IRRIOT
Installation Instruction

Version 1.1

Base Unit Installation

Begin installation with the Base Unit, the Wireless Irrigation Controller itself.

Mounting and Powering the Unit

The Base Unit requires mains power. The unit is equipped with a 2m cable with a EU plug. The Base Unit hangs on two screws, with one extra screw underneath the sliding latch for robustness:

If your Base Unit is equipped with the extension module (optional), a 12V backup battery, e.g. a standard car battery, can be connected to it. The battery is not used (not discharged) while the unit is connected to mains power. In the event of mains outage, the battery automatically takes over without any service interruption. A fully charged 65Ah car battery will supply the Base Unit for at least 1 month, providing for all scheduled and manual irrigation. The screw terminal for backup power connection is shown on the figure below:

Pull out the Extension board halfways to get access to the screws. Observe the polarity! There are “+” and “-” signs beside the terminal.

To provide for the entry for the backup (or any other external) cable, cut the rubber inlet cover appropriately:

Antenna Installation

The controller is co-located with the high-gain ceramic antenna. The RF cable provided is 10m long coaxial 50Ohm RF cable, black:

The cable should not be modified by the customer. It is not possible to shorten or extend an RF cable without severely undermining radio performance. If your requirements can not be met with the 10m cable between the antenna and the Base Unit, please order a cable with desired length from us or other electronics/radio professionals. The cable has an N-type socket on the antenna side and SMA plug on the Base Unit side.

The Base Unit has two RF ports, both residing on top of the unit. The left side connector is for WiFi. It has the antenna mounted upon delivery. The RF connector to the right, is for LoRa communication. That is where you connect the black RF cable coming from the high-gain antenna:

Choosing the location and height of the antenna is the most important factor for stable connectivity. One should struggle to provide a direct line of sight between the high-gain antenna and the Remote units. Trees are normally no problem, but hills or, common for the farms, metal buildings in the way are. Such objects in the line of sight may lead to communication delays, and in worst case timeouts. Please consider the following examples:

Good enough example:

Excellent example:

Perfect example:

When selecting location for the high-gain antenna/Base unit consider that you will mostly control irrigation from the app. Thus placing the Base closer to the valves (or pump) is better than placing it closer to your home/office.

In some cases a 17cm whip antenna is sufficient to provide the required coverage. The antenna is included in the delivery for test purposes but it can be used at smaller installations too:

Notice, the WiFi antenna is always mounted on delivery. The antennas are of the same type.

Pump Control (optional)

If your Base Unit is equipped with the Extension Module, you can configure the Unit to start and stop 1 or 2 pumps. Notice that the Pump outputs are passive relay contacts. Typically a frequency pump controller has a factory default configuration for one digital input specifically allowing to activate or deactivate the pump externally. Normally it is between the 24V output pin on the frequency controller and the digital pump activation pin that the wires from the Base Unit should be connected. If in doubt, ask your pump supplier or IRRIOT engineers. The picture below illustrates where the control wiring for pumps go from:

Pull the wires through the inlet cover underneath the unit. Pull out the Extension board to access the terminal's screws. Screw the wires (no polarity). Push the board back in, when the wires are connected.

In order to get the pump activated when a specific wireless station opens its valves, the wireless station should be configured accordingly through the menu.

Rain Sensor

A rain, or any other switch-type sensor, can be connected to the Base Unit. First remove the red shorting wire by pushing the orange pad and pulling the wire, one end at a time:

The terminal to the left corresponds to Base Sensor 1, the other terminal is sensor 2. Use sensor 1 if available, because it is configured as a rain sensor by default.

Second step, pull the Rain Sensor's wiring through the inlet in the bottom, and connect to the terminal (push the pad with a screwdriver and stick the wire all the way in).

The Rain Sensor can be connected to a Remote Unit too. This is a little more complicated, since the wire ends should be incorporated in a special connector, and the sensor would require configuration in the Sensor Configuration matrix. This however, may prove practical in some cases.

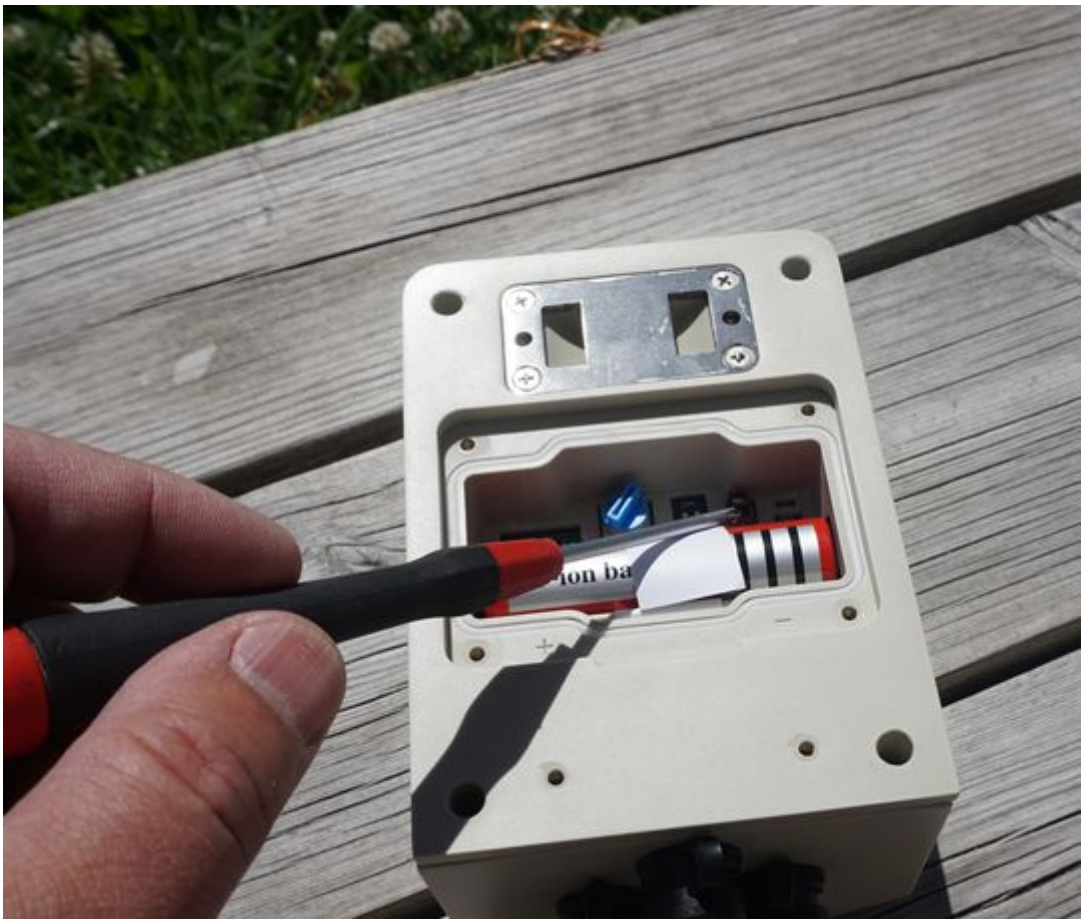
Remote Units' Installation

Now it is time to install the Remote Units. The Remote Units arrive to you paired with the Base Unit. So they have a number assigned. This is the Wireless Station number.

All you need to do to get them up, is to power up. For this, unscrew the latch on the back:

Wireless Remote Station

and lift up the little rocker switch:



Both the LED inside and the alarm LED outside will illuminate for 3 seconds. Screw back the latch. The Remote is activated.

For mounting the Remote Units, consider the following options:

a. the bracket

b. The hose clamp or just a plastic tie, whichever suits you best:

Each unit comes with a pair of pre-stripped 1.5m valve cables:

You can extend or shorten these cables freely to reach out to valves a hundred meters away if desired. Use the blue watertight silicon connectors to attach to the solenoids in the field (press all the way down with the pliers for a proper contact!).

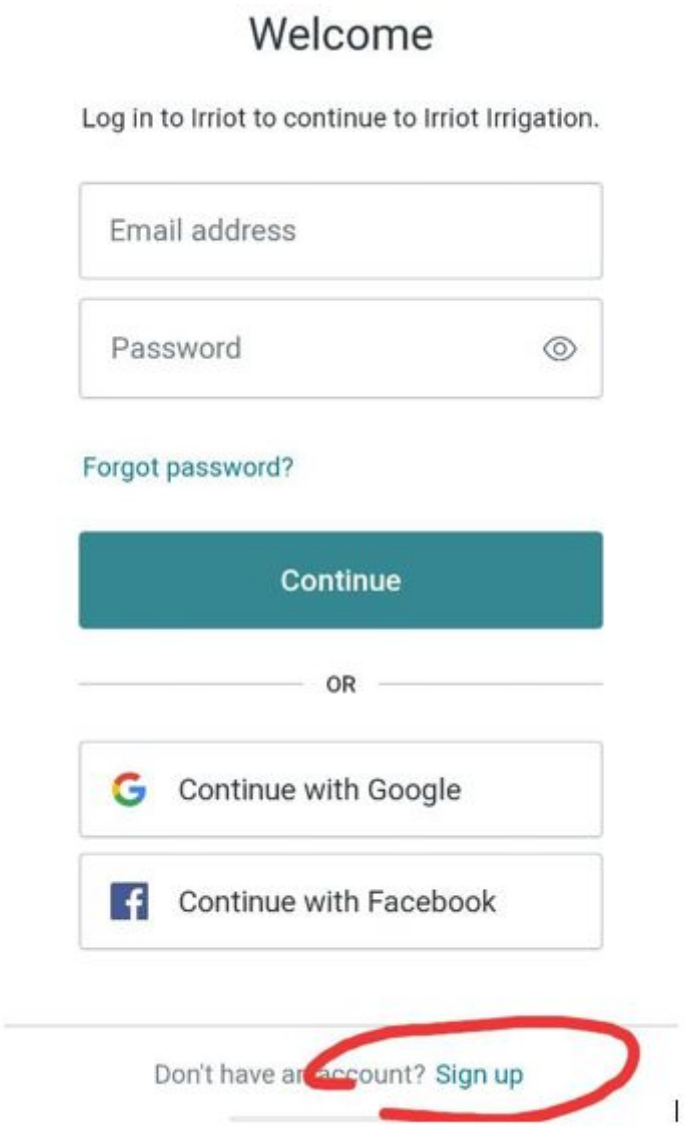
IRRIOT Cloud Service

The next step is to connect to the IRRIOT Cloud. Firstly, connect the WiFi dongle to the permanent WiFi in your area. Please follow the below tutorial:
https://www.youtube.com/watch?v=9i5A5EQayJw&t=14s

Upon successful establishment of the Hub connection, the LED on the WiFi dongle will lit green:

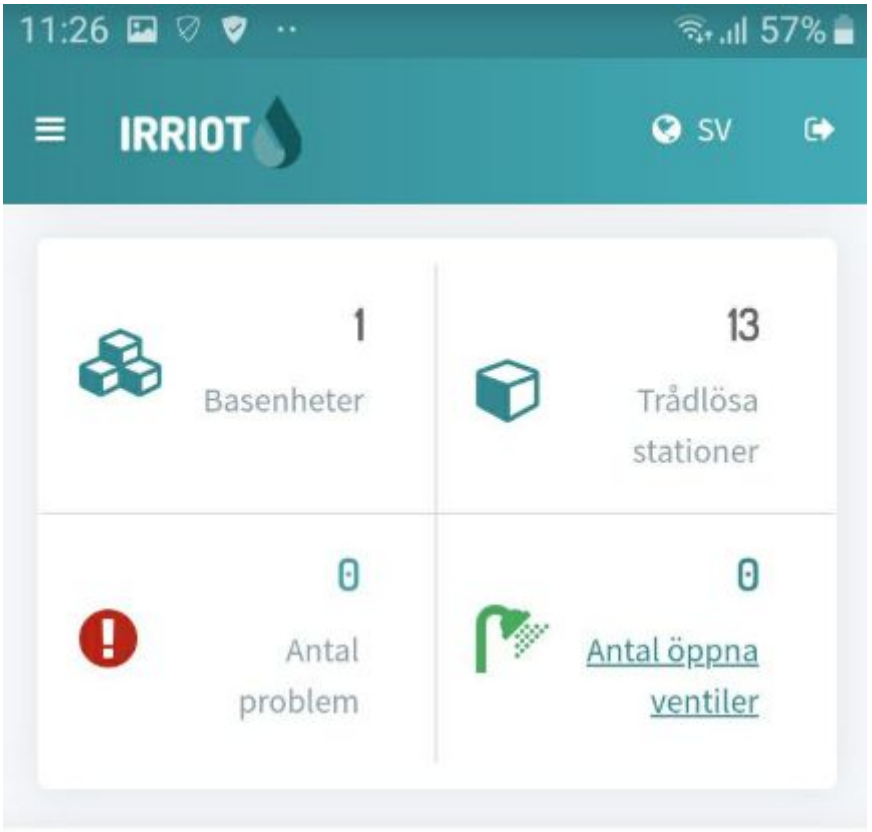
Next, you have to create your account and register your Base Unit in the cloud. In a browser in your mobile, type app.irriot.com

You'll see the login page. Choose Sign up::



Once the registration is complete, just follow the wizard for registering your Base Unit. You will need your unique Base Unit ID. You can see it in Menu About... or inside the Base Unit under the sliding latch. Type it in the Wizard when asked for.

If all is successful, on completion of the wizard you should see something like this:



Now you have to restart the Base Unit to sync up with the Cloud. You can pull the wall plug, or push the reset button underneath the slider in the Base:

Reset