

1995

BMW

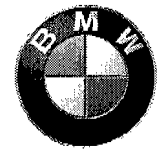
**525i, 525it, 530i,
530it, 540i (E34)**

Electrical

Troubleshooting

Manual

Vehicles Produced 5/94 to 12/95



ELECTRICAL TROUBLESHOOTING MANUAL

5 SERIES – E34 (525i/t, 530i/t, 540i)

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MODEL YEAR 1995

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REAR WINDOW LIMIT SWITCH, S170	5126.0-07	SEAT/MIRROR MEMORY SYSTEM (SM/SPM)	5200.1-00
REAR WINDOW MOTOR, M96	5126.0-07	SEATBACK HEATER, DRIVER'S, E56	5203.0-00
REAR WINDOW OPENING SWITCH, S147	6162.0-01	SEATBACK HEATER, PASSENGER'S, E59	5203.0-00
REAR WINDOW WASHER PUMP, M95	6162.0-01	SEATBACK POTENTIOMETER, R7	5200.1-03
REAR WINDOW WIPER MOTOR, M94	6162.0-01	SEATBACK RECLINER MOTOR, DRIVER'S, M53	5200.0-00
REAR WINDOW WIPER/WASHER CONTROL	6162.0-00	SEATBACK RECLINER MOTOR, PASSENGER'S, M58	5200.0-03
REAR WIPER/WASHER FLUID LEVEL SWITCH, S176	6200.0-11	SECONDARY AIR PUMP RELAY, K6304	1210.11-11
REAR WIPER/WASHER INTERVAL CONTROL MODULE, A36	6162.0-00	SECONDARY AIR PUMP VALVE, B6163	1210.11-11
RECIRCULATION FLAP MOTOR, M40	6450.5-04	SECONDARY AIR PUMP, M63	1210.11-11
RELAY MODULE, A5	6100.0-05	SHIFT LOCK, S8522	2460.2-06
REMOTE LOCKING RECEIVER, N13y	6610.0-00	SHIFT LOCK, Y8522	2460.7-03
RESISTOR, R6240	0670.4-24	SIDE MEMORY MIRROR, DRIVER'S, Y9	5200.1-07
RESISTOR, R6240	0670.4-27	SIDE MEMORY MIRROR, PASSENGER'S, Y10	5200.1-08
REVERSING LIGHT SWITCH, S8524	6322.0-00	SIDE MIRROR, DRIVER'S, Y5	5116.0-01
SEAT BELT SWITCH, DRIVER'S, S58	3234.0-01	SIDE MIRROR, PASSENGER'S, Y6	5116.0-01
SEAT BELT SWITCH, PASSENGER'S, S59	3234.0-01	SLIP CONTROL (ABS)	3450.0-00
SEAT CONTROL SWITCH, DRIVER'S SEAT, S51	5200.0-00	SLIP CONTROL 5 (ASC 5)	3450.5-00
SEAT CONTROL SWITCH, PASSENGER'S SEAT, S56	5200.0-02	SLIP CONTROL MODULE (ABS), A7	3450.0-00
SEAT CUSHION MOVEMENT POTENTIOMETER, R9	5200.1-02	SLIP CONTROL MODULE (ABS/ASC), A52	3450.5-00
SEAT CUSHION REAR HEIGHT POTENTIOMETER, R8	5200.1-02	SPEAKER, LEFT FRONT, H41	6561.1-00
SEAT CUSHION TILT MOTOR, DRIVER'S, M50	5200.0-01	SPEED SENSOR - ABS, LEFT REAR, B4	3450.0-04
SEAT CUSHION TILT MOTOR, PASSENGER'S, M61	5200.0-02	SPEED SENSOR - ABS, LEFT FRONT, B2	3450.0-04
SEAT HEADREST MOTOR, PASSENGER'S, M57	5200.0-03	SPEED SENSOR - ABS, LEFT FRONT, B2	3450.5-06
SEAT HEATER SWITCH, DRIVER'S SEAT, S53	5203.0-00	SPEED SENSOR - ABS, LEFT REAR, B4	3450.5-06
SEAT HEATER SWITCH, PASSENGER'S SEAT, S54	5203.0-00	SPEED SENSOR - ABS, RIGHT FRONT, B1	3450.0-04
SEAT HEATER, DRIVER'S, E57	5203.0-00	SPEED SENSOR - ABS, RIGHT FRONT, B1	3450.5-06
SEAT HEATER, PASSENGER'S, E58	5203.0-00	SPEED SENSOR - ABS, RIGHT REAR, B3	3450.0-04
SEAT HEIGHT MOTOR, DRIVER'S, M52	5200.0-00	SPEED SENSOR - ABS, RIGHT REAR, B3	3450.5-06
SEAT HEIGHT POTENTIOMETER, R6	5200.1-03	SPlice LOCATION VIEWS	8000.0-00
SEAT LUMBAR SUPPORT MOTOR, DRIVER'S, M55	5212.0-00	START	1240.0-00
SEAT LUMBAR SWITCH, DRIVER'S, S52	5212.0-00	STARTER IMMOBILIZATION RELAY, K1w	1240.0-01
SEAT MOVEMENT MOTOR, DRIVER'S, M51	5200.0-01	STARTER, M6510	1240.0-01
		STEERING COLUMN LENGTH ADJUST MOTOR, M82	3231.0-00



STEERING COLUMN POSITION SWITCH, S119z	3231.0-00	TRUNK LID SWITCH, S61	6320.0-01
SUNROOF MOTOR, M24	5410.0-03	TRUNK LIGHT ASSEMBLY, LEFT, E46	6320.0-01
SUNROOF POSITION SWITCH, S39	5410.0-02	TRUNK LIGHT ASSEMBLY, RIGHT, E47	6320.0-01
SUNROOF SWITCH, S38	5410.0-02	TRUNK LIGHT, LEFT H90	6320.0-01
SUNROOF SWITCH, S38	5410.2-01	TRUNK LIGHT, RIGHT, H91	6320.0-01
SUPPLEMENTAL RESTRAINT SYSTEM		TRUNK LOCK MOTOR, M17	5126.0-05
CONTROL MODULE, A12	3234.0-00	TURN LIGHT, LEFT FRONT, H7	6313.0-02
SUPPLEMENTAL RESTRAINT SYSTEM (AIR BAG)	3234.0-00	TURN LIGHT, LEFT REAR, H6	6313.0-02
SUPPRESSION FILTER, C900	6424.0-01	TURN LIGHT, RIGHT FRONT, H4	6313.0-02
SYMBOLS	0140.0-00	TURN LIGHT, RIGHT REAR, H5	6313.0-02
TAIL LIGHT, LEFT, H25	6314.0-01	TURN/HAZARD LIGHTS	6313.0-00
TAIL LIGHT, RIGHT, H30	6314.0-01	UNLOADER RELAY, TERMINAL 15, K9	0670.2-06
TELEPHONE HANDSET, U4	6561.0-01	UNLOADER RELAY, TERMINAL 61, K61	1230.0-00
TELEPHONE INTERFACE US, A192	6561.0-01	UNLOADER RELAY, TERMINAL R, K3	0670.2-06
TELEPHONE TRANSCEIVER, H38	6561.0-00	VALVE RELAY (ABS/ASC), K95	3450.0-02
TEMPERATURE SWITCH, B6235	1290.0-00	VALVE RELAY (ABS/ASC), K95	3450.5-02
TEMPERATURE SWITCH, S36	6454.0-00	VEHICLE SPEED SENSOR, B10	6200.0-05
THIGH SUPPORT MOTOR, DRIVER'S, M65	5200.0-04	WASHER FLUID LEVEL SWITCH, S64	6200.0-11
THIGH SUPPORT MOTOR, PASSENGER'S, M66	5200.0-04	WASHER JET HEATER, LEFT, E51	6169.0-00
THIGH SUPPORT POTENTIOMETER, R15	5200.0-06	WASHER JET HEATER, RIGHT, E52	6169.0-00
THIGH SUPPORT SWITCH, DRIVER'S, S93	5200.0-04	WASHER PUMP, M4	6160.0-00
THIGH SUPPORT SWITCH, PASSENGER'S, S94	5200.0-04	WATER VALVE ASSEMBLY, Y4	6450.5-01
THROTTLE FLAP HEATER, E104	3450.5-04	WHEEL CAMBER CONTROL MODULE, B22	6200.0-13
THROTTLE POSITION SENSOR, R6252	1210.11-06	WINDOW LIMIT SWITCH, DRIVER'S, S43	5133.0-01
THROTTLE POSITION SENSOR, R6252	1210.13-05	WINDOW LIMIT SWITCH, RIGHT REAR, S46	5133.0-03
TRANSMISSION CONTROL MODULE (AGS), A8600	2460.7-00	WINDOW LIMIT SWITCH, S44	5133.0-01
TRANSMISSION CONTROL MODULE (AGS), A8600	2460.8-00	WINDOW LIMIT SWITCH, S45	5133.0-03
TRANSMISSION CONTROL MODULE (EGS), A8500	2460.2-00	WINDOW MONITORING SWITCH	
TRANSMISSION POSITION INDICATOR LIGHT, E82	6300.0-03	(DWA), PASSENGER'S, S99	6575.3-06
TRANSMISSION VALVE UNIT, Y8505	2460.2-01	WINDOW MONITORING SWITCH	
TRANSMISSION VALVE UNIT, Y8505w	2460.7-01	(DWA), RIGHT REAR, S101	6575.3-06
TRANSMISSION VALVE UNIT, Y8505w	2460.8-01	WINDOW MONITORING SWITCH	
TRANSMITTER MODULE (EWS II), A835	6135.0-01	(DWA), LEFT REAR, S102	6575.3-06
TRUNK COMPARTMENT LIGHT, E32	6320.0-01	WINDOW MONITORING SWITCH (DWA), DRIVER'S,	
TRUNK LID LIGHT, E33w	6320.0-02	S100	6575.3-06



INDEX

WINDOW MOTOR, DRIVER'S, M21	5133.0-04
WINDOW MOTOR, LEFT REAR, M20	5133.0-04
WINDOW MOTOR, PASSENGER'S, M23	5133.0-05
WINDOW MOTOR, RIGHT REAR, M22	5133.0-05
WINDOW SWITCH, LEFT REAR, S41	5133.0-01
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WIPER RELAY, K11	6160.0-00
WIPER/WASHER SWITCH, S5	6160.0-00
WIPER/WASHER SWITCH, S5	6162.0-00
WIPER/WASHER SWITCH, S5	6167.0-01
ZKE CENTRAL LOCKING (ZV)	5126.0-00
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ZKE INTERIOR LIGHTS CONTROL (IB)	6330.0-00
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ZKE SUNROOF (SHD)	5410.0-00
ZKE WIPER/WASHER CONTROL	6160.0-00

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 1 m 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.

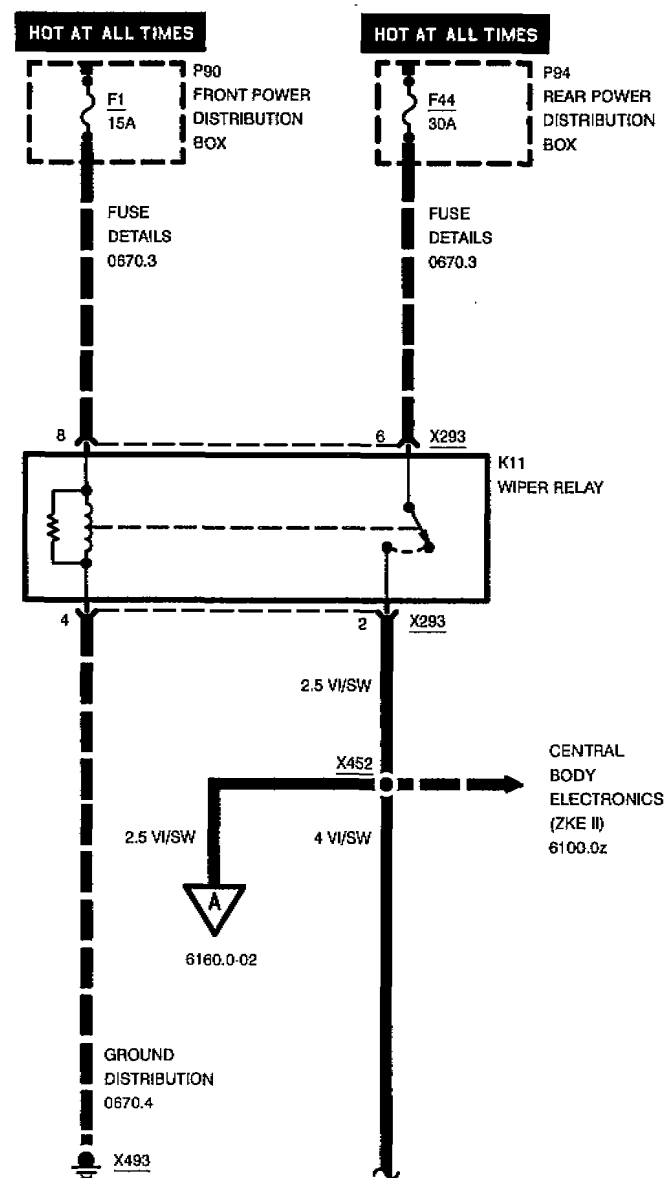
All circuit symbols used are listed and explained in cell **0140.0 Symbols**.

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 **8500.0 Connector Views** diagrams of connectors with more than 2 pins are illustrated.

Example

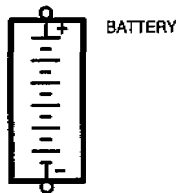
General conventions can be explained based on the following schematic example.





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 P94).
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 II)**. 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.



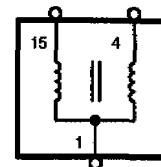
BATTERY



SOLENOID CONTROLLED VALVE
OR CLUTCH SOLENOID



VARIABLE RESISTANCE
SENSOR VARIABLE
CONTACT IS MOVED BY
AN EXTERNAL FORCE



IGNITION COIL



FUSE DETAILS



HEATING ELEMENT



VARIABLE RESISTOR
RESISTANCE IS CHANGED BY
TEMPERATURE OR PRESSURE



CONTROL/POWER ELECTRONICS



FUSIBLE LINK



LOUDSPEAKER OR HORN



INDUCTIVE SENSOR



RADIO



CIRCUIT BREAKER



LIGHT



DIODE
CURRENT CAN FLOW
ONLY IN DIRECTION OF
ARROW



TRANSISTORIZED SWITCH



OXYGEN SENSOR



Q7
ZENER DIODE
TO REGULATE VOLTAGE



VEHICLE SPEED SENSOR



THERMO SWITCH



PERMANENT MAGNET MOTOR
ONE SPEED



PERMANENT MAGNET MOTOR
TWO SPEEDS

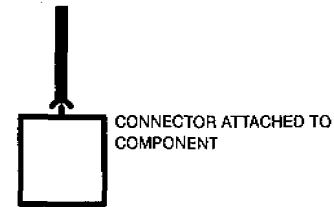
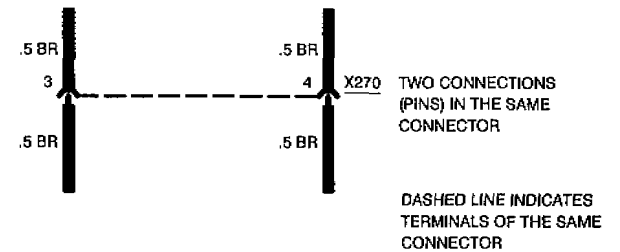
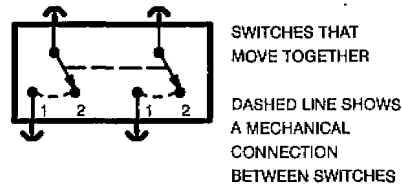
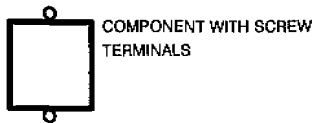
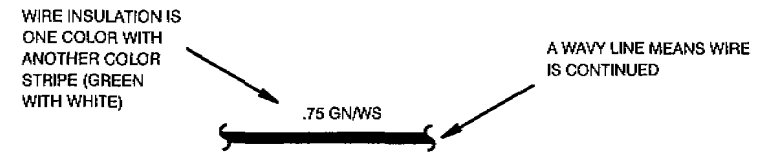
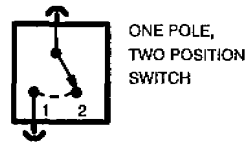
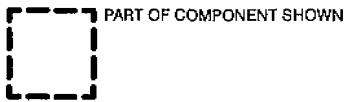
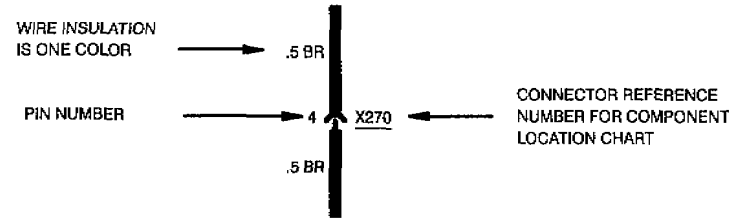
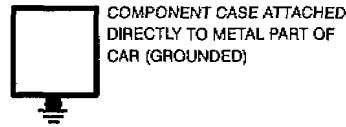


LIGHT EMITTING DIODE

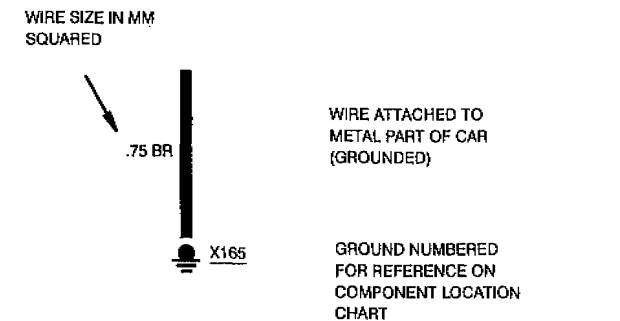
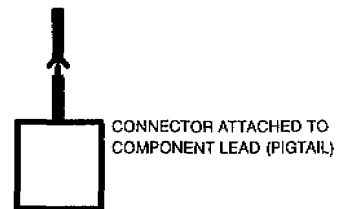


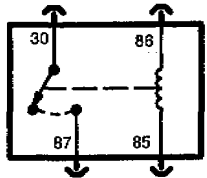
KNOCK SENSOR

SYMBOLS

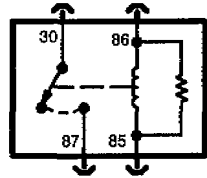


WIRE COLOR	
BL	BLUE
BR	BROWN
GE	YELLOW
GN	GREEN
GR	GRAY
OR	ORANGE
RS	PINK
RT	RED
SW	BLACK
VI	VIOLET
WS	WHITE
TR	TRANSPARENT

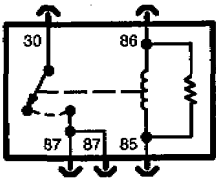




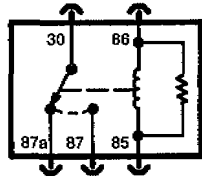
CONTACT RELAY



RELAY WITH RESISTOR ACROSS WINDING



CONTACT RELAY WITH TWO OUTPUTS



CHANGEOVER RELAY WITH TWO OUTPUTS

TERMINAL NUMBER DESCRIPTION

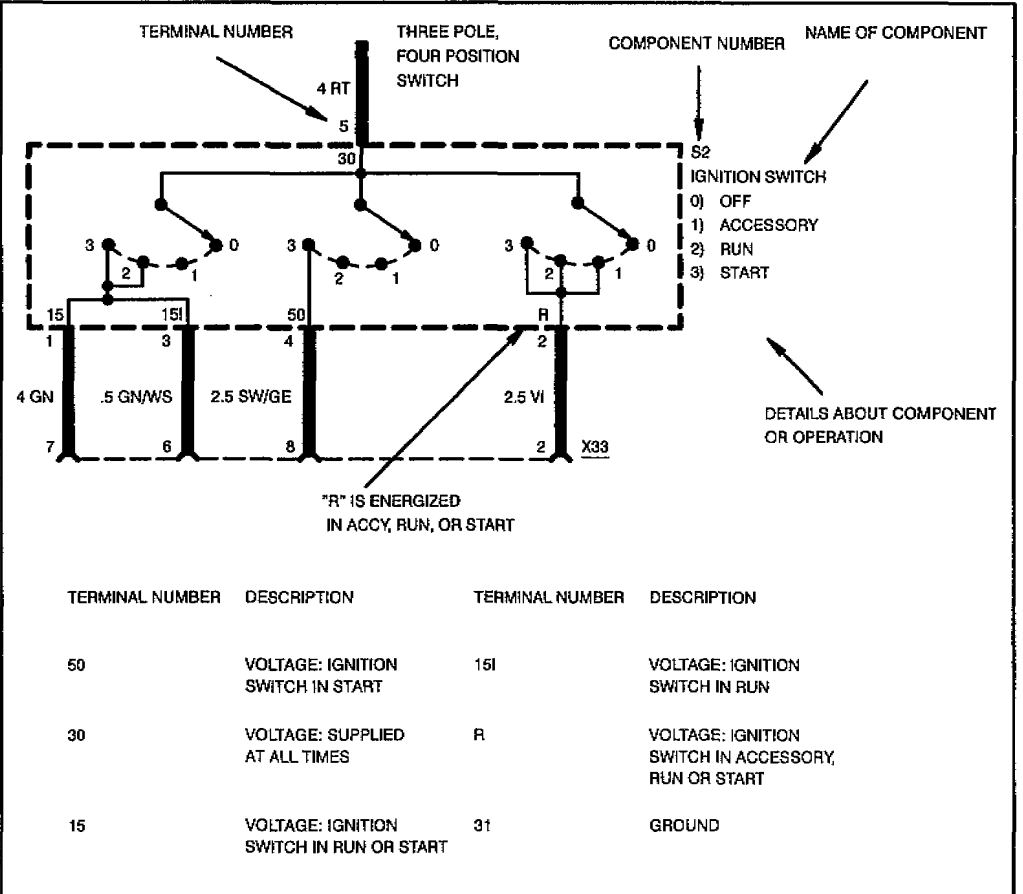
30 RELAY INPUT

85 RELAY OUTPUT (WINDING)

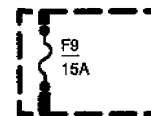
86 RELAY INPUT (WINDING)

87 RELAY OUTPUT (ENERGIZED)

87a RELAY OUTPUT (AT REST)



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

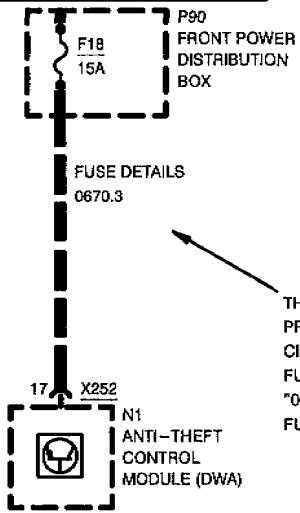
VOLTAGE: IGNITION SWITCH IN RUN OR START

VOLTAGE: IGNITION SWITCH IN ACCESSORY, RUN OR START

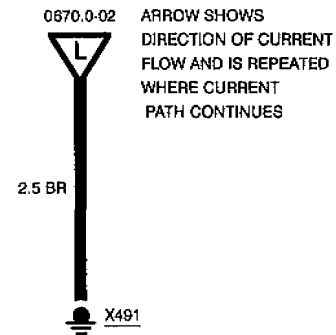
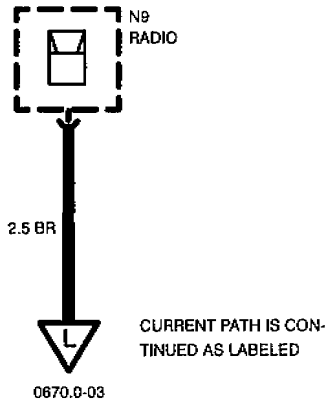
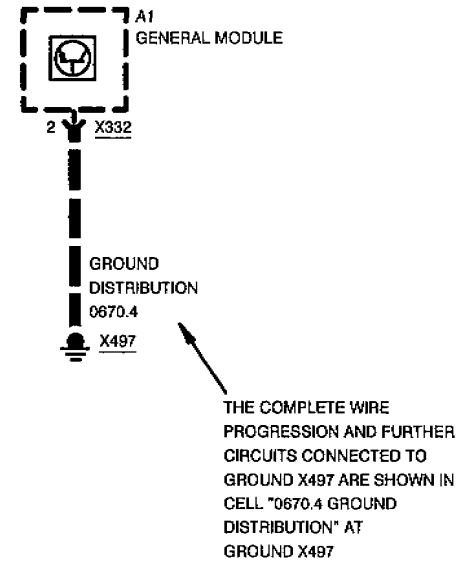
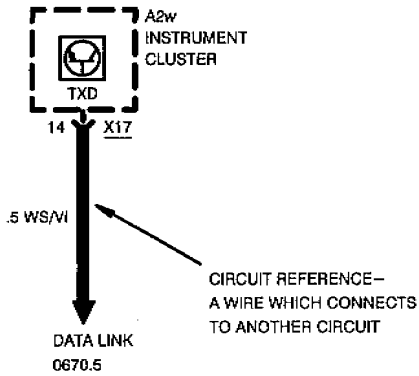


SYMBOLS

HOT IN ACCY, RUN AND START



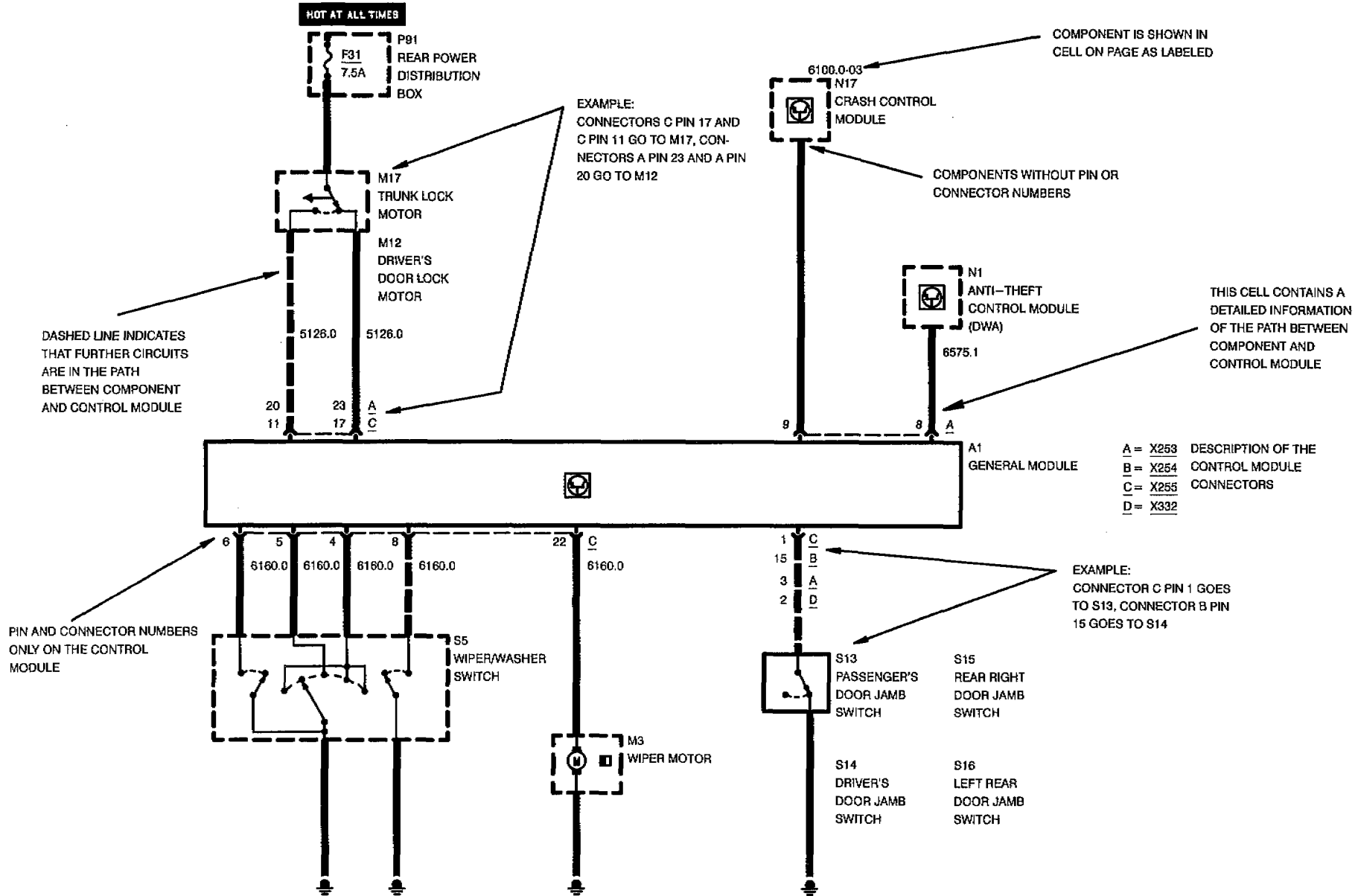
THE COMPLETE WIRE PROGRESSION AND FURTHER CIRCUITS CONNECTED TO FUSE 18 ARE SHOWN IN CELL "0670.3 FUSE DETAILS" AT FUSE 18





SYMBOLS

BLOCK DIAGRAM





0670.0