



## LINEE DI COLLEGAMENTO CAN

198 - Bravo

## 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

An ISO 5 serial A-BUS is also connected to the rain sensor

See E1060 A-BUS SERIAL LINE

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 M1 is supplied directly from the battery via line protected by maxifuse B99 at pin 18 of connector F that interfaces with the junction unit under the dashboard B2.

The ignition-operated power supply (INT) reaches pin 9 of connector F of the interface with the junction unit B2: this signal, among other things, "wakes up the network".

Pins 10 and 19 of connector H of M1 supply the Body Computer with a reference earth.

The nodes connected to Body Computer M1 - from pins 44 and 45 of connector A - via the high speed C-CAN are:

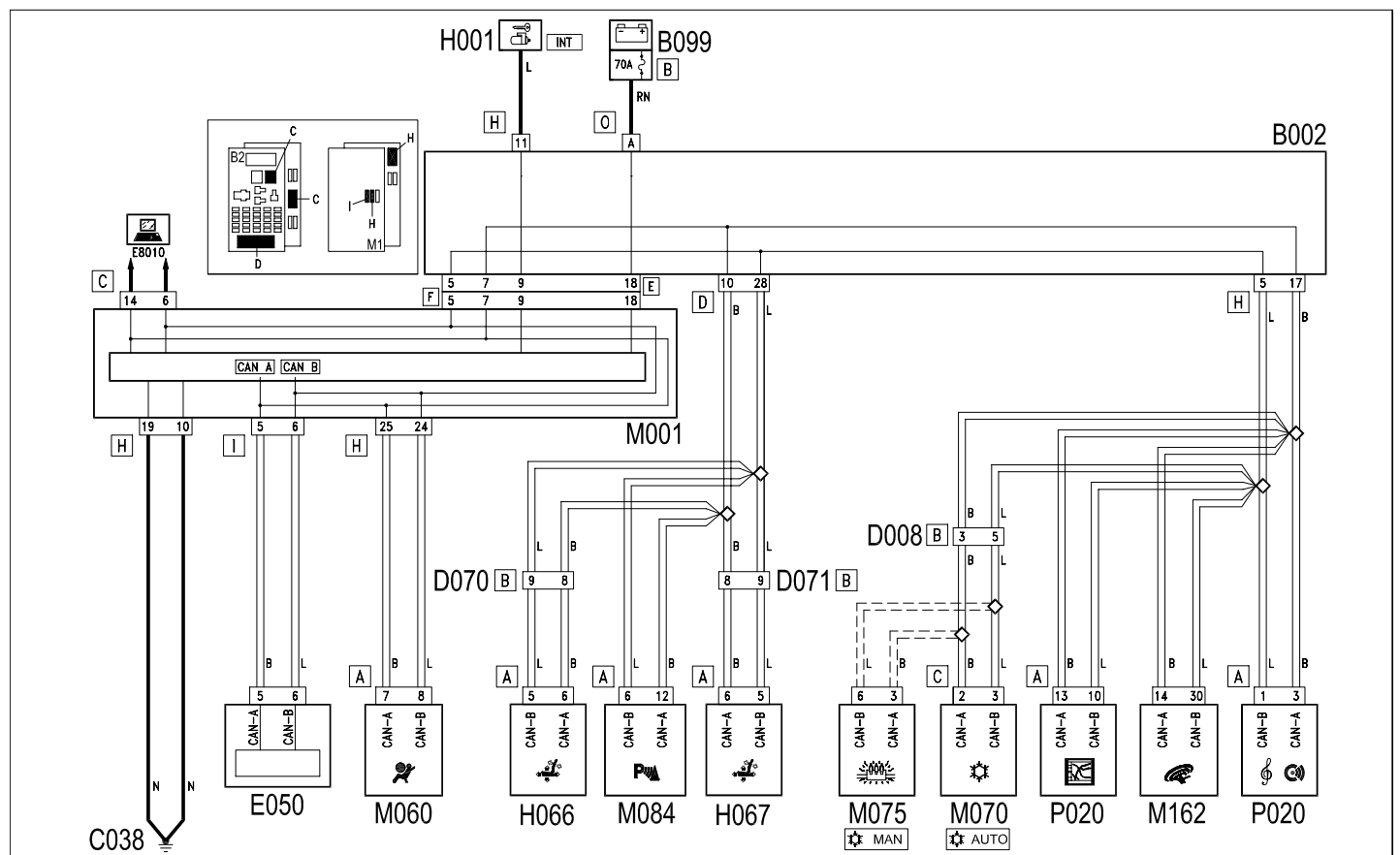
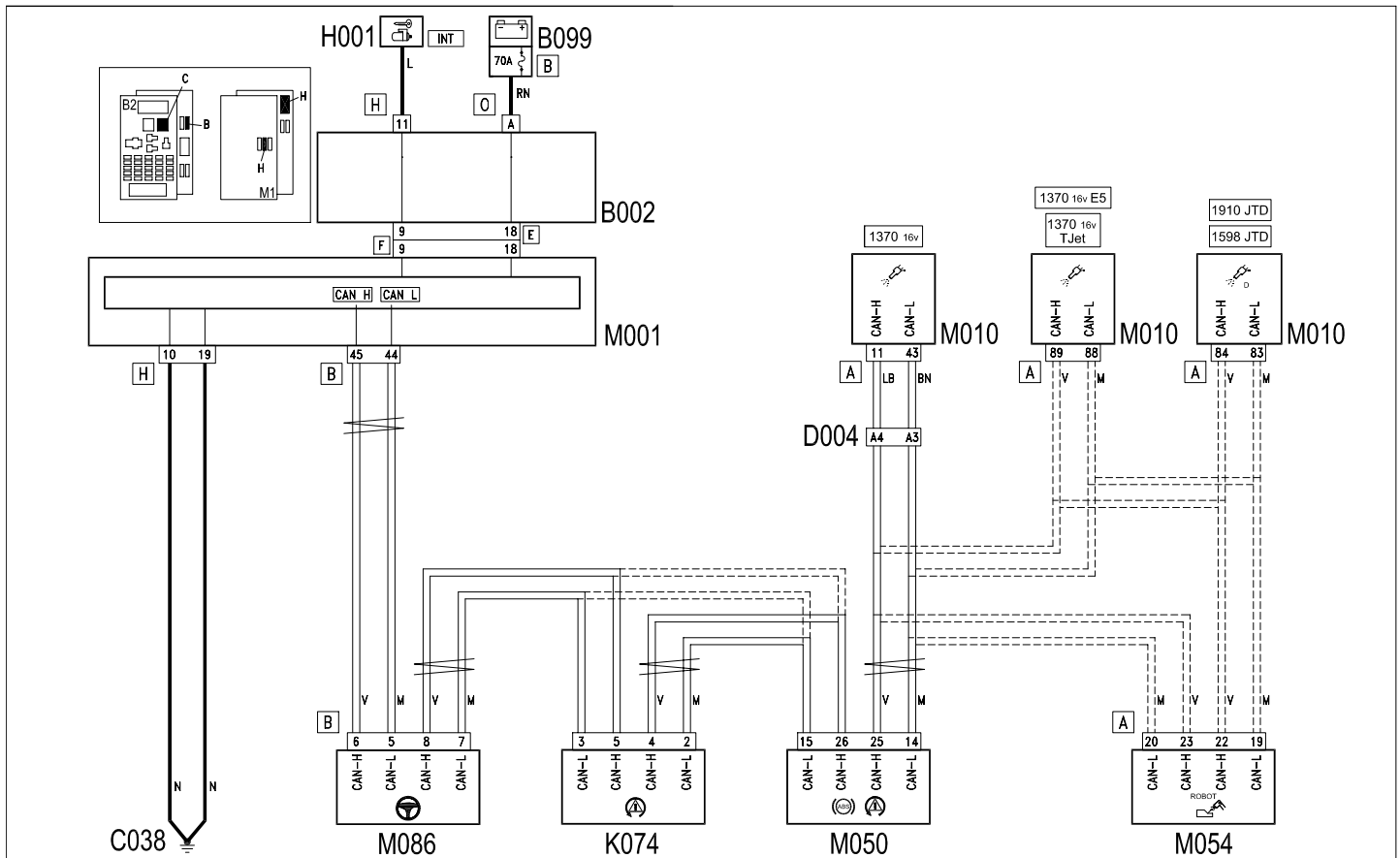
- electric steering control unit M86;
- yaw sensor K74 (only present on versions with ESP).
- ABS/ESP control unit M50;
- Powertrain Control Module M10;
- robotised gearbox control unit M54 (if present);

Numerous nodes are connected with the Body Computer M1 via the B-CAN low-speed network - from pins 5-6, 24-25 of connector H of M1, in addition to from pins 5-17 of connector H and 10-28 of connector D of the junction unit under the dashboard B2.

These nodes are:

- instrument panel E50
- Airbag control unit M60
- climate control system control unit M70
- additional heater control unit M75 (if present)
- radio/navigator unit P20
- Bluetooth control unit M162
- parking sensor control unit M84
- seat control units H66, H67

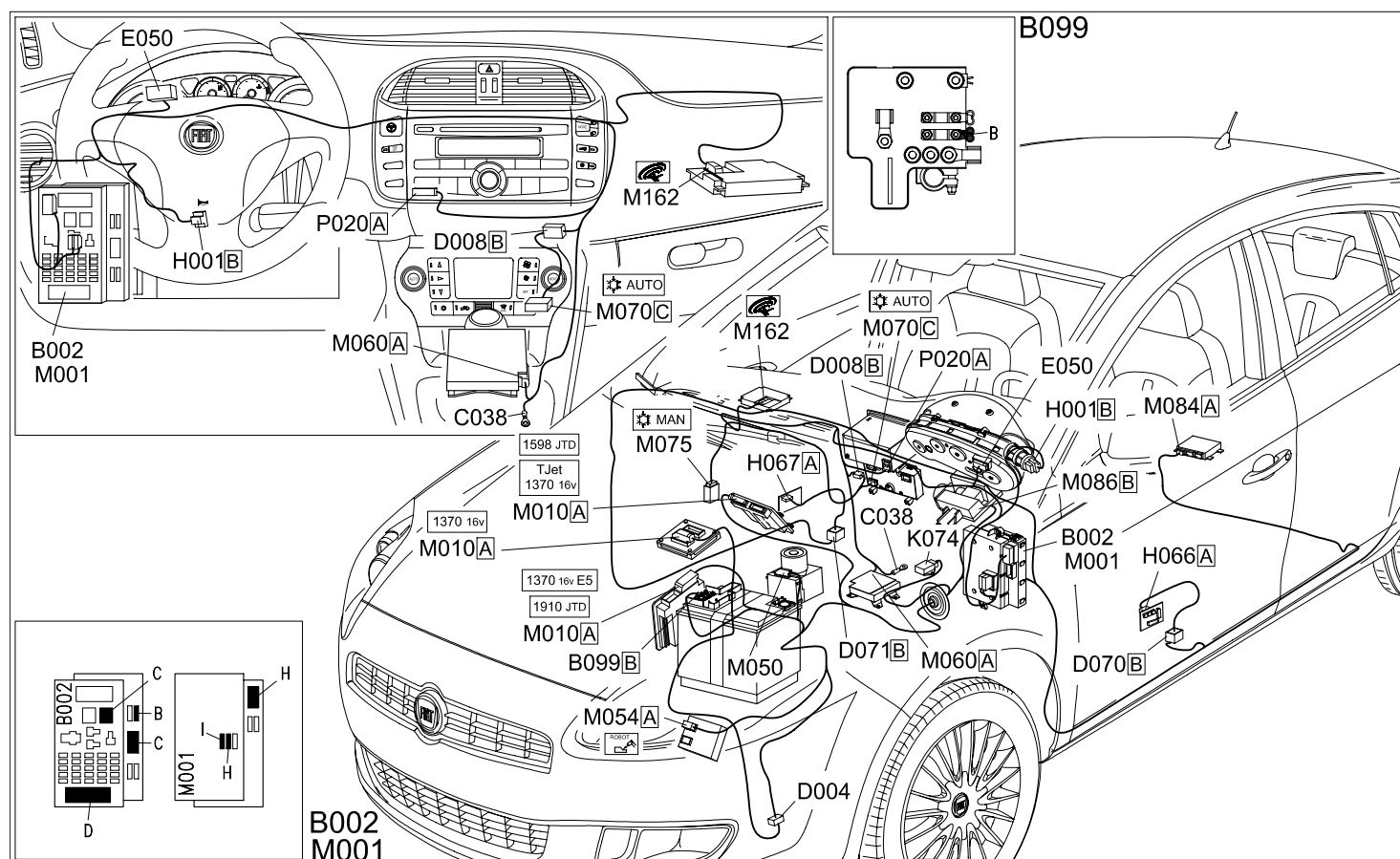
# CAN CONNECTION LINES - WIRING DIAGRAM



Component Code	Name	Reference to the operation
B002	JUNCTION UNIT UNDER DASHBOARD	Op. 5505A35 MAIN BODY COMPUTER/JUNCTION UNIT - R.R.
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B40 SUPPLY BOX ON BATTERY (LINK BATTERY AND FUSE BOX) - R R
C038	EARTH ON CENTRE TUNNEL	-
D004	FRONT/ENGINE COUPLING	-
D008	FRONT/AIR CONDITIONING-HEATER COUPLING	-
D070	DRIVER'S SEAT COUPLING	-
D071	PASSENGER SEAT COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
H066	DRIVER'S SEAT MOVEMENT CONTROLS	Op. 7045J36 SEAT MOVEMENT ECU R R FOLLOWING ELECTRICAL CIRCUIT CHECK
H067	PASSENGER SEAT MOVEMENT CONTROLS	Op. 7045J36 SEAT MOVEMENT ECU R R FOLLOWING ELECTRICAL CIRCUIT CHECK
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. Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1060G80 DIESEL ELECTRONIC INJECTION CONTROL UNIT - R.R
M050	ABS CONTROL UNIT	Op. 3340A20 ABS ELECTRONIC CONTROL UNIT - R+R
M054	ROBOTIZED TRANSMISSION CONTROL UNIT	Op. 2127E10 HYDRAULIC SPEED SELECTION SYSTEM CONTROL UNIT - R.R.
M060	AIR BAG CONTROL UNIT	Op. 5580C14 AIR BAG ECU - R+R
M070	CLIMATE CONTROL SYSTEM CONTROL UNIT	Op. 5040D15 FOG LIGHT TRIM - R.R.
M075	ADDITIONAL HEATER CONTROL UNIT	-
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
M162	BLUETOOTH CONTROL UNIT	Op. 5570T49 BLUETOOTH ELECTRONIC CONTROL UNIT - R.R.
P020	CAR RADIO	Op. 5570T80 CAR RADIO EQUIPMENT - R+R



# CAN CONNECTION LINES - COMPONENT LOCATION



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M162	BLUETOOTH CONTROL UNIT	Op. 5570T49 BLUETOOTH ELECTRONIC CONTROL UNIT - R.R.
P020	CAR RADIO	Op. 5570T80 CAR RADIO EQUIPMENT - R+R
		Op. 5580P12 CONNECT PANEL - R.R.