



## SISTEMA ASSISTENZA AL PARCHEGGIO

334 - 500X

## PARKING ASSISTANCE SYSTEM - DESCRIPTION

In its most complete version, the "PARK ASSIST" parking assistance system consists of rear parking sensors, a rear "PARKVIEW" video cam and a blind corner monitoring system "BLIND SPOT ASSIST".

The "Parking Sensor" system gives the driver information on distance while approaching obstacles behind the vehicle to identify those beyond his range of vision, thus providing an addition to parking manoeuvres.

The information on the presence/distance of an obstacle is transmitted to the driver by means of acoustic warnings whose frequency depends on the distance of the vehicle from the obstacle.

An electronic control unit activates and controls the operability of the four sensors located in the fenders, it processes the signals received and activates the acoustic signal (integrated in the instrument panel).

The system is activated if the following conditions are present simultaneously:

- key in MAR
- reverse gear engaged

When the system is activated, the buzzer system emits a warning that the system is activated.

The system is deactivated by taking the gear out of reverse and when a speed greater than 15 km/h is reached.

The signalling of the distance of the obstacle is achieved through intermittent impulse sound signals: the frequency of this signal increases gradually as the bumper approaches an obstacle: when the distance calculated drops below 30 cm, the sound becomes high pitched and constant; the acoustic signal stops when the distance of the obstacle increases.

The signals relative to the system are viewed with appropriate graphics on the instrument panel screen (the function can be deactivated via the "Set up Menu" on the instrument panel).

The control unit is equipped with a self-diagnosis function: when switched on the control unit carries out an initial test on the sensors which are then continuously subject to fault diagnosis during the operation of the system. A fault in only one sensor inhibits the operation of the entire system: in this case the system excludes itself and sends a fault message, the failure status is signalled to the instrument panel which switches on the special warning light and sends a suitable acoustic signal.

The car can also be equipped with a rear view video cam "PARKVIEW" that lets the driver see a picture of the rear area surrounding the car on the screen every time reverse gear is engaged.

The camera is located in the rear part of the car, above the number plate.

The image is displayed on the radio/navigator screen, accompanied by a warning displayed in the upper part of the screen that reminds the driver to check the area around the car.

The video cam picture can be viewed up to 10 seconds after disengaging from reverse gear, at least until the car exceeds 12 km/h or the gear is in P or idle.

When the gear lever is not in reverse, there is a flashing graphic on the radio/navigation screen to deactivate viewing the video cam picture.

The "BLIND SPOT" monitoring system uses two radar sensors located in the rear fenders to detect the presence of vehicles (cars, trucks, motorcycles, etc.) in the blind spots in the rear and side areas of the car.

The system warns the driver about the presence of vehicles in the detection area by lighting up, on the relevant side, the warning light located on the door mirror, along with an acoustic warning.

When the vehicle is started the warning light turns on to signal the driver that the system is active.

The system can be activated/deactivated from the "Set up Menu" in the instrument panel.

The sensors are activated when any forward gear is engaged at a speed higher than about 10 km/h, or when reverse is engaged.

The sensors are temporarily deactivated when the car is stopped and gear is in P or the hand brake is pulled up.

The detection area of the system covers about a lane on both sides of the vehicle (around 3 metres).

The reversing light activation signal is acquired by the engine control module and sent via the CAN to the Body Computer which forwards it via the CAN to the parking sensor control unit and the blind spot sensors.

See E2022 REVERSING LIGHTS

The system receives an ignition-operated power supply from the circuit protected by a fuse in the Body Computer.

## PARKING ASSISTANCE SYSTEM - FUNCTIONAL DESCRIPTION

The parking sensor control unit M084 receives an ignition-operated supply at pin 1 of connector A from the ignition-operated INT line protected by fuse F49 of the Body Computer M001; pin 7 of connector A is earthed.

The Body Computer M001 - connector A - receives a direct power supply from the battery through the line protected by maxi fuse F01 of the engine compartment junction unit B001.

The Body Computer M001 receives an ignition-operated power supply (INT) at pin 12 of connector H: this signal is used, amongst other things, to "wake up the network".

Pins 1 and 11 of connector G of M001 provide the Body Computer with a reference earth.

The control unit M084 is connected, via pins 6 and 12 of connector A and the CAN, to all the other nodes in the same network, for example receiving the information that reverse gear is engaged.

The commands for the display are sent to the instrument panel E050 via the CAN.

The six rear parking sensors connect to the M084 control unit connector B: pin 8 supplies the reference mass, pin 4 power supply, pins 5, 1, 3 and 2, 6 and 7 are connected respectively to sensors K097A, K097B, K097C, K097D.

The rear K151 video cam - connected via the D299 junction - is powered - pin 3 - by the "under key" (INT) line, protected by Body Computer fuse M001 F51; pin 2 connects via LIN2 line to Body Computer M001, connector F pin 28 and pin 1 to mass.

The signals (+, - and display) come from pins 5 and 6 so the picture of the surrounding area behind the car can be viewed on the P020 radio/navigation screen.

The "blind spot" M207 sensor control unit is powered under key (INT) - pin 10 - from the line controlled by relay switch K2 and protected by the M1 fuse FM34; pins 1 and 7 are to mass.

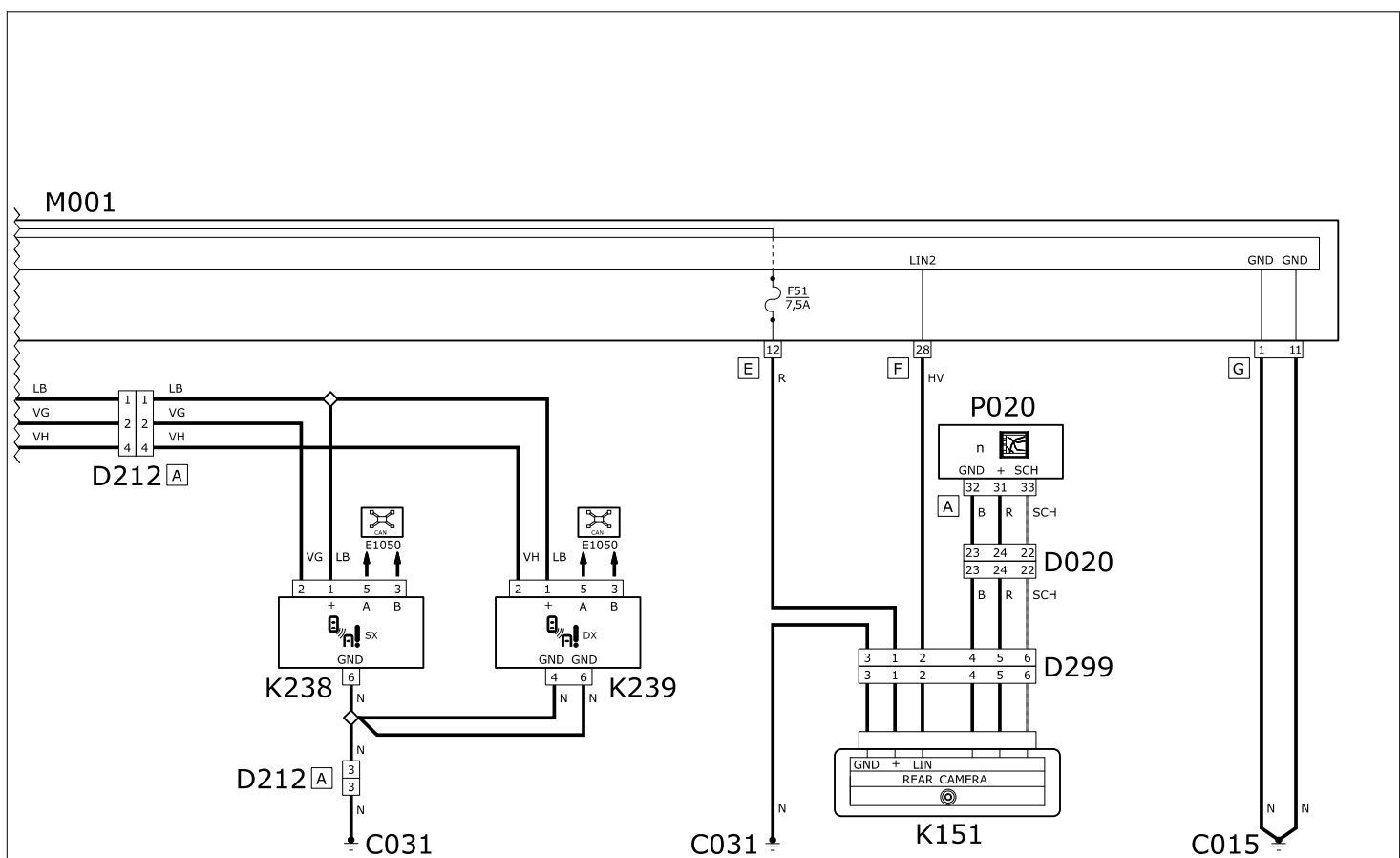
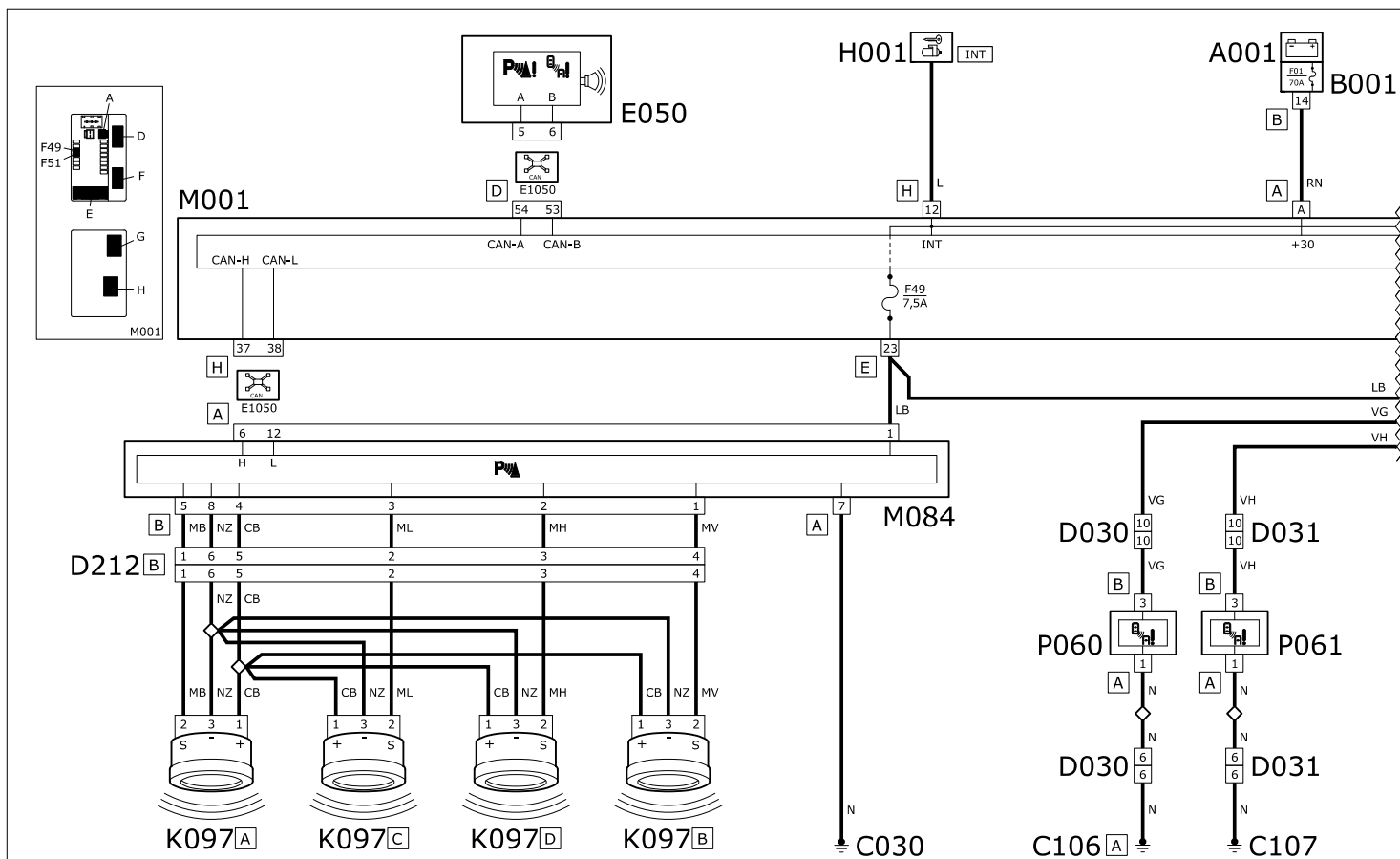
Control unit M207 is connected to the Body Computer M1 and other network nodes via CAN.

The blind spot detection sensors K238 and K239 are powered by the ignition-operated line (INT) protected by fuse F49 of the Body Computer M001; pins 4 and 6 are connected to earth.

Sensors K238 and K239 are connected via CAN and pins 5 and 3 to all the other nodes in the same network, where they receive information such as reverse gear engaged, and display viewing and failure signals to the E050 instrument panel.

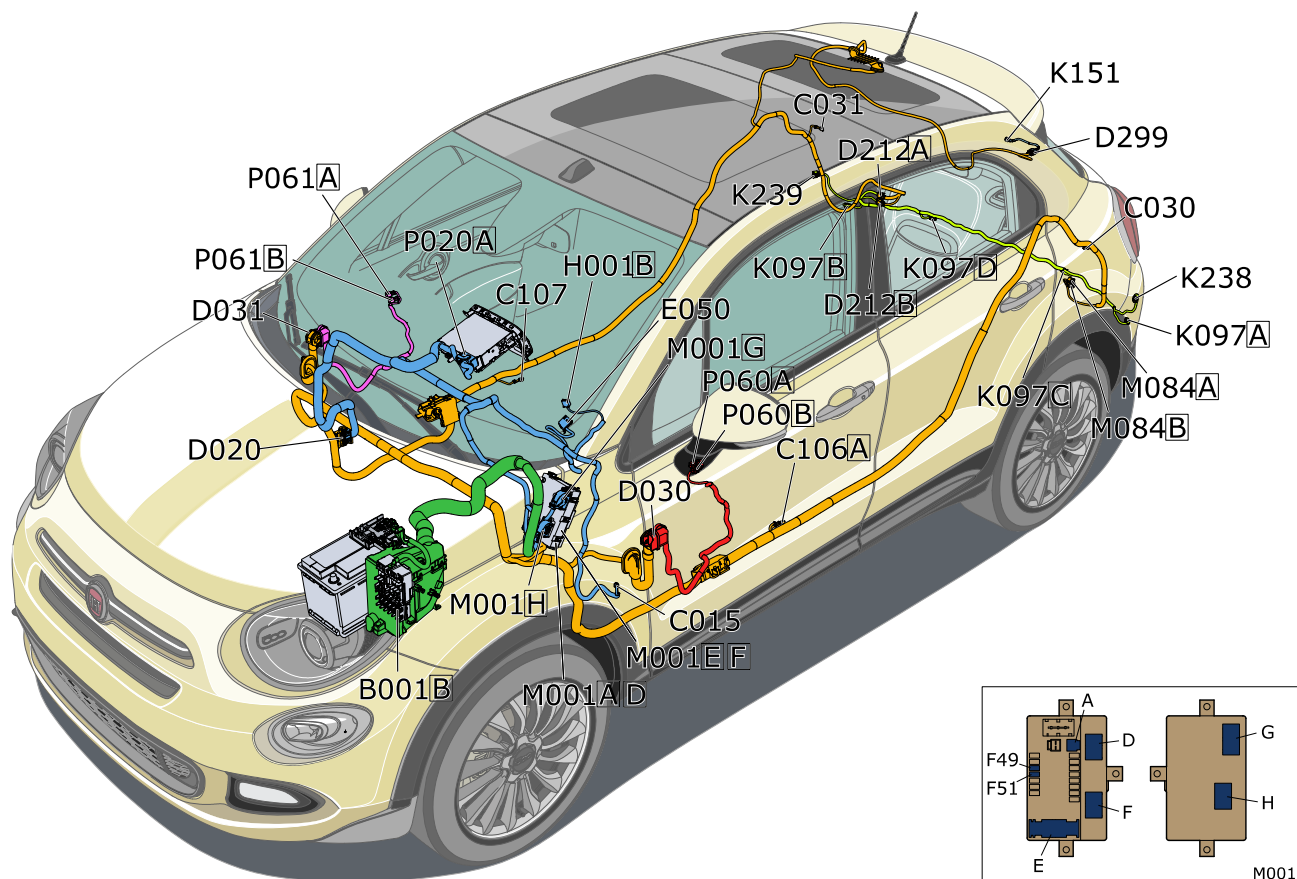
Signals go from pin 2 with information about the system display, inside the side rear view mirrors P060 and P061.

# PARKING ASSISTANCE SYSTEM - WIRING DIAGRAM



Component code	Name	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5530B10 BATTERY - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
C030	LEFT REAR EARTH	-
C031	RIGHT REAR EARTH	-
C106	Compartment wiring earth, left side	-
C107	Compartment wiring earth, right side	-
D020	DASHBOARD/REAR COUPLING	-
D030	LEFT FRONT DOOR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D212	BUMPER/REAR COUPLING	-
D299	Camera coupling	
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
K097	PARKING SENSORS	Op. 5580H31 PARKING OBSTACLE DETECTION SYSTEM REAR SENSOR - R.R.
K151	REAR TV CAMERA	Op. 7210G76 REAR SPOILER - R.R.
K238	Left dead angle sensor	Op. 5580D20 SENSOR/RADAR FOR BLIND SPOT DETECTION - R.R.
K239	Right dead angle sensor	Op. 5580D20 SENSOR/RADAR FOR BLIND SPOT DETECTION - R.R.
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R.
M084	PARKING SENSOR CONTROL UNIT	Op. 5580H10 PARKING OBSTACLE DETECTION DEVICE ELECTRONIC CONTROL UNIT - R.R.
P020	CAR RADIO	Op. 5580M02 PANEL FOR ON-BOARD NAVIGATOR/RADIO/AUDIO CD PLAYER - R.R.

# PARKING ASSISTANCE SYSTEM - COMPONENT LOCATION



Component code	Name	Reference to the operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5530B10 BATTERY - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
C030	LEFT REAR EARTH	-
C031	RIGHT REAR EARTH	-
C106	Compartment wiring earth, left side	-
C107	Compartment wiring earth, right side	-
D020	DASHBOARD/REAR COUPLING	-
D030	LEFT FRONT DOOR COUPLING	-
D031	RIGHT FRONT DOOR COUPLING	-
D212	BUMPER/REAR COUPLING	-
D299	Camera coupling	-
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
K097	PARKING SENSORS	Op. 5580H31 PARKING OBSTACLE DETECTION SYSTEM REAR SENSOR - R.R.
K151	REAR TV CAMERA	Op. 7210G76 REAR SPOILER - R.R.
K238	Left dead angle sensor	Op. 5580D20 SENSOR/RADAR FOR BLIND SPOT DETECTION - R.R.
K239	Right dead angle sensor	Op. 5580D20 SENSOR/RADAR FOR BLIND SPOT DETECTION - R.R.
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R.
M084	PARKING SENSOR CONTROL UNIT	Op. 5580H10 PARKING OBSTACLE DETECTION DEVICE ELECTRONIC CONTROL UNIT - R.R.
P020	CAR RADIO	Op. 5580M02 PANEL FOR ON-BOARD NAVIGATOR/RADIO/AUDIO CD PLAYER - R.R.

