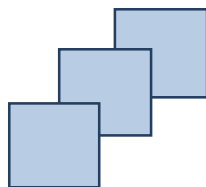


# DIGITAL TEMPERATURE SENSOR USER GUIDE

## V1.1




Model: Temperature Sensor

Version: V1.1

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## Document History

Version	Revision Date	Author	Detail
V1.1	July 21, 2016	Vito Hu	Initial Version

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# 1 Instructions of Safety

This chapter contains information on how to operate 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.

When connecting sensor's cables to the vehicle, please power off the vehicle.

## 2 Applied Model

Digital temperature sensor (hereinafter to be referred as "sensor") is connected to tracker via 1-wire bus, it is applied for:

- ⊙ A300

## 3 Basic Description & Specification

- ⊙ Measure temperature from  $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$  ( $-67^{\circ}\text{F} \sim +257^{\circ}\text{F}$ )
- ⊙ Accuracy:  $\pm 0.5^{\circ}\text{C}$  from  $-10^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- ⊙ Cable length: 5m
- ⊙ Protection rank: IP66

## 4 Installation

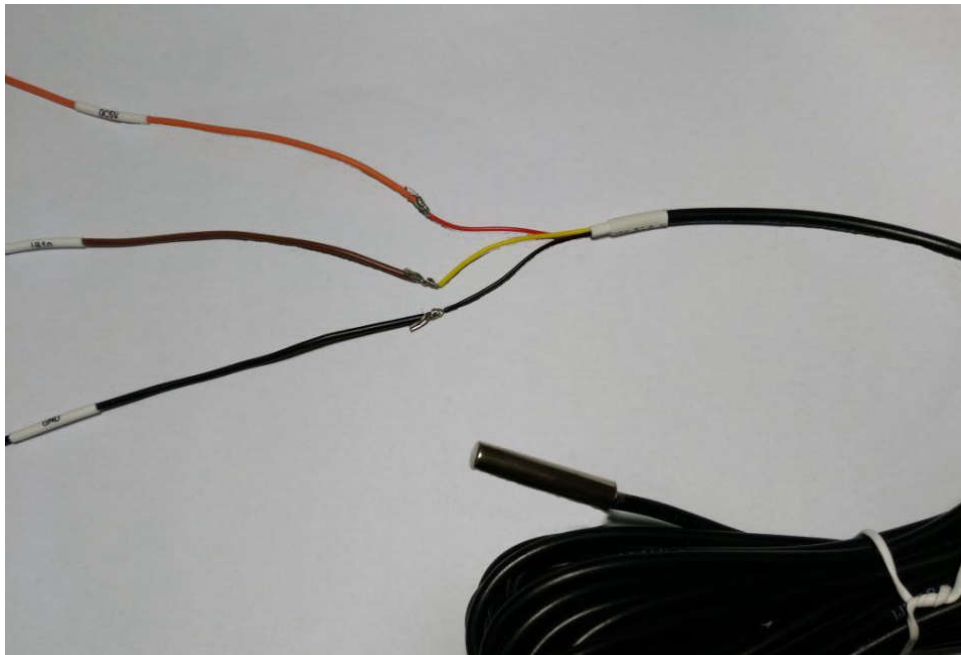
### 4.1 Connect to A300

Sensor Cable	A300 Cable
Red cable	Orange cable/DC5V
Black cable	Black cable/GND
Yellow cable	Brown cable/iBtn

#### NOTE:

- ⊙ When using multiple sensors, connect sensors together pin-pin, and then connect to A300 according to the table above.

- ⦿ Wrap over the naked joints with electrical tape after connection.



## 5 Operation

Tracker supports single sensor or multiple sensor according to actual need.

After connect sensor(s) to tracker, power on tracker with external supply, tracker will read sensors' data automatically. The following steps are used to set sensor parameters on tracker and FIMS.

- ⦿ Setting sensor's sequence number on tracker
- ⦿ Setting sensor definition on FIMS

According to the number of sensors, there are some difference between single sensor and multiple sensors usage.

### 5.1 Setting Sensor's Sequence Number

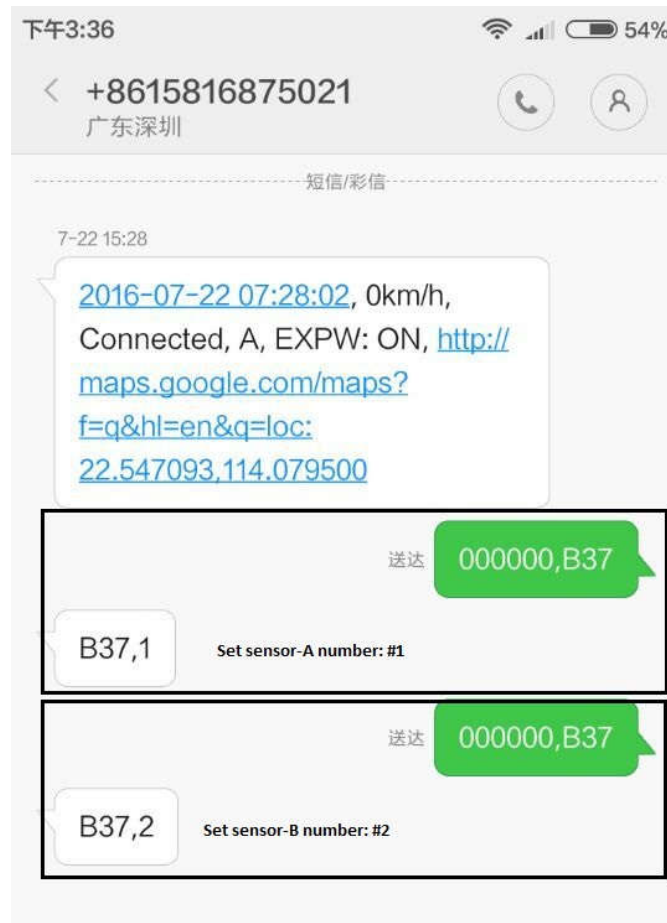
When using single sensor, this step can be omitted, tracker set #1 to the connected sensor automatically.

When using multiple sensors, follow below steps to set/retrieve all sensor's sequence number, if they are put in variable environment.

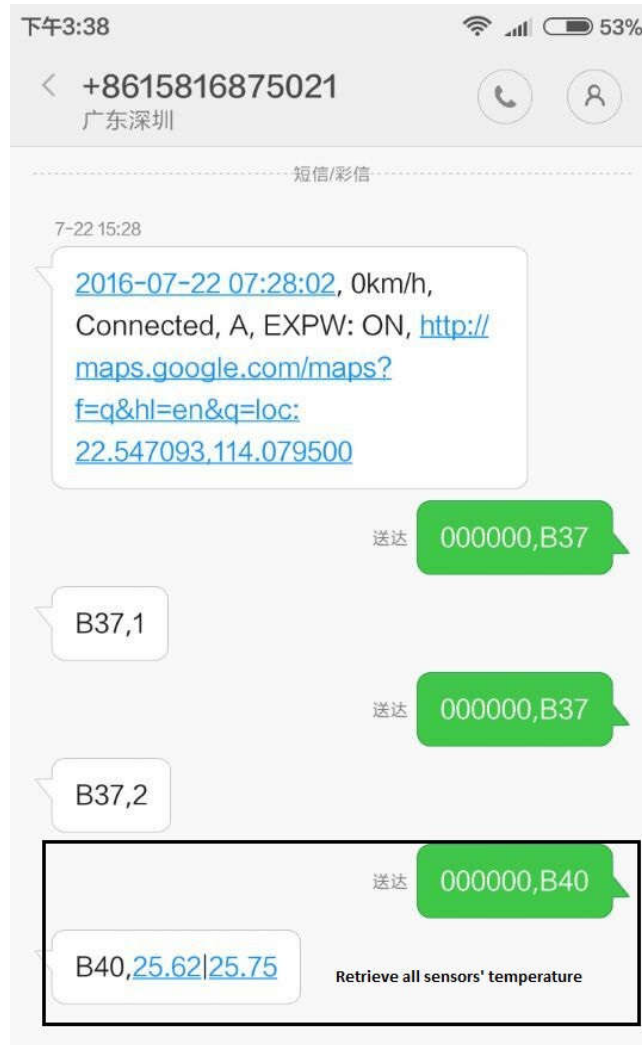
- Connect sensor-A to tracker. (NOTE: only one sensor)
- Use the following SMS command to retrieve the sequence number if it has been set, or automatically set a number for new sensor. The reply of the command indicates sensor's number.

SMS command: 000000,B37

- Reply: B37,< t\_sensor\_sn>, while t\_sensor\_sn is sensor's sequence number
- Mark the set sequence number to the sensor, disconnect sensor-A; Connect sensor-B to tracker, using step-b to set sensor-B sequence number.
  - Repeat step-b and step-c to set other sensors sequence number.
  - After all sequence number are set, connect sensors together pin-pin, and then connect to tracker, refer to chapter-4 for connection details.
  - Refer to the following figure for sensor's sequence number setting/retrieving.

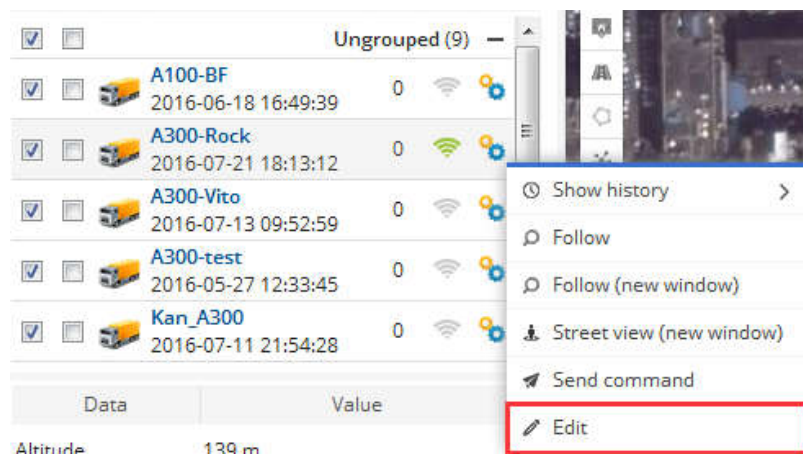


- After all sensor(s) connected and set, use the following SMS command to verify connection.  
SMS command: 000000,B40  
Reply: B40,<tsensor1\_temp| tsensor2\_temp|...|tsensorN\_temp>, while tsensor[1,N] temp is the temperature of all sensors

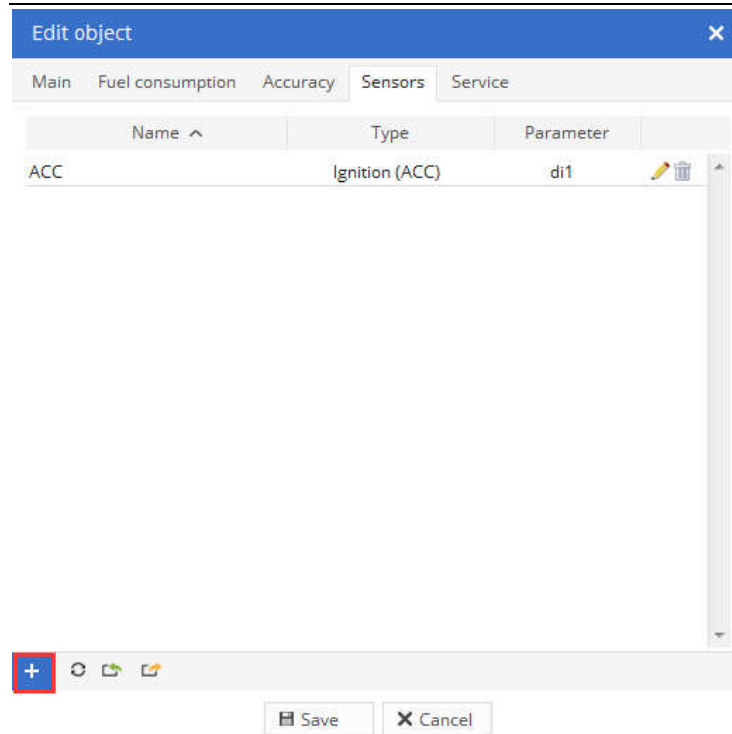


## 5.2 Setting on FIMS

Login FIMS, select target tracker->Edit->Sensors->Add,







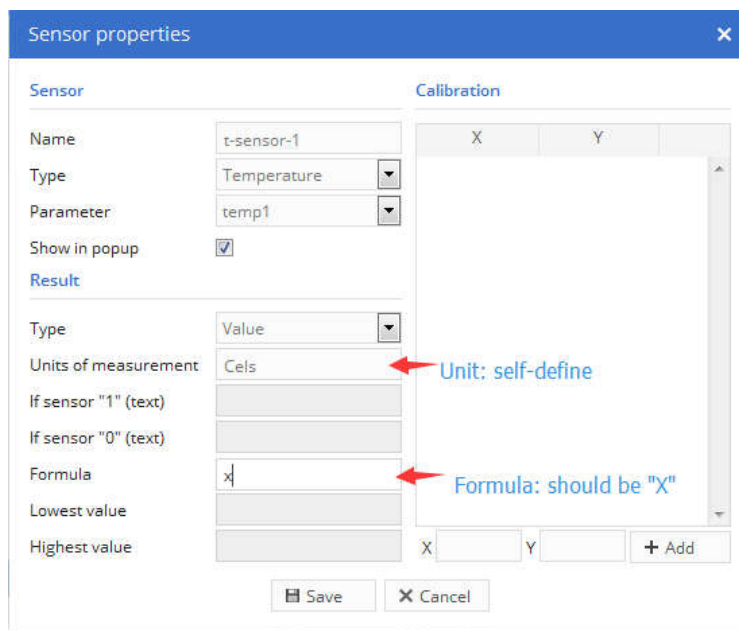
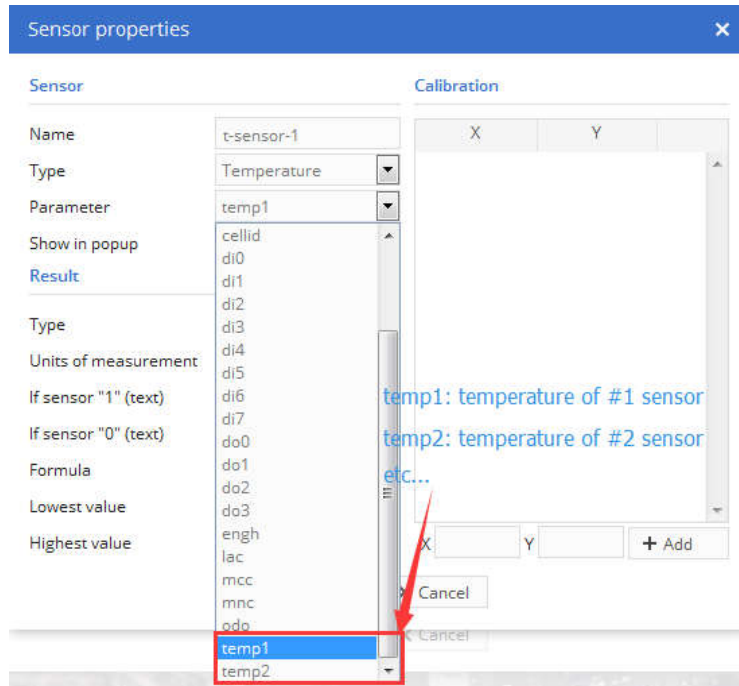
At "Sensor Properties" dialog, set parameters as below:

### Sensor

- ⊙ Name: Input self-define string
- ⊙ Type: Select "Temperature"
- ⊙ Parameters: Select "Tempx"
  - If single sensor is using, "Temp1" is shown in the "Parameters" box
  - If multiple sensors are using, "Tempx" corresponds to #x sensor's temperature, while 'x' is the sequence number of sensor set/retrieved by B37 command.
- ⊙ Show in popup: selected

### Result

- ⊙ Type: Select "Value"
- ⊙ Units of measurement: self-define, the unit of sensor is °C.
- ⊙ Formula: should be "x"



Click "Save", all sensors' temperature will be display at "Object page", as below:

Object	kph
Ungrouped (9) —	
<input checked="" type="checkbox"/> <input type="checkbox"/> <b>A100-BF</b> 2016-06-18 16:49:39	0
<input checked="" type="checkbox"/> <input type="checkbox"/> <b>A300-Rock</b> 2016-07-21 18:06:10	0
<input checked="" type="checkbox"/> <input type="checkbox"/> <b>A300-Vito</b> 2016-07-13 09:52:59	0
<input checked="" type="checkbox"/> <input type="checkbox"/> <b>A300-test</b> 2016-05-27 12:33:45	0
<input checked="" type="checkbox"/> <input type="checkbox"/> <b>Kan_A300</b> 2016-07-11 21:54:28	0

Data	Value
Altitude	163 m
Angle	121 °
Nearest zone	HQ-shennan-road (0.09 km)
Odometer	56 km
Position	22.546700 °, 114.079546 °
Time (position)	2016-07-21 18:06:10
Time (server)	2016-07-21 18:06:12
t-sensor-1	25.62 Cels
t-sensor-2	25.62 Cels

### 5.3 Temperature Report

FIMS supports one type of temperature report:

- Temperature graph

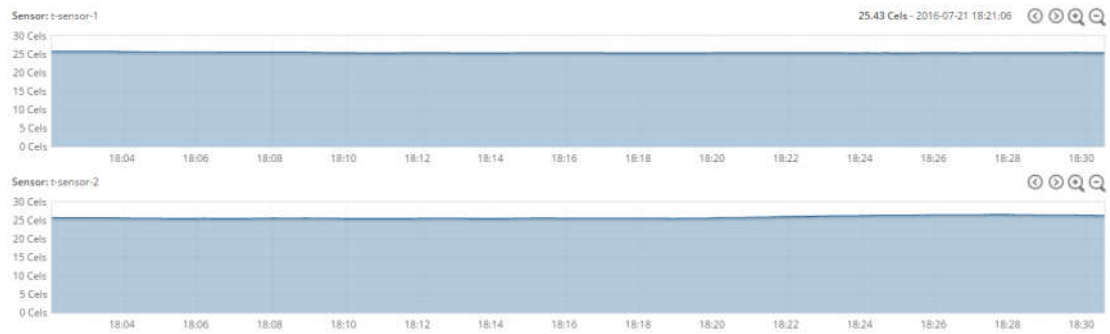
Export “temperature graph” as below:

Name		Objects	Data items	Zones	Sensors
Type	Temperature graph	A100-BF			
Format	General information	A300-Rock			
Show addresses	General information (merged)	A300-Vito			
Zones instead of addresses	Object information	A300-test			
Stops	Drives and stops	Kan_A300			
Speed limit (kph)	Travel sheet	fifotrack-A100-BF			
Time period	Events	fifotrack-Q1-1160			
Filter	Overspeeds	fifotrack_A100			
Time from	Underspeeds	fifotrack_Q1			
Time to	Zone in/out				
	Service				
	Driver behavior (RAG)				
	Fuel fillings				
	Fuel thefts				
	Logic sensor information				
	Ignition (ACC) graph				
	Fuel level graph				
	Temperature graph				
	Sensor graph				
		Format	Objects	Zones	Schedule

## Temperature graph

### Temperature graph

Object: A300-Rock  
Period: 2016-07-21 18:02:00 - 2016-07-22 00:00:00



## 6 NOTE

- ⦿ Sensor works only when external power on.
- ⦿ After connection sensor(s) and setting sequence number, wrap over the naked joints with electrical tape.

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