Water Leak Detector

Installing and configuring the Blynk smartphone project.

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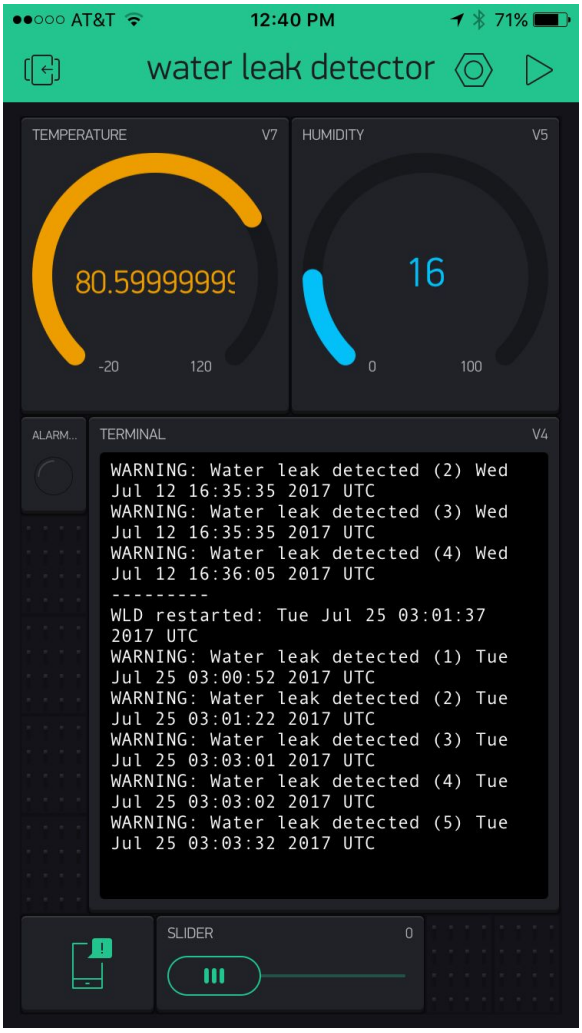
Purpose

This document will give you instructions for installing the Blynk smartphone app that pairs with the Water Leak Detector.



The WLD Blynk Project

What is Blynk?

Blynk is a free application that can be used to communicate between smartphones and IoT devices. The Blynk application runs on both Android and Apple devices. When the Blynk app is running you can create other “projects” that can talk to your IoT devices. Each project generates a unique code that you embed in your IoT device; this code is what allows your IoT device to authenticate your smartphone.

We have created a Blynk project for the WLD and will share that project with you.

Note… Blynk is indeed free for a user of one small app, like the WLD project. However, if you have several WLD devices you will need a copy of the project for each one. Blynk allows you to do this, but for a price. Currently Blynk charges a nominal one-time fee for each additional project you run. (Their actual pricing is structure is based on complexity of the project, but for $2

you could run a couple of WLD.) The good news is that your first WLD project should be entirely free!

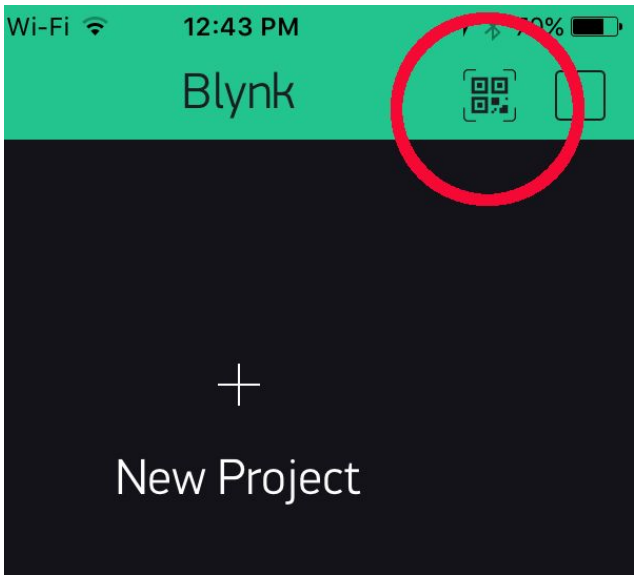
Steps

Sign up for Blynk

Go to http://blynk.com and sign up for a free account. Install the Blynk app on your smartphone.

Install the WLD Blynk project

Open the Blynk app. Log in to your account.
On the upper right of the main Blynk screen is a small QR code icon; tap it.

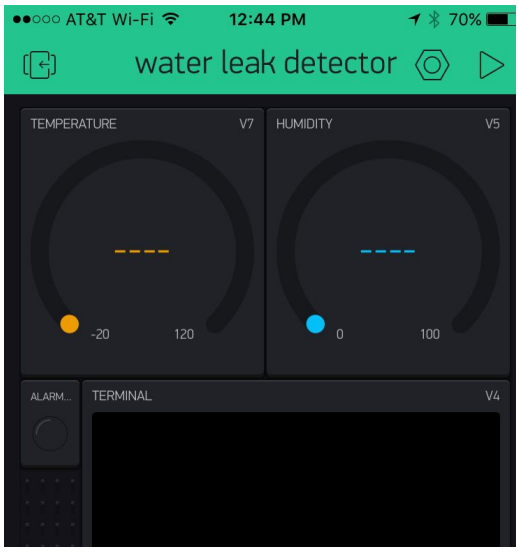


Blynk App Start Screen, QR code icon

When Blynk asks to you scan a QR code, scan this one:

Blynk WLD Project QR Code

This will give you a copy of the WLD project.

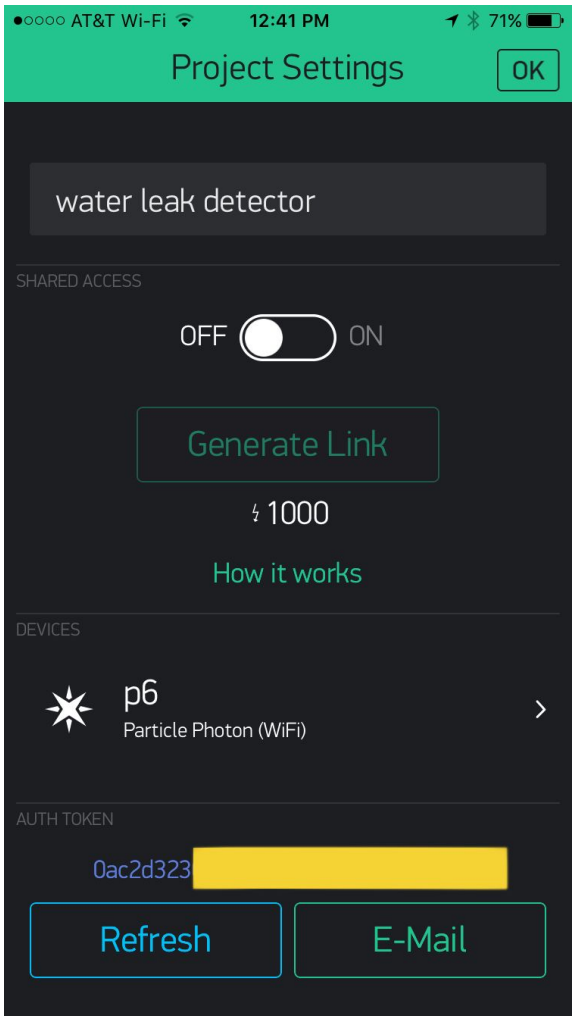


Newly Loaded WLD project

If you have already created other Blynk projects, then you may be asked by Blynk to purchase “more power.” However, if you’re already a Blynk user, then you should expect this.

Put your Blynk project Auth Token in the WLD firmware

Select the WLD project and tap on the hex-nut icon in the top right corner to bring up the project settings.



Note: part of auth token has been redacted.

Note the long hex string titled “AUTH TOKEN”. This authorization token is unique to your phone and this instance of the WLD project. Tap the button labeled “E-mail”. Blynk will email the authorization token to you.

Open your email and find the email from Blynk.

Follow the instructions in the document, “Instructions for Installing and Testing the Water Leak Detector Firmware”, section “Copy Your Blynk Authentication Token into the Firmware”

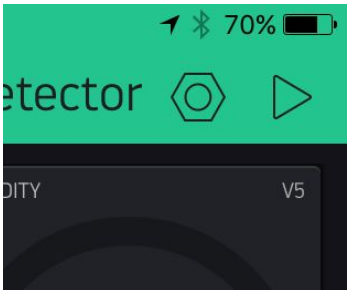
In the Blynk WLD project settings, tap the device selection. Provide any name you want. Select Device Type: Particle Photon. Connection Type: WiFi.

Exit Project Settings.

Configure the Blynk WLD Project

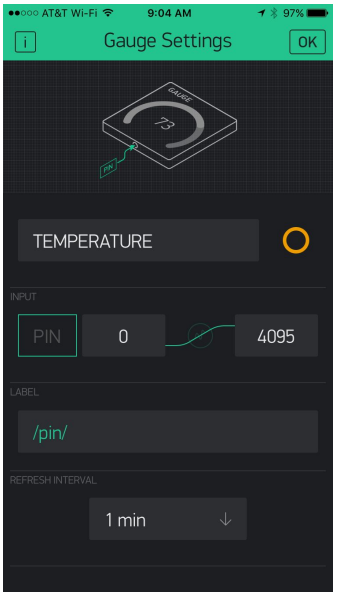
The Blynk WLD project has a number of “widgets”: two gauges, a virtual LED, a terminal text box, and a notification widget. Each of these widgets must be configured to read a specific “virtual pin” in the firmware on your Photon. This may sound a bit confusing, but it is easy to set up.

We will walk through configuration of each widget. First, be sure the Blynk WLD project is not running - in the upper right corner you should see an arrow, not a square.

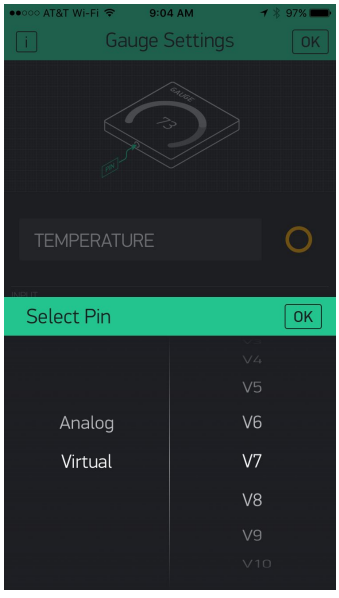


Blynk WLD Project Stopped

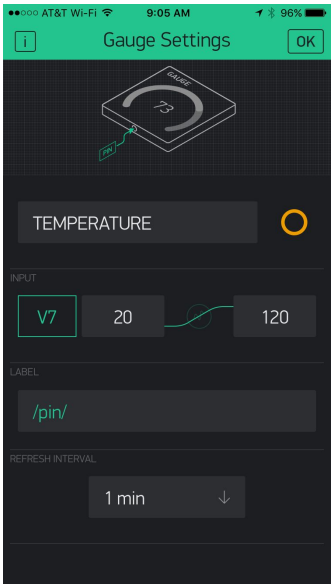
For each widget you will tap on it to bring up its Settings screen, make the configuration changes, and tap OK. Here are some pictures of a typical Settings screen:



Raw config



Selecting a pin



Finished config

Assign Inputs to Each Widget[1]

1. Tap the gauge widget labeled “Temperature”. This brings up the widget configuration screen. Set the “pin” to “Virtual” and “V7”. Set the range to be 20 to 120. Now tap “OK”.

2. Tap the gauge widget labeled “Humidity”. Set the pin to V5. Set the range to 0 to 100. Tap OK.

3. Tap the LED widget labeled “Alarm”. Set the pin to V6. Tap OK.

4. Tap the Terminal widget. Set the pin to V4. Tap OK.

5. Tap the alert widget at the bottom left of the project. Select Yes for Alert When Hardware Goes Offline. Tap OK.

Run the Blynk WLD Project

Locate the little right pointing arrow in the upper right corner. Tap it to run the Blynk project; the arrowhead should turn into a square.

The app should now come alive with temperature and humidity readouts. The Terminal window widget should also show a notification that your Photon has rebooted recently.

[1] The virtual pin assignments can be found in the WLD firmware. You will find several source lines similar to this: `#define BLYNK_VPIN_TEMPERATURE V7`

Blynk WLD project running

Test it

Place a bit of water (like a wet finger) on one of the water sensors. The Alarm indicator in the Blynk project should turn red immediately. You should then get a pop-up notification on your phone. 30 seconds later you should get a second pop-up notification.

Pop-up notifications should appear anytime the Blynk WLD project is running, even if the Blynk app has been put into the background of your smartphone.