

Soil moisture sensor with 7X LED

Instructions

1. How to use

The sensor detects the volumetric water content (VWC) using the capacitance domain technology and is reliable in any soil. The system has a self-learning process to recognize the properties of different soil types.

There are 7 LEDs that indicate different moisture levels. One of the LEDs flashes once every 3 seconds to show the moisture content of the soil.

The sensor is ideal for use in your garden or for house plants. The transparent plastic housing is weather resistant and therefore the sensor is suitable for both indoor and outdoor use.

2. Battery safety

Pay attention to the correct polarity when inserting the battery.

The battery should be removed if the sensor is not used for a long period of time to prevent damage due to leaks. Leaking or damaged batteries can cause acid burns when in contact with skin. Therefore, use suitable protective gloves to remove a damaged battery. Batteries must be kept out of reach of children. Do not leave the battery lying around, as there is a risk of children or pets swallowing the battery.

3. Power supply

Use a CR2032 lithium battery.

4. Operation

4.1 Ensure that the sensor is not placed in the ground. Remove the cover on the top of the sensor and pull the transparent piece of cellophane out of the sensor to ensure that the battery can make contact. Replace the cover. All LEDs on the sensor now switch on for 3 seconds and then off again.

4.2 Insert the sensor into the ground at a depth of 8-10 cm (the housing must always protrude 1-2 cm above the ground) and ensure that the ground presses tightly against the sensor (press the ground with your fingers firmly against the part that is in the ground). Pebbles, air bubbles and other obstacles influence the accuracy of the measurements. Ensure that the sensor is not placed near metal objects.

Pour water on the ground until the surface shimmers and the ground is well saturated. The sensor will now detect the maximum moisture content and after approximately 2 minutes the highest moisture level indicator LED (> 20%) will start to flash. This moisture level will be used as a reference for the following measurements.

The sensor is now ready to permanently check the soil moisture. When the moisture level drops, another LED with a lower moisture percentage will light up. When a dried-out soil is detected, LED 1 (<2%) will normally illuminate.

If you want to place the sensor in a different location, you must first reset the sensor! Remove the battery, wait 5 seconds and follow the same procedure as described

under 4. above. Without a reset, the self-learning procedure is not started by the sensor and this can lead to erroneous measurement results.

Important: the sensor can be damaged if it is forcefully pushed into (too) hard ground. Never use a hammer or other instrument to knock the sensor into the ground, but first loosen the soil well before you insert the sensor into the ground manually and without using force.

Ensure that the sensor is always placed in free soil without roots, twigs, stones or other obstacles.

If you do not trust the measurement results, we recommend that you first perform a reset as described above and check whether the battery needs to be replaced.

A plant with a normal (average) water requirement needs moisture at least if the light comes on with 10% or a light with a lower percentage. Water the plant immediately. Try to keep the moisture level at a minimum of 10-15%.

The sensor is splash-proof but not waterproof. Ensure that the sensor body never touches the ground and never immerse the sensor in water.

5. Technical data

Inactive current: $<3\mu\text{A}$

Detection current: $400\mu\text{A}$ (measures every 12 seconds)

LED flashes: 1 mA (at 10 ms every 3 seconds)

Estimated battery life: >10 months with 230Ah CR2032 battery.

6. Removal

6.1 Disposal of electrical and electronic equipment.

To maintain, protect and improve the quality of the environment, protect human health and use natural resources with care and rational use, the user must return an unusable product in accordance with legal requirements.

Follow the rules for electronic equipment when disposing.

6.2 Disposal of used batteries.

The user is legally obliged (battery regulation) to return used batteries. The disposal of used batteries in household waste is prohibited!

Batteries contain hazardous substances that are marked with the disposable garbage bin on wheels (see the symbol below). The symbol indicates that the product may not be disposed of with the household waste.

