Connecting Fuel Level Sensors to UMKa310 tracker via RS-485, in analog and frequency modes

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Enter these parameters to register on Wialon:
1. Identifier – IMEI 0000000000000000 (EXAMPLE)
2. Server IP address: 193.193.165.165
3. Port: 21787 (UMKa310)

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1.1 Connecting FLS via RS-485

Up to three LSS Fuel Level Sensors (FLS) can be simultaneously connected to the tracker via PS-485 interface.

In Figure 1, find an example of FLS connection. The resistance at the end of the bus is installed to match the impedance and is equal to 120 Ω. For the RS-485 bus, the recommended cable type is a “twisted pair”.

RS-485 bus stubs should be as short as possible to match bus impedance. In order to prevent bus collisions, assign each device a unique address in advance.

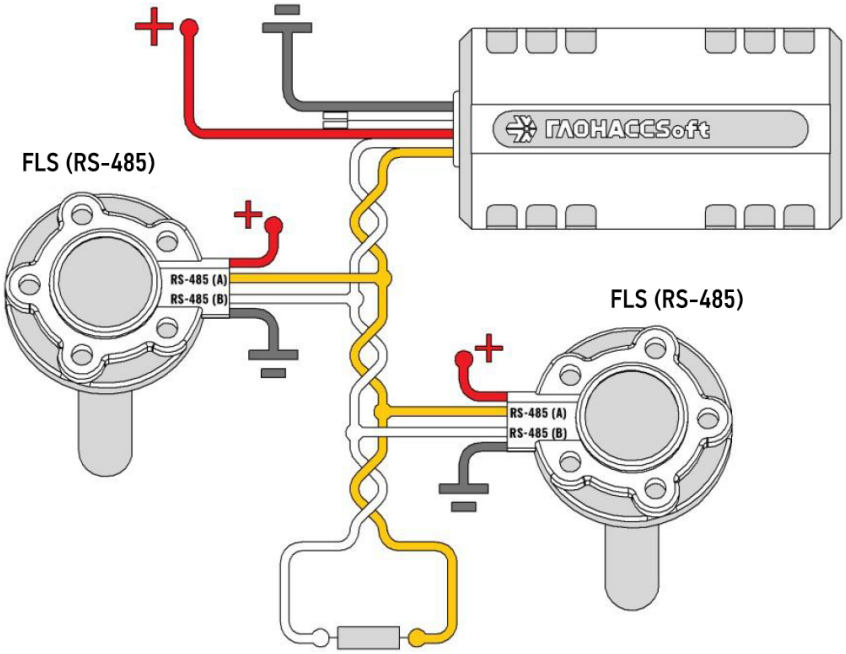

Figure 1 –Connecting via RS-485 interface

Attention! While working with fuel level sensors, one must strictly adhere to the requirements of the relevant maintenance manuals.

1.2 Connecting FLS in analog mode

The analog input of the tracker is used for monitoring vehicle parameters by utilizing analog data (from an analog fuel level sensor, an analog thermometer, etc.). The tracker has a channel for measuring external voltages.

It is possible to connect an additional sensor in analog mode. When connecting FLS in analog mode, comply with the diagram in Figure 2.

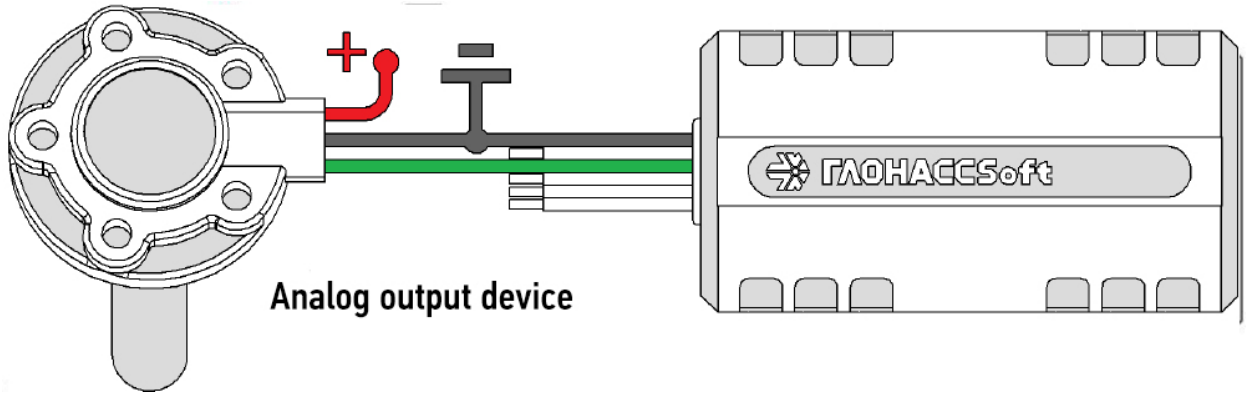

Figure 2 – Connecting FLS in analog mode

2. Configuring FLS using UMKa310 configurator

In order to configure FLS, you can use the configurator for PC as well as the mobile configurator. You can download PC version of the configurator here: https://qr-service.ru/sites/default/files/configurator_umka3xx.exe. And mobile version – here: https://play.google.com/store/apps/details?id=ru.glonasssoft.configurator3xx.

Before you start configuring FLS via UMKa310 configurator:

1) Open the configurator; connect the tracker to PC.
2) Power the tracker on.
3) Wait for the tracker to boot, and, if necessary, update it up to the latest available version.
4) Start configuring FLS.

Attention! When configuring, the tracker should not be connected to a PC via USB without power supply. It is compulsory to connect an external power supply.
If the configurator cannot find the tracker, check whether the drivers have been installed. If there are no drivers, it is recommended to reinstall the configurator by checking the box “Install drivers”.

2.1 “Interfaces” tab

In order to connect RS-485 devices to the tracker, use the “Interfaces” tab (Figure 3). If the RS-485 interface does not come with your tracker, the “RS-485” field will not be available for editing.

In this tab, you can select the type of a device connected to one or another interface (e.g., FLS, CAN-log and others). In order to do so, select the mode you need in the "Mode" dropdown menu, and specify the interface operating speed in the "Speed" dropdown menu.

Attention! Use the “Transparent mode” option group to establish direct connection to the tracker device or module via the console or third-party utilities using the tracker as a USB-RS485 adapter.

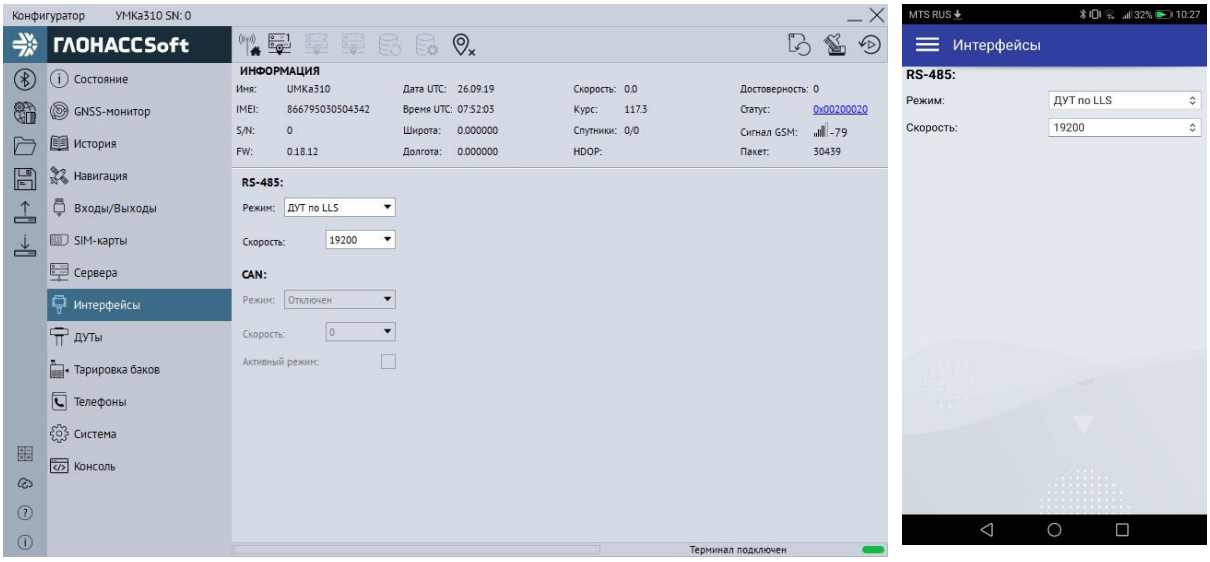

Figure 3 – “Interfaces” tab

Attention! In the “Transparent mode”, the tracker does not respond to commands but relays them to the interface. In order to exit the “Transparent mode”, disconnect the tracker from the USB port.

2.2 “FLSs” tab

In order to configure and obtain the data from the fuel level sensors with RS-485 interface, use “FLSs” tab (Figure 4), assigning addresses to each of the sensors in the corresponding field in advance.

To assign the addresses in the tracker, it takes only to enter them in "RS-485 FLS addresses setting" field and then write the configuration into the tracker. The configurator automatically displays the connected sensors and the parameters they show.

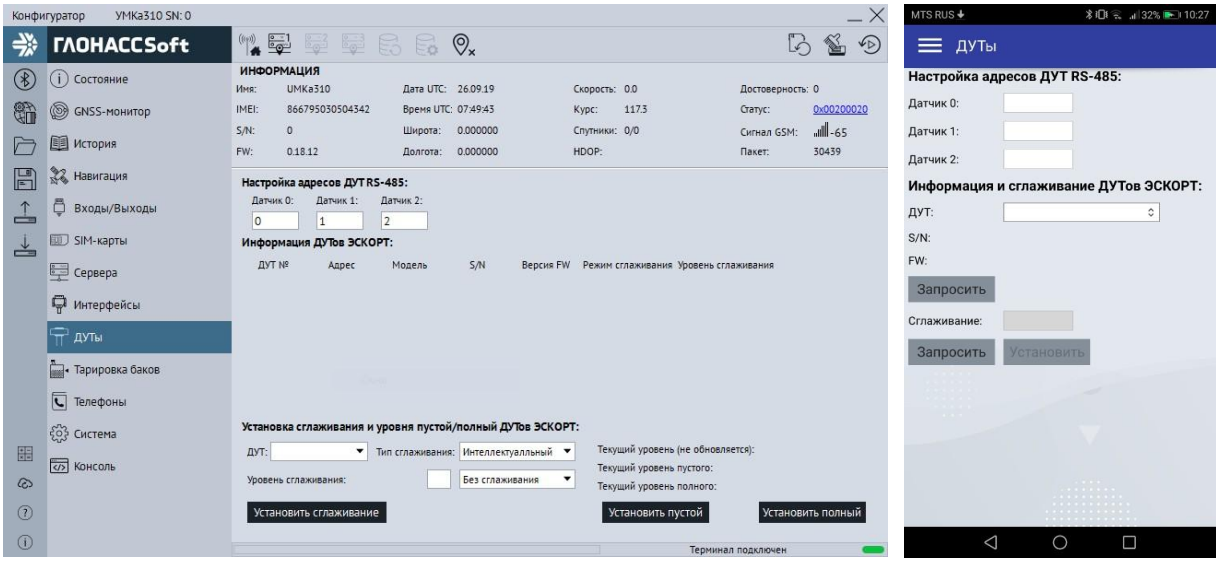

Figure 4 – “FLSs” tab

Attention! Beforehand, switch one of the available interfaces into the "FLS via LLS" mode in the “Interfaces” tab, set the "Speed" option to "19200" and write the configuration into the tracker.

In order to configure smoothing of the FLS parameters, use “ESCORT”. To obtain a current smoothing parameter, select a FLS and click the “Request” button. To set a smoothing parameter, select a FLS, enter the smoothing parameter and click the “Setup” button.

2.3 “Inputs/Outputs” tab

The “Inputs/Outputs” tab is used for configuring the inputs (Figure 5). Select the “Analog” mode for analog inputs.

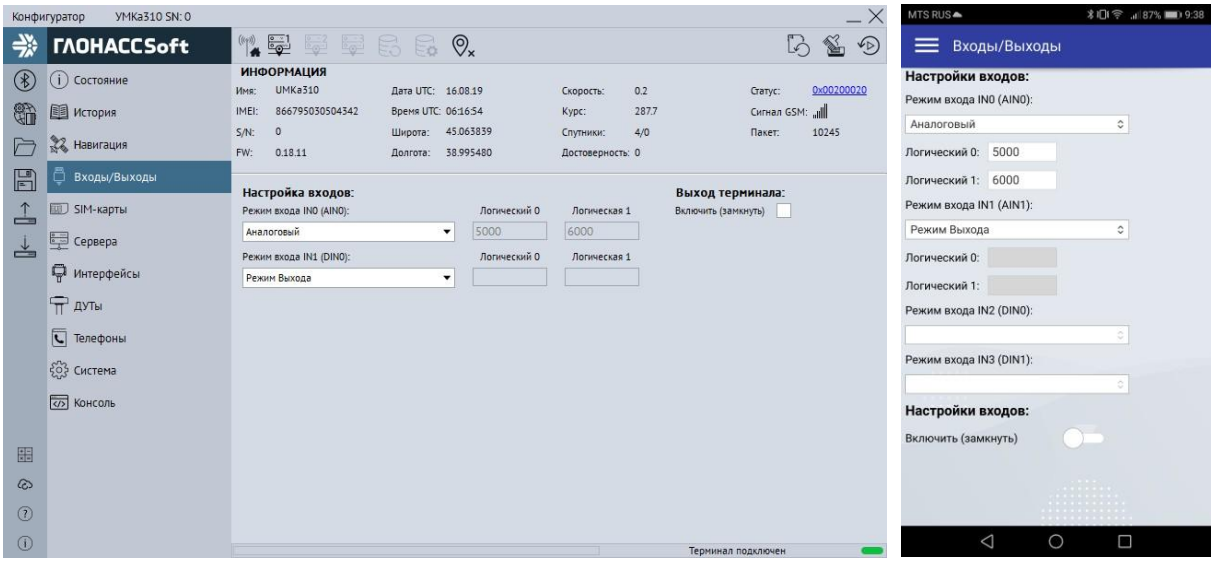

Figure 5 – “Inputs/Outputs” tab