# MEITRACK Tire Pressure Sensor User Guide

## Applicable Model: T333/T1

# Change History

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# 1 Copyright and Disclaimer



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# 2 Product Introduction

## 2.1 Product Overview

High land surface temperature and ambient temperature could be one of the causes of a flat tire. When a tire is abnormal, if drivers know the tire's condition in advance, they can take measures in a timely manner, thus preventing accidents.

The tire pressure sensor is designed to monitor vehicle tires in real time and provide an early warning for any form of abnormal conditions. After it is installed on the position where tire's valve stem locates, tire pressure data will be sent to the tracker via wireless transmitter and then will be displayed on the MS03 tracking platform or app. When the tire pressure is too low or a tire leaks air, an alert will be generated.

## 2.2 Product Functions

- Monitor tire pressure and temperature in real time.
- Set the thresholds of tire pressure and temperature alerts.
- Fast air leak alert
- Radio Frequency (RF) transmission
- Smart sleep

## 2.3 Product Specifications

| Item | Specifications |
|---|---|
| Operating temperature | -40°C to 80°C |
| Storage temperature | -40°C to 85°C |
| Pressure range | 0–8 bar (small vehicles)<br>0–13 bar (large vehicles) |
| Pressure accuracy | ±0.1 bar (±1.5 psi) |
| Temperature accuracy | ±3°C |
| Temperature measuring range | -20°C to 90°C |
| Transmitting power | < 10 dBm |

| | |
|---|---|
| Transmitting frequency | 433.92 MHz |
| Battery life | External tire pressure sensor: ≥ 2 years<br>Internal tire pressure sensor: ≥ 5 years |
| Dimension | External tire pressure sensor SO (small vehicles): 18 mm in diameter; 17 mm in height<br>Internal tire pressure sensor SI (small vehicles): 60 mm x 31 mm x 21 mm (L x W x H)<br>External tire pressure sensor ST (large vehicles): 52 mm x 26 mm x 25 mm (L x W x H)<br>Internal tire pressure sensor SR (large vehicles): 60 mm x 31 mm x 20 mm (L x W x H) |
| Weight | External tire pressure sensor SO (small vehicles): 12g<br>Internal tire pressure sensor SI (small vehicles): 54g<br>External tire pressure sensor ST (large vehicles): 22g<br>Internal tire pressure sensor SR (large vehicles): 77g |

## 2.4 Smart Sleep Mode

When a tire pressure sensor works normally, tire pressure data will be updated every 5 minutes by default. This helps save power. Tire pressure data will be uploaded immediately once an alert is generated. Each tire pressure sensor has an internal vibration module. When the sensor detects that a vehicle does not move for 15 consecutive minutes, it will enter smart sleep mode automatically and tire pressure data will not be updated.

# 3 Main Device and Accessories

| | | |
|---|---|---|
|  |  |  |
| Tire pressure receiver (4 pins) | Repeater (2 power cables only) | External tire pressure sensor SO (small vehicles) |
|  |  |  |
| Internal tire pressure sensor SI (small vehicles) | External tire pressure sensor ST (large vehicles) | Internal tire pressure sensor SR (large vehicles) |

| | | |
|---|---|---|
|  |  | |
| 8-pin to 4-pin cable | LCD display | |

## 4 Connecting the Tire Pressure Receiver to the Tracker

T333/T1 tracker's RS232 port:


| Pin No. | Color | Description |
|---|---|---|
| 1 | Red | Power output<br>Output voltage: 5 V |
| 2 | Black | Ground wire |
| 3 | Orange | RX (T333/T1 receives data) |
| 4 | Yellow | TX (T333/T1 sends data) |

Connect the tire pressure receiver to the T333/T1:

1. Plug the T333/T1 into the 8-pin interface of the 8-pin to 4-pin cable.

2. Plug the tire pressure receiver into the 4-pin interface of the cable.

Note: To make sure that the tire pressure receiver can work normally, the T333/T1 must be connected to an external power supply.

The wiring figure is as follows:

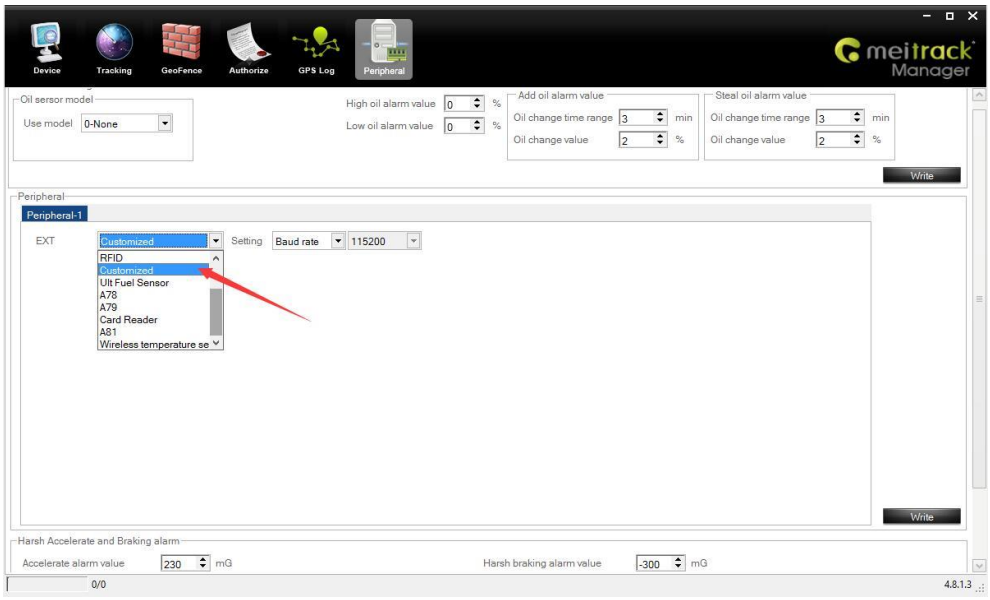

# 5 Tire Pressure Sensor Configuration

## 5.1 Configuring the Tire Pressure Sensor by Meitrack Manager

Before configuring the sensor, please check the ID number printed on its surface.

For example, the following tire pressure sensor's ID number is **528501**.


Set the serial port by Meitrack Manager, as shown in the following figure.



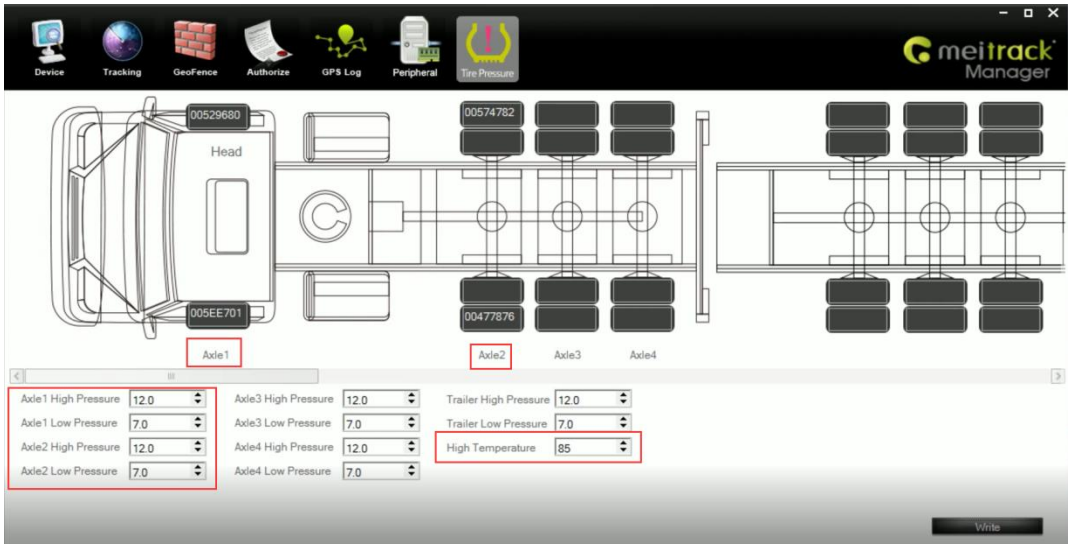

The vehicle's head part is important. So set the alert values for tires on the 4 axles of the vehicle's head part, as shown in the following figure.

On the **Tire Pressure** tab page, select tires to be bound, and enter the ID numbers of the corresponding tire pressure sensors.

If you want to unbind a tire and a tire pressure sensor, delete the tire pressure sensor's ID number.

In general, the tire pressure of large trucks is 7–12 bar, while the tire pressure of private cars is 2.2–2.5 bar. The tire pressure varies depending on the vehicle type. In high temperature environments, if you drive a vehicle for a long time, the tire temperature can reach more than 80°C. As the outside air temperature increases, the tire pressure will increase. So you need to set tire pressure and temperature alert thresholds based on actual conditions.

**Before the next configuration step, ensure that the tire pressure receiver has been installed properly.**




Use a large vehicle as an example. Bind tires of 4 axles to tire pressure sensors, and set all the high pressure thresholds to 12 bar, all the low pressure thresholds to 7 bar and the high temperature threshold to 85°C, as shown in the previous figure.

**Note: If the tire pressure receiver is not installed properly, you will fail to configure tire pressure sensors.**

## 5.2 Configuring the Tire Pressure Sensor by MS03 Platform

Before configuring a tire pressure sensor by MS03 platform, you should:

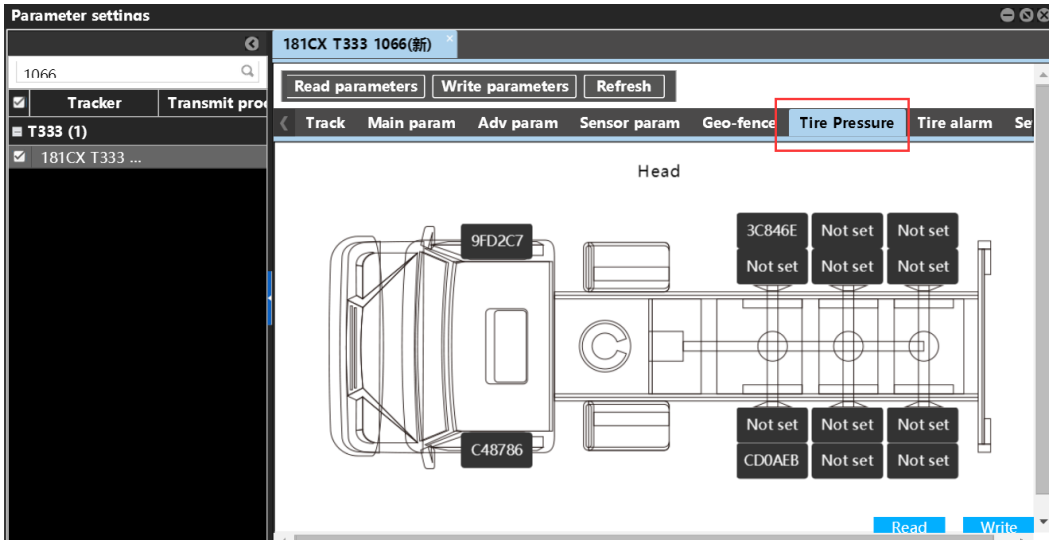
1. Set the server IP address and port on Meitrack Manager.
2. Ensure that the tracker is online on the MS03 tracking platform.

Perform the following steps to configure a tire pressure sensor:

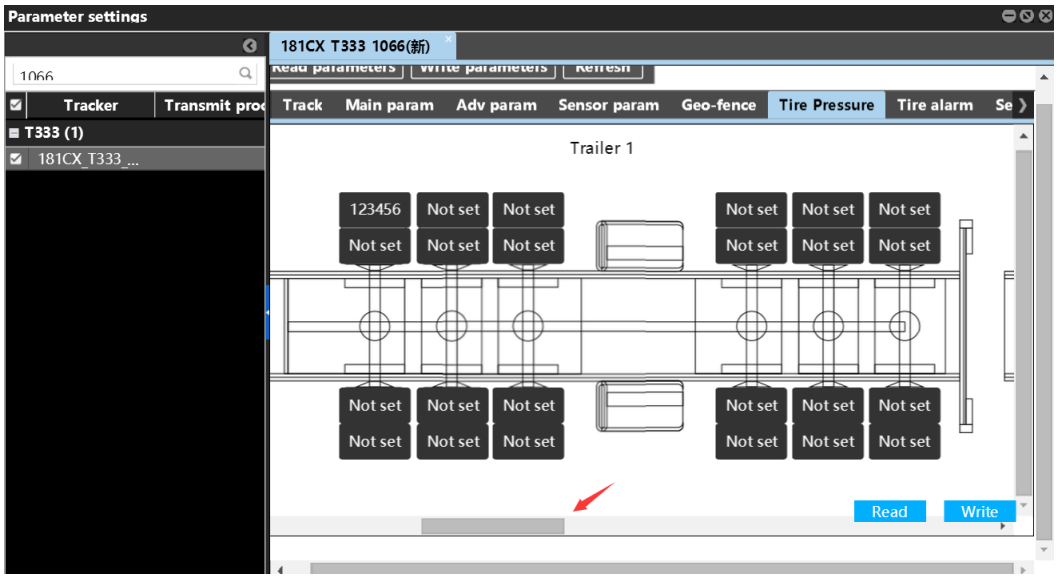
1. On the main interface, choose **Management**.
2. On the **Management** window that is displayed, select **Parameter settings** from **Use Normal**. The **Parameter settings** window will be displayed.
3. Select a tracker and click the **Tire pressure** tab.
4. On the **Tire pressure** tab page, select tires to be bound, and enter the ID numbers of the corresponding tire pressure sensors.

   If you want to unbind a tire and tire pressure sensor, delete the tire pressure sensor's ID number.

The parameter settings page is as follows:

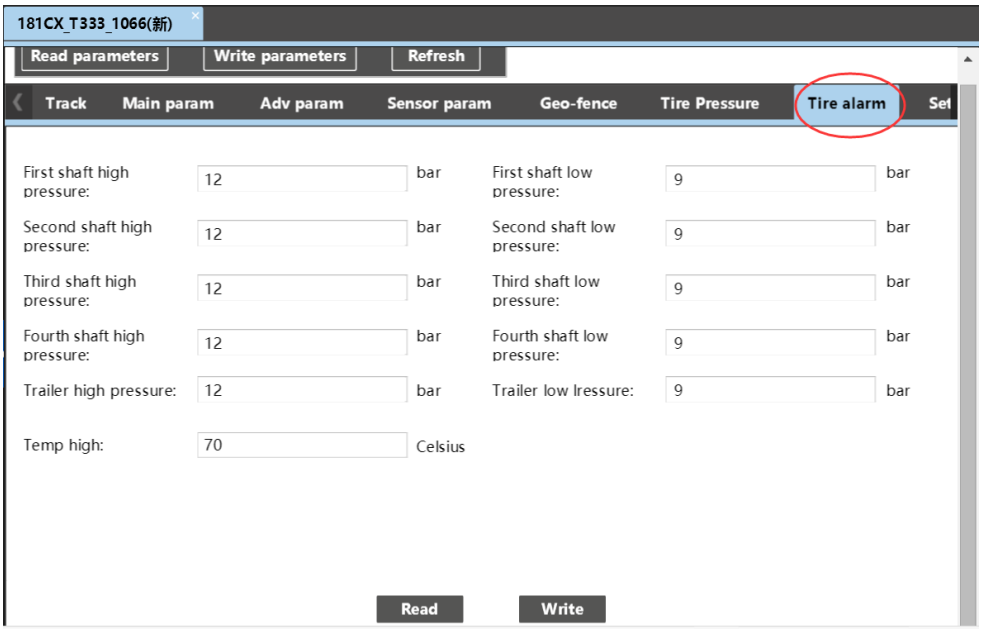



As shown in the previous figure, four tires have been bound to four tire pressure sensors. You can move the horizontal scroll bar to bind the tires of four trailers.



The method for setting tires of trailers is the same as that of tires of the vehicle's head part.

5. Click the **Tire alarm** tab. On the tab page that is displayed, set the thresholds of high pressure, low pressure, and high temperature alerts, as shown in the following figure.




As shown in the previous figure, all the high pressure thresholds are set to 12 bar, all the low pressure thresholds are set to 9 bar, and the high temperature threshold is set to 70°C.

Note: If you use Meitrack Manager to configure tire pressure sensors, you must connect the tracker to a computer by USB cable. If you use the MS03 platform, you must ensure that the tracker is online. However, the two configuration methods are nearly the same.

## 5.3 Configuring the Tire Pressure Sensor by MS03 App

Download the MS03 app:

Scan the following QR code to download the MS03 app.

MS03 app for Android

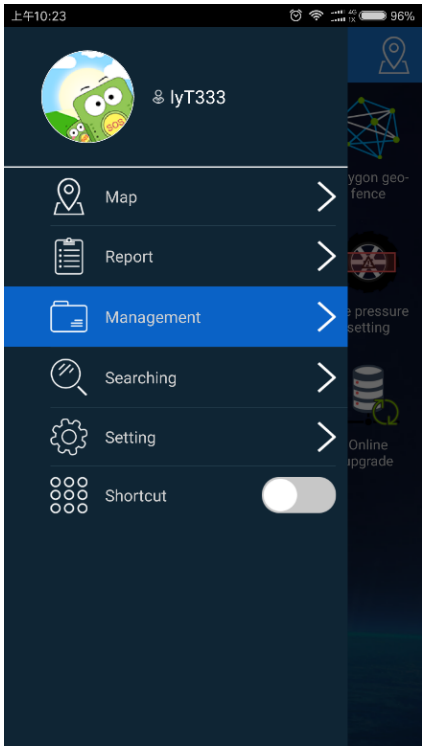
MS03 app for iOS

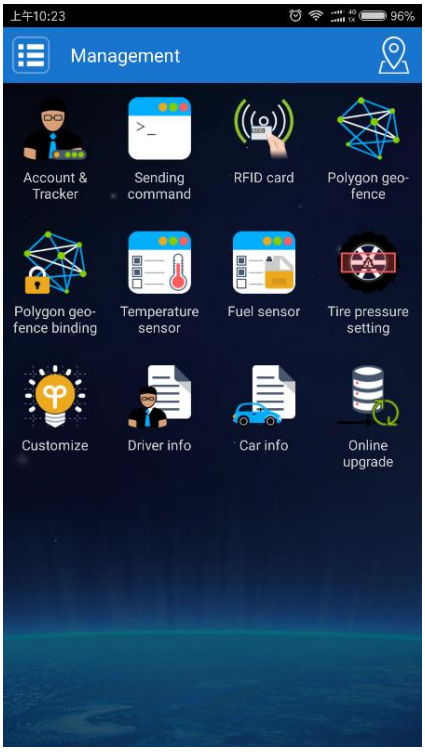
Note: Please use your MS03 account to log in to the app.

Perform the following steps to configure a tire pressure sensor:

1. Log in to the MS03 app, click the icon in the upper left corner of the main interface, and choose **Management** >

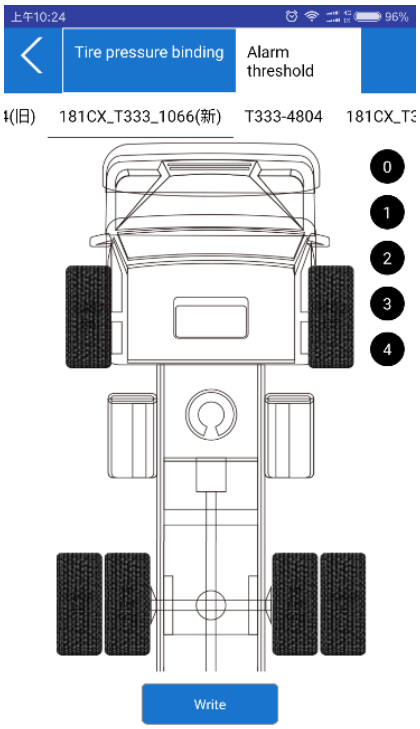
**Tire pressure settings**.

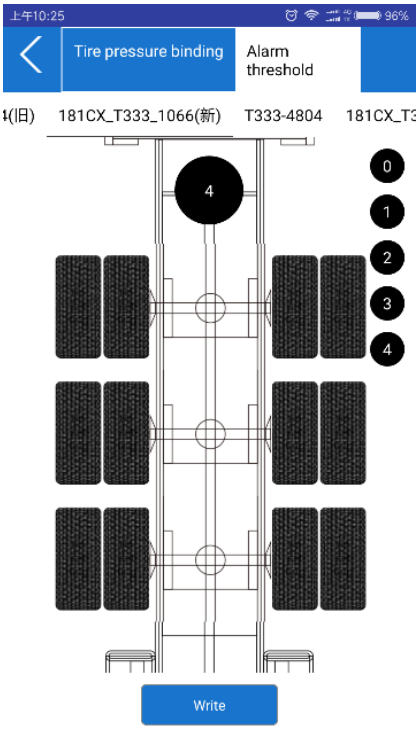



2. Bind tires to tire pressure sensors.

Select tires to be bound, and enter the ID numbers of the corresponding tire pressure sensors. If you want to configure trailers, click the buttons on the right, for example, button 4. The page of trailer 4 will be displayed.



# 6 Installing the Tire Pressure Sensor

## 6.1 Installing the Tire Pressure Receiver

Ensure that the tracker is connected to an external power supply and the distance between the receiver and vehicle tires is less than 10 meters. If this distance exceeds 10 meters, a repeater is required to be installed.

## 6.2 Installing an External Tire Pressure Sensor

Visit https://youtu.be/1jYJGVT0ezw to view Meitrack Tire Pressure Sensor Installation Video.

Perform the following steps to install an external tire pressure sensor:

(1) Unscrew the valve stem cap.

(2) Screw the lock nut onto the valve stem.

(3) Install the external tire pressure sensor.

(4) Fasten the lock nut anticlockwise by clamp to prevent sensor theft.

(5) Drive the vehicle to test whether the sensor is installed tightly.

## 6.3 Installing an Internal Tire Pressure Sensor

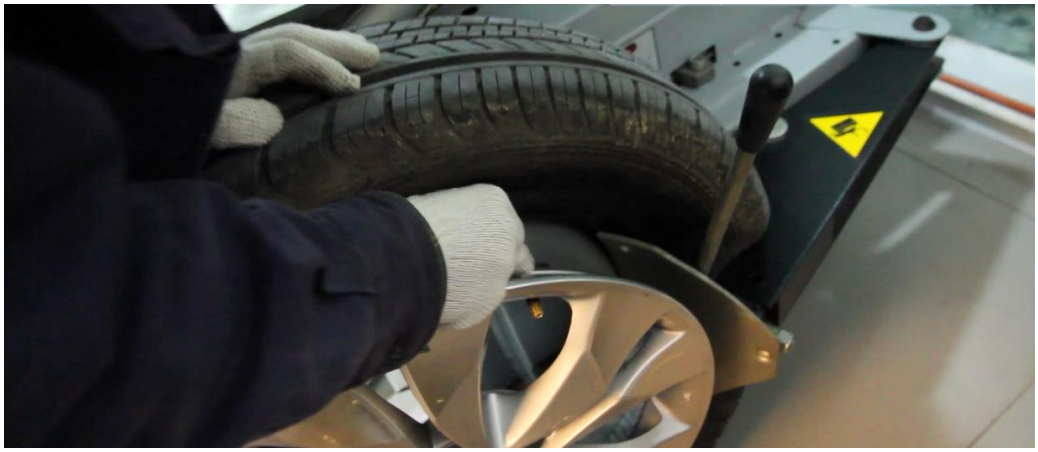
The installation method of internal tire pressure sensors is complicated. So it is recommended that you should install them on 4S car shops or professional vehicle companies.

Perform the following steps to install an internal tire pressure sensor:

(1) Remove a tire from the vehicle.

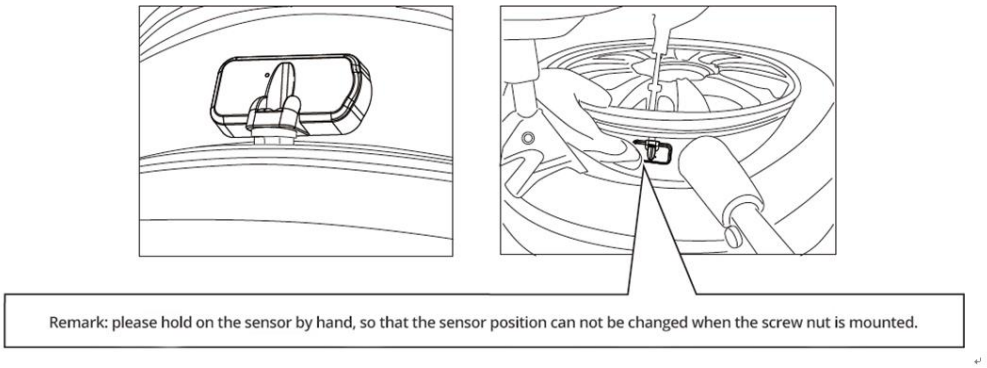
(2) Deflate the tire and place it on the tire changer.

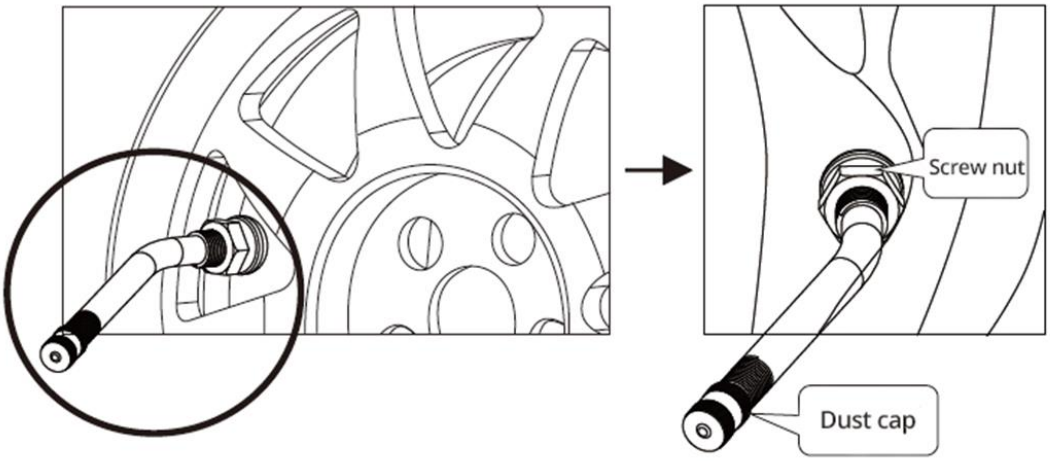
(3) Remove the tire from the wheel rim and shovel the original tire valve.



(4) Install and fasten the sensor tail and valve stem.

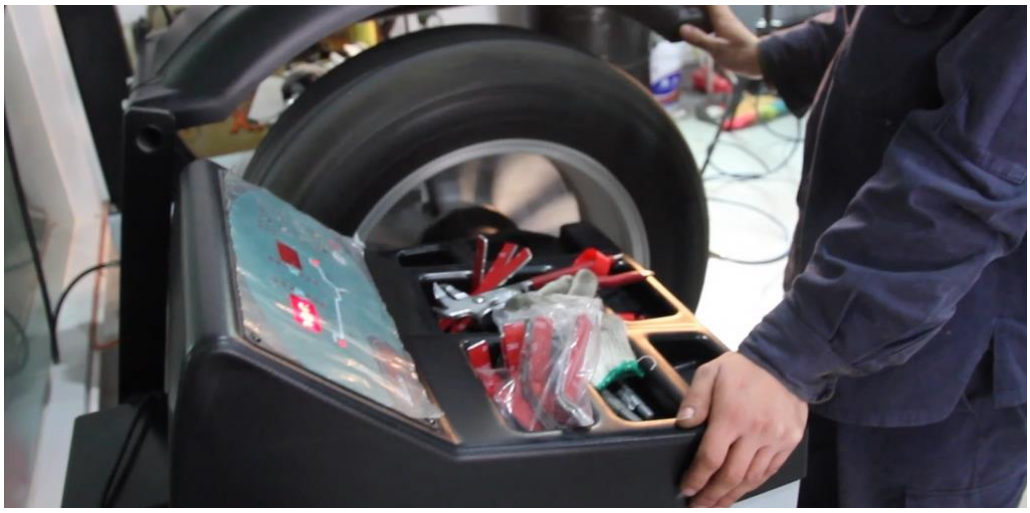

As shown in the following figure, the sensor tail is installed inwards, the valve stem is installed outwards, and the nut is fastened.






(5) Inflate the tire at proper tire pressure and rotate the tire to detect dynamic balance.

Confirm whether the sensor is installed tightly and check whether the tire can be mounted to the vehicle.



### 6.4 Installing the Repeater

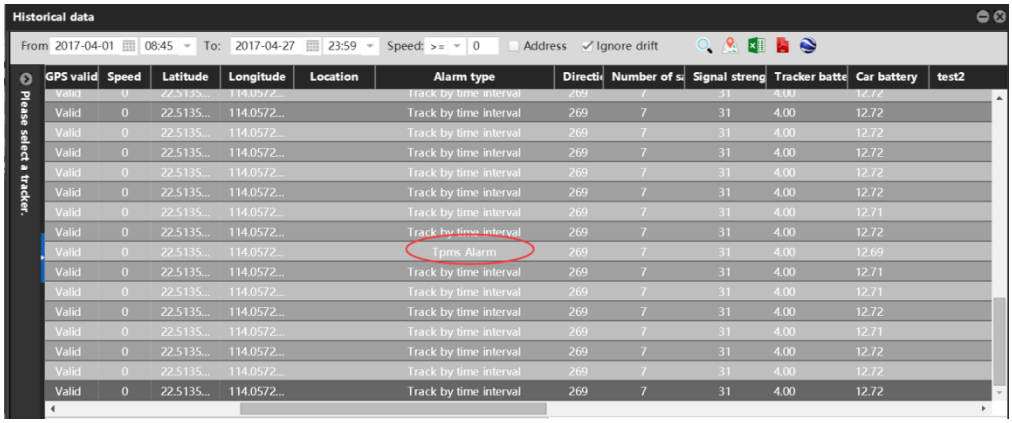
When a truck has too many containers, maybe the tire pressure receiver cannot receive data from the tire pressure sensor mounted on the truck's head part due to a long transmission distance. In this way, you can install a repeater in the middle container of the truck to extend transmissions so that the signal can cover longer distances. And you must connect an external power supply (12 V) to the repeater. In general, when the transmission distance exceeds 10 meters, a repeater is required to be installed.

## 7 Data Querying

### 7.1 Querying Tire Pressure Data by MS03 Platform

On the main interface, choose **Reports** > **Historical data**.

When a tracker is online, you can query related historical data as follows.

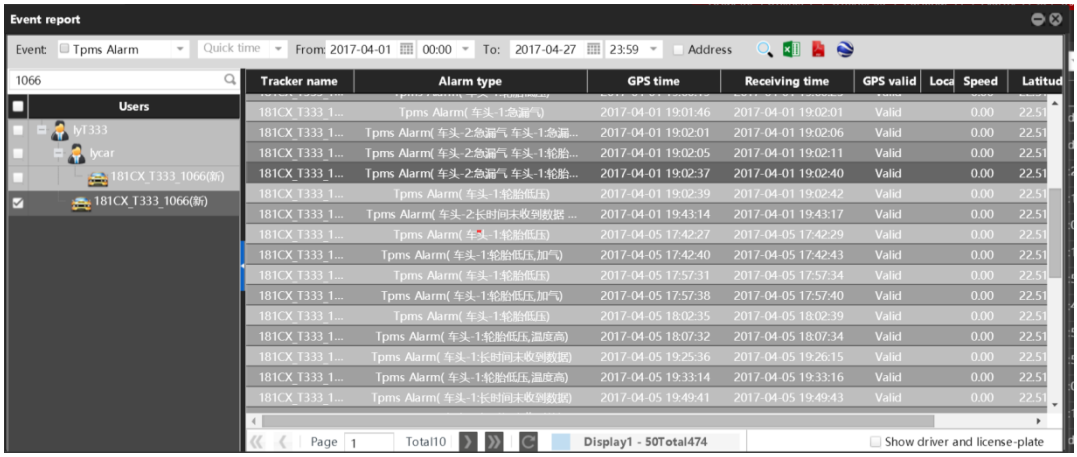



Besides the high pressure, low pressure, and high temperature alerts, there are the following alerts:

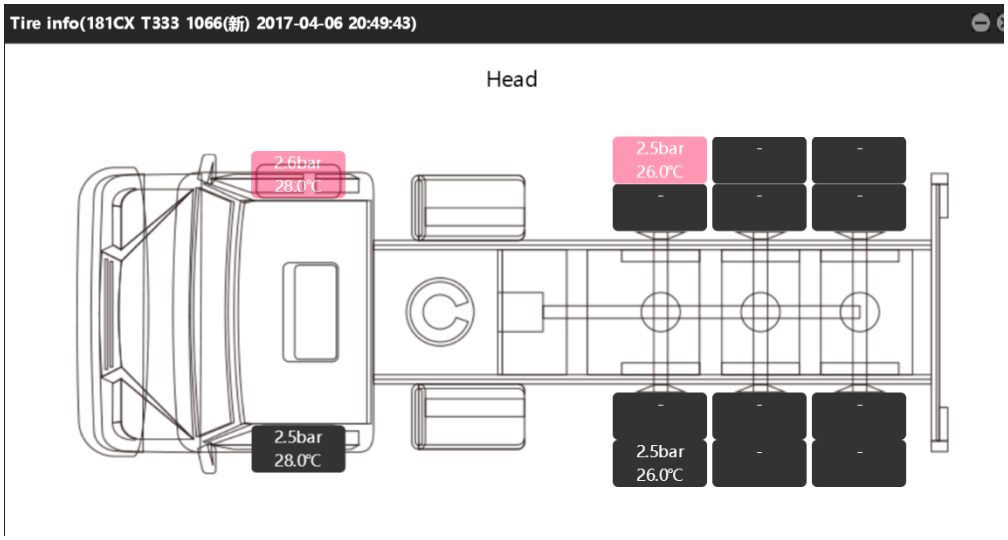
- When the decrease rate of tire pressure exceeds 0.2 bar/s, a fast air leak alert will be generated.
- When the decrease rate of tire pressure is between 0.05 bar/s and 0.2 bar/s, a slow air leak alert will be generated.
- When the increase rate of tire pressure exceeds 0.2 bar/s, a tire inflation alert will be generated.
- When tire pressure sensor's power is too low, a low power alert will be generated. Please replace the battery with a new one.

Besides reports, you can view tire pressure data on a graphical interface. Perform the following steps:

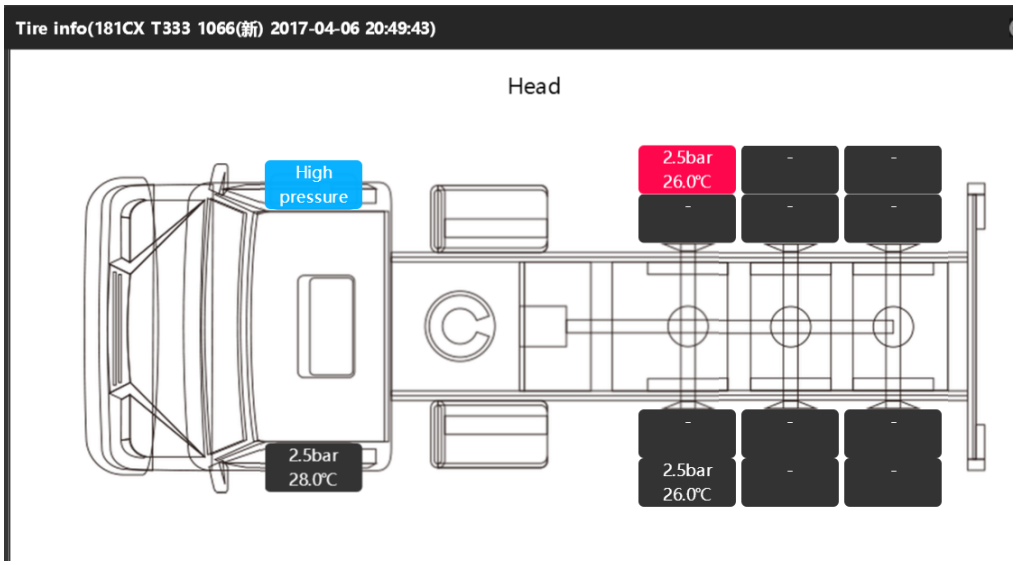
1. On the main interface, choose **Reports** > **Event Report**. On the **Event report** page that is displayed, select a tracker and event, set query time and click  . Then select a report and double-click it.




2. On the page that is displayed, a red area indicates that an alert is generated, and a black area indicates no alert is generated.

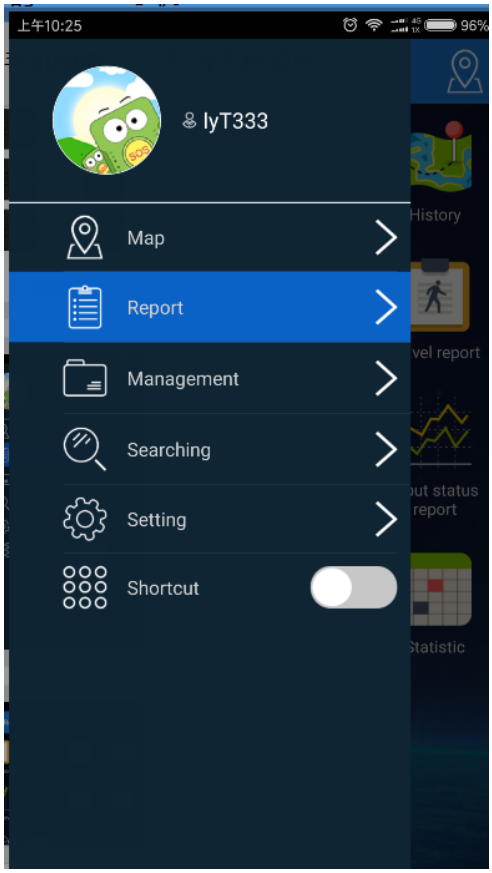


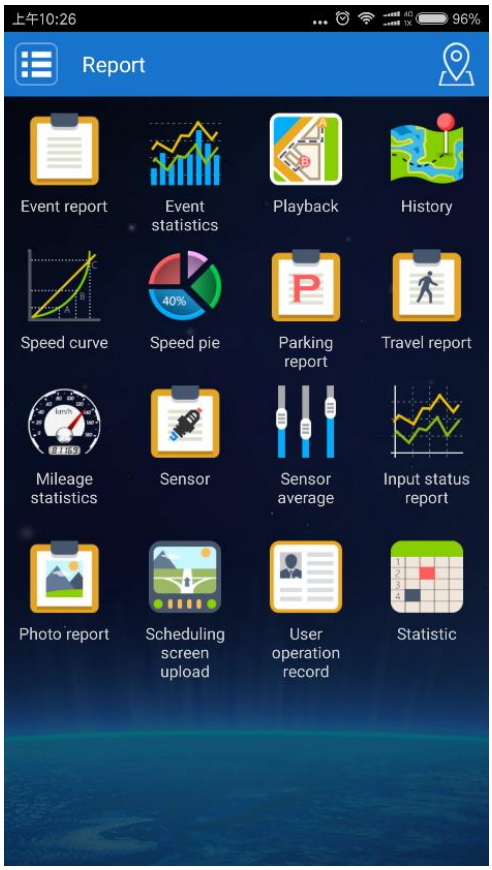

3. Move the mouse to a red area, the alert details will be displayed.



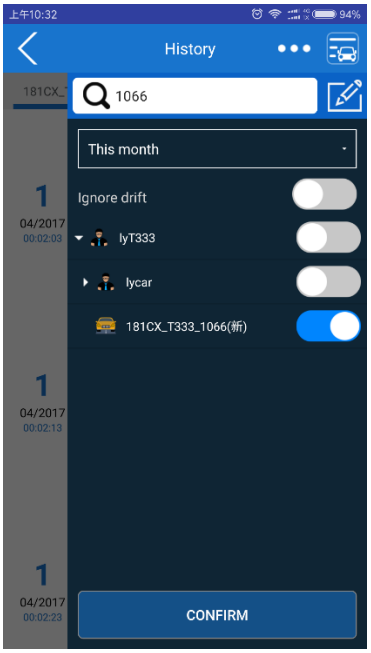

## 7.2 Querying Tire Pressure Data by MS03 App

1. On the main interface, choose **Reports** > **History**.

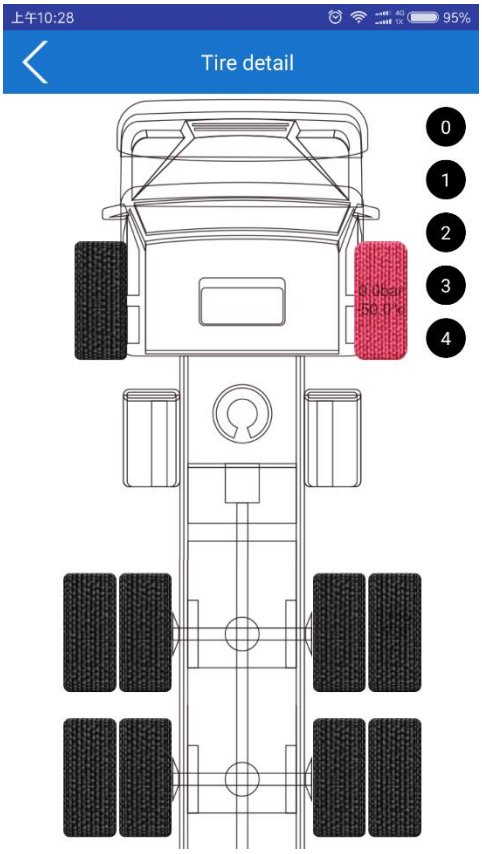



2. On the page that is displayed, enter the IMEI number, device name or user name, set the query time, and click **Confirm**. The **History** page will be displayed.




3. On the **History** page that is displayed, click **Check**. The **Tire detail** page will be displayed.


# 8 Querying Tire Pressure Data by LCD Display

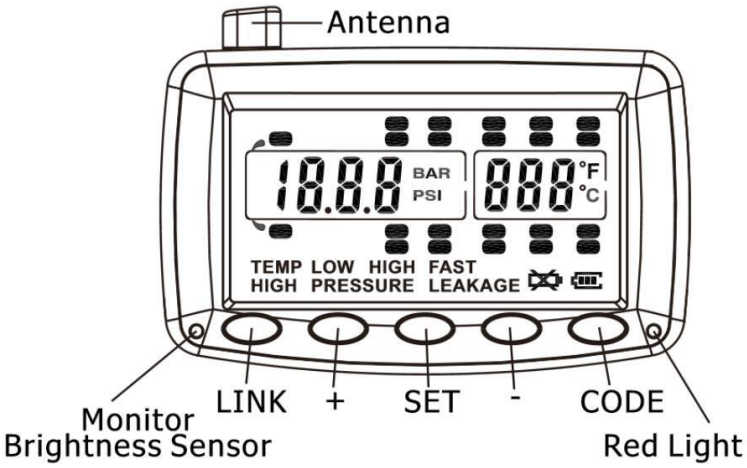
Besides the MS03 web page and app, you can use the LCD display to receive tire pressure data after its coding is completed.

## 8.1 LCD Display Introduction

(1) The LCD display has an internal battery. It can also be supplied power with an external power supply.

(2) When the LCD display does not detect vibration for 10 consecutive minutes, it will enter the sleep mode automatically. This will help save battery power. When it detects vibration, it will be woken up and will start to receive data.

(3) LCD Display appearance




(4) LCD Display keys

| No. | Key | Description |
|---|---|---|
| 1 | Power button | The key is on the left of the LCD display and is used to power on or power off the LCD display. |
| 2 | LINK | Used to clear the ID numbers of configured tire pressure sensors. |
| 3 | SET | Used to confirm. |
| 4 | CODE | Used for code matching. |
| 5 | + / - | Used to select a tire pressure sensor's ID number. |

## 8.2 LCD Display Configuration

To determine which tire pressure data is showed on the LCD display, you need to set code matching.

### 8.2.1 Auto Code Matching

In standby mode, press and hold down the **CODE** key of the LCD display for 3 seconds. When you hear "Bi" once, release the key. Then the system will enter code matching mode and the icon of the tire requiring code matching will blink on the LCD display. Press the **+** or **-** key to select the tire's location, place the bottom of the LCD display close to the tire pressure sensor requiring code matching, and press the **CODE** key. The sensor will start to match a code. Then "IDLF" will be showed on the LCD display, and the red LED indicator will be steady on. If the LCD display receives the 6-digit ID number of the sensor, the ID number will be showed on the LCD display and the red LED indicator will be off. When the buzzer makes a long sound "Bi", it means that code matching is performed successfully and the ID number will be stored automatically. If you do not receive the ID number within 6 seconds, you will hear "Bi" twice, the red LED indicator will be off, and "Id Err" will be showed on the LCD display, which indicates that code matching fails to be performed. Please rotate the direction of the sensor or LCD display, or place the bottom of the LCD display close to the sensor requiring code matching, and then press the **CODE** key to preform code matching again. Press the **+** key to select the next tire requiring code matching, and perform the same steps to complete code matching. If the codes are the same, the previous same ID number will be deleted automatically. After all the ID numbers are matched codes successfully, perform one of the following steps to exit the settings state or enter normal working status: (1) do not press any key for 3 consecutive minutes to exit the settings state; (2) press and hold down the **CODE** key for 3 seconds. After you hear "Bi" once, release the key. The LCD display will return back to normal working status.



Code matching success: The ID number is showed after the corresponding tire is selected.

Code matching failed: "Id Err" is showed on the LCD display.

### 8.2.2 Manual Code Matching

In standby mode, press and hold down the **CODE** key of the LCD display for 6 seconds (continue to press the key when you hear the first "Bi" sound; release the key when you hear the second "Bi" sound). The system will enter manual code matching mode, and the ID number of the current tire will be showed on the LCD display. Press the **+** or **-** key to select the tire requiring code matching, and press the **SET** key to confirm. Then press the **CODE** key to switch the digits of the 6-digit ID number, press the **+** or **-** key to set the value of the ID number, and press the **SET** key to store. Press the **+** key to select the next tire requiring code matching, and perform the same steps to complete code matching. After all the ID numbers are matched codes successfully, perform one of the following steps to exit the settings state or enter normal working status: (1) do not press any key for 3 consecutive minutes to exit the settings state; (2) press and hold down the **CODE** key for 3 seconds. After you hear "Bi" once, release the key. The LCD display will return back to normal working status.

### 8.2.3 Deleting ID numbers

**Deleting an ID number in ID number querying mode:**

In standby mode, short press the **CODE** key of the LCD display. When you hear "Bi" once, the system will enter ID number querying mode. Press the **+** or **-** key to select the location of the tire to be deleted, and press and hold down the **SET** key for 3 seconds. If you hear "Bi" twice, it means that the tire's ID number is deleted. In this way, perform one of the following steps to exit the settings state or enter normal working status: (1) do not press any key for 3 consecutive minutes to exit the settings state; (2) short press the **CODE** key. After you hear "Bi" once, release the key. The LCD display will return back to normal working status.

**Deleting an ID number in code matching mode:**

In standby mode, press and hold down the **CODE** key of the LCD display for 3 seconds. When you hear "Bi" once, release the key. Then the system will enter code matching mode. Press the **+** or **-** key to select the location of the tire to be deleted, and press and hold down the **SET** key for 3 seconds. If you hear "Bi" twice, it means that the tire's ID number is deleted. In this way, perform one of the following steps to exit the settings state or enter normal working status: (1) do not press any key for 3 consecutive minutes to exit the settings state; (2) press and hold down the **CODE** key for 3 seconds. After you hear "Bi" once, release the key. The LCD display will return back to normal working status.

**Deleting all the ID numbers:**

In standby mode, short press the **CODE** key of the LCD display. When you hear "Bi" once, the system will enter ID number querying mode. Then press and hold down the **LINK** key for 3 seconds. When you hear "Bi" once, release the

key. Then "DEL ALL" will be showed on the LCD display, indicating that all tires' ID numbers will be deleted. Short press the **SET** key to confirm and delete all the ID numbers. Then the LCD display will make a long "Bi" sound for 3 seconds and will return back to normal working status. If you short press the **CODE** key instead of the **SET** key, all the ID numbers will not be deleted and the LCD display will return back to ID number querying mode. If you do not press any key for 3 consecutive minutes, the LCD display will return back to normal working status.

### 8.2.4 Restoring Factory Settings

When the LCD display is turned off, press the **SET** key to turn on it. When you hear "Bi" once, release the key. Then default alert parameters will be restored, and original ID numbers of tires will stay unchanged.

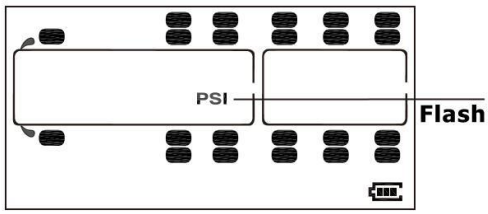
After factory settings are restored, related parameters are as follows:

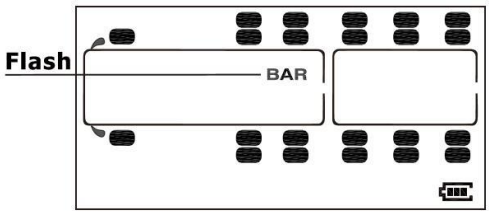
| | |
|---|---|
| Pressure unit | PSI |
| High pressure alert threshold | 175 PSI (12.1 BAR) |
| Low pressure alert threshold | 100 PSI (6.9 BAR) |
| Temperature unit | °C |
| High temperature alert threshold | 70°C (158 °F) |

### 8.2.5 Setting Alert Thresholds

After the LCD display is turned on, long press the **SET** key. When you hear "Bi" once, release the key. Then you can set high temperature, low temperature, high pressure, and low pressure alert thresholds of truck's containers.

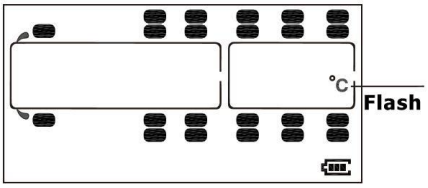
Pressure unit:

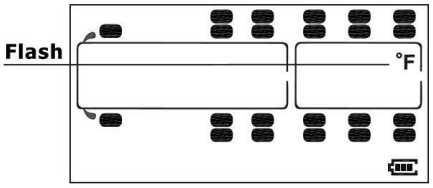



Press the **+** or **-** key to select a pressure unit.

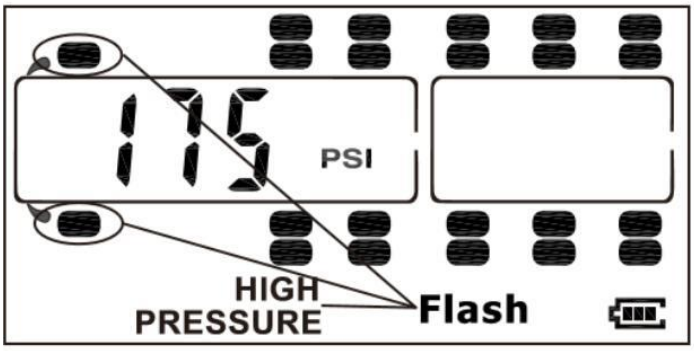
Temperature unit:



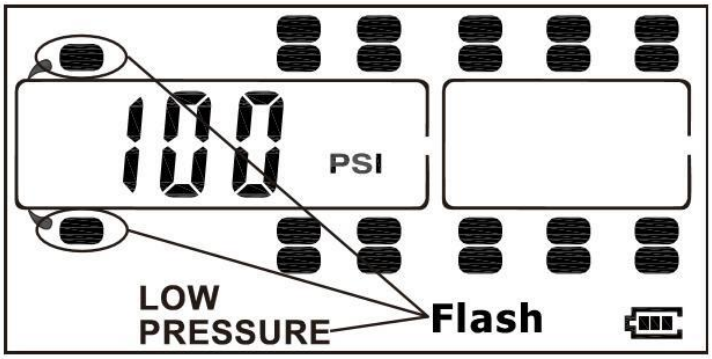




Press the **+** or **-** key to select a temperature unit.

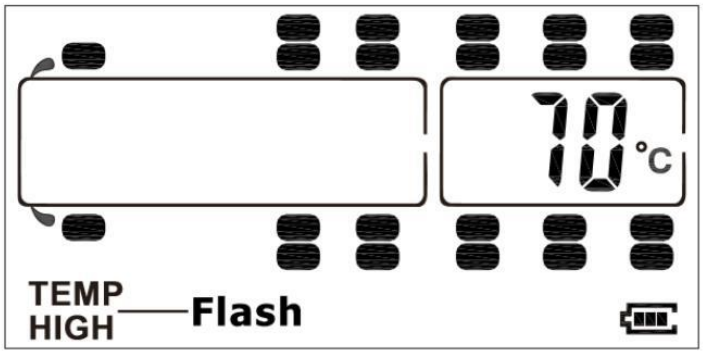
High pressure alert threshold:



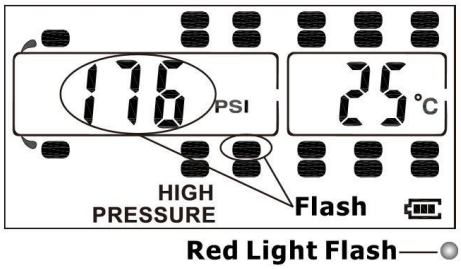

Low pressure alert threshold:



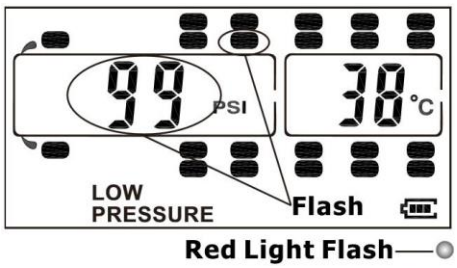

High temperature alert threshold:




### 8.2.6 Viewing Alerts



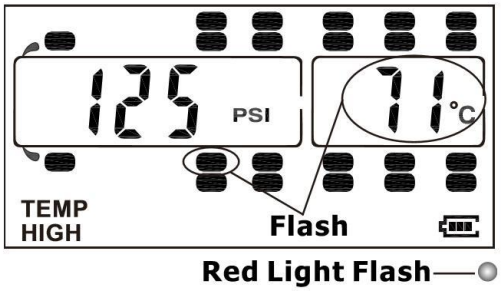

Red Light Flash

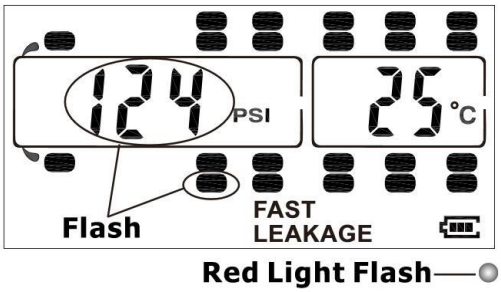



Red Light Flash

High pressure alert: Red LED indicator and corresponding tire icon will blink.

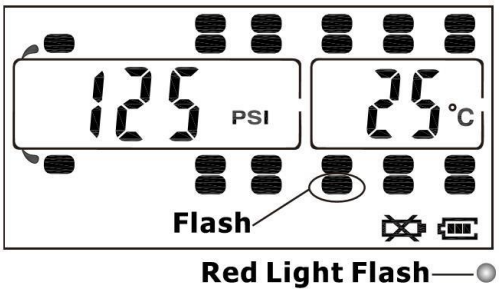
Low pressure alert: Red LED indicator and corresponding tire icon will blink.

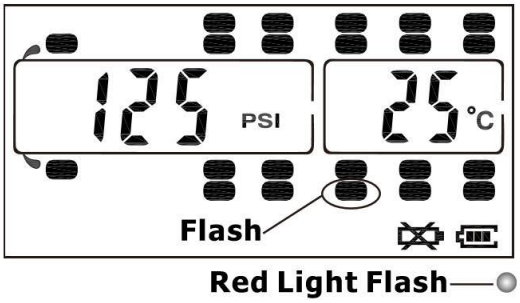



High temperature alert: Red LED indicator and corresponding tire icon will blink.

Fast air leak alert: Red LED indicator and corresponding tire icon will blink.




Low battery alert for the sensor: Red LED indicator and corresponding tire icon will blink.

Data receiving failure alert: Corresponding tire icon will blink.

# 9 Tire Pressure Sensor GPRS Protocol

## 9.1 Tracker Command Format

$$<Data identifier><Data length>,<IMEI>,<Command type>,<Event code>,<(-)Latitude>,<(-)Longitude>,<Date and time>,<Positioning status>,<Number of satellites>,<GSM signal strength>,<Speed>,<Direction>,<Horizontal dilution of precision (HDOP)>,<Altitude>,<Mileage>,<Run time>,<Base station info>,<I/O port status>,<Analog input value><Geo-fence number>/<Assisted event info>,<Customized data>,<Extended protocol version>,<Fuel percentage>,<Temperature sensor 1 value|Temperature sensor 2 value|……Temperature sensor n value>,<Data of tire pressure sensor 1|Data of tire pressure sensor 2|……Data of tire pressure sensor n><*Checksum >\r\n

Note:

- A comma (,) is used to separate data characters. The character type is the American Standard Code for Information Interchange (ASCII) (hexadecimal: 0x2C).
- Symbols "<" and ">" will not be present in actual data, only for documentation purpose only.
- All multi-byte data complies with the following rule: High bytes are prior to low bytes.
- The size of a GPRS data packet is about 160 bytes.

Descriptions about GPRS packets from the tracker are as follows:

| Parameter | Description | Example |
|---|---|---|
| @@ / $$ | @@: Indicates the GPRS data packet header sent from the server to the tracker. The header type is ASCII (hexadecimal: 0x40).<br>$$: Indicates the GPRS data packet header sent from | @@ / $$ |

| | | |
|---|---|---|
| | the tracker to the server. The header type is ASCII (hexadecimal: 0x24). | |
| Data identifier | Contains 1 byte. The type is the ASCII, and its value ranges from **0x41** to **0x7A**. | Q |
| Data length | Indicates the length of characters from the first comma (,) to \r\n. Decimal.<br>Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Command content*><*Checksum*>\r\n | 25 |
| IMEI | Indicates the tracker's IMEI number. The number type is ASCII. It has 15 digits generally. | 353358017784062 |
| Command type | Hexadecimal | AAA |
| Event code | Decimal | 1 |
| Latitude<br>(-)yy.dddddd | Unit: degree; decimal<br>When a minus (-) exists, the tracker is in the southern hemisphere. When no minus (-) exists, the tracker is in the northern hemisphere.<br>**yy** indicates the degree.<br>**dddddd** indicates the decimal part. | 22.756325<br>Indicates 22.756325°N.<br>-23.256438<br>Indicates 23.256438°S. |
| Longitude<br>(-)xxx.dddddd | Unit: degree; decimal<br>When a minus (-) exists, the tracker is in the western hemisphere. When no minus (-) exists, the tracker is in the eastern hemisphere.<br>**xxx** indicates the degree.<br>**dddddd** indicates the decimal part. | 114.752146<br>Indicates 114.752146°E.<br>-114.821453<br>Indicates 114.821453°W. |
| Date and time<br>yymmddHHMMSS | **yy** indicates year.<br>**mm** indicates month.<br>**dd** indicates day.<br>**HH** indicates hour.<br>**MM** indicates minute.<br>**SS** indicates second.<br>Decimal | 091221102631<br>Indicates 21 December 2009, 10:26:31 am. |
| Positioning status | Indicates the GPS signal status.<br>**A** = Valid; **V** = Invalid | A<br>The GPS is valid. |
| Number of satellites | Indicates the number of received GPS satellites.<br>Decimal | 5<br>Five GPS satellites are received. |
| GSM signal strength | Value: 0–31; decimal | 12<br>The signal strength is 12. |
| Speed | Unit: km/h; decimal | 58<br>The speed is 58 km/h. |
| Direction | Indicates the driving direction. The unit is degree. When the value is **0**, the direction is due north. The value ranges from **0** to **359**. | 45: The location is at northeast.<br>90: The location is at due east. |

| | | | |
|---|---|---|---|
| | | Decimal | |
| HDOP | | The value ranges from **0.5** to **99.9**. The smaller the value is, the more the accuracy is.<br>When the accuracy value is **0**, the signal is invalid.<br>Decimal<br>0.5–1: Perfect<br>2–3: Wonderful<br>4–6: Good<br>7–8: Medium<br>9–20: Below average<br>21–99.9: Poor | 5<br>The HDOP is 5. |
| Altitude | | Unit: meter; decimal | 118 |
| Mileage | | Unit: meter; decimal<br>Indicates the total mileage. The maximum value is **4294967295**. If the value exceeds the maximum value, it will be automatically cleared. | 564870 |
| Run time | | Unit: second; decimal<br>Indicates the total time. The maximum value is **4294967295**. If the value exceeds the maximum value, it will be automatically cleared. | 2546321 |
| Base station info | | The base station information includes:<br>MCC\|MNC\|LAC\|CI<br>Note: Base station information in an SMS is empty. The MCC and MNC are decimal, while the LAC and CI are hexadecimal. | 460\|0\|E166\|A08B |
| I/O port status | | Hexadecimal<br>Status values of eight input ports and eight output ports:<br>Bits 0–7 correspond to status of output ports 1–8.<br>Bits 8–15 correspond to status of input ports 1–8. | 0421 (hexadecimal)<br>= 0000 0100 0010 0001 |
| Analog input value | | Separated by "\|".<br>Hexadecimal<br>AD1\|AD2\|AD3\|Battery analog\|External power analog<br>Voltage formula of analog AD (AD1, AD2, AD3, AD4, and AD5): AD/100 | 123\|456\|235\|1456\|222<br>(Hexadecimal) |
| Assisted event info | System flag | Contains 4 bytes; hexadecimal<br>Bit 0: Whether to modify the EEP2 parameter. When the value is 1, the EEP2 parameter is modified.<br>Bits 1–31: reserved.<br>Only available by GPRS event code 35. | 00000001<br>The EEP2 parameter is modified. |
| Customized data | | Reserved<br>A separator still exists. | |

| | | |
|---|---|---|
| Extended protocol version | Decimal | 4<br>The extended protocol version is 4. |
| Fuel percentage | Contains 4 hexadecimal characters.<br>When the fuel level sensor type is **0**, the sensor is not connected and the value is empty. | 0E2E<br>The fuel percentage is 36.30%. |
| Temperature sensor No. + Temperature value | Contains 6 hexadecimal characters.<br>The first two characters indicate the temperature sensor No.<br>The last four characters indicate the temperature value (actual temperature x 100; including the integer and decimal parts; -327.67°C to +327.67°C). | 011A09\|021A15\|06FB2E<br>There are 3 temperature sensors.<br>Temperature sensor 1: 66.65°C<br>Temperature sensor 2: 66.77°C<br>Temperature sensor 6: -12.34°C |
| Tire pressure sensor data | At most 64 tire pressure sensors are supported.<br>Contains 18 hexadecimal characters.<br>● First two characters: indicates the installation location of a tire pressure sensor; 1 byte (2 characters).<br>Bits 7–5: indicate the vehicle head or trailer. 000(B): vehicle head; 001(B): trailer 1; 010(B): trailer 2; 011(B): trailer 3; 100(B): trailer 4.<br>Bits 4–0: indicate the tire number. For example, 00001(B), indicating the first tire.<br>● The 3rd to 10th characters: indicates a tire pressure sensor's ID number; 4 bytes (8 characters); unsigned.<br>● The 11th to 14th characters: indicates the tire pressure; 2 bytes (4 characters); formula: obtained value x 0.025; unit: bar.<br>● The 15th and 16th characters: indicates the tire temperature; 1 byte (2 characters); formula: obtained value – 50; unit: °C; unsigned.<br>● The 17th and 18th characters: indicates the tire status; 1 byte (2 characters); unsigned.<br>Bit 7: indicates the battery voltage status of the transmitter. 0: normal voltage; 1: low voltage.<br>Bit 6: Whether to receive data from the transmitter. If you do not receive data from the transmitter within 15 minutes, the parameter value will be reset to 1.<br>Bit 5: reserved.<br>Bit 4: When the value is 1, the air pressure is high.<br>Bit 3: When the value is 1, the air pressure is | 0A00123456025878 01\|<br>0B00123457025878 01\|<br>0C00123458025878 01<br>There are 3 tire pressure sensors.<br>Tire pressure sensor 1:<br>● 0A: The sensor is installed on the 10th tire of the vehicle head.<br>● 00123456: The tire pressure sensor ID is 0x00123456 (hexadecimal).<br>● 0258: The tire pressure is 15 bar.<br>0258 (hexadecimal) = 600 (decimal)<br>600 x 0.025 = 15<br>● 78: The tire temperature is 70°C.<br>78 (hexadecimal) = 120 (decimal)<br>120 - 50 = 70<br>● 01: A fast air leak alert is generated.<br>Tire pressure sensor 2:<br>● 0B: The sensor is installed on the 11th tire of the vehicle head.<br>● 00123457: The tire pressure sensor ID is 0x00123457 |

| | | |
|---|---|---|
| | low.<br>Bit 2: indicates temperature status. 1: high temperature; 0: normal temperature.<br>Bits 1–0: indicates the alert status. 00: no alert; 01: fast air leak alert; 10: slow air leak alert; 11: tire inflation alert. | (hexadecimal).<br>● 0258: The tire pressure is 15 bar.<br>0258 (hexadecimal) = 600 (decimal)<br>600 x 0.025 = 15<br>● 78: The tire temperature is 70°C.<br>78 (hexadecimal) = 120 (decimal)<br>120 - 50 = 70<br>● 01: A fast air leak alert is generated.<br>Tire pressure sensor 3:<br>● 0C: The sensor is installed on the 12th tire of the vehicle head.<br>● 00123458: The tire pressure sensor ID is 0x00123458 (hexadecimal).<br>● 0258: The tire pressure is 15 bar.<br>0258 (hexadecimal) = 600 (decimal)<br>600 x 0.025 = 15<br>● 78: The tire temperature is 70°C.<br>78 (hexadecimal) = 120 (decimal)<br>120 - 50 = 70<br>● 01: A fast air leak alert is generated. |
| * | Separates commands from checksums.<br>Contains 1 byte.<br>ASCII (hexadecimal: 0x2A) | * |
| Checksum | Contains 2 bytes.<br>Hexadecimal<br>The parameter indicates the sum of all data (excluding the checksum and ending mark).<br>Example: $$<*Data identifier*><*Data length*>,<*IMEI*>,<*Command type*>,<*Command content*><**Checksum*>\r\n | BE |
| \r\n | 2 bytes. The parameter is an ending character. The | \r\n |

| | | |
|---|---|---|
| | type is ASCII (hexadecimal: 0x0d 0x0a). | |

## 9.2 Command Details

### 9.2.1 Obtaining All Alert Parameters of a Tire Pressure Sensor – DA0

| | |
|---|---|
| GPRS Sending | DA0 |
| GPRS Reply | DA0,*<High pressure threshold of the first axle><Low pressure threshold of the first axle><High pressure threshold of the second axle><Low pressure threshold of the second axle><High pressure threshold of the third axle><Low pressure threshold of the third axle><High pressure threshold of the fourth axle><Low pressure threshold of the fourth axle><High pressure threshold of the trailer><Low pressure threshold of the trailer><High temperature threshold>* |
| Description | High pressure threshold of the first axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the first axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the second axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the second axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the third axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the third axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the fourth axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the fourth axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the trailer: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the trailer: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High temperature threshold: hexadecimal; unsigned; 1 byte; formula: obtained value – 50; unit: °C. |
| **Example** | |
| GPRS Sending | @@Q25,863835020877432,DA0*72\r\n |
| GPRS Reply | $$Q90,863835020877432,DA0,02080010000000000004576*46\r\n |

### 9.2.2 Obtaining Data of All Bound Tire Pressure Sensors – DA1

| | |
|---|---|
| GPRS Sending | DA1 |

| | |
|---|---|
| GPRS Reply | DA1,*<Location 1><ID1><Tire pressure 1><Temperature 1><Status 1>……<Location n><IDn><Tire pressure n><Temperature n><Status n>* |
| Description | ● Location: indicates the installation location of a tire pressure sensor; 1 byte; unsigned; hexadecimal.<br>Bits 7–5: indicate the vehicle head or trailer. 000(B): vehicle head; 001(B): trailer 1; 010(B): trailer 2; 011(B): trailer 3; 100(B): trailer 4.<br>Bits 4–0: indicate the tire number. For example, 00001(B), indicating the first tire.<br>● ID: indicates a tire pressure sensor's ID number; 4 bytes; unsigned; hexadecimal.<br>● Tire pressure: 2 bytes; unsigned; hexadecimal; formula: obtained value x 0.025; unit: bar.<br>● Temperature: indicates the tire temperature; 1 byte; unsigned; hexadecimal; formula: obtained value – 50; unit: °C.<br>● Status: indicates the tire status; 1 byte; unsigned; hexadecimal.<br>Bit 7: indicates the battery voltage status of the transmitter. 0: normal voltage; 1: low voltage.<br>Bit 6: Whether to receive data from the transmitter. If you do not receive data from the transmitter within 15 minutes, the parameter value will be reset to 1.<br>Bit 5: reserved.<br>Bit 4: When the value is 1, the air pressure is high.<br>Bit 3: When the value is 1, the air pressure is low.<br>Bit 2: indicates temperature status. 1: high temperature; 0: normal temperature.<br>Bits 1–0: indicates the alert status. 00: no alert; 01: fast air leak alert; 10: slow air leak alert; 11: tire inflation alert.<br>Note: At most 64 tire pressure sensors are supported. In other words, the maximum value of *n* is 64. |
| **Example** | |
| GPRS Sending | @@Q25,863835020877432,DA1*82\r\n |
| GPRS Reply | $$Q90,863835020877432,DA1,020800100000000000000711010000000000000610010000000000050101000000000000040001000000000000031100000000000000010185A000000BC*46\r\n |

### 9.2.3 Obtaining Data of a Tire Pressure Sensor – DA2

| | |
|---|---|
| GPRS Sending | DA2,*Location* |
| GPRS Reply | DA2,*<Location><ID><Tire pressure><Temperature><Status>* |
| Description | ● Location: indicates the installation location of a tire pressure sensor; 1 byte; unsigned; hexadecimal.<br>Bits 7–5: indicate the vehicle head or trailer. 000(B): vehicle head; 001(B): trailer 1; 010(B): trailer 2; 011(B): trailer 3; 100(B): trailer 4.<br>Bits 4–0: indicate the tire number. For example, 00001(B), indicating the first tire.<br>● ID: indicates a tire pressure sensor's ID number; 4 bytes; unsigned; hexadecimal.<br>● Tire pressure: 2 bytes; unsigned; hexadecimal; formula: obtained value x 0.025; unit: bar. |

| | |
|---|---|
| | ● Temperature: indicates the tire temperature; 1 byte; unsigned; hexadecimal; formula: obtained value – 50; unit: °C.<br>● Status: indicates the tire status; 1 byte; unsigned; hexadecimal.<br>Bit 7: indicates the battery voltage status of the transmitter. 0: normal voltage; 1: low voltage.<br>Bit 6: Whether to receive data from the transmitter. If you do not receive data from the transmitter within 15 minutes, the parameter value will be reset to 1.<br>Bit 5: reserved.<br>Bit 4: When the value is 1, the air pressure is high.<br>Bit 3: When the value is 1, the air pressure is low.<br>Bit 2: indicates temperature status. 1: high temperature; 0: normal temperature.<br>Bits 1–0: indicates the alert status. 00: no alert; 01: fast air leak alert; 10: slow air leak alert; 11: tire inflation alert. |
| **Example** | |
| GPRS Sending | @@g27,863835020877432,DA2,01*C8\r\n |
| GPRS Reply | $$g35,863835020877432,DA2,010185R000000K@*F2\r\n |

### 9.2.4 Deleting Tire Pressure Sensors – DA3

| | |
|---|---|
| GPRS Sending | DA3,<*Location 1*>……<*Location n*> |
| GPRS Reply | DA3,<*Location 1*>……<*Location n*>,OK |
| Description | Location: indicates the installation location of a tire pressure sensor; 1 byte; unsigned; hexadecimal.<br>Bits 7–5: indicate the vehicle head or trailer. 000(B): vehicle head; 001(B): trailer 1; 010(B): trailer 2; 011(B): trailer 3; 100(B): trailer 4.<br>Bits 4–0: indicate the tire number. For example, 00001(B), indicating the first tire.<br>Note:<br>1. The maximum value of *n* is 64.<br>2. If the command is sent successfully, the installation locations of deleted tire pressure sensors will be received. |
| **Example** | |
| GPRS Sending | @@i27,863835020877432,DA3,0A*22\r\n |
| GPRS Reply | $$i34,863835020877432,DA3,0A,OK*56\r\n |

### 9.2.5 Obtaining Data of Multiple Tire Pressure Sensors – DA4

| | |
|---|---|
| GPRS Sending | DA4,<*Location 1*><ID1>……<*Location n*><ID*n*> |
| GPRS Reply | DA4,<*Location 1*><ID1>……<*Location n*><ID*n*>,OK |
| Description | ● Location: indicates the installation location of a tire pressure sensor; 1 byte; unsigned; hexadecimal.<br>Bits 7–5: indicate the vehicle head or trailer. 000(B): vehicle head; 001(B): trailer 1; 010(B): trailer 2; 011(B): trailer 3; 100(B): trailer 4.<br>Bits 4–0: indicate the tire number. For example, 00001(B), indicating the first tire. |

| | |
|---|---|
| | ● ID: indicates a tire pressure sensor's ID number; 4 bytes; unsigned; hexadecimal.<br>Note:<br>1. At most 64 tire pressure sensors are supported. In other words, the maximum value of *n* is 64.<br>2. If the command is sent successfully, the installation locations and ID numbers of bound tire pressure sensors will be received. |
| **Example** | |
| GPRS Sending | @@\31,863835020877432,DA4,9800100100*62\r\n |
| GPRS Reply | $$\59,863835020877432,DA4,0210000000!0100000800100100C11000000980010010 0010185R00,OK*A4\r\n |

### 9.2.6 Setting Alert Thresholds of a Tire Pressure Sensor – DA5

| | |
|---|---|
| GPRS Sending | DA5,*<High pressure threshold of the first axle><Low pressure threshold of the first axle><High pressure threshold of the second axle><Low pressure threshold of the second axle><High pressure threshold of the third axle><Low pressure threshold of the third axle><High pressure threshold of the fourth axle><Low pressure threshold of the fourth axle><High pressure threshold of the trailer><Low pressure threshold of the trailer><High temperature threshold>* |
| GPRS Reply | DA5,OK |
| Description | High pressure threshold of the first axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the first axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the second axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the second axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the third axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the third axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the fourth axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the fourth axle: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High pressure threshold of the trailer: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>Low pressure threshold of the trailer: hexadecimal; unsigned; 1 byte; formula: obtained value/10; unit: bar.<br>High temperature threshold: hexadecimal; unsigned; 1 byte; formula: obtained value – 50; unit: °C. |
| **Example** | |

| | |
|---|---|
| GPRS Sending | @@l37,863835020877432,DA5,FF0000FFFFFF00000F19d*58\r\n |
| GPRS Reply | $$l31,863835020877432,DA5,OK*BC\r\n |

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