



ALIMENTAZIONE

250/251 - Ducato

POWER SUPPLY SYSTEM - 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 this type of protection.

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

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 12V.

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

See 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 ON position numerous circuits are supplied which are, in effect, known as "ignition-controlled" ("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 motor, disconnecting some other circuits (those which absorb a lot of power, "INT/A" line) thereby ensuring the maximum current flow to the actual starter motor;
- when the button located on the ignition barrel is pressed it is possible to turn it in the opposite direction before extracting the key. In this position, known as "PARK", the side lights receive a power supply even with the ignition off.

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



This general diagram shows all the lines as they leave the battery and junction units. Refer to specific diagrams for more details.

POWER SUPPLY SYSTEM - 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:

- CVM (F70) : engine compartment junction unit B001 power supply, at connector X;
- CPL1 (F71): main junction unit under the dashboard B002 power supply, at pin A of connector D;
- CPL2 (F72): secondary junction unit under the dashboard B002 power supply, at pin B of connector D;
- TRASF (F73): conversion socket P125 power supply, at pin A of connector C.

See E3094 SOCKET FOR TRANSFORMER VERSION

A special "powerval" fuse (CAL4) - connector B - is used in junction unit B099 designed to protect the starter motor A020.

A direct battery power supply reaches the controlled suspension fuse B107 from connector F of junction unit B099.

See E7070 CONTROLLED SUSPENSION

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

- in the ON position numerous circuits and "ignition-controlled" services protected by fuses in the junction unit under the dashboard B002 are supplied ("INT" line) - from pin 2 of connector B to pin 11 of connector B - and from the fuses in the engine compartment junction unit B001 ("15/54" line) - from pin 1 of connector B to pin 30 of connector A -;
- the starter motor A020 (line 50) receives a power supply in the AVV position - from pin 3 of connector A -;

See E5010 STARTING AND RECHARGING

- the side lights are supplied in the PARK position ("POS" line) via the Body Computer M001 - from pin 3 of connector B to pin 12 of the coupling with the junction unit B002 -.

See E2010 SIDE LIGHTS / NO. PLATE LIGHTS

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

The additional fuse box B098 is designed (in three different configurations) if the following devices are fitted:

- vehicle side markers - extra long wheelbase versions -;

See E2010 SIDE LIGHTS / NO. PLATE LIGHTS

- additional under seat heater - Cab and Van versions and, on request, Combi version -;

See E6012 SUPPLEMENTARY HEATER

- additional rear heater and air conditioner - versions designed for carrying people; Panorama and Combi -;

See E6012 SUPPLEMENTARY HEATER

See E6025 SUPPLEMENTARY AIR CONDITIONER

- heated seats;

See E3075 HEATED SEATS

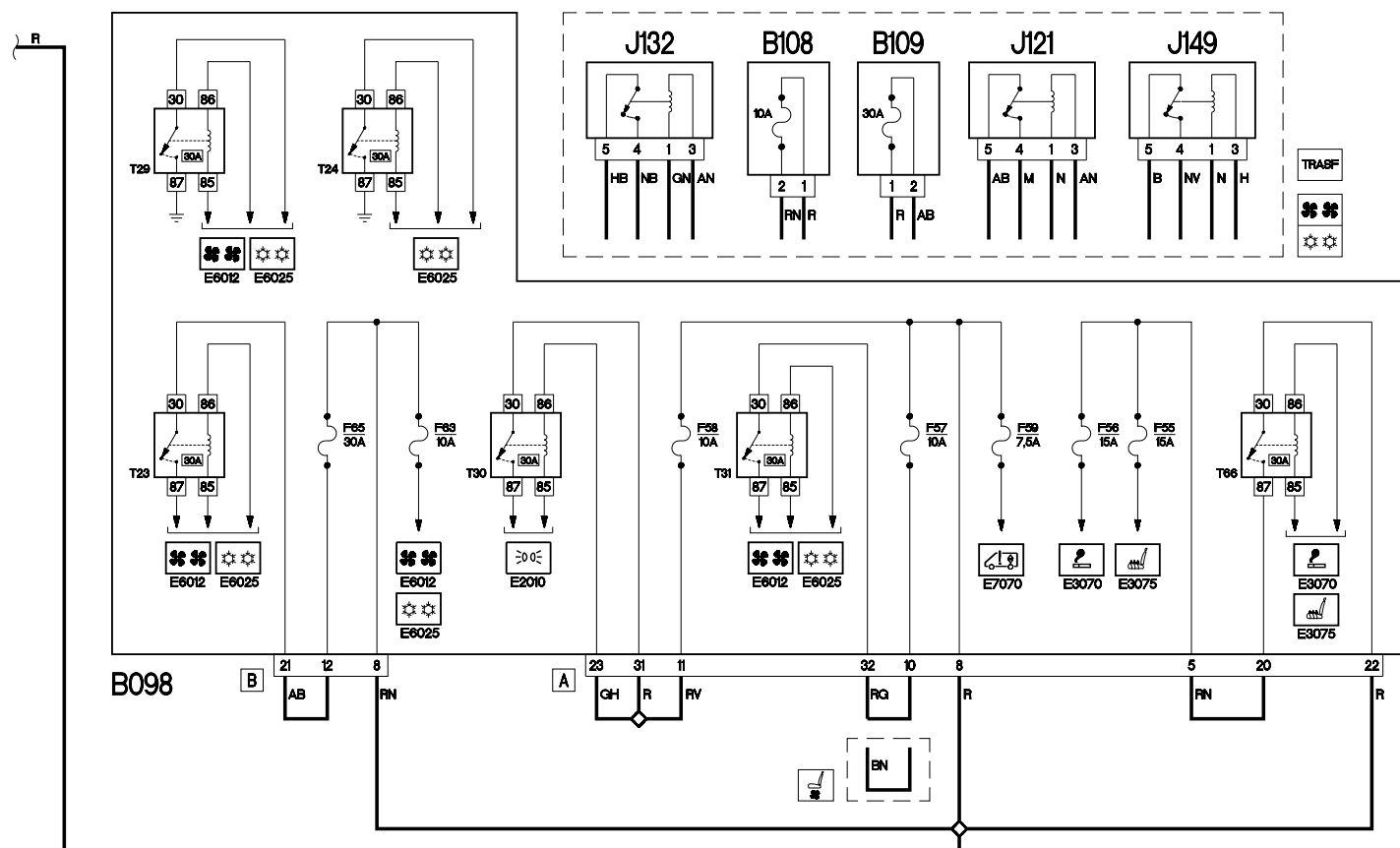
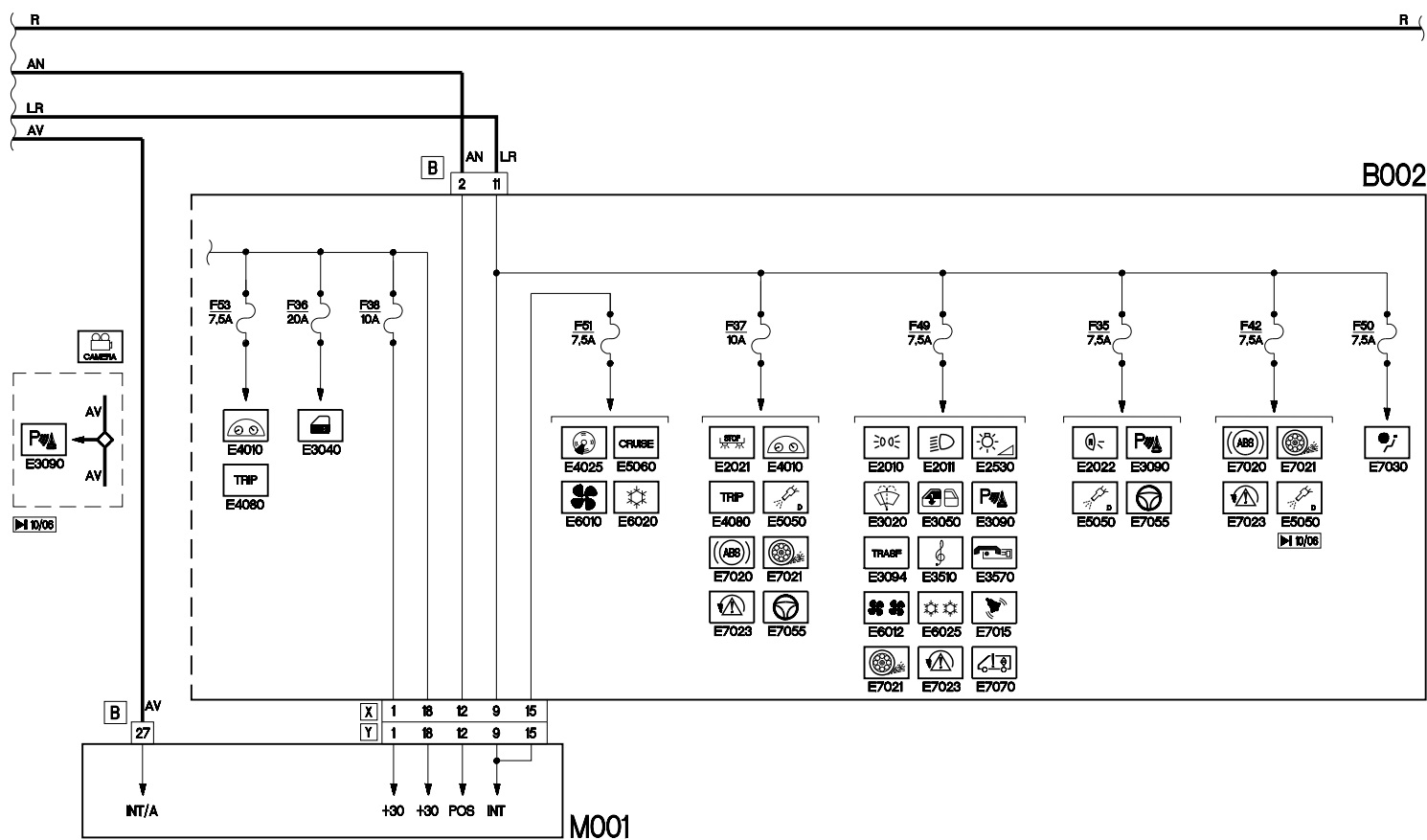
- rear current sockets - versions designed for carrying people: Panorama and Combi -;

See E3070 CIGAR LIGHTER / CURRENT SOCKET

- self-levelling suspension.

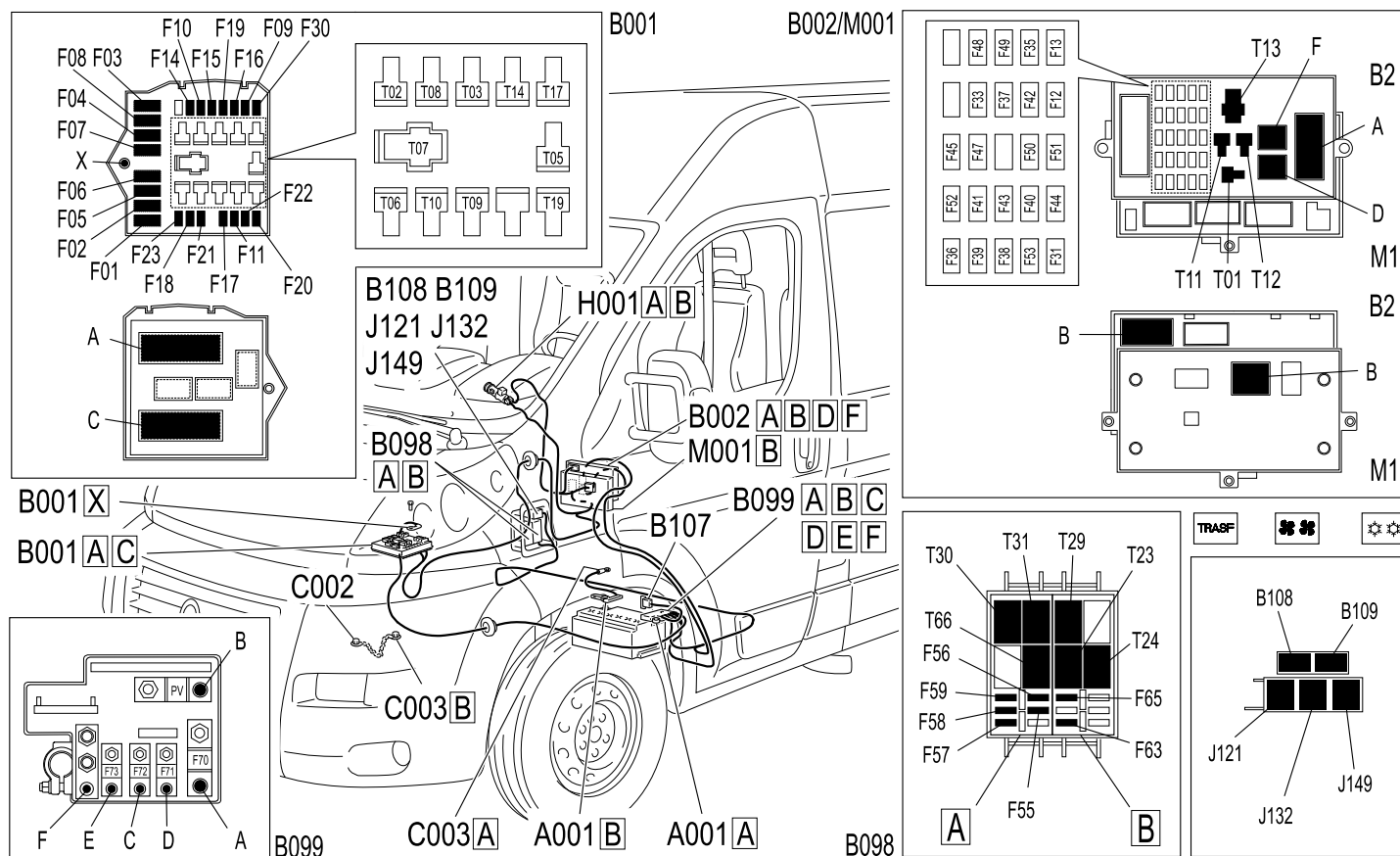
See E7070 CONTROLLED SUSPENSION

The adoption of relays and fuses that can be replaced, located near the additional fuse box B098 is planned for the rear additional air conditioning/heating systems on versions designed for transporting people with conversion sockets.



Component code	Description	With reference to the assembly
A001	BATTERY	Op. 5530B BATTERY AND LEADS
B001	JUNCTION UNIT	Op. 5505A MULTI-FUNCTION COMPONENTS
B002	JUNCTION UNIT UNDER DASHBOARD	Op. 5505A MULTI-FUNCTION COMPONENTS
B098	SUPPLEMENTARY FUSE BOX	-
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B BATTERY AND LEADS
B107	MAXI FUSE FOR CONTROLLED SUSPENSION	-
B108	ADDITIONAL FAN FUSE	-
B109	ADDITIONAL HEATER/AIR CONDITIONER CONTROL PANEL FUSE	-
C002	BATTERY EARTH ON ENGINE	-
C003	BATTERY EARTH ON BODYSHELL	-
H001	IGNITION SWITCH	Op. 5520A IGNITION SWITCH
J121	PASSENGER COMPARTMENT AIR ADDITIONAL FAN RELAY	-
J132	ADDITIONAL AIR CONDITIONING FAN LOW SPEED ENGAGEMENT RELAY	-
J149	ADDITIONAL AIR CONDITIONING ENABLEMENT RELAY	-
M001	BODY COMPUTER	Op. 5505A MULTI-FUNCTION COMPONENTS

POWER SUPPLY SYSTEM - COMPONENT LOCATION



Component code

Description

A001	BATTERY
B001	JUNCTION UNIT
B002	JUNCTION UNIT UNDER DASHBOARD
B098	SUPPLEMENTARY FUSE BOX
B099	MAXI FUSE BOX ON BATTERY
B107	MAXI FUSE FOR CONTROLLED SUSPENSION
B108	ADDITIONAL FAN FUSE
B109	ADDITIONAL HEATER/AIR CONDITIONER CONTROL PANEL FUSE
C002	BATTERY EARTH ON ENGINE
C003	BATTERY EARTH ON BODYSHELL
H001	IGNITION SWITCH
J121	PASSENGER COMPARTMENT AIR ADDITIONAL FAN RELAY
J132	ADDITIONAL AIR CONDITIONING FAN LOW SPEED ENGAGEMENT RELAY
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M001	BODY COMPUTER

With reference to the assembly

Op. 5530B BATTERY AND LEADS
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-
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Op. 5505A MULTI-FUNCTION COMPONENTS