



# TPMS

Tire Pressure Monitoring System



*Let technology protect our lives !*

TPMS-1A / 1B

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## User Manual



## 6. Unit Conversion of Air Pressure and Temperature

### 6.1. Barometric unit conversion

A kilogram /square centimeter =0.98Bar=14.2PSI=98.0665kpa

A barometric=1.03327kilogram/ square centimeter

### 6.2. Temperature unit conversion

$C=5/9(F-32)$        $F=9/5C+32$       **Note:** C stands for Celsius;  
F stands for Fahrenheit.

## 7. Solutions to Malfunction

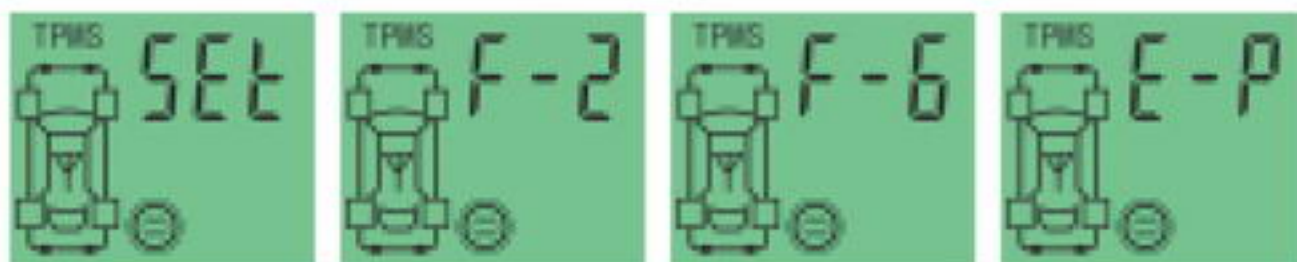
Symptom	Possible cause	Solutions
No display on LCD	No connection with power	Check whether the connection to the plug of the host system is well
Sometimes the keys are not workable	Under the condition of receiving data	Do not operate the keys during the first 5 minutes after the car starts.
The host system can not receive the tire pressure data from one extension	The host system has not been powered during the data transmission of the extension system	Power the host system firstly, and then install the extension system. Tire installation place should be within 10 meters range from the vehicle, or after the installation of the extension system, the vehicle starts after 10 minutes, That's when the data from the extension system will reach the host system.
One tire will utter "over pressure" after a long period of driving	Temperature rising causes pressure rises	Deflate some air, temperature rising may cause pressure rising approx 0.3Bar
Utter "over pressure" or "air leakage" under normal tire pressure	The set of the standard tire pressure is not correct	Under E-P set menu, reset the vehicle mode which is corresponding to the tire pressure

## Index

1. Introduction of TPMS (Tire Pressure Monitoring system).....	1
2. Installation of the System.....	2
2.1. Installation of the Host System.....	2
2.2. Installation of the Extension System.....	2
3. Operation Manual of the Host System.....	5
3.1. Keys Explanation.....	5
3.2. Self-detection of the After-electrified State.....	5
3.3. Circular Screen Display.....	5
3.4. Circular Display Halt.....	6
3.5. Various Alarm States.....	6
3.6. Manual Reading.....	7
4. Settings.....	7
4.1. Air Pressure Unit Setting.....	7
4.2. Temperature Unit Setting.....	8
4.3. Tire Position Setting.....	8
4.4. Standard Tire Pressure Setting.....	9
4.5. Screen Brightness Setting.....	9
4.6. Loudspeaker Volume Setting.....	10
5. Various Warning Functions.....	10
6. Unit Conversion of Air Pressure and Temperature.....	11
7. Solutions to Malfunction.....	11
8. Key Technology Parameters.....	12
9. Warnings.....	12

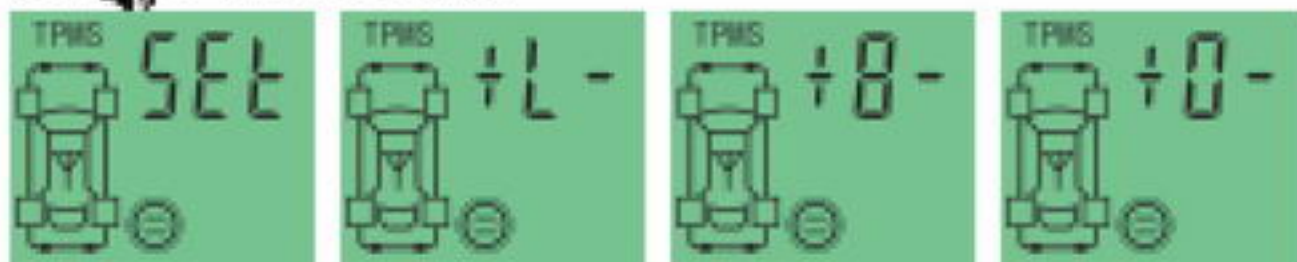


Press ▼ to “SET” press ⏮ to display “P-b” then press ▲ to set vehicle mode, “E-P” is displayed on the screen. Press ⏮ to display the chosen vehicle mode which is set as “F-2” Press ▲ again to move to mode “F-3” Press ▲ to continue the list until you find the vehicle mode corresponding to your vehicle. When the vehicle mode which is corresponding to the tire pressure is selected, press ⏮ to finish the setting.



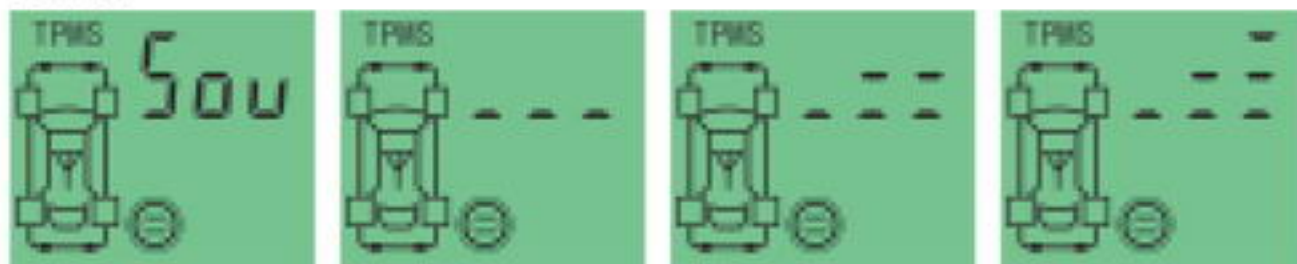
#### 4.5. Screen Brightness Setting

Press ▼ to display “SET” press ⏮ to display “P-b” then press ▲ to set brightness, the screen displays “+L-” Press ⏮ to set screen brightness, press ▲ to increase the screen brightness until the max brightness “+8-” press ▼ to weaken the screen brightness until the min brightness “+0-” press ⏮ to save the change.



#### 4.6. Loudspeaker Volume Setting

Press ▼ to “SET” press ⏮ to display “P-b” press ▲ till the screen displays “Sou” Press ⏮ to set loudspeaker volume. press ▲ to increase volume and press ▼ to decrease volume. Press ⏮ to save the new volume setting.



## 2. Installation of the System

### 2.1. Installation of the host system

Insert the plug of the host system in the smoke-device socket, the host system will utter “dingdong” ※(TPMS-1A will utter “di”) and enter self-detection state, thus the installation of the host system is complete.



### 2.2. Installation of the extension system

#### 2.2.1. Relationship between Extension tabs and location of Tires

Each extension has a tab (No.1-No.6) and each number corresponds to a tire position. The corresponding relationship between the pre-set tabs before the product leaves the factory and the exact location of the tires is illustrated in the picture below.



According to the corresponding relationship between the extension tab and the tire's location, install the extension in each tire respectively.

#### 2.2.2. Installation Process of the Extensions (B02)



① According to the standard process of tire disassembly, take the tires off the automobile, deflate them and remove the rubber tires.





② Clean the hubs and the inner side of the rubber tires.

③ Select the extension corresponding to the tire position. Then place them close to the valve of the wheel hub. Countermark two brims of the extension on the wheel hub, Remove the oxygen layer by the petiolate abradant (B05) and keep the hub clean within 10mm range of the mark.










will utter audio frequency alarm).press  if you want to replay voice information. Under normal condition, the screen will display front-right tire data, and pressing  can utter front-right tire voice information.

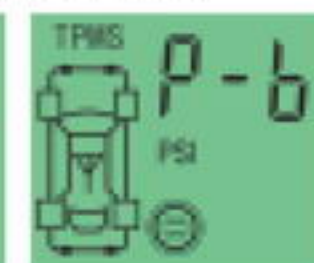
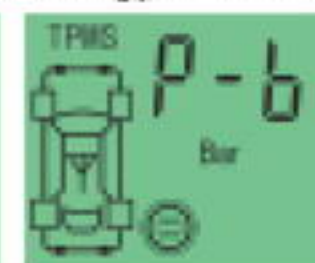
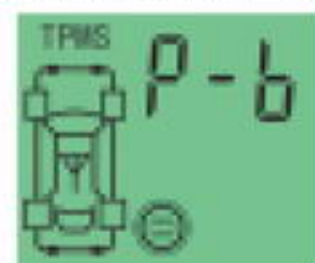
② The screen will display no.1 if press , press  or  to select a tire, after choosing a certain tire, if press ,the screen will display pressure or temperature data,and the loudspeaker will utter corresponding voice information (the host system can store the latest information of 6-tires), no.7 is the product function information.









## 4. Settings

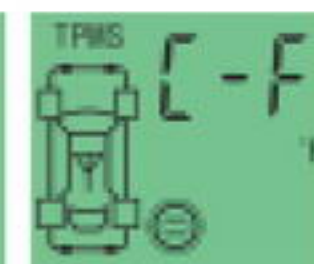
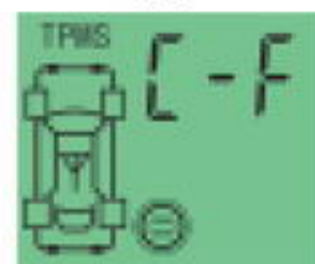
### 4.1. Air Pressure Unit Setting

Press  to "SET" then press , "P-b" is displayed. Press  to air pressure unit setting, the screen will display "PSI" make a shift between "PSI" and "Bar" by pressing ,press  to save the change.



### 4.2. Temperature Unit Setting

Press  to "SET" press  to enter settings, the screen displays "P-b" press  till the screen displays "C-F" then press  to set temperature unit, the screen will display "C" then press  to shift between C and F. Press  to save corresponding temperature unit.



07



08



09



10



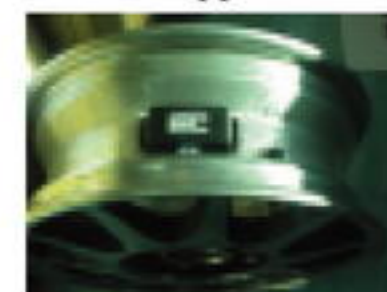
11



12



13




14


#### Notes:


- B02 is a fully dimensional equipment, installation at any position will not affect its performance.
- B02 had better be installed near the valve in the tire, in order to indicate its position so that damage to the extension during tire or wheel repairs can be avoided in the future.

## 3. Operation Manual of the Host System

### 3.1. Keys Explanation

 Enter key: confirm setting information

 Page Up key: Enter switch

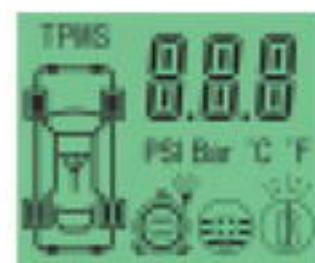
 Page down key: Enter settings



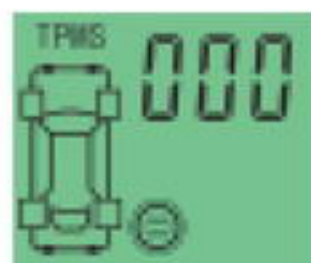


### 3.2. Self-detection State

When the host system is inserted in the socket of the smoke-device, the host screen pattern is as chart LED-1 and utter "dingdong"※(TPMS-1A will utter "di"); 3 seconds later, the host screen pattern is as chart LED-2.



LED-1



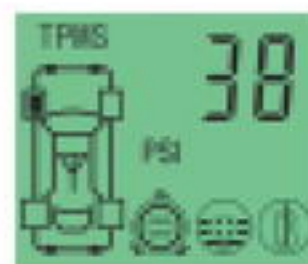
LED-2

### 3.3. Circular Screen Display

After the host system receives normal tire pressure data from each extension, the screen begins to make a shift between the data of tires per 5 second and displays are as follows in two cycles: front-right tire pattern and pressure data → rear-right tire pattern and pressure data (chart LED-3) → front-left tire pattern and pressure data → rear-left tire pattern and pressure data → rear-right inner tire pattern and pressure data → rear-left inner tire pattern and pressure data. Finally, the screen displays the front-left tire pattern and pressure data.



LED-3



LED-4



LED-5

### 3.4. Circular Display Halt

When the host system receives abnormal data of the tire, it will display the alarm data ceaselessly. Circular display will stop under following situations: press any key, electrified again, after 2-cycle periods.

### 3.5. Various Alarm States

① When the host system receives "over pressure" alarm, the loudspeaker will utter voice alarm ※(TPMS-1A will utter "di-di-di-di" audio frequency alarm), the screen will display pressure data and unit, corresponding blinking tire position on the screen and 3 signs of over pressure (chart LED-4).

② When the host system receives "tire leakage" alarm, the loudspeaker will utter voice alarm, the screen will display pressure data and unit, corresponding the blinking tire position on the screen and sign of tire leakage (chart LED-5).

③ When the host system receives "under pressure" alarm, the loudspeaker will utter voice alarm ※(TPMS-1A will utter "di-di" audio frequency alarm), the screen will display pressure data and unit, corresponding blinking tire position on the screen and sign of under pressure (chart LED-6).

④ When the host system receives "low pressure" alarm, the loudspeaker will utter voice alarm ※(TPMS-1A will utter "di-di" audio frequency alarm), the screen will display pressure data and unit, corresponding blinking tire pattern and sign of low pressure (chart LED-7).

⑤ When the host system receives "Quickly rising temperature" alarm, the loudspeaker will utter voice alarm ※(TPMS-1A will utter "di-di-di" audio frequency alarm), the screen will display temperature data and unit, corresponding blinking tire position on the screen and sign of thermometer (chart LED-8).

⑥ When the host system receive "over high temperature" alarm, the loudspeaker will utter voice alarm, the screen will display temperature data and unit, corresponding blinking tire position on the screen and sign of thermometer (chart LED-9).

⑦ When the host system receives "ultra high temperature" alarm, the loudspeaker will utter voice alarm ※(TPMS-1A will utter "di-di-di" audio frequency alarm), the screen will display temperature data and unit and corresponding blinking tire position on the screen and sign of thermometer (chart LED-10).

### 3.6. Manual Reading

① The system will automatically display warning information and utter voice alarm ※(TPMS-1A



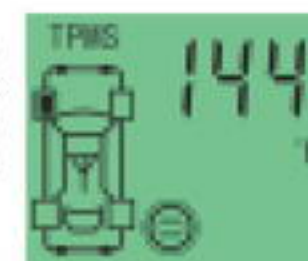
LED-6



LED-7



LED-8



LED-9



LED-10



④ Remove the oxygen layer from the stickup surface of the extension by the petiolate abradant and keep it clean. Both poles of the extension are the main stickup parts.

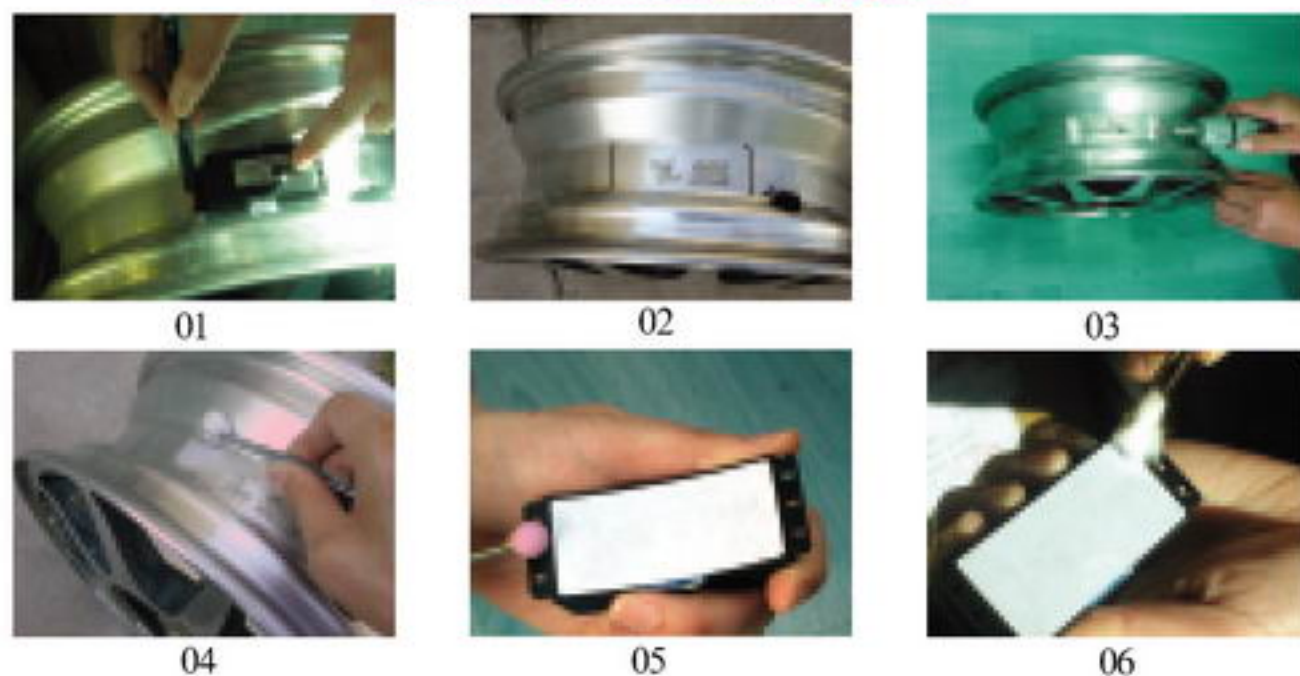
⑤ Squeeze out 1/4 of A and B glue (B03) respectively and mix the glue well to make a smooth paste. Now spread the glue on the abraded parts of the wheel hub and the ends of the extensions. Then remove the paper covering from the extension and stick the corresponding extension to the wheel hub within 3 minutes (room temperature), and locate them within 5-10 minutes and reach use intensity within 30 minutes.

⑥ Put the rubber tire on the hub, be careful so as not to destroy the extension (B02), then charge and make dynamic balance of the tire.

⑦ Paste the tab (B04) corresponding with the due tire on the frame of the hub, indicate the position of the sensor. Please clear up the frame surface before pasting.

⑧ Install the other extensions on the rest tires as above-mentioned procedures.

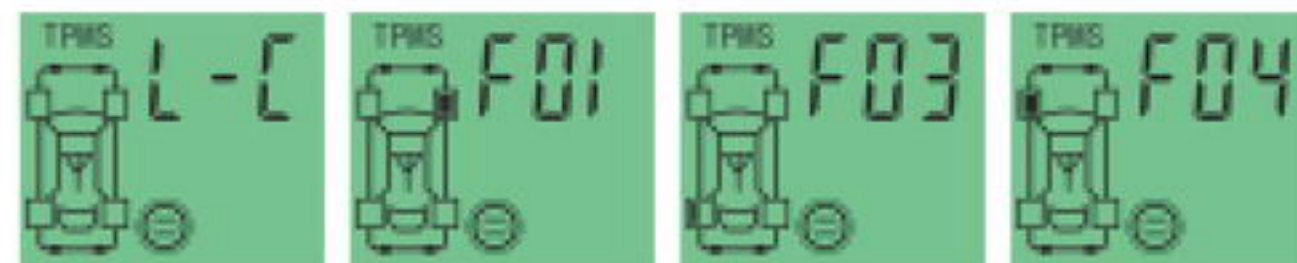
#### Extension System Fixation Approach



### 4.3. Tire Position Setting

After installing this product to the vehicle, if tire adjustment is needed due to the normal exhaustion, you must reset the host system. Procedure of resetting is as follows:

Press ▼ to display "SET" press 🔊 to enter setting, the screen displays "P-b" Then press ▲ till "L-C" is displayed, press 🔊 to set tire positions. The screen displays that the front-right tire's extension is "F01" press ▲ continuously the screen will display the cycle "front-right → rear-right → rear-left → front-left → rear-right inner → rear-left inner → front-right" Press ▼ to continuously select "F01-F02-F03-F04-F05-F06-F07-F08-F09" which will be used for the current tire position, press 🔊 to save the setting.



### 4.4. Standard Tire Pressure Setting

Select the vehicle mode which is corresponding to the tire pressure as follows:

vehicle mode	standard tire pressure				corresponding vehicle mode
	Psi	Bar	Kpa	kilogram/centimeter	
F-1	26	1.79	180	1.83	SANTANA
F-2	30	2.07	207	2.11	NISSAN\ PASSAT\ CITROEN
F-3	35	2.42	241	2.46	XIALI\ JETTA\ BUICK
F-4	40	2.76	276	2.81	Buick business car
F-5	45	3.11	311	3.17	CHEVOLET V6-4.3
F-6	60	4.14	414	4.23	IVECO\ JINBEI
F-7	80	5.52	553	5.63	Passenger coach
F-8	120	8.28	829	8.45	Bus
F-9	140	9.66	967	9.86	Cargo truck




## 1. Introduction of TPMS (Tire Pressure Monitoring System)

The TPMS (tire pressure monitoring system) for automobiles comprises of a host system and several extension systems (sensors). Its host system is inserted in the smoke-device socket without wire connection, the extensions system are fixed on the wheel hubs respectively.

After the automobile with this system is started, the extension systems in the tires will be powered automatically and they will examine the real-time pressure and temperature of the tires through the sensors. If one tire's air-pressure or temperature is out of normal range, the host system will receive wireless messages and send corresponding voice, screen and digital display, warning the driver in advance.

Compared with its kindred products, TPMS's advantages are as follows: easier installation, more precise detection, longer life-span of the batteries, and TPMS takes the lead in integrating the voice alarm which can inform drivers of the unsafe situation without the need to look at the screen. As a result, it ensures the safety of drivers, passengers and automobiles.

**Content Table of the TPMS System**

Parts	Name	4-tires vehicle	6-tires vehicle	
host system (B01)		1	1	
extension system (B02)		4	6	
A,B glue (B03)		4	6	
Label (B04)		1	1	
Petiolate abradant (B05)		1	1	

### Notes:

1. After you open the package, please check whether the items are complete according to the table above. If you find any of the piece missing or damaged, please contact with the local franchiser/distributor.

2. When the product leaves the factory, every extension is installed with special batteries with a life-span of more than 5 years.

## 5. Warning Functions (TPMS-1B)

No	Malfunction	Warning conditions	Warning mode	
			voice	display
01	Over pressure	Tire air pressure variance $\geq 1/5$ fiducial tire pressure	✓	✓
02	Tire leakage	Air pressure drops over 2PSI in 10 Secs. within $\pm 1/5$ fiducial tire pressure	✓	✓
03	Under pressure	Tire air pressure variance $< 1/5 - 1/3$ fiducial tire pressure	✓	✓
04	Low pressure	Tire air pressure variance $< 1/3$ fiducial tire pressure	✓	✓
05	Quickly rising temperature	Rising up over 10°C within 10 Mins when the temperature is over 40°C	✓	✓
06	Over high temperature	The inner temperature of tire surpasses 70°C	✓	✓
07	Ultra high temperature	The inner temperature of tire surpasses 80°C	✓	✓
08	System self-detection	System can receive pressure data from extensions when the car starts every time	✓	✓

## Warning Functions (TPMS-1A)

No	Malfunction	Warning conditions	Warning mode	
			audio frequency alarm	display
01	Over pressure	Tire air pressure variance $\geq 1/5$ fiducial tire pressure	"di-di-di-di"	✓
02	Tire leakage	Air pressure drops over 2PSI in 10 Secs. within $\pm 1/5$ fiducial tire pressure	"di-di"	✓
03	Under pressure	Tire air pressure variance $< 1/5 - 1/3$ fiducial tire pressure	"di-di"	✓
04	Low pressure	Tire air pressure variance $< 1/3$ fiducial tire pressure	"di-di"	✓
05	Quickly rising temperature	Rising up over 10°C within 10 Mins when the temperature is over 40°C	"di-di-di"	✓
06	Over high temperature	The inner temperature of tire surpasses 70°C	"di-di-di"	✓
07	Ultra high temperature	The inner temperature of tire surpasses 80°C	"di-di-di"	✓
08	System self-detection	System can receive pressure data from extensions when the car starts every time	"di"	✓



## Preface

Thank you for buying our automobile tire air pressure monitoring system. This system surpasses most competing products in the international market in terms of the main features. It can not only prevent tire exploding, but can also increase the service lives of the tires, decrease fuel consumption, overcome deviating braking caused by the tires, avoid abnormal wearing of the vehicle parts. Moreover, it also has integrated in it a wireless voice prompt/alarm device that does not require any cable installation. With this system, your car will be much safer, more comfortable and fuel-efficient.

Application has been made for this product to the relevant organizations for international patent protection. Our enterprise has been issued the ISO9001 by the National Quality Assurance Limited. This product has passed the testing and attestation of the International organizations like the E-MARK of Europe.

Wireless digital transmission with emission power of only 5 milliwatts is applied between the host system and the sensors, which is equal to 1/100 of transmitting power of a normal cell phone. The transmission is non-continuously instant and it will not do any harm to human bodies or the related equipments in the automobiles. The life-span of the lithium batteries in the sensors, which are quite energy-saving, is longer than 5 years. Therefore, this product has been described as the "green" safety alarm system in the industry.

## 8. Key Technology Parameters

### Host System

Voltage: 12V-24V  
Alarm power consumption  $\leq 2W$   
Operating Condition humidity  $\leq 90\%$   
Voice alarm frequency power  $\geq 0.5W$   
Display mode: digital and pattern  
Receiving frequency: 433.92 MHz  
Carrying number rate: 2.4K bit/s (TPMS-1A is 4.8K bit/s)

Static power consumption  $\leq 0.36W$   
Operating temperature range:  $-30^{\circ}C-80^{\circ}C$   
Alarm mode: voice (TPMS-A is audio frequency alarm)  
Digital display: temperature/pressure  
Wireless modulating mode: ASK/FSK  
Receiving sensitivity:  $-105dBm$

### Extensions System

Life cycle: 5 years (5 hours each day)  
Operating Condition humidity  $\leq 90\%$   
Transmission power  $\geq 8dBm$   
Carrying number rate: 4.8K bit/s  
Pressure detection precision:  $\pm 2PSI$   
Start-up condition: 3 rings /sec.

Operating temperature range:  $-40^{\circ}C-95^{\circ}C$   
Transmission frequency: 433.92MHz  
Modulating mode: ASK/FSK  
Pressure detection range: 0-100PSI  
Temperature detection precision:  $\pm 2^{\circ}C$   
Weight:  $< 35g$

## 9. Precautions and Warnings

- Any installation method not included in the provision of this manual and any kind of structural changes in the product are strictly prohibited.
- For avoiding harm to the system equipments, please do not open the host and extension system's outer shell. If you want to disassemble the tire, please keep in mind the position of the extensions to avoid damage to the extensions.
- This system can monitor the tire air pressure and temperature of the automobile effectively. User should drive the automobile under normal tire air pressure with the help of this system.
- The battery in the extension can't be replaced. If the battery has no electricity or is damaged, please replace the assembly part.
- When the car is running, pressing the mode button will disperse the attention.
- Even when this product is working normally, sudden steering or sudden application of sudden brakes can also be dangerous. So you should take appropriate measures according to the situation.
- Filling any kind of chemicals into the tire (for example, glue-water) will damage the extensions thereby affecting the running of the system. In case of chemical injection in the tire the producer will not provide the quality guarantee of the damaged system.
- After buying this product, the customer should fill in the after-sale service card, so that the producer can provide after-sale services to the customer conveniently. If the product is not bought from the appointed franchiser, the producer has the right to refuse any form of after-sale service.
- Please forgive us that the technical renewal of this product will not inform you.



**Note**

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 radiate radio frequency energy and, if not installed 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.

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.

changes or modifications could void the user's authority to operate the equipment