CropX Sensor V04

Installation Guide

This manual provides step-by-step instructions for installing a CropX sensor in your field.

**Note: Prior to installing your sensor, you should create an account and set up your fields.

The sensor is shipped with a matching installation kit

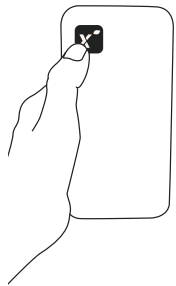|		
A		Sensor
B		Protective Cover
C		Antenna
D		Antenna extension
E		Auger
F		Rod
G		Micro-USB cable

Before installation

Step 1: Download app

- Go to the Apple App Store or the Google Play Store, and download the CropX Farm Management app to your phone. Apple - CropX Google play- CropX
- Launch the CropX app by clicking on the CropX icon and create an account.
- If you already have an account → Log in to your existing account.
- If you have yet to add a new field, you may do so by clicking on the add a new field sign (+) at the first screen and follow the instructions.
- By clicking on one of the fields you've created, if no sensors are currently installed, a link to install your sensor will appear. Click on it to go to the interactive installation guide that will guide you through the installation process.
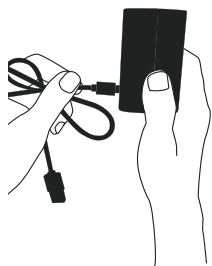
Step 2: Prepare to install the sensor

Although sensors are shipped with fully charged batteries that should last the whole season, we recommend charging your batteries for 10 hours prior to installation, using the USB cable provided (see charging instructions on the last page).
*The batteries turn from a red LED when charging to a green LED when full.

Please ensure you have the following for installation:

- Sensor
- CropX Installation Kit

Please provide the following for installation as well:

- A smartphone
- ½" cordless drill, minimum 18V (fully charged)
- In case of heavy and really dry soil please provide a container filled with a 1/2 gallon (~2 L) of water for each sensor
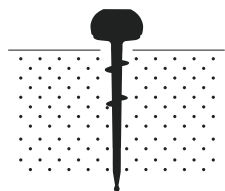
Step 3: Installation Recommendations

For optimal sensor installation and accuracy, it should be installed:
- In a soil that best represents the field average
- In moist soil, preferably around field capacity
- Within the zone outlined on the map
- In a location in the field that best represents the crop (near the plants, in average plant density)
- In a flat surface, with no slope, no ditch or cracked soil
- Away from the tractor and pivot wheel tracks
- In a uniformly planted area
- Inside the wetted area of an active emitter, but not too close to it, if your crop is surface or sub-surface drip irrigated

Offset settings

With a V4 sensor,
you must drill in the ground
according to the offset at
which you choose to install.
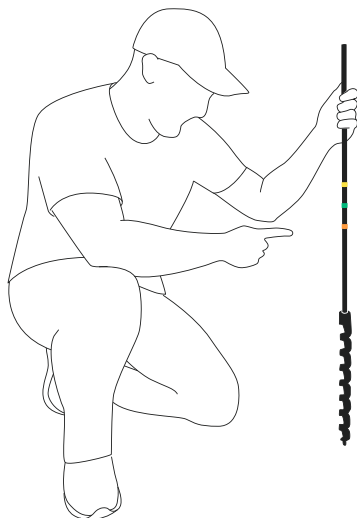
How to measure your offset

Offset {   Ground level
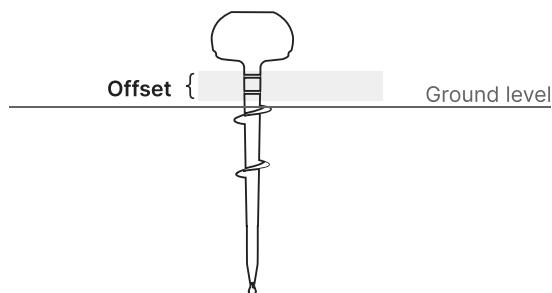
Sensor depths offset

With this type of sensor, the depth of the drilling in the ground must be according to the depth of installation (offset length).

Choose the offset you want and accordingly - know how deep you should drill in the ground.

*Be careful not to drill deeper.

**If the drill in your hand is not marked with colors according to the following figure, use the following lengths (measured from the tip of the drill)

Full installation

Drill until the -
Yellow mark

8" / 20cm

16" / 40cm

26" / 66cm

2 inch/5 cm offset

Drill until the -
Green mark

6" / 15cm

14" / 35cm

24" / 61cm

4 inch/10 cm offset

Drill until the -
Orange mark

4" / 10cm

12" / 30cm

22" / 56cm
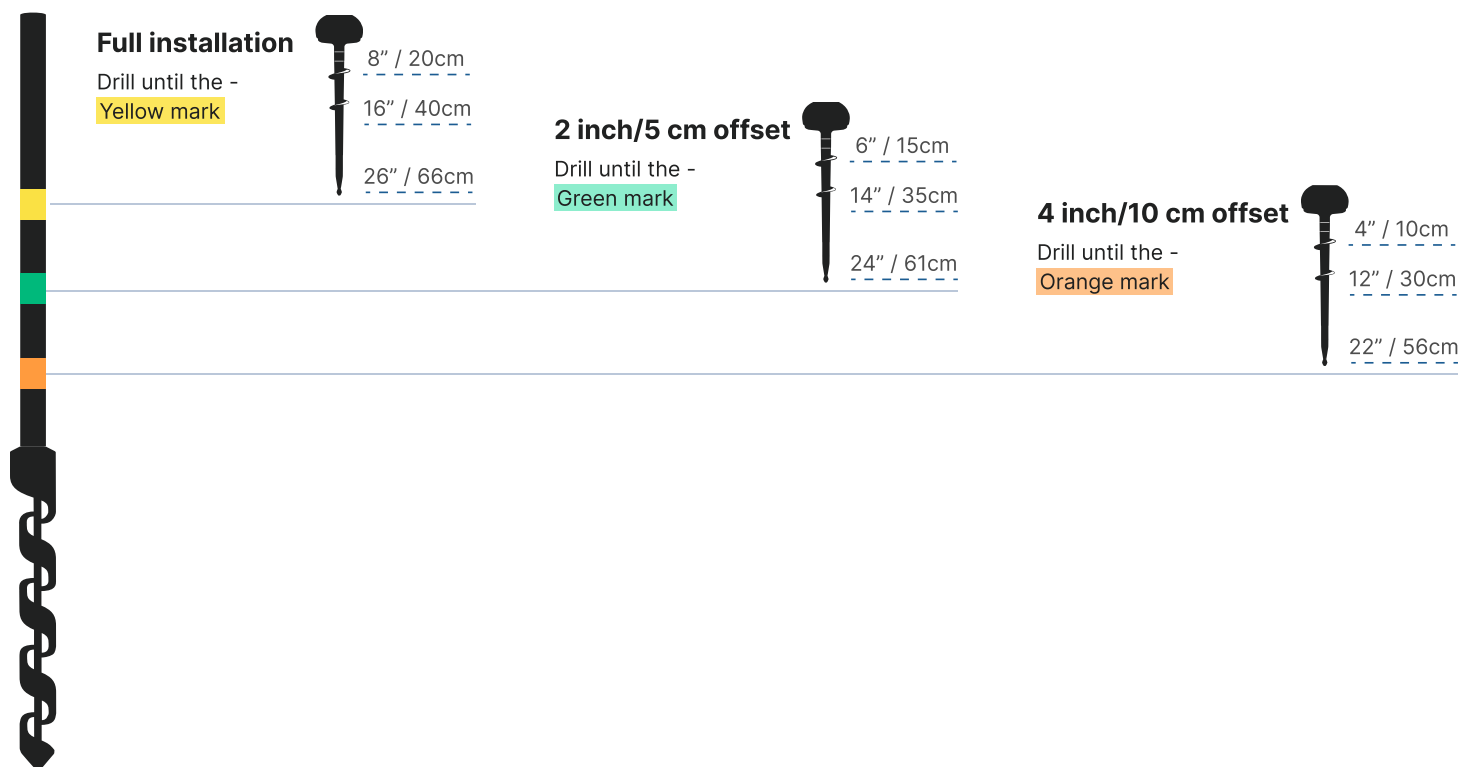
The installation in the field

1
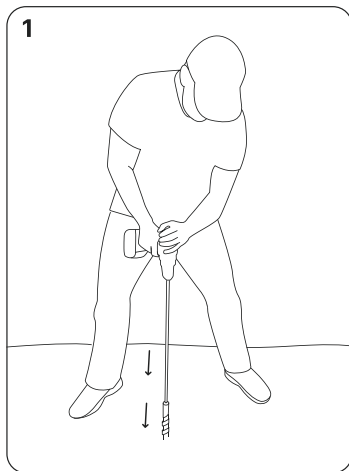
Drill a vertical hole in the soil using your drill and the provided drill bit.
If necessary, drill and retract several times until the bit reaches the depth desired for the specific offset.

2

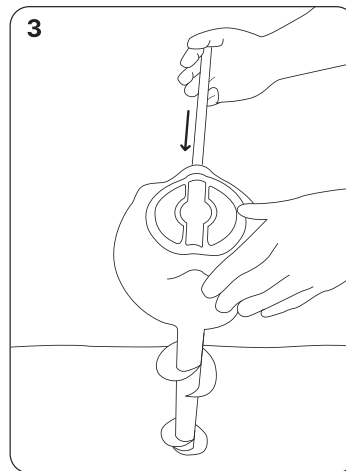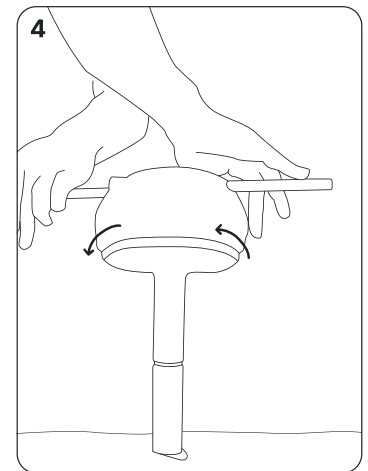Remove protective cover (if you have) and unscrew the antenna. Insert the sensor into the hole and screw it gently, until it stands firmly in the ground.
Do not apply downward force.
Ensure there is no debris (plants, leaves, etc.) caught on the sensor during installation.

3

Insert the rod into the ears of the sensor.

4

Screw the sensor to the ground using the rod you threaded into the sensor.

5
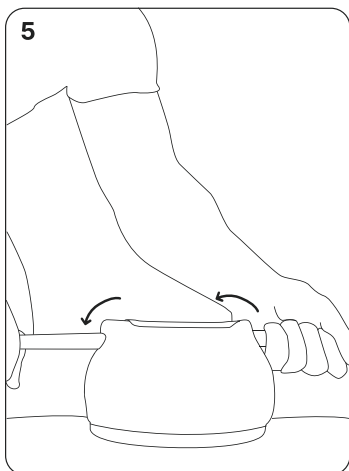
Screw the sensor almost all the way down using the rod, either all the way down, leaving a 1 finger gap, or to the desired offset.

**If the sensor is spinning in place then drill a new hole a bit deeper at a near location (back to action No. 1)
**If installation was hard at two locations, then drill a deeper third hole, pour water slowly into the hole until it is full, wait 5 minutes and then insert the sensor (back to action No. 2)

6
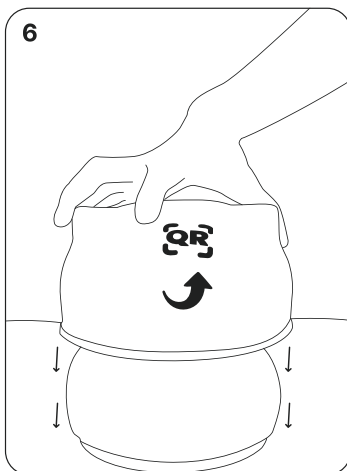
Place the protective cover over the sensors head.

**Make sure there is no dirt and fluids on sensor head
**Make sure Sensor battery slot is fully closed

7
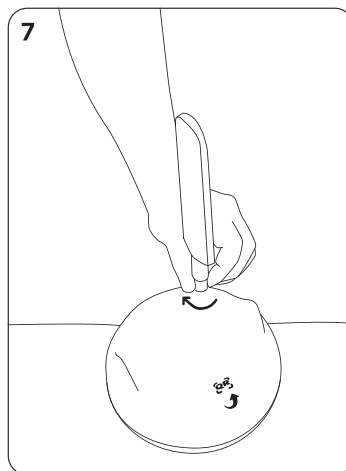
Screw the antenna to the sensor and make sure the antenna fully assembled.

**In areas of low reception and with high vegetation screw the antenna extension cable to the sensor and the antenna to the extension cable and raise the antenna as high as possible on a pole.

8
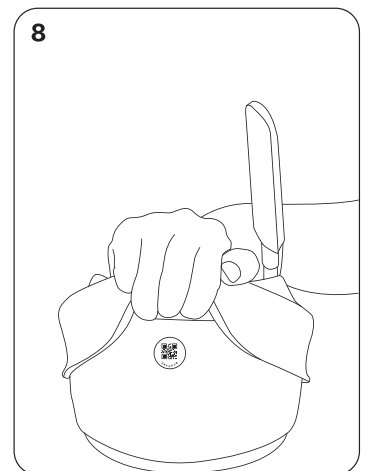
Uncover the protective cover to scan the QR code

Closing the loop

9
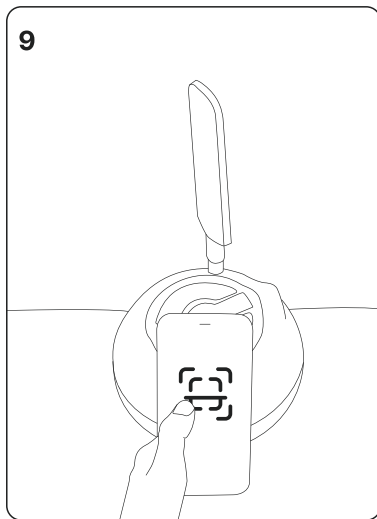
Scan the QR code in the CropX app.

10
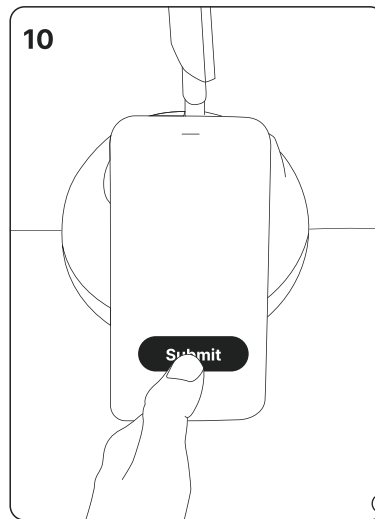
Fill in all the necessary details in the form, choose your offset if needed and click Submit.

11
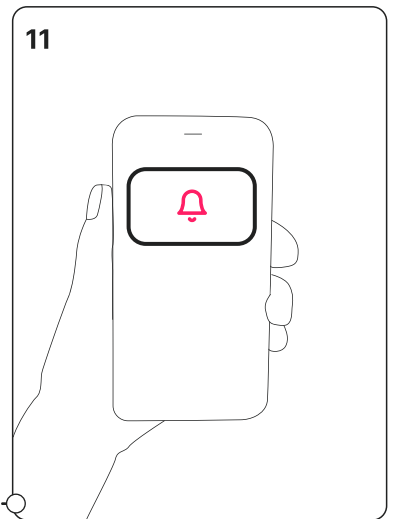
The installation has been completed and in a few minutes you will receive a notification.

*See a schematic of the operation below.

Transmission verification during installation

Now, with the help of Bluetooth and cellular communication from the sensor, we will make an attempt to transmit to the CropX system to verify that the sensor is in a place with cellular coverage and is working properly.
*make sure your BLE service in your mobile device turn on.

Cellular Transmission

Installation process+ Submit button
Sending measuring and transmitting orders using the Bluetooth

Measure and transmit
Taking a measurement and sending it immediately to the CropX system

Notification
Notification
Up to 6 min
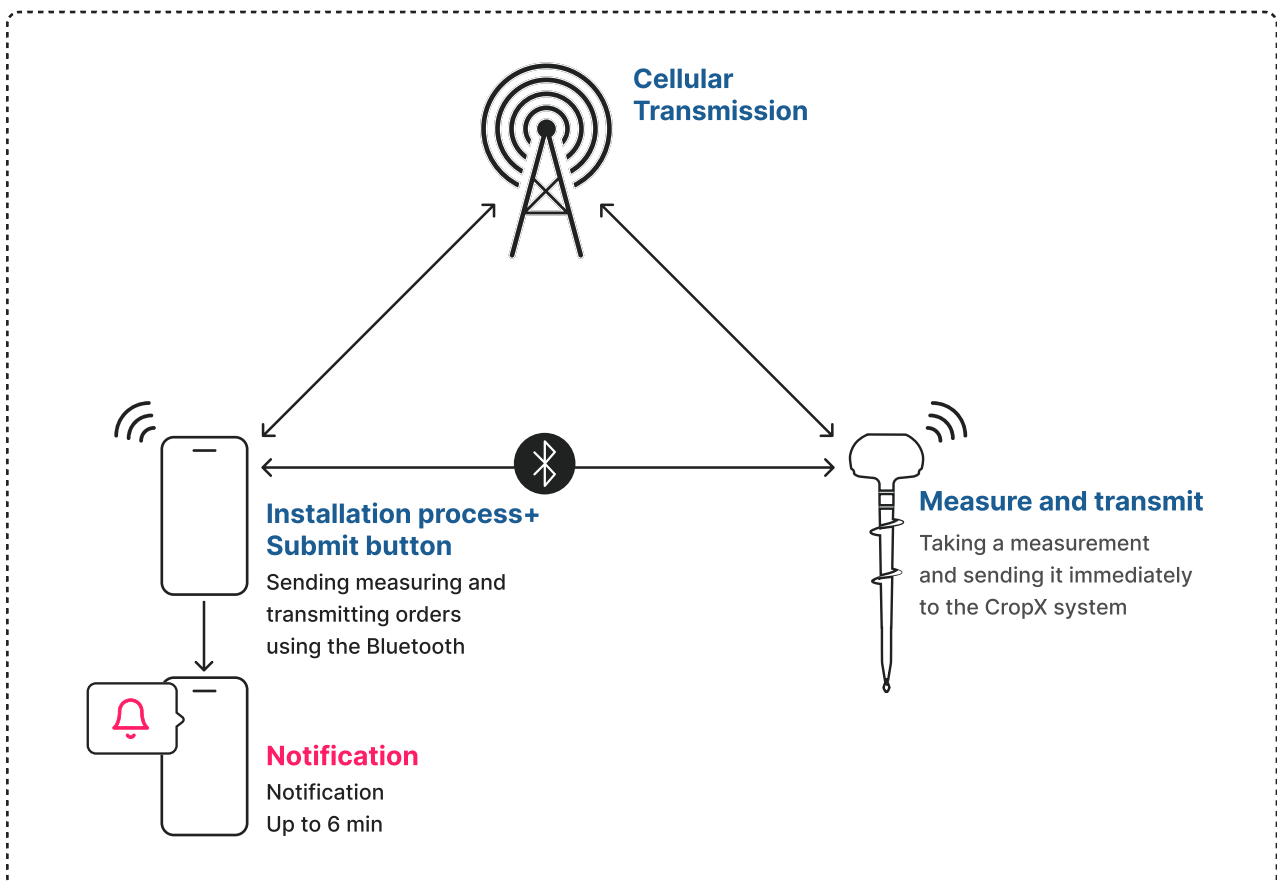
Additional Operations

Uninstalling the Sensor

It is recommended to uninstall the sensors at the end of each season, by completing the following:

1. Take the rod, a shovel and in case of very dry soil, also water with you.
2. Navigate to the Farm/Field in which the Sensor is located. Ensuring you've selected the correct Sensor to uninstall, press the 'Options' button in the top right corner (3 black dots). From here, you'll click on 'Deactivate Sensor' and on the next screen, you'll click the ON button next to the Sensor's name to deactivate it (ON = activated and OFF = deactivated). A pop-up window will ask you for confirmation to uninstall your Sensor and by clicking 'Yes, deactivate,' your Sensor will be deactivated.
3. Ensure the soil is moist. It is recommended to wet the soil around the sensor a day prior to uninstalling, and just before the uninstallation.
4. Insert the rod into the ears of the sensor and loosen the sensor counterclockwise.
5. If you feel strong resistance from the sensor while trying to screw it out, pour water around the sensor area to soften the soil. You may use the shovel to dig around the sensor to further loosen the soil, but make sure to keep a distance of at least one foot away from the sensor.
6. While in storage, assemble the antenna to the sensor and make sure the antenna is fully assembled.
7. Clean battery housing from external fluids and dirts.
8. After removing the sensor, keep the sensor in a safe and dry place and charge it prior to the next installation.

Charging the Sensor

To charge the battery, follow the steps below:

1. Unscrew the battery socket cover and pull out the battery.
2. Connect the provided micro-USB cable to the battery and connect to a certified UL/CE USB power adapter.
3. Allow the battery to fully charge for at least ten hours, until the light changes to green (this may take up to 24 hours, depending on the charging source).
4. Insert the battery into the battery socket and make sure the sensor has responded with a start-up beep.
5. Before screwing back the battery socket cover, make sure it is clean from dust & debris.

Technical Data:

Battery and Power:

Risk of explosion if battery is replaced by un-authorized personnel

Dispose used batteries according to the local regulations.
4.2V 10Ah Rechargeable Li-ion
Charging at: 5VDC @ 2A max

Temperatures range:

Storage range -22°F to 185°F (-30 °C to 85 °C)
Operating range -4°F to 140°F (-20 °C to 60 °C)
What if the temperature is below 0°C?
The moisture values are not accurate below 0 but the sensor is working.

Physical Dimensions

Height 36 inch (91 cm)
Width   7 inch (18 cm)
Weight 5.5 lbs (2.5 kg)

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