MEITRACK Ultrasonic Fuel Level Sensor User Guide

Applicable Model: MVT600/T1/T333/T622

Change History

File Name	MEITRACK Ultrasonic Fuel Level Sensor User Guide		
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Contents

1 Copyright and Disclaimer

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2 Product Functions and Specifications

2.1 Product Functions

- Measure vehicle's fuel level.
- Detect an alarm when the fuel level is too high.
- Detect an alarm when the fuel level is too low.
- Detect a fuel filling alarm and a fuel theft alarm.

2.2 Specifications

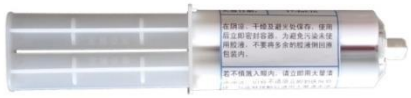
Item	Specifications
Operating voltage	9–36 V DC
Maximum power consumption	0.4 W/12 V DC
Operating temperature	-30°C to 75°C
Storage temperature	-40°C to 85°C
Operating humidity	5%–90%
Measurement range	Depend on the material and thickness of the container. Steel plate with a thickness of 5 mm: The measurement range is 5–100cm.
Pressure range	≤0.8 kg or 0.8 MPa
Measurement accuracy	±0.5%
Measurement resolution	0.1 mm
Explosion proof rating	Intrinsic Safety Exia Ⅱ CT6; flameproof Exd Ⅱ CT5
Water resistance rating	IP66
Interface	RS232
Communication port parameters	Baud rate 115200 by default; no parity bit; 8 data bits; 1 stop bit; no flow control

3 Accessories

Standard accessories:

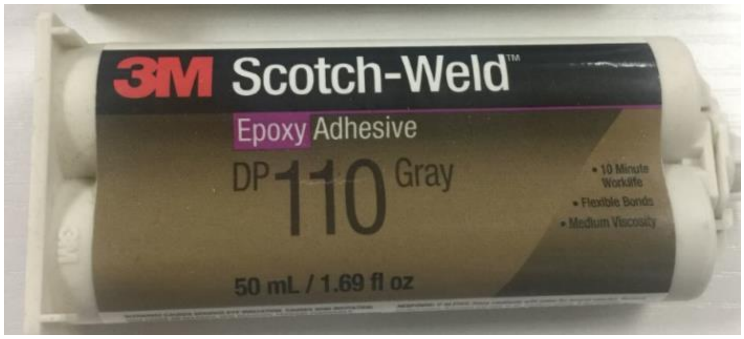
Standard Accessories	Quantity	Picture
Probe (integrated type)	1 pcs	 Diameter: ϕ33 mm Height: 12 mm Wire length: 1m (including the connector)
Protective shell	1 pcs	
Fuse	1 pcs	
8m extension cable	1 pcs	 Wire length: 8m (including the connector)
8 pin to 4 pin conversion cable	1 pcs	
8cm heat shrink tubing	1 pcs	 Used to protect the plug from water.
1.2m cable tie	2 pcs	Used to fix the probe.
15cm cable tie	10 pcs	Used to fix the connected wires.
Sandpaper	1 pcs	Used to clean the bottom of the fuel tank.

Optional accessories:

Optional Accessories	Picture
AB glue (unable to go through logistics, so cannot provide. Only for reference)	
Couplant (unable to go through logistics, so cannot provide. Only for reference)	
LED display	

Note:

1. Because Couplant and AB glue are liquids, they cannot be transported by logistics.Please buy by yourself.
2. Couplant for medical use can be purchased at large pharmacies. If you can't get it, use toothpaste instead.
3. AB glue is available on websites such as amazon. The model is 3M DP110. As the following picture:



4 Installation

4.1 LED Display (Optional Accessory)

This display is used to find the probe installation location.

LED Display	Description
	Check the number of signal echoes, fuel level and status code.
	**3**: indicates the number of signal echoes; **2**: indicates the status code. The value of the status code is 0, 1, or 2. ● **0**: The probe cannot be installed at this place. ● **1**: It is not a suitable place to install the probe. ● **2**: It is a suitable place to install the probe.
	**018.9**: The fuel level is 18.9cm.
	**F 4**: The probe angle is 4 degrees. It means that the probe cannot be installed. When the angle is less than 4 degrees, you can install the probe.
	**9 9**: The display is not connected to the probe.

4.2 Installing the Sensor

1. Important note: Prior to the installation, keep the fuel tank at least half full and park the vehicle on level ground.
2. Knock the fuel tank to determine the fuel level.

When there is fuel in the fuel tank, you can hear a muffled sound.

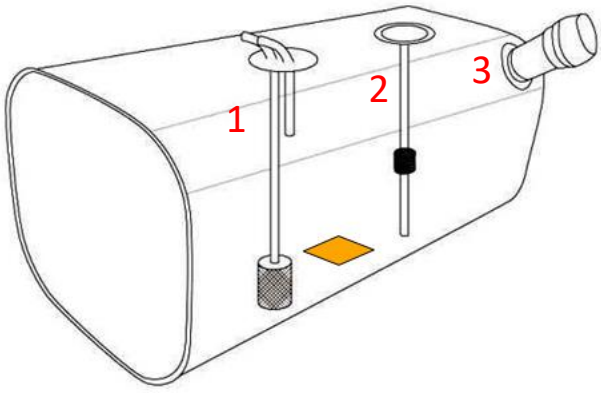
When there is no fuel in the fuel tank, it sounds clear.

At the meantime, you can open the fuel tank and check the fuel level.

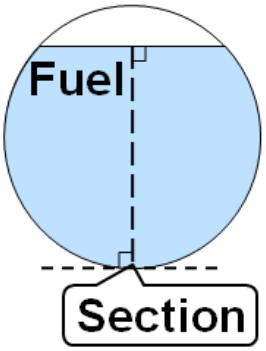
You can use any of the preceding ways to determine whether the fuel tank is half full and estimate the fuel level.

3. Know more information about probe installation.

When sticking the probe, keep it away from the fuel inlet and float. As shown in the following figure, the yellow area is suitable to install the probe.



If the fuel tank is cylindrical, choose the area that is closest to the ground such as the section shown in the following figure.



Clean up the dirt and oil stain in the probe installation area, and keep the area dry.

4. Find a precise installation location via the display.

As shown in the following figure, connect the probe to the display, put the male plug of the DC power supply in the display, and connect the male plug to the power extension cable.

Arrange the extension cable in the cab.

Then connect the red wire of the extension cable to vehicle battery's anode (9–36 V) and the black wire of the extension cable to its cathode (that is, GND wire).

Apply the couplant to the probe surface and stick the probe on the bottom of the fuel tank. The display will show numbers.

In this example, **3** indicates the number of signal echoes and **2** indicates the status code. The status code is the most important parameter. Its value is 0, 1, or 2. When the status code is **2**, it means that you can install the probe here. Move the probe slowly and wait for 2 seconds to find the location where the status code on the display is 2. Then mark the location.

Note: The sensor's sensitivity is high. Hold the probe steady because shaking will make data unstable. If an angle alarm is generated, park the vehicle on level ground before installing the probe.

5. Install the sensor.

Clean up the couplant on the fuel tank and probe and keep the probe installation location dry. If the bottom of the fuel tank is covered with paint, use the putty knife or screwdriver to scrape paint. Then use the sandpaper to polish the installation location until the tank metal is exposed. Apply the couplant to the probe surface and test the installation location again. After that, keep the installation location clean and dry. As shown in the following figure, the diameter of the polished area is 3.5cm.

Use the screwdriver to push the AB glue, apply proper amount of glue to the probe center, and evenly stir it.

After the glue is stirred evenly, we will not see hot or green color.

Stick the probe on the marked location and check whether the status code is 2. If no, move the probe slowly within 2–3 mm and find the right installation location.

If the ambient temperature is 25°C, move the probe for 30 seconds after sticking the probe. In this way, if the status code

is not **2**, remove the probe, clean up all AB glue, and apply glue to the probe surface again. Because the AB glue does not work at this moment.

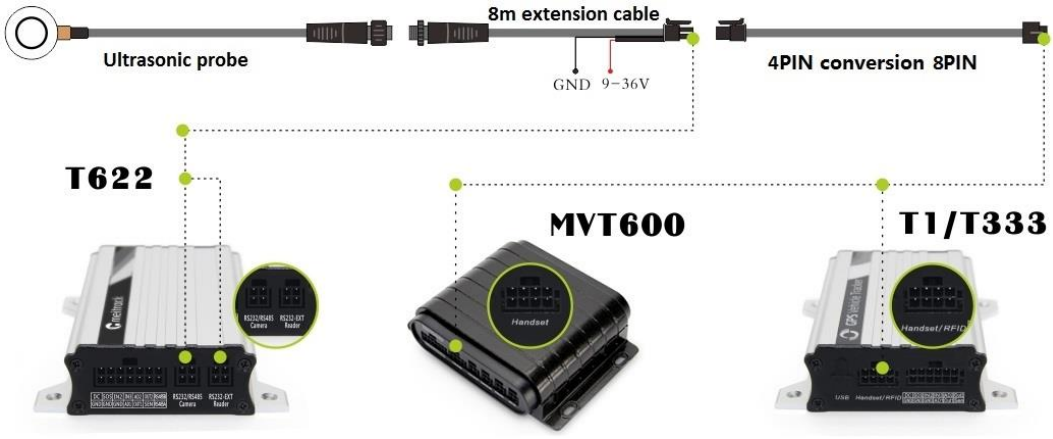
If the status code is **2**, hold the probe for 5–15 minutes until the glue is solidified. While pressing, ensure that the status code is always **2**.

Note:

4. When the ambient temperature is 25°C, you are advised to finish the stir within 20 seconds.
5. When the ambient temperature is more than 30°C, finish the stir as soon as possible. Because the higher the temperature is, the shorter the solidification time is.
6. When the ambient temperature is less than 0°C, you are advised to heat the probe (at around 20°C) before applying AB glue to it.

4.3 Installing the Tracker

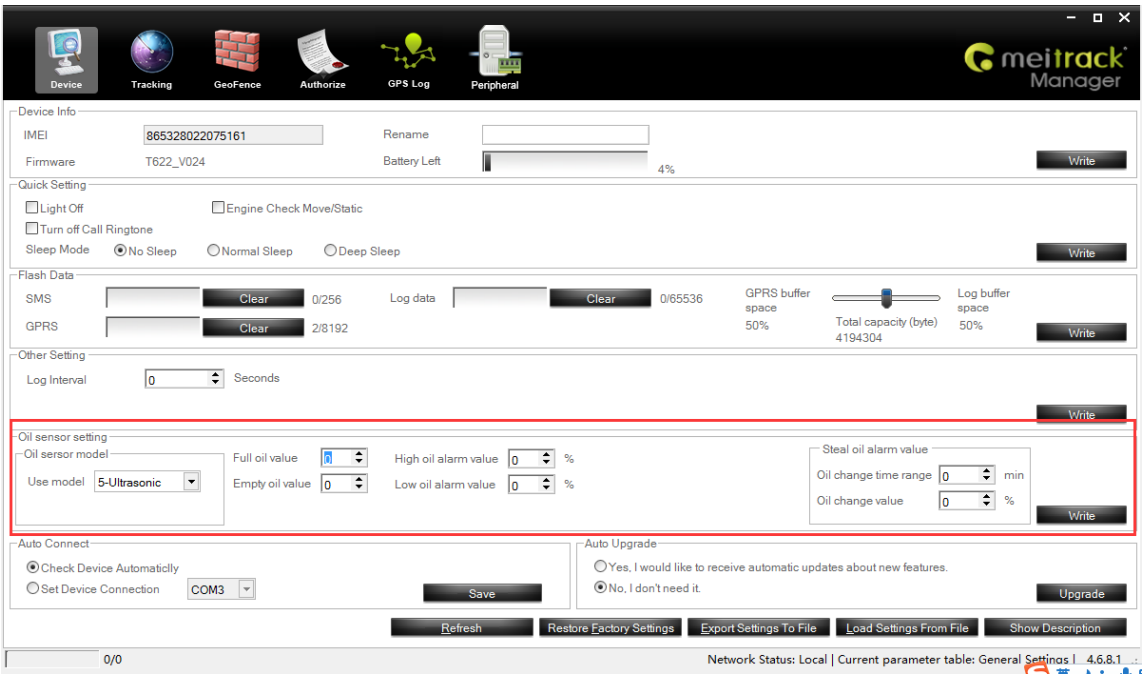
The tracker's (MVT600/T1/T333/T622) RS232 port is used to connect to the probe. The device wiring diagram is as follows:



5 Configuring the Sensor

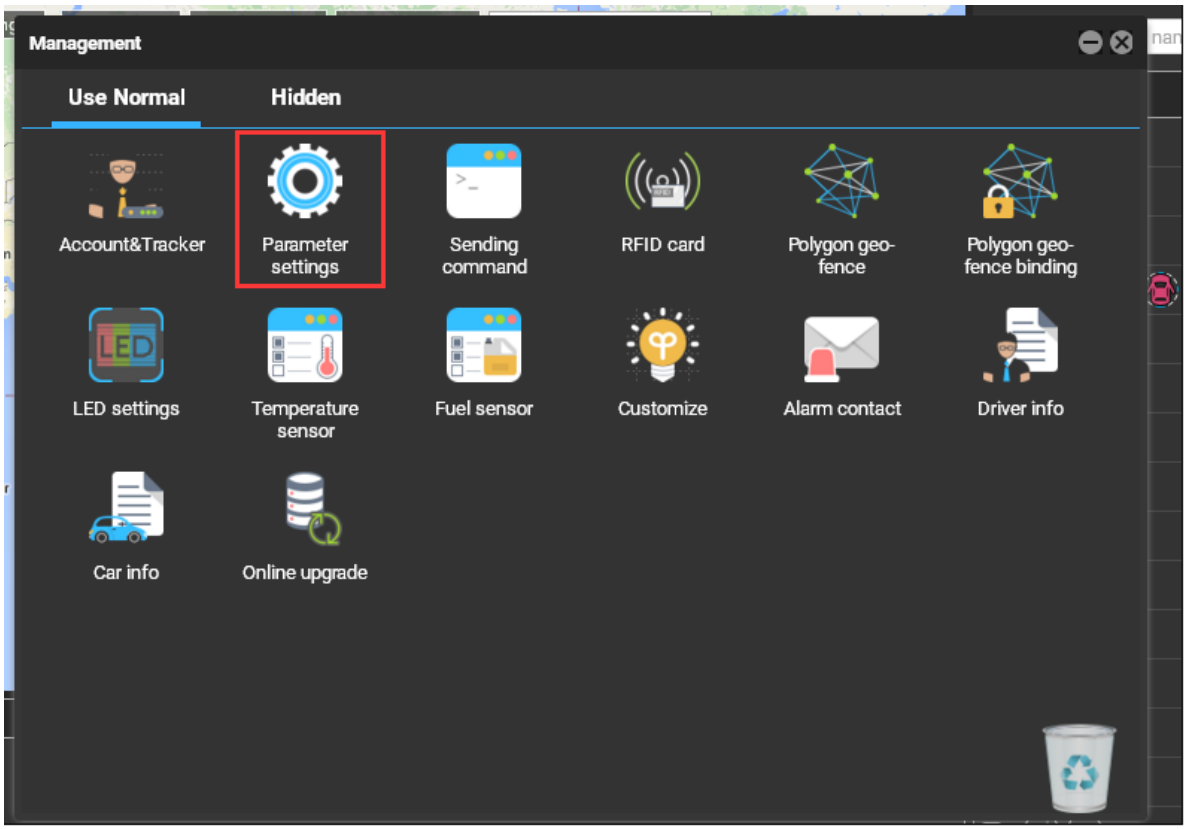
5.1 Configuring the Sensor by Meitrack Manager or MS03

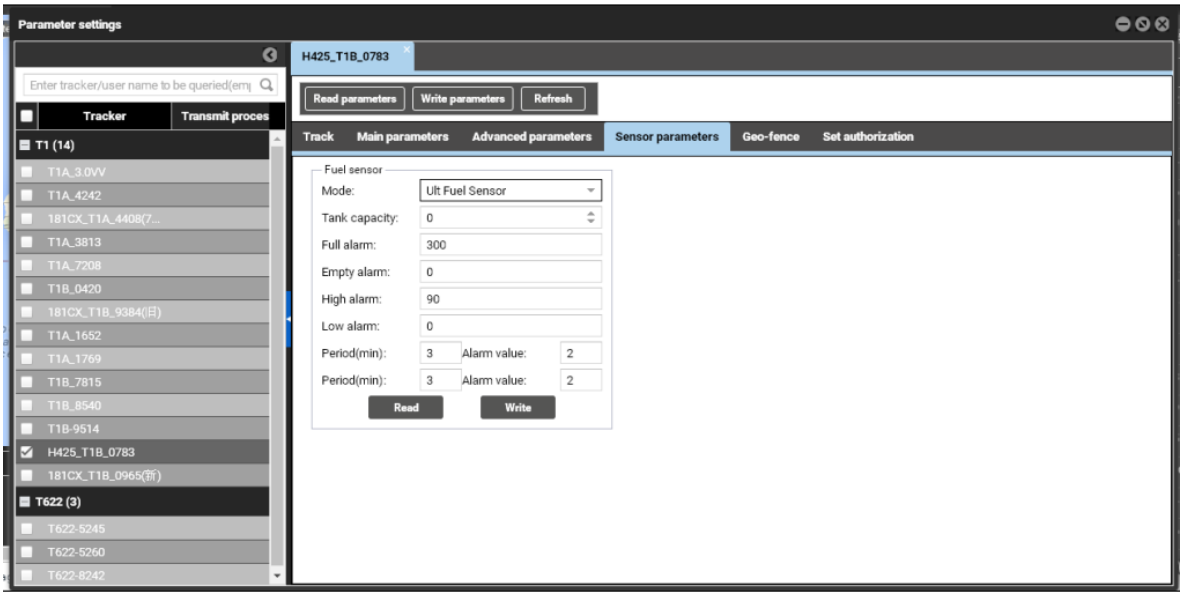
1. Turn on the tracker (MVT600/T1/T333/T622), connect it to a computer, and run Meitrack Manager. On the **Device** tab page, locate **Oil sensor setting**, set **Use model** to **5-Ultrasonic**, and set other parameters as required, as shown in the following figure. Click **Write** to save the configuration.



2. You can also set the sensor by MS03 tracking system. Please ensure that the tracker is online.

On MS03, choose **Management**. On the **Management** window, select **Parameter settings** from **Use Normal**. On the page that is displayed, select a tracker in the left navigation pane, click **Sensor parameters**, and then set related parameters.

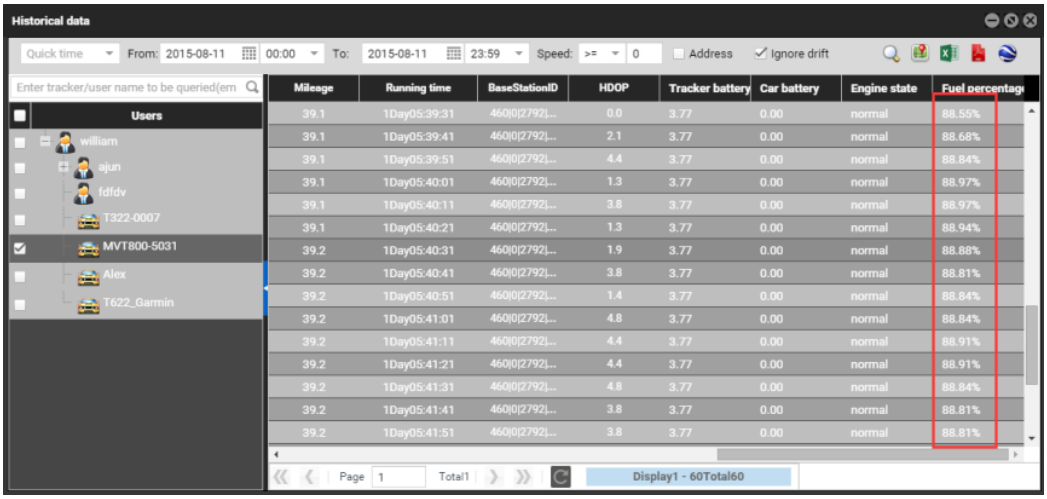




6 Querying Reports

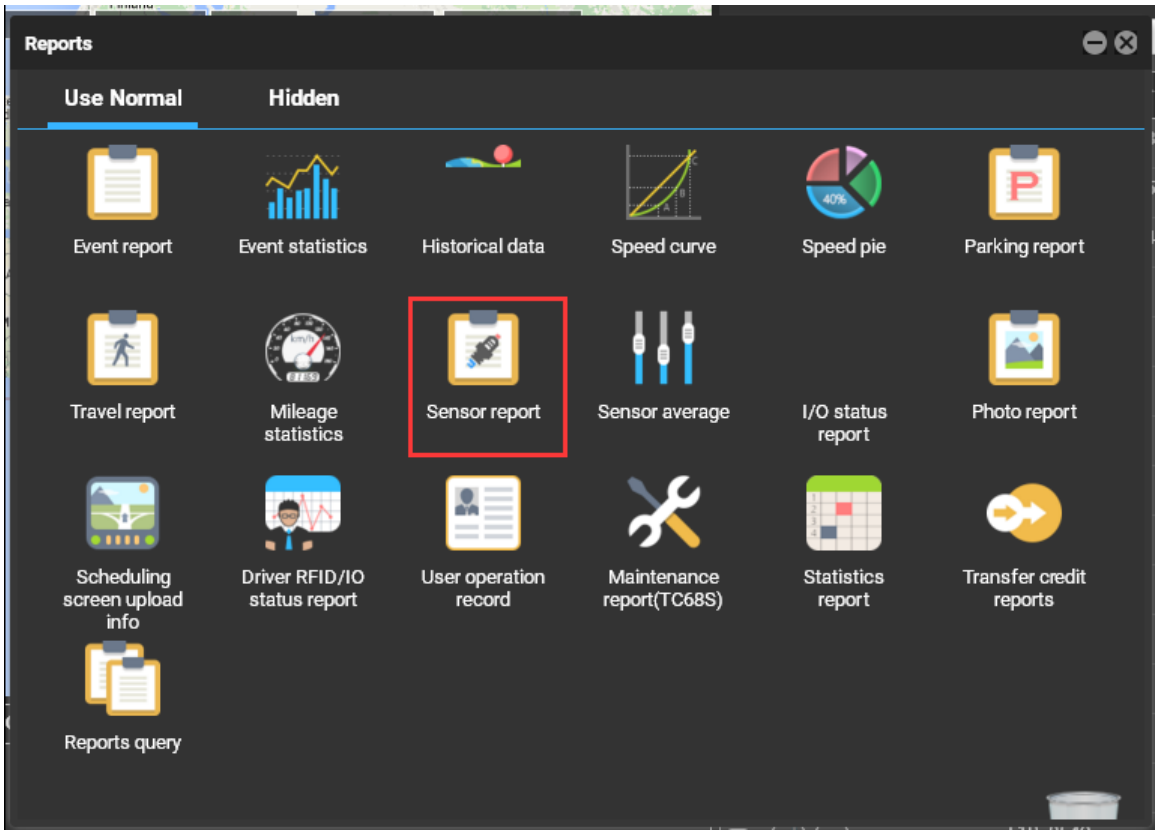
6.1 Historical Data

1. On the MS03, choose **Reports**.
2. On the **Reports** window, select **Historical data** from **Use Normal**. The **Historical data** window is displayed.
3. Select a tracker, set the query time, and click . The results will be displayed, as shown in the following figure.

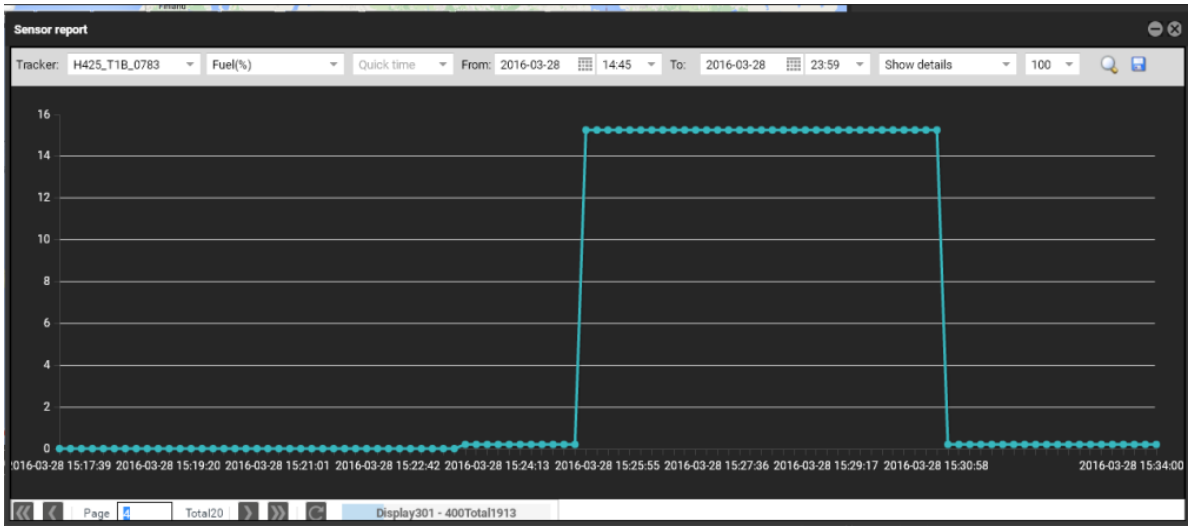


6.2 Sensor Report

1. On the **Reports** window, choose **Sensor report** from **Use Normal**. The **Sensor report** window is displayed.



2. Select a tracker and sensor, set the query time, and click  . The results will be displayed, as shown in the following figure.



If you have any questions, do not hesitate to email us at info@meitrack.com.