



# PTLevel Wireless

Long Range

Let's get started!



# Congratulations on your purchase!

We strive to supply you with the best North American made product possible! If you have troubles or concerns, please don't hesitate to look on our support system and contact us about anything you need. There is also a 30 day full refund guarantee if you aren't satisfied with the device as well as a 2 year full warranty for your peace of mind.

Support support.paremtch.com	Warranty Full 2 year warranty	Guarantee 30 days full refund guarantee
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## Product Liability Disclaimer

ParemTech offers its products with the terms, conditions and notices as follows. The following terms and conditions apply to all sales and uses. Please review carefully. These terms and conditions include limited warranties and disclaimers of liabilities. Keeping, using or allowing use of ParemTech's products indicates your agreement to these terms. If you do not wish to agree to these terms, you have 30 days from the date of purchase to return the unused product.

**Terms of use**

This product is offered to you conditional upon your acceptance without modification of the terms, conditions, and notices contained herein.

**Exclusive Obligation**

This product has been designed for a variety of uses, but was neither designed nor manufactured as a product to be used with flammable or combustible materials. This product may not be used for unlawful purposes and that use is expressly prohibited under the terms and conditions of its use.

**Use limitation**

You may not modify, copy, distribute, transmit, display, perform, reproduce, publish, license, create derivative works from, transfer, or sell, any information, software, products or services obtained, from ParemTech's website or its products unless given express permission.

**Limited Replacement Warranty**

This product is warranted against any manufactured defect for a period of two years from date of purchase.

**High Risk Activity**

Products sold by ParemTech include devices designed to monitor liquid levels. Risks include, but are not limited to, flooding or running dry and the costs associated with these. By using ParemTech's products you are participating at your own risk and ParemTech will not be held responsible for losses associated with these risks or any other risk.

**Assumption of Risk**

By buying, using, or allowing the use of ParemTech's products, YOU EXPRESSLY AND VOLUNTARILY ASSUME ALL RISK WHETHER OR NOT CAUSED BY THE NEGLIGENCE OR OTHER FAULT OF ParemTech including but not limited to equipment malfunction from whatever cause, or any other fault of ParemTech. Additionally, you agree to indemnify, defend, and hold ParemTech harmless from any third party claims arising from such.

**Product Modification**

Modification of ParemTech's products, through the use or misuse of ParemTech products, can lead to malfunction causing risk. You are responsible for any modifications you perform on your or anyone else's products using ParemTech products. ParemTech is not responsible and will not be held liable for any modifications to its products.

**Limitation Of Liability**

As set forth above under the limited warranty provisions, ParemTech liability is limited to repair or replacement of its products which are returned to it in the specified period of time. In no event shall ParemTech liability exceed the value of the product(s) sold. In no event shall ParemTech be liable for any direct, indirect, punitive, incidental, special or consequential damages whatsoever arising out of or connected with the use or misuse of any of its products.

**Inspect Before Each Use**

This product must be inspected for use to ensure it has not been damaged in shipment. If damaged, do not use and immediately return the product to ParemTech for a replacement.

**Entire Obligation**

The PRODUCT LIABILITY DISCLAIMER document states the entire obligation of ParemTech with respect to the products. If any part of this disclaimer is determined to be void, invalid, unenforceable or illegal, including, but not limited to the warranty disclaimers and liability disclaimers and liability limitations set forth above, then the invalid or unenforceable provision will be deemed superseded by a valid, enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall remain in full force and effect.

**Applicable Law**

Your order from ParemTech, and this disclaimer statement are governed by the laws of the province of Ontario, Canada. You hereby consent to the exclusive jurisdiction and venue of the Supreme Court of Canada, in all disputes arising out of or relating to the use of this product. Use of this product is unauthorized in any jurisdiction that does not give effect to all provisions of these terms and conditions, including without limitation this paragraph.

**Modification of Terms and Conditions**

ParemTech reserves the right to change the terms, conditions, and notices under which its products are offered.

# Device Setup and Installation



- 1 Let's start by plugging in the PTLevel receiver and powering it up to connect it to your WiFi and to ensure everything is working as it should before mounting the PTLevel transmitter on your tank.

Place the receiver anywhere within range of your WiFi. The power LED should be on and the status LED should be blinking three times every few seconds.



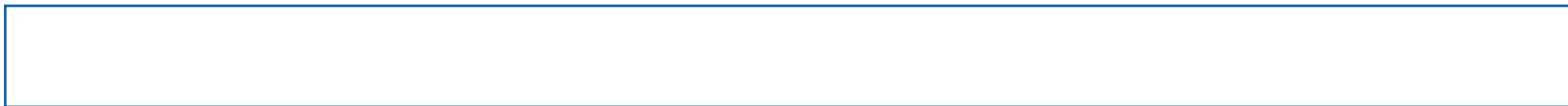
Remove the lid on the transmitter and insert the provided AA batteries into the transmitter. You should see the status LED blink three times slowly to indicate a successful connection with the receiver.



- 2 Let's get the device connected to your WiFi.

You can download our **PTDevices WiFi Connect** applications to your iPhone or Android phone, or you can use the following steps on any device - phone, tablet, pc, mac, etc..

Connect to the PTLevel WiFi signal. The WiFi name is structured like the following: **PTLevel.xxxxxx**. The xxxxxx are the last digits of the Device ID found under the lid or below:

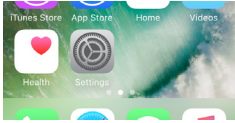


TIP - On some devices, you may need to "forget" your home signal so that it stays connected to the PTLevel for the duration of the setup. This happens because the PTLevel does not provide internet to your device and as soon as you open your browser, your device will try the last known WiFi to get the internet back.

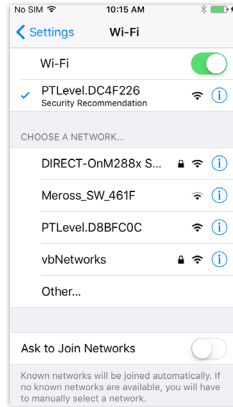
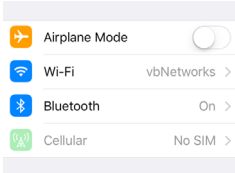
**Screenshots of the procedure on each different type of device are on the following page ->**

## iPhone

Find the settings icon.



Select WiFi in the following menu.



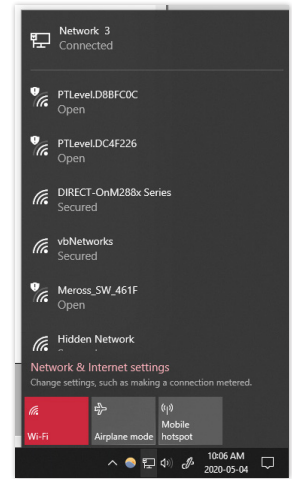
Connect to the PTLevel WiFi.

## Windows

Find the Network icon at the bottom right.



Click on the icon to bring up Wi-Fi list. Select the PTLevel and connect to it.



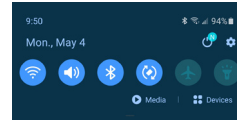
## MacOS

Find the Network icon at the top right and click on it to list the available networks.

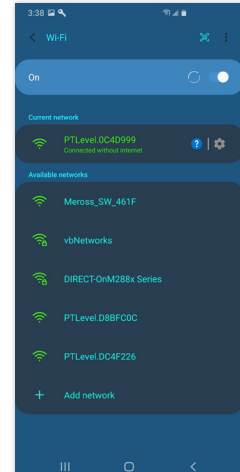


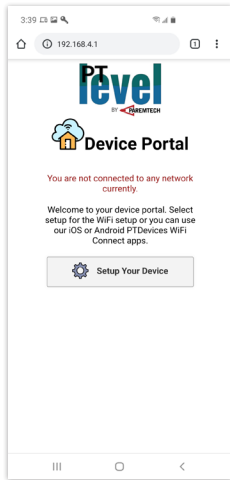
## Android

Pull down the top menu.



Long press the WiFi Icon to bring up the following screen:



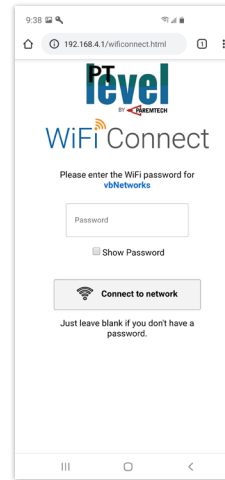
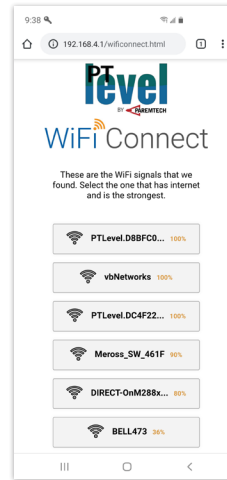


Once you are connected to the PTLevel WiFi, open your device browser and type **192.168.4.1** into the address bar.

You should see the Device Portal.

Select “Setup Your Device”.

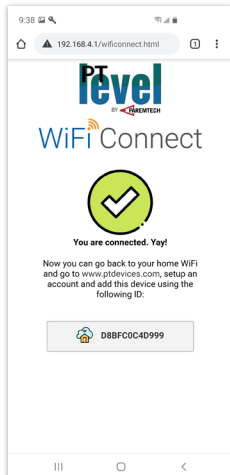
TIP - You must use a browser, not search.



Choose the WiFi signal that will be the strongest at the location of this device's installation.

The next step will be to enter in the password of the selected WiFi network.

Be very sure to enter the password correctly.



You should see the left screen if you've completed the setup correctly.

You can connect your phone/tablet/computer back to your normal WiFi network.

Once you are back on the internet, feel free to click on that ID link to start with your PTDevices.com setup. If you've closed the left screen already, no worries.

3 Let's get you setup online. This simply involves going to [www.ptdevices.com](http://www.ptdevices.com), creating / logging into a free account and adding the device to your account using the provided ID. You can find the ID under the lid of the device or on the previous page.

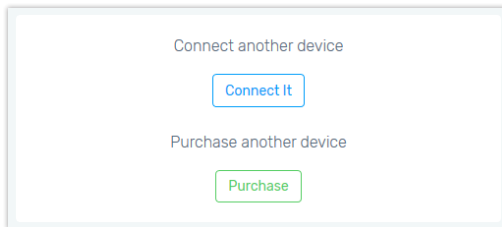


With your free account, you can:

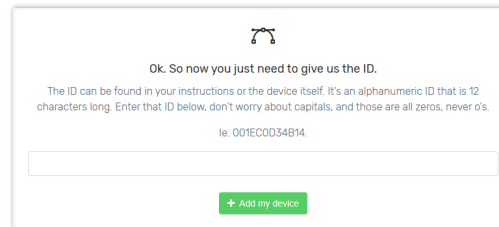
- view device history
- setup sms and email alerts
- share with your delivery company
- and more...

We offer a premium level account where you can upgrade to add even more features to your account:

- two years of device history
- more history UI controls
- download history
- unlimited alert setpoints
- public sharing and web embedding
- send alerts to other recipients
- and more...



Once you have logged in, you can click on the **“Connect It”** button on the dashboard or **“Add PTLevel”** in the main menu.

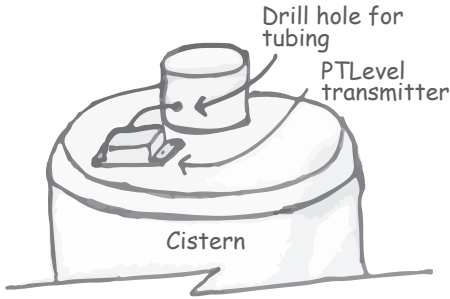


Enter in the ID of the device here and click on **“Add my device”**. If your receiver is connected OK, and batteries are inserted, press the **“Connect”** button on the transmitter.



With a successful connection, you will see the above. Feel free to explore and setup your device online. *(Yours will read 0% initially)*

4 Let's get the transmitter installed on your tank. First we will start with how you can mount the transmitter however it varies depending on the scenario and environment.



The main idea is to mount the device outside of the tank.

For example, if you have an outside underground tank, mount the device on the lid and run the tubing into the tank through the lid or filler pipe.

If you have a built in foundation style tank, just mount the device in the room above.

INFO - The device is fully weather proof and warrantied as such but it is not water proof so you must take precautions to prevent any possible submersion scenarios.

Once the device is mounted and you've found a way for the tubing into the tank, you must connect the weighted pressure chamber next.

WARNING - You must not install the pressure chamber with the tubing disconnected from the device. This will create very improper readings.

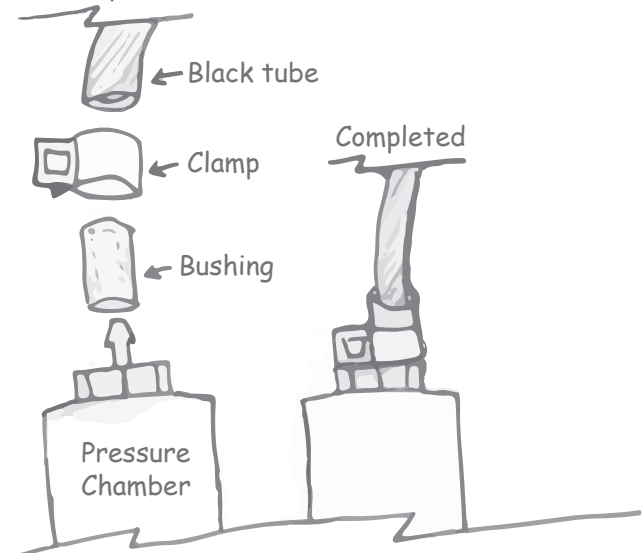
The image to the right is the proper setup for installing the tubing to the weighted pressure chamber. It is recommended to measure and cut the small tubing to the correct length so that the pressure chamber will always stay in the upright position at the bottom of your tank.

INFO - There is a red sealant on the black barb of the pressure chamber, put there to ensure a good tubing seal.

TIP - Use a lighter to briefly heat the end of the tubing so that it goes onto the barb easily.

Now you can carefully lower the pressure chamber into the tank and let it sink to the bottom. Press the "Connect" button to update the reading online.

#### Assembly Process



5 Let's complete the setup online. This step calibrates the reading to make sure it is correct and allows the online system to know some details about the tank we are monitoring.

Log back into your account at [www.ptdevices.com](http://www.ptdevices.com). Click on "Please Setup" or "Features" button at the top right of the level graphic. Click on the "Settings" tab with the gear icon and enter in the full depth of the tank as a decimal number. Ie - 6' 6" would be entered in as 6.5. You may fill out any of the other optional details and then click on "Save Settings".

The first screenshot shows the 'Your Level' page with a blue bar at 55% and a green 'Working' status. A 'Features' button is in the top right. The second screenshot shows the 'Your Level' page with a blue bar at 55% and a green 'Working' status. Below the bar, it says 'Last reported on May 01st, 9:58 AM' and 'Battery Good'. The third screenshot shows the 'Settings' page with tabs for 'Usage History', 'Alerts', 'Settings', and 'Share'. The 'Settings' tab is active. It contains fields for 'Device ID' (D8BFC0C4D9AC), 'Units of measure' (US Imperial (feet)), 'Full depth of container' (1), 'Shape of container' (Rectangle), 'Length of container' (L), and 'Width of container'.

Finally, we can calibrate the level.

The 'Calibrate' page has a title 'Calibrate' with an information icon. Below it is a text input field, a percentage sign, and a green button with a refresh icon. Below the input field, there is a note: 'If your reading is off, measure it yourself, enter in the percentage above, then click the green button.'

1. Press the "Connect" button on the transmitter to get a recent reading.
2. Measure the amount of liquid in the tank.
3. Divide that measurement by the full empty depth of the tank.  
Ie: 72" of water / 144" tank height = 0.5
4. Multiply the above result with 100 to get the current percentage.  
Ie:  $0.5 * 100 = 50\%$
5. Enter the result from step 3 into the calibration input online.
6. Press the "Connect" button on the transmitter to update the calibration online with a recent reading.

INFO - You can only calibrate when the level reading is greater than 20%.



## ***Can't connect or stay connected to the PTLevel WiFi***

Some computers, phones, or tablets won't stay connected to the PTLevel WiFi due to the lack of internet from the PTLevel. Your device will switch back to the last known good WiFi as soon as you open a browser. To prevent this from happening, the best way is to "Forget" the "last known" WiFi. This will ensure your device stays connected to the PTLevel WiFi because there are no other options.

## ***The level is not reading accurately***

If this is the case during the first installation, be sure to check that you've calibrated properly. If this is something that has happened over time, be sure to check all the tubing connections as they must be absolutely air tight. Also try removing the pressure chamber from the tank, allow it to drain and replace it. While you have the tubing out, inspect it to see if there is liquid in the small tubing. That liquid must be removed completely and the connections resealed well. There is more assistance at [support.paremtech.com](https://support.paremtech.com) with this.

## ***What do the receiver status LED blinks mean?***

- Always on - This scenario represents an issue with the device. Please contact us to work with you on repairing or replacing.
- Blinks three times every few seconds - This means that your PTLevel is not connected to any WiFi. Please unplug and re plug in or setup the connection to a WiFi within range.
- Blinks once quickly every once in a while - This is normal function. The Status LED comes on whenever the device reports sensor data.

## ***What do the transmitter status LED blinks mean?***

- Three times slowly - Represents a successful connection with the receiver.
- Two quick blinks every 2 seconds 7 times - Represents an unsuccessful connection with the receiver. Either out of range, or it needs to be linked. Please see [support.paremtech.com](https://support.paremtech.com) for more information.

## ***Device reads "Not Connected" online***

This means that your receiver has malfunctioned or has lost the WiFi signal it was connected to. Check the device for power and see if it can be connected to a WiFi signal within range. This status is for the receiver only.

## ***Device reads "Transmitter Not Reporting" online***

This means that your transmitter has malfunctioned or is out of range. We suggest to give it a day longer to see what happens or go press the "Connect" button on it to see what is happening with it.

## Device Features to Know About

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The device WiFi signal is always available. This gives you the opportunity to easily access the device at any time. The other way to access the device at any time is through your own home network if you know the IP address. You can find the IP in the Features of your device online. A few things available to you if you want to access the device:

- Disconnect the device from the current WiFi.
- Setup a Static IP should you want to.
- Retrieve raw sensor values in JSON format by going to `xxx.xxx.xxx.xxx/get_sensors`

There is an external power option that can be requested when you order the PTLevel. This gives you another power supply and a plug on the transmitter for that power supply. The transmitter can then run on batteries and the external power supply, using the batteries as a backup. You can also wire up a solar system for it using the provided power connector.

## Maintenance

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We recommend that once a season you remove the pressure chamber from the liquid volume, let it drain, then replace it into the liquid again. This resets the air pocket and will keep the reading as accurate as possible. Re-calibrate if necessary. The PTDevices system will send you friendly reminders to do this.

## Batteries

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The PTLevel transmitter is where the batteries reside. It requires 4 AA batteries of any type. Just remove the four screws in the lid, pull off the lid carefully, pop the batteries out carefully, and finally, place the new batteries. You should note what the status LED is doing after the last battery is replaced.

## Applications

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Below are a few application ideas for this device. It can be used for a septic application, however please contact us to see what is required for that application.

Cistern, dug well, sump, peroxide, chlorine, oil, fertilizer, livestock watering, rain water harvesting

# Specifications

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## Connectivity

- 802.11 b/g/n 2.4Ghz WiFi
- 915Mhz LoRa

## Receiver Power

- 4V to 16V DC input range
- 110V - 220V 50/60Hz Wall adapter - 8v DC 500mA output

## Transmitter Power

- 4 AA batteries of any kind
- Expected battery life: at least one year
- 4V to 16V DC input range (External Power Option)

## Dimensions

- Transmitter - 69mm x 140mm x 51mm
- Receiver - 55mm x 95mm x 51mm
- Pressure Chamber - 250mm height, 91mm base diameter, 26mm base height, 22mm tube OD
- 5/32" OD Ether based polyurethane tubing

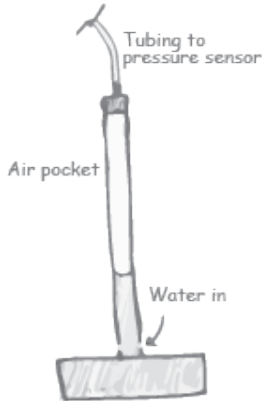
## Technical

- -40°C to 125°C temperature range
- 0ft to 20ft depth reading range

## Package Contents

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- PTLevel receiver
- PTLevel transmitter
- Four AA batteries
- Weighted pressure chamber
- 13' of pressure tubing
- Pressure tubing clamp and bushing



## Device Function

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The PTLevel works by measuring the pressure of an air pocket created and held at the bottom of your tank in the pressure chamber. The pressure variance relates to the height / weight of the liquid. This reading is then transmitted to online servers where a few algorithms are used to translate that data into a usable reading along with many other features.



www.paremtech.com  
www.ptdevices.com

## FCC Regulatory Compliance

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## ISED Regulatory Compliance

This device contains licence-exempt transmitters that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.