



STRUMENTO DI BORDO

150 - 500

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 control panel circular display is available in the version in multifunction configuration (COMFORT type).

This version allows the display of the functions offered by the Bluetooth system.

See E3570 INTEGRATED RADIO PHONE

The panel includes 4 gauges, 2 of which employ step motors and 2 of which are digital gauges in the display.

A single instrument console contains:

- Electronic speedometer;
- Electronic rev counter;
- Digital fuel level gauge;
- Digital engine coolant temperature gauge;
- Display;
- Warning lights.

The display, depending on the version, includes several useful information icons, such as:

- robotised gearbox gear selection indicator and AUTO operation mode;
- engagement of CITY function;
- SPORT function engagement;
- ECO function engagement;
- headlight alignment position;
- outside temperature and ice danger (snowflake symbol);
- Start&Stop system activation;
- gear change indicator (SHIFT UP - SHIFT DOWN) - only with manual gearbox -;
- date and time.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; this function makes the steering wheel effort lighter, making parking easier: therefore, this function is particularly useful for driving in city centres.


The SPORT function activation icon is activated after the dedicated button on the central dashboard is pressed; this function permits the activation of a sports setting characterised by greater response from the car when accelerating (by means of a different mapping in the Powertrain Control Module) and greater effort required at the steering wheel for an appropriately sporty driving feel.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; with this function the vehicle's drive style is set for urban use, characterised by lower fuel consumption and emissions thanks to an engine torque decrease.

The Start&Stop activation symbol activates when the vehicle is ready to resume after it has been automatically switched off. The display signals the procedures that the driver has to carry out to restart the engine via dedicated messages (for example: press the brake pedal).

The gear change indication makes it possible, on vehicles with a manual gearbox, to suggest the driver make a gear change (SHIFT-UP or SHIFT DOWN) via a special indication in the control panel.

This suggestion to change gear is designed to improve consumption and ensure the best driving style.

 The indication in the instrument panel remains on until the driver shifts gear or the driving conditions go back to a situation where gearshifting is not required to improve consumption.

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

- alarm/warning/danger signalling;
- parking sensor signalling;
- set vehicle speed exceeded;
- doors open signalling;
- robotized gearbox signals;
- handbrake applied with the vehicle moving signalling;
- Seat Belt Reminder;
- direction indicators/hazard warning lights acoustic signals;
- Push button 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 thorough the Body Computer.

Engine rpm: this function involves the display on the instrument panel of the engine rotation speed by means of the data sent through the CAN network from the Powertrain Control Module.

Milometer: this function involves the display and memorising of the total and trip mileage: mileage information is processed by the Body Computer by means of a counter that is sent to the instrument panel through the CAN; the trip counter that forms part

of the Trip Computer can be reset using the special TRIP button for the right steering column stalk lever.

See E4080 TRIP COMPUTER

Engine water temperature: this function involves the display of the engine water level in the instrument panel and the overheating warning light coming on by means of messages sent through the CAN network from the Powertrain Control Module.

Fuel level: the Body Computer receives the signal from the sensor built into the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the instrument panel digital gauge; it also controls the lighting of the reserve warning light.

The instrument panel also has various warning lights.

Brake pad wear status: this function involves the dedicated 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).

Engaged parking brake: the Body Computer acquires the handbrake engaged status from the dedicated switch and communicates this information to the instrument panel through the CAN network; also, if this signal is associated with a given speed threshold being exceeded, an acoustic warning is activated.


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

The general failure warning light summarises the faults detected by a series of systems and components, such as:

- engine oil pressure sensor fault;
- parking sensor fault;
- intervention of the fuel cut off function - FPS (Fire Prevention System) signal - which cuts off the fuel;
- fuel cut off function not available;
- robotized gearbox system failure;
- exterior lighting failure;
- Start&Stop system fault.

The signalling of exterior lights failure via the general failure warning light is managed by the Body Computer; it contains a check function that checks the operation of the exterior lights, lighting up the warning light if a fault is detected with the lights or their connection:

- side lights;
- daytime running lights (DRL);
- number plate;
- rear fog light;
- direction indicator;
- vehicle brake light (excluding 3rd brake light).

 This wiring diagram illustrates the operation of the warning lights that are not included in other functions; the other warning lights are described and illustrated in the wiring diagrams for the components to which they refer.

Together with the activation of the warning lights, there are several messages (subdivided by priority) which allow the specific identification of the fault.

The use of the various settings in the instrument panel SET UP menu takes place via the MENU/arrow symbol, + and - buttons to the right of the instrument panel. For example, settings relating to the following can be adjusted:

- Vehicle interior lighting adjustment;
- Speed limit;
- Trip B enabling;
- Time adjustment;
- Date adjustment;
- Repetition of audio information;
- Autoclose function (automatic central locking with vehicle moving);
- Units of measurement (distances in km or miles; fuel consumption in km/l or l/100 km or mpg; temperature in °C or °F);
- Language selection;
- Volume of acoustic warnings / failure signals;
- Button press volume;
- Activation / deactivation of S.B.R. buzzer;
- Planned maintenance indications;
- Passenger airbag activation/deactivation;
- Daylight lights (DRL) activation/deactivation.

The control panel is equipped with a brightness sensor that discriminates between night (nighttime) and day (daylight) conditions in order to suitably manage the lighting of the vehicle controls and displays.

See E2530 INSTRUMENT LIGHTING

For further details,

See descriptions 5560 INSTRUMENTS

The instrument panel receives a direct battery power supply and an ignition-operated power supply via two lines protected by two dedicated fuses in the Body Computer.

INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

The ignition-operated power supply (INT) for instrument panel E050 reaches pin 3 via a line protected by fuse F37 of Body Computer M001 (pin 7 of connector E). The direct battery power supply reaches pin 2 of E050 via a line protected by fuse F53 of the Body Computer (pin 14 of connector E).

Pin 1 of the instrument panel E050 is connected to the driver's dashboard earth C015.

The instrument panel E050 is connected from pins 5 and 6 with the Body Computer M001 (pins 18 and 20 of connector D) and via the latter to the entire CAN.

The Body Computer M001 (pins 44 and 45 of connector B) receives the speedometer signal from the braking system control unit M051 (pins 26 and 14) via the C-CAN, and forwards it to the instrument panel E050.

The electronic rev counter receives the engine rpm signal from the Powertrain Control Module M010 via the CAN.

The digital fuel level gauge is managed according to the signal coming from the level detector located in the electric fuel pump unit N040. The Body Computer provides the sensor with a reference earth (pin 17 of connector F) and receives a proportional signal at pin 4 of the same connector, forwarding it to the instrument panel E050 via the B-CAN.

The handbrake applied/insufficient brake fluid level warning light is activated by an earth signal from the handbrake switch I040 that reaches pin 10 of connector F of the Body Computer M001, or from the brake fluid level sensor K025 that reaches pin 33 of connector B of M001.

The front left K020 and front right K021 wear sensors (switches) control the associated warning light through a connection with pin 26 of connector B of the Body Computer M001. For the 0.9 TwinAir 105 HP version, equipped with rear disc brakes, the Body Computer M001 also receives the signals from the dedicated sensors on the rear left (K217) and right (K218) wheel.

The outside temperature sensor, incorporated in the passenger side exterior rear view mirror P061, receives a reference earth from the Body Computer M001 and sends a signal to pin 37 of connector B of the Body Computer; the latter forwards this signal via the B-CAN to the instrument panel E050 (displaying of outside temperature, intermittent if < 3°C) and to the other network nodes.

The Powertrain Control Module M010 sends signals coming from the following to the instrument panel via the CAN:

- insufficient engine oil pressure sensor (switch) K030;
- engine rpm sensor K046;
- engine coolant temperature sensor K036.

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

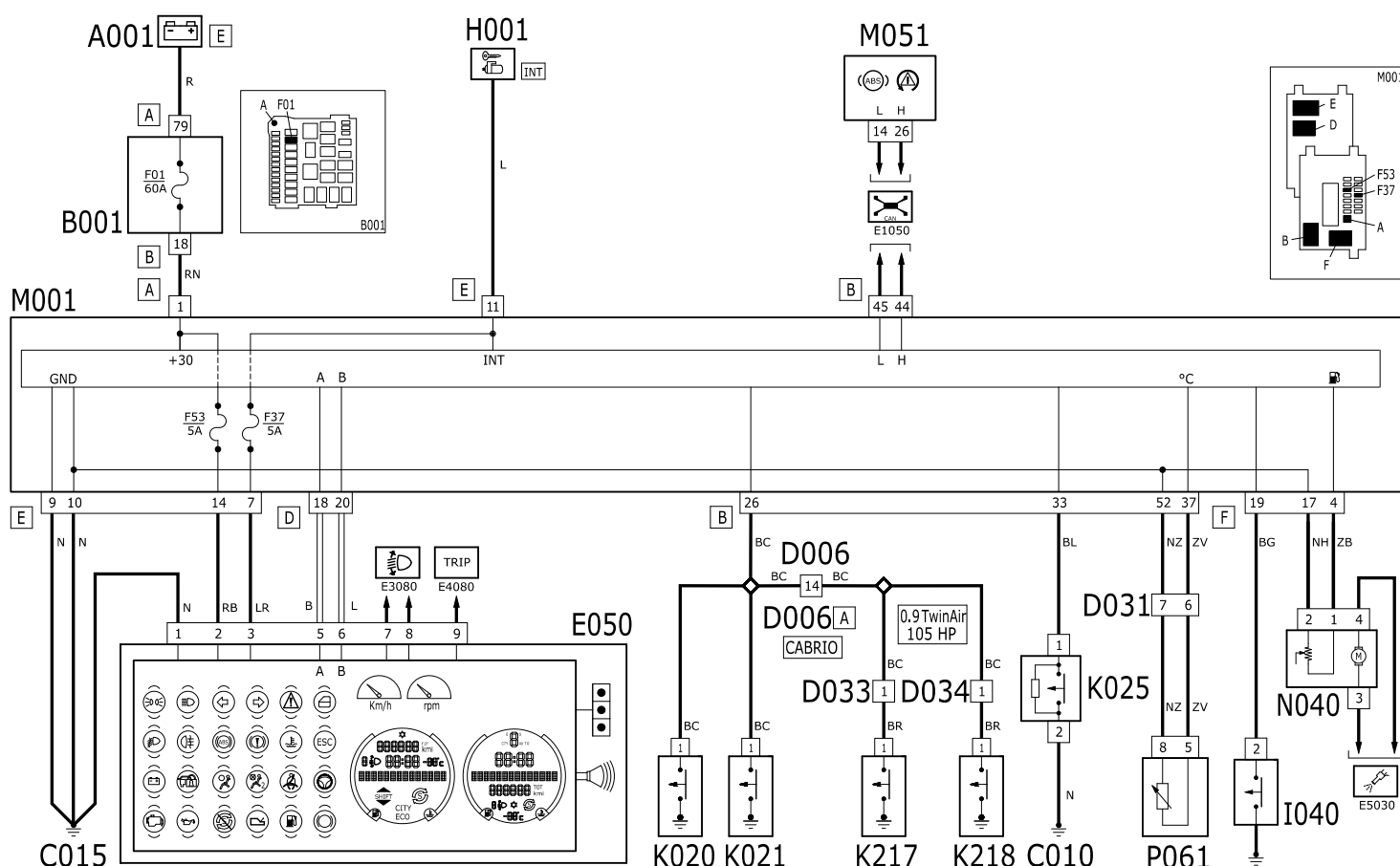
The internal logic for E050, which also manages the headlamp adjustment function, sends a control signal to the motors in the lamps from pin 7, whilst the enabling signal reaches pin 8 (dipped headlamps on). Pressing the + or - buttons to the right of the panel controls the adjustment.

See E3080 HEADLAMP AGLINMENT CORRECTOR

The Trip Computer zeroing button (TRIP), located at the end of the right steering column switch unit H005 lever, sends an earth signal to pin 9 of the instrument panel E050.

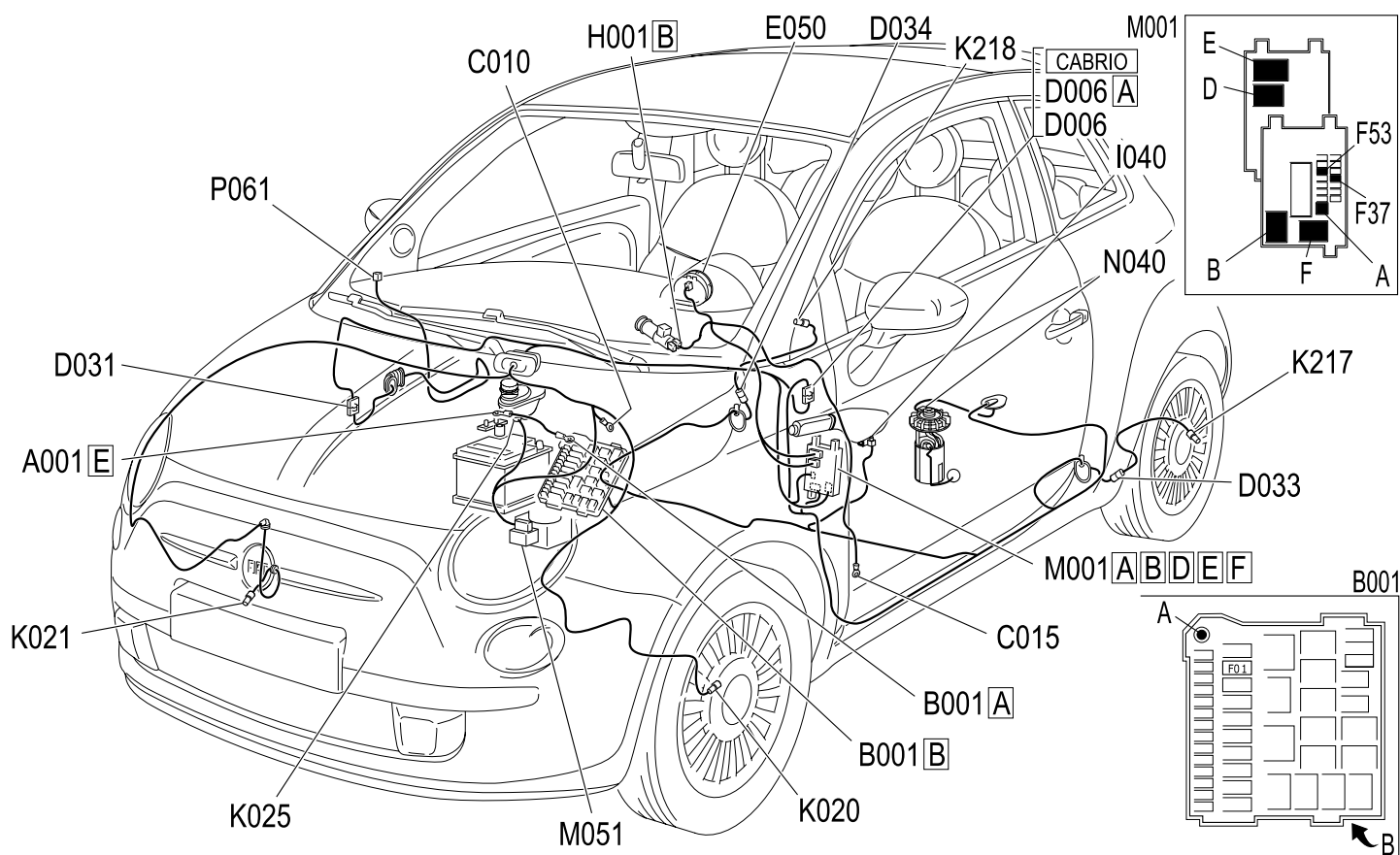
See E4080 TRIP COMPUTER

INSTRUMENT PANEL - WIRING DIAGRAM



Component code	Name	Reference to the Operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D006	FRONT/REAR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D033	Left rear/brake caliper coupling	-
D034	Right rear/brake caliper coupling	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K021	RIGHT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K217	LEFT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
K218	RIGHT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R
P061	PASSENGER DOOR MIRROR	Op. 7005R30 ELECTRICALLY CONTROLLED DOOR MIRROR (ONE) - R+R

INSTRUMENT PANEL - COMPONENT LOCATION



Component code	Name	Reference to the Operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D006	FRONT/REAR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D033	Left rear/brake caliper coupling	-
D034	Right rear/brake caliper coupling	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K021	RIGHT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K217	LEFT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
K218	RIGHT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R
P061	PASSENGER DOOR MIRROR	Op. 7005R30 ELECTRICALLY CONTROLLED DOOR MIRROR (ONE) - R+R



STRUMENTO DI BORDO

150 - 500

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

- COMFORT multifunctional display - LOW trim levels;
- MATRIX reconfigurable multifunctional display - HIGH trim levels.

Both versions allow the display of the functions offered by the Bluetooth system.

See E3570 INTEGRATED RADIO PHONE

The MATRIX reconfigurable display also allows the display of a navigation map with the Blue&Me system.

See E4090 NAVIGATOR

The panel includes 4 gauges, 2 of which employ step motors and 2 of which are digital gauges in the display.

In both configurations a single instrument contains:

- Electronic speedometer;
- Electronic rev counter;
- Digital fuel level gauge;
- Digital engine coolant temperature gauge;
- Display;
- Warning lights.

The available control panel versions (COMFORT and MATRIX) therefore differ according to the technology of the display.

The display includes the display of several useful information icons, such as:

- engagement of CITY function;
- service due (spanner symbol);
- headlamp alignment position;
- outside temperature and ice danger (snowflake symbol);
- robotized gearbox gear selection indicator and AUTO and ECO operating mode;
- date and time.

On versions with START&STOP there is also an S&S system activation/deactivation/failure multifunction symbol (where present).



The spanner symbol (scheduled maintenance) is no longer displayed on this version.

The S&S on symbol is activated when the vehicle is ready to resume after it has been automatically switched off. The display signals the procedures that the driver has to carry out to restart the engine via dedicated messages (for example: press the brake pedal).

The S&S deactivation symbol (for MATRIX versions only) is activated when the driver presses the button in the auxiliary panel in the centre of the dashboard. There are dedicated messages in the display on COMFORT versions.

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

- alarm/warning/danger signalling;
- parking sensor signalling;
- set vehicle speed exceeded;
- doors open signalling;
- robotized gearbox signals;
- handbrake applied with the vehicle moving signalling;
- Seat Belt Reminder;
- direction indicators/hazard warning lights acoustic signals;
- Push button 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.

Mileometer: this function involves the display and memorising of the total and trip mileage: mileage information is processed by the Body Computer by means of a counter that is sent to the instrument panel via the CAN. The trip counter that forms part of the Trip Computer can be reset using the special TRIP button for the right steering column switch unit lever.

See E4080 TRIP COMPUTER

Engine coolant temperature: this function involves the display of the engine coolant temperature level 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 built into the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the instrument panel digital gauge; it also controls the lighting of the reserve warning light.

The instrument panel also has various warning lights.

Brake pad wear status: this function involves the dedicated 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).

Handbrake applied: the Body Computer acquires the handbrake applied status from the dedicated switch and communicates this information to the instrument panel via the CAN; also, if this signal is associated with a determined speed threshold being exceeded, an acoustic warning is activated.


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

The general failure warning light summarises the faults detected by a series of systems and components, such as:

- engine oil pressure sensor fault;
- parking sensor fault;
- intervention of the fuel cut off function - FPS (Fire Prevention System) signal - which cuts off the fuel;
- fuel cut off function not available;
- robotized gearbox system failure;
- exterior lighting failure;
- S&S system failure (COMFORT versions only, where present).

The signalling of exterior lights failure via the general failure warning light is managed by the Body Computer; it contains a check function that checks the operation of the exterior lights, lighting up the warning light if a fault is detected with the lights or their connection:

- side lights;
- daylight lights (DRL);
- number plate;
- rear fog lamp;
- direction indicator;
- vehicle brake light (excluding 3rd 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, there are several messages (subdivided by priority) which allow the specific identification of the fault.

The use of the various settings in the instrument panel SET UP menu takes place via the MENU/ESC, + and - buttons to the right of the instrument panel. For example, settings relating to the following can be adjusted:

- Vehicle interior lighting adjustment;
- Speed limit;
- Trip B enablement;
- Time adjustment;
- Date adjustment;
- Repetition of audio information;
- Autoclose function (automatic central locking with vehicle moving);
- Units of measurement (distances in Km or miles; fuel consumption in Km/l or l/100Km or mpg; temperature in °C or °F);
- Language selection;
- Volume of acoustic warnings / failure signals;
- Button press volume;
- Activation / deactivation of S.B.R. buzzer;
- Planned maintenance indications;
- Passenger Air Bag activation/deactivation;
- Daylight lights (DRL) activation/deactivation.

On both trim levels the control panel is equipped with a brightness sensor that discriminates between night (nighttime) and day (daylight) conditions in order to suitably manage the lighting of the vehicle controls and displays.

See E2530 INSTRUMENT LIGHTING

For further details,

See descriptions 5560 INSTRUMENTS

The instrument panel receives a direct battery power supply and an ignition-operated power supply via two lines protected by two dedicated fuses in the Body Computer.

INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

The ignition-operated power supply (INT) for instrument cluster E050 reaches pin 3 via a line protected by fuse F37 of Body Computer M001 (pin 7 of connector E). The direct battery power supply reaches pin 2 of E050 via a line protected by fuse F53 of the Body Computer (pin 14 of connector E).

Pin 1 of the instrument panel E050 is connected to the driver's dashboard earth C015.

The instrument panel E050 is connected from pins 5 and 6 with the Body Computer M001 (pins 18 and 20 of connector D) and via the latter to the entire CAN.

The Body Computer M001 (pins 44 and 45 of connector B) receives the speedometer signal from the braking system control unit M051 (pins 26 and 14) via the C-CAN, and forwards it to 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 9 and 23 of connector B to the engine rpm sensor K046.

On versions with S&S, the engine rpm sensor K046 receives a power supply and earth respectively from pins 15 and 35 of connector B of M010 and provides information on the engine speed via a frequency signal sent to pin 9 of connector B of M010.

The digital fuel level gauge is managed according to the signal coming from the level detector located in the electric fuel pump unit N040. The Body Computer provides the sensor with a reference earth (pin 17 of connector F) and receives a proportional signal at pin 4 of the same connector, and forwards it to the instrument panel E050 via the B-CAN.

The handbrake applied/insufficient brake fluid level warning light is activated by an earth signal from the handbrake switch I040 that reaches pin 10 of connector F of the Body Computer M001, or from the brake fluid level sensor K025 that reaches pin 33 of connector B of M001.

The brake pad wear sensor (switch) K020 controls the associated warning light via a connection with pin 26 of connector B of the Body Computer M001.

The engine management control unit M010 sends signals coming from the following to the instrument panel via the CAN:

- insufficient engine oil pressure sensor (switch) K030, connected to pin 55 of connector A;
- engine coolant temperature sensor K036, connected to pins 36 (reference earth) and 45 (signal) of connector B.

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

The braking system control unit M051 is connected, via the C-CAN line, from pins 15 and 27, to the engine management control unit M010 (pins 49 and 50 of connector A), forwarding the signals described above, via the robotized gearbox M054, to the Body Computer M001.

See E1050 CAN CONNECTION LINES

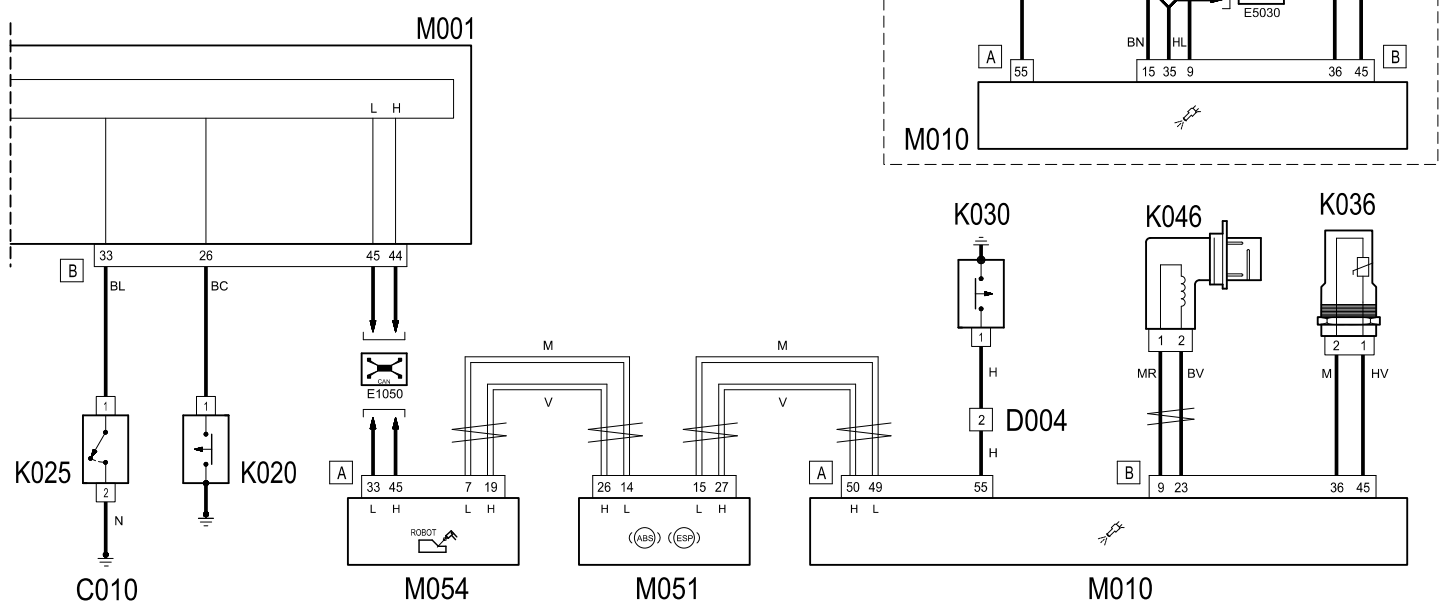
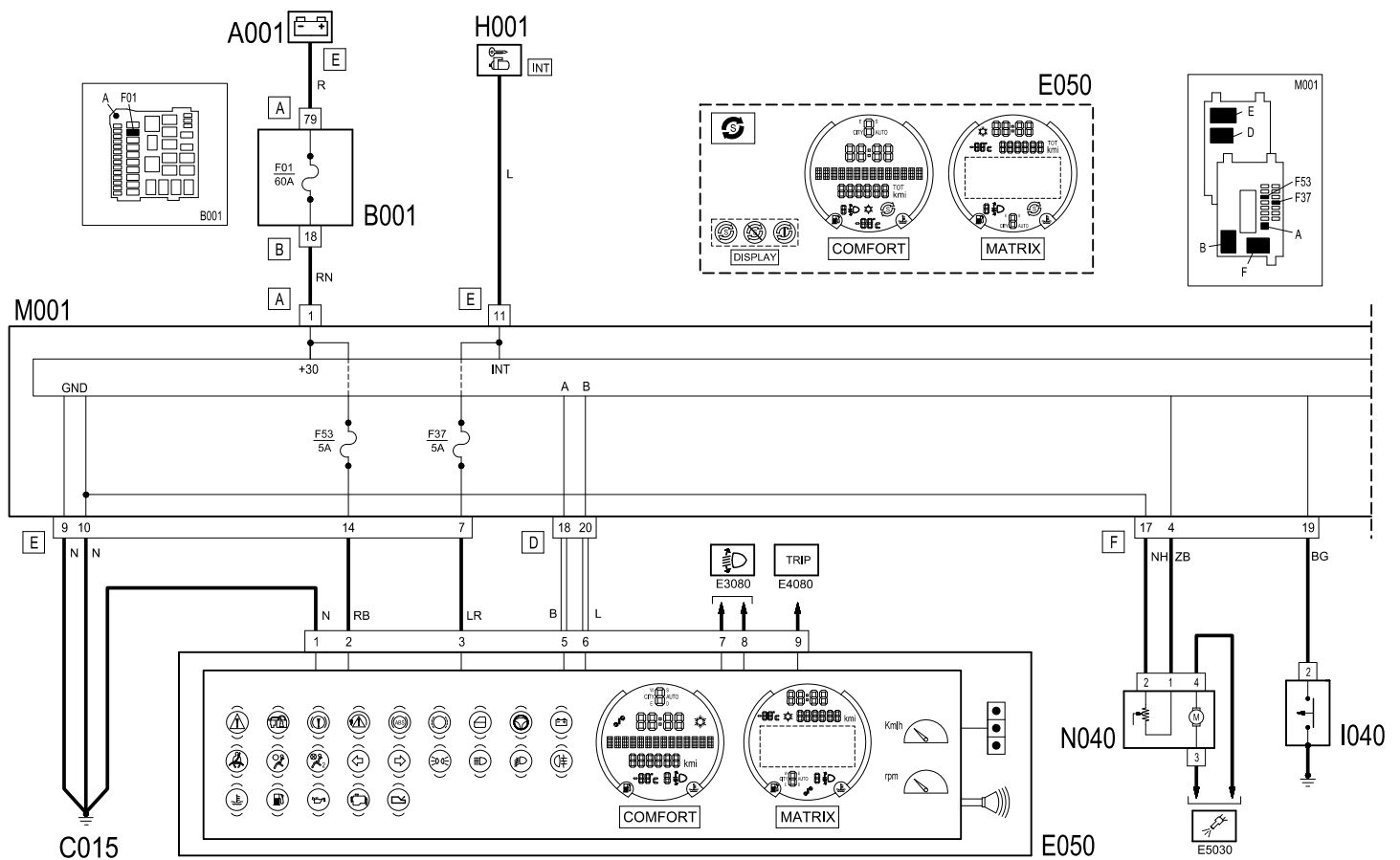
The internal logic of E050 also manages the headlamp adjustment function: the panel sends a control signal to the motors in the headlamps from pin 7, whilst the enablement signal reaches pin 8 (dipped headlamps on). Pressing the + or - buttons to the right of the panel controls the adjustment.

See E3080 HEADLAMP ALIGNMENT CORRECTOR

The Trip Computer zeroing button (TRIP), located at the end of the right steering column switch unit H005 lever, sends an earth signal to pin 9 of the instrument panel E050.

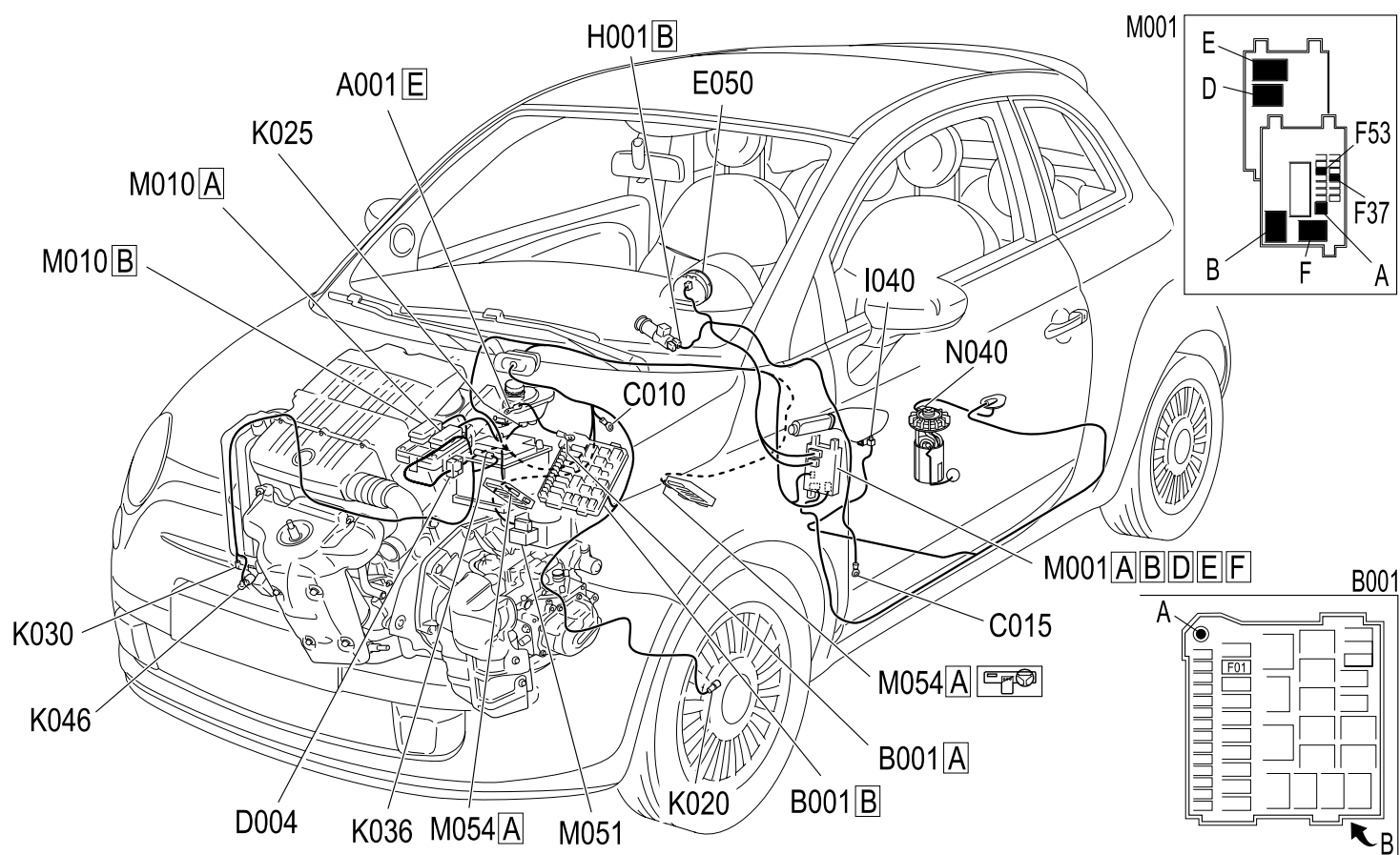
See E4080 TRIP COMPUTER

INSTRUMENT PANEL - WIRING DIAGRAM



Component code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D004	FRONT/ENGINE COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A42 ENGINE OIL PRESSURE WARNING LIGHT SWITCH - R.R.
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1088E30 SWITCH FOR WATER TEMPERATURE WARNING LIGHT - R.R.
K046	RPM SENSOR	Op. 5510C26 ENGINE RPM SENSOR - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
M054	ROBOTIZED TRANSMISSION CONTROL UNIT	Op. 2127E10 HYDRAULIC SPEED SELECTION SYSTEM CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R

INSTRUMENT PANEL - COMPONENT LOCATION



Component code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D004	FRONT/ENGINE COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A42 ENGINE OIL PRESSURE WARNING LIGHT - R.R.
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1088E30 SWITCH FOR WATER TEMPERATURE WARNING LIGHT - R.R.
K046	RPM SENSOR	Op. 5510C26 ENGINE RPM SENSOR - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
M054	ROBOTIZED TRANSMISSION CONTROL UNIT	Op. 2127E10 HYDRAULIC SPEED SELECTION SYSTEM CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R



STRUMENTO DI BORDO

150 - 500

INSTRUMENT PANEL - DESCRIPTION

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

The control panel circular display is available in the following configurations: "multifunction" or "reconfigurable multifunction (TFT)".

Panel with multifunction display

The panel with multifunction display includes 4 gauges, 2 of which employ step motors and 2 of which are digital gauges in the display.

A single instrument console contains:

- Electronic speedometer;
- Electronic rev counter;
- Digital fuel level gauge;
- Digital engine coolant temperature gauge;
- Display;
- Warning lights.

This type of display shows several useful information icons, such as:

- robotised gearbox gear selection indicator and AUTO operation mode;
- engagement of CITY function;
- SPORT function engagement;
- ECO function engagement;
- headlight alignment position;
- outside temperature and ice danger ("snowy road" symbol);
- Stop/Start system activation;
- gear change indicator (SHIFT UP - SHIFT DOWN) - only with manual gearbox -;
- service function indication (scheduled servicing);
- total distance travelled indication (mileometer);
- date and time.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; this function makes the steering wheel effort lighter, making parking easier: therefore, this function is particularly useful for driving in city centres.


The SPORT function activation icon is activated after the dedicated button on the central dashboard is pressed; this function permits the activation of a sports setting characterised by greater response from the car when accelerating (by means of a different mapping in the Powertrain Control Module) and greater effort required at the steering wheel for an appropriately sporty driving feel.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; with this function the vehicle's drive style is set for urban use, characterised by lower fuel consumption and emissions thanks to an engine torque decrease.

The Stop/Start activation symbol activates when the vehicle is ready to resume after it has been automatically switched off. The display signals the procedures that the driver has to carry out to restart the engine via dedicated messages (for example: press the brake pedal).

The gear change indication makes it possible, on vehicles with a manual gearbox, to suggest the driver make a gear change (SHIFT-UP or SHIFT DOWN) via a special indication in the control panel.

This suggestion to change gear is designed to improve consumption and ensure the best driving style.

 The indication in the instrument panel remains on until the driver shifts gear or the driving conditions go back to a situation where gearshifting is not required to improve consumption.

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

- alarm/warning/danger signalling;
- parking sensor signalling;
- set vehicle speed exceeded;
- doors open signalling;
- robotised gearbox signals;
- handbrake applied with the vehicle moving signalling;
- Seat Belt Reminder;
- direction indicators/hazard warning lights acoustic signals;
- Push button Roger Beep.

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

Engine rpm: this function involves the display on the instrument panel of the engine rotation speed by means of the data sent through the CAN from the Powertrain Control Module.

Milometer: this function involves the display and memorising of the total and trip mileage: mileage information is processed by the Body Computer by means of a counter that is sent to the instrument panel through the CAN; the trip counter that forms part

of the Trip Computer can be reset using the special TRIP button for the right steering column stalk lever.

See E4080 TRIP COMPUTER

Engine water temperature: this function involves the display of the engine water level in the instrument panel and the overheating warning light coming on by means of messages sent through the CAN from the Powertrain Control Module.

Fuel level: the Body Computer receives the signal from the sensor built into the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the instrument panel digital gauge; it also controls the lighting of the reserve warning light.

The instrument panel also has various warning lights.

Brake pad wear: this function involves the dedicated warning light switching 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).

Engaged parking brake: the Body Computer acquires the handbrake engaged status from the dedicated switch and communicates this information to the instrument panel through the CAN; also, if this signal is associated with a given speed threshold being exceeded, an acoustic warning is activated.

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

The general failure warning light summarises the faults detected by a series of systems and components, such as:

- engine oil pressure sensor fault;
- parking sensor fault;
- intervention of the fuel cut off function - FPS (Fire Prevention System) signal - which cuts off the fuel;
- fuel cut off function not available;
- robotised gearbox system failure;
- exterior lighting failure;
- Stop/Start system fault.

The signalling of exterior lights failure via the general failure warning light is managed by the Body Computer; it contains a check function that checks the operation of the exterior lights, lighting up the warning light if a fault is detected with the lights or their connection:

- side lights;
- daytime running lights (DRL);
- number plate lights;
- rear fog light;
- direction indicators;
- vehicle brake light (excluding 3rd brake light).



The other warning lights present on versions with instrument panel with multifunction display are described and illustrated in the wiring diagrams for the components to which they refer.

Together with the activation of the warning lights, there are several messages (subdivided by priority) which allow the specific identification of the fault.

The use of the various settings in the instrument panel "Setup" menu takes place via the MENU/arrow symbol, + and – buttons to the right of the instrument panel. For example, settings relating to the following can be adjusted:

- Vehicle interior lighting adjustment;
- Setting a speed limit;
- Headlight sensor;
- Trip B enabling;
- Time adjustment;
- Date adjustment;
- Repetition of audio information;
- Autoclose function (automatic central locking with vehicle moving);
- Units of measurement (distances in km or miles; fuel consumption in km/l or l/100 km or mpg; temperature in °C or °F);
- Language selection;
- Volume of acoustic warnings / failure signals;
- Button press volume;
- Activation / deactivation of S.B.R. buzzer;
- Planned maintenance indications;
- Passenger airbag activation/deactivation;
- Daytime Running Light (DRL) activation/deactivation;
- Tyre pressure monitoring system (iTPMS) calibration.

The type-approval interventions available for the vehicle since 09/2014 make the passenger side airbag deactivation controlled via Setup menu visible not only through the dedicated warning light on the instrument panel, but also through a LED located on the auxiliary dashboard lighting up. In the same way, the following passenger side airbag activation will switch off both the warning light on the instrument panel and the LED located at the centre of the dashboard.

Following the type-approval interventions available for the vehicle since 09/2014, the Setup menu also includes calibration (Reset) of the tyre pressure monitoring system (iTPMS). For further details,

See E7060 TYRE INFLATION PRESSURE CONTROL SYSTEM

The control panel is equipped with a brightness sensor that discriminates between night (nighttime) and day (daylight) conditions in order to suitably manage the lighting of the vehicle controls and displays.

See E2530 INSTRUMENT LIGHTING

Panel with reconfigurable multifunction display [TFT]

The panel with reconfigurable multifunction display (TFT - Thin Film Transistor, with active matrix) includes digital indicators and a large colour central display.

A single instrument console contains:

- 7" TFT colour display;
- Warning lights;
- Digital fuel level gauge;
- Digital engine coolant temperature gauge;
- Electronic digital rev counter;
- Digital indicator with "ECO INDEX" function or "Turbo pressure - Accelerator pedal".

The reconfigurable multifunction TFT colour display shows a big vehicle icon in the middle, above which is the vehicle speed indication (km/h or mph) in digital format, while in the lower area there is the mileometer with the total kilometres/miles travelled indication.

Various icons with information useful for the user are displayed in dedicated areas of the panel, specifically:

the following icons are displayed in the left area above the engine coolant temperature digital gauge:

- insufficient battery charge,
- doors not properly shut,
- open tailgate,
- insufficient engine oil pressure (solid),
- deteriorated engine oil (flashing, for diesel versions only),
- faulty robotised gearbox,
- Hill Holder system failure,
- ASR system deactivation,
- fuel cut-off system intervention,
- fuel cut-off system failure,
- Fiat Code system failure,
- possible presence of ice on the road,
- request for engine oil change,
- exterior lighting failure.

The "external light failure" warning light turns on, along with a dedicated message, if a failure (blown bulb, blown protective fuse, broken wiring) is detected on the following external lights:

- side lights,
- daytime running lights (DRL),
- direction indicators,
- rear fog light,
- number plate lights.

The following icons are displayed in the right area above the fuel level digital gauge:

- service (scheduled servicing),
- brake light failure,
- parking sensor failure,
- Stop/Start system deactivation,
- Stop/Start system failure,
- plug pre-heating/plug pre-heating failure (solid/flashing, for diesel versions only),
- DPF particulate filter cleaning in progress (for diesel versions with DPF only),
- water in diesel filter (for diesel versions only),
- speed limit exceeded,
- general failure.

The "general failure" icon is displayed to highlight the faults detected by a set of systems and components, such as:

- engine oil pressure sensor fault;
- water in diesel filter (for diesel versions only);
- intervention/failure of the fuel cut off function - FPS (Fire Prevention System) signal - which cuts off the fuel;
- parking sensor fault;
- exterior lighting failure;
- robotised gearbox system failure;
- Stop/Start system fault.

In the display, beside the speed indication, other information useful for the user is shown, such as:

- engagement of CITY function;
- SPORT function engagement;
- ECO function engagement;
- outside temperature;
- Stop/Start system activation;
- gear status indication (SHIFT UP - SHIFT DOWN) - for versions with manual gearbox -;
- headlight alignment position;
- robotised gearbox gear selection indication and AUTO operation mode;
- date and time.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; this function makes the steering wheel effort lighter, making parking easier: therefore, this function is particularly useful for driving in city centres.

The SPORT function activation icon is activated after the dedicated button on the central dashboard is pressed; this function permits the activation of a sports setting characterised by greater response from the car when accelerating (by means of a different mapping in the Powertrain Control Module) and greater effort required at the steering wheel for an appropriately sporty driving feel.

The "ECO" function activation symbol activates after pressing the dedicated button on the central dashboard; with this function the vehicle's drive style is set for urban use, characterised by lower fuel consumption and emissions thanks to an engine torque decrease.

Further information about the operating condition of the vehicle mission (journey), is shown on the display, at the right and left of the vehicle icon, specifically:

- instant consumption is shown on the right,
- available range is shown on the left.

After pressing the dedicated "ECO" button, these two indications change to inform the driver about the "best average consumption" function parameters, specifically: current average consumption is shown on the right (from the Trip A information), while best average consumption is shown on the left (stored after the last reset with Trip button).

If the "best average consumption" is lower than the current average consumption of the Trip A, the display will show a dedicated screen with message "New Eco: Hero" and the information about consumption level.

If the value of the "Best average consumption" is reached without pressing the "ECO" button the display does not show the screen but the value is still stored.

If the "Best average consumption" value is not available, the display will show a specific message.

The "best average consumption" can be reset, in this case some dashes will be displayed instead of the consumption value.

The Stop/Start activation symbol activates when the vehicle is ready to resume after it has been automatically switched off. The display signals the procedures that the driver has to carry out to restart the engine via dedicated messages.

The gear change indication makes it possible, on vehicles with a manual gearbox, to suggest the driver make a gear change (SHIFT-UP or SHIFT DOWN) via a special indication in the control panel. This suggestion to change gear is designed to improve consumption and ensure the best driving style.

The instrument panel also has various LED warning lights:

- brake pad wear state,
- insufficient brake fluid/handbrake engaged,
- "Dualdrive" electric power steering failure,
- ABS failure,
- ESC system intervention/failure,
- injection/EOBD system failure,
- side lights and dipped beam headlights on,
- fog lights on,
- rear fog light on,
- main beam headlights on,
- right and left direction indicators,
- Insufficient tyre pressure/iTPMS failure (solid/flashing),
- seat belts not fastened,
- airbag failure,
- Passenger side airbag deactivated.



This wiring diagram illustrates the operation of the warning lights that are not included in other functions; the other warning lights are described and illustrated in the wiring diagrams for the components to which they refer.

Brake pad wear status: this function involves the dedicated 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).

Engaged parking brake: the Body Computer acquires the handbrake engaged status from the dedicated switch and communicates this information to the instrument panel through the CAN; also, if this signal is associated with a given speed threshold being exceeded, an acoustic warning is activated.

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

Fuel level digital gauge: the Body Computer receives the signal from the sensor built into the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the instrument panel digital gauge; it also controls the switching on of the insufficient fuel level icon.

At Key-On the instrument panel progressively activates the bars of the digital gauge, starting from the first, until that corresponding to the level of fuel in the tank (last threshold exceeded by the sensor).

There are 8 bars on the digital gauge, the last of which (at the bottom) is divided into two segments to indicate the beginning of the fuel reserve warning area.

All bars are lightened in white, but the two at the bottom have a red edge. When fuel level is low, these two bars become red also in the inside.

If fuel level is low (approximately 5 litres) the indication is reinforced by the "fuel reserve" amber warning light switching on, under the digital gauge itself.

Engine water temperature: this function involves the display of the engine water level in the instrument panel digital gauge and controls the switching on of the overheating icon by means of messages sent through the CAN from the Powertrain Control Module.

There are 8 bars on the digital gauge, the last of which (at the bottom) is blue at Key-On to signal the low temperature condition.

When the temperature level reaches the normal value, all the bars until that corresponding to the temperature reached (last temperature threshold exceeded) become white.

If the temperature level is high, all the 8 bars light up and the last becomes red, to signal engine overheating.

In this case the indication is reinforced by the "engine coolant overheating" red icon switching on.

Electronic rev counter: this function involves the display of the engine rotation speed by means of the data sent through the CAN from the Powertrain Control Module on the instrument panel digital gauge.

The indicator graphics and the filling colours used by the digital gauge change according to the version (Lounge/Sport) and trim level (Eco/Sport).

In general, engine over revving is signalled with a red colour.

"ECO INDEX" function digital gauge: this function involves the display of the driving style ecological level, through a discrete sequence of 11 levels from "0" (low eco-compatibility) to "5" (high eco-compatibility) on the digital gauge of the instrument panel.

Activation/deactivation of this function is controlled by pressing the dedicated "ECO" button in the dashboard.

Display graphic is white by default; the level corresponding to "5" becomes green.


"Turbo pressure - Accelerator pedal" function digital gauge: this function involves the display of the turbo pressure level (from "min" to "max") or of the vehicle acceleration level (from "0" to "100" percent) on the digital gauge of the instrument panel.

Activation/deactivation of these functions is controlled by pressing the dedicated "SPORT" button in the dashboard.

Vehicle acceleration/deceleration is shown on the display with a graphic indication composed of coloured dots in the area below the vehicle icon, in the directions of the four axes (two longitudinal and two transversal).

Specifically:

- green colour, in the case of maximum acceleration/deceleration;
- red colour, in the case of minimum acceleration/deceleration;
- yellow colour, in the case of medium acceleration/deceleration;

 Pressing the dedicated "ECO" or "SPORT" buttons, causes the display layout to change, specifically the background, the area below the vehicle icon and the digital gauge of the corresponding function change.

The instrument contains a buzzer with 8 different settings to carry out the following functions:

- alarm/warning/danger signalling;
- parking sensor signalling;
- set speed limit exceeded;
- doors open signalling;
- robotised gearbox signals;
- handbrake applied with the vehicle moving signalling;
- Seat Belt Reminder (SBR) for unfastened seat belts;
- direction indicators/hazard warning lights acoustic signals;
- button pressing volume (Roger beep).

The control panel is equipped with a brightness sensor that discriminates between night (nighttime) and day (daylight) conditions in order to suitably manage the lighting of the vehicle controls and displays; for further information:

See E2530 INSTRUMENT LIGHTING


Together with the activation of the warning lights and/or icons, there are several messages (subdivided by priority) which allow the specific identification of the fault.

The use of the various settings in the instrument panel "Setup" menu takes place via the MENU/arrow symbol, + and – buttons to the right of the instrument panel.

The following setting can be adjusted through dedicated items:

- Menu (this item allows you to access the Setup menu);
- Lighting (Interior light adjustment: with the dipped beam headlights on and at night, allows you to regulate the brightness intensity of the instrument panel and of the displays present);
- Speed beep (allows you to set the speed limit above which you are notified through an acoustic and visual warning);

The value can be set between 30 and 200 km/h, or between 20 and 125 mph, according to the set unit of measurement.

 The setting will increase/decrease by five units each time the +/- button is pressed. Hold down the +/- button to increase/decrease the setting rapidly.

- Headlight sensor (automatic headlight/dusk sensor sensitivity adjustment);
- Trip B data activation (allows you to activate or deactivate the display of Trip B - partial trip -);
- Set time (clock adjustment, allows you to set the clock through two submenus: "Time" and "Format");
- Set date (adjustment of date, in the day/month/year format);
- See radio (repetition of the radio and radiophone information);
- Autoclose (allows you to activate/deactivate the automatic central locking with vehicle moving when 20 km/h are exceeded);
- Unit of measurement (setting the unit of measurement, allows you to set the units through two submenus: "Distances" and "Consumption");
- Language (allows you to select the language used for the messages and all the items of the menu);
- Warning volume (setting of the buzzer acoustic warning volume);
- Button volume (setting of the button press acoustic signal volume);
- Seat belt buzzer (allows you to reactivate the buzzer for the SBR signal);
- Service (allows you to display the information about the scheduled servicing intervals);
- Passenger airbag (allows you to activate/deactivate the passenger airbag);

The type-approval interventions available for the vehicle since 09/2014 make the passenger side airbag deactivation controlled via the previous item of the Setup menu, visible not only through the dedicated warning light on the instrument panel, but also through a LED located on the auxiliary dashboard lighting up.



In the same way, the following passenger side airbag activation will switch off both the warning light on the instrument panel and the LED located at the centre of the dashboard.

- Daytime Running Lights (allows you to activate/deactivate the Daytime Running Lights - DRLs);
- Tyre Reset (allows you to carry out the iTPMS Reset procedure).

Following the type-approval interventions available for the vehicle since 09/2014, the Setup Menu also includes a dedicated item for calibration (Reset) of the tyre pressure monitoring system (iTPMS).



For further details,

See E7060 TYRE INFLATION PRESSURE CONTROL SYSTEM

- Exit menu (the last function closing the cycle of settings listed in the menu screen).

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

The panel receives a direct battery power supply and an ignition-operated power supply via two lines protected by two dedicated fuses in the Body Computer.

INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

The ignition-operated power supply (INT) reaches pin 3 of instrument panel E050 via a line protected by fuse F37 of Body Computer M001 (pin 7 of connector E). The direct battery power supply reaches pin 2 of E050 via a line protected by fuse F53 of the Body Computer (pin 14 of connector E).

Pin 1 of the instrument panel E050 is connected to the driver's dashboard earth C015.

The instrument panel E050 is connected from pins 5 and 6 with the Body Computer M001 (pins 18 and 20 of connector D) and via the latter to the entire CAN.

The Body Computer M001 (pins 44 and 45 of connector B) receives the speedometer signal from the braking system control unit M051 (pins 26 and 14) via the C-CAN, and forwards it to the instrument panel E050.

The electronic rev counter (also in the digital version) receives the engine rpm signal from the Powertrain Control Module M010 via the CAN.

The digital fuel level gauge is managed according to the signal coming from the level detector located in the electric fuel pump unit N040. The Body Computer provides the sensor with a reference earth (pin 17 of connector F) and receives a proportional signal at pin 4 of the same connector, forwarding it to the instrument panel E050 via the B-CAN.

The "handbrake applied/insufficient brake fluid" warning light is activated by an earth signal from handbrake switch I040 that reaches pin 19 of connector F of Body Computer M001, or from brake fluid level sensor K025 that reaches pin 33 of connector B of M001.

The front left K020 and front right K021 wear sensors (switches) control the associated warning light through a connection with pin 26 of connector B of the Body Computer M001.

For the 0.9 TwinAir 105 HP version, equipped with rear disc brakes, the Body Computer M001 also receives the signals from the dedicated sensors on the rear left (K217) and rear right (K218) wheel.

The outside temperature sensor, incorporated in the passenger side exterior rear view mirror P061, receives a reference earth from the Body Computer M001 and sends a signal to pin 37 of connector B of the Body Computer; the latter forwards this signal via the B-CAN to the instrument panel E050 (flashing signal and ice danger icon if temperature is lower than 3°C) and to the other network nodes.

The Powertrain Control Module M010 sends signals coming from the following to the instrument panel via the CAN:

- insufficient engine oil pressure sensor (switch) K030;
- engine rpm sensor K046;
- water in diesel filter sensor incorporated in the filter assembly K101 (for diesel versions);
- engine coolant temperature sensor K036.

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

See E5050 DIESEL ENGINES ELECTRONIC MANAGEMENT

See E5031 DESCRIPTION OF LPG FUEL SYSTEM ELECTRONIC MANAGEMENT

For versions with TFT reconfigurable multifunction display, many signals are sent via CAN to the instrument panel E050 for managing the specific icons and the messages on the colour display, the warning buzzer and the operating logic of the digital gauges described previously.

Specifically, the earth signals for activation/deactivation of the "ECO" and "SPORT" functions reach the Body Computer M001 (pin 28 of connector D) and from here are forwarded to the instrument panel via CAN.

For further information,

See E7045 ELECTRIC STEERING

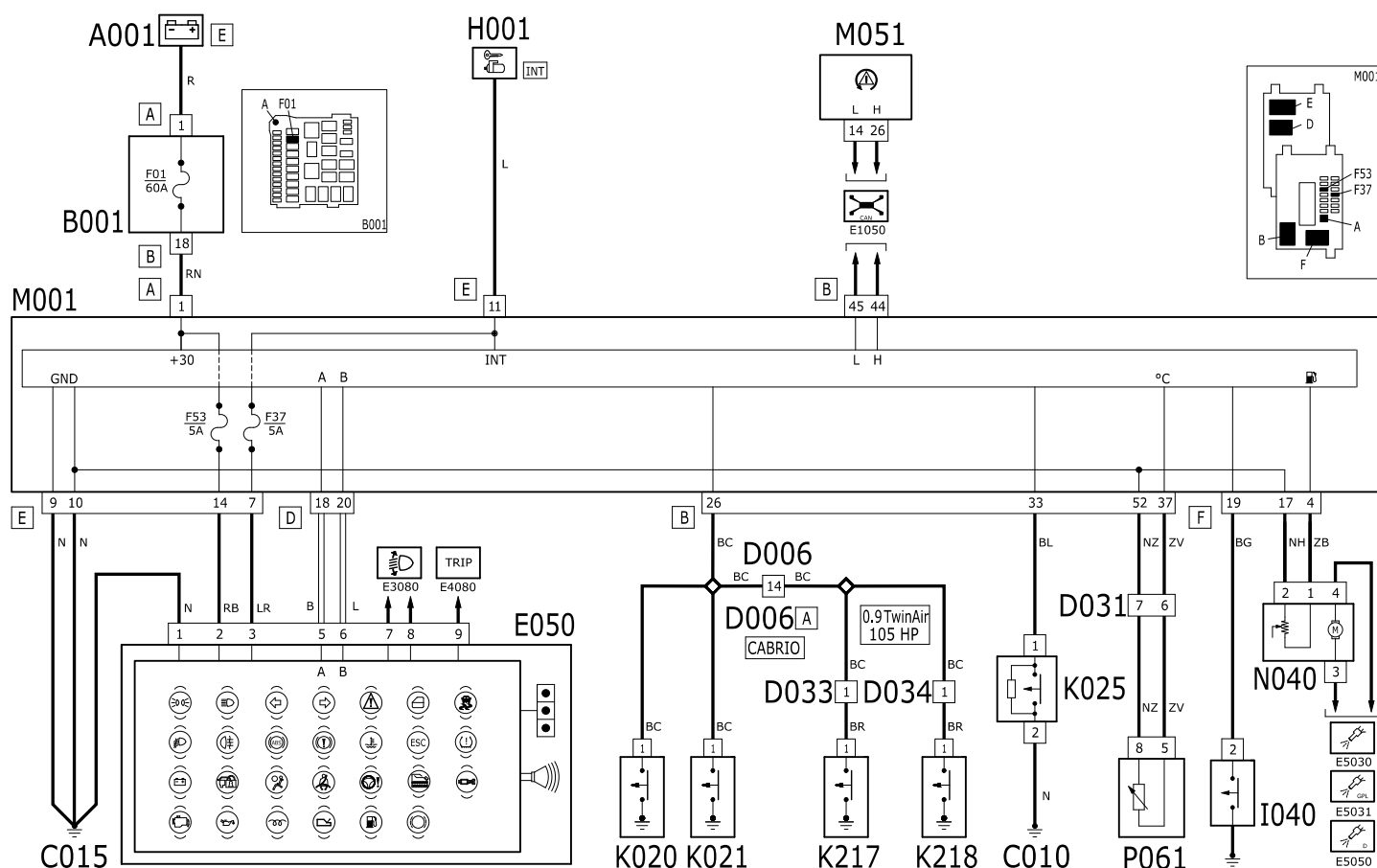
The internal logic for E050, which also manages the headlamp adjustment function, sends a control signal to the motors in the lamps from pin 7, whilst the enabling signal reaches pin 8 (dipped headlamps on). Pressing the + or - buttons to the right of the panel controls the adjustment, for further information:

See E3080 HEADLAMP ALIGNMENT CORRECTOR

The Trip Computer zeroing button (TRIP), located at the end of the right steering column switch unit H005 lever, sends an earth signal to pin 9 of the instrument panel E050.

See E4080 TRIP COMPUTER

INSTRUMENT PANEL - WIRING DIAGRAM



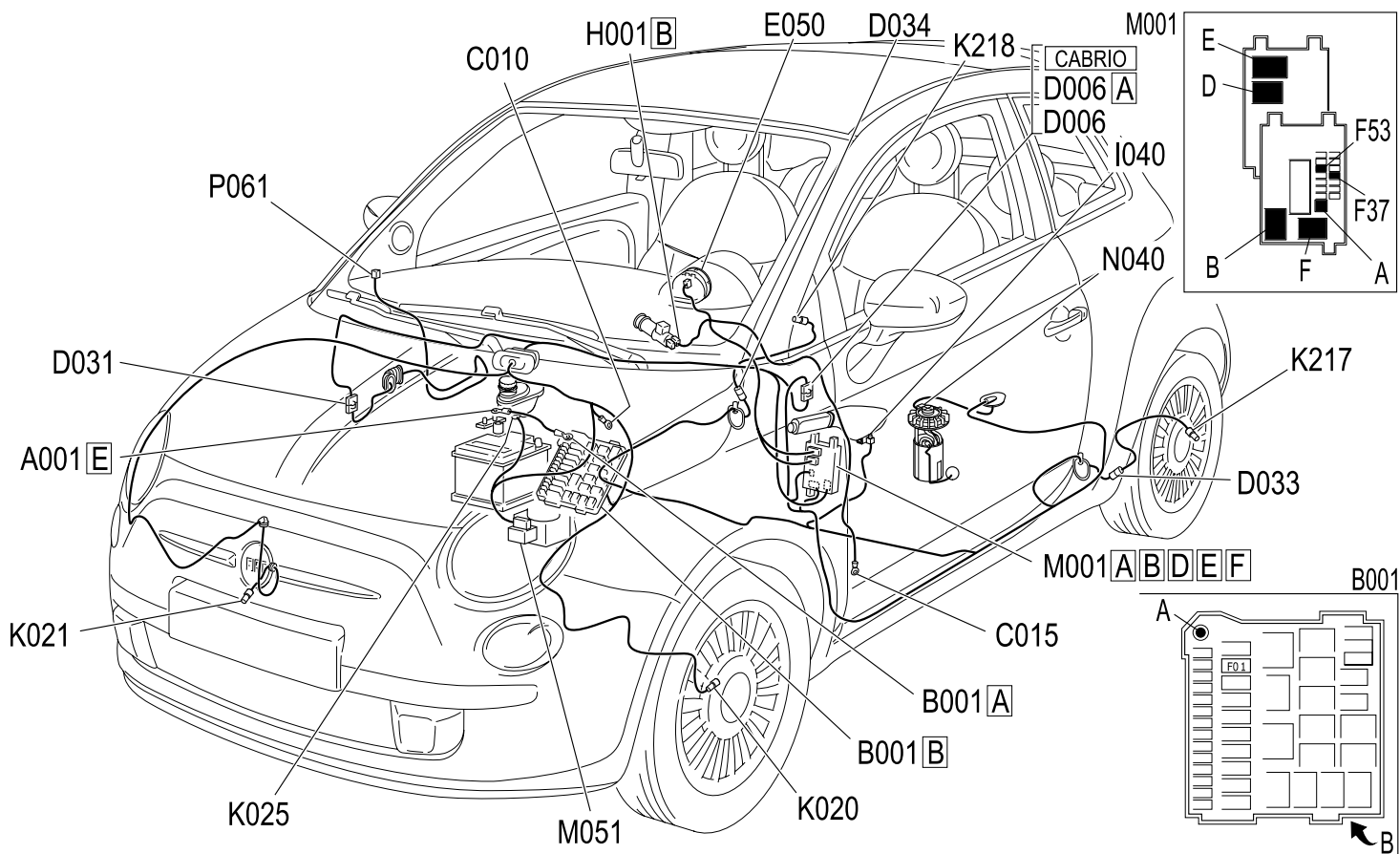
Component code

Name

Reference to the Operation

A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D006	FRONT/REAR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D033	Left rear/brake caliper coupling	-
D034	Right rear/brake caliper coupling	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K021	RIGHT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K217	LEFT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
K218	RIGHT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R
P061	PASSENGER DOOR MIRROR	Op. 7005R30 ELECTRICALLY CONTROLLED DOOR MIRROR (ONE) - R+R

INSTRUMENT PANEL - COMPONENT LOCATION



Component code	Name	Reference to the Operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D006	FRONT/REAR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D033	Left rear/brake caliper coupling	-
D034	Right rear/brake caliper coupling	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K021	RIGHT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K217	LEFT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
K218	RIGHT REAR BRAKE PAD WEAR SENSOR (SWITCH)	-
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R
P061	PASSENGER DOOR MIRROR	Op. 7005R30 ELECTRICALLY CONTROLLED DOOR MIRROR (ONE) - R+R



STRUMENTO DI BORDO

150 - 500

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

- COMFORT multifunctional display - LOW trim levels;
- MATRIX reconfigurable multifunctional display - HIGH trim levels.

Both versions allow the display of the functions offered by the Bluetooth system.

See E3570 INTEGRATED RADIO PHONE

The MATRIX reconfigurable display also allows the display of a navigation map with the Blue&Me system.

See E4090 NAVIGATOR

The panel includes 4 gauges, 2 of which employ step motors and 2 of which are digital gauges in the display.

In both configurations a single instrument contains:

- Electronic speedometer;
- Electronic rev counter;
- Digital fuel level gauge;
- Digital engine coolant temperature gauge;
- Display;
- Warning lights.

The available control panel versions (COMFORT and MATRIX) therefore differ according to the technology of the display.

The display includes the display of several useful information icons, such as:

- engagement of CITY function;
- service due (spanner symbol);
- headlamp alignment position;
- outside temperature and ice danger (snowflake symbol);
- date and time.

On versions with START&STOP and on versions with a manual gearbox (starting from 11/2008) there will also be the following displays:

- S&S system activation/deactivation/failure multifunction symbol (where fitted);
- gear change indicator (SHIFT UP - SHIFT DOWN).



The spanner symbol (scheduled maintenance) is no longer displayed on these versions.

The S&S on symbol is activated when the vehicle is ready to resume after it has been automatically switched off. The display signals the procedures that the driver has to carry out to restart the engine via dedicated messages (for example: press the clutch pedal).

The S&S deactivation symbol (for MATRIX versions only) is activated when the driver presses the button in the auxiliary panel in the centre of the dashboard. There are dedicated messages in the display on COMFORT versions.

The S&S failure symbol (on MATRIX versions only) is activated when system malfunctions are detected. On COMFORT versions this function is performed by the "general failure" warning light and dedicated messages in the display.

The gear change indication makes it possible, on vehicles with a manual gearbox, to suggest the driver make a gear change (SHIFT-UP or SHIFT DOWN) via a special indication in the control panel.

This suggestion to change gear is designed to improve consumption and ensure the best driving style.



The indication in the instrument panel remains on until the driver makes a gear change or until the driving conditions return to a situation where a gear change is not required to improve consumption

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

- alarm/warning/danger signalling;
- parking sensor signalling;
- set vehicle speed exceeded;
- doors open signalling;
- handbrake applied with the vehicle moving signalling;
- Seat Belt Reminder;
- direction indicators/hazard warning lights acoustic signals;
- Push button 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.

Mileometer: this function involves the display and memorising of the total and trip mileage: mileage information is processed by the Body Computer by means of a counter that is sent to the instrument panel via the CAN. The trip counter that forms part of the Trip Computer can be reset using the special TRIP button for the right steering column switch unit lever.

See E4080 TRIP COMPUTER

Engine coolant temperature: this function involves the display of the engine coolant temperature level 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 built into the pump assembly inside the fuel tank and processes it to guarantee suitable filtering/damping for the instrument panel digital gauge; it also controls the lighting of the reserve warning light.

The instrument panel also has various warning lights.

Brake pad wear status: this function involves the dedicated 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).

Handbrake applied: the Body Computer acquires the handbrake applied status from the dedicated switch and communicates this information to the instrument panel via the CAN; also, if this signal is associated with a determined speed threshold being exceeded, an acoustic warning is activated.


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

The general failure warning light summarises the faults detected by a series of systems and components, such as:

- engine oil pressure sensor fault;
- parking sensor fault;
- intervention of the fuel cut off function - FPS (Fire Prevention System) signal - which cuts off the fuel;
- fuel cut off function not available;
- exterior lighting failure;
- S&S system failure (COMFORT versions only, where present).

The signalling of exterior lights failure via the general failure warning light is managed by the Body Computer; it contains a check function that checks the operation of the exterior lights, lighting up the warning light if a fault is detected with the lights or their connection:

- side lights;
- daylight lights (DRL);
- number plate;
- rear fog lamp;
- direction indicator;
- vehicle brake light (excluding 3rd 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, there are several messages (subdivided by priority) which allow the specific identification of the fault.

The use of the various settings in the instrument panel SET UP menu takes place via the MENU/ESC, + and - buttons to the right of the instrument panel. For example, settings relating to the following can be adjusted:

- Vehicle interior lighting adjustment;
- Speed limit;
- Trip B enablement;
- Time adjustment;
- Date adjustment;
- Repetition of audio information;
- Autoclose function (automatic central locking with vehicle moving);
- Units of measurement (distances in Km or miles; fuel consumption in Km/l or l/100Km or mpg; temperature in °C or °F);
- Language selection;
- Volume of acoustic warnings / failure signals;
- Button press volume;
- Activation / deactivation of S.B.R. buzzer;
- Planned maintenance indications;
- Passenger Air Bag activation/deactivation;
- Daylight lights (DRL) activation/deactivation.

On both trim levels the control panel is equipped with a brightness sensor that discriminates between night (nighttime) and day (daylight) conditions in order to suitably manage the lighting of the vehicle controls and displays.

See E2530 INSTRUMENT LIGHTING

For further details,

See descriptions 5560 INSTRUMENTS

The instrument panel receives a direct battery power supply and an ignition-operated power supply via two lines protected by two dedicated fuses in the Body Computer.

INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

The ignition-operated power supply (INT) for instrument cluster E050 reaches pin 3 via a line protected by fuse F37 of Body Computer M001 (pin 7 of connector E). The direct battery power supply reaches pin 2 of E050 via a line protected by fuse F53 of the Body Computer (pin 14 of connector E).

Pin 1 of the instrument panel E050 is connected to the driver's dashboard earth C015.

The instrument panel E050 is connected from pins 5 and 6 with the Body Computer M001 (pins 18 and 20 of connector D) and via the latter to the entire CAN.

The Body Computer M001 (pins 44 and 45 of connector B) receives the speedometer signal from the braking system control unit M051 (pins 26 and 14) via the C-CAN, and forwards it to 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 9 and 23 of connector B to the engine rpm sensor K046.

On versions with S&S, the engine rpm sensor K046 receives a power supply and earth respectively from pins 15 and 35 of connector B of M010 and provides information on the engine speed via a frequency signal sent to pin 9 of connector B of M010.

The digital fuel level gauge is managed according to the signal coming from the level detector located in the electric fuel pump unit N040. The Body Computer provides the sensor with a reference earth (pin 17 of connector F) and receives a proportional signal at pin 4 of the same connector, and forwards it to the instrument panel E050 via the B-CAN.

The handbrake applied/insufficient brake fluid level warning light is activated by an earth signal from the handbrake switch I040 that reaches pin 10 of connector F of the Body Computer M001, or from the brake fluid level sensor K025 that reaches pin 33 of connector B of M001.

The brake pad wear sensor (switch) K020 controls the associated warning light via a connection with pin 26 of connector B of the Body Computer M001.

The engine management control unit M010 sends signals coming from the following to the instrument panel via the CAN:

- insufficient engine oil pressure sensor (switch) K030, connected to pin 55 of connector A;
- engine coolant temperature sensor K036, connected to pins 36 (reference earth) and 45 (signal) of connector B.

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

See E5031 DESCRIPTION OF LPG FUEL SYSTEM ELECTRONIC MANAGEMENT

The braking system control unit M051 is connected, via the C-CAN line, from pins 15 and 27, to the engine management control unit M010 (pins 49 and 50 of connector A), forwarding the signals described above to the Body Computer M001.

See E1050 CAN CONNECTION LINES

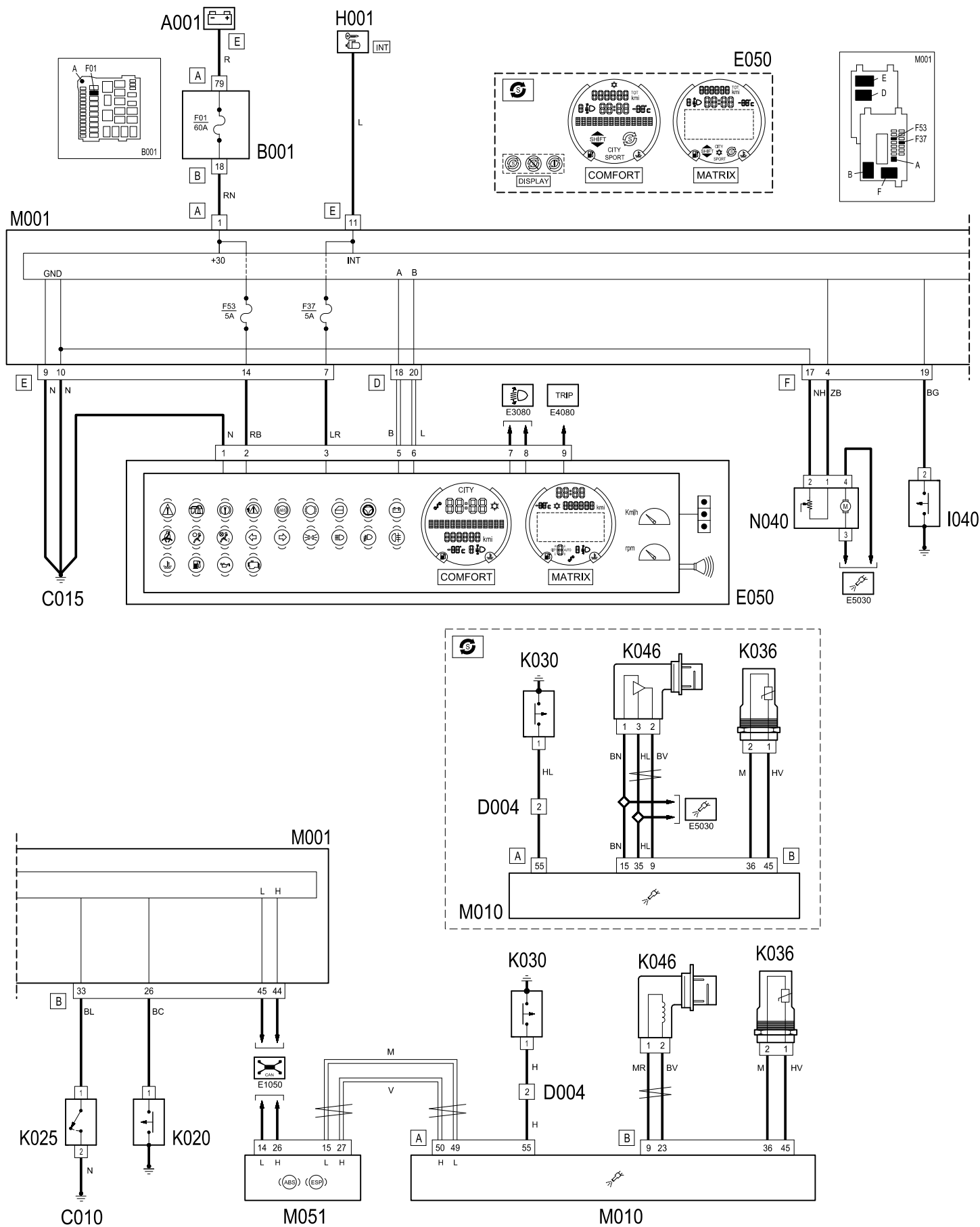
The internal logic of E050 also manages the headlamp adjustment function: the panel sends a control signal to the motors in the headlamps from pin 7, whilst the enablement signal reaches pin 8 (dipped headlamps on). Pressing the + or - buttons to the right of the panel controls the adjustment.

See E3080 HEADLAMP ALIGNMENT CORRECTOR

The Trip Computer zeroing button (TRIP), located at the end of the right steering column switch unit H005 lever, sends an earth signal to pin 9 of the instrument panel E050.

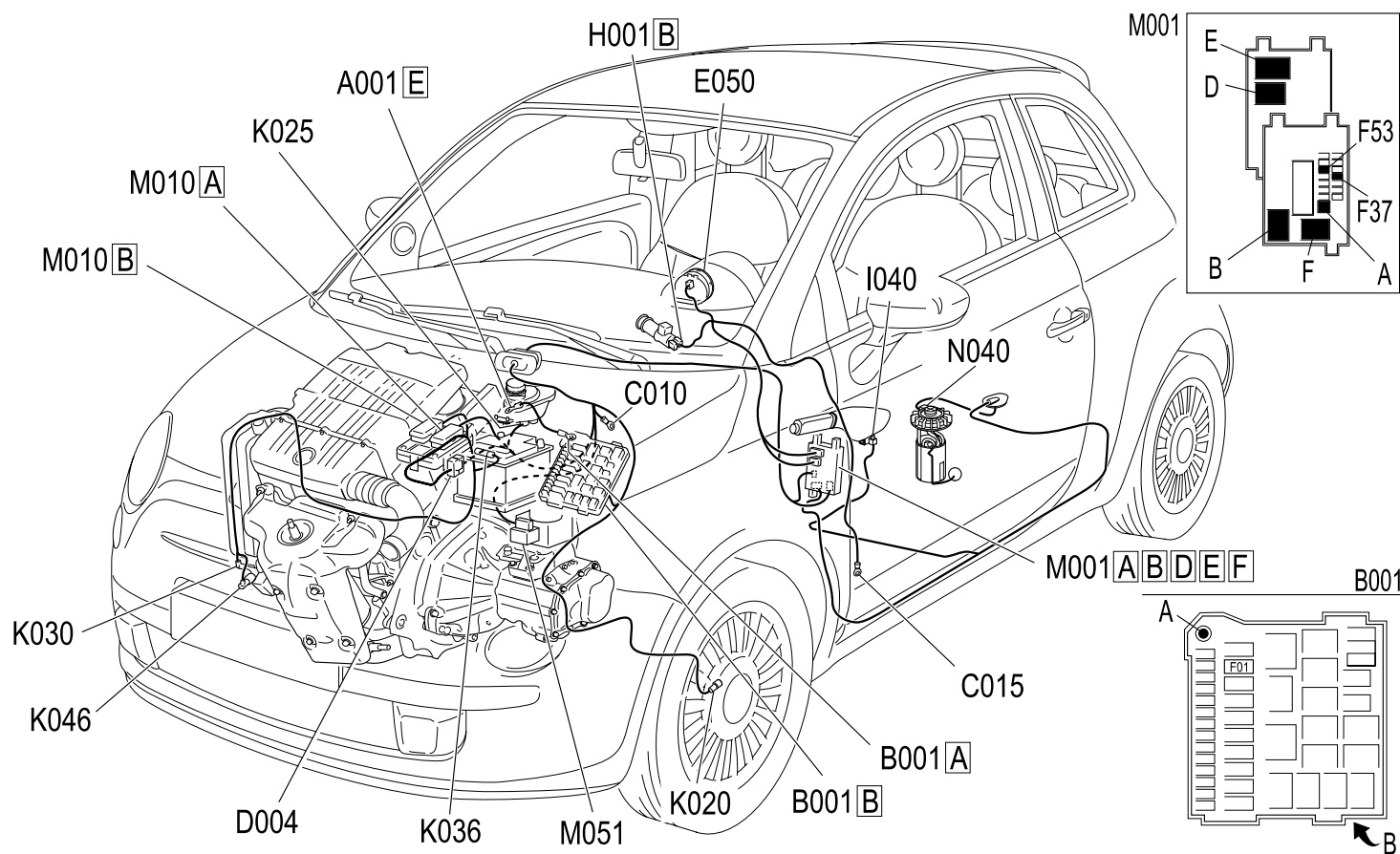
See E4080 TRIP COMPUTER

INSTRUMENT PANEL - WIRING DIAGRAM



Component code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D004	FRONT/ENGINE COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A42 ENGINE OIL PRESSURE WARNING LIGHT SWITCH - R.R.
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1088E30 SWITCH FOR WATER TEMPERATURE WARNING LIGHT - R.R.
K046	RPM SENSOR	Op. 5510C26 ENGINE RPM SENSOR - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R

INSTRUMENT PANEL - COMPONENT LOCATION



Component code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C010	LEFT FRONT EARTH	-
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
D004	FRONT/ENGINE COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
I040	HANDBRAKE APPLIED SWITCH	Op. 5550D18 HANDBRAKE ON WARNING LIGHT SWITCH - R+R
K020	LEFT BRAKE PAD WEAR SENSOR (SWITCH)	Op. 3310A30 FRONT BRAKE CALIPER (ONE) - R.R.
K025	BRAKE FLUID LEVEL SENSOR (SWITCH)	Op. 3330C30 BRAKE FLUID RESERVOIR - R.R.
K030	ENGINE OIL PRESSURE SENSOR (SWITCH)	Op. 1084A42 ENGINE OIL PRESSURE WARNING LIGHT - R.R.
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1088E30 SWITCH FOR WATER TEMPERATURE WARNING LIGHT - R.R.
K046	RPM SENSOR	Op. 5510C26 ENGINE RPM SENSOR - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R.
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056B82 INJECTION/IGNITION SYSTEM E.C.U. (ONE) - R + R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R



TRIP COMPUTER

150 - 500

TRIP COMPUTER - DESCRIPTION

The Trip Computer shows vehicle trip, fuel consumption and mileage details on the control panel display.

There are two fully independent Trip Computer modes (A and B); the displays can be activated by pressing the TRIP button on the right-hand lever of the steering wheel interface.

The data display mode follows a preset order:

TRIP A:

- Range - Distance travelled - Average fuel consumption - Instantaneous fuel consumption - Average speed - Trip time.

TRIP B:

- Distance travelled - Average fuel consumption - Average speed - Trip time.

Both functions can be zeroed (reset - start of a new journey).

Trip B is a function that can be excluded via the instrument panel Set-up menu, by operating the buttons on the right-hand side of the panel.

For further details,

See descriptions 5560 INSTRUMENTS

Trip Computer data is calculated inside the instrument panel.

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

See E4010 INSTRUMENT PANEL

This diagram shows the operation of instrument panel functions that also affect the Trip Counter.

TRIP COMPUTER - OPERATIONAL DESCRIPTION

The ignition-operated power supply (INT) for instrument panel E050 reaches pin 3 via a line protected by fuse F37 of Body Computer M001 (pin 7 of connector E); the direct battery power supply reaches pin 2 of E050 via a line protected by fuse F53 of the Body Computer (pin 14 of connector E).

Pin 1 of instrument panel E050 is connected to driver-side dashboard earth C015.

Body Computer M001 receives a direct battery power supply (pin 1 of connector A) protected by fuse F01 of engine compartment junction unit B001 (pin 18 of connector B); it also receives an ignition-operated power supply (INT) at pin 11 of connector E.

Body Computer M001 is also connected to driver-side dashboard earth C015 via pins 9 and 10 of connector E.

Instrument panel E050 is connected from pins 5 and 6 with Body Computer M001 (pins 18 and 20 of connector D) and via the latter to the entire CAN.

Body Computer M001 (pins 44 and 45 of connector B) receives the speedometer signal from braking system control unit M051 (pins 26 and 14) via the C-CAN, and forwards it to instrument panel E050.

The signal relating to the fuel level is managed according to the data provided by the level detector located in electric fuel pump unit N040. The Body Computer provides the sensor with a reference earth (pin 17 of connector F) and receives a proportional signal at pin 4 of the same connector, and forwards it to instrument panel E050 via the B-CAN.

Engine management control unit M010 sends the signal coming from engine rpm sensor K046 to the instrument panel via the CAN.

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

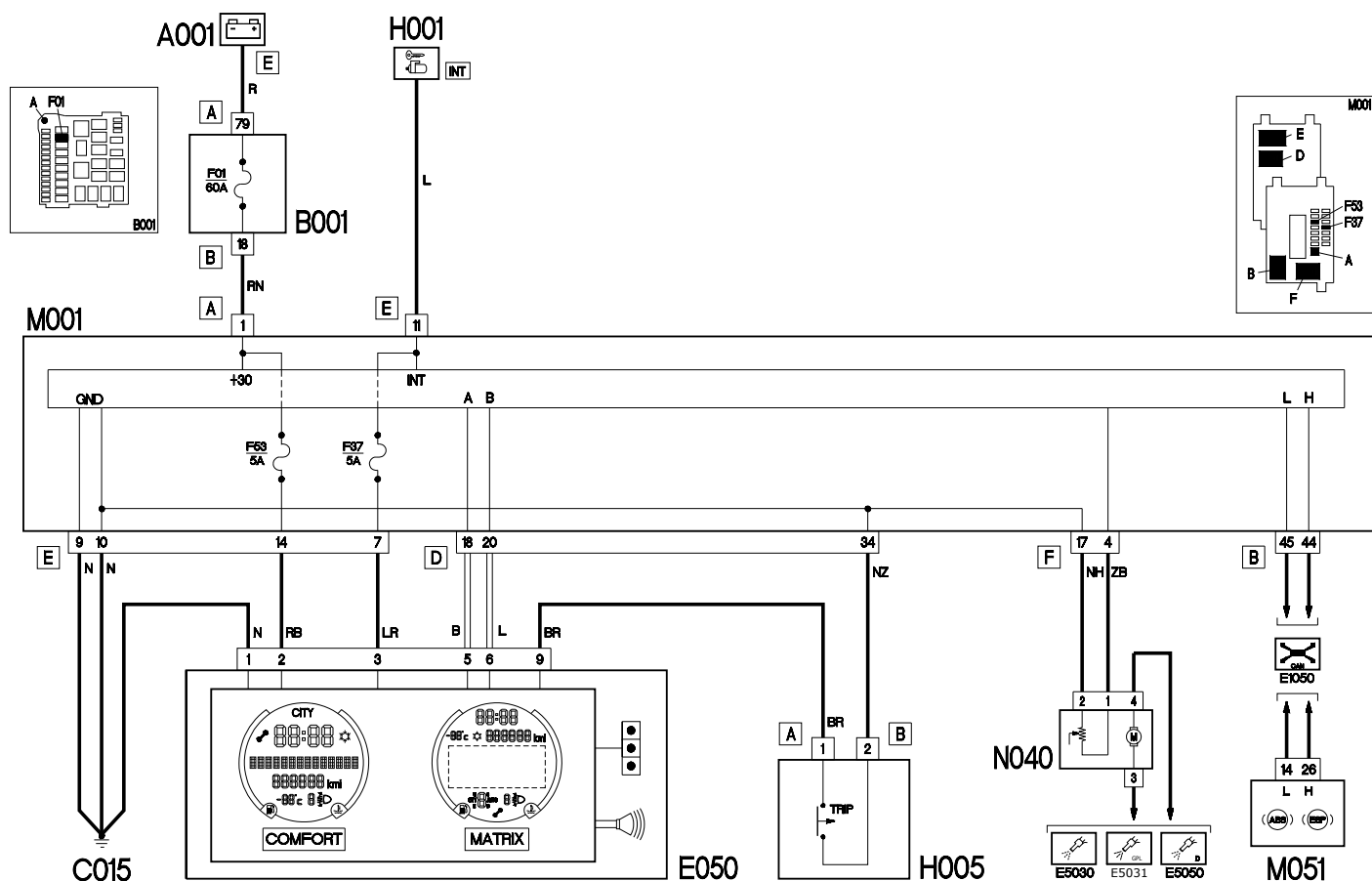
See E5031 DESCRIPTION OF LPG FUEL SYSTEM ELECTRONIC MANAGEMENT

The TRIP electronic module uses these signals to process information on instantaneous and average fuel consumption, range, average speed, Km travelled, duration etc.

The TRIP button for scrolling the parameters (brief press) or zeroing the Trip computer (long press) is located on the end of the right-hand lever of steering wheel interface H005. It receives a reference earth at pin 2 of connector B of the steering wheel interface from pin 34 of connector D of Body Computer M001, and sends the associated signal to pin 9 of instrument panel E050.

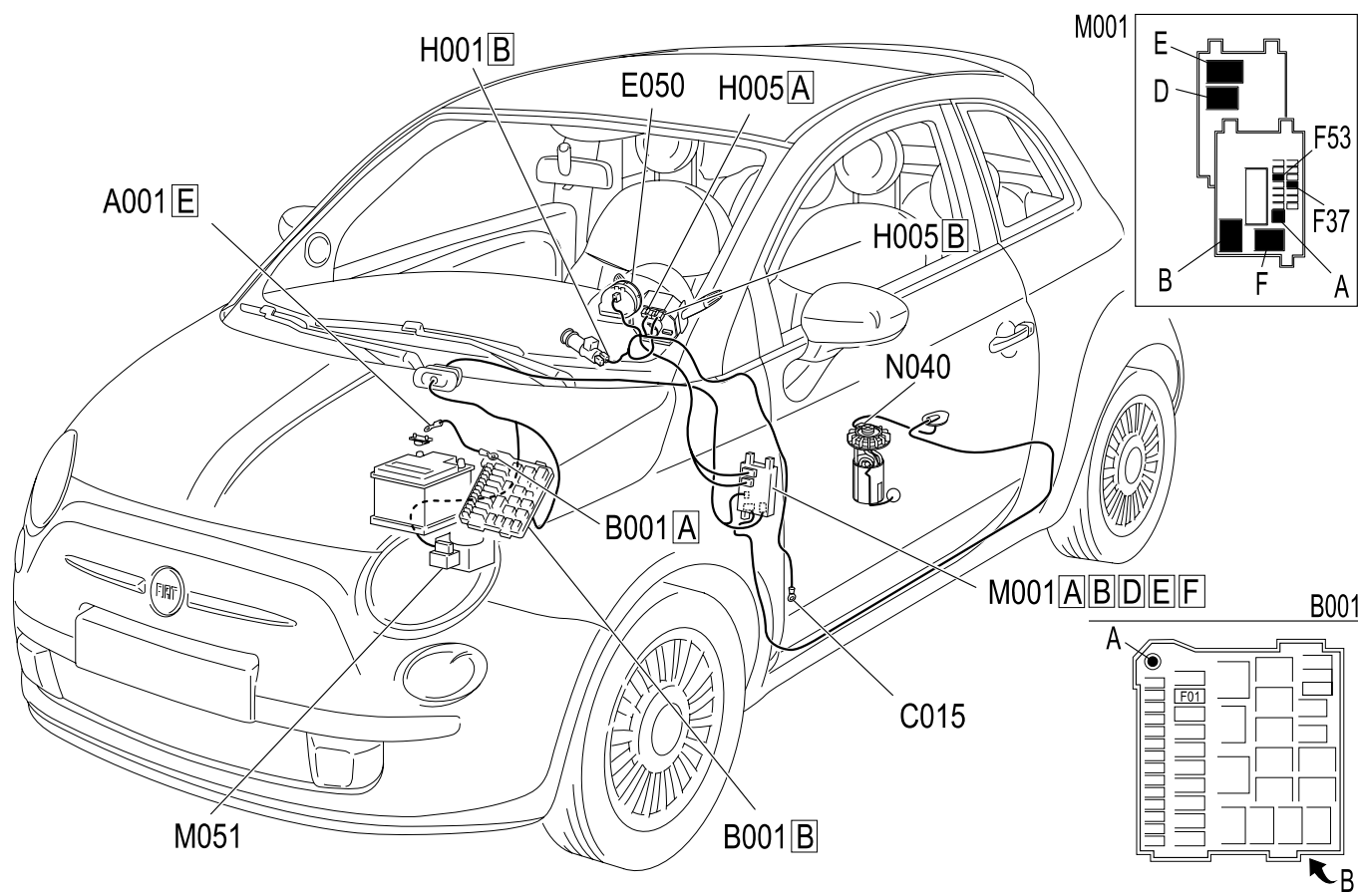
The TRIP B function can be deactivated by operating the buttons to the right of instrument panel E050, using the special Set-up menu on the instrument panel display.

TRIP COMPUTER - WIRING DIAGRAM



Component Code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
H005	STEERING COLUMN SWITCH UNIT	Op. 5550A10 STALK UNIT ASSEMBLY - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R

TRIP COMPUTER - COMPONENT LOCATION



Component Code	Description	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
H005	STEERING COLUMN SWITCH UNIT	Op. 5550A10 STALK UNIT ASSEMBLY - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M051	Braking system control unit	Op. 3340A12 ABS HYDRAULIC AND ELECTRONIC CONTROL UNIT - R.R.
N040	FUEL PUMP AND LEVEL GAUGE	Op. 1040A70 SUBMERGED PUMP ASSEMBLY COMPLETE WITH LEVEL GAUGE CONTROL - R + R