



## Specsheet of the aqa.pinner version 1.0, 29 June 2022



### Pinner characteristics

- Dimensions: length x width X height = 21 X 21 X 33 cm.
- Metal pins: 316 steel, diameter = 6 mm, pin length = 20 cm.
- Operating conditions: -30 to +70 degrees Celsius at 0 - 100% relative humidity.
- Classification: IP44 for outdoor use.
- Mounting: Put the metal pins carefully in the soil, make sure the soil is free of stones at the location of the pins.

### Connectivity

- Power supply: 90 - 265 Volt, 50/60 Hz input, 12 Volt DC output, 5 Watt through included power supply, the power supply is delivered with an IP68 connector fitting to the sensor connector. The cable length of the power supply is 8 meters.
- Solar panel connectivity: the pinner can be connected to the aqa.solar panel. For this purpose, the same IP68 pinner sensor connector can be used.
- The pinner is equipped with a SIM card that is pre-loaded by Aqa.earth, plug & play and delivered with a one year license for receiving AQA rewards when data are uploaded to the Aqa.earth servers.
- Sensor data can be monitored through an Android app, an iOS app, laptop or Desktop computer.
- After one year, the sensor owner may optionally extend the license for receiving AQA rewards. In case the license is extended, the AQA data rewards will continue. In case the license is stopped, the sensor owner will still be able to upload data to the Aqa.earth web servers and to view the sensor data through our apps. In that case, Aqa.earth will update the data bundle on the SIM card at their own cost and receive the mining rewards collected by the sensor.

### Pinner sensors

- Impedance of the soil measured at 1 kHz AC.
- Relative humidity of the air measured through ventilation channels in the pinner housing
- Temperature of the air
- VOC (Volatile Organic Compounds) concentration in the air



- Air pressure
- GPS

As the network grows, we will be able to translate the pinner data through sensor data fusion to soil quality in terms of concentration of nutrients in the soil and moisture content of the soil in the upper and lower parts of the soil. The results presented by our apps will develop over time.

### **CE compliance**

The pinner is CE compliant with the following relevant EU directives:

- EU RoHS 2 directive 2011/65/EU
- Delegated directive 2015/863
- EU Low-voltage directive 2014/35/EU
- EMC directive 2014/30/EU