



Building Operating System (BOS)

User Manual



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1. What is BOS?

The **Turntide Building Operating System (BOS)** is a software application that allows users to graphically see and interact with data from the Turntide Cloud. BOS monitors Turntide Smart Motor Systems and allows users to control motor fleets remotely.

BOS has the following structure:

Organization: Group of Sites and Users. Typically, the name of the organization is the name of the client or partner.

Site: Physical location with cloud-connected Turntide Motor Systems (i.e., a retail store, market place, restaurant, etc). Every Site belongs to an Organization.

User: Person with access to BOS. Each User belongs to at least one Organization. Within each Organization, a user is either a Member or an Administrator.

- Administrators have the ability to create sites, control motors remotely, and perform other important actions.
- Members only have the ability to see Sites belonging to the Organization.

BOS is a tool that is currently in process of integrating with riptideio.com in order to provide a more robust building management solution. Riptide is a monitoring and control system featuring an easy-to-use cloud-based app that works with any mobile device. It is a Smart Building solution designed specifically for small multi-unit operations and mid-sized facilities that lack a traditional automation system. Note that the upgrade from BOS to Riptide will not require any additional hardware and both teams are working on making the transition as seamlessly as possible.

2. Dashboard Set-Up

Access

To gain access to BOS, you need to contact Turntide Technical Support or your Turntide representative and request it. Prior to being granted access, you will be required to complete the appropriate courses within Turntide Academy and provide proof of access approval from your organization.

You will be added to the Organization(s) created by Turntide for the company that you work with.

Create a Site

In order to create a site, you will need three things:

1. Site Name: This will be how you search for the site specific dashboard. We recommend the following structure for ease of use: Site Name Store# - Street Address - City, State

2. Organization: This is the group under which the site will live. You will have access to all the sites that belong to the organization that you are a part of. This will likely be your company name if you are a Channel Partner or the name of the customer if they are a direct customer of Turntide.

3. Site Address: Needed to populate the map at the home screen of BOS.



Create a Site - Continued

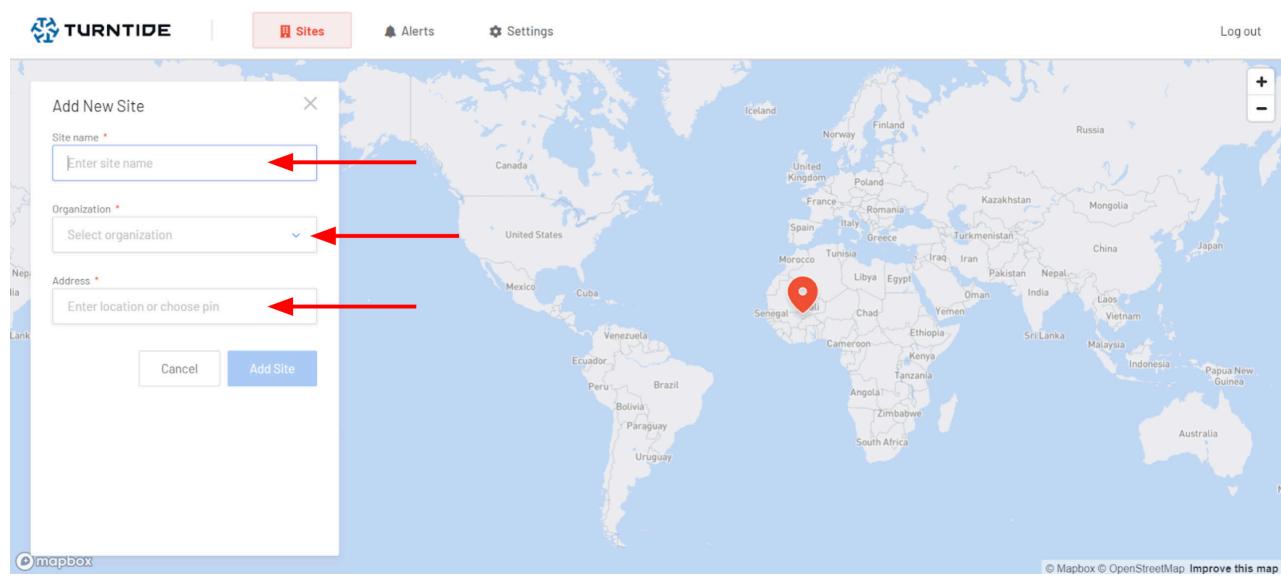
Once you have received access to BOS and have been assigned to an Organization, follow these steps:

1. Open [BOS](#).
2. Log in using your credentials.
3. Click on "+ Add Site":

The screenshot shows the Turntide BOS dashboard. At the top, there is a navigation bar with the Turntide logo, a 'Sites' button (which is highlighted in red), 'Alerts', 'Settings', and a 'Log out' link. Below the navigation bar is a search bar labeled 'Search site or location'. The main area features a world map with country names labeled. In the bottom-left corner of the map area, there is a green button with the text '+ Add Site'. A red arrow points from the left towards this button, indicating where the user should click. The map also includes standard zoom controls (+ and -) and a map attribution at the bottom right.

Create a Site - Continued

4. Enter information for the site, then click "Add Site":



5. You will have successfully created a site and will be redirected to its dashboard.
Note: The dashboard will be empty until a supervisor has been added to it.

The screenshot shows the Turntide BOS interface after site creation, displaying the 'Test' dashboard. At the top, there are navigation links: 'SITES' (highlighted in red), 'Alerts', and 'Settings'. On the right, there is a 'Log out' link. The main title of the dashboard is 'Test'. Below the title, there are three tabs: 'Summary' (highlighted in red), 'Analysis', and 'Configuration'. The 'Summary' tab is active. The dashboard features a section titled 'Metrics' with a table. The table has the following structure:

POINT	BACNET OBJECT	VALUE	MIN. PRIORITY	PRIORITY
No metrics				



Add a Supervisor

After creating the site, you must add a Supervisor to it in order to display the data that it captures. You will need the Supervisor Serial Number and Password. Both can be found on the underside of every Supervisor (you will find barcode labels that show the serial number and password for that device).



1. Open the configuration tab in the dashboard:

The screenshot shows the Turntide dashboard interface. At the top, there is a navigation bar with the Turntide logo, a red 'Sites' button, 'Alerts', 'Settings', and 'Log out'. Below the navigation bar, the title 'Test' is displayed above three tabs: 'Summary' (underlined), 'Analysis', and 'Configuration'. A red arrow points upwards from the 'Metrics' section towards the 'Configuration' tab. The 'Metrics' section contains a 'Filter' input field, a table header with columns 'POINT', 'BACNET OBJECT', 'VALUE', and 'PRIORITY', and a message 'No metrics'.

Add a Supervisor - Continued

2. Click "Add Supervisor":

The screenshot shows the TurnTide BOS interface with the 'Configuration' tab selected. In the 'Supervisors' section, there is a table with columns: SUPERVISOR, CASCADE FLOW, LAST COMMUNICATION, and FIRMWARE VERSION. To the right of the table is a blue 'Add Supervisor' button, which is highlighted with a red arrow.

3. Input the Supervisor Serial Number and Password, then click "Add Supervisor":

The screenshot shows the TurnTide BOS interface with a modal dialog box titled 'Add supervisor to Test'. The dialog contains two input fields: 'Supervisor Serial Number' (with placeholder text 'Example: 27C001234567') and 'Supervisor Password' (with placeholder text 'Example: c8jF9x2'). Below these fields are two buttons: 'Where can I find this?' and 'Cancel'. To the right of the 'Cancel' button is a blue 'Add Supervisor' button, which is highlighted with a red arrow. The background of the main interface is dimmed.



Add a Supervisor - Continued

4. You have successfully added a supervisor. You will be taken back to the configuration page:

The screenshot shows the Turntide configuration interface for a site named "Test". The top navigation bar includes links for "Sites", "Alerts", "Settings", and "Logout". The main content area is titled "Test" and has tabs for "Summary", "Analysis", and "Configuration", with "Configuration" being the active tab. Under the "Alerts" section, there are two toggle switches: "Allow new alerts to be created for this site" (on) and "Send me notifications about alerts at this site" (off). The "Supervisors" section contains a table with one row for a supervisor named "27C001223745" connected to a "CASCADE FLOW" unit. The table columns are "SUPERVISOR", "CASCADE FLOW", "LAST COMMUNICATION", and "FIRMWARE VERSION". The "Motors" section is currently empty.

5. Note: If the Supervisor is connected to the cloud, the Last Communication and Firmware sections will be updated. In addition, if there are any connected motors, they will automatically appear in the "Motors" section and dashboard summary pages:

This screenshot shows the same Turntide configuration interface for the "Test" site. The "Supervisors" section remains the same. In the "Motors" section, there is now a single entry for a motor with the ID "31N012300010", which is connected to a "SMC-P04W" model. The table columns are "MOTOR", "MODEL", "LAST COMMUNICATION", and "FIRMWARE VERSION". The firmware version is listed as "2.4.2 (old)" with a blue update icon. The rest of the interface is identical to the previous screenshot.

Edit Supervisor and Motor

The capabilities of BOS vary from renaming Supervisors and Motors, updating Firmware versions, loading control programs (referred to as flows) and graph available variables and data. This section will walk you through how to make these adjustments as necessary.

Renaming a Supervisor

1. Go to the "Configuration" tab:

The screenshot shows the BOS Test interface with the 'Configuration' tab selected. On the left, there's a 'Metrics' panel displaying a supervisor card with ID 31N012300010, status 'Operating normally', and a speed gauge at 1552 rpm. Below the metrics is a 'Supervisors' table with one entry: ID 27C001223745, model 'CASCADE FLOW', last communication 'Feb 10, 2021 12:37pm a minute ago', and firmware version '1.5.0'. To the right of the table is a three-dot menu icon.

2. Click the 3 dots at the end of the Supervisor row:

The screenshot shows the BOS Test interface with the 'Configuration' tab selected. It includes sections for 'Alerts' (with toggles for creating alerts and notifications), 'Supervisors' (a table with one entry: ID 27C001223745, model 'CASCADE FLOW', last communication 'Feb 10, 2021 12:37pm a minute ago', and firmware version '1.5.0'), and 'Motors' (a table with one entry: ID 31N012300010, model 'SMC-P04W', last communication 'Feb 10, 2021 12:37pm a minute ago', and firmware version '2.4.2 (old)'). Red arrows point to the three-dot menu icons at the end of the Supervisor and Motor rows in their respective tables.



Edit Supervisor and Motor - Continued

Renaming a Supervisor - Continued

3. Select "Rename" from the drop down menu:

The screenshot shows the Turntide software interface. At the top, there are navigation tabs: 'SITES' (highlighted in red), 'Alerts', and 'Settings'. On the right, there are links for 'Log out'. The main area is titled 'Test' and has three tabs: 'Summary', 'Analysis', and 'Configuration' (which is underlined).
Alerts: Contains two checkboxes: 'Allow new alerts to be created for this site' (unchecked) and 'Send me notifications about alerts at this site' (unchecked).
Supervisors: A table with columns: SUPERVISOR, MODEL, LAST COMMUNICATION, and FIRMWARE VERSION. One row is shown: 27C001223745, CASCADE FLOW, Feb 10, 2021 12:45pm a minute ago, 1.5.0. To the right of this row is a context menu with options: 'Add Supervisor', 'Rename' (highlighted with a red arrow), 'Update to latest firmware', and 'Load control logic'.
Motors: A table with columns: MOTOR, MODEL, LAST COMMUNICATION, and FIRMWARE VERSION. One row is shown: 3IN012300010, SMC-P04W, Feb 10, 2021 12:37pm 9 minutes ago, 2.4.2 (old). There is a 'More' button (three dots) next to this row.

4. Input the name that you'd like the supervisor to adopt. Click "Rename Supervisor":

The screenshot shows the Turntide software interface with a modal dialog box overlaid. The dialog is titled 'Rename 27C001223745'. It contains a single input field labeled 'Supervisor Name' with the value 'RTU-01' entered. Below the input field are two buttons: 'Cancel' and 'Rename Supervisor' (highlighted with a red arrow). The background of the interface is dimmed, and the 'Supervisors' section is visible, showing the supervisor list and the context menu from the previous screenshot.

Edit Supervisor and Motor - Continued

Renaming a Supervisor - Continued

5. You have now successfully changed the Supervisor name.

SUPERVISOR	CASCADE FLOW	LAST COMMUNICATION	FIRMWARE VERSION
RTU-01 27C00123745	1_unit_watnode:2019-03-01 12.31.28.117	Feb 10, 2021 12:49pm a minute ago	1.5.0

MOTOR	MODEL	LAST COMMUNICATION	FIRMWARE VERSION
3IN012300010	SMC-P04W	Feb 10, 2021 12:37pm 13 minutes ago	2.4.2 (old) +

Updating a Supervisor's Firmware Version

In order to update the Firmware version using BOS, the supervisor must be in Firmware 1.5.0 or a later released version. To update supervisors that are on a 1.4.X version or lower, please contact Turntide Technical support at (877)776-8470. If supervisor is already in Firmware version 1.5.0:

1. Go to the "Configuration" tab:

3IN012300010
3ID012300010

Operating normally

1552

0 1725

Speed(rpm)

Metrics



Edit Supervisor and Motor - Continued

Updating a Supervisor's Firmware Version - Continued

2. If the supervisor firmware is not up to date, you will see the current firmware version followed by Old (e.g "1.5.0 (Old)"). Currently, 1.5.0 is the latest released version of firmware for the supervisor.

Proceed to click the 3 dots at the end of the Supervisor row:

The screenshot shows the Turntide software interface with the 'Configuration' tab selected. In the 'Supervisors' section, there is a table with columns: SUPERVISOR, CASCADE FLOW, LAST COMMUNICATION, and FIRMWARE VERSION. One supervisor entry is shown with the following details: 27C001223745, 1_unit_wattnode:2019-03-01 12.31.28.117, Feb 10, 2021 12:37pm (a minute ago), and 1.5.0. A red arrow points to the three-dot menu icon next to the supervisor row.

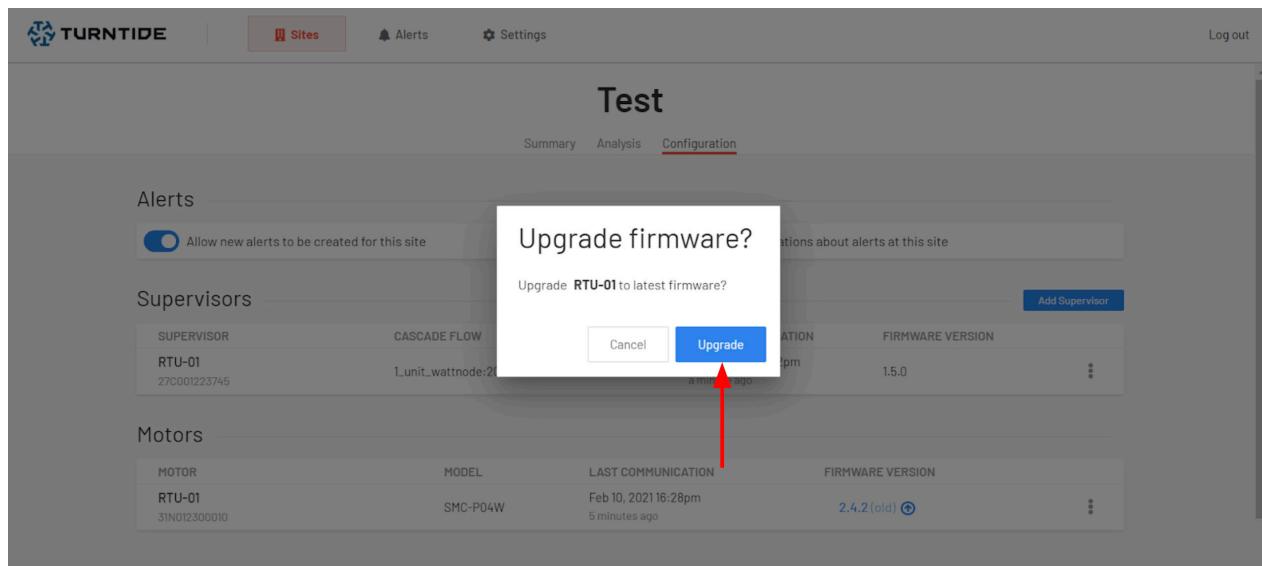
3. Select "Update to latest firmware" from the drop down menu:

The screenshot shows the Turntide software interface with the 'Configuration' tab selected. In the 'Supervisors' section, there is a table with columns: SUPERVISOR, CASCADE FLOW, LAST COMMUNICATION, and FIRMWARE VERSION. One supervisor entry is shown with the following details: RTU-01, 1_unit_wattnode:2019-03-01 12.31.28.117, Feb 10, 2021 16:30pm (a minute ago), and 1.5.0. A red arrow points to the three-dot menu icon next to the supervisor row. A context menu is open, showing options: Rename, Update to latest firmware (which is highlighted in blue), and Load control logic.

Edit Supervisor and Motor - Continued

Updating a Supervisor's Firmware Version - Continued

- Click "Update" from the pop up menu:

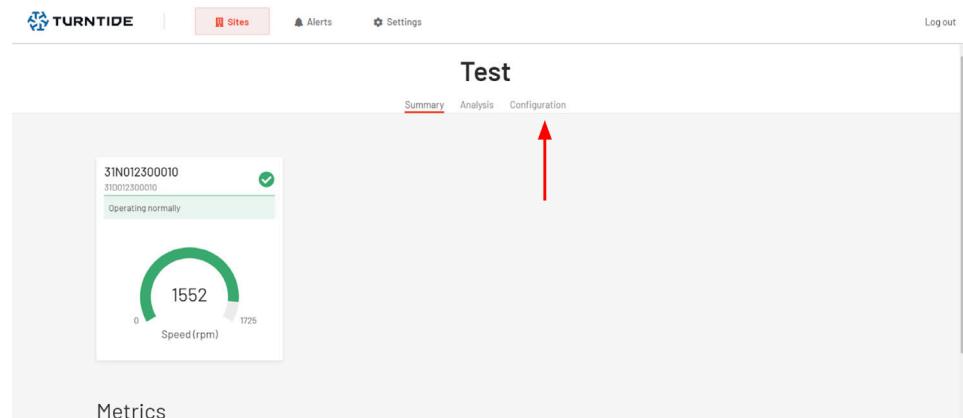


- Supervisor should show the new firmware version after ~5 minutes.
Refresh your browser if you have not seen any changes after 5 minutes.

Updating Motor Controller Logic Flow

In order to update the Logic flow using BOS, the Supervisor must be in Firmware 1.5.0 or later. To update supervisors that are on a 1.4.X version or lower, please contact Turntide Technical support at (877)776-8470. If supervisor is already in Firmware version 1.5.0:

- Go to the "Configuration" tab:





Edit Supervisor and Motor - Continued

Updating Motor Controller Logic Flow - Continued

2. Click the 3 dots at the end of the Motor row:

The screenshot shows the Turntide Test interface with the 'Configuration' tab selected. The 'Motors' section displays a table with the following data:

MOTOR	MODEL	LAST COMMUNICATION	FIRMWARE VERSION
RTU-01 3IN012300010	SMC-P04W	Feb 11, 2021 9:30am 3 minutes ago	2.4.2 (old) ⓘ

3. Select "Load Control Logic" from the drop down menu:

The screenshot shows the Turntide Test interface with the 'Configuration' tab selected. The 'Motors' section displays a table with the following data:

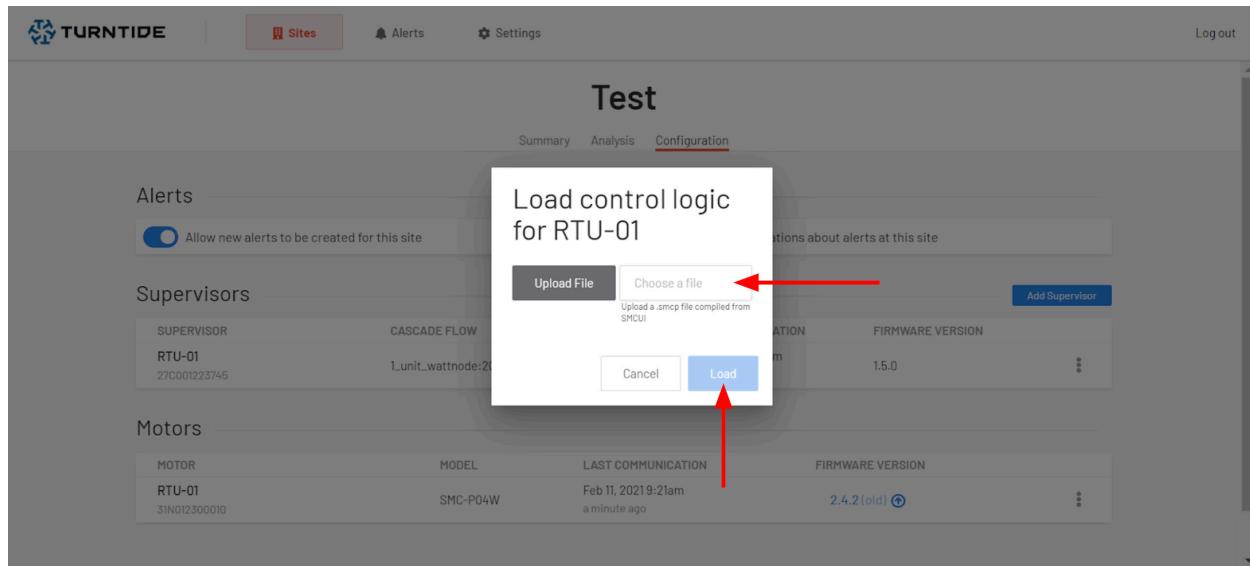
MOTOR	MODEL	LAST COMMUNICATION	FIRMWARE VERSION
RTU-01 3IN012300010	SMC-P04W	Feb 10, 2021 16:28pm 3 minutes ago	2.4.2 (old) ⓘ

A context menu is open over the RTU-01 entry in the 'Motors' table, with the 'Load control logic' option highlighted by a red arrow. Other options visible in the menu include 'Rename', 'Update to latest firmware', and 'Delete'.

Edit Supervisor and Motor - Continued

Updating Motor Controller Logic Flow - Continued

4. Click "Choose a file" from the pop up menu. Browse your computer to the location of the desired flow and select the file. Be aware that the file must be the compiled version or ".smcp" extension. Then click "Load":



5. Motor controller should show the new Flow after ~2 minutes.

Make sure that you refresh your browser if 5 minutes have elapsed and you do not see any changes.



3. Information Review

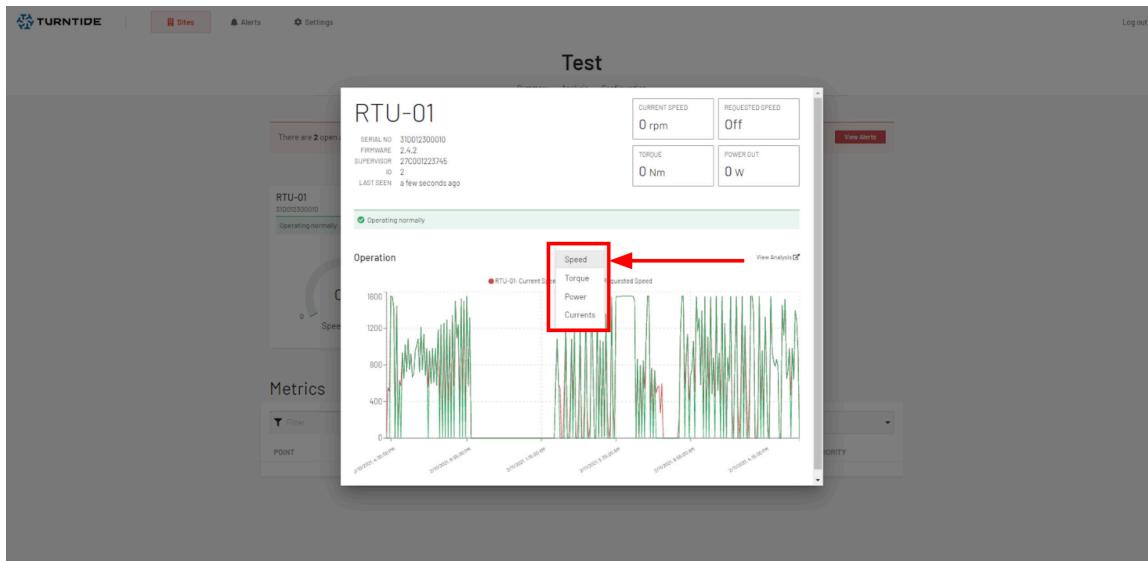
The Turntide Building Operating System (BOS) displays information about the motor systems and Energy Meter Kits that are installed on a site. The main dashboard shows a quick view of the current motor speed (status) and if there are any alerts present on the motor system.

In order to dive into the quick reference motor data, you can click on the motor and a pop up dashboard will appear displaying:

- Motor controller data
- Current motor status
- Last 24 hour operation (speed variables set as default)



You can access a quick view of other variables for the last 24 hour of operations by selecting one of the available options in the drop down menu:



To further dive into the data, you can access the "Analysis" tab by either clicking the link on the quick reference motor data pop up, or from the main screen of the dashboard as shown below:

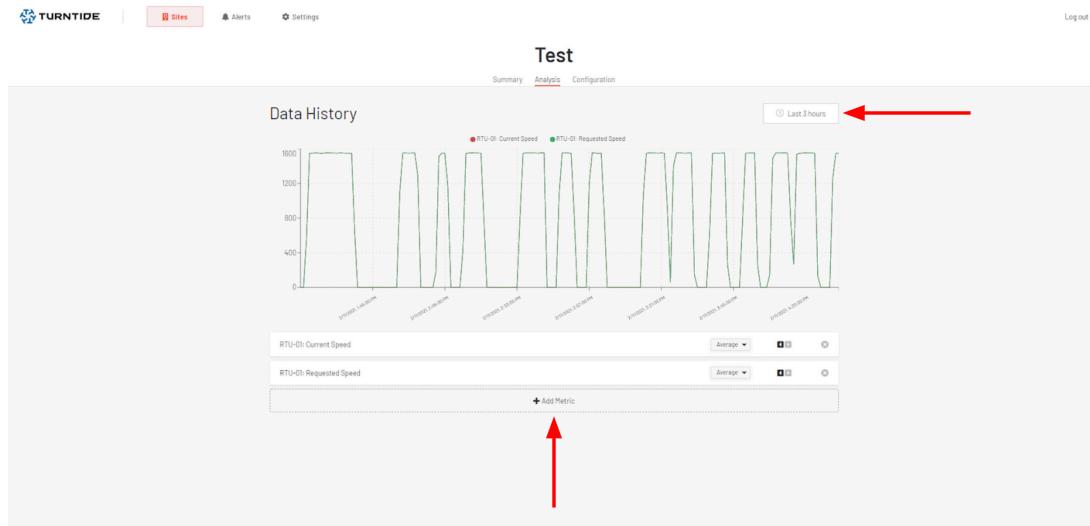
The screenshot shows the Turntide BOS interface. At the top, there are tabs for 'Sites' (highlighted in red), 'Alerts', and 'Settings'. On the left, a sidebar shows 'There are 2 sites' and a list for 'RTU-01'. The main area is titled 'Test' and displays a detailed view for 'RTU-01'. It includes a summary box with serial number, revision, supervisor ID, and last seen information. Below this are sections for 'CURRENT SPEED' (0 rpm), 'REQUESTED SPEED' (Off), 'TORQUE' (0 Nm), and 'POWER OUT' (0 W). A status indicator shows 'Operating normally'. A large chart titled 'Operation' shows 'Speed' over time, comparing 'RTU-01 Current Speed' (red line) and 'RTU-01 Requested Speed' (green line). A red arrow points to the 'View Analysis' button in the top right corner of this chart area.

The screenshot shows the Turntide BOS interface. At the top, there are tabs for 'Sites' (highlighted in red), 'Alerts', and 'Settings'. On the left, a sidebar shows 'There are 2 sites' and a list for 'RTU-01'. The main area is titled 'Test' and displays a detailed view for 'RTU-01'. It includes a summary box with serial number, revision, supervisor ID, and last seen information. Below this is a circular gauge showing 'Speed(rpm)' with a value of 1552. A red arrow points to the 'Analysis' tab at the top of the page.



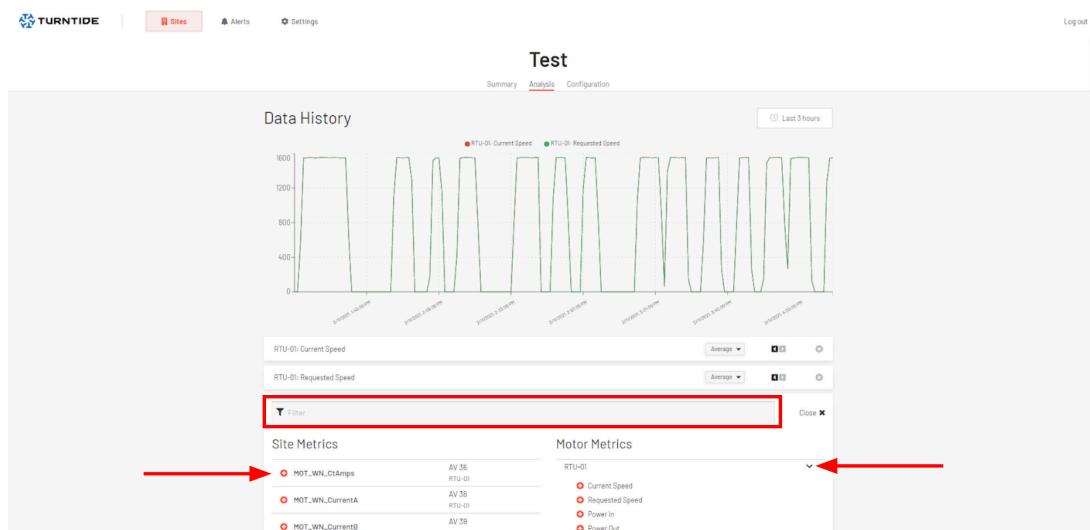
Once in the Analysis tab, you can perform the following operations:

- Change the time range
- Add metrics (Variables) (You can use the filter to search for a particular variable)
- Change variable to secondary Y axis (Recommended when displaying variables with different units)

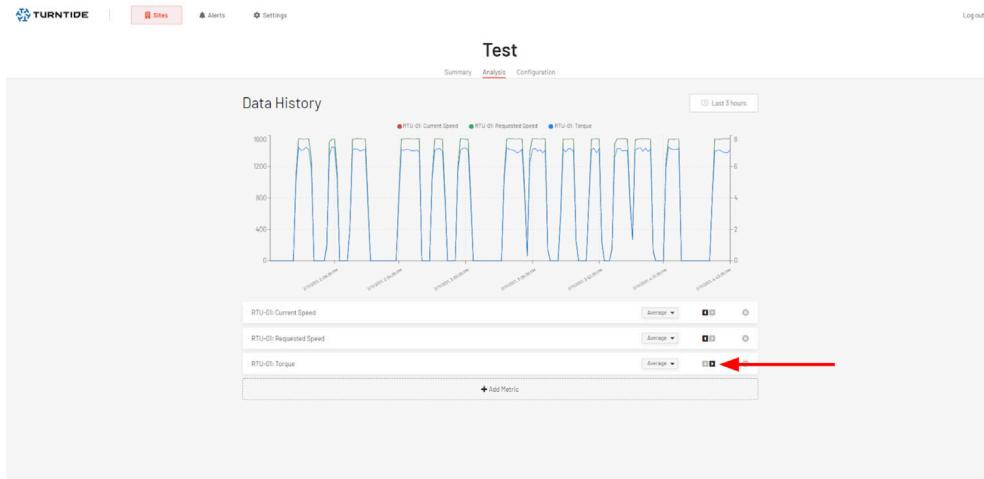


Metrics are displayed as follows:

- On the right side: for the Energy Meter Kit (EMK) and any variable available in the Supervisor logic
- On the left side: for all connected motor systems



To change a variable from the left Y axis to the right, simply press the right arrow next at the end of the variable bar. In the example below, Current Speed & Requested Speed are referenced to the left Y axis while Torque is referenced to the right Y axis:



Available Data in BOS

EMK Data

Variable	Bacnet Object	Unit	Description
WN_Uptime	AV29	Sec	WattNode Uptime
WN_EnergySum	AV30	kWh	Total net (bidirectional) energy
WN_PowerSum	AV31	W	Real power, sum of active phases
WN_PowerA	AV32	W	Real power, phase A
WN_PowerB	AV33	W	Real power, phase B
WN_PowerC	AV34	W	Real power, phase C
WN_CurrentA	AV38	A	RMS current, phase A
WN_CurrentB	AV39	A	RMS current, phase B
WN_CurrentC	AV40	A	RMS current, phase C
WN_VoltAvgLL	AV41	V	Average line-to-line voltage
WN_VoltAB	AV42	V	RMS voltage, line-to-line, phase A to B
WN_VoltBC	AV43	V	RMS voltage, line-to-line, phase B to C
WN_VoltAC	AV44	V	RMS voltage, line-to-line, phase A to C
WN_PowerFactorAvg	AV46	-	Power factor, average
WN_PowerFactorA	AV47	-	Power factor, phase A
WN_PowerFactorB	AV48	-	Power factor, phase B
WN_PowerFactorC	AV49	-	Power factor, phase C



Motor Data

Variable	Bacnet Object	Unit	Description
Current Speed	-	rpm	Speed Status
Requested Speed	-	rpm	Speed Command
Power In	-	W	Motor controller power input
Power Out	-	W	Motor shaft output power
Torque	-	Nm	Torque of motor
Current A	-	mA	Motor controller output current, phase A
Current B	-	mA	Motor controller output current, phase B
Current C	-	mA	Motor controller output current, phase C

Note: The available variables are subject to changes in the programming of the Motor Controller or Supervisor. If you need more data to be available via BOS, please contact Turntide Technical Support at (877)-776-8470.

4. Alerts and Recommended Actions

Navigating Alerts

Alerts are automatically created when there is an anomaly in the operation of the system. You can opt to receive email alerts for a particular site by enabling this functionality in the configuration tab of the site:

The screenshot shows the Turntide BOS interface with the 'Test' page selected. At the top, there are navigation tabs: 'Sites' (highlighted in red), 'Alerts', and 'Settings'. On the far right, there is a 'Log out' link. Below the tabs, the page title is 'Test' with sub-tabs 'Summary', 'Analysis', and 'Configuration' (underlined). The main content area is titled 'Alerts' and contains two toggle switches: 'Allow new alerts to be created for this site' and 'Send me notifications about alerts at this site'. An arrow points upwards from the bottom of the second toggle switch towards the 'Configuration' tab. Below the alerts section is a table titled 'Supervisors' with one row for 'RTU-01'. The table columns are: SUPERVISOR, MODEL, LAST COMMUNICATION, and FIRMWARE VERSION. The last communication was 'Feb 11, 2021 17:23pm' and the firmware version is '1.5.0'. There is a 'Add Supervisor' button. Below the supervisors is a table titled 'Motors' with one row for 'RTU-01'. The table columns are: MOTOR, MODEL, LAST COMMUNICATION, and FIRMWARE VERSION. The last communication was 'Feb 11, 2021 9:30am' and the firmware version is '2.4.2 (old)'. There is a 'More' button next to the last column.

Navigating Alerts - Continued

In order to navigate the alerts, you can click on the "Alerts" button of the top menu, and then search the site from the available list. If the site has any active alerts, they will be displayed in a clickable message on the main screen of the dashboard.

If you click on the "Alerts" button on the menu:

The screenshot shows the Turntide BOS dashboard. At the top, there is a navigation bar with the Turntide logo, a 'Sites' button (highlighted in red), an 'Alerts' button (also highlighted in red with a red arrow pointing to it), a 'Settings' button, and a 'Log out' link. Below the navigation bar, the page title is 'Test' with tabs for 'Summary', 'Analysis', and 'Configuration'. The main content area is titled 'Metrics' and displays a card for site '31N012300010' which is 'Operating normally'. It includes a circular gauge chart showing a speed of 1552 rpm out of a maximum of 1725. On the left side of the dashboard, there is a sidebar with a 'Site Name' dropdown set to 'All Sites' (highlighted in red with a red arrow pointing to it) and a count of 2072 sites, and a 'Site Name' input field.

The screenshot shows the Turntide BOS dashboard. At the top, there is a navigation bar with the Turntide logo, an 'Alerts' button (highlighted in red with a red arrow pointing to it), a 'Sites' button, a 'Settings' button, and a 'Log out' link. Below the navigation bar, the page title is 'Alerts' with a checkbox for 'Include closed alerts' and a count of 2072 alerts. The main content area displays a table of alerts:

ALERT	CREATED	STATUS	ACTION
RTU-4 has lost connectivity Organization / Site Name / RTU-4	Feb 12, 2021 3:19pm 5 minutes ago	TRIGGERED	...
RTU-5 has lost connectivity Organization / Site Name / RTU-5	Feb 12, 2021 3:15pm 9 minutes ago	TRIGGERED	...
P6 has lost connectivity Organization / Site Name / P6	Feb 12, 2021 2:56pm 28 minutes ago	TRIGGERED	...



Navigating Alerts - Continued

If the site has an alert:

The screenshot shows the Turntide interface for a site named "Test". At the top, there are navigation tabs: "Sites" (highlighted in red), "Alerts", and "Settings". On the right, there are links for "Log out" and a user icon. Below the tabs, the page title is "Test". Underneath the title, there are three tabs: "Summary" (highlighted in red), "Analysis", and "Configuration". A message box at the top left states "There are 2 open alerts that need attention". A red arrow points from this message to a "View Alerts" button on the right side of the screen. Below the message, there is a card for "RTU-01" with the ID "310012300010". The card shows a green checkmark and the status "Operating normally". Below this is a circular gauge with the number "0" and "1725", labeled "Off Speed(rpm)".

The screenshot shows the Turntide interface for the "Alerts" tab. At the top, there are navigation tabs: "Sites" (highlighted in red), "Alerts" (highlighted in red), and "Settings". On the right, there are links for "Log out" and a user icon. Below the tabs, the page title is "Alerts". There is a search bar with "All Sites" and "2072" results, and a filter section with "Site Name" and "3" alerts. A checkbox for "Include closed alerts" is checked. The main area displays a table of alerts:

ALERT	CREATED	STATUS	ACTION
RTU-4 has lost connectivity Organization / Site Name / RTU-4	Feb 12, 2021 3:19pm 5 minutes ago	TRIGGERED	⋮
RTU-5 has lost connectivity Organization / Site Name / RTU-5	Feb 12, 2021 3:15pm 9 minutes ago	TRIGGERED	⋮

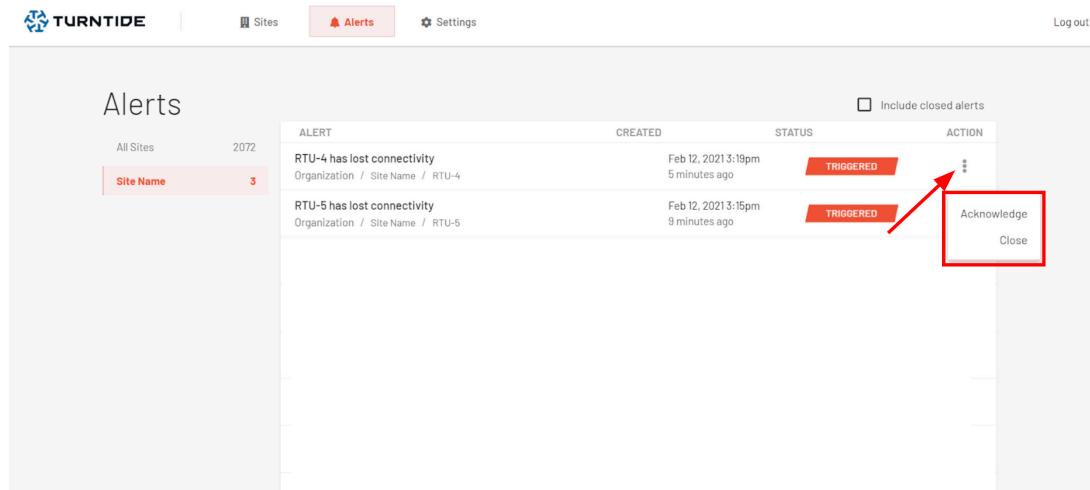
There are two main actions you can perform on an alert:

Acknowledge: Will not allow the alert to be triggered again if the circumstances of the alert are still occurring or re-occur. This only allows you to keep track of the alerts that you have seen and noted.

Close: This effectively closes the alert. If the circumstances that triggered the alert initially are still occurring or re-occur, the alert will be triggered again.

Navigating Alerts - Continued

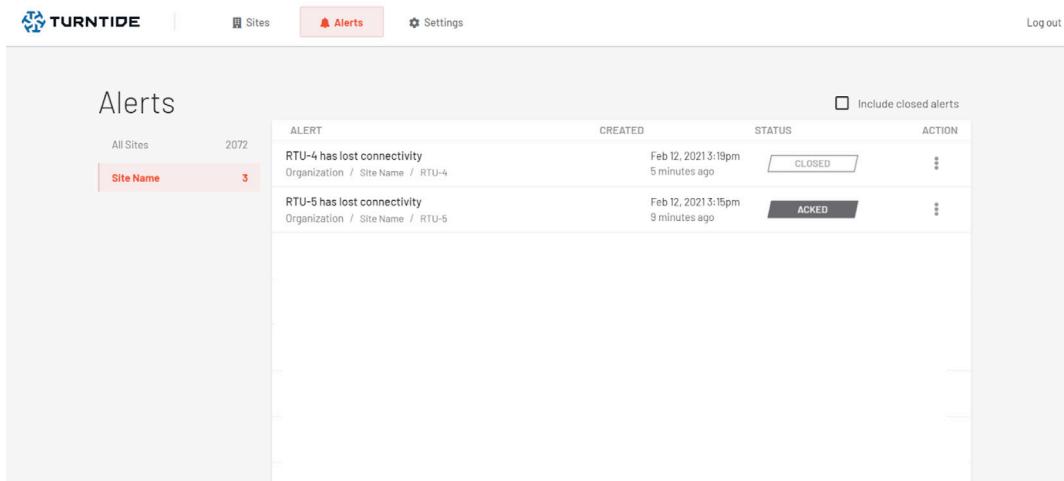
In order to perform these actions, click on the 3 dots at the end of the alert and select the one to perform from the pop up menu:



The screenshot shows the Turntide BOS interface with the 'Alerts' tab selected. There are two alerts listed:

ALERT	CREATED	STATUS	ACTION
RTU-4 has lost connectivity Organization / Site Name / RTU-4	Feb 12, 2021 3:19pm 5 minutes ago	TRIGGERED	⋮ Acknowledge Close
RTU-5 has lost connectivity Organization / Site Name / RTU-5	Feb 12, 2021 3:15pm 9 minutes ago	TRIGGERED	⋮

After the action is performed, the status of the alert will change.



The screenshot shows the Turntide BOS interface with the 'Alerts' tab selected. The alerts now reflect the changes made:

ALERT	CREATED	STATUS	ACTION
RTU-4 has lost connectivity Organization / Site Name / RTU-4	Feb 12, 2021 3:19pm 5 minutes ago	CLOSED	⋮
RTU-5 has lost connectivity Organization / Site Name / RTU-5	Feb 12, 2021 3:15pm 9 minutes ago	ACKED	⋮



Navigating Alerts - Continued

You can also see previous alerts on the site by clicking the check mark for "Include closed alerts" at the top right of the page.

ALERT	CREATED	STATUS	ACTION
RTU-4 has lost connectivity Organization / Site Name / RTU-4	Feb 12, 2021 3:19pm 5 minutes ago	CLOSED	...
RTU-5 has lost connectivity Organization / Site Name / RTU-5	Feb 12, 2021 3:15pm 9 minutes ago	ACKED	...
RTU 4 detected torque loss Organization / Site Name / RTU 4	Sep 10, 2020 4:01pm 5 months ago	CLOSED	...

Most Common Alerts and Recommended Actions

The actions listed in the steps below must be performed in compliance with the Turntide Service Manual and electrical code regulations for all on-site services to be performed.

The Service Manual can be found [here](#).

1. Supervisor Offline:

This alert is triggered when a supervisor does not communicate with the cloud for at least 30 minutes. It provides a message following this nomenclature: "Supervisor name (Serial number if no name was configured) cloud communication interrupted".

When the supervisor stops communicating with the cloud it is typically due to:

- Supervisor power is OFF.
- No network access.
- Supervisor software service is down.

If possible:

- Confirm the status of the site: Is there a power outage? Is there maintenance being performed on the site? Was power manually shut down for a specific reason?
- Confirm that Supervisor is powered on.
- Ensure that the modem that is providing the network is on.
- If possible, verify the quality of the network connection.
- If possible, power cycle the supervisor.
- For further assistance, contact Turntide Technical Support at (877)-776-8470.

Most Common Alerts and Recommended Actions - Continued

2. Motor Controller Offline:

This alert is triggered when a motor controller does not communicate with the supervisor for at least 10 minutes. It provides a message following this nomenclature: "Motor name (Serial number if no name was configured) has lost connectivity".

When the motor controller stops communicating with the supervisor it is typically due to:

- Motor controller has no power.
- No network access.
- Supervisor power is Off.
- Supervisor software service is down.

If possible:

- Confirm the status of the site: Is there a power outage? Is there maintenance being performed on the site? Was power manually shut down for a specific reason?
- Confirm that the unit is powered on.
- Confirm that the Motor controller has power.
- Ensure that the modem that is providing the network is on.
- If possible, verify the quality of the network connection.
- If possible, power cycle the unit.
- For further assistance, contact Turntide Technical support at (877)-776-8470.

3. Speed Mismatch:

This alert is triggered when a motor current speed is not within a 10rpm threshold regarding the motor requested speed for at least 10 minutes. It provides a message following this nomenclature: "Motor name (Serial # if no name was configured) could not reach requested speed".

When there is a speed mismatch in the motor, it is typically due to:

- Mechanical issue: failure of the pulley, belt, bearings or squirrel cage.
- Data averaging is triggering an alarm

If possible:

- Confirm the status of the motor: Is it currently running? Is the current speed matching the requested speed?.
- Check if there has been any changes in the motor torque: Is the value higher than the average for the system?.
- If possible, confirm that there is no mechanical issue.
- For further assistance, contact Turntide Technical Support at (877)-776-8470.



Most Common Alerts and Recommended Actions - Continued

4. Low Torque

This alert is triggered when the motor torque is below the following threshold for at least 10 minutes:

- V01: 0.18 Nm
- V02: 0.9 Nm
- V03: 0.18 Nm

The alert provides a message following this nomenclature: "*Motor name (Serial number if no name was configured) has lost connectivity*".

When there is a speed mismatch in the motor, it is typically due to:

- Mechanical issue, e.g: failure of the pulley, squirrel cage, belt, bearings or shaft.
- Data averaging is triggering an alarm

If possible:

- Confirm the status of the motor: Is it currently running? Is the current speed matching the requested speed?
- Check if there has been any changes in the motor torque: Is the value lower than the average for the system?
- Verify correct rotation direction of the motor/blower.
- If possible, confirm that there are no mechanical issues affecting the blower.
- For further assistance, contact Turntide Technical Support at (877)-776-8470.

Contact Us

If you encounter issues that are not covered in this User Manual, or have other questions about the Turntide Motor System as it relates to your specific application, please contact Turntide's Customer Success team.

877.776.8470

support@turntide.com

1295 Forgewood Avenue
Sunnyvale, CA 94089
www.turntide.com

Indemnity

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support@turntide.com

877.776.8470

Turntide Technologies (formerly Software Motor Company) has developed the world's most efficient and intelligent electric motor system. The revolutionary Smart Motor System is based on proven switched reluctance technology, now managed with advanced cloud software and connected to precise controls via IoT. Turntide's vision is to eliminate the 25% of global electricity consumption that is wasted by legacy motors, thus accelerating the world's transition from fossil fuels. Turntide is based in Sunnyvale, Calif., with offices in San Francisco; Arlington, Wash.; and Kennesaw, Ga. Turntide has installed Smart Motor Systems with dozens of customers, reducing their motor electricity consumption by an average of 64%, and is powering the systems of leading OEMs. For further information, visit www.turntide.com.