翔鑫科技股份有限公司

Oro Technology Co., LTD

無線胎壓監測器

Tire Pressure Monitoring System

型號 ：W410

ORO TPMS User Manual

To ensure correct operations and services please read these instructions before installing and operating the TPMS

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Notice

FCC

This device complies with Part 15 of 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 grantee of this device could void the user's authority to operate the equipment.

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, with up to maximum cold inflation pressure of 600kPa=87 psi (Gauge) or 700kPa=101psi (Absolute). All instructions below use Gauge as a reference.

■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 while a high-temperature alert indicates that the temperature of the tire content has surpassed the threshold value set.

Caution

The system is a wireless RF product and may not receive a signal due to poor environmental conditions, incorrect operation or incorrect installation. When the system continuously cannot receive any signal from any tire sensor for more than 10minutes since the system has been switch on, the display will show " E2 " and activate the RED abnormal LED light along with an alert sound. If moving the vehicle to a different location to eliminate RF interference does not fix the problem, it is advised to take the car to a qualified tire maintenance center.

W410 Tire Pressure Monitoring System

ORO-W410 Tire Pressure Monitoring Systems (TPMS), can monitor and provide tire pressure, tire temperature, and car battery information in real time. This real time information can extend tire life, reduce fuel consumption, help monitor battery status, and provide a more safe driving condition.

ORO-W410 Tire Pressure Monitoring System includes 4 tire sensors, and1 receiver display. The TPMS monitors the pressure/temperature by snap-in installation into the wheel, and transmits the tire information wirelessly to the receiver. The TPMS display will trigger an alarm when any abnormalities happen to the tire in order to prevent any possible accidents that may happen to the driver/vehicle.

W410 TPMS Specification

1.Transmitter Module Specification	
Battery Life	Up to 5~ 7 years in normal use
Power Supply	3.6 V Lithium battery
Operating Humidity	Max 95%
Storage Temperature	-40 ℃ to 125 ℃
Operation Temperature	-40 ℃ to 115 ℃
Transmitting Power	Max 75 dBuv/m
Transmitting Frequency	433.92 MHz
Pressure Monitoring Range	0 ~ 116 psi (or 0~800 kPa or 0~8 bar)
Pressure Reading Accuracy	±1 psi (or ±7 kPa ; ± 0.1 bar)
Temperature Monitoring Range	-30 ℃ to 115 ℃
Temperature Reading Accuracy	±3 ℃
Module Weight	22.7g ± 1g

2. Receiver Module Specification	
Power Supply	DC 9V ~ 16V
Operating Humidity	Max 95%
Operation Current	<200mA at DC 12V
Storage Temperature	-30℃ to 85 ℃
Operation Temperature	-25℃ to 85 ℃
Pressure Display Range	0 ~ 116 psi (or 0~800 kPa or 0~8 bar)
Temperature Display Range	-30 ℃ to 115 ℃

W410 TPMS Installation

1. Please enter the default set mode before installation to set up required Tire Pressure value for the vehicle. The default pressure value of W410 is 35psi (2.4bar). The warning system will alarm when the tire pressure is higher or lower than 25% of set up Tire Pressure value.

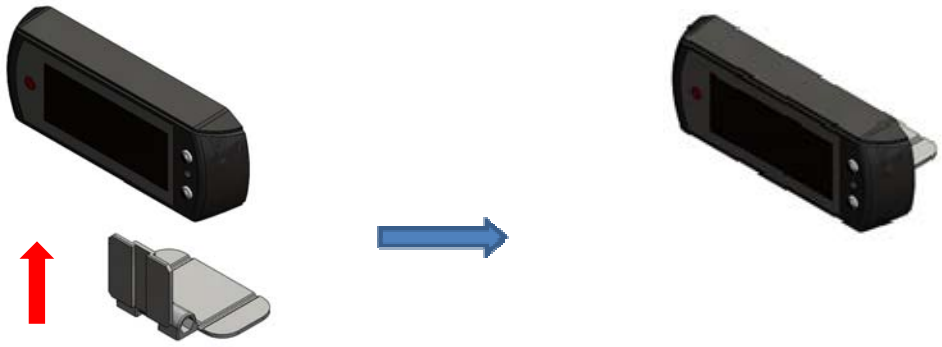
2. The tire temperature will rise simultaneously with Tire Pressure in normal driving conditions. In cold weather conditions such as 6℃ (10℉) the tire pressure may drop 1psi or more. Always check that the psi is within the recommendations of the vehicle's user manual.

NOTE: The standard Tire Pressure set value shall following vehicle manual or placard data.

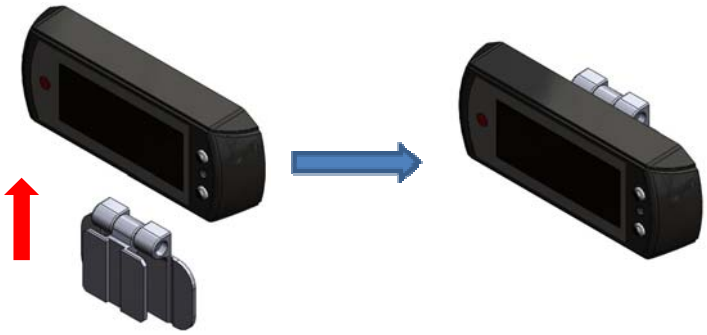
3. Display Installation

a. There are 2 methods to install the display.

1. W410 Standing Adhesive Installation



2. W410 Windshield Adhesive Installation



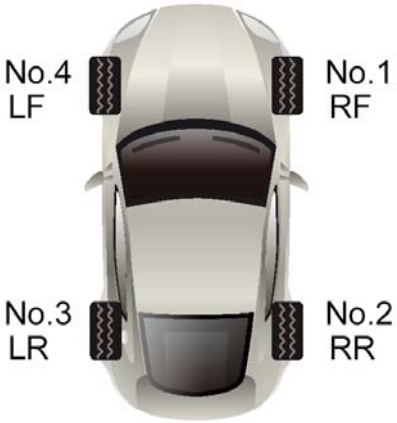
b. Insert the cigar power cable to the plug on the back of display.

c. After decided the position of display, remove the 3M adhesive from the holder, the angle of the display can be adjusted and fixed through the screwdriver.

If the user wants to connect the power directly, please visit an electrical auto shop, dismantle the cigar plug and solder the red and green cable to the AC power. The black and white cables are for grounding.

4. Tire Sensor Installation

Step	Operation Process	Photographs

a	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。 	 
b	Take off the tire and bleed the air. To change to the ORO-Technology TPMS valve, follow these steps: 1. Snap in the valve from the internal edge side of the wheel. 2. Adjust the valve's angle, and make sure the valve is vertical to the edge of the wheel. 3. Put on the circle screw (washer) from the outside of the wheel.	  

	4. Tighten the valve with the nylok screw from the outside of the wheel. 5. Use the alan key provided to tighten.	 
c	Put the marked No. 1 tire sensor to the tire which is marked No. 1. and follow steps: 1. Install the tire sensor to the valve. 2. Use the nylok screw and tighten up with the tire sensor. (Please use the screwdriver to lock the nylok screw using 2.2N · m (22.4kg · cm) torque) 3. Adjust the tire sensor's angle (paste on the surface of the wheel), then tighten up with the nylok screw. 4. Put on the valve's cap, and finish the installation. When there is a need to re-install the tire sensor, please use a new nylok screw.	 
d	Place the No. 2 tire sensor to the tire which is marked No.2, and set up the other 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 the 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.	

Once TPMS is installed correctly, turn on the ignition to start monitoring the tire pressure/temperature and voltage.

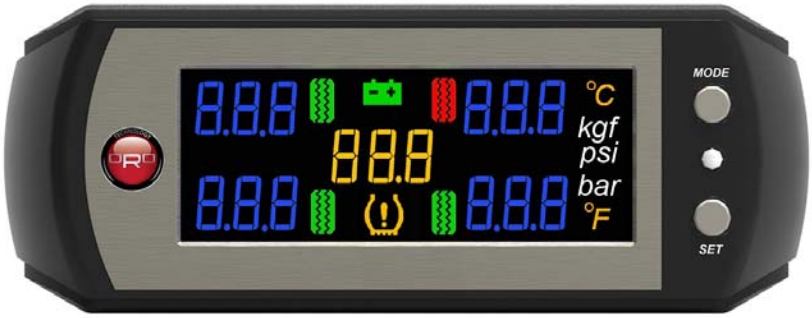
WARNING: The tire sensor will transmit a signal when the vehicle speed is over 20km/hr and will stop transmitting a signal when the vehicle has stopped for over 5 minutes. If the tire pressure is lower than 18psi, the tire sensor will transmit abnormal signal continuously to the user.

There are 2 types for model W410, General Type and Power Saving Type.

a. General Type: transmit a signal each 1 minute when the vehicle speed is under 25km, and transmit a signal each 15sec. when the speed is over 25km.
b. Power Saving Type: transmit a signal each 15sec. when the vehicle speed is over 25km, and stop transmit signal upon the vehicle is stopped over 5min. However, if the tire pressure is lower than 18psi (or 1.24bar), no matter whether the vehicle is moving or stopped, the transmitter will transmit a signal each 30 sec. to warn the vehicle driver.

W410 Systems Operation

1. Display Signals Description



: Battery Signal

kpa psi bar :Pressure Unit

°C °F : Temperature Unit

: Battery Voltage Value

: Normal Tire

: Abnormal Tire Pressure

: Abnormal Tire Condition Signal

: Tire Pressure/Temperature Display Unit

NOTE

There is an ambient light sensor on the top right side of display that is able to adjust the brightness automatically of the LED Display. The display will be brighter in the day and darker in the night to ensure that the user will be able to read the LED Display clearly and not be affected by external lighting.

2. Operation to Change Display Mode

W410 has 3 different modes. They are Tire Pressure Display Mode, Temperature Display Mode, and Pressure-Temperature Alternate Mode. The display will show the tire pressure mode once it is turned on. To enter the temperature mode press the **MODE button** once and to display pressure-temperature press it another time. The system will continuously monitor the tire pressure, tire temperature, battery voltage, no matter what kind of information is being displayed and will notify the driver whenever anything abnormal happens. If the user does not change from the factory default, the system will show the tire pressure display. The 3 modes of display are as follows:

a. Pressure Display Mode: Display of 4 tires pressure and battery voltage unit only.
b. Temperature Display Mode: Display of 4 tires temperature and battery voltage unit only.
c. Pressure-Temperature Alternate Display Mode: Rotating display of tire pressure and temperature with a constant display of battery voltage.

3. How to Change the Unit of Tire Pressure and Temperature

W410 displays 3 kinds of pressure units, bar, kPa and psi. For temperature, Celsius or Fahrenheit can be displayed. To change the factory default for pressure or temperature, press the **MODE button** for 3 sec.

4. How to Modify Factory Default

W410 has 4 factory default modes for users to choose from. Press the **SET button** continuously for 3 sec. to enter the set up mode from Front Tire-Standard tire pressure set up, Rear Tire-Standard tire pressure set up, Tire Temperature-Over Temperature Warning, and Operation Mode. For other parameter settings, please refer below for the relevant process:

NOTE: The user should change the suitable pressure unit for own vehicle before entering into the setup mode.

Set up Front Tire Pressure Value: Range 24psi~80psi (1.7bar~5.5bar), the default set value is 35psi (2.4bar)

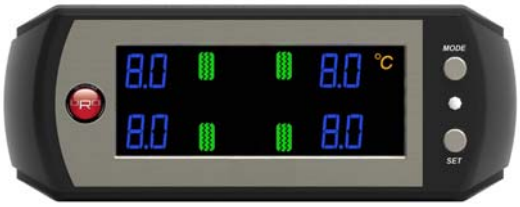
a. Press the **SET button** for 3 seconds to enter the Front Tire-Standard Tire Pressure Setting Mode. The unit increases by 1 psi with each press of the button. When it has reached 80psi (5.5bar), pressing the button again will return the system unit to 24 psi (1.7bar).
b. The system will enter to Rear Tire Pressure Value Mode automatically by quickly pressing the **SET button**.

Set up Rear Tire Pressure Value: Range: 24psi~80psi (1.7bar~5.5bar), the default set value is 35psi (2.4bar)

a. Press the **SET button** for 3 seconds to enter the Rear Tire-Standard Tire Pressure Setting Mode. The unit increases by 1 psi with each press of the button. When it has reached 80psi (5.5bar), pressing the button again will return the system unit to 24 psi (1.7bar).
b. The system will enter to High Temperature Alarm Value Mode automatically by quickly pressing the **SET button**.

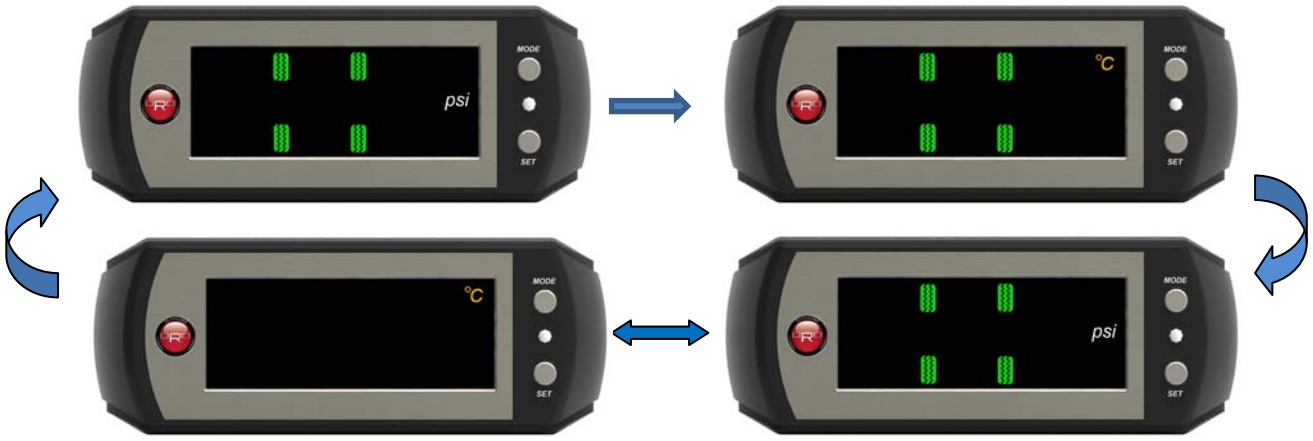
Set up Tire High Temperature Value：Range: 60℃~90℃（140℉到 194℉), the default set value is 80℃（176℉)。

a. Press the **SET button** for 3 seconds to enter the Standard Tire Temperature Setting Mode. The unit increases by 1℃（1℉) with each press of the button. When it has reached 90℃ (194℉), pressing the button again will return the system unit to 60℃（140℉).
b. The system will enter to display set Turn ON Mode automatically by quickly pressing the **SET button**.



Set up Device TURN ON Mode：Displaying Pressure, Temperature and Pressure/Temperature rotate displaying, 3 modes for option, the default set is Pressure displaying.

a. Quickly Pressing the **Mode button** will allow selection of the TURN ON Mode.
b. 3 modes are shown below. The pressure value can be psi, kPa, bar. The Temperature value can be ℃, ℉ which can be changed by following the above instructions.



Rotate Displaying Pressure & Temperature

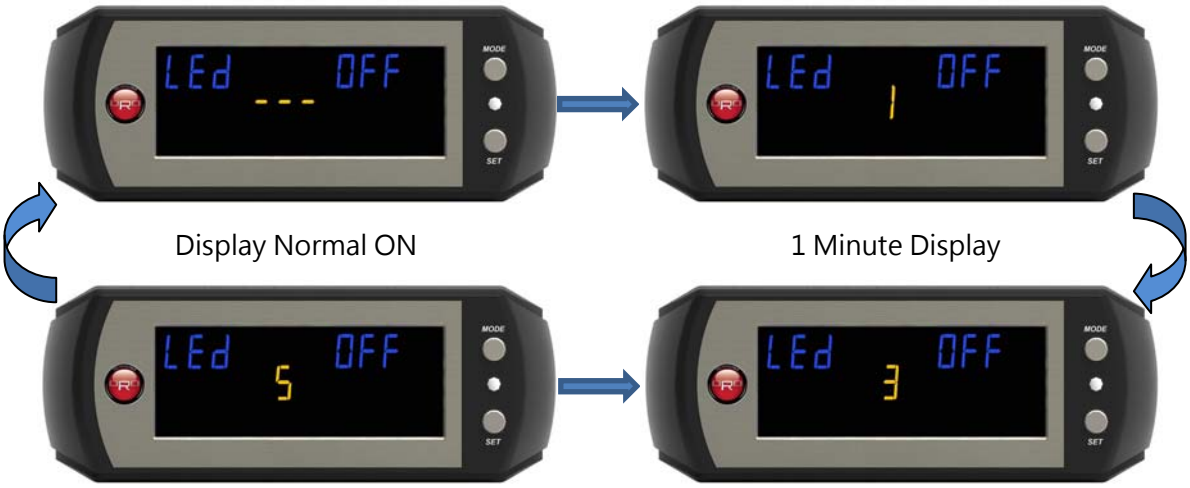
c. After quickly Pressing the **SET button** to TURN ON the device successfully, the system will enter AUTO Display TURN OFF Timing Set Mode automatically.

AUTO Display TURN OFF Timing Set Mode：There are 4 modes to select: Normal ON, 1 minute display, 3 minutes display and 5 minutes display.

a. Quickly Press **MODE button** to select the AUTO TURN OFF Timing Mode. The AUTO TURN OFF timing starts counting after receiving the 4 tires info. The system keeps monitoring tire pressure, tire temperature and battery, any upon any abnormality,

will alarm and display instantly.

b. The 4 mode display are as bellows：



Display Normal ON　　1 Minute Display

5 Minutes Display　　3 Minutes Display

W410 Alarm Mode Description

Tire Pressure over Low/High Alarm Mode：When tire pressure is over low or high than 25% of set value.

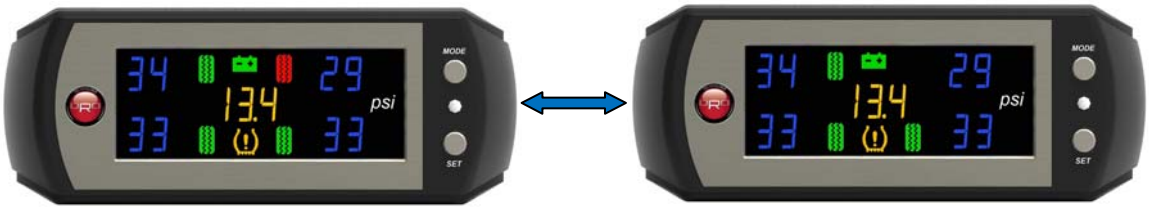
Warning Method：The abnormal tire will flash RED with Beep sound as warning.

Tire Temperature High Alarm Mode：When the tire temperature is higher than set value.

Warning Method：The abnormal tire will flash RED with Beep sound as warning.

Rapid Pressure Air Leaking Alarm Mode：When the tire has a rapid pressure air leaking situation. **(Vary more than 3psi or 20kPa in 30sec.)**

Warning Method：The abnormal tire will flash RED with Beep sound as warning.



Battery Low Voltage Alarm Mode：When battery voltage is lower than 11.5V.

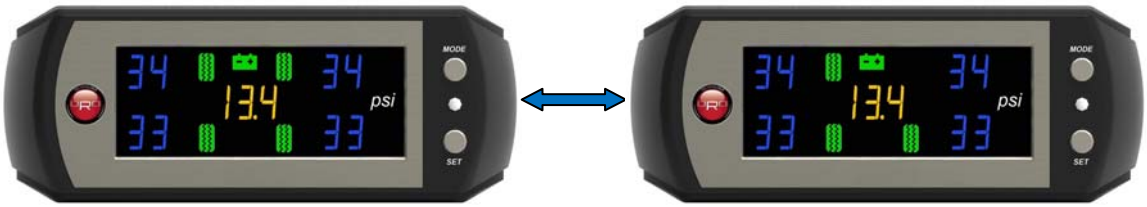
(Regardless the vehicle engine is operating or not.

Warning Method：Battery light will show in RED.

TPMS Sensor Low Battery Alarm Mode：When the tire sensor has a low battery status.

(Suggest to replace the tire sensor with new ORO sensor)

Warning Mode：The tire light will flashing.



Receiver Display Abnormal Alarm Mode：When receiver display has a default failure.

Warning Mode：Show E1 and Greed Light does not work.

No Signal Detecting Alarm Mode：When receiver module is not able to receive signal from tire sensor over 10 minutes.

Warning Mode：Show E2 on the display without Green Light.

NOTE：1. When the alarm beep sound happens, pressing the MODE key continuously for 3 second will turn off the audible alarm.

2. When there is an abnormal status in the receiver module and the unit is not able to receive signals from tire sensor, please contact customer service.

W410 Set for Tire Changing and Rotation

Upon completion of changing or rotation of tires, the user should also reset the position of the tires on the display unit. W410 has provided 7 modes where users can reset quickly and keep the tire position as it in on the display unit.

The user should ascertain that the display is plugged in, when carrying out the Tire Changing/Rotating Mode. If the power is interrupted, please repeat the reset process in order to proceed successfully. The user should confirm whether the display is able to monitor all the tire information correctly, if not, please carry out the reset process.

Set up Process for Enter the Tire Changing and Rotation

Depress the **SET button** and **MODE button** simultaneously for 3 seconds. The system will enter set up mode 1. Pressing once each time will allow the user to move from mode 1 to mode 6 and back to normal display.

Description for Each Set up Process

When the display shows a yellow “1”, this means the display is now in mode 1 and the 4 red lights means the tire position are not set as shown in Fig. 1. The 4 green lights indicates the tire position that the user wants to set up as shown in Fig. 2. Press the **SET button** continuously for 3 sec. until sounds beep indicating set up complete for mode 1. (Front and Rear Tires Exchange) then the system will return to the normal operating display.

Mode 1: Front and Rear Tire Parallel Exchange

Mode 2: Tire Diagonal Exchanged

Mode 3：Front Tire Diagonal Exchange, Rear Tire Parallel Exchange to Front

Mode 4: Rear Tire Diagonal Exchange, Front Tire Parallel Exchange to Rear

Mode 5: Right Side and Left Side Tire Parallel Exchange

Mode 6: Random Repositioning

The user should install the tire to their desired position before entering mode 6. When the display shows a yellow “6”, this means that it is now in mode 6.

Reset starting from Right Front Tire -> Right Rear Tire -> Left Rear Tire -> Left Front Tire automatically in order to complete the set up mode 6. The user should deflate the tire pressure rapidly over 0.3bar/30kPa or 4 psi within 15 sec. until there is a beep sound, which means the user has completed the set up

a. Depress the SET key to skip LF relearn or after completing the rapid deflation of Left Front tire for relearn process. The system will return to the normal operation system automatically.

Mode 7: Single Sensor Replaced

The user should confirm whether the all sensors are manufactured by ORO before carrying out any changes or replacement. The system will not work with non ORO Technology sensors.

The monitor will display No.7 in yellow which means the system is in mode 7.

Choose a sensor to be replaced starting from Right Front Tire -> Right Rear Tire -> Left Rear Tire -> Left Front Tire to complete the set up mode 7 and return to the normal operating mode.

Product Warranty Policy

We warrant our products for 12 months from the date of original purchase to be free from defects in materials and workmanship. If, during this period, the product fails under normal usage, because of a manufacturing defect, we will replace or repair the item. To obtain repair or replacement under the terms of this warranty, please return the product to the place of purchase. Proof of purchase and date of purchase are required to validate the warranty claim. In the event where proof of purchase is unable to be determined, the warranty will be just 6 months.

The following situations void the warranty even when within warranty time period.

1. Broken or damage on appearance of the product.

2. The barcode label is not clear or torn.
3. The user did not follow the user manual instructions on installation, incorrect installation, or improper storage, which made the system fail or be damaged.
4. The system has been installed by non-authorized distributor or technician from ORO.
5. When the user is not using the original manufacturer's accessories (eg: Power code) thus causing the system to fail.
6. Any natural catastrophe, improper installation, improper usage, or any re-modelling process without authorization.
7. Consumables such as batteries which should be replaced on time.

Caution

The range of warranty are not including the "Aluminum Valves" and "Screws", the user should change the "Aluminum Valves" and "Screws" when changing the tire sensor.

Attention

Any user self repairing or modifying the system included the device are NOT protected under the warranty policy.

Any other question which related to the warranty policy, please feel free to contact with your nearest authorized distributor or contact directly with ORO by emailing:

sales@oro-technology.com

For ORO TPMS latest and updated news, please go to: www.oro-technology.com

ORO Technology thanks you for your using ORO TPMS and wishes you "Safe Driving."

Appendix

bar	Tire pressure unit, 1 bar = 0.1N / mm^2
psi	Tire pressure unit, 1 psi = 0.0689 bar.
kPa	Tire pressure unit, 1 kPa = 0.01 bar
℃	Temperature unit, Centigrade = (Fahrenheit-32) x 5/9
℉	Fahrenheit