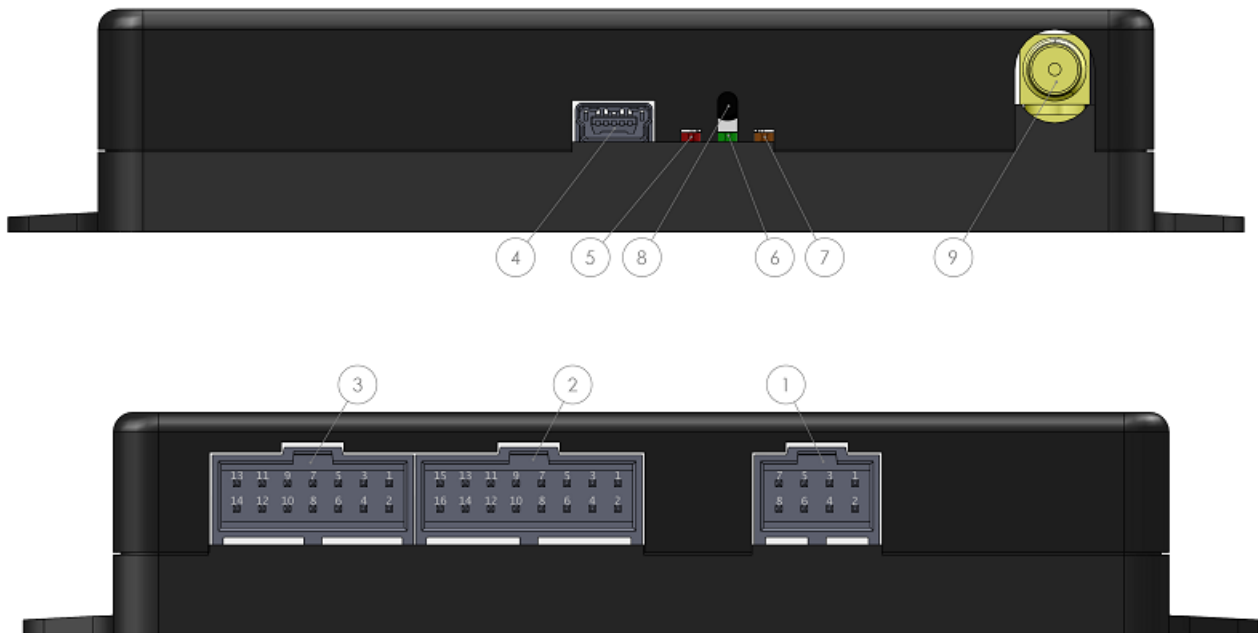


The Mapon Expert device features a hard plastic casing (see Figure 1) with two mounting points and can be secured in a vehicle by means of cable straps. For security reasons, the casing is inconspicuous when mounted amidst other automotive electrical units and wiring. The casing has been closed by means of four screws, one of them sealed with an anti-tamper sticker.



The rear facet contains three power and I/O connectors (1, 2 and 3), which constitute the main electrical and data interface between the host vehicle and Mapon Expert device.

The front facet of Mapon Expert device casing contains a USB Mini B socket for PC connectivity (4), three status light-emitting diodes (5, 6 and 7), a hardware reset switch (8) and female SMA connector (9) for the external GPS antenna.

Note: although the casing offers reasonable protection against physical shock, dust and splashes of liquid, it is not rated nor designed to hold an International Protection Marking.

Power and I/O connector #1

The power and I/O connector #1 (1) contains pins for main device power and ignition signal input (required), as well as analog and switch inputs (optional). Physical type of the connector is Molex C-Grid III™ 2x4.



Table 1: pinout of power and I/O connector #1

Pin	Wire colour	Wire colour starting December 2018	Description	Remarks
1	BK	BK	GND: ground	required
2	RD	RD	V+: main power supply	required, +10 ... +30 VDC
3	WH	WH	IGN: vehicle ignition input	required

4	-	OG/WH	DIN0: switch input 0	optically isolated, +2 ... +30 VDC
5	-	OG/WH	DIN1: switch input 1	optically isolated, +2 ... +30 VDC
6	-	OG/BK	DIN2: switch input 2	optically isolated, active low
7	-	VT	AIN0: analog input 0	0 ... +5 VDC (board rev.1); 0 ... +30 VDC (board rev.2)
8	-	VT	AIN1: analog input 1	0 ... +30 VDC

Pinout of power and I/O connector #1 and standard wire colour scheme of the mating plug are shown in Table 1. Depending on device configuration, the optional pins and wires may be absent from the mating plug shell.

I/O connector #2

The I/O connector #2 (2) contains pins for analog inputs, internal relay, CAN and serial interfaces; all connections are optional. Connector type is Molex C-Grid III™ 2x16.



Table 2: pinout of I/O connector #2

Pin	Wire colour	Wire colour starting December 2018	Description	Remarks
1	-	OG	RYA: relay contact A	internal relay, max. load current 5 A
2	-	OG	RYB: relay contact B	internal relay, max. load current 5 A
3	-	OG	RYA: relay contact A	internal relay, max. load current 5 A
4	-	OG	RYB: relay contact B	internal relay, max. load current 5 A
5	-	GY	AIN2: analog input 2	0 ... +5 VDC
6	-	GY	AIN3: analog input 3	0 ... +5 VDC
7	BU	BU	CAN0H: CAN interface 0, high	
8	YE	YE	CAN0L: CAN interface 0, low	

9	BU	BU/RD	CAN1H: CAN interface 1, high	
10	YE	BU/YE	CAN1L: CAN interface 1, low	
11	WH	GN	SER0TX: serial interface 0, TX	RS-232 signal levels
12	RD	YE	SER0RX: serial interface 0, RX	RS-232 signal levels
13	WH	GN/BK	SER1TX: serial interface 1, TX	RS-232 signal levels
14	RD	YE/BK	SER1RX: serial interface 1, RX	RS-232 signal levels
15	WH	GN/RD	SER2TX: serial interface 2, TX	RS-232 signal levels
16	RD	YE/RD	SER2RX: serial interface 2, RX	RS-232 signal levels

Pinout of I/O connector #2 and standard wire colour scheme of the mating plug are shown in Table 2. Depending on device configuration, the internal relay may not be installed (pins 1 ... 4 will not be connected internally) and certain pins and wires may be absent from the mating connector shell.

I/O connector #3

The I/O connector #3 (3) contains pins for control of external buzzer and LEDs, and 1-Wire interface; all connections are optional. Connector type is Molex C-Grid III™ 2x14; see Figure 3.

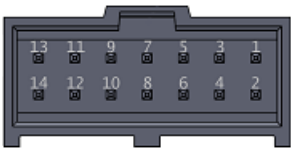


Table 3: pinout of I/O connector #3

Pin	Wire colour	Wire colour starting December 2018	Description	Remarks
1	RD	RD	EXTL0: external LED 0	Red LED for iButton solution
2	GN	GN	EXTL1: external LED 1	Green LED for iButton solution
3	WH	WH	1WD: 1-Wire data	
4	BK	BK	GND: ground	
5	-	-	LS: external buzzer output	output for +5 VDC rated buzzer, OC 100mA max

6	GN	GN	VOUT+: power output	+5 VDC for one wire Temperature
7	-	-	reserved	
8	-	-	reserved	
9	-	-	reserved	
10	-	-	reserved	
11	-	-	reserved	
12	-	-	reserved	
13	-	-	reserved	
14	-	-	reserved	

Pinout of connector I/O connector #3 and standard wire colour scheme of the mating connector are shown in Table 3. Depending on device configuration, certain pins and wires may be absent from the mating connector shell.

Status LEDs

The three status LEDs (5, 6 and 7) provide continuous visual information about the operating status of the Mapon Expert device. Prolonged (>1 min) absence of all LED activity is an indication of device power failure or internal damage. Status LEDs show three types of signals: device boot status information, subsystem status information and system errors.

Hardware reset switch

The hardware reset switch (8) is located above the array of status LEDs. A short push of the button causes forced restart of the device; pushing and holding the button for 3 seconds or more while the main device power is disconnected causes the device to switch off.

Note: it is not recommended to use the hardware reset switch routinely, as it may cause corruption of data store or log memory. The preferred way to restart and switch off the device is by using Mapon Console.

Molex C-Grid® Products

Color Abbreviations according to VDE and IEC