FiveCubits
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Configuration Guide

Truck Probe
Truck Probe Configuration Guide (for Implementation Team) V 0.1
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Contents

Revision History

Date	Version	Author	Notes
02/13/2017	0.1	John Wight	Initial Version

Truck Probe Configuration

To set up truck probe features, you will configure settings in TrackIt and TrackitWare.

Configure TrackIt Settings

TrackIt Web Truck Probe Settings includes the following tasks:

1. Enabling Licenses
2. Configuring Probe Properties
3. Assigning Licenses to Equipment
4. Configuring the OBC for Wifi
5. Configuring Interface Settings
6. Adding Status Cards
7. Adding Probe Alerts
8. Configuring Rollover Display on Map

Enable Licenses

To enable licenses, follow these steps:

1. Click **Settings** > **Site Settings** > **TrackIt Licenses**.
2. Allocate **Probe** licenses in the table on the right, if not already provided. Set the **Probe** license to **True** in the table on the left.
3. Allocate **Engine Diagnostic** licenses in that table on the right, if not already provided. Set the **Engine Diagnostics** license to **True**, if not already set.
4. Allocate **Integration Webkey** licenses in the table on the right, if not already provided. Set the **TrackIt Ticket Integration** license to **True**, if not already set.
5. Allocate **OBC Wifi Hotspot** licenses in the table on the right.
6. Allocate **Report Webkey** licenses in the table on the right, if not already provided, for users wanting to view Probe-based reports, such as the **Batch Slump Report**.

7. Select **Enforce License Restrictions**, if applicable. This will keep users from enabling licenses that have not been allocated.

8. Click **Save Settings**.

Configure Probe Properties

To set up probe properties, follow these steps:

1. Configure probe calibration tables.

2. Configure probe drum type.

3. Configure probe status changes.

4. Configure probe system settings.

Configure Probe Calibration Tables

To set up the probe calibration tables, follow these steps:

1. Click **Settings** > **Probe** > **Probe Setup**.

2. Select the **Probe** Type.
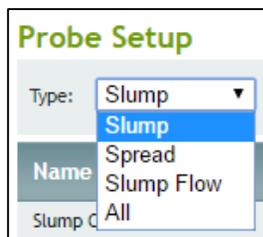
3. Click the **Add Configuration** button in the upper right of your screen.

4. Type a name for your probe setup.

5. Click the **Add Row** button and add values for the **Pressure** and **Workability** variables in the table.

6. Specify the concrete product codes you want to associate with this table. The code is matched with ticket data. Although each ticket can only have one concrete product code, the calibration table can have many tickets associated with it through the product code.

7. Select the **Default Calibration Table** option if you want to use this table as the calibration for any product that is not listed.

8. Click **Save & Close**.

The calibration table is listed and summarized on the **Probe Setup** page.

Configure Probe Drum Type

To specify the probe drum type, follow these steps:

1. Click **Settings** > **Probe** > **Probe Drum Type**.

2. Click the **Add Drum Type** button in the upper right of your screen.

3. Type a **Name** for your drum type.

4. On the **Drum** tab, specify values for the shown fields. Refer to the drum manufacturer documentation for the correct values.

Configure Probe Status Changes

To configure probe status changes, follow these steps:

1. In TrackIt, add a new status to the loop you are using for the probe.
Click **Settings** > **Status** > **Status** and then click the **Add New Status** button. Specify the status options and click **Save**.

2. Click **Settings** > **Probe** > **Probe Status Changes**.

3. Specify the status loop for the probe.

4. Optionally, if you want auto-statusing from the Truck Probe, specify the status you want to be triggered by **Fully mixed**.

5. Optionally, if you want auto-statusing from the Truck Probe, specify the status you want to be triggered by **Begin Pour**.

6. Optionally, if you want auto-statusing from the Truck Probe, specify the status you want to be triggered by **Washing**.

7. Click **Save Settings**.

Configure Probe System Settings

To configure probe system settings, follow these steps:

1. Click **Settings** > **Probe** > **Probe System Settings**.

2. Specify the settings for the probe. Refer to the following table for more information.

3. Click **Save Settings**.

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Probe System Settings

Setting	Description
Temperature Units	Specify Fahrenheit or Celsius (displayed on **Load Properties** card)
Work Units	Specify Inch, Millimeter, or Centimeter (displayed on **Load Properties** card)
Work Precision	Specify the increment that values should be rounded to before being displayed for workability numbers. For example, specifying the value .25 results in values being rounded to the nearest .25 and then being displayed as a rounded figure with a maximum of three digits. Therefore, the value 10.374419 would be rounded to the nearest .25 to the value 10.25 but then displayed as 10.3 because it is rounded again to the fit into three digits.
Initial Volume Precision	Specify the increment that values should be rounded to before being displayed as the initial volume. Rounding for initial volume differs from conventional rounding in that values are rounded up when a threshold of 20% or more of the specified precision value is reached, instead of the usual 50%. For example, an actual volume of 7.10 with a specified precision of 0.5 results in a display of 7.50 because 0.1 is equal to 20% of 0.5; therefore, it is rounded to 7.50.
Unloading Volume Precision	Specify the increment that values should be rounded to before being displayed for volume unloading numbers. For example, specifying the value .25 results in values being rounded to the nearest .25 and then being displayed as a rounded figure with a maximum of three digits. Therefore, the value 10.374419 would be rounded to the nearest .25 to the value 10.25 but then displayed as 10.3 because it is rounded again to the fit into three digits.
Volume Units	Specify Cubic Yards or Cubic Meters (displayed on **Load Properties** card)
Water Units	Specify Gallons, Liters, Cubic Yards, or Cubic Meters
Flow Meter Volume Per Pulse	Specify the amount of water volume per pulse for the Flow Meter, according to the volume units specified
Sleep Delay	Specify the number of seconds of inactivity before the probe system goes into sleep mode for power saving
Temperature Change Alarm	Specify the number of degrees (in previously specified units) that will trigger a temperature alarm if an increase happens within a four-second interval. The temperature display blinks while the alarm is in effect.

Setting	Description
Temperature Alarm Duration	Specify the number of minutes the alarm should last
Turn Counter	Select enable to show the turn count of drum instead of the voltage on the voltage display
Speed Display	Select enable to show speed on probe receiver
Pressure Display	Select enable to show pressure on probe receiver
Yield Display	Select enable to show yield on probe receiver
Viscosity Display	Select enable to show viscosity on probe receiver
Voltage Display	Select enable to show voltage on probe receiver
Workability Display	Select enable to show workability on probe receiver
Temperature Display	Select enable to show temperature on probe receiver
Volume Display	Select enable to show volume on probe receiver

Assign Licenses to Equipment

To assign licenses to equipment, follow these steps:

1. Click **Settings** > **Equipment** and then click the edit icon for the equipment to be assigned.
2. Click the **Probe** tab.
3. Select the **Probe Drum Type**, as configured in the **Probe Properties Setup**.
4. Type the amount of water volume per pulse for the Flow Meter.
5. Select the unit of measurement to associate with the water volume measurements.

   Note: If steps 4 and 5 are skipped, the values specified on the Probe System Settings page will be used.

6. Type the **Probe** Serial **Number**, as found on the unit.

7. Type the **Probe Bluetooth UUID**.

8. Type the **Probe MAC Address**. This can be found in the Probe manual.

9. Click **Save**.

Configure the OBC for Wifi

To configure Wifi for OBCs, follow these steps:

1. Click **Settings** > **Tracking Device** and then click the edit icon next to the OBC device to be configured.

2. On the **Data** tab, specify the **Assigned Vehicle.**

3. On the **License** tab, select the check box for **OBC Wifi Hotspot License**. If this check box is left unselected, the OBC uses Bluetooth connectivity.

4. Click **Save**.
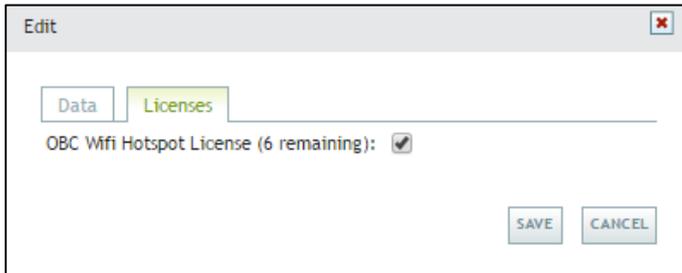
Configure Interface Settings

To configure interface settings for the probe, follow these steps:

1. Click **Settings** > **Interface** and then click the Edit icon.

2. Select the **Allow Probe Polling** option.

3. If integrating with Command QC, select the **Ticket History Polling** option and specify the **Ticket History Poll Time** and the **Ticket History Poll Cut Off Hrs** values.

4. Specify the **Min Probe Poll Time** as the minimum number of seconds to wait between polling intervals.

5. Select the **Allow Water Added Polling** option.

6. Specify the **Min Water Added Polling** as the minimum number of seconds to wait between polling intervals for water adding.

7.

8. Specify the **Water Added Poll Cut Off Hrs** as the number of hours after which poll data will not be sent to the interface.

9. Click **Save**.

Add Status Cards

To set up statuses for probe information, add the following cards to the status:

- Ticket
- Load Properties

Add Ticket Card

To add **Ticket** cards for probe-related statuses, follow these steps:

1. Click **Settings** > **Status** > **Status** and then click the Edit icon next to a status that will include the **Ticket** card and the use of probe data.

2. Click the **Card** tab and select the **Ticket #** option.

3. Click the **Add to Status** button.

4. Click **Save** and repeat the steps for each status in which you want to use probe data.
   The **Ticket** card will also appear on the TrackIt app display for each configured status.
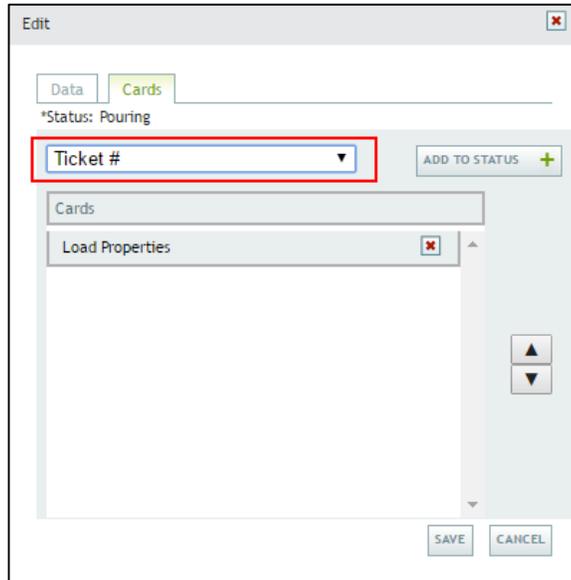
Add Load Properties Card

To add **Load Properties** cards to probe-related statuses, follow these steps**:**

1. Click **Settings** > **Status** > **Status** and then click the **Edit** icon next to a status that will include the **Load Properties** card and the use of probe data.

2. Click the **Card** tab and select the **Load Properties** option.

3.

4. Click the **Add to Status** button.

5. Click **Save** and repeat the steps for each status in which you want to use probe data.
The **Load Properties** card will also appear on the TrackIt app display for each configured status.
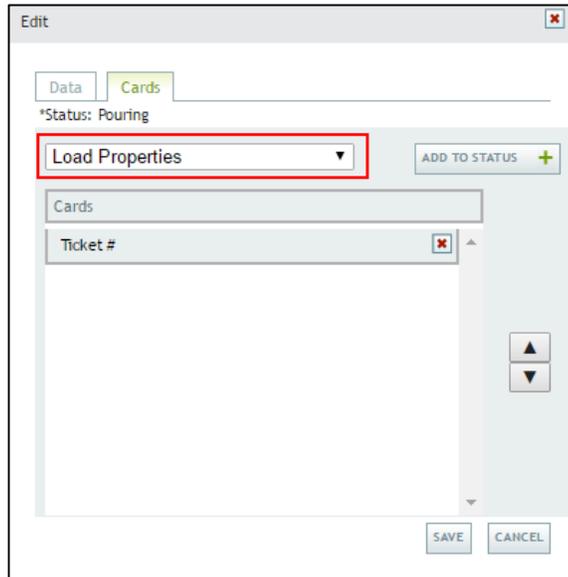
Add Probe Alerts

You can configure the following alerts to be associated with probe measurements. The text of the alert message is specified in setup.

- **Temperature out of Tolerance**: Alerts when temperature exceeds thresholds specified in ticket creation.

- **Slump out of Tolerance**: Alerts when slump tolerance exceeds thresholds specified in ticket creation.

- **Max Water Allowed Exceeded**: Alerts when maximum amount of water allowed exceeds threshold as set in batch creation.

- **Overmixing**: Alerts when mixing time has exceeded threshold set in ticket creation or when adding the alert. The **Overmixing** alert is set as a **Status Reminder Alert** when adding it. Before adding the alert, add a Status Reminder based on the status that correlates with **Fully Mixed**, as shown.

Countdown time for status reminder. This time is displayed in red on the App and decreases until alert appears. This field applies when no **Wait Time** value is present in ticket.

Status that correlates to **Fully Mixed**

Select **overmixing** for probe configurations. This sets the **Wait Time** values to those in ticket creation. Ticket values take precedence over values set in this box.

Settings > Status > Status Reminder > Add

Alerts appear both in TrackIt and the TrackIt App. To set alerts based on probe information, follow these steps:

1. Click **Settings** > **Alerts** and then click **Add Alert** button.

2. For Alert Types, select one of the probe alert options.

3. For **Alert Description**, type the description you want for the alert.

4. Click the **Add Alert** button.

5. In the **Alert** dialog box, type the **Name** of the alert and select the **Status** to associate with the alert.

6. On the **Filters** tab, select the **Equipment Type**, **Equipment Group**, **Employee Type**, and **Employee Group** you want to associate with the alert.

7. On the **Driver Messages** tab, type the text of the message you want to send to the driver with the alert. This is an optional field.

8. On the **Notification** tab, type the text of the **On message**, or the text that is sent to the dispatch system for notification that the measurement is out of tolerance. This is an optional field and is not applicable to the Maximum Water Alert.

9. On the **Notification** tab, type the text of the **Off message**, or the text that is sent to the dispatch system for notification that the measurement is now within tolerance. This is an optional field. This step is not applicable for the **Water Allowed** alert.

10. Select the **Severity** of the alert.

11. Select the **Show on map** option to make the alert icon appear on the map with the equipment.

12. To send email messages associated with the alert, click the **Add Row** button.

13. Select the **Email Group** you want to receive emails for the alert. You can add new rows for each email group.

14. Click **Save & Close**.

15. Repeat these steps for each of the alert types you want to add for probe data.

Add Alert: Filters Tab

Add Alert: Driver Messages Tab

Add Alert: Notification Tab

Configure Rollover Display on Map

You can configure probe information to display for equipment on the map by following these steps:

1. Click **Settings** > **Site Settings** and then click the **Hotspot/Map** tab.

2. Specify the general settings for the Dispatch Map, if not already specified.

3. For probe-related information display, click the **Edit Vehicle Rollover** button.

4. On the **Edit Vehicle Rollover** box, select the **Attribute Name** associated with the probe information you want to display.

5. Select and copy the **Attribute Key** corresponding to the **Attribute Name**.

6. Paste the **Attribute Key** into a blank **Value** field.

7. Type the **Description** next to the **Value** in the corresponding field.

8. Click **Save**.

Refer to the following table for descriptions of probe-related data that can be displayed on the map rollover:

Probe Data Available for Map

Attribute Name	Description
Probe Battery Status	Displays charge of battery, as follows: 0 = low (< 33%) 1 = middle (< 50%) 2 = high (< 75%) 3 = full (> 75%)
Probe Cement	Displays temperature of probe sensor
Probe Concrete Temperature	Displays temperature of concrete

Attribute Name	Description
Battery Status	Charge of probe battery, as follows: 0 = low (<33%) 1 = middle (<50%) 2 = high (<75%) 3 = full (>75%)
Probe Diagnostic Code	This display is best used as a troubleshooting tool. The diagnostic code displayed is a hexadecimal unsigned integer corresponding to conditions as follows: Bit0 > 0x1 : high probe temperature Bit1 > 0x2 : low probe temperature Bit2 > 0x4 : high workability Bit3 > 0x8 : low workability Bit4 > 0x10 : probe dirty Bit5 > 0x20 : bad sleep angle Bit6 > 0x40 : flowmeter failure Bit7 > 0x80 : drum status failure Bit8 > 0x100 : NYI not yet
Direction	Current drum turn direction: positive or negative
Negative Turns	Total number of negative drum turns
Positive Turns	Total number of positive drum turns
Volume Ratio	Percentage of time the probe is submerged during the drum turn, e.g. 0.5 = 50%
Positive Speed	Drum speed in revolutions per minute
Probe Cement	Temperature of probe sensor

Attribute Name	Description
Temperature	Temperature of concrete
Volume	Amount of concrete in drum according to measurement units specified in settings
Pressure	Pressure of drum at the probe location in kPa
Slump	Current slump of concrete
Unloading Rate	Rate the drum is unloading, usually measured in cubic yards per minute
Water Added	Total amount of water added for current load according to measurement units specified in settings
Extra Water	Amount of water currently in the load that exceeds the Water Allowed, or the specified maximum water/cement ratio. For example, if the maximum water/cement ratio is .1 then the total amount of water in the load must be 10% or less of the load to avoid an Extra water condition. If the amount of water is less Than 10%, then a water allowed value will be displayed for the load.
Water Allowed	The amount of water that can be added to a load before it exceeds the maximum water/cement ratio. For example, if the maximum water/cement ratio is .1 then the total amount of water in the load must be 10% or less of the load to avoid an extra water condition. If the amount of water is less than 10%, then a water allowed value will be present for the load.

Configure TrackItWare

To set up Truck Probe Settings in TrackItWare:

- Configure Sync Settings
- Configure Status Mappings
- Configure IBB Settings
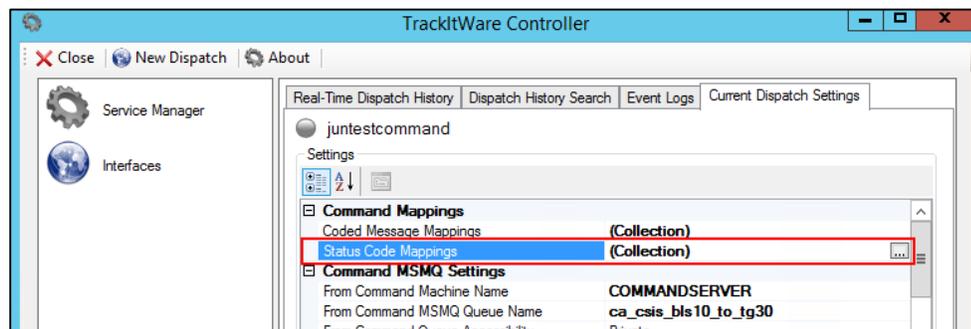
Configure Sync Settings

To configure Sync Settings, follow these steps:

1. Configure the Interface Settings in TrackIt, if not already done.

2. Open the **TrackItWare Controller** and click **Service Manager** in the left pane and then click the **Stop** button.

3. Click **Interfaces** in the left pane and then click the **TrackIt Sync** button at the bottom of the **Controller** window. The settings are synchronized upon clicking the button.
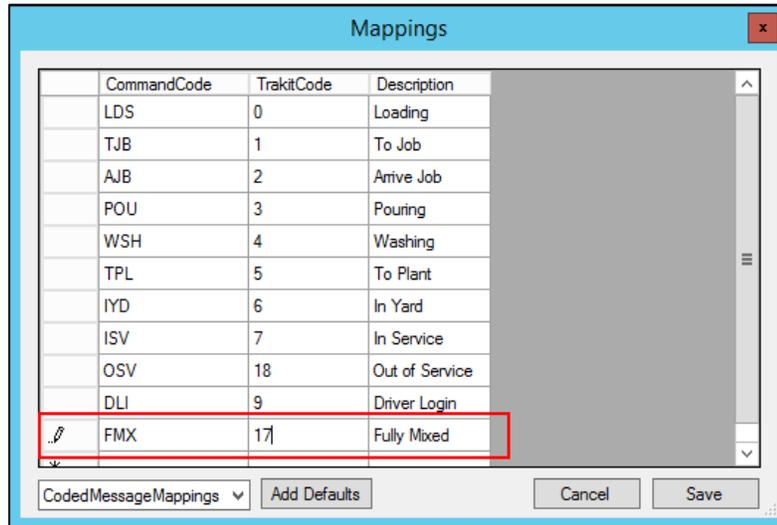
Configure Status Mappings

To configure Status Mappings, follow these steps:

1. Open the **TrackItWare Controller** and click **Interfaces** > **Current Dispatch Settings** tab.

2. Expand the **Command Mappings** settings group and click **Status Code Mappings**.

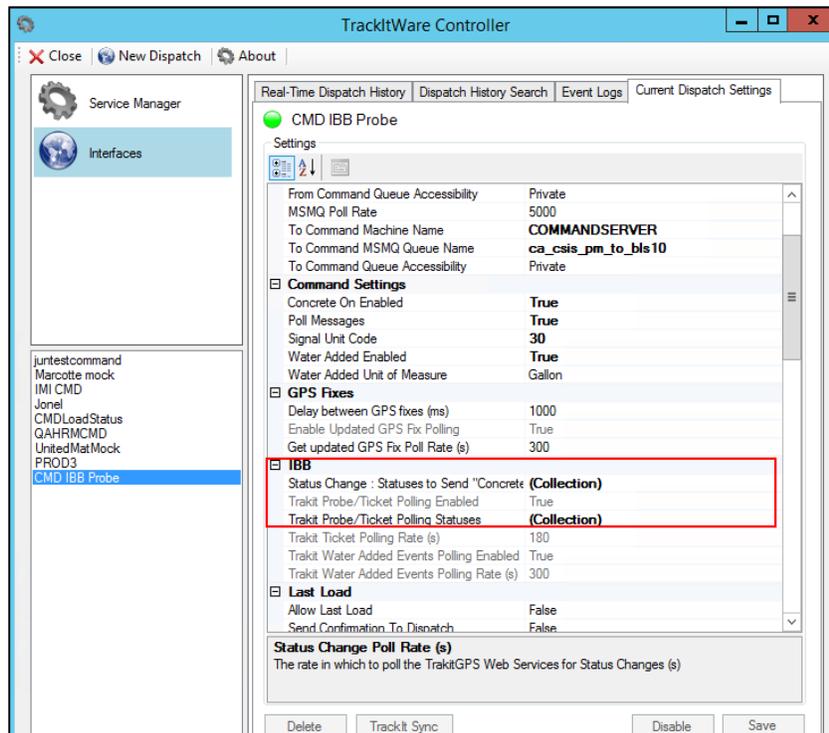3. Click the three dot icon at the end of the settings row.

4. In the **Mappings** box, add the CommandCode **FMX**, provide the **TrakitCode** from the assigned TrackIt status number, and type a **Description** for the status.
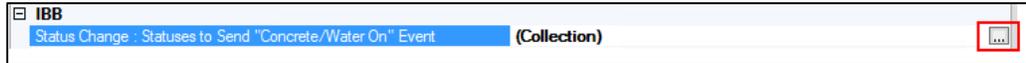
5. Click **Save**.

Configure IBB Settings

To configure IBB Settings, follow these steps:

1. Open the **TrackItWare Controller** and click **Interfaces** > **Current Dispatch Settings** tab.

2. Expand the **IBB** settings group and click **Status Change: Statuses to Send "Concrete/Water On" Event**.

3. Click the three dot icon at the end of the settings row.

4. In the **TrakIt Statuses** box, map the TrackIt statuses you want to enable for **"Concrete/Water on"** data with the number assigned to the status in its creation. For example, if **"To Job"** is assigned as status number **1**, then you would enter **1** in the first cell under the **StatusNum** column and then **"To Job"** for its corresponding description. Enter all the statuses and their numbers that will rely upon **"Concrete/Water On"** data. When any of the specified statuses are entered by the vehicle, the **Concrete/Water On** message will be sent.

Status Numbers in TrackIt   **Status Number Mapping in TrackItWare**

5. Click **OK**.

6. Click **Trakit Probe/Ticket Polling Statuses**.

7. Click the three dot icon at the end of the settings row.

8. In the **Trakit Statuses** box, map the TrackIt statuses you want to enable for **"Probe/Ticket Polling"** data with the number it corresponds to in the TrackIt status loop. For example, if **"On Job"** is the second status in the status loop, you would enter **2** in the first cell under the **StatusNum** column and then **"On Job"** for its corresponding description. Enter all the statuses and their numbers that will rely upon **"Probe/Ticket Polling"** data. This setting will send probe data to dispatch at the specified interval while the vehicle is in any of the specified statuses.

9. Click **OK**.