Connection description

Before SMART tracker installation, first of all, it should be determined the type and kit of the used sensors, identification systems, control devices and other additional equipment. Moreover, it should be ascertained that all the additional equipment connected to the SMART device is fully-operable.

SMART device has internal sensitive GSM and GLONASS/GPS antennas, however, just before the device installation and additional equipment connection, it should be ascertained that the selected mobile operator provides satisfactory quality of communication.

In addition, the device should be installed in such a way as to provide maximum «visibility» of the navigation satellites in the upper hemisphere. The device should be oriented in space so that the internal GLONASS/GPS antenna is on top. That is, when the device is placed vertically, the Microfit-14 interface connector should be located below, and when horizontal, the SYS, GSM and NAV indicators should be on top.

> ⚠️ *To avoid device overheating and Li-Po battery failure (for the models of device with back-up battery), it is forbidden to install SMART tracker in places with temperature more than +60 °C, for example, near the vehicle heating system etc. It is forbidden to place the device in the sealed container without heat rejection.*
> *It is forbidden to install the tracker in places with high humidity and in the places with risk of possible ingress of liquid or big amount of dust into the case of device.*
> *It is also forbidden to place the device in the sealed container without heat rejection.*

At connection of the equipment to the Microfit-14 harness the connector itself should not be connected to the device. Each pin of this connector has numerical reference. The function of each pin of the Microfit-14 connector is shown in the figure below.

In the phase of verification of the correct connection and configuration of the SMART device, it is not recommended to connect actuators directly to the output circuits. It is more practical to do it in the final phase of verification.

Supplying of digital and analog fuel sensors should be connected through the fuses included with the sensors, directly to the power supply.

GND of all the external sensors should be combined with GND contact of SMART device.

Interface lines of fuel sensors are connected directly to the device without additional elements. Commutation should be made with disconnected power.

SMART S-243X interface connector
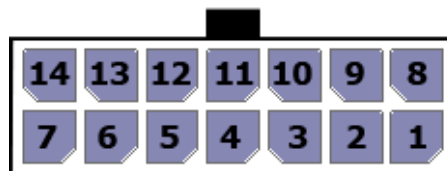
14-pin interface connector (view over the device)

1 – Power supply (+U_G)
2 – GND
3 – Universal input 1 (UIN1).
4 – Universal input 2 (UIN2).
5 – Universal input 3 (UIN3).
6 – Digital output (OUT1)
7 – Digital output (OUT2)
8 – CAN interface line (CANH)
9 – CAN interface line (CANL)
10 – 1-Wire interface (iBUT)
11 – RS-485 interface line (RS-485-(B))
12 – RS-485 interface line (RS-485+(A))
13 – RS-232 interface line (RS-232RX)
14 – RS-232 interface line (RS-232TX)

SMART S-243X connector pins

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
S-2433	$+U_G$	GND	UIN1	UIN2	UIN3	OUT1	OUT2	NC	NC	iBUT	RS-485B(-)	RS-485A(+)	RS-232RX	RS-232TX
S-2435	$+U_G$	GND	UIN1	UIN2	UIN3	OUT1	OUT2	CANH	CANL	iBUT	RS-485B(-)	RS-485A(+)	RS-232RX	RS-232TX

Power supply $+U_G$ should be connected through the fuse.

GND should be connected to GND of the car battery.

Universal inputs UIN1-UIN6 can be set up as digital, analog, pulse or frequency. It allows connecting to them a wide range of different sensors, for example, frequency (frequency 1-3000 Hz) and analog (voltage 0-31 V) fuel sensors, impulse fuel consumption sensors, buttons or limit switches.

> ⚠️ *It is forbidden to apply voltage more than 50 V to the device inputs, as this can lead to device failure.*

Outputs OUT1 and OUT2 are designed to control low-current loads up to 500 mA. At activation, a negative signal (GND) is formed on these lines. External actuators with a load current more than the maximum allowed should be connected through additional switching relays. Relays type is choosing based on the requirements for the value of the switched current, voltage, and also depending on the power of the connected actuator.

> ⚠️ *At controlling the inductive load, which is relay coil, there can be reverse currents with a potential more than 200 V. Such voltage can damage the control transistor of the device output. To limit reverse current emissions, it is necessary to connect an additional diode of the 1N4007 (1A, 1000 V) type parallel to the relay coil as indicated in the connection diagram.*

1-Wire interface (iBUT) is designed for connection of contact pads of TouchMemory keys, Proximity-card readers and digital temperature sensors.

RS-232 interface is designed for connection of devices transmitting and receiving information to this interface, for example, a fuel level sensor, CAN bus readers, tachographs, RFID, MODBUS devices, etc.

RS-485 interface is designed for connection of devices transmitting and receiving information to this interface, for example, fuel level sensors (up to 16 pcs.), CAN bus readers, tachographs, RFID, MODBUS devices, etc.

CAN interface is designed for connection to CAN bus.