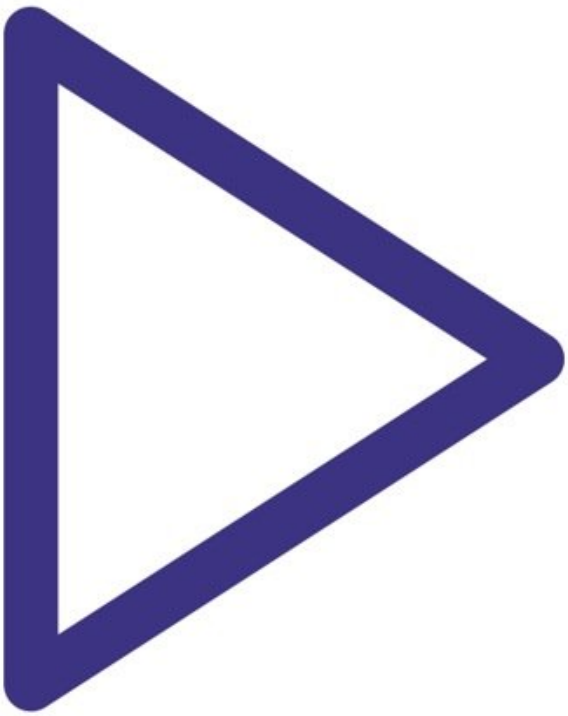
AA Quick Start Guide

The quick start guide will help you set up and start using your Aeroqual Ranger™

Written By: StJohn Vuetilovoni



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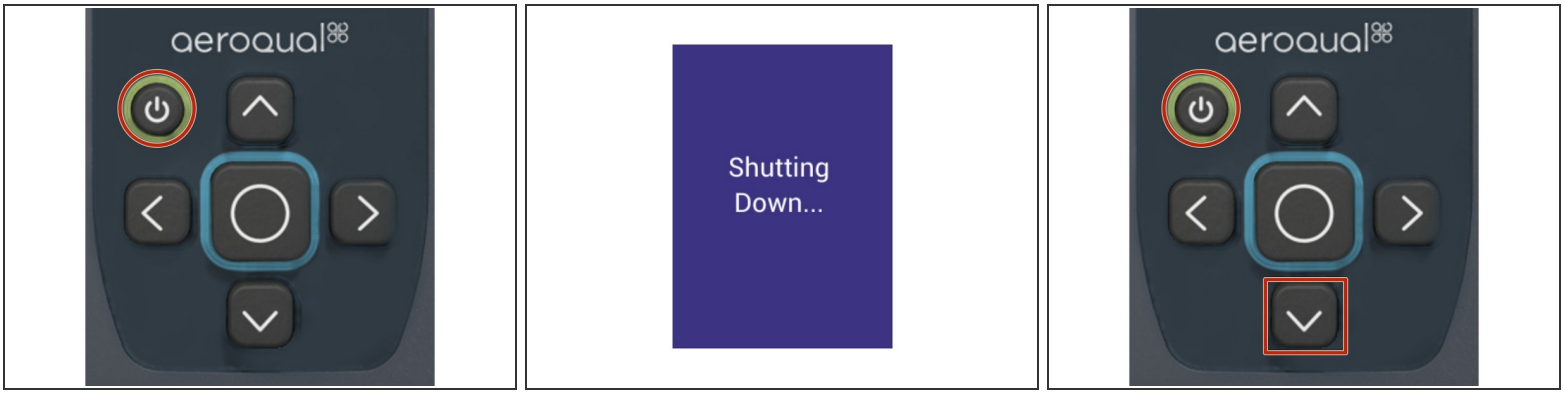
Step 1 — Powering on Ranger

- Press the **POWER** button to power on the instrument.
- An LED will illuminate on the front of the display.
- Please wait 15 seconds for the start-up sequence to complete.
- From the splash screen, press **ANY BUTTON** to proceed.

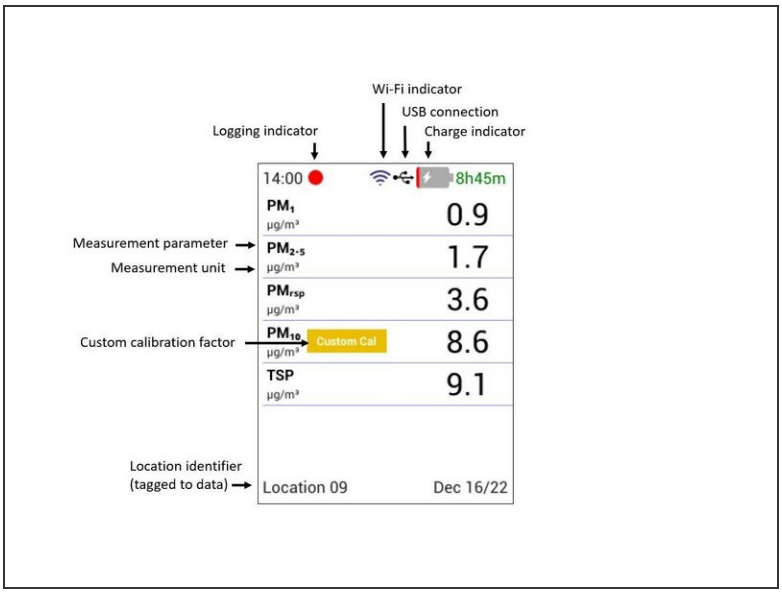
Step 2 — Powering off Ranger



- Press and hold the **POWER** button for five (5) seconds.
- Please wait for the shut-down screen to appear.
- The instrument will now power off.

ⓘ In the event the instrument experiences an irrecoverable failure, a hard reset can be performed by holding the **POWER BUTTON** and **DOWN ARROW** simultaneously for 20 seconds.

Step 3 — Main screen



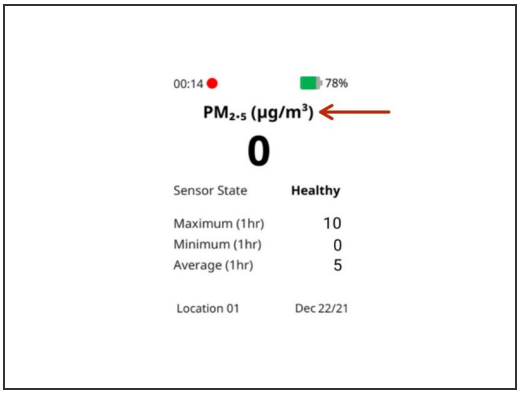
ⓘ Upon startup, the main data display page will be shown.

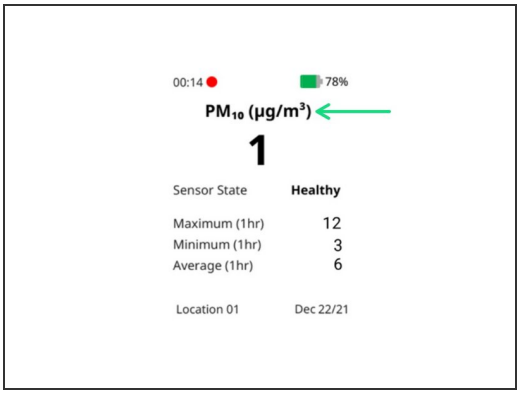
ⓘ The main screen contains real-time measurement data coming from the sensor head connected to the instrument. On the top, it displays time, recording status, Wi-Fi connection status, and battery/charging status. On the bottom, it displays Location ID and date.

- Press the **LEFT** and **RIGHT ARROWS** to navigate between Summary, Detail, and AQI display screens.

ⓘ The AQI screen is available only while using the PMX sensor head.

Step 4 — Data and AQI Screens





ⓘ If the sensor head is able to measure more than one parameter, then a Detail screen is available for each parameter.

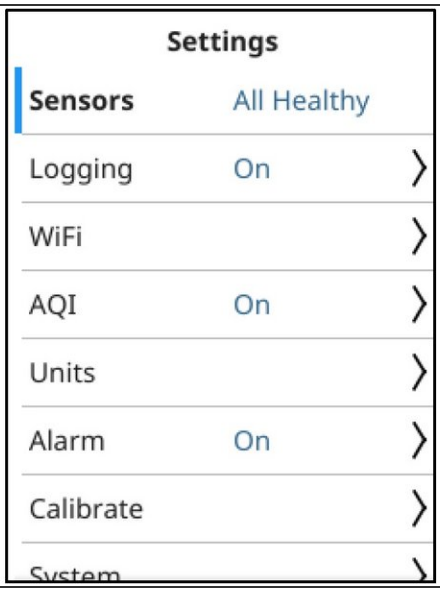
- Scroll through each parameter's Detail screen by using the **LEFT** and **RIGHT** arrows.

ⓘ An Air Quality Index (AQI) will be visible if the AQI feature is turned On

- Scroll through the AQI screens by using the **LEFT** and **RIGHT** arrows.

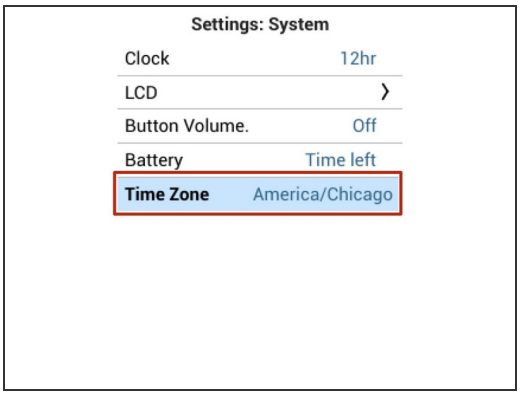
ⓘ The AQI screen is only available while using the PMX sensor head.

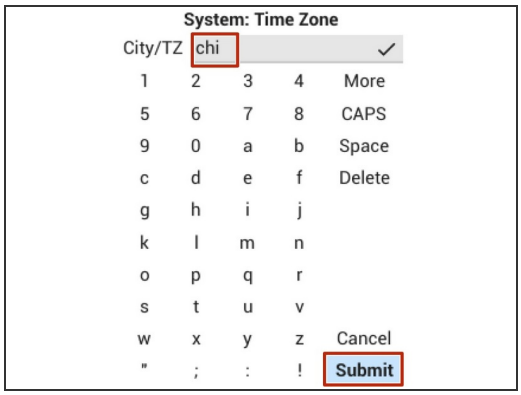
Step 5 — Configure Settings

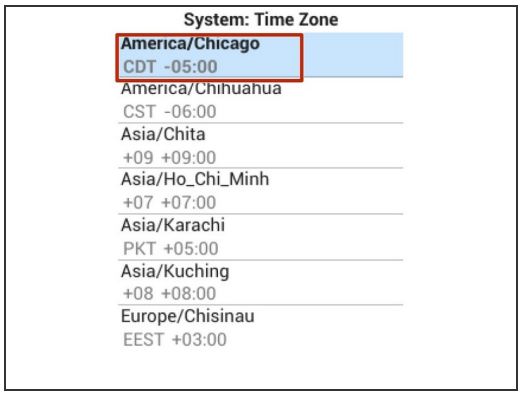


- To enter the settings menu, press and hold the **LEFT ARROW**.
- To exit the settings menu, press and hold the **LEFT ARROW**
- For more details, visit the [Settings guide]

Step 6 — Configure Time Zone

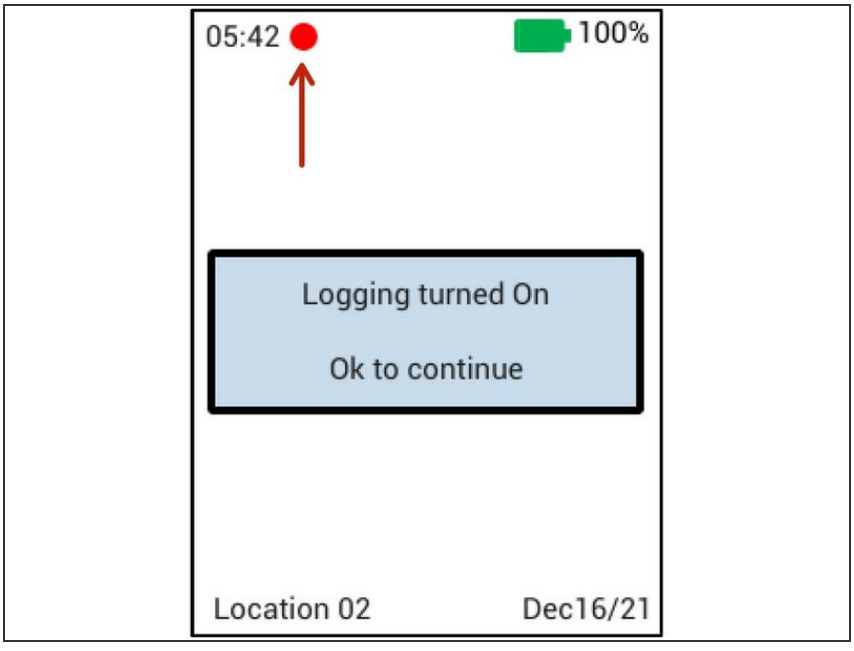






- Navigate to Settings > System
- Select Time Zone
- Enter the name of a large city in your preferred time zone, and select Submit
- A list will appear. Select your city from the list.
- Your time zone has now been set
- Video of steps

Step 7 — Data Logging



- To start and stop Logging from the Main Screen, press and hold the **CENTER BUTTON**.

ⓘ As long as logging is enabled, a red circle will appear at the top of the Main screen.

- For more details and more options, please visit the Settings guide

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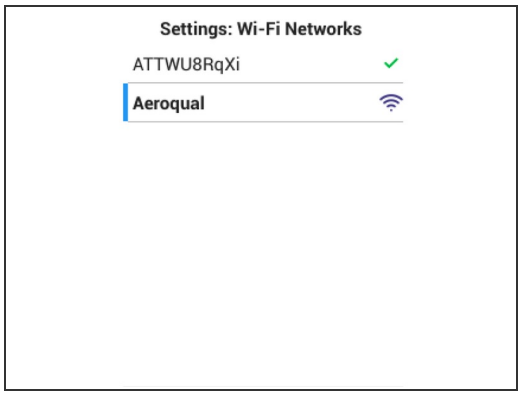
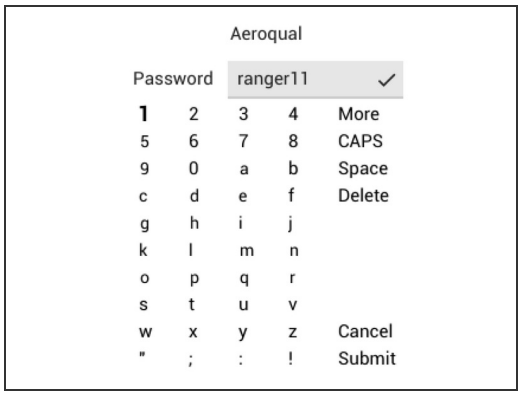
Step 8 — Configure Wi-Fi



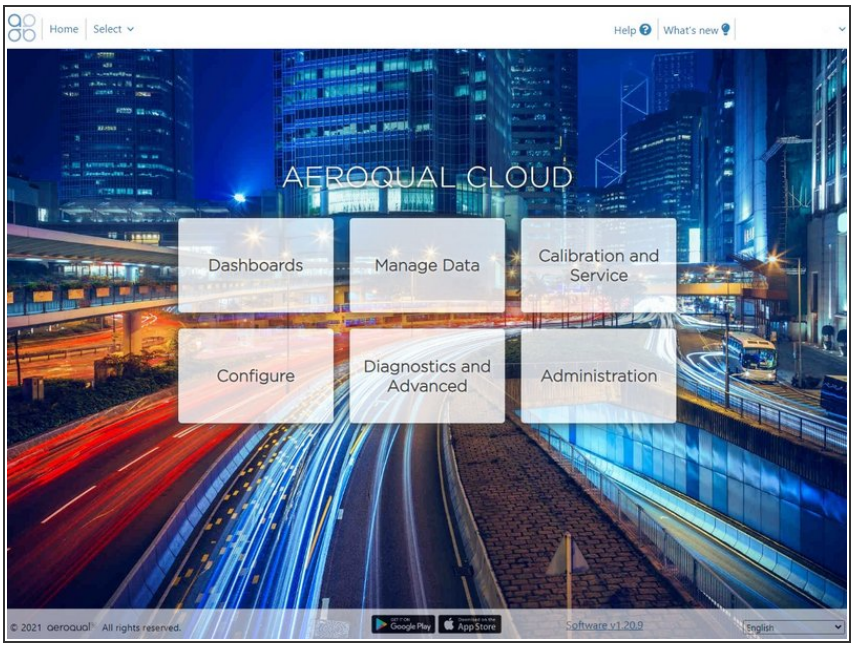


ⓘ Logged data is accessible through Ranger Cloud, which requires Wi-Fi, or via a USB Cable.

- From the Settings menu, navigate to the Wi-Fi > Networks submenu.
- Select the Wi-Fi network you want to connect to
- Enter the Wi-Fi network's password
- Select Submit

⚠ The password is case sensitive.

Step 9 — Data Access



- Data logged on Ranger is accessible from Ranger Cloud, or by download with a USB Cable.
- As long as Wi-Fi is enabled on the instrument, all logged data is immediately synchronized to Cloud.
- Log into Cloud
- If you have trouble accessing your login, contact support@aeroqual.com
- Click on "Manage Data" to access your data.

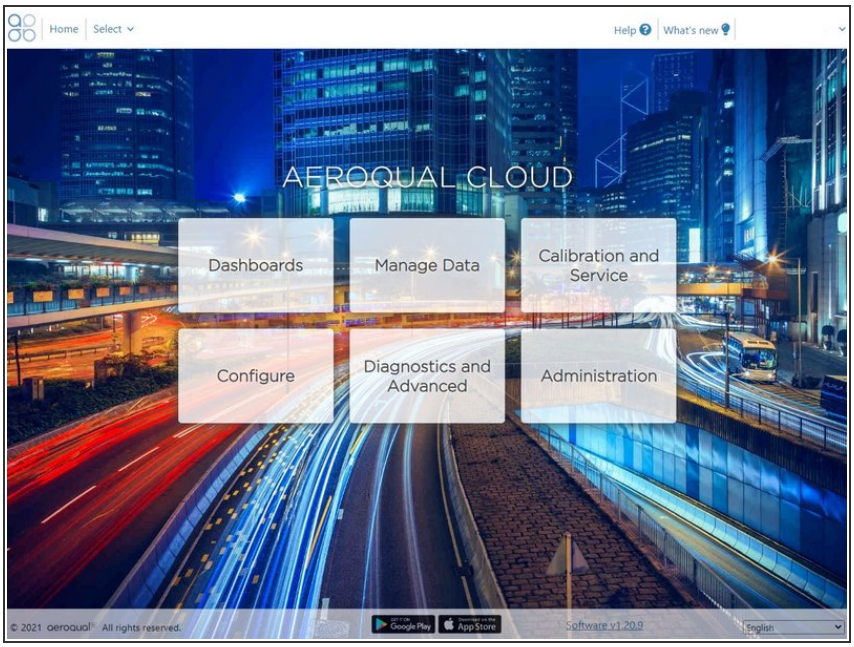
For further support, contact Aeroqual Support.

Access Ranger Data on Aeroqual Cloud

How to access Ranger data on Aeroqual Cloud.

Written By: StJohn Vuetilovoni

Step 1 — Data Access



- **Option 1**: Enable Wi-Fi on Ranger. As long as Wi-Fi is enabled, all logged data is immediately synchronized to Cloud.
- **Option 2**: Manually export the log file via USB, and then synchronize it to Cloud later.
- Log on to Aeroqual Cloud cloud.aeroqual.com using your logon and password.

Visit related guides:

Configure Wi-Fi (Easy)

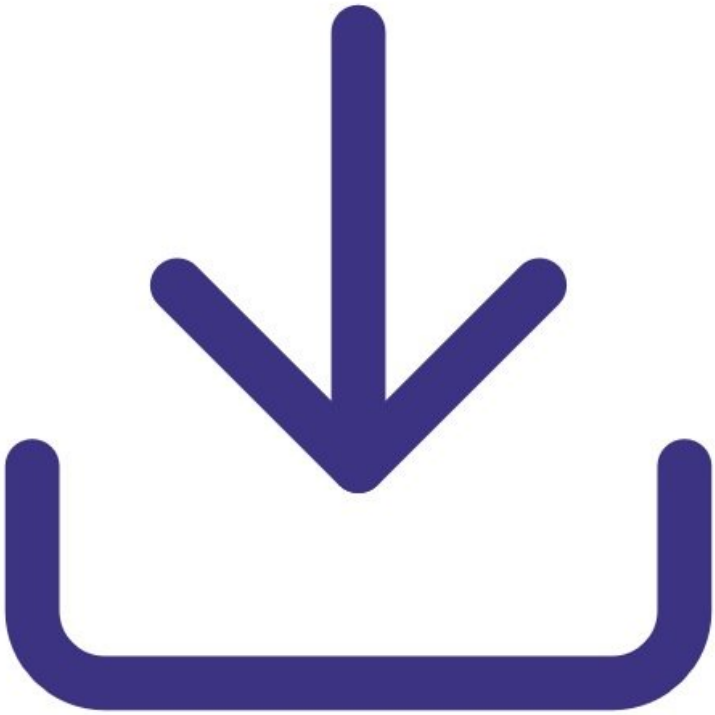
Export logged data via cable

For further support, contact Aeroqual Support by emailing support@aeroqual.com

Access logged data via cable

How to export Ranger's logged data via USB cable.

Written By: Margaret Grattan



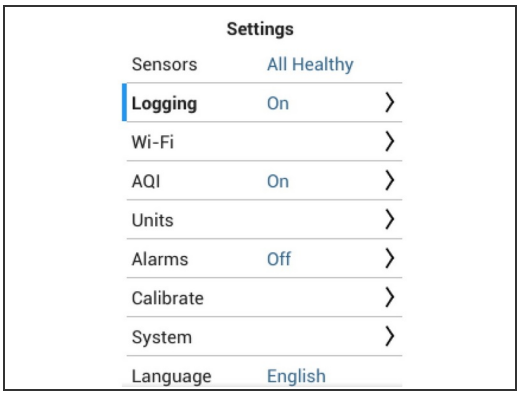
INTRODUCTION

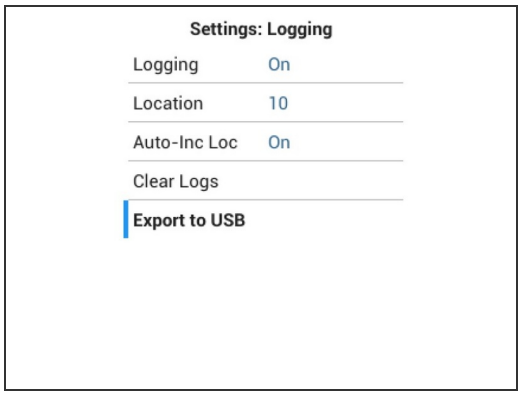
A file containing Ranger's logged data can be exported via USB cable in one of two formats.

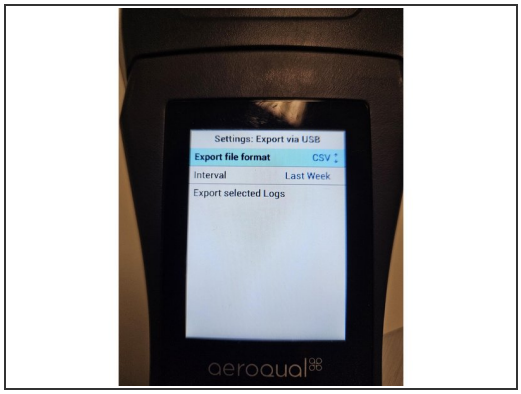
Format Cloud: This format enables the user to upload the Ranger data to Aeroqual Cloud for longterm storage and advanced processing. The user first transfers it to their laptop and then connects to Aeroqual Cloud to upload it via manual sync.

Format CSV: This format enables the user to transfer the Ranger data to their laptop for processing using third party software such as MS Excel.

Step 1 — Creating a data file for USB export

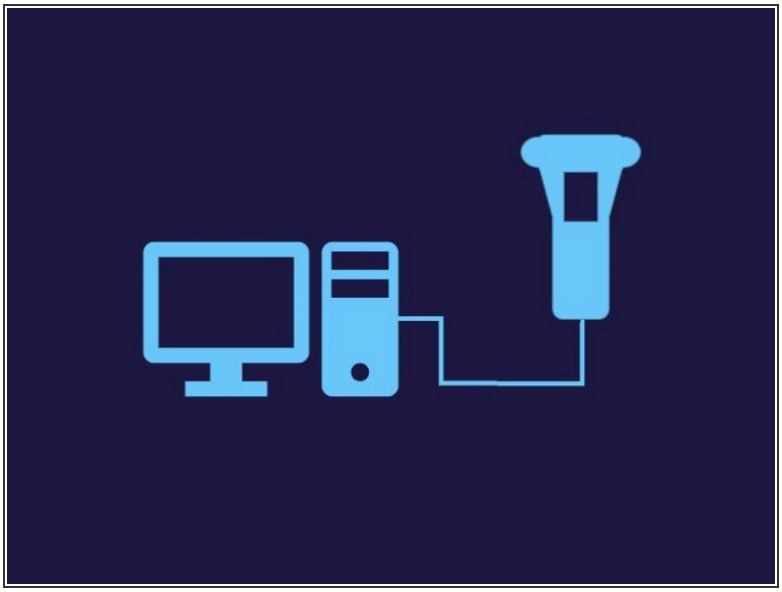


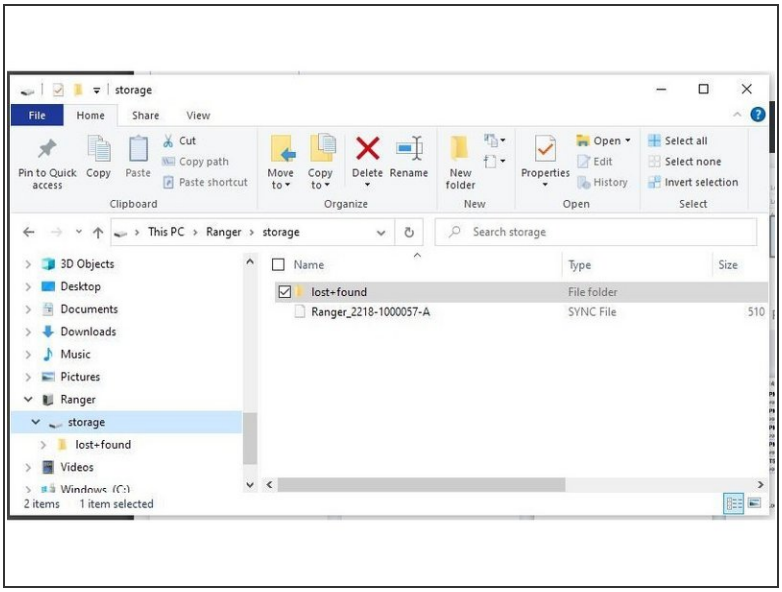




- Using Ranger, navigate into the Settings menu by pressing and holding the **LEFT ARROW**.
- Once in Settings, navigate to Logging>Export to USB.
- Select "Export to USB >"
- Select Export file format and scroll between Cloud and CSV
- Scroll down to "Interval" and select period of time you wish to fransfer
- Scroll down to "Export selected Logs" and select to start export process.
- The CSV or Cloud (SYNC) file will then be created in the Ranger storage memory.

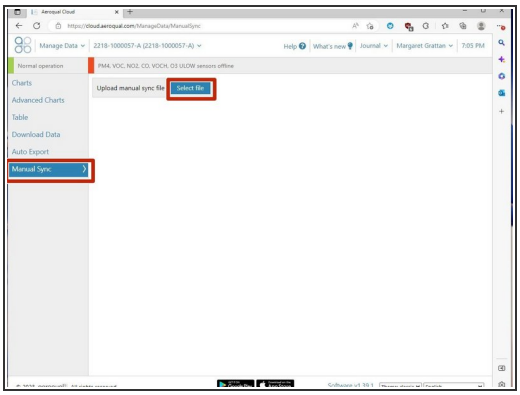
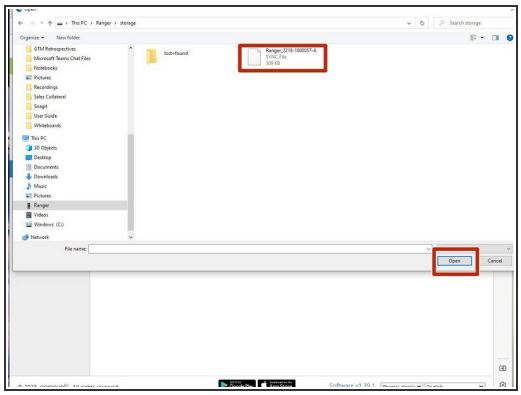
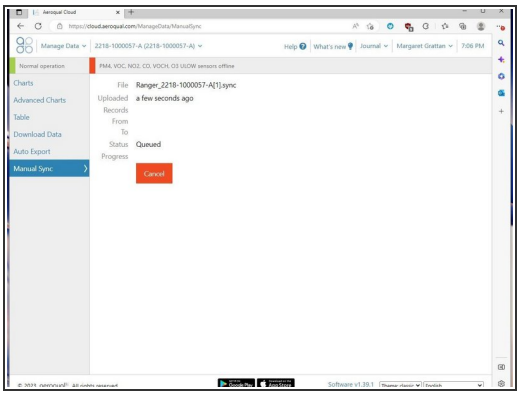
Step 2 — Transferring the file to PC/laptop





- Using the provided USB cable, connect Ranger to your PC or laptop,
- Open file explorer on your PC
- Using the file explorer, Navigate to Ranger > Storage
- You will find a either a CSV or SYNC file present with filename: Ranger_SerialNumber_Date_Time.
- Copy the file to your PC or laptop for upload to Cloud (SYNC) or third party processing (CSV)

Step 3 — Uploading a SYNC file to Aeroqual Cloud

If you have created a SYNC file you can upload it to Aeroqual Cloud.

- Log into Aeroqual Cloud
- Find your instrument and click "Manage Data"
- Using the menu on the left-hand side, select "Manual Sync"
- Select "Select File"
- Locate the .SYNC file and click "Open"
- Wait for the sync operation to complete

For further support, contact Technical Support.

Attaching a sensor head

How to attach a sensor head to Aeroqual Ranger.

Written By: Margaret Grattan

Step 1 — Attach a sensor head

Ranger may be left turned ON or OFF for this operation

- Press the sensor head into the Ranger monitor base until you hear a click

Step 2 — Detach a sensor head

Ranger may be left turned ON or OFF for this operation

- Hold the Ranger monitor base in one hand
- Grab the sensor head with the other hand
- Firmly pull the sensor head apart from the Ranger monitor base

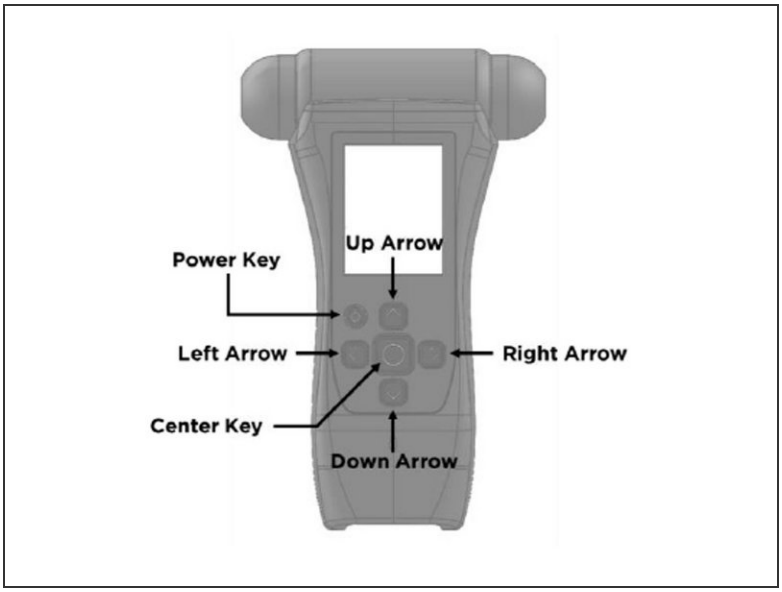
For further support, contact Aeroqual Support.

Button Functions

Where the buttons are, and how to use them for navigation.

Written By: StJohn Vuetilovoni

Step 1 — Button functions

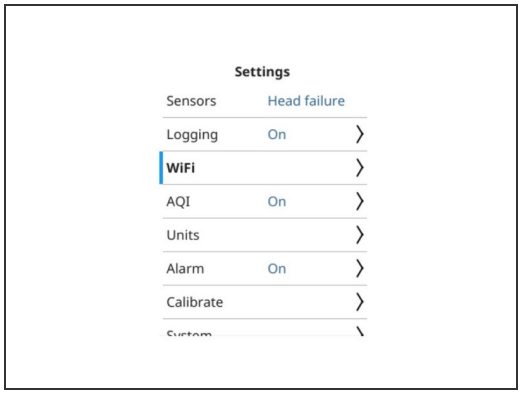


- POWER BUTTON – press and hold turn the instrument off
- LEFT ARROW – press and hold to enter/exit settings menu
- RIGHT ARROW – press to enter an editable field
- UP/DOWN ARROWS –navigate through menus
- CENTER BUTTON – press and hold to enable and disable data logging

Step 2 — Access the Settings menu

- Press and hold the LEFT ARROW to open the settings menu.
- Press and hold the LEFT ARROW to exit the settings menu.

Step 3 — Enable data logging



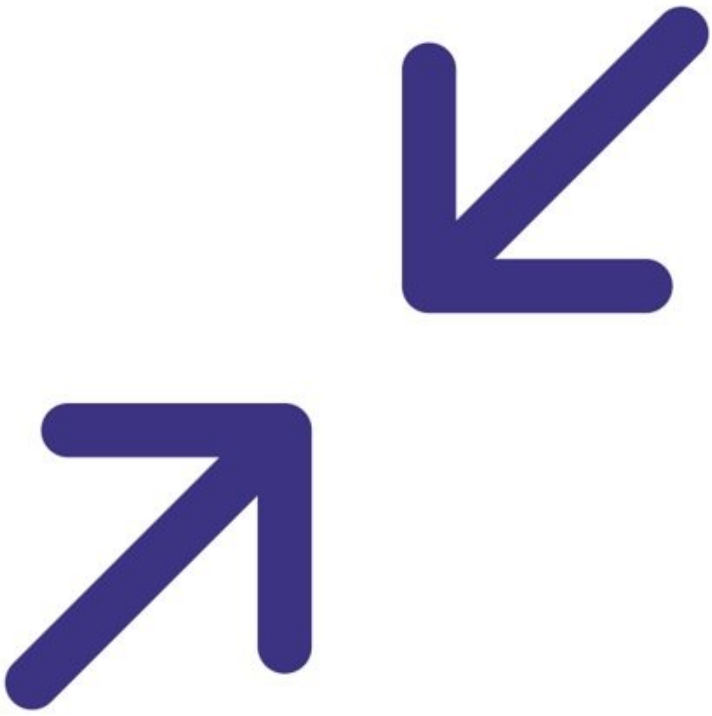
- Press and hold the CENTER KEY to enable data logging.
- Press and hold the CENTER KEY to disable data logging.

For further support, contact Aeroqual Support.

Calibration - Gas span

How to perform a Span Calibration with your Aeroqual Ranger.

Written By: Margaret Grattan



INTRODUCTION

RGR CALKIT can be used to calibrate all Aeroqual sensor heads except ammonia, perchloroethylene, ozone and dust.

Gas calibration using the RGR CALKIT should always be completed in a location with adequate ventilation.

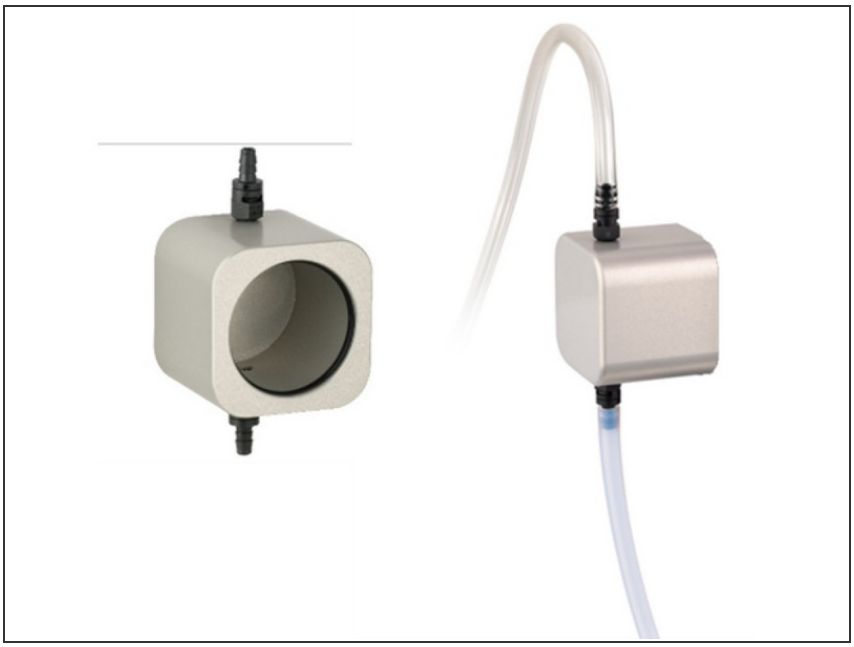
TOOLS:

- Gas regulator (1)
- Calgaz gas cylinders (1)
- 1/8" I.D. Tubing - PVDF (1)

PARTS:

- RGR CALKIT Calibration Accessory (1)

Step 1 — Connect tubing to calibration accessory



The calibration accessory has barbed fittings that are intended to fit with 1/8” ID tubing.

Care should be taken in selecting a tubing material that is appropriate for the type of gas that you will be using to calibrate the sensor head.

- PVDF tubing is appropriate for most gases but the tubing datasheet should be consulted for a full list.

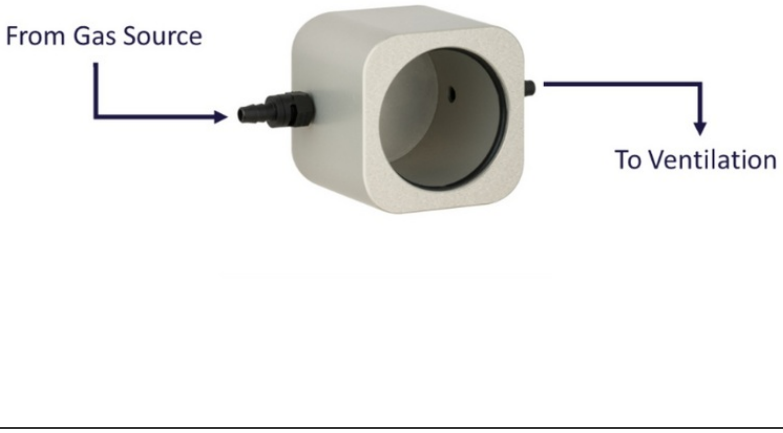
Either side of the calibration accessory can be designated the inlet or the outlet.

Not all gas that enters through the inlet exits through the calibration accessory outlet; be advised that some gas exits through the sensor head exhaust. Depending on your calibration gas of choice and concentration levels, you may need to perform this calibration under a fume hood.

Step 2 — Attach regulator to gas source

- Make sure the valve on your flow gas regulator is fully off.
- Screw the gas regulator onto your gas cylinder. When the regulator is correctly fitted, the pressure indicator will show the cylinder pressure.
- Always point the cylinder and regulator away from yourself and others when attaching or removing a pressure regulator.
- Secure the cylinder so it can't be knocked over while the regulator is attached.

Step 3 — Connect tubing to gas source and ventilation



- Connect tubing to gas source and ventilation.
- Either side of the calibration accessory can be designated the inlet or the outlet

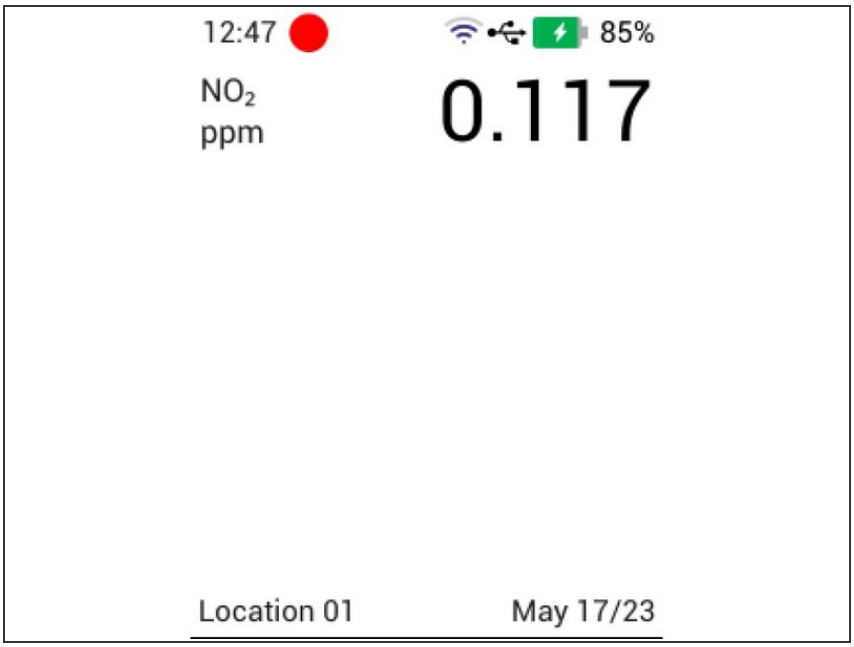
Step 4 — Attach the calibration accessory to the sensor head while the head is plugged into the Ranger

- Attach the sensor head to Ranger
- Turn Ranger On
- Attach the calibration accessory to the sensor head

Step 5 — Gently turn the valve on the regulator and begin to flow gas at >1L/min

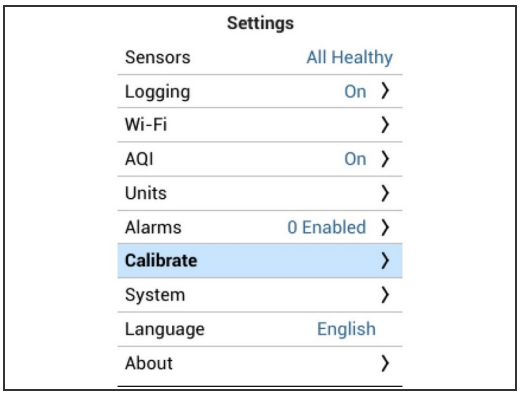
- Check the cylinder pressure to ensure there's enough gas to perform the calibration (10% of full pressure should be enough).
- Gently turn the regulator valve anticlockwise and flow the target gas at >1L/min until the reading stabilizes (about 10 minutes).

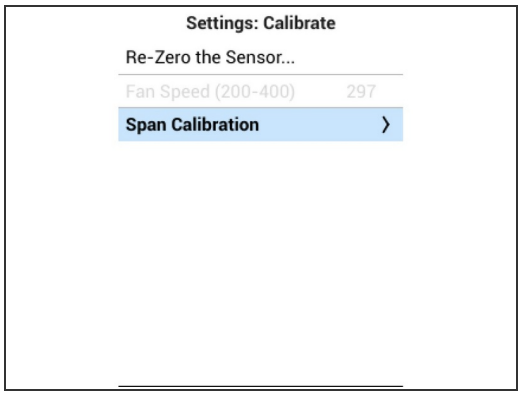
Step 6 — Wait for the gas reading to stabilize

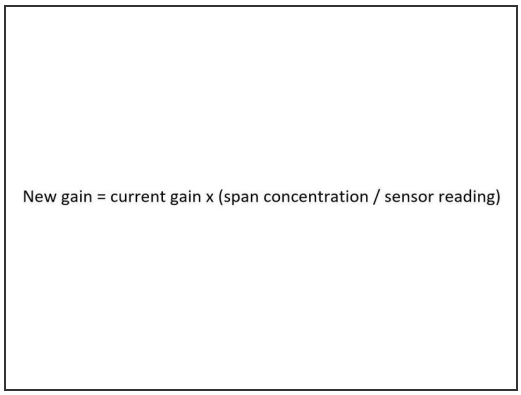


- Wait for the gas reading to stabilize on the display of the Ranger

Step 7 — Navigate to Span Calibration

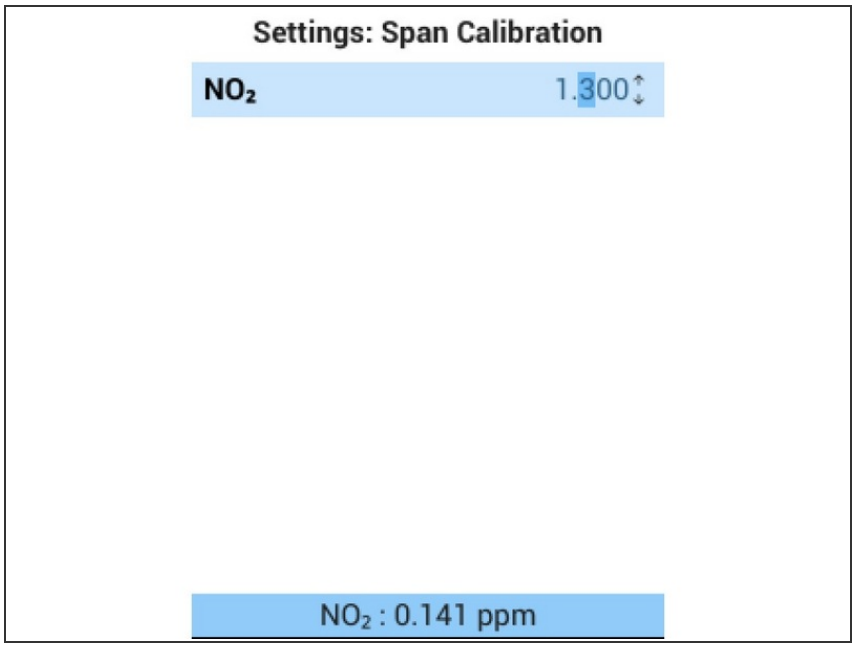






- Press and hold the **LEFT** arrow key to enter the Settings menu
- Navigate down and selectm 'Calibrate' and then ‘Span Calibration’
- Enter the span adjustment menu and calculate the required gain using the formula

Step 8 — Adjust the gain value in the Span Calibration menu



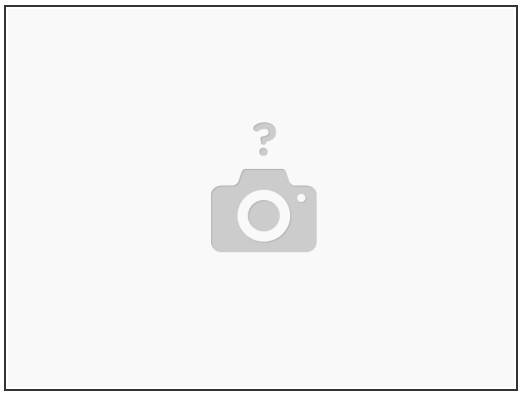
- Adjust the gain value in the Span Calibration menu to match your calculated value
- Press enter
- Wait for the next sensor reading, which will have the new gain applied

ⓘ The value is not applied until you press enter

ⓘ The new gain value will be applied on the next measurement cycle; the value displayed at the bottom may take 1-2 minutes to update

- Confirm the new reading matches your expected value.
- Exit the span calibration menu.

Step 9 — Pack up



- Turn off the gas regulator.
- Pack up.

Step 10 — Span moves with gas sensor head

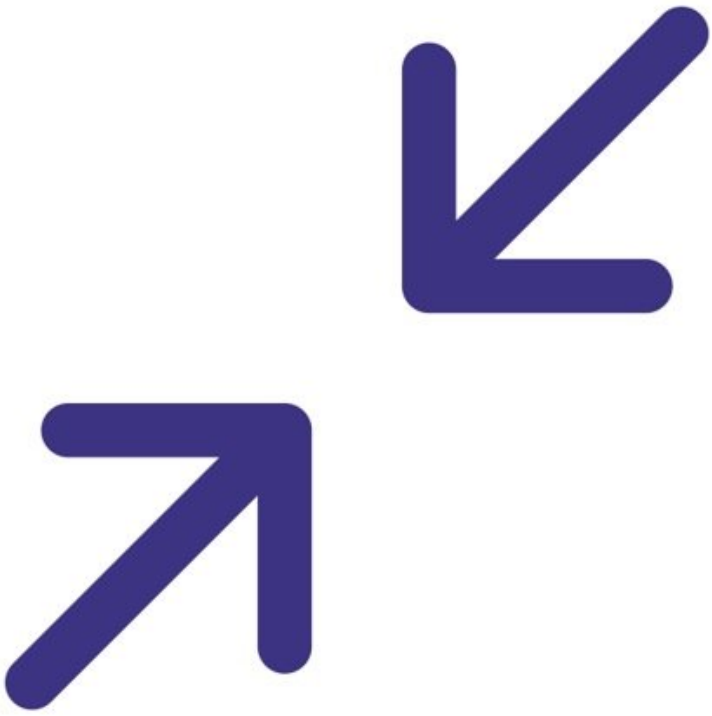
If you remove the gas sensor head from any Ranger base, and attach it to a different Ranger base, the Span will be retained

For further support, visit Span calibration, How to test your sensor head , Sensors - VOC, or contact Technical Support.

Calibration - Gas zero

How to perform a Zero Calibration with your Aeroqual Ranger.

Written By: Margaret Grattan



INTRODUCTION

Under some circumstances, sensors may temporarily exhibit a baseline reading higher than zero due to insufficient warm-up, or cross-sensitivity to other gases. In this case it is worthwhile checking against a standard zero air source.

Please allow 3 minutes for sensor warmup, after turning the instrument on and after swapping sensor heads.

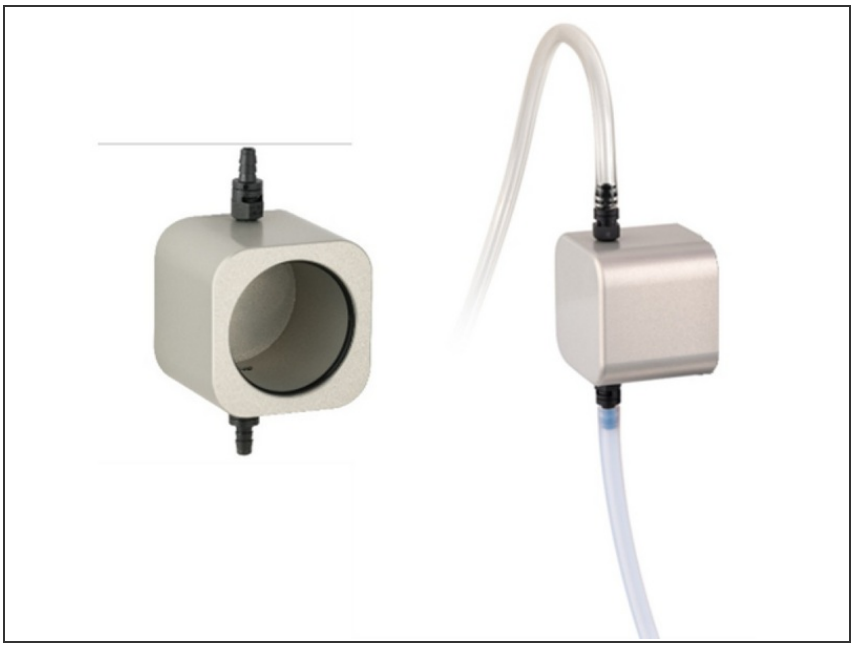
TOOLS:

- Gas regulator (1)
- Calgaz gas cylinders (1)
- 1/8" I.D. Tubing - PVDF (1)

PARTS:

- RGR CALKIT Calibration Accessory (1)

Step 1 — Connect tubing to calibration accessory



The calibration accessory has barbed fittings that are intended to fit with 1/8” ID tubing.

Care should be taken in selecting a tubing material that is appropriate for the type of gas that you will be using to calibrate the sensor head.

- PVDF tubing is appropriate for most gases but the tubing datasheet should be consulted for a full list.

Either side of the calibration accessory can be designated the inlet or the outlet.

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Step 3 — Connect tubing to gas source and ventilation

- Connect tubing to gas source and ventilation.
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Step 4 — Attach the calibration accessory to the sensor head while the head is plugged into the Ranger

- Attach the sensor head to Ranger
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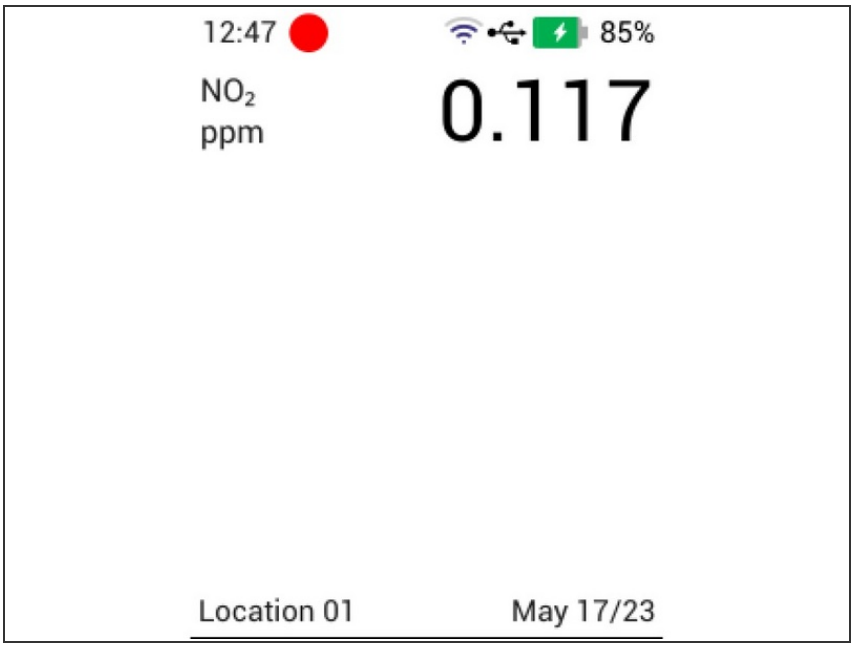
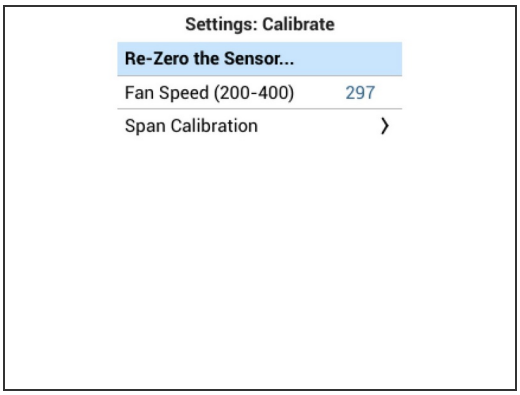
- Gently turn the regulator valve anticlockwise and flow the target gas at >1L/min until the reading stabilizes (about 10 minutes).

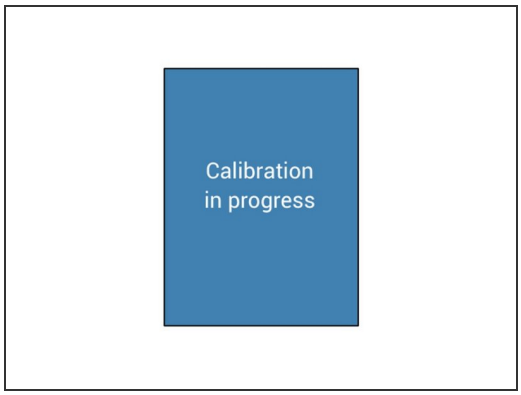
Step 6 — Wait for the gas reading to stabilize

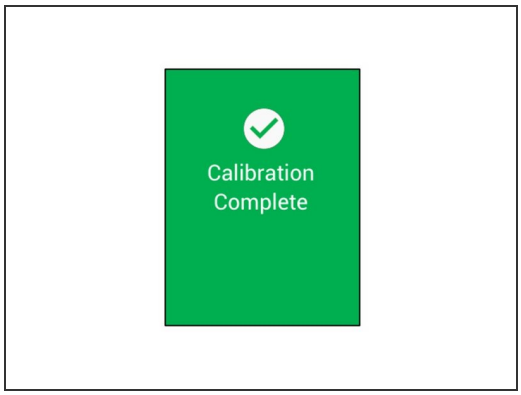


- Wait for the gas reading to stabilize on the display of the Ranger

Step 7 — Re-zero the sensor







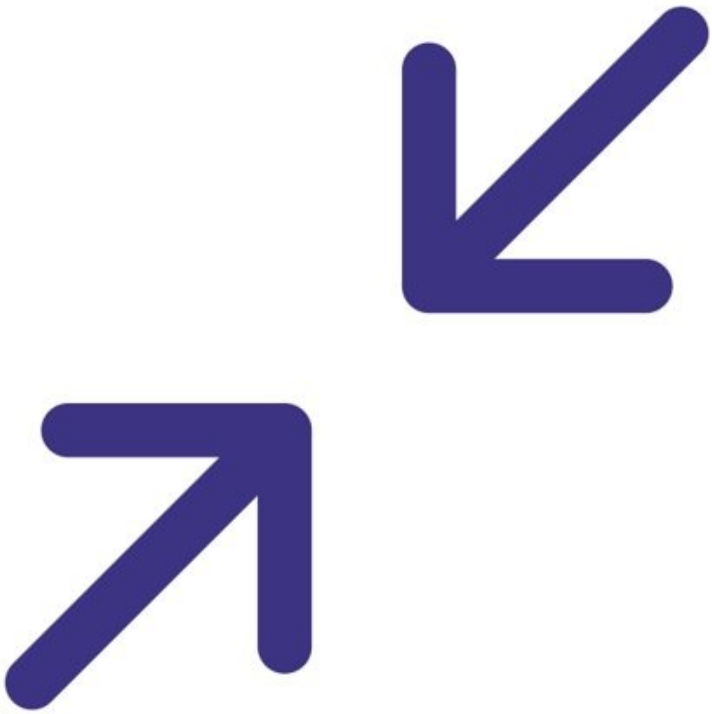
- Flow Zero air until the reading stabilizes (approx, 10 minutes).
- Press and hold the **LEFT** arrow key to enter the Settings menu. Navigate to Settings > Calibrate
- Select ‘Re-zero the sensor...’
- Press OK to confirm.
- Please wait for the ‘Preparing for calibration’ and ‘Calibration in progress’ screens.
- Upon successful calibration, the instrument will display a ‘Calibration Complete’ screen.

For further support, contact Aeroqual Support.

Calibration Accessory (RGR CALKIT) for Gas calibration

How to set up the RGR CALKIT gas calibration accessory.

Written By: Kyle Alberti



INTRODUCTION

RGR CALKIT can be used to calibrate all Aeroqual sensor heads except ammonia, perchloroethylene, ozone and dust.

Gas calibration using the RGR CALKIT should always be completed in a location with adequate ventilation.

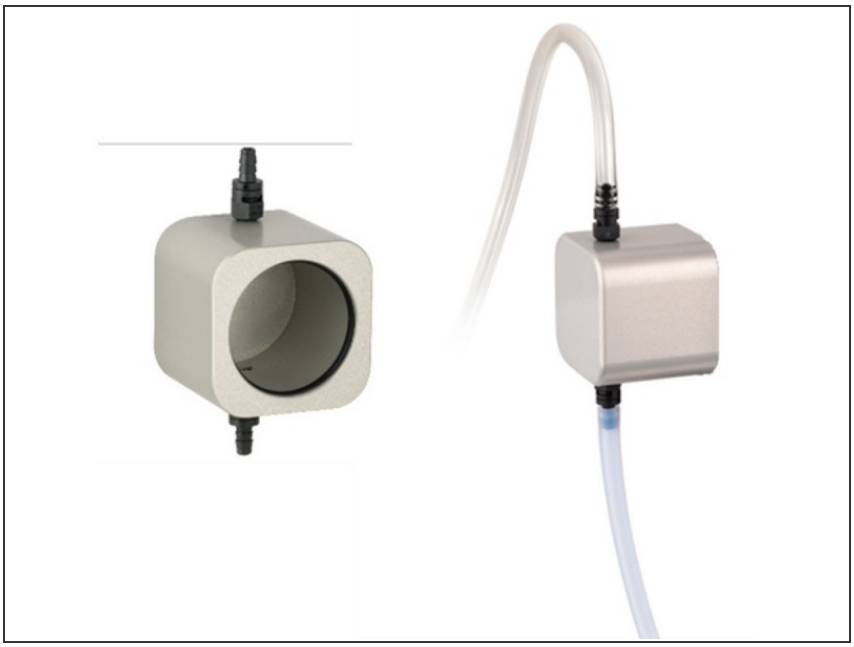
TOOLS:

- Gas regulator (1)
- Calgaz gas cylinders (1)
- 1/8" I.D. Tubing - PVDF (1)

PARTS:

- RGR CALKIT Calibration Accessory (1)

Step 1 — Connect tubing to calibration accessory



ⓘ The calibration accessory has barbed fittings that are intended to fit with 1/8” ID tubing.

⚠ Care should be taken in selecting a tubing material that is appropriate for the type of gas that you will be using to calibrate the sensor head.

- PVDF tubing is appropriate for most gases but the tubing's datasheet should be consulted for a full list.

ⓘ Either side of the calibration accessory can be designated the inlet or the outlet.

⚠ Not all gas that enters through the inlet exits through the calibration accessory outlet; be advised that some gas exits through the sensor head exhaust. Depending on your calibration gas of choice and concentration levels, you may need to perform this calibration under a fume hood.

Step 2 — Attach regulator to gas source

- Make sure the valve on your flow gas regulator is fully off.
- Screw the gas regulator onto your gas cylinder. When the regulator is correctly fitted, the pressure indicator will show the cylinder pressure.
- Always point the cylinder and regulator away from yourself and others when attaching or removing a pressure regulator.
- Secure the cylinder so it can't be knocked over while the regulator is attached.

Step 3 — Connect tubing to gas source and ventilation

- Connect tubing to gas source and ventilation.
- Either side of the calibration accessory can be designated the inlet or the outlet

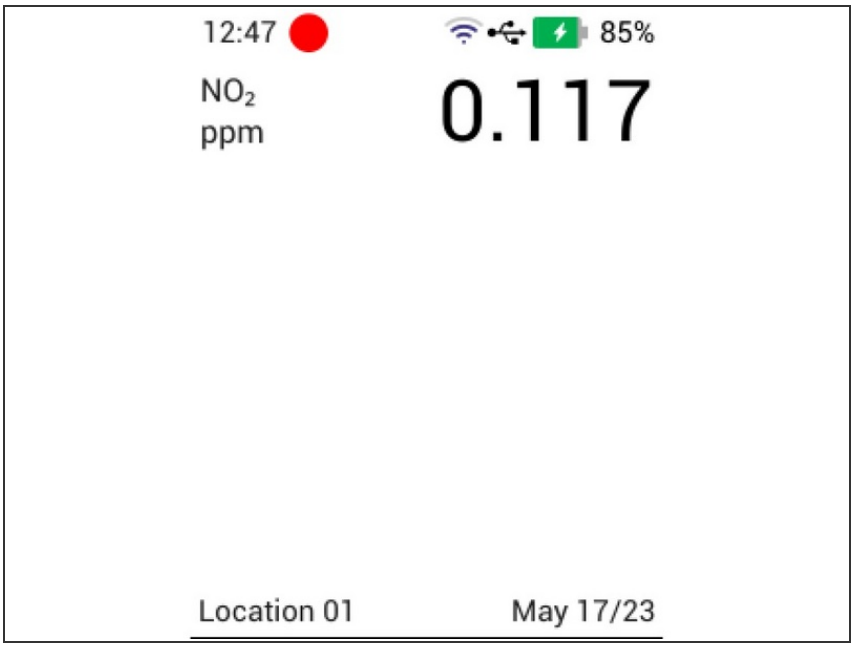
Step 4 — Attach the calibration accessory to the sensor head while the head is plugged into the Ranger

- Attach the sensor head to Ranger
- Turn Ranger On
- Attach the calibration accessory to the sensor head

Step 5 — Gently turn the valve on the regulator and begin to flow gas at >1L/min

- Check the cylinder pressure to ensure there's enough gas to perform the calibration (10% of full pressure should be enough).
- Gently turn the regulator valve anticlockwise and flow the target gas at >1L/min until the reading stabilizes (about 10 minutes).

Step 6 — Wait for the gas reading to stabilize



- Wait for the gas reading to stabilize on the display of the Ranger

For further support, contact Aeroqual Support.

Charging the Ranger battery

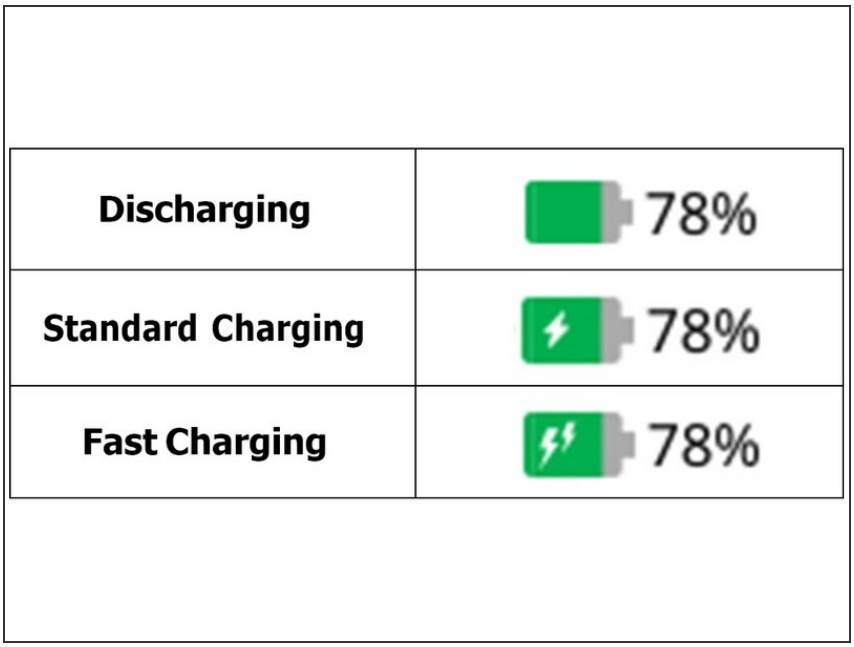
Information relating to charging the Ranger battery.

Written By: StJohn Vuetilovoni

Step 1 — Battery Warnings

- ⚠ The battery in the Ranger is NOT a user-serviceable component and should only be replaced by an Aeroqual authorized agent.
- ⚠ Do not incinerate or heat the battery as this may cause burns and the batteries may burst or cause the release of toxic materials.
- ⚠ Batteries must be recycled or disposed of properly according to your local laws. They must not be disposed of in municipal waste.
- ⚠ Immediately dispose of any battery that has been damaged or has swollen.
- ⚠ Immediately dispose of any power supply that has been damaged.
- ⚠ Only use the Aeroqual supplied charger to charge the Ranger battery.

Step 2 — Charging Ranger



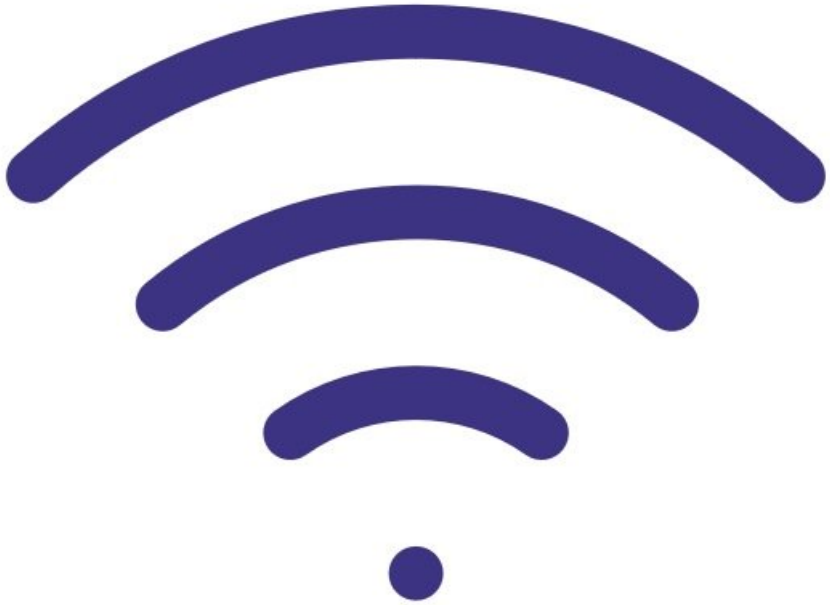
- The Aeroqual-supplied charger can fully charge the Ranger battery in 4 to 5 hours.
- For safety, the Ranger will automatically stop charging its battery if the internal battery temperature exceeds 45°C (113 °F).
- To charge the Ranger, **turn on the Ranger** and then plug in the USB-C charger. The LED will flash GREEN indicating the battery is charging correctly. You can monitor the battery level on the Ranger screen. Remove the sensor if you wish to charge more quickly. When charged, remove the USB-C cable and start measuring !
- When the Ranger is fully charged the LED will show solid GREEN.
- If the connection used to charge the Ranger is not sufficient to charge the battery (eg when plugged into a laptop) then the LED will flash BLUE. If charging is required please use the supplied charger.

For further support, contact Aeroqual Support.

Connect Ranger to Wi-Fi

Connect the instrument to Wi-Fi to synchronize logged data to Ranger Cloud.

Written By: Margaret Grattan



INTRODUCTION

Connect Ranger to Wi-Fi to synchronize its logged data to Aeroqual Cloud.

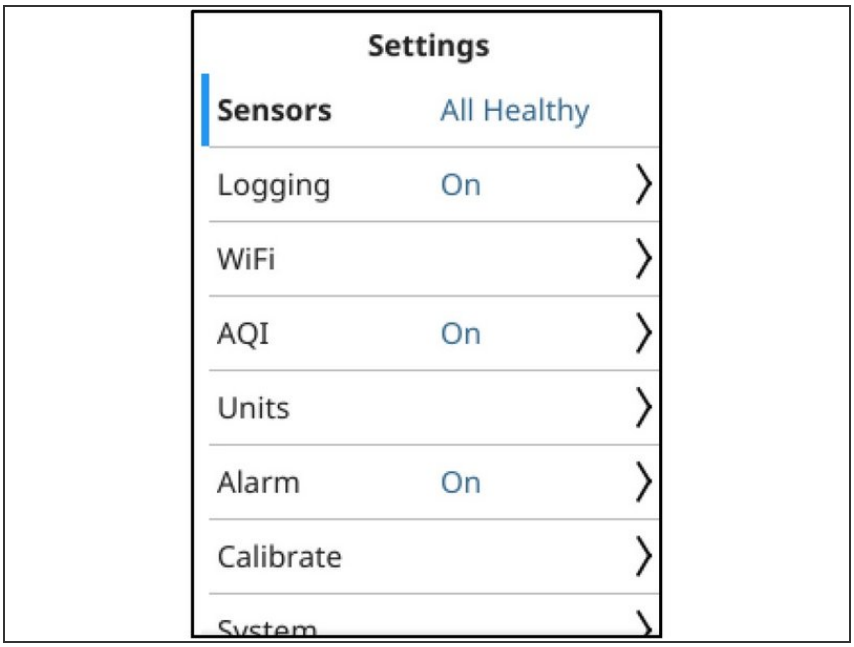
You can also connect Ranger to Aeroqual Cloud using your mobile phone as a hotspot by following the instructions on the video below

[video: https://www.youtube.com/watch?v=63_dnp3u7p0]

TOOLS:

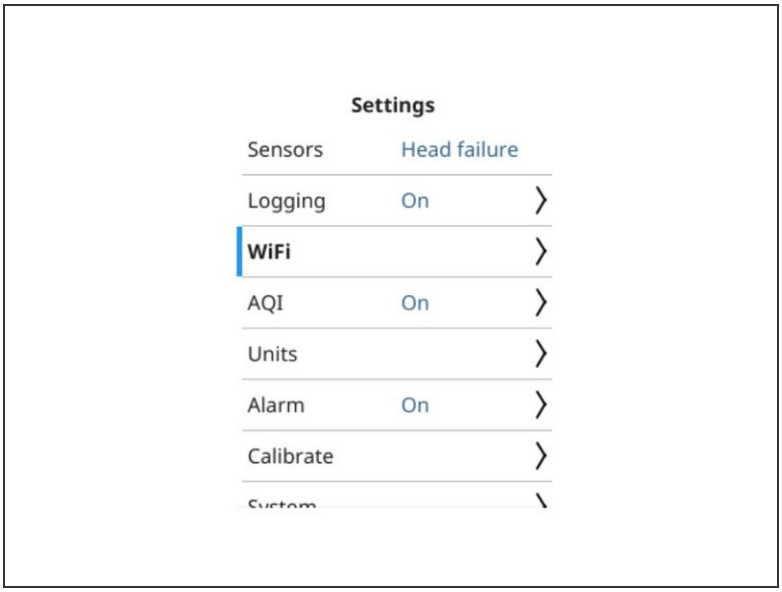
- Wi-Fi network (1)
- Wi-Fi network credentials (1)

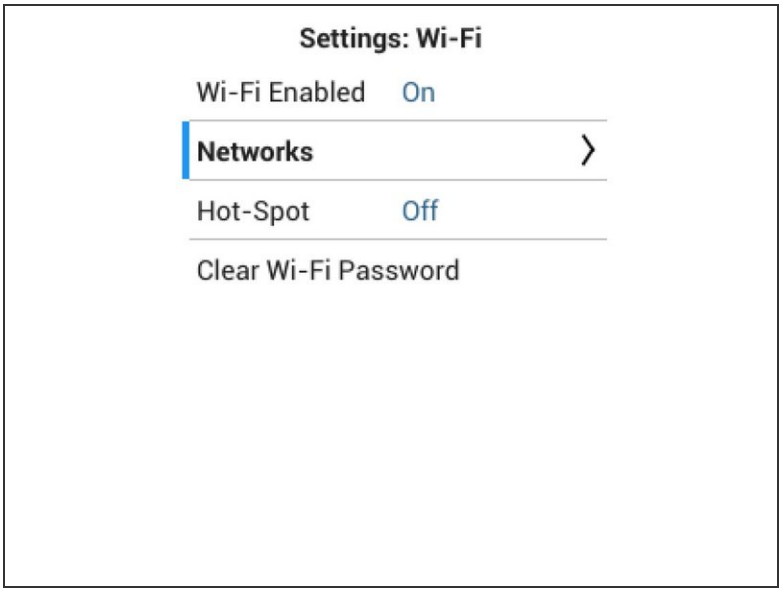
Step 1 — Go to Settings



- From the main screen, enter the Settings menu by pressing and holding the **LEFT ARROW**

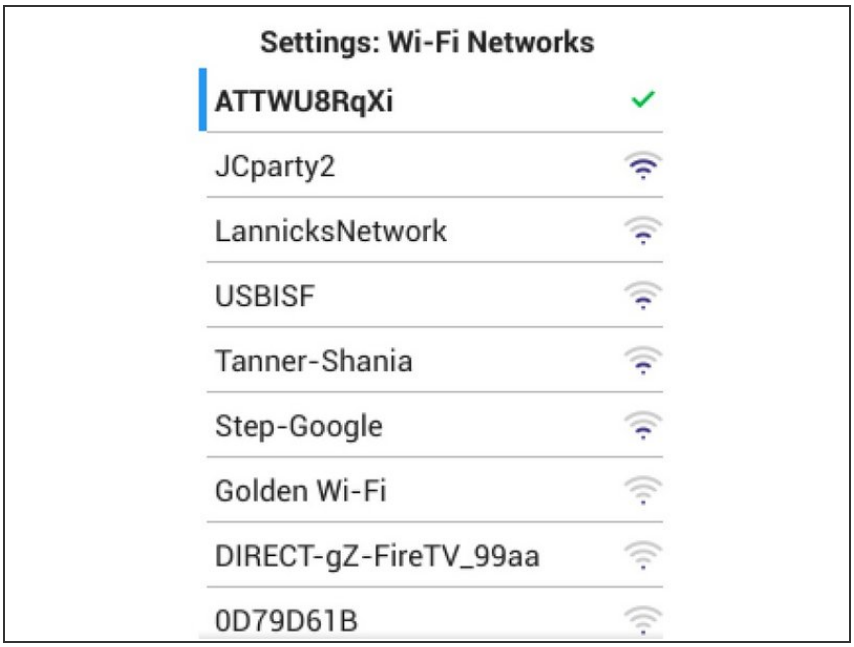
Step 2 — Configure Wi-Fi





- Navigate to the Wi-Fi submenu
- Then, navigate to the Networks submenu

Step 3 — Select your Network

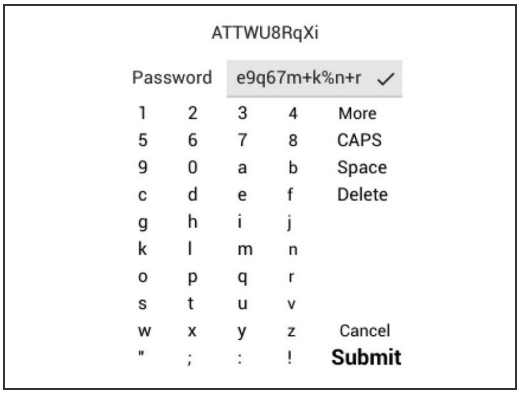


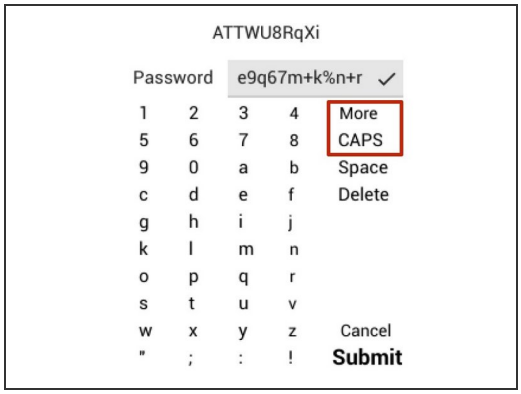
- Next will appear a list of available Wi-Fi networks
- Select the network you'd like to connect to.

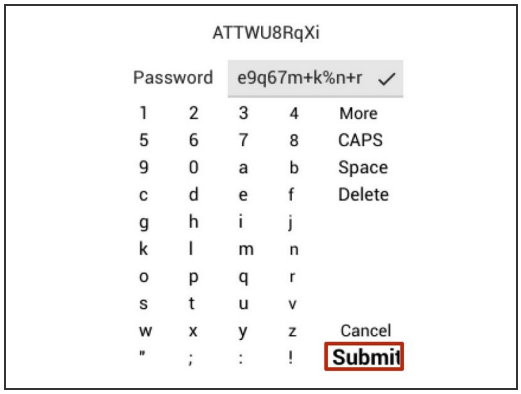
ⓘ To refresh the list of available networks, exit and re-enter the current menu.

⚠ Please note that the Ranger may *not* connect to an Open network.

Step 4 — Enter password

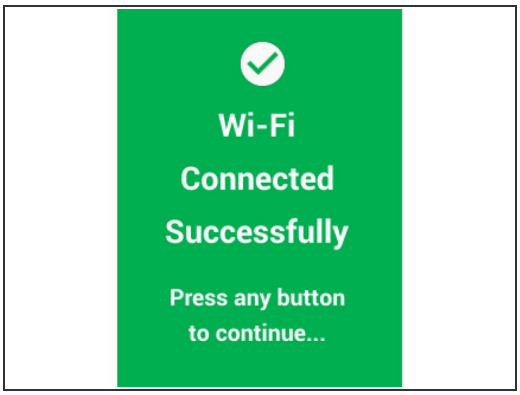


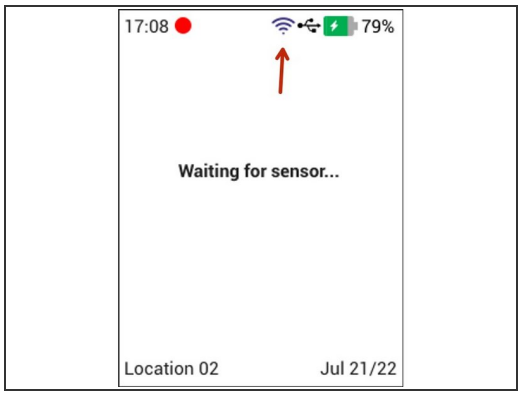




- Enter the Wi-Fi password
- To select a capital letter, select "CAPS"
- To select from a list of special characters, select "More"
- Finally, select "Submit"

Step 5 — Verify connection





- A message will appear, confirming a successful or failed connection to Wi-Fi.
- To exit the Settings menu and return to the Main screen, press and hold the **LEFT ARROW**
- Confirm that the Wi-Fi icon now appears on the Main screen

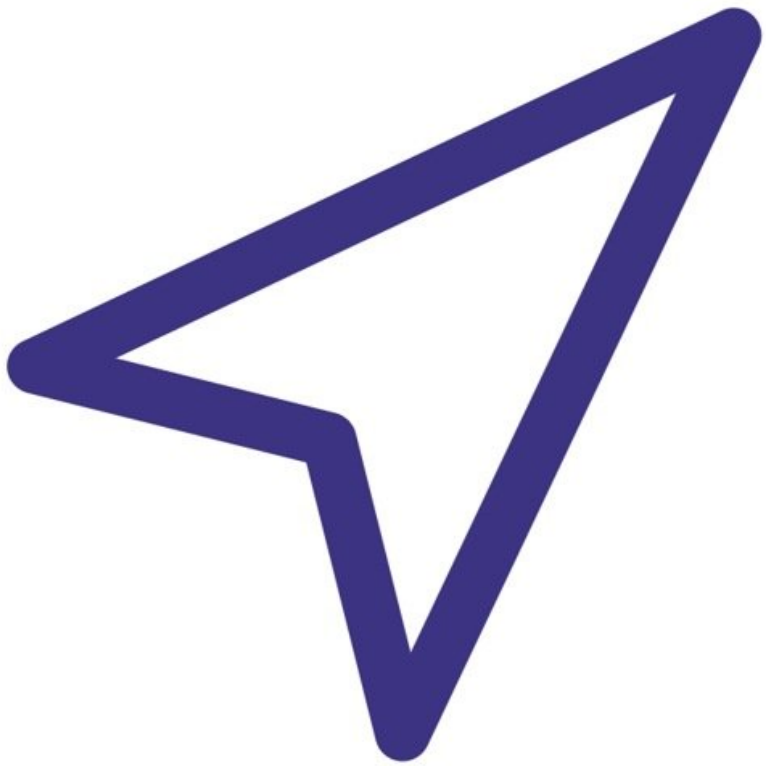
ⓘ Ranger can remember multiple Wi-Fi networks

For further support, contact Aeroqual Support.

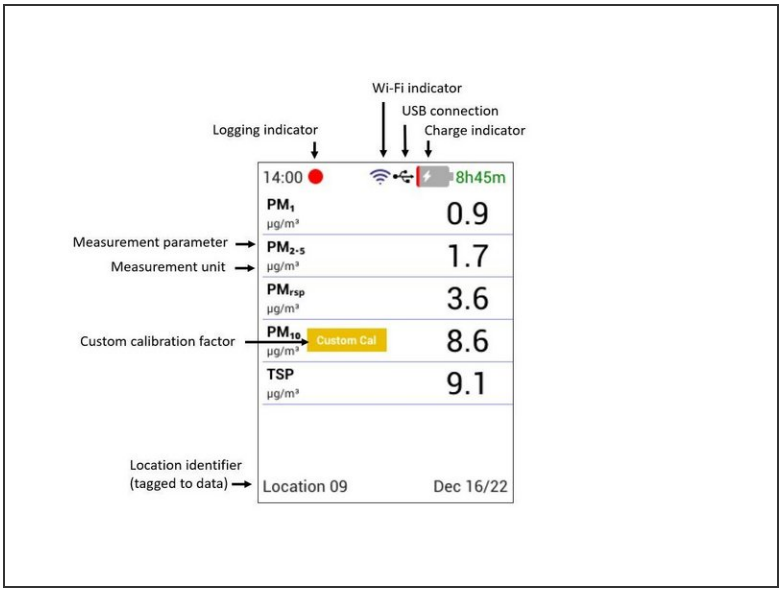
Data display screens

See what is displayed on the screen and how to navigate to different screens.

Written By: StJohn Vuetilovoni



Step 1 — Main screen



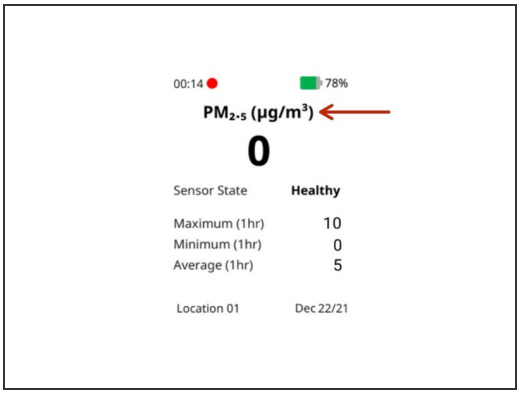
ⓘ Upon startup, the main data display page will be shown.

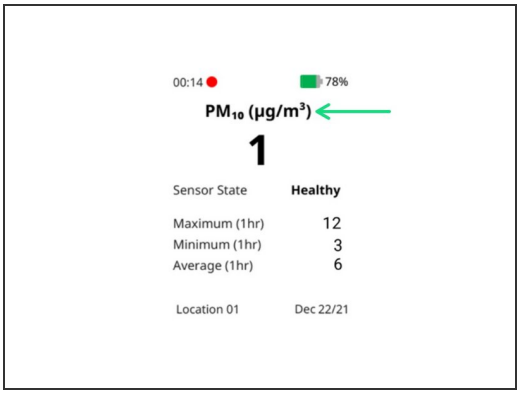
ⓘ The main screen contains real-time measurement data coming from the sensor head connected to the instrument. On the top, it displays time, recording status, Wi-Fi connection status, and battery/charging status. On the bottom, it displays Location ID and date.

- Press the **LEFT** and **RIGHT ARROWS** to navigate between Summary, Detail, and AQI display screens.

ⓘ The AQI screen is available only while using the PMX sensor head.

Step 2 — Data and AQI Screens





ⓘ If the sensor head is able to measure more than one parameter, then a Detail screen is available for each parameter.

- Scroll through each parameter's Detail screen by using the **LEFT** and **RIGHT** arrows.

ⓘ An Air Quality Index (AQI) will be visible if the AQI feature is turned On

- Scroll through the AQI screens by using the **LEFT** and **RIGHT** arrows.

ⓘ The AQI screen is only available while using the PMX sensor head.

For further support, contact Aeroqual Support.

Mounting

How to mount the Aeroqual Ranger.

Written By: StJohn Vuetilovoni

Step 1 — Ranger Mounting

The Aeroqual Ranger™ contains a ¼-20 UNC threaded fitting that can be used to secure the instrument to mounting solutions such as tripods.

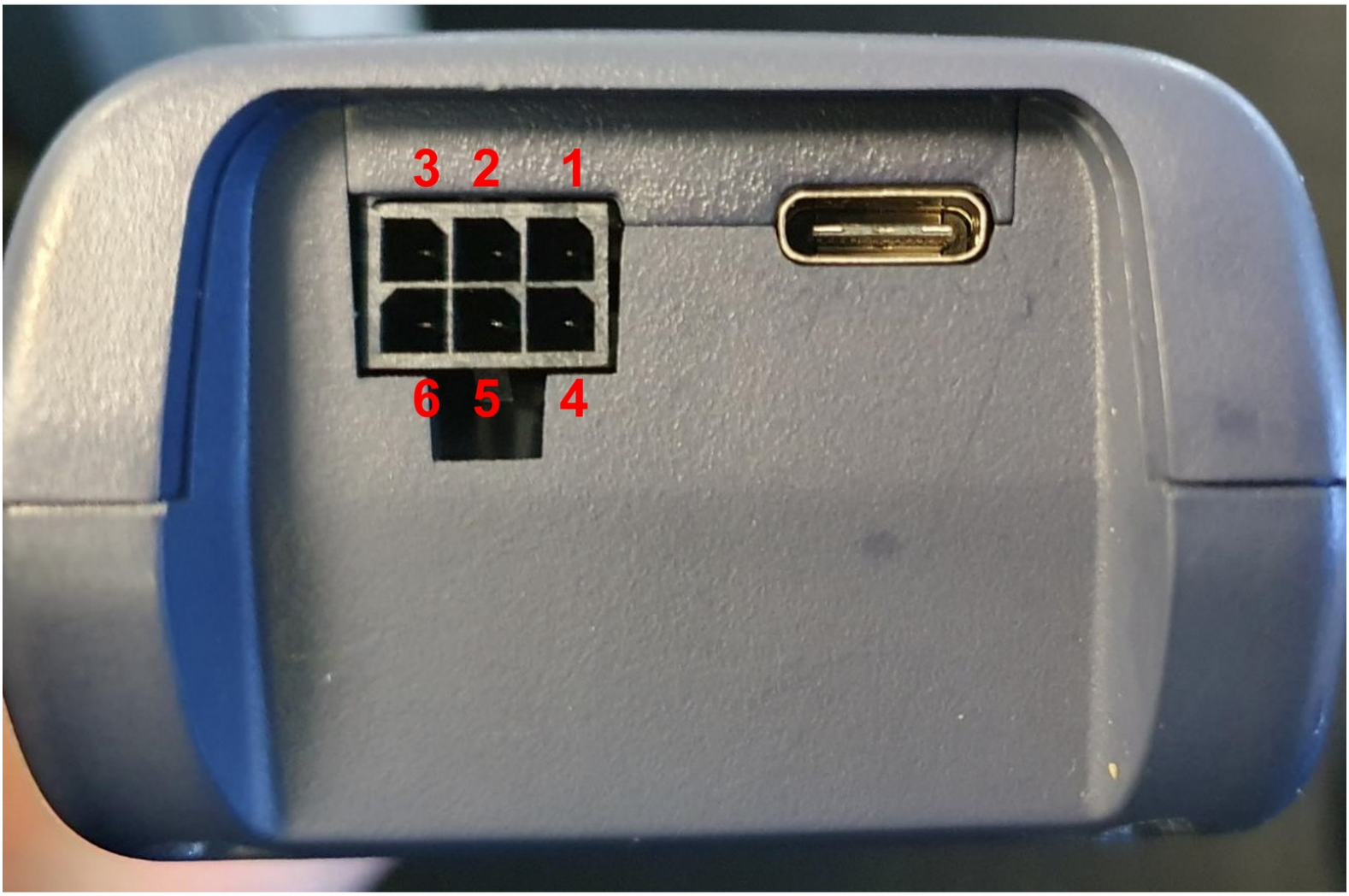
- Obtain a mounting solution, such as a tripod, with a 1/4 " thread mount.
- Locate the fitting on the back of the instrument.
- Secure Ranger by screwing the mounting solution into the back of the instrument.

For further support, contact Aeroqual Support.

Output connections - 0-5V analog

How to use the 0-5V analog output from the Ranger

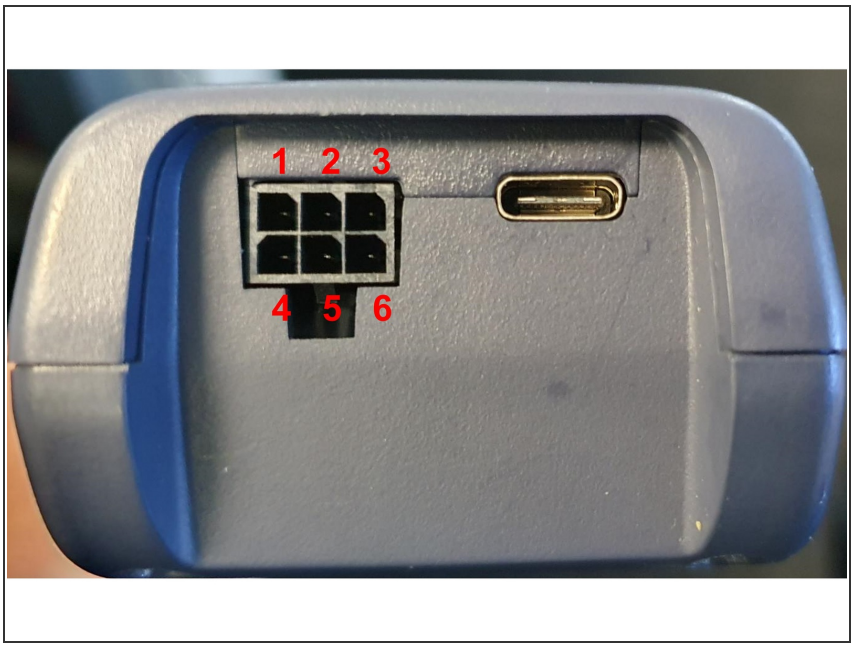
Written By: Geoff Henshaw



INTRODUCTION

The 0-5V analog output is available on Ranger with firmware version 1.1.0 or later

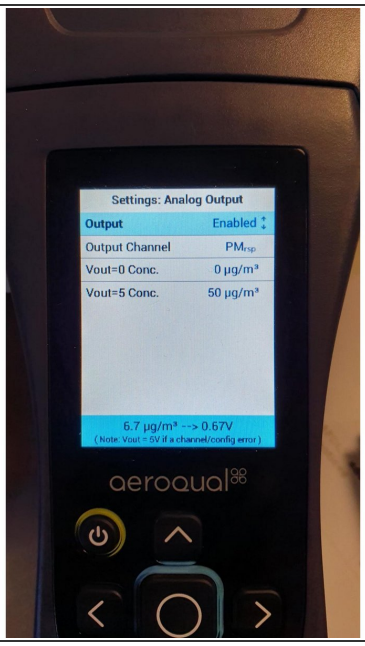
Step 1 — Output connections - 0-5V analog



The connector plug is a Molex Micro-Fit 3.0 6-way connector (e.g. Molex P/N: 2064610600).

Pin 5 = 0-5V ANALOG Pin 6 = GND

Step 2



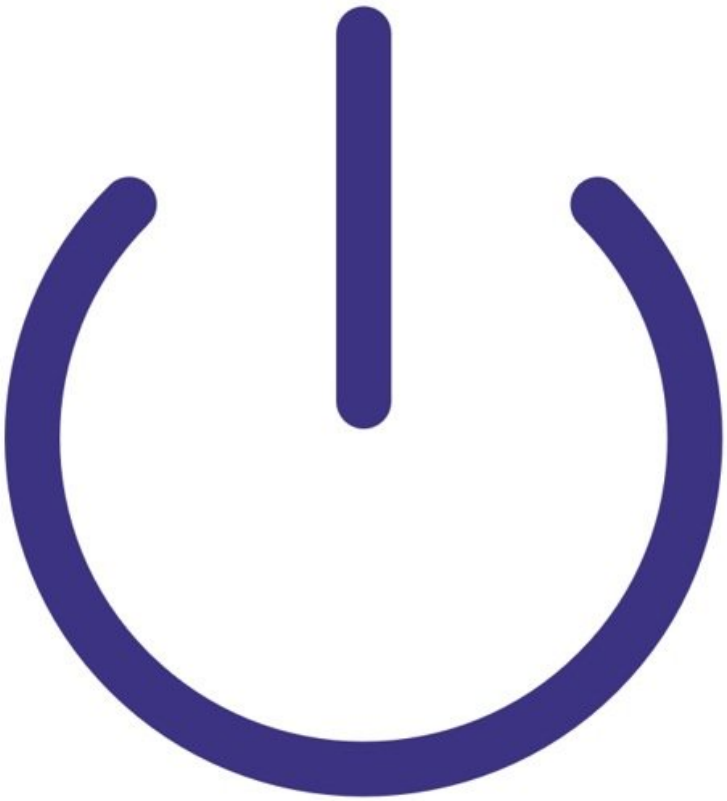
- Set the the 0-5V analog output channel and scale via the Settings menu on Ranger
- The voltage on the 0-5V analog output pin will then scale with the sensor concentration.
- If the Ranger detects a sensor error it will set the 0-5V output to 5 V

For further support, contact Aeroqual Support.

Powering on and off

How to power the Ranger on and off.

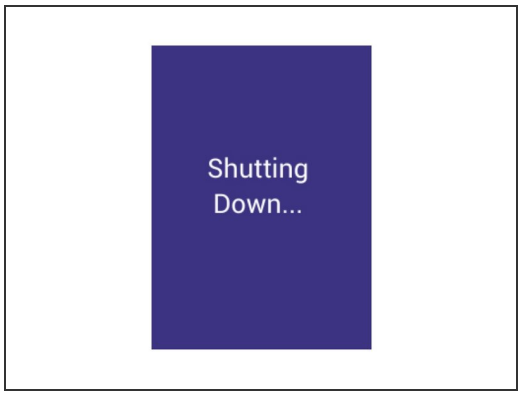
Written By: StJohn Vuetilovoni



Step 1 — Powering on Ranger

- Press the **POWER** button to power on the instrument.
- An LED will illuminate on the front of the display.
- Please wait 15 seconds for the start-up sequence to complete.
- From the splash screen, press **ANY BUTTON** to proceed.

Step 2 — Powering off Ranger



- Press and hold the **POWER** button for five (5) seconds.
- Please wait for the shut-down screen to appear.
- The instrument will now power off.

ⓘ In the event the instrument experiences an irrecoverable failure, a hard reset can be performed by holding the **POWER BUTTON** and **DOWN ARROW** simultaneously for 20 seconds.

For further support, contact Aeroqual Support.

Setting the date/time

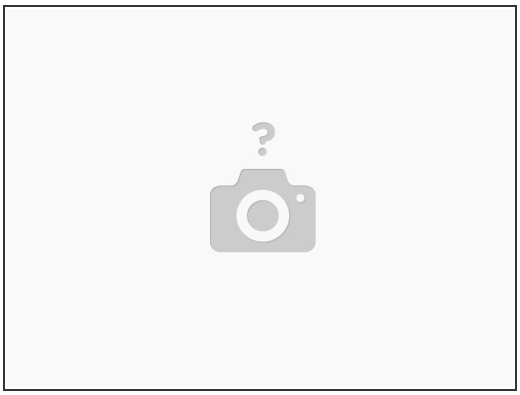
How to change the date/time on the Ranger

Written By: Geoff Henshaw

INTRODUCTION

The Ranger date/time is automatically synchronized to a Global Time Server when connected to the internet via WiFi.

Step 1 — Setting the date/time



- The Ranger automatically synchonizes its date/time to a Global Time server when connected to the internet via WiFi.
- If the Ranger date/time is incorrect because it is being used in a different time zone then correct this by setting the correct time zone (go to the Settings guide)

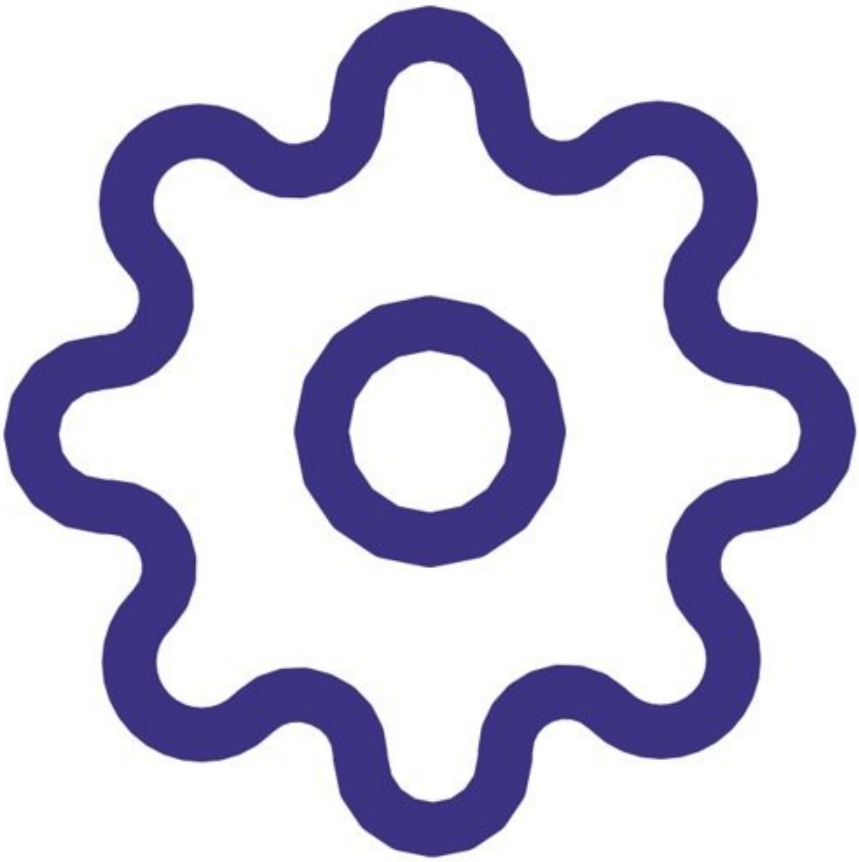
- If the Ranger date/time is incorrect because it hasnt been connected to the internet for a long time then set the date/time by connecting it to the internet via WiFi (see Connect Ranger to WiFi guide).
- Once the Ranger has successfully connected to a WiFi network with internet access, turn it off and then back on. Wait 30s and you will see the date/time change to the correct values on the reading screen.

For further support, contact Aeroqual Support.

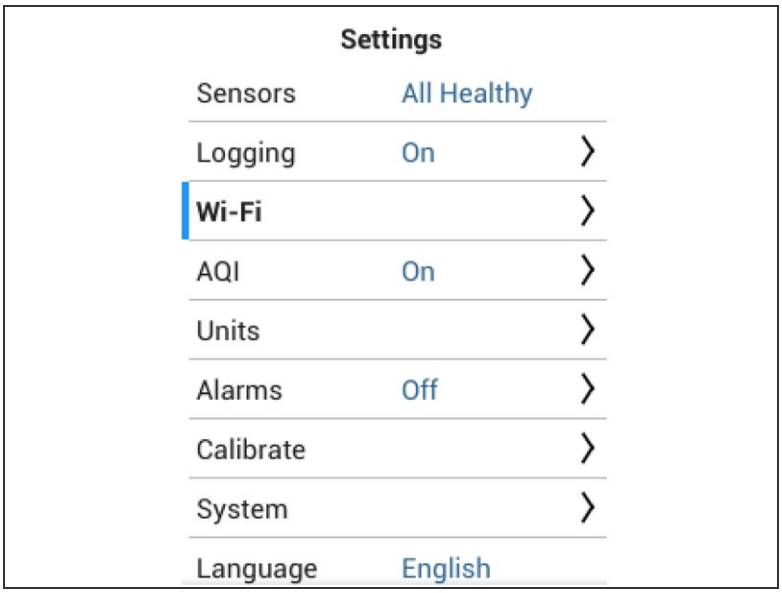
Settings

How to configure the Ranger.

Written By: StJohn Vuetilovoni

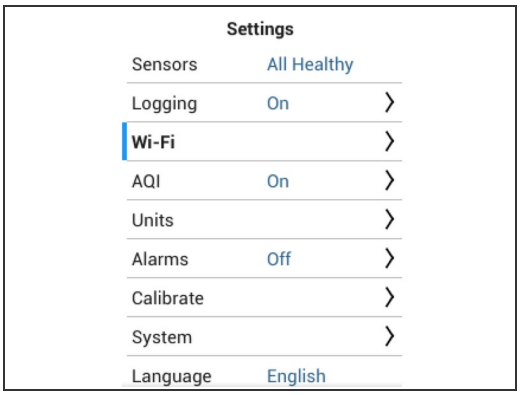


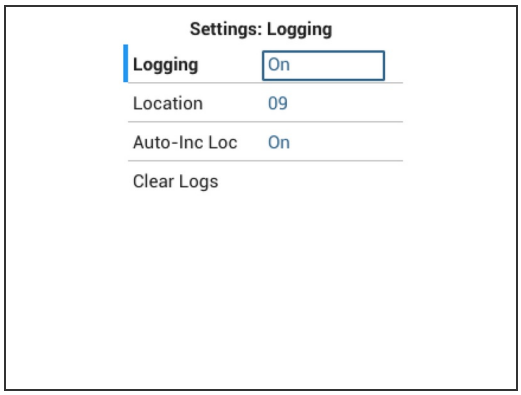
Step 1 — Accessing the Settings Menu



- To enter the settings menu, press and hold the **LEFT ARROW**.
- To exit the Settings menu and return to the main data display, press and hold the **LEFT ARROW**

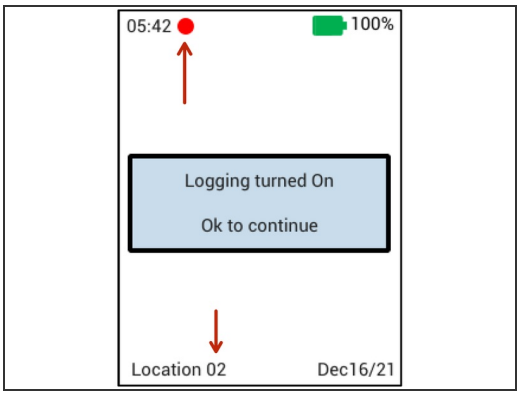
Step 2 — Navigating the Settings Menu

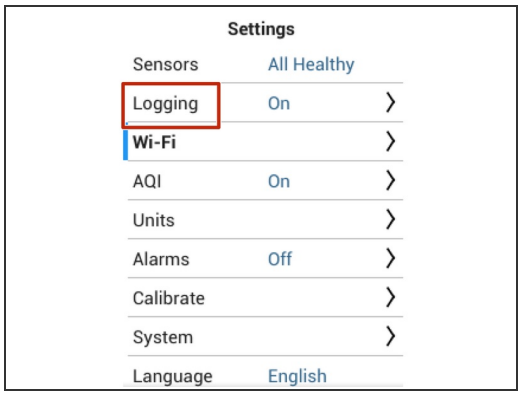


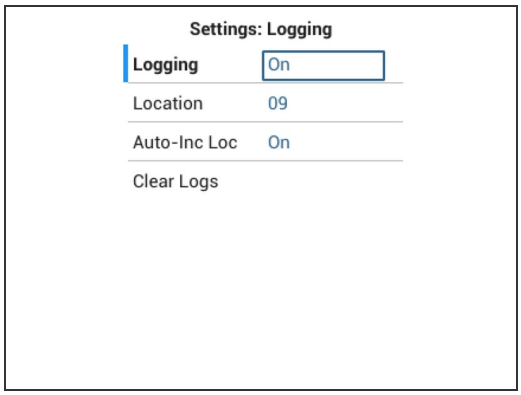


- To enter a sub-menu
  - navigate to it by using the **UP** and **DOWN ARROWS**
  - then press the **CENTER** button.
- To edit any field
  - press and hold the **CENTER** button until it becomes highlighted
  - Then, change the field's value by using the **UP** and **DOWN ARROWS**.
  - Then, press **CENTER** again

Step 3 — Enable and Disable Logging







- To start and stop Logging from the Main Screen, press and hold the **CENTER BUTTON**.

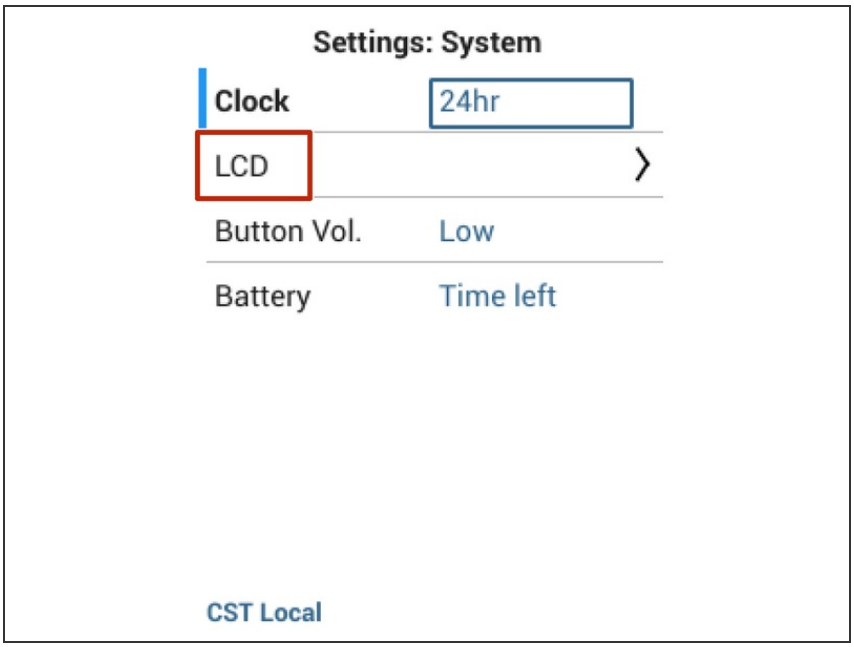
ⓘ When logging is enabled, a red circle will appear at the top of the Main display

- To start and stop Logging from the Settings menu, navigate to Settings>Logging, then toggle Logging to "On" or "Off"
- To change the location tagged with the logged data, navigate to Settings>Logging and toggle the Location

ⓘ This Location identifier is displayed at the bottom of the data display screen.

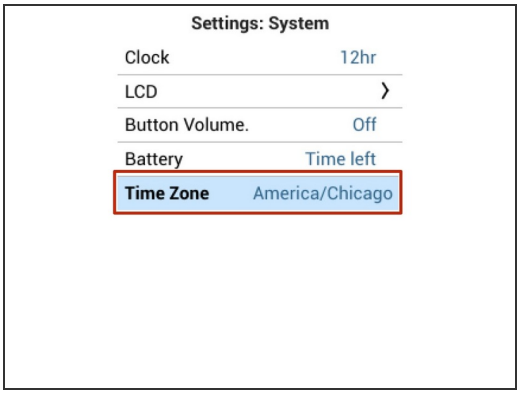
ⓘ Logged data is stored locally on the device and is synchronized to Aeroqual Cloud when the device is connected to the internet.

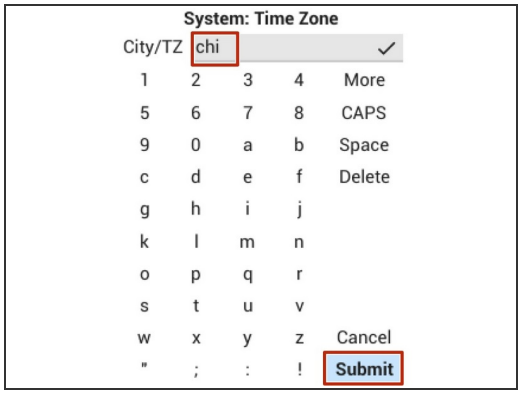
Step 4 — Adjust Brightness

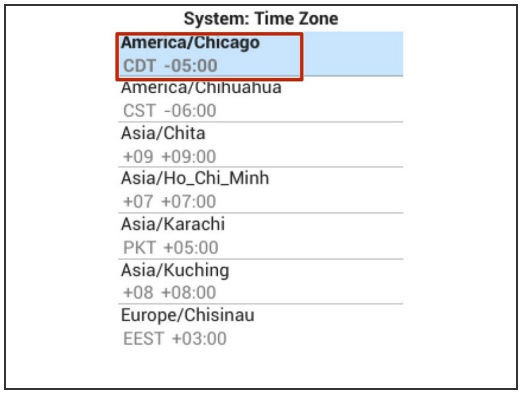


- To adjust the brightness of the display, enter the Settings menu
- Navigate to Settings > LCD
- Edit the LCD brightness value

Step 5 — Configure Time Zone

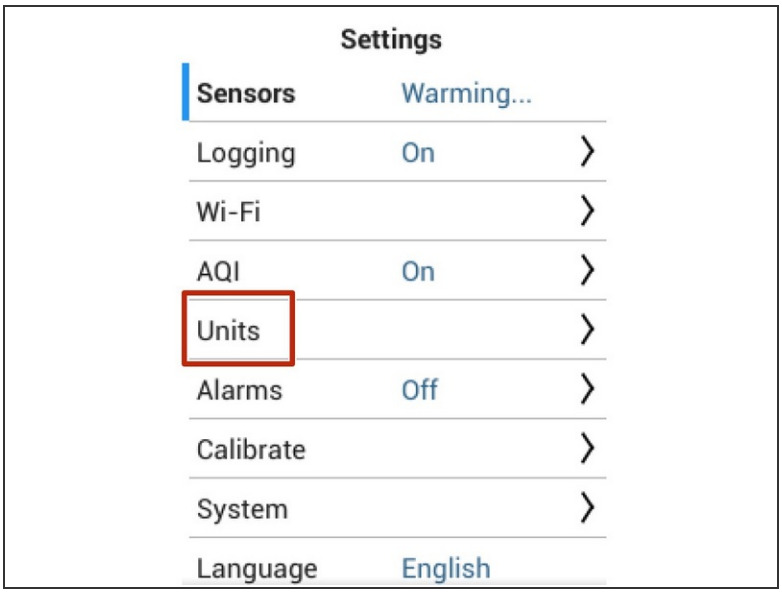


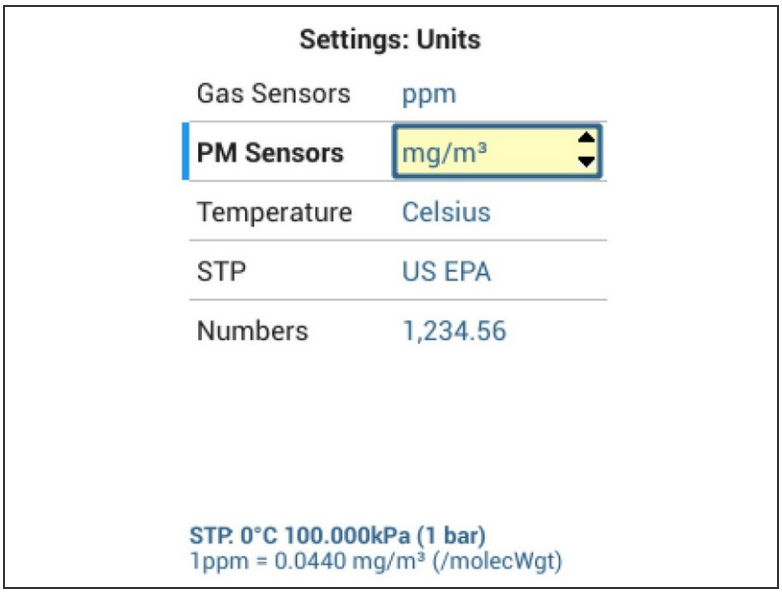




- Navigate to Settings > System
- Select Time Zone
- Enter the name of a large city in your preferred time zone, and select Submit
- A list will appear. Select your city from the list.
- Your time zone has now been set

Step 6 — Set units of measure

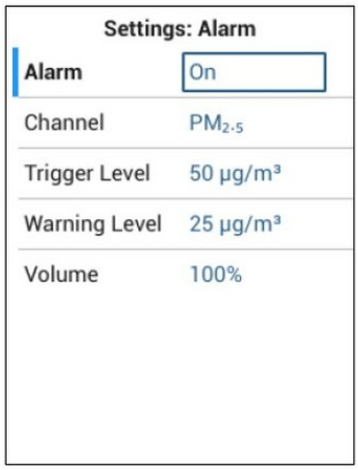




- To edit the units of measure displayed in the readings, enter the Settings menu
- Navigate to Settings > Units
- Adjust the units for instant readings on the various displays

ⓘ Even if you adjust the instant reading units, the default units (ppm for gases, µg/m ^{3} for PM) will continue to be used when logging and synchronizing through Wi-Fi

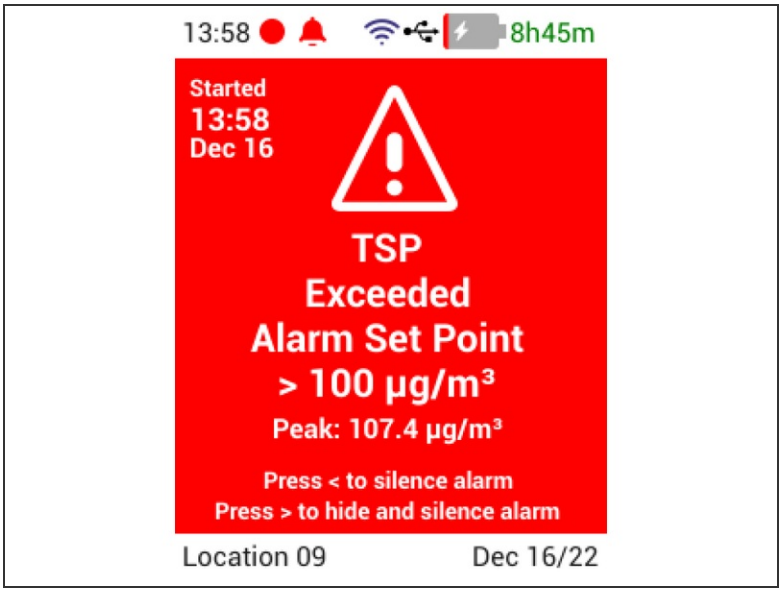
Step 7 — Set Alarms

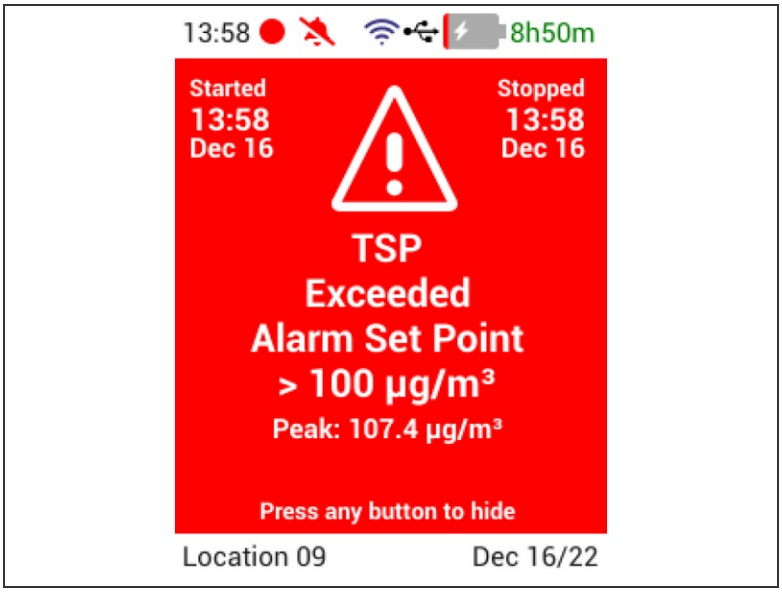


- Enter the Settings menu
- Navigate to Settings > Alarm
- Set the desired channel
- Set the desired Trigger and Warning Levels

ⓘ When real-time measurements exceed the Warning Level or Trigger Level, the instrument will sound an audible alarm and display a message

Step 8 — Manage an Alarm



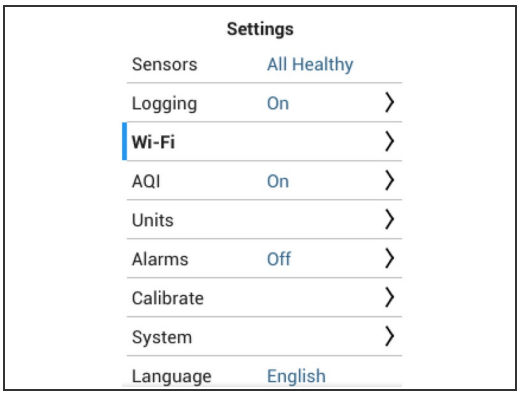


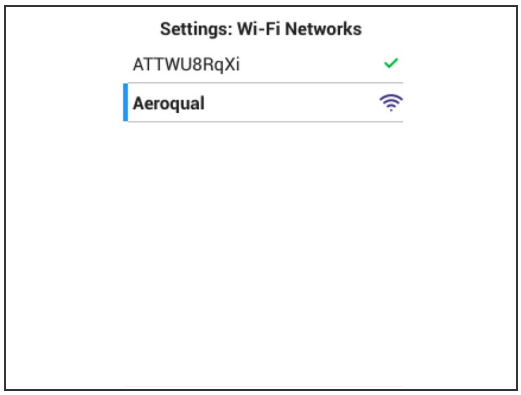
ⓘ When real-time measurements exceed the Trigger Level, the instrument will sound an audible alarm. A message will appear until it's hidden by the user

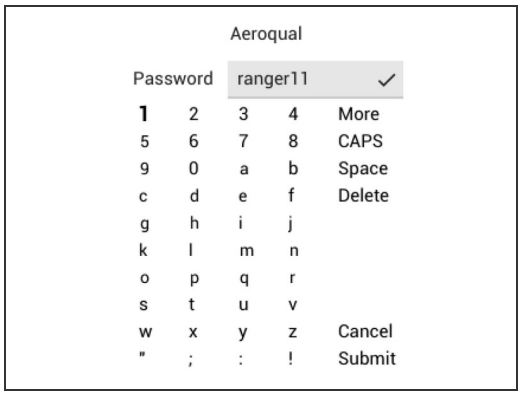
ⓘ When real-time measurements exceed the Warning Level, the instrument will sound an audible alarm. A message will appear until the real-time measurements drop below the Warning Level

- To hide an alarm, press the **RIGHT ARROW**
- To keep the message, but silence the alarm press the **LEFT ARROW**

Step 9 — Configure Wi-Fi





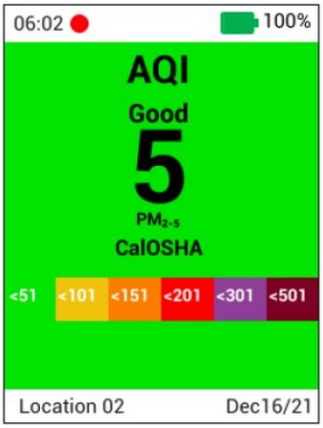


Note that logged data is only accessible through Ranger Cloud, which requires Wi-Fi.

- From the Settings menu, navigate to the Wi-Fi > Networks submenu.
- Select the Wi-Fi network you want to connect to
- Enter the Wi-Fi network's password
- Select Submit

The password is case sensitive.

Step 10 — Settings > AQI

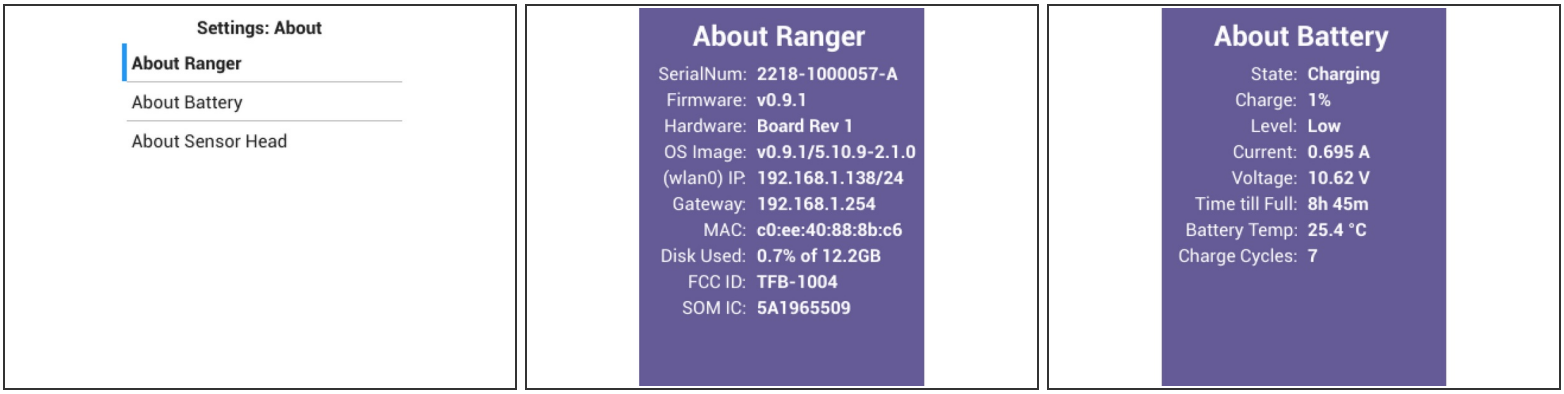


ⓘ An Air Quality Index (AQI) will be visible in the Main Screen when the AQI feature is turned On

- Navigate to Settings > AQI
- Toggle AQI from "Off" to "On"

ⓘ The AQI screen is only available while using the PMX sensor head.

Step 11 — Software Version and Disk Space



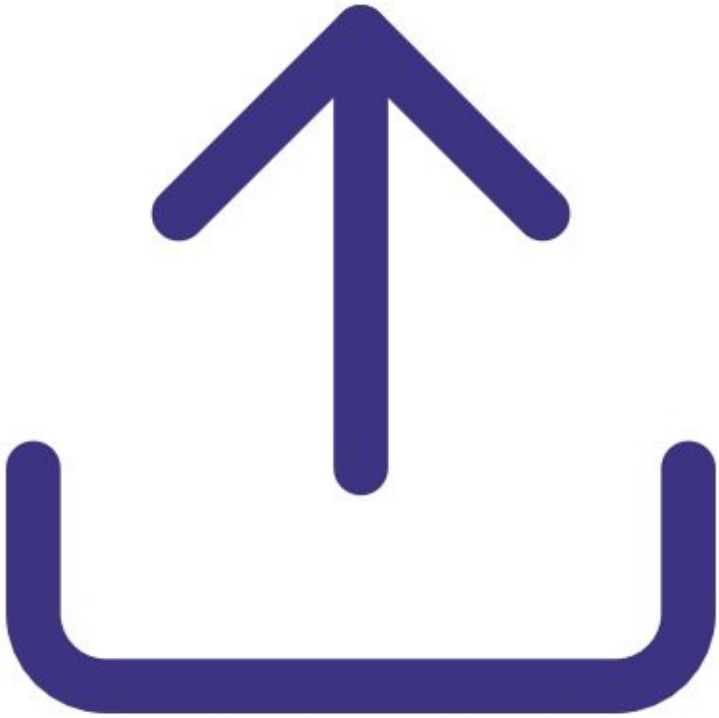
- Enter the Settings menu
- Navigate to Settings > About
- Select About Ranger, About Battery, or About Sensor Head
- To exit the About screen, press the **LEFT ARROW**

For further support, contact Aeroqual Support.

Upgrade Ranger software

Access and install Ranger software updates.

Written By: StJohn Vuetilovoni



INTRODUCTION

Periodically, we release software updates for Ranger. If you are having technical difficulties, or if this user guide does not match what you see on your unit, we recommend you update the software on your instrument first. It's easy and quick.

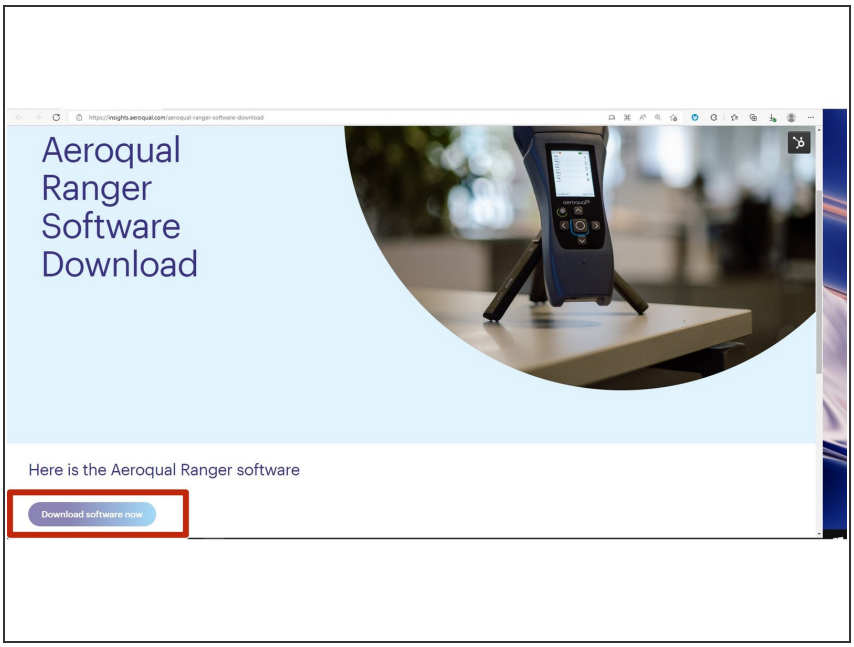
Software updates are applied with a PC and Ranger's charging cable.

[video: https://www.youtube.com/watch?v=2ZED2jrcU1w]

TOOLS:

- Ranger USB Type C Cable (1)
- Computer with internet access (1)

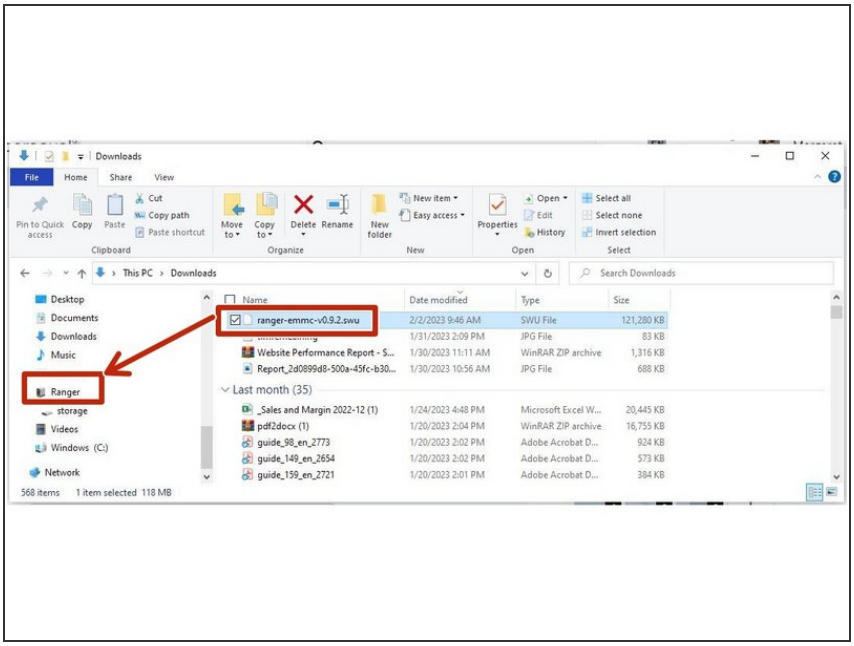
Step 1 — Download the software update file



When a software update is available, Aeroqual will send a notification with a link to the software update file.

- Download the newest software update file to your computer (ending in .SWU)
- https://insights.aeroqual.com/aeroqual-r...

Step 2 — Apply the software update file

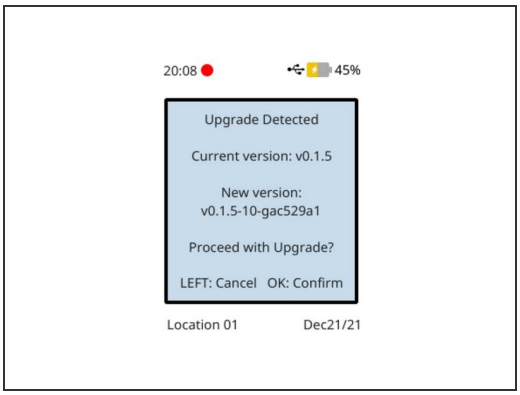


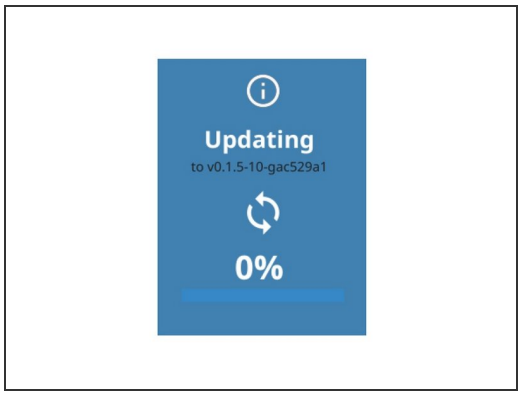
- Connect the instrument to the PC using the USB Type C cable

On your PC, the instrument will appear as a storage device called ‘Ranger’.

- Drag and drop the software update file (ending in '.SWU') into the 'Ranger' device.

Step 3 — Update Ranger



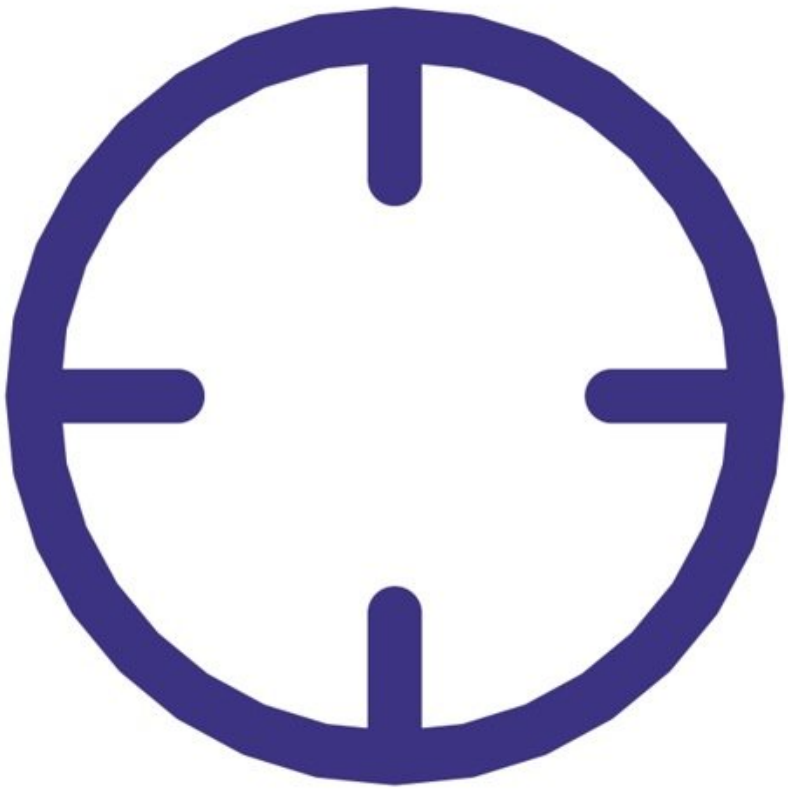


- A prompt will appear on the instrument asking for confirmation to update the instrument.
- Press the **CENTER** button to proceed with the update.
- Please wait for the instrument to apply the software update.
- Upon completion, the instrument will confirm that the update was successfully applied.
- Press **ANY** button to continue
- Please wait for the device to reboot

For further support, contact Aeroqual Support.

Bump Testing for Gas Sensor Heads

Written By: StJohn Vuetilovoni



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INTRODUCTION

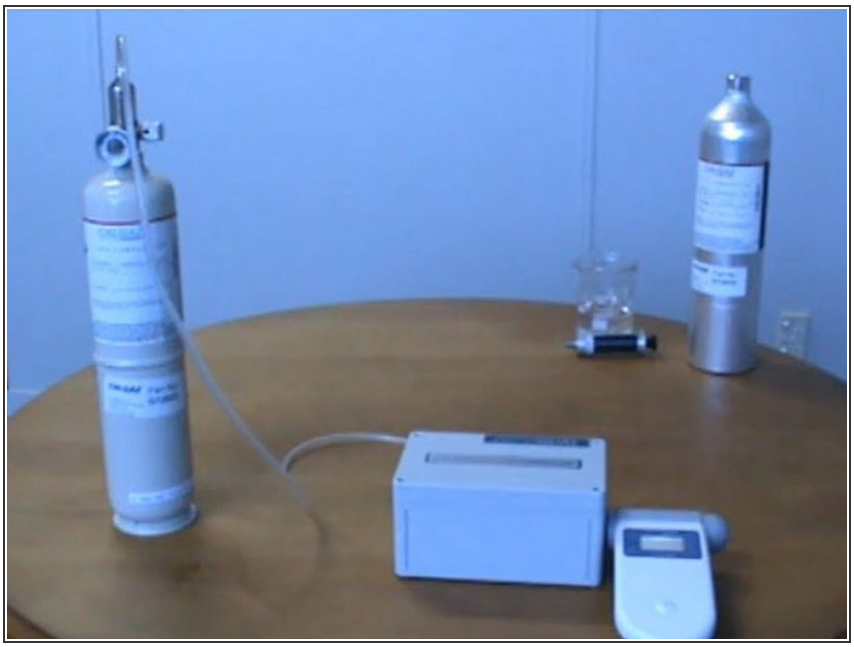
Operators may wish to test their monitor by performing a bump test prior to taking measurements.

A bump test involves quickly exposing the sensor to span gas and confirming the sensor responds.

Unlike calibration there is no adjustment of the monitor in response to the level of gas detected.

The equipment for performing a bump test is the same as that used to perform a span calibration, however it isn’t necessary to wait for the monitor to warm up or wait for readings to stabilize to confirm a successful bump test.

Step 1 — Set up equipment



- Click here to set up the calibration accessory.

You don't need to wait for the monitor to warm up before performing a bump test, nor wait for readings to stabilize to confirm a successful bump test.

Step 2 — Conduct bump test

- Turn on the span gas and observe the sensor reading. The reading should quickly elevate above the

baseline reading and approach that of the span gas concentration.

- If the reading doesn't approach that of the span concentration, this could indicate a sensor fault, or the need to perform a calibration.
- If you observe an elevated reading close to the span gas concentration, turn off the gas and wait for the readings to come down to baseline level before taking measurements.

For further support, contact Technical Support.