

**1996**

**BMW 318is/c,  
320i, 325i/c, 328i/c  
M3 (E36)**

**Electrical  
Troubleshooting  
Manual**

Vehicles Produced 9/95 to 8/96



The following systems have been modified during the model year and are marked as early or late production:

- 0670.2 POWER DISTRIBUTION
- 0670.3 FUSE DETAILS
- 0670.4 GROUND DISTRIBUTION
- 0670.5 DATA LINK
- 1210.20 ENGINE CONTROL SYSTEM (DME M5.2, 4-CYLINDER M44)
- 2460.2 ELECTRONIC TRANSMISSION CONTROL (EGS A4S 310R)
- 5126.0 ZKE CENTRAL LOCKING (ZV)
- 5430.1 ELECTRICAL CONVERTIBLE TOP
- 6135.0 DRIVE-AWAY PROTECTION (EWS II)
- 6211.0 INSTRUMENT CLUSTER
- 6313.0 TURN/HAZARD LIGHTS
- 6350.0 CRASH CONTROL MODULE
- 6450.4 INTEGRATED CLIMATE REGULATION (IHKR E36)
- 6450.7 INTEGRATED CLIMATE REGULATION (IHKA E36)
- 6561.0 CELLULAR TELEPHONE (PROVISIONS)
- 6581.2 ON-BOARD COMPUTER (BC V)



## ELECTRICAL TROUBLESHOOTING MANUAL

**3 SERIES – E36 (318is, 320i, 325i, 328i, M3, INCL.  
CONVERTIBLE)**

### SCHEMATICS

### MODEL YEAR 1996

0100.0	INDEX	2460.2	ELECTRONIC TRANSMISSION CONTROL (EGS A4S 310R)
0110.0	INTRODUCTION	2460.4	ELECTRONIC TRANSMISSION CONTROL (EGS A5S 310Z)
0140.0	SYMBOLS	3234.0	SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)
0670.0	POWER DISTRIBUTION CHART	3450.0	SLIP CONTROL (ABS)
0670.1	FUSE CHART	3450.1	SLIP CONTROL (ABS/ASC)
0670.2	POWER DISTRIBUTION	5116.0	POWER MIRRORS
0670.3	FUSE DETAILS	5126.0	ZKE CENTRAL LOCKING (ZV)
0670.4	GROUND DISTRIBUTION	5133.1	POWER WINDOWS (FH)
0670.5	DATA LINK	5200.0	POWER SEATS
1210.9	ENGINE CONTROL SYSTEM (DME M1.7, 4-CYLINDER M42)	5203.0	HEATED SEATS
1210.10	ENGINE CONTROL SYSTEM MS40 (6-CYLINDER M50)	5410.1	POWER SUN ROOF (SHD)
1210.13	ENGINE CONTROL SYSTEM (DME M3.3.1, 6-CYLINDER M50)	5430.1	ELECTRICAL CONVERTIBLE TOP
1210.14	ENGINE CONTROL SYSTEM (DME M3.3, 6-CYLINDER S50 B30)	6100.0	CENTRAL BODY ELECTRONICS (ZKE IV)
1210.17	ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52)	6133.0	HORN
1210.20	ENGINE CONTROL SYSTEM (DME M5.2, 4-CYLINDER M44)	6135.0	DRIVE-AWAY PROTECTION (EWS II)
1230.0	CHARGING SYSTEM	6160.1	WIPER/WASHER MODULE (WWM)
1240.0	START	6167.1	HEADLIGHT WASHER (SRA)
		6211.0	INSTRUMENT CLUSTER
		6213.2	MULTI-FUNCTION CLOCK
		6214.0	ON-BOARD DISPLAY



## SCHEMATICS

6300.0	LIGHT SWITCH DETAILS	6450.4	INTEGRATED CLIMATE REGULATION (IHKR E36)
6312.0	HEADLIGHTS/FOG LIGHTS	6450.7	INTEGRATED CLIMATE REGULATION (IHKA E36)
6313.0	TURN/HAZARD LIGHTS	6510.0	RADIO/CD PLAYER (PROVISIONS)
6314.0	PARK/TAIL/UNDERHOOD LIGHTS	6510.1	RADIO/HIFI
6320.0	LICENSE PLATE/LUGGAGE COMPARTMENT LIGHTS	6561.0	CELLULAR TELEPHONE (PROVISIONS)
6322.0	BACK UP LIGHTS	6571.0	CRUISE CONTROL (TEMPOMAT)
6325.0	BRAKE LIGHTS	6575.2	ANTI-THEFT SYSTEM (ALPINE)
6330.3	INTERIOR LIGHTS	6581.2	ON-BOARD COMPUTER (BC V)
6332.1	GLOVE BOX LIGHT/CASSETTE BOX/ ASHTRAY LIGHT/CHARGING SOCKET/ CIGAR LIGHTER	7000.0	COMPONENT LOCATION CHART
6350.0	CRASH CONTROL MODULE	7100.0	COMPONENT LOCATION VIEWS
6412.5	PARK VENTILATION WITH IHKR	8000.0	SPLICE LOCATION VIEWS
6424.0	REAR WINDOW DEFOGGER/ ANTENNA	8500.0	CONNECTOR VIEWS



ABS HYDRAULIC UNIT, Y1 .....	3450.0-01
ABS HYDRAULIC UNIT, Y1w .....	3450.1-01
ABS PEDAL TRAVEL SENSOR, S123 .....	3450.
ABS PUMP MOTOR RELAY, K75 .....	3450.
ABS RELAY, K10 .....	3450.
AIR BAG GAS GENERATOR, DRIVER'S, G5 .....	3234.0-00
AIR BAG GAS GENERATOR, PASSENGER'S, G6 .....	3234.0-00
AIR CONDITIONING COMPRESSOR, Y2 .....	6450.4-05
AIR FLOW SENSOR, B6233 .....	1210.9-05
AIR PUMP, M6133 .....	1210.14-06
AIR PUMP, Y6133 .....	1210.17-05
ANTENNA AMPLIFIER AM/FM, N8 .....	6424.0-00
ANTI-THEFT CONTROL MODULE (ALPINE), N12w .....	6575.2-00
ANTI-THEFT HORN (ALPINE), H1w .....	6575.2-02
ANTI-THEFT SYSTEM (ALPINE) .....	6575.2
ASC DIODE, V7 .....	3450.1-00
ASC SWITCH, S6 .....	3450.1-02
AUTOMATIC CLIMATE CONTROL MODULE, A115 .....	6450.7
AUTOMATIC TRANSMISSION RANGE SWITCH, S3 .....	2460.
AUXILIARY FAN MOTOR, M9 .....	6450.4-06
AUXILIARY FUSE BOX, P95 .....	0670.2-04
AUXILIARY THROTTLE POSITION MOTOR (ADS), M93 .....	3450.1-02
AUXILIARY THROTTLE POSITION SENSOR, R31 .....	3450.1-04
AUXILIARY TURN LIGHT, LEFT FRONT, H9 .....	6313.0-02
AUXILIARY TURN LIGHT, RIGHT FRONT, H8 .....	6313.0-02
B+ JUMP START JUNCTION POINT, G6430 .....	0670.2-00
BACK UP LIGHT, LEFT, H27 .....	6322.0-00
BACK UP LIGHT, RIGHT, H28 .....	6322.0-00
BACK UP LIGHTS .....	6322.0
BATTERY, G1 .....	0670.2-00
BLOWER MOTOR, M30 .....	6450.4-01
BLOWER RELAY, K4 .....	6450.4-00
BLOWER RESISTORS, R11 .....	6450.4-01
BLOWER SWITCH, S75 .....	6450.4-01
BODY ELECTRONICS CONTROL MODULE (ZKE IV), A104 .....	6100.0-00

BRAKE FLUID LEVEL SWITCH, B18 .....	6211.0-00
BRAKE LIGHT SWITCH, S29 .....	6325.0-00
BRAKE LIGHT SWITCH, S30 .....	6325.0-01
BRAKE LIGHT, LEFT, H24 .....	6325.0-00
BRAKE LIGHT, RIGHT, H31 .....	6325.0-00
BRAKE LIGHTS .....	6325.0
BRAKE PAD SENSOR, LEFT FRONT, B16 .....	6211.0-01
BRAKE PAD SENSOR, RIGHT REAR, B17 .....	6211.0-01
CAMSHAFT ACTUATOR, B6208 .....	1210.
CAMSHAFT ACTUATOR, Y6208 .....	1210.10-05
CAMSHAFT POSITION SENSOR (CYLINDER IDENTIFICATION), B6204 .....	1210.
CARBON CANISTER VALVE, Y199 .....	1210.17-10
CASSETTE BOX LIGHT, E45y .....	6300.0-00
CD CHANGER, N22 .....	6510.1-00
CELLULAR TELEPHONE (PROVISIONS) .....	6561.0
CENTRAL BODY ELECTRONICS (ZKE IV) .....	6100.0
CENTRAL LOCKING SWITCH, S302 .....	5126.0-02
CENTRAL POWER WINDOW SWITCH, S40y .....	5133.1-03
CHANGE-OVER VALVE, Y5013 .....	1210.14-06
CHARGING SYSTEM .....	1230.0
CHECK CONTROL MODULE, A4 .....	6581.2-03
CHILD PROTECTION CONTROL (CONSOLE), S130 .....	5133.1-02
CHIME MODULE, H10 .....	6581.2-01
CLUTCH SWITCH, S32 .....	6525.0-00
COMBINATION SWITCH, S7 .....	6312.0-00
COMPONENT LOCATION CHART .....	7000.0
COMPONENT LOCATION VIEWS .....	7100.0
COMPRESSOR CONTROL RELAY, K19 .....	6450.4-05
CONNECTOR VIEWS .....	8500.0
CONTACT RING, C101 .....	3234.0-00
CONVERTIBLE TOP ACTUATING SWITCH, S143 .....	5430.1-01
CONVERTIBLE TOP CONTROL MODULE, A96 .....	5430.1-00
CONVERTIBLE TOP END-POSITION MICRO SWITCH, S164 ..	5430.1-01
CONVERTIBLE TOP MOTOR, M101 .....	5430.1-02

CONVERTIBLE TOP POSITION MICRO SWITCH, S165 .....	5430.1-01
CONVERTIBLE TOP STORAGE LID LOCK MOTOR, M43 .....	5430.1-02
CONVERTIBLE TOP STORAGE LID MICRO SWITCH, S214 .....	5430.1-02
CONVERTIBLE TOP STORAGE LID MOTOR, M100 .....	5430.1-02
CRANKSHAFT POSITION/RPM SENSOR, B6203 .....	1210.
CRASH CONTROL MODULE .....	6350.0
CRASH CONTROL MODULE, N17 .....	6350.0-01
CRUISE CONTROL (TEMPOMAT) .....	6571.0
CRUISE CONTROL ACTUATOR (TEMPOMAT), M25 .....	6571.0-01
CRUISE CONTROL MODULE (TEMPOMAT), A8 .....	6571.0-00
CRUISE CONTROL SWITCH, S28 .....	6571.0-00
DASH VENT MIXING FLAP MOTOR, M34 .....	6450.4-04
DATA LINK .....	0670.5
DATA LINK CONNECTOR, D100 .....	0670.5-00
DAYTIME RUNNING LIGHTS CODING DIODE, V4 .....	6314.0-02
DEFROSTER FLAP MOTOR, M35 .....	6450.7-03
DIMMER, N3 .....	6300.0-00
DIVERSITY, N404 .....	6424.0-03
DOOR CONTACT, LEFT REAR, S125 .....	6330.3-01
DOOR CONTACT, RIGHT REAR, S124 .....	6330.3-01
DOOR JAMB SWITCH, DRIVER'S, S14 .....	6330.3-01
DOOR JAMB SWITCH, PASSENGER'S, S13 .....	6330.3-01
DOOR LOCK MOTOR, DRIVER'S, M12 .....	5126.0-00
DOOR LOCK MOTOR, LEFT REAR, M15 .....	5126.0-01
DOOR LOCK MOTOR, PASSENGER'S, M13 .....	5126.0-00
DOOR LOCK MOTOR, RIGHT REAR, M14 .....	5126.0-01
DOUBLE RELAY, K5029 .....	1210.14-00
DOUBLE TEMPERATURE SWITCH, S36y .....	6450.
DUAL TEMPERATURE SENSOR (COOLANT TEMPERATURE), B6256 .....	1210.17-02
ELECTRICAL CONVERTIBLE TOP .....	5430.1
ELECTRONIC IMMOBILIZER CONTROL MODULE (EWS II), A836 ..	6135.0
ELECTRONIC TRANSMISSION CONTROL (EGS A4S 310R) .....	2460.2
ELECTRONIC TRANSMISSION CONTROL (EGS A5S 310Z) .....	2460.4
ENGINE CONTROL MODULE (DME), A6000 .....	1210.

ENGINE CONTROL MODULE RELAY, K6300 .....	1210.
ENGINE CONTROL SYSTEM (DME M1.7, 4-CYLINDER M42) .....	1210.9
ENGINE CONTROL SYSTEM (DME M3.3.1, 6-CYLINDER M50) ..	1210.13
ENGINE CONTROL SYSTEM (DME M3.3, 6-CYLINDER S50 B30) ..	1210.14
ENGINE CONTROL SYSTEM (DME M5.2, 4-CYLINDER M44) .....	1210.20
ENGINE CONTROL SYSTEM MS40 (6-CYLINDER M50) .....	1210.10
ENGINE CONTROL SYSTEM MS41.1 (6-CYLINDER M52) .....	1210.17
ENGINE COOLANT LEVEL SWITCH, S63 .....	6581.2-03
ENGINE COOLANT TEMPERATURE SENSOR, B6232 .....	6211.0-02
ENGINE COOLANT TEMPERATURE SENSOR, B6236 .....	1210.
ENGINE HOOD SWITCH, S21w .....	6575.2-02
EVAPORATIVE EMISSION VALVE, Y6120 .....	1210.
EVAPORATOR TEMPERATURE SENSOR, B14 .....	6450.4-03
EXHAUST GAS FLAP VALVE, Y198 .....	1210.17-04
FINAL STAGE UNIT, N2 .....	6450.7-00
FM AMPLIFIER HLO, N444 .....	6424.0-03
FOG LIGHT SWITCH, S10 .....	6312.0-00
FOG LIGHT, LEFT REAR, H26 .....	6312.0-02
FOG LIGHT, LEFT, E26 .....	6312.0-00
FOG LIGHT, RIGHT, E27 .....	6312.0-00
FRESH AIR FLAP MOTOR, M36 .....	6450.4-04
FRONT ASHTRAY LIGHT, E25 .....	6332.1-00
FRONT CIGAR LIGHTER LIGHT, E29 .....	6300.0-03
FRONT CIGAR LIGHTER, E28 .....	6332.1-00
FRONT DOME LIGHT/MAP READING ASSEMBLY, E34 .....	6330.3-00
FRONT FOG LIGHT RELAY, K47 .....	6312.0-00
FRONT POWER DISTRIBUTION BOX, P90 .....	0670.2-00
FUEL INJECTION VALVE, CYL. 1, Y6101 .....	1210.
FUEL INJECTION VALVE, CYL. 2, Y6102 .....	1210.
FUEL INJECTION VALVE, CYL. 3, Y6103 .....	1210.
FUEL INJECTION VALVE, CYL. 4, Y6104 .....	1210.
FUEL INJECTION VALVE, CYL. 5, Y6105 .....	1210.
FUEL INJECTION VALVE, CYL. 6, Y6106 .....	1210.
FUEL LEVEL SENSOR, B6 .....	6211.0-04
FUEL PUMP RELAY, CYL. 1-6, K6301 .....	1210.

FUEL PUMP RELAY, K6301w .....	1210.9-03
FUEL PUMP, M2 .....	1210.
FUEL PUMP/START IDENTIFICATION RELAY, K6307 .....	1210.14-02
FUEL TANK PRESSURE SENSOR, B72 .....	1210.17-10
FUEL TANK SENSOR II, B25y .....	6211.0-04
FUSE CHART .....	0670.1
FUSE DETAILS .....	0670.3
GAS FILLER LOCK MOTOR, M16 .....	5126.0-01
GENERATOR, G6509 .....	1230.0-00
GLOVE BOX LIGHT, E42 .....	6332.1-00
GLOVE BOX LIGHT/CASSETTE BOX/ASHTRAY LIGHT/ CHARGING SOCKET/CIGAR LIGHTER .....	6332.1
GLOVE BOX LOCK MOTOR, M107 .....	5126.0-01
GROUND DISTRIBUTION .....	0670.4
HALL EFFECT CAMSHAFT SENSOR, B6209 .....	1210.13-01
HARD TOP CONNECTOR 1, E99 .....	5430.1-00
HARD TOP CONNECTOR 2, E100y .....	6330.3-03
HAZARD FLASHER RELAY, K16 .....	6313.0-00
HAZARD SWITCH, S18 .....	6313.0-01
HEADLIGHT WASHER (SRA) .....	6167.1
HEADLIGHT, LEFT, E7 .....	6313.0-02
HEADLIGHT, RIGHT, E8 .....	6313.0-02
HEADLIGHT/FOG LIGHT WASHER PUMP, M7 .....	6167.1-00
HEADLIGHTS/FOG LIGHTS .....	6312.0
HEAT EXCHANGER TEMPERATURE SENSOR, LH, B11 .....	6450.4-03
HEAT EXCHANGER TEMPERATURE SENSOR, RH, B12 .....	6450.4-03
HEATED OXYGEN SENSOR 2, B5028 .....	1210.14-06
HEATED OXYGEN SENSOR, B6200 .....	1210.
HEATED SEATS .....	5203.0
HEIGHT MOTOR, DRIVER'S SEAT, M52 .....	5200.0-00
HIFI AMPLIFIER, A18 .....	6510.1-00
HIGH BEAM LIGHT RELAY, K46 .....	6312.0-01
HIGH BEAM LIGHT, LEFT, E11 .....	6312.0-01
HIGH BEAM LIGHT, RIGHT, E12 .....	6312.0-01
HIGH LEVEL STOP LIGHT, H34 .....	6325.0-00

HIGH RANGE SPEAKER, LEFT FRONT, H59 .....	6510.1-01
HIGH RANGE SPEAKER, LEFT REAR, H56 .....	6510.1-01
HIGH RANGE SPEAKER, RIGHT FRONT, H50 .....	6510.0-00
HIGH RANGE SPEAKER, RIGHT FRONT, H50 .....	6510.1-02
HIGH RANGE SPEAKER, RIGHT REAR, H53 .....	6510.1-02
HIGH SPEED RELAY, K22 .....	6450.4-06
HORN .....	6133.0
HORN RELAY (ALPINE), K108 .....	6575.2-02
HORN RELAY, K2 .....	6133.0-00
HORN SWITCH, S4 .....	6133.0-00
HORN, LEFT, H2 .....	6133.0-00
HORN, RIGHT, H3 .....	6133.0-00
HOT FILM AIR MASS METER, B6207 .....	1210.17-05
HOT FILM AIR MASS METER, B6217 .....	1210.13-05
IDLE SPEED CONTROL VALVE, Y6130 .....	1210.
IGNITION COIL, CYL. 1, T6151 .....	1210.
IGNITION COIL, CYL. 2, T6152 .....	1210.
IGNITION COIL, CYL. 3, T6153 .....	1210.
IGNITION COIL, CYL. 4, T6154 .....	1210.
IGNITION COIL, CYL. 5, T6155 .....	1210.
IGNITION COIL, CYL. 6, T6156 .....	1210.
IGNITION SWITCH, S2 .....	0670.2-05
IHKR CONTROL PANEL, S134y .....	6450.4-02
INDEX .....	0100.0
INERTIA SWITCH, S27 .....	5126.0-02
INSTRUMENT CLUSTER .....	6211.0
INSTRUMENT CLUSTER, A2w .....	6211.0-00
INTAKE AIR RESONANCE CHANGE OVER VALVE, Y6131 .....	1210.20-01
INTAKE AIR RESONANCE CHANGE OVER VALVE, Y6131 .....	1210.9-01
INTAKE AIR TEMPERATURE SENSOR, B6205 .....	1210.
INTEGRATED CLIMATE REGULATION (IHKA E36) .....	6450.7
INTEGRATED CLIMATE REGULATION (IHKR E36) .....	6450.4
INTEGRATED CLIMATE REGULATION CONTROL MODULE, A87y .....	6450.4-00
INTERIOR LIGHT, LEFT REAR, E39 .....	6330.3-00



INTERIOR LIGHT, RIGHT REAR, E40 .....	6330.3-00
INTERIOR LIGHTS .....	6330.3
INTRODUCTION .....	0110.0
KICK-DOWN SWITCH, S8507 .....	2460.2-04
KNOCK SENSOR, B6240 .....	1210.17-06
KNOCK SENSOR, B6240 .....	1210.20-04
KNOCK SENSOR, CYL. 1-2, B6241 .....	1210.9-05
KNOCK SENSOR, CYL. 1-3, B6241w .....	1210.
KNOCK SENSOR, CYL. 3-4, B6242 .....	1210.9-05
KNOCK SENSOR, CYL. 4-6, B6242w .....	1210.
KNOCK SENSOR, CYL. 5-6, B6243 .....	1210.14-05
LICENSE PLATE LIGHT, LEFT, E43 .....	6320.0-00
LICENSE PLATE LIGHT, RIGHT, E44 .....	6320.0-00
LICENSE PLATE/LUGGAGE COMPARTMENT LIGHTS .....	6320.0
LIGHT SWITCH DETAILS .....	6300.0
LIGHT SWITCH, S8 .....	6300.0-00
LOW BEAM LIGHT RELAY, K48 .....	6312.0-01
LOW BEAM LIGHT, LEFT, E13 .....	6312.0-01
LOW BEAM LIGHT, RIGHT, E14 .....	6312.0-01
LOW RANGE SPEAKER, LEFT FRONT, H58 .....	6510.0-00
LOW RANGE SPEAKER, LEFT FRONT, H58 .....	6510.1-01
LOW RANGE SPEAKER, LEFT REAR, H57 .....	6510.1-01
LOW RANGE SPEAKER, RIGHT FRONT, H51 .....	6510.0-00
LOW RANGE SPEAKER, RIGHT FRONT, H51 .....	6510.1-02
LOW RANGE SPEAKER, RIGHT REAR, H52 .....	6510.1-02
MAKEUP MIRROR LIGHT, DRIVER'S, E35 .....	6330.3-00
MAKEUP MIRROR LIGHT, PASSENGER'S, E36 .....	6330.3-00
MAKEUP MIRROR SWITCH, DRIVER'S, S77 .....	6330.3-00
MAKEUP MIRROR SWITCH, PASSENGER'S, S78 .....	6330.3-00
MICROPHONE, B400 .....	6561.0-00
MID-HIGH RANGE SPEAKER, LEFT, H42 .....	6510.1-01
MID-HIGH RANGE SPEAKER, RIGHT, H43 .....	6510.1-02
MIDRANGE SPEAKER, LEFT FRONT, H55 .....	6510.1-01
MIDRANGE SPEAKER, RIGHT FRONT, H54 .....	6510.1-02
MIRROR CONTROL SWITCH, S17 .....	5116.0-00

MIRROR, DRIVER'S SIDE, Y5 .....	5116.0-01
MIRROR, PASSENGER'S SIDE, Y6 .....	5116.0-01
MULTI-FUNCTION CLOCK .....	6213.2
MULTI-FUNCTION CLOCK, N10 .....	6213.2-00
NORMAL SPEED RELAY, K21 .....	6450.4-06
OBD II CONNECTOR, D110 .....	0670.5
OIL PRESSURE SWITCH, B6231 .....	6211.0-00
OIL TEMPERATURE SENSOR, B6238 .....	6211.0-04
ON-BOARD COMPUTER (BC V) .....	6581.2
ON-BOARD COMPUTER TEMPERATURE SENSOR, B21 .....	6581.2-00
ON-BOARD COMPUTER, N4 .....	6581.2-00
ON-BOARD DISPLAY .....	6214.0
ON-BOARD DISPLAY, A35 .....	6214.0-00
OUTSIDE TEMPERATURE SENSOR, B13 .....	6450.4-03
OXYGEN SENSOR (BEHIND CATALYTIC CONVERTER), B62002 .....	1210.20-03
OXYGEN SENSOR (IN FRONT OF CATALYTIC CONVERTER), B62001 .....	1210.20-03
OXYGEN SENSOR I (BEHIND CATALYTIC CONVERTER), B62102 .....	1210.17-04
OXYGEN SENSOR I (IN FRONT OF CATALYTIC CONVERTER), B62101 .....	1210.17-04
OXYGEN SENSOR II (BEHIND CATALYTIC CONVERTER), B62202 .....	1210.17-04
OXYGEN SENSOR II (IN FRONT OF CATALYTIC CONVERTER), B62201 .....	1210.17-04
OXYGEN SENSOR RELAY, K6303 .....	1210.
PARK BRAKE SWITCH, S31 .....	6211.0-00
PARK LIGHT, LEFT, E15 .....	6314.0-01
PARK LIGHT, RIGHT, E19 .....	6314.0-01
PARK VENTILATION RELAY, K450 .....	6412.5.0-00
PARK VENTILATION WITH IHKR .....	6412.5
PARK/TAIL/UNDERHOOD LIGHTS .....	6314.0
POWER DISTRIBUTION .....	0670.2
POWER DISTRIBUTION CHART .....	0670.0



POWER MIRRORS ..... 5116.0  
POWER SEATS ..... 5200.0  
POWER SUN ROOF (SHD) ..... 5410.0  
POWER WINDOW SWITCH, DRIVER'S, S126y ..... 5133.1-01  
POWER WINDOW SWITCH, PASSENGER'S, S127y ..... 5133.1-01  
POWER WINDOWS (FH) ..... 5133.1  
PRESSURE SWITCH, B9508 ..... 6450.4-06  
PROGRAM SWITCH, S8503 ..... 2460.  
RADIO, N9 ..... 6510.0-00  
RADIO/CD PLAYER (PROVISIONS) ..... 6510.0  
RADIO/HIFI ..... 6510.1  
REAR ASHTRAY LIGHT, E28y ..... 6300.0-03  
REAR DEFOGGER RELAY, K13 ..... 6424.0-00  
REAR DEFOGGER/ANTENNA, E10 ..... 6424.0-02  
REAR DOOR (CONSOLE) POWER WINDOW SWITCH, LH,  
S128y ..... 5133.1-02  
REAR DOOR (CONSOLE) POWER WINDOW SWITCH, RH,  
S129y ..... 5133.1-02  
REAR FOG LIGHT SWITCH, S82 ..... 6312.0-02  
REAR POWER WINDOW SWITCH, LH, S128z ..... 5133.1-03  
REAR POWER WINDOW SWITCH, RH, S129z ..... 5133.1-03  
REAR RECIRCULATION FLAP MOTOR, M46 ..... 6450.7-03  
REAR WINDOW BLOWER MICRO SWITCH, S196 ..... 5430.1-01  
REAR WINDOW BLOWER RELAY, K99 ..... 6424.0-01  
REAR WINDOW BLOWER, M105 ..... 6424.0-01  
REAR WINDOW DEFOGGER/ANTENNA ..... 6424.0  
RECIRCULATION FLAP MOTOR, M40 ..... 6450.4-04  
REGULATION FLAP MOTOR, M44 ..... 6450.7-03  
RESISTOR, R8554 ..... 1210.13-04  
REVERSING LIGHT SWITCH, S8511 ..... 6322.0-00  
ROLLOVER PROTECTION ACTUATOR, LH, Y85 ..... 5430.1-03  
ROLLOVER PROTECTION ACTUATOR, RH, Y86 ..... 5430.1-03  
ROLLOVER SENSOR, N24 ..... 5430.1-03  
SEAT BELT SWITCH, DRIVER'S, S58 ..... 3234.0-00  
SEAT BELT SWITCH, PASSENGER'S, S59 ..... 3234.0-00

SEAT CONTROL SWITCH, DRIVER'S SEAT, S51 ..... 5200.0-00  
SEAT CONTROL SWITCH, PASSENGER'S SEAT, S56 ..... 5200.0-01  
SEAT CUSHION TILT MOTOR, DRIVER'S, M50 ..... 5200.0-00  
SEAT CUSHION TILT MOTOR, PASSENGER'S, M61 ..... 5200.0-01  
SEAT HEATER SWITCH, DRIVER'S SEAT, S53 ..... 5203.0-00  
SEAT HEATER SWITCH, PASSENGER'S SEAT, S54 ..... 5203.0-00  
SEAT HEATER, DRIVER'S, E57 ..... 5203.0-00  
SEAT HEATER, PASSENGER'S, E58 ..... 5203.0-00  
SEAT HEIGHT MOTOR, PASSENGER'S, M59 ..... 5200.0-01  
SEAT MOVEMENT MOTOR, DRIVER'S, M51 ..... 5200.0-00  
SEAT MOVEMENT MOTOR, PASSENGER'S, M60 ..... 5200.0-01  
SEAT OCCUPANCY DETECTOR, A113 ..... 3234.0-00  
SEATBACK HEATER, DRIVER'S, E56 ..... 5203.0-00  
SEATBACK HEATER, PASSENGER'S, E59 ..... 5203.0-00  
SEATBACK RECLINER MOTOR, DRIVER'S, M53 ..... 5200.0-00  
SEATBACK RECLINER MOTOR, PASSENGER'S, M58 ..... 5200.0-01  
SECONDARY AIR PUMP RELAY, K6304 ..... 1210.17-05  
SECONDARY AIR PUMP VALVE, Y6163 ..... 1210.17-05  
SHIFT-LOCK, Y19 ..... 2460.2-04  
SLIP CONTROL (ABS) ..... 3450.0  
SLIP CONTROL (ABS/ASC) ..... 3450.1  
SLIP CONTROL MODULE (ABS), A7 ..... 3450.0-00  
SLIP CONTROL MODULE (ABS/ASC), A52 ..... 3450.1-01  
SPEAKER, LEFT REAR, H46 ..... 6510.1-01  
SPEAKER, RIGHT REAR, H45 ..... 6510.0-00  
SPEAKER, RIGHT REAR, H45 ..... 6510.1-02  
SPEED SENSOR - ABS, LEFT FRONT, B2 ..... 3450.  
SPEED SENSOR - ABS, LEFT REAR, B4 ..... 3450.  
SPEED SENSOR - ABS, RIGHT FRONT, B1 ..... 3450.  
SPEED SENSOR - ABS, RIGHT REAR, B3 ..... 3450.  
SPlice LOCATION VIEWS ..... 8000.0  
START ..... 1240.0  
STARTER, M6510 ..... 1240.0-01  
SUNROOF CONTROL ASSEMBLY, A56 ..... 5410.1-01  
SUNROOF MOTOR, M24 ..... 5410.1-01



# INDEX

SUNROOF SWITCH, S38 .....	5410.1-01
SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG) .....	3234.0
SUPPLEMENTAL RESTRAINT SYSTEM CONTROL MODULE, A12 .....	3234.0-00
SUPPRESSION FILTER, C900 .....	6424.0-01
SWITCH SPATIAL SOUND, S303 .....	6510.1
SYMBOLS .....	0140.0
TAIL LIGHT, LEFT, H25 .....	6314.0-01
TAIL LIGHT, LEFT, H37 .....	6314.0-01
TAIL LIGHT, RIGHT, H30 .....	6314.0-01
TAIL LIGHT, RIGHT, H39 .....	6314.0-01
TELEPHONE HANDSET, U4 .....	6561.0-00
TELEPHONE TRANSCEIVER, H38 .....	6561.0-00
TEMPERATURE SWITCH, S36 .....	6450.4-06
THROTTLE FLAP HEATER, E104 .....	3450.1-02
THROTTLE POSITION SENSOR, R6252 .....	1210.9-05
TRANSMISSION CONTROL MODULE (EGS), A7000 .....	2460.4-00
TRANSMISSION CONTROL MODULE (EGS), A8500 .....	2460.2-00
TRANSMISSION POSITION INDICATOR LIGHT, E82 .....	2460.2-03
TRANSMISSION VALVE UNIT, Y8505 .....	2460.2-01
TRANSMISSION VALVE UNIT, Y8505y .....	2460.4-01
TRANSMITTER MODULE (EWS II), A835 .....	6135.0
TRUNK COMPARTMENT LIGHT, E32 .....	6320.0-00
TRUNK COMPARTMENT LIGHT, LEFT, E101 .....	6320.0-00
TRUNK COMPARTMENT LIGHT, RIGHT, E102 .....	6320.0-00
TRUNK LID MICRO SWITCH, S213 .....	5430.1-02
TRUNK LID RELAY, K117 .....	5126.0-01
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6312.0-04
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6313.0-02
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6314.0-01
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6322.0-00
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6325.0-01
TRUNK LIGHT ASSEMBLY, LEFT, E46 .....	6581.2-04
TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6312.0-04
TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6314.0-01

TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6313.0-02
TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6322.0-00
TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6325.0-01
TRUNK LIGHT ASSEMBLY, RIGHT, E47 .....	6581.2-04
TRUNK LIGHT SWITCH, S61y .....	6320.0-00
TRUNK LOCK MOTOR, M17 .....	5126.2-01
TURN LIGHT, LEFT FRONT, H7 .....	6313.0-02
TURN LIGHT, LEFT REAR, H6 .....	6313.0-02
TURN LIGHT, RIGHT FRONT, H4 .....	6313.0-02
TURN LIGHT, RIGHT REAR, H5 .....	6313.0-02
TURN/HAZARD LIGHTS .....	6313.0
UNCOUPLING DIODE (KL61), V9501 .....	1210.14
UNDERHOOD LIGHT SWITCH, S19 .....	6300.0-00
UNDERHOOD LIGHT, E20 .....	6300.0-00
UNLOADER RELAY, TERMINAL 15, K9 .....	5203.0-00
VARIABLE CAMSHAFT CONTROL MODULE (VANOS), A5024 ..	1210.14-04
VARIABLE CAMSHAFT CONTROL SENSOR 1, B5022 .....	1210.14-04
VARIABLE CAMSHAFT CONTROL SENSOR 2, B5023 .....	1210.14-04
VARIABLE CAMSHAFT CONTROL VALVE 1, Y5020 .....	1210.14-04
VARIABLE CAMSHAFT CONTROL VALVE 1, Y6275 .....	1210.17-05
VARIABLE CAMSHAFT CONTROL VALVE 2, Y5021 .....	1210.14-04
VEHICLE SPEED SENSOR, B10 .....	6211.0-04
WASHER FLUID LEVEL SWITCH, S64 .....	6581.2-03
WASHER PUMP, M4 .....	6160.1-01
WATER VALVE ASSEMBLY, Y4 .....	6450.4-02
WINDOW MOTOR, DRIVER'S, M21 .....	5133.1-04
WINDOW MOTOR, LEFT REAR, M20 .....	5133.1-05
WINDOW MOTOR, LEFT REAR, M98 .....	5133.1-05
WINDOW MOTOR, PASSENGER'S, M23 .....	5133.1-04
WINDOW MOTOR, RIGHT REAR, M22 .....	5133.1-05
WINDOW MOTOR, RIGHT REAR, M99 .....	5133.1-05
WINDOW SWITCH, LEFT REAR, S41 .....	5133.1-02
WINDOW SWITCH, RIGHT REAR, S42 .....	5133.1-02
WINDSCREEN COWL PANEL LOCK MICROSWITCH, S231 .....	5430.1-00
WINDSCREEN COWL PANEL LOCK MOTOR, M132 .....	5430.1-00



# INDEX

---

WIPER MOTOR, M3 .....	6160.1-00
WIPER/WASHER MODULE (LOW II), A64 .....	6160.1
WIPER/WASHER MODULE (WWM) .....	6160.1
WIPER/WASHER MODULE, A51 .....	6160.1-01
WIPER/WASHER SWITCH, S5 .....	6160.1-01
ZKE CENTRAL LOCKING (ZV) .....	5126.0



**Schematics**

The schematics divide the entire vehicle electrical system into individual circuits. Interacting electrical components are shown on one common schematic.

Switches and other components are represented in such a way that their general layout and function are self-explicit. They are arranged on the sheet such that the current path can be followed from positive (top) to negative (bottom).

**Important:** The components and wires are not drawn to scale. For instance, a lead with a length of over 1m can be shown as a lead that is only a few cm long. To ensure clear arrangement, all connectors, lines branches and connected components from the fuses to the component and from the component to ground connection are not shown within the individual cells. If required, reference can be made to cells **0670.3 Fuse Details** and **0670.4 Ground Distribution** where all lines are illustrated with all plug connections, line branches and connected components.

All circuit symbols used are listed and explained in cell **0140.0 Symbols**.

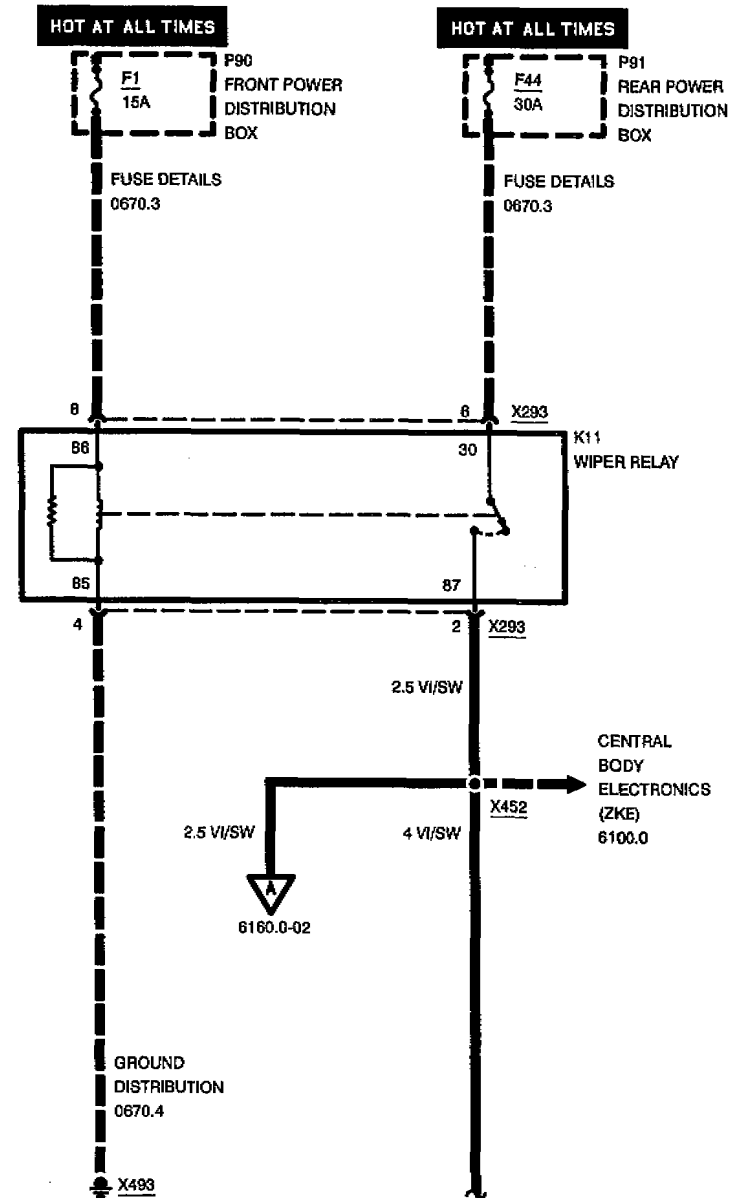
In cell **7000.0 Component Location Chart** all important connectors, ground points and components are listed in tabular form. It provides a precise description of the component locations in the vehicle.

In cell **7100.0 Component Location Views** the location of connectors and components which are difficult to locate are shown in line arts or illustrations. In cell **8000.0 Splice Location Views** all splices are listed in numerical order and illustrations are provided to assist in locating splices on larger harnesses. In cell **8500.0 Connector Views** diagrams of connectors with more than 2 pins are illustrated.

Included in this ETM are foldout block diagrams. These are overviews of the entire system (EGS, ABS, AC, etc.) which helps understand the relationships between various components and control unit of the system being diagnosed.

**Example**

General conventions can be explained based on the following schematic example.



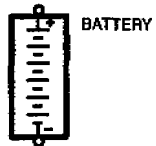


## INTRODUCTION

---

### General Conventions

1. Switches and relays are always shown in rest position (e.g. K11).
2. A component shown in a dashed frame signifies that the component is illustrated only in part (e.g. P90 and P91).
3. A component shown in a completely drawn frame signifies that the component is illustrated in full (e.g. K11).
4. The dashed line between pin 8 and pin 6 of connector X293 indicates that both pins belong to connector X293.
5. The dashed line from fuse F1 to pin 8 of connector X293 shows the positive supply of relay K11. If required, refer to cell **0670.3 Fuse Details** at fuse F1 for the complete line progressing with plug connections, line branches, wire colors and cross sections.
6. The dashed line with an arrow at splice X452 indicates that several wires lead to splice X452. All lines leading to the connection are illustrated in cell **6100.0 Central Body Electronics (ZKE)**. An interrupted line with an arrow indicates that only this one wire leads to another circuit.
7. The dashed line from pin 4 of connector X293 to ground X493 shows the ground supply for relay K11. If required, refer to cell **0670.4 Ground Distribution** at ground X493 for the complete line progression with all plug connections, line branches, wire colors, and cross sections.
8. The interrupted line from splice X452 with an **A** in the open arrow is continued on page 6160.0-02. Termination of wire 4 VI/SW from splice X452 with a wavy line indicates that the wire is continued on the opposite page.



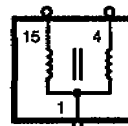
BATTERY



HEATING ELEMENT



VARIABLE RESISTANCE SENSOR  
VARIABLE CONTACT IS MOVED BY AN EXTERNAL FORCE



IGNITION COIL



FUSE DETAILS



LOUDSPEAKER OR HORN



VARIABLE RESISTOR  
RESISTANCE IS CHANGED BY TEMPERATURE OR PRESSURE



CONTROL/POWER ELECTRONICS



FUSIBLE LINK



LIGHT



DIODE CURRENT CAN FLOW ONLY IN DIRECTION OF ARROW



HALL EFFECT SENSOR



RADIO



THERMO SWITCH



PERMANENT MAGNET MOTOR ONE SPEED



ZENER DIODE TO REGULATE VOLTAGE



TRANSISTORIZED SWITCH



SOLENOID



PERMANENT MAGNET MOTOR TWO SPEEDS



LIGHT EMITTING DIODE



INDUCTIVE SENSOR



SOLENOID CONTROLLED VALVE OR CLUTCH SOLENOID



KNOCK SENSOR



OXYGEN SENSOR



VEHICLE SPEED SENSOR



# SYMBOLS



ENTIRE COM-  
PONENT SHOWN



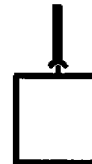
PART OF COM-  
PONENT SHOWN



COMPONENT WITH  
SCREW TERMINALS



COMPONENT  
CASE ATTACHED  
DIRECTLY TO  
METAL PART OF  
CAR (GROUNDED)



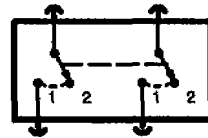
CONNECTOR  
ATTACHED TO  
COMPONENT



CONNECTOR  
ATTACHED TO  
COMPONENT  
LEAD (PIGTAIL)



ONE POLE, TWO  
POSITION SWITCH

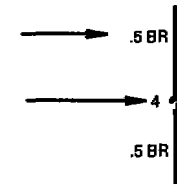


SWITCHES THAT  
MOVE TOGETHER

DASHED LINE SHOWS  
A MECHANICAL CON-  
NECTION BETWEEN  
SWITCHES

WIRE COLOR	
BL	BLUE
BR	BROWN
GE	YELLOW
GN	GREEN
GR	GRAY
OR	ORANGE
RS	PINK
RT	RED
SW	BLACK
VI	VIOLET
WS	WHITE
TR	TRANSPARENT

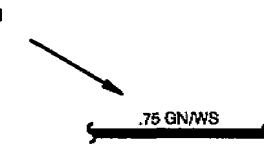
WIRE INSULATION  
IS ONE COLOR



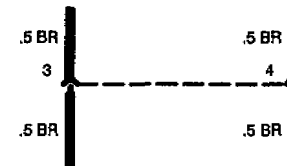
PIN NUMBER

CONNECTOR REF-  
ERENCE NUMBER  
FOR COMPONENT  
LOCATION CHART

WIRE INSULATION  
IS ONE COLOR  
WITH ANOTHER  
COLOR STRIPE  
(GREEN WITH  
WHITE)



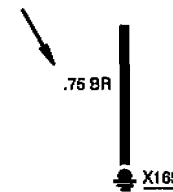
A WAVY LINE  
MEANS WIRE IS  
CONTINUED



TWO CONNE-  
CTIONS (PINS) IN  
THE SAME  
CONNECTOR

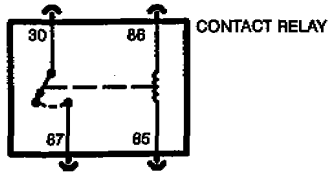
DASHED LINE INDI-  
CATES TERMINALS  
OF THE SAME  
CONNECTOR

WIRE SIZE IN MM  
SQUARED

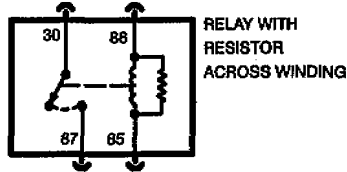


WIRE ATTACHED  
TO METAL PART OF  
CAR (GROUNDED)

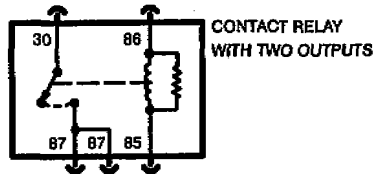
GROUND NUMBERED  
FOR REFERENCE ON  
COMPONENT LOCATION  
CHART



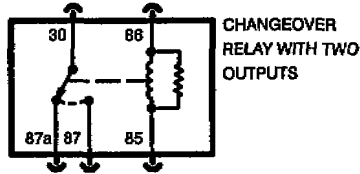
CONTACT RELAY



RELAY WITH RESISTOR ACROSS WINDING

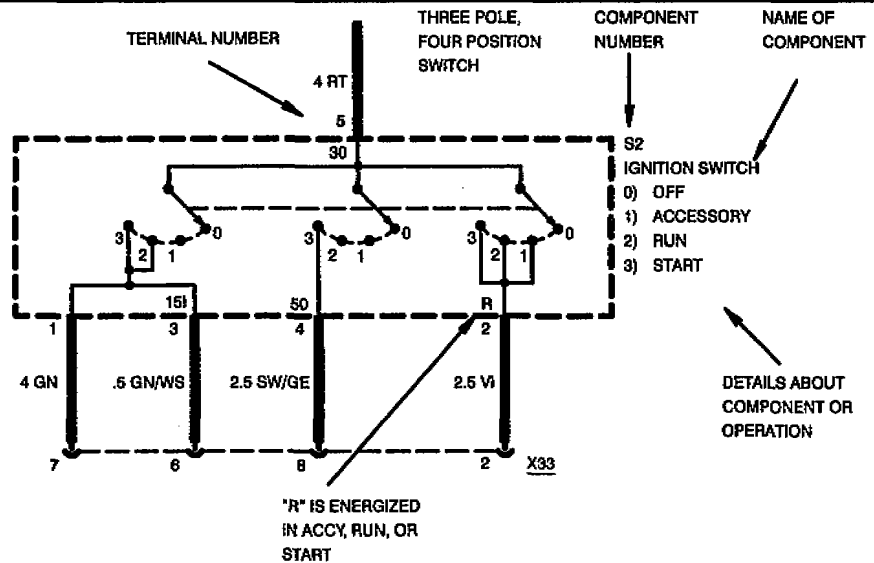


CONTACT RELAY WITH TWO OUTPUTS



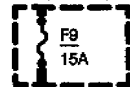
CHANGEOVER RELAY WITH TWO OUTPUTS

TERMINAL NUMBER	DESCRIPTION
30	RELAY INPUT
85	RELAY OUTPUT (WINDING)
86	RELAY INPUT (WINDING)
87	RELAY OUTPUT (ENERGIZED)
87a	RELAY OUTPUT (AT REST)



TERMINAL NUMBER	DESCRIPTION	TERMINAL NUMBER	DESCRIPTION
50	VOLTAGE: IGNITION SWITCH IN START	15I	VOLTAGE: IGNITION SWITCH IN RUN
30	VOLTAGE: SUPPLIED AT ALL TIMES	R	VOLTAGE: IGNITION SWITCH IN ACCESSORY, RUN OR START
15	VOLTAGE: IGNITION SWITCH IN RUN OR START	31	GROUND

**HOT AT ALL TIMES**



INDICATES THAT FUSE 9 IS SUPPLIED WITH POWER AT ALL TIMES

POWER STATUS

**HOT AT ALL TIMES**

**HOT IN RUN AND START**

**HOT IN ACCY, RUN AND START**

DESCRIPTION

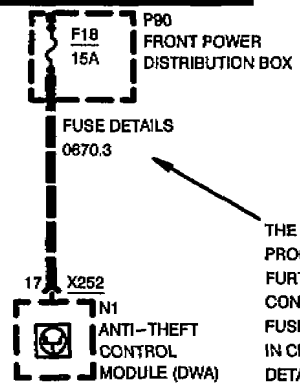
VOLTAGE: SUPPLIED AT ALL TIMES

VOLTAGE: IGNITION SWITCH IN RUN OR START

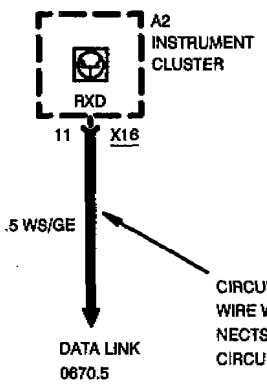
VOLTAGE: IGNITION SWITCH IN ACCESSORY, RUN OR START

**BMW**  
**3** **SYMBOLS**

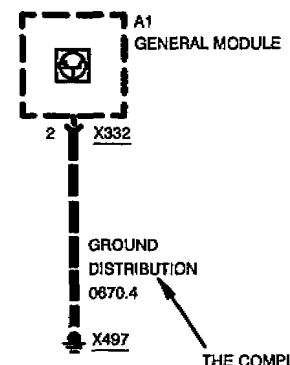
**HOT IN ACCY, RUN AND START**



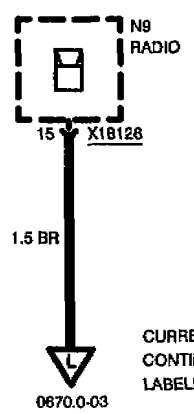
THE COMPLETE WIRE PROGRESSION AND FURTHER CIRCUITS CONNECTED TO FUSE 18 ARE SHOWN IN CELL "0670.3 FUSE DETAILS" AT FUSE 18



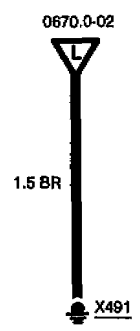
CIRCUIT REFERENCE—A WIRE WHICH CONNECTS TO ANOTHER CIRCUIT



THE COMPLETE WIRE PROGRESSION AND FURTHER CIRCUITS CONNECTED TO GROUND X497 ARE SHOWN IN CELL "0670.4 GROUND DISTRIBUTION" AT GROUND X497



CURRENT PATH IS CONTINUED AS LABELED



ARROW SHOWS DIRECTION OF CURRENT FLOW AND IS REPEATED WHERE CURRENT PATH CONTINUES

**BMW 3** **SYMBOLS**  
**BLOCK DIAGRAM**

