



## INSTRUMENT PANEL

## INSTRUMENT PANEL - DESCRIPTION

The control panel is fitted behind the steering wheel; its position guarantees maximum visibility/legibility of the information for the driver in all vehicle usage conditions (day/night) without reflections, distortions or double images.

The panel includes 4 gauges which have stepping motors.

the control panel display is available in two versions depending on the vehicle's on-board features:

- MODAL display - LOW trim levels;
- COMFORT display - HIGH trim levels.

In both configurations a single instrument contains:

- Electronic speedometer;
- Fuel level gauge (with insufficient fuel level warning light);
- Engine coolant temperature gauge (with overheating warning light);
- Electronic rev counter;
- Display (available in two different versions: digital or multifunction);
- Warning lights.

A buzzer inside the instrument can produce signals of different intensities to perform the following functions:

- Alarm / warning / danger signals;
- Parking sensor signalling;
- Seat Belt Reminder;
- Direction indicators / hazard warning lights activation;
- Pushbutton roger beep.

The instrument panel is a CAN node through which information is exchanged with the Body Computer and with the other electronic units.

Speedometer: its function allows the vehicle speed to be displayed on the instrument panel. This information is obtained from the braking system control unit via the Body Computer.

Rev counter: this function involves the display on the instrument panel of the engine rotation speed by means of the data sent via the CAN from the engine management control unit.

Milometer: the milometer function includes the display and memorizing of the total and trip mileage: Mileage information is processed by the Body Computer by means of a counter that is sent via the CAN network to the instrument panel. The trip counter that forms part of the Trip Computer can be reset using a TRIP button on the right steering wheel stalk.

See E4080 TRIP COMPUTER

Engine coolant temperature: this function involves the display of the engine coolant temperature in the instrument panel and the overheating warning light coming on by means of messages sent via the CAN from the engine management control unit.

Fuel level: the Body Computer receives the signal from the sensor integrated in the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the panel gauge, also managing the reserve warning light.

The instrument panel also has various warning lights.

Brake pad wear state: this function involves the specific warning light coming on: the Body Computer detects the brake pad wear status when braking (signal from the brake pedal) in a prolonged manner (occasional signals are ignored).

Hanbrake applied: the Body Computer acquires the handbrake status from a special switch and notifies the instrument panel of activation via the CAN network. The function turns on the low brake fluid level warning light on the instrument panel. A buzzer is also activated if this signal is associated with the exceeding of a set speed threshold.

Insufficient brake fluid: this function involves the "insufficient brake fluid level" warning light in the instrument panel coming on with the signal sent by the Body Computer via the CAN.

Planned maintenance (Modal versions only): this function involves signalling when the planned maintenance period has been reached; the warning light is deactivated after this maintenance is carried out or 1000 Km after this signalling.

Engine coolant level: the Body Computer acquires the level of the fluid in the radiator from the dedicated switch and notifies the activation to the instrument panel via the CAN.

Other warning lights involve transverse operation in relation to the different problems that may be found on the vehicle.

The general fault signal summarises the faults detected by a set of systems and components, such as:

- Inertia switch operation;
- Engine oil pressure sensor failure;
- Rain / dusk sensor failure;
- Parking sensor failure (Comfort versions only).

The signalling of the "exterior lights failure" is managed by the Body Computer; it contains a check function that controls the operation of the exterior lights, in particular, lighting up the appropriate warning light if a problem is detected with the lights or their connection:

- Side lights;

- Number plate light;
- Rear fog lamp;
- Direction indicator;
- Brake light.



The operation of the warning lights which do not come under any other functions is illustrated below: the other warning lights are described and illustrated in the diagrams for the components to which they refer

Together with the activation of the warning lights, on versions with multifunction displays, there are several messages (divided by priority) which allow the specific identification of the fault.

The use of the various settings in the SET UP menu for the instrument panel takes place through the "MODE", "+" and "-" buttons in the left control panel. For example, the following settings can be adjusted on the Comfort version:

- Speed limit;
- Dusk sensor sensitivity;
- Trip B enablement;
- Time;
- Date;
- repetition of audio information;
- Automatic central locking with vehicle moving;
- Unit of measurement (Km or miles);
- Language selection;
- Volume of acoustic warnings / failure signals;
- Activation / deactivation of S.B.R. buzzer;
- Planned maintenance indications;
- Passenger air bag activation / deactivation (where fitted).

For further details,

See descriptions 5560 INSTRUMENTS

## INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

The ignition-controlled power supply (INT) for the instrument panel E050 reaches pin 3 via the line protected by fuse F37 of the junction unit B002; the direct battery supply arrives at pin 2 via the line protected by fuse F53 of the junction unit B002.

The instrument panel E050 receives a reference earth at pin 1 via the connection with pin 36 of connector B of the Body Computer M001.

The instrument panel E050 is connected from pins 5 and 6 with the Body Computer M001 (pins 5 and 6 of connector B) and via the latter to the entire CAN.

The speedometer signal arrives from pin 23 of the braking system control unit M051 at pin 10 of connector A of the Body Computer M001, which repeats it for the instrument panel E050.

The electronic rev counter receives the engine rpm signal coming via the CAN from the engine management control unit M010, connected via pins 58 and 41 of connector A to the engine rpm sensor K046.

The fuel level gauge is controlled by means of signals coming from the level gauge located in the fuel pump assembly N040 - at pins 7 (positive) and 21 (negative) of connector C of the Body Computer M001 and from there via the CAN to the instrument panel E050.

The insufficient brake fluid level/handbrake warning light is lit up by a signal from the handbrake switch I040 that reaches pin 20 of connector C of the Body Computer M001 or from the signal from the brake fluid level sensor K025 that reaches pin 24 of connector A of M001.

The "engine coolant level" warning light is regulated by the engine coolant level sensor K026, connected to pin 9 of connector A of by the Body Computer M001.

The brake pad wear sensor (switch) K020 controls the warning light through the connection with pin 32 of connector A of the Body Computer M001.

The engine management control unit M010 also sends signals coming from the following units via the CAN (pin 83 and 84 of connector B) to the instrument panel:

- the insufficient engine oil pressure sensor (switch) K030, connected to pin 56 of connector A;
- the engine coolant temperature sensor K036, connected to pins 58 and 41 of connector A;
- the water in the diesel filter sensor K031, connected to pin 74 of connector B.

The braking system control unit M051 is connected, from pins 15 and 26, via the CAN line, to the engine management control unit M010, and via pins 14 and 25 to the Body Computer M001 (pins 48 and 49 of connector A) forwarding the signals described above.

There are two direct connections for the instrument panel E050 to light up two warning lights: the EOBD warning light (pin 18) and the electric steering failure warning light (pin 17) which receive the earth signals produced by the autodiagnostic system for the engine management control unit M010 (pin 71 of connector B) and the Servotronic control unit M088 (pin 3) respectively.

See E5050 DIESEL ENGINES ELECTRONIC MANAGEMENT

See E7055 SERVOTRONIK DEVICE

The "Mode +" and "Mode -" controls (pins 5 and 6) located in the left control panel H091 send analogue signals to the instrument panel E050 (pins 13 and 16). Pin 2 of H091 receives the reference earth from pin 8 of connector B of the Body Computer M001.

The instrument panel E050 contains electronic modules that control the dimmed lighting adjustment.

See E2530 INSTRUMENT LIGHTING

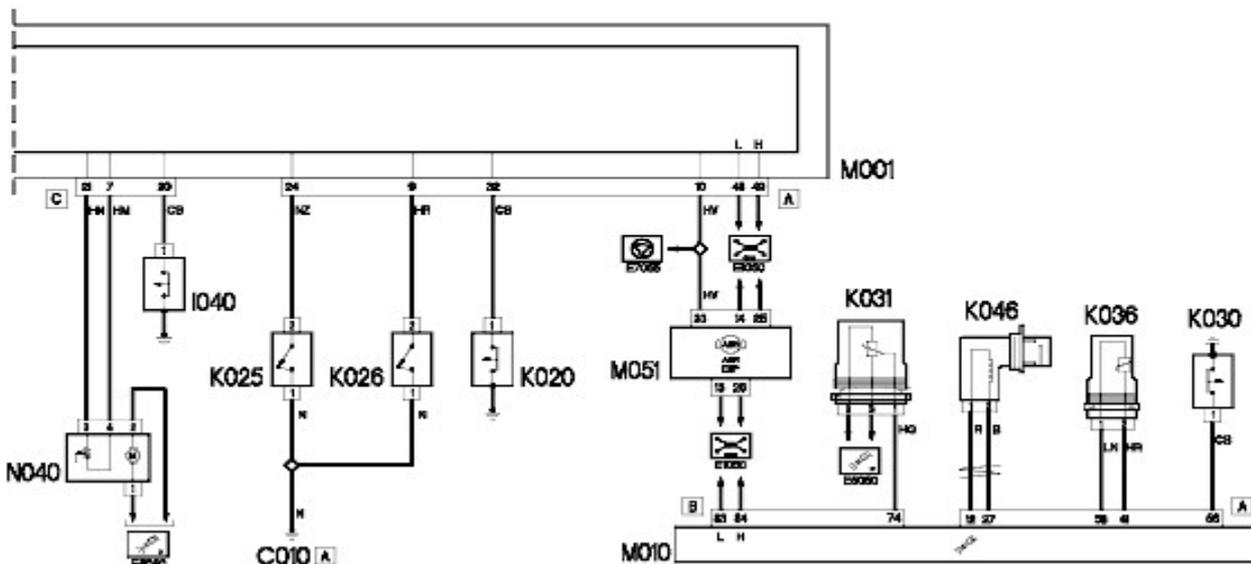
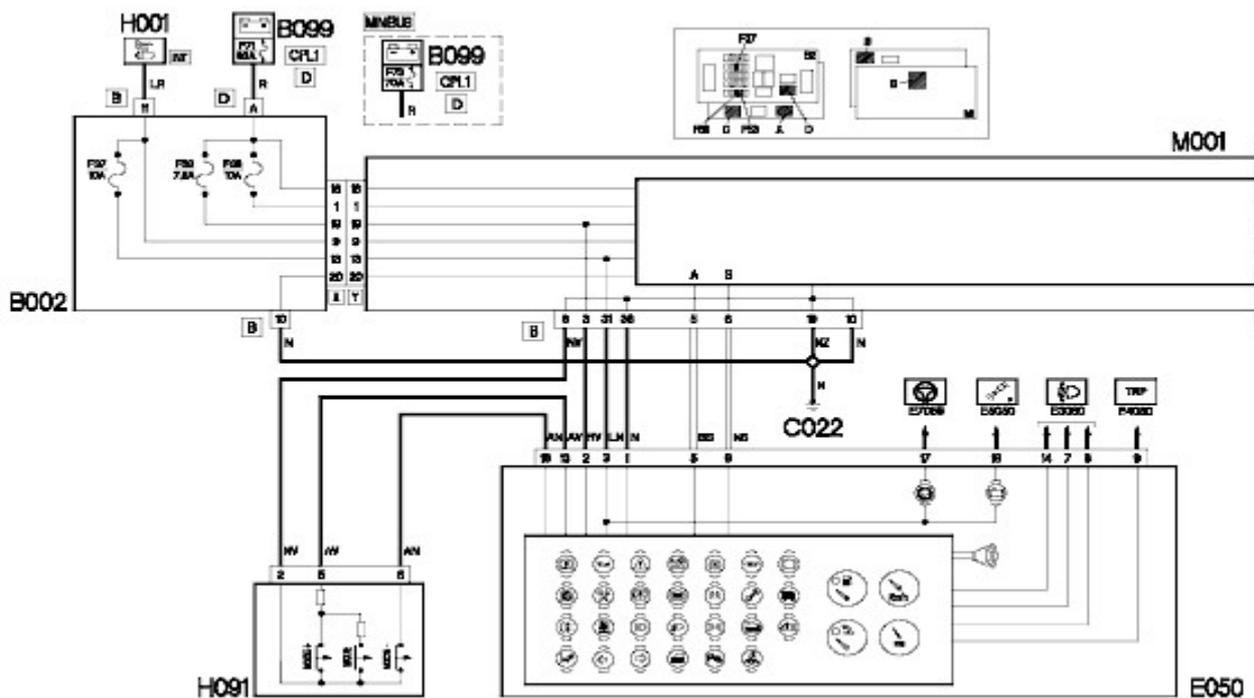
The internal logic for E050 also manages the headlamp adjustment function: the panel sends a control signal to the motors in the headlamps from pin 7, whilst the enablement signal reaches pin 8 (dipped headlamps on). The control for the adjustment of the headlamps for unit H091 sends a signal to the instrument panel E050 (pin 14) each time the "+" or "-" buttons are pressed.

See E3080 HEADLAMP ALIGNMENT CORRECTOR

The Trip Computer zeroing button, located in the steering column switch unit H005 (pin 11 of connector A), sends an earth signal to pin 9 of the instrument panel E050.

See E4080 TRIP COMPUTER

### INSTRUMENT PANEL - WIRING DIAGRAM

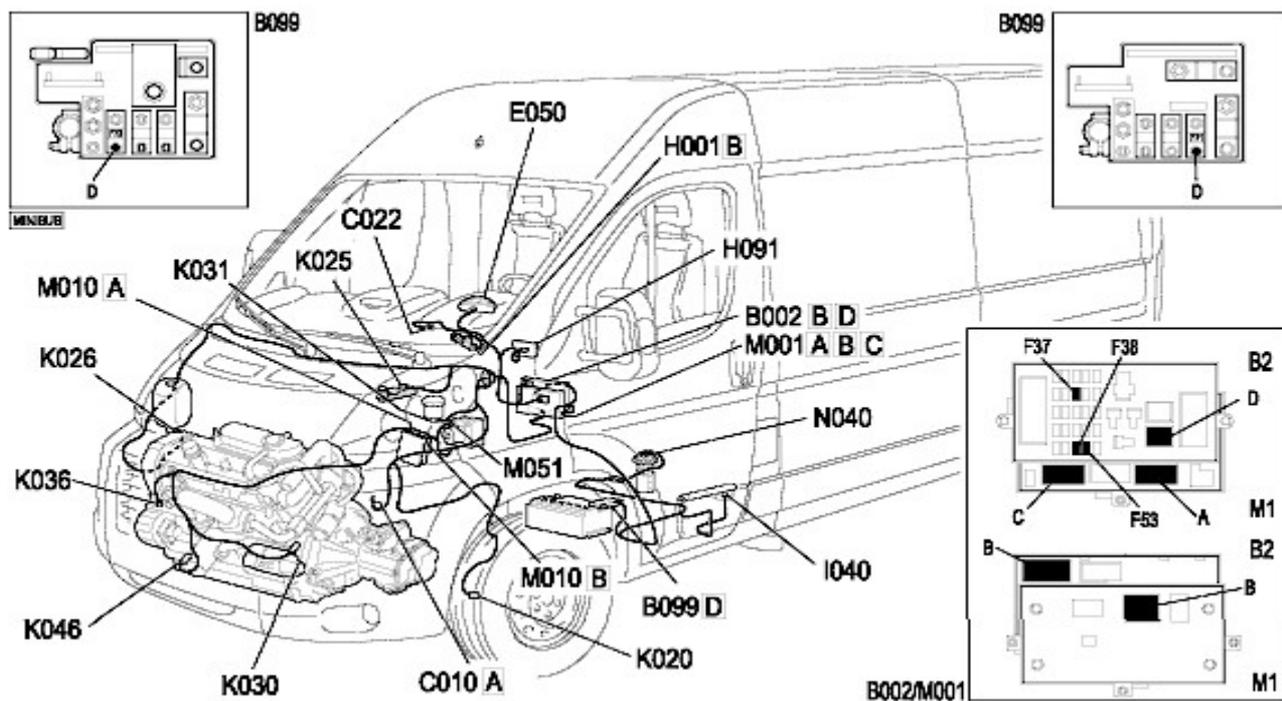


Component code	Description
B002	JUNCTION UNIT UNDER DASHBOARD
B099	MAXI FUSE BOX ON BATTERY
C010	LEFT FRONT EARTH
C022	Centre dashboard earth
E050	INSTRUMENT PANEL
H001	IGNITION SWITCH

Description	With reference to the assembly
JUNCTION UNIT UNDER DASHBOARD	Op. 5505A MULTI-FUNCTION COMPONENTS
MAXI FUSE BOX ON BATTERY	Op. 5530B BATTERY AND LEADS
LEFT FRONT EARTH	-
Centre dashboard earth	-
INSTRUMENT PANEL	Op. 5560B ANALOGUE CONTROL PANEL
IGNITION SWITCH	Op. 5520A IGNITION SWITCH

H091	LEFT CONTROL UNIT (PCS, LEFT CONTROL PANEL)	Op. 7040A PASSENGER COMPARTMENT TRIMS
I040	HANDBRAKE SWITCH	Op. 5550D BRAKE AND REVERSING LIGHTS
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A FRONT DISC BRAKES
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C BRAKE PUMP, RESERVOIR AND LOAD PROPORTIONING VALVE
K026	Engine coolant level sensor	Op. 1088B ENGINE COOLING RADIATOR
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A INDICATORS/CHECK DEVICES
K031	WATER IN DIESEL FILTER SENSOR	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
K046	RPM SENSOR	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
M001	BODY COMPUTER	Op. 5505A MULTI-FUNCTION COMPONENTS
M010	ENGINE MANAGEMENT ECU	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
M051	Braking system control unit	Op. 3340A ABS CHECK/ADJUSTMENT DEVICES
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A FUEL TANK AND COMPONENTS

## INSTRUMENT PANEL - COMPONENT LOCATION



Component code	Description	With reference to the assembly
B002	JUNCTION UNIT UNDER DASHBOARD	Op. 5505A MULTI-FUNCTION COMPONENTS
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B BATTERY AND LEADS
C010	LEFT FRONT EARTH	-
C022	Centre dashboard earth	-
E050	INSTRUMENT PANEL	Op. 5560B ANALOGUE CONTROL PANEL
H001	IGNITION SWITCH	Op. 5520A IGNITION SWITCH
H091	LEFT CONTROL UNIT (PCS, LEFT CONTROL PANEL)	Op. 7040A PASSENGER COMPARTMENT TRIMS
I040	HANDBRAKE SWITCH	Op. 5550D BRAKE AND REVERSING LIGHTS
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A FRONT DISC BRAKES
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C BRAKE PUMP, RESERVOIR AND LOAD PROPORTIONING VALVE
K026	Engine coolant level sensor	Op. 1088B ENGINE COOLING RADIATOR
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A INDICATORS/CHECK DEVICES
K031	WATER IN DIESEL FILTER SENSOR	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
K046	RPM SENSOR	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
M001	BODY COMPUTER	Op. 5505A MULTI-FUNCTION COMPONENTS
M010	ENGINE MANAGEMENT ECU	Op. 1060G DIESEL INJECTION PRESSURE PUMP ELECTRONIC CONTROL
M051	Braking system control unit	Op. 3340A ABS CHECK/ADJUSTMENT DEVICES
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A FUEL TANK AND COMPONENTS