



# **Tire Pressure Monitoring System (TPMS)**

## **User Manual**

**EL-409**

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## **Notice**

### **System Scope of Use and Warnings**

#### **■System Installation and Usage**

Use of the TPMS requires that qualified personnel according to the instructions here have properly installed it. This system is suitable for use on a passenger car, SUV and 4X4 tires.

TPMS can monitor and provide tire pressure and tire temperature in real time to help the driver control and keep the normal tire pressure in order to reduce the fuel consumption and extend the tire life, and also reduce the possibility of vehicle breakdown on the road or heavy incident or crash to occur.

#### **■Reacting to Alerts**

When an alert or warning is received, reduce vehicle's speed and proceed to a safe location to stop where the tire can be inspected and /or serviced.

The low-pressure alert indicates that the air pressure has dropped to a selected minimum and a high-temperature alert indicates that the temperature of the tire content has surpassed the threshold value set.

### **Federal Communication Commission Interference Statement**






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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

### Accessory Line Up

Accessories	Pictures	QTY
Display Module	 <p>A black rectangular display module with a yellow LCD screen. The screen shows 'TPMS' at the top, followed by two rows of '34 34' and 'PSI PSI'. Below the screen are four small indicator lights and the text 'E-LEAD' at the bottom.</p>	1
Receiver Module	 <p>A black rectangular receiver module with a coiled black cable and a connector at the end.</p>	1
Tire Sensor	 <p>A black rectangular tire sensor with a white label on the side that reads 'E-LEAD TPMS 1.0 0.0 0.1'.</p>	4
Nylok Screw	 <p>A small metal screw with a red Nylok coating on the head.</p>	4
Aluminum Valve	 <p>A small metal valve with a black plastic cap and a threaded end.</p>	4
User Manual		1

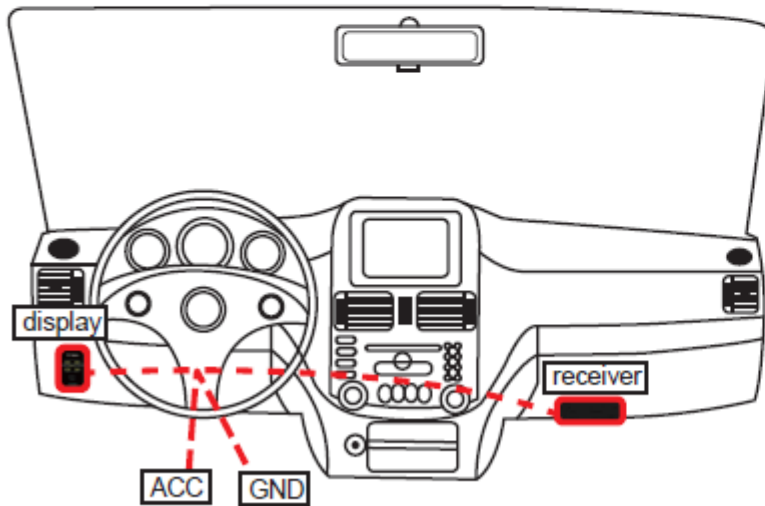
## Installation

### Display & Receiver module installation





1. Take out original blind spot and replace with TPMS display module
2. Stick receiver module in glove box
3. Connect display and receiver module
4. Find ACC and GND wire from car to connect to get the power for display and receiver module.





### Note




TPMS installation require knowledge of car power system, please find qualified technician for installation.



## Tire Sensor installation

Step	Operation Process	Photographs
a	<p>Take off the 4 tires and mark 1~4 for each tire position.            No.4 = Left Front Tire ;            No.1 = Right Front Tire ;            No.3 = Left Rear Tire ;            No.2 = Right Rear Tire</p> 	 
b	<p>Take off the tire and flat them then, to change to the E-Lead TPMS valve, follow the steps:            1. Snap in the valve from the internal edge side of the wheel.</p>	

b	<p>2. Adjust the valve's angle, and make sure the valve is vertical to the edge of the wheel.</p>	
	<p>3. Put on the circle screw (washer) from the outside of the wheel.</p>	
	<p>4. Tighten the valve with the nylok screw from the outside of the wheel.</p>	
	<p>5. Use the alan key provided to tighten.            ※ Force torque 4 N.m (40.8Kg.cm)</p>	

c	<p>Put the marked No. 1 tire sensor to the tire which is marked No. 1. as step as. photo and follow steps:</p> <ol style="list-style-type: none"> <li>1. Install the tire sensor to the valve.</li> <li>2. Use the nylok screw and tighten up with the tire sensor. (Please use the screwdriver which is included to the accessories bag)</li> <li>3. Adjust the tire sensor's angle (paste on the surface of the wheel), then tight up the with the nylok screw.</li> <li>4. Put on the valve's cap, and finish the installation</li> </ol>	 <p>※ When there is a need to re-install the tire sensor, please use a new nylok screw in order to prevent the usage of the old ones.</p>
d	Place the No. 2 tire sensor to the tire which is marked No.2, and set up the other 2 sensors in the same manner as shown in the step "c".	
e	Make sure there is no other liquid or dust present around the area of the tire sensor.	
f	After installation, inflate the tire to the appropriate air pressure as suggested in each vehicle's user manual	
g	Balance the tires with the tire balance machine.	



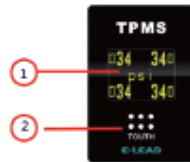
h	Place the tires back to it's corresponding position as shown in the photograph on step "a".	
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Once TPMS is installed correctly, turn on the ignition to start monitoring the tire pressure/temperature.

<p><b>Note</b></p>
<ol style="list-style-type: none"> <li>1. Pls. follow user manual installation instructions, the manufacturer won't take any responsibility on any problems, if the user is not following installation instruction.</li> <li>2. Pls. follow the default value strictly, different vehicle model has it default value on tire pressure. The manufacturer won't take any responsibility if the user is not following the default value. (According to the national std. actual tire pressure &gt; std. tire pressure x 125%, means the tire pressure is too high.; however, actual tire pressure &gt; std. tire pressure x 75%, means the tire pressure is too low). Pls. take reference on the car maker default value for tire pressure.</li> <li>3. The TPMS installation shall be installed by qualified tire shop, and be aware to prevent any damage to TPMS while fixing or change tires.</li> </ol>

## Display Module Functions, Operations & Settings

### Display Screen / Key press timeouts

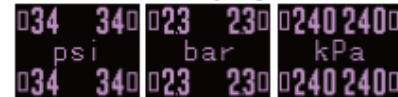


- ① Display Screen: shows tire pressure, temperature and warning information etc.
- ② Touch Button: short press to select/switch; long press to confirm selection/back to normal display/cancel alarm.

#### Key Press Timeouts:

1. Short press: over 500ms and within 2 sec.
2. Long press: over 2 sec.
3. Long press and back to normal display: over 5 sec. (except warning screen)
4. Long press to cancel alarm: over 5 sec. (only at warning screen)
5. No operation and auto back to normal display: over 10 sec. (except pairing/swap setting screen)

### Tire Pressure Display



1. TPMS system would detect 4 vehicle tires' pressure and show on the display screen, pressure unit could be switch between Psi/Bar/KPa ( refer to TIRE UNIT setting)
2. To switch to temperature model, simply short press the touch button

### Tire Temperature Display



1. TPMS system would detect 4 vehicle tires' temperature and show on the display screen, temperature unit could be switch between degree C/degree F ( refer to TEMP UNIT setting)
2. To switch to pressure model, simply short press the touch button

### Warning Display

#### [1] Tire Pressure Abnormal

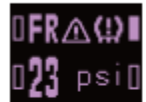


1. When tire pressure lower than 75% of system pressure value setting or 125% higher than it (refer

to TIRE SET setting). System would show warning screen with sound alarm.

2. To cancel alarm, press and hold the touch button over 5 sec.

#### [2] Urgent Tire Blowout



1. When tire pressure lost 2psi (about 0.1 bar or 100 kpa) within 30 sec., system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

#### [3] Tire Temperature Abnorma



1. When tire temperature higher than 85 degree C (185 degree F), system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

#### [4] Tire Sensor Signal Abnormal



1. When receiver module didn't receive the signal of any of the tire sensors over 10 minutes, system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

#### [5] Tire Sensor Low Battery



1. When tire sensor voltage lower than required supply level, system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

#### [6] TPMS System Abnormal



1. When power on, receiver module initial process error and could not obtain signal from tire sensors, system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

## [7] Tire Balance Abnormal



1. When front/rear pair of tires' pressure difference over 8 psi (about 0.4 bar or 400 kpa), system would show warning screen with sound alarm.
2. To cancel alarm, press and hold the touch button over 5 sec.

## Settings

### [1] TIRE UNIT

Change tire pressure display format, psi/bar/kpa



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SET mode, then long to enter setting layer 2



3. At setting layer 2, short press to select TIRE UNIT mode, then long press to enter setting layer 3



4. At setting layer 3, short press to select desired pressure unit and then long press to put the check in box and confirm selection
5. After selection confirmed, short press to select BACK and long press to return upper setting layer; User can return layer by layer or simply press touch button over 5 sec. to return to normal TPMS display.

### [2] TEMP UNIT

Change tire temperature display format, °C / °F .



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SET mode, then long to enter setting layer 2



3. At setting layer 2, short press to select TEMP UNIT mode, then long press to enter setting layer 3





4. At setting layer 3, short press to select desired temperature unit and then long press to put the check in box and confirm selection
5. After selection confirmed, short press to select BACK and long press to return upper setting layer; User can return layer by layer or simply press touch button over 5 sec. to return to normal TPMS display.

### [3] TIRE SET

Setting standard tire pressure value, so if actual tire pressure lower than 75% or higher 125% of it, system would alarm.



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SET mode, then long to enter setting layer 2



3. At setting layer 2, short press to select TIRE SET mode, then long press to enter setting layer 3



4. At setting layer 3, short press to select FRONT/ REAR and long press to enter numeral setting. Number area is highlighted and short press to add up numbers. Once number selected, long press to confirm and highlight will disappear.
5. After selection confirmed, short press to select BACK and long press to return upper setting layer; User can return layer by layer or simply press touch button over 5 sec. to return to normal TPMS display.

#### Note

1. Standard tire pressure setting value adjustable range  
29~41 psi  
2~2.8 bar  
200~280 kpa
2. Tire temperature setting value is 85 degree C (185 degree F), and this value is not adjustable by user.

## Pairings

### [1] PAIR 1

Once one of the vehicle tire sensors is replaced, to pair the new tire sensor with receiver module follows single tire pairing process.



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select PAIR mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select PAIR 1 mode, then long press to enter setting layer 3



4. At setting layer 3, short press to select desired pairing tire sensor, and then long press to start pairing and the selected tire will be highlighted.
  - ※ Pairing requires actual tire pressure change for up or down 4 psi (0.3 bar or 30 kpa) within 15 sec. to activate the pairing process.



5. After pairing completed, screen shows OK with one beep sound then auto returns to normal TPMS display.
  - ※ During pairing process, short press and select BACK then long press to cancel pairing and back to upper layer; Long press over 5 sec. to cancel pairing and return to normal TPMS display.

### [1] PAIR 2

Once 4 vehicle tire sensors are replaced; to pair the new tire sensors with receiver module follows 4 tires pairing process.



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select PAIR mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select PAIR 2 mode, then long press to enter setting layer 3

## Pairings

### [1] PAIR 1

Once one of the vehicle tire sensors is replaced, to pair the new tire sensor with receiver module follows single tire pairing process.



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select PAIR mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select PAIR 1 mode, then long press to enter setting layer 3



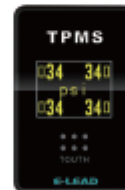
4. At setting layer 3, short press to select desired pairing tire sensor, and then long press to start pairing and the selected tire will be highlighted.
  - ※ Pairing requires actual tire pressure change for up or down 4 psi (0.3 bar or 30 kpa) within 15 sec. to activate the pairing process.



5. After pairing completed, screen shows OK with one beep sound then auto returns to normal TPMS display.
  - ※ During pairing process, short press and select BACK then long press to cancel pairing and back to upper layer; Long press over 5 sec. to cancel pairing and return to normal TPMS display.

### [1] PAIR 2

Once 4 vehicle tire sensors are replaced; to pair the new tire sensors with receiver module follows 4 tires pairing process.



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select PAIR mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select PAIR 2 mode, then long press to enter setting layer 3

## [2] MODE 2

Tire diagonal exchange, to let sensors have correct display position follows mode 2 switching process



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SWAP mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select MODE 2 mode, then long press to enter setting layer 3



4. At setting layer 3, short press to select desired pairing tire sensor, and then long press to start pairing and the selected tire will be highlighted.
- ※ Pairing requires actual tire pressure change for up or down 4 psi (0.3 bar or 30 kpa) within 15 sec. to activate the pairing process.

## [3] MODE 3

Swap front pair of tires to rear and exchange left and right position, to let sensors have correct display position follows mode 3 switching process



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SWAP mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select MODE 3 mode, then long press to enter setting layer 3



4. At setting layer 3, system starts to switch front pair of tires sensor to rear and exchange left and right position.
- After swapping completed, screen shows OK with one beep sound then auto returns to normal TPMS display.
- ※ During swapping process, short press and select BACK then long press to cancel swapping and back to upper layer; Long press over 5 sec. to cancel swapping and return to normal TPMS display.



#### [4] MODE 4

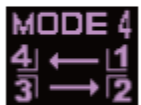
Right Side and Left Side Tire Parallel Exchange, to let sensors have correct display position follows mode 4 switching process



1. At normal display mode, long press touch button to enter setting layer 1



2. At setting layer 1, short press to select SWAP mode, then long press to enter setting layer 2



3. At setting layer 2, short press to select MODE 3 mode, then long press to enter setting layer 3



4. At setting layer 3, system starts to switch FL tire sensor to FR and RL to RR.

After swapping completed, screen shows OK with one beep sound then auto returns to normal TPMS display.

※ During swapping process, short press and select BACK then long press to cancel swapping and back to upper layer; Long press over 5 sec. to cancel swapping and return to normal TPMS display.

## Appendix

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### 1. Signal Description

bar	Pressure value, 1bar=0.1N/mm <sup>2</sup> (Newton=kg x acceleration gravity, mm <sup>2</sup> Km square area)
psi	Tire pressure value, 1psi=0.0689bar
kPa	Tire pressure value, 1kPa=0.01bar
°C	Degree C value, Degree C = (Fahrenheit-32)*5/9
°F	Fahrenheit

### 2. Trouble Shooting

Failure Phenomenon	Possible Cause	Troubleshooting steps
1. No Response after connecting to the power	1. ACC and GND clips didn't well connect to car wires.	Make sure ACC and GND clips well connected to car wires
	2. Faulty of the display and receiver module device.	After the distributor got back the broken-down module be repaired, module should reset the tire sensors' ID using PAIR 2 (4 wheels) setting
2. Display not receiving any signal from the 4 sensors after connecting the power.	1. Wrong tire sensor ID setting on 4 tires.	Reset the tire sensor ID using PAIR 2 (4 wheels) setting
	2. Failure on the receiver circuit of the display.	After the distributor got back the broken-down display be repaired, should reset the ID using PAIR 2 (4 wheels) setting.
3. Display is not receiving any signal of tire sensor and shows warning screen after connecting the power.	1. Incorrect ID setting on the tire	Reset the ID using PAIR 1 (single wheel) setting
	2. Failure on the Tire Sensor	Request for a new sensor from the distributor and reset the system using PAIR 1( single wheel) setting

4. No response on the touch button.	Faulty display module	After the distributor got back the broken-down module be repaired, should reset the ID using PAIR 2 (4 wheels) setting.
5. Pressure (or Temperature) shows in wrong number and position	1. Tire on the wrong position	Ask the Tire Shop to place the tires in the correct position.
	2. Wrong ID setting on 4 tires.	Reset the ID using PAIR 2 (4 wheels) setting.
6. No alarm sound of the display module	Faulty display module	After the distributor got back the broken-down display be repaired, should reset the ID using PAIR 2 (4 wheels) setting