



Installation Guide

RMK+ Long-Range

Document Version 4.0
June 2, 2023

Installation Guide Instructions for:



| Item Number | Description |
|----------------------|---|
| RMK-002-US-LR | Long-range cloud monitoring kit (USA) |
| RMK-003-US-LR | Long-range cloud energy monitoring kit (USA) |
| RMK-002-CA-LR | Long-range cloud monitoring kit (Canada) |
| RMK-003-CA-LR | Long-range cloud energy monitoring kit (Canada) |
| KIT-RMK-US-LR | Kit for upgrading RMK to RMK+ Long-Range Wi-Fi (USA) |
| KIT-RMK-CA-LR | Kit for upgrading RMK to RMK+ Long-Range Wi-Fi (Canada) |

| WWW - | XXX - | YY - | ZZ |
|--|---|--|--|
| Family RMK - Remote Monitoring Kit KIT - Kit of parts for field install | Type 001 - Cloud Monitoring via customer internet 002 - Cloud Monitoring via cell modem 003 - Cloud Energy Monitoring via cell modem 004 - Cloud Energy Monitoring via customer internet RMK - RMK+ upgrade kit for standard RMK Only used when WWW = KIT | Country Code CA - Canada US - United States CO - Columbia CL - Chile None - United States | Range None - standard range <= 40ft (12 m) LR - RMK+ long range <=250ft (76 m) Only available in US and Canada |

Revision History

| Document Revision Number | Description | Date |
|--------------------------|--|-------------------|
| 1.0 | Initial Release | February 3, 2022 |
| 1.1 | <ul style="list-style-type: none"> Removed incorrect reference to Upgrade in All Components of Repeater section Some photographs replaced with drawings Step revised to: Drill a 7/8" hole <i>into the side of the RTU</i> and install the Weather-Tite Connector | February 24, 2022 |
| 2.0 | Removed content for MR (Mid-Range) antenna New images for regular versus RMK+ long-range benefits | March 18, 2022 |
| 3.0 | <ul style="list-style-type: none"> Repeater product removed New product SKU decoder Long-range radius updated from 150ft to 250ft Wiring diagram updated with generic naming (brands removed) Appendix removed | June 15, 2022 |
| 4.0 | <p>Added</p> <ul style="list-style-type: none"> General Concept Example of 4 RTUs on Roof Task 1: Assemble one of the antenna risers that will be used to connect the external Wi-Fi antenna to the Turntide motor inside the RTU Task 2: Assemble the antenna mount for the long-range antenna Tap Connections <ul style="list-style-type: none"> Transformer for US Customers Transformer for Canadian Customers How to install the external Wi-Fi antenna with 3m cable on each RTU that is using a Turntide Motor System (Motor and Controller) <p>Revised</p> <ul style="list-style-type: none"> Other Included Components Signal Strength | June 2, 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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Audience

The instructions in this guide are intended for a mechanical technician who is used to working with commercial HVAC equipment but may not be used to working with networking equipment (Cloud connectivity and wireless networks).

You will have access to Remote Support from Turntide Technical Services:

877.776.8470 (877-PRO-TIP+)

support@turntide.com

Review this installation guide and follow all local and national electrical codes, safety compliance requirements, and common installation procedures

RMK Placement with Multiple Commercial HVAC Equipment Units

Determining the location of RMKs on a rooftop with multiple RTUs is known as ***developing the network architecture***. If this information is not provided to you by your Turntide representative, see the **INST201** course on Turntide Academy. Please contact Technical Services if you need assistance regarding a network architecture.

Overview

A Remote Monitoring Kit (RMK) typically consists of the cellular modem and a Turntide® Supervisor controller. The RMK product is the primary means of connecting a motor controller to the Turntide Cloud applications using Wi-Fi and cellular 4G communications.

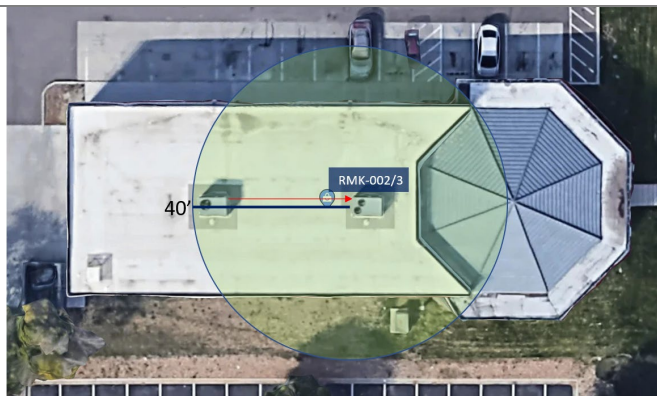
This Kit includes everything needed to connect a Turntide® Smart Motor Systems™ to the internet. Once an internet connection is established, the RMK will automatically connect to the Turntide Secure Cloud platform to provide you remote access to your equipment data.

Benefits of RMK+ Long-Range

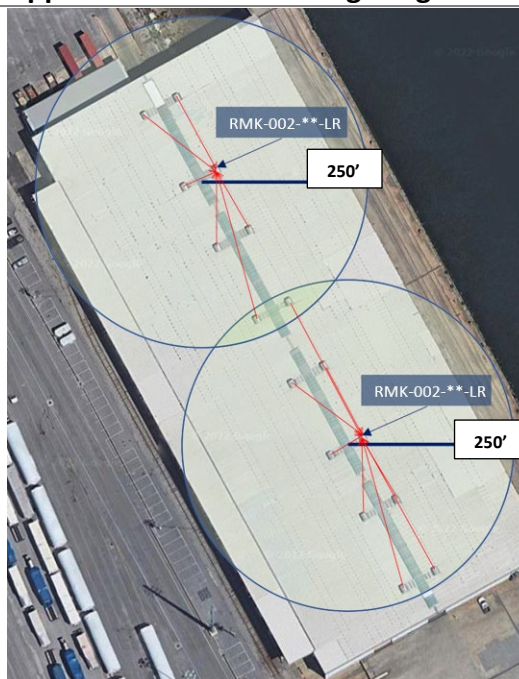
RMK+ Long-Range (herein after called **RMK+**) increases the range of RMK Wi-Fi signals so that Turntide Smart Motor Systems can be installed farther away from the RMK. Increasing the range of one RMK increases the number of motors that can be added to a single RMK and therefore reduces the total number of RMKs on a roof.

By using more powerful dedicated Wi-Fi Access Points, the reliability of wireless communication between RMK and Turntide Smart Motor System is increased. This helps reduce nuisance alerts from the Turntide Cloud for intermittent communications issues.

RMK-### = 40ft radius



Appended with LR for long-range = 250ft radius



RMK Signal Radius

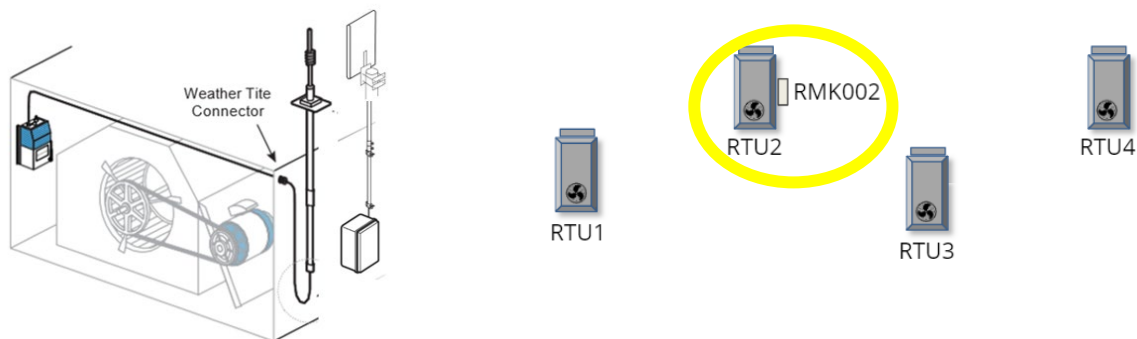
Use the following signal radius distances *only as guidelines*. Actual radius depends on signal strength, which is also affected by such factors as physical barriers and signal interference.

- RMK-### = 40ft radius
- Appended with **LR** for long-range = 250ft radius (**No more than 20 motors may be installed at a maximum radius of 250' from the RMK+**)

General Concept Example of 4 RTUs on Roof

If you are going to install an RMK, you need to install an external Wi-Fi antenna on each RTU that will have a Smart Motor System **wirelessly** connected to the RMK. You will install the **antenna riser** with an antenna on top and run the 3m cable through that conduit and through the RTU to finally connect it to the Turntide Motor Controller. An external Wi-Fi antenna with 3m cable comes in **Box 3** of each **Turntide Smart Motor System** shipment.

You will then install the RMK on **one of the RTUs that is centrally located**. This RTU will need **two antenna risers**, one with the **external Wi-Fi antenna** and one with the **Ubiquiti long-range antenna**.







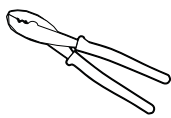
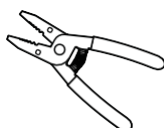

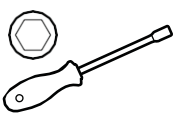


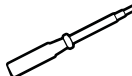
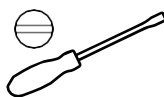

For instructions on installing an external antenna on each RTU that has an existing Turntide Motor Controller System, see the [Appendix](#) of this guide. **No more than 20 motors may be installed at a maximum radius of 250' from the RMK+.**



Note that you must remove the small pre-installed antenna on P06 and SL121 motor controllers and replace it with the External Wi-Fi antenna with 3m cable from Box 3 of each Turntide Smart Motor System shipment.

Tools You'll Need

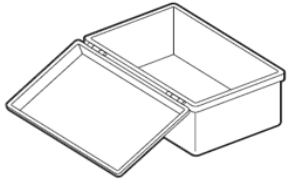
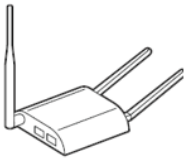
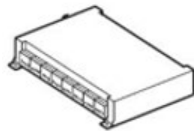
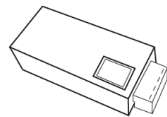
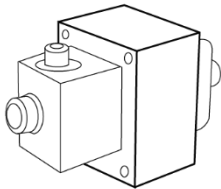

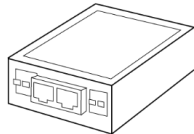
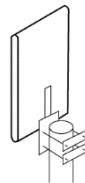
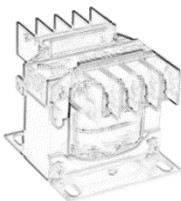
The following common tools are required to install the Turntide Remote Monitoring Kit. Every application is different, and additional tools may be required.

| | | | |
|--|---|---|--|
|  <p>Cordless Drill</p> |  <p>Unibit Hole Saw 7/8" for the RTU antenna 1-1/8" for the conduit connector and Ubiquiti connector</p> |  <p>Drill Bit Index up to 1/2"</p> |  <p>Clamp Amp Meter</p> |
|  <p>Terminal (Spade) Crimp Tool</p> |  <p>Wire Strippers</p> |  <p>Multimeter</p> |  <p>Nut Driver 1/4" and 5/16"</p> |
|  <p>Adjustable Pliers</p> |  <p>Needle Nose Pliers</p> |  <p>Screwdriver Small terminating</p> |  <p>Screwdriver Slot</p> |
|  <p>Screwdriver Phillips</p> | | | |

Included in the Kit

Turntide provides everything commonly necessary to install the Remote Monitoring Kit.

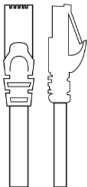


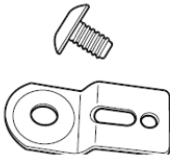


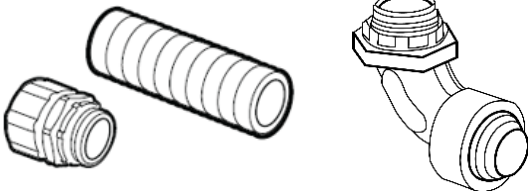
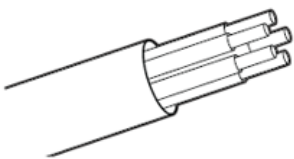
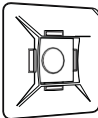
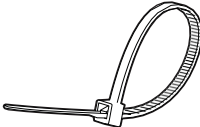
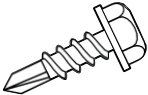
RMK Assembly

| | | |
|-----|------|--|
| RMK | | <div data-bbox="334 394 618 573"></div> <div data-bbox="362 594 586 623">NEMA-4X Enclosure</div> <div data-bbox="706 409 888 567"></div> <div data-bbox="706 598 799 630">Modem</div> <div data-bbox="967 432 1159 562"></div> <div data-bbox="953 602 1179 636">Turntide Supervisor</div> <div data-bbox="1273 409 1438 525"></div> <div data-bbox="1258 592 1477 657">24AC/DC to 12VDC Convertor</div> |
| | RMK+ | <div data-bbox="334 724 553 911"></div> <div data-bbox="324 928 636 1062">Control Transformer 75VA, 480/240/208/120 to 24VAC multi-tap input, for US Customers</div> <div data-bbox="649 758 878 863"></div> <div data-bbox="669 919 850 949">Network Router</div> <div data-bbox="964 720 1156 852"></div> <div data-bbox="958 911 1101 942">PoE Injector</div> <div data-bbox="1265 705 1349 886"></div> <div data-bbox="1177 926 1453 993">Long-range Wi-Fi Access Point (antenna)</div> <div data-bbox="420 1100 600 1299"></div> <div data-bbox="336 1333 742 1434">Control Transformer 100VA, Primary 600; secondary 24VAC multi-tap input, for Canadian Customers</div> |

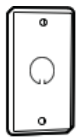
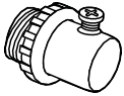
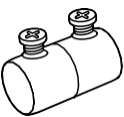
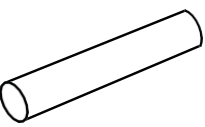
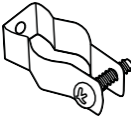
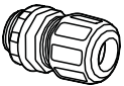
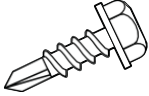
Other Included Components

Remote Monitor Kit components and antenna riser components.

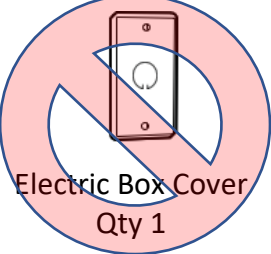
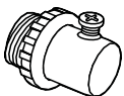
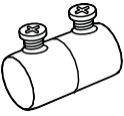
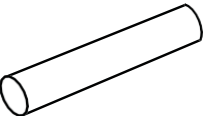
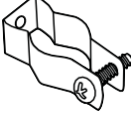
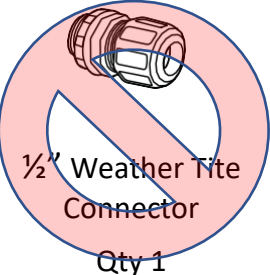
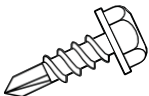
RMK+ Kit

| | | | |
|---|---|---|---|
|  <p>15' CAT6 ethernet cable, Qty 1 Rated for outdoor use (UV resistant, waterproof, direct burial rated)</p> | |  <p>3' of 14-gauge wire Qty 1</p> | |
|  <p>$\frac{3}{4}$" Weather-Tite connector for Ethernet cable</p> |  <p>Mounting Brackets w/Screws Qty 4</p> |  <p>Piggyback Spade Connectors Blue Qty 2</p> |  <p>Wire Nuts Blue Qty 3</p> |
|  <p>Liquid-Tight Conduit & Connectors 5' – $\frac{3}{4}$" Flexible Conduit Qty 2 – Straight Connectors Qty 2 – 90-degree Connectors</p> | |  <p>10' - 18/2 low voltage power cable Qty 1</p> | |
|  <p>Cable Tie Bases Qty 4</p> |  <p>Cable Ties Qty 10</p> |  <p>Self-drilling screws #10 x $\frac{3}{4}$" Qty 8</p> | |

Antenna Riser Component Kit Shipped with Motor Controller

| | | | |
|--|--|--|---|
|  <p>Electric Box Cover Qty 1</p> |  <p>1/2" EMT Connector Qty 1</p> |  <p>1/2" EMT Coupling Qty 1</p> |  <p>1/2" x 12" EMT Conduit Qty 2</p> |
|  <p>1/2" Conduit Hanger Qty 2</p> |  <p>1/2" Weather Tite Connector Qty 1</p> |  <p>Self-drilling screws #10 x 1/2" Qty 2</p> | |

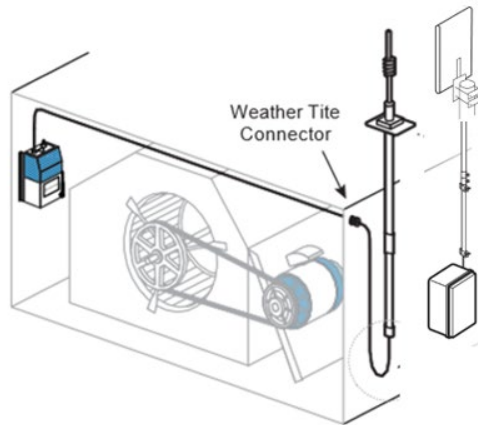
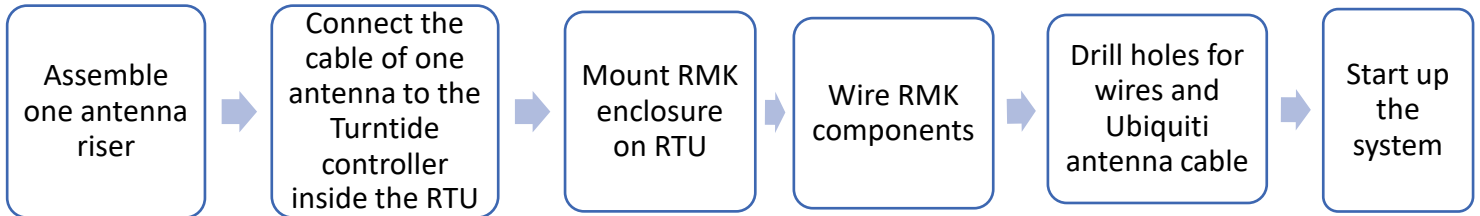
Antenna Riser Component Kit Shipped with RMK Kit

| | | | |
|--|--|--|--|
|  <p>Electric Box Cover Qty 1</p> |  <p>1/2" EMT Connector Qty 1</p> |  <p>1/2" EMT Coupling Qty 1</p> |  <p>1/2" x 12" EMT Conduit Qty 2</p> |
|  <p>1/2" Conduit Hanger Qty 2</p> |  <p>1/2" Weather Tite Connector Qty 1</p> |  <p>Self-drilling screws #10 x 1/2" Qty 2</p> | |

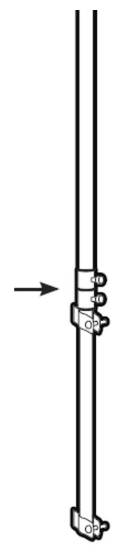


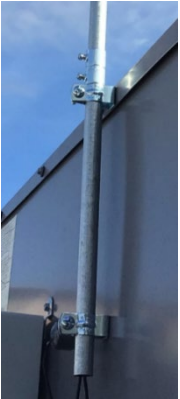
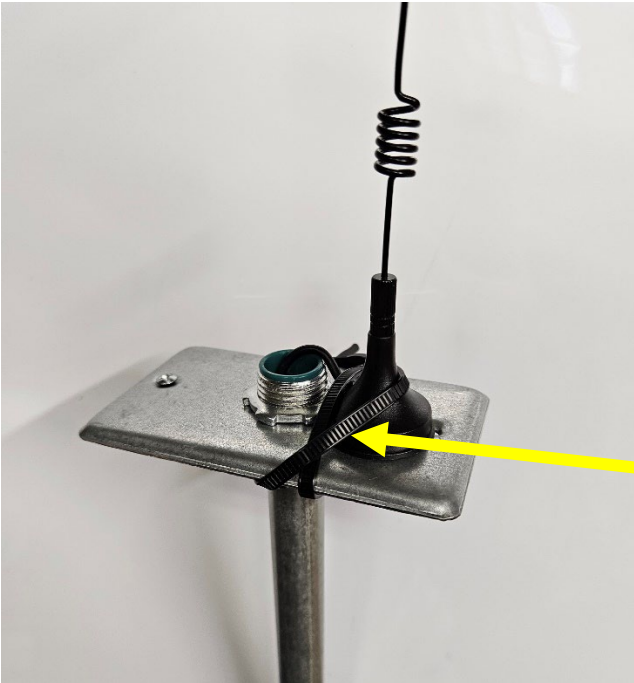
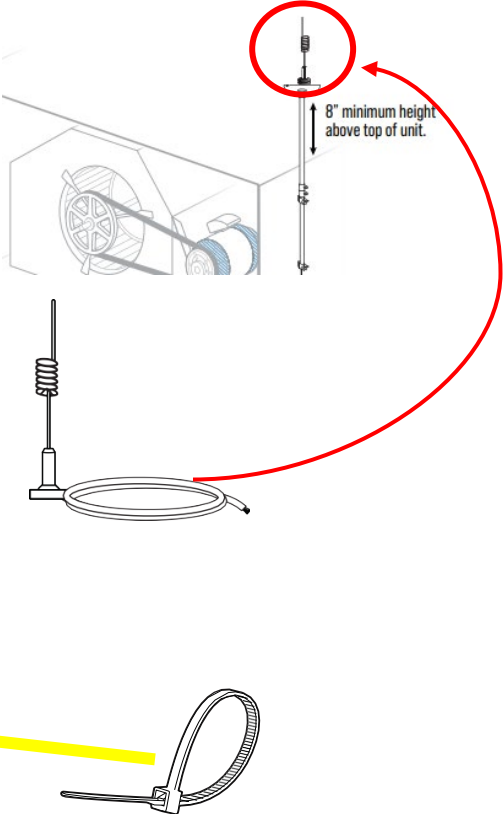

Do not use for RMK+ antenna installation

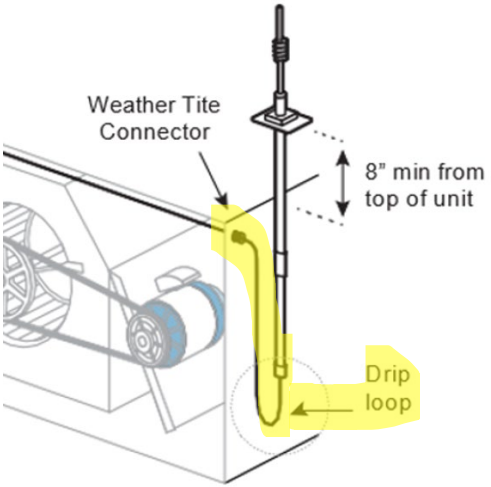
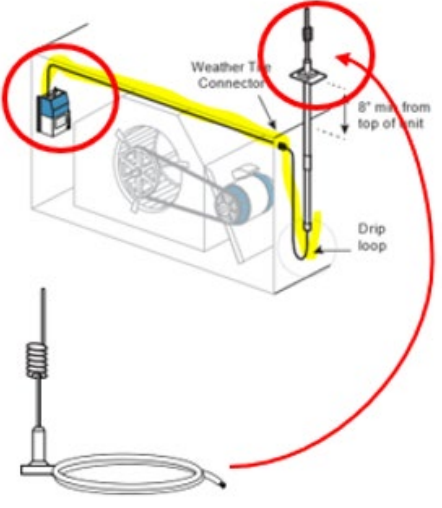
How to install an RMK unit and two antenna risers on the central RTU



Task 1: Assemble one of the antenna risers that will be used to connect the external Wi-Fi antenna to the Turntide motor inside the RTU

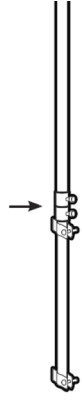
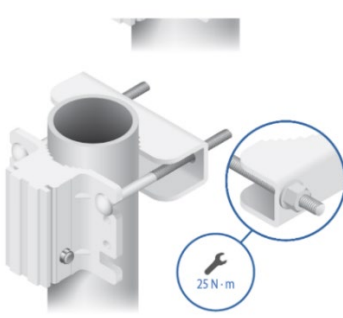
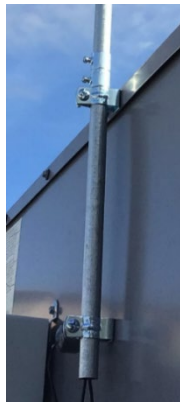
| | | |
|----------|---|---|
| 1 | <p>Connect the EMT conduit sections using the EMT coupling.</p> <p>The Turntide Academy video at this URL point https://youtu.be/nTHIVFat8Bw?t=72 provides instructions for assembling the couplings.</p> <p>Note on antenna risers:</p> <ul style="list-style-type: none"> One antenna riser is shipped in the RMK+ kit. Another antenna riser is in Box 3 of the Turntide Motor Systems installation package that was shipped to install the motor and controller. |  |
|----------|---|---|

| | | |
|-----------------|---|---|
| <p>2</p> | <p>Attach the assembled antenna riser to a non-removable panel of the HVAC unit using the two conduit hangers and sheet metal screws. The EMT conduit should be screwed/bolted to the side of the HVAC unit (rooftop unit).</p> |  |
| <p>3</p> | <ol style="list-style-type: none"> 1. Install the external Wi-Fi antenna with 3m cable on top of the EMT conduit base. 2. Use the cable ties to secure the antenna to the conduit base in a crisscross pattern. 3. Route the 3m cable of the antenna through the EMT conduit.  |  |
| <p>4</p> | <p>You will need to connect that cable to the Turntide motor controller in the RTU.</p> <p>Drill a 7/8" hole into the side of the RTU and install the ½" Weather-Tite Connector from the <i>Antenna Riser Component Kit Shipped with Motor Controller</i>.</p> |  |

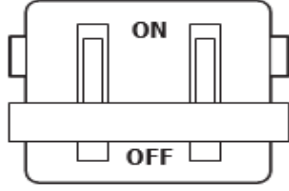
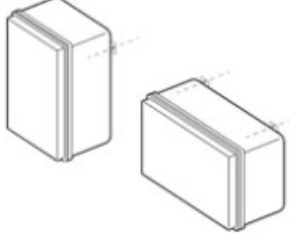

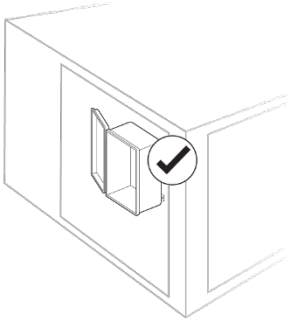
| | | |
|-----------------|--|---|
| <p>5</p> | <ol style="list-style-type: none"> 1. Route the antenna coax cable through the Weather-Tite Connector. 2. Tighten the connector over the coax only enough to grip the coax. Do not overtighten. 3. Fill the connector with silicone caulk. 4. Ensure you have a drip loop between the cable from the EMT conduit and the connection into the RTU. |  |
| <p>6</p> | <ol style="list-style-type: none"> 1. Route the antenna coax cable through the RTU. 2. Note that you must first remove the small pre-installed antenna on the P06 and SL121 motor controllers. 3. Screw the 3m antenna cable into the Turntide motor controller. |  |



Task 2: Assemble the antenna mount for the long-range antenna that will connect to the RMK unit

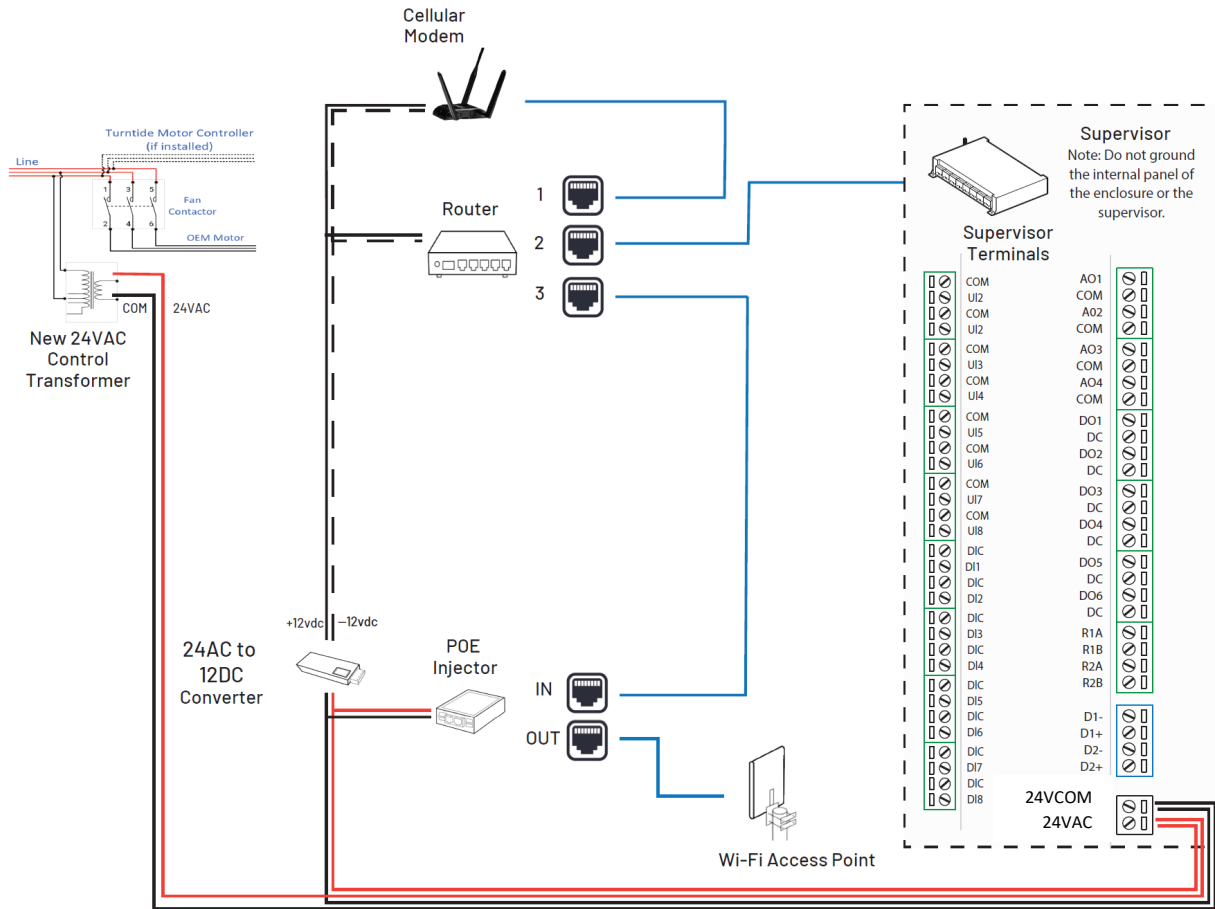
| | | |
|----------|--|---|
| 1 | <p>Connect the two EMT conduit sections using the EMT coupling.</p> <p>The Turntide Academy video at this URL point https://youtu.be/nTHIVFat8Bw?t=72 provides instructions for assembling the couplings. Note that you do NOT need to attach the box cover to the EMT as demonstrated in the video.</p> |  |
| 2 | <p>For a long-range antenna:</p> <p>Using the Ubiquiti pole mount kit, attach the mounting bracket to the conduit.</p> <p>Full assembly instructions: https://dl.ui.com/qsg/UAP-AC-M-PRO/UAP-AC-M-PRO_EN.html</p> |  |
| 3 | <p>Attach the assembled antenna mount (EMT conduit) to a non-removable panel of the HVAC unit using the two conduit hangers and sheet metal screws. The EMT conduit should be screwed/bolted to the side of the HVAC unit (rooftop unit).</p> <p>Important: The Ubiquiti antenna that will be attached at the top of the EMT conduit must sit 8" above the top of the RTU.</p> |  |

Task 3: Mount the NEMA enclosure on the RTU

| | | |
|---|---|---|
| 1 | Turn OFF the power to the unit. |  |
| 2 | <p>Install the RMK enclosure near the unit control panel either with vertical or horizontal <i>orientation</i> using the external brackets and self-tapping screws.</p> <p>For a video demonstration, see the RMK Mounting video from Turntide Academy: https://www.youtube.com/embed/LllrzlgeSW.</p> <p>You must install the enclosure on a vertical section of the HVAC unit (rooftop unit). RMKs should NOT be installed on the top of an HVAC unit (rooftop unit) because this leads to serious risk of water ingress.</p> |   <p>Mounting brackets</p>  |

Wiring Diagram

Before you wire components, familiarize yourself with the wiring diagram.



! Note: 24 volt wiring is polarity sensitive. If wiring is terminated incorrectly, it will damage the supervisor or the control transformer.

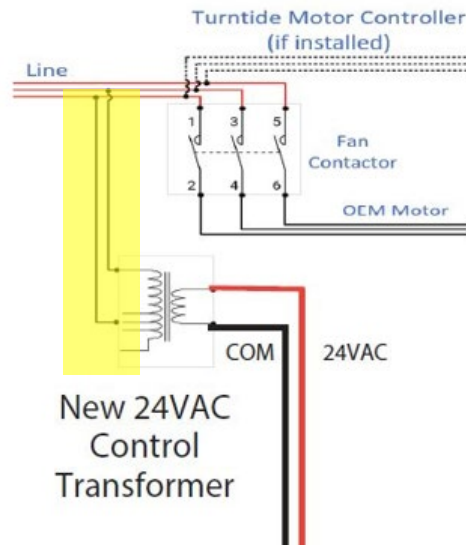
Task 4: Wire the components

Reminder: Turn OFF the power to the unit before you begin.

- 1 Find an adequate location within the RTU control cabinet to mount **the 24VAC transformer**.

Use the provided **14-gauge wiring** to terminate the transformer primary winding onto the **line side** of the indoor fan contactor. Be sure to connect the proper primary winding to match the voltage of the **line side** power.

For details, see [Tap Connections](#) in the [Appendix](#).



- 2 Use the provided **18-gauge wiring** to terminate power from the secondary side of the **24VAC transformer** to the **Turntide Supervisor**:
 - **COM** (common) on the **transformer** wires to **24VCOM** terminal on the **Turntide Supervisor**
 - **24VAC** on the **transformer** wires to **24VAC** terminal on the **Turntide Supervisor**

Note: The wires preinstalled on the Supervisor's 24 VAC input terminal, which supply power to the 12 VDC converter, should remain installed after installing the power wiring from the transformer.

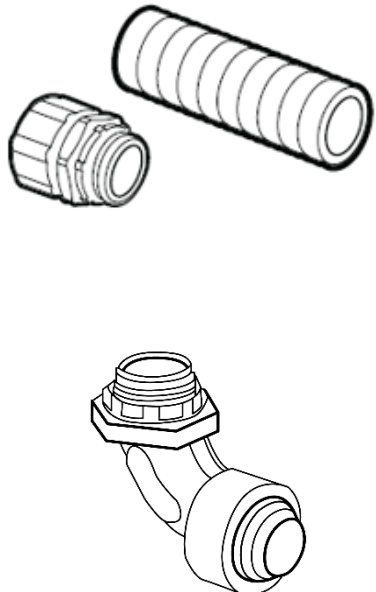
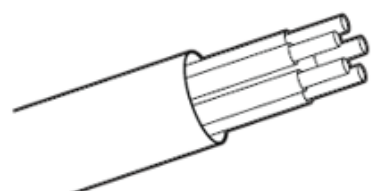

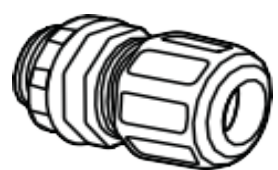


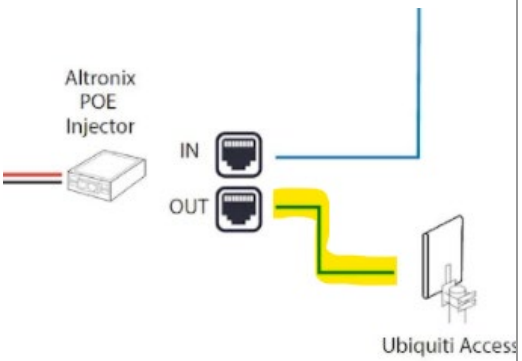

Caution: 24-volt wiring is polarity sensitive! If wiring is terminated incorrectly, it will damage the Turntide Supervisor or the control transformer.



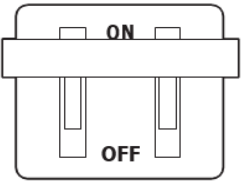
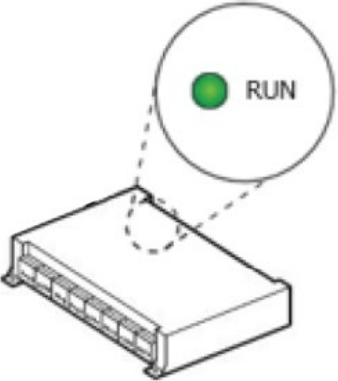
Ground the common of the transformer secondary at the install location.

Task 5: Drill holes in RMK enclosure and RTU to route wires and cables

| | | |
|-----------------|---|---|
| <p>1</p> | <ol style="list-style-type: none"> 1. Drill a 7/8" hole in the RTU. 2. Drill a 7/8" in the bottom of RMK enclosure. 3. Install the 3/4" Liquid-Tight conduit and the connectors from the RMK to the RTU control cabinet. <p><i>Two straight connectors and two 90-degree connectors are provided to accommodate any installation scenario.</i></p> <p>Important: Never drill through the top of the RMK enclosure. <i>If access at the bottom of the RMK enclosure is not possible, you can alternatively drill the hole through the side of the enclosure.</i></p> |  |
| <p>2</p> | <p>Route the 18-2 wire from the RTU electrical cabinet through the 3/4" Liquid-Tight conduit and the connectors and into the RMK enclosure.</p>  |  |
| <p>3</p> | <p>Drill a 1-1/8" hole into the bottom of the RMK enclosure and install the 3/4" Weather-Tite Connector shipped in the RMK+ Kit.</p> <p><i>Alternatively, drill inside of RMK enclosure if bottom not possible.</i></p> |  |

| | | |
|-----------------|---|---|
| <p>4</p> | <p>Plug one end of the 15' CAT6 ethernet cable into the OUT of the PoE Injector in the RMK and route it through the enclosure (through the Weather-Tite connector) and plug it into the Ubiquiti antenna.</p> |  |
| <p>5</p> | <ol style="list-style-type: none"> 1. Connect the cable to the port labeled MAIN. 2. Reinstall the power cover once the cable is installed. <p>Full assembly instructions: https://dl.ui.com/qsg/UAP-AC-M-PRO/UAP-AC-M-PRO_EN.html</p> <p>Secure the cable with zip ties to the conduit. Ensure that you neatly tighten down all slack in the ethernet cables in a safe location.</p> |  |

Task 6: Start up the system

| | | |
|---|---|--|
| 1 | Turn ON the power unit. |  |
| 2 | <p>Verify that the Turntide Supervisor has power and is running by checking the green RUN LED.</p> <p>Note: If the supervisor isn't powering up, perform a visual inspection of the Supervisor's USB port, located on the top edge next to the RJ45 Ethernet port. Debris in the USB port could short the pins preventing the Supervisor from powering up. If any material is observed in the port, remove the 24 VAC input power, clear the port, then reapply power.</p> |  |

| | |
|--|---|
| <p>3 Verify the LED on the modem is on:</p> <p>Green LED = Power and Connection to cell Blue LED = Cell strength</p> <p>Open and close the SIM card door on the modem to ensure it is properly closed. <i>An ajar SIM card door is the most common cause of an RMK not communicating.</i> For a video demonstration, see RMK Commissioning.</p> <p>See also: Signal Strength in the Appendix.</p> |   |
| <p>4 Ensure that the router is powered up. View the LED display on the MikroTik Router.</p> <p>Blue LED = Router is powered up. If no LED, check the wiring and 12 VDC power supply.</p> <p>Green LEDs = Indicates a good connection to the device on the associated router. If no LED, check the CAT6 ethernet cable connection and that the connected device is powered up.</p> |   |

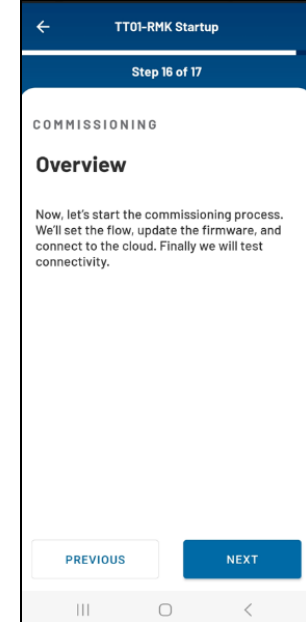
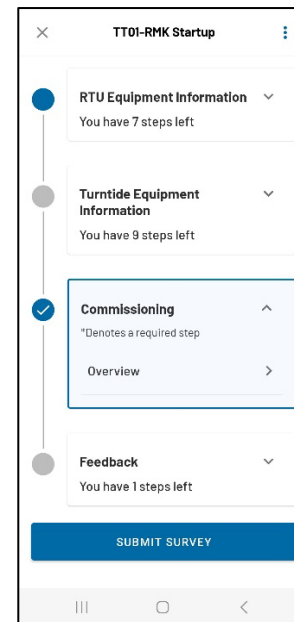
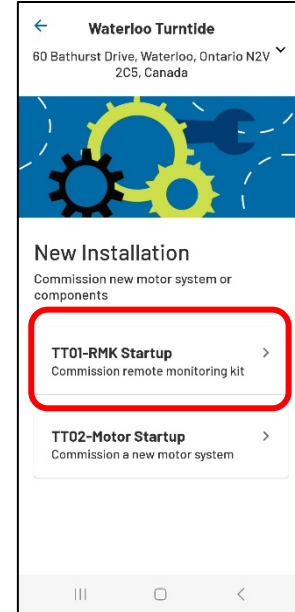
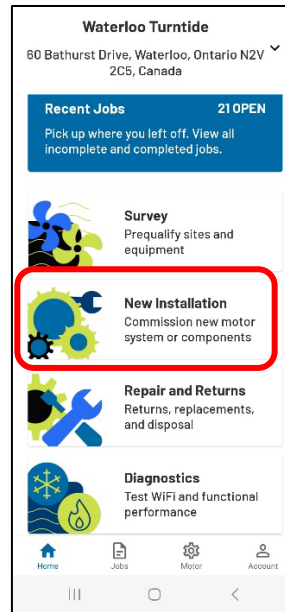
5

After physical installation is finished, use the **Turntide Technician App** to connect the RMK to a nearby active Turntide Smart Motor System.

The Turntide Technician App captures information about the RTU and Turntide equipment.

Follow the **Commissioning** steps which guide you through setting up the flow, updating the firmware, and connecting to the cloud.

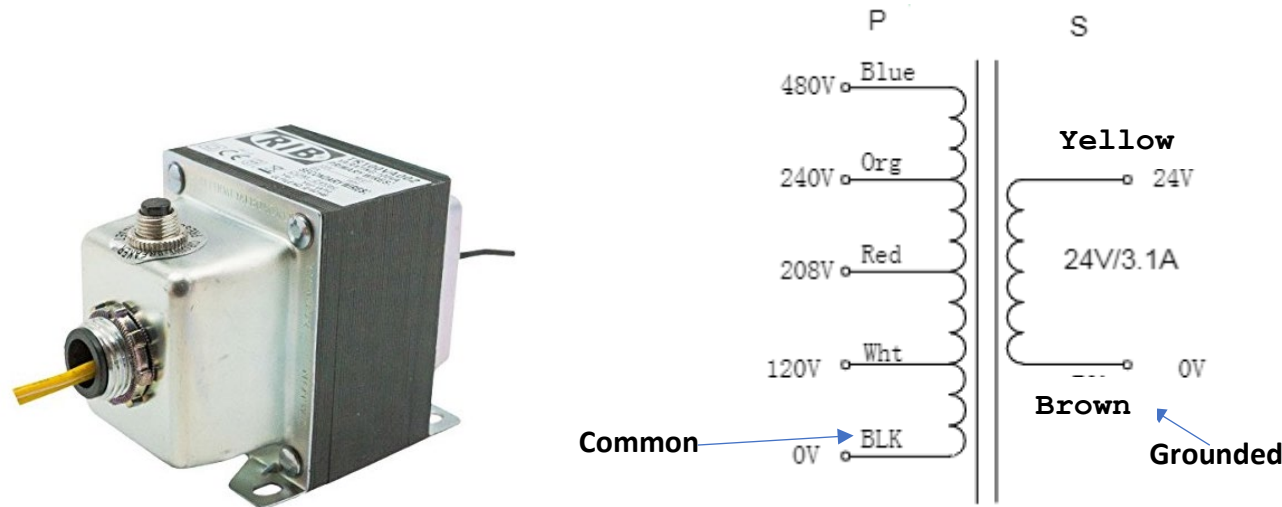
You can download the **Turntide Technician App User Guide** from the Technical Documents page on [Turntide Academy](#).



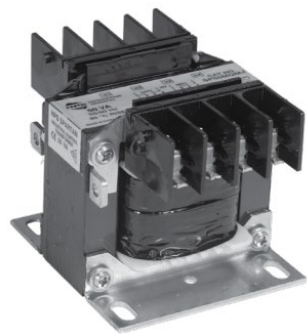
Appendix

Tap Connections

Transformer for US Customers

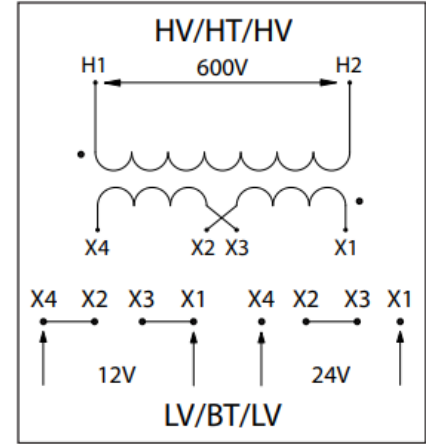


Transformer for Canadian Customers

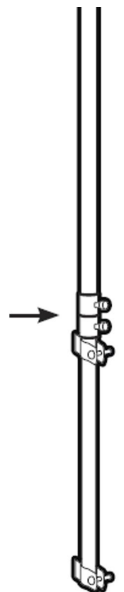
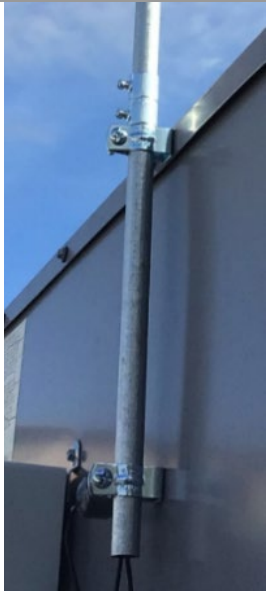


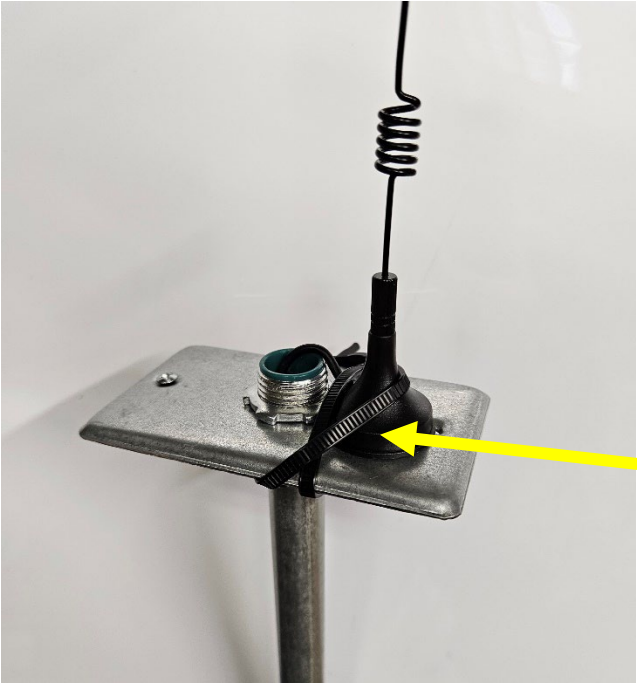
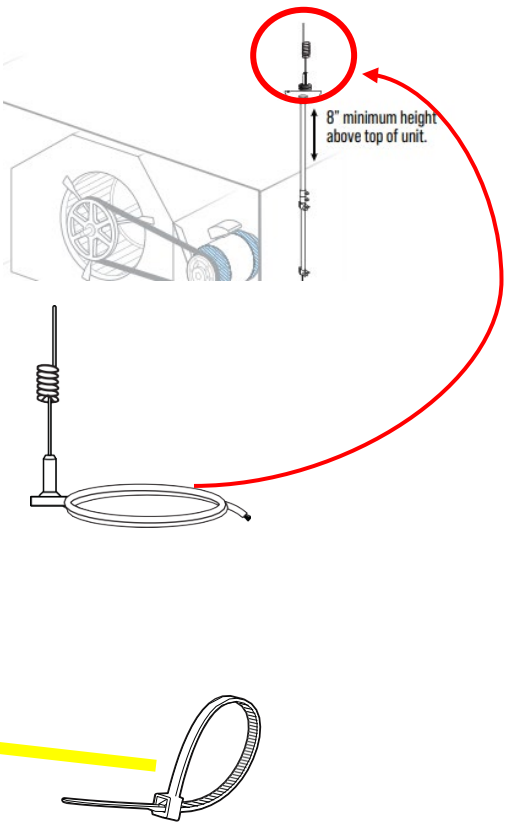
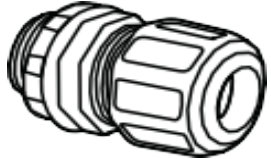
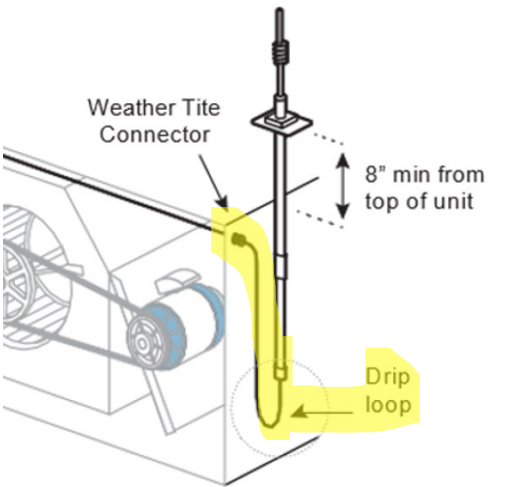
Connections for 600 HV to 12 x 24 LV
Branchements pour 600 HT à 12 x 24 BT
Conexiones de alta tensión de 600 V a baja tensión de 12 x 24 V

| | | |
|--|--|---------------------------------------|
| High Voltage (HV) (Primary Volts) | Install Supplied Jumpers Between Terminals | Supply Lines Connect To |
| Haute tension (HT) (Volts primaires) | Cavaliers fournis installés entre les bornes | Lignes d'alimentation Branchez sur |
| Alta Tensión (HV) (Voltios primarios) | Instale los puentes proporcionados Entre terminales | Líneas de suministro Conectar a |
| 600 | None/ Aucun/ Ninguno | H1, H2 |
| Low Voltage (LV) (Secondary Volts) | Install Supplied Links Between Terminals | Load Lines Connect To |
| Basse tension (BT) (Volts secondaires) | Barrettes fournies installées entre les bornes | Lignes de charge Branchez sur |
| Baja Tensión (LV) (Voltios secundarios) | Instale los enlaces proporcionados Entre terminales | Líneas de carga Conectar a |
| 12 | X1-X3, X2-X4 | X1, X4 |
| 24 | X2-X3 | X1, X4 |

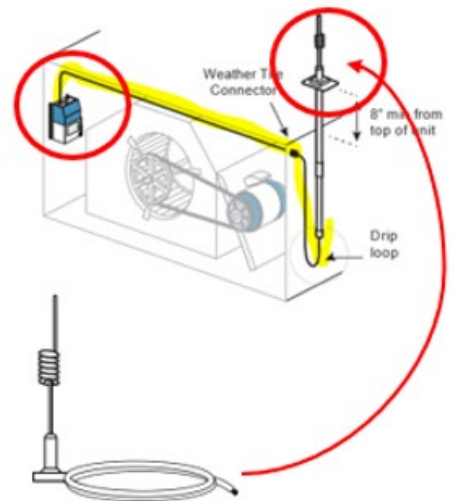


How to install the external Wi-Fi antenna with 3m cable on each RTU that is using a Turntide Motor System (Motor and Controller)

| | | |
|-----------------|---|--|
| <p>1</p> | <p>Connect the two EMT conduit sections using the EMT coupling.</p> <p>The Turntide Academy video at this URL point https://youtu.be/nTHlVFat8Bw?t=72 provides instructions for assembling the couplings.</p> |  |
| <p>2</p> | <p>Attach the assembled antenna riser (EMT conduit) to a non-removable panel of the HVAC unit using the two conduit hangers and sheet metal screws. The EMT conduit should be screwed/bolted to the side of the HVAC unit (rooftop unit).</p> |  |

| | | |
|-----------------|--|--|
| <p>3</p> | <ol style="list-style-type: none"> 1. Install the external Wi-Fi antenna with 3m cable on top of the EMT conduit base. 2. Use the cable ties to secure the antenna to the conduit base in a crisscross pattern. 3. Route the 3m cable of the antenna through the EMT conduit.  |  <p>8" minimum height above top of unit.</p> |
| <p>4</p> | <p>Drill a 7/8" hole into the side of the RTU and install the 1/2" Weather-Tite Connector from the <i>Antenna Riser Component Kit Shipped with Motor Controller</i>.</p> |  |
| <p>5</p> | <ol style="list-style-type: none"> 1. Route the antenna coax cable through the Weather-Tite Connector. 2. Tighten the connector over the coax only enough to grip the coax. Do not overtighten. 3. Fill the connector with silicone caulk. 4. Ensure you have a drip loop between the cable from the EMT conduit and the connection into the RTU. |  <p>Weather Tite Connector</p> <p>8" min from top of unit</p> <p>Drip loop</p> |

- 6**
1. Route the antenna coax cable through the RTU.
 2. Note that you must first **remove** the small pre-installed antenna on the P06 and SL121 motor controllers.
 3. Screw the 3m antenna cable into the Turntide motor controller.



Signal Strength

A received signal strength indicator (RSSI) is a measurement of how well your device hears a signal from an access point or router.

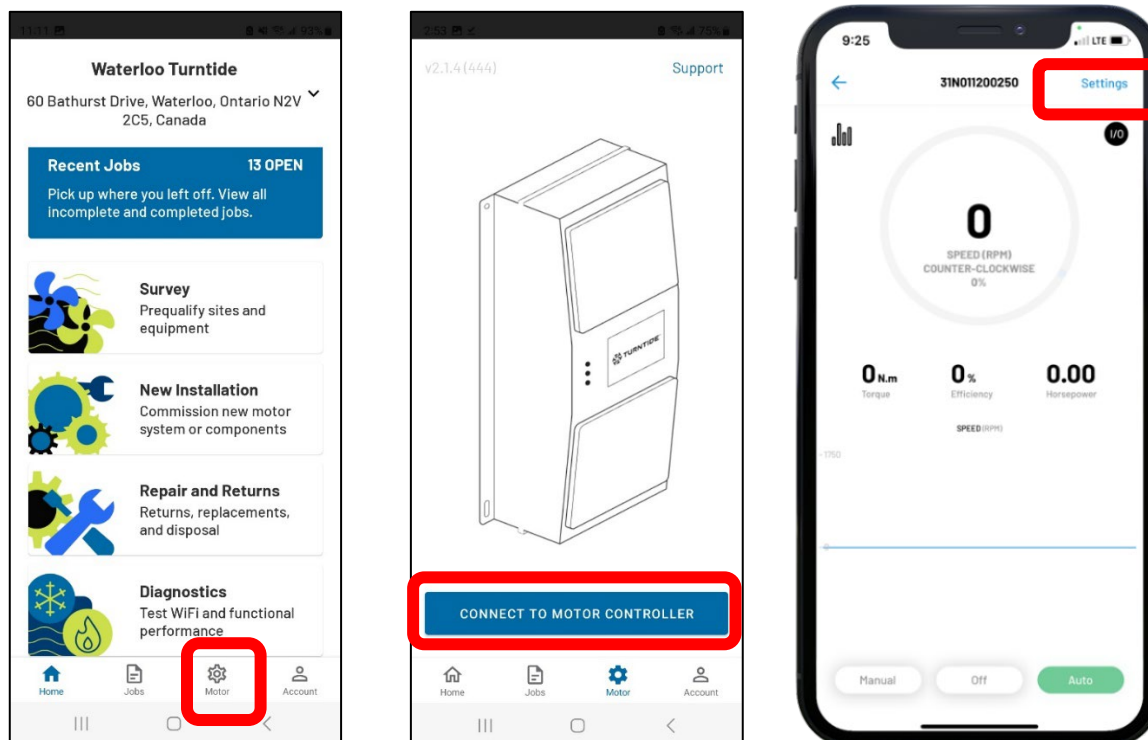
A poor signal strength indicates a problem either with the hardware supporting the connection (e.g., the motor controller or RMK antenna) or that the two devices are too far apart. **RSSI should be greater than -70 dBm** (smaller negative number).

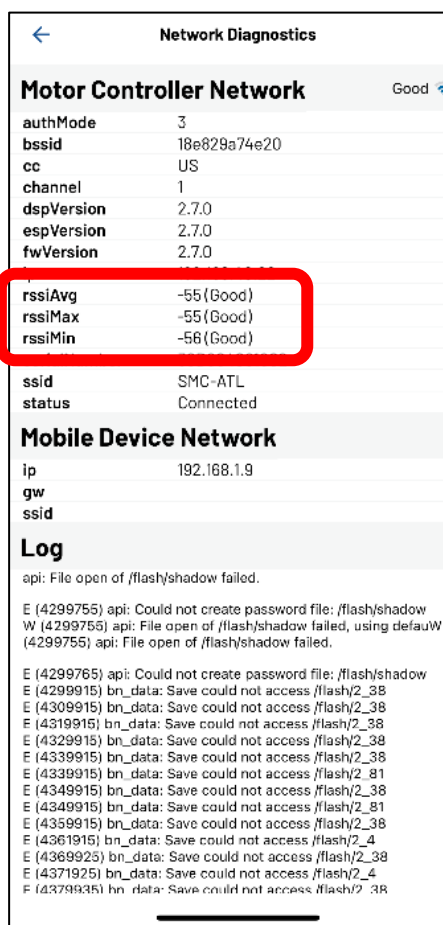
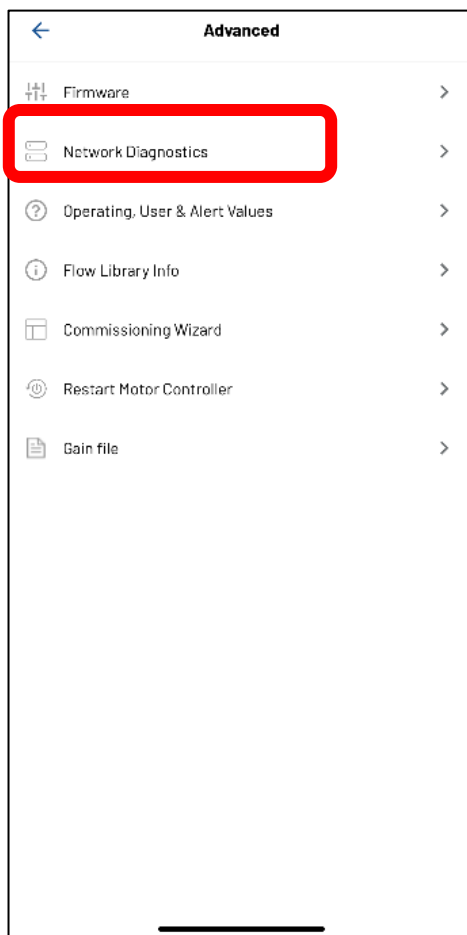


Wifi signal strength

You can view **RSSI signal strength** between a motor controller and the RMK it is connected to by using your **Turntide Technician App**.

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.
3. Tap **Settings** and then tap **Advanced Settings**.
4. Tap **Network diagnostics**. The Average, Maximum and Minimum RSSI values are displayed.





Note: Turntide Technical Services can remotely determine if you have weak signal strength between a motor controller and an RMK on a roof, and then provide you with the next steps to take.

TURNTIDE TECHNOLOGY FOR SUSTAINABLE OPERATIONS

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