELAY
FUEL FILLER FLAP UNLOCK RELAY
TRUNK RELEASE ACTUATOR
KEY FOB ANTENNA
TRUNK SWITCH
TRUNK RELEASE SWITCH
SECURITY AND LOCKING CONTROL MODULE
DRIVER DOOR LOCK SWITCHES
KEY BARREL
DRIVER DOOR SWITCH
DRIVER DOOR LOCK ACTUATOR
DRIVER DOOR CONTROL MODULE
DOOR LOCK CONTROL
DRIVER REAR DOOR LOCK ACTUATOR
DRIVER REAR DOOR SWITCH
DRIVER REAR DOOR CONTROL MODULE
PASSENGER DOOR SWITCH
PASSENGER DOOR LOCK ACTUATOR
PASSENGER DOOR CONTROL MODULE
PASSENGER REAR DOOR LOCK ACTUATOR
PASSENGER REAR DOOR SWITCH
PASSENGER REAR DOOR CONTROL MODULE
LOCK STATUS
LOGIC
POWER
SCP
LOCK
UNLOCK

* **NOTE:** BT22L, Premium ICE vehicles.

** **NOTE:** Module identification.

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

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	WINDSHIELD 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+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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

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

Fig. 14.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 10-WAY U.T.A. FUSE BOX / BLUE ST19 / EYELET	ENGINE COMPARTMENT / LH FRONT
INTERIOR REAR VIEW MIRROR	CA55 / 8-WAY MULTILOCK 070 / YELLOW	WINDSHIELD / IN FRONT OF ROOF CONSOLE
LIGHTING STALK (COLUMN SWITCHGEAR)	SC2 / 10-WAY MULTILOCK 070 / YELLOW	COLUMN SWITCHGEAR HARNESS / ADJACENT TO STEERING COLUMN MOTOR
POWER WASH PUMP	LF43 / 2-WAY REINSHAGEN / VOLKSWAGEN / BLACK	RIGHT FRONT QUARTER PANEL / WASHER FLUID CONTAINER
RAIN SENSING MODULE	EM72 / 12-WAY AMP ML42 / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
RAIN SENSOR	NO CODES / 3-WAY AMP MICRO QUAD LOCK / BLACK	BEHIND INTERIOR REAR VIEW MIRROR
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	LF44 / 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	LF11 / BLACK	ENGINE COMPARTMENT FRONT RELAYS / ENGINE COMPARTMENT
WIPER FAST / SLOW RELAY	BLACK	LF11 / 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	18-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM51	12-WAY AUGAT 1.6 / GREY	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
LF3	54-WAY THROUGH PANEL CONNECTOR / GREY	LH 'A' POST / LOWER 'A' POST FINISHER

GROUNDS

Ground	Location / Type
EM8L	EYELET (PAIR) – EMS LH GROUND STUD
EM17	EYELET (SINGLE) – EMS BULKHEAD GROUND STUD
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
LF18R	EYELET (PAIR) – LH FORWARD GROUND STUD
LF19L	EYELET (PAIR) – RH FORWARD GROUND STUD

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

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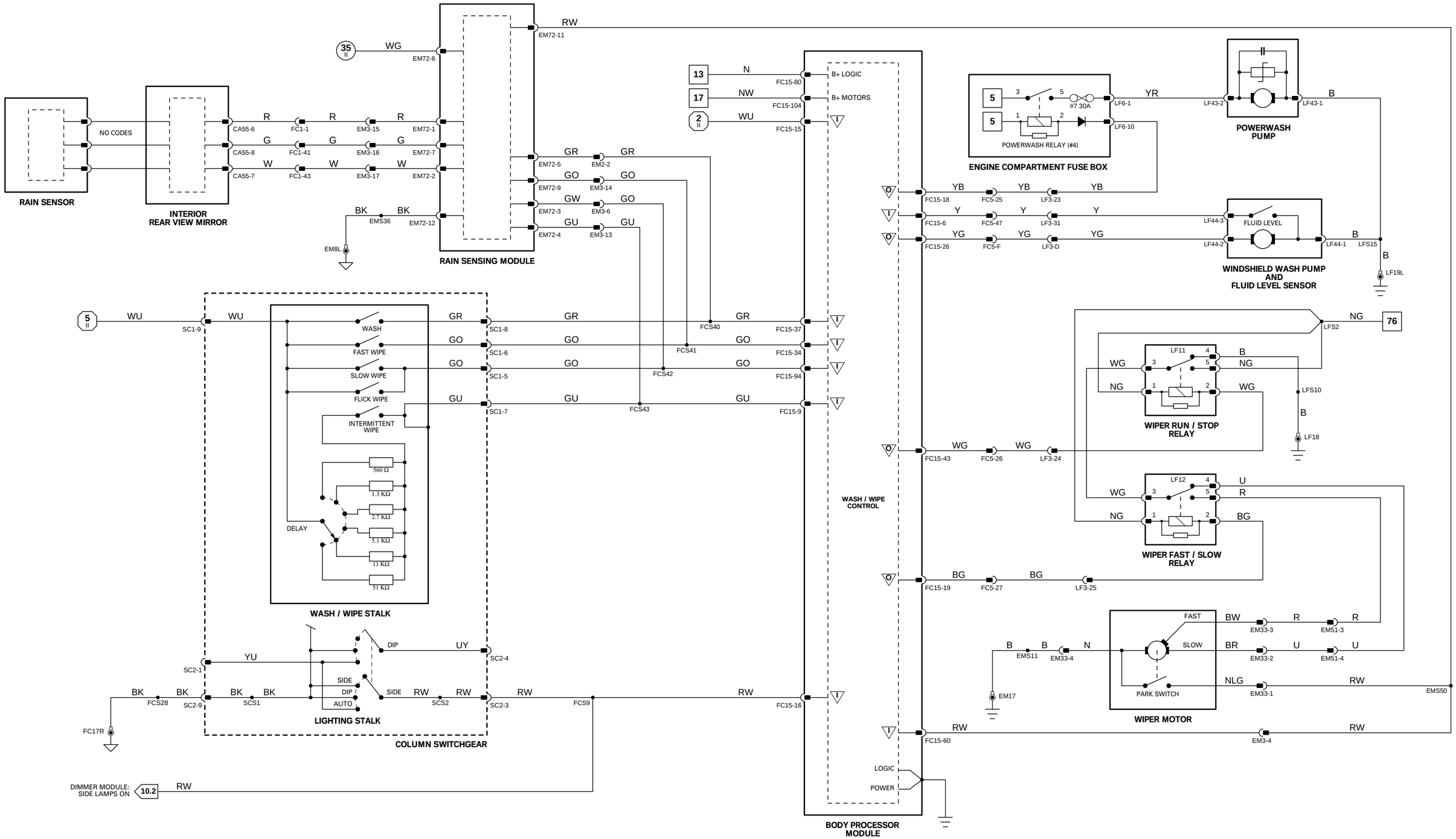

1 → 6 Fig. 01.1	1 II → 4 E Fig. 01.1	7 → 49 Fig. 02.1	50 → 88 Fig. 01.3	5 II → 49 II Fig. 01.4
50 E → 63 E Fig. 01.5	1 → 19 I Fig. 02.1			

I Input	+ Sensor Supply V	A ACP	S SCP
O Output	− Sensor Ground	C CAN	D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-15	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-33	IGNITION SWITCHED GROUND	GROUND	B+
I	FC15-41	STARTER ENGAGE REQUEST	GROUND (CRANKING)	B+
O	FC15-46	DRIVER DOOR – SLIDING ROOF GLOBAL CLOSE REQUEST	GROUND (MOMENTARY)	B+
O	FC15-47	CENTRAL LOCKING SWITCH – SLIDING ROOF GLOBAL OPEN REQUEST	GROUND (MOMENTARY)	B+
I	FC15-63	CENTRAL LOCKING REQUEST	GROUND (MOMENTARY)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+
S	FC15-84	SCP NETWORK	2 – 1600 Hz	
S	FC15-85	SCP NETWORK	2 – 1600 Hz	
I	FC15-89	REAR WINDOW INHIBIT REQUEST	GROUND	B+

DRIVER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	DD10-1	BATTERY POWER SUPPLY	B+	B+
O	DD10-7	WINDOW LIFT MOTOR DOWN SUPPLY	B+	GROUND
I	DD10-8	LOGIC GROUND	GROUND	GROUND
S	DD10-9	SCP NETWORK	2 – 1600 Hz	
I	DD10-10	DRIVER DOOR SWITCH PACK DRIVER WINDOW DOWN REQUEST	GROUND (MOMENTARY)	B+
O	DD10-15	DRIVER DOOR WINDOW LIFT MOTOR UP SUPPLY	B+	GROUND
S	DD10-16	SCP NETWORK	2 – 1600 Hz	
I	DD10-17	POWER GROUND	GROUND	GROUND
I	DD10-18	DRIVER DOOR SWITCH PACK DRIVER WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	DD10-19	DRIVER DOOR SWITCH PACK PASSENGER WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	DD11-4	DRIVER DOOR LOCK BARREL UNLOCK REQUEST	B+ (MOMENTARY)	GROUND
I	DD11-6	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	DD11-7	DRIVER DOOR SWITCH PACK PASSENGER WINDOW DOWN REQUEST	B+ (MOMENTARY)	GROUND
I	DD11-12	DRIVER DOOR LOCK BARREL LOCK REQUEST	B+ (MOMENTARY)	GROUND
I	DD11-15	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW DOWN REQUEST	GROUND (MOMENTARY)	B+
I	DD11-21	DRIVER DOOR SWITCH PACK PASSENGER REAR WINDOW DOWN REQUEST	B+ (MOMENTARY)	GROUND
I	DD11-22	DRIVER DOOR SWITCH PACK DRIVER REAR WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND

DRIVER REAR DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	RD10-1	BATTERY POWER SUPPLY	B+	B+
O	RD10-7	DRIVER REAR WINDOW LIFT MOTOR DOWN SUPPLY	B+	GROUND
I	RD10-8	LOGIC GROUND	GROUND	GROUND
S	RD10-9	SCP NETWORK	2 – 1600 Hz	
O	RD10-15	DRIVER REAR WINDOW LIFT MOTOR UP SUPPLY	B+	GROUND
S	RD10-16	SCP NETWORK	2 – 1600 Hz	
I	RD10-17	POWER GROUND	GROUND	GROUND
I	RD10-19	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-6	DRIVER REAR DOOR SWITCH PACK WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	RD11-7	MODULE IDENTIFICATION	GROUND	GROUND
I	RD11-21	DRIVER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST	B+ (MOMENTARY)	GROUND

PASSENGER DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	PD10-1	BATTERY POWER SUPPLY	B+	B+
O	PD10-7	PASSENGER WINDOW LIFT MOTOR DOWN SUPPLY	B+	GROUND
I	PD10-8	LOGIC GROUND	GROUND	GROUND
S	PD10-9	SCP NETWORK	2 – 1600 Hz	
O	PD10-15	PASSENGER WINDOW LIFT MOTOR UP SUPPLY	B+	GROUND
S	PD10-16	SCP NETWORK	2 – 1600 Hz	
I	PD10-17	POWER GROUND	GROUND	GROUND
I	PD11-6	PASSENGER DOOR SWITCH PACK WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	PD11-21	PASSENGER DOOR SWITCH PACK WINDOW DOWN REQUEST	B+ (MOMENTARY)	GROUND

PASSENGER REAR DOOR CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	RP10-1	BATTERY POWER SUPPLY	B+	B+
O	RP10-7	PASSENGER REAR WINDOW LIFT MOTOR DOWN SUPPLY	B+	GROUND
I	RP10-8	LOGIC GROUND	GROUND	GROUND
S	RP10-9	SCP NETWORK	2 – 1600 Hz	
O	RP10-15	PASSENGER REAR WINDOW LIFT MOTOR UP SUPPLY	B+	GROUND
S	RP10-16	SCP NETWORK	2 – 1600 Hz	
I	RP10-17	POWER GROUND	GROUND	GROUND
I	RP11-6	PASSENGER REAR DOOR SWITCH PACK WINDOW UP REQUEST	GROUND (MOMENTARY)	GROUND
I	RP11-21	PASSENGER REAR DOOR SWITCH PACK WINDOW DOWN REQUEST	B+ (MOMENTARY)	GROUND

SECURITY AND LOCKING CONTROL MODULE

▽	Pin	Description	Active	Inactive
S	BT1-8	SCP NETWORK	2 – 1600 Hz	
I	BT1-13	LOGIC GROUND	GROUND	GROUND
I	BT1-14	LOGIC GROUND	GROUND	GROUND
I	BT1-15	BATTERY POWER SUPPLY	B+	B+
S	BT1-16	SCP NETWORK	2 – 1600 Hz	
I	BT6-1	KEY FOB ANTENNA		
I	BT6-2	KEY FOB ANTENNA SHIELD	GROUND	GROUND

SLIDING ROOF CONTROL MODULE

▽	Pin	Description	Active	Inactive
I	CA64-1	BATTERY SUPPLY	B+	B+
I	CA64-2	CENTRAL LOCKING SWITCH – SLIDING ROOF GLOBAL CLOSE REQUEST	GROUND (MOMENTARY)	B+
I	CA64-3	GROUND SUPPLY	GROUND (MOMENTARY)	GROUND
I	CA64-4	DRIVER DOOR – SLIDING ROOF GLOBAL CLOSE REQUEST	GROUND	B+
I	CA64-5	SLIDING ROOF SWITCH OPEN REQUEST	GROUND (MOMENTARY)	B+
I	CA64-6	SLIDING ROOF SWITCH CLOSE REQUEST	GROUND (MOMENTARY)	B+
O	SR2-1	SLIDING ROOF MOTOR SUPPLY	B+	GROUND
O	SR2-3	SLIDING ROOF MOTOR SUPPLY	B+	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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 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 SWITCHES – DRIVER	DD3 / 13-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
KEY FOB ANTENNA	BT33 / 1-WAY COAXIAL CONNECTOR / BLACK	TOP OF BACKLIGHT
REAR WINDOW INHIBIT SWITCH (DRIVER DOOR SWITCH PACK)	DD1 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	DOOR TRIM PANEL
SECURITY AND LOCKING CONTROL MODULE	BT1 / 16-WAY FORD 2.8 TIMER / BLACK BT2 / 26-WAY FORD IDC / BLACK BT6 / 2-WAY MINI UHF / METALLIC	BELOW TRUNK FUSE BOX
SLIDING ROOF CONTROL MODULE	CA64 / 6-WAY MULTILOCK 070 / WHITE	ROOF CONSOLE
SLIDING ROOF MOTOR	SR2 / 3-WAY MULTILOCK 070 / WHITE	ROOF CONSOLE
SLIDING ROOF SWITCH (ROOF CONSOLE)	CA53 / 8-WAY MULTILOCK 040 / BLACK	ROOF CONSOLE
SWITCH PACK – DRIVER REAR DOOR	RD1 / 5-WAY JAE IL-AG5 / GREEN	DOOR TRIM PANEL
SWITCH PACK – PASSENGER DOOR	PD1 / 5-WAY JAE IL-AG5 / GREEN	DOOR TRIM PANEL
SWITCH PACK – PASSENGER REAR DOOR	RP1 / 5-WAY JAE IL-AG5 / GREEN	DOOR TRIM PANEL
WINDOW LIFT MOTOR – DRIVER	DD16 / 2-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
WINDOW LIFT MOTOR – DRIVER REAR	RD16 / 2-WAY ECONOSEAL III LC / BLACK	DOOR CASING / TRIM PANEL
WINDOW LIFT MOTOR – PASSENGER	PD16 / 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 AMP MICRO QUAD LOCK / 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
FC1	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC5	54-WAY THROUGH PANEL CONNECTOR / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)
BT34	EYELET (SINGLE) – KEY FOB ANTENNA GROUND / BACKLIGHT / CENTER
CA30L	EYELET (PAIR) – LH 'A' POST GROUND SCREW
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
CA36R	EYELET (PAIR) – LH 'A' POST GROUND SCREW
CC3R	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE

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

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

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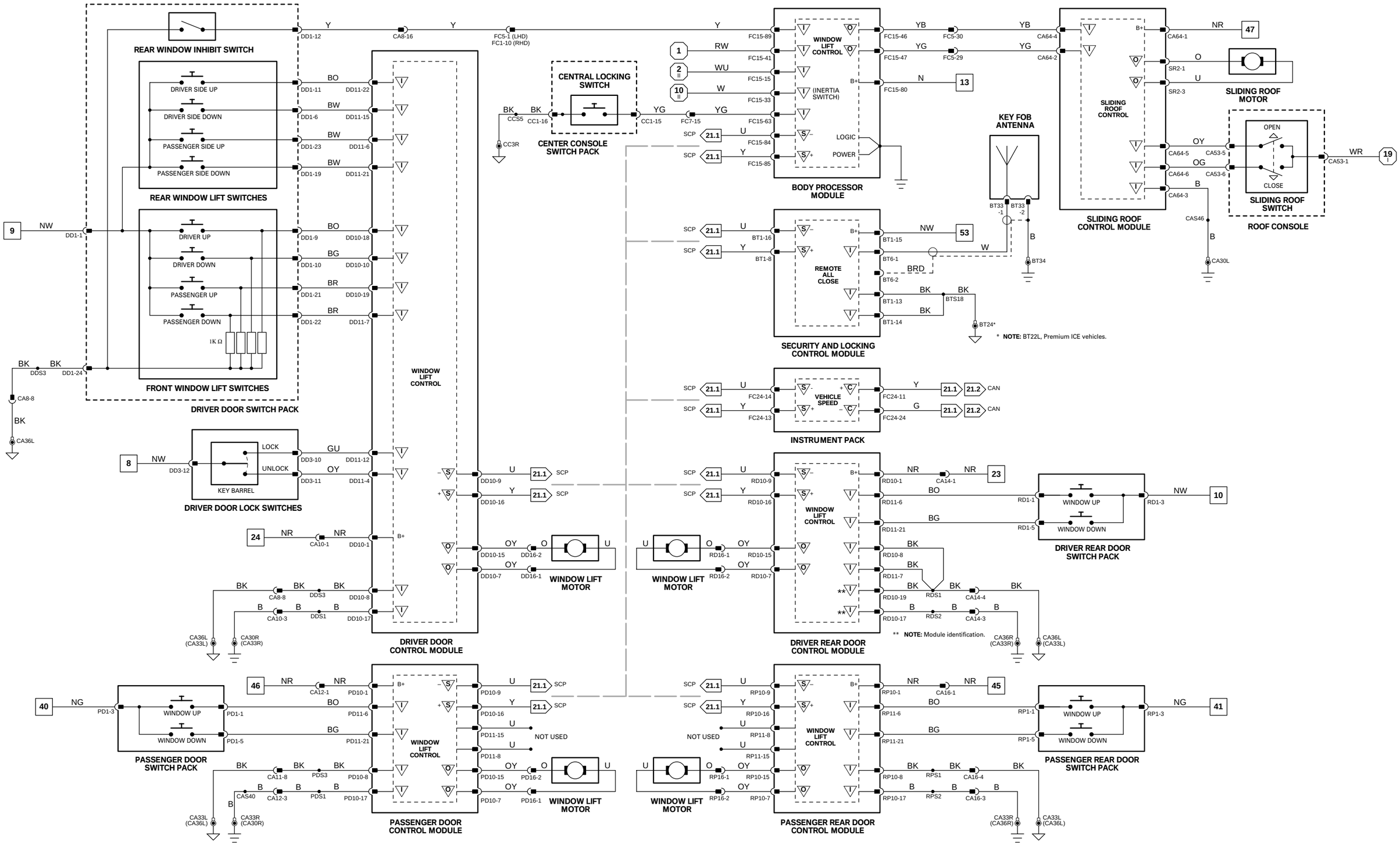

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 T Fig. 02.1

I Input | O Output | + Sensor Supply V | − Sensor Ground | A ACP | C CAN | S SCP | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	
O	FC25-20	VEHICLE SPEED	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	

RADIO / CASSETTE HEAD UNIT

▽	Pin	Description	Active	Inactive
I	IC11-1	VEHICLE SPEED	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
I	IC11-2	STEERING WHEEL AUDIO CONTROLS	0 V = MODE, 1.2 V = SEEK, 2.4 V = VOLUME '+', 3.7 V = VOLUME '-'	5V
O	IC11-18	ANTENNA UP	B+	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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.

ections 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. 16.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ANTENNA MOTOR	BT19 / 6-WAY YAZAKI TYPE C / WHITE	ANTENNA MOTOR ASSEMBLY / BATTERY COVER
CD AUTO-CHANGER	IC5 / 8-WAY ALPINE / BLACK	TRUNK LH SIDE / TRUNK CARPET
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
RADIO / CASSETTE HEAD UNIT	CA3 / COAXIAL CONNECTOR IC10 / 20-WAY MULTILOCK 070 / WHITE IC11 / 26-WAY AMP MICRO QUAD LOCK / YELLOW IC19 / 8-WAY ALPINE / BLACK	CENTER CONSOLE
RADIO ANTENNA	CA7 / COAXIAL CONNECTOR	ANTENNA MOTOR ASSEMBLY / BATTERY COVER
RADIO CONTROL SWITCHES (STEERING WHEEL)	SW4 / 3-WAY EPC / BLACK	STEERING WHEEL
RADIO TELEPHONE CONNECTOR	RT2 / 10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX
SPEAKER, 'A' POST TWEETER – LH	CA56 / 2-WAY MULTILOCK 040 / BLACK	LH 'A' POST / UPPER 'A' POST TRIM
SPEAKER, 'A' POST TWEETER – RH	CA54 / 2-WAY MULTILOCK 040 / BLACK	RH 'A' POST / UPPER 'A' POST TRIM
SPEAKER, REAR DOOR MID-BASS – DRIVER SIDE	RD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR MID-BASS – PASSENGER SIDE	RP6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR TWEETER – DRIVER SIDE	RD5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR TWEETER – PASSENGER SIDE	RP5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR MID-BASS – DRIVER SIDE	DD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR MID-BASS – PASSENGER SIDE	PD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR TWEETER – DRIVER SIDE	DD5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR TWEETER – PASSENGER SIDE	PD5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
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 / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD
IC3	12-WAY MULTILOCK 070 / WHITE	LH HEELBOARD
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR

GROUNDS

Ground	Location / Type
BT28L	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
IC8	EYELET (SINGLE) – RADIO GROUND STUD / REARWARD OF GEAR SELECTOR ASSEMBLY

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

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

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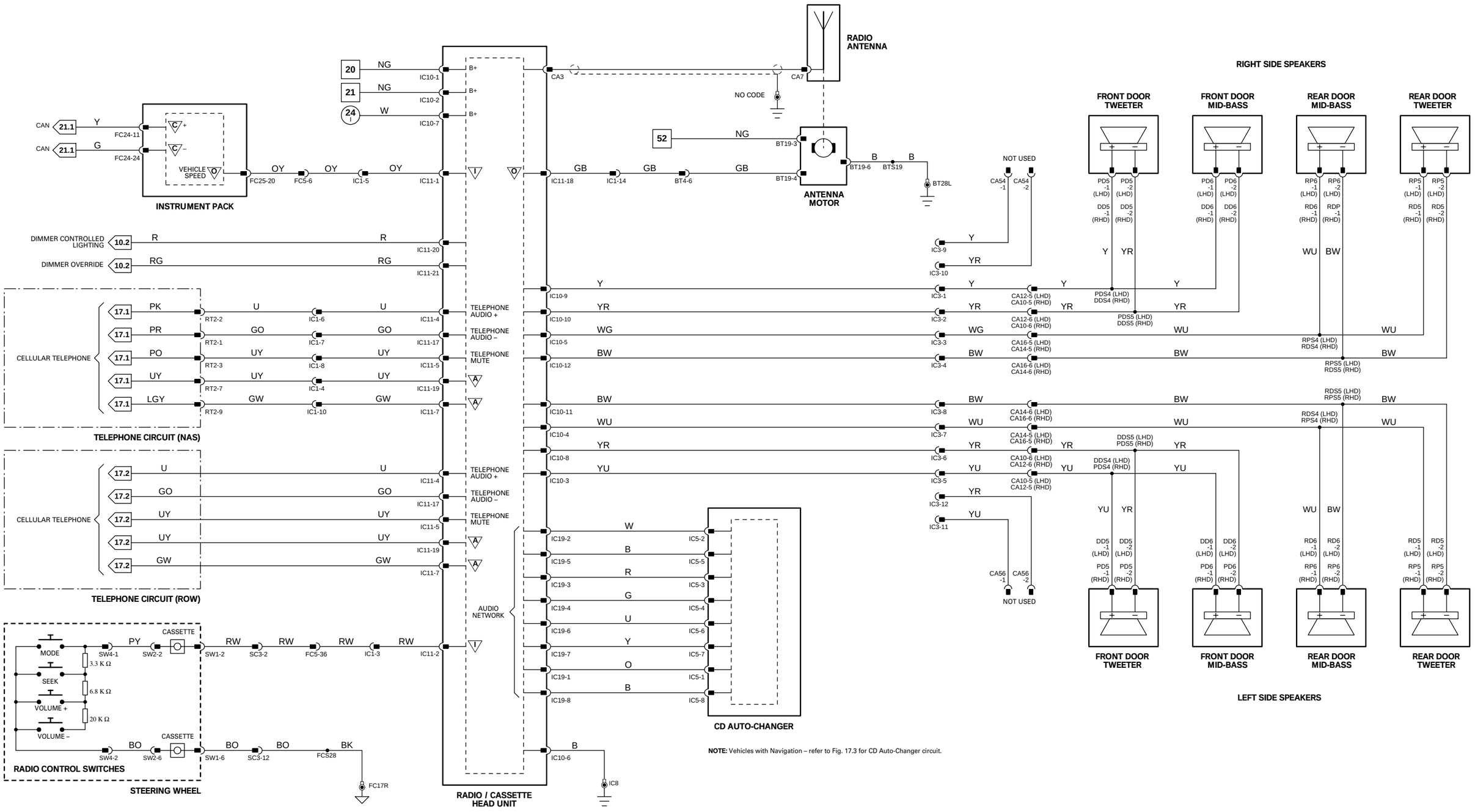

CAUTION: The steering wheel contains two logic ground circuits that must remain separate. Do not connect or cross-switch the BO and BK circuits.

1 → 6 Fig. 01.1 | 1 II → 4 E Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | 5 II → 49 II Fig. 01.4 | 50 E → 63 E Fig. 01.5 | 1 → 19 I Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP
O Output | – Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: Standard ICE Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

INSTRUMENT PACK

▽	Pin	Description	Active	Inactive
C	FC24-11	CAN NETWORK	15 – 1500 Hz	
C	FC24-24	CAN NETWORK	15 – 1500 Hz	
O	FC25-20	VEHICLE SPEED	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	

RADIO / CASSETTE HEAD UNIT

▽	Pin	Description	Active	Inactive
I	IC11-1	VEHICLE SPEED	22 Hz @ 10 MPH (16 KM/H); 44 Hz @ 20 MPH (32 KM/H) @ B+	
I	IC11-2	STEERING WHEEL AUDIO CONTROLS	0 V = MODE, 1.2 V = SEEK, 2.4 V = VOLUME '+', 3.7 V = VOLUME '-'	5V
O	IC11-18	ANTENNA UP	B+	GROUND

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

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

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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. 16.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
ANTENNA MOTOR	BT19 / 6-WAY YAZAKI TYPE C / WHITE	ANTENNA MOTOR ASSEMBLY / BATTERY COVER
CD AUTO-CHANGER	CD AUTOCHANGER DATA CABLE	TRUNK LH SIDE / TRUNK CARPET
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
POWER AMPLIFIER	IC5 / 8-WAY ALPINE / BLACK IC21 / CD AUTOCHANGER DATA CABLE IC30 / 12-WAY MULTILOCK 070 / WHITE IC31 / 18-WAY MULTILOCK 070 / WHITE	TRUNK LH SIDE / TRUNK CARPET
RADIO / CASSETTE HEAD UNIT	CA3 / COAXIAL CONNECTOR IC10 / 20-WAY MULTILOCK 070 / WHITE IC11 / 26-WAY AMP MICRO QUAD LOCK / YELLOW IC19 / 8-WAY ALPINE / BLACK	CENTER CONSOLE
RADIO ANTENNA	CA7 / COAXIAL CONNECTOR	ANTENNA MOTOR ASSEMBLY / BATTERY COVER
RADIO CONTROL SWITCHES (STEERING WHEEL)	SW4 / 3-WAY EPC / BLACK	STEERING WHEEL
RADIO TELEPHONE CONNECTOR	RT2 / 10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX
SPEAKER, 'A' POST TWEETER – LH	CA56 / 2-WAY MULTILOCK 040 / BLACK	LH 'A' POST / UPPER 'A' POST TRIM
SPEAKER, 'A' POST TWEETER – RH	CA54 / 2-WAY MULTILOCK 040 / BLACK	RH 'A' POST / UPPER 'A' POST TRIM
SPEAKER, REAR DOOR MID-BASS – DRIVER SIDE	RD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR MID-BASS – PASSENGER SIDE	RP6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR TWEETER – DRIVER SIDE	RD5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, REAR DOOR TWEETER – PASSENGER SIDE	RP5 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR MID-BASS – DRIVER SIDE	DD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SPEAKER, FRONT DOOR MID-BASS – PASSENGER SIDE	PD6 / 2-WAY GROTE & HARTMAN MDK / BLACK	DOOR CASING / TRIM PANEL
SUBWOOFER	BT52 / 2-WAY GROTE & HARTMAN MDK / BLACK BT53 / 2-WAY GROTE & HARTMAN MDK / BLACK	ABOVE FUEL TANK / TRUNK CARPET

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	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
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 / GREY	BELOW DRIVER SIDE AIR VENT / COIN TRAY
IC1	14-WAY MULTILOCK 070 / WHITE	LH HEELBOARD
IC3	12-WAY MULTILOCK 070 / WHITE	LH HEELBOARD
SC3	12-WAY MULTILOCK 070 / GREY	ADJACENT TO STEERING COLUMN MOTOR

GROUNDS

Ground	Location / Type
BT22R	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
BT28L	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD
FC17R	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
IC8	EYELET (SINGLE) – RADIO GROUND STUD / REARWARD OF GEAR SELECTOR ASSEMBLY
IC20	EYELET (SINGLE) – TRUNK / LH FORWARD GROUND STUD

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

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

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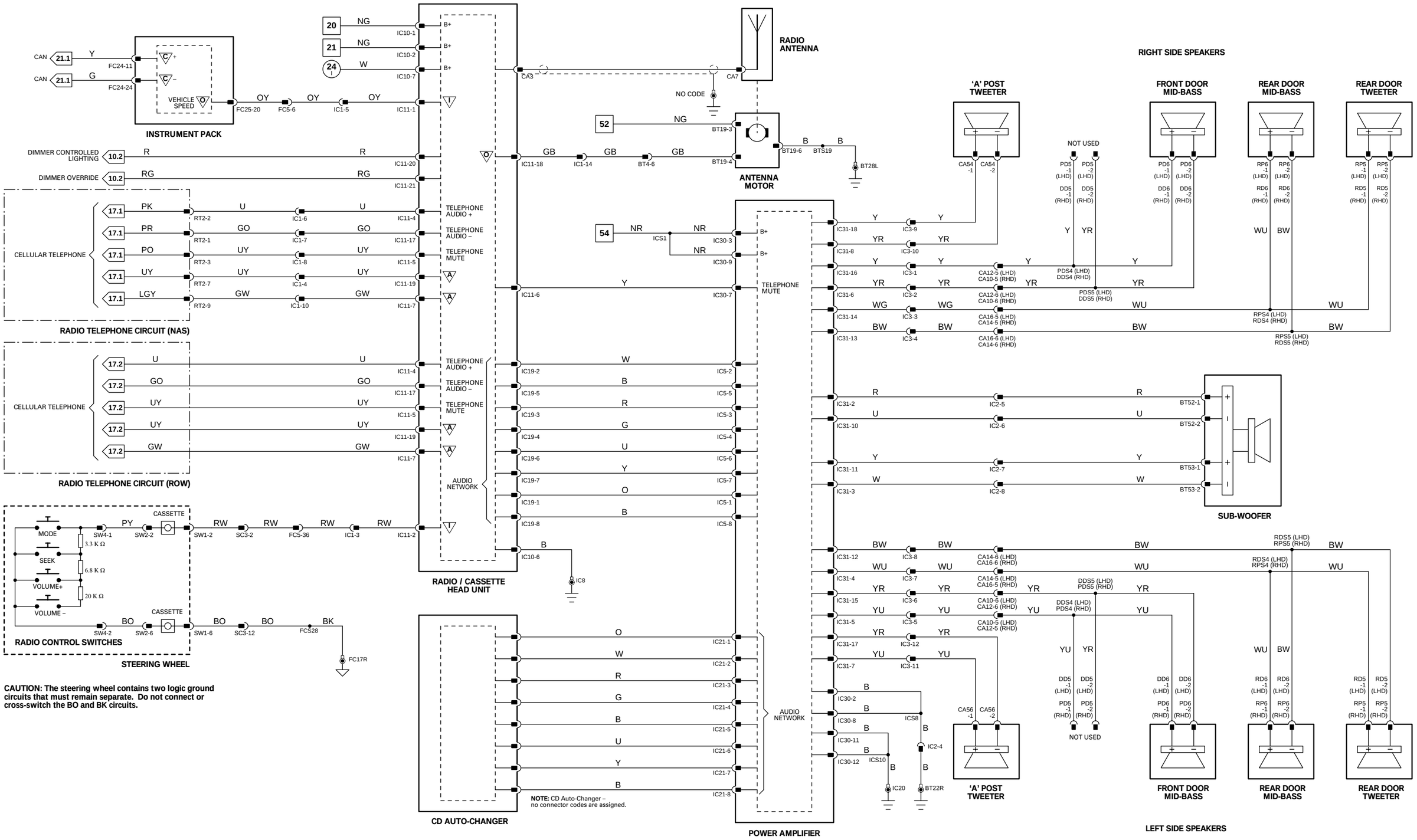


1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 02.1 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input O Output + Sensor Supply V – Sensor Ground A ACP C CAN S SCP D Serial and Encoded Data

VARIANT: Premium ICE Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 17.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
TELEPHONE ANTENNA	RT64 / COAXIAL CONNECTOR RT65 / COAXIAL CONNECTOR RT66 / COAXIAL CONNECTOR	BELOW CENTER CONSOLE GLOVE BOX HEATED BACKLIGHT / HEADLINING / REAR CENTER CONSOLE
TELEPHONE HANDSET – FRONT	RT5 / TELEPHONE / PROPRIETARY	CENTER CONSOLE
TELEPHONE HANDSET – REAR	RT10 / TELEPHONE / PROPRIETARY	CENTER CONSOLE
TELEPHONE MICROPHONE	CA67 / 2-WAY MULTILOCK 040 / BLUE	ROOF CONSOLE
CELLULAR PHONE CONTROL MODULE (PORTABLE PHONE)	RT3 / TELEPHONE / PROPRIETARY RT4 / TELEPHONE / PROPRIETARY	RH TRUNK

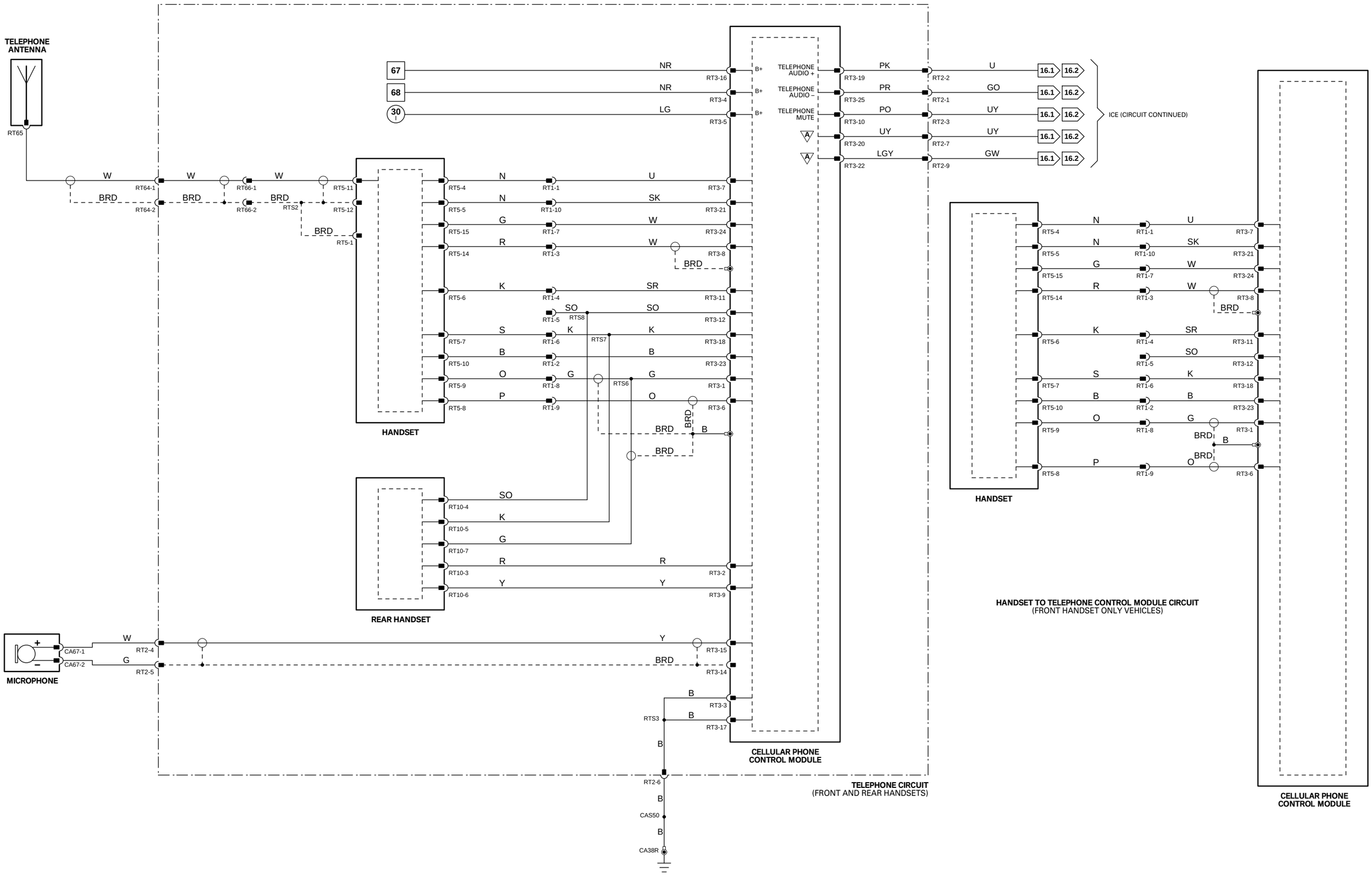
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
RT1	TELEPHONE / PROPRIETARY	CENTER CONSOLE
RT2	10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX

GROUNDS

Ground	Location / Type
CA38R	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 T Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | – Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: NAS Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 17.2

COMPONENTS

Component	Connector / Type / Color	Location / Access
CELLULAR PHONE CONTROL MODULE (FIXED PHONE)	IC25 / TELEPHONE / PROPRIETARY	RH TRUNK
TELEPHONE ANTENNA	RT6 / COAXIAL CONNECTOR RT7 / COAXIAL CONNECTOR	BELOW CENTER CONSOLE GLOVE BOX HEATED BACKLIGHT / HEADLINING / REAR
TELEPHONE HANDSET – FRONT	RT3 / TELEPHONE / PROPRIETARY	CENTER CONSOLE
TELEPHONE MICROPHONE	CA67 / 2-WAY MULTILOCK 040 / BLUE	ROOF CONSOLE

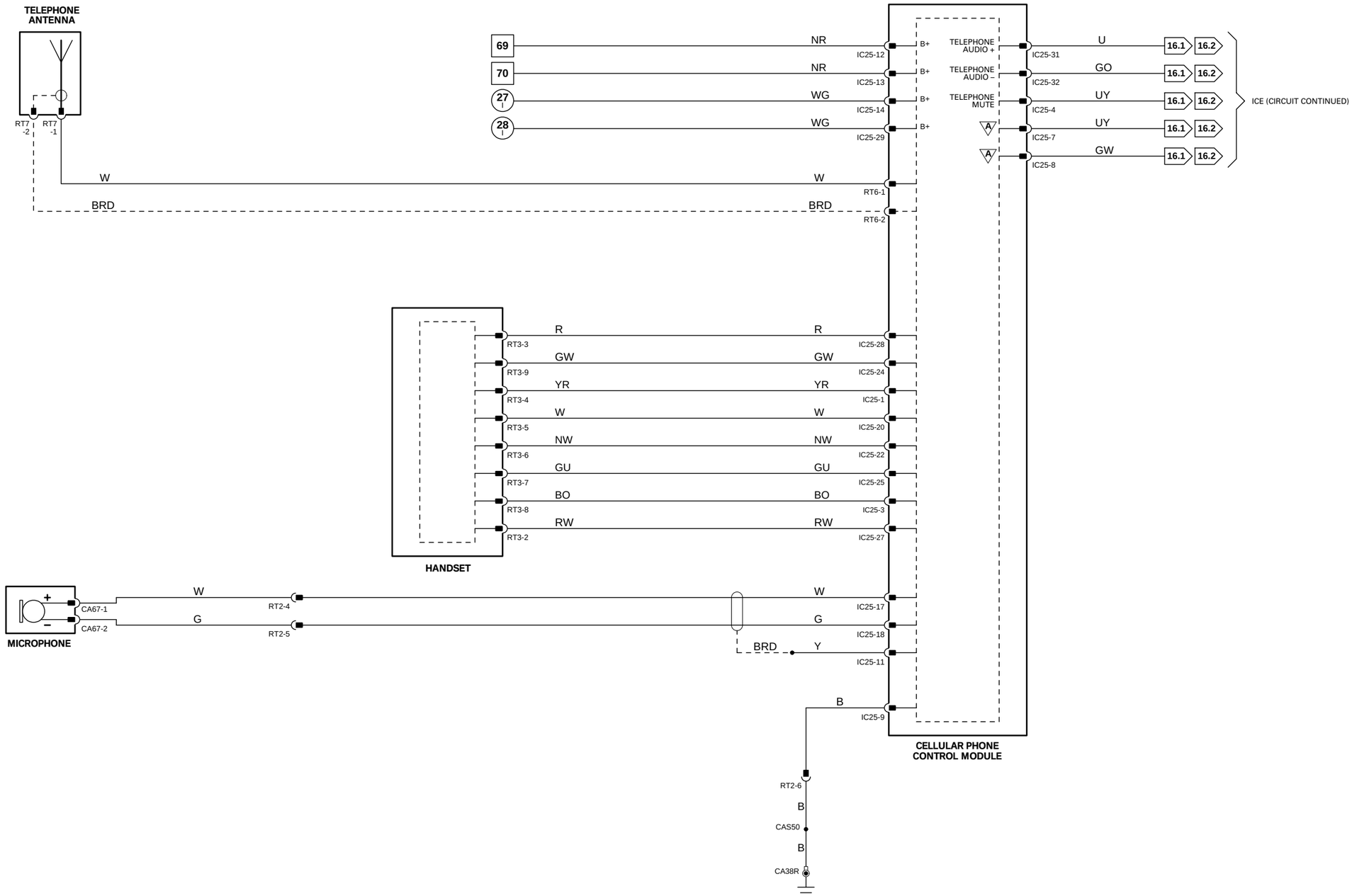
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
RT2	10-WAY MULTILOCK 070 / WHITE	BELOW CENTER CONSOLE GLOVE BOX

GROUNDS

Ground	Location / Type
CA38R	EYELET (PAIR) – LH HEELBOARD POST GROUND SCREW

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → (19 T) Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: ROW Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 17.3

COMPONENTS

Component	Connector / Type / Color	Location / Access
CD AUTO-CHANGER	CD AUTOCHANGER DATA CABLE	TRUNK LH SIDE / TRUNK CARPET
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
NAVIGATION CONTROL MODULE	IC5 / 8-WAY ALPINE / BLACK IC12 / 16-WAY MULTILOCK 42 / BLACK	TRUNK LH SIDE / TRUNK CARPET INSIDE LH REAR QUARTER PANEL
NAVIGATION GPS ANTENNA	IC41 / 2-WAY HIROSE COAX GT5 SERIES / GREY	BELOW PARCEL SHELF
POWER AMPLIFIER	IC5 / 8-WAY ALPINE / BLACK IC21 / CD AUTOCHANGER DATA CABLE IC30 / 12-WAY MULTILOCK 070 / WHITE IC31 / 18-WAY MULTILOCK 070 / WHITE	TRUNK LH SIDE / TRUNK CARPET
RADIO / CASSETTE HEAD UNIT	CA3 / COAXIAL CONNECTOR IC10 / 20-WAY MULTILOCK 070 / WHITE IC11 / 26-WAY AMP MICRO QUAD LOCK / YELLOW IC19 / 8-WAY ALPINE / BLACK	CENTER CONSOLE

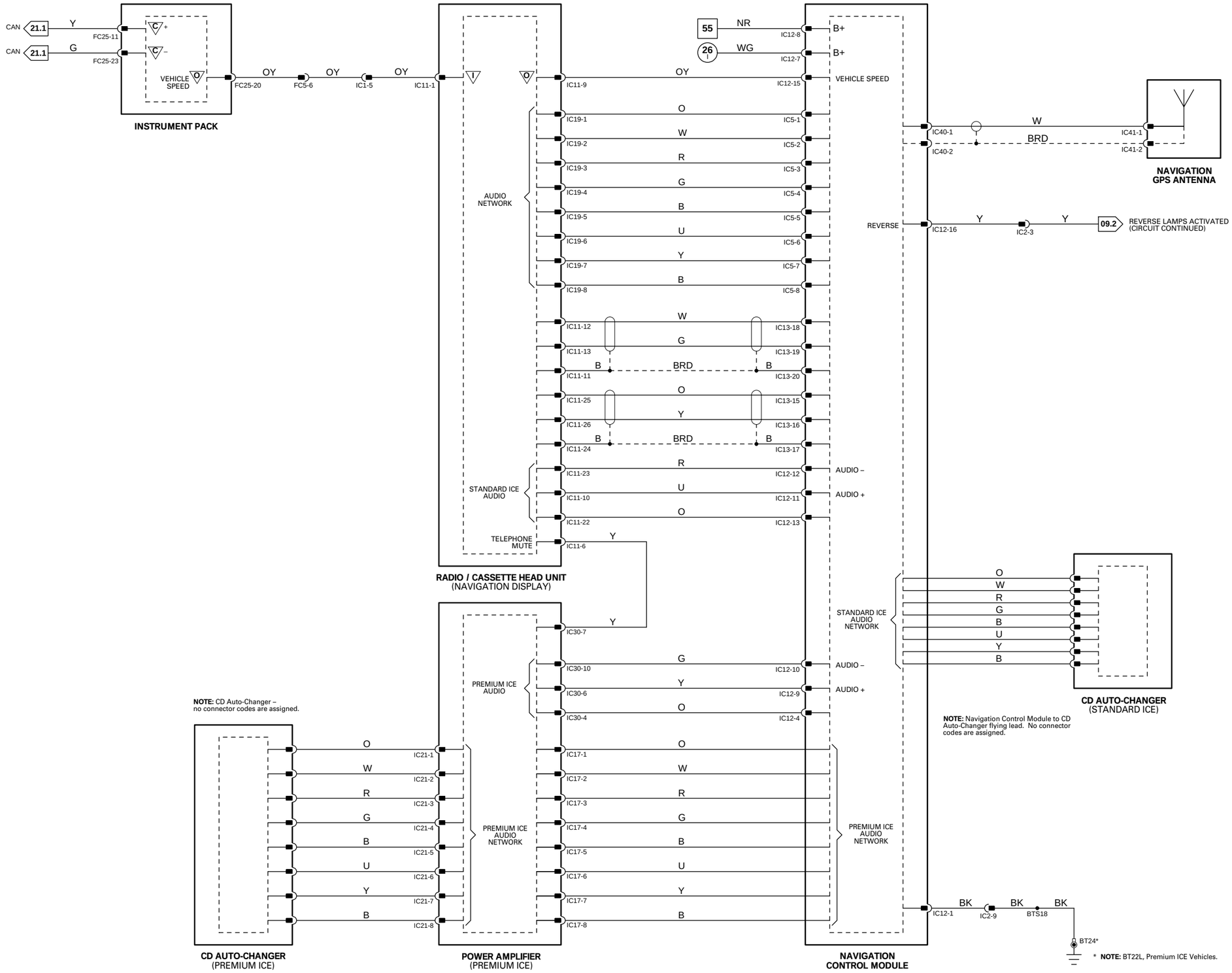
HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
NV2	2-WAY MULTILOCK 070 / WHITE	RH SIDE OF TRANSMISSION TUNNEL
IC2	8-WAY MULTILOCK 070 / WHITE	REARWARD OF FUEL TANK / BATTERY COVER

GROUNDS

Ground	Location / Type
FC17L	EYELET (PAIR) – EMS BULKHEAD GROUND STUD
BT22L*	EYELET (PAIR) – TRUNK / RH CENTER GROUND STUD (*PREMIUM ICE)
BT24*	EYELET (SINGLE) – TRUNK / RH CENTER GROUND STUD (*STANDARD ICE)

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: Navigation Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

AIRBAG / SRS SINGLE POINT SENSOR

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

Fig. 18.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
AIRBAG / SRS SINGLE POINT SENSOR	CA61 / 50-WAY ELO50 / YELLOW	BELOW CENTER CONSOLE ASSEMBLY
AIRBAG – DRIVER SIDE	SW11 / 3-WAY EPC / BLACK	CENTER OF STEERING WHEEL
AIRBAG – PASSENGER SIDE	CA81 / 3-WAY CARDEL / FORD / GREY	PASSENGER AIR BAG
IMPACT SENSOR – LH	CA15 / 3-WAY MOLEX C-GRID / BLACK	INSIDE 'B/C' POST / 'B/C' POST TRIM
IMPACT SENSOR – RH	CA22 / 3-WAY MOLEX C-GRID / BLACK	INSIDE 'B/C' POST / 'B/C' POST TRIM
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	SD15 / 2-WAY FORD AIRBAG / YELLOW	DRIVER SEAT / SIDE
SIDE AIRBAG – PASSENGER	SP15 / 2-WAY FORD AIRBAG / YELLOW	PASSENGER SEAT / SIDE

HARNESS-TO-HARNESS CONNECTORS

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

GROUNDS

Ground	Location / Type
CA48	EYELET (SINGLE) – RH HEELBOARD POST GROUND SCREW (AIRBAG ONLY GROUND)

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

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

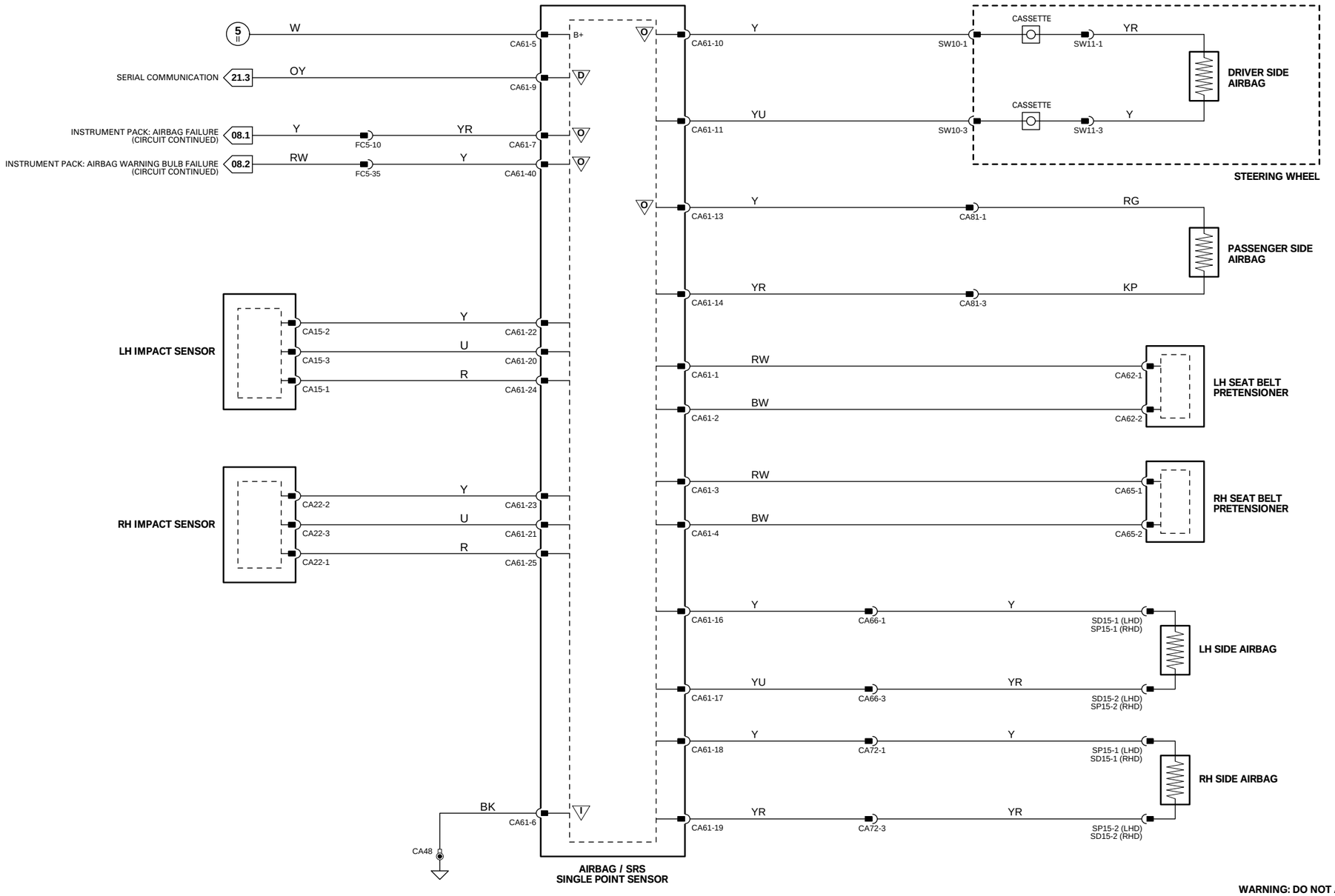
I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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.

ections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

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

DATE OF ISSUE: September 2000



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

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 02.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input
O Output
+ Sensor Supply V
− Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 19.1

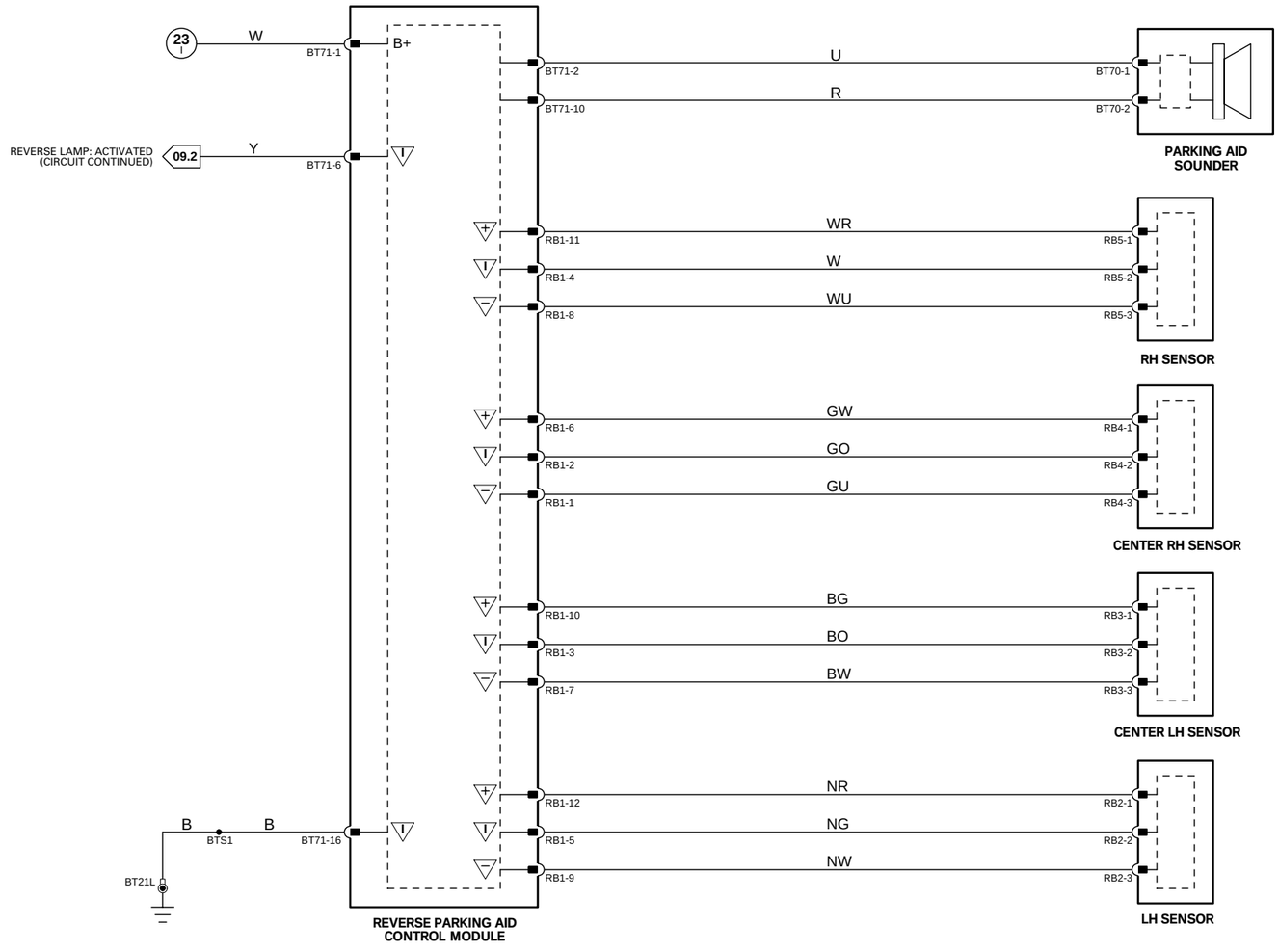
COMPONENTS

Component	Connector / Type / Color	Location / Access
PARKING AID CONTROL MODULE	RB1 / 12-WAY / WHITE BT71 / 16-WAY / WHITE	TRUNK / LH REAR
PARKING AID SENSOR – LH	RB2 / 3-WAY AMP MICRO QUAD LOCK / BLACK	REAR BUMPER
PARKING AID SENSOR – CENTER LH	RB3 / 3-WAY AMP MICRO QUAD LOCK / BLACK	REAR BUMPER
PARKING AID SENSOR – RH	RB5 / 3-WAY AMP MICRO QUAD LOCK / BLACK	REAR BUMPER
PARKING AID SENSOR – CENTER RH	RB4 / 3-WAY AMP MICRO QUAD LOCK / BLACK	REAR BUMPER
PARKING AID SOUNDER	BT70 / 2-WAY / WHITE	CENTER REAR HEADLINING

GROUNDS

Ground	Location / Type
BT21L	EYELET (PAIR) – TRUNK / RH REAR GROUND STUD

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 Fig. 02.1

I Input
O Output
+ Sensor Supply V
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A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

CONTROL MODULE PIN OUT INFORMATION

BODY PROCESSOR MODULE

▽	Pin	Description	Active	Inactive
I	FC15-4	HORN ACTIVATE REQUEST	GROUND (MOMENTARY)	B+
O	FC15-70	HORN RELAY ACTIVATE	GROUND (MOMENTARY)	B+
I	FC15-80	BATTERY SUPPLY VOLTAGE	B+	B+

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

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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.

ections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

Fig. 20.1

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 AMP / METALLIC CA76 / 1-WAY LUCAR POSILOCK MKI / BLACK	REAR CENTER CONSOLE VENT
FUSE BOX – ENGINE COMPARTMENT	LF5 / 10-WAY U.T.A. FUSE BOX / NATURAL LF6 / 10-WAY U.T.A. FUSE BOX / BLACK LF7 / 10-WAY U.T.A. FUSE BOX / GREEN LF8 / 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
HORN SWITCHES (STEERING WHEEL)	HP1 / 1-WAY BLADE HP2 / 1-WAY BLADE	CENTER OF STEERING WHEEL
HORN – LH	LF46 / 1-WAY LUCAR POSILOCK MKI / BLACK LF47 / 1-WAY LUCAR POSILOCK MKI / BLACK	FORWARD OF RADIATOR – LH SIDE / RADIATOR GRILLE
HORN – RH	LF48 / 1-WAY LUCAR POSILOCK MKI / BLACK LF49 / 1-WAY LUCAR POSILOCK MKI / BLACK	FORWARD OF RADIATOR – RH SIDE / RADIATOR GRILLE
PASSENGER COMPARTMENT ACCESSORY CONNECTOR	CA71 / 3-WAY AMP SERIES 250 PIN / BLACK	RH 'A' POST / 'A' POST TRIM
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 / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
EM1	12-WAY AUGAT 1.6 / BLACK	ENGINE COMPARTMENT / ADJACENT TO ABS PUMP
EM3	18-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 / BLACK	CENTER OF STEERING WHEEL

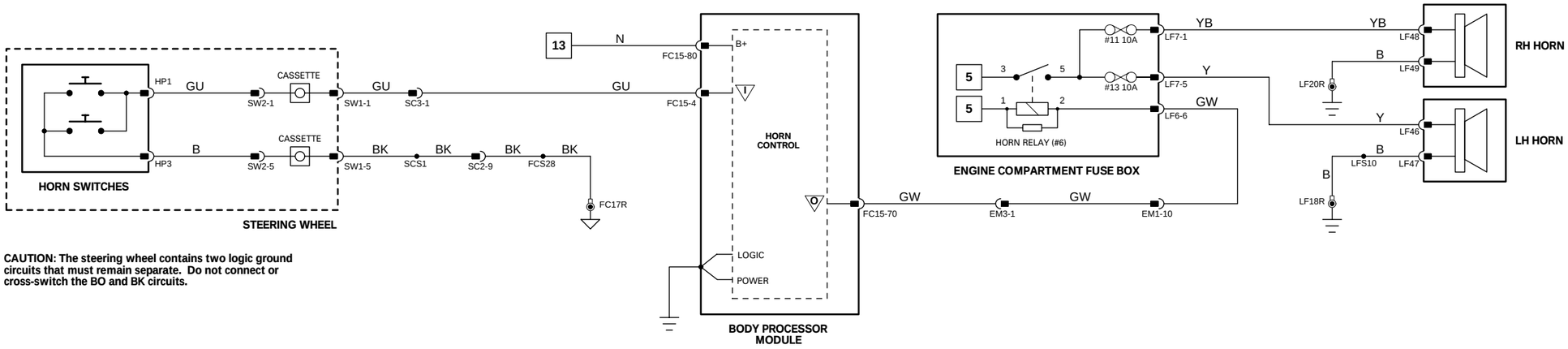
GROUNDS

Ground	Location / Type
BT21R	EYELET (PAIR) – TRUNK / RH REAR GROUND STUD
CA30L	EYELET (PAIR) – LH 'A' POST GROUND SCREW
CA37	EYELET (SINGLE) – RH 'A' POST GROUND SCREW
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
LF18R	EYELET (PAIR) – LH FORWARD GROUND STUD
LF20R	EYELET (PAIR) – RH FORWARD GROUND STUD

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

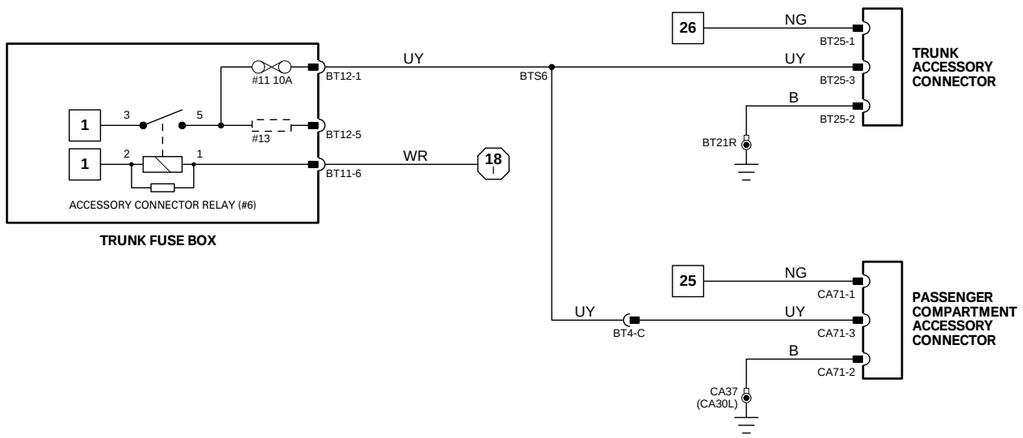
Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, grounds, control modules and control module pins.

DATE OF ISSUE: September 2000

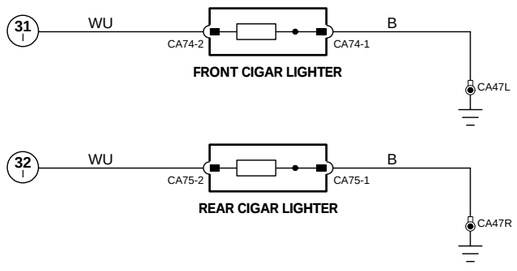


CAUTION: The steering wheel contains two logic ground circuits that must remain separate. Do not connect or cross-switch the BO and BK circuits.

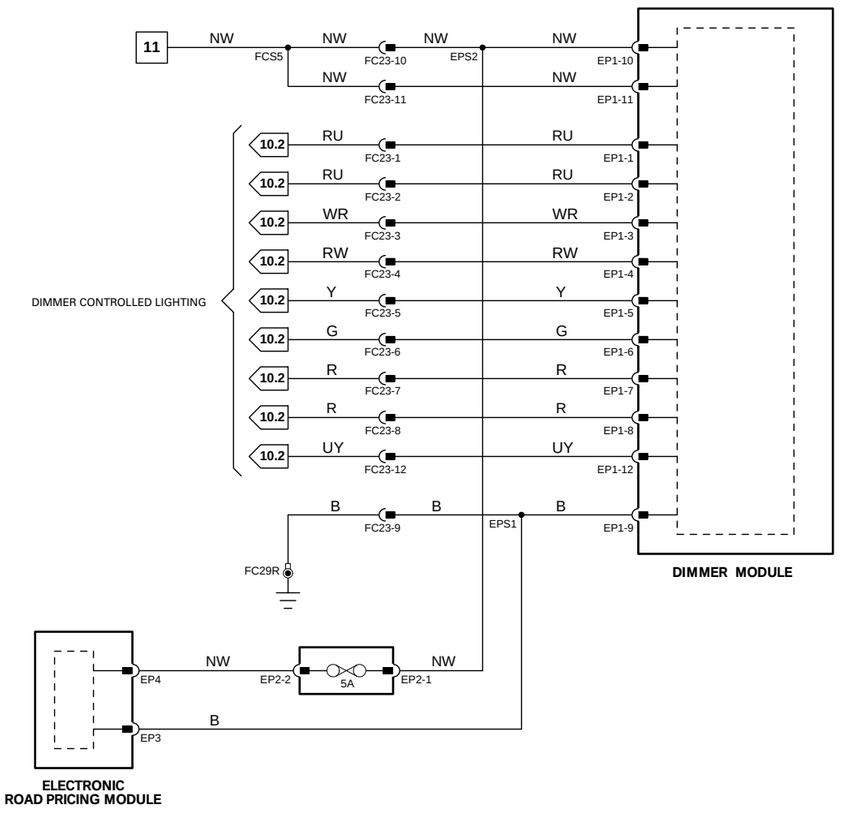
HORNS



ACCESSORY CONNECTORS



CIGAR LIGHTERS



ELECTRONIC ROAD PRICING

1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → 19 I Fig. 02.1

I Input · O Output · + Sensor Supply V · − Sensor Ground · A ACP · C CAN · S SCP · D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 21.1

COMPONENTS

Component	Connector / Type / Color	Location / Access
ABS / TRACTION CONTROL CONTROL MODULE	LF27 / 25-WAY AMP / FORD / BLACK	ENGINE COMPARTMENT / BEHIND LH HEADLAMP ASSEMBLY
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DATA LINK CONNECTOR	CC6 / 16-WAY AMP (OBD2) / BLACK	TRANSMISSION TUNNEL
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
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
GEAR SELECTOR ILLUMINATION MODULE	CC14 / 10-WAY MULTILOCK 070 / WHITE	CENTER CONSOLE ASSEMBLY
INSTRUMENT PACK	FC24 / 26-WAY AMP MICRO QUAD LOCK / BLACK FC25 / 26-WAY AMP MICRO QUAD LOCK / YELLOW	FASCIA
SEAT CONTROL MODULE – DRIVER	SD1 / 16-WAY FORD 2.8 TIMER / BLACK SD2 / 26-WAY FORD IDC / BLACK SD3 / 10-WAY FORD 2.8 TIMER / BLACK	DRIVER SEAT / UNDER
SEAT CONTROL MODULE – PASSENGER	SP1 / 16-WAY FORD 2.8 TIMER / BLACK SP3 / 10-WAY FORD 2.8 TIMER / BLACK	PASSENGER SEAT / UNDER
SPLICE HEADER – CA222	CA222 / 20-WAY SUMITOMO SPLICE HEADER / GREY	RH HEELBOARD / HEELBOARD COVER
SPLICE HEADER – CA223	CA223 / 20-WAY SUMITOMO SPLICE HEADER / BLACK	RH HEELBOARD / HEELBOARD COVER
TRANSMISSION CONTROL MODULE: AJ27 N/A	EM7 / 88-WAY BOSCH / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
TRANSMISSION CONTROL MODULE: AJ27 SC	EM61 / 18-WAY AMP JUNIOR POWER TIMER / BLACK EM62 / 14-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE

HARNESS-TO-HARNESS CONNECTORS

Connector	Type / Color	Location / Access
BT4	54-WAY THROUGH PANEL / GREY	BELOW PARCEL SHELF / TRUNK / REAR BULKHEAD / RH SIDE
CA8	20-WAY MULTILOCK 070 / WHITE	DRIVER 'A' POST / DOOR HARNESS GAITER
CA11	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / DOOR HARNESS GAITER
CA19	20-WAY MULTILOCK 070 / YELLOW	LH 'A' POST CONNECTOR MOUNTING BRACKET / LOWER 'A' POST FINISHER
CA23	10-WAY MULTILOCK 070 / WHITE	BELOW DRIVER SEAT
CA27	10-WAY MULTILOCK 070 / WHITE	BELOW 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
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 / GREY	BELOW PASSENGER SIDE AIR VENT / GLOVE BOX ASSEMBLY
FC7	20-WAY MULTILOCK 070 / YELLOW	ABOVE DIMMER MODULE / COIN TRAY
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE

NOTE: Refer to the Appendix at the rear of this book for CAN and SCP Network messages.

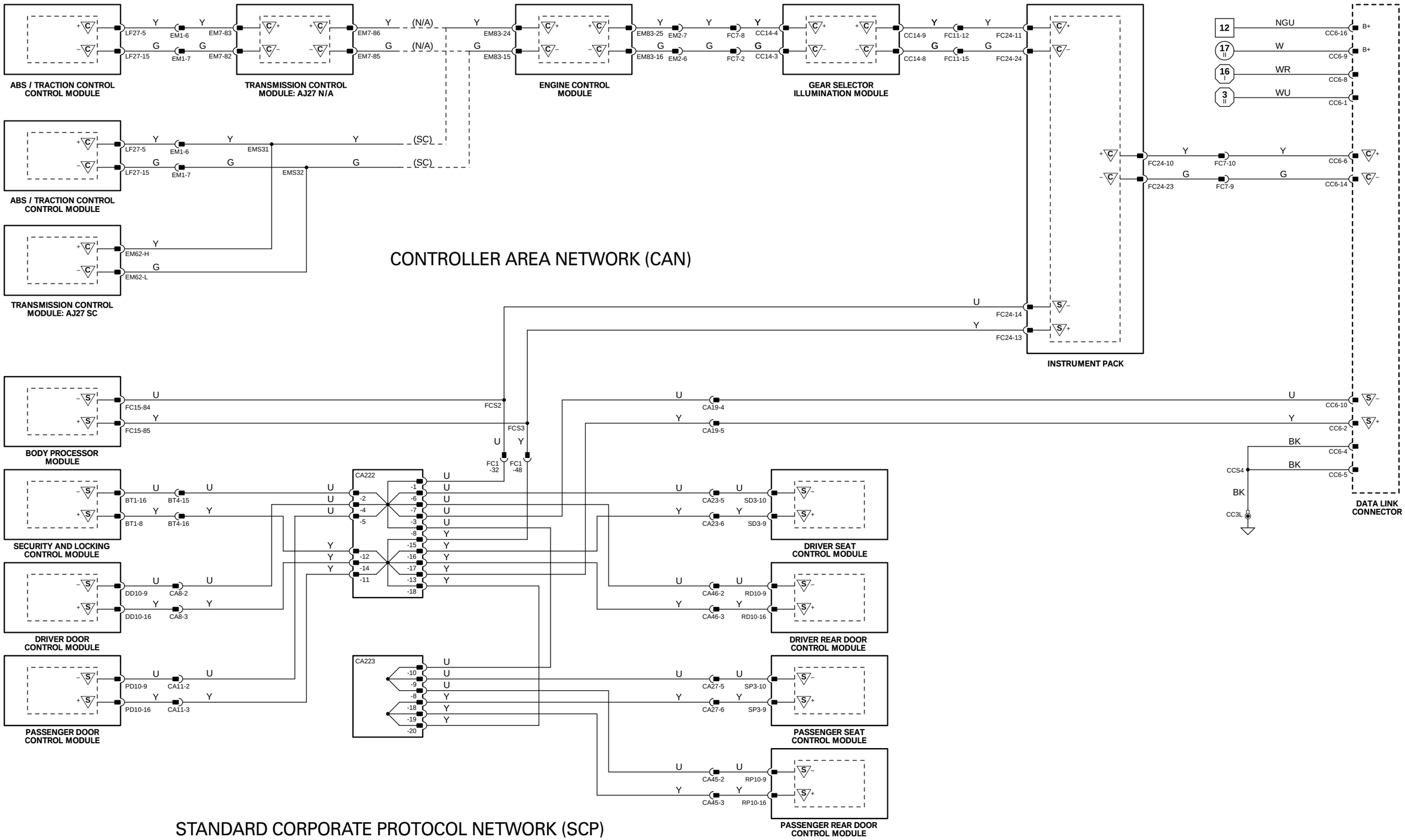
The following abbreviations are used to represent values for Control Module Pin-Out data

I	**Input**	**SG**	**Sensor Ground**	**S**	**SCP Network**	**V**	**Voltage (DC)**
O	**Output**	**A**	**ACP Network**	**D**	**Serial and Encoded Data**	**Hz**	**Frequency**
SS	**Sensor Supply V**	**C**	**CAN (Network)**	**B+**	**Battery Voltage**	**kHz**	**Frequency x 1000**

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.

ections made and all components connected and fitted. "Active" means a load is applied or a switch is ON; "Inactive" means a load is not applied or a switch is OFF.

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



1 → 6 Fig. 01.1 | (1 II) → (4 E) Fig. 01.1 | 7 → 49 Fig. 01.2 | 50 → 88 Fig. 01.3 | (5 II) → (49 II) Fig. 01.4 | (50 E) → (63 E) Fig. 01.5 | 1 → (19 I) Fig. 02.1

I Input | + Sensor Supply V | A ACP | S SCP

O Output | − Sensor Ground | C CAN | D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

Fig. 21.2

COMPONENTS1

Component	Connector / Type / Color	Location / Access
ADAPTIVE DAMPING CONTROL MODULE	EM68 / 35-WAY AMP JUNIOR POWER TIMER / BLACK	ADJACENT TO PASSENGER SIDE BLOWER / GLOVE BOX ASSEMBLY
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
AIRBAG / SRS SINGLE POINT SENSOR	CA61 / 50-WAY ELO50 / YELLOW	BELOW CENTER CONSOLE ASSEMBLY
BODY PROCESSOR MODULE	FC15 / 14-WAY AMP EEEC / GREY	BULKHEAD / BEHIND GLOVE BOX
DATA LINK CONNECTOR	CC6 / 16-WAY AMP (OBD2) / BLACK	TRANSMISSION TUNNEL
ENGINE CONTROL MODULE	EM80 / 31-WAY AMP 403 / NATURAL EM81 / 24-WAY AMP 403 / NATURAL EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
KEY TRANSPONDER MODULE	FC22 / 20-WAY MULTILOCK 040 / GREEN	BELOW INSTRUMENT PACK

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
EM2	20-WAY MULTILOCK 070 / GREY	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM3	18-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
EM53	20-WAY MULTILOCK 070 / WHITE	PASSENGER 'A' POST / LOWER 'A' POST FINISHER
FC11	18-WAY MULTILOCK 070 / WHITE	ABOVE DIMMER MODULE / COIN TRAY

GROUNDS

Ground	Location / Type
CC3L	EYELET (PAIR) – RH FRONT BULKHEAD STUD / CABIN SIDE

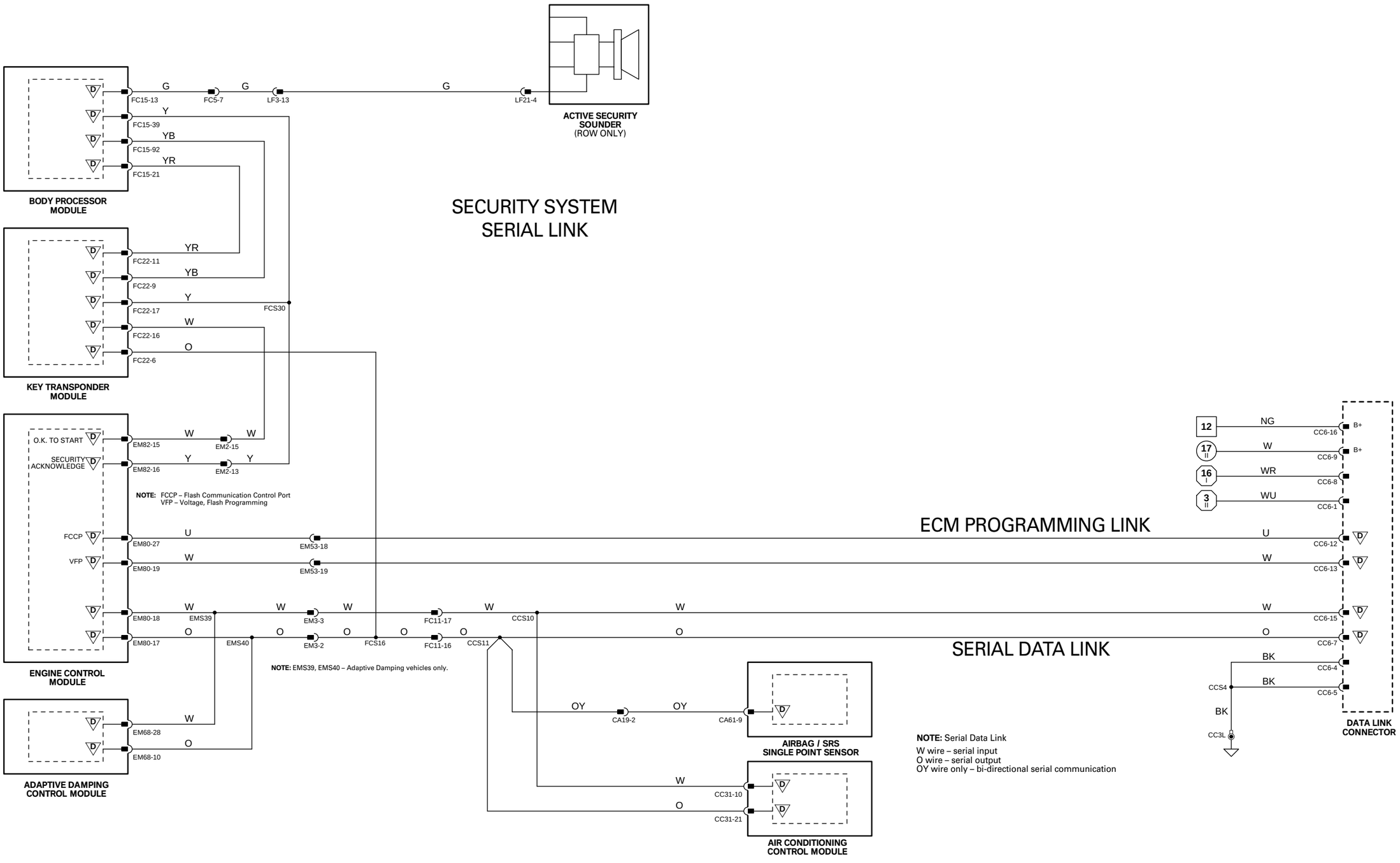
The following abbreviations are used to represent values for Control Module Pin-Out data

I	Input	SG	Sensor Ground	S	SCP Network	V	Voltage (DC)
O	Output	A	ACP Network	D	Serial and Encoded Data	Hz	Frequency
SS	Sensor Supply V	C	CAN (Network)	B+	Battery Voltage	kHz	Frequency x 1000

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

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

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



1 → 6 Fig. 01.1 (1 II → 4 E) Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 (5 II → 49 II) Fig. 01.4 (50 E → 63 E) Fig. 01.5 1 → (19 I) Fig. 02.1

I Input
O Output
+ Sensor Supply V
– Sensor Ground
A ACP
C CAN
S SCP
D Serial and Encoded Data

VARIANT: All Vehicles
VIN RANGE: F20645 →
DATE OF ISSUE: September 2000

This Appendix contains a listing of CAN and SCP Network messages.

Abbreviations

The following abbreviations are used throughout this Appendix:

ABS/TCCM	Anti-Lock Braking / Traction Control Control Module
BPM	Body Processor Module
DIAG	Diagnostics
DDCM	Driver Door Control Module
DRDCM	Driver Rear Door Control Module
DSCM	Driver Seat Control Module
ECM	Engine Control Module
INST	Instrument Pack
J-GATE	Gear Selector Illumination Module
PDCM	Passenger Door Control Module
PRDCM	Passenger Rear Door Control Module
PSCM	Passenger Seat Control Module
R	Receive
T	Transmit
TCM	Transmission Control Module
SLCM	Security and Locking Control Module

CAN Message Matrix

Message / Function	Source	Receivers					
		ECM	TCM	ABS/TCCM	INST	J-GATE	DIAG
CAN traction acknowledge	ECM		X				
CAN traction control estimated engine torque	ECM		X				
CAN shift energy management estimated engine torque	ECM		X	X			
CAN throttle position	ECM		X	X			
CAN pedal position	ECM		X	X			
CAN torque reduction acknowledge	ECM		X				
CAN engine speed	ECM		X	X	X		
CAN brake pedal pressed	ECM			X	X		
CAN speed control status	ECM		X				
CAN parking brake status	ECM				X		
CAN OBDII clear fault codes	ECM		X	X			
CAN engine coolant temperature	ECM		X		X		
CAN engine OBDII MIL	ECM			X	X		
CAN throttle malfunction red	ECM			X	X		
CAN throttle malfunction amber	ECM			X	X		
CAN ECM fault code MIL status	ECM			X			
CAN ECM PECUS flag	ECM				X		
CAN engine fault codes	ECM			X			
CAN fuel used	ECM				X		
CAN barometric pressure	ECM		X				
CAN torque reduction request	TCM	X					
CAN transmission overload	TCM	X					
CAN transmission input speed	TCM	X		X			
CAN transmission output speed	TCM	X		X			
CAN torque converter slip	TCM	X		X			
CAN kickdown	TCM	X		X			
CAN gear position actual	TCM	X		X			
CAN torque converter status	TCM	X		X			
CAN gear position selected	TCM	X			X	X	
CAN gear selection fault	TCM	X			X	X	
CAN transmission shift map	TCM	X		X			

Message / Function	Source	Receivers					
		ECM	TCM	ABS/TCCM	INST	J-GATE	DIAG
CAN transmission oil temperature	TCM	X			X		
CAN transmission malfunction	TCM	X		X	X		
CAN TCM PECUS flag	TCM				X		
CAN gear position target (not used)	TCM			X			
CAN torque transfer in progress (not used)	TCM			X			
CAN TCM fault code MIL status	TCM	X					
CAN OBDII TCM clear acknowledge	TCM	X					
CAN transmission fault codes	TCM	X		X			
CAN torque reduction throttle	ABS/TCCM	X					
CAN fast torque reduction ignition	ABS/TCCM	X					
CAN fast torque reduction cylinder	ABS/TCCM	X					
CAN traction status	ABS/TCCM	X			X		
CAN traction shift map	ABS/TCCM		X				
CAN ABS PECUS flag	ABS/TCCM				X		
CAN vehicle reference speed	ABS/TCCM	X			X		
CAN reference distance traveled	ABS/TCCM				X		
CAN ABS fault codes	ABS/TCCM	X					
CAN OBDII ABS clear acknowledge	ABS/TCCM	X					
CAN ABS fault code MIL status	ABS/TCCM	X					
CAN ABS malfunction	ABS/TCCM	X			X		
CAN front left wheel speed	ABS/TCCM	X	X				
CAN front right wheel speed	ABS/TCCM	X	X				
CAN rear left wheel speed	ABS/TCCM	X	X				
CAN rear right wheel speed	ABS/TCCM	X	X		X		
CAN sidelight status	INST	X					
CAN dipped beam status	INST	X					
CAN main beam status	INST	X					
CAN oil pressure low	INST	X					
CAN trip units	INST	X					
CAN fuel level damped	INST	X					
CAN fuel level raw	INST	X					

CAN Message Matrix

Message / Function	Source	Receivers					
		ECM	TCM	ABS/TCCM	INST	J-GATE	DIAG
CAN NWM token ECM	ECM		X	X	X		
CAN NWM token TCM	TCM	X		X	X		
CAN NWM token INST	INST	X	X	X			
CAN NWM token ABS	ABS/TCCM	X	X		X		
CAN diagnostic data in ECM	DIAG	X					
CAN diagnostic data in TCM	DIAG		X				
CAN diagnostic data in INST	DIAG				X		
CAN diagnostic data in ABS	DIAG			X			
CAN diagnostic data out ECM	ECM						X
CAN diagnostic data out TCM	TCM						X
CAN diagnostic data out INST	INST						X
CAN diagnostic data out ABS	ABS/TCCM						X

SCP Message Matrix

#	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	T	T	T	T	T	T	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	R	R	R	R	R	R
20	Key not-in-ignition		T	R	R	R	R	R		R
21	Key in-ignition		T	R	R	R	R	R		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					
55	Passenger mirror left			T	R					
56	Unlock all doors			T / R	T / R			R	R	

continued...

SCP Message Matrix

#	Message Name	INST	BPM	DDCM	PDCM	DSCM	PSCM	DRDCM	PRDCM	SLCM
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
70	Passenger door lock cylinder status		R	R	T			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
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
86	Passenger front door ajar	R	R	R	T		R			R
87	Driver rear door ajar	R	R	R	R			T		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	
95	Stop sunroof close		R	T						
96	Stop passenger front window			T	R					
97	Stop driver rear window			T				R		
98	Stop passenger rear window			T					R	
99	Rear window switches – enable		T					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			R						
105	Close sunroof		R	T						
106	Close passenger front window			T	R					
107	Close driver rear window			T				R		
108	Close passenger rear window			T					R	
109	Inhibit rear window switches		T					R	R	
110	Tail lamp failure	R	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

#	Message Name	INST	BPM	DDCM	PDCM	DSCM	PSCM	DRDCM	PRDCM	SLCM
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	T	T	T	T	T	T	T	T
139	Network status – awake	T / R	T / R	T / R	T / R	T / R	T / R	T / R	T / R	T / R
140	Entering sleep mode	T / R	T / R	T / R	T / R	T / R	T / R	T / R	T / R	T / R