METOS®

BY PESSL INSTRUMENTS

METOS® Storage

USER MANUAL

Version 1.0, 03-2023

Thank you for choosing METOS® Storage. The METOS® Storage is a multi-sensor device that measures the key parameters within the storage season amongst your tubers by providing real-time information. It is designed to collect and analyse data to help support decisions to control storage conditions.

METOS® Storage sensors:
- Temperature
- Relative Humidity
- CO_2
- Mechanical Shocks

Thanks to METOS® Storage, you'll know the conditions in the storage at all times which will help prevent crop damage/rotting before it occurs. It will help you understand pile temperature and other conditions which leads you to fine tuning the environmental conditions inside the storage unit. Hot spots are easily detected thereby helping to mitigate the problem with chemical or other applications.

Key Features:
- Preventing crop damage and money loss
- Suitable for any type of storage (bulk or box)
- Precise and specific measurements for quick actions
- Completely wireless
- Easy to use and setup
- Flexible solution for every tuber grower

YOUR METOS® Storage

The METOS® Storage consists of one plastic egg-shell-like plastic case containing the electronics and the battery. In the package with the METOS® Storage is a sticker with a unique serial number and the keys that grants you access to the FieldClimate platform.

There is also a sticker glued on the METOS® Storage labelled **NFC Antenna** which indicates the NFC scanning area to activate your device.

START-UP THE METOS® Storage

By default, the METOS® Storage station comes with a soldered battery in deep sleep mode.

To activate your device from deep sleep mode:
- You can use any NFC scanner mobile App to scan your device (It is important to know the location of your NFC detector on your mobile device. This will make activation very easy). Place the NFC device on the NFC Antenna sticker on the METOS® Storage. A beep or vibration on your phone indicates successful activation of your device.
- Alternatively, you can open your device and connect a Micro USB cable to the device and to the PI Service Terminal Application on your computer
  - After connecting your device, click on the Esc key on your keyboard to activate the METOS® Storage device.
  - **Device Activated** message indicates successful activation of your end device.

Once the device is activated, it is ready to measure and transfer the data.

For successful data transmission, TTN LoRaWAN® network coverage should be available at the deployment location of the METOS® Storage device.

In situations where fine tuning of the configuration or parameter settings are needed, the user can access the service menu via the PI Service Terminal application.

Close the cover to its final position after setting of parameters.
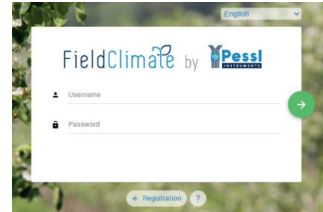
INSTALLING METOS® Storage

This is a plug and play device.
- Put the METOS® Storages amongst the crop in storage to collect data – normally you need 3 to 5 METOS® Storages.
- Make sure there is a TTN LoRaWAN® network coverage on the location
- By default, data is measured every 5 minutes and transmitted to FieldClimate every 15 minutes.

USE YOUR METOS®

StorageTo start using services we provide, the device needs to be registered on the FieldClimate platform, which gives access to the data in graphs and tables. FieldClimate also provides a powerful decision support system for growing crops.
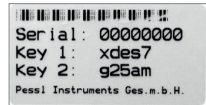
1. Open fieldclimate.com and log in as an existing user or register as a new FieldClimate user

2.After creating a new account you will receive an email with a confirmation link with which you confirm creation of your FieldClimate profile.

ADD YOUR METOS® Storage DEVICE TO YOUR FiledClimate ACCOUNT

1. Locate the sticker with the device serial number and Key1 and Key2 passwords on the product. Key 1 gives you full (admin) access and enables you to change all the settings

and set up the METOS® Storage. With Key 2, the user is not allowed to change the station parameters, but can access all the data.

2. To add your METOS® Storage device, click on the User Menu icon at the top right corner. Click on Add/Remove station. It will ask you for the Station Serial number (SN) and the station key. There is also an option to add the name of the station (This should be any name of your choice)
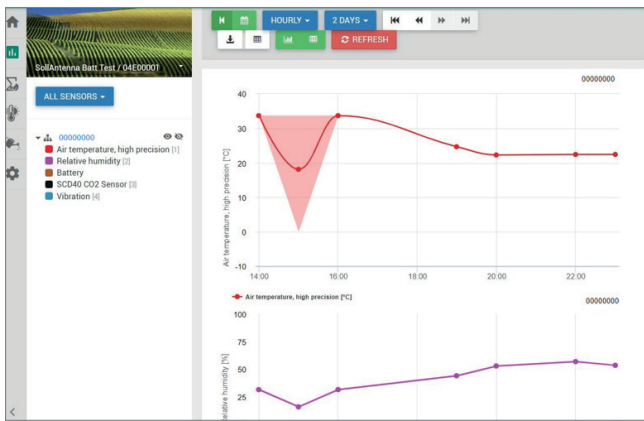
3. Click on the ADD STATION button once done.

THE FieldClimate DASHBOARD, STATION DATA AND SETTINGS

In the new **Dashboard**, the user can manage the fast access to the services of highest interest. On the top right corner, the station list allows you to choose among all registered devices. On the navigation bar, select the data page from your device. Data can be viewed in detailed graphs and tables. You can access the structured menu, which allows you to define time series resolution and export data in a chart or table. On the left side, you can see all the sensors connected to your METOS® Storage.

On the Station settings page, you can configure your METOS® Storage device by navigating through settings > Sensors and nodes: You can define a custom name for your METOS® Storage. For convenient viewing of data, you can also rename each sensor and customise its colour in the graph. For further inquiries visit metos.global/fieldclimate-manual.
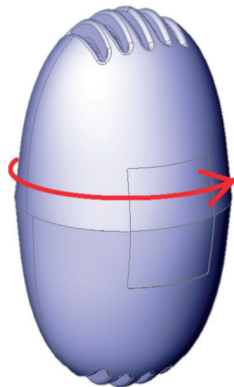
MAINTAINING YOUR METOS® Storage

The METOS® Storage should be checked periodically to ensure that the sensors are in optimal conditions. Regular maintenance is necessary for flawless operation and durability. At the beginning of the new storage season, check that the device is working correctly, and that there is no low battery level and that the data is transmitted at the set intervals to FieldClimate.

INSTRUCTIONS ON HOW TO OPEN AND CLOSE THE METOS® Storage DEVICE

1. To Open the METOS® Storage

A: Press and hold the METOS® Storage Device at both ends and rotate it anti-clockwise. A click sound indicates that its successfully opened.

B: Separate the case by lifting it up as indicates in the image below to access the electronics.
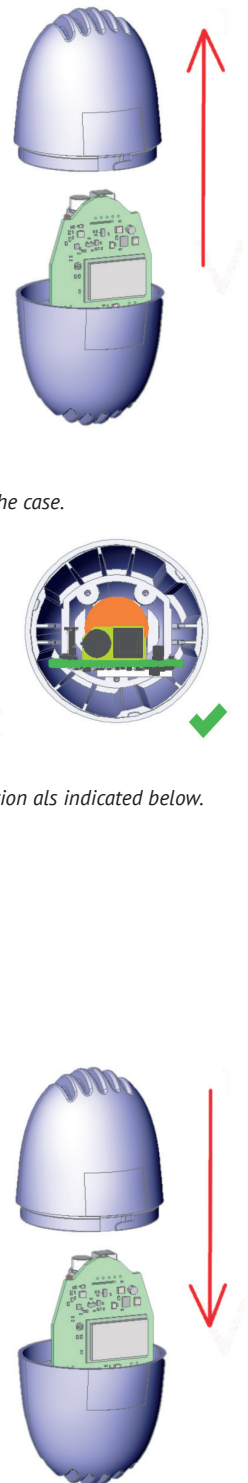

2. To Close the METOS® Storage

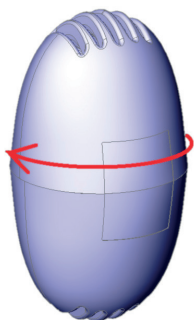*A: Make sure the PCB is properly placed inside the case.*

B: Check that the battery faced the proper direction als indicated below.

C: Close the case after ensuring that PCB is inserted properly.

D: Pressed and rotate clockwise to close.

NOTE: The METOS® Storage comes with a blue plastic holder which helps to keep the electronics tight in place.

TECHNICAL SPECIFICATIONS

Connectivity	LoRaWAN® Frequency plans: EU863-870, RU864-870, US902-928, AU915-928 and AS920-925
Measuring range	CO_2: 0 – 40.000 ppm
Temperature	-5°C – +60°C
Humidity	0% – 99% RH
Measuring accuracy	CO2 ± 40 ppm +5% of the measured value
Temperature	± 0,5°C
Humidity	0% – 90%, ±1.8% RH, 90% – 95%, ± 2.3% RH 95% – 100%, accuracy ± 3% RH
Sensors Types	SCD41 0-40000ppm HYT-221 – temperature sensor TWLM1001 – humidity sensor
Measuring interval	5 minutes
Logging interval	15 minutes
Communication interval	15 minutes

For full user manuals please visit:
metos.global/manuals

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