



Field Installation Document

Technical Specification

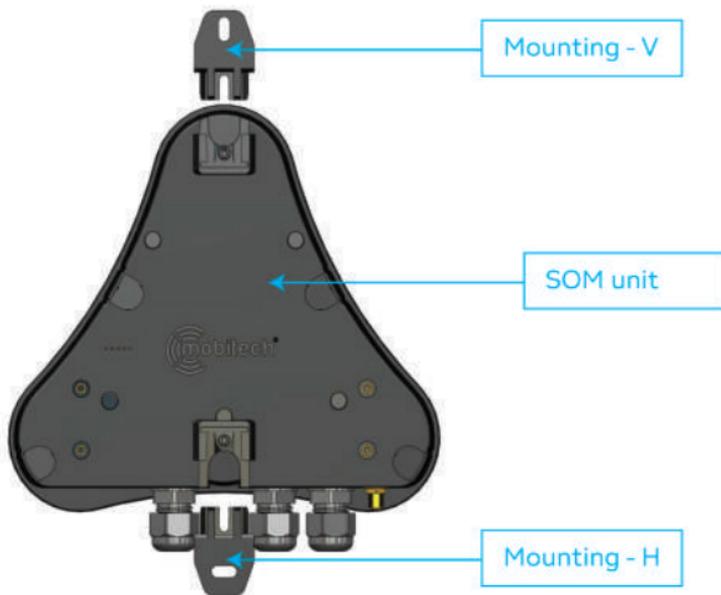
Product Name	: SOM
Solar Panel	: 9V/6W
Battery	: 3.7V/2.6AH
Backup Time	: 120 Hours
Communication	: LORA and Bluetooth 5.0
GPS	: Inbuilt
No of Soil Moisture Sensor	: 3
No of Temperature Sensor	: 1

ASSEMBLY PROCEDURE

Mounting Assembly

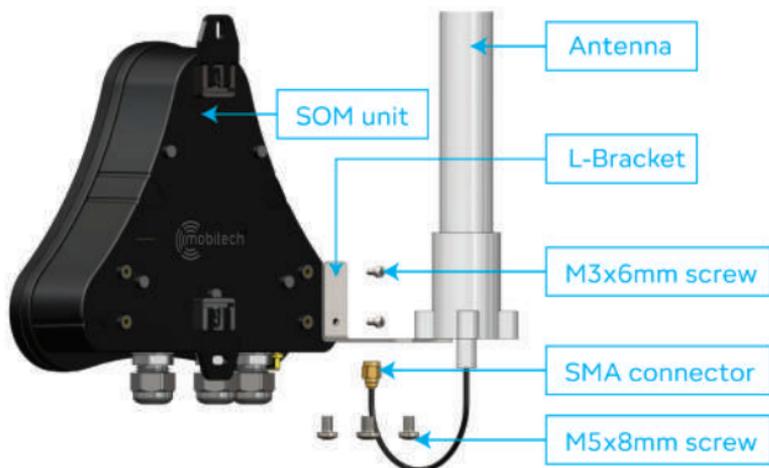
Place V slot mounting at top side.

Place H slot mounting at bottom side.



Antenna Assembly

- Place the L-bracket for antenna mounting and screw with M3x6mm screw.
- Place the antenna on the mounting plate with M5x8mm screw.
- Connect antenna connector to SMA connector in SOM unit.



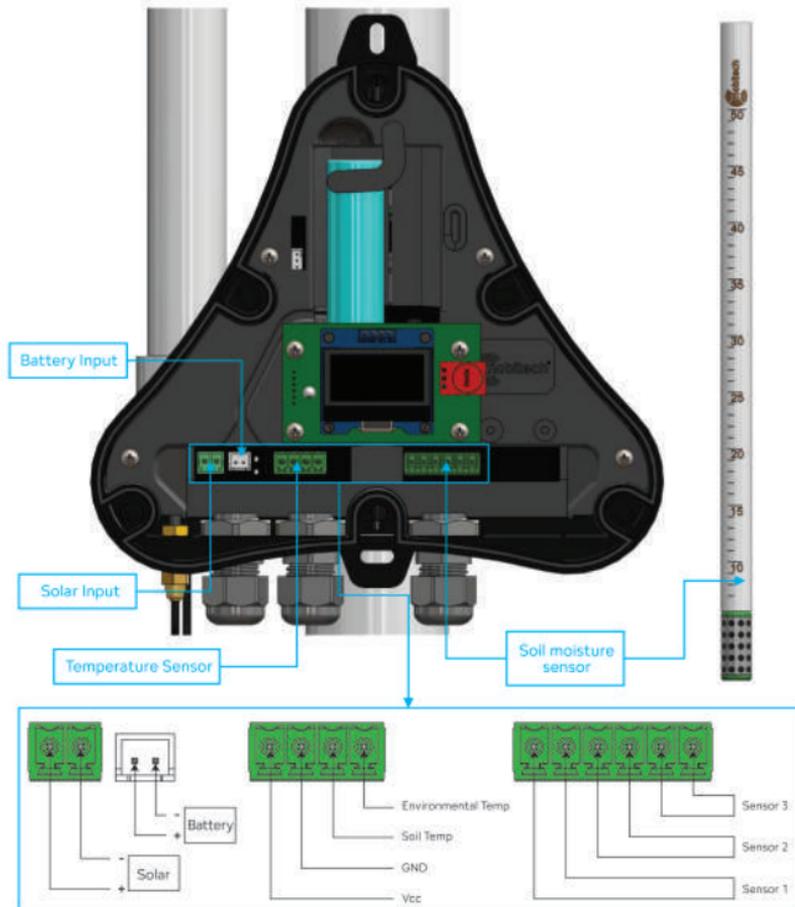
Pole Assembly

- Mount SOM unit with screw on pole



Wiring Drawing

- Open top cover.
- Connect the solar input as shown in wiring diagram.
- Connect the battery connector as shown in wiring diagram.
- Connect valve wires as shown in wiring diagram.



SENSOR PREPARATION BEFORE INSTALLATION

Sensor Hydration Procedure (Recommended)

- Wet the sensor 1st time by submerging less than halfway for 30 minutes in the morning.
 - Fully submerging the sensor will trap air inside it and will require drying the sensor completely and restarting this procedure.
 - Submerging it only halfway lets air escape out of the pores above the water. It allows the capillary action to pull water into the inner pores. It is the fastest way to get the sensor prepared for installation.
- Let it dry until the evening.
- Wet the sensor 2nd time by submerging less than halfway for 30 minutes that same evening.
- Let it dry overnight.
- Wet the sensor 3rd time by submerging less than halfway for 30 minutes the next morning and let dry until the evening.
- Finally, fully submerge the sensor over the 2nd night and install soaking wet in the 3rd morning.

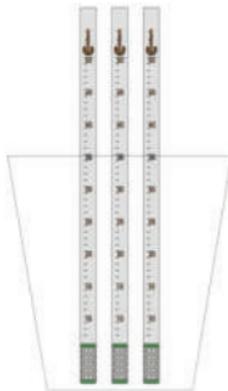
Full sensor accuracy will reach after two or more irrigation cycle, depending on the soil's wetness.

Sensor Hydration Procedure (Not-Recommended)

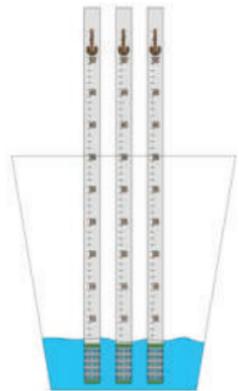
- Soak the sensors overnight in irrigation water before installing the next day. A minimum of 8 hours should allowed penetrating water into most of the inner matrix pores and for most of the air need to pushed out or dissolved in the water.
- Full sensor accuracy will reach after five or more irrigation cycles, depending on the soil's wetness



Sensor submerging
less than halfway



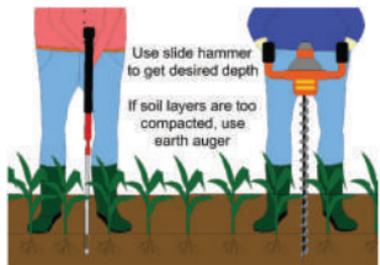
Drying Condition



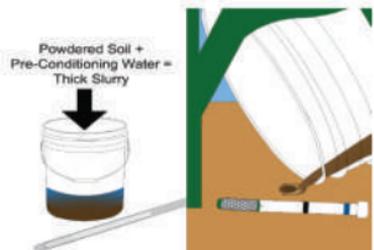
Sensor
submerged fully

Field Installation Steps

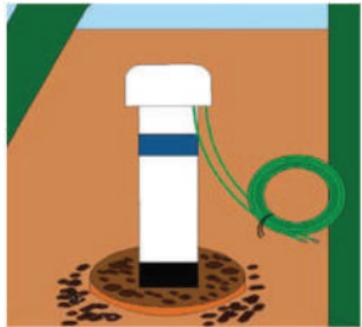
Step-1: At the selected location, create a vertical hole for the 6-inch sensor. Keep pushing deeper until the marking corresponding to this sensor depth is even with the soil surface. If the soil is compacted, use a $\frac{7}{8}$ -inch OD auger bit with a cordless drill or gas power head.



Step-2: Create a thick slurry by thoroughly mixing powdered soil (preferably sieved) with preconditioning water. Pour this smooth "batter" (not "broth" or "paste") into the hole to fill it halfway.

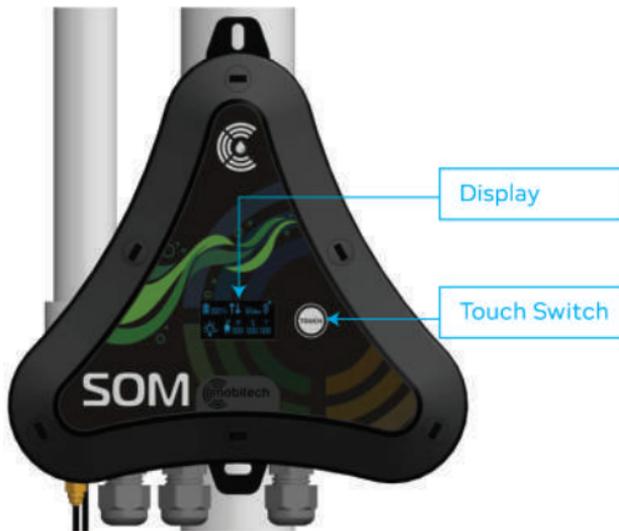


Step-3: Push the sensor down into the hole until the bottom of the black electrical tape is even with the soil surface. Some of the slurry should ooze out. Around the lip of the hole, pack down the existing soil and then a mound of additional soil, holding down the rubber washer (if used) to further reduce water leakage into the hole.

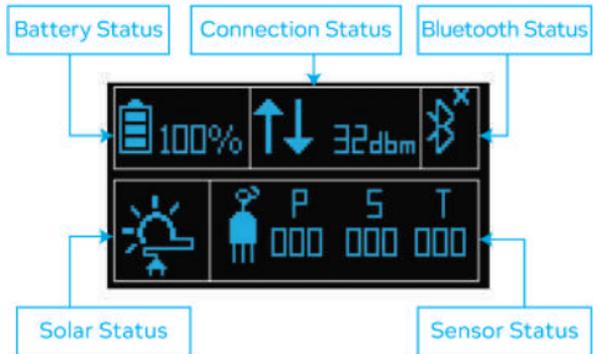


Configuration

- After finishing wiring, touch the touch sensor, it will wake-up display.
- Long touch (3sec) to connect Bluetooth for configuration.



Display Screens Wake-up Screen



Battery Status



- It shows Internal Battery Percentage

Connectivity



- It shows Connectivity Strength

Bluetooth Status



- Bluetooth Disconnected



- Bluetooth Stand-by (Blink)



- Bluetooth Connected

Solar Status



- Solar Not Connected



- Solar Connected (Blink)

Sensor Status



- Sensor readings.