

User Manual

PULSE





Founded in 1991 by Phillip and Rhita Zaroor, PressurePro has led the innovation and advancement of the TPMS market for nearly three decades. Noted as the pioneers in our field, we remain unwavering in our dedication to adding safety and savings for drivers and fleets of all types and sizes, around the globe. Today, we are proud to remain the Global Standard in TPMS, while maintaining our roots as a family owned and operated company providing top quality solutions designed and manufactured in the USA.

PRODUCT DESCRIPTION

PressurePro is a wireless electronic Tire Pressure Monitoring System (TPMS) that is designed to display current tire pressures on demand, whether moving or stationary. PressurePro systems, which can be used on all pneumatic tires, consists of two basic components: Tire Sensors which screw onto the valve stems of the tires, and a Display. The Sensors read tire pressure every 7 seconds (12,343 times a day), and transmit a coded RF signal to the Display every 5 minutes assuring timely information. If an alarm level is reached, PressurePro Sensors will override the normal update and alert the Display immediately (see "Alerts" section on page 12). During an alert, the tire location flashes on the Display, the current pressure reading for that tire flashes, and an audible alert sounds.

PressurePro systems provide users with the market's most comprehensive alert schedule, with two low pressure alerts, a high pressure alert, a high temperature alert, a fast leak alert, and a cross axle alert, all user customizable.

PressurePro is a monitoring system and will not prevent tires from losing pressure or failing, but it can provide early notice of potential problems and alert to low tire pressure situations. Because of the quirks of RF Transmissions and interference, no guarantee of signal reception can be made. PressurePro is not meant to function as a pressure gauge or low pressure indicator.

DISPLAY BUTTON FUNCTIONS



POWER

- Activates Screen
- Exits all Menus



ALERT

- Quick access prioritization of alerts
- Alert/Warning Indicator Reminder Light



UP/DOWN ARROWS

- Navigates through screens and positions
- Scrolls through tire positions and readings in operation mode.



SELECT

- Selects Display functionality during programming and use
- Alternates viewing mode for display
 - Tire Mode
 - Axle Mode
 - Unit Mode



MENU

- Enter Main Menu
- Moves back within menus

PRE-INSTALLATION INSTRUCTIONS

When Sensors are installed, they recognize the initial pressure sampling/reading as their BASELINE, therefore tire pressure at the time of installation is important. It is recommended to install Sensors with all tires inflated to the manufacturer's recommended pressures while the tires are "cool". Installation in the morning before vehicle movement is optimal, but not necessary. Installations can be done when tires are "warm", though doing so, without manually resetting the reference pressures, may cause false alerts. If installation is done while tires are "warm", make sure to manually set your reference pressures using the instructions on page 7.

Tires and valve stems should be carefully inspected prior to installation of the system to ensure that they are in good condition. Defective valve stems must be replaced. At times, it may be necessary to clean the threads of the valve stem with a wire brush before installing a Sensor.

The valve core (the small valve inside the valve stem) must depress fully and release air for the Sensor to activate. The Sensor might not activate properly if the valve core pin is not flush with the end of the valve stem, allowing a good release of air to interface with the Sensor. It is not unusual to find valve cores installed too deep, which will cause the Sensor to not activate properly. The valve core should be centered. Check valve core by pressing the end of a thumbnail directly into the valve core to make sure it releases a "burst" of air.

PRE-INSTALLATION NOTES

When installing Sensors on vehicles with aluminum valve stems: New autos may include factory installed TPMS Systems. New vehicles with TPMS utilize aluminum valve stems while PressurePro Sensors are made with brass threads. Brass will bond to aluminum due to the galvanic action between the different metals. When installing PressurePro Sensors to aluminum stems, carefully apply dielectric grease, an anti-seize compound, to the aluminum stem being careful to apply only to the threaded area of the valve stem. **IMPORTANT: Remove Sensors every 4 weeks to ensure that the aluminum stem and brass threads don't bond. If storing the vehicle for extended periods, remove the Sensors from the aluminum stems.**

When using mounting options with your PULSE Display, use #8-32 machine screw. 1/4" length is recommended for most applications. **Hand tighten only.**

Utilizing PressurePro's Drop-and-Hook capabilities (or PULSE as a Programmer): If you plan to use your PULSE unit in a drop-and-hook operation in conjunction with Gateways or Universal Repeaters (PressurePro's LINK solutions), please see PULSE AS A PROGRAMMER instructions, located on page 11.

INITIAL SYSTEM SET-UP & CONFIGURATION

First things first! Upon initial powering of your PULSE Display, please take a minute to configure your unit's time and date, vehicle configuration and (if wanted) custom alert settings.



GIVE IT POWER!

- Find your PressurePro power cord.
- Connect the 6-Pin Molex connector to your Display.
- Connect opposite end to a 12V or 24V power source (via an accessory lighter or hard-wiring).



SET TIME AND DATE:

- Your Display will automatically take you to a screen prompting you to set your time and date and will walk you through the set-up. Use to the date and time settings.
- When complete, press to leave 'Display' screen and return to the "MENU".



CONFIGURE VEHICLES (IF MONITORING MULTIPLE UNITS)

Towed units and trailers are considered their own vehicle:

- From the main "MENU", to "VEHICLE SETTINGS" and push .
- If you have a tow vehicle, or are monitoring multiple vehicles, "+/- Vehicles", and through and activate the desired number of vehicles. *When finished, press to return to "VEHICLE SETTINGS".*



SELECT VEHICLE ID:

- From "VEHICLE SETTINGS", "VEHICLE ID" and the vehicle you want to name.
- Follow the Display's prompts (using to name vehicle). Repeat as needed for all vehicles. *When finished, press to return to "VEHICLE SETTINGS".*

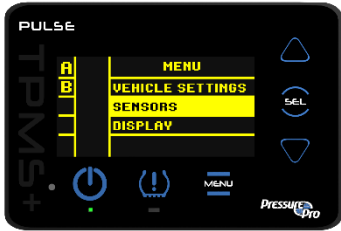


SET YOUR ALERTS:

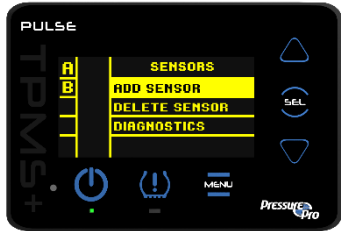
- From "VEHICLE SETTINGS", "ALERT SETTINGS", the alert option you'd like to customize, and follow the Display's prompts to change alert settings. See Alert Settings, page 12, for full alert instructions.

PROGRAMMING SENSORS

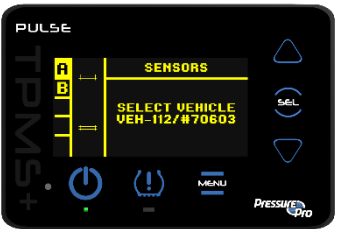
DO NOT PUT SENSORS ON TIRES. (You'd be amazed at the number of calls received to prompt this note.) First, read [Initial System Set-Up & Configuration](#) (page 5) and follow the simple steps. You'll be set-up in minutes!



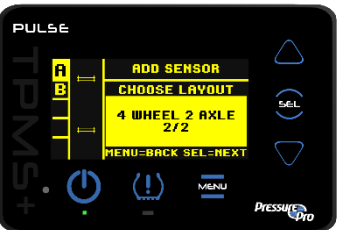
1. From the main "Menu" to "SENSORS" and .



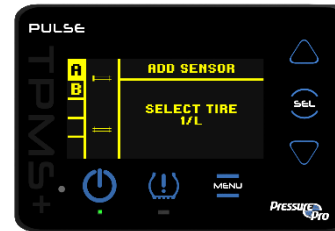
2. "ADD SENSOR".



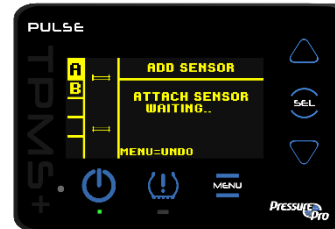
3. If monitoring more than one unit to desired vehicle and .



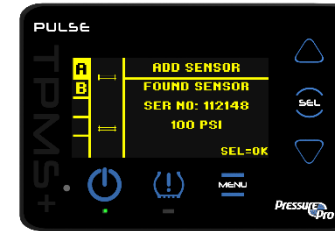
4. through and the desired vehicle layout (or create a custom layout) following prompts.
Your display will populate your configuration, and default to the front left tire for installation. To choose another position to the desired location then press .



5. Press to install a sensor for the highlighted location. Press to adjust the location. Your display will begin searching for a sensor recently pressurized.



6. Attach a Sensor to the highlighted location's valve stem, and wait for a reading to populate. This may take up to 60 seconds.



7. Once the pressure populates, press to lock in the Sensor and move to the next location.



Repeat steps 5-7 as needed for all desired locations. **When finished, press the power button twice to place Display in operation mode. Installation is now complete.**

SETTING REFERENCE PRESSURES

MENU → VEHICLE SETTINGS → REF PRESSURES → AXLE REF PRESSURE or VEH REF PRESSURE → Axle or Vehicle → Adjust reference pressure using → Use to save the new reference pressure.




NOTE: AXLE allows the user the ability to control reference pressures by axle; VEH allows the user the ability to control the reference pressure based on the virtual unit or vehicle.

FREQUENTLY ASKED QUESTIONS/TIPS

WHAT SHOULD BE DONE IF A LOW PRESSURE ALERT IS SOUNDED? Immediately pull over to a safe location and inspect indicated tire. Be sure to check valve stem for damage.





CAN I STORE MY VEHICLE WITH THE DISPLAY ON? Yes. The Display draws 25mA to 100mA of power. It's possible the Display could drain the vehicle's battery over an extended period of time. If storing vehicle for more than one month it is recommended that you unplug Display and remove Sensors (see VEHICLE STORAGE RECOMMENDATIONS, page 9).

DOES DISPLAY NEED TO BE POWERED BY LIGHTER ACCESSORY? No. Hardwiring is the preferred method of powering as it reduces back feed interference. To hardwire, connect the red wire to a 12 or 24-volt DC positive power source (direct wire to the battery is not required). The black wire should be connected to a ground or chassis. When direct wiring, it is important to install a 2 AMP in-line, fast blow fuse to protect the Display from voltage spikes. **DISPLAYS DAMAGED DUE TO HIGH VOLTAGE OR HIGH CURRENT ARE NOT COVERED BY WARRANTY.**

CAN DISPLAY BE USED INDEPENDENTLY ON PRIMARY AND TOW VEHICLE? Yes.
MENU → VEHICLE SETTINGS → +/- VEHICLES →   to desired Vehicles → Turn "ON"/"OFF" (Using the  button). *Note: Vehicle Layout settings, programmed Sensors, and reference pressures are saved when a vehicle is turned "OFF"

WHAT HAPPENS WHEN I REMOVE A SENSOR TO INFLATE A TIRE? Display will show "00" reading. After 15 minutes, the Display shows 3 question marks (???).



WHAT IS THE "REMINDER" ALERT? After an alert has been acknowledged with a button press, the amber TPMS Alert/Warning Quick Indicator Light will remain solid as a reminder of the alarm/warning condition and the reminder alert will continue to beep once every 5 minutes.

HOW DO I DELETE SENSORS? MENU → SENSORS → DELETE SENSORS →   to desired vehicle A-E →   to desired tire location → Confirm deletion.

CAN I USE A SEALANT OR EQUALIZER POWDER IN THE TIRE WITH PRESSUREPRO? If using a sealant or powder, PressurePro recommends the use of a filtered valve stem (or filtered core) to reduce the chance of the Sensor becoming clogged.

DO I NEED TO REBALANCE MY TIRES WHEN USING A SENSOR? The 2/3 ounce Sensor, on large tires (RV/Truck), seldom necessitate a tire be rebalanced. Smaller tires may require a ½ ounce stick-on weight opposite the Sensor, or rebalancing.

DATA LOG FULL! If the data log is full, it can be cleared by going to MENU → DISPLAY → LOGGING. While in LOGGING, select clear log and follow the prompts.

DO I HAVE TO USE DATA LOGGING CAPABILITIES? No. If not using PressurePro's data logging capabilities, go to MENU → DISPLAY → LOGGING → LOG INTERVAL. Press  until 'ALERT ONLY' and .


IF I UNPLUG OR LOSE POWER, MUST I REPROGRAM DISPLAY? No. Settings are always retained unless physically deleted. Display shows 3 question marks (???) until Sensors send a new updated reading within the normal 5 minute reporting period.

WHEN DO MY SENSORS SAMPLE/TRANSMIT PERFORMANCE?

1. Within 60 seconds of screwing Sensor onto the valve stem.
2. Every 7 seconds/5 minutes while updating, under normal conditions.
3. Every 5 seconds/3.5 minutes during operating conditions (Dynamic Sensors only).
4. During an Alarm Condition.
5. When a Sensor is removed from its valve stem.




DURING INSTALLATION, NO SIGNAL WAS RECEIVED FROM THE SENSOR. Higher radio frequency (RF) transmissions propagate mostly via straight lines and along line-of-sight pathways. PressurePro Sensors are required to accomplish a daunting task – transmit from a vehicle's tires to the Display. If a Sensor fails to give a pressure reading, slightly move the Display, remove the Sensor for 60 seconds, and reattach Sensor.

POWER CORD & FUSE / WHY DOESN'T MY DISPLAY TURN ON? If your Display does not power, make sure the cord is properly connected. Check the fuse located in the cigarette lighter end of the cord by unscrewing the silver ring (at the silver tip) of the plug. Replace if necessary with a 2 amp in-line, fast blow fuse.

HOW DO I CHANGE BETWEEN MEASUREMENT UNITS? PULSE can show pressure and temperature values in imperial or metric units. The TPMS+ Display shows the measurement unit to the right of all readings. To adjust the measurement unit follow these instructions: MENU → DISPLAY → MEASUREMENT UNITS → PRESSURE or TEMPERATURE →  desired unit of measurement.

WHAT HAPPENS DURING A BLOWOUT? During a blowout (or situation with complete loss of pressure) the Display will signal a 'very low' pressure and read "00". There may be instances, such as in a catastrophic blowout, when a Sensor or stem is blown off the tire, the vehicle moves out of signal range and no signal (alert) is received.

WHY DO I HAVE AN INACCURATE LOW OR HIGH-PRESSURE ALARM? Most false low or high pressure alarms are a result of improper reference pressure settings. To resolve these notifications, follow SETTING REFERENCE PRESSURES instruction on page 7. If inaccurate alerts persist after setting correct reference pressures, contact your PressurePro representative/dealer for assistance.

HOW DO I SET OR CHANGE MY PASSWORD ON MY DISPLAY? The PULSE gives you password protection abilities to eliminate accidental or intentional tampering with settings. To set or change your password: MENU → DISPLAY → ADVANCED → PASSWORD → ON/OFF. "0000" is the factory password. To change/customize your password  CHANGE PASSWORD →   to your new password > LOG OUT to activate password.

VEHICLE STORAGE RECOMMENDATIONS: If storing your vehicle for extended periods, removing the Sensors can help extend battery life. Mark each Sensor's location so it can be replaced on the same tire location from where it was removed (eliminating the need for reprogramming), or use a sectional storage device (similar to a tackle box divider system). When putting the system back on, power up Display first, next screw Sensors onto their original wheel locations. Pressure readings will show on Display (can take up to 1 minute for new readings to report).

DATA LOGGING CAPABILITIES

PULSE comes standard with market leading data logging capabilities. Data Logging allows a complete history of your tire performance to be exported from the PULSE via a microSD. Data logs will export in .xml format, which works with many programs. **Alongside these capabilities, PressurePro offers an automated data log processing tool to help simplify and analyze your data.**

Free for consumer use, the tool can be accessed at <http://datalog.pressurepro.us>. **To gain access, you must first be registered.** Contact your dealer/distributor for more information.

Export Instructions: MENU → DISPLAY → LOGGING → EXPORT LOG

To Clear Data Log (deletion): MENU → DISPLAY → LOGGING → CLEAR LOG

If you don't intend to use the PULSE's data logging functionality, you can adjust the logging frequency to its lowest available setting of Alert Only:

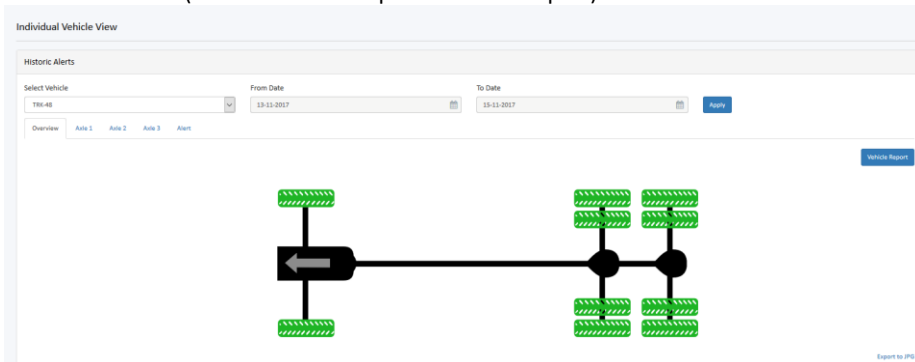
- MENU → DISPLAY → LOGGING → LOG INTERVAL → ▽△ to ALERT ONLY.

MicroSD Card Format Information:

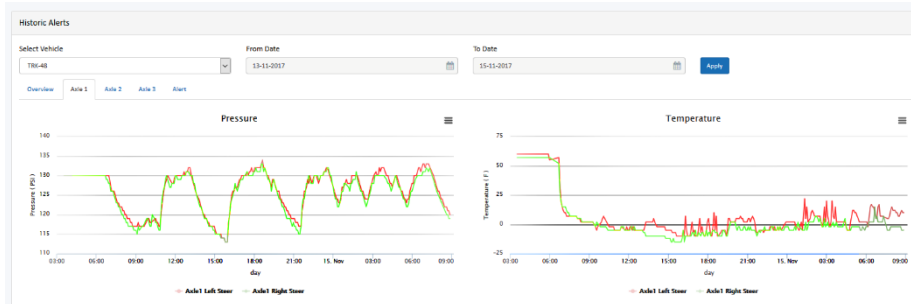
MicroSD cards must be FAT32 formatted and a maximum size of 32 GB.

Examples:

Vehicle Overview (also available in exportable excel report).



Alert History, Axle View, Pressure and Temperature Overview.



PULSE AS A PROGRAMMER

PressurePro's PULSE acts as the primary programming interface for the LINK Product line (Gateway, GatewayLite, and Universal Repeater). The PULSE communicates with the Gateway or GatewayLite directly over CAN/J1939, and with the Universal Repeater by communicating with a Gateway powered at the same source.

To Access/Activate Drop and Hook: MENU → DISPLAY → ADVANCED → OPERATION MODE → ▽ to scroll to DROP AND HOOK → SEL to confirm.

PULSE will automatically reboot to enter Drop and Hook mode. After rebooting, your PULSE will search for a Gateway/GatewayLite over CAN, this is indicated by the "Scanning for Vehicles" prompt. If the PULSE recognizes a Gateway/GatewayLite it will display "No Sensors" or the sensors programmed to the box. If the PULSE does not find the Gateway/GatewayLite, it will display "No Vehicles Found".

BAUD RATE

Many networks use different data rates for communication. PressurePro products come from the factory configured to 250K baud. The data rate for the Gateway/GatewayLite and the PULSE can be configured through the PULSE display, but the PULSE must see the Gateway/GatewayLite before it can force its baud to change.

To change Gateway/GatewayLite baud:

MENU → VEHICLE SETTINGS → ADVANCED → CAN BAUD RATE

To change PULSE baud:

MENU → DISPLAY → ADVANCED → CAN BAUD RATE

TIRE ALLOWANCE INSTRUCTION





PULSE can enable the maximum tires programmable to a Gateway, GatewayLite, or Universal Repeater from 16 to 32. The unit will need to reboot after PULSE makes the change for the settings to implement.



Max Tires Change Instruction:

MENU → VEHICLE SETTINGS → ADVANCED → MAX TIRES → ▽△ to desired vehicle and SEL → ▽△ to choose between 16/32 tires → SEL to confirm.


For complete LINK (Gateway/Universal Repeater) instructions, visit our website at www.pressurepro.us.


ALERT SETTINGS



All alert settings are vehicle specific. You will need to  the vehicle after 'ing the parameter to be adjusted by using  to  the desired vehicle.

LOW and HIGH PRESSURE: MENU → VEHICLE SETTINGS → ALERT SETTINGS → LOW PRESSURE or HIGH PRESSURE → Use  to adjust percentage from reference pressure for alarm triggering → Use the  button to save the new alarm setting.

*NOTE: Low Pressure has two alarm settings. The extremely low pressure (adjustable) & slightly low pressure (calculated at 5/8ths of the extreme; toggled on/off). LOW & HIGH PRESSURE alarms are factory set at 25%, with slightly low pressure toggled on.

ACROSS AXLE %: MENU → VEHICLE SETTINGS → ALERT SETTINGS → ACROSS AXLE % → Use  to adjust the percentage deviation per axle. *NOTE: Across Axle % is factory set at 20%.

HIGH TEMPERATURE: MENU → VEHICLE SETTINGS → ALERT SETTINGS → HIGH TEMPERATURE → Use  to adjust the High Temperature Alert. *NOTE: High Temperature alarm is factory set to 200°F.

LEAK DETECTION: MENU → VEHICLE SETTINGS → ALERT SETTINGS → LEAK DETECTION → Use  to adjust the percentage deviation → Use  to adjust the time limit for deviation. *NOTE: Leak Detection is factory set as OFF.



US Letter Patent # 6,453,737 (Other Patents Pending)

PressurePro systems comply with Part 15, Class B of the FCC Rules.

Products using RF signals are subject to interference causing a loss of signal. Reception depends on the environment and conditions present at the time of use. PressurePro is a device meant for displaying tire pressures and has been designed to be as reliable as possible with the use of RF transmissions. There is no guarantee of signal reception. 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. PressurePro is a device meant for displaying tire pressures.

SPECIFICATIONS

DISPLAY

Power Requirements	12 or 24 VDC; draws 50 mA in standby.
Dimensions	4.5" W x 3.0" H x 1.0" D
Mounting screw size	#8-32 machine thread 1/4" internal length. Hand tighten only
Tire Positions	1 to 80 tire positions
Pressure Alert Levels/Options	Alerts are completely customizable. For convenience, your Display comes factory set at the following levels. <ul style="list-style-type: none">i. Low Pressure = 15% and 25% lossii. High Pressure = 25% increaseiii. Cross Axle Alert = 20% variationiv. Fast Leak Alert = OFF
Temp. Alert Levels/Options	200°F (User Configurable)
Built in Advanced Capabilities	RS232, J1939 & USB data feeds Data logging and download

SENSOR

Transmit Range	Up to 300 feet (Line-of-Sight) +
Operating Frequency	433.92 MHz FM
Operating Temperature Range	-20 °C to 70 °C
Excursion Temperature Range*	-40 °C to 120 °C
Weight	.66 oz. (18 grams)
Dimensions	1.01" H x 1.11" Dia.
Batteries	Internal, sealed unit, non-replaceable
Operational Pressure Range	0 to 215 psi
Survivable Pressure Range*	0 to 300 psi
Pressure Resolution*	1 psi (±3 psi)

*Notes

Sensor transmission range is dependent on the vehicle environment and receiver antenna location.

Operating Temperature Range refers to the range that the Sensor would be expected to survive over an indefinite duration. Specifically, this refers to the temperature limit inside the housing of the Sensor.

Excursion Temperature Range refers to the environment that the Sensor has been tested and known to survive in for short durations. Specifically, this refers to the survivability of the Sensor housing. Prolonged exposure to temperatures outside the Operating Temperature Range, even if within the Excursion Temperature Range, can result in Sensor failures.

Sensor Pressure Survivability refers to the physical survival of the Sensor. Sensors employ an internal seal tested to survive up to 299 psi. The Sensor is not guaranteed to function if exposed to pressures above the Operating Pressure Range.

PressurePro Sensors are officially rated at ±3 psi (20 kPa). This limitation is a factor of the chipset used within the Sensor. In practice, PressurePro has found the variance in Sensors to be within 2 psi in most conditions.

LIMITED WARRANTY

ONE YEAR LIMITED WARRANTY: Subject to the limitations and exclusions set forth in this Limited Warranty, PressurePro is warranted by Advantage PressurePro, LLC (hereinafter "APP") against defects in material or workmanship that result in a product failure during the one-year period following the date of purchase. This Limited Warranty applies only to claims made by the original end user (hereinafter "you") and cannot be assigned, transferred or conveyed to any subsequent users.

EXCLUSIONS FROM COVERAGE: This Warranty does not apply to any claims arising from misuse, abuse, unauthorized repair or alteration, circumstances where PressurePro is improperly installed or improperly wired contrary to PressurePro product instructions; or damage or defect attributable to fire or other casualty, including, without limitation, acts of God or exposure to abrasive or corrosive materials or pollutants, or attributable to collision or other accidents involving vehicles upon which the PressurePro is installed. Removal or alteration of labels voids product Warranty. Only PressurePro accessories may be used with PressurePro products. The use of other accessories with PressurePro product is prohibited and can damage the PressurePro product. Warranty problems caused by use of accessories not supplied by APP will not be covered under the warranty.

LIMITATIONS: APP expressly limits the applicability of the implied warranty of merchantability and the implied warranty of fitness for a particular purpose to the one-year warranty period as provided herein. Some states don't allow limitations on how long an implied warranty lasts, so the above limitation may not apply.

To the extent permitted by state law, the remedy of repair or replacement discussed below is the sole remedy available to the end user under this Limited Warranty. THIS LIMITED WARRANTY SPECIFICALLY EXCLUDES ALL INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. To the extent permitted by state law, APP's liability for PressurePro will not exceed the purchase price paid for the product.

NOTICE: This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIVE AGREEMENT: To the extent permitted by state law, this One Year Limited Warranty is a complete and exclusive statement of the warranties, which apply to the PressurePro; there are no express or implied warranties beyond those expressly stated above. No employee, agent, dealer or other person is authorized to give any warranties on behalf of the APP, except as authorized in writing.

STATUTE OF LIMITATIONS: To the extent permitted by state law, in purchasing the PressurePro you agree that any action for breach of contract or warranty must be commenced within one year after the cause of action has accrued.

PROCEDURE: In the event that a product failure covered by this warranty occurs while this warranty is in effect, APP will, at its option, either: (a) repair the defective unit; (b) replace the defective unit with a new unit; or (c) replace the defective unit with a refurbished unit. APP will ship your repaired, new, or refurbished unit to you without charge for parts, service, or any other cost (except shipping and handling) incurred by APP or its representatives in connection with the performance of this warranty. Failed units covered under this warranty must be sent by you to APP with shipping prepaid by you. You are responsible for all costs incurred in the removal, reinstallation, and shipping of the unit. A copy of the sales slip received by you at the point of purchase of the unit must accompany the returned unit. Call APP for Warranty Return Authorization.



CORPORATE OFFICES:

ADVANTAGE PRESSUREPRO, LLC
205 W. WALL STREET; HARRISONVILLE, MO 64701
TEL: 816-887-3505 FAX: 816-887-3705
www.pressurepro.us

FOR ORDERING OR TECHNICAL ASSISTANCE, CONTACT YOUR DEALER.

WARRANTY AUTHORIZATION:

FOR RETURN AUTHORIZATION ON WARRANTY ISSUES
CALL PRESSUREPRO TOLL FREE AT: 800-959-3505

To activate your Warranty, visit www.pressurepro.us and click on the "Register Your Product" box (located on the homepage under Quick Links). Customers must retain their original purchase receipt as a copy will be required for warranty or service work on your PressurePro product.



Designed and Manufactured in the USA