OTODATA

Installation Procedure

Junior BLE Dial & SureSense Capacitance Sensor

Models: WS10XX, WS2000

GRA-0113-EN_BETA004 IM_WS10XX_WS2000 2025-09-03

Support

North America
From 8 AM–6 PM EST

+1 (514) 673-0244

+1 (844) 763-3344 (toll-free)
support@otodata.com
go.otodata.com/support

Europe

+48 32 630 41 84

support@otodata.eu
go.otodata.eu/support

After-hour Emergency Support
From 6 PM–8 AM EST

+1 (833) 529-9499*

*Only North America. Only call this number in an emergency.

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Safety and Warnings

WARNING—POTENTIAL ELECTROSTATIC CHARGING HAZARD.
Use caution when handling or cleaning product to avoid static charge buildup. Do not wipe with dry cloth; use only damp cloth and let air dry. Do not use or install in high charge areas.

THE INSTALLATION OF THIS DEVICE IS RESERVED ONLY FOR PROPERLY TRAINED PERSONNEL AND MUST BE APPROVED BY THE SAFETY BODY HAVING JURISDICTION.
These instructions are made to assist technicians familiar with liquid storage tank equipment. Most consumers are not qualified to perform the installation described herein. If you have any questions concerning installation or operation of this product, contact Otodata or one of our authorized distributors for assistance.

EQUIPMENT IS INTENDED FOR FIXED AND GROUNDED INSTALLATION ONLY.

WIRELESS SENSORS ARE DEPENDENT.
A tank monitor is required for our wireless sensors to connect to the Nee-Vo Portal.

Before You Begin

This document provides installation and software instructions for the WS10XX Junior BLE Dial. Instructions are also applicable to the WS2000 SureSense Capacitance Sensor which is a supported device, but not sold by Otodata.

You will need:

A **connection to the Internet** (WiFi or cellular network).

Identifying Your Device

We offer multiple BLE dials which can be identified by the manufacturer's SKU etched on the side of the device.

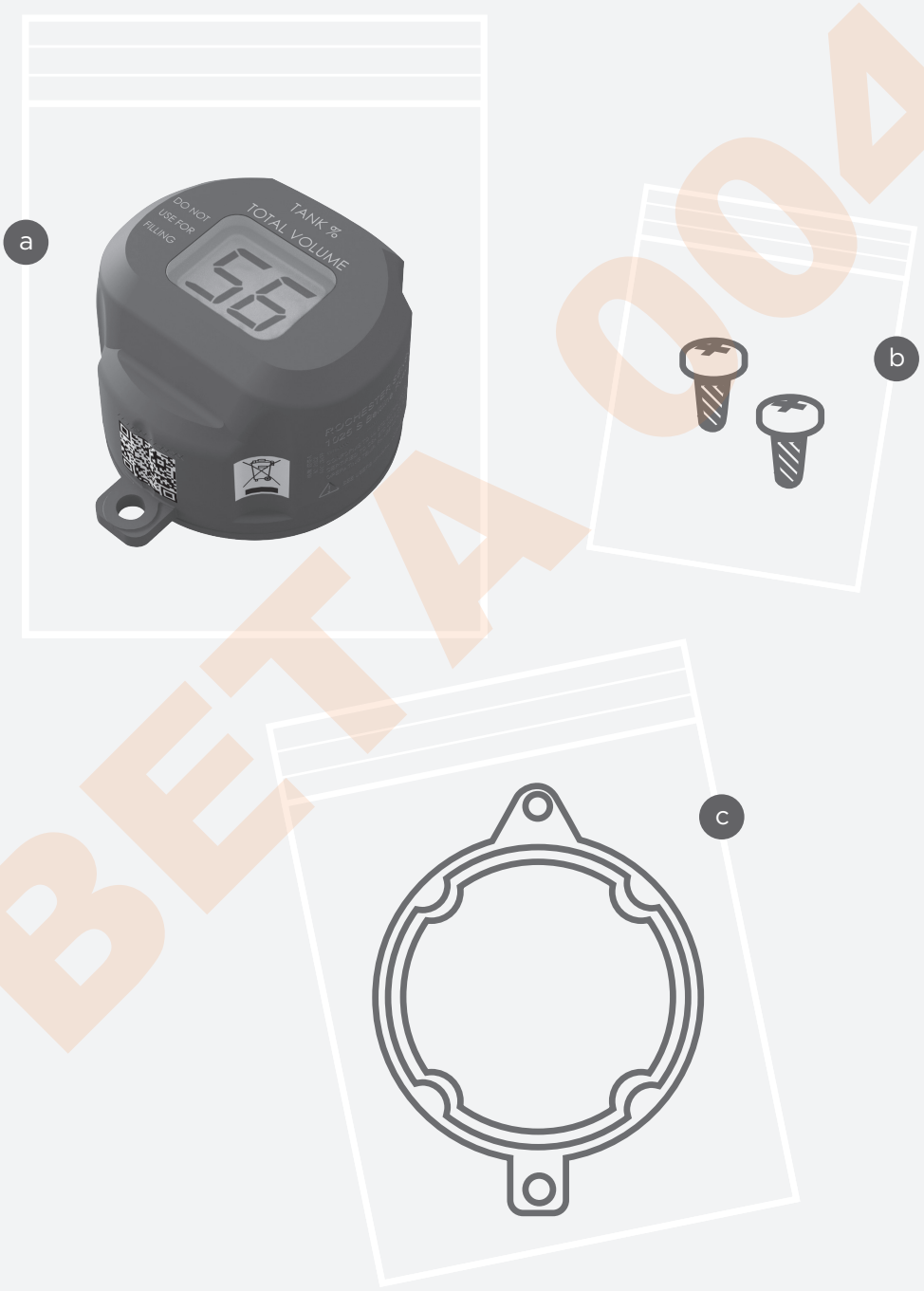
Use the reference chart below to find Otodata's equivalent SKU.

Otodata SKU	Manufacturer SKU	Product Name
Jr. Dials		
WS1011	6318-EH-001	Jr. Dial, European Limits, Screw-In, Horizontal Tank
WS1021	6318-EH-002	Jr. Dial, European Limits, Snap-On, Horizontal Tank
WS1012	6318-EV-001	Jr. Dial, European Limits, Screw-In, Vertical Tank
WS1022	6318-EV-002	Jr. Dial, European Limits, Snap-On, Vertical Tank
WS1013	6318-NH-001	Jr. Dial, North American, Screw-In, Horizontal Tank
WS1023	6318-NH-002	Jr. Dial, North American, Snap-On, Horizontal Tank
WS1014	6318-NV-001	Jr. Dial, North American, Screw-In, Vertical Tank
WS1024	6318-NV-002	Jr. Dial, North American, Snap-On, Vertical Tank
ACRRADAPWSSR	0021-02914	Sr. Adapter Ring for WS10XX Screw-In Jr. Dial
Related Products		
WS2000	6320-XXXX	6320 SureSense TM Capacitance Propane Level Sensor

Box Contents

Your kit will contain the following items:

a. One Junior BLE Dial (screw-in or snap-on)
b. Two screws (screw-in model only)
c. One senior ring adapter for screw-in model (ordered separately)



Overview of the BLE Dial

The BLE Dial (WS10XX, WS2000) provides wireless connectivity between a mechanical float and Otodata's TM cellular monitor (TM5240, TM5040, TM5030, etc.).

It's integrated screen provides a live level reading in percentage on an easy-to-read LCD display, and is battery operated and completely autonomous.

The WS10XX is available in two formats: snap-on and screw-in, is broadly compatible with most floats, and can be used in *lieu* of a traditional mechanical dial. No serviceable parts inside.

How It Works

The dial reads the float's position in-tank and broadcasts the level reading to a nearby TM monitor via BLE. Otodata's TM monitor then transmits the data to the Nee-Vo Portal via cellular network.

The dial's display updates every time it takes a new measurement and, thanks to the dial's Fill Detect capability, can detect when a fill is taking place and will display incremental level increases every second until a fill is complete. The dial will exit Fill Mode automatically.

Key Features

- Acquires new level reading every 15 seconds from float
- Broadcasts level reading every 2.2 seconds via BLE to TM monitor
- Digital display shows tank volume in 1% increments
- System accuracy of +/- 2%
- 10-year battery life
- Up to 8 meter operational range
- Excellent mechanical properties and chemical resistance due to nylon housing
- No exposed sensing elements (all components are located on the PCB inside the housing)
- IP67/IP69K rated ingress protection
- Over-the-air firmware update capability
- Snap-on or screw-in models available
- Horizontal and vertical tank compatible models available
- Compatible with floats that have junior-size dial seats (1.5″)—Adapter available for senior-size dial seats

LCD Status Indicators

Output	Description
	**bL: Battery Low**—Battery is estimated to be within 1-2 years of expected end-of-life. The measured level on the LCD display will alternate between this code and any applicable warning codes.
	**bC: Battery Critical**—Battery is estimated to be < 1 year of expected end-of-life. The measured level on the LCD display will alternate between this code and any applicable warning codes.
	**Er: Device Error**—Device is not functioning correctly and electronics should be replaced. The level will be set to 0% and alternate with this code.
	**Lo: Low or Low-Low Warning**—Tank level is below expected operating range: Tank Level < 5% (for EU products the LO warning level is 20%).
	**Hi: High or High-High Warning**—Tank level is above expected operating range: Tank Level > 95%.

Environmental Ratings

Parameter	Rating
Operating Temperature Range	-40–80°C (-40–176°F)
Typical Module Accuracy	<1% level
UV Withstand	600 hrs, UVA-340 at 0.76W/m2, 70°C (158°F)
Vibration	Mil STD-810: 5 Hz, 12.7mm Amplitude, 1G, 45 minutes

Installation Instructions

The installation of this device is reserved for properly trained personnel only and must be approved by the safety body having jurisdiction.

Equipment is intended for fixed and grounded installation only.

Junior BLE Dial (WS10XX)

1. Remove the existing dial from the float head.

2. Clean the empty float head of all foreign debris or liquid. The magnetic particles found in dirt and dust may impact the accuracy of the dial's reading.

3. Remove the Jr. BLE Dial from its packaging.

4. Install the dial:
   a) Snap-on dials: Position the dial's alignment key over the slot on the float head. Press into place until all four latching tabs snap onto the float head.

   b) Screw-in dials: Align the dial's round and rectangular ends with the corresponding impressions on the float head. Install the screws using hand tools only as not to damage the plastic fittings.

   c) If senior dial required: Slide the adapter ring (SKU: ACRRADAPWSSR) onto the Jr. BLE Dial. Then follow *step 4.b.* Above to complete installation.

5. Verify the LCD on the dial is displaying the appropriate level. This may take up to 1 minute.

Screw-in method with senior adapter

How to Register Your BLE Dial

Please scan the QR code to the left or visit the link below to download Otodata's "How to Pair a Wireless Sensor to a Tank Monitor" guide.

go.otodata.com/gra-0112

Tank Profile Setup and Configuration in the Nee-Vo Portal

IMPORTANT Before proceeding, ensure you have done the following:

i. Noted the outer dimensions of tank—*Width* and *Depth*.

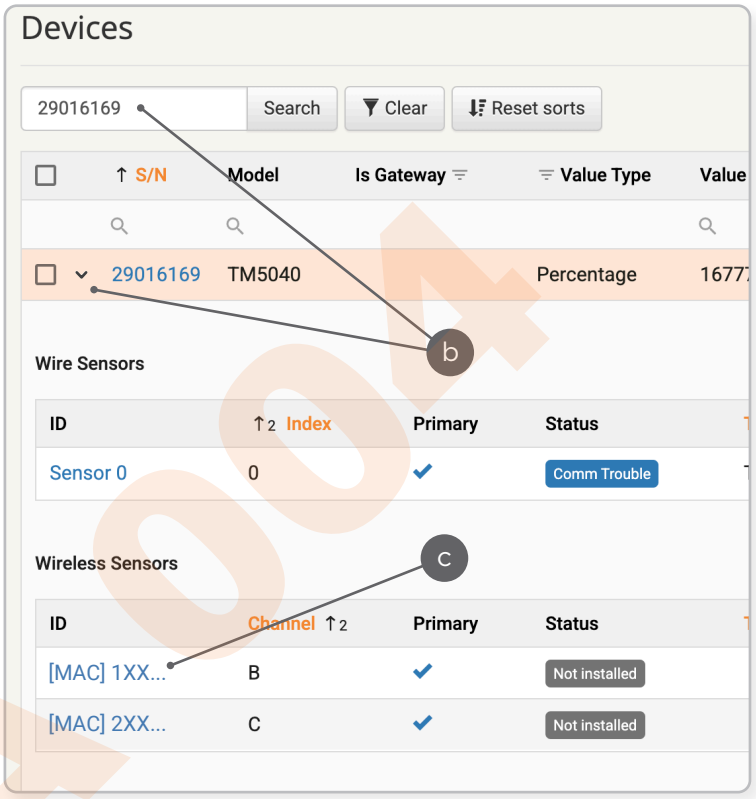
Note: *Depth* (length) will usually be the longest measurement.

Note: If the tank is single-walled, dimensions should be measured from wall-to-wall. If the tank is double-walled or manifolded, you will need to measure dimensions from the welding line to the tank's wall.

ii. Noted the tank's *Height*—measured by dip stick for maximum accuracy.

iii. Paired your wireless sensor (BLE dial) to your monitor (TM device) and verified that the status is OK.

Should you require more information, refer to the "How to Pair a BLE Device with an Otodata Monitor" guide.



1. Tank Setup and Configuration

a. In the Nee-Vo Portal, select Tanks in the main menu, then Devices.

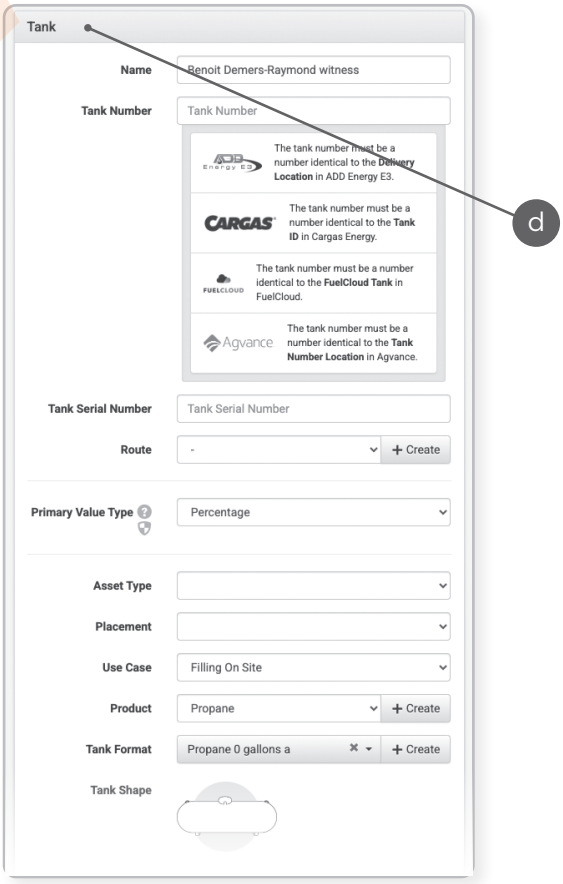
b. Enter the Tank Monitor's serial number (S/N) into the search bar located in the upper left corner of your screen, and click Search.

Once found, click the arrow icon to the left of the serial number (S/N). This will open the *Connected Sensors* drawer.

c. In the *Connected Sensors* drawer, click the BLE dial's ID (MAC address) to open the *Edit* page.

d. Scroll down to the *Tank* section and carefully input all necessary information such as the tank's serial number, the tank's format, the product in-tank, its location, and more.

Note: If you cannot find an accurate option in the *Tank Format* dropdown list, you will need to create a custom tank shape. See following step.



1.2. Creating a Custom Tank Shape

In the event that you are required to create a custom tank shape because no accurate formats exist, follow the steps below.

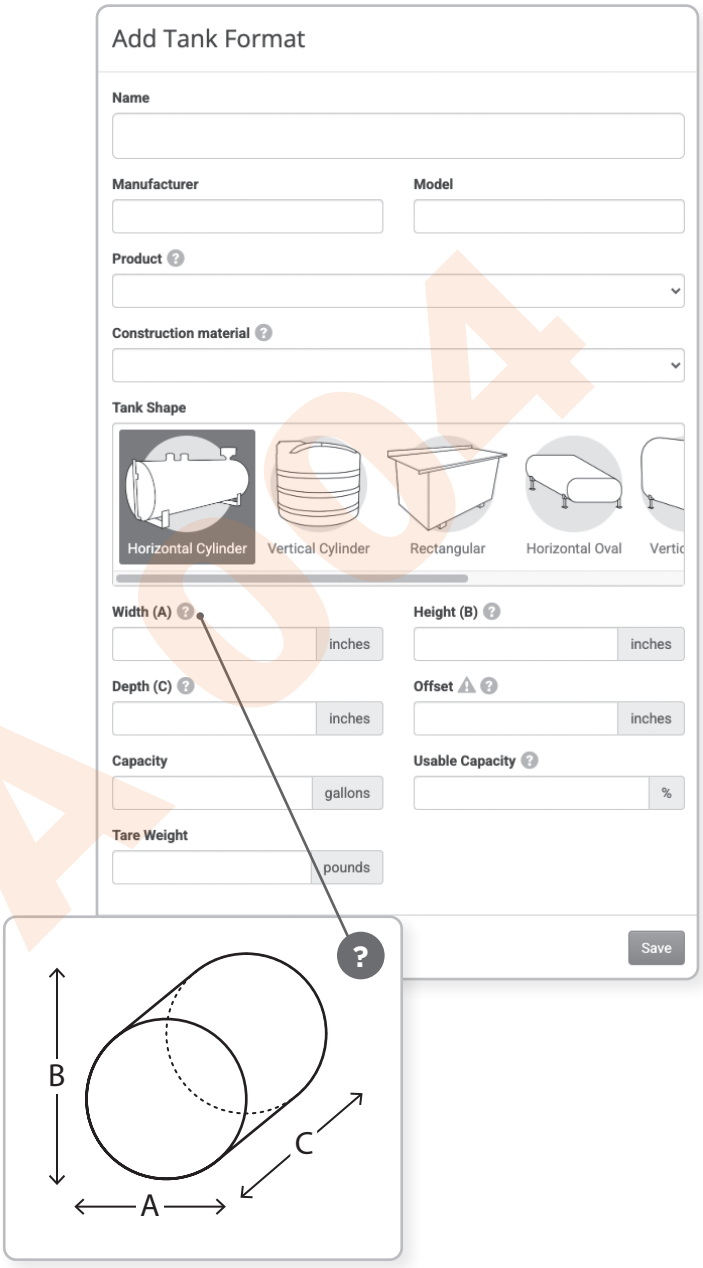
a. On the tank's Details page, click the Create button to the right of the Tank Format dropdown list, or click Config from the main menu, then Tank Formats.

b. On the Tank Formats page, click the Create a tank format button to the upper right of the screen.

c. On the tank format creation screen, input all pertinent information including the tank's Construction Material, its exact dimensions and a Tank Shape.

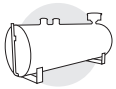
Note: Upon saving your new tank shape, some content will be permanently locked and unable to be edited (such as the Product and Construction Material fields). If you accidentally input the wrong information in a locked field, you will need to create a new Tank Format.

IMPORTANT Inputting a Product will make your tank shape exclusively available to tanks that are associated to that product. Example: If you choose Propane from the product dropdown list on the Tank Format creation screen, the tank shape will only appear as an option for tanks that are filled with propane. To avoid this, you may leave this field blank.



Available Tank Shapes

When creating a custom Tank Format, you can use the following Tank Shape templates as a starting point.



Horizontal Cylinder

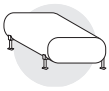
Width and Height are usually the same measurement.

Vertical Cylinder

Width and Length are usually the same measurement.

Rectangle

Cube, rectangular vertical, or rectangular horizontal shaped tanks fall into this category. Note: Miscategorizing a rectangular tank as a horizontal cylinder will negatively impact the accuracy of the monitor's reading. Please avoid doing so.



Horizontal Oval

Width will be the smallest measurement. Note: Height can sometimes be the longest measurement for this tank shape.

Vertical Oval

Height will be the smallest measurement. Note: Width can sometimes be the longest measurement for this tank shape.

Horizontal Capsule

Dimension A: Diameter of the capsule, Dimension B: Radius of end cap, Dimension C: Total length end-to-end of capsule.

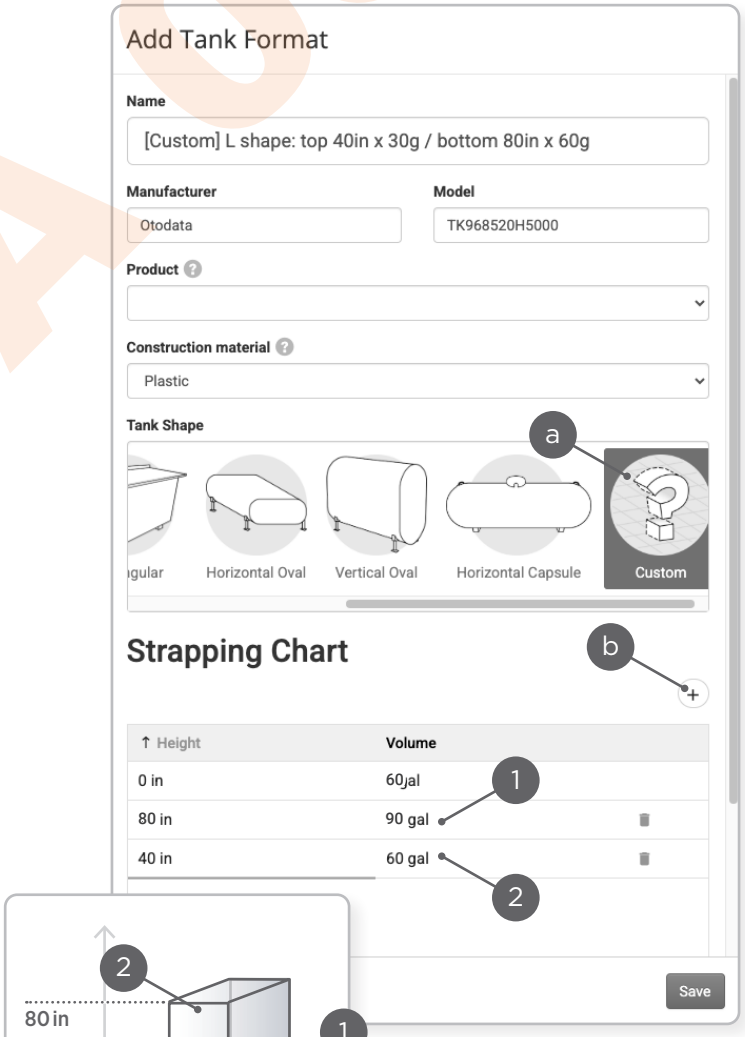
How to Create a Custom Tank Shape

For irregular shaped tanks, you will be required to create a custom shape.

a. In the Tank Shapes section, select Custom from the list.

b. In the Strapping Chart section, click the plus button above the table to create a new row and input the tank's Height and Volume (capacity) for each distinct section of the tank. Example: Top section 1, Bottom section 2.

c. Once done, click Save.



2. Review Level Data Report to Validate Installation

Note: The first report will be available within 24-hours of installation. Reports include hourly readings.

a. Log into your Nee-Vo Portal account and navigate to Tanks > Monitored Assets.

b. Ensure your *Predefined View* is set to *Level Sensors.*

i. Click on the Actions menu to the right of the screen

ii. Click Set predefined view

iii. Select Level Sensors, then click Confirm

c. Search for the Tank Monitor paired with your BLE Dial.

i. Ensure *Serial Number* is selected from the dropdown menu to the left of the search bar and input the Tank Monitor's *Serial Number* into the search bar and click Search

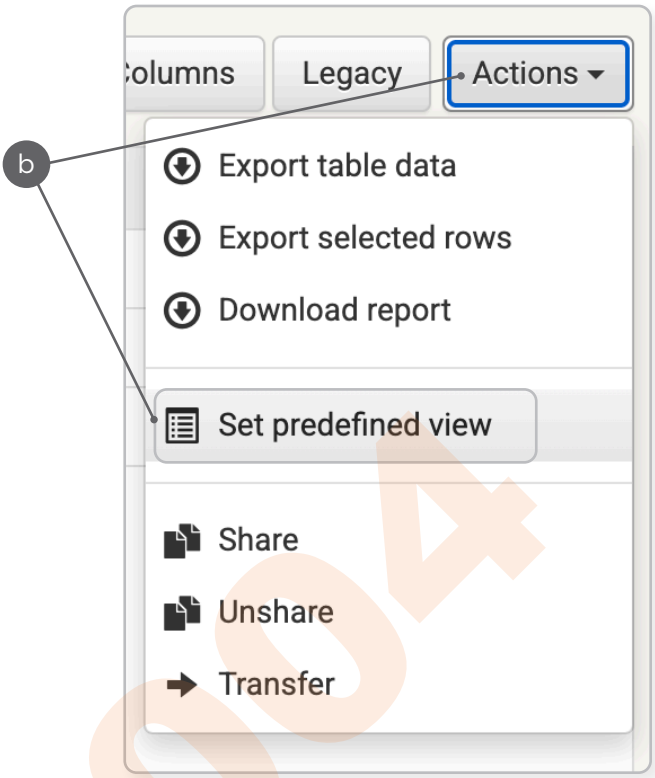
ii. Once found, select the Monitor from the list by clicking its Serial Number (S/N)—This will open the Details page

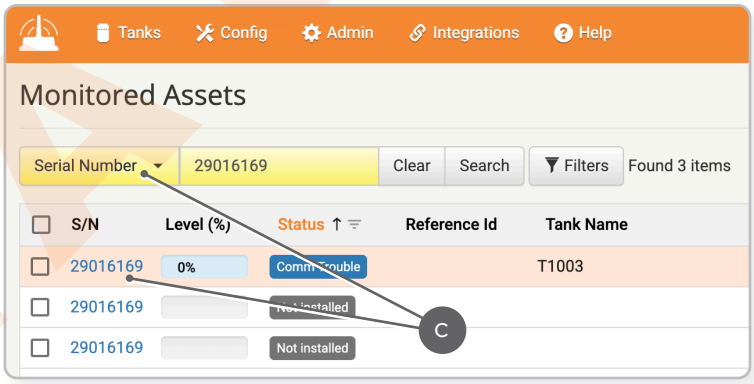
d. Review Tank's Statistics.

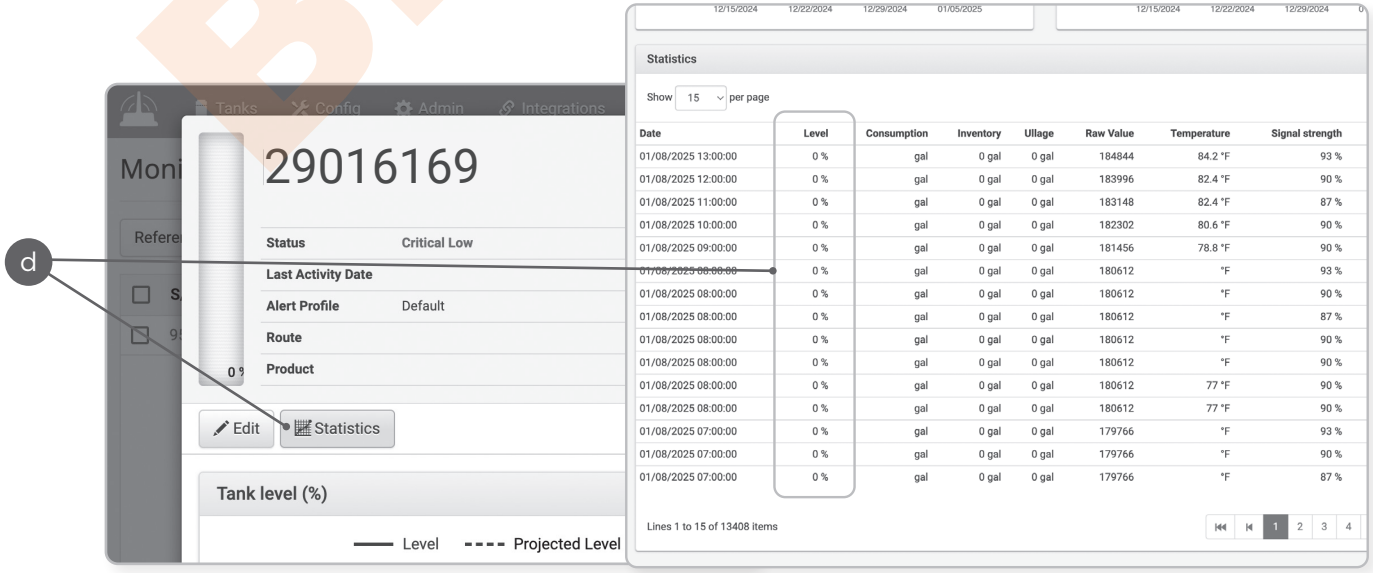
i. On the *Details* page, click the Statistics button

ii. Scroll down to the *Statistics table* to see a detailed list of all received readings

A successful installation will produce decreasing Level (%) readings and a sharp increase when filled.







Members can watch step-by-step installation videos and shop online

Sign up free today

otodatatankmonitors.com/membership

Members can purchase monitors and accessories like gauges, leads, mounting equipment and more via our online store.

IMPORTANT

Please take a moment to carefully read the installation instructions included with your monitors, and ensure you understand and respect local regulations.

ABOVE-GROUND TANKS	UNDERGROUND TANKS
Do not install monitors under lids.	**Plastic lid suggested. Metal lids will obstruct signal.**

Reading installation instructions will ensure maximum monitoring performance on all your tanks and installations.