

1992
BMW 525i, 525it, 535i, M5 (E34)
Electrical
Troubleshooting
Manual
Vehicles Produced 7/91 to 9/92

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THIGH SUPPORT SWITCH, DRIVER'S, S93	5200.0-04
THIGH SUPPORT SWITCH, PASSENGER'S, S94	5200.0-04
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THROTTLE POSITION SENSOR, S6250	1210.2-01
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THROTTLE POSITION SENSOR, S6251	2460.0-02
TRANSMISSION CONTROL MODULE (EGS), A8500	2460.0-00
TRANSMISSION CONTROL MODULE (EGS), A8500	2460.2-00
TRANSMISSION POSITION INDICATOR LIGHT, E82	6300.0-03
TRANSMISSION RANGE SELECTOR LIGHT, E9500	6300.0-03
TRANSMISSION VALVE UNIT, Y8505	2460.0-04
TRANSMISSION VALVE UNIT, Y8505	2460.2-01
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TRUNK LID LIGHT, E33	6320.0-02
TRUNK LID SWITCH, S61	6320.0-01
TRUNK LIGHT, LEFT, H90	6320.0-01

TRUNK LIGHT, RIGHT, H91	6320.0-01
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TURN LIGHT, LEFT REAR, H6	6313.0-02
TURN LIGHT, RIGHT FRONT, H4	6313.0-02
TURN LIGHT, RIGHT REAR, H5	6313.0-02
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UNLOADER RELAY, TERMINAL R, K3	0670.2-05
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VOLUME AIR FLOW SENSOR, B6233	1210.1-09
VOLUME AIR FLOW SENSOR, B6233	1210.2-09
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WHEEL CAMBER CONTROL MODULE, B22	6200.0-14
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WINDOW LIMIT SWITCH, LEFT REAR, S45	5133.0-03
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WINDOW MOTOR, DRIVER'S, M21	5133.0-04
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WINDOW MOTOR, RIGHT REAR, M22	5133.0-05
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WINDOW SWITCH, LEFT REAR, S41	5133.0-01
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WINDOW SWITCH ASSEMBLY, FRONT CONSOLE, S40	5133.0-00
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BMW
5

0110.0

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 which is only a few cm long. To enhance the clarity of the schematics, all connectors and splices between fuses and components as well as between grounds and components have been omitted. If this information should be required, it may be referenced in cells **0670.3 Fuse Details** and **0670.4 Ground Distribution**.

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

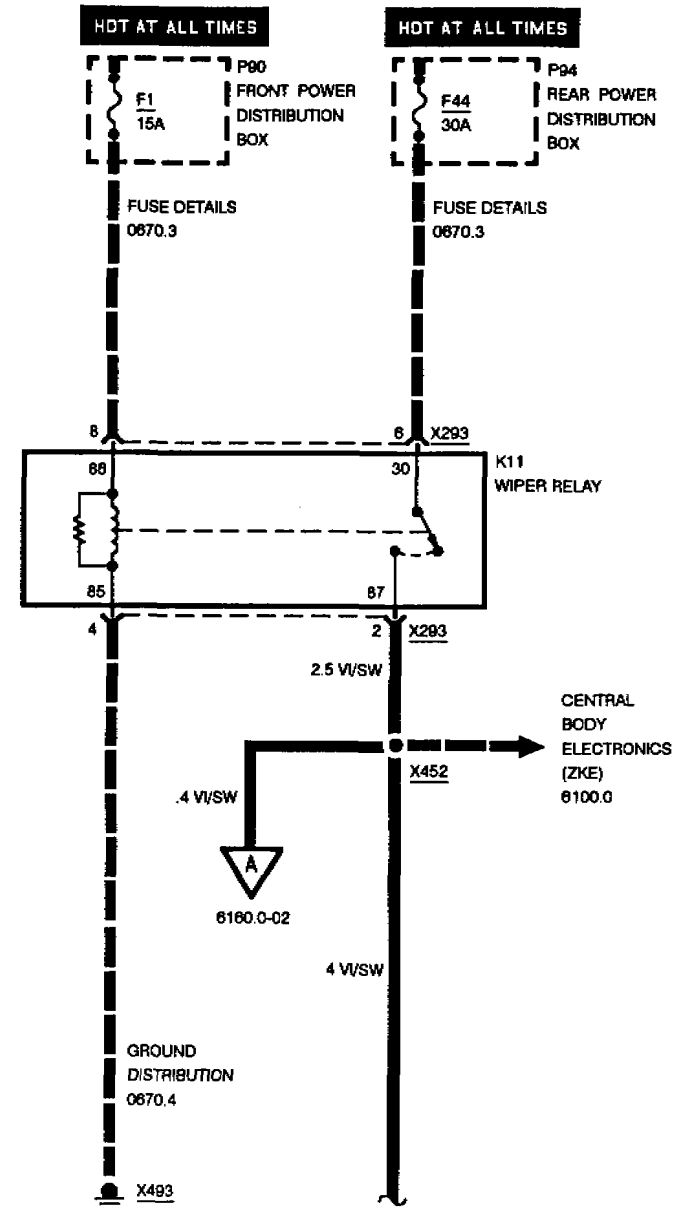
In cell **7000.0 Component Location Chart** all important connectors, ground points and components are listed in tabular form. It provides a precise description of the component locations in the vehicle.

In cell **7100.0 Component Location Views** the locations of the connectors and components which are difficult to locate are shown in photographs. In cell **8500.0 Connector Views** diagrams of all connectors with more than three 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.

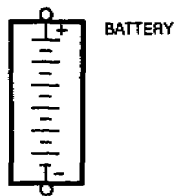




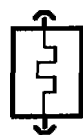
General Conventions

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 1 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.

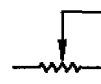
SYMBOLS



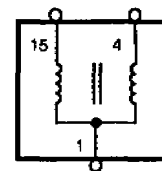
BATTERY



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



INDUCTIVE SENSOR



RADIO



CIRCUIT BREAKER



DIODE
CURRENT CAN FLOW ONLY IN DIRECTION OF ARROW



TRANSISTORIZED SWITCH



THERMO SWITCH



PERMANENT MAGNET MOTOR
ONE SPEED



ZENER DIODE
TO REGULATE VOLTAGE



OXYGEN SENSOR



SOLENOID



PERMANENT MAGNET MOTOR
TWO SPEEDS

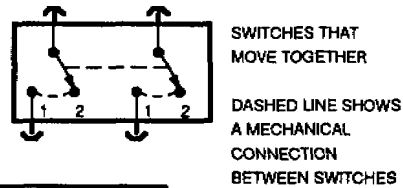
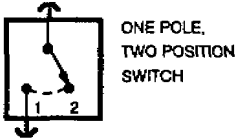
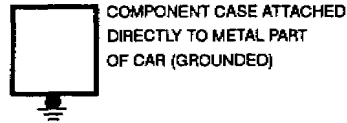
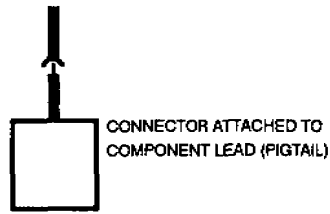


LIGHT EMITTING DIODE

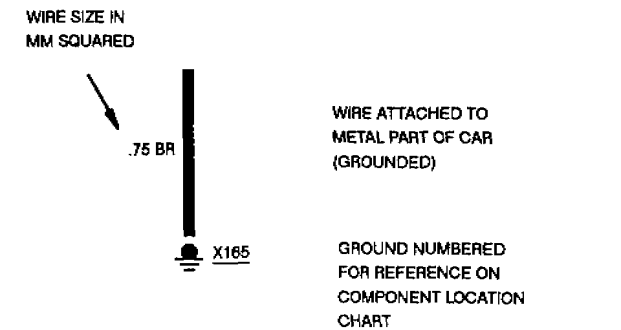
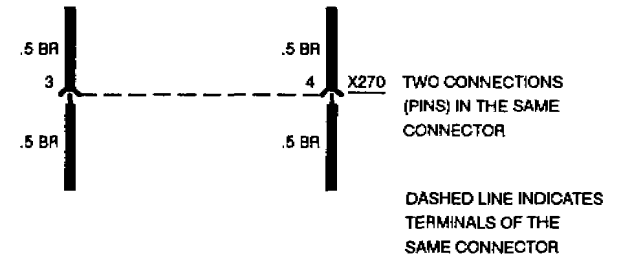
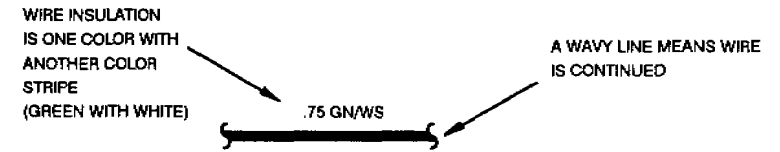
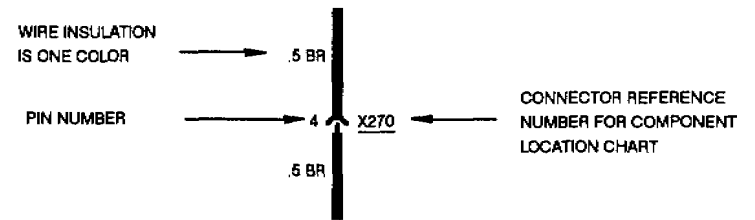
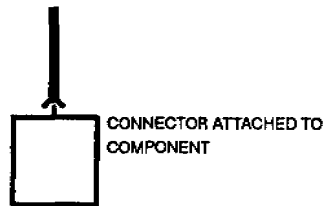


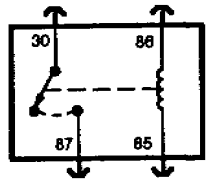
VEHICLE SPEED SENSOR

SYMBOLS

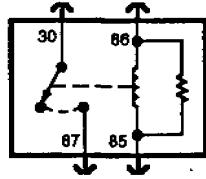


WIRE COLOR	
BL	BLUE
BR	BROWN
GE	YELLOW
GN	GREEN
GR	GRAY
OR	ORANGE
RS	PINK
RT	RED
SW	BLACK
VI	VIOLET
WS	WHITE
TR	TRANSPARENT

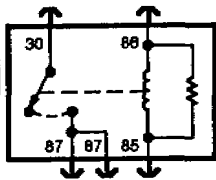




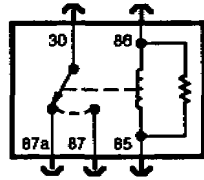
CONTACT RELAY



RELAY WITH RESISTOR ACROSS WINDING

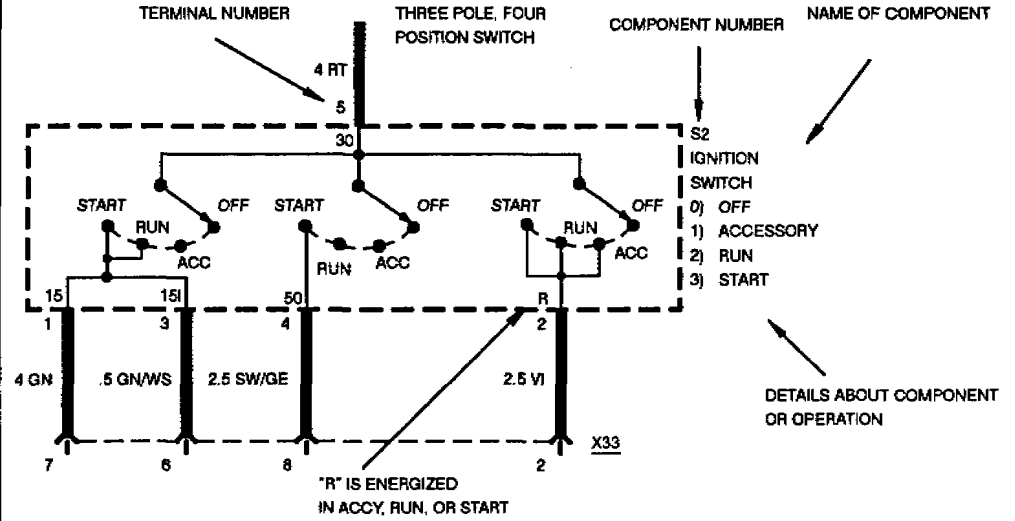


CONTACT RELAY WITH TWO OUTPUTS



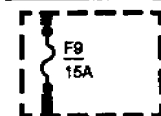
CHANGEOVER RELAY WITH TWO OUTPUTS

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



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

HDT AT ALL TIMES



INDICATES THAT FUSE 9 IS SUPPLIED WITH POWER AT ALL TIMES

POWER STATUS

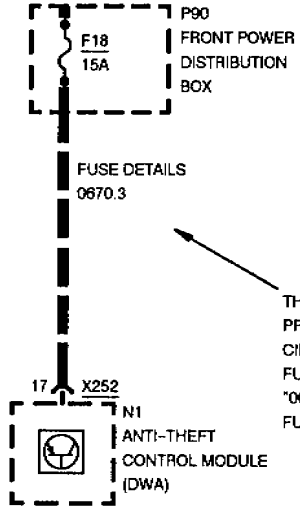
HDT AT ALL TIMES

HDT IN RUN AND START

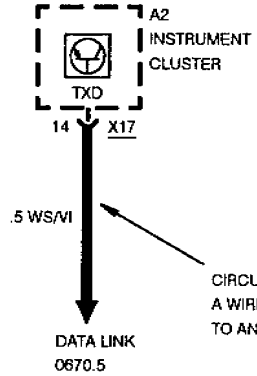
HDT IN ACCY, RUN AND START

DESCRIPTION
VOLTAGE: SUPPLIED AT ALL TIMES
VOLTAGE: IGNITION SWITCH IN RUN OR START
VOLTAGE: IGNITION SWITCH IN ACCESSORY, RUN OR START

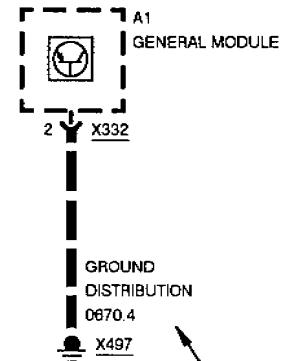
HOT IN ACCY, RUN AND START



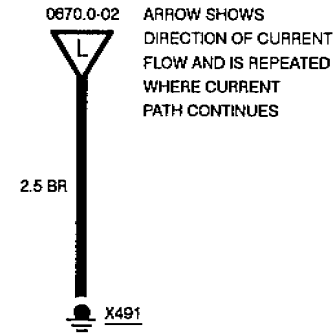
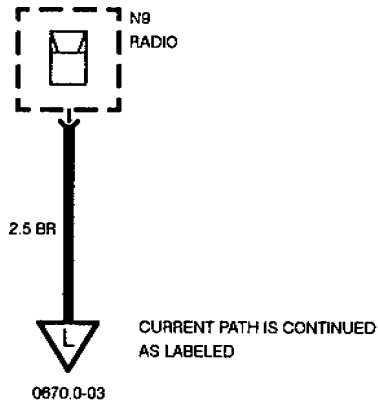
THE COMPLETE WIRE PROGRESSION AND FURTHER CIRCUITS CONNECTED TO FUSE 18 ARE SHOWN IN CELL "0670.3 FUSE DETAILS" AT FUSE 18



CIRCUIT REFERENCE- A WIRE WHICH CONNECTS TO ANOTHER CIRCUIT



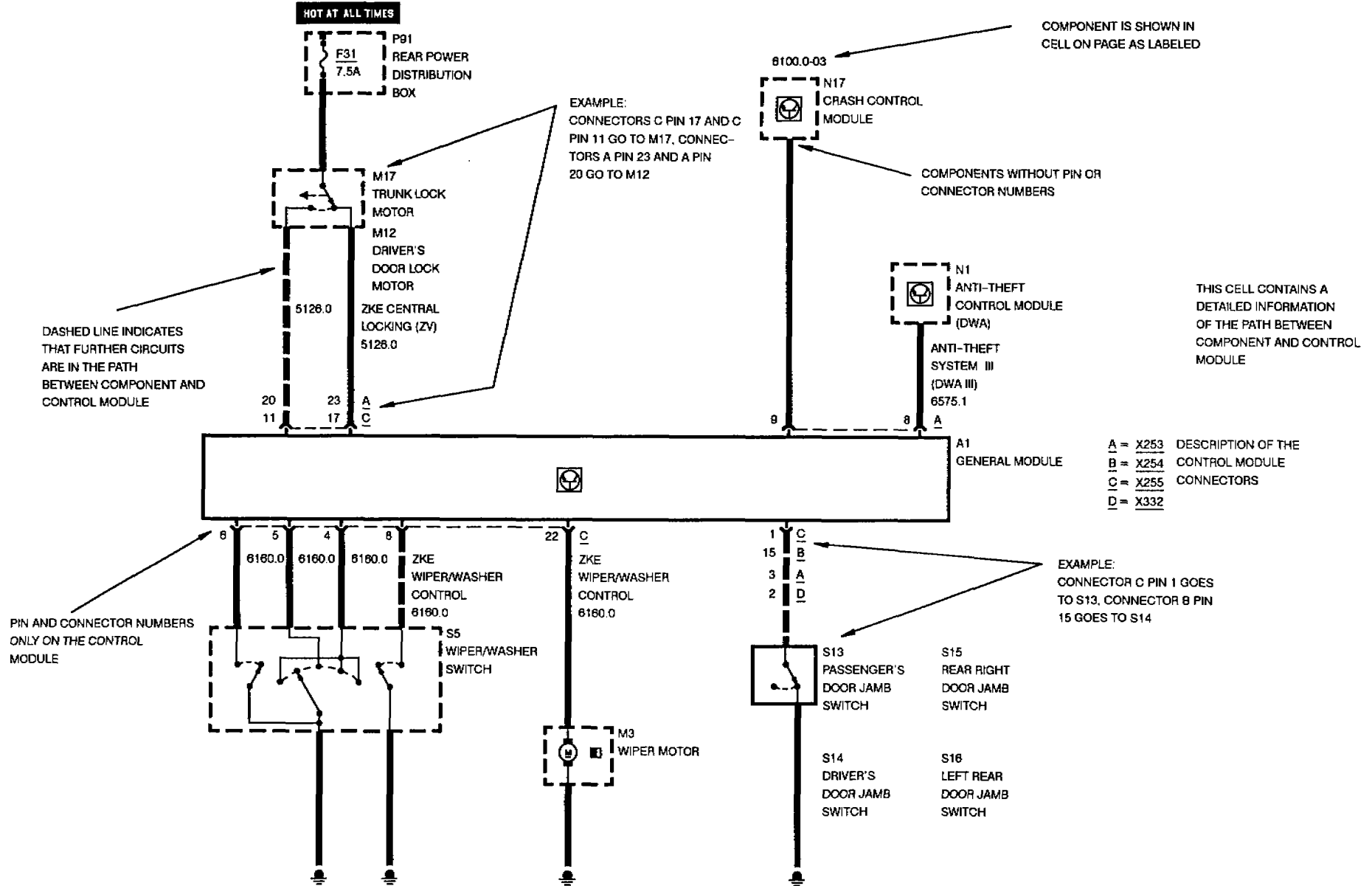
THE COMPLETE WIRE PROGRESSION AND FURTHER CIRCUITS CONNECTED TO GROUND X497 ARE SHOWN IN CELL "0670.4 GROUND DISTRIBUTION" AT GROUND X497





SYMBOLS

BLOCK DIAGRAM



BMW
5

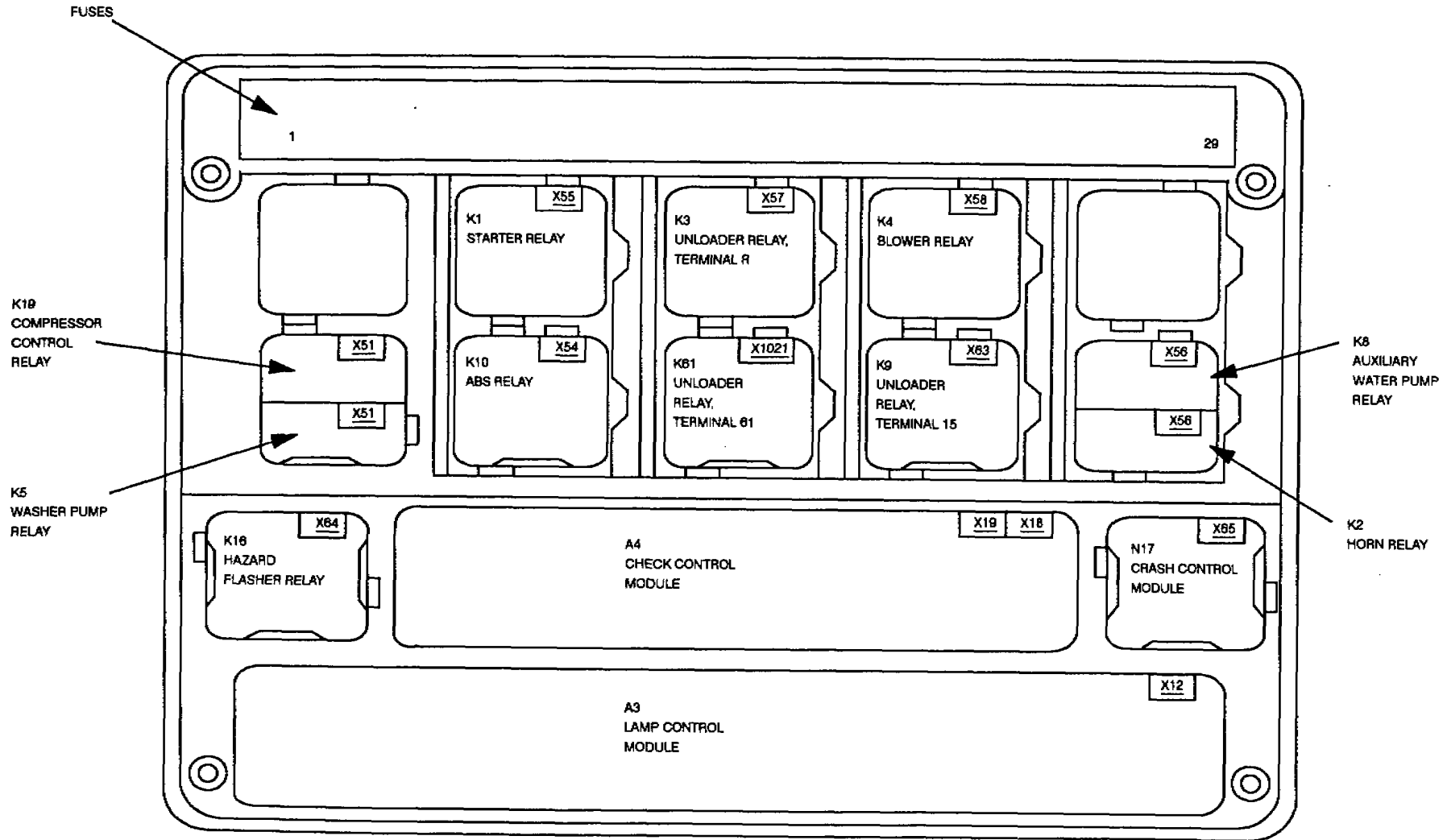
0670.0



POWER DISTRIBUTION CHART

FRONT POWER DISTRIBUTION BOX

ZKE





POWER DISTRIBUTION CHART

REAR POWER DISTRIBUTION BOX WITH ZKE

