



AIR CONDITIONING

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AIR CONDITIONING - Description

An automatic system manages the climate control in the passenger compartment, i.e. temperature and ventilation, with recirculation and air flow orientation.

A dedicated control unit manages system operation by controlling:

- air temperature at outlets;
- fan speed;
- air distribution;
- activation of the compressor (air refrigeration circuit);
- activation of air recirculation.

The control unit sets the above parameters in order to adjust passenger compartment temperature to the required level.

The control unit supplies information on interior and exterior temperature via special sensors. After processing the information, it adjusts the passenger compartment air intake speed by means of the fan motor and the air temperature by a mixer actuator. It also controls interior air recirculation via a specific actuator.

When required, the ECU automatically activates the cooling circuit and dehumidifies the air by operating the air conditioner compressor. (E6021 COMPRESSOR ENGAGEMENT).

In addition to the climate control commands described above, the climate control system also comprises the solar radiation sensor located in the middle at the base of the windscreen; this sensor enables you to foresee an increase in temperature in the interior compartment caused by heat from solar radiation, and consequently appropriate strategies are adopted to improve climatic comfort in the car.

For greater detail, see 5040 AIR CONDITIONING CASING AND COMPONENTS .

The control unit supply lines are protected by a fuse in the junction unit.

The fan supply line is protected by a special maxifuse.

The system will only operate when the ignition is turned to MAR.

AIR CONDITIONING - Functional description

Control unit M70 is supplied when the ignition is turned on (INT/A) at pin 11 of connector B from a line protected by fuse F9 from junction unit B1 .;

The power supply comes directly from the battery to pin 10 of connector C through fuse F17 of junction unit B1 and a line protected by maxifuse CENTR of B5 .

Pin 8 of connector C of M70 is earthed.

The outdoor temperature sensor is located on the left door mirror P60 : the sensor is connected to pins 1 and 7 of connector A of M70 .

Control unit M70 is also connected to sensors K87 (lower treated air), K88 (upper treated air) and K89 (passenger compartment air), which are connected to pins 3-5, 11-12 and 8-13 of connector A of M70 respectively.

Sensor K89 is fitted with a fan motor so that the temperature reading is not affected by the motionless and thus warmer air inside the facia: the motor is connected to the control unit via pins 10 and 12 of connector B.

Solar radiation sensor K90 is connected to pins 6 and 15 of connector A of M70 .

The air conditioning system is equipped with three activators for recirculation (N82), air mixing (N81) and air distribution (N80).

Recirculation actuator N82 is controlled by control unit M70 , via pins 3 and 4 of connector B.

The air mixing actuator N81 is controlled from pins 1 and 2 of connector B from control unit M70 ; it receives a supply for control by potentiometer from pin 20, the reference earth to pin 14 at connector A, and sends a feedback signal to pin 16 of connector A.

The air distribution actuator N80 is connected from pins 7 and 8 of connector B from control unit M70 ; it receives a supply for control by potentiometer from pin 18, the reference earth at pin 2 of connector A, and sends a feedback signal to pin 17 of connector A.

An electronic governor operates fan N85 at different speeds: this receives a control signal from control unit M70 - from pin 2 of connector C - and converts it to a variable voltage signal that controls the fan.

Pin 1 of connector C provides a reference earth, pin 6 of connector C of M70 provides a speedometer signal.

Fan unit N45 is supplied when the ignition is turned on (INT/A) via relay J35 and fuse B65 .

Pin 4 of connector C of M70 receives a speedometer signal from instrument E50 .

A heated back window activation control - from pin 9 of connector B - is sent to control unit M45 (

See

E3030 HEATED REAR WINDSCREEN AND DOOR MIRROR DEFROSTING .)

Pin 6 of connector B controls activation of the compressor (E6021 COMPRESSOR ENGAGEMENT).

Climate control unit H80 communicates with control unit M70 via a serial connection line: from pin 13 of connector C of M70 to pin 9 of H80 .

The supply to the climate control unit H80 arrives directly from the battery. (maxifuse CENTR of B5) to pin 1, via fuse F18 of junction unit B1.

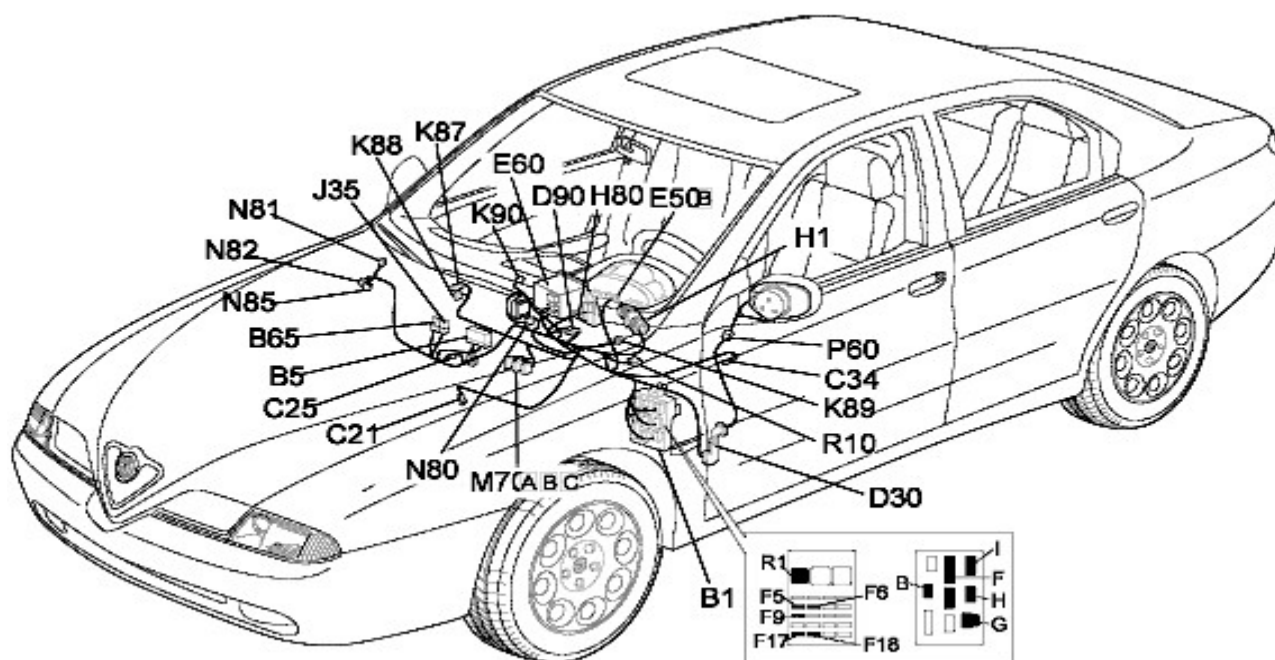
An ignition-operated power supply (INT/A) reaches pin 2 via fuse F5 of junction unit B1; pin 7 is earthed.

Climate control unit H80 is then connected - from pin 8. to ICS display E60 - pin 15 of connector B, via a special serial connection line.

Control unit M70 is equipped with a self-diagnostic system, that may be used by connecting to connector R10 : it receives signals from pin 13 of connector C of M70 through a serial connection line between control unit M70 and climate control unit H80 ; from here it is connected to the ICS display E60 .

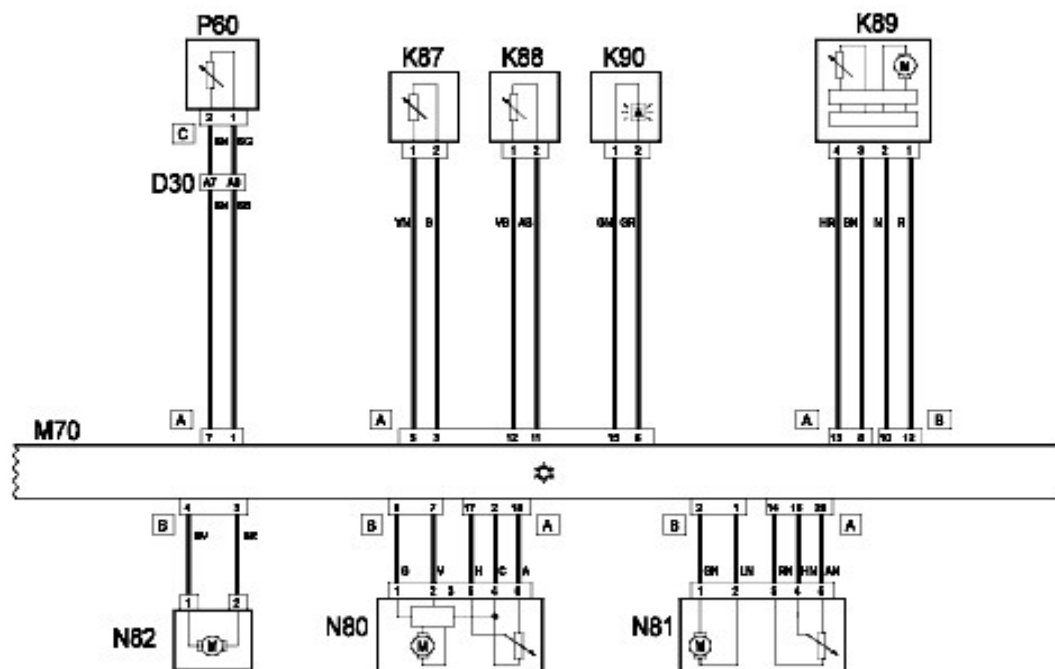
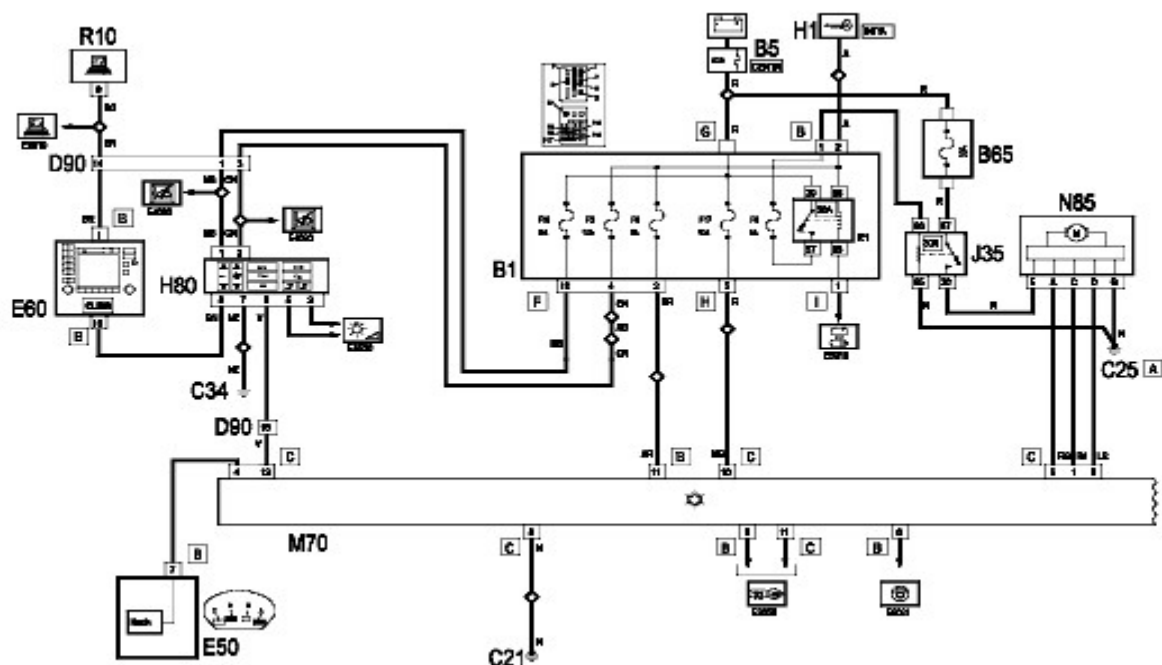
Control unit H80 also receives other signals for the Trip Computer function of the ICS display: these signals are then exchanged with display E60 via the above serial line (E4090 NAVIGATOR).

AIR CONDITIONING - Location of components



Component code	Name	Assembly reference
B1	Junction unit	5505A
B1	Junction unit	5505A
B2	Junction unit	5505A
B5	MAXI FUSE box	-
B45	Luggage compartment junction unit (CVB)	-
B65	Vehicle interior fan fuse	-
B99	Battery fuses junction unit (CBA)	5530B
C10	Front left earth	-
C21	Dashboard earth on Air Bag bracket	-
C21	Passenger side dashboard earth	-
C25	Earth on steering column	-
C34	ICS earth	-
D1	Front-dashboard coupling	-
D20	Dashboard-rear coupling	-
D30	Driver's front door rear. section.	-
D30	Front left door connection	-
D90	ICS-dashboard coupling	-
E50	Instrument panel	5560B
E60	ICS display	5580M
H1	Ignition switch	5520A
H80	Climate control system controls	5040D
H80	Climate control system controls	5580M
J35	Interior compartment air electric fan relay	5040C
K87	Lower mixed air temperature sensor	5010D
K88	Upper mixed air temperature sensor	5010D
K89	Passenger compartment air temperature sensor	5010D
K90	Solar sensor	5010D
M70	Climate control system control unit	-
M70	Climate control system control unit	5040B
N80	Air distribution flap actuator (motor)	5040D
N81	Mixed air flap actuator (motor)	5040D
N82	Outside air intake flap actuator (motor)-	5040D
N85	Passenger compartment ventilation fan	5040C
P60	Left door mirror	7005R
R10	Multiple tester connection	-

AIR CONDITIONING - Wiring diagram



Component code	Name	Assembly reference
B1	Junction unit	5505A
B1	Junction unit	5505A
B2	Junction unit	5505A
B5	MAXI FUSE box	-
B45	Luggage compartment junction unit (CVB)	-
B65	Vehicle interior fan fuse	-

B99	Battery fuses junction unit (CBA)	5530B
C10	Front left earth	-
C21	Dashboard earth on Air Bag bracket	-
C21	Passenger side dashboard earth	-
C25	Earth on steering column	-
C34	ICS earth	-
D1	Front-dashboard coupling	-
D20	Dashboard-rear coupling	-
D30	Driver's front door rear. section.	-
D30	Front left door connection	-
D90	ICS-dashboard coupling	-
E50	Instrument panel	5560B
E60	ICS display	5580M
H1	Ignition switch	5520A
H80	Climate control system controls	5040D
H80	Climate control system controls	5580M
J35	Interior compartment air electric fan relay	5040C
K87	Lower mixed air temperature sensor	5010D
K88	Upper mixed air temperature sensor	5010D
K89	Passenger compartment air temperature sensor	5010D
K90	Solar sensor	5010D
M70	Climate control system control unit	-
M70	Climate control system control unit	5040B
N80	Air distribution flap actuator (motor)	5040D
N81	Mixed air flap actuator (motor)	5040D
N82	Outside air intake flap actuator (motor)-	5040D
N85	Passenger compartment ventilation fan	5040C
P60	Left door mirror	7005R
R10	Multiple tester connection	-