

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+

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 CC40 / 4-WAY MULTILOCK 070 / WHITE CC20 / 10-WAY AMP MICRO QUAD LOCK / NATURAL SW3 / 3-WAY EPC / BLACK	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
BRAKE CANCEL SWITCH	EM80 / 31-WAY AMP 403 / NATURAL	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CRUISE CONTROL ON / OFF SWITCH	EM81 / 24-WAY AMP 403 / NATURAL	CENTER CONSOLE ASSEMBLY
CRUISE CONTROL SWITCHES (STEERING WHEEL)	EM82 / 17-WAY AMP 403 / NATURAL EM83 / 28-WAY AMP 403 / NATURAL EM84 / 22-WAY AMP 403 / NATURAL EM85 / 12-WAY MULTILOCK 070 / WHITE	CENTER OF STEERING WHEEL ENGINE COMPARTMENT / CONTROL MODULE ENCLOSURE
ENGINE CONTROL MODULE	PI7 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI11 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI8 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI12 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI9 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI13 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI10 / 2-WAY AMP JUNIOR POWER TIMER / BLACK PI14 / 2-WAY AMP JUNIOR POWER TIMER / BLACK BT17 / 6-WAY SUMITOMO DL090 / NATURAL 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	ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL ENGINE COMPARTMENT / INTAKE MANIFOLD / FUEL RAIL EVAPORATIVE FLANGE / TOP OF FUEL TANK TRUNK ELECTRICAL CARRIER
FUEL INJECTOR – 1A	PI51 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 1B	PI55 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 2A	PI52 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 2B	PI56 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 3B	PI53 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 4A	PI57 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL INJECTOR – 4B	PI54 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUEL PUMP	PI58 / 4-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / CAMSHAFT COVER
FUSE BOX – TRUNK	LF31 / 8-WAY TRW / BLACK CF1 / 2-WAY REINSHAGEN / BLACK CF2 / 2-WAY REINSHAGEN / BLACK LF26 / 6-WAY ECONOSEAL III LC / BLACK	ENGINE COMPARTMENT / BELOW LH FAN ENGINE COMPARTMENT / BELOW RH FAN ENGINE COMPARTMENT / ADJACENT TO LH SIDE OF RADIATOR
IGNITION COIL – 1A		
IGNITION COIL – 1B		
IGNITION COIL – 2A		
IGNITION COIL – 2B		
IGNITION COIL – 3A		
IGNITION COIL – 3B		
IGNITION COIL – 4A		
IGNITION COIL – 4B		
RADIATOR FAN CONTROL RELAY MODULE		
RADIATOR FAN – LH		
RADIATOR FAN – RH		
REFRIGERANT 4-WAY PRESSURE SWITCH		

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

HARNESSTO-HARNES 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

GROUND

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.

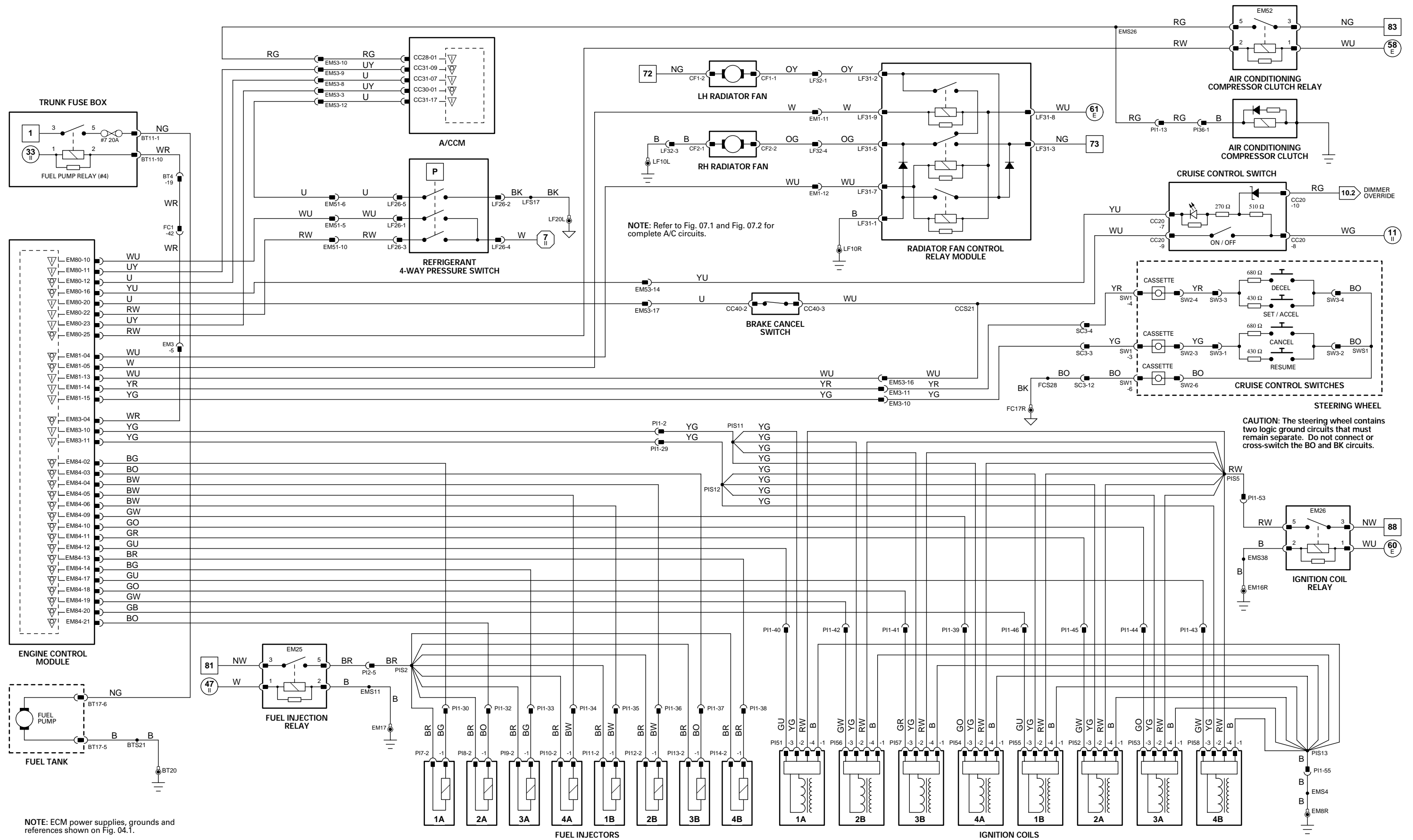
The following abbreviations are used to represent values for Control Module Pin-Out data

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 → 4 Fig. 01.1 7 → 49 Fig. 01.2 50 → 88 Fig. 01.3 5 → 49 Fig. 01.4 50 → 63 Fig. 01.5 1 → 19 Fig. 02.1

▽ Input + Sensor Supply V ▽ ACP ▽ SCP
 ▽ Output - Sensor Ground ▽ CAN ▽ Serial and Encoded Data

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

CONTROL MODULE PIN OUT INFORMATION

Fig. 04.3

ENGINE CONTROL MODULE

Pin	Description	Active	Inactive
O	EM80-01	EVAP VALVE ACTIVATE	GROUND (VALVE OPEN)
O	EM80-02	CANISTER CLOSE VALVE ACTIVATE	B+
I	EM80-03	GROUND (POWER)	B+
O	EM80-04	THROTTLE MOTOR POWER SUPPLY	GROUND
O	EM80-05	THROTTLE MOTOR POWER SUPPLY	B+
O	EM80-06	THROTTLE MOTOR POWER SUPPLY	B+
O	EM80-07	THROTTLE MOTOR POWER SUPPLY	B+
I	EM80-08	THROTTLE MOTOR POWER SUPPLY	B+
I	EM80-09	THROTTLE MOTOR POWER SUPPLY	B+
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
D	EM80-27	ECM PROGRAMMING	
I	EM80-28	MAPS SIGNAL	
I	EM80-29	GROUND (LOGIC 2)	1.2 V = IDLE; 3.6 V = ENGINE SWITCHED OFF
I	EM80-31	GROUND (THROTTLE MOTOR 2)	GROUND
O	EM81-03	EMS CONTROLLED RELAY ACTIVATE	GROUND
I	EM81-08	GROUND (POWER)	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 (TPS1)	0.5 V = IDLE; 4.75 V = WOT
I	EM81-12	PARK / NEUTRAL CONFIRMATION	B+ (P, N)
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+
I	EM81-18	PEDAL POSITION SIGNAL (PPS/2)	0.8 V = FOOT OFF; 2.4 V = PEDAL FULLY DEPRESSED
I	EM81-19	TPS SIGNAL (TPS2)	0.6 V = IDLE; 4.85 V = WOT
I	EM81-21	GROUND (LOGIC 1)	GROUND
I	EM81-22	PARKING BRAKE SWITCH	GROUND (APPLIED)
I	EM81-23	IATS 2 SIGNAL	B+
I	EM81-24	PEDAL POSITION / THROTTLE POSITION SENSORS SHIELD	2.38 V @ 20 °C, (DECREASING VOLTAGE WITH TEMPERATURE INCREASE)
SG	EM82-01	SENSOR SUPPLY VOLTAGE 1	GROUND
SS	EM82-02	ENGINE CRANK	5 V
I	EM82-04	HO2S, UPSTREAM 'A' BANK - VARIABLE CURRENT (µA)	GROUND (CRANKING)
I	EM82-05	HO2S, UPSTREAM 'B' BANK - VARIABLE CURRENT (µA)	3.5 V
O	EM82-06	THROTTLE MOTOR POWER RELAY ACTIVATE	3.5 V
SG	EM82-07	SENSORS SIGNAL GROUND 1	GROUND
I	EM82-08	BRAKE SWITCH	GROUND
I	EM82-09	IGNITION SWITCHED POWER SUPPLY	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
I	EM82-13	EMS SWITCHED POWER SUPPLY 2	B+
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
SG	EM83-06	SENSOR SHIELD	GROUND
SG	EM83-07	CKPS SIGNAL 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
SG	EM83-12	HO2S SHIELD	GROUND
SG	EM83-13	SENSORS SIGNAL GROUND 2	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
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+
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
SG	EM83-27	MAFS REFERENCE GROUND	GROUND
I	EM83-28	MAFS SIGNAL	1.2 V @ IDLE, INCREASING WITH RPM INCREASE
I	EM84-01	GROUND (DOWNSTREAM HO2S HEATERS)	GROUND
O	EM84-07	HO2S HEATER, 'A' BANK DOWNSTREAM CONTROL	GROUND (20 - 60% DUTY CYCLE)
O	EM84-15	HO2S HEATER, 'B' BANK DOWNSTREAM CONTROL	GROUND (20 - 60% DUTY CYCLE)
I	EM84-16	GROUND (INJECTORS 1A, 2B, 3B, 4A)	GROUND
I	EM84-22	GROUND (INJECTORS 1B, 2A, 3A, 4B)	GROUND
O	EM85-01	HO2S HEATER, 'A' BANK UPSTREAM CONTROL	GROUND (85 - 90% DUTY CYCLE AT IDLE)
O	EM85-02	HO2S HEATER, 'B' BANK UPSTREAM CONTROL	GROUND (85 - 90% DUTY CYCLE AT IDLE)
O	EM85-03	EGR STEPPER MOTOR 'S1' WINDING SUPPLY	GROUND
O	EM85-04	EGR STEPPER MOTOR 'S2' WINDING SUPPLY	GROUND
O	EM85-05	"COOL BOX" COOLING FAN ACTIVATE	GROUND
I	EM85-06	GROUND (HO2S A UPSTREAM HEATER)	GROUND
I	EM85-07	GROUND (HO2S B UPSTREAM HEATER)	GROUND
I	EM85-08	HO2S HEATERS OBD MONITOR	HEATERS ACTIVE = B+ V
O	EM85-09	EGR STEPPER MOTOR 'S3' WINDING SUPPLY	GROUND
O	EM85-10	EGR STEPPER MOTOR 'S4' WINDING SUPPLY	GROUND

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

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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	P117 / 2-WAY ECONOSEAL III HC / BLACK	ENGINE / REAR OF BED PLATE
CMPS: CAMSHAFT POSITION SENSOR - 'A' BANK	P116 / 2-WAY YAZAKI / BLACK	ENGINE COMPARTMENT / 'A' BANK CYLINDER HEAD, REAR
CMPS: CAMSHAFT POSITION SENSOR - 'B' BANK	P115 / 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	P134 / 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	P14 / 2-WAY ECONOSEAL E J2 / GREY	ENGINE COMPARTMENT / REAR OF ENGINE TOP HOSE
EOTS: ENGINE OIL TEMPERATURE SENSOR	P138 / 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	P13 / 2-WAY AMP JUNIOR POWER TIMER / BLACK	ENGINE COMPARTMENT / 'A' BANK INTERCOOLER / REAR
KS: KNOCK SENSOR - 'A' BANK	P126 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
KS: KNOCK SENSOR - 'B' BANK	P127 / 2-WAY ECONOSEAL III LC / BLACK	ENGINE VEE / UNDER INTAKE MANIFOLD
MAFS: MASS AIR FLOW SENSOR	P135 / 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	P142 / 5-WAY SUMITOMO TS090 / BLACK	ENGINE COMPARTMENT / ON THROTTLE ASSEMBLY
THROTTLE MOTOR	P133 / 2-WAY SUMITOMO HM250 / BLACK	ENGINE COMPARTMENT / THROTTLE ASSEMBLY
TPS: THROTTLE POSITION SENSORS	P16 / 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.

CONTROL MODULE PIN OUT INFORMATION

AIR CONDITIONING CONTROL MODULE

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

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+
O	EM80-12	ELECTRICAL LOAD INHIBIT	GROUND
O	EM80-14	INTERCOOLER PUMP RELAY ACTIVATE	GROUND
O	EM80-16	CRUISE CONTROL ON STATUS LED	GROUND
I	EM80-20	CRUISE CONTROL BRAKE CANCEL REQUEST	GROUND
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+
O	EM80-25	AIR CONDITIONING COMPRESSOR RELAY ACTIVATE	GROUND
O	EM81-04	PARALLEL (HIGH) SPEED FAN ACTIVATE	GROUND
O	EM81-05	SERIES (LOW) SPEED FAN ACTIVATE	GROUND
I	EM81-13	CRUISE CONTROL ON REQUEST	B+
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
I	EM83-04	FUEL PUMP RELAY ACTIVATE	GROUND
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
O	EM84-03	INJECTOR 3B ACTIVATE	GROUND
O	EM84-04	INJECTOR 2B ACTIVATE	GROUND
O	EM84-05	INJECTOR 4A ACTIVATE	GROUND
O	EM84-06	INJECTOR 1B ACTIVATE	GROUND
O	EM84-09	IGNITION MODULE 4A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-10	IGNITION MODULE 3A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-11	IGNITION MODULE 2A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-12	IGNITION MODULE 1A SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
I	EM84-13	INJECTOR 4B ACTIVATE	GROUND
I	EM84-14	INJECTOR 3A ACTIVATE	GROUND
O	EM84-17	IGNITION MODULE 4B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-18	IGNITION MODULE 3B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-19	IGNITION MODULE 2B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-20	IGNITION MODULE 1B SWITCHING	GROUND (85 – 90% DUTY CYCLE @ IDLE)
O	EM84-21	INJECTOR 2A ACTIVATE	GROUND

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 CC40 / 4-WAY MULTILOCK 070 / WHITE CC20 / 10-WAY AMP MICRO QUAD LOCK / NATURAL SW3 / 3-WAY EPC / BLACK	RH SIDE OF TRANSMISSION TUNNEL / GLOVE BOX ASSEMBLY
BRAKE CANCEL SWITCH	EM80 / 31-WAY AMP 403 / NATURAL	ADJACENT TO THE BRAKE PEDAL MOUNTING ASSEMBLY
CRUISE CONTROL ON / OFF SWITCH	EM81 / 24-WAY AMP 403 / NATURAL	CENTER CONSOLE ASSEMBLY
CRUISE CONTROL SWITCHES (STEERING WHEEL)	EM82 / 17-WAY AMP 403 / NATURAL	CENTER OF STEERING WHEEL
ENGINE CONTROL MODULE	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

HARNESSTO-HARNESSTO 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.

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.

CONTROL MODULE PIN OUT INFORMATION

GEAR SELECTOR ILLUMINATION MODULE

Pin	Description	Active	Inactive
I	CC14-1	IGNITION SWITCHED POWER SUPPLY	B+
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
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	B+ (NO PRESSURE)
O	EM7-2	SPORT MODE SWITCH STATUS LED	GROUND = LED ON
O	EM7-4	PRESSURE REGULATOR #4	B+ (NO PRESSURE)
O	EM7-5	PRESSURE REGULATOR #1	B+ (NO PRESSURE)
I	EM7-6	GROUND	GROUND
I	EM7-8	ROTARY SWITCH 'L2' CONTACTS	B+
I	EM7-9	ROTARY SWITCH 'L4' CONTACTS	B+
I	EM7-12	SPORT MODE SWITCH STRATEGY SELECT	GROUND = SPORT
I	EM7-13	D – 4 SWITCH	GROUND
SG	EM7-14	TURBINE SPEED SENSOR	300 Hz @ IDLE (2.5 V)
SG	EM7-15	OUTPUT SPEED SENSOR SHIELD	GROUND
SG	EM7-16	OUTPUT SPEED SENSOR	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
I	EM7-26	BATTERY POWER SUPPLY	B+
SG	EM7-28	ROTARY / D – 4 / KICK DOWN SWITCHES COMMON GROUND	GROUND
O	EM7-29	PRESSURE REGULATOR #3	GROUND (MAXIMUM PRESSURE)
O	EM7-30	SOLENOID VALVE #1	GROUND
O	EM7-32	SOLENOID VALVE #3	GROUND
O	EM7-33	SOLENOID VALVE #2	GROUND
I	EM7-34	GROUND	GROUND
I	EM7-36	ROTARY SWITCH 'L1' CONTACTS	B+
I	EM7-37	ROTARY SWITCH 'L3' CONTACTS	B+
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
O	EM7-51	PRESSURE REGULATOR #5	GROUND = NORMAL
O	EM7-52	SOLENOID VALVES COMMON SUPPLY	B+ (NO PRESSURE)
O	EM7-53	PRESSURE REGULATORS COMMON SUPPLY	B+
I	EM7-54	IGNITION SWITCHED POWER SUPPLY	B+
I	EM7-55	IGNITION SWITCHED POWER SUPPLY	B+
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.

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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