

# TM-510RV Manual

**Tire Pressure Monitoring System  
Automatically Monitor Tire Pressure and  
Temperature for up to 22 Tires**



# System Features

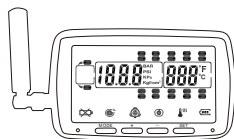
## Sensor Features

- 1) The sensors are easy to install and very reliable.
- 2) The sensor is water resistant.
- 3) Sensors transmit pressure and temperature data every 5 minutes.
- 4) The Sensors conserve power by not transmitting data when there is zero pressure (For example, if you store your unit seasonally, sensor life can be prolonged by removing the sensors from the valve stems of your tires.).
- 5) The battery operated sensors will last up to five years.
- 6) Leaks and temperature variances are detected swiftly and reliably.
- 7) Each sensor is individually coded for easy installation and individual settings.

## Monitor Features

- 1) The monitor is easy to install and makes a stylish enhancement to your cab.
- 2) The large display is easy to read.
- 3) The monitor contains a built in rechargeable lithium battery and an DC adaptor which fits into any cigarette outlet.
- 4) Automatic activation when vehicle is in motion.
- 5) With automatic monitor illumination, monitor lighting is adaptable to all conditions.
- 6) Programmable high and low pressure alarm thresholds customizable to the specific requirements of your tires.
- 7) Programmable high temperature alarm thresholds customizable to the specific requirements or alert status of your tires.
- 8) Visual warning lights and audible alarms sound when temperature and pressure thresholds are exceeded.
- 9) Pressure unit selectable: PSI, BAR, Kpa, Kg/cm<sup>2</sup>
- 10) Temperature unit selectable: °C, °F
- 11) The monitor effortlessly reads up to twenty-two (22) tires accurately and without fail.
- 12) The monitor can read trailers in tow, vehicles in tow, or any combination thereof resulting in a maximum of twenty-two tires in one contiguous transport vessel.
- 13) The range is upwards of 60 linear feet from tire to monitor. Even farther with the addition of the easy to install repeater.
- 14) Tire pressure and temperature readings are displayed simultaneously for quick access to the data.
- 15) Tire pressure and temperature setting can be configured "per axle" in that the tires on each axle and be read and programmed for individual readings.

# System components



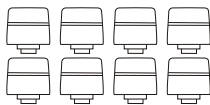
Monitor



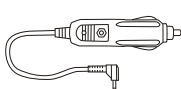
Monitor holder



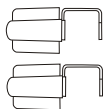
Long antenna



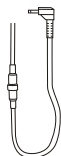
Sensors  
(Quantity depends on customer requirement)



Power adapter

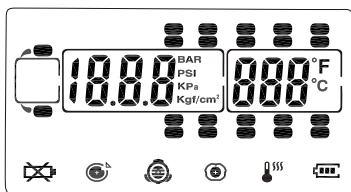


Installation Tool



Power cable

# Monitor Components and Icons



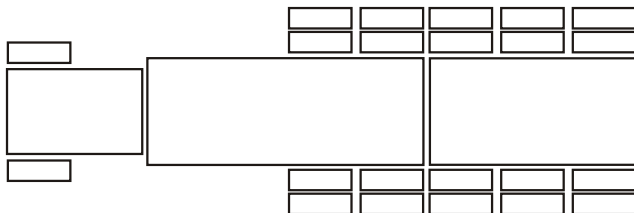
- Sensor Battery Low
- High Pressure
- High Temperature
- Fast Leakage
- Low Pressure
- Monitor Battery Indication
- Tire

Alarm LED

Monitor  
 Brightness  
 Sensor

Pressure Unit : BAR, PSI, Kpa, Kg/cm<sup>2</sup>  
 Temperature Unit : C, °F °

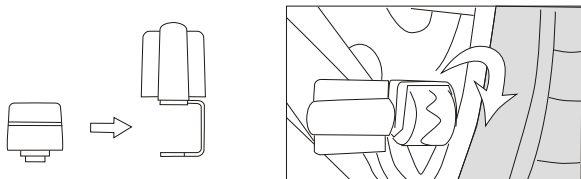
# Installation Sensor Installation



Please note that the sensors are theft resistant, so special wrenches are included to install the sensors with. Install each of the sensors on your tires, the order of installing them is not important.

NOTE: Low pressure trailer and vehicle tires may have rubber valve stems; it is highly recommended that these be replaced with metal valve stems prior to installing the sensors. It is possible that you will need valve extensions, angled adaptors, or something to allow the sensor to be installed on your tires. Due to the large number of possibilities, we do not carry these adaptors but we can recommend places that other customers have used. Please do not over tighten the sensors or damage could result.

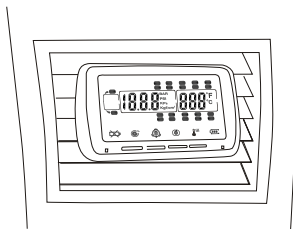
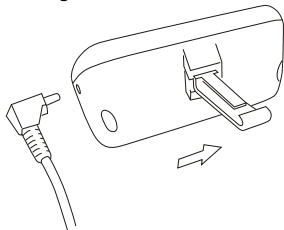
On the back of each sensor is a decal with a 4 digit sensor code. Write this code in the space that corresponds to where you want that tire displayed on your monitor, until you have all of your sensors codes written on the diagram.



## Monitor Installation

Place the monitor in an easy place to be seen either on the dashboard or dash. Plug the power adapter to the vehicle cigarette socket or plug the power connector and connect to the vehicle power.

If, due to length or interference, your monitor does not receive all of the sensors, you should change to the longer antenna. This can be done by unscrewing the the short antenna and screwing in the long antenna. If the monitor still does not receive all of the sensors, or if you do not wish to use the long antenna, you will need to purchase a repeater to increase the sensors transmitting distance.



# Monitor turn on / off manually

The user can turn on / off the monitor when you park the vehicle for long periods of time. Unplug the power cord and press "-" for 6 seconds to turn off the receiver. Press "-" for 6 seconds to turn the monitor back on .

## Parameter Setting

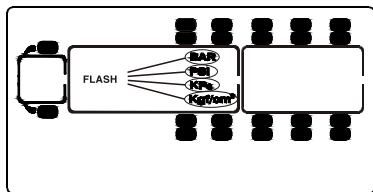
In standby mode, press the "MODE" button for 6 seconds and release it when you hear the first beep. The pressure unit will flash, press + or- to get your preferred unit of measure .Press "MODE" to select the next setting and press + or- to change the values .After all the user adjustable parameters have been set, press the "SET" button to save. Please find the sequence of the parameter setting as the diagram below: Note : factory preset setting :

High Pressure: 175PSI (12.1 BAR)

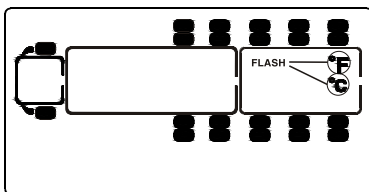
Pressure Unit: PSI

Low Pressure 100PSI (6.9 BAR)

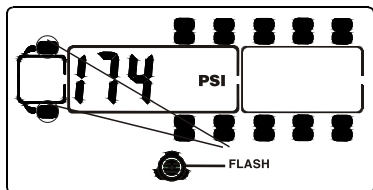
High Temperature: 70°C (158°F)



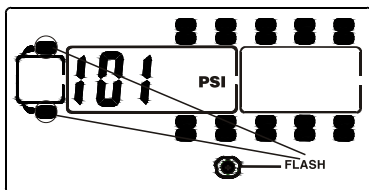
① **Pressure Unit setting**  
selected pressure unit icon flash



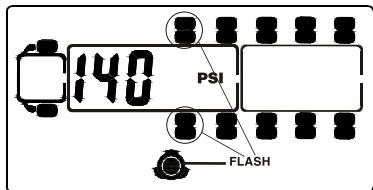
② **Temperature Unit setting**  
selected temperature unit icon flash



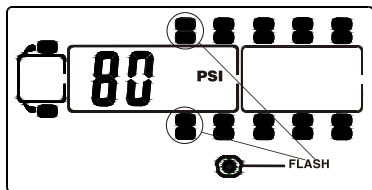
③ **1<sup>st</sup> axle High Pressure setting**  
1<sup>st</sup> axle 2 tires icon and high pressure icon flash



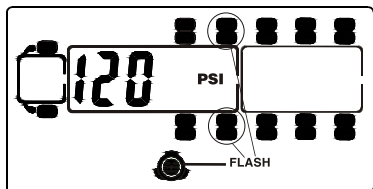
④ **1<sup>st</sup> axle Low Pressure setting**  
1<sup>st</sup> axle 2 tires icon and low pressure icon flash



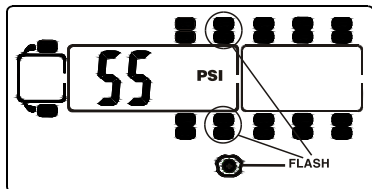
- ⑤ **2<sup>nd</sup> axle High Pressure setting**  
2<sup>nd</sup> axle 4 tires icon and high pressure icon flash



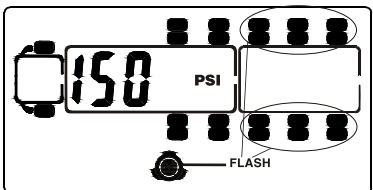
- ⑥ **2<sup>nd</sup> axle Low Pressure setting**  
2<sup>nd</sup> axle 4 tires icon and low pressure icon flash



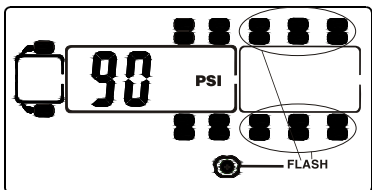
- ⑦ **3<sup>rd</sup> axle High Pressure setting**  
3<sup>rd</sup> axle 4 tires icon and high pressure icon flash



- ⑧ **3<sup>rd</sup> axle Low Pressure setting**  
3<sup>rd</sup> axle 4 tires icon and low pressure icon flash

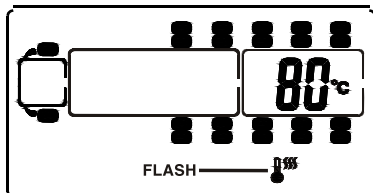


- ⑨ **Back vehicle High Pressure setting**  
back vehicle 12 tires icon and high pressure icon flash



- ⑩ **Back vehicle Low Pressure setting**  
back vehicle 12 tires icon and low pressure icon flash

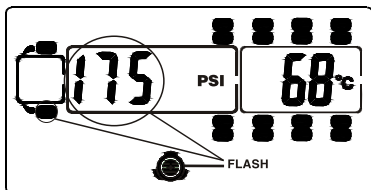
Note: High pressure and low pressure value for Axle 1, Axle 2 and Axle 3 and towed vehicle tires are adjusted separately.



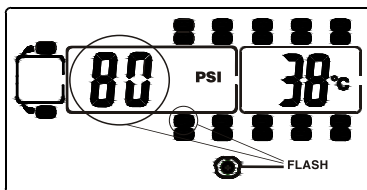
- ⑪ **High Temperature setting**  
high temperature icon flash

## High Pressure / Low Pressure / High Temperature Alert

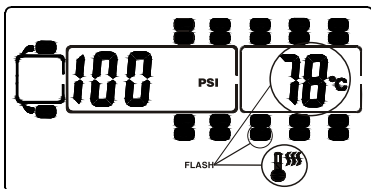
Sensors detect tire pressure and temperature readings every 6 seconds and send the latest reading every 5 minutes. If the reading is over or under the preset levels, an audible alarm will sound and a red alert light will flash within the monitor. The alarm can be silenced by pressing any button on the monitor, however, the red LED light will continue to flash until the temperature or pressure is restored to your acceptable ranges.



(a) High Pressure Alert e.g. 175PSI



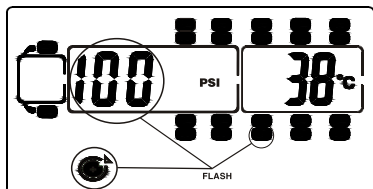
(b) Low Pressure Alert e.g. 80PSI



(c) High Temperature Alert e.g. 78°C

## Fast Leakage Alert

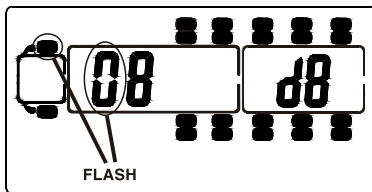
When the sensors detect a fast leak it will send this information the monitor immediately. The corresponding tire icon and the reading flash immediately. There will be audible warning and red LED flash. If you press any button the alarm will silence, however, the red LED light will continue to flash until the problem is corrected.



Fast Leakage Alert 100PSI

## Programming Sensor Codes Into The Monitor

From the normal (standby) monitor display press the SET button for 6 seconds until you hear a beep. The monitor is now in manual code entry mode. Pressing the SET button scrolls through all available tire positions on the monitor until you get to the position you want to program. All available tire positions are steadily displayed, the one that is being programmed will flash. Pressing the + and - buttons changes the value of each digit of the code, pressing the MODE button changes which digit you are programming. For example, let's say you are programming the code from this picture 08d8. Once you are at the desired tire location, the display should show ffff (this is the default setting that tells the monitor no sensor is programmed, and this position is not to be displayed during normal use). The first "f" will be flashing, and by pressing the + or - buttons you will scroll through the letters and numbers changing this f to 0. Press the MODE button and the second f will flash, press the + or - button to change this position to an 8. Pressing the MODE button again will change to the third f, and so on until the display shows the 08d8 from your sensor. Now press the SET button to change to the next tire, and so on until you are finished. Once you are finished press the SET button for 6 seconds to save your programming and exit the programming mode. Please note that once your monitor is programmed it will not lose its programming even if left unplugged with a dead battery.



The picture shows the sensor setting of the tire 08d8. While in setting, the relevant tire and relevant number will flash.

## Automatic Code Learning

This is very handy if you lose a code label and don't have it programmed into the monitor. It is recommended for simplicity to do one sensor at a time. First, take the monitor with the sensor you need the code for and go to a tire that is easy to install and remove a sensor from. Next, press the SET button on the monitor for 9 seconds, until you hear a second beep,



you are now in automatic code learning mode. By pressing the SET button scroll through the available tire positions until you find one with no code entered into it. Now quickly screw the sensor onto the tire. As the sensor is pressurized it will transmit its code to the monitor. The monitor should instantly display the code for that sensor. If you take too long to screw the sensor in, the monitor will exit the Automatic code learning mode and you will have to start over. Repeat for as many sensors as you need codes for. Remember to program the tire position in the monitor back to ffff to keep it from being displayed on the monitor during normal tire monitoring.

## **Other Functions**

### **Normal Scrolling Display**

During normal use, the display scrolls through the displayed tires, one by one, displaying each tire for 5 seconds. As sensors transmit fresh data to the monitor, the monitor changes (out of its normal sequence) to display that tire for 30 seconds. You can manually scroll through the displayed tires one by one by pressing the + button. When you manually select a tire to display, the monitor will stay on that tire for 10 seconds.

### **Backlighting**


The monitor is equipped with a light sensor and a motion sensor, the backlight will only turn on when it detects that your vehicle is in motion and it is dark enough to need the backlight. If the monitor is operating on the internal battery, the display will "go to sleep" to conserve the battery if the motion sensor detects that you have stopped for a time, an example would be for fuel. The motion sensor will wake it up to display the tire data once you are back under way.

The backlight can be turned on manually by pressing the + button for 3 seconds. It can then be turned off by pressing the button for 3 seconds.

### **Disconnect / Connect towed vehicle**

When the towed vehicle is not connected to the towing vehicle, you can press MODE and - buttons at the same time for 3 seconds, the rear vehicle tires will temporarily be removed from the display. Pressing MODE and - again will re-display your towed vehicle.

## **Charging Feature of the Monitor**

There is a rechargeable lithium-ion battery inside the monitor , when fully charged the monitor has a battery life of 36 hours. For example , if you drive 4 hours per day, the receiver can be used for 8 days without connecting the power cord. There is a battery level meter on the display ,when the icon shows  , you need to charge the battery immediately. Be sure to unplug the monitor when storing your vehicle for long periods of time so as to avoid draining your vehicle battery.

## **Sensor Specification :**

Operation Temperature :  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Storage Temperature :  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Pressure Range : 0-13 bar, 0-188 psi

Pressure Sensitivity :  $\pm 0.1$  bar or 1.5 psi

Temperature Sensitivity :  $\pm 1^{\circ}\text{C}$

Fast Leakage Alert :  $>0.4$  bar or 6 psi within 12 seconds

Transmission Power :  $<10\text{dBm}$

Transmission Frequency : 433.92MHz

Battery Life : 5yrs

Size : diameter 22mm height 22mm

Weight 23.5grams

## **Monitor Specification :**

Operation Temperature : -20°C to +85°C

Storage Temperature : -30°C to +95°C

Cigarette Plug (Charger) Input Voltage : 12-24V

Frequency : 433.92MHz

Size : 85L x 45H x 35D

Weight (with Lithium Rechargeable Battery) : 160grams

## **Attention:**

- This system can effectively monitor air pressure and temperature inside the tire, but it cannot prevent traffic accidents. With the assistance of this system, the user should ensure the vehicle is in proper operating condition before travel including verifying tires condition before travel. This system is used a safety tool to help drivers understand when their tires are approaching a unsafe condition. It is understood improper driving habits or careless driving cannot prevent tire damage, and this system can not warn for all conditions encountered while driving that cause tire failure.
- This system is not a substitute for regular tire inspections and as needed maintenance. This system is a reporting device intended to aid the operator in consistently monitoring tires. It is understood that unsafe driving, road conditions, other drivers, tire load restrictions, overloading, and tire manufacturer specifications are all salient factors in the longevity and safety of any tire. As such, the operator is strongly advised to educate oneself as to the specific peak operating needs of their tires as recommended by the tire manufacturer and program your system to respond to those requirements.

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