

# Tire Pressure Monitoring System

Instruction Manual  
M7 +SO

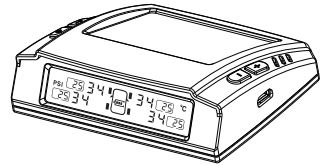
**TPMS** 



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## Product Picture



Monitor



SO Sensor

## **1.Product Introduction**

### **1-1. Product Feature**

Thanks for choosing our TPMS product. The system is used to monitor the pressure and temperature data of each tire. After the alarming condition is set up by the user, the system will alarm in case of abnormal pressure and temperature and make the driver be alerted of danger driving. The system also enhance fuel efficient, prolong tire life and make the driving more comfortable.

Be sure to read the user guide carefully before installation and keep the manual for future use.

### **1-2. Caution**

It is highly recommended to read the instructions below before installing the system:

- 1.The monitor should be installed inside the vehicle where it does not affect normal driving.
- 2.The monitor should be well fixed to avoid falling off during driving.
- 3.The tires' temperature and pressure will increase while driving. The vehicle should be stopped for cooling if there is high temperature alarm and avoid braking problem or tire blowout.
- 4.Driver should stop the vehicle and get off to check the tire if there is continue high pressure or slow leakage alarm .
- 5.Be ware of tire blowout when there is high tire pressure, and be ware of fuel consumption and wheel balance while low tire pressure.
- 6.The system can effectively monitor tire pressure and temperature but cannot avoid traffic accident after tire browout. Using quality tire product and correct tire pressure monitoring is still necessary.
- 7.Be ware of driving safety while checking tire data on the way of driving.
- 8.After the system is installed correctly, the driver does not need to stare at the monitor all the time and feel interrupt during driving.

### **1-3. Installation Tips**

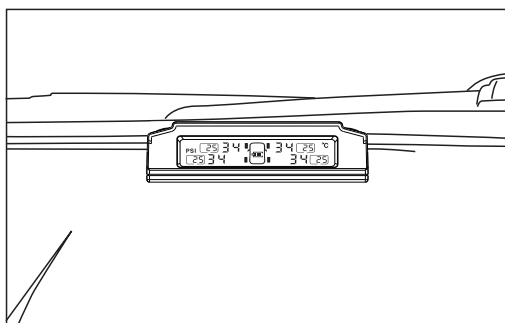
- 1.The monitor will be in sleeping mode to save battery life if the motion sensor detects the vehicle has stopped for ten minutes. It will turn on again when it detects the vehicle is moving again. If one of the sensor data has not been display on the monitor at the beginning, the data will be displayed later when there is pressure or temperature changes.
- 2.The signal transmission from the monitor and sensors is wireless, and the transmission distance is long enough for a passenger car due to internal anti -inference circuit design.
- 3.Due to the air expansion and contraction, the tire pressure and temperature will normally changing all the time while driving.
- 4.There is normal air leakage in every tire rim, TPMS should have no responsibility to keep the tire pressure unchanged after long time storage or driving.
- 5.Should you have any question or problem while installation, please contact with your local distributor.

## 2. Monitor Feature

- Automatically solar power battery recharger.
- Pressure and temperature alarm.
- Visible and audible alarm.
- Selectable pressure unit (PSI, BAR).
- Selectable temperature unit (°C, °F).
- Configurable high/low pressure and high temperature alarm.
- Tire position exchange.
- Automatic awake feature.
- Automatic backlighting.
- Built in rechargeable lithium battery.
- Monitor up to 7 tires (including one spare tire).
- Display temperature and pressure simultaneously.
- Fast leakage alert.
- High stability and easy to install.

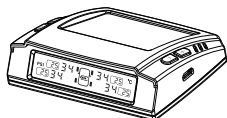
## 3. Installation Tips

Monitor should be installed in appropriate place using the sticky pad or the magic tape. Recharge the monitor by the DC-DC power adaptor for the first time and allow continue recharge by solar power after the first full DC recharge.



## 4. Product Accessories

### Monitor accessories



LCD Monitor  
(1 pc)

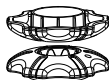


Sticky pad  
(1 pc)

### Sensor accessories



SO Sensor



Opener Too



Hex Wrench



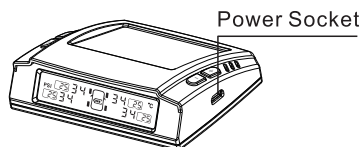
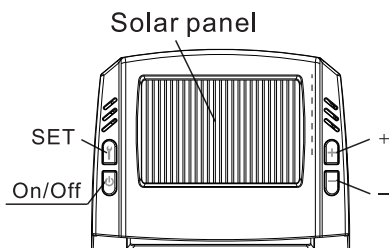
Hex Nut  
(4pcs)








Rubber O-Ring  
(4pcs)

Quantity of sensor will be shipped in 4 pieces or specified by customer to add one to three more pieces for spare at extra cost.

### 4-1. Monitor Components and Icons



Pressure Unit : BAR or PSI, user-selectable  
Temperature Unit : °C or °F, user-selectable

Icon	Indication
	Tire Position
	Sensor Low Battery
	Monitor Power level
	Tire Alarm Status
	Solar Power Indicator

## 5. Parameters Settings

In standby mode, press the “SET” button, release after the 1<sup>st</sup> beep to enter the 1<sup>st</sup> set up menu. The corresponding icon on the LCD will flash. Press the “SET” button to select the desired setting, press button “+” or “-” to select the data. After the setting is finished, press the “SET” button to save the setting and exit after a beep. Press the button “+” and “SET” at the same time to exit without saving the setting. The monitor will return to standby mode if there is no operation within 1min in the setting mode.

### 5-1.Factory default alarm setting

Pressure unit	PSI
High pressure	3.0BAR (44PSI)
Low pressure	2.0BAR (29PSI)
Temperature unit	°C
High temperature	70 °C

#### To restore the factory default setting:

First turn off the monitor by pressing “⏻”, then turn on the monitor again until all icons displayed and press the button “SET” within 3 seconds, release after a “Bi” sound and red backlight will light to complete factory reset.

#### Monitor Power on / off

Driver could turn off the monitor manually before long time parking. When the monitor is power off, press the “⏻” button, release after the first beep to turn on the monitor. Repeat same step to turn off the monitor. The monitor will turn off automatically when the power is too low.

### 5-2.Setting Sequence

#### ① Pressure Unit

While the PSI or BAR icon is flashing, press the button “+” or “-” to select the desired unit.

Flashing



Flashing



#### ② Temperature Unit

While the °C or °F icon is flashing, press the button “+” or “-” to select the desired unit.

Flashing

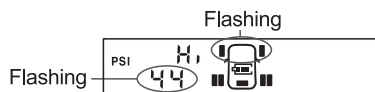


Flashing



## ③ High Pressure Setting for Front Tires

While the two front tire icons and the high pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.



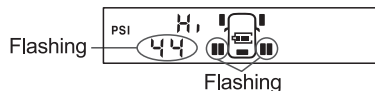
## ④ Low Pressure Setting for Front Tires

While the two front tire icons and the low pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.



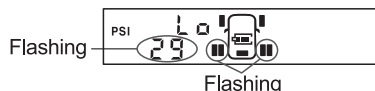
## ⑤ High Pressure Setting for Rear Tires

While the four rear tire icons and the high pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.



## ⑥ Low Pressure Setting for Rear Tires

While the four rear tire icons and the low pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.



## ⑦ High Pressure Setting for Spare Tire

While the spare tire and the high pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.



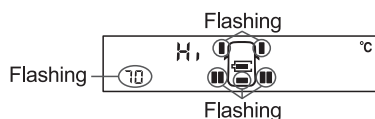
## ⑧ Low Pressure Setting for Spare Tire

While the spare tire and the low pressure data icons are flashing, press the button “+” or “-” to select the desired pressure data.





## ⑨ High Temperature Setting

While the high temperature data and all tire icons are flashing, press the button “+” or “-” to set the desired temperature data.



## 6. Alarm Condition

### High / Low Pressure Alert / High Temperature Alert / Fast Leakage Alert / Sensor Low Battery Alert.

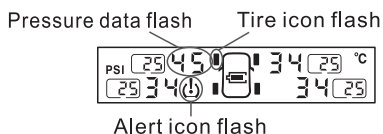
The monitor displays the temperature and the pressure data of four sensors simultaneously. The corresponding alert icon and red LED will flash together with a warning beep when the sensor detects abnormal conditions from the tire. The faulty tire and/or battery alarm (  ,  ) icons will still flash until the problem has been settled.

Eg.: Factory default setting

High pressure alarm level	3.0BAR (44PSI)
Low pressure alarm level	2.0BAR (29PSI)
High temperature alarm level	70 °C

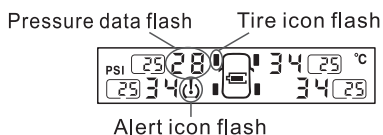
### 6-1.High Pressure Alert

e.g. While the front left tire pressure is 45PSI, the monitor will alert together with a warning beep, and the red LED will flash.



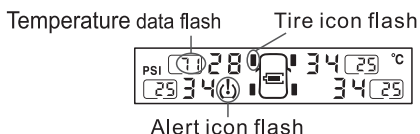
### 6-2.Low Pressure Alert

e.g. While the front left tire pressure is 28PSI, the monitor will alert together with a warning beep, and the red LED will flash.



### 6-3.High Temperature Alert

e.g. While the front left tire temperature is 71°C, the monitor will alert together with a warning beep, and the red LED will flash.

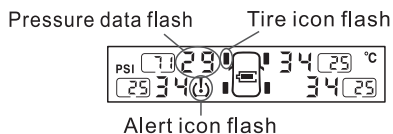




## 6-4. Fast Leakage Alert

The sensor will send alert data to the monitor if it detects fast leakage in a tire. The alert icon and the pressure data will flash together with the tire icon. The flashing red LED and a warning beep will be issued by the monitor simultaneously. Press any button to turn off the beep warning. But the alert tire icon and the pressure data will still flash together with the red LED till the problem has been solved.

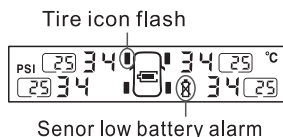
e.g. While the front left tire pressure drops from 34PSI to 29PSI immediately, the monitor will alert as the picture below:



## 6-5. Sensor Low Battery Alert

While the sensor battery voltage is low, the sensor will send the alert to the monitor. The corresponding tire icon and the low battery icon will flash together with the red LED, the warning beep will be issued by the monitor. Press any button to turn off the warning beep, but the tire icon and the low battery icon will still flash together with the red LED till the a new sensor battery has been replaced.

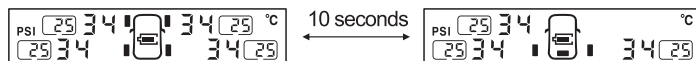
e.g. While the battery in the front left tire sensor is low, the monitor will alert as the picture as below sensor low battery icon flash.



## 7. Other Functions

### 7-1. Monitor Displays 7 Tires



7 Sensors (Spare tire) : displays as below.



### 7-2. Monitor Battery Saving Mode

The monitor will be in sleeping mode when the vehicle not in motion for 10 minutes and when external DC power is not connected. The monitor will not receive any data from the sensors. Press any button to wake up the monitor to standby mode.

## 7-3.Charging the Monitor

The solar power battery was built inside the monitor, it can power the monitor for long hours once fully charged. But the solar battery will not recharge itself when insufficient sunshine. In such case, when the battery level indicator is low as show by the icon (  ), please recharge with factory provided DC charger for 2.5hours and continually recharge by sufficient sunlight when the icon (  ) is displayed.

## 7-4 Tire ID interchange(Tire position exchange)

During standby mode, long press“-” until “Bi” sound to begin, one tire will flash and use “+ or -” to exchange to a new tire position and confirm by pressing “SET ” button. Repeat using “-” to choose another tire and follow by using “+ or -” button to exchange another new tire and finished by pressing “SET ” button again with a long beep. (During ID interchange mode if no action for one minute, system will resume to normal mode operation.)

## 8. Recode Sensors

The factory has already coded 4 sensors to the monitor, and the sensors can be re-coded accordingly to actual tires' position after exchanging the tires. There is Inflate Code Learning for re-code the sensors:

### 8-1 Inflate Code Learnings

In standby mode, press and hold“+” button and release it after the beep sound to enter learning mode, the tire icon will flash on the LCD with “id ” Letter showing the beginning letter of the tire ID code. Short press “-” or “+” to scroll tire position needed to re-code. Once ready, then mount the sensor on to the tire valve(for external sensor), or inflate the tire(for internal sensor), once the sensor sensed the inflator, the sensor will send its own ID code to the monitor and the monitor will display it's sensor code after the beep. Repeat above step to re-code others sensor if needed . Press “SET” until Beep sound to ensure new code completed stored into the monitor . If press “+” and “SET” buttons together will not store any new ID and resume to standby mode.

Example tire icon flashing

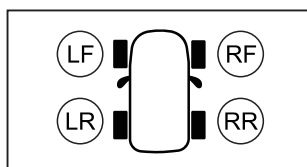


Left Front Tire ID as 83A512

## 5. Sensor Installation

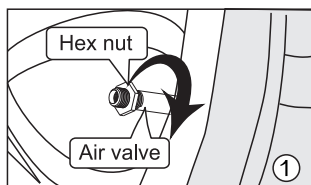
Each sensor has been marked with a position number sticker, and sensors ID has been coded into the monitor during ex-factory. Please installed the sensors according to the picture below. Sensor can be re-coded when the sensor position is changed. Please refer to section “Recode sensors” and reinstall the sensor accordingly.

**Tips:** You are highly recommend to use factory pre-coded sensor and recommended sensor position as initial functional testing of the system.

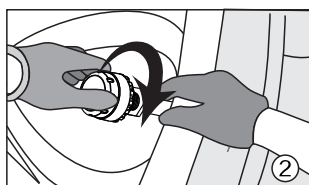


### SO External Sensors Installation:

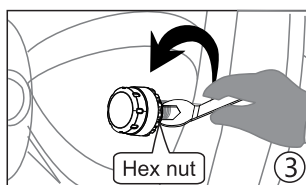
**Notice:** please ensure to turn on the monitor firstly before install the sensor so that the monitor can receive the sensor data on time.



(1) Mount the hex nuts



(2) Screw in sensor at clock wise direction




(3) Tighten hex nuts in counter clock wise direction

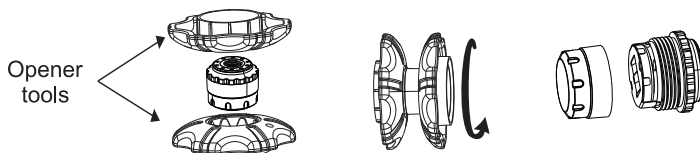
#### Tips:

1. Each sensor are labeled with its wheel position and highly recommended to be used during installation.
2. If battery inside sensor has insufficient voltage will trigger battery low alarm.
3. After all sensor has been installed, please ensure no any air leakage over wheel surface and may use soapy water for testing if necessary.

## SO External Sensors battery replacement

When the sensor low battery icon “” shows on the monitor and corresponding tire icon is flashing, the sensor battery needs replacement. Using CR1632 battery cell which operates at -40°C to +80°C is recommended. You can buy replacement batteries from your local dealer.

(1) Hold the sensor inside opener tools and open sensor cover in clockwise direction.



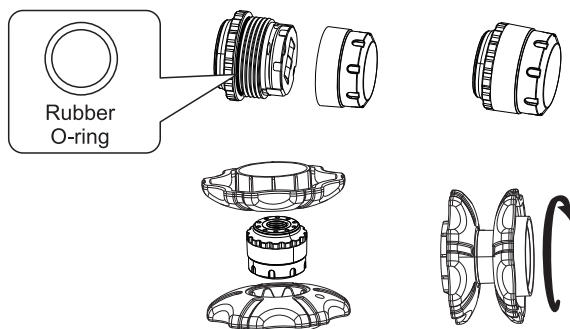
(2) Take out old battery



(3) Replace the new Lithium CR1632, ensure positive “+” is facing upwards.



4. Open or fasten the sensor battery cover with special opener tools. Replace new battery with correct polarity. Please check if the rubber O-ring is in good condition otherwise replace a new one.




## 10. Technical Specification

### 10.1 Monitor Specification

Pressure setting range	1.0-9.9BAR(16-99PSI)	Temperature setting range	-25°C ~ 93°C (77 °F ~ 199°F )
Working temperature	-20°C ~ 80°C	Frequency	433.92 MHz
Storage temperature	-30°C ~ 85°C	Size	84 ( L ) * 66 (W) * 23 (H)mm
Output voltage/current	DC 5V/1A	Weight	82 g

### 10.2 Sensor Specification

	 SO sensor
Working temperature	-40 °C~ +80 °C
Storage temperature	-40 °C~ +85 °C
Pressure range	0~6 bar (0~87 psi )
Pressure accuracy	±1.5 psi (± 0.1 bar )
Temperature accuracy	± 3°C
Transmission power	<10dBm
Transmission frequency	433.92MHz
Battery life	≥ 2 years
Dimension	21 ( Φ)X17.5 (H) mm
Weight	9 g

## 11. Friendly Reminder

- (1) Please use the system correctly in the right condition. The distributor is not liable for damages from the miss-use.
- (2) Installation should follow the instruction guide, if any damage occurs due to the wrong installation, the distributor is not liable for it.
- (3) The content and specification are subject to change without prior notice. Pictures in the article are just for illustration. Please take the actual product for reference.
- (4) Internal sensor installation should be carried out by professional person. Be ware of the internal sensors while reload the tire.
- (5) Please be careful not to damage the sensor during tire removal.