

CropX Sensor V02/v03

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 2/3 depth
B		Antenna
C		Antenna extension
D		Auger
E		Handle
F		Sensor head adapter
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 & create an account.
 - If I 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 following 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.
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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).

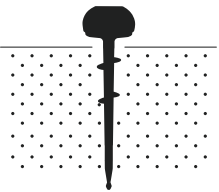
* The blue LED will be on during charging and will start blinking when it is fully charged.

Please ensure you have the following for installation:

- Sensor
- CropX Installation Kit

Please provide the following for installation:

- 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
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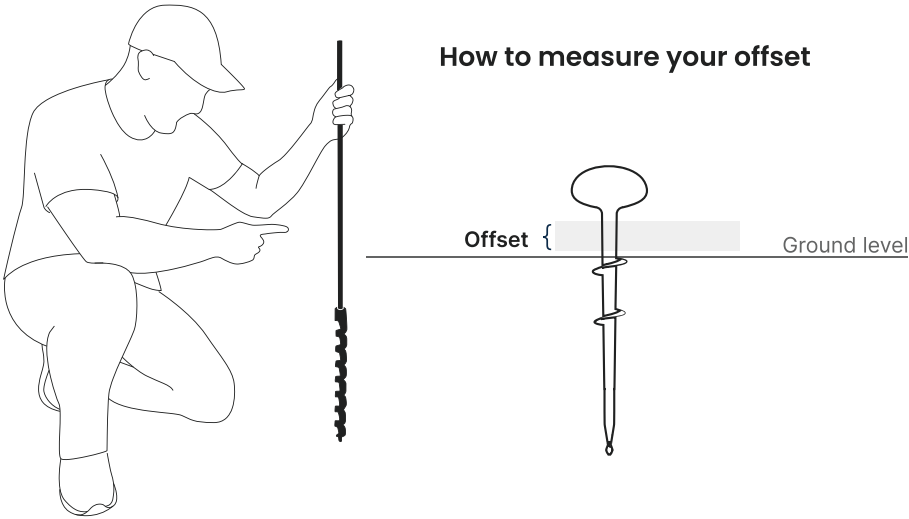
Step 3: Installation Recommendations

For optimal sensor installation and accuracy, it should be installed:

- 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

In a **3 and 2 depths** type sensor, you must drill in the ground according to the offset at which you choose to install.

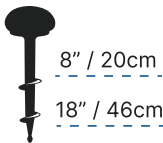


Sensor depths offset

2 depths

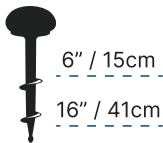
Full installation

Drill until 18" / 46cm



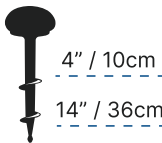
2 inch/5 cm offset

Drill until 16" / 41cm



4 inch/10 cm offset

Drill until 14" / 36cm

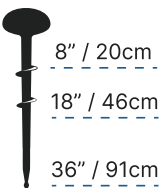


Sensor depths offset

3 depths

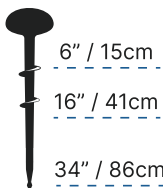
Full installation

Drill until 36" / 91cm



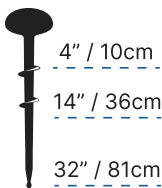
2 inch/5 cm offset

Drill until 34" / 86cm

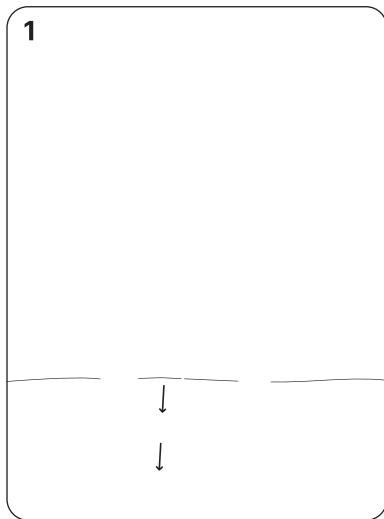


4 inch/10 cm offset

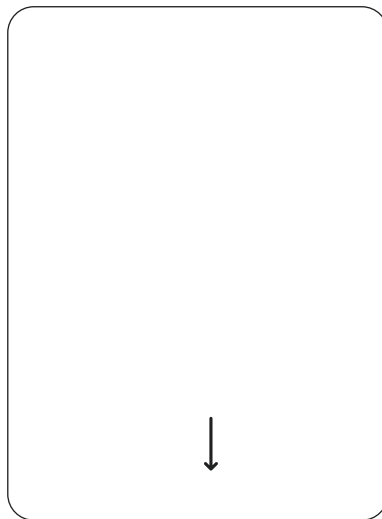
Drill until 32" / 81cm



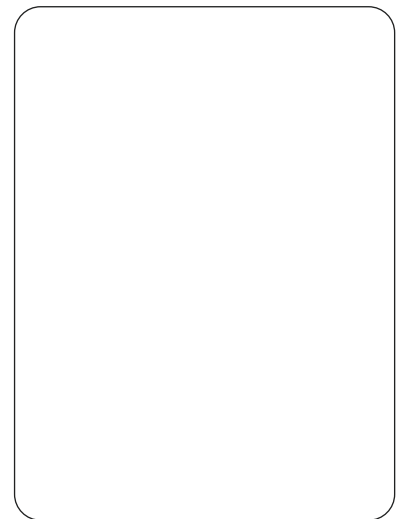
The installation in the field



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 full depth



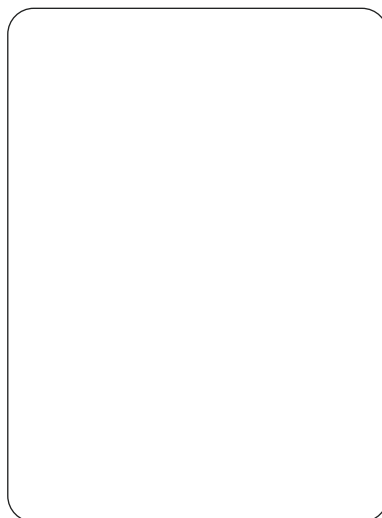
Insert the sensor into the hole and screw it gently, until it stands firmly in the ground. Do not apply downward force.
Ensure there is no debris (plants, leaves, etc.) caught on the sensor during installation.



Mount the sensor head adapter in the grooves on top of the sensor head



Mount the handle on the sensor head adapter and tighten it.



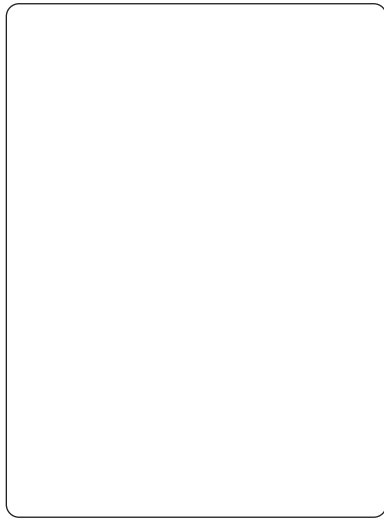
Screw the sensor almost all the way down using the handle, leaving a 1-finger gap between the ground level and the bottom of the sensor head.

*If the sensor is spinning in place then drill a new hole a bit deeper at a near location
(back to action No. 1)

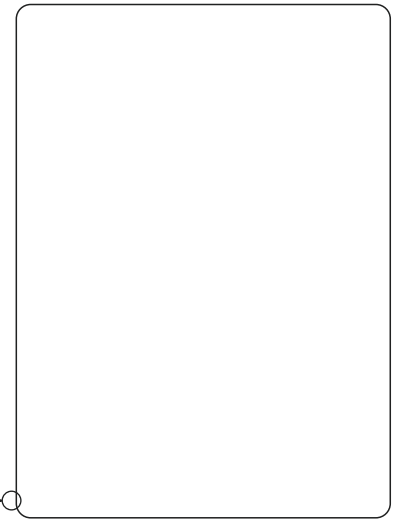
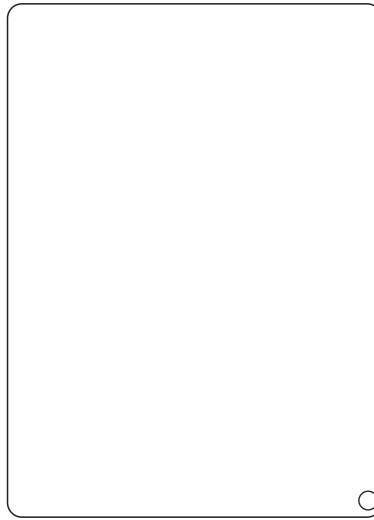
**If installation was hard at two locations, then drill a deeper third hole, pour water slowly into the hole until it is full, wait 5 minutes and then insert the sensor
(back to action No. 2)

***in areas of low reception and with high vegetation raise the antenna as high as possible on a pole

Closing the loop



Scan the QR code in CropX app



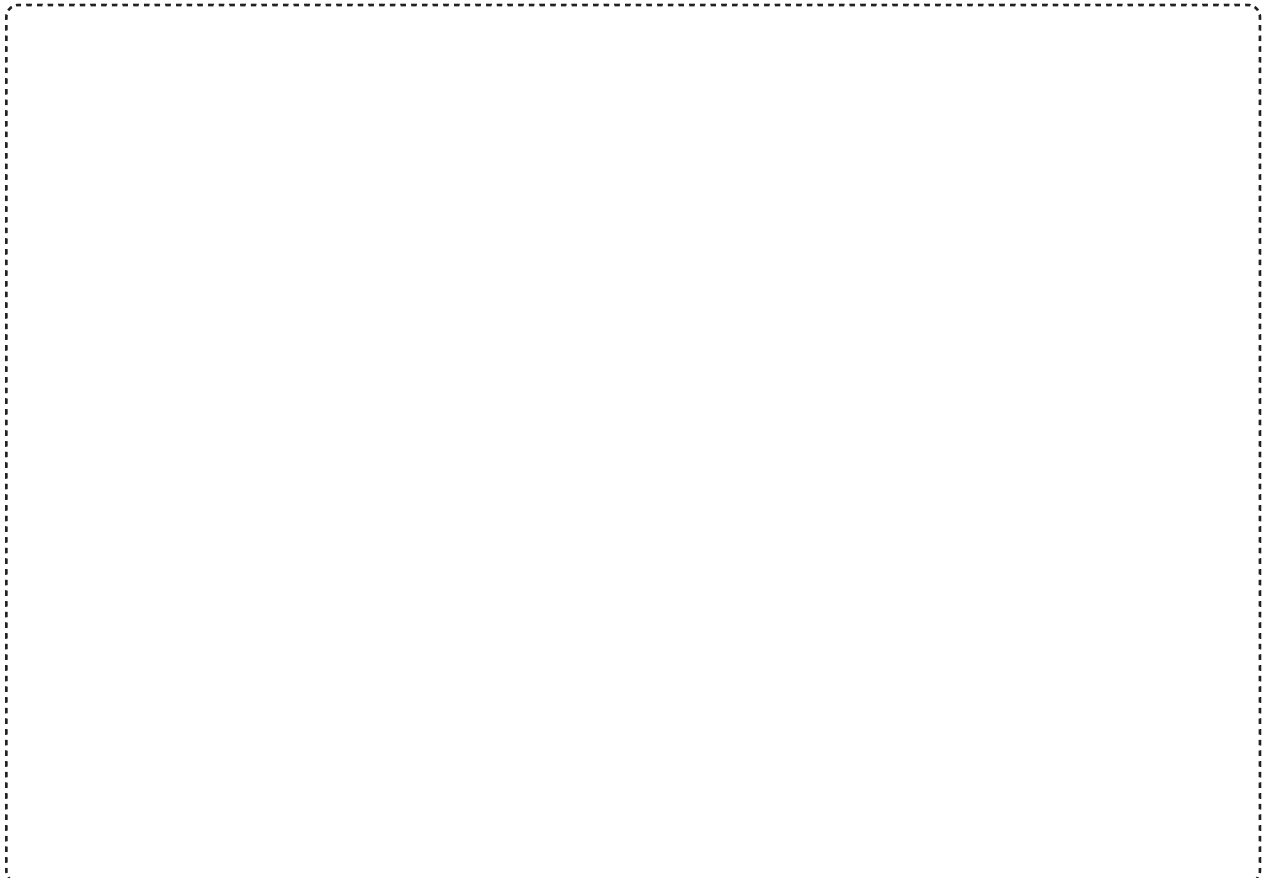
The installation has been completed in a few minutes you will receive a notification

*See a schematic of the operation below.

Transmission verification during installation

Now, with the help of BLE 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.



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 handle, the sensor head adapter and a shovel with you, if the soil is very dry you may want to take a 1/2 gallon (2 L) of water as well.
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 white dots). From here, you'll click on 'Activate / 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. Connect the sensor head adapter to the handle.
5. Mount the sensor head adapter to the grooves on the top of the sensor head and loosen the sensor counterclockwise.
6. 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.
7. 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. Gently remove the five screws on top of sensor.
2. Remove the charging socket cover.
3. Connect the USB cable to the micro-USB cable port (cable provided) and connect to a certified UL/CE USB power adapter.
4. Allow the sensor to fully charge for at least ten hours, until the light changes to blinking blue (this may take up to 24 hours, depending on the charging source).
5. Before reattaching the charging socket cover, make sure the rubber sealing ring is in place and 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.

3.7V/10.4Ah/38.48Wh (Two Li-Ion battery pack)

Charging at: 5VDC @ 2A max

Environmental grade:



CropX Pro/Deep sensors comply with outdoor grade IP68

Temperatures range:

Storage range -4°F to +140° F (-20°C to +60°C)

Operating range 32°F to +122°F (0°C to +50°C)

What if the temperature is below 0°C?

The moisture values are not accurate below 0 but the sensor is working.

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