



ALIMENTAZIONE

290/295 - Ducato FL 2014

POWER SUPPLY - DESCRIPTION

The entire electrical system has been designed and implemented with a view to the most up-to-date safety and protection standards and is particularly well-protected against fire.

Two main types of protection are provided:


- active protection, to reduce possible fault causes at source;
- passive protection, to minimise the effects of a fault.

The first category covers careful design of wiring circuits, including well thought-out positioning and fastening and the definition of properly shielded and protected layouts.

All operations designed to reduce or interrupt faulty currents (overloading or short circuits) are included in passive protection.

Power is distributed via the junction units and/or fuses boxes, located on the battery, in the engine compartment, in the Body Computer and in the optional wiring control unit, connected to control elements (relay switches and static actuators) to ensure maximum electrical protection and minimum complexity.

The Body Computer under the dashboard is connected via special multifunction connectors in the various wirings and protects the secondary load lines via dedicated fuses. A series of built-in relays operates these circuits.

 The relay switches in the Body Computer are incorporated into the control unit itself; therefore no type of operation can be carried out (replacement, removal, etc.).

The ratings of all fuses in the system have been selected according to the nominal power uptake of any loads that may be activated simultaneously and to ensure cut-in in the case of a general short-circuit.

All systems and electrical equipment are supplied by the battery at a voltage of 12 V.


The battery is, in turn, recharged by the alternator during engine operation.

E5010 STARTING AND RECHARGING

Some circuits are continuously supplied, even with the car at a standstill and the key out because they are connected directly to the battery.

Other circuits are supplied by turning the ignition key to various positions:

- when the ignition key is inserted and turned to the MAR position, numerous circuits are supplied - these are known as ignition-operated (INT and 15/54 lines with the power supply maintained even during starting and INT/A, whose power supply is interrupted during starting);
- the second position - AVV (starting) - supplies the starter, disconnecting some other circuits (those which draw the most power, "INT/A" line) thereby ensuring the maximum current flow to the starter.

 The lines that distribute power to the various appliances are represented in the wiring diagrams for the various functions and systems.

POWER SUPPLY - FUNCTIONAL DESCRIPTION

All the electrical systems and circuits are supplied by the battery A001.

The main supply lines are protected by the maxifuse box B099 fitted on the battery that contains the fuses labelled according to the circuits protected:

- BCM1 (F71): Body Computer M001 main supply, at pin A of connector A;
- BCM2 (F72): Body Computer M001 secondary supply, at pin B of connector A;
- TRASF (F73): transformer socket P125 power supply, at pin A of connector C.

E3094 SOCKET FOR TRANSFORMER VERSION

The direct battery supply protected by maxifuse F72 (BCM2) is sent to the additional fuse box B098 through the Body Computer M001 (pin A of connector B).

A special "powerval" fuse (CAL5) - connector B - is used in control unit B099 to protect the following circuits:

- starter A020 through contact board A005 (connector B);

E5010 STARTING AND RECHARGING

- additional fuse box B046 (connector C) through contact board A005 (connector D);
- engine compartment relay module box B001 (connector X pin 1) through contact board A005 (connector C);

Additional fuse box B046 (connector A) receives a direct battery power supply from the line protected by fuse F05 located inside the engine compartment junction unit B001 (connector D pin A).

A direct battery power supply reaches the controlled suspension fuses B107 A-B from connector F of control unit B099.

E7070 CONTROLLED SUSPENSION

Other circuits are supplied by turning the ignition key H001 to various positions:

- in the MAR-ON position, numerous circuits and ignition-operated services protected by fuses in Body Computer M001 (INT line) are supplied - from pin 2 of connector B of H001 to pin 2 of connector G of M001 - and from the fuses in engine compartment junction unit B001 (15/54 line) - from pin 1 of connector A of H001 to pin 30 of connector A of B001 -;

E5050 DIESEL ENGINES ELECTRONIC MANAGEMENT

- starter A020 (line 50) receives a power supply in the AVV position - from pin 3 of connector A of H001 -.

E5010 STARTING AND RECHARGING

E7051 ROBOTISED GEARBOX

During starting, some circuits are disconnected ("INT"/"A line) - pin 1 of connector B of H001 -.

The Body Computer M001 receives power supply at pin 9 of connector G and, through the line protected by a suitable fuse (F31), it interrupts a set of "secondary" loads (power sockets, air conditioning system, etc.).

The Body Computer M001 uses this power supply for the management of its own loads via its built-in relay switches.

The Body Computer M001 is also connected to the central dashboard earth C022 (connector A) via pins 1 and 11 of connector G.

POWER SUPPLY - WIRING DIAGRAM

