



Performance Under Pressure

Version 1.1

Thank you for your purchase of our *Pressure Track HD*, TPMS system developed for Heavy Duty, RV and Industrial applications.

Using replaceable CR1632 sensor batteries, this system can measure up to 140 psi inflation pressures as well as tire temperatures

This monitor can handle up to 22 sensors

These instructions are for systems operating Monitor to Sensor distances of up to 30 feet. The addition of a HawksHead Signal Booster should be used for longer vehicles or where the sensor signal is shielded by vehicle bodywork etc. Please contact HawksHead or your local dealer to purchase the Signal Booster or extra sensors.



INTRODUCTION

This Tire Monitoring System monitors the tire's air pressure and temperature. It consists of external tire air pressure sensors and hand-held or mounted monitor.

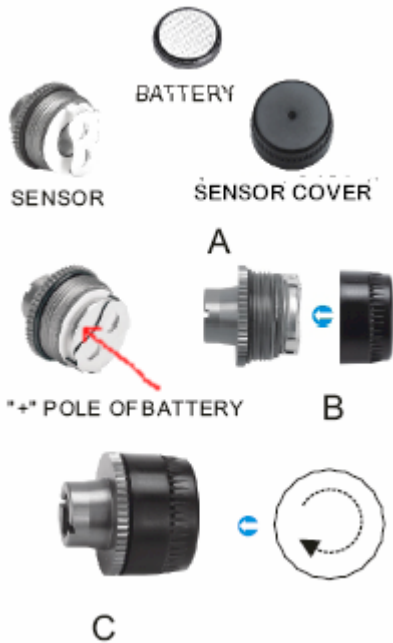
Simply screwed onto the tire valve, the external sensor is used to monitor the air pressure and temperature inside the tire, and then wirelessly send this information to the monitor in real time

The pressure sensor regularly measures the tire's air pressure, temperature and sensor battery voltage.

The monitor indicates the condition of each tire by the graphics mode on the screen. Data for each tires pressure & temperature can be scrolled through on the screen.

The system has many functions of visual warnings and audible alarms to notify the operator of the systems status, pending and actual tire pressure and

temperature changes that can have an effect on the vehicles safe operation.



SENSOR BATTERY INSTALLATION

The standard battery model is the supplied CR1632

Polarity of the battery is critical.

Unscrew the black sensor cover counter clockwise from the sensor. This will allow entry of the battery into the sensor antenna

Slide the battery into the sensor antenna, ensuring the + positive terminal side is outmost facing towards the removed black sensor cover. Replace the black sensor cover securely.

After installing the batteries proceed through the standard alignment process. The battery may have to be re installed again if you get any errors in alignment. When removing sensors for storage, mark each sensor so it can be replaced on the same wheel it was removed from.



SYSTEM SETUP

The monitor has low battery alarm, and multi position windshield bracket mounting options and can be carried around the vehicle for ease of system set up and changes. The monitor comes with an environmentally conscious 12 volt ROHS vehicle lighter cord which is used for recharging the internal rechargeable Lithium power pack. Mount the monitor out of any direct heat or sun.

The monitor has 3 control buttons. The Centre button is the **SET** button. The Left button is the **UP** button and the Right button is the **DOWN** button.

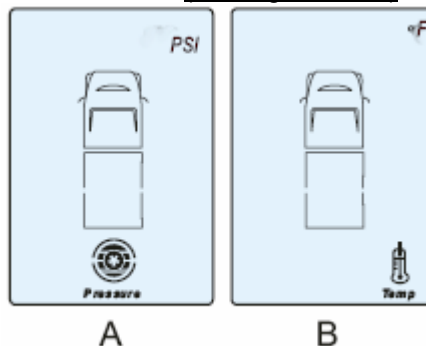
A motion sensor switches the monitor off and the Sensors switch off when there is no motion after 15 minutes to save the batteries. System updates are received on vehicle movement

The system offers pressure settings in PSI, Bar, kPA, kgf/cm² and temperature in °C & °F

1. Setting the calibration, PSI, and either ° F or ° C are the most common in North America
2. Press the **SET** button and the monitor will power up (Charge monitor for 8 hrs prior to starting)
3. Press the **SET** button for **5 seconds** and the monitor will enter the **SETTING MODE** and beep (as diagram below)



4. The monitor will flash the front left tire position. Press the **SET** button 22 times to scroll through all 22 tire positions, then the pressure icon in the top right of the screen will flash allowing you to change pressure calibration type (PSI/BAR etc) by pressing the **UP** or **DOWN** buttons. (As diagram A&B)



5. Then press the **SET** button to switch to temperature type, (degrees F or C) change by pressing **UP** or **DOWN** buttons. Then press **SET** again to finalize your calibration type and return to the **SETTING MODE** with the front left wheel flashing.

6. It is now time to determine your tire pressure settings. This should be determined by consulting your owner's manual for the vehicle. The tires pressures should be set when the tires are cool, out of the sun and the vehicle has not been driven for at least 1hr. This will ensure changes caused by heat and vehicle operation will not affect your true pressure readings. A good quality digital tire gauge is recommended for initial settings.
7. The front left wheel should be still flashing on the monitor. Press the **UP** or **DOWN** button to set that wheels desired normal operating pressure. When the desired pressure is reached press the **SET** button, this will start the front right wheel flashing on the monitor, again using the **UP** or **DOWN** button set the desired pressure and press the **SET** button. Continue setting each desired wheel position pressure in the same manner. The number of wheel positions depends on the number of sensors to be used. When all desired pressure settings have been made press and hold the **SET** button for 5 seconds, the monitor will then beep, the screen will darken and the monitor will enter the **STANDBY** mode.

8.



SENSOR ALIGNMENT & INSTALLATION

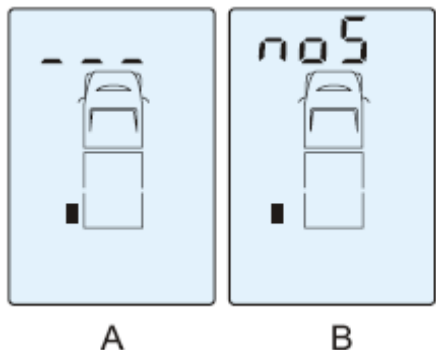
The sensor simply screws onto the tire valve (Dill Valve) it is critical that the complete valve be in good condition with no cracks, be correctly assembled with no wear or side play. Metal valve stems are preferred over rubber. The sensor should be finger tight and no tools used in its tightening. Use a small amount of lubrication/anti seize on Aluminum stem threads ensure none enters the Sensor or valve. A water/soap solution should be applied to the valve thread area after installation to ensure there are no air leaks. Most wheels do not need to be rebalanced after sensor installation.

8. After all wheels have been inflated to their correct operating pressures. Press the **UP** and **DOWN** buttons on the monitor both at the same time for 2-3 seconds.

The **Red warning light** will now be displayed and the wheel sensor position to be aligned will flash. Install a sensor on the wheel to be aligned. The monitor should then show the **Green warning light** and display the aligned wheels tire pressure.

9. This means that this wheel has been detected and is correctly aligned, should the **Red warning light** still be displayed the sensor is not aligned correctly.
10. Press the **UP** or **DOWN** button to scroll to the next wheel position and the **Red warning light** will be displayed and the wheel position to be aligned will flash. Install the sensor for this wheel and the **Green warning light** and wheel pressure will be displayed. Continue with this method until all wheel positions being used are aligned with sensors.
11. To delete a sensor press the **SET** button while in the alignment mode on that wheel position. **To add additional sensors at a later date**, delete all existing sensors and set up from instruction 1
12. After all sensors are aligned press the **UP** and **DOWN** buttons together to go back to the **STANDBY** mode. The **STANDBY** mode is the normal system operating mode and will show the aligned wheels on the display along with pressures. The UP and DOWN buttons enable scrolling.

The system can be shut off by pressing the **SET** button for 8 seconds; the monitor will pass through the **SETTING MODE** before shutting down completely. The sensors still remain operative even in a power down situation.

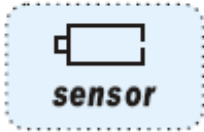


13. **PLEASE NOTE**, Upon restarting the system it may take up to 4 minutes for all sensors to be detected by the system. Wheels with no sensors will be displayed as A and wheels with sensors and no signal will show as B. The sliding monitor antenna can improve signal reception if needed.

14. BATTERY LEVELS



The monitor has visible and audible alarms to warn of low battery levels, the monitor can be recharged by plugging in the adaptor charger cord (8 hrs for full charge), A.B.C. shows charging rate, with beep for full charge. The monitor can continuously work 192 hours at idle state **and will shut off to save power when no motion is detected for 15 mins**

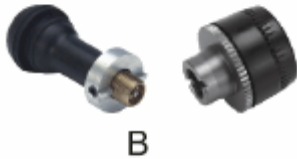


A B C

Should a **sensor low** battery be displayed with its associated location please replace the sensor battery.



15. SENSOR SECURITY



Should sensor security be an issue the sensors are supplied with a screw on locking system which comes complete with wrench or screw driver

This prevents the sensors being unscrewed with a bare hand.



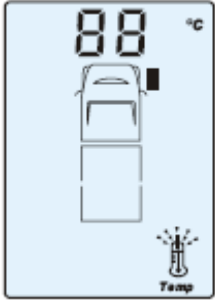
16. SYSTEM ALARMS

Should you get any alarms **STOP** and check your tires.
Rapid Leakage

When the air pressure of a tire drops down more than 4 PSI within 2 minutes, the monitor will give an alarm and the corresponding wheel icon on the screen will flash to indicate the position of the tire with abnormal air pressure along with its air pressure value. Then the icon showing rapid drop in air pressure appears on the screen along with the **Red warning light** as the left diagram shows.

Slow Leakage

When the air pressure of a tire drops down more than 4 PSI within 2 – 10 minutes, the monitor will give an alarm and the corresponding wheel icon on the screen will flash to indicate the position of the tire with abnormal air pressure along with its air pressure value. Then the icon showing slow drop in air pressure appears on the screen along with the **Red warning light** as the right diagram shows.



Note: in the case of a fast or slow leakage, the sensor will deliver the alarm signal in either driving or parked status.

High Temperature Warning: Level 1

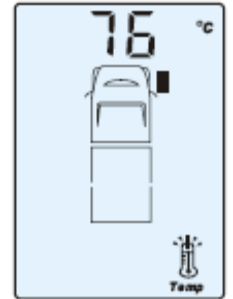
When the temperature inside a tire exceeds 85C, the system will give a class 1 high temperature alarm and the monitor will indicate the position of the tire with the abnormal temperature along with its temperature value. Then the icon showing level 1 temperature alarm appears on the screen along

with the **Red warning light** as the left diagram shows.



High Temperature Warning: Level 2

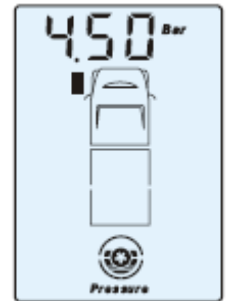
When the temperature inside a tire exceeds 75 degrees C, the system will give a class 2 high temperature alarm and the monitor will indicate the position of the tire with the abnormal temperature along with its temperature value. Then the icon showing level 2 temperature alarm appears on the screen along with the **Red warning light** as the right diagram shows



Low Air Pressure Warning: Level 1

An initial alarm is activated when there is a pressure drop of 15% of the set sensor.

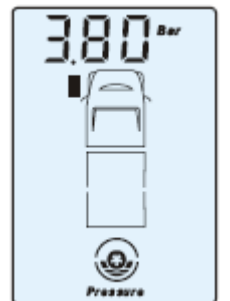
The wheel will be indicated along with the pressure symbol and a flashing red LED as the right diagram shows



Low Air Pressure Warning: Level 2

A warning level 2 is activated when there is a pressure drop of 25% of the set sensor.

The wheel will be indicated along with the pressure symbol and a flashing red LED as the right diagram shows



Low Air Pressure Warning: Level 3

A warning level 3 is activated when there is a pressure drop of 50% of the set sensor.

The wheel will be indicated along with the pressure symbol and a flashing red LED as the right diagram shows



High Air Pressure Warning

A high air pressure warning is activated when there is a pressure increase of 20% of the set sensor. The wheel will be indicated along with the pressure symbol and a flashing red LED as the right diagram shows



Sensor Error

If the monitor doesn't receive a signal from the sensor within 20 minutes when in **STANDBY** mode, the system will alarm for 15 seconds, and the corresponding icon of the abnormal wheel sensor will also flash and indicate with "No S" which means there is something wrong with the sensor or the sensor is damaged. The system will alarm every 20 minutes if the monitor still can't receive the signal from the sensor. As the left diagram shows.

Note:

1. When the monitor is changed from **POWER-OFF** to **STANDBY** mode, the monitor will display "No S" instead of the detailed pressure and temperature value of the aligned tire; however the monitor will

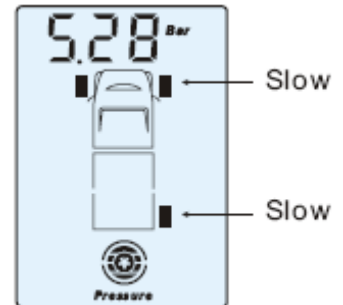
indicate the correct value within 4 minutes if the sensor works normally.

2. When there are several abnormalities with the same tire simultaneously, the monitor will indicate all the information as the right diagram shows:

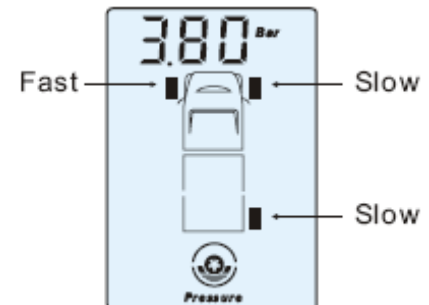


3. When there are abnormalities with 2 or more tires simultaneously:

(a) When scrolling through wheel positions to check the tire pressure and temperature readings. Any normal tires corresponding icon will not flash and the monitor will just indicate the pressure and temperature value of this tire. The icon of an abnormal tire position will flash slowly to remind the user to check it.



(b) If the abnormal tire is selected when checking the pressure and temperature, the corresponding icon of the abnormal tire will flash quickly, the monitor will indicate all the abnormal information of this tire and the icon of other abnormal tires will flash slowly as the right diagram shows:



19 GENERAL INFO

The monitor will give a continuous alarm for 15 seconds with the Red LED and backlight flashing along with the corresponding icon of the tire. Press "↑" **UP** or "↓" **DOWN** buttons to stop an alarm. The backlight will not be flashing and the monitor will just indicate the position of the aligned tire. The Red LED will not stop until the abnormal tire issues are eliminated.

When the tire is inflated, rapid leakage or slow leakage may happen if the pressure inside the tire changes from the current pressure value to zero, The monitor will become normal and the alarm will stop after finishing inflating the tire within 2~10 minutes.

Deleting information of aligned tires

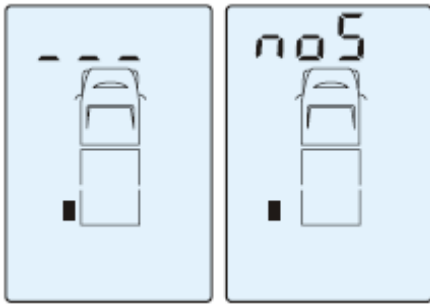
Hold down the **SET** button on the monitor for 5 seconds to delete the current aligned tire during alignment mode.

NOTE: When the sensor's position is changed, please delete the current alignment first and then re-align it. Otherwise there is no need to re-align the sensor even after inflation.

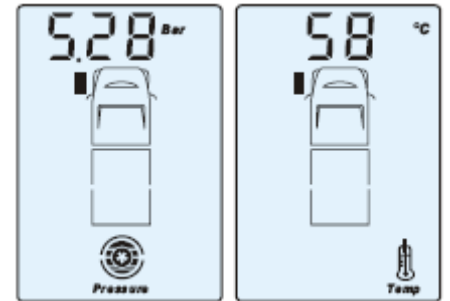
When exiting from the learning mode and checking the pressure and temperature values, the monitor will just indicate, the information of the selected tires so long as all of the tires are to the specified values; after finishing the check, the backlight will go out and the monitor will indicate just the aligned sensors.

Checking Tire conditions

During the standby mode, press “**↑ UP**” or “**↓ DOWN**” buttons to check the air pressure and temperature values of the aligned tires. Press “**↓ DOWN**” button and the monitor will switch to indicate the next data as the *right graphic* shows.



The monitor will indicate “- - -” to show the tires that haven't been aligned as the *left graphic* shows, the monitor will indicate “no S” for aligned tires without signals.



Battery Capacity Indicator for Monitor and Sensor

When the monitor has low power, the battery icon and “MONITOR” icon on the screen flash it then gives a 10 seconds audible alarm.

When the sensor has low power, the battery icon and “SENSOR” icon together with the corresponding tire icon will be indicated on the screen along with a 10 second audible alarm. Low power sensors should be replaced with a new battery as soon as possible. Cold temperatures may also cause lower sensor battery power and should be taken into consideration

Technical Specifications

Sensor

Working Temperature	-20C – 85C
Working Humidity	0-- 95%
Dimension	21X21X21mm
Weight	9g
Battery Voltage	3V DC (CR1632)
Battery Life	1 year minimum
Standby Current	500nA
Working Current	6mA
Pressure Measure Range	140psi
Pressure Measure Precision	+/-2 psi
Temperature Measure Range	-20c-85c
Temperature Measure Precision	+/-3C
Signal Transmitting Frequency	433.92MHz

Monitor

Working Voltage	3 VDC
Working Temperature	-20 – 60 C
Working Humidity	0 – 90%
Standby Current	0.1mA
Working Current	15 mA
Dimension	90 X 55 X 24mm
Signal Receiving Frequency	433.92MHz
Color of Backlight	White

Units Conversion

1 Bar=14.5 psi , 1 Bar=1.02 kgf/cm², C stands for Celsius, F stands for Fahrenheit, F=9c/5+32

OPTIONAL SIGNAL BOOSTER



An optional signal booster (ordered separately) **either hard wired or battery powered** is available from www.TPMS.ca

Designed to boost the sensor transmitting range for vehicles with long distances from sensors to monitor or where sensors are shielded by bodywork etc causing sensor signal strength to be reduced and where extremely cold temperatures may reduce sensor battery power.

The booster should be installed as low as possible on the rear of the towing vehicle or as close to the furthest sensors as possible on a long vehicle. The hard wired booster should be powered by a fused 12v DC supply powered when the vehicle is moving. The red cable is + and the black –

If the system is used for a tow vehicle and trailer/toad together. The system will still show detached trailer pressures and temps for a period of time before reverting to a no signal warning. The system will continue to monitor the tow vehicle and will pick up the trailer sensors when re connected. to the trailer

GENERAL INFORMATION

Tire pressure recommended operating pressures should be set when the ambient temperature is low or cold or where the tire has cooled down and is at a low temperature, out of the sun etc. Dramatic changes in tire pressure can occur because of increased or decreased ambient temperature; tire contact surface temperature etc, these and other situations should be taken into consideration when setting initial tire operating pressures. This system cannot warn you of impending side wall failures or blowouts, however it can supply you with irregular pressures and temperature information that may help to prevent this. To test fast leakage response, unscrew a sensor with monitor in range. Vehicle must have moved and the sensors & monitor not in sleep mode to see current data.

The **Pressure Track System**, relies on a good air connection between the Pressure Track Sensors and the tire valve (known as the Dill Valve) which is located inside the tire valve stem.

The Dill Valve should be the correct size, be in good condition and be able to be depressed fully to allow the release of air to the Pressure Track sensor so it can operate.

Some valve stem extensions may cause inaccurate readings if they do not allow the sensor to operate correctly, standard short metal bodied stems are recommended for best performance.

Should you have difficulty with a pressure sensor not operating correctly we recommend that you contact a tire professional to ensure that the tire stem and Dill Valve are installed and operating correctly.

Do not use tire sealants when using this system. Over a period of time tires may loose pressure naturally, through the tire itself or for other reasons such as rim leakage etc.

However after the Pressure Track valve sensors (including locking mechanism, if fitted) are installed it is recommended that the sensor and valve stem be completely covered in a soapy solution of 1 part liquid soap to 2 parts water, to see if there are any air bubbles coming from the valve and sensor area indicating that the tire is leaking air.

If air bubbles are visualized in any of these areas, the tire may deflate and the **Pressure Track**, system will not operate correctly. The wheel sensors are weatherproof and can be run in the rain.

A tire professional should be consulted should any of these areas prove to be a problem

Please note, Pressure Track Systems, operates on an RF system, as with many RF tire systems this system can suffer from interference depending on the systems location thus causing the system to be inaccurate or not operate at all. We cannot guarantee that the display will receive the sensor signal accurately.

Purchasers of this product should not rely on this tire pressure monitoring system for safety and should check the condition and pressure of their vehicles tires on a regular basis as described by the manufacturer of the vehicle or tire manufacturer.

Tire pressures and temperatures are not the only things that can affect tire safety; we suggest daily visual inspections and checks by tire professionals.

LIMITED WARRANTY

HawksHead will, within 12 months from date of original purchase, repair or replace free of charge any defective component (except batteries) which upon careful inspection is found, in our sole judgment, to have material or manufacturing defects, provided it is received freight prepaid, accompanied by the original purchasers sales slip and an authorized Return Merchandise Authorization number (RMA #.). You may obtain an RMA # by emailing RMA@TPMS.CA

DISCLAIMER OF WARRANTY: *Neither the seller nor the manufacturer will be liable for any loss damage or injury directly or indirectly arising from the use or inability to determine the use of this product. Before using, the user shall determine the suitability of the product for its intended use, and the user shall assume all responsibility and risk in connection herewith.*

PLEASE NOTE: SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG IMPLIED WARRANTIES MAY LAST OR DO NOT ALLOW EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THOSE EXCLUSIONS OR LIMITATIONS MAY NOT BE APPLICABLE TO YOU.

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