

# FIFOTRACK LIQUID SENSOR USER GUIDE




Model: Liquid Sensor

Version: V1.3

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

## Copyright and Disclaimer

- ⦿ All copyrights belong to Shenzhen fifotrack Solution Co., Ltd. You are not allowed to revise, copy or spread this file in any form without consent of fifotrack.
- ⦿  is trademark of fifotrack, protected by law.
- ⦿ Please read this user guide carefully before installation to avoid any possible personal injury or property loss.

## Document History

Version	Revision Date	Author	Detail
V1.1	April 3, 2019	Cici Wu	Initial Version
V1.2	July 7, 2021	Cici Wu	Add stationary tank pictures
V1.3	June 24, 2022	Cici Wu	Updated liquid sensor wires order

## Contents

<b>Document History .....</b>	<b>3</b>
<b>Contents.....</b>	<b>4</b>
<b>1 Overview .....</b>	<b>5</b>
<b>2 Applied Model .....</b>	<b>5</b>
<b>3 Basic Description &amp; Specification .....</b>	<b>6</b>
<b>4 Dimension and Drawing .....</b>	<b>7</b>
<b>5 Installation.....</b>	<b>8</b>
<b>5.1 Connect to GPS tracker (Take A300 as example) .....</b>	<b>8</b>
<b>5.2 Wire connection picture .....</b>	<b>8</b>
<b>6 Monitoring liquid sensor on platform.....</b>	<b>9</b>
<b>6.1 Sensor settings on platform .....</b>	<b>9</b>
<b>6.2 Liquid level graph in platform.....</b>	<b>10</b>
<b>6.3 Liquid level alarms.....</b>	<b>10</b>
<b>7 Note .....</b>	<b>12</b>

## 1 Overview

Liquid sensor is suitable for multiple liquid level monitoring, especially for liquid inside big stationary tank, such as petrol, diesel and water, etc. The output signal of liquid sensor is linear analog voltage data based on air pressure change. The cable length can be customized according to the height of liquid tank.



### Core benefit features

- Easy and safe installation, put probe into liquid, no need drill a hole.
- Low cost compare to traditional fuel sensor
- Higher accuracy than traditional fuel sensor
- Flexible cable length for different height tanks

### Applications

- Oil and Fuel Tank level measurement
- Diesel level measurement
- Sea and lake water level measurement and control
- Industrial course testing and control
- Sewage treatment
- Well level measurement and control
- Automatic detection system
- Water-saving irrigation

## 2 Applied Model

Liquid sensor is compatible with all fifotrack vehicle tracker models below.

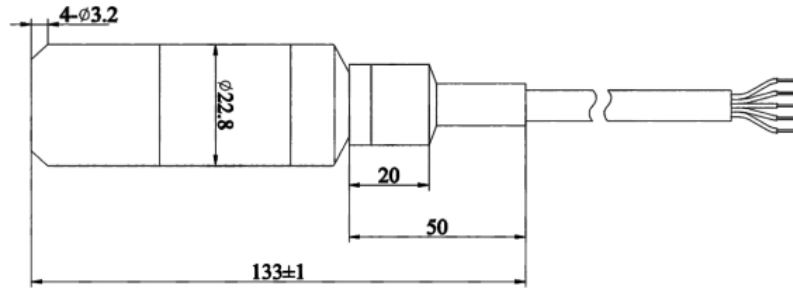
GPS tracker Model	Analog input	
S20	AD1	\
S30	AD1	\
A100	AD1	\
A300	AD1	AD2
A500	AD1	AD2
A600	AD1	AD2
A700	AD1	AD2

**Tips:** AD1 is recommended for liquid sensor.

### 3 Basic Description & Specification

Model	Liquid Sensor	
Parameter		
Pressure Range	-1...0-0.05Bar...50 Bar Optional	
Overload	150% F.S.	
Burst Pressure	300% F.S.	
Accuracy:(Linearity Hysteresis Repeatability)	$\leq \pm 0.5\%F.S;$ $\leq \pm 0.25\%F.S;$ $\leq \pm 0.15\%F.S$ Including non-lin., rep. and hys. Optional	
Long Stability	Standard: $0.1\%F.S \pm 0.05\%/Year$	Max: $0.15\%F.S \pm 0.05\%/Year$
Working Temp	-20°C~70°C	
Storage Temp	-30°C~100°C	
Temperature Compensation	-10°C~60°C	
Medium compatible	Compatible with 316 Stainless Steel or Titanium Alloy or PTFE materials.	
Signal output	0-5V	
Power Supply	12~ 30Vdc	
Electronic connection	Fixed cable and IP68 waterproof	
Waterproof	IP68	
Cable length	According to the storage tank height	

## 4 Dimension and Drawing



Unit: mm



## 5 Installation

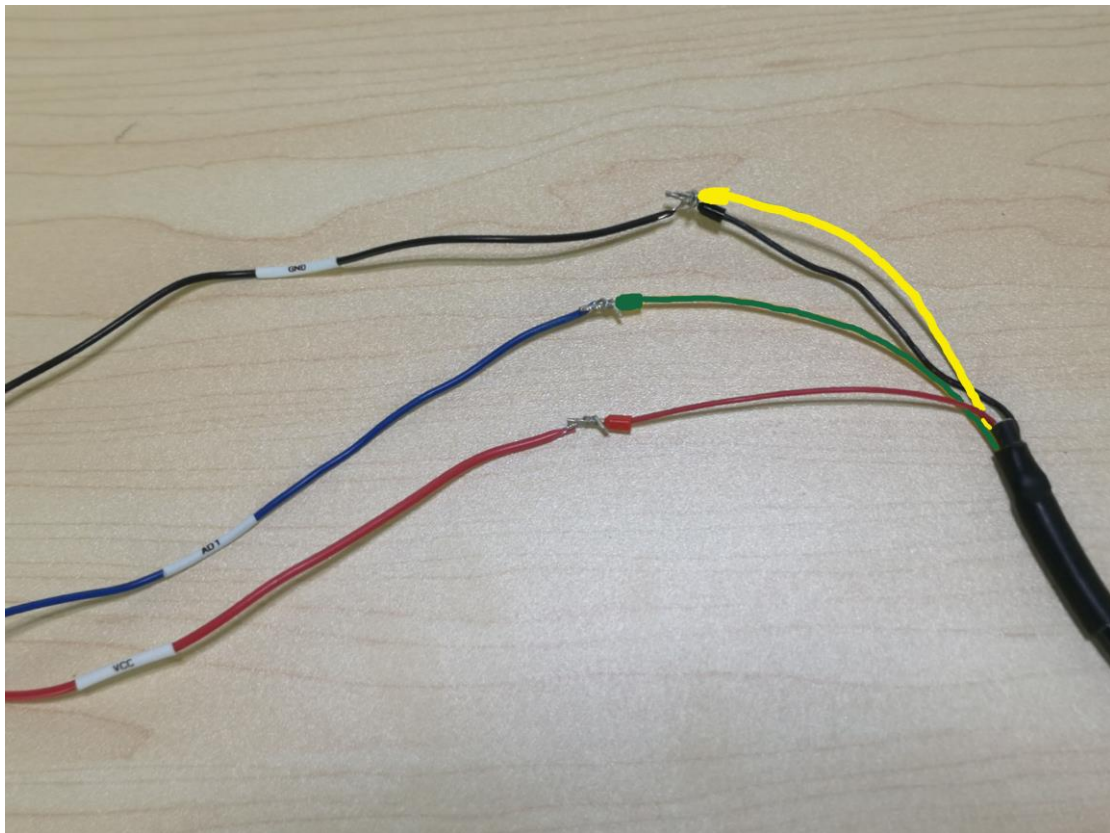
### 5.1 Connect to GPS tracker (Take A300 as example)

Liquid Sensor	Cable color	GPS tracker A300	Cable color
Power	Red	VCC	Red
Ground	Black	Ground	Black
Shield	Yellow		
Signal output	Green	Analog input 1 (AD1)	Blue

Note:

1. The sensor's ground and shield wires connect to GPS tracker's ground wire together.
2. After wire connection, connect external power 12~30V to GPS tracker.

### 5.2 Wire connection picture



Left is A300 wire

Right is liquid sensor wire



## 6 Monitoring liquid sensor on platform

### 6.1 Sensor settings on platform

**Sensor properties**

Sensor		Calibration	
Name	Tank Level	X	Y
Type	Fuel level		
Parameter	ai0		
Data list	<input checked="" type="checkbox"/>		
Popup	<input type="checkbox"/>		
Result			
Type	Value		
Units of measurement	Liter		
If sensor "1" (text)			
If sensor "0" (text)			
Formula	X/4096*10000		
Lowest value			
Highest value		X	Y

**Sensor result preview**

Current value: 346    Result: 346

Save    Cancel

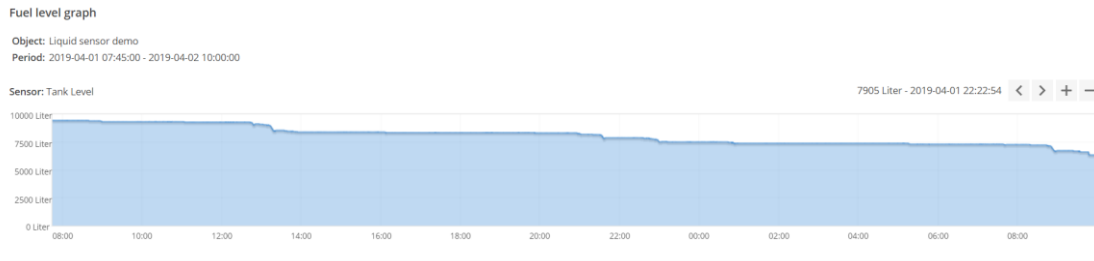
Type: always choose "fuel level" type

Parameter: AD1 selects "ai0", AD2 selects "ai1".

Formula: if the tank is regular size, formula is

Tank level (unit is liter)= $X/4096*Y$  (Y is tank Max capacity, unit is liter. In this example Y is 10000 liters)

## 6.2 Liquid level graph in platform



## 6.3 Liquid level alarms

High/low level alarms notification on platform and by e-mail ( Below example is tank level low alarm)

### Hardware configuration

Use SMS command B81 to set low and high level threshold values.

000000,B81,<ad-idx>,<low-percentage>,<high-percentage>

For example 000000,B81,1,15,80

000000 is SMS command default password

B81 is command

1 means AD1 is connecting with liquid sensor

15 means when the liquid level lower than 15%, alarm will be triggered (alarm code 46)

80 means when the liquid level higher than 80%, alarm will be triggered (alarm code 47)

**Note:** GPS tracker liquid high/low level alarm configuration refers to command **B81** details, download each model command list file here: <https://www.fifotrack.com/Support/Userguide/>

### Alarm configuration on platform

Event properties ✕

Main Time Notifications Object control

**Event**

Active

Name

Type

Objects

Depending on routes

Routes

Depending on zones

Zones

Time period (min)

Speed limit (kph)

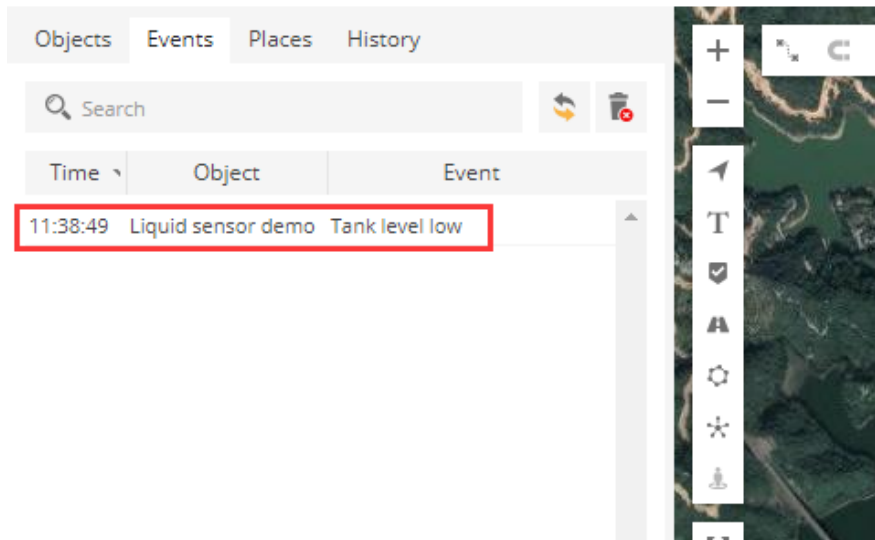
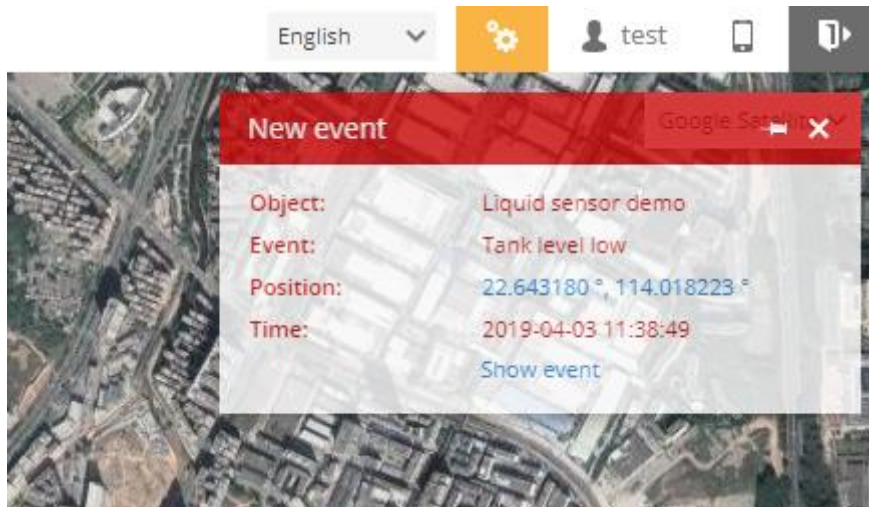
**Parameters and sensors**

Source	Operator	Value	
alm_code	=	46	✕

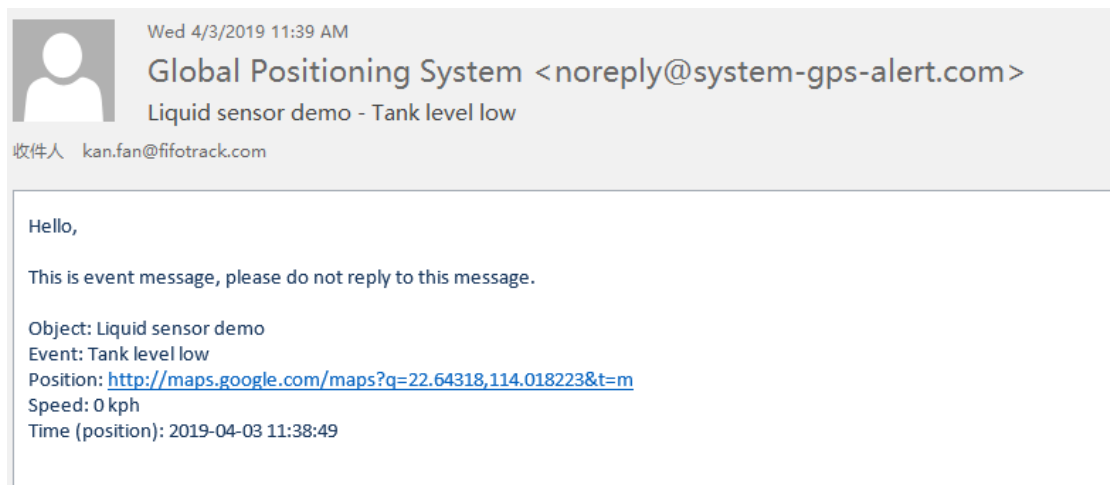
+ Add

Save Cancel

### Alarm notification in platform



### Alarm notification by e-mail



## 7 Note

- Before quotation, the liquid type such as petrol, diesel or water need to confirm.
- Height of tank need confirm to decide the cable length.
- The AD error is within 2%, liquid level accuracy is higher than 97% for stationary tank.

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