

IC-10 SENSOR MONITOR



Device ID: _____

IMPORTANT This Device ID will be required to register your device. If installing multiple devices, make sure to note which ID's are installed in each location, noting the GPS coordinates if the mapping feature of IRROcloud is to be used.

The IC-10 is a cellular device reporting to IRROMETER's IRROcloud platform, found at www.irrocloud.com. Reliable cellular service is required in the area of installation for proper operation. New units include data service which will require a renewal one year after activation. Expected battery life is 4-5 years and no other hardware maintenance should be necessary.

Additional information about the IRROcloud platform, sensor interpretation, wire extensions, and troubleshooting can be found on the home page by clicking on the IRROcloud icon in the upper left.

Registration

We recommend registering your device prior to installation to allow for quick validation of communication once installed. If this is your first IC-10, you will need to create an account on the IRROcloud platform:

Go to www.irrocloud.com and select the "Create New Account" option in the lower right of the login screen. Follow the prompts to create and then activate your new account. A valid email address will be required (all lower case), along with a password of at least 8 characters, one of which must be a letter.

Once your account is created, or you already have an existing account, you will need to add this device to your account. Login, go to the main Dashboard page, click on the "Register New Device" link in the upper left of the device list. Input the device ID code from above and choose confirm. The IC-10 will now be added to your account and will be visible on the device list.

For additional video content on IC-10 and sensor installation, visit:

<https://www.youtube.com/@irrometer>



IC-10 INSTALLATION

A Phillips head screwdriver will be required for installation. If modifying sensor wire lengths, cutting and stripping tools will also be needed, along with waterproof wire splices.

The IC-10 can be mounted on a pole or post with the provided screws. Secure with holes at the top and bottom flanges. Installation must be vertical, upright, and at a height that will prevent any flooding of the enclosure. Additional height may be necessary for areas with poor cellular reception.

Use a screwdriver to remove the six screws securing the cover. These screws are not retained in the cover, use care to avoid losing any. Pull the power tab out of the battery holder. In about one minute, the IC-10 will attempt to connect to IRROcloud. Success is indicated by the following patterns on the green LED located near the top center of the IC-10:

- Solid for up to 30 seconds (attempting to connect to cellular network)
- Blinking for 5 to 20 seconds (connected, attempting to send data)
- Solid for up to 30 seconds (success, disconnecting)

Once this pattern completes, the device will show activity on IRROcloud and you can proceed with sensor installation. ***If the LED never blinks, a connection could not be established*** and the IC-10 should be moved or raised to improve connection.

SENSOR INSTALLATION

WATERMARK (200SS - Green Wires)

If time permits, conditioning the sensors before installation will provide the most accurate results immediately. To condition sensors:

- Soak for 30 minutes partially submerged and let dry overnight
- Soak again for 30 minutes in the morning, let dry through the day
- Soak the sensors overnight, remove in the morning

Install sensors in the root zone either vertically or up to a 45° angle. Using a 7/8" (22 mm) diameter bar (or 1/2" IPS pipe), Coring Tool, or Slide Hammer Tool, make a hole to the desired depth. With hard or rocky soil, a larger hole can be made with a soil auger. Fill the bottom of the hole with a mud slurry made from native soil, then push the sensor down into the slurry. This process will 'grout' the sensor to the soil for maximum contact. Backfill the rest of the hole with the remaining mix.

Before installation, the sensor can be attached to a 1/2" class 315 PVC (thin wall SDR 13.5) or 3/4" CPVC (SDR 11) pipe with an PVC to ABS cement. The pipe becomes a conduit to protect the sensor wires and also helps to install and remove the sensor. Cap the top of the pipe to prevent water entering from the top. A small hole should be drilled at the bottom of the pipe just above the sensor, to allow water to drain away if it becomes trapped in the pipe.

Soil Temperature (200TS, Red Wires)

The 200TS should be installed at a depth representing an average of the upper two WATERMARK depths. All WATERMARK sensor readings will be compensated by this sensor if connected. Bore a 1/2" (13 mm) or larger diameter hole and insert the sensor, then backfill.

Air Temperature Station (ATS - Black Wires)

Use the screws included with the ATS to mount it on the same pole or post as the IC-10. IRROcloud can be configured to use this sensor for SMS frost alerts.

SENSOR CONNECTIONS (IC-10, IC-10-F)

Remove the plug from each cable gland used and route sensor wires into the IC10, pulling enough through to provide some slack in the wires after connection. Tighten the gland on the fitting to secure the wires and weather-proof the enclosure. **NOTE:** **Leave the plugs in all unused glands**

Each sensor channel on the IC-10 is labeled for the appropriate sensor:

- S-TEMP: Soil Temperature Sensor (Red Wires)
- SM1 – SM6: Watermark Soil Moisture Sensors (Green Wires)
- IRRIG: Irrigation Switch (Red and Black Wires)
- RAIN (IC-10, IC-10-IR): Tipping Bucket Rain Gauge (Red and Black Wires)
- A-TEMP: Air Temperature Station (Black Wires)

On the IC-10-F flow meter version, the meter pulse output will be connected to the RAIN ports on the IC-10. The left port is the ground/common, the right is the signal/pulse. Contact IRROMETER for additional information about wiring specific flow meters to the IC-10-F. Note that the IRRIG channel is disabled on the on IC-10-F, events will be triggered by the flow data.

To connect sensors, use a small screwdriver to push and hold the orange button down until the stripped wire end is inserted, then release the button to clamp the wire.

SENSOR CONNECTIONS (IC-10-IR TENSIO METER VERSION)

Each RSU equipped tensiometer will have a red, black, and white wire, to be connected to the IC-10-IR as follows:

Internal terminal board version:

For each RSU, the adapter terminal board in the IC-10 is marked by number and color: **W1 B1 R1** are the white, black, and red wires for the #1 RSU, **W2 B2 R2** are the white, black, and red wires for #2, and so forth for each RSU.

External cable version:

RSU CABLE	#1 RSU WHITE	#2 RSU WHITE	#3 RSU WHITE	#4 RSU WHITE	#5 RSU WHITE	#6 RSU WHITE	RSU RED	RSU BLACK
IC-10 CABLE	GREEN	GREEN BLACK	BLUE	BLUE BLACK	WHITE	WHITE BLACK	RED	RED BLACK

S-TEMP, IRRIG, RAIN, and A-TEMP are all connected as shown above in the standard IC-10 version.

BATTERY WARNING:

This device contains a lithium thionyl chloride battery.

- Fire, explosion, and severe burn hazard- do not recharge, disassemble, heat above 100°C, incinerate or expose contents to water
- Dispose of used batteries according to local regulations - do not place in regular trash

WARRANTY: The IRRMETER COMPANY warrants its products against defective workmanship or materials under normal use for one year from date of purchase. Defective parts will be replaced at no charge for either labor or parts if returned to the manufacturer during the warranty period. The seller's or manufacturer's only obligation shall be to replace the defective part and neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or inability to use the product. This warranty does not protect against abuse, shipping damage, neglect, tampering or vandalism, freezing or other damage whether intentionally or inadvertently caused by the user.



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