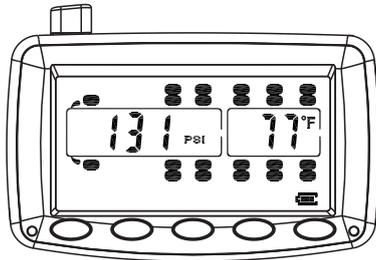


# WIRELESS TIRE PRESSURE AND TEMPERATURE MONITORING SYSTEM

# TPMS

Monitors up to **22** tires in real time

**Instruction Manual**  
**Model no.: TM508T22**



# TPMS

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## 1. TPMS MAIN FEATURES

### Reduce Driving Risks

It was reported that an astonishing 75% of all running tires in the USA are under-inflated and 70% of fatal traffic accidents were caused by tire blowouts. With a TPMS, drivers are warned of abnormal tire conditions before it becomes dangerous.

### Improve Fuel Economy

Today's tire designs make visual inspection of deflated tires very difficult. Very often, a 30% under-inflated tire looks very much like a fully inflated one. A TPMS will make sure your tire pressure is at its proper level. A 9PSI drop in tire pressure will cause approximately 4% increase in fuel consumption.

### Prolong Lifetime of Tires

The following table shows a simple relationship between tire pressure and tire lifetime:

Tire Pressure	Tire Lifetime
20% under inflated	30% less
30% under inflated	45% less
20% over inflated	10% less

## 2. PRODUCT FEATURES

### 2-1. Monitor Features

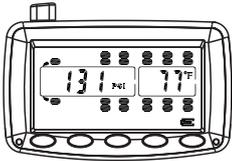
- Ø Reliable and easy to install.
- Ø Large LCD screen.
- Ø Built-in rechargeable lithium battery.
- Ø Automatic backlight.
- Ø Configurable high/low pressure warnings.
- Ø Configurable high temperature warnings.
- Ø Visible and audible alerts.
- Ø Selectable pressure units.
- Ø Monitors up to 22 tires maximum.
- Ø Long range between sensors and monitor.
- Ø Per axle measurements can be configured on the tractor.

### 2-2. Transceiver Features (Optional parts)

- Ø Maintains signal stability.
- Ø Records sensor ID, trailer ID and tire pressure and temperature limits.
- Ø Supports truck and trailer exchange.
- Ø Transferable trailer sensor data between monitor and transceiver.
- Ø Visible and audible alerts.
- Ø Fixed alert for high temperature (194°F)

# TPMS

## 3. SYSTEM COMPONENTS



Monitor



Monitor Holder



Power adaptor

Item	Q'ty
Monitor	1pc
Monitor Holder	1pc
Suction Cup	1pc
Power adaptor	1pc
Power Cable	1pc

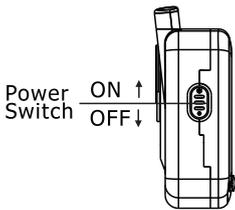


Power Cable

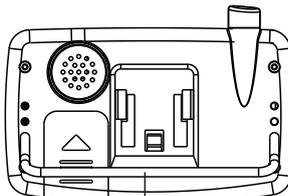


Suction Cup

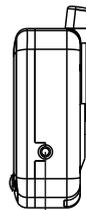
## 3-1. MONITOR COMPONENTS AND ICONS



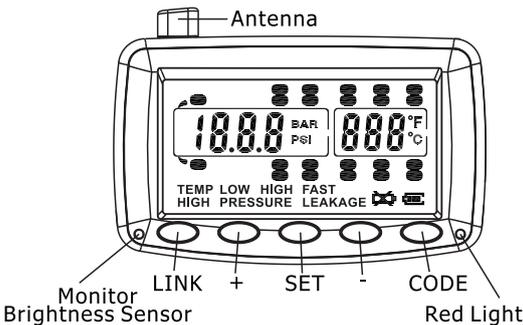
Power Switch  
ON ↑  
OFF ↓



Monitor Holder



Power Socket



Icon	Description
	Tire Indicator
	High Temperature
	Low Pressure
	High Pressure
	Fast Leakage
	Sensor Low Battery Indicator
	Monitor Battery Indicator

Pressure Unit : BAR or PSI, user-selectable  
Temperature Unit : °C or °F, user-selectable

## 4. PROGRAMMING SETUP

### 4-1. First Time Set Up

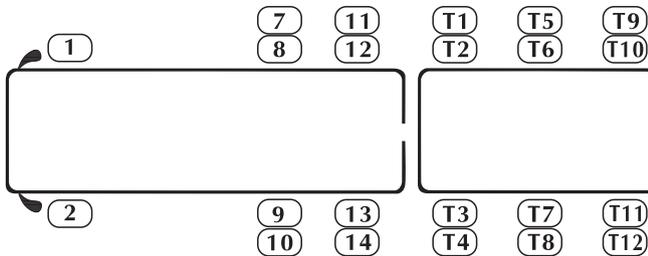
Before you use the TPMS for the first time, you should program the sensor codes. There are 3 options available:

**INFLATE CODE, INPUT ID CODE and LF (Low frequency) CODE.**

Note: It is recommended to label the sensors positions of the tires.

Record the sensors and tire positions as follows:

Tractor Axle	Label	Trailer Axle	Label
1	1,2	1	T1-T4
2	7-10	2	T5-T8
3	11-14	3	T9-T12



### 4-2. Programming Sensor Codes

#### PROGRAMME SENSOR ID INTO MONITOR THROUGH INFLATION

1. In standby mode, press and hold the **CODE** button for 3 seconds, release it after the beep to enter the coding mode. A flashing tire icon is displayed together with the letters **FFF FFF** for un-programmed tire or sensor's ID code for programed tire.
2. Press the **+** or **-** button to select the desired tire.
3. Mount the sensor on to the valve, the sensor will send its ID code to the monitor automatically. A beep will be issued and the tire position is stored together with sensor's ID code.
4. The tire icon and ID code will keep flashing.
5. Press the **+** or **-** button to select the other tire and repeat for all the tires.
6. The programmed sensors' ID can be saved automatically.
7. After all sensors' ID code are programmed to the monitor, press the **CODE** button for 3 seconds to exit.

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## INPUT SENSOR ID CODE TO THE MONITOR DIRECTLY

1. In standby mode, press and hold the **CODE** button for 6 seconds until the second beep(do not release after the first beep).
2. Press the **+** or **-** button to select the desired tire, and press **SET** button to confirm.
3. Press the **CODE** button to scroll through each digit code.
4. Press the **+** or **-** button to change the value of each digit code.
5. Then press **SET** button to save the ID code.
6. After all sensors' ID code are input to the monitor, press the **CODE** button for 3 seconds to exit.

Note: If a sensor is coded twice into the same monitor, the previous setting will be deleted automatically.

## LF (low frequency) CODE (not available for all sensor types)

1. In standby mode, press and hold the **CODE** button for 3 seconds, release it after the beep to enter the LF coding mode. A flashing tire icon is displayed together with the letters **FFF FFF** for un-programmed tire or sensor's ID code for programmed tire.
2. Press the **+** or **-** button to select the desired tire.
3. Press the **CODE** button, a flashing tire icon and **LF** are displayed together with letter "**Id**".
4. Place the sensor close to the monitor and press the **CODE** button once the letters **Id** with a flashing **LF** will be displayed and a red light will be lit on the monitor.
5. On receiving the code, the monitor will issue a long beep and the tire position is stored together with sensor's ID code. The tire icon on the monitor will keep flashing after the code is received successfully.
6. If the monitor does not receive the code within 6 seconds, an error message **Err** will be displayed. A double-beep will be issued and the red light goes out. Move the sensor closer to the monitor and repeat step 4 and 5.
7. The tire icon and sensor's ID code will keep flashing.
8. Press the **+** or **-** button to select the other tire and repeat the above operations for all the tires.
9. The programmed sensors' ID can be saved automatically.
10. After all sensors' ID code are programmed to the monitor, press and hold the **CODE** button for 3 seconds to exit.

## **4-3. Deleting a Single Sensor ID**

### **In Sensor Code Mode**

1. In standby mode, press and hold the **CODE** button for 3 seconds, release it after the beep to enter the coding mode. A flashing tire icon and ID code are displayed. Press the **+** or **-** button to select the desired tire.
2. Press and hold the **SET** button for 3 seconds. A double-beep sound will be issued after the sensor code is deleted successfully. If no further action is made after 3 minutes, the system will return to standby mode automatically. To return to standby mode immediately, press and hold the **CODE** button for 3 seconds until a beep is issued.

### **In Review ID Code Mode**

1. In standby mode, press the **CODE** button to enter the review ID mode. A flashing tire icon and sensor's ID code are displayed. Press the **+** or **-** button to select the desired tire.
2. Press and hold the **SET** button for **3** seconds. A double-beep sound will be issued after the sensor code is deleted successfully. If no further action is made after 3 minutes, the system will return to standby mode automatically. Press the **CODE** button will return to standby mode immediately.

## **4-4. Deleting all Sensors ID**

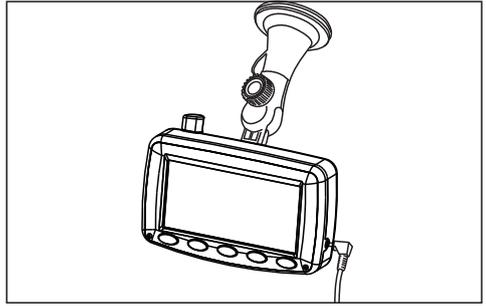
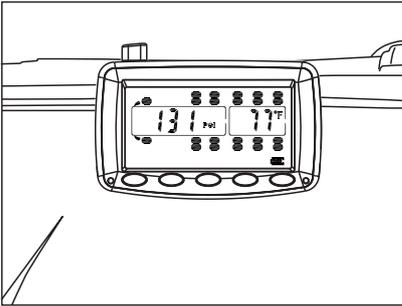
1. In standby mode, press the **CODE** button to enter the review ID mode. A tire icon and sensor's ID code will flash.
2. Press and hold the **LINK** button for **3** seconds. During this period, a double-beep will be issued. The message **del ALL** will display on the monitor.
3. Press the **SET** button to confirm the delete operation or press the **CODE** button to cancel. If no further action is made after 3 minutes, the operation is automatically cancelled and the system will return to standby mode.

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## 5. INSTALLATION

### 5-1. Monitor Installation

1. Install the monitor inside the vehicle cabin without obstructing the driver's vision of the road.
2. Place the monitor on the dashboard or mount it onto the windscreen using the suction cup provided.
3. Plug the power adapter into the cigarette lighter and connect the power cable to the monitor or plug the power cable and connect to the vehicle power.



## 6. TRANSCIVER FUNCTIONS (optional parts)

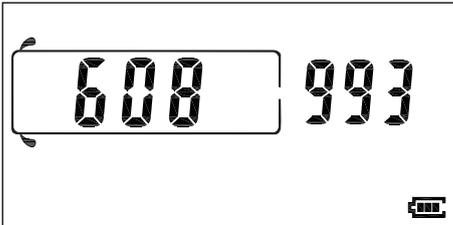
### 6-1. Transceiver

- Within a fleet of trucks, trailers are often interchangeable with many tractors. A transceiver allows data from the new trailer to transfer to the tractor's monitor without having to enter all trailer's sensor codes all over again.
- All the functionality of the TPMS as well as its data can be kept even if trailers changed.

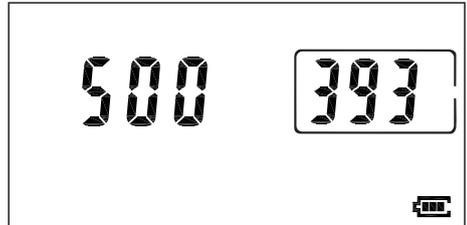
### 6-2. Entering Tractor & Trailer ID for the First Time

1. In standby mode, press the **LINK** button on the monitor a six digits ID will be displayed for the current tractor.
2. Press the **LINK** button again will display the six digits ID of the trailer.
3. Press the **LINK** button for the 3<sup>rd</sup> time, the system will enter the tractor ID coding mode.
4. Press the **LINK** button for the 4<sup>th</sup> time, the system will enter the trailer ID coding mode.

5. Press the **+** or **-** buttons to scroll through numbers from 0-9. Press the **CODE** button will set the digit and move the cursor to the next digit.
6. Press and hold the **CODE** button for 3 seconds to store the ID. If no action is taken for 1 minute, the system will return to the standby mode without making any changes.



**Example 1:** Tractor ID (608993) and a flashing tractor.



**Example 2:** Trailer ID (500393) and a flashing trailer.

### **6-3. Monitor Sending Data to Transceiver for the First Time**

If using the transceiver for the first time, you will need to code all the sensors, input the trailer ID, set the high/low pressure alerts and send the trailer data to the transceiver.

1. In standby mode, press and hold the **LINK** button on the monitor for **6** seconds to enter **sending mode**. Do not release it after you hear the 1<sup>st</sup> beep. A flashing **SEnd** will be displayed on the monitor.
2. Press and hold the button on the transceiver for 3 seconds until a beep is issued. The monitor will now send the sensor IDs, pressure and temperature data and the trailer ID to the transceiver. On successful transmission, the monitor will issue a long beep together with trailer ID and tire icons.
3. On error, or if the transceiver does not receive the data within 2 minutes, the monitor will issue a double-beep and a flashing **FAIL** will be displayed on the monitor.
4. Press any button or wait 3 minutes to return to standby mode.

Note: The transceiver can only store the latest trailer's data it will automatically update the data if the data is received from the monitor.

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## **6-4. Transceiver Send Data to Monitor (For Trailer Exchange)**

1. Press and hold the button on the transceiver for 3 seconds until you hear the 2<sup>nd</sup> beep and the LED will be lit.
2. Press and hold the **LINK** button for 3 seconds on the monitor within 2 minutes. All the tire icons will be displayed on the monitor with a flashing **ACCEPT** message. Here the system enters the receiving ID mode.
3. The transceiver will send the sensor IDs, pressure and temperature data and the trailer ID to the monitor.
4. On receiving the data, the monitor will display all the tire icons in the trailer and the trailer ID. The trailer icon will flash for 3 minutes then exit. Press any button within that 3 minutes period to escape and cancel the operation.
5. On error, or if the transceiver does not receive the data within 2 minutes, the monitor will issue a double-beep and a flashing **FAIL** will be displayed with the trailer tire icons.
6. Press any button or wait 3 minutes to return to standby mode.

Note: The transceiver can only store the latest trailer's data even if no sensor data was recorded for tires in the trailer it will automatically update the data if the data is received from the monitor.

## 7. PARAMETER SETTINGS

1. In standby mode, press and hold the **SET** button for 3 seconds, release it after the beep.
2. Press the **SET** button repeatedly to scroll thru the different parameters.
3. Press the **+** or **-** button to adjust the desired settings.
4. Press and hold the **SET** button for 3 seconds then release it after the beep to save the settings.
5. If no action is taken for 1 minute, the system will return to the standby mode without making any changes.

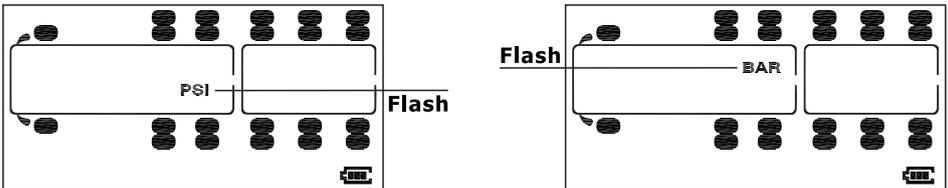
### 7-1. Factory Default

Pressure Unit:	PSI
High Pressure:	175PSI (12.1 BAR)
Low Pressure:	100PSI (6.9 BAR)
Temperature Unit:	°F
High Temperature:	158°F (70°C)

Note: To restore the factory default settings, turn on the monitor and press the **SET** button at the same time. The factory default settings will be restored without changing the ID code information.

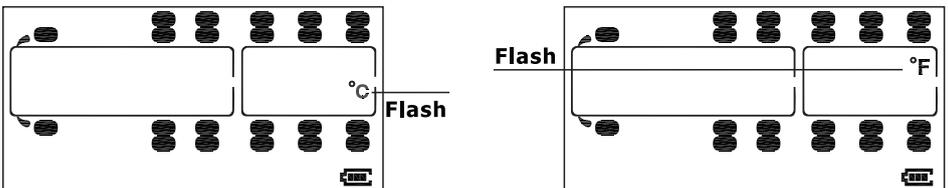
### 7-2. Settings Sequence

#### 1. Pressure Unit



While the **PSI** or **BAR** icon is flashing, Press the **+** or **-** button to select .

#### 2. Temperature Unit

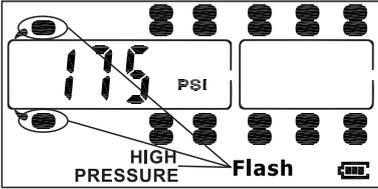


While the **°C** or **°F** icon is flashing, Press the **+** or **-** button to select.

# TPMS

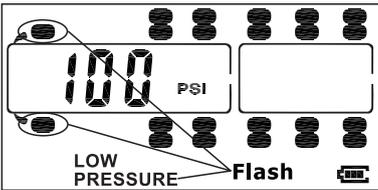
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## 3. High Pressure Alert in 1<sup>st</sup> Axle



While both tires in the 1<sup>st</sup> axle and the **HIGH PRESSURE** icons are flashing, press the + or - button to adjust.

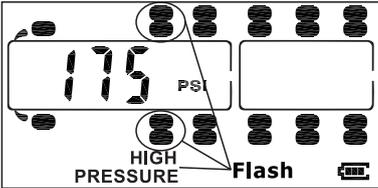
## 4. Low Pressure Alert in 1<sup>st</sup> Axle



While both tires in the 1<sup>st</sup> axle and the **LOW PRESSURE** icons are flashing, press the + or - button to adjust.

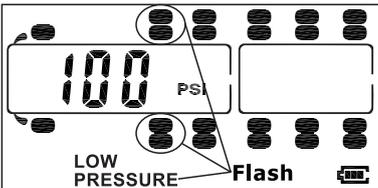
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## 5. High Pressure Alert in 2<sup>nd</sup> Axle



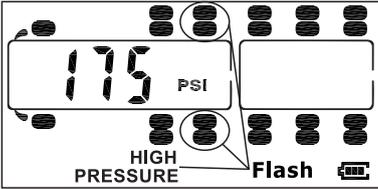
While 4 tires in the 2<sup>nd</sup> axle and the **HIGH PRESSURE** icons are flashing, press the + or - button to adjust.

## 6. Low Pressure Alert in 2<sup>nd</sup> Axle



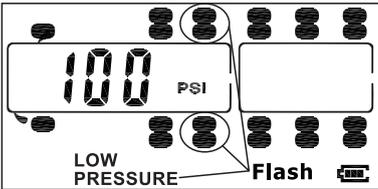
While 4 tires in the 2<sup>nd</sup> axle and the **LOW PRESSURE** icons are flashing, press the + or - button to adjust.

## 7. High Pressure Alert in 3<sup>rd</sup> Axle



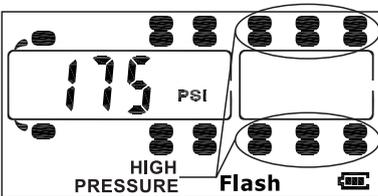
While 4 tires in the 3<sup>rd</sup> axle and the **HIGH PRESSURE** icons are flashing, press the + or - button to adjust.

## 8. Low Pressure Alert in 3<sup>rd</sup> Axle



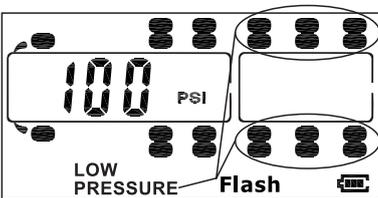
While 4 tires in the 3<sup>rd</sup> axle and the **LOW PRESSURE** icons are flashing, press the + or - button to adjust.

## 9. High Pressure Alert in trailer



While all 12 tires in the trailer and the **HIGH PRESSURE** icons are flashing, press the + or - button to adjust.

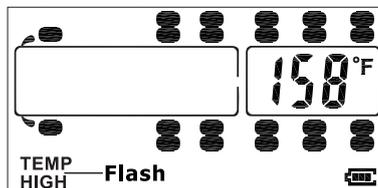
## 10. Low Pressure Alert in trailer



While all 12 tires in the trailer and the **LOW PRESSURE** icons are flashing, press the + or - button to adjust.

**Note:** High pressure and low pressure alert for axle 1, axle 2 and axle 3 and trailer are adjusted separately.

## 11. High Temperature Alert



While the **TEMP HIGH** icon is flashing, press the + or - button to adjust.

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## 8. ALERTS

The sensors send pressure and temperature readings to the monitor every 5 minutes. If any reading is out of the pre-defined values, you will notice 3 things:

1. An audible alarm;
2. The red light on the monitor will flash;
3. The corresponding icon on the monitor will flash.

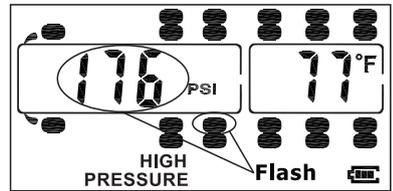
Press any button to switch the alarm off. However, the red light will not be turned off until the correct pressure and temperature settings are restored to within range. The factory preset values are:

High Pressure:	175PSI (12.1 BAR)
Low Pressure:	100PSI (6.9 BAR)
High Temperature:	158°F (70°C)

### 8-1. Monitor Alerts

#### 1. High Pressure Alert

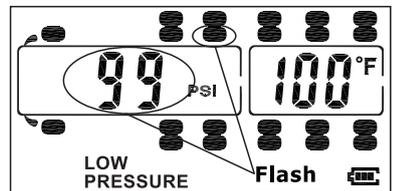
When the sensor detects high pressure in a tire, it will send an alert to the monitor immediately. The **HIGH PRESSURE** will show on LCD and the corresponding tire icon will flash. The audible alarm will be on together with the flashing red light. Press any button to turn off the alarm. However the flashing red light and icons will continue until the problem is corrected.



Red Light Flash — ●

#### 2. Low Pressure Alert

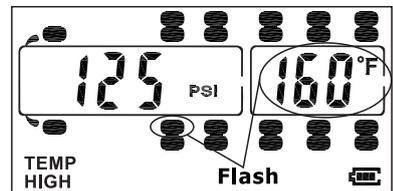
When the sensor detects low pressure in a tire, it will send an alert to the monitor immediately. The **LOW PRESSURE** will show on LCD and the corresponding tire icon will flash. The audible alarm will be on together with the flashing red light. Press any button to turn off the alarm. However the flashing red light and icons will continue until the problem is corrected.



Red Light Flash — ●

#### 3. High Temperature Alert

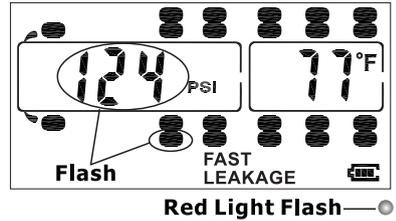
When the sensor detects high temperature in a tire, it will send an alert to the monitor immediately. The **TEMP HIGH** will show on LCD and the corresponding tire icon will flash. The audible alarm will be on together with the flashing red light. Press any button to turn off the alarm. However the flashing red light and icons will continue until the problem is corrected.



Red Light Flash — ●

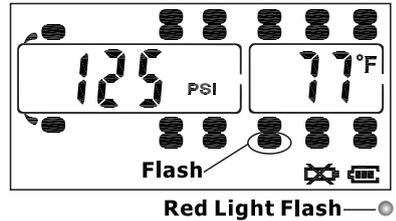
## 4. Fast Leakage Alert

When the sensor detects abnormal loss of tire pressure, it will send an alert to the monitor immediately. The **FAST LEAKAGE** will show on LCD and the corresponding tire icon will flash. The audible alarm will be on together with the flashing red light. Press any button to turn off the alarm. However the flashing red light and icons will continue until the problem is corrected.



## 5. Sensor Low Battery Alert

When the sensor detects low battery level, it will send an alert to the monitor immediately. The low battery icon will show on LCD and the corresponding tire icon will flash. The audible alarm will be on together with the flashing red light. Press any button to turn off the alarm. However the flashing red light and icons will continue until the problem is corrected.



## 8-2. Transceiver Alerts(optional parts)

### 1. High/Low Pressure and Fast Leakage Alerts

When the sensor detects high/low pressure abnormalities and fast leakage, it will send an alert to the **transceiver** immediately. The audible alarm will be on together with the flashing red light. Press any button on the transceiver to turn off the alarm. However the flashing red light will continue until the problem is corrected.

### 2. High Temperature Alert

The transceiver has a fixed temperature alert at 194°F. The sensors send the temperature readings to the transceiver every 5 minutes. If the temperature is above 194°F, an audible alarm will be on together with the flashing red light. Press any button on the transceiver to turn off the alarm. However, the flashing red light will continue until the temperature is dropped below 194°F.

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## 9. OTHER FUNCTONS

### 9-1. Normal Scrolling Display

During normal operation, the monitor scrolls through and displays the tires one by one for 5 seconds. An audible alarm will be issued if one of the sensor data is not received by the monitor for more than 60 minutes. You can manually scroll through and select the tire by pressing the **+** or **-** button. A manually selected tire will be displayed for 10 seconds.

### 9-2. Backlighting

The monitor has a built in light and motion sensor. The backlight only turns on when it detects the vehicle is in motion and when it is dark enough. The monitor will be in sleep mode to conserve battery life if the motion sensor detects the vehicle has stopped for a while. It will turn on again when it detects the vehicle is moving again. Press any button on the monitor to turn on the backlight manually, to turn it off, press and hold the **+** button for 3 seconds.

### 9-3. Connecting/Disconnecting the Trailer

When the trailer is not connecting to the tractor, press the **LINK** and **-** buttons at the same time, the trailer and its tire icons will be removed temporarily. Press the **LINK** and **+** buttons at the same time, the trailer and its tire icons will re-appear.

### 9-4. Charging the Monitor

The lithium-ion battery inside the monitor, when fully charged, is capable of running for 60 hours. When the  appears, a recharge is required.

### 9-5. Viewing ID Code

In standby mode, press the **CODE** button to enter the view mode, the monitor will display sensor's ID code if the tire position is programmed with a sensor, while it will display **FFF FFF** if the tire position is un-programmed. Press the **+** and **-** buttons to select the tires you want to review. It returns to standby mode after 3 minutes or by pressing the **CODE** button.

## 10. SPECIFICATIONS

### 10-1. Monitor

Operational Temperature	-4°F to 176°F
Storage Temperature	-22°F to 185°F
Charger Input Voltage	DC 8 to 30V
Transmission Frequency	433.92MHz
Size	116(L) x 68(W) x 25(H) mm
Weight	138g

## 11. CAUTIONS

1. The monitor should be installed inside the vehicle where it does not affect normal driving.
2. The monitor should be well fixed to avoid falling off during driving.
3. After the sensor installation, it is highly recommended to check for any air leakage.
4. This TPMS can effectively monitor tire pressure and temperatures but cannot prevent traffic accidents. Regular tire inspection and maintenance is still necessary.
5. After the system is installed correctly, the driver does not need to stare at the monitor all the time while driving. Alerts will be issued when abnormal conditions are found in the tires.

*\*Information in this manual is subject to change without notice.*