

KUENDER
Wireless Tire Pressure Monitoring System

KD-TPMS-T04R05

User's Guide

Version 4.1c



KUENDER Co., Ltd.

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1. Wireless tire pressure monitoring system

The wireless tire pressure monitoring system is a wireless device which detects the tire pressure status and transmits the signal to the receiver and displays on the screen to monitor the status in real time driving.

The driver can clearly know the pressure, temperature as well as the power running out condition of the sensor of each tire from the screen. (Normally the screen of the receiver will not show the battery status unless in low level.) When the tire is in unusual status, the receiver shall warn to remind the driver automatically so that the abnormal situation can be dealt with and avoid from the accident.

2. Warning

FCC warning

The system is in compliance with U.S. FCC regulation term 15th requirements. However, users are advised to aware the following matters: (1) The system may be not work due to surrounding interferences. (2) The system may be failed due to incorrect operation.

Warning: Any changes or modifications are not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Function of the warning system

- Pressure Low warning: (when tire pressure lower than warning value (default= 23 psi))
- Pressure High warning: (when tire pressure higher than warning value (default= 45 psi))
- Battery operation voltage low warning: (when battery operation voltage is in low level)

- Temperature abnormal warning: (when tire temperature higher than warning value (default= 185°F))

Warning: Please slow down and stop the car in a safe place to check whether the tire is in abnormal condition whenever the system generates abnormal state warning.

Warnings in using the device:

- The system can detect the tire status effectively, but can not avoid the accident. However, the user can take use of this system to ensure the normal condition of tires in the driving. Those unqualified or seriously worn out tires are advised not to be used.
- In order to operate the system in normal condition, do not dismantle any element or outer shell of the system.
- Injection of some certain chemicals (i.e. anti-leakage resin...) into the tire will damage the function of the sensor; therefore, the manufacturer will not guarantee the system operation on such condition..
- This system provides automatic monitoring function that the user has no need to read information by the operating keys in driving and avoids distracting the driving attention.
- The front shield glass should avoid from using metallic heat insulation film.

3. Specification

Spec.of sensor:

Pressure range in sensing	6 psi ~ 70psi
Accuracy of pressure	+/- 2 psi (32°F ~ 158°F)
Accuracy of temp.	+/- 6°F (32°F ~ 158°F)
Working temp.	-22°F~221°F
Storage temp.	-40°F~257°F
Tuning method	FSK
Working frequency	433.92MHz
Battery voltage	>3.1 V
Battery life	> 3 year
Wt. (incl. valve)	45g ± 2g

Spec. of receiver:

System power	DC 12V(cigarette lighter power)
Working temp.	14°F~167°F
Storage temp.	-4°F~185°F

Spec. of remote controller (option):

System power	CR-2032 (3V)
Working temp.	14°F~167°F
Storage temp.	-4°F~185°F
Working frequency	433.92MHz
Modulation method	FSK
Life cycle	> 1 year

4. System set up

The system has been divided into two main parts and is required to be installed separately:

1. To set up the receiver in the vehicle.
2. To set up Install the sensor in the tire.

Suggest setting up the receiver in the vehicle first, and then the sensor.

5. Contents list

The contents of the wireless pressure monitoring system include:

NO.	Items	Q'ty
1	Sensor	4
2	Receiver	1
3	Car charger	1
4	ID card (for setting tire location)	4
5	Remote controller (option):	1



Sensor



Receiver



Car charger



ID card *4



Remote controller (optional):

6. Installation receiver

The power of product is coming from car charger and it will be turn on without any key when power core inter into the cigarette .This will enable the receiver into the detecting state.

Set up the receiver



7. Installation sensor

(**The sensor should be sat by the professional technician!)

- A. Raise the car by lifting machine or jack;
- B. Take off the tire from the car and deflate the air inside. Peel off tire from tire frame.
- C. Remove the original air valve from the tire frame.
- D. Find out the corresponding sensor for this tire position (sensor label specifies the corresponding tire position).Then dismantle the valve accessories. (valve cap, valve nut, spacer)
- E. Install sensor air valve on the tire frame to replace the original one with label face outwards.
- F. Move back the spacer and valve nut in sequence (locking torsion of valve nut is 30~50 kgf-cm or 3~5 N-m). Fix the sensor in the tire frame.

- G. Move back the tire. (Pay attention to the partial press of tire cover or sensor damage when perform installation) Then perform tire inflation according to standard tire pressure.
- H. Move back the valve cap after inflation is concluded and perform tire dynamic balance. Finally, install back the tire in the car.
- I. Repeat step B to H. Install other sensors in the corresponding tires until the full installation.

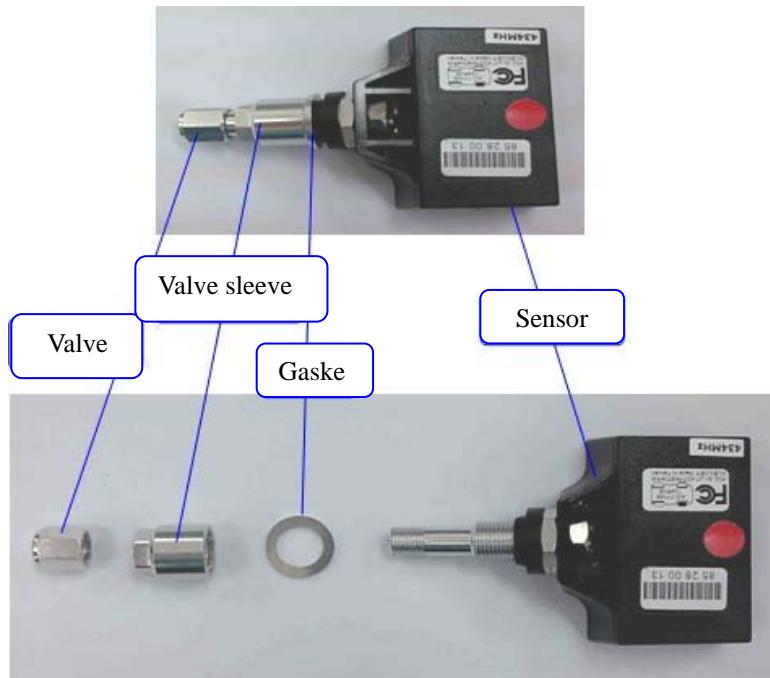


Illustration of sensor nipple kit



Illustration of sensor in correspondence to the tire location



Illustration of sensor installation



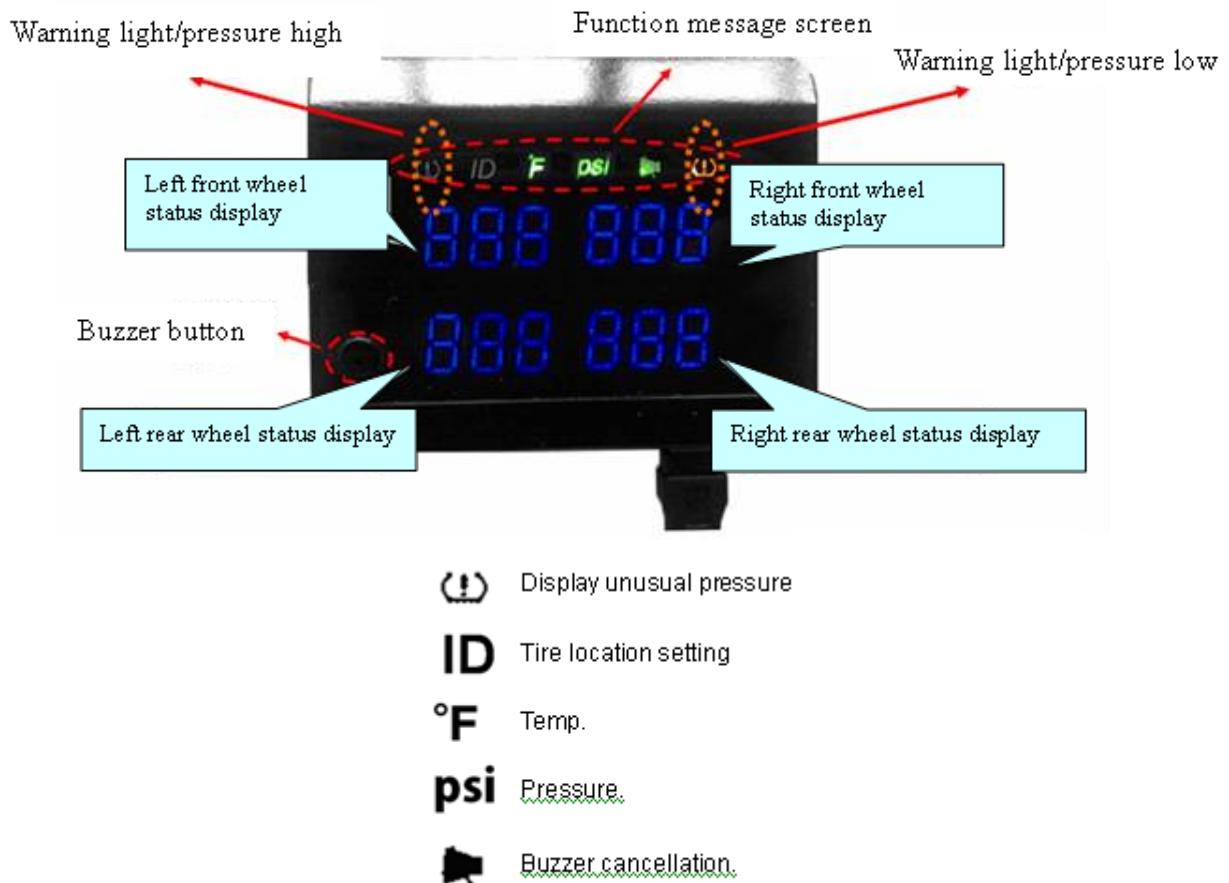
Illustration of sensor installation in completion



Attention: keep away from sensor position when performing tire installation and dismantling in case of sensor damage.

8. Instruction of receiver interface

Description of panel and keys:



****Unit: pressure psi ; temp. °F ****

9. Turn ON status

The monitoring of the tire pressure and temperature will be activated automatically once vehicle power supply has been switched on. In case the receiver has not received the signal within 20 minutes with (---) symbol which is showed on the screen, it maybe the signal being shaded. Move the car forward or backward and start up again can solve the problem.

10. Normal condition

In normal condition, the screen will show all tires' pressure value about 20 seconds. and then the temperature value about 5 seconds in turn.



The pressure mode



The temperature mode

11. Warning tire pressure

When tire pressure in warning condition, the system will show the tire location, pressure and indicator **W** will be flashed (red: over high pressure; yellow: over low pressure); in the same time buzzer will be made the “bi-“sound.



Tire pressure over low



Tire pressure over high

12. Warning Temperature

When tire temperature is over high, the system will display the location and temperature. In the same time, the warning tire value will be flashed and the buzzer is made the “bi-“sound.



Display of warning temperature

13. Sensor battery capacity too low

When sensor battery capacity is lower and detected, the system will display the “blo” words in the tire location, shown as below:



Display low capacity of battery

14. The button of buzzer

Condition of buzzer in activation:

The buzzer will beep upon unusual tire pressure, unusual tire temperature or sensor battery low being detected until recovering to the normal condition.

Manually switch off the buzzer:

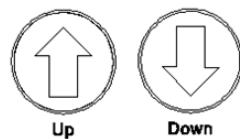
When unusual condition encountered (buzzer activated), the driver can push the button to switch off the buzzer into mute mode, in the same time the indicator will be lighted up shown as below. Push again to cancel muting and back to normal mode.



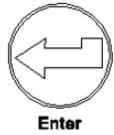
PS: Re-start the device will stay in non-muting mode.

15. Description of the interface of remote controller and operating function settings (option):

The interface of remote controller:



Direction key/ numerical +/-key



Function confirmation key



Function exiting key

The settings of operating function:

The remote controller is incorporated with KD-TPMS-T04R05. It is necessary to enter into receiver **setting mode** before setting the remote controller functions which is shown as follows:

1. **Turn on remote controller:** Insert ID card into the remote controller (any one of the 4 colors cards) as shown below:
2. Press the “Enter” key of the remote controller several times within 10sec. after turn on the receiver and wait until **ID**, **°F** & **psi** indicators all light up and enter into the setting mode as shown below for menu selecting:

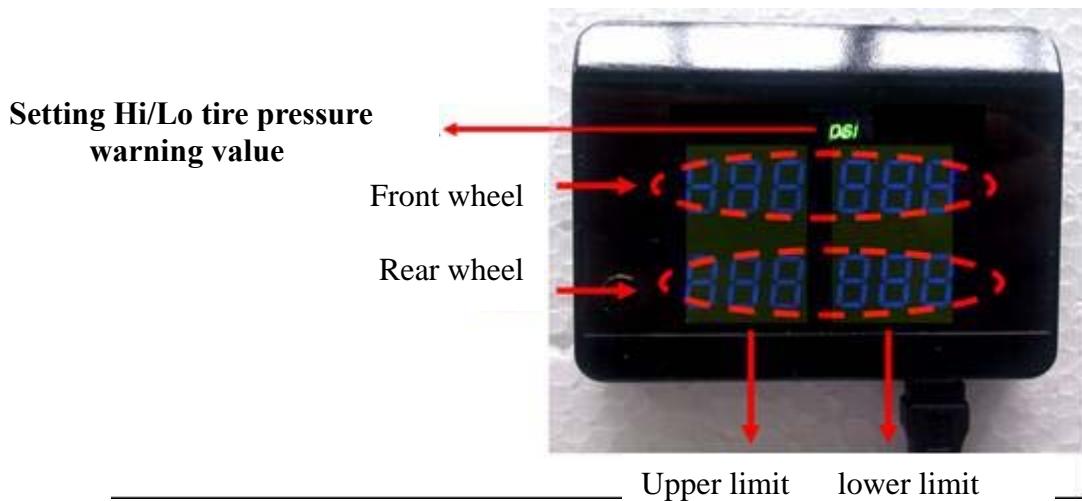


ID card insert remote controller



Product KD-TPMS-T04R05

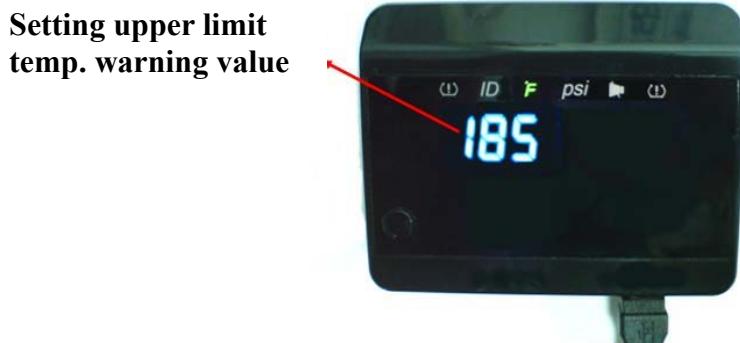
A. The setting of pressure warning value



Tire pressure setting menu: select P and press **Enter** to show up the upper/ lower limit value of the front/ rear tires. In which, the upper value of the front wheel will be flashed first for setting. Press **Enter** to confirm and jump to the lower value of the front wheel in flashing for setting. The sequence of flashing and setting is: upper limit/ front wheel → lower limit/ front wheel → upper limit/ rear wheel → lower limit/ rear wheel. Press **Return** key to finish setting mode and the setting is finished after re-start.

Initial value: upper limit at 45 psi, lower limit at 23 psi.

B. The setting of temperature warning value



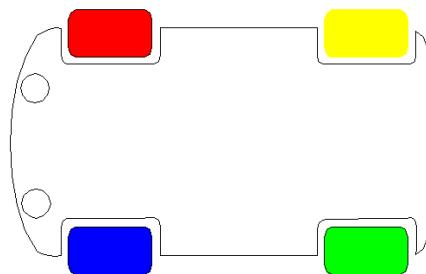
In setting mode, press ↑ to select $^{\circ}\text{F}$ and enter into the temperature setting of upper limit (with $^{\circ}\text{F}$ indicator lighted). To use direction key ($\uparrow\downarrow$) on the remote controller to adjust the temperature value as required, then press **Enter** to complete and go back to the menu. Press **Return** to exit setting mode and the device will be had sat after restarting.

Initial value: upper value at 185°F

C. The exchange of tire location

In setting mode, press **↑** key to select ID, then press **Enter** to go into ID setting mode with left upper wheel displayed in “---”. Select the tire location to be exchanged, insert the ID card and press **Enter** to complete the setting with SET displayed on the screen and “b” twice. Press **Return** to go back to the setting menu. Press Return again to exit. Re-start the device to complete.

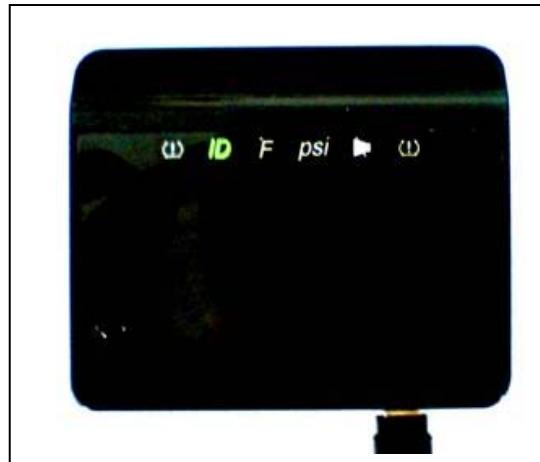
Four colors ID cards in red, yellow, green and blue represent the right front, right rear, left rear and left front wheel location respectively and correspond to the color label on the sensor as follows:



Example of operating

The setting process of exchanging left rear wheel to the left front:

1. Enter into setting mode
2. Select ID in menu as shown in figure:



3. Press **Enter** to go into the ID setting mode. The left front wheel will display “---” as shown below:



4. Insert the ID card of the left rear wheel into the remote controller, then press **Enter** to complete with “SET” displayed and “b” twice, then go back to “---” in 2 seconds. as shown below:



5. Press **Return** and go back to the setting menu as shown below:



6. Press again the **Return** key and exit the setting mode, re-start up the device to complete the tire exchanging.
7. The process of exchanging other wheels is the same as above from step1~step 6.

***Users are advised to keep ID card safely and securely. In case of missing, please inquire from the manufacturer (by providing the sensor serial no.).

***Users without remote controller should bring ID card to the original installation factory if changing tire location is required.

Appendix

Unit :

$$1 \text{ psi} = 6.895 \text{ kpa}$$

$$1 \text{ kpa} = 0.145 \text{ psi}$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) * 5/9$$

Normal range of tire pressure:

The slight variation of tire pressure resulted from some external factors during the driving is normal. Generally speaking, variation scope shall be within 3 ~ 2 psi according to standard tire pressure of 32 psi. Hence, variation of 29 psi ~ 35 psi is normal during the driving.

The replacement of sensor:

The battery life of the sensor is at least 3 years in normal operating condition.

The warranty of the sensor is one year.

Knowledge of using tires:

It is important to keep the correct tire pressure all the time that the life cycle can be extended and the accident can be avoided. Besides, never flat the tire when tire is hot. Don't use recycled tires or never to use the different model of tires on the same axle. Keep in mind these important rules would guarantee the safety of tires and vehicles.