

## AM-100 soil probe

- ✓ wireless
- ✓ powered by solar energy
- ✓ constant monitoring of relevant soil parameters
- ✓ measurement results available on-line, from anywhere on desktop computers and mobile devices (smartphone, tablet, laptop)

The AM-100 soil probe is a device dedicated to the remote monitoring of humidity, temperature and EC (electrical conductivity) of soil. The area of application of the AM-100 probe covers all types of agricultural, horticultural, forest and green areas where it is necessary to precisely determine the parameters measured by the probe.

The probe is available in three versions:

- **AM-100-101** – a probe with a total length of 118.5 cm and one measuring module located 15 cm from the end of the probe
- **AM-100-103** – a probe with a total length of 118.5 cm and three measurement modules, where the first is placed 15 cm, the second 25 cm, and the third 35 cm from the end of the probe
- **AM-100-051** – a probe with a total length of 69 cm and one measuring module located 15 cm from the end of the probe

Soil parameters measured by the AM-100 probe are transmitted wirelessly to the AGREUS® System base station, and from there, via GSM, to the online application, both via a web browser on desktop computers and in a dedicated application on mobile devices (Android).

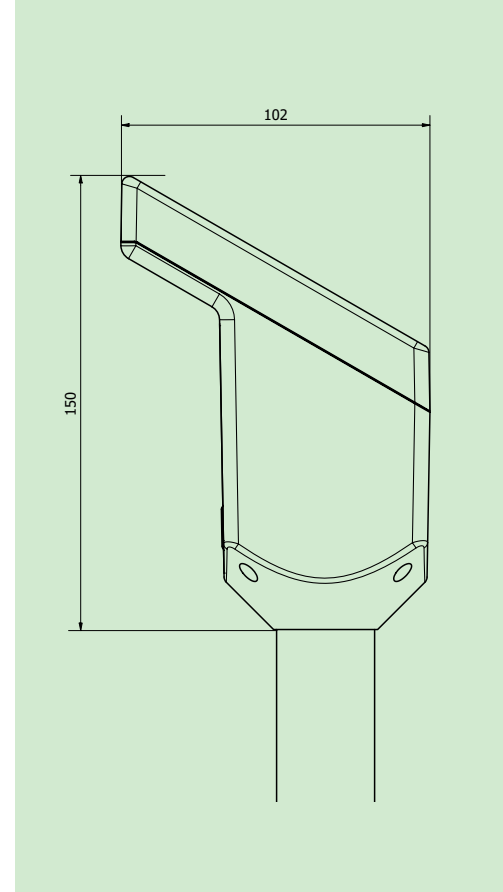
### KEY FEATURES

- Wireless – transmission of measurement data takes place via Semtech LoRa®, so the risk of damaging the wiring by agricultural machinery or animals disappears,
- Range up to several kilometers (depending on topography and land cover),
- High frequency of measurements – every 10 minutes,
- Possibility to calibrate the measurements according to the type of soil in which the probe is installed,
- Solar power supply with battery backup – ensures continuous operation of the probe even in the field where there is no access to external power sources,
- Immunity to environmental conditions IP65 means reliable operation regardless of weather conditions,
- Permanently engraved scale on the probe body allows you to place the measuring element at the desired depth without the need for additional measurements,
- Sound and visual signaling informing the user about the probe status, i.e. whether it is on or inactive,



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- The ability to easily locate the probe in the field and on the online map, thanks to the built-in GPS module,
- Easy integration of the device with the AGREUS® system thanks to the TapIN (NFC) technology – you bring the smartphone closer and the system recognizes the probe itself (Note! The smartphone must be enabled to read NFC and have the Agreus application running),
- Together with the AGREUS® Portal receiving data from the AM-100 probe, it allows:
  - » Use of soil parameters measured by the probe to make automated decisions on irrigation,
  - » Defining thresholds for temperature, humidity and soil EC, the exceeding of which generates a notification for the user (SMS or email),
  - » Analysis of historical measurement data,
  - » Visualization of the location of the probe on the map,
  - » Warning about the change of probe position (theft suspicion).



## Technical data

### General

- Dimensions: 102x69x150 mm (probe head) + tube 1040 mm (long probe) or 540 mm (short probe)
- Weight (with batteries): 508 g (short probe), 680 g (long probe 101), 745 g (long probe 103)
- Installation method: with a 30 mm diameter hole saw or soil drill
- Working temperature: -20 to +50 °C
- Relative humidity: up to 95%, non-condensing
- Protection class: IP 65

### Measuring element

#### Soil conductivity (EC)

Measuring range:	0-2.5 mS/cm
Resolution:	0.001 mS/cm
Relative error:	±2,5 %

#### Soil temperature

Measuring range:	-20 do +50 °C
Resolution:	±0.1 °C
Absolute error:	±0.1 °C

#### Moisture of soil and garden substrates

Measuring range:	0 to 95 %
Resolution:	0.1 %
Relative error:	2.5 %

### Radio modem

- Radio technology: Semtech LoRa®
- Working channel frequency: 869.5 MHz
- Working channel band: 125 kHz
- Maximum transmit power: 25 mW
- Receiver sensitivity: -133.5 dBm
- Antenna: built-in

### Other

- GPS module
- Accelerometer

### Power supply

- Built-in 3.6 V DC rechargeable NiMH battery
- Solar panel of a voltage of 6.5 V DC and a maximum current of 120 mA

### Software for the User

Dedicated AGREUS® application available through a web browser (Chrome) and as a dedicated Android mobile application (version 6.0 or higher)