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CAN-VERBINDUNGSLEITUNGEN

145 - MiTo

CAN CONNECTION LINES - DESCRIPTION

This vehicle is equipped with a CAN (Controller Area Network) system of electrical connections: it involves a software and hardware solution which is designed to efficiently manage the resources on the vehicle, allowing:

- the sharing of information between the various electronic units;

- the integration of several electronic units through one network;

- a high network information exchange speed;

- advantages in economic terms because there is a considerable reduction in the wiring/connectors inside the vehicle;

- higher standards in terms of quality and reliability.

The advantage of using a CAN system stems from the fact that communication takes place between numerous control units and consequently the number of signals to be managed is very high.

For this reason the signals travel on a CAN type serial Bus where one wire is high level (H) and the other low level (L); these signals on the CAN Bus are differential, i.e. the value assigned to the bit is represented by the difference between the CAN-H and CAN-L voltage levels.

The different electronic units which make up the system, known as network nodes, are connected to the CAN by means of communication interfaces known as transceivers; these connection interfaces, integrated in the electronic units, constitute the gate for sending/reading the information at the CAN or at the serial lines.

The exchange of information at CAN type serial lines is only possible using a transmission protocol which is the collection of rules that allow communication between two or more nodes by means of the exchange of information or data packages.

The main element of the network is the Body Computer.

The Body Computer node is entrusted with "waking up the network" at key on (if there is a fault with the Body Computer this task is entrusted to the instrument panel).

The Body Computer also carries out the network monitoring functions which make it possible to provide information on:

- the network activity status;

- the functional failure status of the individual electronic units (nodes)

- a possible fault in the CAN.

The various electronic units process the various signals coming from the corresponding sensors both for their own management and for other control units to which they are sent through the CAN

The specific structure adopted for this vehicle consists of two CAN communication networks that connect nodes belonging to two different areas:

- C-CAN for dynamic vehicle control (high speed): bus CAN-H and CAN-L;

- B-CAN for the management of standard body functions (low speed): bus CAN-A and CAN-B;

the two CAN communication networks are connected to one another by a gateway for transferring joint information, located in the Body Computer Node.

Diagnosis of nodes connected to the network - B-CAN and C-CAN - is carried out via the specific diagnosis connector

See E8010 DIAGNOSTIC MULTIPLE CONNECTOR

Power is distributed through the junction boxes and/or fuse boxes. These are connected to control elements (relays and static actuators) to ensure maximum electrical protection and minimum wiring complexity

See E1010 POWER SUPPLY

CAN CONNECTION LINES - FUNCTIONAL DESCRIPTION

The Body Computer M001 - connector A - receives a direct power supply from the battery through the line protected by maxi fuse F01 of the engine compartment junction unit B001.

The Body Computer M001 receives an ignition-operated power supply (INT) at pin 11 of connector E: this signal is used, amongst other things, to "wake up the network".

Pin 9 of connector E of M001 provides the Body Computer with a reference earth.

The following nodes are connected to the Body Computer M001 via the C-CAN high speed network from pins 44 and 45 of connector B:

- suspension control unit M46;

- electric steering control unit M086;

- yaw sensor K074;

- ABS/ESP control unit M050;

- engine management control unit M010.

The following nodes are connected to the M001 Body Computer via the low speed B-CAN:

- instrument panel E050, from pins 17 and 21 of connector D;

- radio or radionavigator P020, from pins 16 and 22 of connector D;

- airbag control unit M060, from pins 16 and 20 of connector D;

- parking sensor control unit M084, from pins 34 and 49 of connector F;

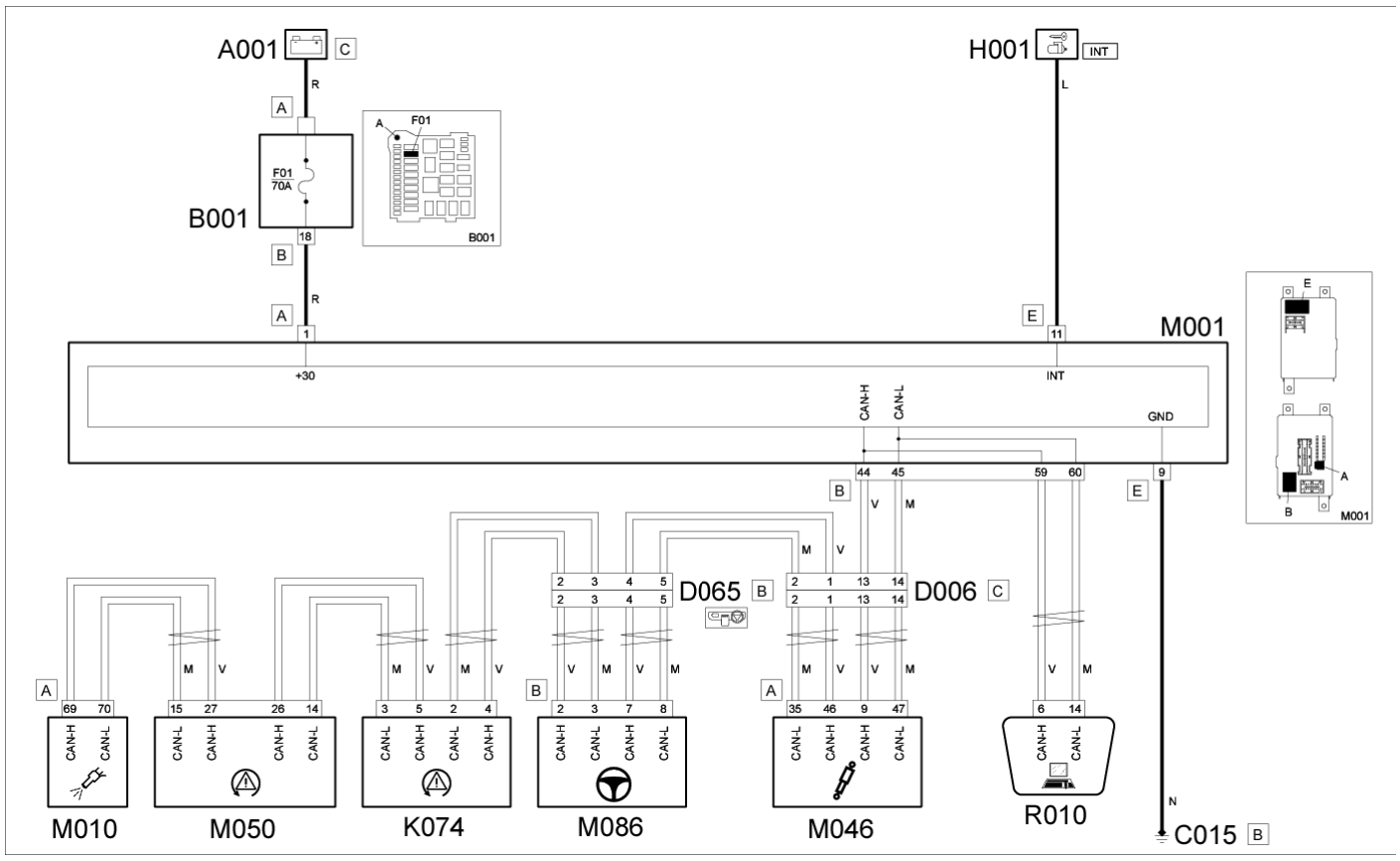
- tyre inflation pressure control unit M047, - from pins 37 and 52 of connector F;

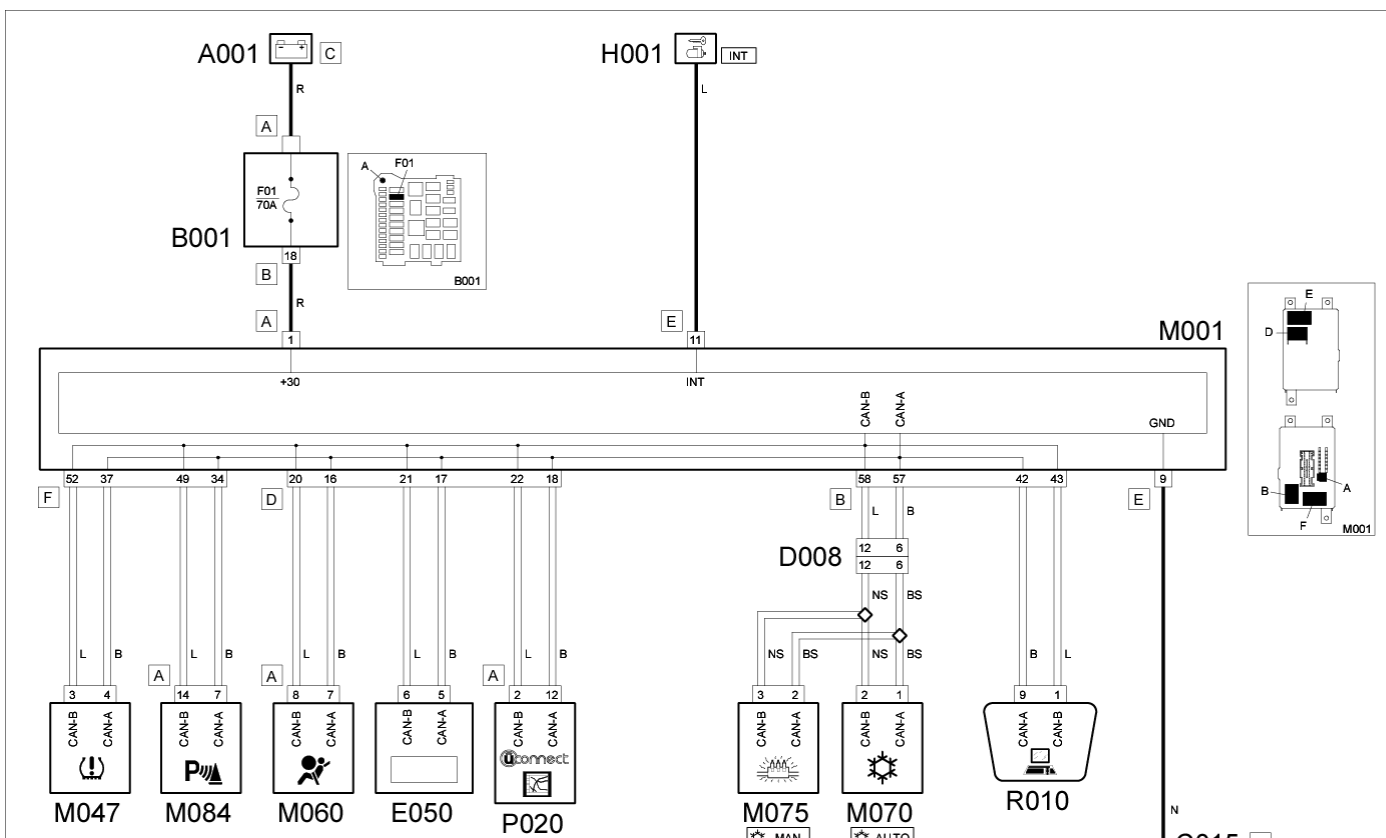
- climate control system control unit M070, - from pins 57 and 58 of connector B;

- additional heater control unit M075, - from pins 57 and 58 of connector B.

The central diagnosis socket R010 is connected to the C-CAN at pins 59 and 60 of connector B of M001 and to the B-CAN at pins 42 and 43 of connector B of M001.

CAN CONNECTION LINES - WIRING DIAGRAM





Component Code	Name	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A28 CONTAINER FOR ADDITIONAL JUNCTION UNIT IN ENGINE COMPARTMENT - R.R.
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D006	FRONT/REAR COUPLING	-
D065	ELECTRIC STEERING COUPLING	-
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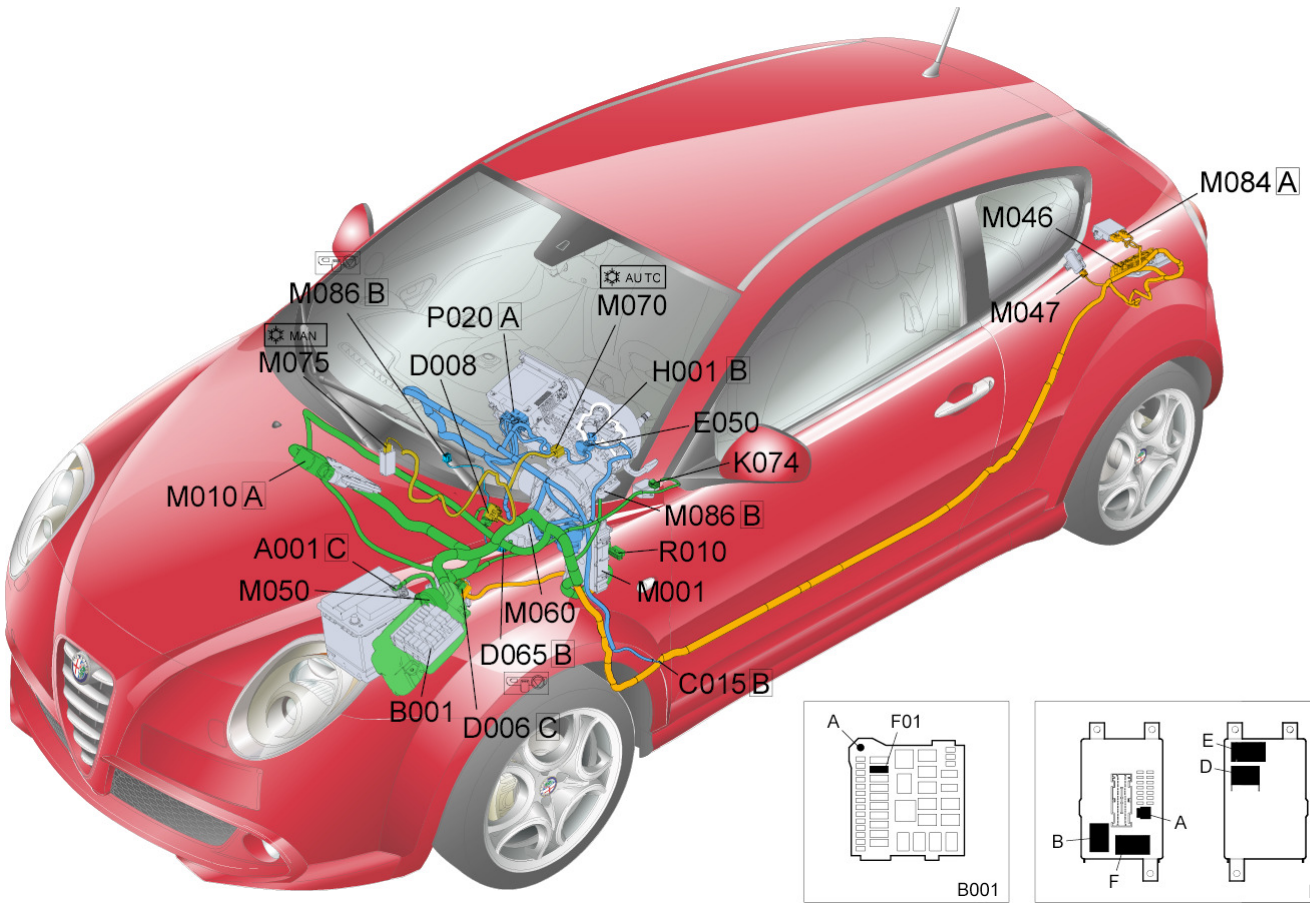
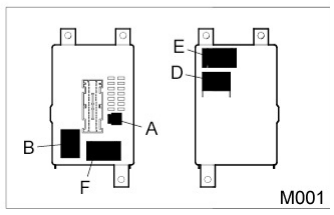
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A18 IGNITION SWITCH CONTACT CARRIER LOCK BARREL - R.R.
K074	SLEWING SENSOR (VDC)	Op. 3350E30 LATERAL ACCELERATION AND SLEWING SENSOR - R.R
M001	BODY COMPUTER	Op. 5505A35 MAIN BODY COMPUTER/JUNCTION UNIT - R.R.
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M046	CONTROLLED SUSPENSION CONTROL UNIT (SCS)	Op. 4440B10 INTELLIGENT SUSPENSION SYSTEM CONTROL UNIT - R.R.
M047	TYRE INFLATION PRESSURE CONTROL UNIT	Op. 4450B91 TPMS SYSTEM CONTROL UNIT R R
M050	ABS CONTROL UNIT	Op. 3340A20 ABS ELECTRONIC CONTROL UNIT - R+R
M060	AIR BAG CONTROL UNIT	Op. 5580C14 AIR BAG ECU - R+R
M070	CLIMATE CONTROL SYSTEM CONTROL UNIT	Op. 5040D15 CONTROL UNIT WITH KNOBS AND BUTTONS FOR DUAL ZONE AIR CONDITIONER - R.R.
M075	ADDITIONAL HEATER CONTROL UNIT	Op. 5020E61 CONTROL UNIT FOR ADDITIONAL HEATER P.T.C. - R.R.
M084	PARKING SENSOR CONTROL UNIT	Op. 5580H10 PARKING OBSTACLE DETECTION DEVICE ELECTRONIC CONTROL UNIT - R.R.
M086	ELECTRIC STEERING CONTROL UNIT	Op. 4110D20 STEERING ELECTRICAL CONTROL DEVICE - R R
		Op. 5570T80 CAR RADIO EQUIPMENT - R+R

P020	CAR RADIO	Op. 5580M02 PANEL FOR ON-BOARD NAVIGATOR/RADIO/AUDIO CD PLAYER - R.R.
R010	MULTIPLE TESTER CONNECTION	-

CAN CONNECTION LINES - COMPONENT LOCATION





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