Colorful TPMS LM6040 User Guide

1. Introduction

This Tire Pressure Monitoring System (TPMS) was designed for increasing security, reliability, and understanding on tire conditions of your car. Once you properly install the TPMS, these sensors will automatically monitor pressures and temperatures of tires in real time, and send these data to display through wireless communications. When there is any abnormal pressure (under or over inflated) and/or temperature of tire detected, the LCM display will alert driver immediately through both flash light and voices alarm. This system could ensure you are driving in safety.

About This Manual

- The information in this manual is subject to change without notice.
- This manual has been created with extra care. In case that you have any comments or questions regarding this manual, please contact your local dealer or our Customer Service Center.
- Before operating this set, please fully understand the prerequisite such as specifications or constraints of the hardware and software. We are not responsible and have no liability for any loss, damage or injury as a result of misuse.
- All other products and company names used in this manual are trademarks or registered trademarks of their respective owners.

2. Check Accessories

Part	Photo	Qty
LCM display		1
Power Cord & adaptor (12 to 5V)		1
Fixture: fix display at air condition outlet		1
AT68 sensor		4
Lock Nut	Refer to 3.2.3	4
Tool	Refer to 3.2.3	1
User Guide		1

3. Installation

3.1 Install LCM Display :

3.1.1 Plug in USB adaptor and power on display

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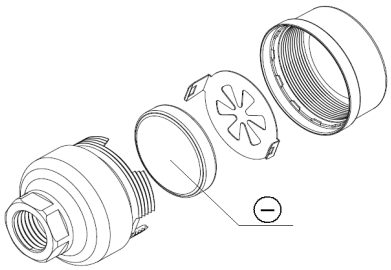
3.1.2 Plug the Mini USB connecter in display.

3.1.3 Use fixture to fix LCM display.

Set fixture at air outlet	Fix LCM display
	

3.2 Install AT68 Sensor:

3.2.1 Install battery into sensor and tighten sensor top cap:

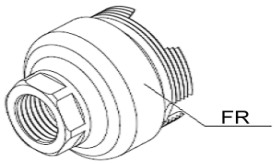


Note: Be sure that the battery polarity was correct.

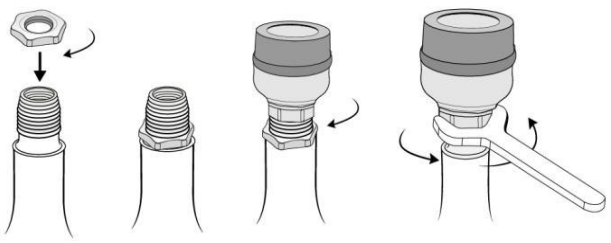
3.2.2 Check Sensor location:

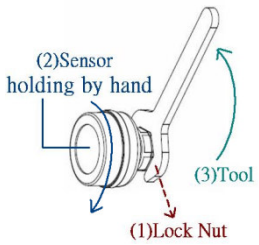
FL: Front Left tyre, FR: Front Right Tyre

RL: Rear Left tyre, RR: Rear Right Tyre



3.2.3 Remove original valve cap and screw (1) lock nut first then (2) sensor onto valve stem.





3.2.4 Screw (1) lock nut back and using (3) Wrenches to lock tight. This two steps lock procedure can effectively prevents sensor from easy removing also in favor of sensor stationary.

Note: User may ignore this fixture, when causing inflation hassle concerns.

3.2.5 Continue to install all other sensors with the same procedure.

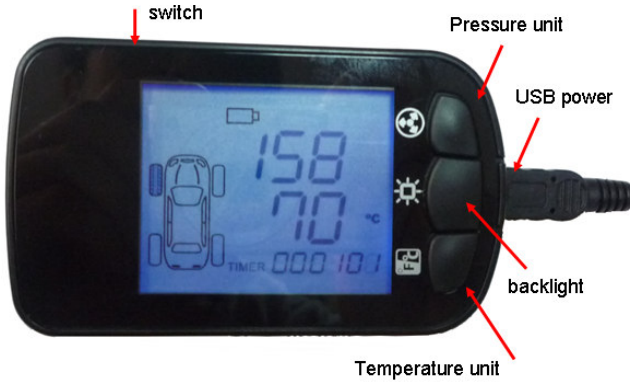
Note：

(1) Clean up the valve stem surface before installation to ensure the conductivity between sensor and valve.

(2) Sensor shall be tight lock at valve steam to avoid leak.

(3) Please replace sensor battery in case voltage is low less than 2.7v.

5. LCM Display Function description



5.1 Keypad:

Power switch：Power ON/OFF/ Backlight selection.

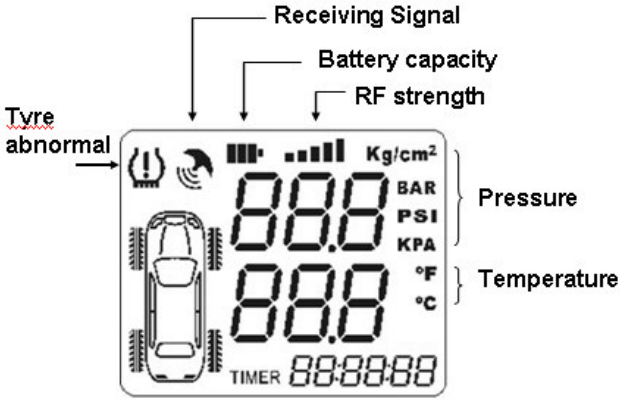
Temperature unit: temperature unit selection/ Setting value decrease.

Pressure unit: Pressure unit selection/ Setting value increase.

Backlight：Turn ON/OFF backlight/ Setting value confirmation.

5.2 Mini USB connector：Provide power input.

5.3 Display:



The LCM Display of LM6040 has 4 operation modes:

1.) Normal Mode: This is the major display mode of LM6040. It shows sensor battery capacity, RF signal strength, pressure, temperature, running time.

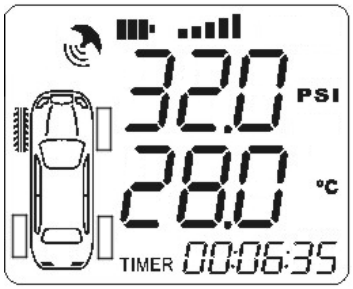
2.) Alarm Mode: When an abnormal detected, this mode will be triggered automatically, user can pre-set trigger conditions.

3.) Setting Mode: It offers kinds of pressure and temperature display unit for selection, setting backlight and pre-set alarm trigger conditions.

4.) Learning Mode: It offers sensor's ID scan and tyre match.

6. Normal Mode:

Once the LM6040 power on, it will start to receive sensor data and show on LCM display. Data of four tyres will shown by turns, Including sensor battery capacity, RF signal strength, tyre pressure, and tyre temperature of single tyre will be shown in the same time, the tyre icon indicates which tyre is displaying. For example, the following figure indicates that front Left tyre pressure is 32 psi, temperature is 28℃, and running time is 6 minutes 35 seconds. Icon indicates sensor's signal is receiving.



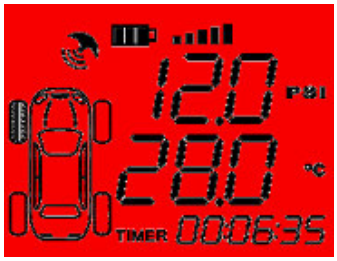
Front Left tyre

7. Alarm Mode:

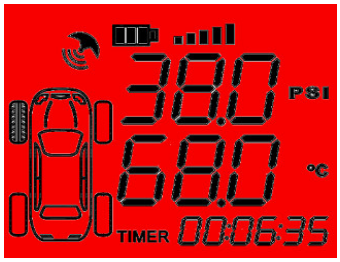
Backlight color turns to red once abnormal events detected.

For example when the alarm pre-set threshold were set as: low pressure threshold is 25.5 psi, high pressure threshold is 45.5 psi, and high temperature threshold is 65℃.

7.1 represents that Front Left tyre pressure was 12 psi, which was too low (<25.5psi)



7.2 Indicates Front Left tyre temperature is 68.0℃, which was higher than high temperature threshold.



8. Setting Mode:

There are three thresholds can be adjusted to fit for individual user requirements. They are High temperature threshold, High pressure threshold, and Low pressure threshold. The backlight color can be adjusted also.

8.1 High temperature threshold setting:

Press °F/°C for 5 seconds to enter this setting mode, backlight color turns to blue and digits flash.

Degrees of setting temperature in both Centigrade and Fahrenheit are shown in the same time. High temperature threshold of each individual tyre can be set independently with the following procedure: First, setting Front Left (FL) tyre high temperature threshold, and then Front Right (FR), Rear Right (RR), Rear Left (RL) tyre.

Keypad function:

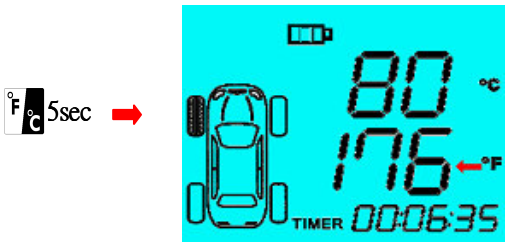
°F/°C : - 1.

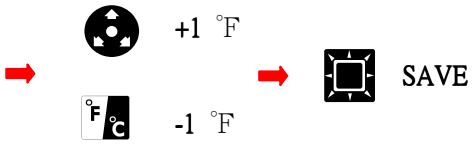
: + 1.

: Save and go to next tyre. After rear tyre saved system quit from setting mode automatically.

Example: Fahrenheit temperature.

Setting High temperature threshold to 176 ℉

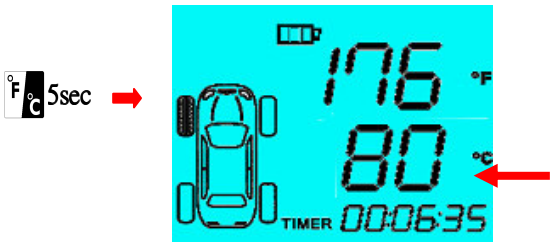


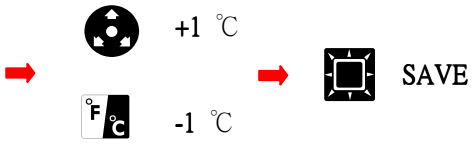


Continue next tyre (FL->FR->RR->RL->EXIT).

The original unit of temperature is Centigrade.

Setting High temperature threshold to 80 ℃





Continue next tyre (FL->FR->RR->RL->EXIT).

8.2 Pressure thresholds setting:

Press 5 seconds to enter this setting mode, backlight turns to blue color and digits flash.

Pressure thresholds will adjust in order of:

High Pressure: Front Left ➔Front Right➔Rear Right➔Rear left➔

Low Pressure : Front Left ➔Front Right➔Rear Right➔Rear left➔ Exit.

Keypad function:

: decrease value (refer to NOTE).

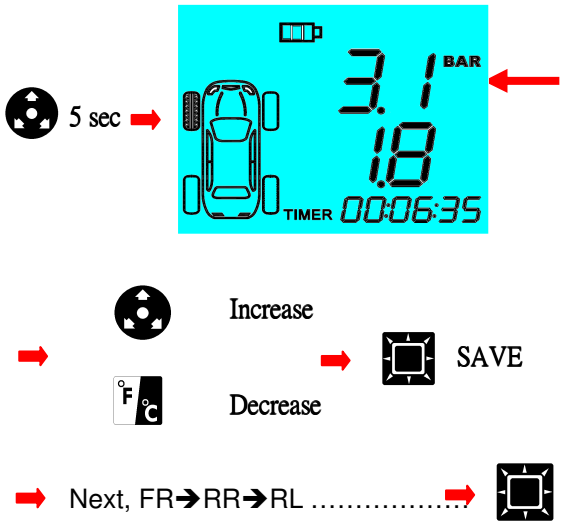
: Increase value (refer to NOTE).

: Save, continue next tyre or exit.

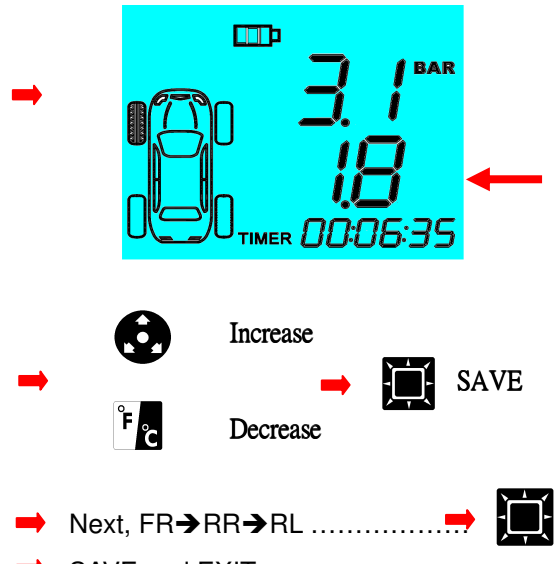
NOTE: Psi= 0.5, KPA= 5, Kg/cm= 0.05, BAR= 0.1

Example: Front Left tyre high pressure threshold setting to 3.1 BAR, low pressure threshold 1.8 BAR.

For setting high pressure threshold:



And then for low pressure threshold



8.3 Backlight color setting:

Under normal display mode, there are 7 colors can be setting as your backlight color, press can toggle backlight on/off, and during backlight turning on, press can change color.

Press for 5 seconds to SAVE backlight.

8.4 Mute

Press and in the same time to toggle mute Enable/Disable.

9. Learning Mode:

LM6040 distinguish tyre sensors by their globally unique Identification Code (ID), so LM6040 shall be told and memorize each tyre's sensor ID and install position before use, Learning Mode provides an very easy mechanism to pair tyre and the sensor locked on it and save result to memory of LM6040.

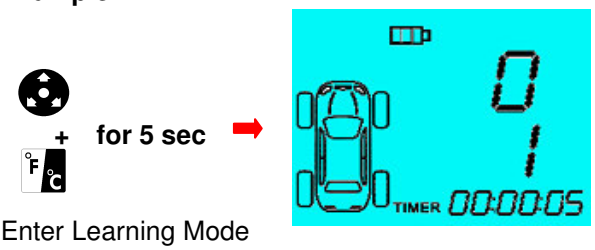
For easy to use, Sensor ID and install position have been paired before shipment, for new products, user can install very easy by following the instruction of installation. If there are any necessary to re-match sensor and tyre (after tyre maintenance for example), please follow the procedure below to re-match sensor and tyre:

First of all, press and in the same time for 5 seconds to enter the Learning Mode, backlight color will turn to blue. Then,

1.) Properly install batteries to sensors.
2.) Power on LM6040.
3.) Place sensors near the LM6040.
4.) Under Learning Mode, LM6040 will start to catch signals of sensors near display. LM6040 counts amount of candidates and shows on upper digit of LCM display. After 4 candidates acknowledged, go to next step to accomplish sensor match process.
5.) Match sensor to front left wheel first. Lock one candidate sensor to front left wheel (the tyre should be inflated to rated pressure), and wait for LM6040 pairs this sensor to front left wheel. Once match successful, front left wheel icon lit and beep to notice user that front left wheel learning process has just completed.
6.) Continue to learn Front Right wheel➔Rear Right

wheel ➔Rear left wheel with the same procedure.

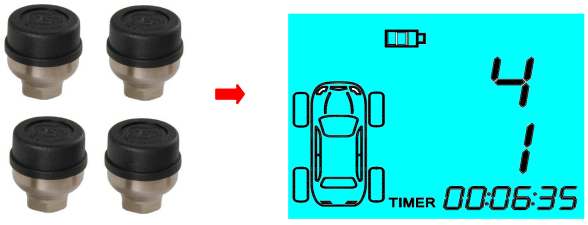
Example:



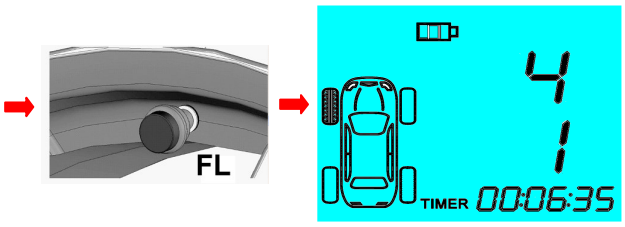
Enter Learning Mode

The **0** indicate 0 sensor candidate,

The **1** indicate the first wheel learning

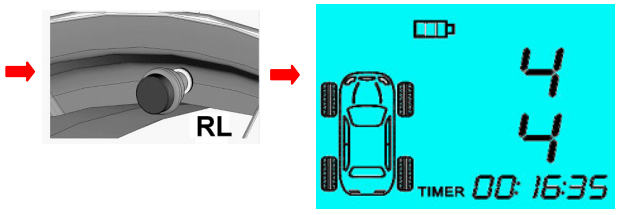


4 sensor candidates acknowledged



Front left wheel learning successful

Continue to learn Front Right wheel➔Rear Right wheel ➔Rear left wheel with the same procedure.



4 wheels learning successful,

7.) The display also can match with internal sensors, the installation program is the same, the only differ is that the internal sensor one by one was set in the tire inflated.

10. Specification

10.1 LM6040 Display:

Operation Voltage	USB 5V
Operation Current	50 mA
Operation Temperature	-40~ 85 ℃
Frequency	433.92 MHz

10.2 AT68 Sensor:

Operation Temperature	-40 ℃ to 125 ± 1℃
Operating Humidity	100%
Frequency	433.92MHz
Monitoring Pressure	0~65± 1 PSI
Battery	3.0 V
Weight	8.5g
Battery Lifespan	About 12 months

11. NOTE and CAUTION：

11.1 No chemical allowed for clearing.

11.2 Do not place the unit at the dusty place. It could cause malfunction.

11.3 Connect the power plug securely. Improper connection will cause over current and may result in malfunction.

11.4 Do not remove cover, or modify the product. Contact your local dealer to perform servicing such as inspection, adjustment, or repair work.

11.5 This product prevents moisture, but not 100% waterproof; do not soak it in water

11.6 The product warranty for one year, please correctly use the product, due to natural and man-made disasters, drops, soak water, smolder, non-normal power supply and other damage caused, not within the warranty.

FCC 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 residental 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.
To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

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.

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