

Quantified installation manual

Congratulations on your purchase, thank you for choosing Quantified!

This is a quick guide to getting started. Go to <https://www.quantified.eu> for manuals and the product catalog of specifications.

1 Gateway installation

When using ethernet on a business network: open "port 1700". (For IT department, connect to: router.eu.thethings.network with upd protocol).

For optimal functionality, the gateway's antenna should be placed as high as possible:

- Higher than 6 meters from the ground and above the canopy
- Antenna placed vertically (standing or hanging) in line of sight with the sensors
- No concrete/metal obstacles within 1 meter of antenna

Indications for range and effect on battery life Firefly

Cultivation system	Antenna	Battery FireFly	Range (Gateway - Firefly)
High wire	6 meters and above the canopy	+/- 9 months	+/- 100 meters
Tables	4-6 meters and above the canopy	+/- 11 months	100- 300 meters
Floor	3-6 meters	+/- 14 months	300 -500 meters
Open field	> 6 meters	+/- 10 months	1,000 - 5,000 meters

1.1 Instructions for Gout Gateway

1. Squeeze the tabs (1) to access the antenna, power and Ethernet ports. Tighten the antenna screw rings firmly hand-tight, 2 times:
 - in the gateway
 - and**
 - on the antenna side.

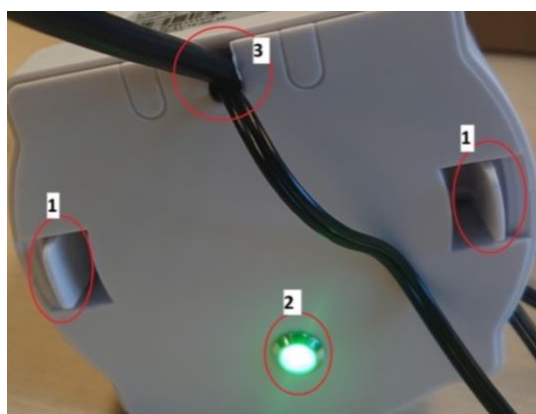


Figure 1. underside of the gateway.

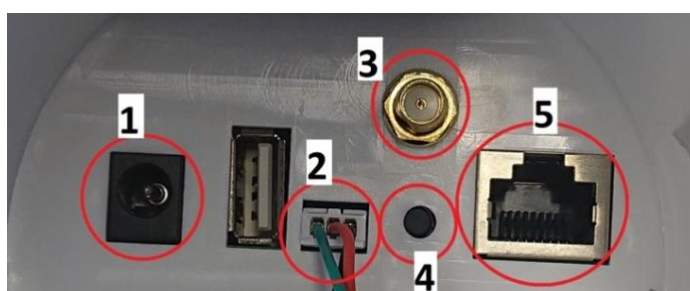


Figure 2. (1) Power source, (2) LED connector, (3) Lora antenna connector, (4) Hard reset (**Do not use!**), (5) Ethernet port.

2. LED status light:
 - A. CONSTANT GREEN: Gateway has a LoRaWAN server connection.
 - B. GREEN FLASHING: a) Gateway has internet connection but no LoRaWAN connection. Or b) Device is in the startup phase, in this phase it flashes GREEN for a few seconds and then RED and YELLOW flash simultaneously.
 - C. CONSTANT RED: Gateway does not have an Internet connection.
3. Cable entry ports
4. Install the antenna vertically, as high as possible and free standing (not against metal/concrete)!

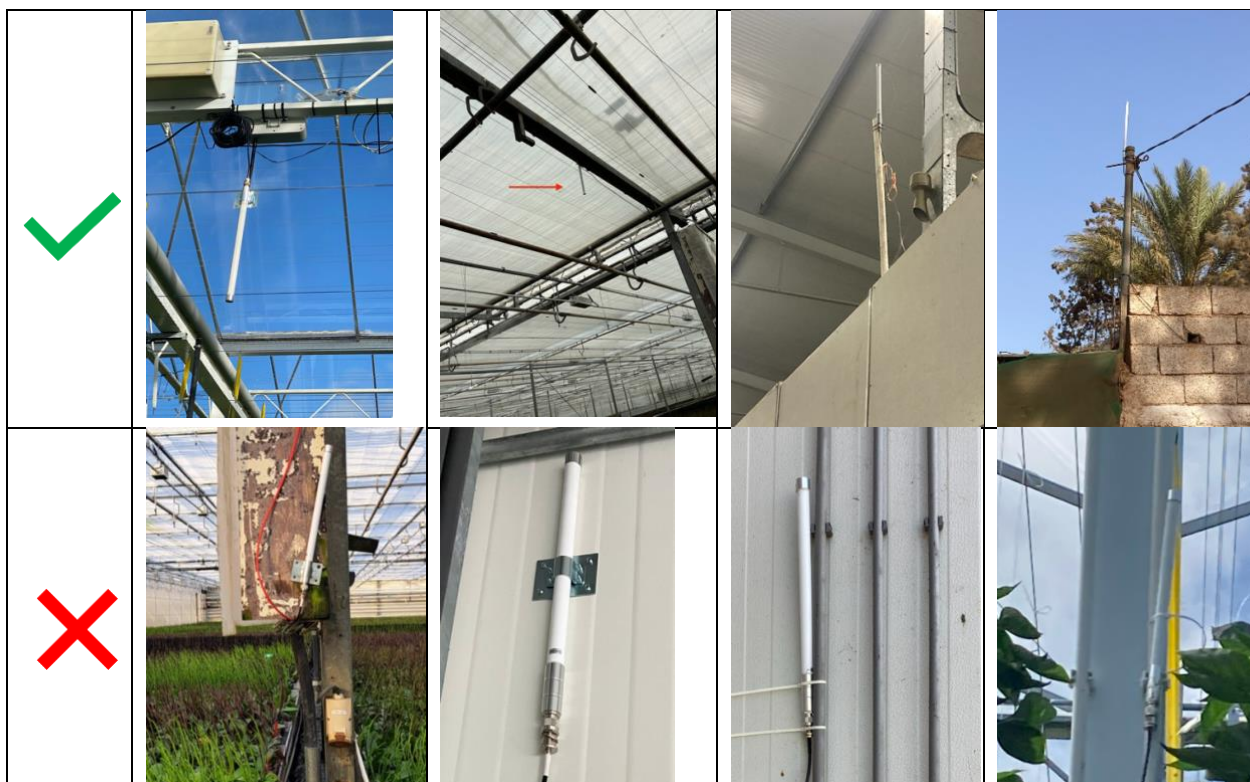


Figure 3. Proper and improper antenna mounting.

2 Installing the FireFly sensor (install the Gateway first!)

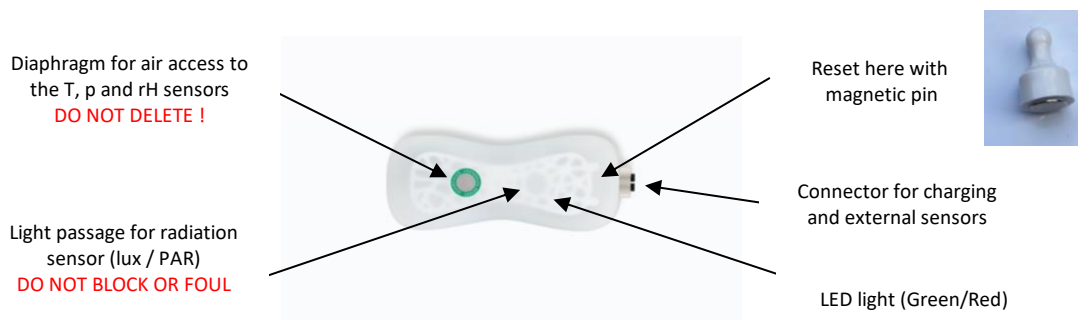


Figure 4. FireFly sensor (sensor configuration may vary by type).

The color of the stickers below shows whether the FireFly is equipped with temperature (T), relative humidity (rH) and optionally barometric pressure (p) sensors (gray circle in the center) or without these optional sensors (green circle in the center).



Figure 5. FireFly without T, rV or p.



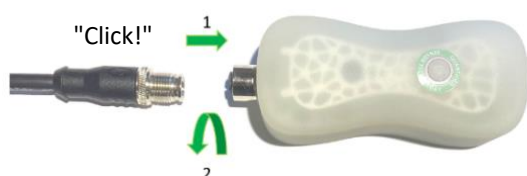
FireFly with T, rV or p

The FireFly is shipped in "safe mode" to extend battery life and prevent transmission during transport. Before use, charge the battery to 100% (red indicator light on the charger disappears when the FireFly is fully charged).

Reset the FireFly by swiping the Quantified reset magnet over the designated spot just above the connector. The LED indicator will flash red. After some time, the LED will flash green, the FireFly is online! From now on, the LED will flash green with every measurement. Make sure the M12 connector is always shielded with an external sensor or end cap to prevent corrosion and internal damage.

For temperature and relative humidity measurements under high radiation conditions (sun or lights), the FireFly should be shielded. The Macro Chimney or Solar Chimney can be used under high radiation conditions.

3 Connecting external sensors to the FireFly



Connected external sensors use the transmitter module and power source of the FireFly platform sensor. The connector only fits in one position. Gently twist the connector until it clicks into place. Then screw the chrome ring tight (firmly but only hand tight), this is important to keep out any moisture! When the external sensor is connected, activate the combination using the magnet. This reset also tares counters

in sensors such as e.g. the scales, pluviometer and drain sensor. Please refer to the relevant external sensor installation guide or manual on our website.