TPMS with External Sensor for Car
User's Manual

Chapter 1. Function Introduction

Features

1. Real-time monitor tires' pressure and temperature.

2. LCD displayer, exquisite & compact LCD screen displays pressure and temperature of 4 tires synchronously.

3. Blue LCD displayer with cigarette plug or cigarette plug wire.

4. Visual and audible warning for abnormal tire pressure and temperature, low pressure alarm, high pressure alarm, air leak alarm, high temperature alarm and sensor failure alarm.

5. Easy-to-install TPMS, 2 minutes installation.

6. Sensor with long battery life (>3 yrs) and sensor battery can be easily replaced.

7. Stable wireless signal transmission.

TPMS Description:

TPMS is the abbreviation of Tire Pressure Monitoring System. It is an electronic system for monitoring the air pressure in a vehicle tire and automatically transmitting a warning to the driver in the event of an under or over inflated tire.

Why need TPMS?

1) Safety. Remind the driver to take measures when tires are in abnormal status to prevent accident.

2) Cost Saving. Help drivers adjust tire pressure to correct, reduce fuel consumption caused by under-inflated tires, reduce tire abrasion to extend tire life

3) Environmental-friendly. Decreases vehicle fuel consumption, less CO_2

4) TPMS legislation. TPMS is an vehicle safety product that already be legislated to use in US in 2007 and EU in 2012, it will be a global trend and a booming market.

Chapter 2 Working Principle

The tire pressure monitor system is made up of a CPU (Central Processing Unit) and a group of sensors. Sensors are installed onto the valves of four tires to collect the data of tire pressure and tire temperature. The data is then sent through radio electromagnetic wave to the CPU installed in the vehicle.

The tire pressure and temperature information will be displayed in the screen after being processed by the CPU. When scenarios such as tire air leakage, tire pressure too high or too low, tire temperature surpasses the alarm threshold, sensors malfunction happens, the system will alarm drivers by means of beeps and screen graph flashing. This way, the potential problems of the tire are early warned to keep the driving safer.

**Brief Introduction to installation procedure & operation**

First of all, install the display, when the display screen is power on, the 4 tires' icon in the display chart are all flashing, then, screw the 4 sensors onto the 4 tires valves, several minutes later, pressure data are renewing, the tire icon will not flash any more, then restart your car, the tire icon in the display will flash again, please drive your car for a while, when the car speed reaches 15 kilometers/hour, in several minutes, the display will receive the signal from the sensors, the tire icon will not flash any more.

During driving, every 2 minutes, data will be updated in the display, 10 minutes after parking, display will keep still, no more data renewal. If tire pressure changes caused by air leakage or some other reasons, or, the driving speed is over 15 kilometers/hour, the display begin to renew data.

The sensor battery is RC1632 3V lithium battery, the battery's normal life is over 3 years, can be easily replaced and bought in the market.

Chapter 3.Explanation to display chart

The display screen display 4 tires' pressure and

Wide screen blue LCD display
Pressure Unit   Temparature Unit
Tire Pressure
Tire Temparature

1
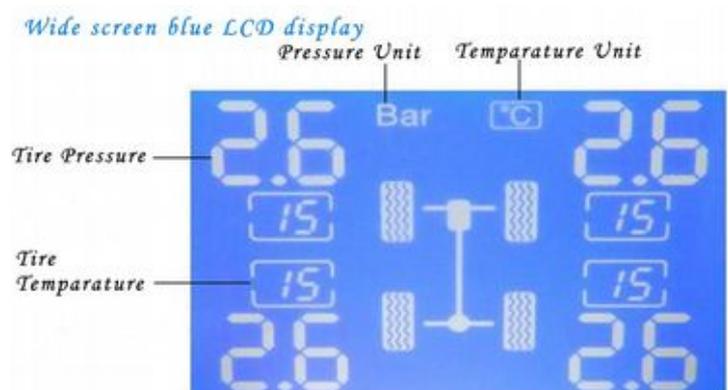
temperature, the pressure unit is "Bar", and the temperature unit is "℃", alarm figure will display when the tire appears abnormal.

Chapter 4. Installation

Displayer installation:

1. DIY to install TPMS with cigarette plug

This is an easy-to-install cigarette plug monitor, plug-and-play and wireless design, Self-install external sensor and do not need dynamic balancing.

It can monitor the tire status during driving. Displayer will immediately alarm when any of tire is leaking, low pressure, high pressure and high temperature. Prevent tire puncture, save fuel, decrease tire wear and improving vehicle handling.

Cigarette plug displayer installation:

Plug the monitor in the cigarette lighter socket directly.

2. DIY to install TPMS with cigarette plug wire

The displayer is desktop. Put the displayer on the instrument platform of your car, and fix the displayer base with adhesive sticker, and plug the power wire into the cigarette lighter socket directly.
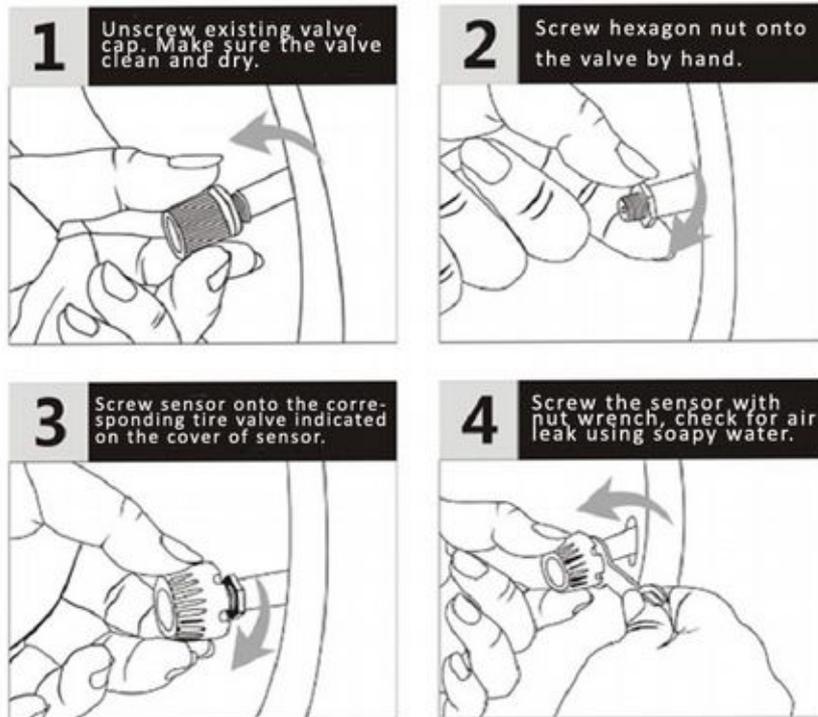
Another way to take power, you can take electricity from the car inner power referring to the below indication. Cut the cigarette lighting plug from the TPMS display's power wire, then connect the RED line with the vehicle's "ACC 12V" power source while connect the BLACK line to the "GND". Note, you need to cascade one "1A" fuse to the RED line.
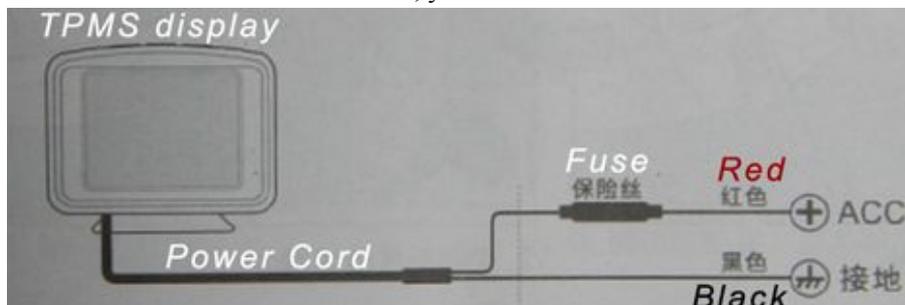
Sensor installation:

Screw the sensor onto the valve, and make sure the sensor tight with nut wrench.

Easy DIY Installation for Sensors

1 Unscrew existing valve cap. Make sure the valve clean and dry.

2 Screw hexagon nut onto the valve by hand.

3 Screw sensor onto the corresponding tire valve indicated on the cover of sensor.

4 Screw the sensor with nut wrench, check for air leak using soapy water.

Sensor battery replacement

1 Unscrew the nut

2 Unscrew the sensor

3 Remove the washer

4 Unscrew the sensor cover using the sensor tool.

5 Replace the battery

6 Repeat above steps in reverse order to refit sensor.

Note: The above picture is just for reference, in the 4th photo, we don't need the 'sensor tool 'in the photo, just unscrew the sensor cover with your hands and nut wrench in the package easily.

Chapter 5 System Setup Instruction

● Settings of the pressure alarm threshold

When the tire pressure is over the Highest Tire Pressure Limitation or under the Lowest Tire Pressure Limitation, TPMS will automatically make sound and flicker alarm.

The factory setting of TPMS is 3.2 Bar for the Highest Tire Pressure alarm threshold, 1.7 Bar for the Lowest Tire Pressure alarm threshold. Different type of cars can be set based on the parameters of the tire or relevant instruction book.
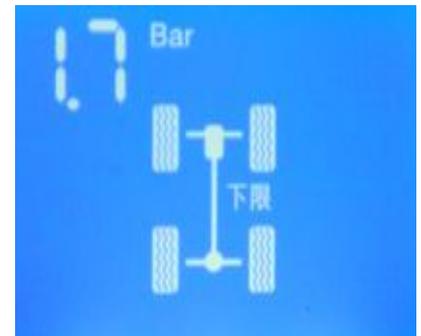
>> **Set the Highest limit value of tire pressure**

Press the set key for 3 seconds, you will hear a beep of "bi", then you move away your finger, the system is entering the setting interface, shortly press the set key again, then make a recurrent selection in the set interface in the order of "Pressure Highest Limitation" → "Pressure Lowest Limitation" → "Temperature Highest Limitation", in the interface of "Pressure Highest Limitation", press the set key for long time, when you hear a sound of "bi", move away your finger, Pressure Highest Limitation Value will flash, shortly press the set key again to adjust Pressure Highest Limitation Value. When you press the set key for 3 seconds, you can save the value and exit. The factory saved setting of the Highest Tire Pressure alarm threshold is 3.2 Bar.
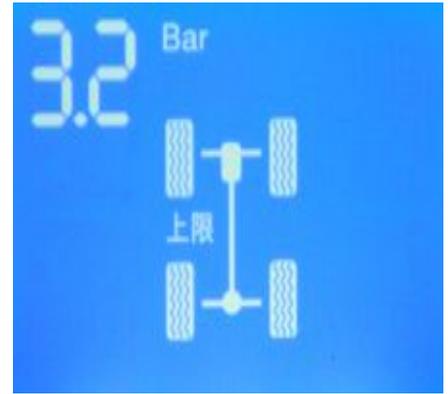
>> **Set the Lowest limit value of tire pressure**

Press the set key for 3 seconds, you will hear a beep of "bi", then you move away your finger, the system is entering the setting interface, shortly press the set key again, then make a recurrent selection in the set interface in the order of "Pressure Highest Limitation" → "Pressure Lowest Limitation" → "Temperature Highest Limitation", in the interface of "Pressure Lowest Limitation", press the set key for long time, when you hear a sound of "bi", move away your finger, Pressure Lowest Limitation Value will flash, shortly press the set key again to adjust Pressure Lowest Limitation Value. When you press the set key for 3 seconds, you can save the value and exit. The factory saved setting of the Lowest Tire Pressure alarm threshold is 1.7 Bar.

● Settings of the Temperature alarm threshold

>> **Set the Highest limit value of Tire Temperature**

Press the set key for 3 seconds, you will hear a beep of "bi", then you move away your finger, the system is entering the setting interface, shortly press the set key again, then make a recurrent selection in the set interface in the order of "Pressure Highest Limitation" → "Pressure Lowest Limitation" → "Temperature Highest Limitation", in the interface of "Temperature Highest Limitation", press the set key for long time, when you hear a sound of "bi", move away your finger, Temperature Highest Limitation Value will flash, shortly press the set key again to adjust Temperature Highest Limitation Value. When you press the set key for 3 seconds, you can save the value and exit. The factory saved setting of the Highest Temperature Limitation alarm threshold is 65℃.

Chapter 6. Alarm Function

1. When the tire pressure surpasses the highest limitation, the lowest limitation or air leakage, the corresponding tire icon, pressure parameter and alarm graph at the tire's place in the display screen flash, in the meantime, the alarm will keep beeping.
2. When the tire temperature surpasses the set highest limitation value, the corresponding tire icon, temperature parameter and alarm graph at the tire's place in the display screen flash, in the meantime, the alarm will keep beeping.
3. When the sensor battery is short of power, the corresponding tire icon flash, and the display screen displays the sign of "LB".
4. When the sensor malfunction, and the signal can not be sent to the receiver, the corresponding tire information will disappear in the display screen after 25 minutes, at the same time, alarm the driver with sound "bi-bi-bi".

Chapter 7. Tire Sensor Position Matching

Sensors are matched well with the displayer when leaving the factory, only when the sensor is damaged or lost, we need to replace the new sensor and re-match the sensor.

Under the stand-by mode, press continuously the set key for 5 times, you will hear a sound of "bi", then you move away your finger, the system is entering tire matching mode, the icon of "-- --" display, shortly press the set key to choose tire position which need to be matched. At the moment, install the sensor onto the corresponding tire valve, after receiving the signal from the sensor, the display icon changes from "-- --" to "on", this means receiving the signal successfully. Then long press the set key for 3 seconds to save the new sensor ID and exit. If you haven't long pressed the set key for 3 seconds, you can't save the new sensor ID, and in 3 minutes, the system automatically exit from the matching interface.

Chapter 8. Technical parameters

Sensor:

Working frequency: 433.92MHz

Working voltage: 2.0 ~ 3.6V

Working temperature: -40℃~+125℃

Humidity: 0%~100%

Temperature reading: ±1℃

Pressure reading: ±0.1Bar

Working current:

   static state: ＜1uA

   emission current:＜10mA

Displayer:

Working frequency: 433.92MHz

Working voltage: 9~15V

Working temperature: -20℃~+70℃

Working current:

   static state: ＜20mA

   alarm current: ＜100mA

Pressure Range of Alarm: 1.7-3.2 Bar

Air pressure Unit Conversion

1 Bar = 14.5 Psi = 100K Pa = 1.02 Kgf/cm²

Chapter 9. Trouble shooting

1、 Q: Why is there not any tire information displaying in the screen after installing all the TPMS?

   A: 1> When the driving speed is over 15km/hr, automatically display the tire parameters.

    2> The sensor isn't matching with the displayer, you need to match them again.

2、 Q: When ACC is on, there is tire information displaying in the screen, but why is the tire figure flashing?

   A: This is the renewing of tire information, once receiving the new tire data signal, the flashing will stop.

3、 Q: Why is there not any information of a certain tire displaying in the screen?

   A: 1> The sensor in the position isn't matching with the displayer, you need to match them again.

    2> The sensor in the position is damaged or the battery is too low power.

Note: The parameters of this product have been set to the factory settings correctly. Please install the sensor to the "Left-Front", "Left-Rear", "Right-Front", "Right-Rear" tires according to the instruction shown in the tag attached at the back of the sensor properly. When the product is power on, system is activated and self-tested, the displayer will function 10seconds after the System Self Testing step without further parameter setting and adjusting.