

Manual XH300

Wireless Soil Moisture Meter with Thermometer

Introduction

Congratulations with the purchase of this compact 433MHz soil moisture meter station with temperature, which displays time, indoor temperature, outdoor temperature and soil moisture readings. The XH300 indoor station can receive up to 3 remote sensors. Additional sensors are available in our web shop.

Content:

1. 1 indoor station
2. 1 remote sensor
3. Instruction Manual

Function:

1. Indoor temperature
2. Outdoor soil moisture reading and temperature
3. Min/Max. record of temperature and soil moisture
4. Switch from °C to °F for temperature unit
5. Quartz time, calendar date.
6. Flip out desk stand or wall mount

Intended Use

The XH300 sensor detects soil moisture content using capacitance domain technology. The sensor is reliable in almost any soil. The system has a self-learning process built to eliminate the influences of different soil or media. Also on the remote sensor, it measures outdoor temperature, which is received and displayed by the receiver for easy reading purpose. It is strongly recommended to put the sensor in a shaded location. The remote sensor data will be updated every 90 seconds. After watering the soil the sensor takes a lot of readings. If all these reading data are consistent, new data will be updated accordingly. So there is a delay between watering the soil and having the new data displayed of about 5 min. The sensors are both suitable for indoor and outdoor use.

Installing batteries and battery Safety

Correct polarity must be observed while inserting the batteries. Batteries should be removed from the device if it is not used for a longer period of time to avoid damage caused by leaking. Please use only new, good quality alkaline batteries and avoid using rechargeable batteries.

Power Supply for the sensor:

LR3, AAA alkaline batteries 2pcs.

Power supply for the receiver:

LR6, AA alkaline batteries 2pcs.

Quick Setup

1. Unpack the display unit and remote sensor.
2. Install the batteries of the indoor temperature station first. All LCD readings will be turned on for 5 seconds, and then the Outdoor Reception Signal Icon will be displayed, indicating that the receiver is trying to find the remote sensor. Please do not press any key; this will interrupt the matching process between the sensor and the receiver. Install now the batteries of the remote sensor, the LED indicator will be lit for about 20 sec. The sensor

will start to transmit temperature and soil moisture readings. If the receiver decodes the sensor data successfully, the sensor temperature and soil moisture reading will be displayed. The matching process will take about 7 min.

3. If you need to install a second and/or a third sensor you need to “address” them (if not, you can continue reading 4.). Follow the instructions like you did when you installed the first sensor. After you’ve installed the batteries you’ll find in the top left corner sensor address pins. It says “address” on the left side and under the address pins you’ll find the numbers “1”, “2” and “3”. There is a black plastic cap that can fit over one of the three prong fittings. From the factory, the caps are all over the number one fitting. You have to move the cap to the number two setting for the second sensor, and to the number three setting for the third sensor. If you now press the CH+ button on the base station you will see it toggles to sensor number 2 and sensor number 3.
4. If a key is pressed before the station receives the sensor data, the receiver will terminate the matching process and it will take 10 minutes before the receiver starts to synchronize with the outdoor sensor again. If a reset is needed for the receiver or the sensor, pull out the batteries and wait 10 seconds before you re-insert the batteries to make a proper reset.
5. After this matching process is completed insert the sensor into the location where you want to monitor the soil moisture. The depth of the sensor should be around 8 ~10cm below surface. Make sure the soil is tight around the probe of the sensor by pushing the soil against the probe. Stones or air pockets next to the sensor will affect the accuracy of the readings. Please avoid metal objects near the sensor. Water the soil until the soil is saturated. The sensor will read the maximum water content level, and after about 4 minutes the highest water level will be displayed on the receiver LCD: 99% (please note that the “Wet Soil” reading of 99% is not an exact soil moisture content level, it shows the max. saturation of the soil. The sensor uses a self-calibrating process. The time needed for finishing the self-calibrating process varies from a couple of min. up to max. 20 min.
6. Now the sensor is ready to monitor the soil moisture. When the water level drops, the wet soil data will drop accordingly. Please note that the wet soil reading is not linear to the water content. You should be able to determine which readings you should use to water your plant. In general it is recommended to water your plant when the reading is below 50% and/or the flower pot shows 2 marks.
7. If you want to change the location of the sensor, it is recommended to take out the batteries of the sensor for 10 sec. and to install them again. Follow the above mentioned five steps again to eliminate the difference in soil. Without initiating this self-learning procedure readings could be wrong.
8. Important: The sensor can be damaged if it is pushed directly into hard soil. If necessary make the soil loose before inserting the probe. After watering your plant well, the reading should be 99%. If this is not the case, start the learning process again by taking out the batteries of the sensor for 10 sec. and by following again the five steps mentioned above.

Key Operation

There are four different function keys available: Mode, CH/+, °C/°F and Min/Max/-.

Mode key (normal and manual setting mode):

1. For entering the normal working mode, short press the MODE key to display different data like time, day and date.
2. For entering the manual setting mode press the MODE key for 3 seconds. Now you can set the time, the date etc. (see below for more instructions). By pressing short in this mode you can toggle between the different data.

CH + key (Channel, plus):

During the normal working mode press shortly to toggle between different channel readings if you installed more than 1 sensor. The display shows sensor 1, 2 or 3 with the corresponding moisture level and temperature.

°C/°F key (temperature unit):

During the normal working mode, press °C/°F key once, the display unit will switch from °C to °F. Pressing the same key again will switch back to °C.

Min/Max key (showing Min/Max temperature and erasing recorded data):

During the normal working mode, press shortly to display the minimum temperature recorded. Press again to show the maximum temperature recorded. Pressing a third time will switch back to the current temperature. You can erase these recorded data by pressing and holding this key for three seconds.

Manual setting:

1. Being in the normal display mode, please press and hold the MODE key for about 3 seconds. The “12h” or “24h” digit will be flashing. Press + (CH) or – (MIN/MAX) key to set the desired mode.
2. Press MODE key again to confirm and go to the TEMPERATURE UNIT (°C/°F) SETTING. The temperature display will flash. Press + (CH) or – (MIN/MAX) key to set the desired temperature °C/°F display mode.
3. Press MODE key again to confirm and go to the DD/MM SETTING. The DD/MM indicator will flash. Press + (CH) or – (MIN/MAX) key to set the desired day-month or month-day display mode.
4. Press MODE key again to confirm and go to the HOUR SETTING: The hour indicator will flash. Press + (CH) or – (MIN/MAX) key to adjust the hour (Press and hold to change faster). Press MODE key to confirm and go to the MINUTE setting.
5. Press MODE key again to confirm and go to the MINUTE SETTING. The minute indicator will flash. Press + (CH) or – (MIN/MAX) key to adjust the minute (Press and hold to allow fast advancing). Press MODE key to confirm and go to the WEEK DATE setting.
6. Press MODE key again to confirm and go to the WEEK DAY SETTING. The week date will flash. Press +(CH) or –(MIN/MAX) key to adjust the day. (Press and hold to change faster). Press MODE key to confirm and go to

the YEAR setting. Press MODE key again to confirm and go to the YEAR SETTING.

7. The year indicator will flash. Press + (CH) or – (MIN/MAX) key to adjust the year.(Press and hold to change faster). Press MODE key to confirm and go to the MONTH setting.
8. Press MODE key again to confirm and go to the MONTH SETTING. The month indicator will flash. Press + (CH) or – (MIN/MAX) key to adjust the month. (Press and hold to allow fast advancing). Press MODE key to confirm and go to the DAY setting.
9. Press MODE key again to confirm and go to the DAY SETTING. The day indicator will flash. Press + (CH) or – (MIN/MAX) key to adjust the date (Press and hold to change faster). Press MODE key once more to return to normal display.

Walls mount:

Fix a screw (not supplied) into the wall, leaving the head of the screw out by about 5 mm. Hang the display Station onto the screw. Remember to ensure that it locks into place before releasing.

Maintenance and Care

1. Extreme temperatures, vibration, and shock should be avoided to prevent damage to the units.
2. Clean displays and units with a soft, damp cloth. Do not use other products; they may damage the display and casing.
3. Do not submerge in water. The remote sensor has IP4 level for outdoor use purpose; however it is absolutely not allowed to be submerged into water, which can lead to permanent failure of the sensor.
4. Opening the casings invalidates the warranty. Do not try to repair the unit.

The effective wireless working distance is about 100 meter. Keep in mind that the 100 meter range is valid in free open air with no obstructions and keep in mind that a radio signal cannot bend around objects. Actual transmission range will vary. Each obstruction (roof, walls, ceilings, thick trees, ground etc.) will effectively cut the signal range.

Specifications

1. Indoor temperature range: -10°C ~ +60°C
2. Remote temperature range: -40°C ~ +65°C
3. Temperature accuracy: +/-1.0°C
4. Transmission frequency: 433 MHz
5. Transmission range: up to 100 meters (300 feet) in free open air
6. Meets ROHS standards

