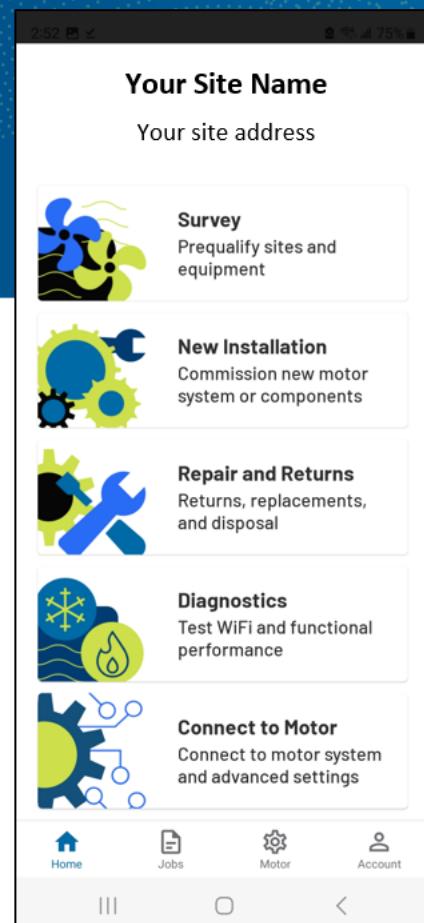




User Guide

Turntide Technician App

Edition 3, User Guide v1.0 for
Turntide Technician App v. 2.2.1
April 28, 2023



Revision History

Document Revision Number	Description	Date
1.0	Initial Release of Edition 3 of this guide for Turntide Technician App version. <ul style="list-style-type: none">• Shorter guide than previous edition.• New and easier ways of using the app explained	April 28, 2023

Conventions

Bold	Used in procedures for names of interface elements, such as buttons, fields, and menu items.
<i>Italics</i>	Used for emphasis, typically when introducing a new concept.
Note:	Indicates information that can help a customer make better use of a Turntide product.
Caution icon 	Indicates an instruction that draws attention to the risk of damage to the product, process, or surroundings.
Warning icon 	Indicates an instruction that draws attention to risk of injury or death and tells the customer how to avoid the potential problem.

Legal

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About the Turntide Technician App

The Turntide Technician App is essential to commissioning and interacting with a Turntide Smart Motor system. Turntide motor controllers emit a localized Wi-Fi signal. **A smart phone with the Technician App is necessary for connecting to the motor controller.** (A tablet may also be used.) The mobile app is required to configure the motor for operation. You cannot complete the installation without using the mobile app.

You will have access to Remote Support from **Turntide Technical Services: 877.776.8470** (877-PRO-TIP+) and support@turntide.com.

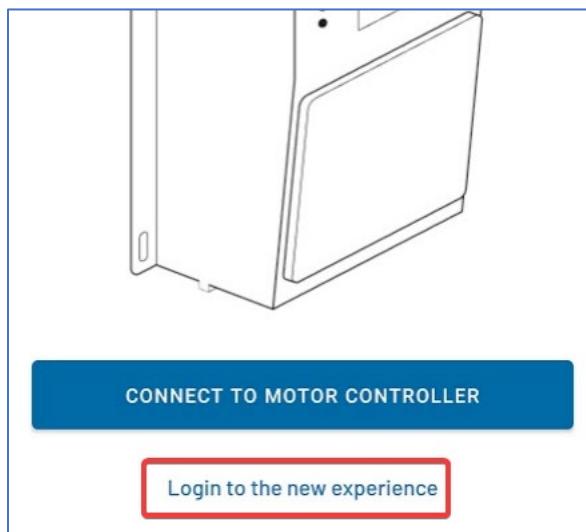
Download the App

The Turntide Technician App is a free download on the Google Play Store and App Store. Simply search for the Turntide Technician App. More than one app is associated with Turntide. The correct app for Turntide Smart Motor Systems is the Turntide Technician App.

	
<p>Apple Devices - (iPhone) require iOS 12.0 or later</p>  	<p>Android Devices - require Android 9 (Pie) or later</p>  

New Turntide Technician App – First time logging in

After you install the Turntide Technician App on your phone, tap **Login to the new experience**.

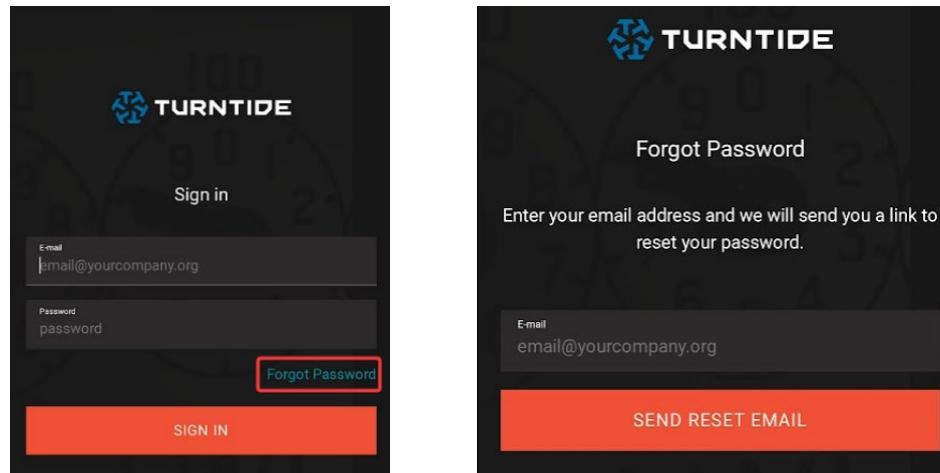


If you don't see the **Login to the new experience** option, ensure you have downloaded the latest version of the app from your app store.

Forgotten your password?

You no longer have to call Turntide Support to change your password. You can now do this yourself.

1. Within the Technician App, tap **Login to the new experience**.
2. Under the **Password** field, tap **Forgot Password**.
3. In the **Email** field, enter your email address.
4. Tap **SEND RESET EMAIL**.



New Look – High Level Overview of the Home Screen

Recent Jobs – Allows you to immediately continue working on incomplete or completed jobs.

Survey – Where you can prequalify the rooftop or air handling unit providing information ranging from the unit location and ID to details about the existing motor. Also, where you can provide Turntide with any necessary supplemental information.

New Installation – Where you commission a new motor system and/or a remote monitoring kit (RMK)

Repairs and Returns – Allows you to request a return or replacement of an item, a motor or motor controller, or an RMK.

Diagnostics – Set up and verify connectivity for an RMK or EMK, or complete a final connectivity check on your controller and Turntide supervisor unit.

Connect to Motor – Allows you to connect to a motor controller using the interface of the previous Turntide Technician App.

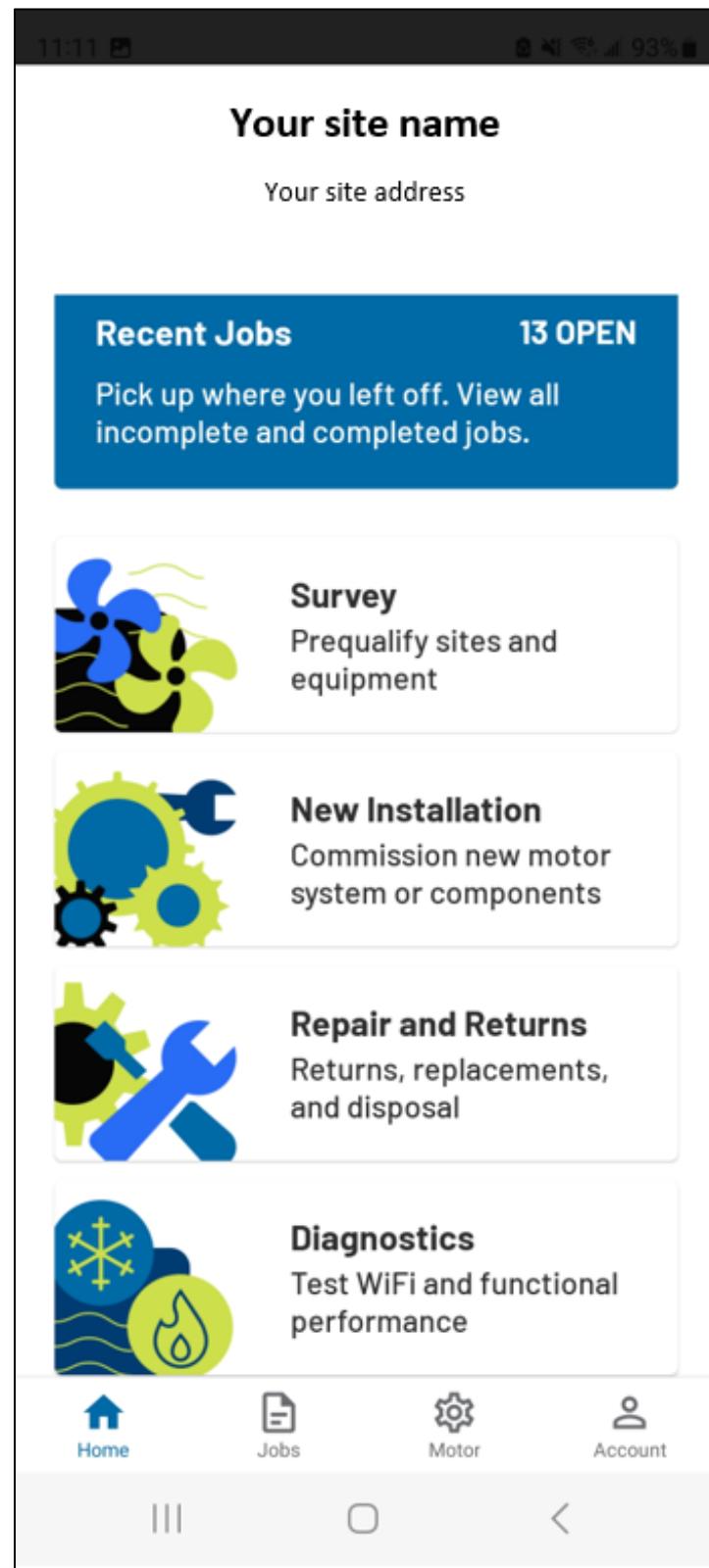
Navigation Icons

Home – Returns you to the main screen showing the five categories of tasks.

Jobs – Lists all jobs you have been working on (in progress, incomplete, completed) in a MY JOBS tab and all jobs in a CURRENT SITE tab.

Motor – Allows you to connect to a motor controller using the interface of the former Turntide Technician App.

Account – Your email and organization. Also, where you can select to upload files using only Wi-Fi.



New Concept - Templates

Templates are *bundled processes* that make gathering information, a new installation, returns & repairs, and diagnostics faster and easier. You must always use the Turntide Technician App template for processes such as installing, repairing/returning equipment, and commissioning.

You still have the option of connecting to a motor without using a template (a bundled process) if you wish, but the new templates make all your work much easier and faster.

Template	When used	Purpose
 Survey		
TT03 RTU Equipment Survey	One per RTU surveyed	Gather information necessary to properly select Turntide products for upgrading a specific RTU.
TT04 AHU Equipment Survey	One per AHU surveyed	Obtain data necessary to correctly select Turntide products for upgrading a specific AHU.
TT09 Additional Information	As necessary	Additional information, such as specific instructions regarding site access.
 New Installation		
TT01 RMK Setup	One per Remote Monitoring Kit installation	Capture RMK installation data and confirm successful commissioning.
TT02 Motor Startup	One per Turntide motor installation	Capture Turntide motor system information data and commissioning process.
 Repair and Returns		
TT05 Request a Return	One per each Turntide component requiring return	Provide information necessary for receiving a replacement part, such as ship to point of contact and location.
TT06 Replace Motor or Controller	One for each motor or motor controller replacement	Required information on failed and replacement motor controller, such as model and serial numbers.

Template	When used	Purpose
TT07 Replace Remote Monitoring Kit	One for each Turntide RMK replacement	To provide necessary information on failed and replacement RMK, such as model and serial numbers.
TT08 Disposal Documentation	One per each Turntide component field scrapped	This serves as the Certificate of Destruction when field scrapping Turntide equipment.
 Diagnostics		
RMK & EMK Setup	One per RMK & EMK installation	Used to confirm connectivity of installed RMK with EMK products.
Final Connectivity Check	As needed	Confirms motor controller to supervisor connectivity.
 Connect to Motor		
This option allows for connecting to a Turntide motor controller without selecting a template listed above. This is commonly used in post-install situations.		

New Process – No more logging into Vision XOI App

Previously you would record your work in the field using the XOI Vision App.

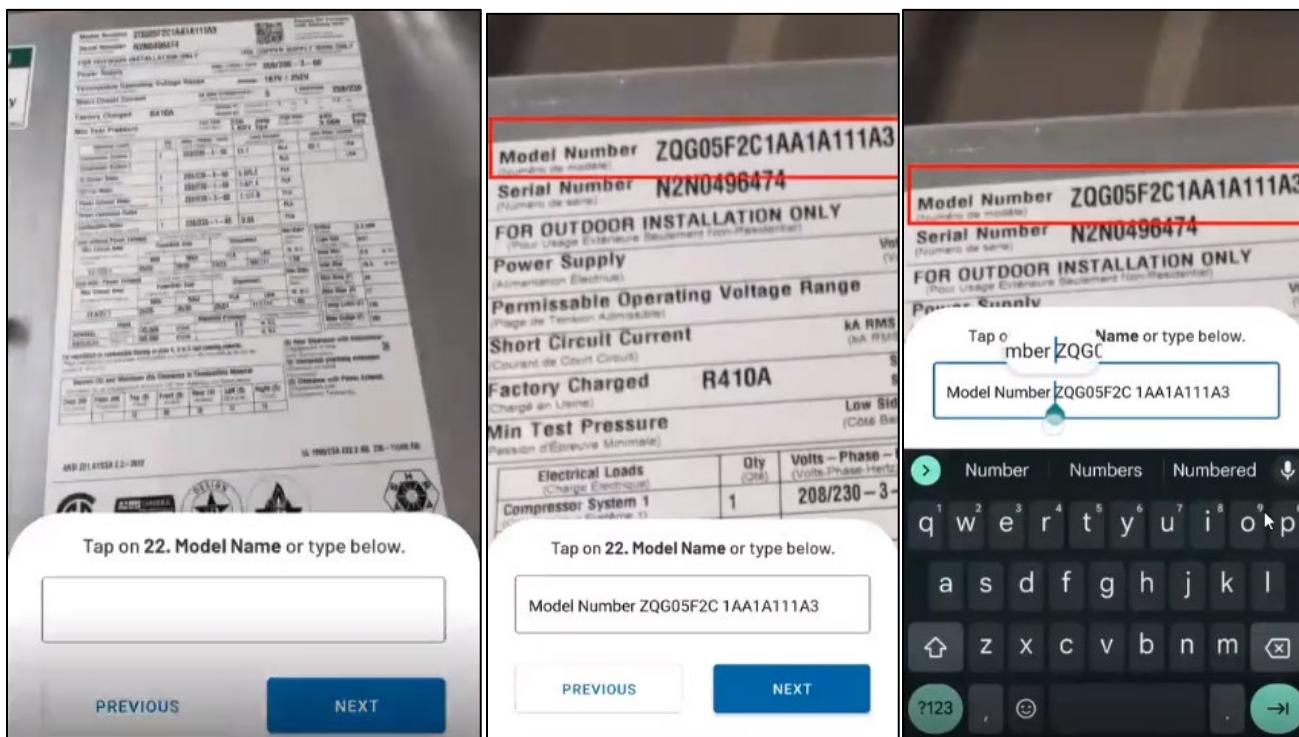
Turntide has consolidated the features in the XOI Vision App with the Turntide Technician App.

Benefits:

- Reduced errors from manually entering information in XOI
- Consolidated workflows
- Superfluous time-consuming tasks/questions removed
- No more jumping between apps to take photos
- Turntide Technician App is now based on site, so no more entering location information in XOI. All sites are listed with distance from your location and the site location.

App can read complex nameplate data

The Turntide Technician App has improved data recognition using your phone's camera and allows you to edit the number if necessary. **Always verify any value read by the phone's camera.**



Turntide Technician App now based on sites

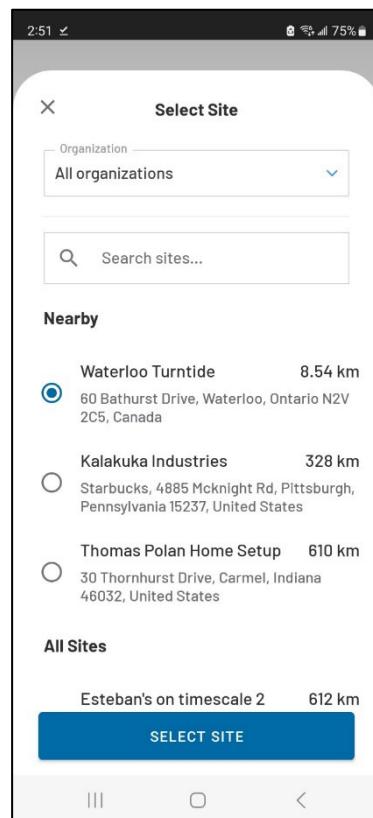
All sites are listed with distance from your location to the site location (miles or kilometers).

When you log into the app, the **Select Site** screen will appear first. You will select the site you need and then the **Home** screen will appear. You can close the **Select Site** screen by tapping on the **X** in the upper left.

Note: Ensure that you have geolocation access set on your phone.

Not seeing the Select Site screen?

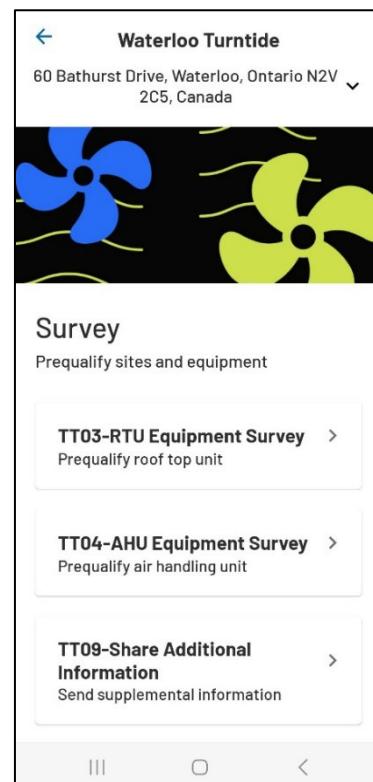
If sites were built using a survey tool other than the Turntide Technician App, then you will automatically see the **Home** screen.



Survey: Refers to the RTU-Equipment site survey and AHU-Equipment site survey. **Previously, the Vision XOi app used the terms Workflows and Surveys.** Turntide will no longer be using the term workflows, and the term survey should only be used to refer to site surveys.

Site surveys are available in the Turntide Technician App BUT you are not required to use that feature of the app. Turntide allows you use your own survey (site survey) tool of choice, for example, DigiMEP.

Important: Currently sites and users are set up by Turntide Support.



Main Tasks – How to in this new app

Task: First time commissioning a motor system

How to:

Using the TT02-Motor Startup job template.

1. In the Home screen, tap **New Installation**.
2. Tap **TT02-Motor Startup**.
3. Follow the on-screen instructions.

Task: Commissioning an RMK

Using the TT01-RMK Startup job template.

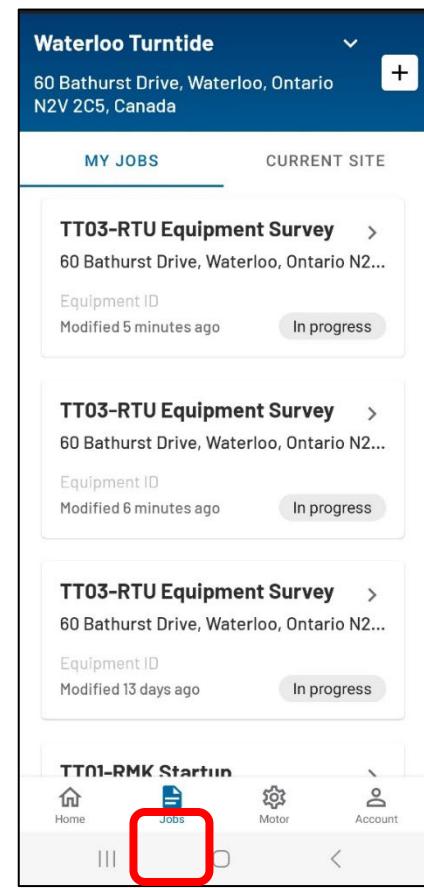
1. In the Home screen, tap New Installation.
2. Tap **TT01-RMK Startup**.
3. Follow the on-screen instructions.

Task: Finding incomplete jobs (what you are working on for a single site)

How to:

To find any job:

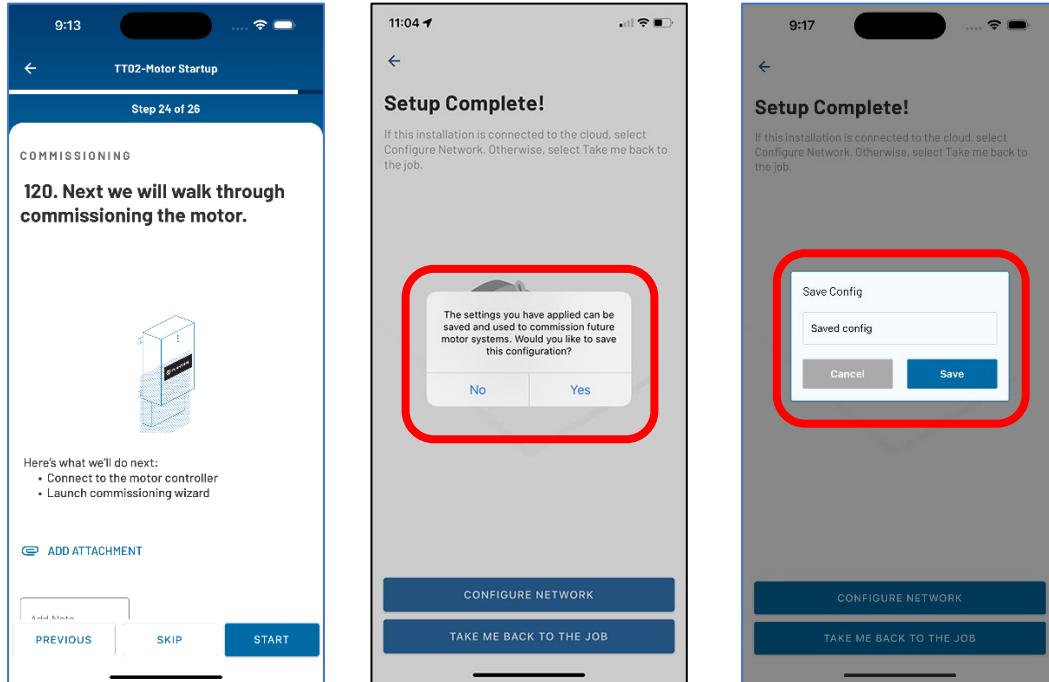
1. Tap the **Jobs** icon that appears at the bottom of the app.
2. At the top of the screen, tap the **MY JOBS** tab.
3. Tap the item that is “In progress” to continue working on that task.
4. Alternatively, you can find other jobs “in progress” by tapping the **CURRENT SITE** tab.



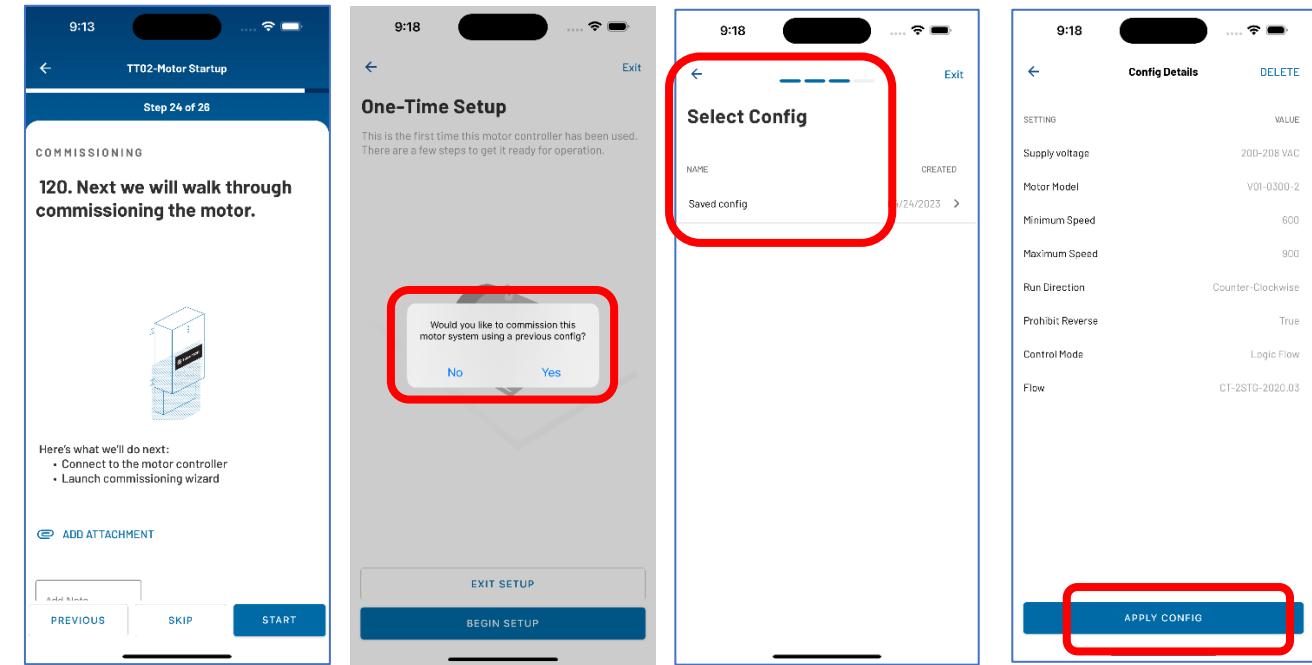
Task: Commissioning a Motor with a Saved Configuration

How to:

As part of the commissioning a motor process in the app, you will be asked if you want to save a configuration.

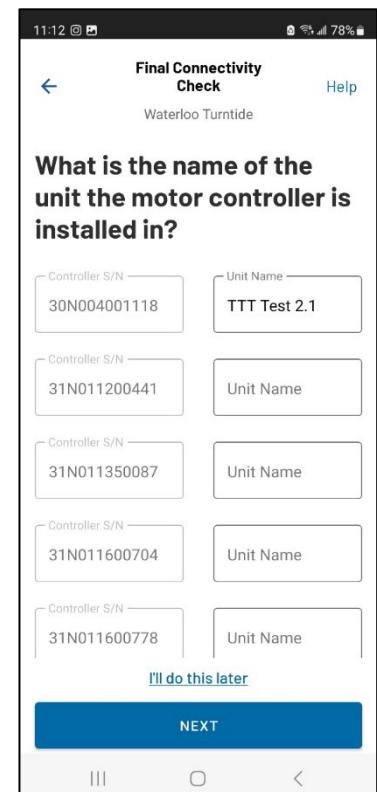


Once you have saved a configuration, you will have the option of applying it to another motor.



Task: Connect to Turntide Motor Controller without Using a Barcode

1. On the Home screen, tap **Diagnostics**.
2. Tap **Final Connectivity Check**.
3. A list of motor controllers appears.

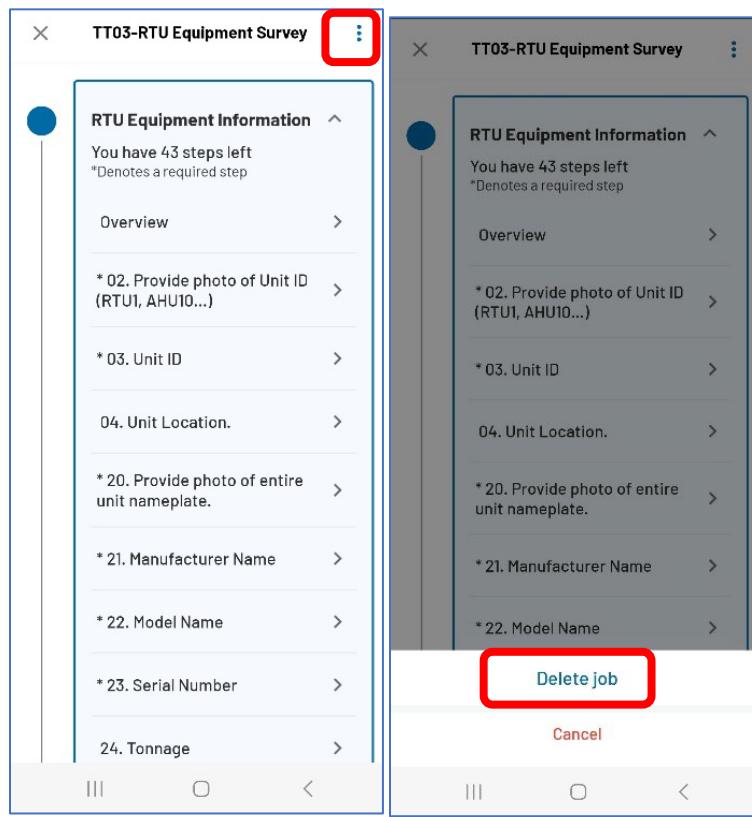


Task: Delete a job**How to:**

As you become familiar with the new process and templates, you may create jobs that you do not want to keep. Maybe you created a job by mistake as part of the learning process. Fortunately, you can remove a job from your long list of work.

To find any job:

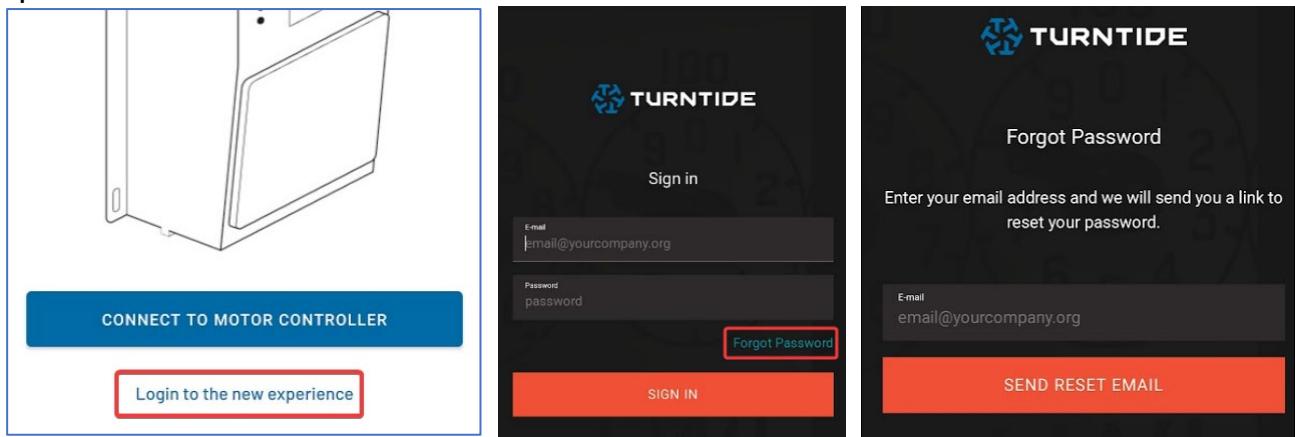
1. Tap the **Jobs** icon.
2. Either in the **MY JOBS** tab or in the **CURRENT SITE** tab, select the job you want to delete.
3. Tap the job. Three dots appear in the upper right of the screen. Tap the dots.
4. A **Delete job/Cancel** option appears. Tap the **Delete job** option and the job will be deleted from your list.



Task: Changing a forgotten password**How to:**

You no longer have to call Turntide Support to change your password. You can now do this yourself.

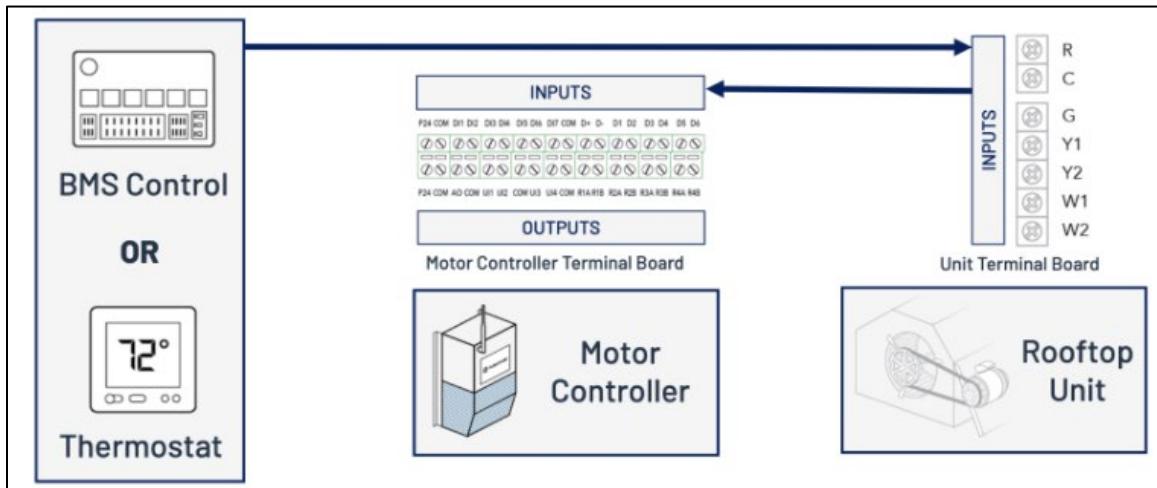
1. Within the Technician App, tap **Login to the new experience**.
2. Under the **Password** field, tap **Forgot Password**.
3. In the **Email** field, enter your email address.
4. Tap **SEND RESET EMAIL**.



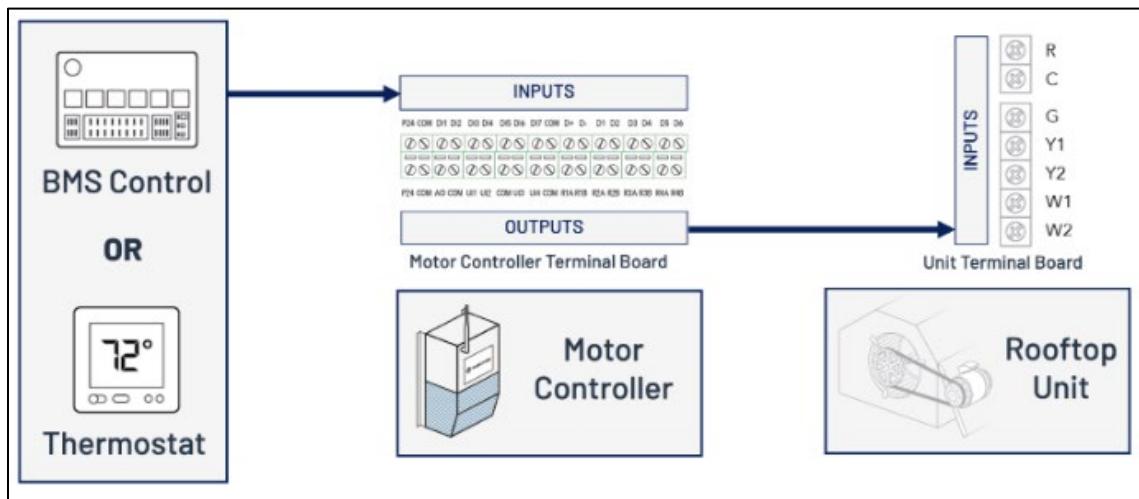
Additional Information on Control Wiring Method

Turntide motor controllers are designed for Monitor Only installation. The pictorial wiring diagrams in the previous version of this guide have all been removed as they no longer apply.

Monitor Only Motor Installation: Defined by a Motor Controller wired in parallel with the 24V signals from the thermostat. The thermostat directly controls RTU heating and cooling operation.



Full Integration: In Full Integration (sometimes called “man-in-the-middle” by Turntide) is the control wiring configuration where the Motor Controller interrupts the 24V signals between the thermostat and RTU. The thermostat sends stage signals to the motor controller via the white input cable. Once the motor reaches speed, the motor controller energizes the corresponding heating or cooling stage via the black output cable to the RTU. **Full Integration is NO LONGER used as part of Turntide product installations. See Appendix - Diagnostics and Troubleshooting for Full Integration Installations ONLY.**



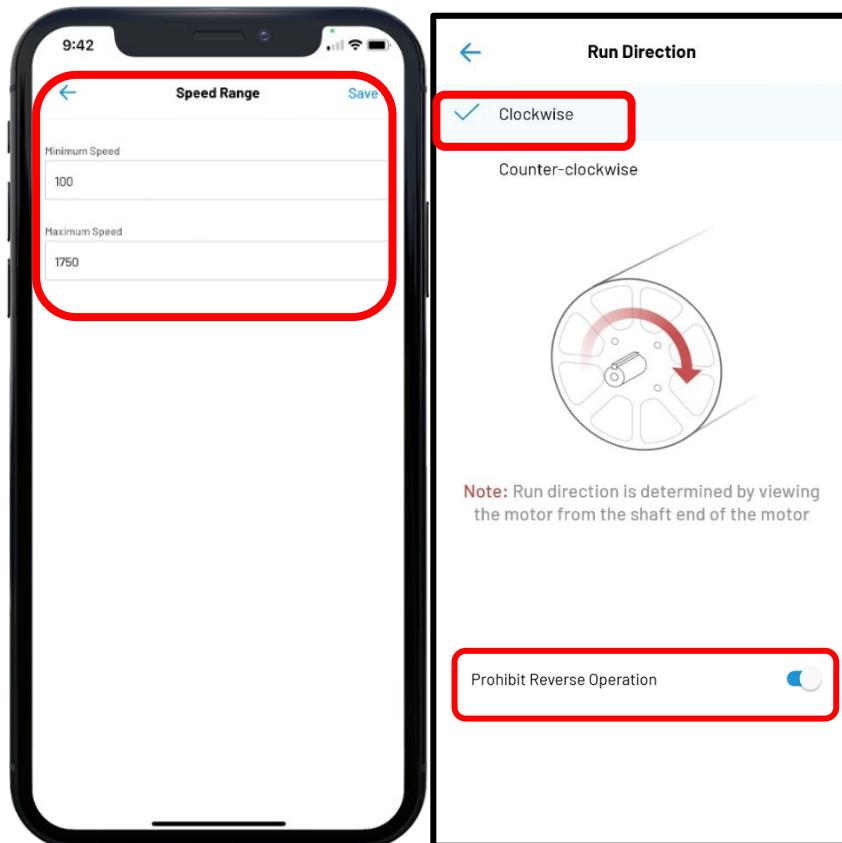
Cautions

Configure Speed Range and Configuration Direction

When configuring the speed range of the motor, exercise the following cautions.



- Ensure you enter a **Maximum Speed** from the induction motor nameplate. (**Max speed is set at the induction motor speed.**)
- Do **NOT** change minimum speed unless directed by a Turntide representative.
- **Speed Range** should never be set below 100 or above that listed on the original induction motor.
- When the **Configure Direction** instruction appears in the **Run Direction** screen, note that by default, the direction is **Clockwise** and **Prohibit Reverse Operation** is set to **ON**.
- Do **NOT** change the **Prohibit Reverse Operation** to OFF. Allowing the RTU blower to run backwards can result in damage.



Configure Acceleration or Deceleration Time

Optimized for most applications and typically not adjusted.

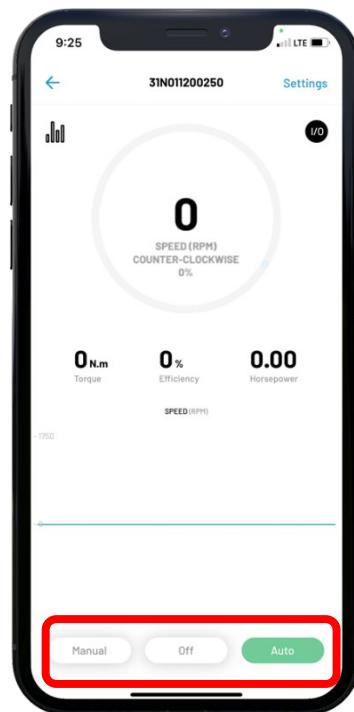
Do not change unless instructed by Turntide Technical Services.

Restart Attempts and Restart Interval

Do not change unless instructed by Turntide Technical Services.

Manual, Off, Auto Modes

- **Auto** mode allows the Turntide motor system to function based on a loaded logical flow. The app must be left in **Auto** mode for the Turntide Smart Motor System to function correctly.
- **Off** mode prevents all HVAC operation in the Turntide *Full Integration wiring method*. If it is *Monitor Only wiring method*, motor operation is stopped but unit operation might continue to be active, which could cause High or Low limit safety devices to trip. *This is NOT a service disconnect.*
- **Manual** mode is used to verify correct motor rotation and that the motor is responding to commands from the Turntide Technician App. Operating the motor in Manual mode does NOT ensure that wiring is correct, or that the setup is correct. It is NOT equal to a function test. Manual mode should be used ONLY after careful consideration. Manual mode does not force heating or cooling operation.

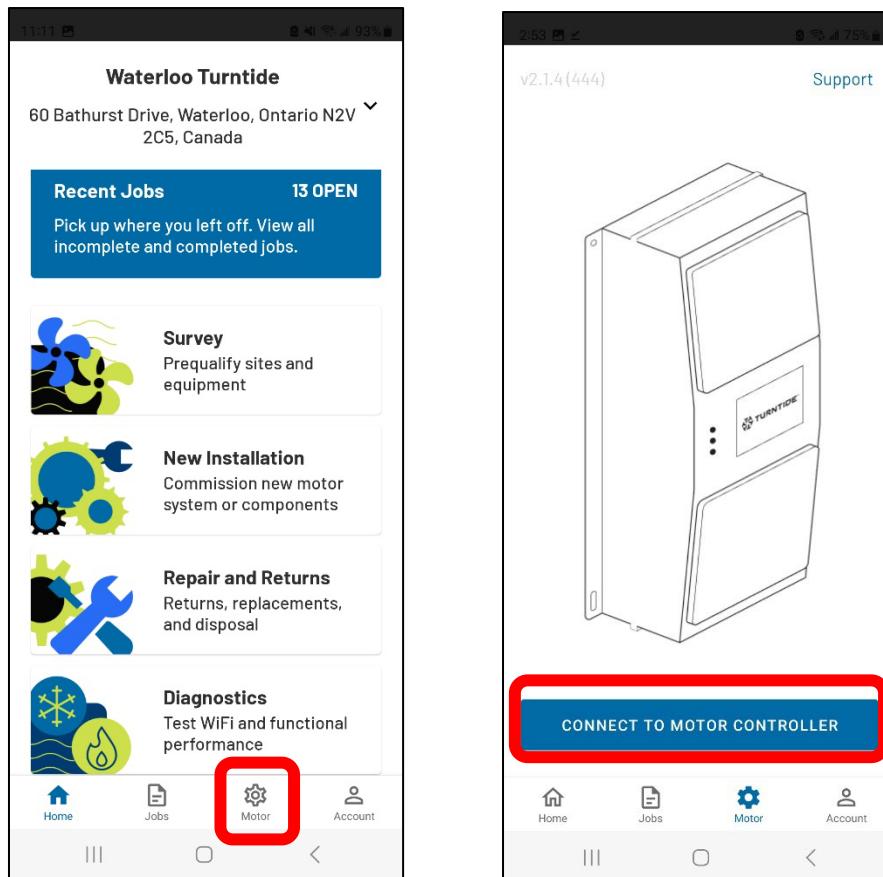


Appendix - Diagnostics and Troubleshooting for Full Integration Installations ONLY

In Full Integration (sometimes called “man-in-the-middle” by Turntide) is the control wiring configuration where the Motor Controller interrupts the 24V signals between the thermostat and RTU. The thermostat sends stage signals to the motor controller via the white input cable. Once the motor reaches speed, the motor controller energizes the corresponding heating or cooling stage via the black output cable to the RTU. **Full Integration is NO LONGER used as part of Turntide product installations, but information is provided here in the Appendix.**

You must first access the screens in the app prior to this release:

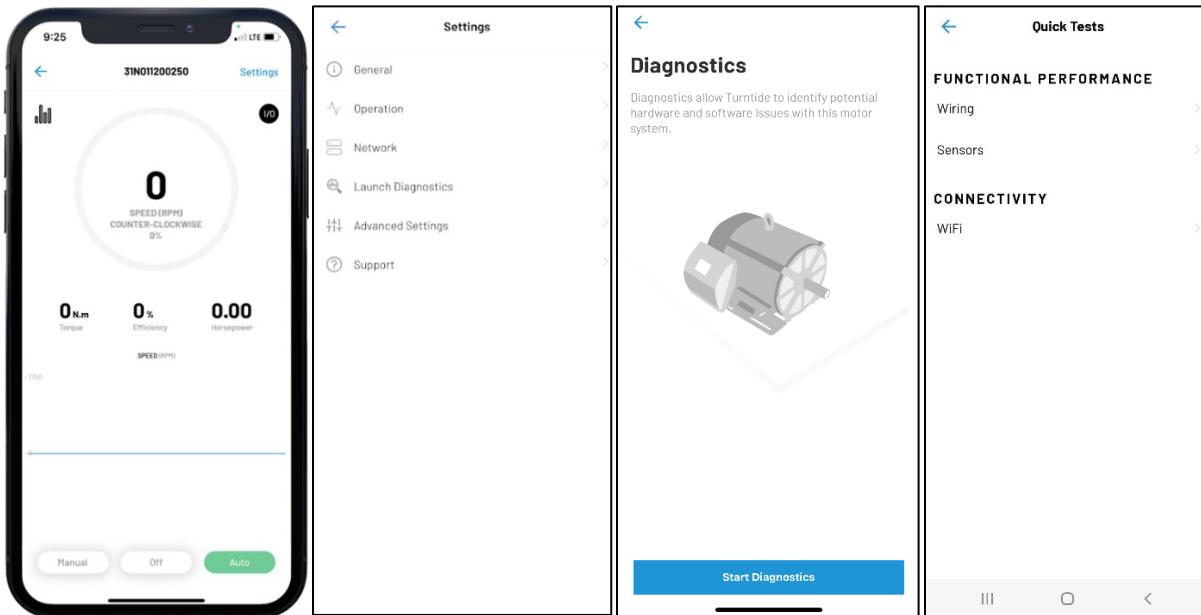
1. Tap the **Motor** icon at the bottom of the screen in the new app.
2. The Connect to Motor Controller screen appears. You are now in the older app and may use instructions on the following pages.



Diagnostics

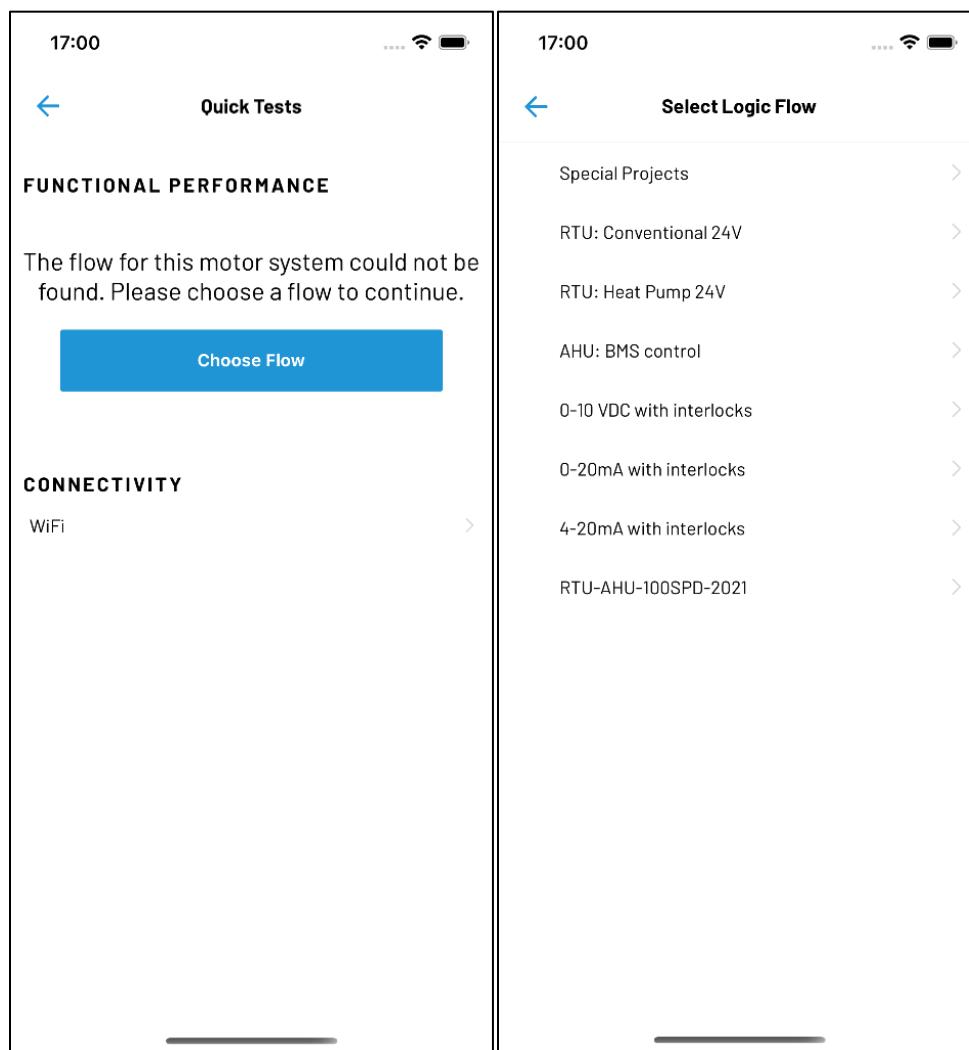
During Turntide motor installation, you can use the Turntide Technician App to confirm that control wiring is correct, the motor is operating properly, the sensors, if used, are wired correctly, and if the motor controller is emitting proper signal strength.

1. You must be connected to a motor controller with the motor Home screen visible.
2. Tap **Settings** and then tap **Launch Diagnostics**.
3. The **Diagnostics** screen opens. Tap **Start Diagnostics**.
4. The **Quick Tests** screen opens.
 - **Wiring:** Allows you to validate motor controller input and output wiring. *
 - **Sensors:** Displays collected sensor data to determine proper location and wiring. **
 - **Wi-Fi:** Motor controller WIFI signal strength is measured to ensure it's adequate.



*With the Turntide Technician App version 1.15.1 and higher, you can conduct the **Wiring** test with any motor controller firmware version.

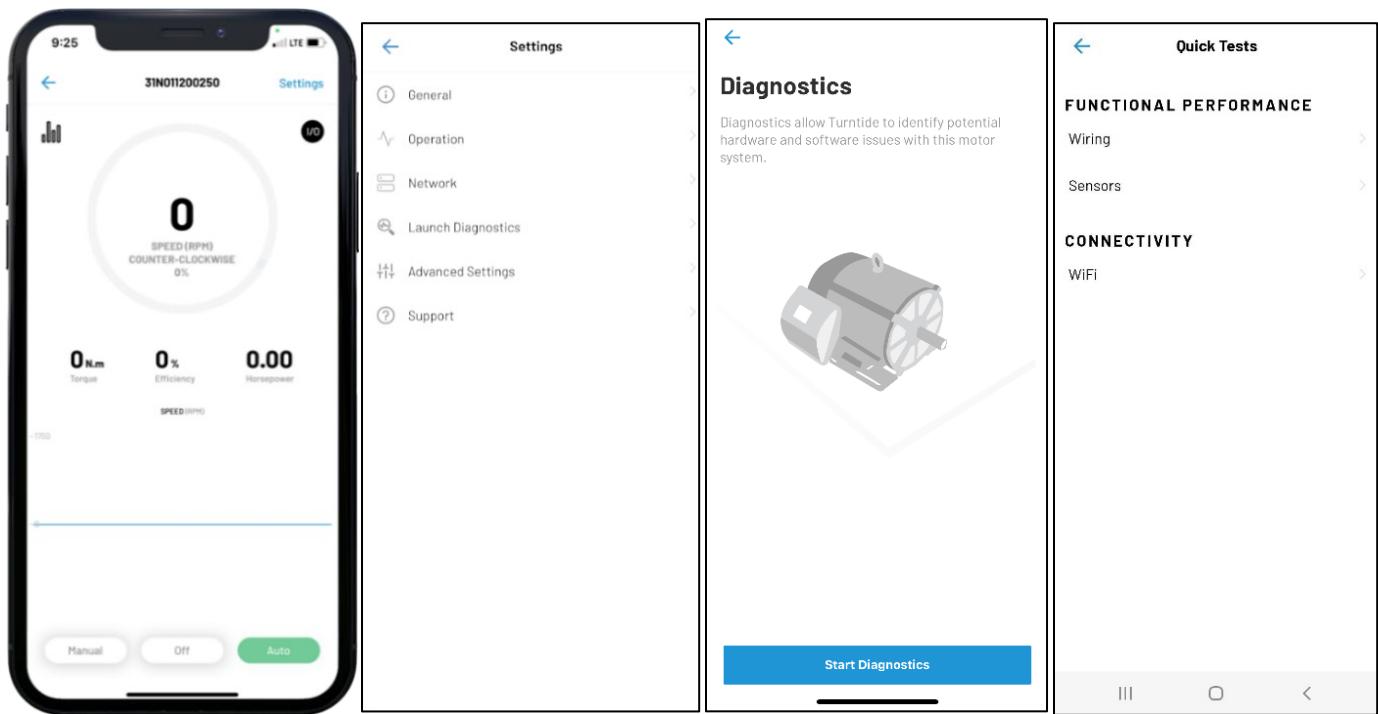
** Sensor testing is available on the Turntide Technician App versions 1.12 through 1.15.1 and higher for motor controllers with firmware *greater than or equal* to firmware version 2.5. If you connect to a motor controller that is running motor controller firmware 2.5.1 or higher and the correct logic flow is loaded (one that indicates sensors are being used), then the **Sensors** test option is displayed in the app. Otherwise, only **Wiring** and **Wi-Fi** test options are displayed.



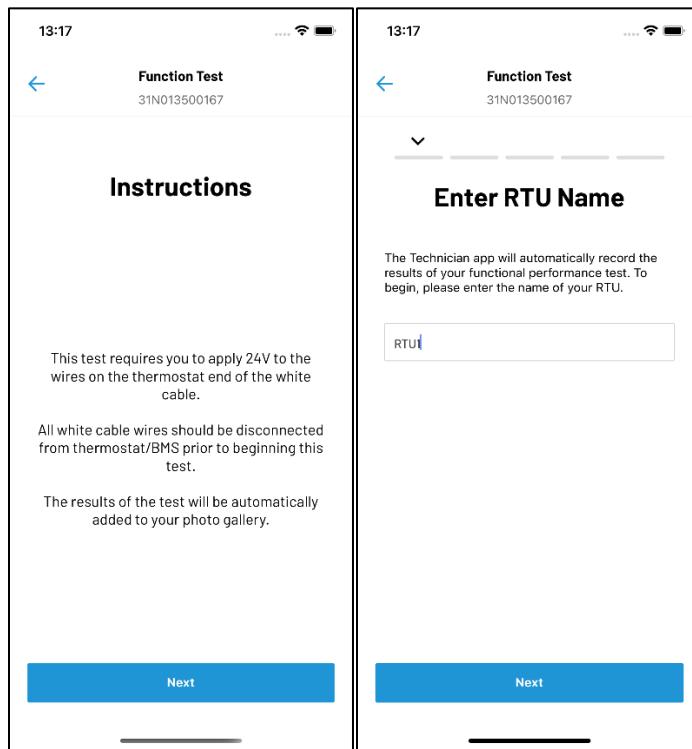
Wiring Test

By using Turntide Technician App version 1.15.1 and higher, you can conduct the Wiring test with any motor controller firmware version.

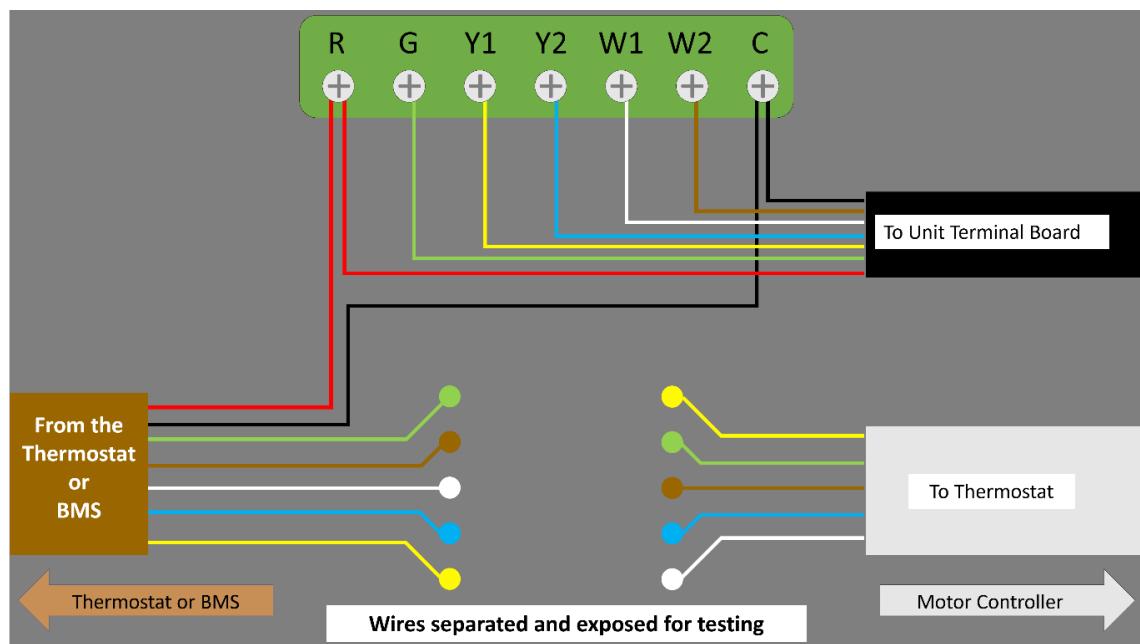
1. You must be connected to a motor controller with the motor Home screen visible.
1. Tap **Settings** and then tap **Launch Diagnostics**.
2. The **Diagnostics** screen opens. Tap **Start Diagnostics**. The **Quick Tests** screen opens.
3. Tap **Wiring**.



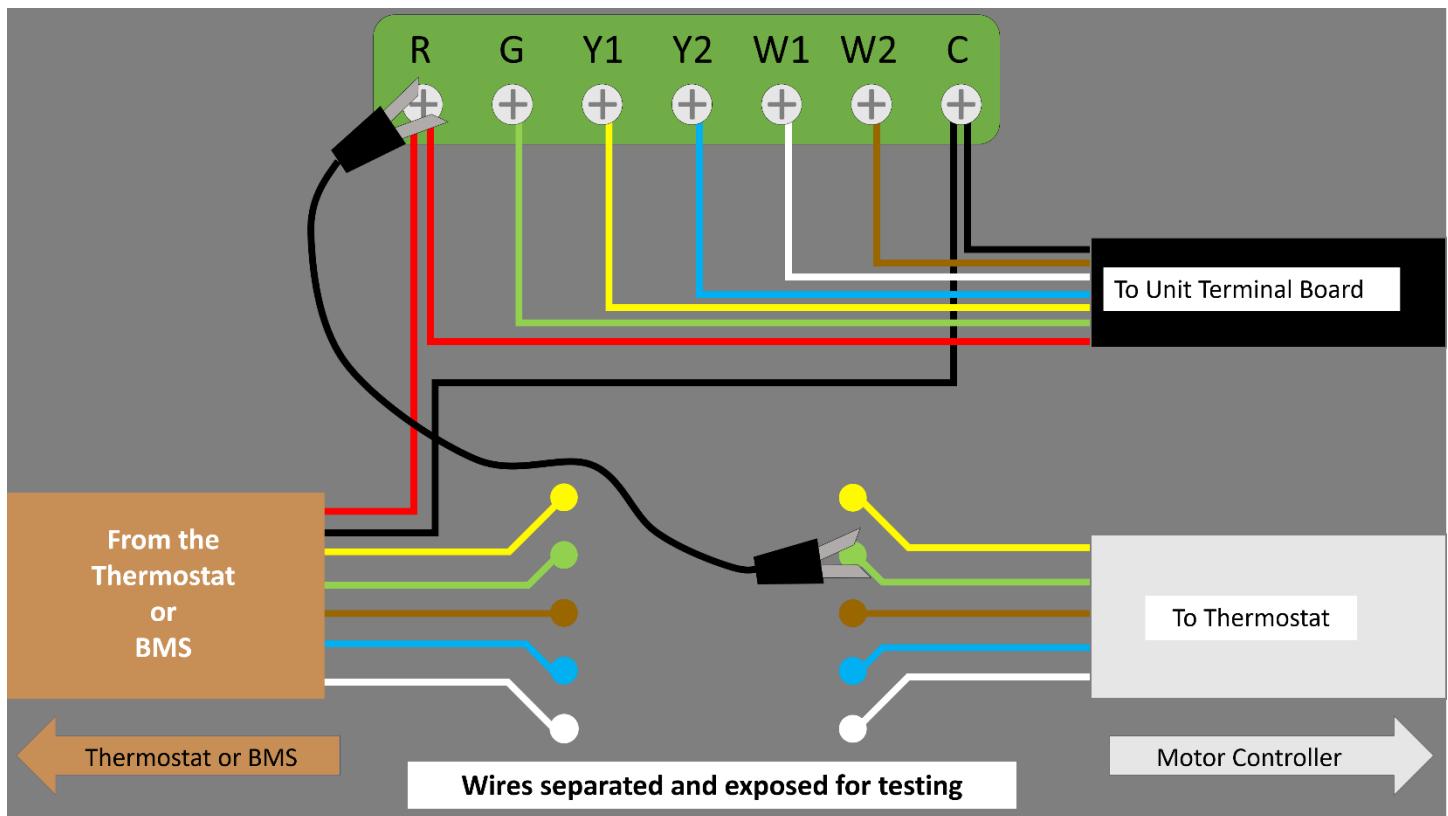
4. The **Instructions** screen opens. Read the information and Tap **Next**. Enter a name for the RTU unit being tested and tap **Next**.

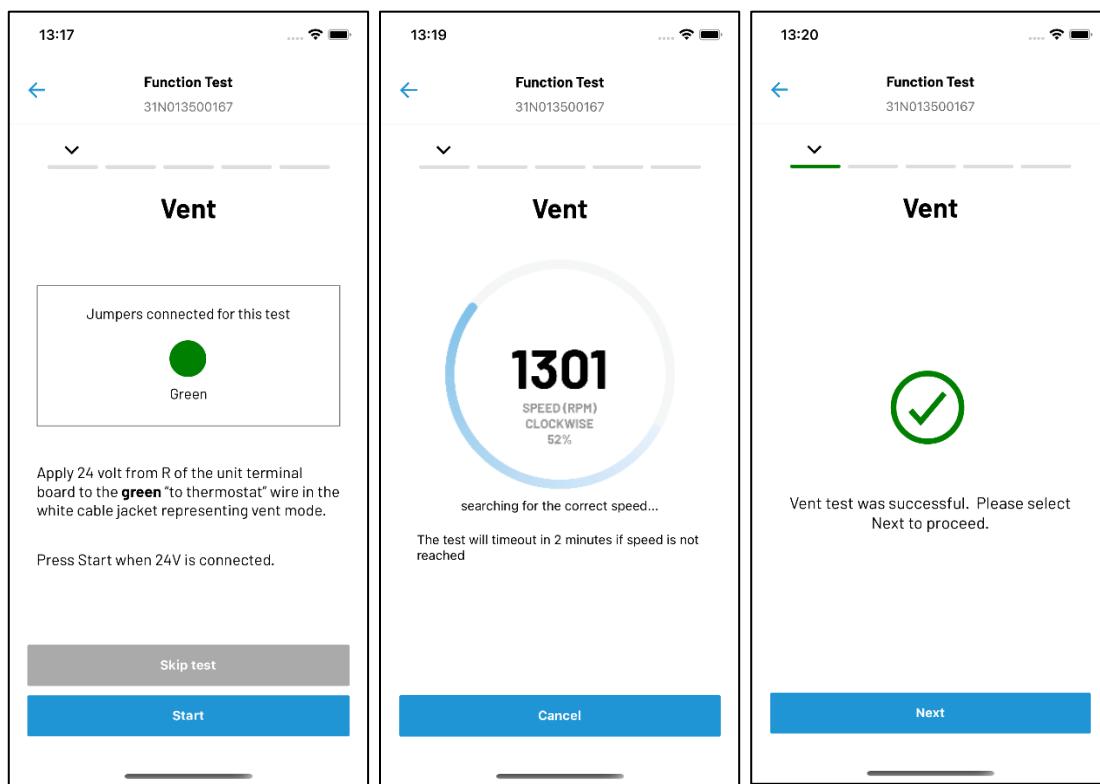


5. As per the instructions in the app, disconnect the **white To Thermostat** wires on the motor controller from the **From the Thermostat or BMS** on the thermostat or BMS. The following illustration shows a two-stage system. When testing a single-stage system, the Turntide Technician App omits the second stage.

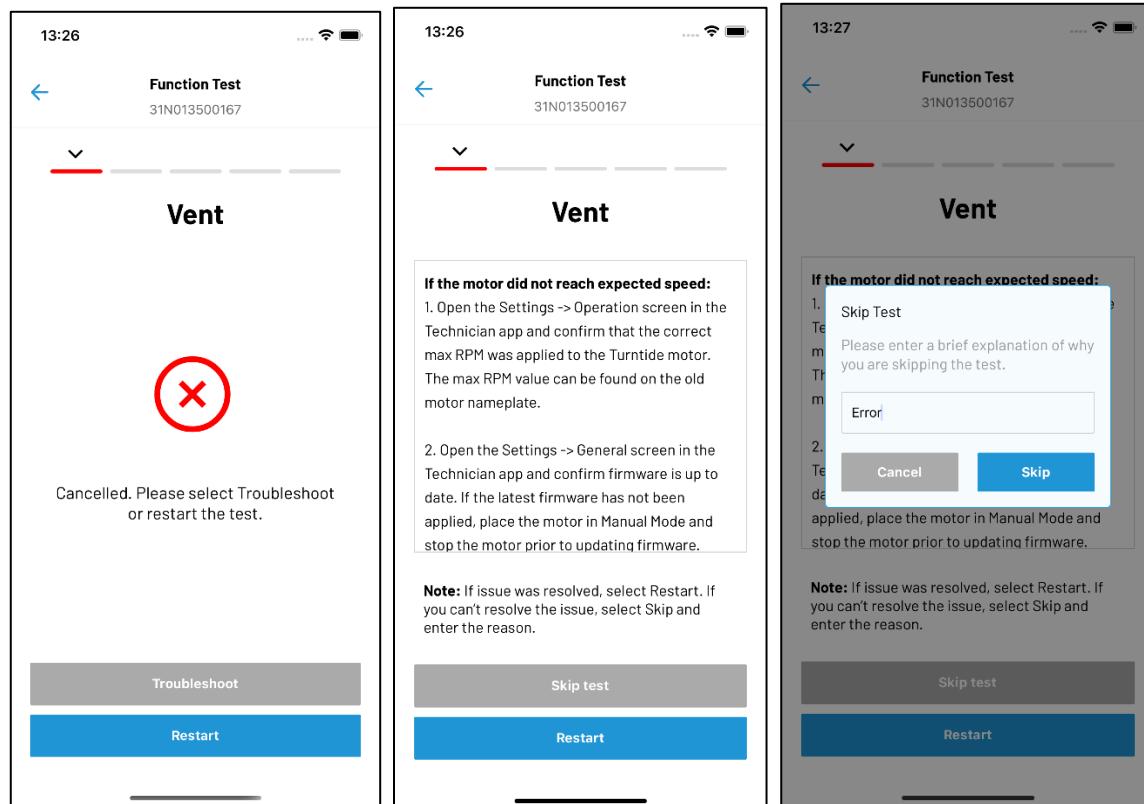


6. The test requires *three* jumper wires in most cases.
 - a. With power applied to the RTU, connect one end for the jumper to the power, or "R" side of the 24 V transformer, such as the "R" terminal of the unit control board.
 - b. You will connect the other end of the jumper to the wire indicated by the test instructions.
7. To begin, connect the other end of the jumper wire to the **green** wire of the **To Thermostat** cable.
 - a. In the **Function Test (Vent)** screen, tap **Start** to begin the test.
 - b. The app displays the motor RPM, rotation, and percent of full speed during ramp up.
 - c. After operating at the proper speed for five seconds a **green** checkmark indicates success. Tap **Next**.

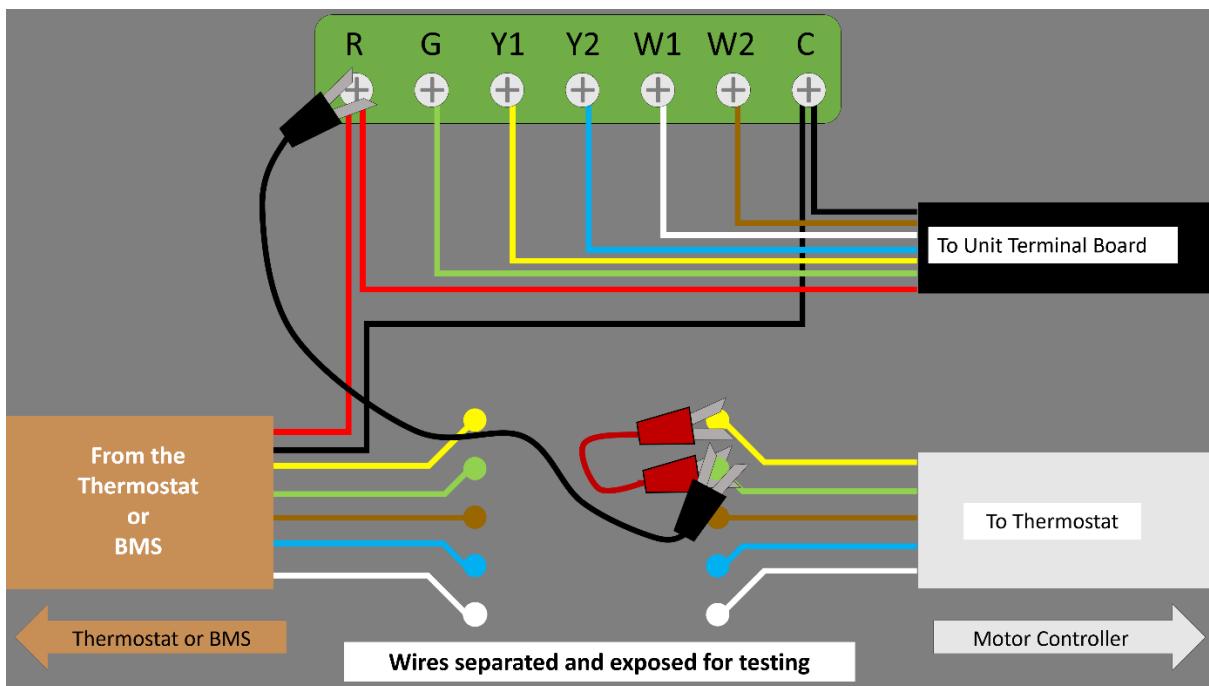




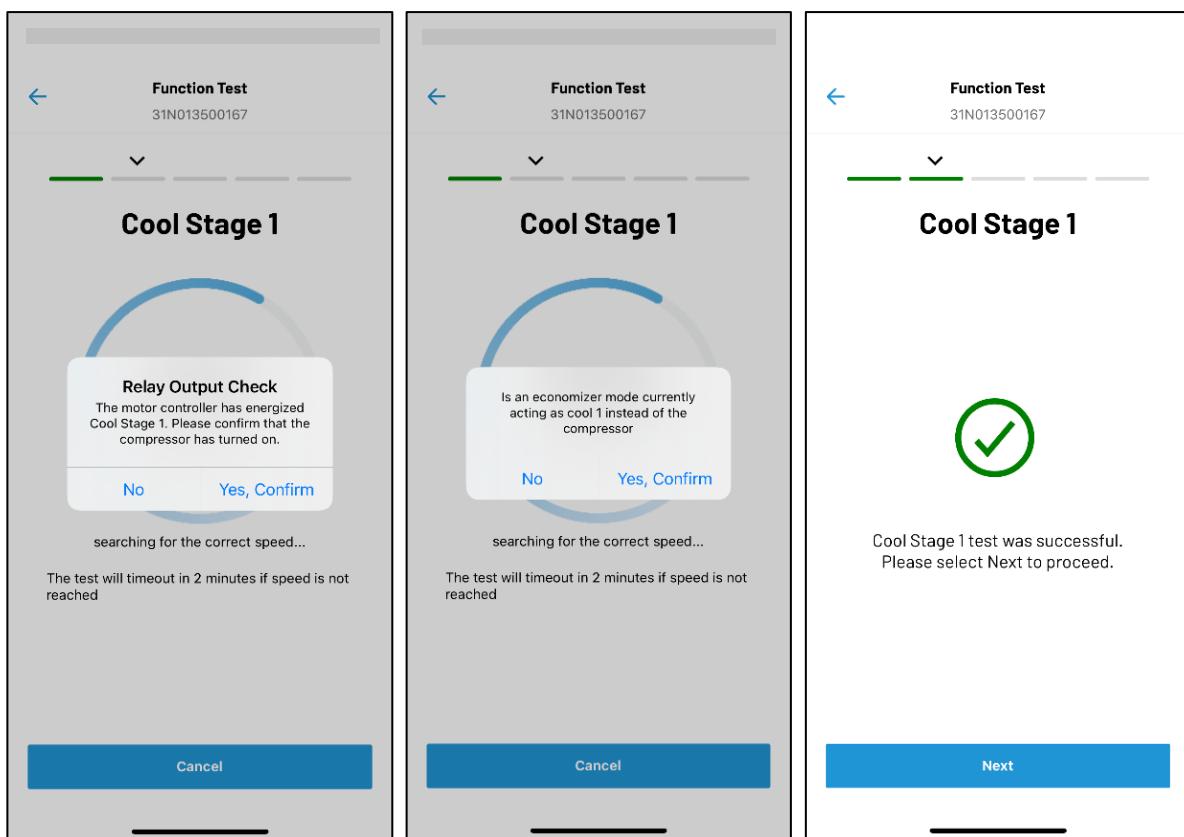
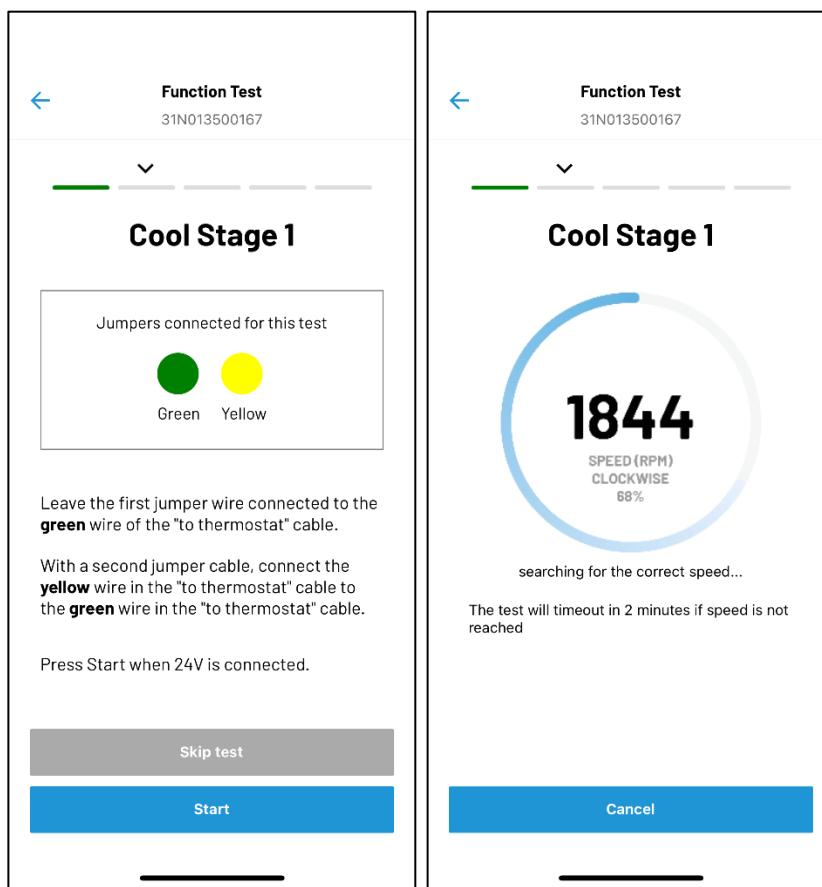
If any test fails, you can tap **Restart** to redo the test or tap **Troubleshoot** for more instructions. See [Troubleshooting: Function Test Fails – Vent](#).



8. Leave the first jumper wire connected to the **green** wire of the **To Thermostat** cable. With a second jumper cable, connect the **yellow** wire in the **To Thermostat** cable to the **green** wire in the **To Thermostat** cable.
- Tap **Start** to begin the test.
 - After the motor achieves the correct speed, the first stage cooling will energize. *
 - Tap **Yes, Confirm**. Following confirmation, a **green** checkmark indicates the test was successful. Tap **Next**.

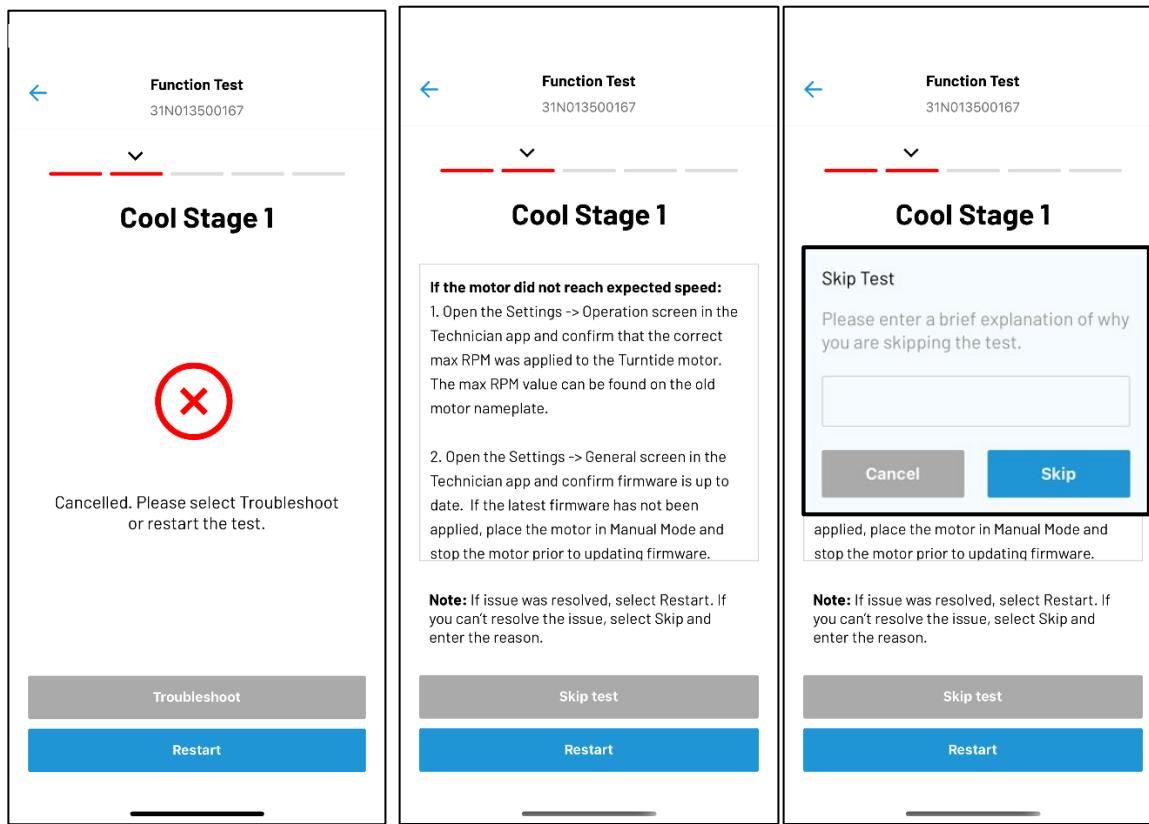


* Time delays built into the RTU control system may prevent the cooling or heating from starting immediately.



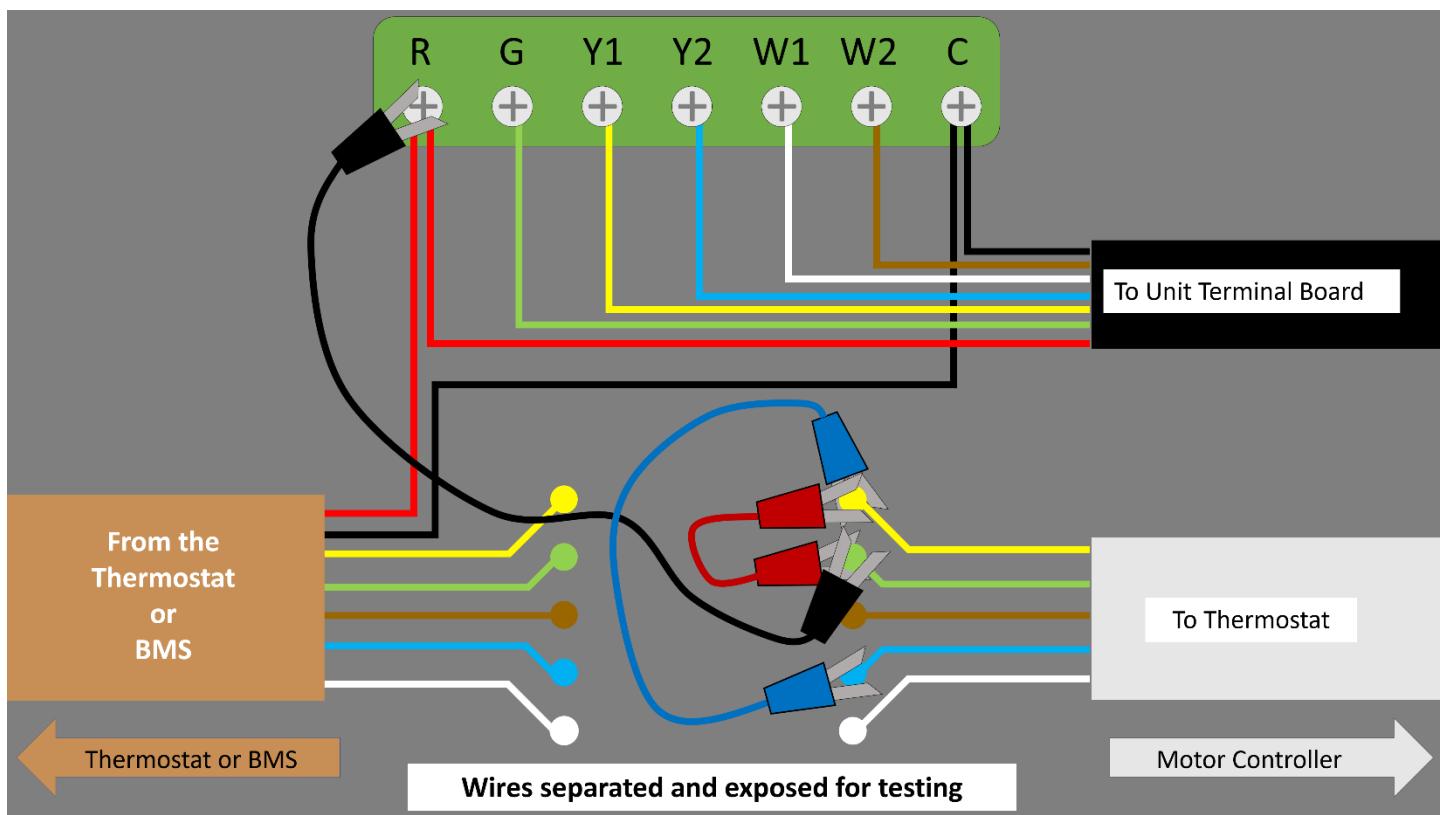
If any test fails, you can tap **Restart** to redo the test or tap **Troubleshoot** for more instructions.

See [Troubleshooting: Cooling Stage 1 & 2 Test Fails](#).

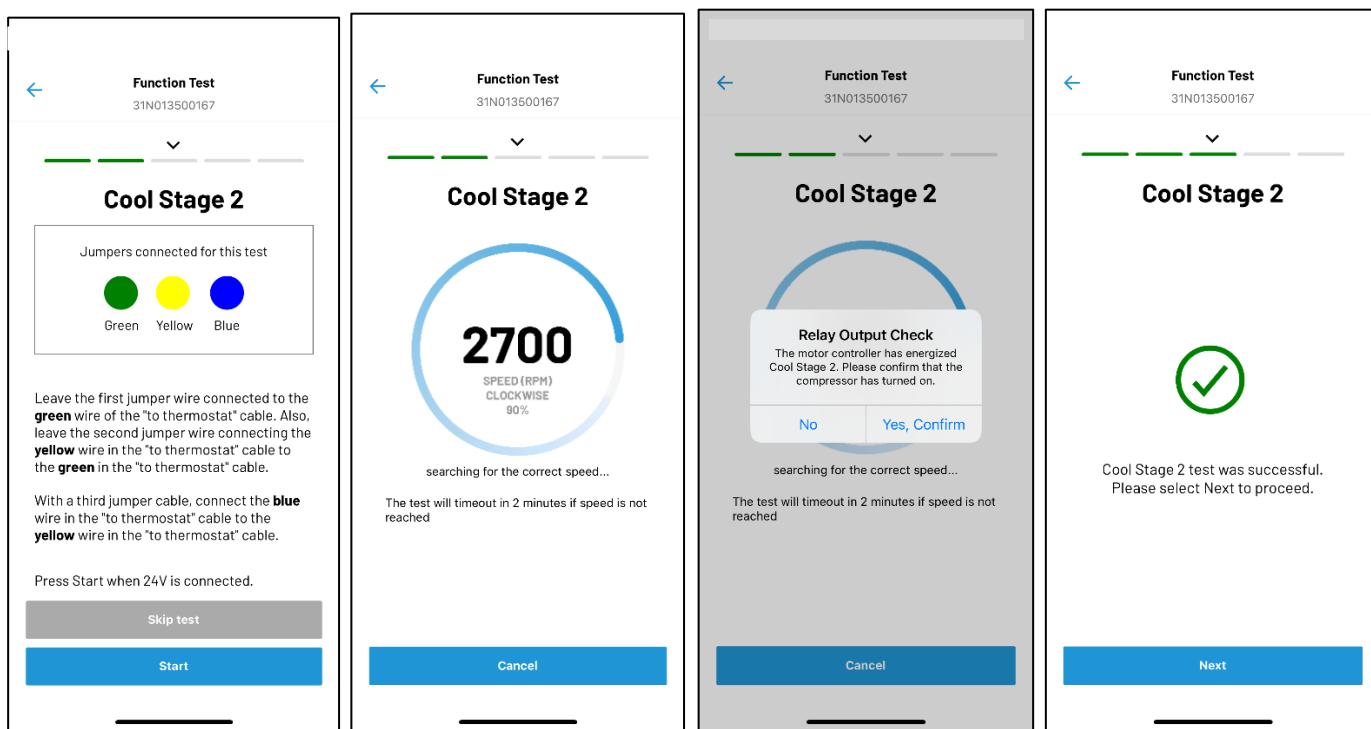


9. (This step is omitted for single stage equipment.) Leave the first jumper wire connected to the **green** wire of the **To Thermostat** cable. Also, leave the second jumper wire connecting the **yellow** wire in the **To Thermostat** cable to the **green** in the **To Thermostat** cable. With a third jumper cable, connect the **blue** wire in the **To Thermostat** cable to the **yellow** in the **To Thermostat** cable.

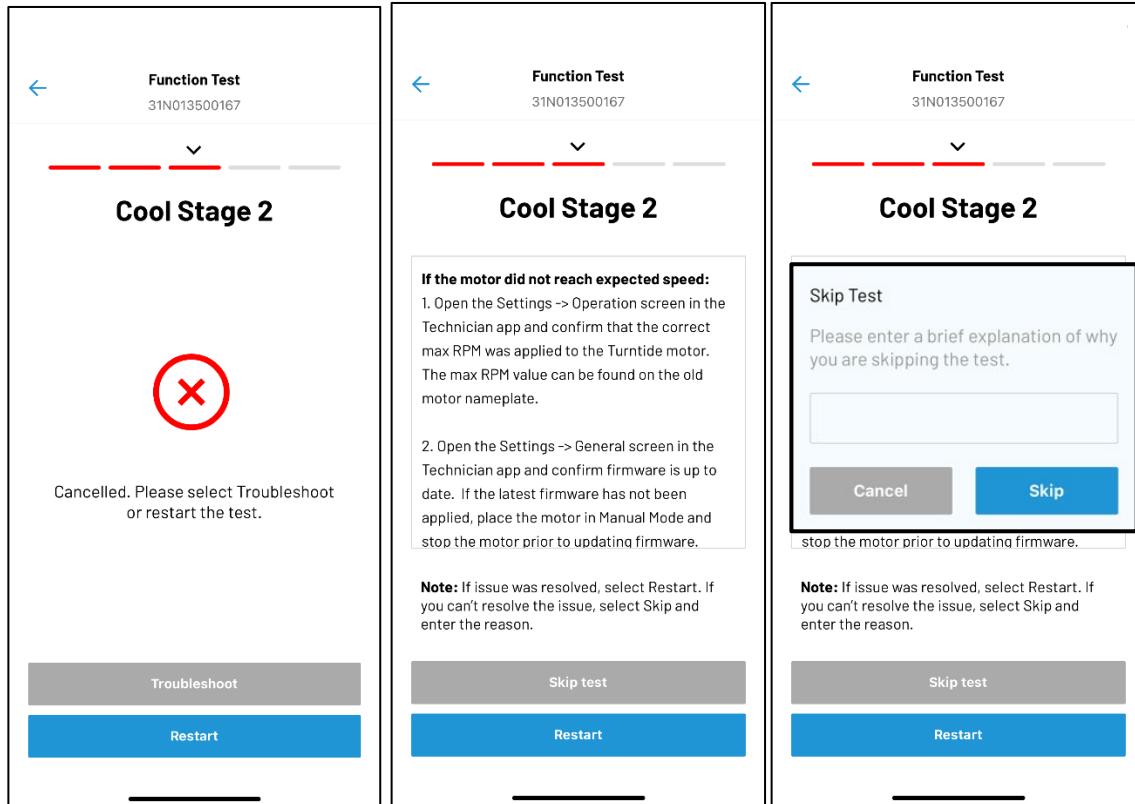
- a. Tap **Start** to begin the test.
- b. After the motor achieves the correct speed, the second stage cooling will energize. *
- c. Tap **Yes, Confirm**. Following confirmation, a green checkmark indicates the test was successful. Tap **Next**.



* Time delays built into the RTU control system may prevent the cooling or heating starting immediately.

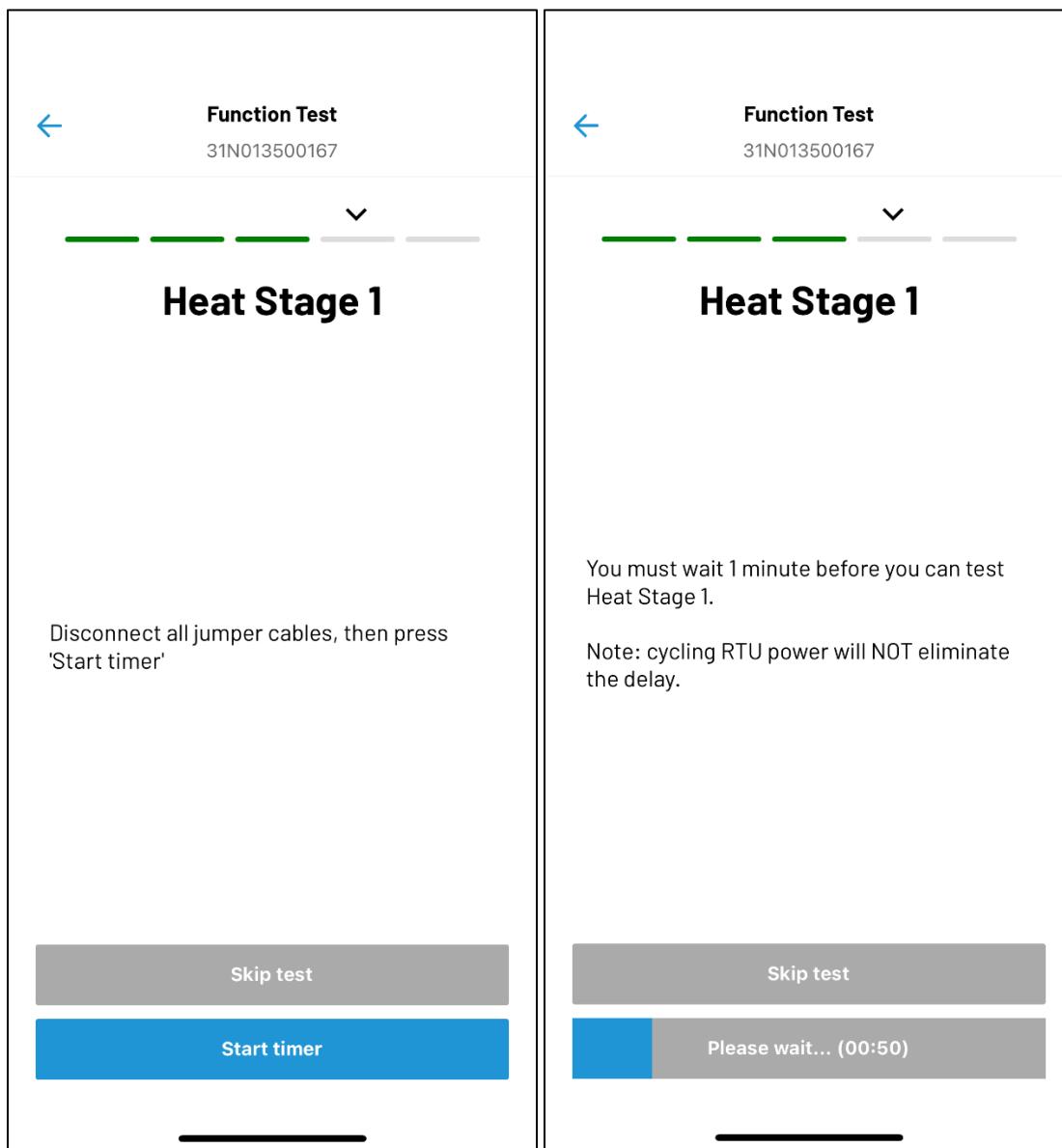


If any test fails, you can tap **Restart** to redo the test or tap **Troubleshoot** for more instructions. See [Troubleshooting: Cooling Stage 1 & 2 Test Fails](#).



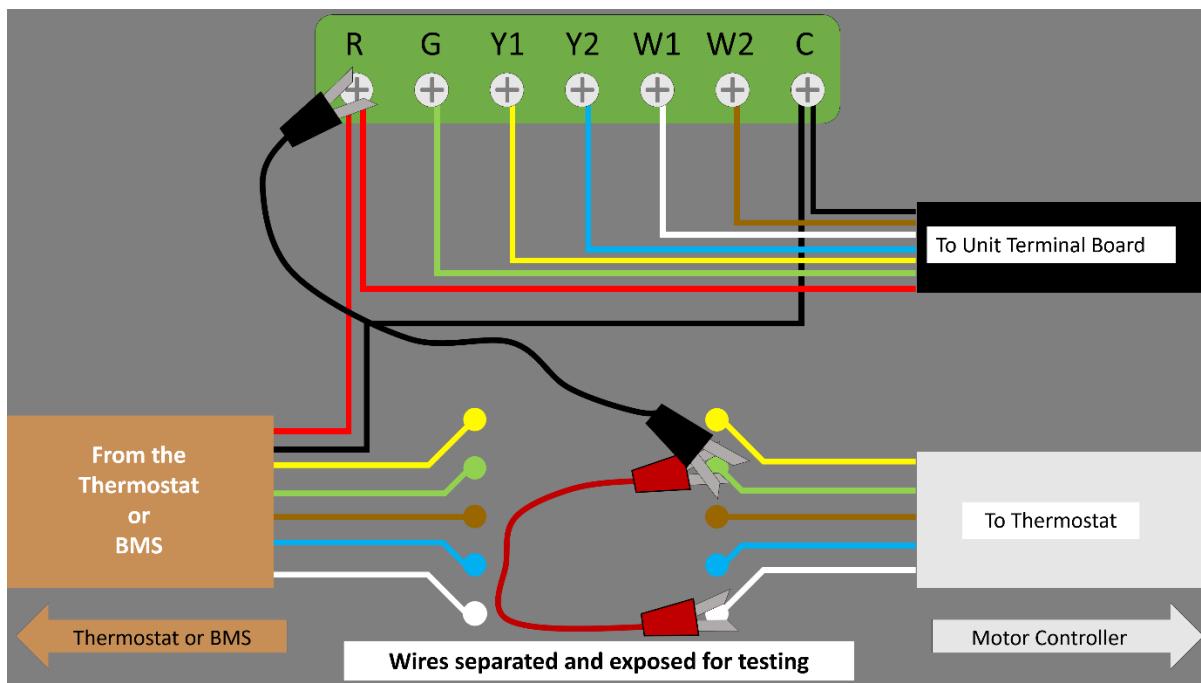
10. Before first stage heating is tested, the motor controller must complete the cooling off period. During this time, the motor will continue to run for 30 to 240 seconds, depending on the flow loaded.

- a. **Disconnect all jumper cables and then tap Start Timer. The Turntide Technician App displays a countdown timer during this period.**
- b. In some applications, the second stage cooling motor speed is the same as the first stage heating speed. There is no speed change.

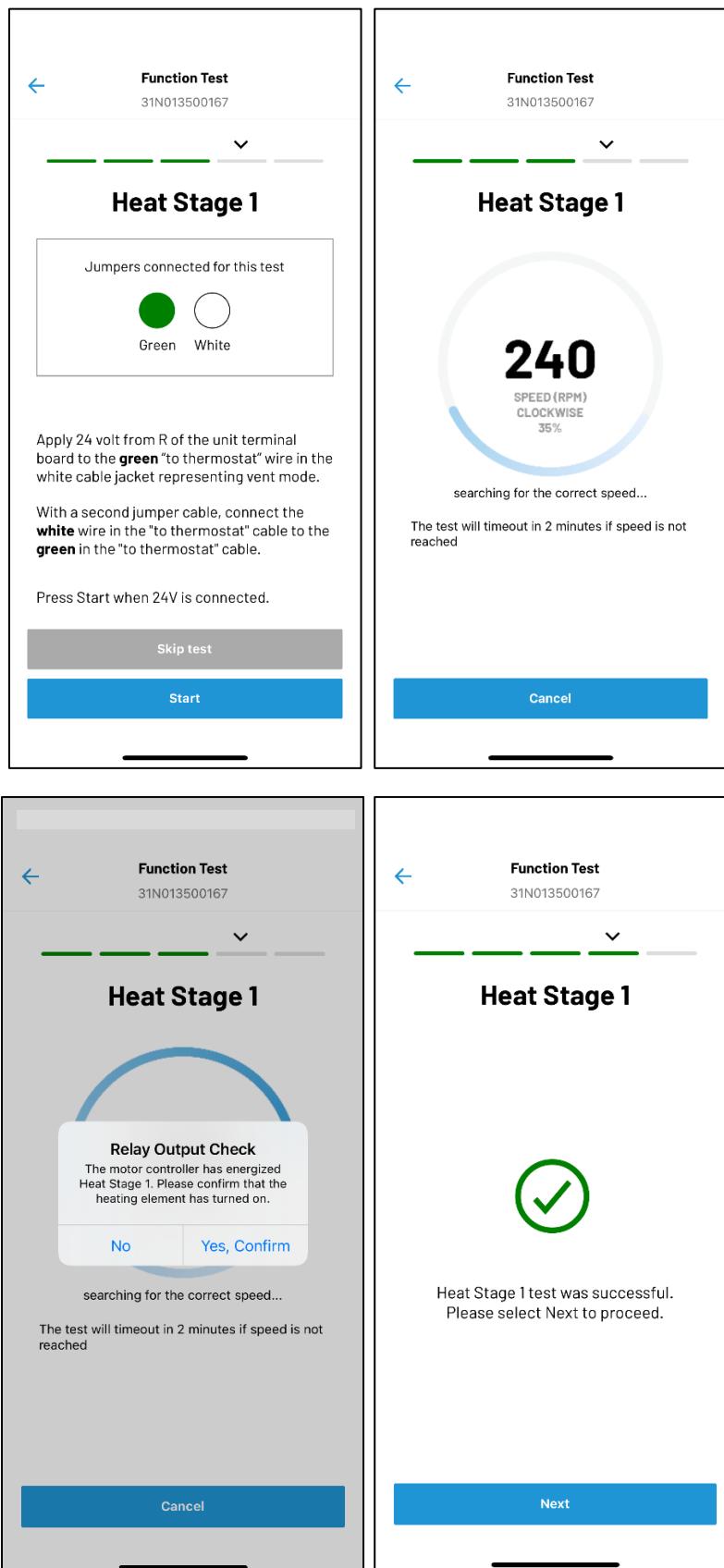


11. With power applied to the RTU, connect one end of a jumper to the power, or “R” side of the 24-volt transformer, such as the “R” terminal of the unit control board. Connect the other end of jumper wire to the **green** wire of the **To Thermostat** cable. With a second jumper cable, connect the **white** wire in the **To Thermostat** cable to the **green** wire in the **To Thermostat** cable.

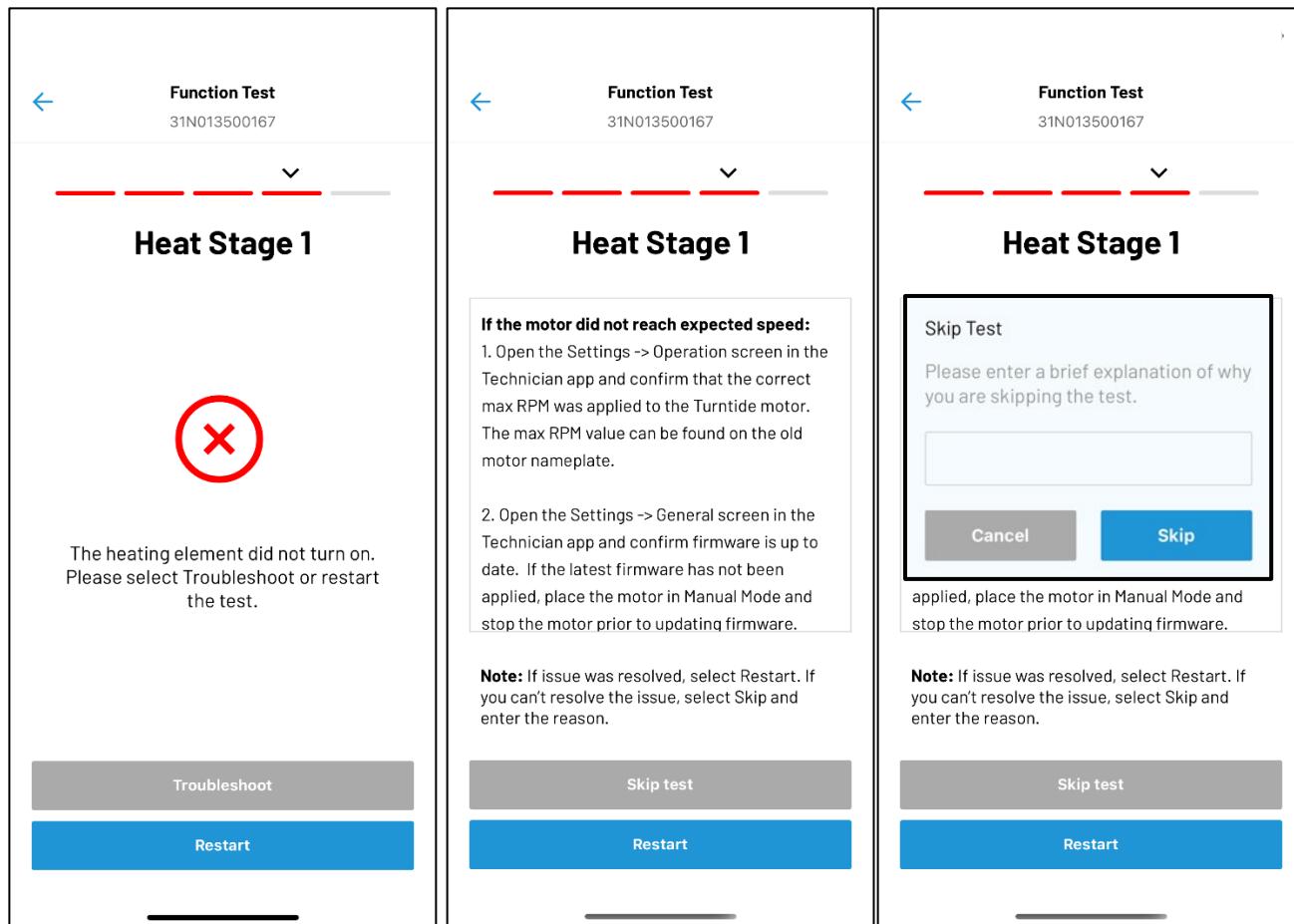
- a. Tap **Start** to begin the test.
- b. After validating motor operation, first stage heating will start. *
- c. Tap **Yes, Confirm**. Following confirmation, a green checkmark indicates the test was successful. Tap **Next**.



* Time delays built into the RTU control system may prevent the cooling or heating from starting immediately.



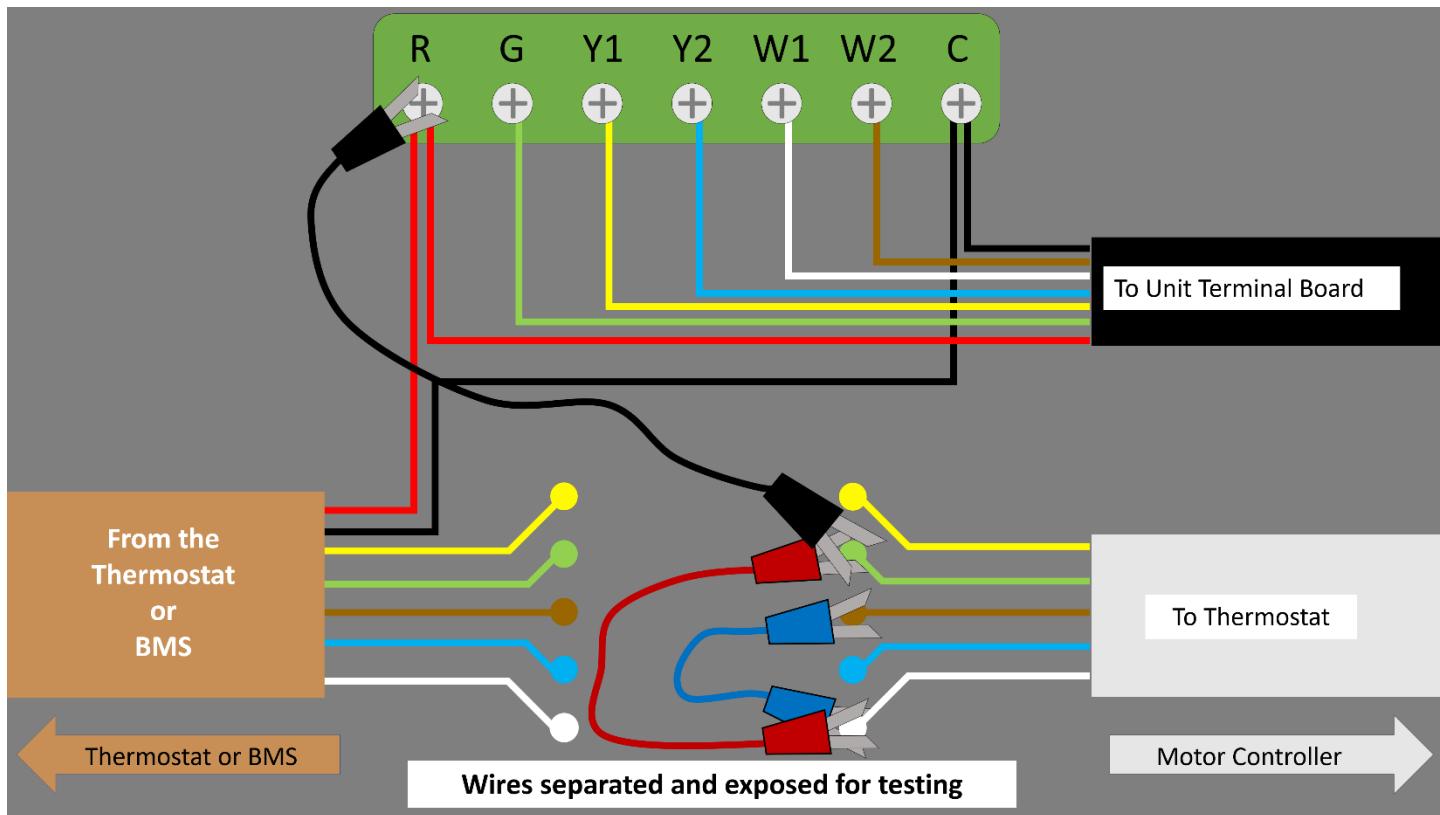
If any test fails, you can tap **Restart** to redo the test or tap **Troubleshoot** for more instructions. **Troubleshooting: Heating Stage 1 & 2 Test Fails.**



12. Leave the first jumper wire connected to the **green** wire of the **To Thermostat** cable.

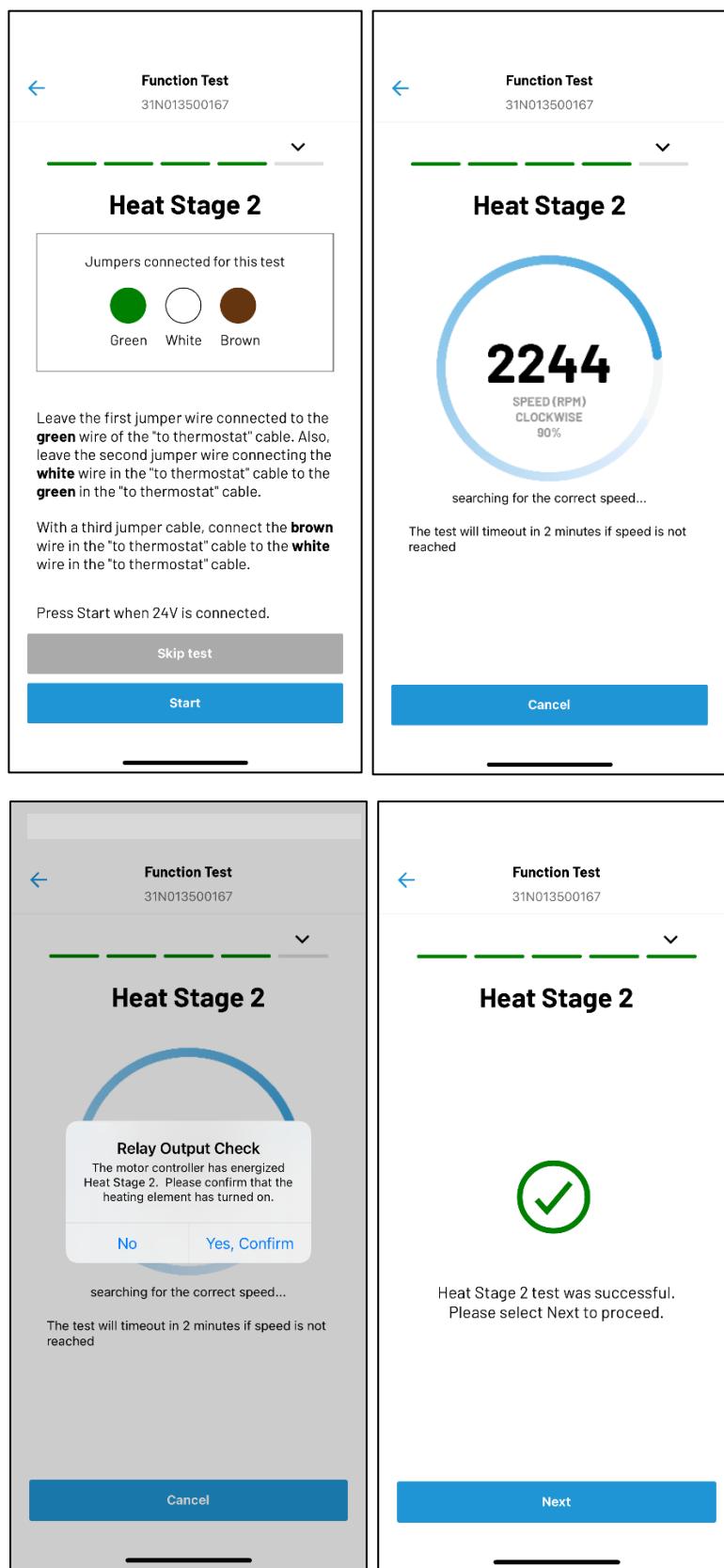
Also, leave the second jumper wire connecting the **white** wire in the **To Thermostat** cable to the **green** wire in the **To Thermostat** cable. With a third jumper wire, connect the **brown** wire in the **To Thermostat** cable to the **white** wire in the **To Thermostat** cable. **

- Tap **Start** to begin the test.
- After motor achieves required speed, second stage heating will start. *
- Tap **Yes, Confirm**. Following confirmation, a green checkmark indicates the test was successful. Tap **Next** to complete testing.

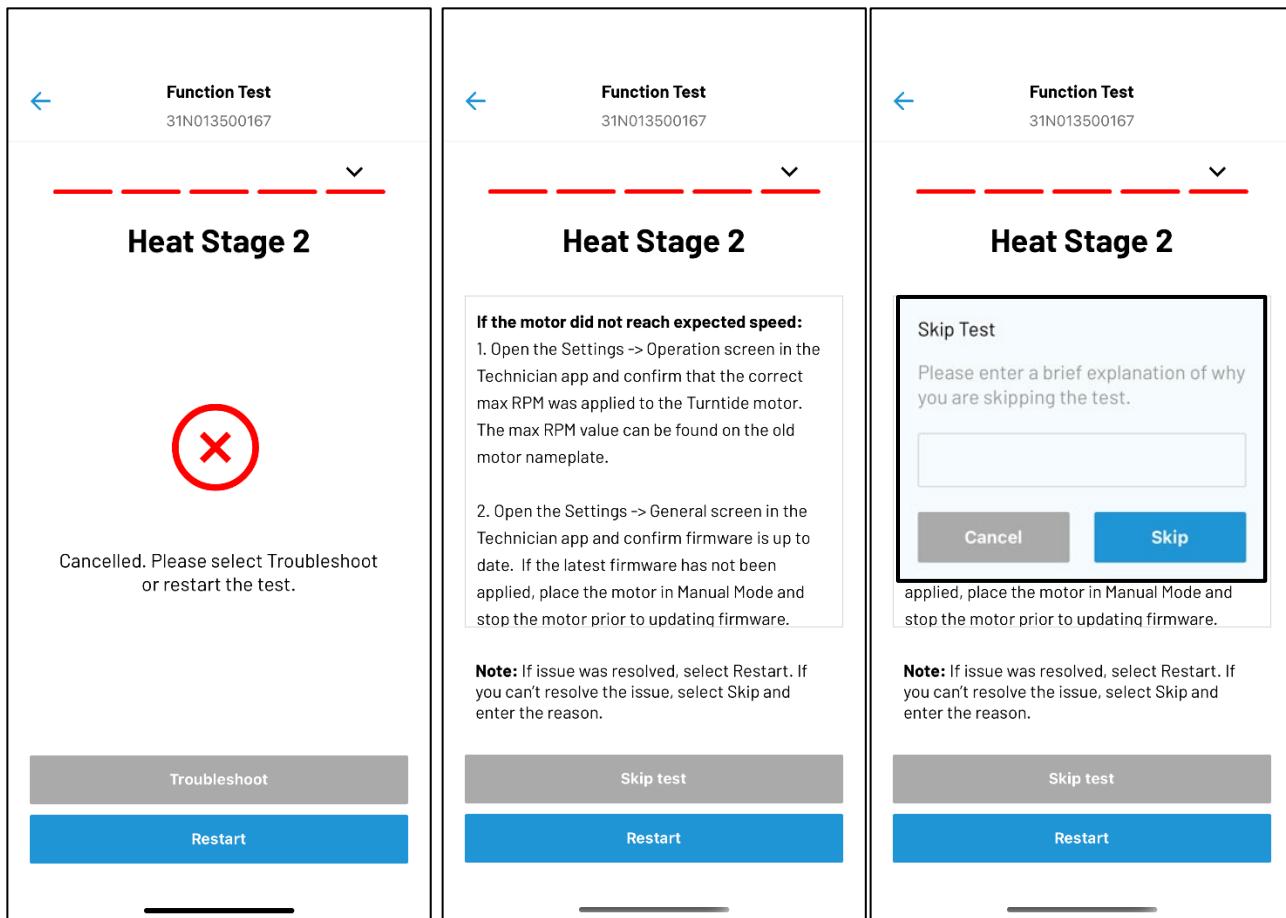


* Time delays built into the RTU control system may prevent the cooling or heating from starting immediately.

** In many cases the first stage heat must be energized before the second stage can energize.



If any test fails, you can tap **Restart** to redo the test or tap **Troubleshoot** for more instructions. See [Troubleshooting: Heating Stage 1 & 2 Test Fails](#).

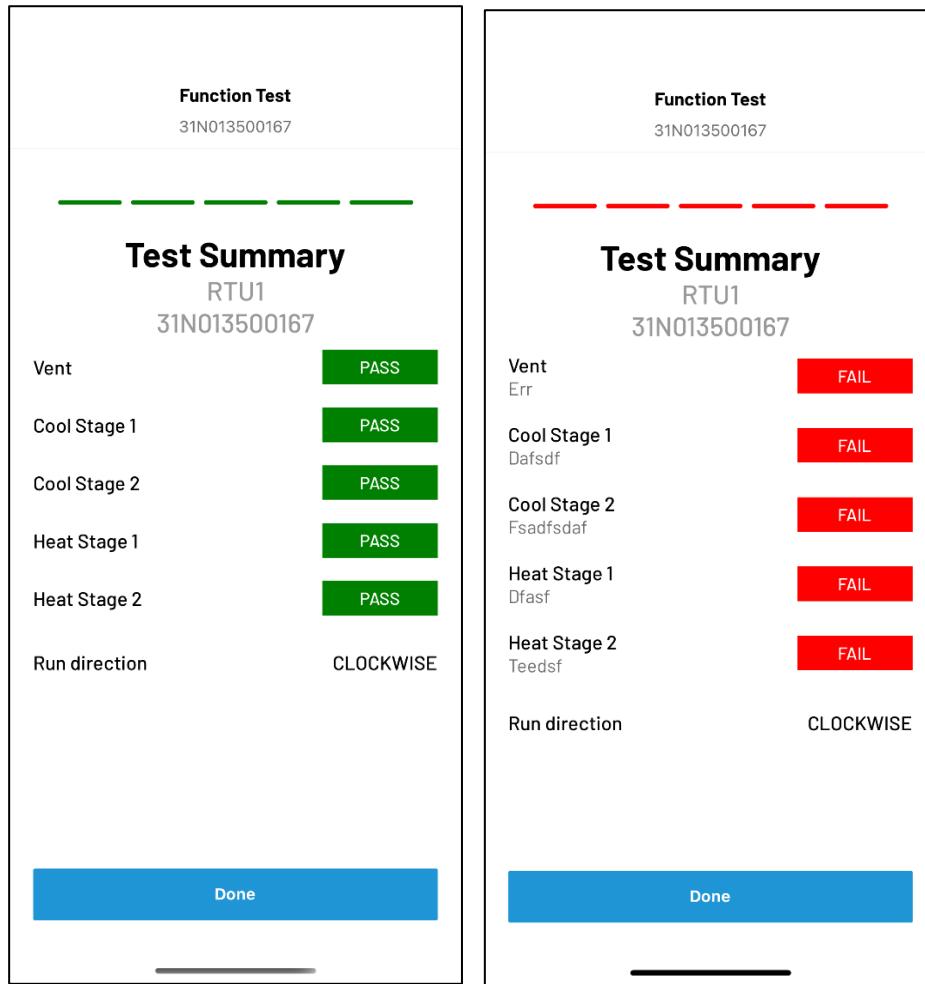


13. The **Test Summary** screen appears.

- Tap **Done** to return to the motor Home screen.
- The app automatically saves an image of the Test Summary to your phone's photo library.

Screenshot captured and saved to your gallery

OK



Disconnect the jumper wires and reconnect the **To Thermostat** cable wires to the thermostat wires.

Troubleshooting: Function Test Fails – Vent

If the motor did not reach expected speed, try all the following troubleshooting steps as necessary using the Turntide Technician App:

Confirm max RPM was applied	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm that the correct max RPM was applied to the Turntide motor. The max RPM value can be found on the motor nameplate.
Confirm firmware is up to date	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm firmware is up to date. If the latest firmware has not been applied, place the motor in Manual Mode and stop the motor prior to updating firmware.After firmware has been updated, place the motor back into Auto Mode.
Reapply flow to motor controller	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Place the motor in Manual Mode and stop the motor.Reapply the flow.After the flow has been applied, place the motor back into Auto Mode.
Ensure sensor installed correctly	If a supply air temperature sensor is part of the install, ensure the sensor is installed in the duct correctly.

If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

Troubleshooting: Cooling Stage 1 & 2 Test Fails

If the motor did not reach expected speed, try all the following troubleshooting steps as necessary using the Turntide Technician App:

Confirm max RPM was applied	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm that the correct max RPM was applied to the Turntide motor. The max RPM value can be found on the motor nameplate.
Confirm firmware is up to date	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm firmware is up to date. If the latest firmware has not been applied, place the motor in Manual Mode and stop the motor prior to updating firmware.After firmware has been updated, place the motor back into Auto Mode.
Reapply flow to motor controller	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Place the motor in Manual Mode and stop the motor.Reapply the flow.After the flow has been applied, place the motor back into Auto Mode.
Ensure sensor installed correctly	If a supply air temperature sensor is part of the install, ensure the sensor is installed in the duct correctly.

If the motor controller output did not close, try all the following troubleshooting steps as necessary:

Verify pins	<ol style="list-style-type: none"> For 24VAC output operated thermostats, open the motor controller, and verify the bridge is placed on pins 5-6 on jumper J96 for P04 and P05 motor controllers and J10 for the SL120 controller. For dry contact signals, the bridge should be placed on pins 3-4 on jumper J96 for P04 and P05 motor controllers and J10 for the SL120 controller.
Toggle modes	<ol style="list-style-type: none"> With the motor Home screen visible in the Turntide Technician App, toggle the motor controller into Manual Mode and then back again into Auto Mode.
Reapply flow to motor controller	<ol style="list-style-type: none"> With the motor Home screen visible in the Turntide Technician App, tap Settings->Operation. Place the motor in Manual Mode and stop the motor. Reapply the flow. After the flow has been applied, place the motor back into Auto Mode.

If the compressor did not engage, try all the following troubleshooting steps as necessary:

Check terminals	<ol style="list-style-type: none"> Check the 24VAC at MC R1/R2 terminals. Ensure a 24VAC input is jumpered across RxA or RxB terminals.
Present at Y1/Y2	<ol style="list-style-type: none"> Check for 24VAC at RTU Y1/Y2. If 24VAC is present at Y1/Y2, continue with normal troubleshooting steps. Check devices in the safety circuit: HPS, LPS, etc.
Cold weather	<p>Some units have a temperature sensor safety that will prevent compressors from running in cold weather. Verify if there is a temperature sensor probe in the fan compartment and warm with hand to see if the compressor engages.</p>

If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

Troubleshooting: Heating Stage 1 & 2 Test Fails

If the motor did not reach expected speed, try all the following troubleshooting steps as necessary using the Turntide Technician App:

Confirm max RPM was applied	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm that the correct max RPM was applied to the Turntide motor. The max RPM value can be found on the motor nameplate.
Confirm firmware is up to date	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Confirm firmware is up to date. If the latest firmware has not been applied, place the motor in Manual Mode and stop the motor prior to updating firmware.After firmware has been updated, place the motor back into Auto Mode.
Reapply flow to motor controller	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Place the motor in Manual Mode and stop the motor.Reapply the flow.After the flow has been applied, place the motor back into Auto Mode.
Ensure sensor installed correctly	If a supply air temperature sensor is part of the install, ensure the sensor is installed in the duct correctly.

If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

If the motor controller output did not close, try all the following troubleshooting steps as necessary:

Verify pins	<ol style="list-style-type: none">1. For 24VAC output operated thermostats, open the motor controller, and verify the bridge is placed on pins 5-6 on jumper J96.2. For dry contact signals, the bridge should be placed on pins 3-4 on jumper J96.
Toggle modes	<ol style="list-style-type: none">1. With the motor Home screen visible in the Turn tide Technician App, toggle the motor controller into Manual Mode and then back again into Auto Mode.
Reapply flow to motor controller	<ol style="list-style-type: none">1. With the motor Home screen visible in the Turn tide Technician App, tap Settings->Operation.2. Place the motor in Manual Mode and stop the motor.3. Reapply the flow.4. After the flow has been applied, place the motor back into Auto Mode.

If the heating element did not engage, try all the following troubleshooting steps as necessary:

Check terminals	<ol style="list-style-type: none">1. Check the 24VAC at MC R3/R4 terminals.2. Ensure a 24VAC input is jumpered across RxA or RxB terminals.
Present at W1/W2	<ol style="list-style-type: none">1. Check for 24VAC at RTU W1/W2.2. If 24VAC is present at W1/W2, continue with normal troubleshooting steps.3. Check devices in the safety circuits: fan proving switch, high limit switch, etc.

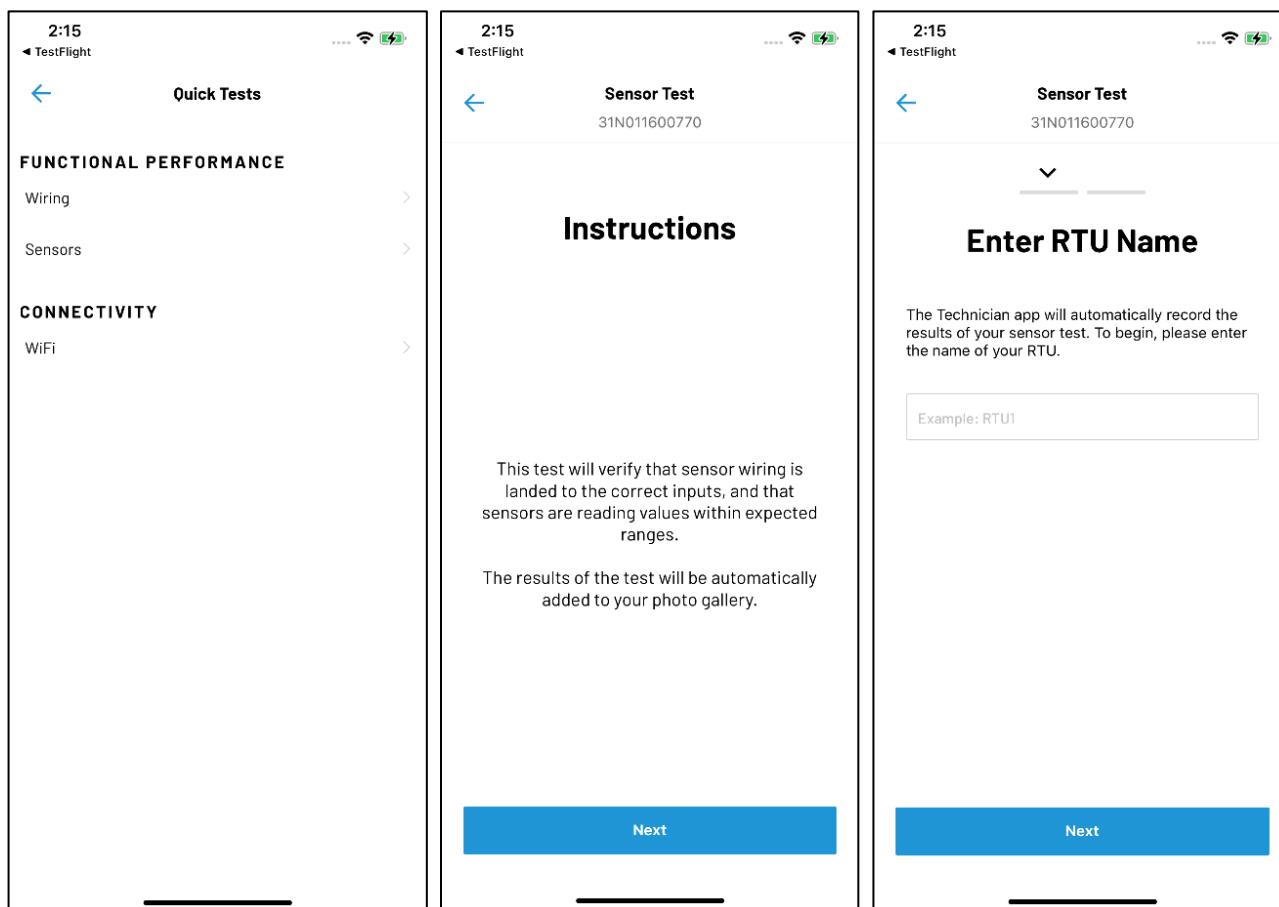
If the issue persists after trying all the troubleshooting steps listed, call Turn tide Support 1-877-PRO-TIP+.

Supply and Return Air Sensor Test

Sensor testing is available on the Turntide Technician App versions 1.12 through 1.15.1 and higher for motor controllers with firmware *greater than or equal* to firmware version 2.5. If you connect to a motor controller that is running motor controller firmware 2.5.1 or higher and the correct logic flow is loaded (one that indicates sensors are being used), then the **Sensors** test option is displayed in the app. Otherwise, only **Wiring** and **Wi-Fi** test options are displayed.

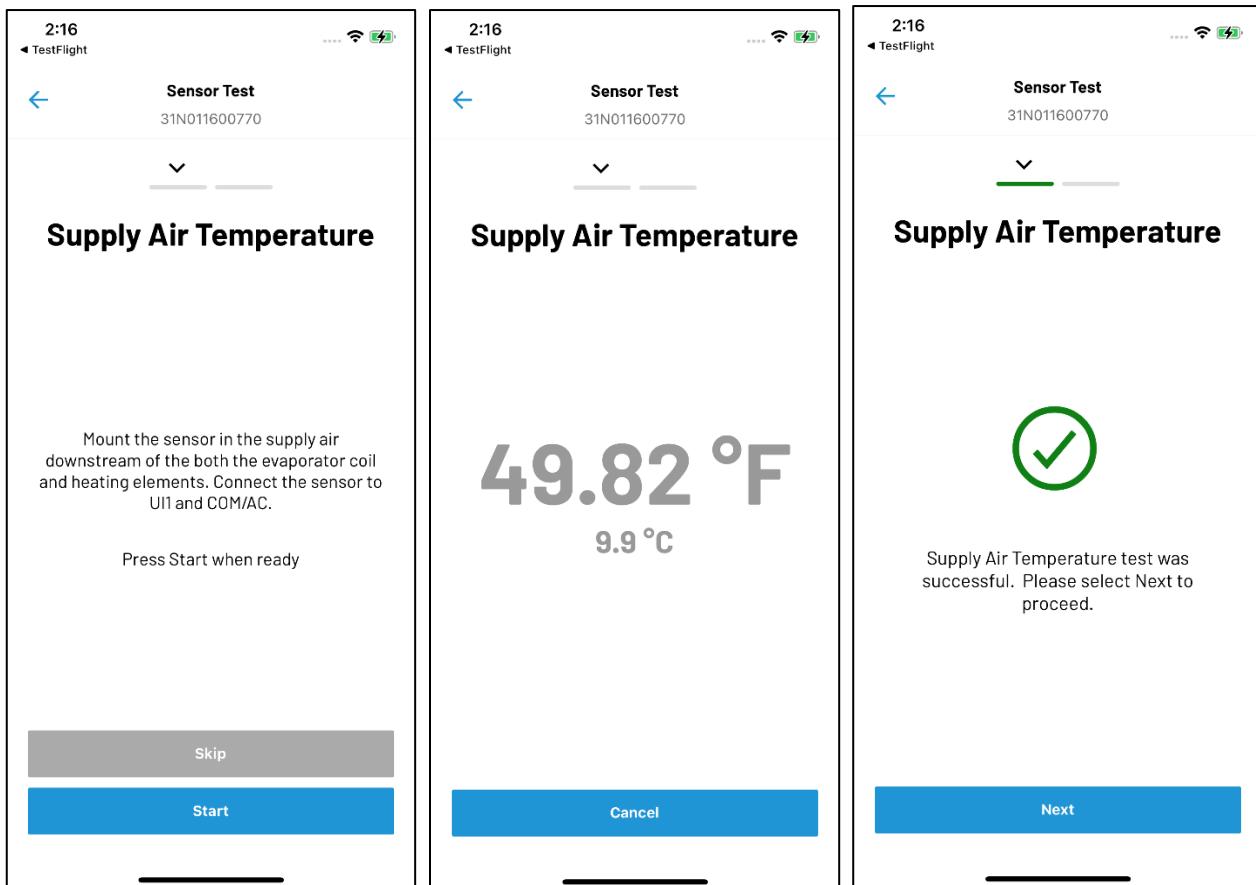
Temperature is displayed in Fahrenheit and Celsius.

1. You must be connected to a motor controller with the motor Home screen visible.
2. Tap **Settings** and then tap **Launch Diagnostics**.
3. The **Diagnostics** screen opens. Tap **Start Diagnostics**. The **Quick Tests** screen opens.
4. Tap **Sensors** to begin testing each sensor. The **Sensor Test** screen appears with **Instructions** outlining the test that will be conducted.
5. Tap **Next** and enter a name for the RTU unit being tested (for example “MyRTU”).
6. Tap **Next**.



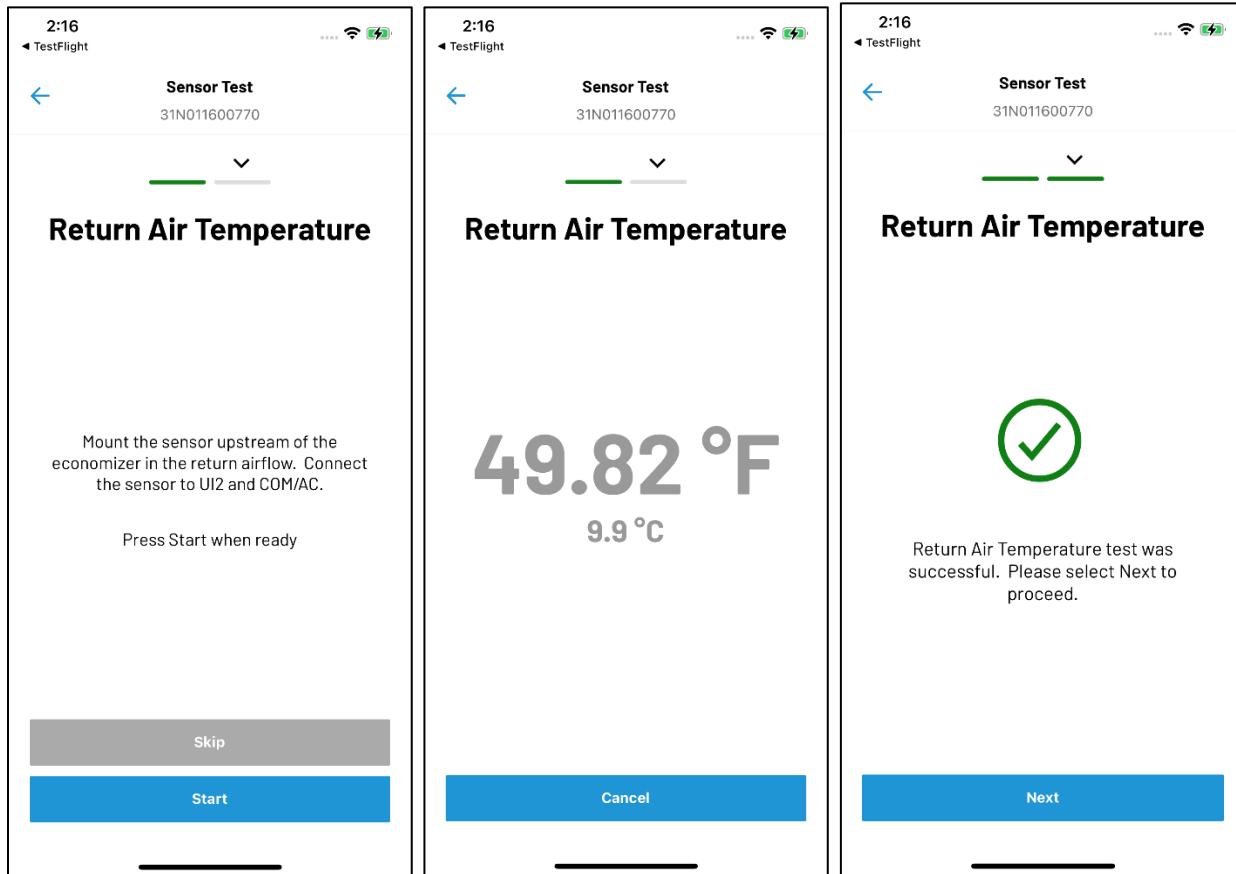
Tap **Start** to begin testing the supply air sensor. The supply air temperature is displayed (Fahrenheit and Celsius).

7. After a few seconds, a green checkmark is displayed indicating the test was successful.
8. Tap **Next** to go to the next test.



A *successful* test indicates that the value from the sensor is between a Fahrenheit range that is specified in the flow. The range is -10 to 200. This test ensures that the universal input on the motor controller (which the sensor is connected to) is configured correctly.

9. The **Return Air Temperature** is displayed. Tap **Start** to begin testing the return air sensor.
10. After a few seconds, a green checkmark is displayed indicating the test was successful.



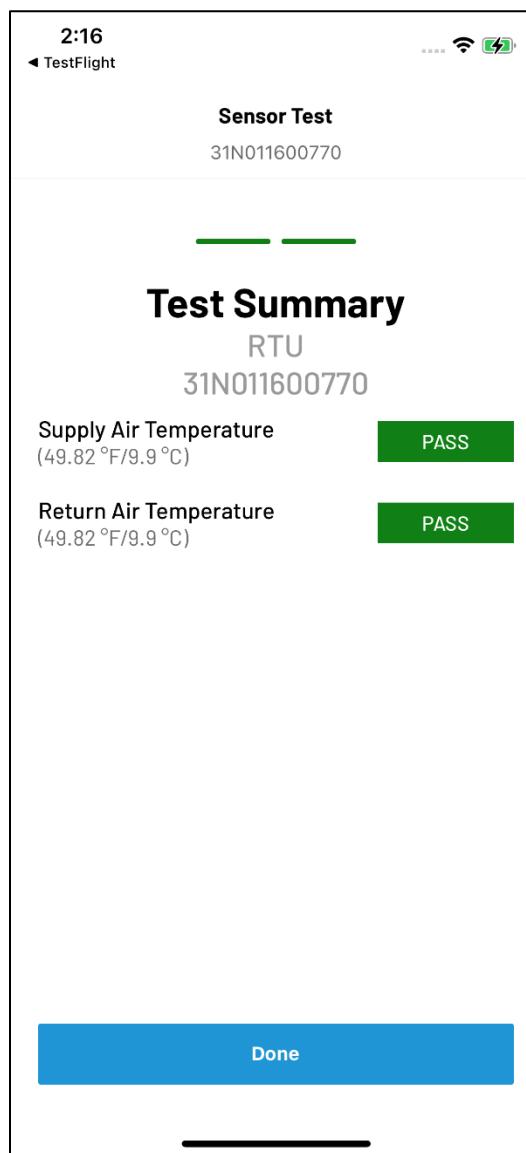
11. Tap **Next**. A **Test Summary** is displayed indicating a **PASS** or **FAIL** for each sensor.

- a. An image of the test summary will be automatically saved to your phone's photo gallery.
- b. If test fails, see [Troubleshooting: Supply Air Temp Not Reading in Expected Range](#) or [Troubleshooting: Return Air Temp Not Reading in Expected Range](#).

Screenshot captured and saved to your gallery

OK

12. Tap **Done** to return to the motor Home screen.



Troubleshooting: Supply Air Temp Not Reading in Expected Range

Try all the following troubleshooting steps as necessary:

Verify pins	Open the motor controller and verify UI 1jumper (J5125 for the P04 and P05 motor controllers and J11 for the SL120 controller) is set on pins 1-2.
Wiring connections	Check all wiring connections
Reapply flow to motor controller	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Place the motor in Manual Mode and stop the motor.Reapply the flow. <p>After the flow has been applied, place the motor back into Auto Mode.</p>

If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

Troubleshooting: Return Air Temp Not Reading in Expected Range

Try all the following troubleshooting steps as necessary:

Verify pins	Open the motor controller and verify UI 2 jumper (J111 the P04 and P05 motor controllers and J12 for the SL120 controller) is set on pins 1-2.
Wiring connections	Check all wiring connections
Reapply flow to motor controller	<ol style="list-style-type: none">With the motor Home screen visible, tap Settings->Operation.Place the motor in Manual Mode and stop the motor.Reapply the flow. <p>After the flow has been applied, place the motor back into Auto Mode.</p>

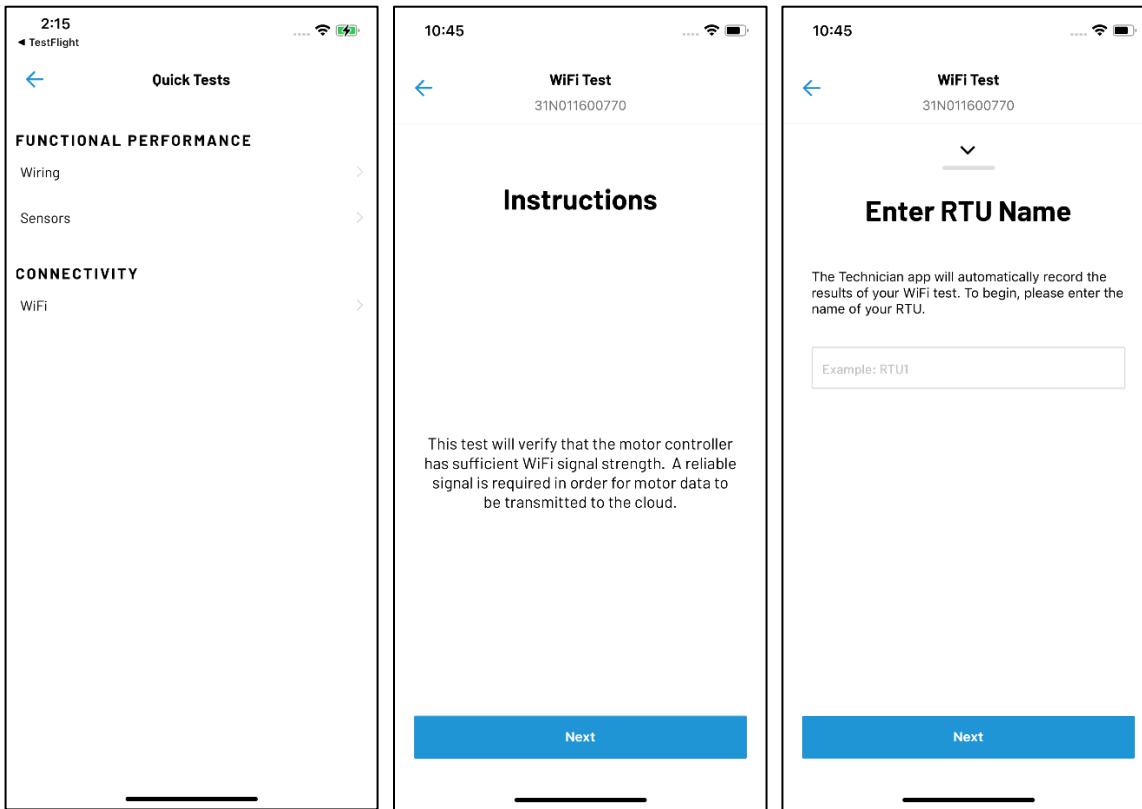
If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

Motor Controller WiFi Strength Test

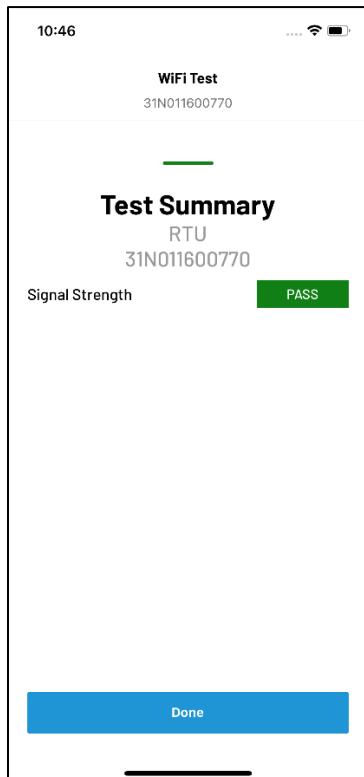
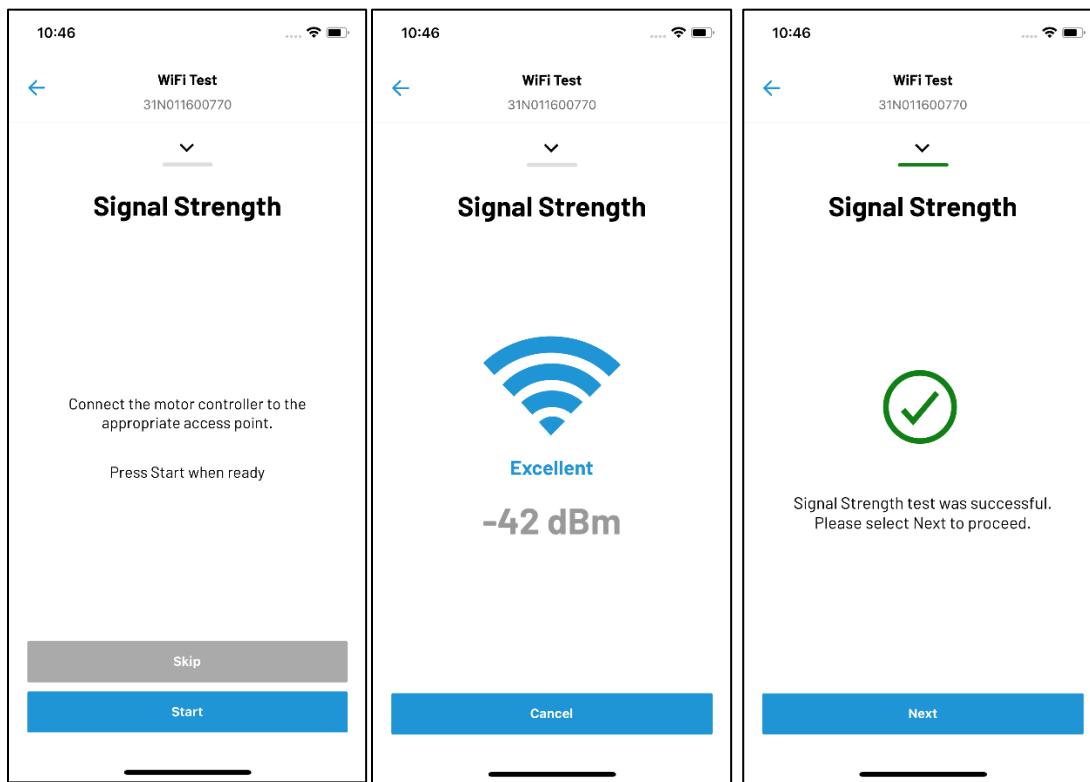
Your motor controller must be using firmware version 2.5.1 or higher.

You must be connected to a motor controller with the motor Home screen visible.

1. Tap **Settings** and then tap **Launch Diagnostics**. The **Diagnostics** screen opens.
2. Tap **Start Diagnostics**. The **Quick Tests** screen opens. Tap **Wi-Fi**.
3. The **Wi-Fi Test** screen with **Instructions** outlining the test that will be conducted is displayed.
4. Tap **Next**. Enter a name for the unit being tested (for example “MyRTU”) and tap **Next**.



5. Tap **Start** to begin testing the signal strength.
6. The app displays the motor Wi-Fi strength in **dBm** and as a **signal icon**.
7. After a few seconds, a green checkmark is displayed indicating the test was successful.
8. A **Test Summary** is displayed indicating **PASS** or **FAIL**. If test fails, see **Troubleshooting: Wi-Fi Signal Strength**.
9. Tap **Done** to return to the motor Home screen.



Signal Strength	dBm
Excellent	>= -50
Good	-50 to -60
Fair	-60 to -70
Weak	-70 to -100

Troubleshooting: Wi-Fi Signal Strength

Try all the following troubleshooting steps as necessary:

Line of sight	Verify that there is line of sight between the Motor Controller antenna and RMK antenna
Antenna securely connected	Verify that the antenna is securely connected to the Motor Controller and RMK. Do NOT overtighten the connector on the Motor Controller.

If the issue persists after trying all the troubleshooting steps listed, call Turntide Support 1-877-PRO-TIP+.

TURNTIDE TECHNOLOGY FOR SUSTAINABLE OPERATIONS

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries.

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