

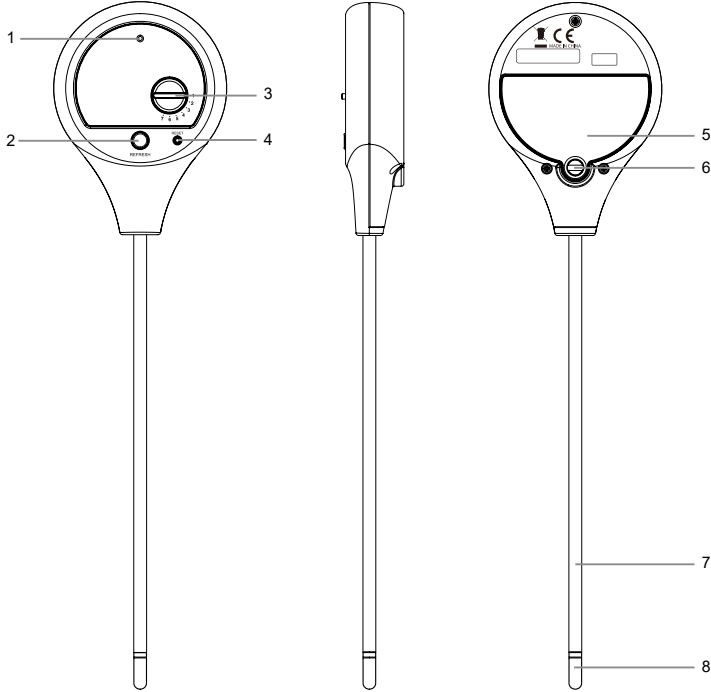


CCL ELECTRONICS LTD

WIRELESS SOIL MOISTURE & TEMPERATURE SENSOR Model: C3102C User Manual

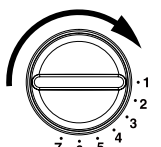
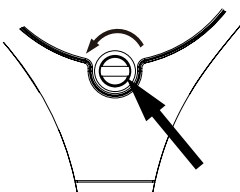
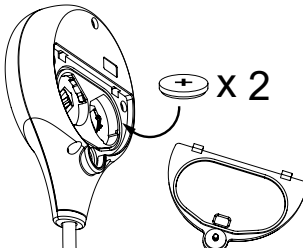
Thank you for selecting this delicate soil sensor. Utmost care has gone into the design and manufacture of the sensor. Please read the instructions carefully according to the version you purchased and keep the manual well for future reference.

OVERVIEW

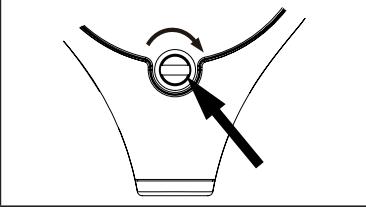


- LED indicator
 - Blinks once during transmission.
- [REFRESH] key
- [CHANNEL] rotatory selection switch
 - Assign the sensor to Channel 1,2,3,4,5,6 or 7.
- [RESET] key
- Battery compartment
 - Accommodates 2 x CR2032 button cells.
- Battery door screw
- Sensor metal probes
- Moisture sensor

GETTING STARTED

<ol style="list-style-type: none"> Select the sensor channel by using [CHANNEL] rotatory selection switch. For example: Channel 1 is selected. 	
<ol style="list-style-type: none"> Drive the battery door screw counter clockwise to open the battery door. 	
<ol style="list-style-type: none"> Insert 2 x CR2032 button cells into the battery compartment. Make sure you insert them the right way according to the polarity information marked on the battery compartment. 	

- Cover the battery door and drive the door screw clockwise to close the battery door.
Note:
Ensure the water tight O-ring is properly aligned in place to ensure water resistant.







- Note:**
- Once the channel is assigned to a Wireless sensor, you can only change it by removing the batteries or resetting the unit.
 - After replacing the batteries of the wireless sensor or the unit fails to receive wireless sensor signal of a specified channel, press [SENSOR] key on the console unit to manually receive the sensor signal again.

WIRELESS SENSOR SIGNAL RECEIVING (DISPLAY CONSOLE)

This soil sensor can support different 7CH console, user can base on the following step to setup the display console.

- In normal mode, press the [SENSOR] key of the console once to start receiving the sensor signal of current on displaying channel. The signal icon will flash.
For example, when CH 1 is displayed, pressing [SENSOR] key will start receive for CH 1 only.
- The signal icon will flash until the reception succeeded. If no signal is received within 5 minutes the icon will disappear.

The icon blinks once every time when incoming wireless sensor signal is received (every 60s)	 OUT	Weak wireless sensor signal	 OUT
Fair wireless sensor signal	 OUT	Bad / no wireless sensor signal	 OUT

- If the signal for Ch 1~7 has discontinued and does not recover within 15 minutes, the temperature and humidity will display "Er" for the corresponding channel.
- If the signal does not recover within 48 hours, the "Er" display will become permanent. You need to replace the batteries of the "Er" channel's sensors and then press [SENSOR] key to pair up with the sensors per each "Er" channel again.

Note:
The operation or signal icons of different display consoles may be different, please refer to the user manual of your display console for more detail.

TEMPERATURE DISPLAY

On the display of the console which the soil sensor is linked to, temperature reading will be displayed.

SOIL MOISTURE DISPLAY

Soil moisture can be clarified into 5 different levels: **Very Dry**, **Dry**, **Moist**, **Wet** and **Very Wet**.

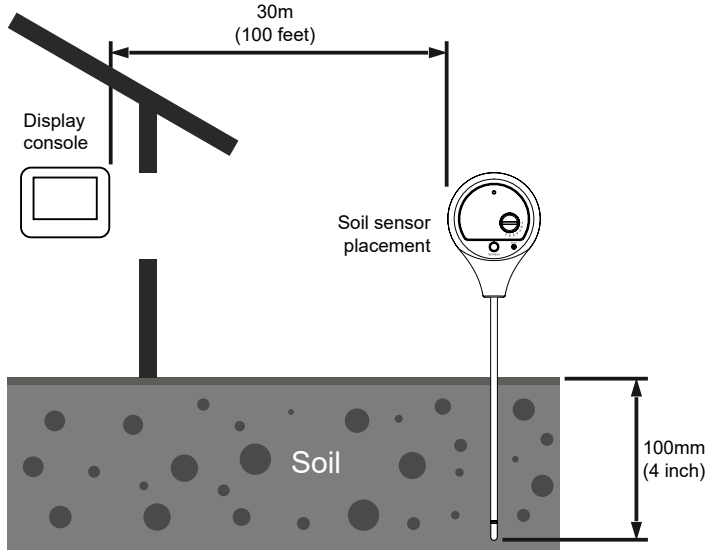
To determine the moisture of soil, the sensor calibrate the moisture into 16 points, and correlate them into percentage value:

Points	Percentage	Level
1	0%	Very Dry
2	7%	
3	13%	
4	20%	
5	27%	Dry
6	33%	
7	40%	
8	47%	
9	53%	Moist
10	60%	
11	67%	
12	73%	
13	80%	Wet
14	87%	
15	93%	Very Wet
16	99%	

Note:
The measurement accuracy of the sensor can be affected by the soil condition. For example, the loose soil may get lower moisture level that compare with the dense soil.

SENSOR PLACEMENT

Select the suitable installation site that insert the sensor probes into the soil around 100mm (4 inch) and sensor should place within 30 meters of the display console to get the best transmission performance.



Note:

Signal transmission range of the sensor will be gradually reduced as sensor is inserted deeper into the soil. To achieve best transmission range, install the sensor on the same plain of view as the display console.


REFRESH THE READING ON DISPLAY CONSOLE

The sensor transmits once every 5 minutes automatically to the display console. User may also press the [REFRESH] key on the sensor to manually refresh the readings if necessary - please note the refresh may take a few seconds up to a minute.

Note:

Some battery operated display consoles may not support this function, please check your retailer to get more information.

LOW BATTERY ICON

If the sensor is low in battery, the low battery icon "  " will display on the LCD of the display console.

Note:

On the display console, the low battery icon will only appear when the corresponding channel is displaying.

IMPORTANT NOTE

- Read and keep these instructions.
- Do not subject the unit to excessive force, shock, dust, temperature or humidity.
- Do not cover the ventilation holes with any items such as newspapers, curtains etc.
- Do not clean the unit with abrasive or corrosive materials.
- Do not tamper with the unit's internal components. This invalidates the warranty.
- Only use fresh batteries. Do not mix new and old batteries.
- Do not dispose old batteries as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
- Attention! Please dispose of used unit or batteries in an ecologically safe manner.
- Technical specifications and user manual contents for this product are subject to change without notice.



FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

SPECIFICATIONS

Dimensions (W x H x D)	65 x 257.5 x 23.5 mm
Main power	2 x CR2032 button cell
Operating temperature range	-40°C ~ 60°C (-40°F ~ 140°F) do not recommend under freeze condition
RF frequency	915 MHz for US version, 868 MHz for EU or UK version, 917 MHz for AU version
RF Transmission interval	5 minute
RF transmission range (Place on soil ground)	Up to 30m (100 feet) line of sight