

Electrical Function of Air-Conditioning System

1. Engagement of ignition will energize terminal 1 of temperature switch (1) via fuse 9 (12) and fan switch (10) via fuse 7 (11) of 15/54 (Fig. 2 or 3).
2. Turning temperature switch (1) clockwise will energize fan motor (5) — via preresistor 0.7 (6) via terminal 4 on temperature switch, and warning light (2). In addition, relay (6) terminal 30/87 (except USA vehicles), and electromagnetic clutch (7) will be energized via terminal 2 of temperature switch (Fig. 1 to 3).
3. Turn four-stage fan switch (10) clockwise to increase air volume.
4. Actuation of starter will simultaneously energize relay (4) terminal 86 via terminal 50 of starter, so that circuit to electromagnetic clutch will be broken during the starting operation.
5. For max. cooling, set temperature vacuum switch (1 and 34) to position "Inside", which will change the vacuum elements (29) for ambient air flaps to ambient air by means of vacuum switch (34).

Electrical Function of Supplementary Fan (27)

1. Engagement of ignition will energize terminal 30 and 86 of relay (24) via fuse No. 8 or 9 (13 or 12) of 15/54 (Fig. 2 or 3).
2. After reaching a coolant temperature of more than 62° C or a coolant water temperature of approx. 100° C, the respective temperature switch (3 or 8) will switch a ground connection to terminal 85 of relay (28) or on USA vehicles in addition via terminal 85 and 30 of relay (18); the supplementary fan (27) is energized via terminal 87 of relay (28) (Fig. 2 and 3).
3. A functional layout and color coding of supplementary harness for air-conditioning and supplementary fan for all vehicles except USA vehicles (electrical lines for air-conditioning system and supplementary fan are already contained in main harness) are shown in Fig. 4.

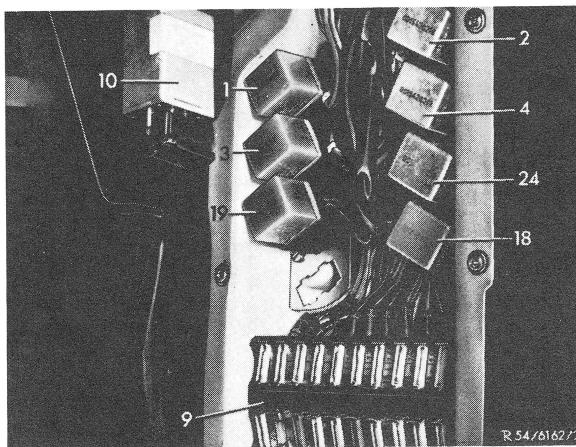


Fig. 1

Layout of relay

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|--|---|
| 1 Relay for fuel pump | 18 Relay for separating air-conditioner (supplementary fan) from exhaust cleaning (ignition changeover), on USA vehicles only |
| 2 Relay for starting valve | 19 Relay for air-conditioning system and exhaust (two-way valve) on USA vehicles |
| 3 Relay for electronic control unit | 24 Relay for supplementary fan |
| 4 Relay for starter terminal 50 or on USA vehicles relay for air-conditioner/starter terminal 50 | |
| 9 Fuses | |
| 10 Time switch for heatable rear window | |

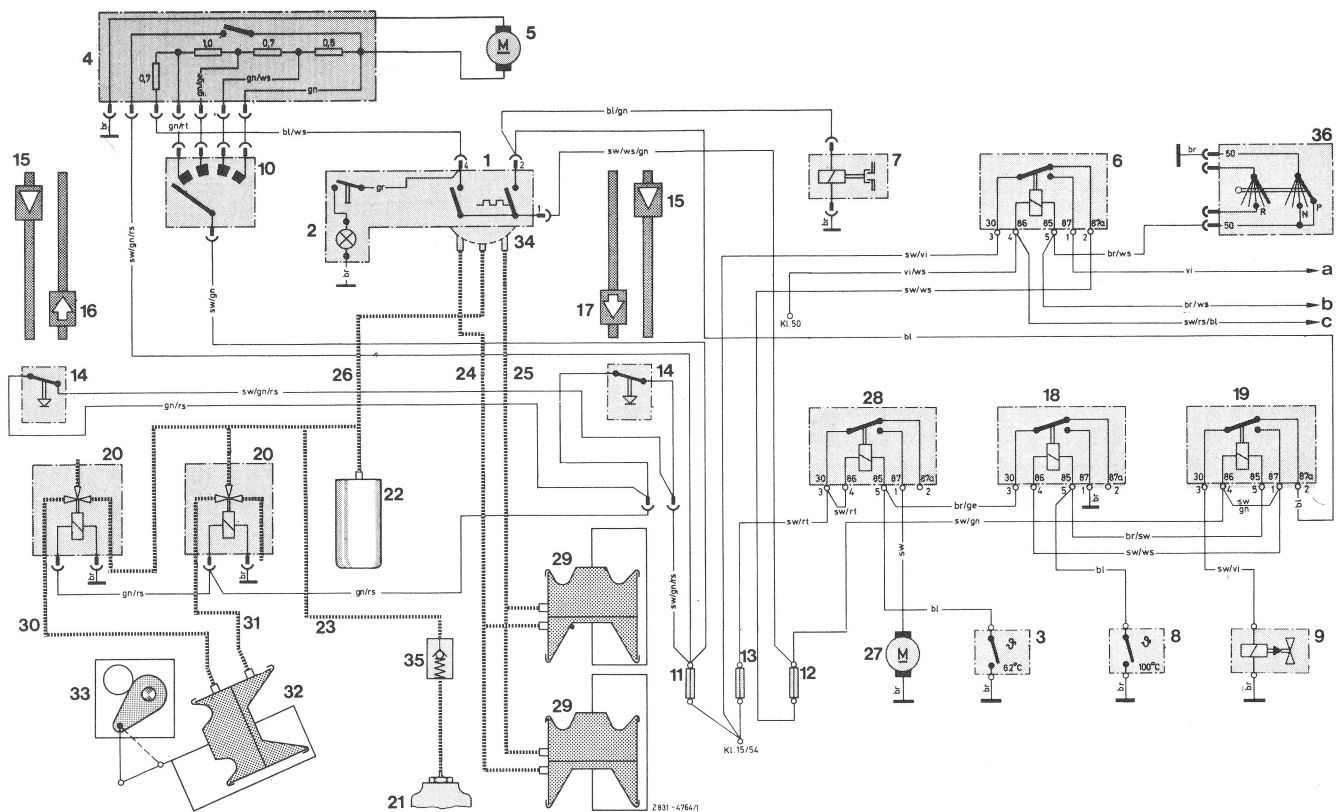


Fig. 3

Wiring diagram cooling and heating (USA vehicles)

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|---|--|--|
| a Starter | 10 Fan switch | 24 Vacuum line, light green |
| b Relay for seat belt warning system terminal 85 | 11 Fuse No. 7, 16 Amps. | 25 Vacuum line, dark green |
| c Relay for starting valve terminal 86 | 12 Fuse No. 9, 8 Amps. | 26 Vacuum line, medium green |
| | 13 Fuse No. 8, 8 Amps. | 27 Supplementary fan |
| 1 Temperature switch | 14 Micro switch, left or right | 28 Relay supplementary fan |
| 2 Warning light | 15 Heater lever left or right | 29 Vacuum element for ambient air flap |
| 3 Temperature switch (62° C coolant temperature) | 16 Lever for venting, top | 30 Vacuum line, red |
| 4 Series resistors | 17 Lever for venting, bottom | 31 Vacuum line, medium green |
| 5 Fans | 18 Relay separating air-conditioner (supplementary fan) from exhaust cleaner (ignition changeover) | 32 Vacuum element for water valve |
| 6 Relay air-conditioner/starter | 19 Relay exhaust (two-way valve) | 33 Water valve |
| 7 Electromagnetic clutch | 20 Three-way valve | 34 Vacuum switch |
| 8 Temperature switch (100° C cooling water temperature) | 21 Vacuum connection on intake pipe | 35 Check valve |
| 9 Two-way valve exhaust | 22 Vacuum supply tank | 36 Starter locking and backup light switch |
| | 23 Vacuum line, white | |

83.1 Electrical Function of Air-Conditioning System and Supplementary Fan

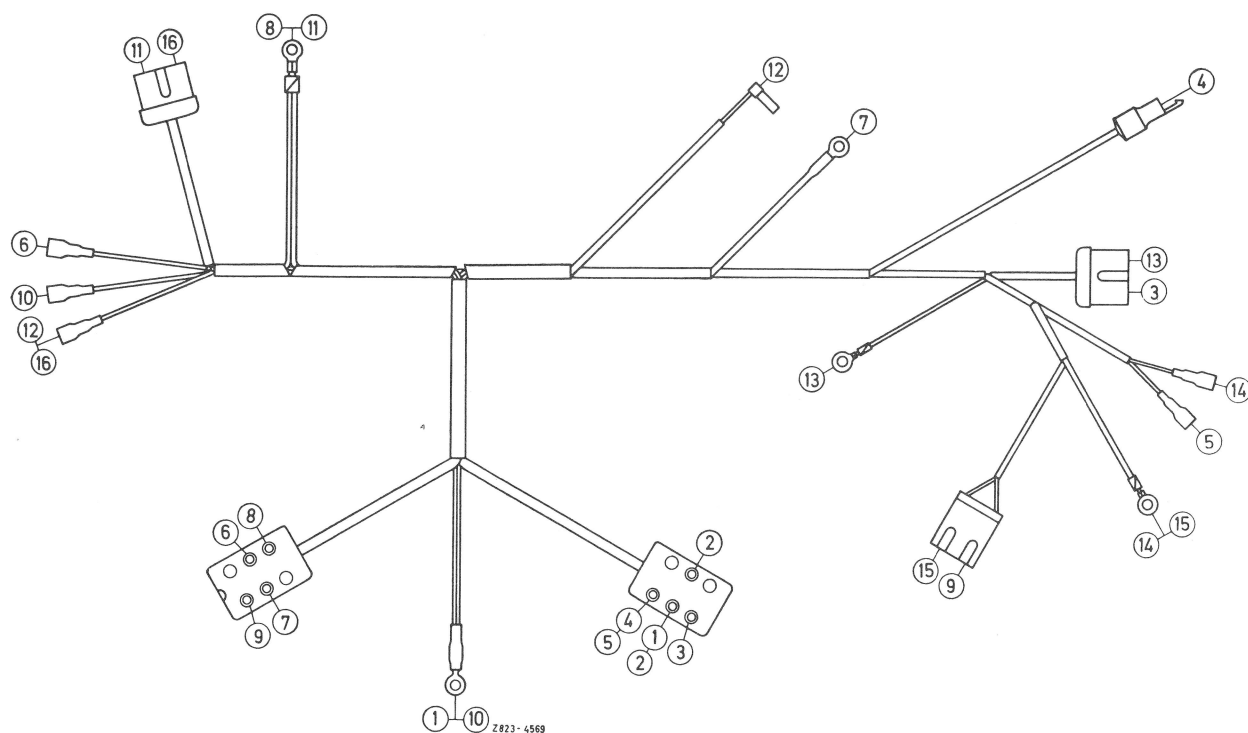


Fig. 4
Supplementary harness for air-conditioner and supplementary fan (on USA vehicles already in main harness)

Function Layout and Color Coding

Item No.	Line from	to	Color Code
1	Main fusebox 15/54 fuse 9	6-pole coupler term. 3 (relay (24), term. 30)	black/red
2	6-pole coupler term. 4 (relay (24), term. 86)	6-pole coupler term. 3 (relay (24), term. 30)	black/red
3	6-pole coupler term. 3 (relay (24), term. 87)	2-pole coupler suppl. fan	black
4	6-pole coupler term. 5 (relay (24), term. 85)	Temperature switch 100° C (cooling water thermostat)	blue
5	6-pole coupler term. 5 (relay (24), term. 85)	Temperature switch 62° C (receiver dehydrator)	blue
6	Temperature vacuum switch term. 2	6-pole coupler term. 3 (relay (4), term. 30)	black/blue
7	Cable connector term. 50 (starter)	6-pole coupler term. 4 (relay (4), term. 86)	lilac
8	Ground connection	6-pole coupler term. 5 (relay (4), term. 85)	brown
9	2-pole coupler refrigerant compressor	6-pole coupler term. 2 (relay (4), term. 87a)	blue/green
10	Main fusebox 15/54 fuse 9	Temperature vacuum switch term. 1	black/green
11	Ground connection	2-pole coupler temperature vacuum switch	brown
12	8-pole coupler term. 4 (resistors heating and cooling fan)	Temperature vacuum switch term. 4	blue/white
13	Ground connection	2-pole coupler suppl. fan	brown
14	Ground connection	Temperature switch 62° C (receiver dehydrator)	brown
15	Ground connection	2-pole coupler refrigerant compressor	brown
16	Temperature vacuum switch	2-pole coupler temperature vacuum switch term. 4	grey