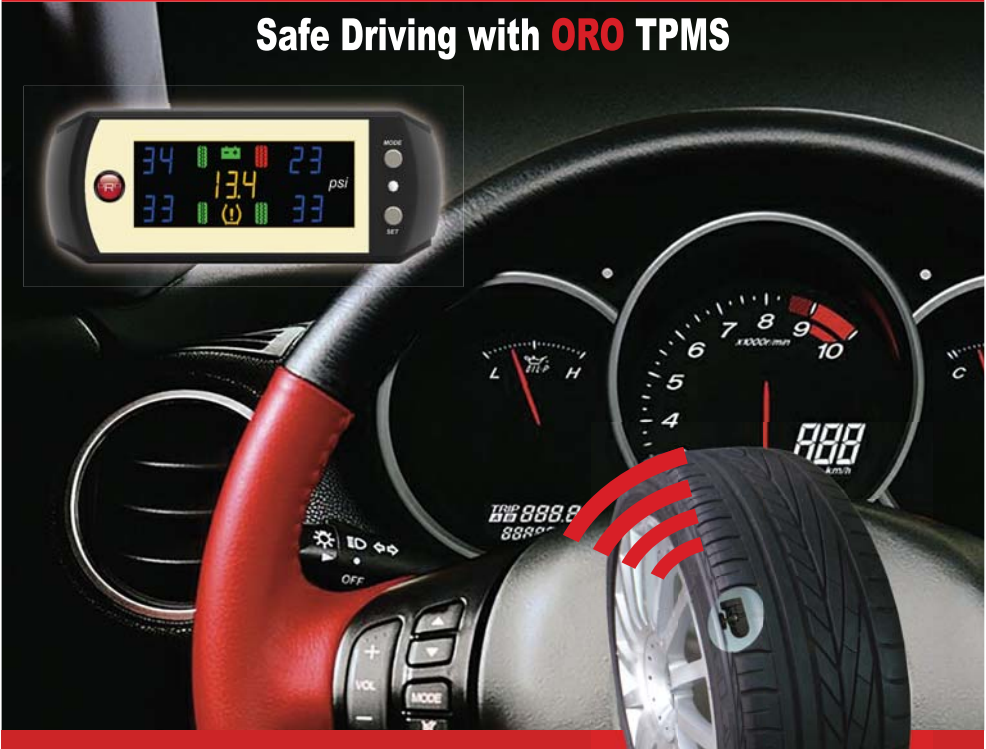




# Tyre Pressure Monitoring System **TPMS** Installation User Manual

*Wireless Direct*

Safe Driving with **ORO** TPMS



**Model : W410-A**

[www.oro-technology.com/en/](http://www.oro-technology.com/en/)

# ORO TPMS User Manual

Prior to installing or operating this ORO TPMS review this user manual in detail.

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**FCC**

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.

**■System Installation and Usage**

This system is suitable for use on light vehicles, with up to maximum pressure of 116 psi.

**■Reacting to Alerts**

When an alert or warning is received, proceed to a safe location where the tyre can be inspected and /or serviced.

The low-pressure alert indicates that the air pressure has dropped to the selected minimum while a high-temperature alert indicates that the air temperature inside the tyre has reached 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 does not receive any signal from any tyre transmitter for more than 10 minutes after the system has powered up, the corresponding tyre display will show "E2" on the display without green light. If moving the vehicle to a different location to eliminate RF interference does not fix the problem, please contact your nearest authorised distributor or contact ORO directly by emailing to [sales@oro-technology.com](mailto:sales@oro-technology.com)

ORO W410-A TPMS monitors and displays tyre pressure, tyre temperature and vehicle battery voltage in real time; by reacting accordingly, tyre life may be extended, fuel consumption may be reduced and safety of the vehicle and occupants improved.

ORO W410-A TPMS includes 4 transmitters and 1 display unit. Each transmitter monitors the pressure and temperature of the air inside the wheels transmitting data to the display unit. Should an abnormal condition be experienced, the visual and audible alarm will activate and display on the monitor. This alerts the driver and reduces the potential for any hazardous incidents.

## W410-A Specification

### 1. Transmitter Module Specification

Power Supply	3V Lithium battery
Operating Humidity	Max 95%
Storage Temperature	-40 °C to 125 °C
Operation Temperature	-30 °C to 115 °C
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 °C to 115 °C
Temperature Reading Accuracy	±3 °C
Module Weight	13.3g ± 1g

### 2. Receiver / Display Module Specification

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

Contents	Pictures	QTY	Contents	Pictures	QTY
Display unit		1	Nylok Screw		4
Transmitter unit		4	Power Cable		1
Rubber valve		4	Manual		1

## W410-A Installation

### There are two parts to the system installation

**A .** Setting up the display unit in the vehicle.

**B .** Installing the transmitter unit in each tyre.

Enter the default set mode before installation to set up required tyre pressure value for the vehicle. The default pressure value of W410-A is **35psi(240KPa, 2.4bar)**. The warning system will activate the alarm once the tyre pressure is **30% higher** or **20% lower** than the pre-set tyre pressure value.

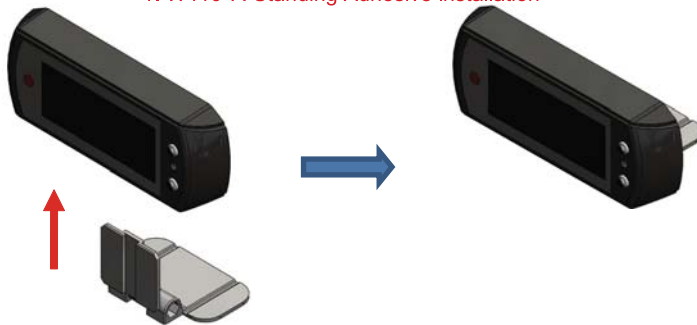
The tyre temperature will rise in normal driving conditions. In cold weather conditions for each 6°C (10°F) reduction, the tyre pressure may drop 1psi or more. Always ensure the pressure is within the recommendations of the tyre's specification.

**NOTE:** It is recommended that the tyre pressure should be set according to the manufacturer's recommended pressure which may be found in the vehicle owner's manual or on the tyre placard on the vehicle.

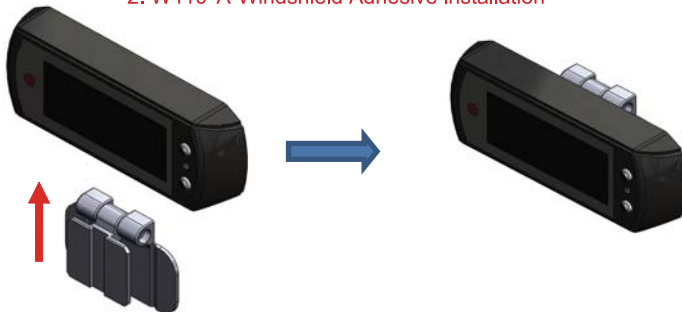
## 1. Display unit installation

a. There are two recommended methods for installing the display.

### 1. W410-A Standing Adhesive Installation













### 2. W410-A Windshield Adhesive Installation



- b. Insert the power cable to the plug on the rear of the display unit.
- c. Once you have selected a suitable position for the display unit, remove the backing tape from the 3M adhesive tape. The angle of the unit may be adjusted to suit the desired location and locked using the screw provided on the holder.
- d. Tyre work should be performed by an appropriately qualified technician.

## 2. Transmitter unit installation

Step	Operation Process	Photographs
a	<p>Remove the tyres from the vehicle and mark each tyre as follows:</p> <p>No.4 = Left Front Tyre No.1 = Right Front Tyre No.3 = Left Rear Tyre No.2 = Right Rear Tyre</p> 	 
b	<p>Start with number 1 and work around to number 4. Remove the tyre from the rim and replace the original valve with the new rubber valves provided by ORO TPMS in the package, follow the below steps :</p> <ol style="list-style-type: none"> <li>1. Attach the transmitter to the valve by using the nylok screws provided by ORO in the package, tighten the screw lightly.</li> <li>2. Fit No. 1 transmitter on No. 1 rim. Put the valve into the rim hole, levelling the transmitter on the rim.</li> <li>3. Position the valve by using the valve puller as shown.</li> </ol>	  

c	<p>1. Tighten the nylok screw with torque wrench, set the torque force to 2.N.m(20.4kg. cm)</p> <p>2. Complete the installation by installing the valve cap.</p> <p><b>It is recommended to use the new nylok screw provide by ORO should you have to reinstall the transmitter every time.</b></p>	
d	<p>Install the other transmitters with the same procedures as above.</p>	
e	<p>Make sure there is no any debris or liquid on the rim or inside the tyre air chamber.</p>	
f	<p>Remount the tyres to the wheel/rim, inflate the tyres accroding to manufacturer's recommendation.</p>	
g	<p>After fitting the valves balance the tyre assembly.</p>	
h	<p>Replace the tyres on the vehicle and tighten all wheel nuts to manufacturer's recommended torque settings.</p>	



**NOTES:**

W410-A has the Smart Auto-Logic- automatic learning of the tyre position after a tyre rotation. Park up the vehicle for 30 minutes upon finishing the tyre rotation, then the system will relearn the tyre positions after 3 minutes of driving.

W410-A uses power saving technology, where the data is sent to the display unit every minute at 25km/hr or above, and stops sending data after the vehicle has stopped for more than 5 minutes.









When the tyre pressure is lower than 18psi, the transmitters will keep sending data to the display unit every minute to remind the driver.

Should a transmitter require replacement, purchase it from your nearest stockist or distributor and have it installed by your tyre service provider. Park up the vehicle for 30 minutes after the installation, then the system will recognise the new transmitter and relearn the position after 3 minutes of driving.

## W410-A Operation & Setting

### 1. Display Signals Description



	Battery Signal		Pressure Unit		Temperature Unit
	Battery Voltage Value		Normal Tyre		Abnormal Tyre Pressure
	Abnormal Tyre Condition Signal		Tyre Pressure / Temperature Display Unit		

**NOTE:**

There is an ambient light sensor situated at the top right hand side of the display unit. This sensor will automatically adjust the LED display brightness according to the ambient light to ensure that the display is clearly visible during the day or night.

## 2. Changing display mode

W410-A has three different modes:

- (1) Pressure Display Mode –Display of four tyre pressures and battery voltage
- (2) Temperature Display Mode –Display of four tyre temperatures and battery voltage
- (3) Pressure Temperature Alternate Display Mode –Rotating display of four tyre pressures and temperatures with a constant display of battery voltage

The display will show the tyre pressure mode as factory default once it is turned on. To access the display temperature mode, press the **MODE button** and to display pressure temperature alternate display mode, press it again. The system will continuously monitor the tyre pressure, tyre temperature and battery voltage no matter which mode is selected and will notify the driver whenever abnormal event is experienced.

## 3. Changing units of tyre pressure and temperature

W410-A displays three 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 seconds.

## 4. Modifying factory default

Press the **SET button** continuously for 3 seconds to enter the set up mode.

W410-A has 5 factory default modes:

- (1) Standard front tyre pressure setting
- (2) Standard rear tyre pressure setting
- (3) Tyre temperature warning setting
- (4) Display unit turn on setting
- (5) Display unit auto turn off setting

**NOTE:** The user should select their preferred unit of pressure before entering the setup mode.

**(1) Standard front tyre pressure setting :**

Range: 24psi~80psi (1.7bar~5.5bar, 170KPa~550KPa).

The default set value is 35psi (2.4bar, 240KPa).

Press the **SET button** for 3 seconds to enter the standard front tyre pressure setting mode. The unit increases by 1 psi with each press of the **MODE button**. When it reaches 80psi (5.5bar), press the **MODE button** again will return the system unit to 24psi (1.7bar). The system will enter the standard rear tyre pressure setting mode by a quick press of the **SET button**.

**(2) Standard rear tyre pressure setting :**

Range: 24psi~80psi (1.7bar~5.5bar, 170KPa~550KPa).

The default set value is 35psi (2.4bar, 240KPa).

The unit increases by 1 psi with each press of the **MODE button**. When it reaches 80psi (5.5bar), press the **MODE button** again will return the system unit to 24psi (1.7bar). The system will enter the tyre temperature warning setting mode by a quick press of the **SET button**.

**(3) Tyre temperature warning setting :**

Range: 60°C~90°C (140°F~194°F).

The default set value is 80°C (176°F).

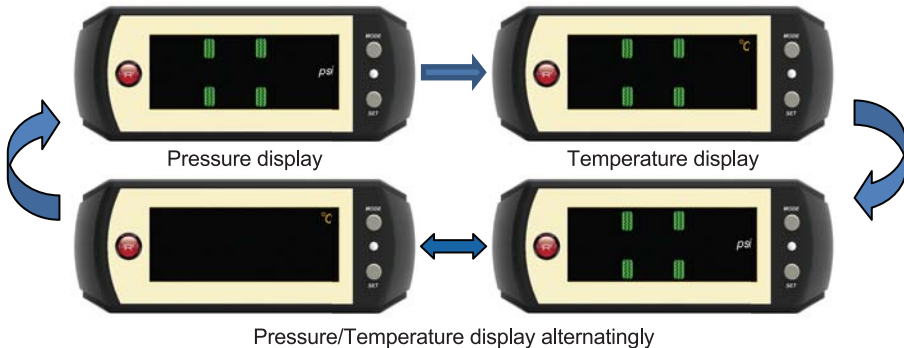
The unit increases by 1°C (1°F) with each press of the **MODE button**. When it reaches 90°C (194°F), press the **MODE button** again will return the system unit to 60°C (140°F). The system will enter the display unit turn on setting mode by a quick press of the **SET button**.



**(4) Display unit turn on setting:** Three modes to select:

- Pressure display • Temperature display • Pressure/Temperature display alternatingly
- The default mode is pressure display.

- A quick press of the **MODE button** will allow selection of the display turn on mode.
- 3 modes are shown below. The pressure unit options are psi, kPa, bar. The temperature unit can be chosen between °C and °F



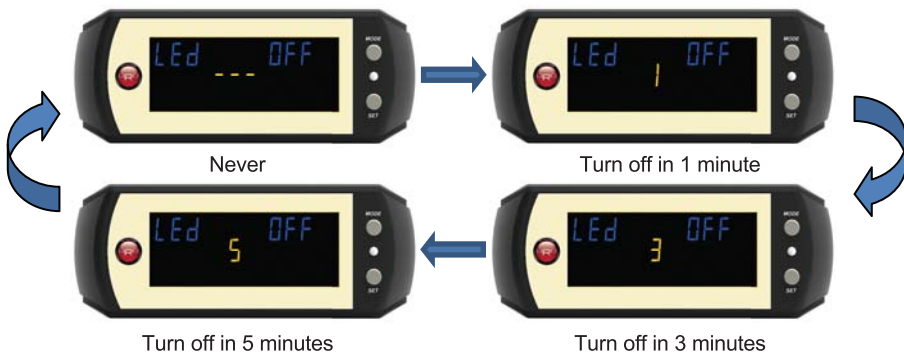
- A quick press of the **SET button** will finalise display turn on mode setting, then the system will enter the display unit auto turn off setting mode.

**(5) Display unit auto turn off setting:** Four modes to select:

- Never •Turn off in 1 minute •Turn off in 3 minutes •Turn off in 5 minutes

- A quick press of the **MODE button** to select the auto turn off mode. The auto off timing starts after receiving the 4 tyres data. While the display is turned off, the system maintains monitoring tyre pressure, tyre temperature and battery voltage. The display unit will show the alarm when there is any abnormality.

- Four modes are shown below.



## W410-A Alarm Mode Description

**Tyre pressure high / low alarm mode :** When the tyre pressure is **30%** higher and **20%** lower than the pre-set tyre pressure value.

**Warning Method :** The abnormal tyre will display in RED with a "BEEP" sound as warning.



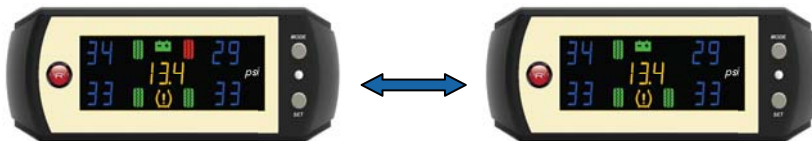
**High Tyre Temperature Alarm Mode :** When the tyre temperature is higher than set value.

**Warning Method :** The abnormal tyre will display in RED with a "BEEP" sound as warning.



**Rapid Tyre Pressure Loss Alarm Mode :** When the tyre has a rapid pressure loss. (Vary more than 3 psi or 20 kPa in 30 seconds)

**Warning Method :** The abnormal tyre will flash RED with a "BEEP" sound as warning.



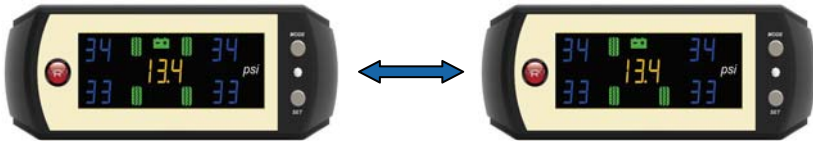
**Battery Low Voltage Alarm Mode :** When battery voltage is lower than **11.5V**. (Regardless the vehicle engine is operating or not)

**Warning Method :** Battery light will show in RED.



**Transmitter Unit Low Battery Alarm Mode :** When the transmitter unit battery power is low.  
(Suggest to replace with new ORO transmitter unit)

Warning Method : The tyre light will flash.



**Display Unit Abnormal Alarm Mode :** When display unit has a default failure.

Warning Method : Show E1 without green lights.



**No Signal Detecting Alarm Mode :** When display unit is unable to receive signal from the transmitter unit over 10 minutes.

Warning Method : Show E2 on the display without green lights.



**NOTE:** 1. When the alarm is sounding, to mute, simply press the MODE button for 3 seconds.

2. Please contact nearest distributor/dealer when there is malfunction in the display unit, for example, not receiving signals from the transmitter unit.

ORO will warrant W410-A TPMS for 24 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, it is not covered by the warranty.

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

1. A broken or damaged product due to negligence.
2. The user did not follow the user manual instructions on installation, incorrect installation, or improper storage, which caused damage to the unit.
3. The TPMS has been installed by unregistered tyre fitment centre.
4. When the user is not using the original contents mentioned on page 3.
5. Improper use, neglect, fire, flood, electric shock, or unnatural action, improper modification or failure to follow the instructions accompanying the product.
6. Consumable parts and accessories.

**Caution**

"Rubber valves" and "Nylok screws" are consumable parts, customers should replace them when they reinstall the transmitter unit.

**Warning**

Any modification or alteration of the system will nullify any warranty or performance guarantee.

Any warranty policy related queries, please contact your nearest authorised distributor or contact ORO directly by emailing to

For ORO TPMS latest and updated news, please go to : [www.oro-technology.com/en/](http://www.oro-technology.com/en/)

ORO Technology thank you for using ORO TPMS and wishes you a Safe Driving Experience.

## Appendix

bar	Tyre pressure unit, 1 bar= 0.1N/ mm <sup>2</sup>
psi	Tyre pressure unit, 1 psi = 0.0689 bar.
kPa	Tyre pressure unit, 1 kPa= 0.01 bar
°C	Temperature unit, Centigrade = (Fahrenheit-32) x 5/9
°F	Fahrenheit





## Warranty Card

SALESPERSON TO COMPLETE THE FOLLOWING

Model No.	W410-A	Serial No.	
Purchase Date	(DD/MM/YYYY)		
Dealer's Information	Business Name		
	Address		
	Contact Number		
Salesperson Signature		Customer Signature	

### Customer information

Name	
Contact No.	
Postal Address	

**ORO Technology Co., Ltd.**

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