GrowSphere™
Operating System

GrowSphere™ **ONE**

Field Monitoring Unit

GrowSphere™ **ONE** is a stand-alone monitoring unit that can be connected to a wide range of sensors to collect real-time data from the field, enabling optimal irrigation management

Quick Setup Guide

May 2024

orbia | Precision Agriculture

NETAFIM™ DIGITAL FARMING

Technical Assets

Technical specifications

Solar panel	5.5 Watt
Battery rechargeable li-ion pack	3.7V 5200mAh
Outdoor installation	IP65, UV protected
Standard compliance	CE & FCC*

* Certification in process

Environmental specifications

- Working temperature -10°C to 55°C (14°F to 131°F)
- Storage temperature -20°C to 60°C (-4°F to 140°F)
- Air humidity 0% to 95%

Supported sensors

- Analog input (X3)
- Serial input (X1)
- Digital input (X2)

Two configurations available:

GrowSphere™ **ONE**
integrated solar panel

GrowSphere™ **ONE**
external solar panel

What's in the box

	GrowSphere™ ONE integrated solar panel	GrowSphere™ ONE external solar panel
ONE monitoring unit + bracket		✓
ONE monitoring unit	✓	
External solar panel 5.5W + 5m extension cable		✓
Integrated solar panel 5.5W	✓	
Antenna	✓	✓
Charging cable	✓	✓
Base plate	✓	✓
Bird spikes	✓	✓
Metal cable ties	✓	✓
Plastic bands	✓	✓
Magnetic screwdriver 2.0 x 50mm	✓	✓
Activation magnet	✓	✓
Technician USB cable	✓	✓

Initial setup

1 **Grow**Sphere™ **ONE integrated** solar panel

A

Connect the unit to the panel

B

Connect the antenna and solar panel to the **ONE** unit

Cellular antenna connector

Solar panel connector / Charging cable
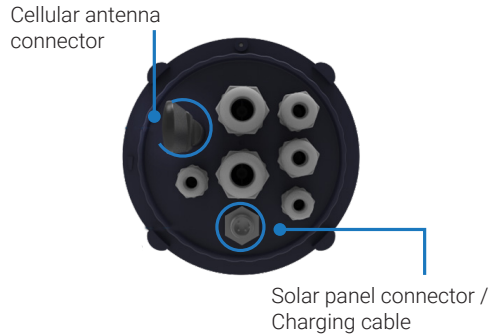
C

Connect the bird spikes to the solar panel if required
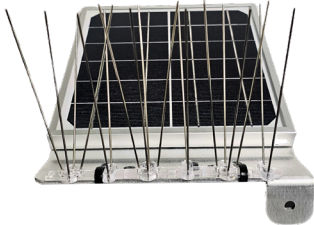
2 GrowSphere™ ONE **external** solar panel

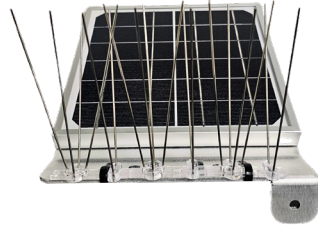### A

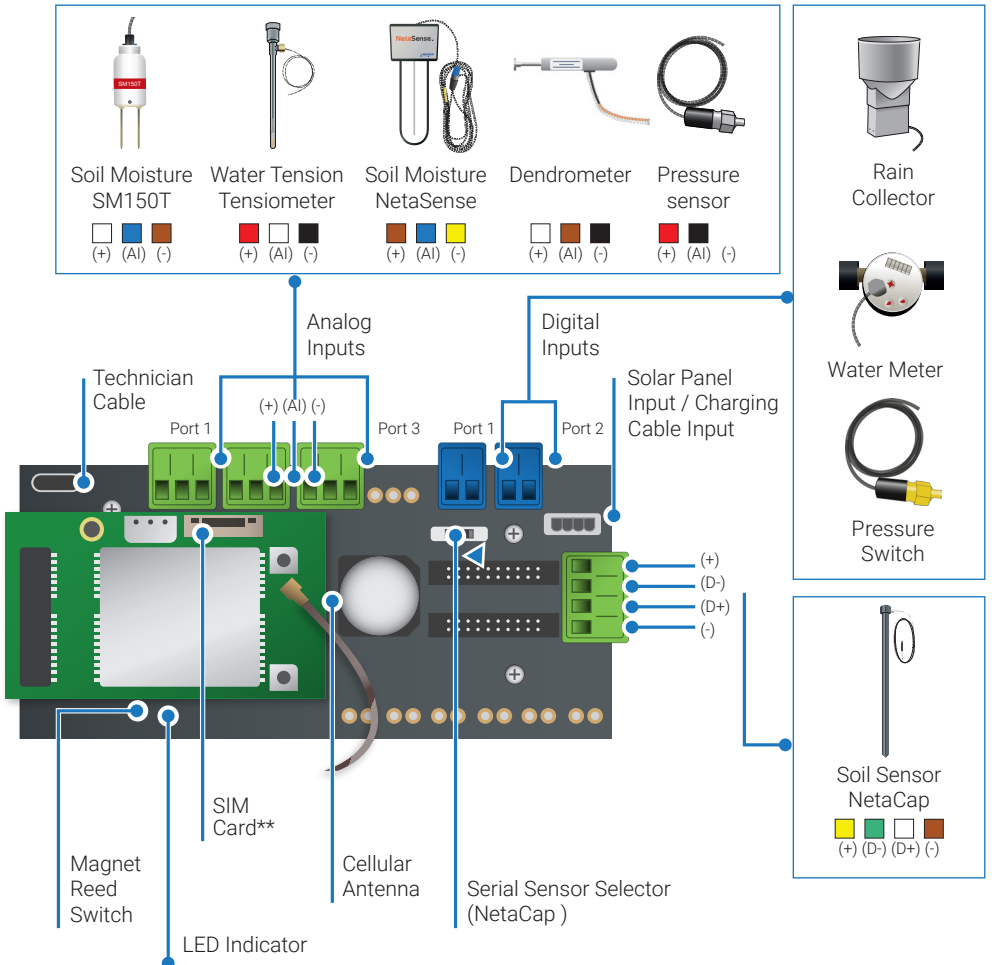Connect the antenna and solar panel to the **ONE** unit

Cellular antenna connector

Solar panel connector / Charging cable

B

Connect the bird spikes to the solar panel if required

Sensor Wiring Diagram

Soil Moisture SM150T — (+) (AI) (-)

Water Tension Tensiometer — (+) (AI) (-)

Soil Moisture NetaSense — (+) (AI) (-)

Dendrometer — (+) (AI) (-)

Pressure sensor — (+) (AI) (-)

Rain Collector

Water Meter

Pressure Switch

Analog Inputs

Digital Inputs

Technician Cable

Solar Panel Input / Charging Cable Input

Port 1 — (+) (AI) (-) — Port 3 — Port 1 — Port 2

(+)
(D-)
(D+)
(-)

Soil Sensor NetaCap — (+) (D-) (D+) (-)

SIM Card**

Magnet Reed Switch

Cellular Antenna

Serial Sensor Selector (NetaCap)

LED Indicator

Number of flashes	Meaning
1	Modem not responding
2	SIM error
3	Network error
4	IP error
5	Certificate error
6	DPS code error

* Stay updated with your Netafim representative for sensor compatibly.

** The unit is provided with a SIM card

Prior to configuration

1 Ensure the unit is charged for a minimum of 5 hours, by using the provided charging cable (as demonstrated in the diagram above).
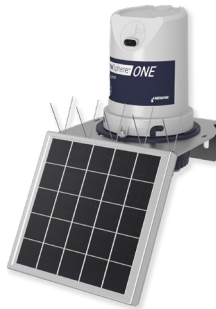
2 A blue led will indicate battery charging.

After charging, disconnect the cable and connect the solar-panel cable instead.

ONE installation

Integrated solar panel	External solar panel, 5m cable
Towards sunlight	Towards sunlight

In the App folder, click on the EXE. file. The user-name and password are not required. Instead, click on the 'Login'

Select Device
Select your device

Select Device

Unit E7-00-00-2A - ONE

Unit E1-23-33-5C - ONE

Unit E1-00-23-3V - ONE
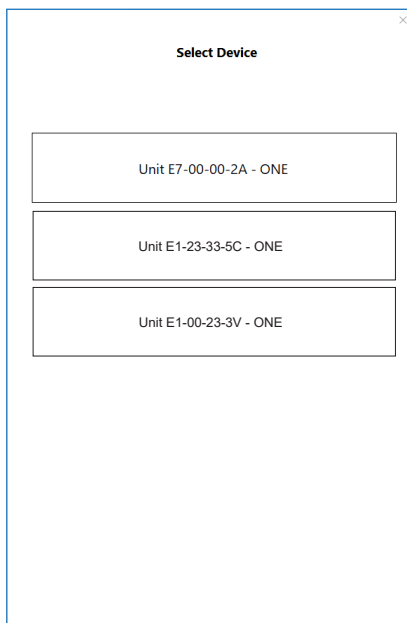
TechApp

Configure your unit by following the instructions below, based on the sensors you wish to connect. To begin, select Unit Parameters

< **TechApp**

Unit E7-00-00-2A - ONE

Unit Parameters

Network

Configuration

Status

Project
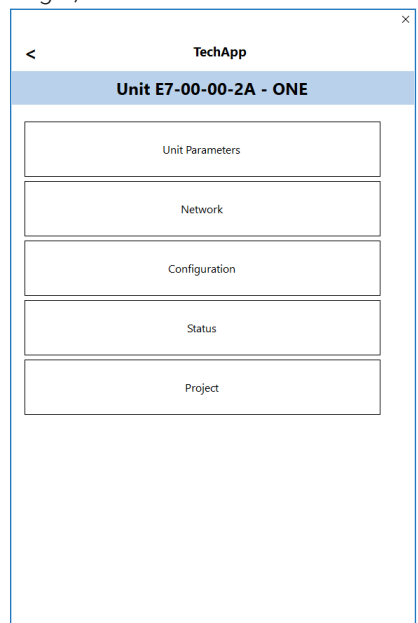
Unit Parameters

The parameters are read-only.

Click 'Save'

Sensors Configuration

Select the sensors you wish to connect

Port Config for Serial sensors

Define the Sensor Type and Sensor Depth. Check the Active box and then click Save

Sensors Configuration
Unit E7-00-00-2A - ONE
AI1 - Tensiometer
AI2 - NetaSense
AI3 - PressureSensor
DI1 - Water Meter
DI2 -
SERIAL1 - NetaCap20

Table View   Send Topology

Port Config
Unit E7-00-00-7A - ONE
SERIAL1 -

Active ☑
Sensor Type
NetaCap20

Select Depth
0 CM

Read   Cancel   Save

* It is recommended at this stage to physically connect the sensors to the device

Port Config for Digital sensors

Define the Sensor Type, Sensor Name and Pulse Volume. Check the Active box and then click Save.

Please note: Metric / Imperial units can be selected

Port Config for Analog sensors

Define the Sensor Type, Sensor Name and Sensor Depth.

Check the Active box and then click Save

Quick check-list:

- Ensure the serial sensor selector is in the proper position (please see Wiring Diagram)
- Ensure the Active box is checked
- Activated ports should be highlighted in blue

Network

Now you can disconnect the cable, the unit is ready for field installation.

Please note, from the moment the unit is activated, it will stay active for 15 minutes. If Modem Status is "Not connected", you can use the magnet or select 'Read' and then 'Connect' to activate it

Sign-up to GrowSphere™ Cloud

Create your GrowSphere™ account or log in to an existing account.

A link was sent to you by your Netafim representative

Log-in to your GrowSphere™ Cloud account

Setup your Farm

Navigate to 'Add device'

Add Device

- Choose 'ONE'
- Input your unit's MAC address
- Click 'Connect'

Add device

Which source would like to add?

Controller / PLC   rLink   ONE   3rd Party Service

Please check that your ONE device is turned on, You can use a magnet to initiate.

MAC address

E7-00-00-19   🔳 Scan Code

Connect

Device is active and connected
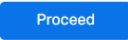
Add device

Which source would like to add?

Controller / PLC   rLink   ONE   3rd Party Service

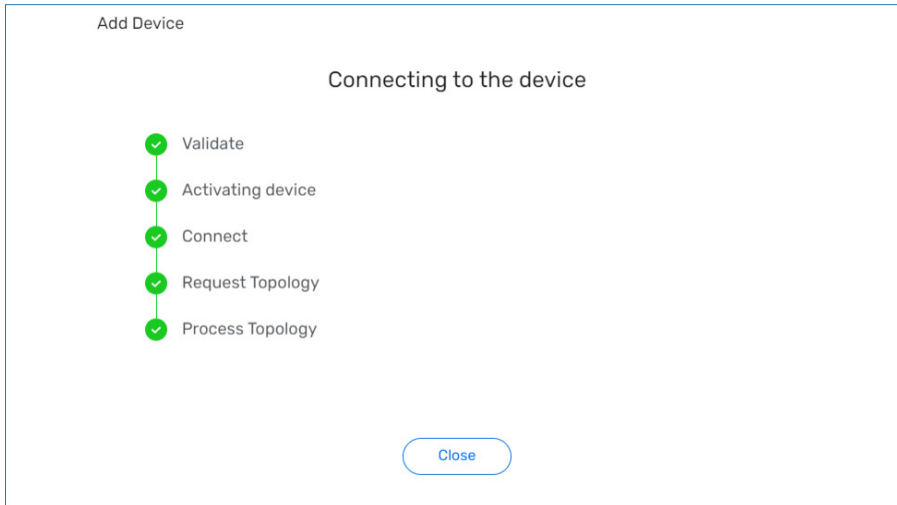Please check that your ONE device is turned on, You can use a magnet to initiate.

MAC address

E7-00-00-19   🔳 Scan Code
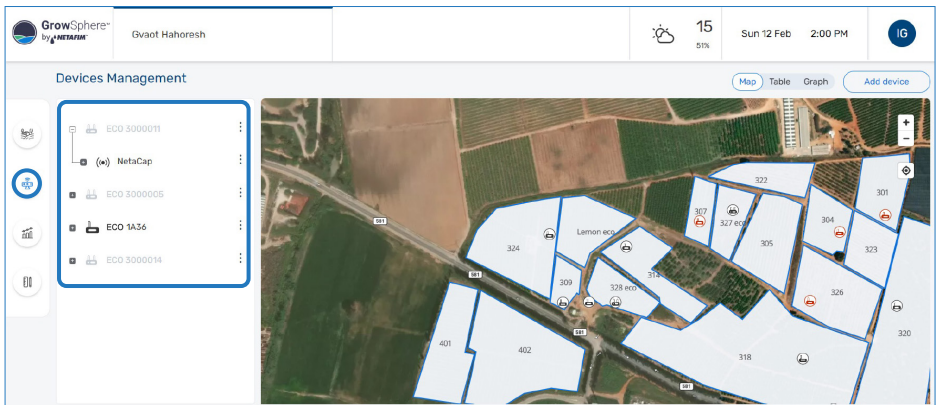
Device is active and connected

Proceed

Process completed

Congratulations! The set-up process is now completed

View your Device

Your device and the connected sensors will appear on the menu, in the 'Devices Management' screen

Recommended next steps

- You can name each device - By default, the device name will be its serial number
- Define thresholds for relevant sensors according to your preferences
- Create Irrigation Blocks and Crop Units
- Assign the devices to their relevant Irrigation Block
- Define a leading sensor, that ultimately represents your Irrigation Block's status

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