

Appion[®]

PTC900[™]

PRESSURE-TEMPERATURE GAUGE



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

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Introduction

With the PTC900 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

- 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

- (1) Wireless Pressure Gauge
- (1) Thermal Sensor with clamp
- (3) AA Batteries
- (1) Operation Manual
- (1) Warranty Card

Using the Temperature Sensor

WARNING: Always wear hand and eye protection when handling connections to systems under pressure.

The Temperature Sensor included with your PTC900 is thermally isolated for high accuracy, and highly versatile, as it can be used to measure temperature on pipes of *any size* (see page #6)

Using the Temperature Sensor with Clamp

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

1. Plug the 3.5mm connector into the PTC900
2. The gauge display will show temperature readings.
(see page #10)
3. Squeeze to open, and attach clamp to pipe.
4. Use the gauge display or the Appion Central™ App to calculate Superheat or Subcool

Using the Temperature Sensor

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 “V” of the clamp.*

General Functions

Pressure Units:

Psi and in/hg

kg/cm² and cm/hg

kPa

MPa

bar

Temperature Units:

Fahrenheit

Celsius

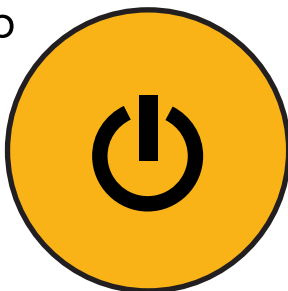
Button Configuration



Backlight/Up



Cycle/Down



Power/Menu/Select

PRESS a button for the “press” function

HOLD a button for 2 seconds for the “Hold” function

General Button Functions (cont.)

Power/Menu/Select:

Quick Press:

- Gauge On
 - *A quick press of the power button will turn the gauge on.*
- Menu
 - *If the gauge is on, a quick press of the power button will open the Menu.*

Hold 2 Seconds:

- Gauge Off
 - *If the gauge is on, hold the power button for 2 seconds to power off.*

Select:

- Press the Power button to make a selection.

Backlight/Up:

Quick Press:

- Backlight On/Off
 - *When the backlight is toggled on, the backlight stays on for 2 minutes.*

Hold 2 Seconds:

- Units selection
 - *Select pressure units, then select temperature units.*
 - *Scrolling of units is done by pressing the Up (Backlight) and Down (Cycle) buttons.*
 - *Selection is done by pressing the Power button.*

General Button Functions (cont.)

Backlight+Power:

- Bluetooth Toggle On/Off

Backlight+Cycle:

- Cycle Favorite Refrigerants
 - Highlights the selected refrigerant on the main screen allowing users to scroll through pre-selected favorite refrigerants from the main screen.
 - Scrolling is done by pressing the Up (Backlight) and Down (Cycle) buttons.
 - Selection is done by pressing the Power button.

Up:

- Users press the Backlight button to scroll UP through selectable options.

Cycle/Down:

Quick Press:

- Cycles Superheat/Subcool

Hold 2 Seconds:

- Zero Pressure
 - Zero pressure to atmospheric pressure.

Cycle+Power:

- Auto Power-Off Toggle On/Off

Down:

- Press the Cycle button to scroll DOWN through selectable options.

Displays

Main Screen:

Main Screen Example:

1. Battery Level Indicator

2. APO Indicator

3. Bluetooth Indicator

4. Units

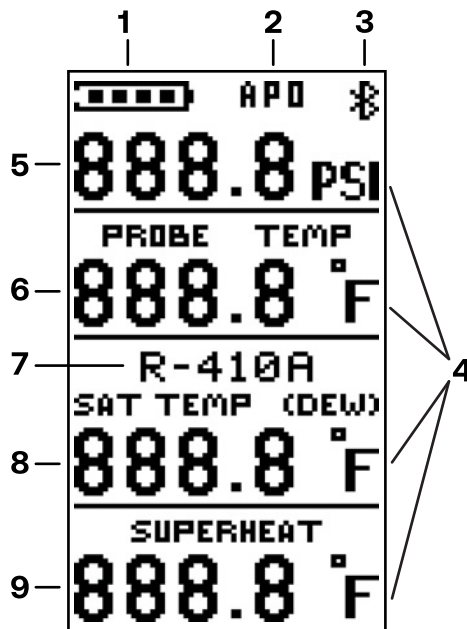
5. Sensor Pressure

6. Probe Temperature

7. Selected Refrigerant*

8. Refrigerant Specific Saturated Temperature

9. Refrigerant Specific Superheat/Subcool



Note: The gauge will display - - - - in Probe Temp, Sat Temp, and Superheat/Subcool fields if no temperature probe is connected.

*Refrigerant Favorites:

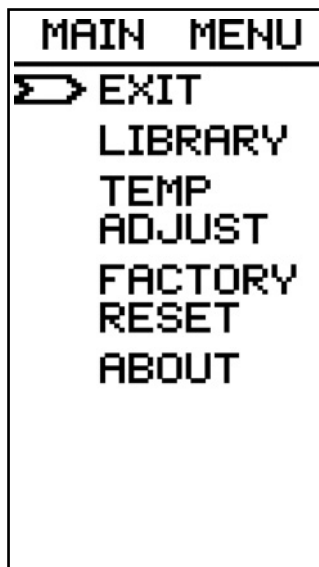
Quickly select a favorite refrigerant from the main screen. Refrigerants can be added to your favorites list in the refrigerant library.

Displays

Main Menu:

Access Main Menu by quick-pressing the Power Button while on the Main Screen.

Main Menu Screen Example:



Main Menu Selections:

- **Exit**
Select this option to exit the Menu screen and return to the Main screen.
- **Library**
Select this option to enter the Refrigerant Library.
- **Temp Adjust**
Select this option to adjust the calibrated temperature offset.
- **Factory Reset**
Select this option to reset the gauge to factory-calibrated settings.
- **About**
View the gauge serial number and version number.

Main Menu Button Functions

Power/Select

Quick Press

- If the gauge is on, a quick press of the power button opens the Main Menu.
- A quick press of the Power button will select an option the user has placed the cursor on.

Backlight/Up:

Quick Press:

- Press the Backlight button to scroll UP through selectable options.

Cycle/Down:

Quick Press:

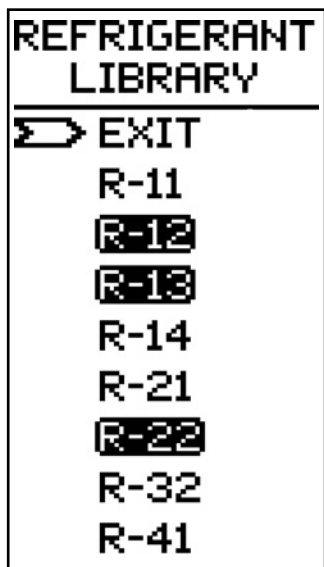
- Press the Cycle button to scroll DOWN through selectable options.

Displays

Library:

Access the Refrigerant Library by selecting Library from the Main Menu.

Refrigerant Library Screen Example:



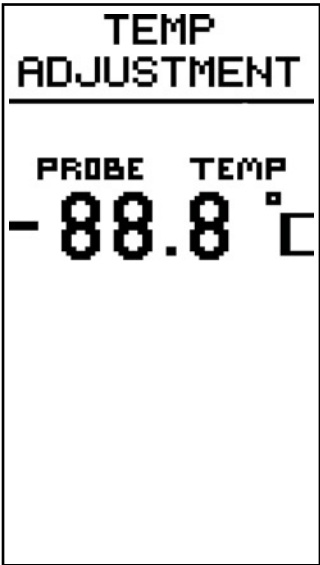
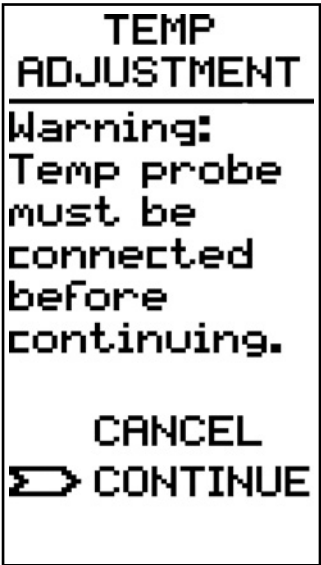
- Scroll through the menu by pressing the Up (Backlight) and Down (Cycle) buttons.
 - Hold the Up and Down buttons to scroll one page at a time.
- Favorite or unfavorite refrigerants by pressing the Power/Select button.
 - Favorite as many refrigerants as you want from this menu.
 - All favorite refrigerants will be highlighted within the Refrigerant Library Menu.
- Exit Refrigerant Library Menu
 - Select EXIT to save the selected refrigerants and return to the Main Menu.

Displays

Temperature Adjust:

Access Temperature Adjust by selecting Temp Adjust from the Main Menu.

Temperature Adjustment Screen Example:



Temperature Adjust Button Functions

- Scroll through the selections by pressing the Up (Backlight) and Down (Cycle) buttons.
- Select CANCEL or CONTINUE by pressing the Power/Select button.
 - Selecting CANCEL
 - Returns to the Main Menu.
 - Selecting CONTINUE
 - Enters the Temperature Adjustment Screen with the current temperature reading.
 - Temperature Adjustment
 - Offset the temperature reading in .1 increments by pressing the Up (Backlight) and Down (Cycle) buttons.
 - Save the desired temperature offset by pressing the Power/Select button.
 - Saved Temperature Offset
 - Once the offset is saved, the Main Screen appears.

Displays

Factory Reset:

Access Factory Reset by selecting Factory Reset from the Main Menu.

Factory Reset Screen Example:



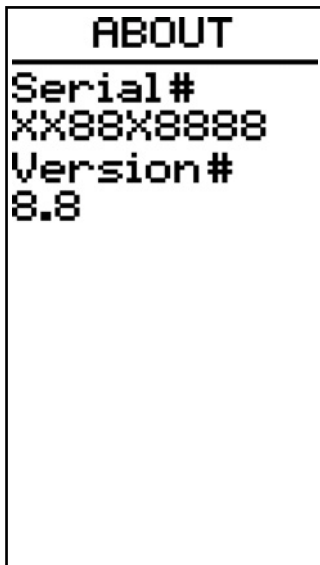
- Scroll through the selections by pressing the Up (Backlight) and Down (Cycle) buttons.
- Select CANCEL or CONTINUE by pressing the Power button.
 - Selecting CANCEL
 - Returns user back to the Main Menu.
 - Selecting CONTINUE
 - Resets the device back to factory-calibrated settings

Displays

About:

Access the About screen by selecting About from the Main Menu.

About Screen Example:



- Exit the About Screen by pressing the Power button.

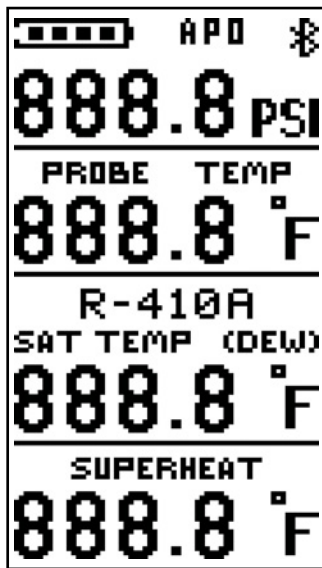
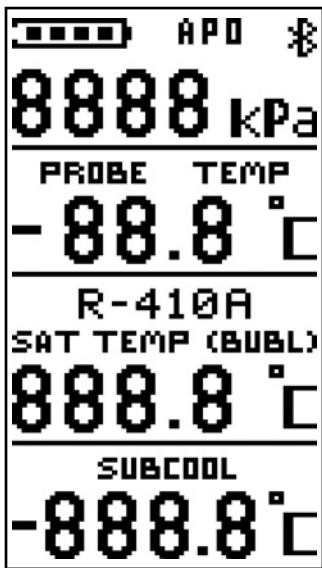
Saturated Temperature, Superheat, and Subcool Calculations

Once a refrigerant is selected on the Main Screen Saturated Temperature, Superheat, and Subcool calculations will be displayed.

Use the Cycle button to cycle between Superheat and Subcool.

- Non-Blended Refrigerants:
 - Non-blended Refrigerants will display a saturated temperature value.
- Blended Refrigerants (Mixtures):
 - Blended Refrigerants will display a saturated temp of (Dew) if displaying Superheat or a saturated temp of (Bubble) if displaying Subcool.

Blended Refrigerant Dew & Bubble Examples:



Appion Central™ Bluetooth Operation

Note: Bluetooth communication requires a compatible device running the Appion Central™ App. Development of the Appion Central™ App is ongoing, and any information presented in this manual about the Appion Central™ App may not be up to date. Visit Appion-Tools.com or your device's App Store for the latest Appion Central™ App and additional information.

1. With the PTC900 powered on, press and hold the “Backlight/Units” button AND the “Power” button until the Bluetooth symbol appears on the PTC900 screen.
2. In the Appion Central™ App, “Scan” for devices, and connect as shown in the Appion Central™ 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, move back into Bluetooth range until the gauge reconnects.

Note: Bluetooth range may vary due to obstructions or interference. The Appion Central™ App will indicate when communication is lost.

Note: The PTC900 will continue to operate normally even if Bluetooth communication is lost.

Appion Central™ App

Scan to download app and access user guide.



Specifications

A rating of IP65 means that the PTC900 is rated for dust and water resistance. The gauge is NOT rated for submersion or underwater operation. It can be used in:

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

Battery Selection Tips

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.

- Standard Alkaline batteries offer the best power capacity, and are recommended by Appion.
- “Heavy Duty” batteries often have 1/3rd of 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.

Gauge Specifications

Weight:

151 g / 4.33 oz (without batteries)

Gauge Body Dimensions:

265 x 48.25 x 25.4 mm / 10.43 x 1.9 x 1 in

Flexible Probe Dimensions:

Length: 110 mm / 4.3 in

Diameter: 9.75 mm / .38 in

Fitting Type:

1/4in FFL

Operating Temperature:

Gauge Operating Temperature: -20 °C to 55 °C / -4 °F to 131°F
(limited by battery performance)

Storage Temperature:

-20°C to 60°C / -4°F to 140°F (without batteries)

Pressure Units:

Psi and in/hg

kg/cm² and cm/hg

kPa

MPa

bar

Temperature Units:

Fahrenheit

Celsius

Number of Preloaded Refrigerants:

160

Gauge Specifications (cont.)

Battery Type:

2x AA

Battery Life:

Bluetooth On: 500 hours at 25° C / 500 hours at 77° F

Bluetooth Off: TBD

Wireless Range:

TBD (line of sight)

Auto Power Off Time:

15 minutes (Selectable On/Off)

Pressure Sensor Specifications

Operating Range:

-28 inHg to 900 psi

Resolution:

.1 psi

Accuracy:

+/-0.5% of Full-Scale Value

Overload:

+1000 psi / +69 bar

Temperature Sensor and Clamp Specifications

Probe Operating Range:

Temperature: $-40\text{ }^{\circ}\text{C}$ to $105\text{ }^{\circ}\text{C}$ / $-40\text{ }^{\circ}\text{F}$ to $221\text{ }^{\circ}\text{F}$

Safe Clamp Operating Range:

Temperature: $-20\text{ }^{\circ}\text{C}$ to $55\text{ }^{\circ}\text{C}$ / $-4\text{ }^{\circ}\text{F}$ to $131\text{ }^{\circ}\text{F}$

Resolution:

Temperature: $.1\text{ }^{\circ}\text{C}$ / $.1\text{ }^{\circ}\text{F}$

Accuracy:

$\pm 1\%$ of Full-Scale Value ($\pm .25^{\circ}\text{C}$ at 25°C) / $\pm 1\%$ of Full-Scale Value ($\pm .5^{\circ}\text{F}$ at 77°F) (Probe Only with Full Thermal Saturation)

Cable Length:

79in / 2m

Pipe Size Clamp Compatibility:

1/8in to 1.5in OD / 3.175mm to 38.1mm OD (limited by clamp opening)

Weight:

66g / 2.33 oz

Regulatory Information

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 the 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 may 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.

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 license exempt **RSS-247** standard. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any 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.

Warranty Information

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.

The complete Manufacturer's Limited Warranty is available online at AppionTools.com.

All warranty services must receive Appion Factory Authorization and an RGA number prior to any action. Contact your local Appion authorized distributor to obtain the RGA number and shipping instructions. To help us provide the best service, be sure to have the following information available:

- Serial number of the equipment
- Purchase date of the defective unit
- A detailed description of the problem

Appion offers technical troubleshooting customer support for the lifetime of every product. Regardless of your warranty status, you can always contact us for assistance. Our website includes additional technical information that can help you experience the fullest potential of our products, making your job quicker and easier.

Appion RHT100 Warranty Registration Card

Please complete this card and return it within 10 days of purchase with a copy of your sales receipt.

Your Name	Your Company
Street Address	Phone Number
City	State Zip
Email Address	Serial Number
Place of Purchase	Date of Purchase
How did you learn about our products? (Please only check one) ☐ Wholesaler _____ ☐ Recommended By: _____ ☐ Magazine ☐ Newspaper Ad ☐ Internet	Please select your primary line of business. (Check all that apply) ☐ Automotive ☐ Commercial ☐ Residential ☐ Service ☐ Installation
Register by <u>Mail</u>: Appion Inc. 2800 South Tejon Street Englewood, CO 80110 USA Register by <u>Email</u> or <u>Fax</u>: 1. Scan this page AND a copy of your sales receipt. 2. Email to: Sales@AppionTools.com <u>or</u> Fax this page and your sales receipt to: 1-303-937-1599	What features most interested you? (Check all that apply) ☐ High Production ☐ Low Cost ☐ Low Maintenance ☐ Portability ☐ Ease of Use ☐ Other: _____



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QR Code Index



Appion Central App Download



Product Registration



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