

1 CONNECT SPRUCE SENSOR TO SMARTTHINGS

Perform the following steps near your Spruce Sensor near the SmartThings Hub. Open the SmartThings App and navigate to the Marketplace ☼ by tapping then tap + Connect New Device.

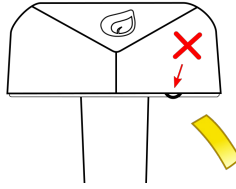
SmartThings will start to search for devices. Pull out the battery isolation ribbon while SmartThings is searching for devices.

NOTE: There is a rubber o-ring which forms a watertight seal. Make sure that this o-ring has **not** popped out of place when the ribbon is pulled out (like in the schematic to the right). If the o-ring has been disturbed, un-screw the lid on the sensor and re-seat the o-ring.

The Spruce Sensor will automatically attempt to join the network and should connect to SmartThings within 1 minute.

Once connected, select "Spruce Sensor". On the next screen, add this Sensor to the Spruce Room (if it exists) or add the Spruce Room (tap Select a Room -> Add a new room and name it Spruce).

On the next screen, configure the preliminary options. **It is highly recommended that you rename your Sensor with a description.** You can also associate a picture with the Sensor. When done, tap next. Make any desired changes, then tap Done.



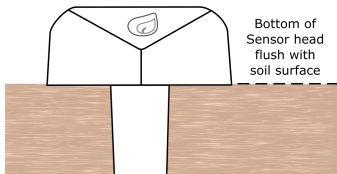
2 SELECTING SENSOR PLACEMENT FOR CONTROLLER FEEDBACK + AUTOMATIC SCHEDULING

Place the sensor in a location where it will be exposed to watering from the zone of your choice; ideally, in the middle of the watering area. Find a spot that is representative of the zone. Once installed, Spruce Sensors are low enough that lawn mower blades can pass over without contact. **WARNING: Impact from a riding mower tire or any other large machinery at appreciable speed can damage the Spruce Sensor.** Use caution to avoid impact with Spruce Sensors if using such equipment, or locate the sensors outside of the operating area of large equipment.

SENSOR RANGE Spruce Sensors work best up to 150 ft from either your SmartThings Hub or your Spruce Controller, after accounting for typical obstructions such as walls or other radio devices. An open line of sight will increase the range and has been tested to over 300ft. Any Zigbee wall-powered device will also act as range extenders for Spruce Sensors. No additional setup is required for range extension to occur.

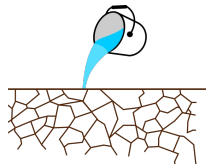
3 SENSOR INSTALLATION

Push the Sensor into the ground until the bottom of the Spruce Sensor is flush with the soil surface.



WARNING: Attempting to insert the sensor into hard, dense soil may cause the sensor to break.

If the Spruce Sensor is difficult to insert because the soil is packed and dry, soak the soil with water until the soil is soft enough for insertion.



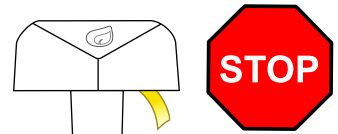
YOUR PLANTS WILL THANK YOU FOR THIS

Your Spruce Sensor will make your life easier by telling you how wet or dry your soil really is. Pair Spruce Sensors with your Spruce Controller for in-ground irrigation systems and let the system control itself.

The Spruce Sensor measures soil moisture content between 3 inches to 5 inches below the soil surface. The Spruce Sensor can be used indoors or outdoors.

NOTE: This guide will assume that you have already configured your SmartThings Hub & installed the SmartThings App on your smartphone or tablet. Refer to the SmartThings manual to get SmartThings up and running.

A SmartThings Hub is required for operation.



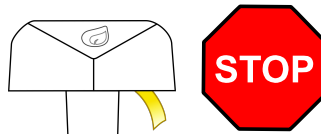
IMPORTANT!!! Do not remove the pull-tab from the battery compartment until instructed.

Can't connect to the network?
Need more information? Visit
support.spruceirrigation.com

Operating Range
Spruce Sensors can be safely operated between 0°F and 120°F. Moisture readings will only be valid above freezing temperatures (32°F).

spruceirrigation.com/terms

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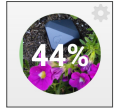
IMPORTANT!!! Do not remove the pull-tab from the battery compartment until instructed.



spruce
Soil Moisture Sensor
Quick Start Guide

READING MOISTURE DATA

Moisture data is shown in the Spruce Room that you set up, or in the Things section of the SmartThings App (Navigate to My Home  --> Things). It should typically read in from 15%–45% and the range will vary based on soil type. The sensor will poll for moisture data every 10 minutes by default.



If there is no change in the moisture value, no activity will be reported in the "Recently" tab.

Because of this, it may take several hours for a moisture reading to report.

BATTERY STATUS

The Spruce Sensor uses one replaceable CR123 battery, which will last at least one year. Battery status can be viewed in the SmartThings App. If changing the battery, be sure that the o-ring is seated properly when re-assembling the sensor, so that the integrity of the waterproof seal is maintained.



ASSIGNING SENSORS TO ZONES

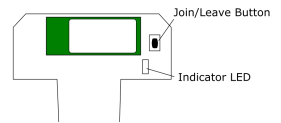
Sensor assignment is performed through the Spruce SmartApp. Ensure that your Spruce Controller is configured first, then assign sensors in the Zone Summary and Setup section. Refer to the Spruce Controller Manual for details.

TROUBLESHOOTING SENSOR CONNECTIVITY

REMOVE SPRUCE SENSOR FROM THE NETWORK

The sensor must be removed from the network on both the sensor hardware as well as in the app. Start by un-joining the sensor on the hardware itself. Remove the 2 screws from the sensor with a Phillips screwdriver and slide the top cover off (Do not attempt to remove the bottom plastic plate. It must remain permanently attached to the Sensor probe). **NOTE:** The o-ring in the outer groove creates a waterproof seal for the Spruce Sensor. Be careful to not lose this o-ring.

Unpair the Sensor by holding down the Join/Leave button on the Sensor. The LED indicator will turn blue after a few seconds – release the button as soon as the LED turns on. Once the button is released, the LED will turn off. Remove the battery, and leave it out for at least 30 seconds to ensure a full reset.



Now remove the sensor from the SmartThings. The sensor may have joined as a generic “Thing” if the join process was incomplete; check your Things list to be sure. In the Sensor’s Thing page, or in the generic “Thing” page, tap the three dots at the upper right hand side of the screen, then tap Edit Device. Scroll down and tap, “Remove.”

Spruce Sensor is now completely disassociated with your SmartThings Hub.


RECONNECT OR RE-JOIN SPRUCE SENSOR TO THE NETWORK

Make sure the Spruce Sensor is not exposed to moisture during the join process. Follow the instructions in the first step of this Quick Start Guide (titled, “Connect Spruce Sensor to SmartThings”) to join Spruce to the SmartThings network. When prompted to pull out the battery isolation ribbon, insert the battery and press the Join button once.

If the join was successful, the Recently Tab should say “Configuration Successful” soon after the “Configuration initialized” message. **NOTE:** you may need to completely back out of the Spruce Sensor Summary screen, then re-enter, in order for the Recently Tab to refresh.

REINSTALL THE PLASTIC HOUSING

Once Spruce has connected successfully, put the Sensor back together. **Ensure that the o-ring is installed properly** – it should be pushed down flat against the bottom surface of the plastic, and hug the outside of the o-ring lip. This o-ring serves as the seal which prevents water from entering the device, so take care to install the o-ring correctly. Slide the top cover back, making sure that the o-ring is still in proper placement, and re-install the screws.

 Spruce™ Wireless Soil Moisture Sensor
Model Number: PS-SPRZMS-01
Contains FCC ID: XFF-Z357PA20
FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 to an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

Changes or modifications to this product not authorized by Plaid Systems could void the electromagnetic compatibility and wireless compliance and negate your authority to operate the product.

Canada Statement

This Class B digital apparatus complies with Canadian ICES-003
This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.