FARM-MESH

Quick Start Guide

Solar transmitter / repeater · Yellow WiFi Bridge · Sensors

MUST KNOW

RULE 1

Antenna first, then power

Always tighten the antenna by hand before powering the solar transmitter or repeater. Powering it without an antenna reduces range and may damage the radio inside.

RULE 2

Wake the unit with USB

Solar transmitters and repeaters ship in transport mode. Before mounting, connect USB power for at least 10 seconds, otherwise the unit will not appear in the app.

IN BRIEF · SIX STEPS

Use this table as your installation checklist. Complete the steps in order, and before leaving the farm check that the antennas can see each other.

Step	Action	Pass check
1	Assemble the solar transmitter or repeater and fit the antenna.	Antenna is vertical and hand-tight.
2	Connect USB power to the solar transmitter or repeater for at least 10 seconds.	The unit is awake from transport mode.
3	Install the Farm-Mesh app on Android or iOS.	The app opens on your phone.
4	Power the Yellow WiFi Bridge and pair it to WiFi with the app.	Bridge is on the correct WiFi network.
5	Connect sensors and test readings before final mounting.	Each sensor shows a recent value in the app.
6	Install with clear line of sight and test on site.	Bridge is within 250 m of the nearest repeater.

KIT COMPONENTS COVERED BY THIS GUIDE

Your readings travel in one direction: the sensor connects by cable to the solar transmitter, which sends them by radio to a solar repeater. They then pass through any further repeaters and finally reach the Yellow WiFi Bridge, which puts them onto your WiFi.

SOLAR · TRANSMITTER

Solar transmitter

Connects to the sensor by cable and sends the readings by radio.

SOLAR · REPEATER

Solar repeater

Passes the readings on to the next repeater.

BRIDGE · WIFI

Yellow WiFi Bridge

Receives the readings from the nearest repeater and sends them to your WiFi.

SENSORS

Sensors

Soil moisture, water pressure, irrigation and other sensors. Each one connects to a solar transmitter by cable.

WHAT YOU WILL NEED ON SITE

Equipment

- ☐ A pole for each solar transmitter and repeater
- ☐ Hose clamps, cable ties, a spanner or screwdriver
- ☐ A portable USB power bank or USB power supply
- ☐ A spade or auger for the soil sensors

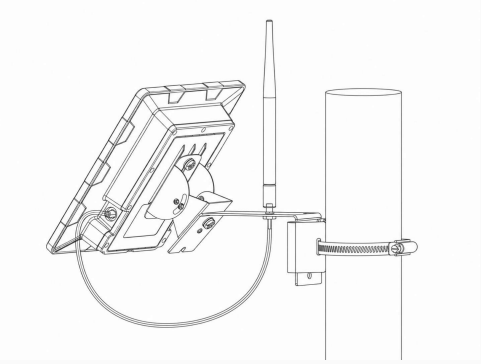
Connectivity

- ☐ A smartphone with mobile internet
- ☐ The farm WiFi name (SSID) and password
- ☐ A power socket within 10 m of the WiFi router
- ☐ Bluetooth switched on on your phone

1 Assemble and connect the antenna

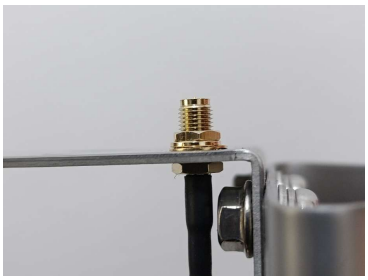
Finish the mechanical assembly and connect the antenna **before** powering the unit. Choose a pole with the best view of the field and the nearest repeater.

1. Fit the metal bracket to the back of the solar transmitter or repeater.
2. Set the solar panel angle so it gets good sun.
3. Screw the antenna onto the antenna connector. Hand-tighten only.
4. Keep the antenna vertical for the best range.
5. Fasten the unit to the pole with the supplied hose clamp.



Final arrangement: solar transmitter or repeater, bracket, antenna, cable loop and pole clamp.

Bracket with pivot plate.



Antenna connector.

! Never power on without an antenna

Without an antenna, range drops and the radio inside can be damaged.

2 Wake the solar transmitter or repeater with USB

Solar transmitters and repeaters ship in **transport mode** to save battery. They will not work until you have woken them once with USB power.

1. Check that the antenna is already connected.
2. Plug a USB power supply or power bank into the solar transmitter or repeater.
3. Keep USB connected for at least 10 seconds. The LEDs will show power.
4. Disconnect USB. The unit will now run from solar and the internal battery.
5. If the unit does not appear in the app later, repeat this wake-up step.

Workshop checks before you head out

Antenna Vertical and hand-tight on the antenna connector.	**USB wake-up** Done for 10 seconds or more. The LEDs lit up.	**Solar panel** Faces open sky for the season.
Pole clamp Tightened firmly. Does not turn when pushed.	**Cable** No sharp bends. No strain on the connector.	**Label** Unit number recorded in a list or on a map.

3 Install the Farm-Mesh app

Search for “Farm-Mesh” in Google Play or the Apple App Store, or scan the QR code with your phone camera.

iPhone / iPad

Apple App Store

Scan to install

Android

Google Play

Scan to install

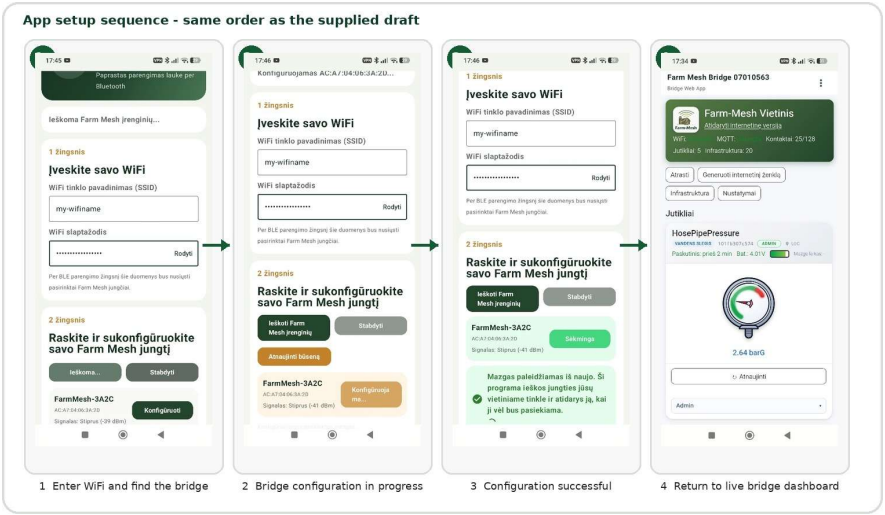
4 Power the Yellow WiFi Bridge and set up WiFi

The Yellow WiFi Bridge connects your network to the internet. Set it up on the WiFi network where it will stay — if you later move it to another network, you will have to repeat this step.

1. Plug the Yellow WiFi Bridge into a USB power supply.
2. Open the Farm-Mesh app and follow the on-screen instructions.
3. When prompted, enter the farm WiFi name (SSID) and password.
4. Wait until the bridge display shows a successful connection.
5. Keep the bridge within 10 m of the WiFi router for a reliable connection.

If you change the WiFi network later

If you move the bridge to a different WiFi network, repeat steps 1–4 on site. You may need to uninstall and reinstall the app to clear the old settings.



App screens in order: 1) enter WiFi, 2) bridge configuration, 3) successful connection, 4) live bridge dashboard.

5 Connect sensors and test readings

Always confirm that readings are coming in **before** you tie everything down with cable ties. Moving a unit a metre or two is far easier than dismantling gear that is already fixed.

First test

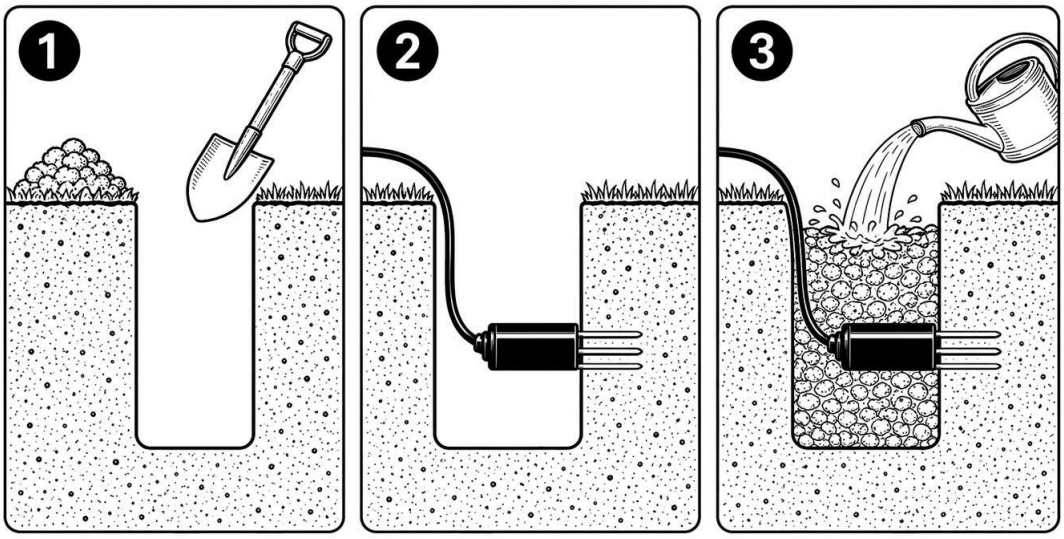
1. Connect the sensor cable to the solar transmitter.
2. Open the app and wait for the solar transmitter to appear in the list.
3. Check the battery and solar status and the latest sensor value.
4. Move the transmitter or repeater if readings are not updating.
5. Tighten the final cable ties only after you get stable readings.

What a good test looks like

- ✓ **Transmitter visible.** The solar transmitter is listed in the app.
- ✓ **Recent value.** The value updates once the sensor is connected.
- ✓ **Stable signal.** Readings keep coming after you move the transmitter or repeater to its final position.

Soil sensor installation

Install the soil sensor in undisturbed soil, water it in, and let the soil settle around the sensor. The three pictures below show the sequence.



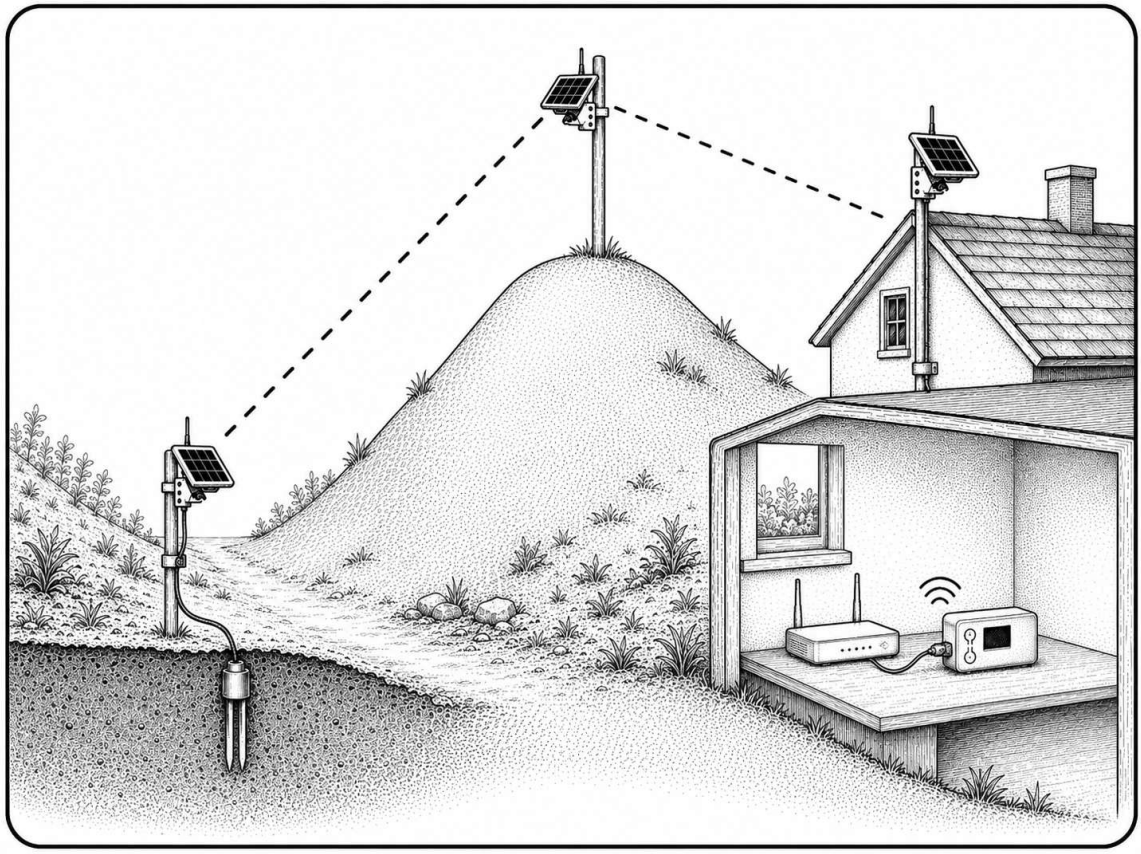
1
Dig a narrow slit to the required depth.

2
Push the sensor into firm soil so the tines are fully covered.

3
Backfill, press the soil around the sensor, and water in well.

6 Install for clear line of sight

Farm-Mesh range is best when antennas can “see” each other. **Do not place transmitters or repeaters behind hills, dense trees, buildings, metal tanks, or machinery.**



Recommended layout: transmitter → repeater → repeater → Yellow WiFi Bridge, with all antennas in view of each other.

Transmitter and repeater placement

- Each solar transmitter should have line of sight to a repeater.
- Repeaters should have line of sight to each other.
- Maximum distance between repeaters: 2 km.
- Mount repeaters as high as possible — on a hill, pole, barn or farmhouse roof.
- Keep all antennas vertical.

Yellow WiFi Bridge placement

- Bridge — within 250 m of the nearest repeater.
- Bridge — within 10 m of the WiFi router.
- If the bridge is moved to a new WiFi network, repeat step 4.
- Before leaving, check the live readings in the app.

The network at a glance — distances

Plan your installation with these distances in mind. The network is most reliable when every link stays comfortably within its maximum distance.

Link	Maximum	Why it matters
Transmitter → Repeater	**≈ 2 km with clear line of sight**	Obstacles greatly reduce the real range.
Repeater → Repeater	**2 km per hop**	Mount as high as possible to keep hops reliable.
Bridge → Nearest repeater	**250 m**	The bridge is the gateway to your WiFi.
Bridge → WiFi router	**10 m**	The closer, the more reliable the connection.

Troubleshooting

The most common first-install problems and the quickest fixes.

Symptom	Likely cause	Fix
Unit not visible in the app	The unit is still in transport mode.	Connect USB power to the solar transmitter or repeater for at least 10 seconds, then refresh the app.
Bridge will not connect to WiFi	Wrong SSID or password, or too far from the router.	Re-enter the WiFi details in the app. Move the bridge to within 10 m of the router and try again.
Readings stopped after final mounting	Line of sight to the repeater was lost.	Raise the unit higher, or add another repeater between it and the existing repeater.
Sensor value not updating	The sensor cable is not fully seated, or the sensor is not paired.	Reconnect the sensor cable to the solar transmitter. If you still see nothing, repeat the USB wake-up.
Bridge worked, now unreachable	The WiFi network changed, or the router was moved.	Repeat step 4 on site. If the bridge still will not pair, reinstall the app.
Solar unit battery keeps draining	The solar panel is shaded or not facing the sun.	Reposition the panel toward open sky. Move the unit out of long shadows.

Before you leave the farm

Go through this checklist with the app open. What takes minutes to fix now would take hours later.

Equipment

- ☐ All antennas are vertical and hand-tight.
- ☐ All pole clamps hold firmly.
- ☐ Solar panels face open sky.
- ☐ No strained or pinched cables.
- ☐ Soil sensors have been watered in.

App

- ☐ Bridge is connected and shows a recent timestamp.
- ☐ All solar transmitters and repeaters appear in the device list.
- ☐ Each sensor shows a recent reading.
- ☐ All transmitter and repeater batteries are sufficiently charged.
- ☐ Device names match the labels or map on the farm.