RS232. Integration with “HI-P21” Temperature Recorder

User Manual
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Necessary Tools, Devices, Materials

To connect “HI-P21” (hereinafter – device) to Galileosky tracking device (hereinafter – tracking device) one should have:

1. Electrical tools.
2. A set of connecting wires.
3. A computer with Windows-based operating system and an installed configuration program for Galileosky tracking devices— «Configurator 4.0» or higher version. It is recommended to download the latest version from the site https://galileosky.com/podderzhka/programmyi.html
RS232. Integration with “HI-P21” Temperature Recorder  
(version 2 dated from April 4, 2018)

General Information

An automatic temperature recorder “HI-P21” produced by "High Tech Control" company (Korea) (pic. 1) is designed to measure and record temperature.

“HI-P21” temperature recorder consists of an electronic module with a display and 2 temperature sensors connected as primary transducers and allows to measure the range of temperature -50..+99.9 degrees Celsius accurate within +/- 1 degree. Measuring results are displayed and stored into internal memory. Automatic temperature recorders “HI-P21” are equipped with a built-in printer so that it could be possible to print the measuring results. Measuring data can be transmitted to the monitoring server when the device is connected to the tracking device.

The tracking device performs a function of sending information on temperature measurements.

ATTENTION! Such functionality is implemented in the tracking devices by means of Easy logic technology (https://galileosky.com/products/easylogic.html). It is necessary to use tracking devices with support of Easy Logic. You can find out whether the tracking device supports Easy Logic or not in the following ways:

- in tracking device’s specification there should be abbreviation (Al) or sticker on the back of the device should have abbreviation (2) near IMEI (Pic.2).
- send Hardversion command to the tracking device, if you receive numbers different from zero after comma in response, algorithms are supported (example of reply: HARDVERSION=21,8243)
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Minimal firmware version should be

- 231 for Galileosky v2.X, v5.X;
- 1 for Galileosky Base Block, 7.0.

Pic. 2
Defining tracking device support of Easy Logic by the sticker
Connection of the Device via RS232 Interface

The device is connected to the tracking device via RS232 interface in accordance with the schemes provided in picture 3.

ATTENTION! Grounds (GND) of the tracking device and temperature recorder must be connected. RS232 contacts must be connected strictly according to the scheme: RX of the temperature recorder - TXD0 (1) of the tracking device and TX of the temperature recorder - RXD0(1) of the tracking device. Power supply is provided separately.

1. connect the temperature recorder to the tracking device;
2. connect the tracking device to your PC;
3. run “Configurator” program;
4. go to tab “Settings” -> “Track” and select a “Dynamic” value in field “Archive structure mode” (pic. 4);
ATTENTION! For tracking devices Galileosky Base Block and 7.0 versions the setting of dynamic structure mode is not needed.

5. go to “Protocol” tab and set the main packet to transmit data to the server by ticking parameters “User tag 0”, “User tag 1”, “User tag 2” (pic. 5);

6. on the tab “Settings” - > “Digital inputs” select “Nothing” in the field “RS232 peripheral type” (pic. 6);

7. click “Apply” button;

8. go to “Commands” tab in Configurator and execute the following command – “script galileosky/HI-P21SensorHandler” (pic. 7);
ATTENTION! The algorithm is downloaded from the server, that is why, the tracking device should have an activated SIM-card with GPRS support.

9. go to Device tab, check the Easy Logic parameter and make sure it includes information on the algorithm (pic. 8).

“HI-P21” temperature recorder’s scanning occurs every 10 seconds. Temperature is recorded to user tags 0 and 1 for sensor A(1) and B(2) correspondingly. Temperature is transmitted in degree Kelvin*10. To convert degrees to Celsius, subtract 2730 from the temperature value and divide the total number by 10.

Example:

Temperature sensor measures -1.7 degrees Celsius. Galileosky tracking device converts the value to Kelvin and sends 2713 to the server.

To convert the temperature value back to degrees Celsius use the following formula:

Total value in degrees Celsius = (2713 -2730)/10 = -1.7

Occurrence of error (connection failure, damaged data) is recorded into user tag 2 and sent with the following values:

0 – no error;
1 – no connection with device (3 seconds waiting period has expired);
2 – damaged data are received;
3 – signs instead of temperature values are received.
Setting the Monitoring Software to Receive Messages from Devices

After your set-up the tracking device, the monitoring software settings should be completed. If your software does not support receiving information from the device by means of Galileosky tracking device, you should individually develop and install software to the monitoring server, processing data in accordance with the protocol of exchange between the tracking device and server. See protocol description on our site http://galileosky.com/podderzhka/dokumentacziya.html

Connection of “HI-P21” temperature recorder to Galileosky tracking device is completed, the tracking device is ready for use.

RSA “Galileosky”, LLC produces satellite monitoring equipment for GPS and GLONASS real time vehicles monitoring. The tracking devices determine the mobile object location recording the time and route as points with geographical coordinates and send the data to the server to be further processed and sent to the traffic controller panel.

In addition, a number of other vehicle parameters are recorded: the state of analog and discrete inputs of the tracking device and the state of digital interfaces.

The tracking devices can be used in any vehicle.