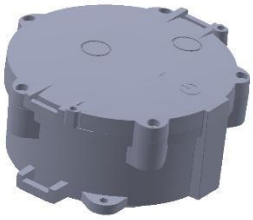


TEK 880 Installation Guide

The TEK 880 Cellular Radar Monitor BLE sensor is a tank level liquid monitor for plastic or steel tanks. It can be installed invasively, that is facing directly into the contents of the tank, or non-invasively looking through the tank wall on plastic tanks. It transmits the data to the cloud and allows on-site configuration via a BLE interface App.

This installation guide is divided into non-invasive (Page 1) and invasive installation – (Page 9). Note that invasive mounting gives the best performance.

Installation Instructions - NON-INVASIVE PLASTIC TANK MOUNTING

Please also refer to audio visual guides referenced in the appendix.

STEP 1*: Sensor Location*:

- Select a location on top of the tank that is not too close (<25cm / 10”) to any internal or external obstructions including the wall of the tank.
- The selected location should also be dry, level, and clear from any standing water that could occur. Ensure that no water enters the base adapter during the installation.
- Please also see additional tank mounting guidelines in the Appendix.

STEP 2: Site *Preparation:*

- Clean the area where the adhesive pad is to be placed to remove any grease or dirt. This can be done with an alcohol rub or equivalent.

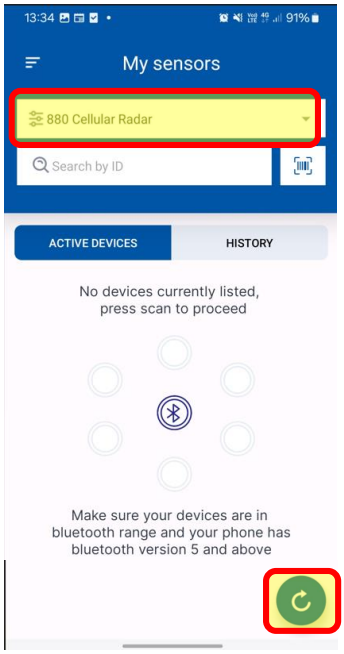
STEP 3: *Wake-up:*

- To activate the Bluetooth function and wake the sensor from factory mode – swipe a magnet across the ON/Off symbol on the TEK 880 enclosure lid.

- The sensor BLE connection remains active for at least 3 minutes before reverting to sleep if there is no activity.

STEP 4: Open BLE App:

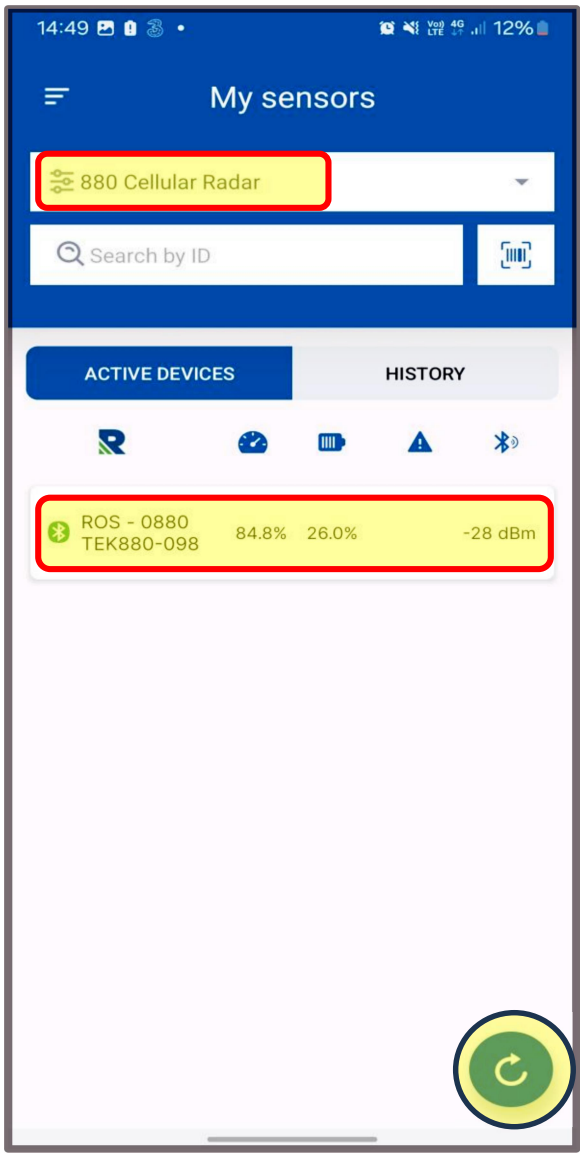
- Open the Rochester BLE cellphone app (ref: Rochester Universal BLE app quick start guide). Ensure BLE is enabled on the cellphone app (See Appendix for additional reference).
- Select the '880 Cellular Radar' from the sensor menu.
- Press the ***scan*** button (*screen 1* – Page 4) to display the list of sensors available.
  Note: The Scan button changes to red and pulses while active.
- If the sensor does not appear on the BLE App Scan list, perform the magnet swipe again.



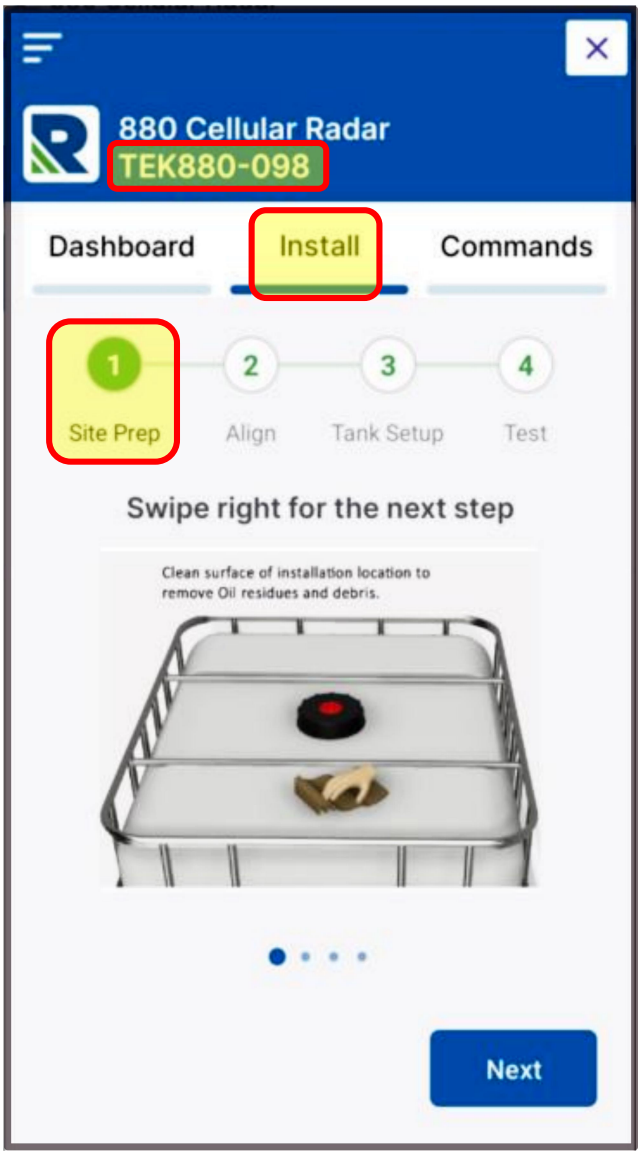
STEP 5: BLE Install:

- Select sensor by serial number from list (*screen 1*).
- Screen 2 will pop up for the selected relevant sensor's serial number.
- Click the ***install*** button on screen 2 to start the installation sequence.
- Review section 1 – Site Prep for hints on sensor mounting preparation and location.

SCREEN 1

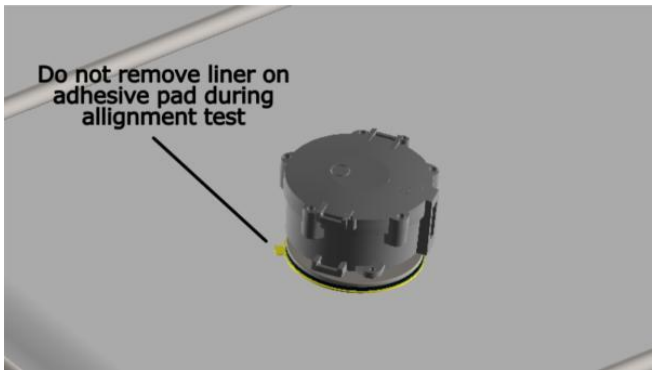


SCREEN 2



STEP 6: BLE Install - alignment:

- Press ***Next*** to move to section 2 – Align.
- Place the sensor in a suitable location without removing the liner on the adhesive pad.
- If a **green** or **orange** dot is displayed, the sensor is correctly aligned.
- Press ***Next*** to continue.

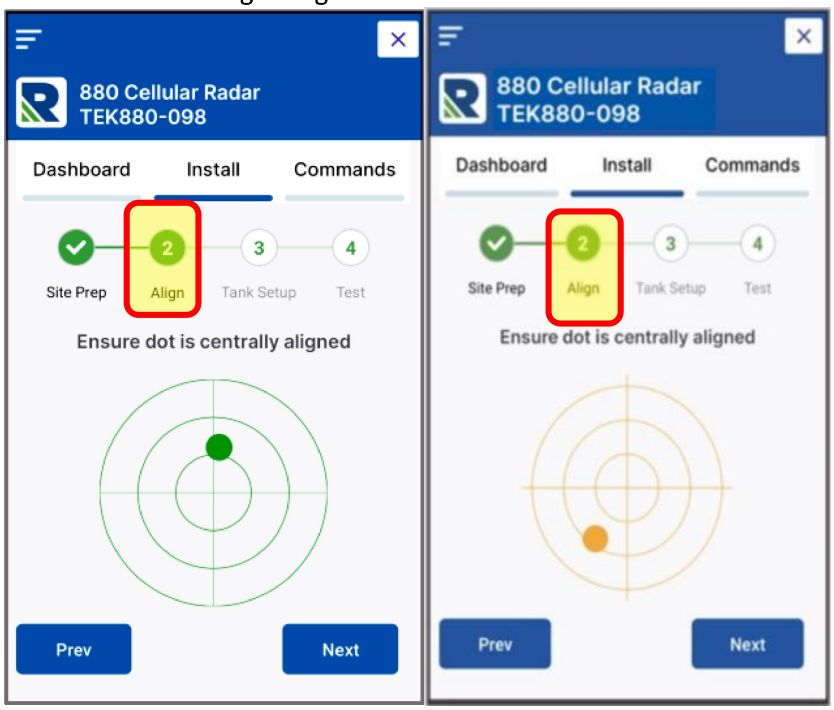


- If a **red dot** appears, choose an alternate location that is level.

- Once this stage is complete, then the sensor may be fully installed in this area of the tank.

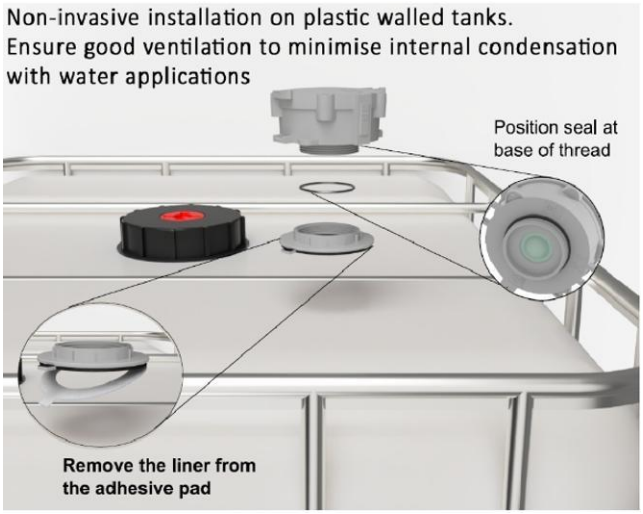
Note: Red dot indicates that the chosen mounting position is not sufficiently level to give an acceptable performance and the BLE app will not allow the installer to proceed to the next stage.

Note: For tanks heights greater than 2m – it is preferable to have a green dot.
Note: See appendix for the sensor ullage range.



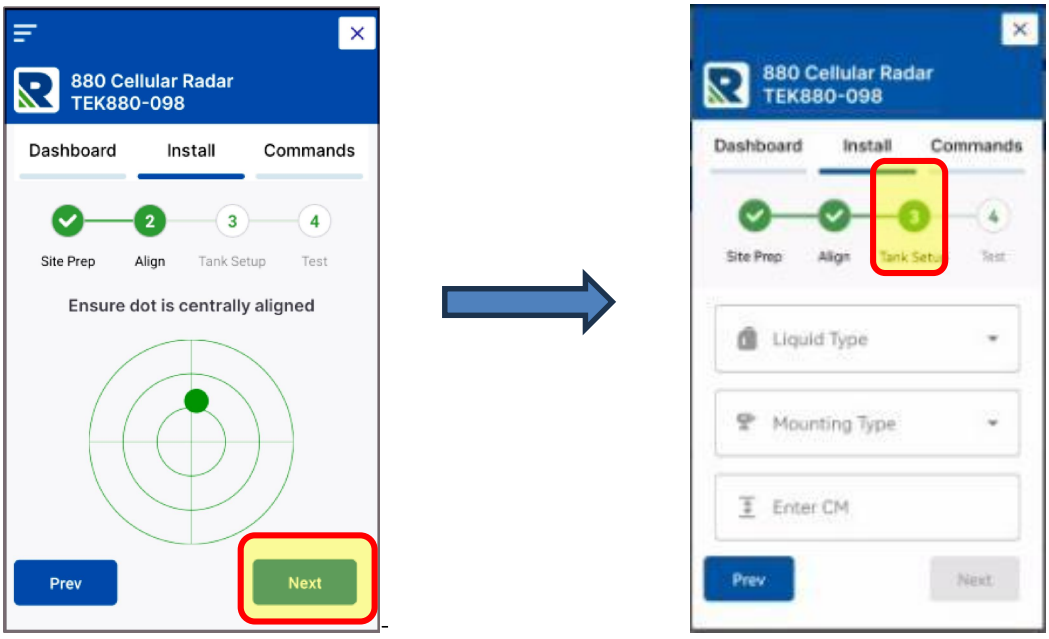
STEP 7: BLE Install.

- Remove the liner from the adhesive pad and place it on the tank (same location as previous test).



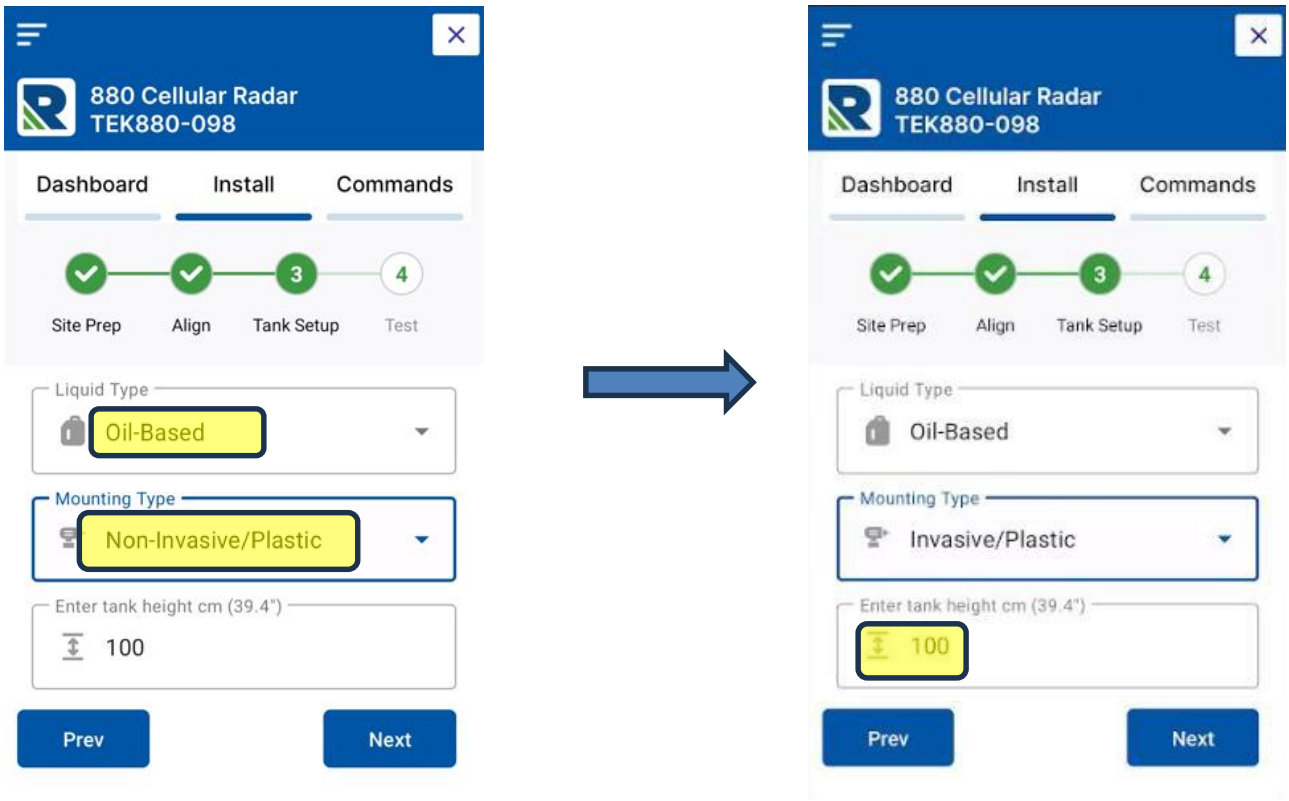
STEP 8: BLE Install - setup:

- Press ***Next*** to move to ***Tank Setup*** on section 3.



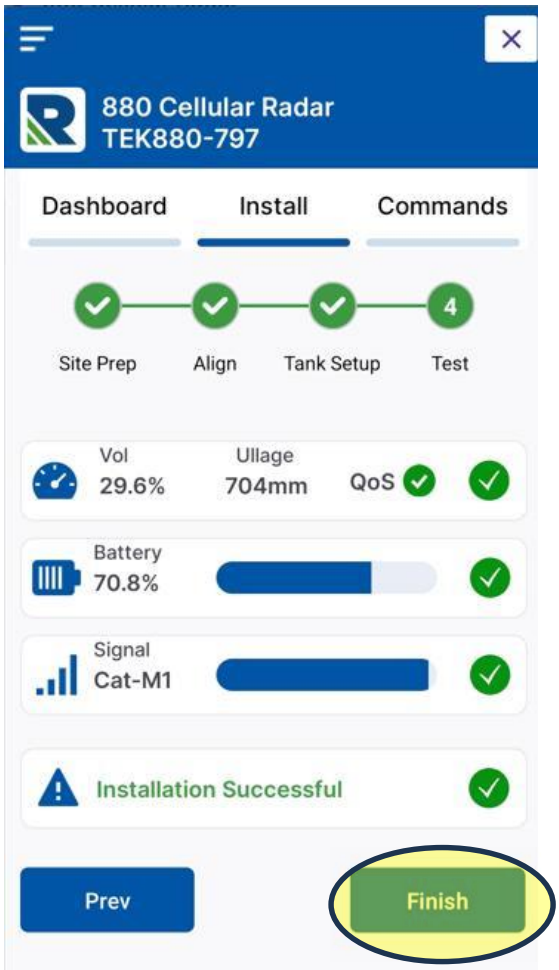
STEP 9: BLE Install - setup:

- On the dropdown menu – select the nearest liquid type: ***Oil or Water***
- Select the correct *mounting option*: ***Non-Invasive.***
- Enter the usable ***tank height in cm.*** *Inches is visible alongside cm.* Refer to appendix for more details.



STEP 10: BLE Install - finish:

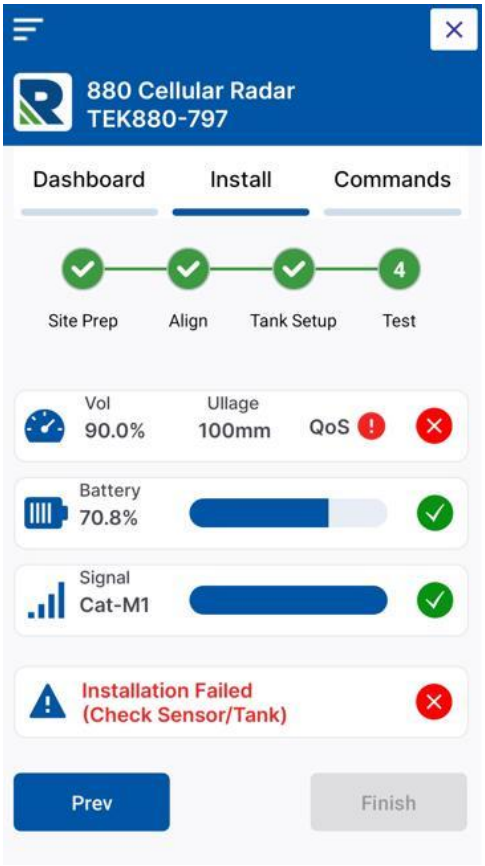
- Press ***Next*** to move to section 4 and wait for the test to complete and display ***Installation Successful***.
- Press ***Finish*** to return to the Dashboard view.



This concludes the installation.

STEP 11: Error in Install

- If the display indicates an ***Installation Failed.***
- Check if the liquid type and tank height are correctly set, if not press the ***Prev*** button to go back and correct them.
- *In some circumstances the Installation can fail if there are issues with overfilled tanks where the sensor cannot resolve a correct reading in the blind zone. In the case of tank overfilled – it is recommended to either postpone installation or accept the current situation will resolve itself when the liquid level reduces.*

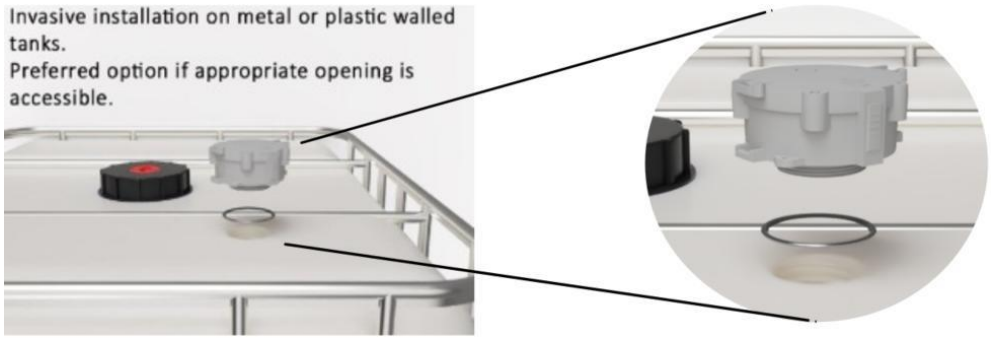


Installation Instructions - INVASIVE TANK MOUNTING

The invasive mounting arrangement for the TEK 880 Cellular Radar Monitor is shown in the graphic below.

All the parts shown in the adjacent graphic are provided in the product packaging and it is mandatory to use these in the installation process.
Please also refer to audio visual guides referenced on the appendix.

STEP 1: Adapter assembly



STEP 2: Tank Opening:

- Ensure that the threaded opening is smooth and clear of any obstacles. The threaded opening must be 2" NPT.
- Screw the sensor into the tank opening and tighten – noting the ON/OFF symbol location.

STEP 3: *Wake-up:*

- To activate the Bluetooth function and wake the sensor from factory mode – swipe a magnet across the ON/Off symbol on the TEK 880 enclosure lid for 1 second, until a double beep is audible.

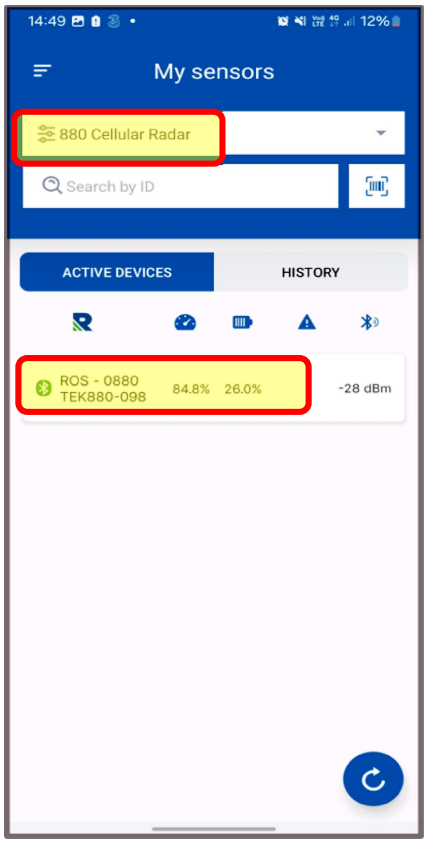
STEP 4: Open BLE App:

- Open the Rochester BLE cellphone app (ref: Rochester Universal BLE app quick start guide). Ensure BLE is enabled on the cellphone app. (See Appendix for additional reference.
- Select the '880 Cellular Radar' from the sensor menu.
- Press the ***scan*** button (*screen 1* – Page 4) to display the list of sensors available.
  Note: The Scan button changes to red and pulses while active.
- If the sensor does not appear on the BLE App Scan list, perform the magnet swipe again.

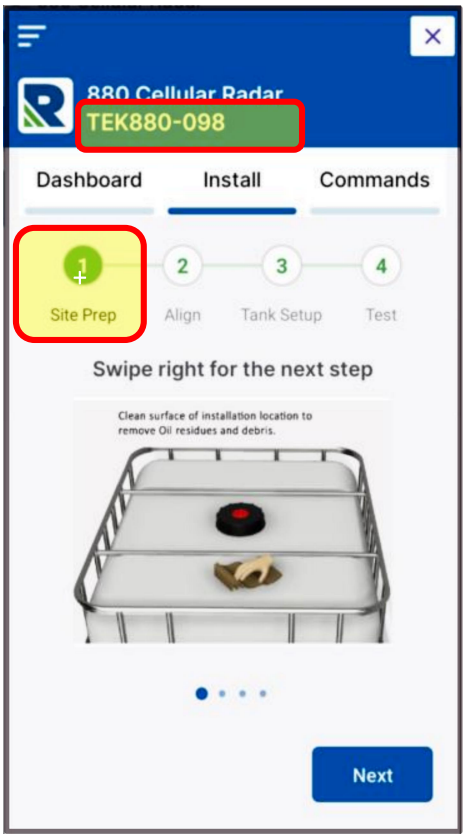
STEP 5: BLE Install:

- Select sensor by serial number from list (*screen 1)*.
- Screen 2 will pop up for the selected relevant sensor's serial number.
- Review section 1 – Site Prep for hints on sensor mounting preparation and location.
- Click the ***install*** button on screen 2 to start the installation sequence.

SCREEN 1



SCREEN 2



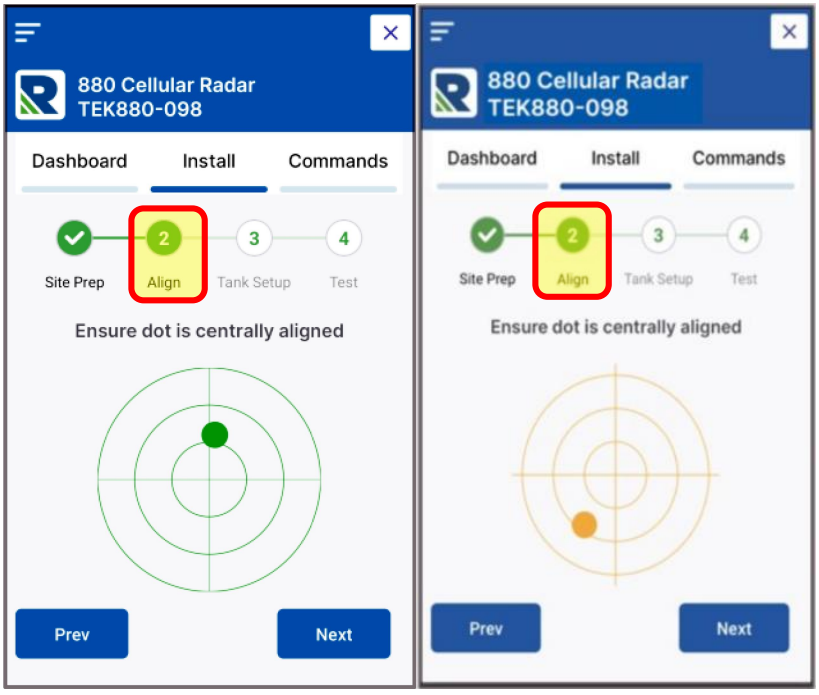
STEP 6: BLE Install - align:

- Press ***Next*** to move to section 2 – Align.
- If a **green** or **orange** dot is displayed, the sensor is correctly aligned.
- Press ***Next*** to continue.

- If a **red dot** appears, choose an alternate location that is level.

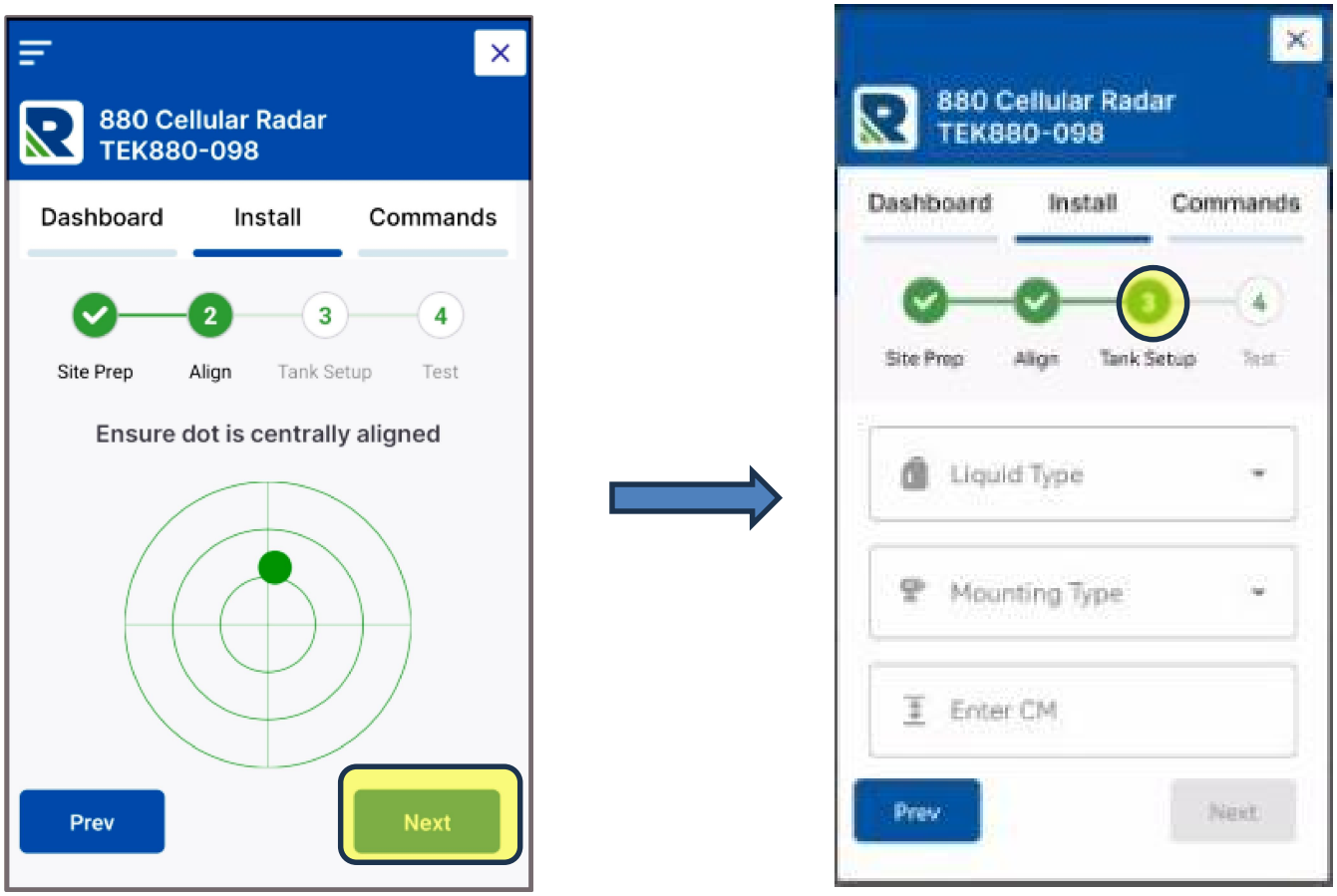
Note: Red dot indicates that the chosen mounting position is not sufficiently level to give an acceptable performance and the BLE app will not allow the installer to proceed to the next stage.

Note: For tanks heights greater than 2m – it is preferable to have a green dot.
Note: The maximum sensor ullage range is 3m.



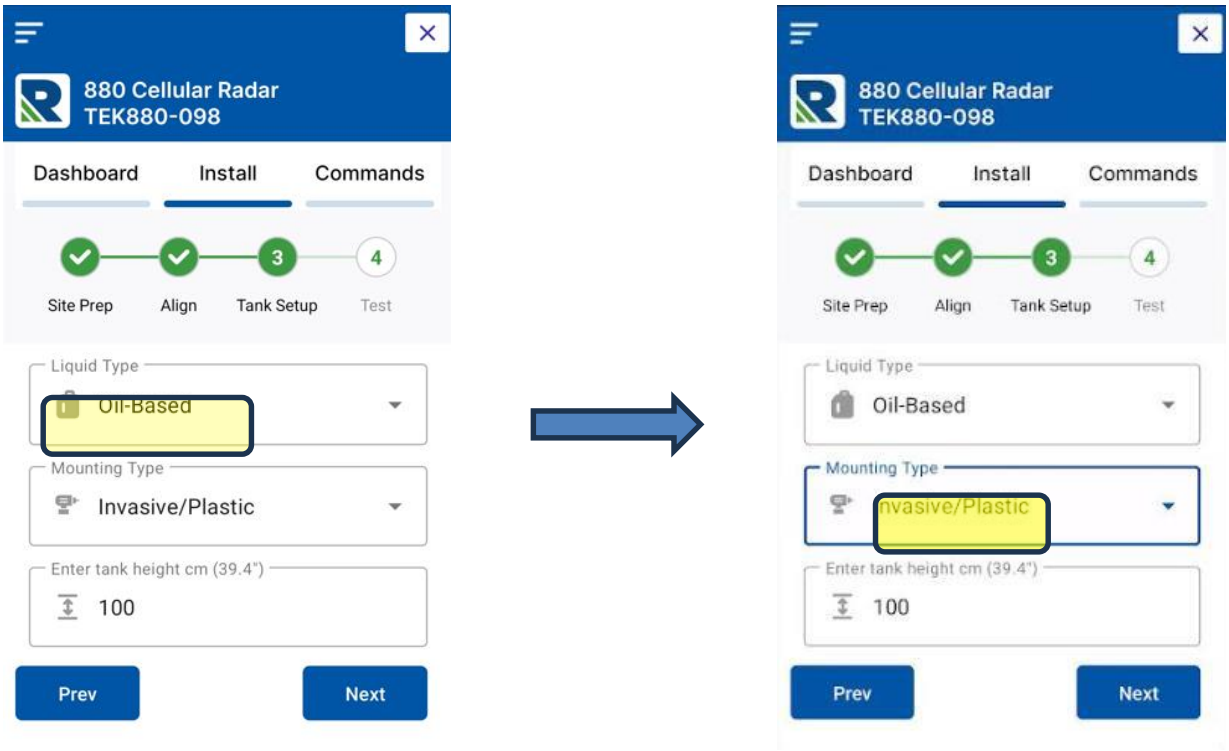
STEP 7: BLE Install - setup:

- Press ***Next*** to move to ***Tank Setup*** on section 3.



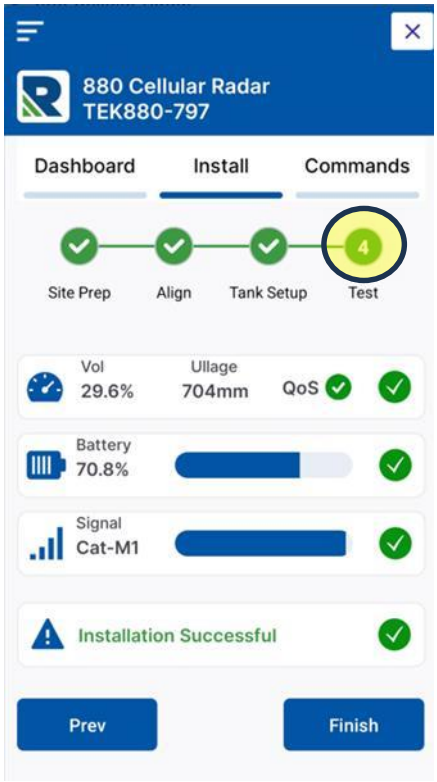
STEP 8: BLE Install - setup:

- On the dropdown menu – select the nearest liquid type: ***Oil or Water***
- Select the correct *mounting option*: ***Invasive.***
- Enter the usable ***tank height in cm.*** Refer to appendix for more details.
- Inches displayed alongside cm.



STEP 9: BLE Install - finish:

- Press ***Next*** to move to section 4 and wait for the test to complete and display ***Installation Successful***.
- Press ***Finish*** to return to the Dashboard view.

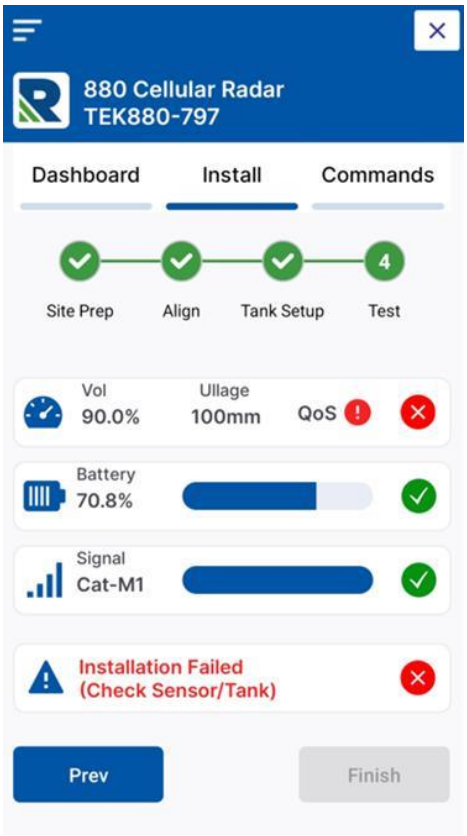


This concludes the installation.

STEP 10: Error in Install

- If the display indicates an ***Installation Failed.***
- Check if the liquid type and tank height are correctly set, if not press the ***Prev*** button to go back and correct them.

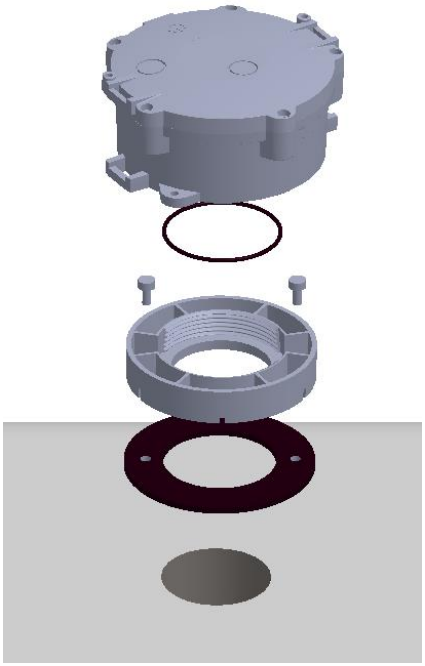
In some circumstances the Installation can fail if there are issues with overfilled tanks where the sensor cannot resolve a correct reading in the blind zone. In the case of tank overfilled – it is recommended to either postpone installation or accept the current situation will resolve itself when the liquid level reduces to within the measurable range.



NOTE: Align Failure or obstruction issue:

If during installation with the threaded adapter, it becomes apparent that the sensor fails the alignment test or there is an internal obstruction that causes an issue then there is an alternative invasive installation option detailed below: ***Alternatively, the tank onto which the sensor is to be installed should be leveled for best performance.***

- A center hole can be manually drilled in the tank (2" opening).
- Place the foam gasket over the hole followed by the mounting adaptor.
- Tighten on to tank with 2 stainless steel self-tapping, counter sunk screws, supplied. Do not over tighten!
- Attach the seal to the base of the thread on the Sensor
- Screw the sensor into the adaptor. Ensure that the sensor is vertical on the tank and screwed correctly into the base and that the threads have not crossed, to give a secure seal.



APPENDIX:

WARNING

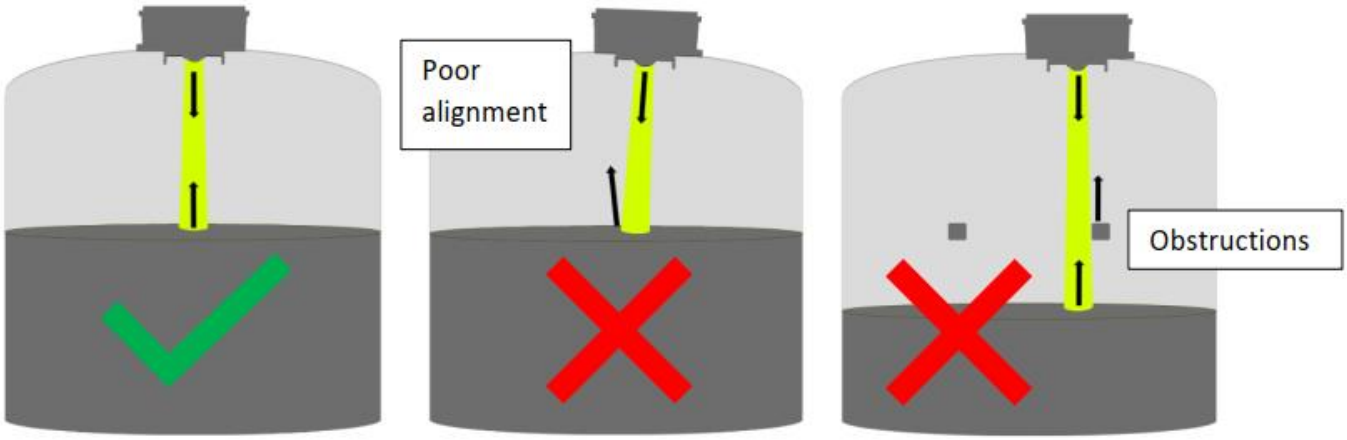
This sensor is a Class 1 Div 1, Zone 0 intrinsically safe product (ATEX). Please observe the conditions of safe use in the installation site.

NOTE

This sensor is serviceable. The battery can be replaced when its depleted. Please reference document 9-6315 for instruction.

ALIGNMENT GUIDE.

Please note the installation guide images below.



Note: This sensor is a Class 1 Div 1, Zone 0 intrinsically safe product.

Safety Installation Guidelines

WARNING

POTENTIAL ELECTROSTATIC CHARGING HAZARD

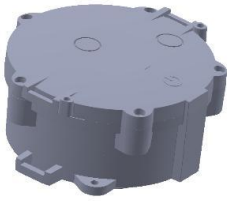
Caution must be used when handling or cleaning products so there is no static charge buildup. Do not wipe off the TEK 880 Cellular Radar Monitor BLE sensor with dry cloth. Use only water damp cloth and allow to air dry for cleaning device. Do not use or install in high charge areas. See IEC60079-32-1 for further information.

RISQUE DE CHARGE ÉLECTROSTATIQUE POTENTIEL

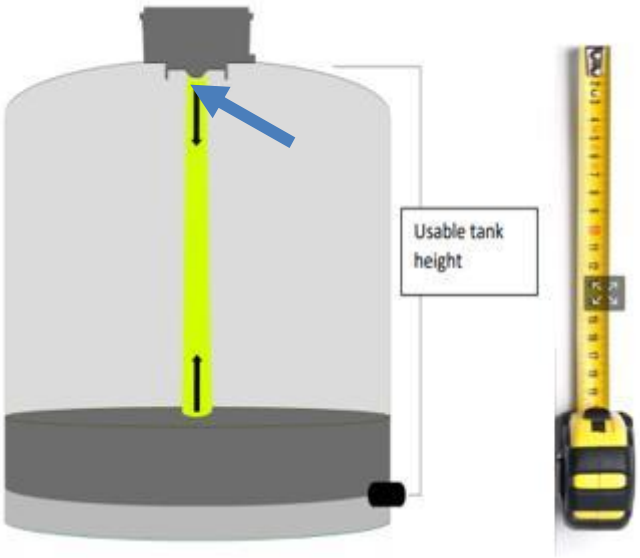
Il faut être prudent lors de la manipulation ou du nettoyage des produits afin qu'il n'y ait pas d'accumulation de charge statique. N'essuyez pas le capteur TEK 880 Cellular Radar Monitor BLE sensor avec un chiffon sec. Utilisez uniquement un chiffon humide et laissez sécher à l'air pour nettoyer l'appareil. Ne pas utiliser ou installer dans des zones de charge élevée. Voir IEC 60079-32-1 pour plus d'informations.

Usable Tank Height:

Note: This measurement should range from the base of the sensor to just below the usable minimum level and above the tank bottom.



Base



NOTE:

This sensor is configured in metric units – ***cm*** for tank height. The conversion factor from inches to cm is x 2.54

Cellphone BLE enable (example)

Download and install the smartphone app from the links below

Android

For direct link access click here.

iOS

For direct link access click here.

Link to TEK 880 Cellular Radar Monitor

Install Manual

IMPORTANT

These instructions are prepared to assist installers and others generally 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 Rochester Sensors, Inc. or one of our authorized distributors for assistance.

9-6416-01

KEY COMMENTS FOR NON-INVASIVE INSTALLATIONS:

Non-invasive mounting (on Plastic / Poly Tank)

✅ Do	❌ Don't
Read the full instructions before starting.	Skip steps or assume you know the process.
Clean the area for mounting	Mount the device on a dirty or contaminated tank surface.
Carefully hand tighten screws on adapter	Over-tighten screws, risking damage. Etc
Chose an invasive mounting option if available	Chose to use fit non-invasive adapter on tank with standing water.

FAQ

- **What is the minimum and maximum range: Different liquid compositions have a varying ability to reflect radar signals back to the sensors. Also, the mounting type has an effect on the range. See details below.**

Liquid Type	Mounting Type	Minimum Range (Ullage)	Maximum Range
Aqueous	Invasive	0.14 meter	6.75 meter
Hydrocarbon	Invasive	0.1 meter	4 meter
Aqueous	Non-Invasive	0.14 meter	2 meter
Hydrocarbon	Non-Invasive	0.1 meter	3 meter