Tire Pressure Monitoring System

User Manual

Internal Tire Sensor model：AT-119

USB Connection Model：AT-122

Contents

Check this manual before installing the product whether suits to install in your car. This product can help to prevent tire explosion, but can't eliminate this issue on road, please don't break the sensor with force, avoid damaging the internal circuit.

Users no need to observe the system display all the time, avoid to affect the driving safety

1. How does the TMPS work

1.1. This product includes a display and four sensors, the sensors install in the tire directly, It will test the tire pressure every 4 seconds and will send a signal every 4 minutes when the car speed higher than 20KM/H ,the air pressure is normal,and it will send the alarm data immediately once the sensor monitors the abnormal air pressure, and it will send the audible alarm when the monitor realize the tire pressure and temperature abnormal, to remind the users to observe the state of the tire, make timely treatment and take the necessary preventive measures.

1.2. Display

The display built in rechargeable lithium battery, and charged by solar energy, the users no need to prepare the separate battery and no need to provide the car power supply for the display, about its supply voltage can refer to the display technical parameters. The display also built-in vibration switch, it will automatically switch into the sleep state when parking and automatic monitoring status when driving.

1.3. The installation and technical data of the display

1.3.1. Please use the original 3M tape to fix on the car dashboard

1.3.2. If the solar panel failure or no sunshine for a long time, you can use the car USB charger or mobile phone charger to charge the display. About the display battery life, please refer to the technical parameters.

1.3.3. After installation, no need to watch at the display all the time. The display will automatically alarm when the tire pressure or temperature is abnormal, avoid to affect the driving safety after long-term observation.

2. Product Specification

Display technical parameter	Internal sensor technical parameter	External sensor technical parameter
Input voltage: 5V (USB)	Operating voltage: 2.1V-3.5V	Operating voltage: 2.1V-3.5V
Working temperature: -30 -100 ℃	Temperature test range: - 30℃ -100 ℃	Temperature test range: -30-100 ℃
Sleep current: <20uA	Operating frequency: 433.92 MHz	Quiescent current: <0.5 uA
Frequency modulation method: FSK	frequency modulation method: FSK	frequency modulation method: FSK
Endurance: charging 2 hours per week	Air pressure test range: 0-900Bar (62.0PSI)	Operating frequency: 433.92MHz
Receiver sensitivity :> - 105 dbm	Transmit power: <8dbm	Transmit power: <8dbm
		Air pressure test range: 0-900Bar (62.0PSI)

3. Function Description

3.1 Start Up

Press any key when the display power off, then release once hearing "Di…Di….",then the display light and System boot.

3.2 Shut down

While the display is on, press the left and right key simultaneously for 2 seconds, then System will shut down.

3.3 Automatic code function

3.3.1 In the main interface, press the middle button for 5 seconds, then will enter into the automatic code mode, and the display left front wheel will have number "00" flashing.

3.3.2 While the left front wheel flashing, take the display near to the external tire pressure, it will automatically receive the data which comes from left front wheel. If the display doesn't receive the data, then make the display close to the tire, rotate manually the external tire pressure sensor, deflate first and then tighten and watching the display at the same time. Repeat the same steps to near the left front---right front---right back--left back to finish the automatic code. Then the display will show the four wheels tire pressure and temperature after driving 50-200meters.

3.3.3 When you deflate, can't Interrupt but need to continue, and the time can't less than 8 seconds. You need to know about your maximum tire pressure before you inflate, don't exceed the maximum tire pressure.

After the above steps, the sensors are activated, enter into automatic code mode, the display will receive the RF signal, and prompt "di…di" sound, and show the latest ID number, the system will automatically jump out.

4. Tire position adjustment

Long press the right button for 3 seconds into the wheel changing mode, Four groups nixie tubes display static the tire position label(number 0-3),number changed by the middle button, number cycles from 0 to 3, Left button to select the tire position, the selected tire corresponds to nixie tubes flashing, then automatically exit the wheel changing mode after a lap. For example, the tire position and corresponding label as: Left front--0, right front--1, right back--2, left back--3. If change the left front and right back tires, then change the left front 0 as 2,and right back 2 as 0, then exit the wheel changing mode to normal use.

Press the right button to switch the tire temperature and battery power display mode.

Battery Power display mode

Press the left button to switch the unit of tire pressure air pressure, The main interface default to display the pressure in bar units, pressure units to switch to PSI

5. Tire pressure alarm Up-Down Limit

Press the left button for 3 seconds to enter into, then press the middle button to select the upper or lower limit, right button to adjust the value. The lower limit can be adjusted in 1.1-2.5bar, the upper limit as 2.5-4.4bar

6. Abnormal Alarm

6.1. Sensor failure alarm

The host light-screen states 60 minutes and do not receive the data from sensor, it determine the sensor failure, the corresponding temperature Tire pressure digital tube display "-", the alarm lights with long flashing.

6.2. Tire pressure alarm

Tire pressure bar with the corresponding digital tube displays the current tire pressure and flash, tire position lights flash, alarm lights flash and buzzer alarm shortly.

6.3 Low pressure alarm

The sensor temperature is above 70 degrees, the corresponding digital tube displays the current temperature of the tire and flash, the tire position indicates light flash, the warning light flash and buzzer alarm shortly.

6.4. Sensor low-power alarm

When the sensor needs to replace the battery, the temperature digital display LO, alarm light flashes for a long time.

6.5. Press any key or delay 30 seconds can turn off the buzzer alarm, but the display alarm can only be released to stop the failure

6.6. Receiver charging reminder. Use USB to charge, it displays the power is empty and frame flash.

7. External sensor installation process

7.1. Find the corresponding tire, unscrew the dust cap, lock the nut into the gas nozzle

7.2. Lock nut and make it close to sensor, then lock sensor tightly.

7.3. Check for air leakage with soap water

External sensor battery replacement:

When it alarms for sensor voltage low, please replace the battery in time, recommend to use the imported CR1632 batteries. Our company will not undertake the liability for the problems, which resulted in the replacement of poor quality battery by the user

A. Turn the housing counter-clockwise with a hexagonal wrench

B. Take out the old battery and keep it

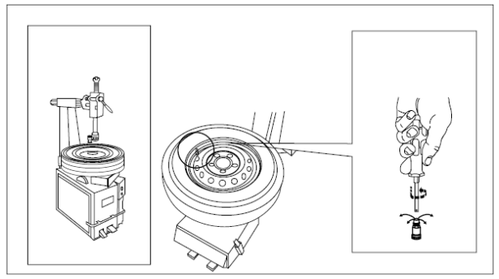
C. Remove the new battery, posing the positive and negative pole position

D. Install the battery in the opposite direction for one second and then correct it.

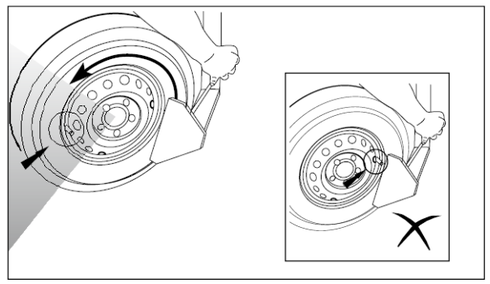
E. After the battery is installed, rotate the housing clockwise and install the sensor in its original position as described in the previous section.

8. Internal sensor installation

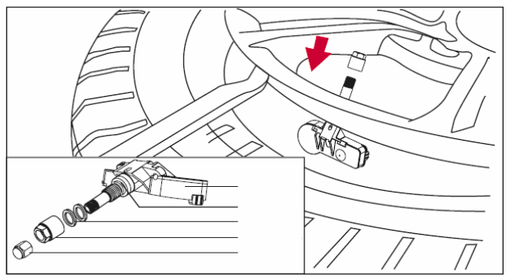
8.1. Remove the tire from the vehicle and deflate it.



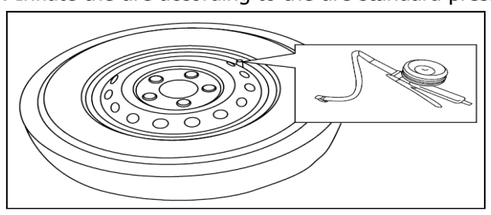
8.2. Separate the tire coat and wheel by tire removal machine, avoid scratching and damage to the transmitter in disassembling process.



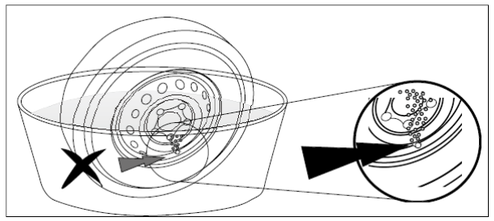
8.3 Remove the original tire valve, and clean the rim valve hole, the transmitter from the rim of the valve hole piercing, the valve rubber ring to align with the valve hole, anatomizes, so as not to fix the leak and then install On the flat washer, and then wrench to tighten the jacket nut to 5Nm, about hand-tighten the nut and then clockwise 2 turns, the tire set into the rim.



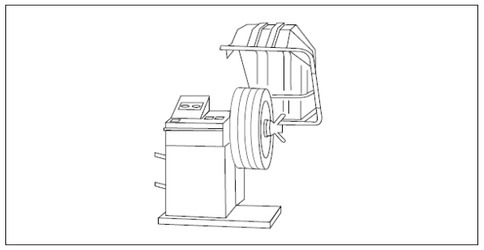
8.4. Inflate the tire according to the tire standard pressure of leaving factory



8.5. Check the transmitter installation air tightness, if the valve leakage, it may be caused by improper installation to damage the rubber ring or not tightening the nut. Please adjust the installation, and finally tighten the protective cap.



8.6. Adjust the dynamic balance



【Remarks】

A.The transmitter is suitable for standard rims with Φ11.3mm bore diameter

B. Transmitter installation should be carried out by professionals; the installation must be in accordance with the order of the emitter labeled in order to ensure the installation correct and reliable.

B.After the installation of the transmitter, the dynamic balance of the tire must be adjusted in order to avoid the vehicle abnormal.

9. Notice

A. Each sensor has a corresponding position, to be properly installed on the corresponding tire

B. After the installation of the sensor, check whether the tire leaks, if necessary, coated with soap water at the gas nozzle to confirm.

C. Any failure caused by leakage of installation, the company does not assume joint and direct liability.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radi-ate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/ TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.