

ANALOG CAPACITIVE FUEL SENSOR

Introduction & Tutorial

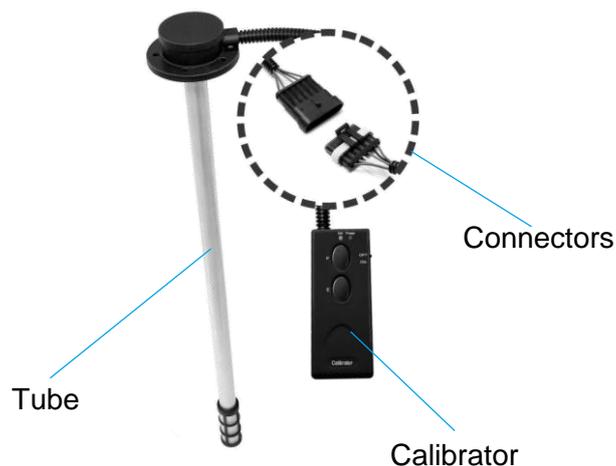
Version 1.0

1. Introduction

Capacitive fuel sensor is used for preventing fuel leakage and theft as it monitors the fuel level in real-time. When an abnormal change of fuel level is detected, an immediate alert will be sent to inform vehicle owners of that incident.

The standard length of the tube is 75cm, can be trimmed to fit tanks of varying heights.

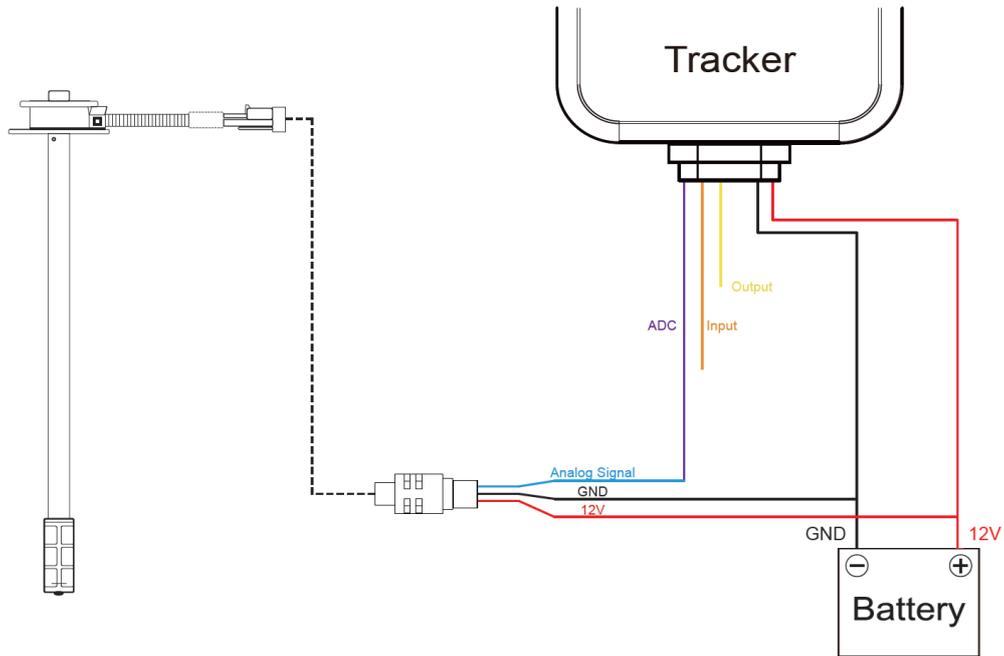
2. Picture



3. Specification

Operating voltage	10-32V DC (Normally 12/24V)
Working current	<15mA
Communication interface	Analog: Analog interface
IP rating	IP65
Working temperature	-40°C-85°C (-30-75°C recommended)
Installation position	Central sector inside the fuel tank
Calibration	By calibrator

4. Wiring diagram



5. Supported devices



GT06E



X3



JM-VL02

6.1 Commands of X3

- **Function: Turn on fuel monitoring**

Command: `ADT,ON,T#`

T=5-3600 (unit: second), time interval of uploading, default=600s..

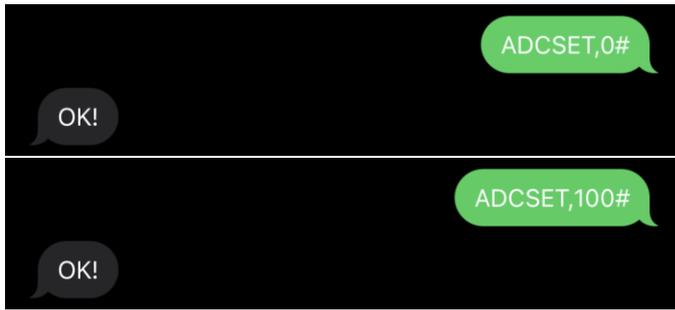


● Function: Calibration

Command: `ADCSET,A#`

A=0: define current voltage as the voltage of empty tank.

A=100: define current voltage as the voltage of full tank.



● Function: Smoothing data report

Explanation: Mitigate the interference of abnormal fuel-level changes caused by jerk and vibration, thus the chart of fuel consumption can be more smooth.

Command: `PSF,N#`

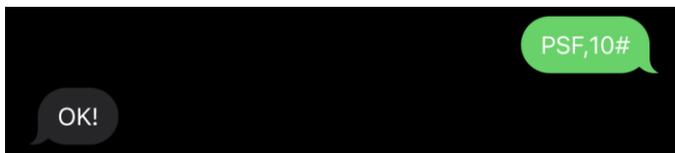
N=1-100 (unit: pieces), the quantity of the data to calculate average, default=1pcs.

Examples:

When N=1, smoothing function is turned off.

When N=3, uploaded fuel percentage = $\frac{\text{Sum of the last three percentages}}{3}$

When N=10, uploaded fuel percentage = $\frac{\text{Sum of the last ten percentages}}{10}$



● Function: Turn on the alert of fuel theft and refueling

Explanation: When the difference between two fuel percentages exceeds or equal to preset value, a fuel theft alert/refueling alert will be triggered.

Command: `OILALM,A,T1,T2,C,H,M#`

A=0, turn off alerts (DEFAULT).

A=1, turn on fuel theft alert.

A=2, turn on refueling alert.

A=3, turn on fuel theft alert and refueling alert.

T1=0-3600 (unit: second), the time interval of fuel monitoring when ACC is ON, default=5s.

When T1=0, means "no monitoring when ACC is ON".

T2=0-3600 (unit: second), the time interval of fuel monitoring when ACC is OFF, default=5s.

When T2=0, means "no monitoring when ACC is OFF"

C=1-300 (unit: pcs), the maximum quantity of local data storage (First in first out), default=12pcs.

H=1~10000, the threshold of the difference of fuel percentages, unit: 0.01%, default=1000.
The device can automatically compare the first percentage and the last percentage stored at local, if the difference is larger than preset value "H", a fuel theft alert/refueling alert will be sent. (Device can identify whether the percentage is increasing or decreasing).

M=0, alert by platform only.

M=1, alert by SMS & platform (DEFAULT).

M=2, alert by SMS & platform & phone call.

M=3, alert by platform & call.

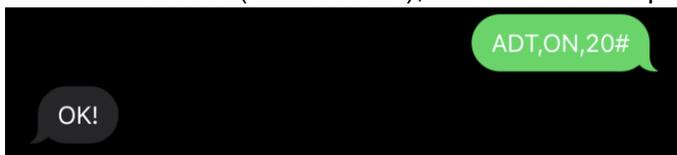


6.2 Commands of GT06E & JM-VL02

● Function: Turn on fuel monitoring

Command: `ADT,ON,T#`

T=5-3600 (unit: second), time interval of uploading, default=600s..

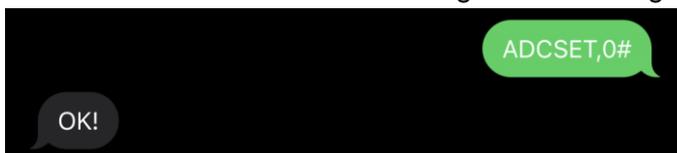


● Function: Calibration

Command: `ADCSET,A#`

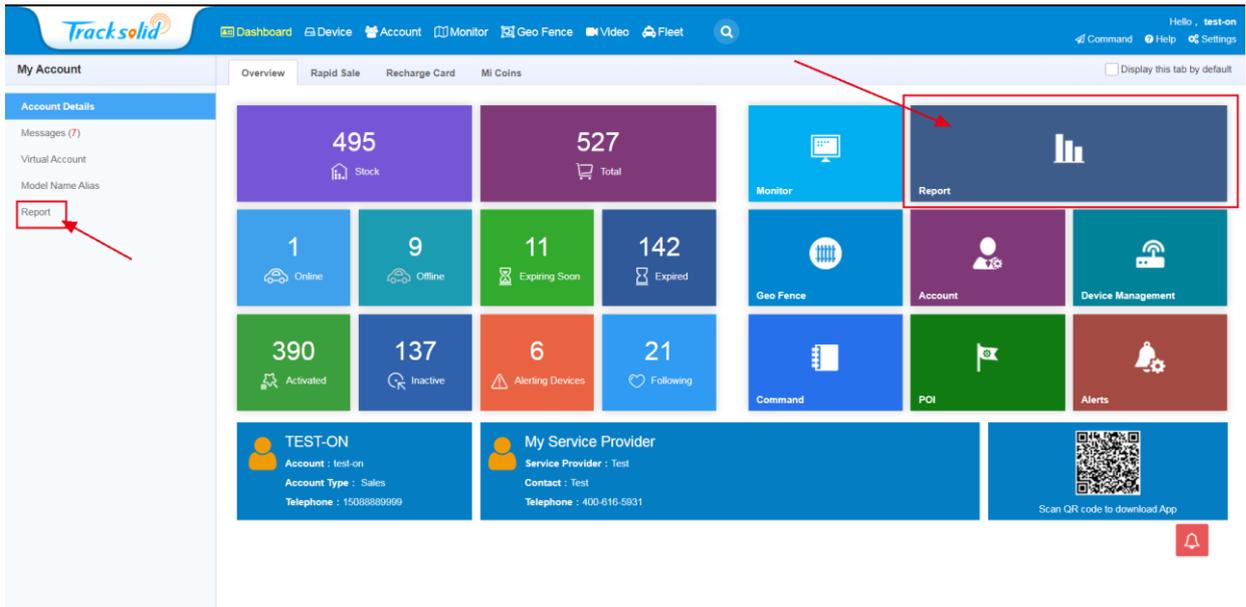
A=0: define current voltage as the voltage of empty tank.

A=100: define current voltage as the voltage of full tank.

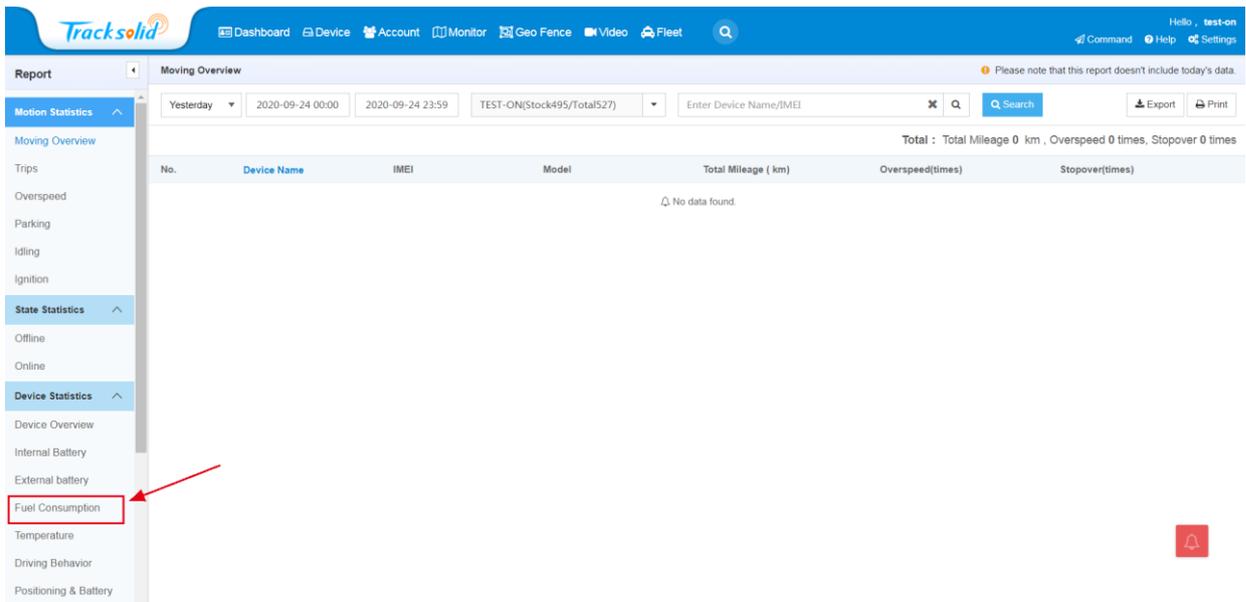


7. Platform

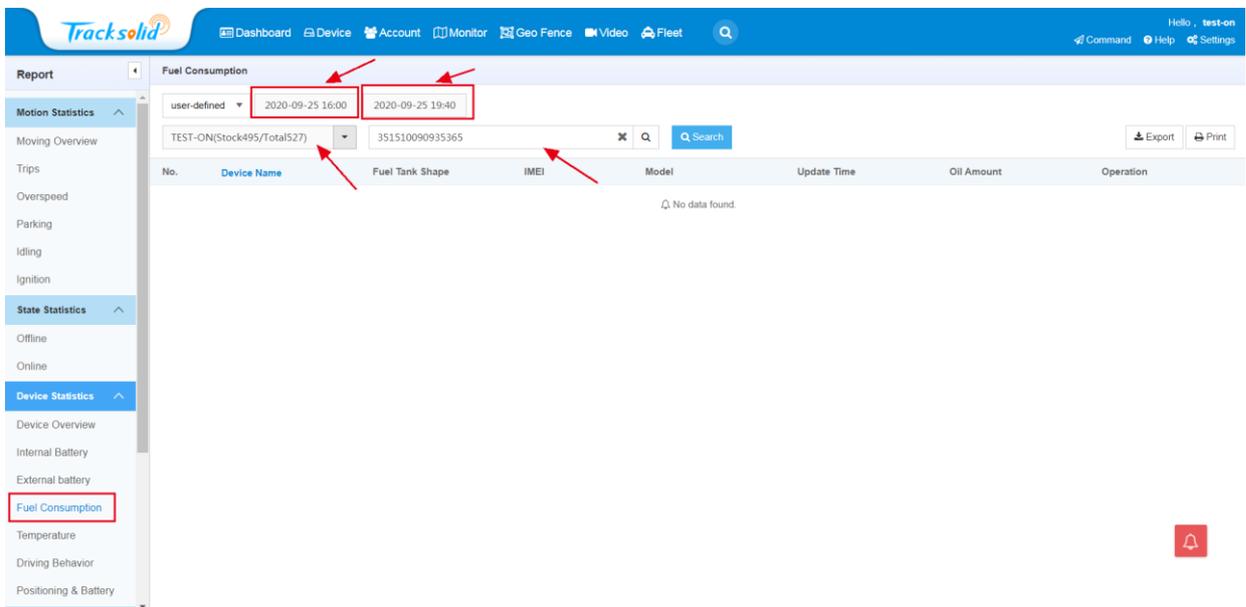
1) Click "Report" on homepage.



2) Click "Fuel consumption" on the left column.



3) Select the account and time period and input the device IMEI number.



4) Click "View Chart" or "Export",

No.	Device Name	Fuel Tank Shape	IMEI	Model	Update Time	Oil Amount	Operation
1	X3-35365		351510090935365	X3	2020-09-25 19:40:55	18.24L(45.6%)	View Chart
2	X3-35365		351510090935365	X3	2020-09-25 19:40:50	18.24L(45.6%)	View Chart
3	X3-35365		351510090935365	X3	2020-09-25 19:40:45	18.24L(45.6%)	View Chart
4	X3-35365		351510090935365	X3	2020-09-25 19:40:40	18.24L(45.6%)	View Chart
5	X3-35365		351510090935365	X3	2020-09-25 19:40:35	18.24L(45.6%)	View Chart
6	X3-35365		351510090935365	X3	2020-09-25 19:40:30	18.24L(45.6%)	View Chart
7	X3-35365		351510090935365	X3	2020-09-25 19:40:25	18.24L(45.6%)	View Chart
8	X3-35365		351510090935365	X3	2020-09-25 19:40:20	18.24L(45.6%)	View Chart
9	X3-35365		351510090935365	X3	2020-09-25 19:40:15	18.24L(45.6%)	View Chart
10	X3-35365		351510090935365	X3	2020-09-25 19:40:10	18.24L(45.6%)	View Chart

5) Then you can view the fuel consumption graph.

6) Or export a fuel consumption report.

Fuel Consumption Report (from 2020-09-25 17:00 to 2020-09-25 18:40)						
No.	Device name	Fuel tank shape	Device IMEI	Model	Update time	Oil amount
1	X3-35365		351510090935365	X3	2020-09-25 18:40:58	25.68L(64.2%)
2	X3-35365		351510090935365	X3	2020-09-25 18:40:53	25.68L(64.2%)
3	X3-35365		351510090935365	X3	2020-09-25 18:40:48	25.68L(64.2%)
4	X3-35365		351510090935365	X3	2020-09-25 18:40:43	25.68L(64.2%)
5	X3-35365		351510090935365	X3	2020-09-25 18:40:38	25.68L(64.2%)
6	X3-35365		351510090935365	X3	2020-09-25 18:40:33	25.68L(64.2%)
7	X3-35365		351510090935365	X3	2020-09-25 18:40:28	25.68L(64.2%)
8	X3-35365		351510090935365	X3	2020-09-25 18:40:23	25.68L(64.2%)
9	X3-35365		351510090935365	X3	2020-09-25 18:40:18	25.68L(64.2%)
10	X3-35365		351510090935365	X3	2020-09-25 18:40:13	25.68L(64.2%)
11	X3-35365		351510090935365	X3	2020-09-25 18:40:08	25.68L(64.2%)
12	X3-35365		351510090935365	X3	2020-09-25 18:40:03	25.68L(64.2%)
13	X3-35365		351510090935365	X3	2020-09-25 18:39:58	25.68L(64.2%)
14	X3-35365		351510090935365	X3	2020-09-25 18:39:53	25.68L(64.2%)
15	X3-35365		351510090935365	X3	2020-09-25 18:39:48	25.68L(64.2%)
16	X3-35365		351510090935365	X3	2020-09-25 18:39:43	25.68L(64.2%)
17	X3-35365		351510090935365	X3	2020-09-25 18:39:38	25.68L(64.2%)
18	X3-35365		351510090935365	X3	2020-09-25 18:39:33	25.68L(64.2%)