



# User Manual & Product Guide

Rev. E

## YJACK® Series Bluetooth® Sensing Technology



- Enhanced YJACK VIEW® App
- Customized PDF service reports
  - Supply and return air enthalpy
  - System heating/cooling efficiency
  - System Energy Efficiency Ratio (EER)

The YJACK VIEW® App provides ease of access to all information measured by the YJACK® Series of devices and TITANMAX™ and P51-870 TITAN® Digital Manifolds.

MADE IN THE USA



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# Getting Started

## Introduction

Thank you for your purchase of the YELLOW JACKET® YJACK® Series of Bluetooth® Sensing devices. The YJACK® series of devices are the evolution in creating an interconnected and efficient work environment allowing service technicians to work more quickly and precisely in the ever growing and complicated HVAC/R industry.

Take a moment to familiarize yourself with your new device(s). You will notice that all YJACK® devices feature a simple on/off button to power cycle the device, a quick-coupler for system attachment and/or a mounting magnet for strategic placement on surrounding metallic surfaces, and flexible connections to aid in the proper positioning of the device within your workspace. Each YJACK® product is powered by (2) AAA batteries housed beneath the removable battery door on the back of the device. The procedure to replace the product batteries is the same across all YJACK® devices and will be covered in more detail later.

All YJACK® products include an integrated Electronic Paper Display (EPD) or a status indication LED adjacent to the power button which can provide feedback as to the device's current mode of operation. During normal operation, the status indicator LED will flash yellow once every two seconds to indicate that a measurement has been transmitted via Bluetooth®.

Unlike other Bluetooth® devices, YJACK® devices do not require "pairing" or an established connection between one another or the user's smart device to transmit and receive information. Simply power the device on and it will immediately begin broadcasting data to other available devices within the broadcast range.

YJACK® tools may be used individually or together, broadcasting up to (6) unique measurements to one P51-870 TITAN® or TITANMAX™ Digital Manifold (see firmware requirements) or an unlimited number of unique measurements to a smart device running the YJACK VIEW® smart application.

To order accessories, receive assistance, or locate the nearest YELLOW JACKET® distributor, contact Ritchie Engineering Company, Inc.

Corporate Office and Mailing Address:

Ritchie Engineering Company, Inc.  
YELLOW JACKET® Products Division  
10950 Hampshire Avenue South  
Bloomington, MN 55438-2623 USA  
Phone: (952) 943-1300 or (800) 769-8370  
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E-mail: [custserv@yellowjacket.com](mailto:custserv@yellowjacket.com)  
[www.yellowjacket.com](http://www.yellowjacket.com)

## Safety and Warning Information

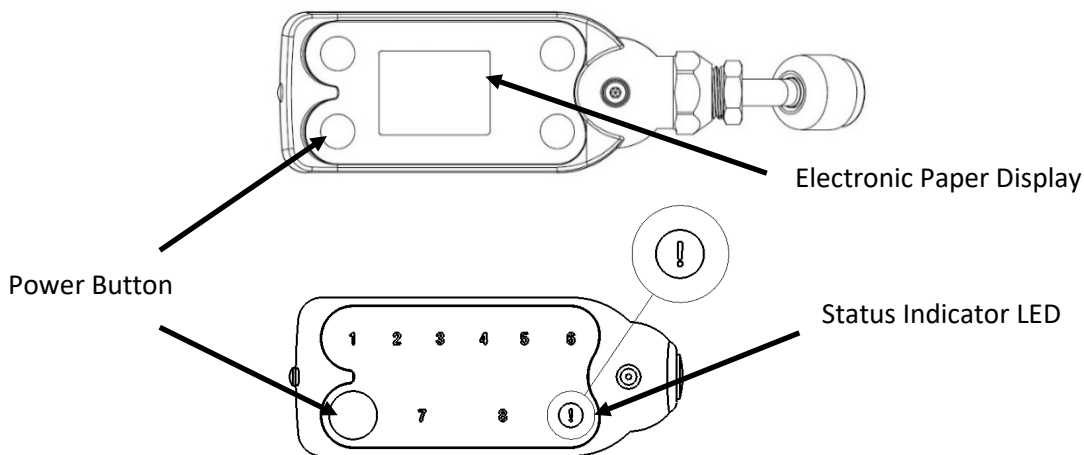
Use the YJACK® Series of Bluetooth sensing devices only as specified in this manual.

- Most governments and legal authorities require that HVAC technicians be trained and certified in the safe and proper operation of HVAC tools, such as these instruments.
- Read the entire User Manual before using the instrument.
- Do not use the instrument if it is damaged. Before you use the instrument, inspect the case. Look for cracks or loose components.
- The instrument contains no internal user serviceable parts, except for the AAA batteries.
- Do not open the instrument. Have the instrument serviced only by Ritchie Engineering Co. or authorized service centers.
- Do not use the instrument if it operates abnormally. Protection may be impaired. When in doubt, have the instrument serviced.
- Do not operate the instrument around explosive gas, vapor, or dust.
- Do not operate the instrument outside of its rated specifications, outlined later in this manual.
- The refrigerant database used in conjunction with these tools may include refrigerants classified as flammable. If such refrigerants are selected, the operator may need additional certifications and/or training. Consult your government and legal authority and comply fully with all requirements.
- Always wear eye and skin protection when working with refrigerants. Escaping refrigerant vapors will present a freezing danger. Do not direct refrigerant vapors venting from hoses towards the skin.

## Using Your YJACK® Devices

### Powering the Device On

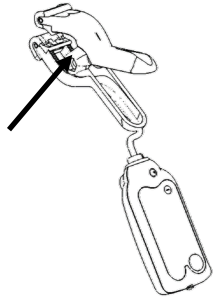
All YJACK® devices utilize the same power switch and either an integrated display or a status indicator LED. Press and hold the power button to power on the device. Release the power button when the display image changes or the status indicator LED illuminates.



When using the YJACK PATH®, numeric LEDs 1-8 will illuminate to indicate the number of YJACK™, TITANMAX™ and P51-870 TITAN® devices within range.

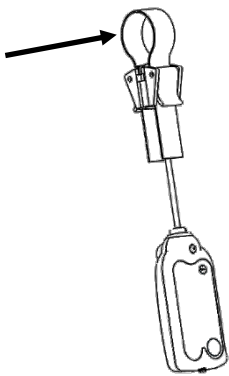
## Placing the Device on the System

### YJACK® Temperature Clamp



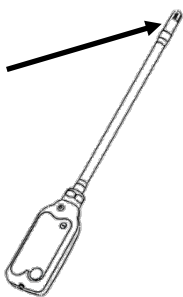
Depress the clamp handle to open the clamp jaws and attach the clamp to the pipe surface where temperature measurements are desired. For best results, attach the clamp in an area where the clamp jaws have full engagement of the pipe surface. The clamp can be used on pipes up to 1.25 inches in diameter. Avoid clamping over areas of pipe that are coated or insulated as this may impact the accuracy of the system temperature reading. If there is a ferrous metal surface near the placement of the clamp, the magnet on the bottom of the radio module can be attached to the surface for a more secure connection.

### YJACK® Temperature Strap



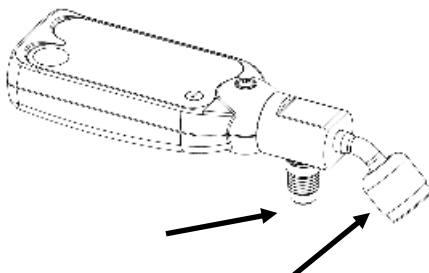
Utilize the flexible strap to tightly secure the strap clamp to the pipe surface where temperature measurements are desired. First, open one of the buckles and pull the strap out of the buckle so that it is only retained in the second buckle. Feed the strap around the pipe and back through the open buckle. Pull the strap tightly around the pipe and then close the buckle. The strap can be used on pipes up to 6 inches in diameter. For best results, attach the strap in an area where the strap body has full engagement of the pipe surface. Avoid attaching the strap over areas of pipe that are coated or insulated as this may impact the accuracy of the system temperature reading. If there is a ferrous metal surface near the placement of the clamp, the magnet on the bottom of the radio module can be attached to the surface for a more secure connection.

### YJACK DEW® Psychrometer



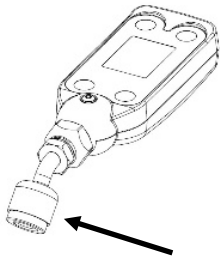
Remove the black vinyl cap covering the sensing element. Form the flexible wand to the desired shape and place the sensing element within the ventilation system or wherever psychrometric data is desired. If there is a ferrous metal surface near the placement of the Dew, the magnet on the bottom of the radio module can be attached to the surface for a more secure connection.

### YJACK PRESS® Wireless Pressure Gauge



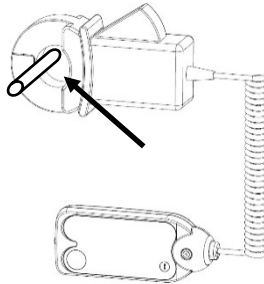
Remove the red plug from the brass quick coupler nut. Make sure the pressure transducer has been zeroed (this will be covered in more detail later) and attach the device directly to the system low-side or high-side service port. A 5/16" adapter (19121 straight or 19221 90 degree) can be used for systems with 5/16" connections. The integrated charging port on the back of the device can be connected to a charging hose for adjustment of system charge while continuing to monitor system pressure.

### YJACK VAC® Wireless Vacuum Gauge



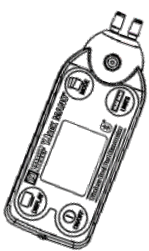
Remove the red plug from the brass quick coupler nut. Then the device can be attached directly to the side port of a core removal tool or to a system service port. A 5/16" adapter (19121 straight or 19221 90 degree) can be used for systems with 5/16" connections. For the most accurate system vacuum readings and to avoid contamination of the sensor, it is not recommended to connect the vacuum gauge directly to the vacuum pump.

### YJACK AMP® Wireless Current Probe



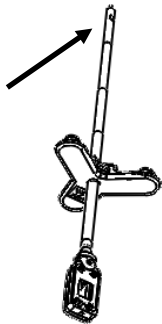
Depress the clamp lever and place the CT around the hot or neutral wire where AC current is to be measured. Make sure the clamp jaws are fully closed for best accuracy. If there is a ferrous metal surface near the placement of the clamp, the magnet on the bottom of the radio module can be attached to the surface for a more secure connection.

### YJACK MANO® Wireless Dual Port Manometer



Make sure that the supply and return pressures have been zeroed (this will be covered in more detail later). For static pressure measurements in ducting, drill 3/8" holes where the static pressure tips are to be placed. Insert the static pressure tips into the ductwork so that the tips are pointing towards the direction of airflow and use the provided tubing to connect the corresponding pressure tips to the supply and return pressure ports on the device. For gas pressure measurements, use the appropriate gas manifold fitting and use the provided tubing to connect the fitting to the corresponding pressure port on the device.

### YJACK FLOW™ Wireless Anemometer



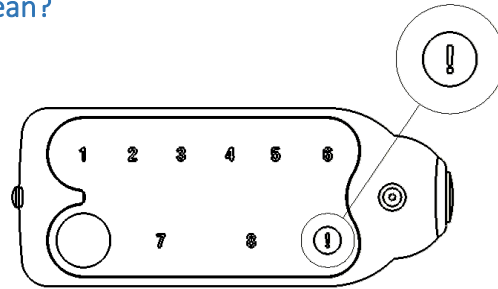
Remove the black vinyl cap covering the sensing element. Adjust the fixed wand to the desired depth to insert into duct and place the sensing element within the ventilation system with the arrow in the direction of the airflow. If the duct is a ferrous metal surface, the mounting adapter can be attached to the surface for a more secure connection.

### YJACK PATH®

Although the YJACK PATH® is not placed directly on the system, the location of the device can impact its effectiveness in repeating the Bluetooth® signals from the other YJACK® devices. Be mindful of the environment in which readings are being taken. If there are obstructions, such as walls, paneling, or other equipment between the YJACK® devices and the P51-870 TITAN® or smart device running the

YJACK VIEW® app, placing the YJACK PATH® in an area that has direct line-of-sight of the Bluetooth® devices often provides the best results and longest communication ranges. Also keep in mind that there could be obstructions and interference caused by signals not visible. If you believe that you may be experiencing signal interferences, move the YJACK PATH® to a different location until the Bluetooth® signal improves. If there is a ferrous metal surface near the placement of the YJACK PATH®, the magnet on the bottom of the radio module can be attached to the surface for a more secure connection.

### Status LED: What Does it Mean?



When powering on the YJACK® device, hold the power button until the status LED illuminates solid yellow, then release the power button. Once powered on, the LED will flash every time the YJACK® devices readings are broadcast, every 2 seconds. When the battery level reaches 10%, the LED will flash red to indicate the low battery condition. When powering off the device, the LED stays red until the power button is released and the device is powered down.

### Changing the Display and Settings on the YJACK VAC®

The diagram below outlines the button functions and device settings for the YJACK VAC®:

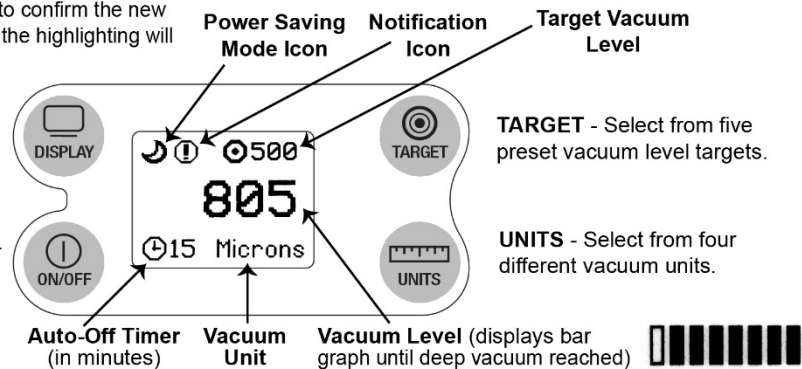
#### TO CHANGE A SETTING:

- Tap the corresponding button to highlight the current setting.
- Continue to tap this button until the desired value is displayed.
- Press and hold this button for 2 seconds to confirm the new setting. The setting will be confirmed and the highlighting will disappear when the button is released.

**DISPLAY** - Select from several notification options. To change the background, press and hold for three seconds to inverse LCD mode.

**ON/OFF** - Power on and off, select from four different auto-off timer settings.

**POWER SAVING MODE** - Powers off display after 15 minutes of inactivity to extend battery life while viewing readings remotely. Press any button to refresh the display.





## Changing the Batteries

Each YJACK® product is powered by (2) AAA batteries housed beneath the removable battery door on the back of the device. Using your finger or a flat blade, pry up on the battery door to remove it from the device. Remove the batteries and place (2) new AAA batteries into the battery holder. Reference the required polarity of the batteries molded into the battery holder. Replace the battery door by inserting the tab on the inside edge of the door into the slot in the module enclosure and then press down on the battery door until it snaps into place.

## With a P51-870 TITAN® and TITANMAX™ Digital Manifold

To use the YJACK® series of Bluetooth® Sensing devices with the P51-870 TITAN® and TITANMAX™ Digital Manifolds, ensure that the firmware version is up to date. The YJACK® Temperature Clamp/Strap, and YJACK DEW® are used in the P51-870 TITAN® and TITANMAX™ sessions. YJACK® VAC and YJACK AMP®, YJACK PRESS® and YJACK MANO® readings are only broadcast to the YJACK VIEW® app and cannot be displayed on the P51-870 TITAN® or TITANMAX™. If a firmware update is required, reference the “P51-870 TITAN® and TITANMAX™ Digital Manifold – Firmware Update” for details on updating the firmware.

## With the YJACK VIEW® Smart Application

The YJACK VIEW® smart application provides a simple yet comprehensive interface to display, analyze, and record the data from the P51-870 TITAN®, TITANMAX™ and all YJACK® Bluetooth® devices. The app is available for both iOS and Android smart devices through the App Store and Google Play Store, respectively. Be sure to download any available app updates as they will include new features and app enhancements. Open the camera app on your Android or iOS smart device and scan over the QR codes or click on the links below to go directly to the app store pages:



<https://play.google.com/store/apps/details?id=com.ritchieengineering.yjackview>

<https://apps.apple.com/us/app/yjack-view/id1492358956>



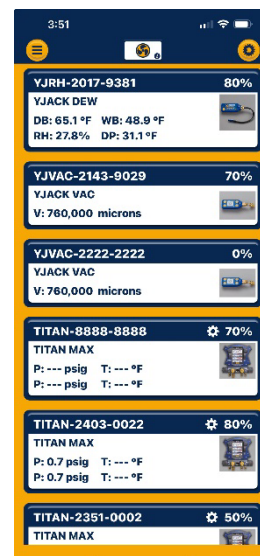
**Google Play Store for Android™ devices**

**App Store for iOS devices**



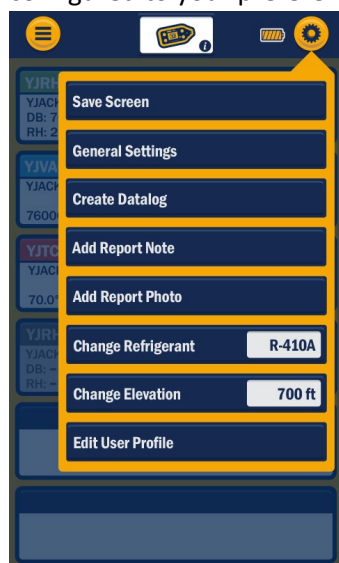
## Available Devices

Upon selecting Available devices in the app, a list of available devices will appear. If there are no P51-870 TITAN®, TITANMAX™ or YJACK® devices turned on and within range, no devices will be listed, but as these devices are powered on, they will populate on this screen. Each device that appears on the list of available devices includes some basic information about the device. This includes the device serial number/Bluetooth® ID, the battery level, and any readings that the device is broadcasting. Keep in mind that the YJACK PATH® can be utilized to repeat the readings from any P51-870 TITAN®, TITANMAX™ or YJACK® device, improving the connection range. If a device moves out of range or is turned off, it will display on the available devices screen with a red banner. If this occurs make sure the device is turned on and moved back within range, possibly by relocating the YJACK PATH® device.



## General Settings

Before starting any system readings session with the YJACK VIEW® app, make sure the app settings are configured to your preferences. Press on the three-dot icon in the upper right corner of the screen. A list

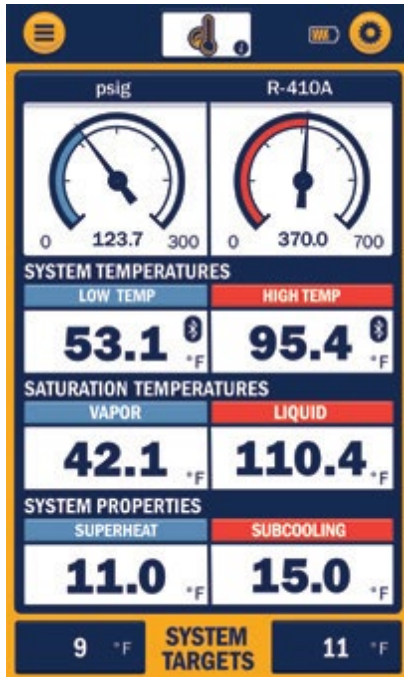


of configurable settings will appear including General Settings, Create Datalog, Change Refrigerant, Change Elevation, and Edit User Profile. First, access the “General Settings.” This screen will allow you to set your preferred units of measurement for pressure, temperature, vacuum, and elevation. You can also turn on and off sound notifications and the screen lock functions. Once the proper settings have been selected, press “Save.” If you plan to start a Pressure/Temperature Session, again tap the three-dot icon and select “Change Refrigerant.” The list of over 126 selectable refrigerants will appear. Next to each refrigerant name, there is an outline of a star. Pressing on the star icon will turn the star solid yellow and classify that refrigerant as a favorite. Favorite refrigerants will always appear at the top of the refrigerant selection screen for easy access. To remove a refrigerant from the list of favorites, simply press on the solid yellow star next to the desired refrigerant and it will instantly be removed from the list of favorites. Once the favorites have been configured as

desired, and the proper refrigerant has been selected, press Save. The final app configuration setting is to set the elevation where the service is being performed. Press on the three-dot icon once again and select “Change Elevation.” Enter the elevation where service is being performed and press “OK.” This will implement pressure measurement compensation when reading gauge pressure. The fourth option from the app settings, “Create Datalog,” is discussed in more detail below. Now that the app settings have been configured. The session type can be selected. Press on the three-line icon on the upper left corner of the screen to bring up the session selection menu. You can select from Pressure/Temperature, Psychrometric Air Calculations, Evacuation, Static Pressure, or Available Devices to return to the Available Devices screen.

## Pressure/Temperature Session

The Pressure/Temperature session type displays system pressure and temperature measurements, as well as saturation temperatures and superheat/subcooling data. The first time a Pressure/Temperature session is started, the system pressure and temperature measurements will need to be assigned to the specific P51-870 TITAN® and YJACK® devices being used. Press on the 3 dashes within the Low-Pressure measurement box. A list of available devices broadcasting pressure measurements will appear. Select the device and measurement that corresponds with the low side of the system. Above the device selection, there is also a list of reading display options. Pressures can be displayed as a large digital number, a simulated analog gauge, or as a line graph to show measurement changes over time. Select the preferred graphical type and press “Save & Close.” Follow this same procedure for the High-Pressure measurement. Now assign the system low-side and high-side temperatures. Press on the 3 dashes within the Low Temperature measurement box. A list of available devices broadcasting system temperature measurements will appear including any YJACK® Temperature Clamp or Strap probes as well as any wired temperature clamps plugged into a P51-870 TITAN®.



Select the device and measurement that corresponds with the low side of the system. Above the device selection, there is also a list of reading display options. Temperatures can be displayed as a large digital number or as a line graph to show measurement changes over time. Select the preferred graphical type and press “Save & Close.” Repeat this process for the system high temperature reading. Below the system pressure and temperature readings are the vapor and liquid Saturation Temperatures, which are automatically generated once the pressures are assigned. The refrigerant that has been selected is also displayed in this line and can be changed at any time in the app settings as outlined earlier. The next set of data is the System Properties, which includes the system superheat and subcooling values generated once the pressure and temperature measurements have been assigned. The last set of data is the System Targets, where you can input the target superheat and subcooling values for reference against the actual system readings. To adjust the datasets that appear on the Pressure/Temperature session screen, press the caret “^” icon next to each dataset to minimize or maximize it until the desired datasets are displayed. The system readings assignments are stored in the app memory for future sessions, but the assignments can be changed at any time by pressing on the reading that is to be changed.

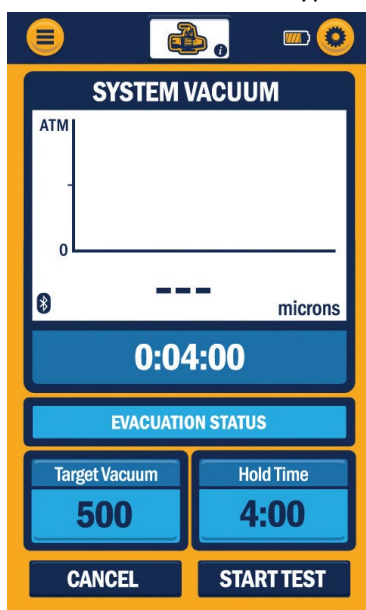
## Psychrometric Air Calculations

The Psychrometric Air Calculations session type displays relative humidity, dry bulb temperature, wet bulb temperature, and dew point temperature from 2 YJACK DEW® psychrometer probes, great for taking supply air and return air measurements in ventilation systems. The first time a Psychrometric Air Calculations session is started, the supply and return air measurements will need to be assigned to the specific YJACK DEW® psychrometer probes being used. Press on the 3 dashes within the Supply Air Relative Humidity measurement box. A list of available devices broadcasting psychrometric measurements will appear. Select the device that corresponds with supply air side of the system and press “Save & Close.” Follow this same procedure for the return air measurement. Once the readings have been assigned, the Psychrometric Air Calculations readings screen will display the relative humidity, dry bulb temperature, wet bulb temperature, and dew point temperature for both the supply and return air. To adjust the datasets that appear on the session readings screen, press the caret “^” icon next to each dataset to minimize or maximize it until the desired datasets are displayed. The system readings assignments are stored in the app memory for future sessions, but the assignments can be changed at any time by pressing on the reading that is to be changed.



## Evacuation

The Evacuation session type displays the system vacuum level from any vacuum probe plugged into a P51-870 TITAN®, TITANMAX™, or YJACK VAC®. The first time an Evacuation session is started, the vacuum measurement will need to be assigned to the specific vacuum probe. Press on the 3 dashes within the System Vacuum measurement box. A list of available devices broadcasting vacuum measurements will appear. Select the correct device being used with the vacuum probe. Above the device selection, there is also a list of reading display options. Pressures can be displayed as a large digital number, a simulated analog gauge, or as a line graph to show measurement changes over time. Select the preferred graphical type and press “Save & Close.” Once assigned, the system vacuum level will be displayed. If the system is initially at atmospheric pressure, the reading is displayed as 100,000 microns (or other unit equivalent) until the system vacuum drops below that level. From the Evacuation reading screen, a target vacuum pressure and hold time can also be set. To set the target vacuum pressure, press on the 3 dashes within the Target Pressure display box. Enter the target vacuum pressure and press “Save.” Follow the same process for the Hold Time. Once the system vacuum level reaches the target pressure, the target pressure box will turn green and the timer corresponding to the



hold time will begin. If the system maintains the target pressure throughout the duration of the hold time, a message will appear indicating that the target hold time test has completed. The vacuum reading assignment is stored in the app memory for future sessions, but the assignment can be changed at any time by pressing on the system vacuum reading.

## Static Pressure

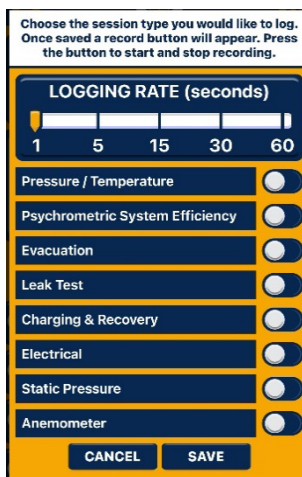
The Static Pressure session type displays the differential pressure level from any two sources connected to the YJACK MANO®. The first time a static pressure session is started, the Supply & Return measurement will need to be assigned to the specific YJACK MANO® pressure probe. Press on the 3 dashes within either the Supply or Return measurement box. A list of available devices broadcasting differential pressure measurements will appear. Select the correct YJACK MANO® being used in conjunction with the pressure differential and press “Save & Close.” Once assigned, the system pressure levels will be displayed. Pressures will be displayed as a large digital number to show measurement changes over time. If the system is initially at balanced pressure, the reading is displayed as 0 inWC (or other unit equivalent) until the system pressure differentials change from that level. From the Static pressure reading screen, a Filter Pressure Drop, Coil Pressure drop,



Total external static Pressure, pressure differential, Static Pressure, and Gas Pressure can also be recorded. To record the pressure, press on the heading display box. Tap the “Assign current Reading” box. Follow the same process for each pressure drop recording. Once the readings have been recorded, “Take Report Snapshot” can be used to capture all the held data.

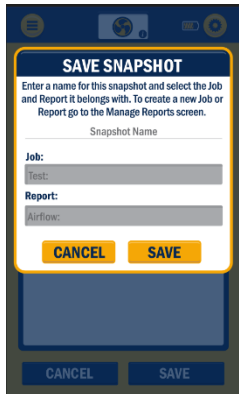
## Create Data log

Data logs can be created to log readings during any of the 3 session types. To start a data log from within any session, press on the three-dot icon in the upper right corner of the screen and select “Create Datalog.” From this screen you can select the logging rate, which is how frequently the readings will be logged, and which session type to log readings from. Multiple session types can be selected if desired, but keep in mind that only one session readings screen can be displayed within the app at any given time. Once the logging rate and session type(s) have been selected, press “Save.” A recording icon and timer will display in the lower right corner of the screen. When you are ready to start recording data, press on the red circle “record” icon to begin the datalog. The timer will count from the time that the datalog was started. When you are ready to stop the datalog, press on the red square “stop” icon. You can then select to either save or discard the log file. If you wish to save the log file, a list of available save options will appear.



## Take Report Snapshot

Report snapshots can be recorded to log readings during any of the sessions. To take a data “snapshot” (record capture) from within any active session, press on the three-dot icon in the upper right corner of the screen and select “Take Report Snapshot.”



From this screen you will Name the snapshot and be able to pick which job and which report to record the snapshot on. Once the name is entered and the proper job and Report are selected, press “Save.”

## Device Specifications

### General Device Specifications

The following tables outline the specifications for each of the YJACK® products. All YJACK® products have the following features and specifications:

Warranty: 2 years

IP Rating: IP-52

Battery Type: 2 x AAA (Included)

Radio Module System Attachment: Mounting Magnet\*

Radio Version: Bluetooth 4.2 Compliant Low Energy

Bluetooth Range: 400 feet (122 meters) line-of-sight\*\*

Communication Interface: YJACK VIEW® App & P51-870 TITAN® Digital Manifold\*\*\*

\*YJACK PRESS® and YJACK VAC® mount directly to system service port and do not include mounting magnet

\*\*Radio interference and nearby obstructions may reduce signal strength

\*\*\*YJACK AMP® and YJACK MANO® only communicate w/ YJACK VIEW® app

### YJACK PATH® Range Extender Specifications

#### 67060 YJACK PATH® Range Extender

Measurement Type	N/A, Signal Repeater
Weight	0.19 lbs (86 g)
Dimensions	4"L x 1.7"W x 1.4"H (102 x 43 x 36mm)
Tether Length	N/A
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-40°F to 122°F (-40°C to 50°C)
Battery Life	75 hours continuous use
Max Connections - YJACK®	6 Connections
Max Connections - P51-870	2 Connections
Auto-Off Timer	30 minutes w/o readings

### YJACK® Temperature Clamp Specifications

#### 67061 YJACK® Temperature Clamp

Measurement Type	Temperature
Weight	0.35 lb (160 g)
Dimensions (including clamp)	10"L x 4"W x 1.5"H (254 x 102 x 38mm)
Tether Length	1.5" (38mm)
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-40°F to 122°F (-40°C to 50°C)



Battery Life	1200 Hours
Measurement Range	-40°F to 176°F (-40°C to 80°C)
Measurement Accuracy	+/-1.0 °C TYP*
Pipe Diameter - Max	1.25" (32mm)
Auto-Off Timer	N/A

\*Results may vary with ambient conditions

## YJACK® Temperature Strap Specifications

### 67062 YJACK® Temperature Strap

Measurement Type	Temperature
Weight	0.25 lb (115 g)
Dimensions (including strap)	10"L x 1.7"W x 1.4"H (254 x 43 x 36mm)
Tether Length	5" (127mm)
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-40°F to 122°F (-40°C to 50°C)
Battery Life	1200 Hours
Temp Measurement Range	-40°F to 176°F (-40°C to 80°C)
Temp Measurement Accuracy	+/-1.5 °C TYP*
Pipe Diameter - Max	6" (152mm)
Auto-Off Timer	N/A

\*Results may vary with ambient conditions

## YJACK DEW® Psychrometer Specifications

### 67063 YJACK DEW® Psychrometer

Measurement Type	Psychrometric (Temp, Humidity)
Weight	0.38 lb (175 g)
Dimensions (including wand)	13"L x 1.7"W x 1.4"H (330 x 43 x 36mm)
Wand Length	8" (203mm)
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-40°F to 122°F (-40°C to 50°C)
Battery Life	1500 Hours
Humidity Measurement Range	0-100% RH
Humidity Measurement Accuracy	+/- 2.0 %RH TYP (10 to 90 %RH)*
Temp Measurement Range	-40°F to 257°F (-40°C to 125°C)
Temp Measurement Accuracy	+/- 0.2 °C TYP (-10°C to 80°C)*
Auto-Off Timer	N/A

\*Results may vary with ambient conditions



## YJACK PRESS® Pressure Gauge Specifications

### 67065 YJACK PRESS® Pressure Gauge

Measurement Type	Pressure
Weight	0.52 lb (235 g)
Dimensions	6.5"L x 1.8"W x 2.3"H (165 x 45 x 58mm)
Tether Length	N/A
Operating Temperature	0°F to 130°F (-18°C to 55°C)
Storage Temperature	-40°F to 130°F (-40°C to 55°C)
Battery Life	300+ Hours
Quick Coupler Fitting	1/4" Flare w/ Depressor
Charging Port	1/4" Male Flare w/ Core
Pressure Measurement Range	-14.7 to 725 psig (-1.01 to 50 bar gauge)
Pressure Measurement Accuracy	0.5% full scale at 77°F (25°C), 1.8% full scale from 0 to 130°F (-18 to 55°C)
Units of Measure	psig, psia, bar, kPa, MPa, kg/cm <sup>2</sup>
Auto-Off Timer	N/A

## YJACK VAC® Vacuum Gauge Specifications

### 67066 YJACK VAC® Vacuum Gauge

Measurement Type	Vacuum
Weight	0.39 lb (180 g)
Dimensions	6.5"L x 1.8"W x 1.5"H (165 x 45 x 38mm)
Tether Length	N/A
Operating Temperature	32°F to 104°F (0°C to 40°C)*
Storage Temperature	-4°F to 122°F (-20°C to 50°C)
Battery Life	Up to 240 hours
Quick Coupler Fitting	1/4" Flare w/ Depressor
Vacuum Measurement Range	1 to 760,000 microns with YJACK VIEW app, 1 to 99,999 microns on integrated display
Vacuum Measurement Accuracy	+/- 20% of reading from 10 to 25,000 microns
Units of Measure	microns, Torr, mTorr, mbar, mmHg, Pa
Auto-Off Timer	Adjustable from 15 minutes to never

\*Operating temperature is restricted by integrated display; range is extended when using with YJACK VIEW® app

## YJACK AMP® Current Probe Specifications

### 67067 YJACK AMP® Current Probe

Measurement Type	Electrical Current (Amps)
Weight	0.39 lb (180 g)
Dimensions	6.5"L x 1.8"W x 1.5"H (165 x 45 x 38mm)
Tether Length	12" spirial cable (extends to 72")
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-22°F to 130°F (-30°C to 55°C)
Battery Life	600 hours
Clamp Jaw Opening	1.2" (30.5mm)
Maximum Voltage	660 V
Current Measurement Range	0-50 Amps AC
Current Measurement Accuracy	+/- 1% of reading or +/- 0.15 A (whichever is greater)
Auto-Off Timer	N/A

## YJACK MANO® Dual Port Manometer Specifications

### 67068 YJACK MANO® Dual Port Manometer

Measurement Type	Static Pressure
Weight	0.20 lb (95 g)
Dimensions	4.5"L x 1.8"W x 1.5"H (115 x 45 x 38mm)
Tether Length	N/A
Operating Temperature	32°F to 104°F (0°C to 40°C)*
Storage Temperature	-4°F to 122°F (-20°C to 50°C)
Battery Life	Up to 280 hours
Port Barb Fitting	For 1/8" ID tubing
Static Pressure Measurement Range	+/- 80 inWC
Static Pressure Measurement Accuracy	+/- 0.03 from 0 to 2 inWC, +/- 1.5%FS from 2 to 80 inWC
Units of Measure	inWC, mmWC, mbar, psi, Pa
Auto-Off Timer	Adjustable from 15 minutes to never

\*Operating temperature is restricted by integrated display; range is extended when using with YJACK VIEW app

## YJACK FLOW™ Anemometer Specifications

67069 YJACK FLOW™ Anemometer

Measurement Type	Air velocity
Weight	0.38 lb (175 g)
Dimensions (including wand)	13"L x 1.7"W x 1.4"H (330 x 43 x 36mm)
Wand Length	18" (457mm) Fully extended
Operating Temperature	-0.4°F to 131°F (-18°C to 55°C)
Storage Temperature	-40°F to 122°F (-40°C to 50°C)
Battery Life	1500 Hours
Velocity Measurement Range	0-98.4ft/sec (0-30m/sec)
Error codes	
E1	Disconnected sensor
E2	Value over 40m/s
Velocity Measurement Accuracy	+/- 5.0 %*
Temp Measurement Range	32°F to 104°F (0°C to 40°C)
Temp Measurement Accuracy	+/- 1.4 °F *
Auto-Off Timer	N/A

\*Results may vary with ambient conditions

## Troubleshooting & FAQs

Q: Why am I losing my Bluetooth® connection when I am within 400' of the YJACK® device(s)?

A: With any radio technology, when you start to add obstructions between the transmitter and the receiver, the ultimate range may decrease as different objects interfere with the radio signal in different ways. The more obstructions you add between YJACK® device and either the P51-870 TITAN® or the smart device running the YJACK VIEW® app, the weaker the signal may become after it has passed through or around the obstacles. This could ultimately lead to a shorter maximum range, but this can be improved by using the YJACK PATH® signal repeater device. All YJACK® devices, including the YJACK PATH®, utilize a Bluetooth® 4.2 compliant low energy radio to ensure the best possible range, however each situation will be slightly different depending on the environment/ surroundings you are working within. The YJACK PATH™ can be positioned to get around obstructions and up to 6 YJACK PATH® devices can be used simultaneously to maximize the connection range, even in environments with multiple obstructions.

Q: Why doesn't my TITANMAX™ show up on the list of available devices within the YJACK VIEW® app?

A: The app must be version 5.0 or higher.

Q: Why doesn't my P51-870 TITAN® show up on the list of available devices within the YJACK VIEW® app?

A: The radio inside the P51-870 TITAN® must be programmed with radio firmware version 2.01 or higher. This firmware version includes critical updates for communication with the YJACK VIEW® app. The firmware can be updated over-the-air through a Bluetooth® connection to a Windows or MacOS device. The radio firmware updater files are available on the P51-870 TITAN® (40870) product webpage under the "Documents" tab (<https://yellowjacket.com/product/p51-titan-digital-manifold>).

Q: Why are the YJACK® devices not showing up on my TITANMAX™?

A: Only devices required for providing data to the sessions on the TITANMAX™ will be displayed in the available devices session.

Q: Why are the YJACK® devices not showing up on my P51-870 TITAN®?

A: The circuit board inside the P51-870 TITAN® must be programmed with USB firmware version 2.01 or higher to recognize the YJACK® series of devices. If the P51-870 TITAN® firmware version that is displayed during power up is 1.40 or lower, the firmware must be updated through a USB connection to either a Windows or MacOS device. The firmware updater files are available on the P51-870 TITAN® (40870) product webpage under the "Documents" tab (<https://yellowjacket.com/product/p51-titan-digital-manifold>).