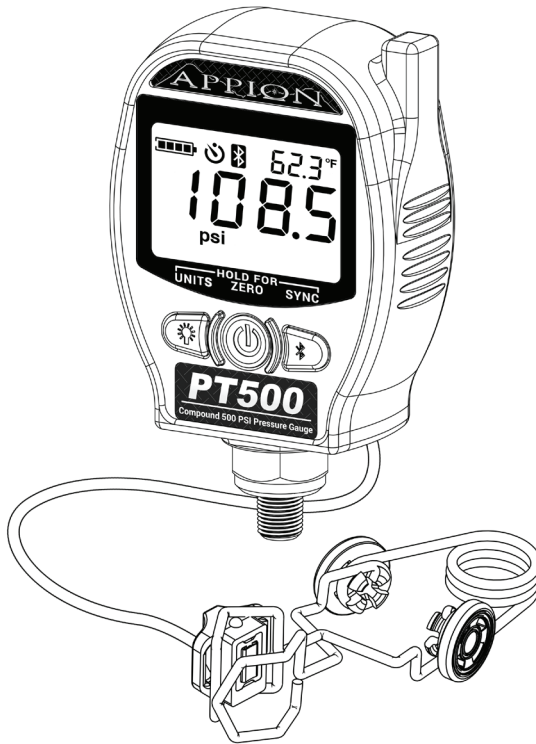




[www.AppionTools.com](http://www.AppionTools.com)

# ***PT500 / PT800***

**Wireless Pressure Gauge with Temperature**



## **OPERATION MANUAL**



### **WARNING**

TO REDUCE THE RISK OF INJURY OR PRODUCT DAMAGE, READ OPERATION MANUAL PRIOR TO OPERATING PRODUCT.

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# Introduction

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With the PT500 & PT800 Wireless Digital Pressure/Temperature Gauges, you can take measurements directly from system access ports and monitor the readings remotely, without the refrigerant loss caused by manifolds and long hoses.

A temperature clamp with minimal thermal mass, and a thermally isolated contact sensor lead to improved response times, and highly accurate temperature readings.

With its high accuracy and repeatability, you can depend on the real-time readings on the built-in display or on a remote Smartphone or Tablet for easy AC/R system service.

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# Safety

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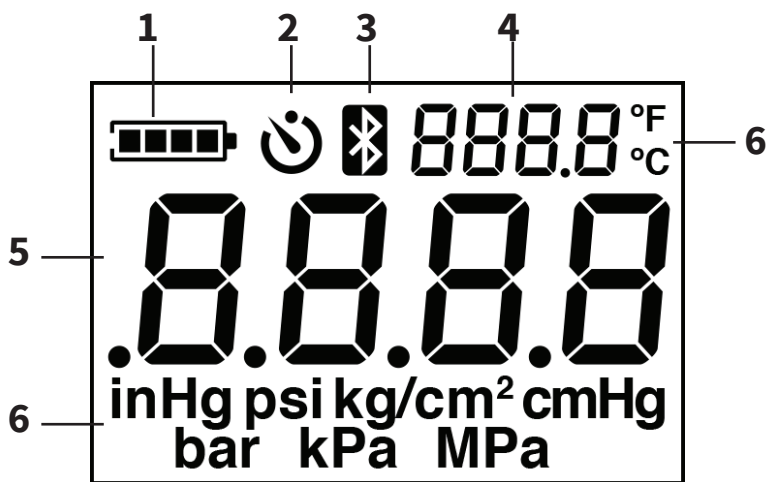
- Do not connect to systems exceeding rated pressures.
- Do not use leaky or damaged batteries.
- Use only specified batteries and cleaning agents.
- Battery operating temperatures may vary by manufacturer. The batteries supplied with this unit are for storage and operating between 32°F-104°F (0°C-40°C).
- Dispose of batteries in accordance with any applicable local laws and regulations.
- Do not dispose of the product or battery in a fire or heat above 100°C.

# Package Contents

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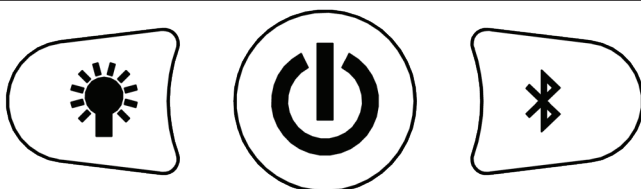
- (1) Wireless Pressure Gauge
- (1) Thermal Sensor with clamp
- (1) 1/4" Male Flare Adapter
- (1) 1/4" Female Swivel Flare Adapter
- (3) AA Batteries
- (1) Operation Manual
- (1) Warranty Card

# Display



- |                      |                         |
|----------------------|-------------------------|
| 1- Battery Indicator | 4- Temp. Measurement    |
| 2- Auto Power Off    | 5- Pressure Measurement |
| 3- Bluetooth Status  | 6- Units                |

# Controls



<b>Press</b>	Backlight/ Units 'up'	ON/OFF	Units 'down'
<b>Hold</b>	Setup Mode	Zero	Connect Bluetooth
<b>Both</b>	Toggle APO Timer		

- 1. Press** a button for the “Press” function above.
- 2. Hold** a button for 2 seconds for the “Hold” function.
- Press **both** Backlight and Power to toggle Auto Power Off (APO) timer feature.

# Using the PT500 & PT800

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**⚠ CAUTION** Always wear hand and eye protection when handling connections to systems under pressure.

## **BEFORE CONNECTING TO SYSTEM UNDER PRESSURE:**

1. Press and hold the Power (center) button to “zero” the reading to adjust for ambient atmospheric pressure.

## **NORMAL USAGE:**

2. Make sure that all fittings are properly tightened and sealed before connecting the gauge to a system under pressure. ***Never tool-tighten a knurled fitting.***
3. Press the Power button to turn on the gauge. Wait for the power on self-test to complete before using the readings from the gauge.

## **CHANGING UNITS (SETUP MODE):**

4. Press and hold the Backlight button for 2 seconds to enter setup mode.
5. Backlight and Bluetooth buttons can be used to cycle units (up/down). Pressure units are changed first.
6. Press Power button to accept and set units.
7. Temperature units may now be changed using steps 5 and 6.

**NOTE:** Setup will timeout after 5 seconds without input.

**Tip:** *Connect directly to the system or to the Side Access Port on a Valve Core Removal Tool with the included Female Swivel Adapter.*

# Using the Temperature Sensor

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**⚠ CAUTION** Always wear hand and eye protection when handling connections to systems under pressure.

The temperature sensor included with your PT500/800 is thermally isolated for high accuracy, and highly versatile, as it can be used to measure temperature on pipes of *any size* (see page #7).

## USING THE TEMPERATURE SENSOR WITH CLAMP

The temperature sensor can be attached to pipes up to 1.5 inches in diameter using the included clamp.

1. Plug the 3.5mm connector into the back of the PT500/PT800.
2. The gauge display will show temperature readings. (see page #4)
3. Squeeze to open, and attach clamp to pipe.
4. Use the ION HVAC/R App™ to calculate Superheat or Subcool. (optional)

# Using the Temperature Sensor, cont.

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**⚠ CAUTION** Always wear hand and eye protection when handling connections to systems under pressure.

## USING THE TEMPERATURE SENSOR ON LARGE DIAMETER PIPES

For pipes larger than 1.5 inches in diameter, the sensor may be detached from the clamp and attached to pipes of *any size* using cable ties.

1. To use the temperature sensor with a cable tie: first remove it from the clamp and thread the cable tie through the opening on either side of the sensor.
2. Loop the loose end of the cable tie around the pipe, thread it through the other opening on the side of the sensor, and through the ratchet head on the cable tie.
3. To tighten, pull the end of the cable tie until tight.

**NOTE:** Full contact of the sensor to the pipe is necessary for accurate temperature readings. If the sensor becomes misaligned, it can be moved back into the correct position on the clamp using your fingers. The sensor should fit square in the (non-rubberized) ‘vee’ of the clamp.

# Bluetooth Operation

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**NOTE:** Bluetooth communication requires a compatible device running the ION HVAC/R App™. Development of the ION HVAC/R App™ is ongoing, and any information presented in this manual about the ION HVAC/R App™ may not be up to date. Visit [www.AppionTools.com](http://www.AppionTools.com) or your device's App Store for the latest ION HVAC/R App™ and additional information.

1. With the gauge powered on, press and hold the “SYNC” button for a few seconds, until the Bluetooth symbol begins flashing on the gauge screen.
2. In the ION HVAC/R App™, “Scan” for devices, and connect as shown in the ION HVAC/R App™. When using multiple Appion gauges, it may be easiest to connect all of the gauges first, then disconnect if needed.
3. If the connection is lost due to exceeding the Bluetooth range, or due to loss of power, repeat Step 1, then “Reconnect” the gauge through the ION HVAC/R App™ interface.

**NOTE:** Bluetooth range may vary due to obstructions or interference. The ION HVAC/R App™ will indicate when communication is lost.

**NOTE:** The gauge will continue to operate normally even if Bluetooth communication is lost.

**Tip:** Disable Bluetooth connection on gauge and disconnect gauges from ION HVAC/R App™ to save battery life.



# ION HVAC/R App™

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The ION HVAC/R App™ enables remote viewing for applION™ Wireless Digital Gauges.

**SUPERHEAT/SUBCOOL:** Select the *Superheat/Subcool* subview. Either type in a manual entry, or connect pressure and/or temperature sensor (see page #6). Select *OK-Save*. As the pressure and/or temperature change, the superheat/subcool calculations will change.

**ADD REFRIGERANTS TO FAVORITES LIST:** From any refrigerant list indicator, select the colored refrigerant icon and select *Library*. Scroll through the list and select refrigerants to add to your favorites list by highlighting the *Favorite* icon.

**ADJUST FOR ELEVATION:** In the Navigation Menu, select *Settings*, and then select *Location Preferences*. Turning ON will account for elevation and adjust settings accordingly. **NOTE:** *Elevation & location accuracy may vary between devices due to the devices GPS accuracy.*

**APP FEEDBACK & SUPPORT:** In the Navigation Menu, select *Help-Send Feedback* to provide feedback, or e-mail support.

**NOTE:** Development of the ION HVAC/R App™ is ongoing, and any information presented in this manual about the App may not be up to date, and is not intended to be comprehensive. Visit [www.AppionTools.com](http://www.AppionTools.com) or your device's App Store for the latest ION HVAC/R App™, additional information, and a full feature list.

# What is IP65 Rated?

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A rating of IP65 means that the PT500/800 is rated for dust and water resistance. The gauge is not rated for submersion or underwater operation, and can be used in:

- Dusty environments.
- Wet environments (no submersion).
- Some extreme weather conditions (ie. light-to-moderate rain/snow).

## Battery selection tips

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Different types of batteries have different power capacities. Selecting the right batteries for your gauge and operation environment is critical to reaching the longest battery life. In general...

- Standard **Alkaline batteries** offer the best power capacity, and are recommended by Appion.
- **‘Heavy Duty’** batteries often have 1/3rd the power capacity of a standard Alkaline Battery.
- In some **low-temperature** environments, specialty batteries may be needed in order to reach a long battery life.

Contact the battery manufacturer for specific details on each application.

# Technical Information

	PT500	PT800
Measuring Range	29 to 0 inHg, 0 to 500 psi	0 to 800 psi
Accuracy	± 0.5% (ASME B40.7 Grade 2A)	
Resolution	0.5 psi	
Refresh Rate	<0.5 seconds	
Units	psi, in/Hg, kg/cm <sup>2</sup> , cm/Hg, bar, kPa, MPa	psi, kg/cm <sup>2</sup> , bar, kPa, MPa
Power	3x AA Batteries	
Battery Life	Up to 160 hours (continuous usage with radio turned off)	
Weight	5.6 oz (158.8 grams)	
Dimensions	4.68" x 2.86" x 1.39" (119mm x 73mm x 35mm)	
Auto Power Off (APO)	After 15 minutes with no change, user input, or Bluetooth activity	
Warm-up	5 seconds (with self-test)	
Fitting	1/8" Male NPT	
Maximum Overpressure	750 psi	1000 psi
Operating Temperature	0° to 140° F (-17.8° to 60° C)	
Wireless Range	Bluetooth, up to 100ft (30m) "line of sight"	

# Technical Information, cont.

Temperature Sensor & Clamp Specifications	
Sensor Type	NTC Thermistor
Measuring Range	-40° F to 225° F (-40° C to 105 °C)
Accuracy	± 0.27° F (± 0.15° C)
Resolution	0.1° F/C
Cable Length	79" (2m)
Maximum Clamp Opening	1/4" to 1.5" OD (6.35mm to 38.1mm)

Radio Information	
Bluetooth QDID	84419

## RELATED ACCESSORY ORDERING INFORMATION

Part No.	Description
AY1252	Replacement Thermistor Sensor with Spring Clamp Assembly (Blue - PT500)
AY1264	Replacement Thermistor Sensor with Spring Clamp Assembly (Red - PT800)
CTEE14	MegaSeal Low-Loss Charging T-Fitting - 1/4" FL
CTEE516	MegaSeal Low-Loss Charging T-Fitting - 5/16" FL
MGAVCR	MegaFlow Valve Core Removal Tool - 5/16in.
MGAVCT	MegaFlow Valve Core Removal Tool - 1/4in.

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# Regulatory Information

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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.

## Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

# **Regulatory Information, cont.**

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## **FCC Radiation Exposure Statement**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **FCC Caution**

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## **Industry Canada Radio Equipment**

This device complies with Industry Canada licence-exempt RSS-210 standard. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## **Équipement radio d'Industrie Canada**

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

# Manufacturer's Limited Warranty

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Appion Inc. (hereinafter Appion) warrants that this equipment will, under normal and anticipated use, be free from defects in materials and workmanship for a period of one (1) year from the date of purchase by Purchaser from an Appion-authorized distributor.

Appion shall be liable to repair or replace the applicable parts during this period, so long that:

The User of this equipment notifies Appion of the discovery of an alleged defect during the warranty period;

Purchaser obtains return authorization from Appion during the warranty period;

Purchaser returns the equipment during the warranty period with all transportation charges prepaid by purchaser;

Appion's examination of the equipment confirms a defect that is not caused by Purchaser or its agents;

The equipment has not been modified by Purchaser or its agents; AND

The defective part(s) are otherwise covered by this limited warranty.

Purchaser may attempt to repair or replace defective parts without risk of voiding this warranty, so long that:

Purchaser follows all instructions and guidance provided by Appion to perform such repair AND

Purchaser utilizes only parts obtained from or authorized by Appion in such repair;

Notwithstanding anything contained in this limited warranty to the contrary, this limited warranty shall become null and void upon the use of any improper chemicals, or in the event that modifications or improper service or installation is performed on the equipment.

This limited warranty is applicable only to the first Purchaser when purchased through an authorized wholesale distributor, and no subsequent purchasers of the equipment from Purchaser shall be entitled to any warranty whatsoever from Manufacturer, express or implied.

The obligation of Appion under this limited warranty is limited to the repair or supply of parts, excluding consumables such as oil, grease, and plastic parts. Parts shall be new or nearly new. Appion assumes no liability for failure in performing its obligations thereunder if failure results, directly or indirectly, from any cause beyond its control, including but not limited to acts of God, acts of government, floods, fires, shortages of materials, strikes and other labor difficulties or delays, or failures of transportation facilities.

This warranty constitutes the sole and exclusive warranty of manufacturer with respect to the equipment. There are no other warranties, express or implied, and Appion specifically disclaims all other warranties, express or implied, including (without limitation) any and all warranties as to the suitability or merchantability or fitness for any particular purpose of the equipment hereunder. The exclusive remedy of Purchaser against Appion for any breach of the foregoing limited warranty shall be to seek replacement of the affected parts. In no event will Appion's liability in connection with the equipment which is found to be defective exceed the amounts paid by Purchaser to Appion hereunder for such equipment which is specifically found to be defective. These limitations apply to all causes of action in the aggregate, both at law and in equity, and including without limitation, breach of contract, breach of warranty, manufacturer negligence, infringement, strict liability, misrepresentation and other torts and contractual claims. Except for the exclusive remedy provided above for Appion's breach of this limited warranty, Purchaser, for itself and its successors and assigns, hereby waives and releases Appion from any and all other claims or causes of action they have against Appion on account of or associated with the equipment purchased hereunder or for Appion breach of this limited warranty.

In no event shall Appion be liable for any indirect, special, incidental, consequential or punitive damages, such as, but not limited to, loss of anticipated profits, lost savings, lost revenues, fines, or other economic loss in connection with or arising out of the existence, furnishing, functioning or use of any item of equipment provided under this agreement, even if Appion has been advised of the possibility of such damages and/or such damages are reasonable and/or foreseeable. Further, Purchaser, for itself and its successors and assigns, waives and releases any rights they may have to bring an action arising or resulting from this agreement, regardless of its form, more than fifteen (15) months after purchase of the affected equipment by Purchaser from an Appion-authorized distributor. 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.

The provisions of this warranty shall supersede any contrary provisions contained in this agreement, any document supplied by Appion to Purchaser or by Purchaser to Appion, or any other agreement, written or oral, between Purchaser and Manufacturer, notwithstanding the fact that the provisions contained in this warranty directly conflict with other terms or provisions of this agreement or such other documents, or that such other documents or agreements were provided, delivered, made or executed subsequent to this agreement unless such agreements are in writing, specifically refer to this agreement, and specifically provide that they are amending this and are signed by the President of Appion.

This warranty gives you specific legal rights, and you may also have other rights which vary in certain states or provinces.

If any term herein is declared invalid or unenforceable, the validity of the remaining terms shall not be affected thereby.

## **Appion Inc.**

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