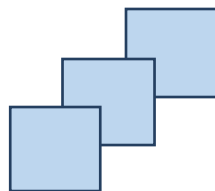
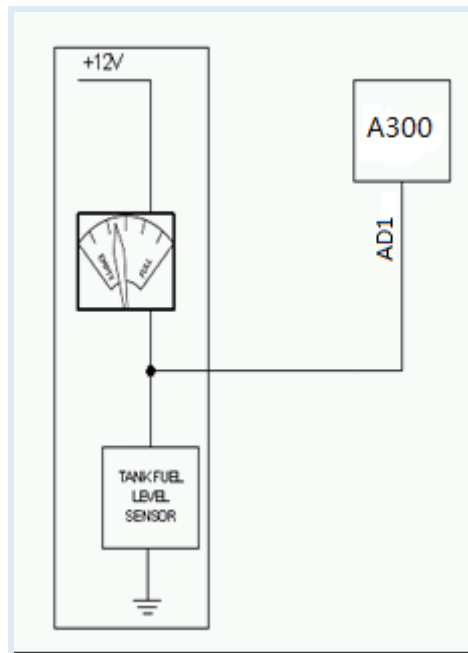


# FIFOTRACK VEHICLE ORIGINAL FUEL SENSOR USER GUIDE




Original Fuel sensor

Version: V1.1

[www.fifotrack.com](http://www.fifotrack.com)

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## Document History

Version	Revision Date	Author	Detail
V1.1	Feb 8, 2017	Vito Hu	Initial Version

# Contents

<b>Document History .....</b>	<b>3</b>
<b>1 Instructions of Safety .....</b>	<b>5</b>
<b>2 Applied Model.....</b>	<b>5</b>
<b>3 Basic Description of Connection .....</b>	<b>5</b>
<b>4 Fuel Sensor Cable Identification.....</b>	<b>6</b>
4.1 Step 1.....	6
4.2 Step 2.....	6
4.3 Step 3.....	7
4.4 Step 4.....	7
<b>5 Fuel Sensor Cable Connection .....</b>	<b>8</b>
5.1 Regular and Irregular Fuel Tank.....	8
5.2 Connect Fuel Sensor Cable to analog input 1 (AD1).....	8
5.3 Record Voltage of Fuel Sensor Cable for Calibration .....	8
5.4 Connect Digital input 3 to ACC .....	9
5.5 Contact Sales .....	9
<b>6 Fuel Level Monitoring .....</b>	<b>10</b>
6.1 Fuel Level Comparison Graph .....	10
6.2 Small Car Fuel level Graph( Full 65 liters) .....	10
6.3 Real-time Fuel Level.....	11
6.4 Fuel level Accuracy.....	11
6.5 Vehicle Original Fuel Sensor Advantages and Limitations .....	11

## 1 Instructions of Safety

This chapter contains information on how to operate vehicle original fuel sensor and device safely. By following these requirements and recommendations, you will avoid dangerous situations. Please read these instructions fully and follow them strictly before operating the tracker!

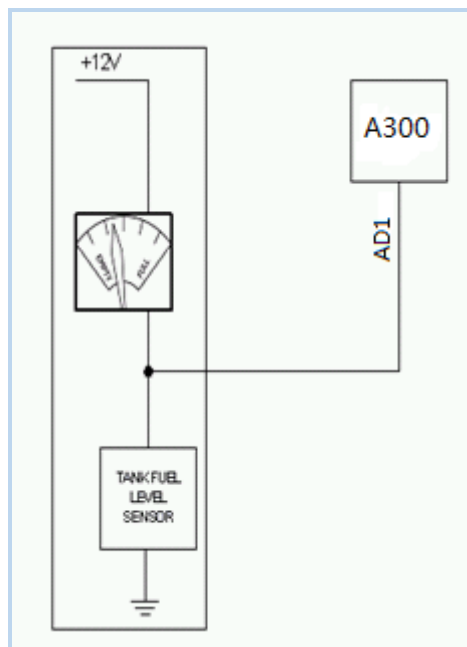
Before using, please make sure the tracker has been configured well and LED lights are visible in working status.

## 2 Applied Model

Vehicle original fuel sensor is connected to tracker via analog input (default analog input1), it is applied to GPS tracker model

© A300 (firmware version V1.08 or above)

## 3 Basic Description of Connection



## 4 Fuel Sensor Cable Identification

### 4.1 Step 1

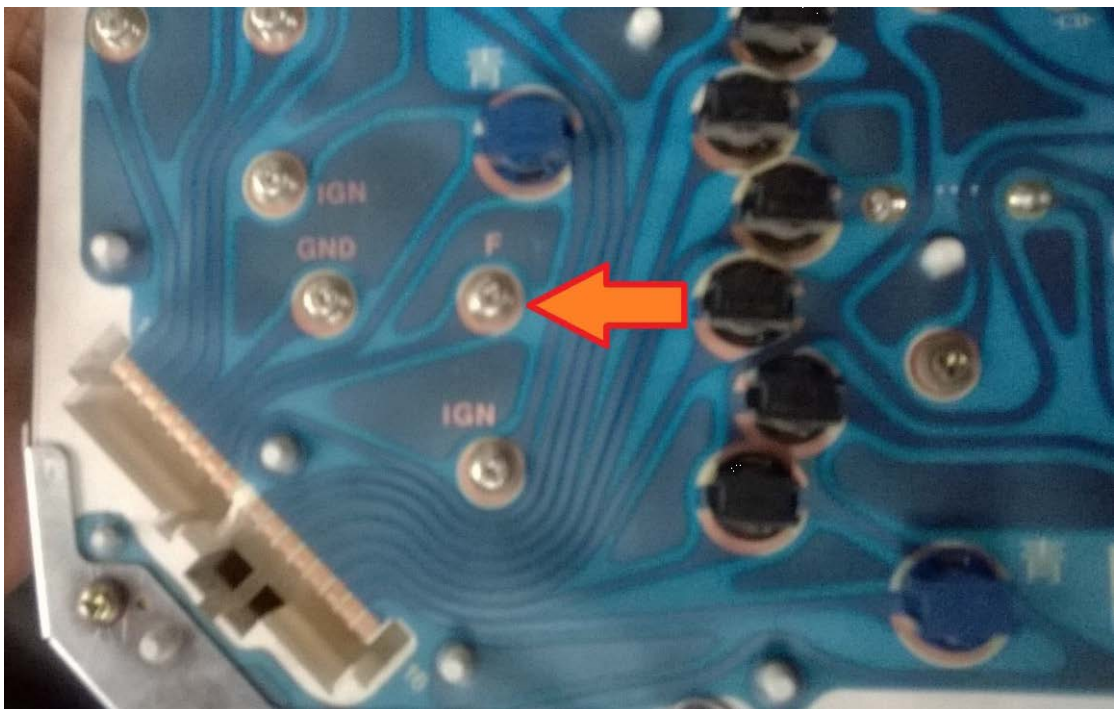
Removing the driver's indicator panel



Now the fuel level is more than quarter a tank as shown on the image above.

### 4.2 Step 2

Identifying the cable that connects the fuel tank sensor to the gauge meter on the driver's panel. Behind the indicator panel, it is clearly labelled where the fuel sensor cable is being connected as shown on the image below.



### 4.3 Step 3

After doing a continuity test, the cable was identified. To prove this, you have to cut the identified cable to see the reaction of the fuel gauge meter.



### 4.4 Step 4

After moving with the vehicle and covering a distance of 100m approximately, the gauge meter indicator arrow dropped from quarter a tank to Empty.

Then reconnect the cable, when driving back the arrow went back to the previous position (quarter tank)

The identified cable has been proved after above tests.



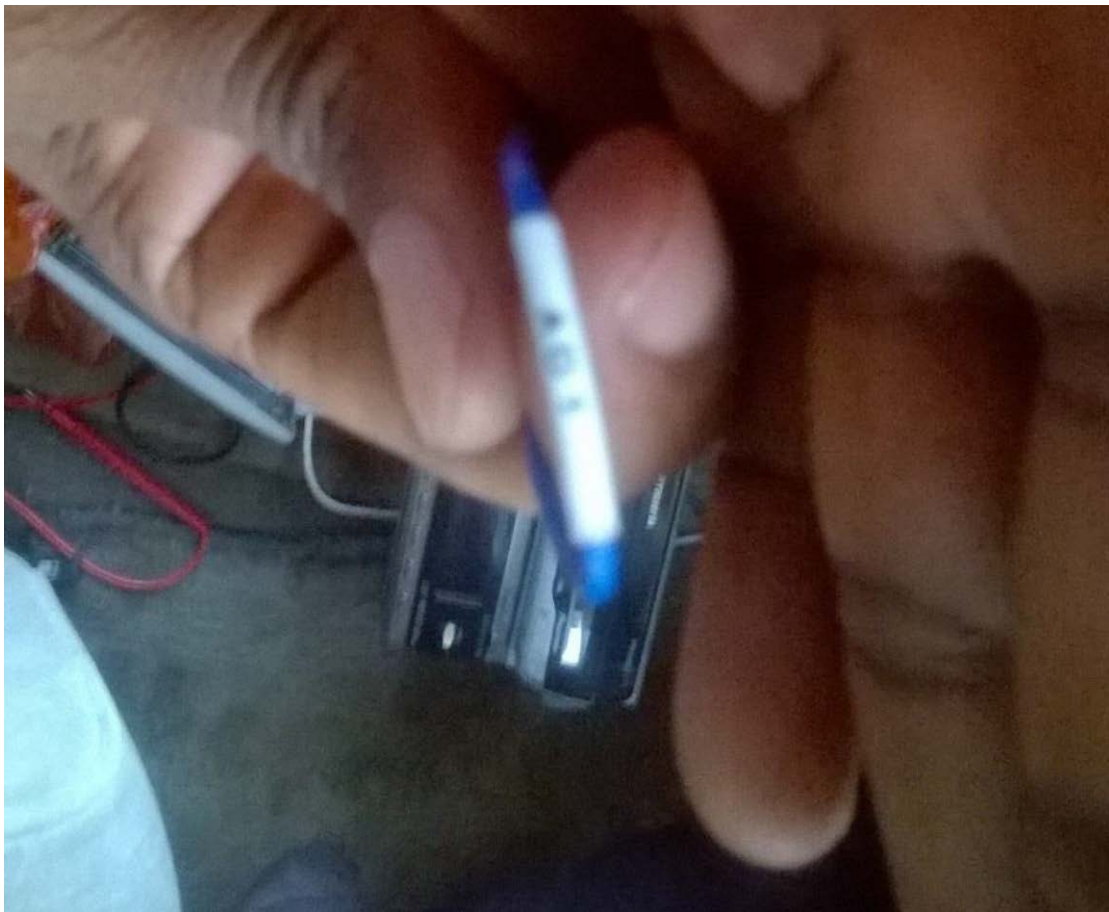
## 5 Fuel Sensor Cable Connection

### 5.1 Regular and Irregular Fuel Tank

Output voltage of original fuel sensor is not linear, both the regular and irregular fuel tank have to do the cable connection and calibration as follows.

### 5.2 Connect Fuel Sensor Cable to analog input 1 (AD1)

Connect analog input 1 to the original fuel sensor cable. The fuel sensor cable is connected to the driver's indicator panel.



### 5.3 Record Voltage of Fuel Sensor Cable for Calibration

Fuel tank volume	Fuel sensor cable voltage
0 liters	X
10% liters	X
20% liters	X
30% liters	X
40% liters	X
50% liters	X



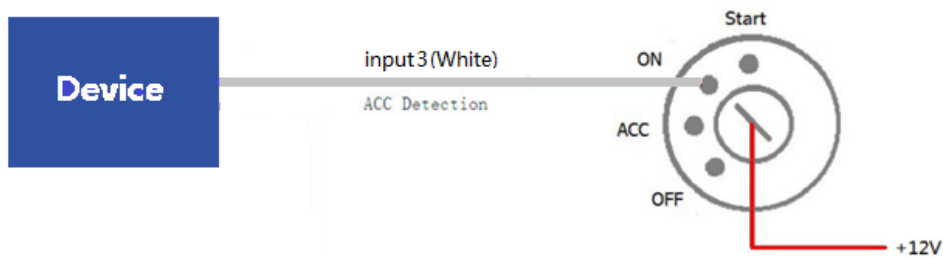
60% liters	X
70% liters	X
80% liters	X
90% liters	X
Full liters	X
<b>Note:</b>	
1) This measure should be done under engine on status.	
2) More calibration records, higher precision.	

**For Example**

Fuel tank volume (full is 65 liters)	Fuel sensor cable voltage
0 liters	3.90V
10 liters	3.47V
20 liters	2.89V
30 liters	2.15V
40 liters	1.53V
50 liters	0.93V
60 liters	0.21V
<b>Note:</b>	
1) This measure should be done under engine on status.	
2) More calibration records, higher precision.	

**5.4 Connect Digital input 3 to ACC**

Digital input 3 of A300 is specified to detect the status of engine on/off for original fuel sensor solution. Please don't use any other digital inputs to connect with ACC.



**5.5 Contact Sales**

Different types of vehicle have different formulas, please contact fifotrack sales to finish below steps:

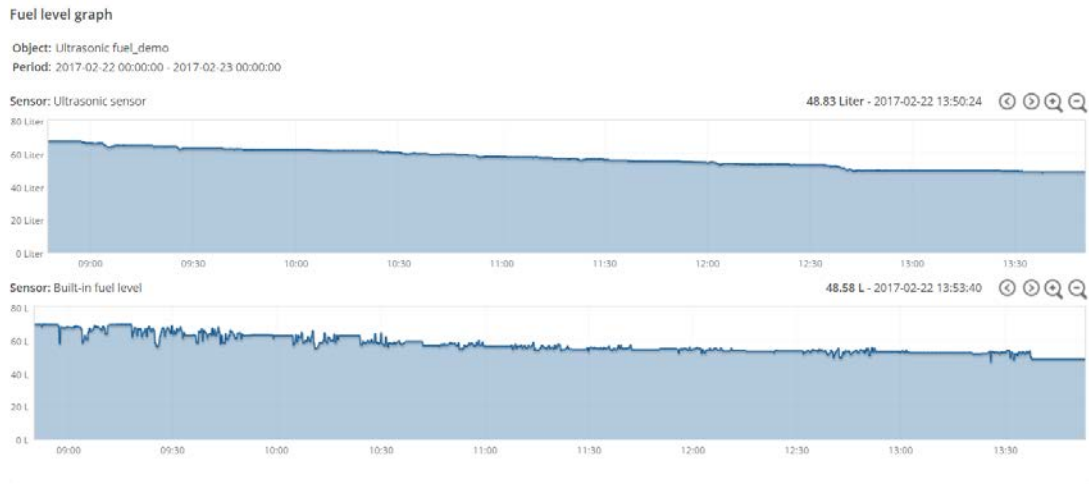
1. Adjust analog input voltage range by command
2. Specific formula on FIMS tracking software

## 6 Fuel Level Monitoring

### 6.1 Fuel Level Comparison Graph

Ultrasonic fuel sensor and vehicle original fuel sensor results of same truck.

Testing environment: vehicle runs between mountains, the truck goes uphill and downhill frequently.



Vehicle original fuel sensor has more fluctuation than ultrasonic fuel sensor.

However, the trend of fuel consumptions is cognizable, maximum fuel wave is less than 10 liters.

We keep improving it.


### 6.2 Small Car Fuel level Graph( Full 65 liters)



**Note:** Red arrows is the fuel filling data.

### 6.3 Real-time Fuel Level

Data	Value
Altitude	1286 m
Analog1 voltage	2.6 V
Angle	0 °
Engine hours	40 h
External Battery	12.16 V
<b>Fuel Sensor</b>	<b>23.89 Liter</b>
Internal Battery	4.18 V
Model	TOYOTA I...
Nearest marker	Headquarters (0.02 km)
Nearest zone	Red Box Zone (0.00 km)
Odometer	72536 km
Plate	BAD 5195
Position	-15.420863 °, 28.281638 °
Regius	Engine on



### 6.4 Fuel level Accuracy

Compare to the external fuel sensor, original fuel sensor accuracy is less precise. Based on current firmware version, the accuracy as follows according to test results both in China and abroad.

Fuel tank full volume (liter)	Fuel Tank Size(CM) (L*W*H)	Error (%)	Error (liter)
155	80*48*40	5.8%	9
65	Irregular tank, height is 20CM	15.4%	10

### 6.5 Vehicle Original Fuel Sensor Advantages and Limitations

**Advantages:**

1. Cost saving, no need pay for external fuel sensor and following maintenance costs.
2. Easy and controlled installation way
3. Safe, no need drill a hole on fuel tank
4. Fuel consumption trend, fuel filling, fuel theft are clear and acceptable enough for fleet management.

**Limitations:**

1. When engine off, original fuel sensor will not work due to lack of power. The fuel filling or fuel theft data is not real-time, it will be uploaded when engine on.
2. Less precision compare to external fuel sensor

Please e-mail us at [info@fifotrack.com](mailto:info@fifotrack.com) if any question or feedback.