

## nMETOS Tunnel

### USER MANUAL

Version 1.0, 09-2024



Thank you for choosing a nMETOS Tunnel for monitoring your agrometeorological conditions within the FieldClimate decision support system. The nMETOS Tunnel is designed to monitor data with a set of sensors oriented to plant protection. Like other products of the METOS® family, it measures and sends data to the FieldClimate platform using the NB-IoT connectivity. Users have free access to data through web, mobile applications and decision support systems. Additional services (like plant disease models and weather forecasts) are available with a licence fee. Web API is available for interface with other custom applications.

**nMETOS Tunnel systems will be mainly used for:**

- Air-Temperature/Moisture monitoring
- Soil volumetric water content monitoring

## MAINTAINING THE nMETOS Tunnel

The weather station should be checked periodically to ensure that sensors are in optimal condition. Regular maintenance is necessary for flawless operation and durability.

At the beginning of the new season, check that the station is working correctly; data must be transmitted at the set interval to FieldClimate.

➤ Add station
➤ Remove station

Use the Station ID and key that came with your nMetos station to add it to your list. Use key 1 if you want to be able to change station configuration settings or key 2 if you want read-only access.

Station ID

Station key

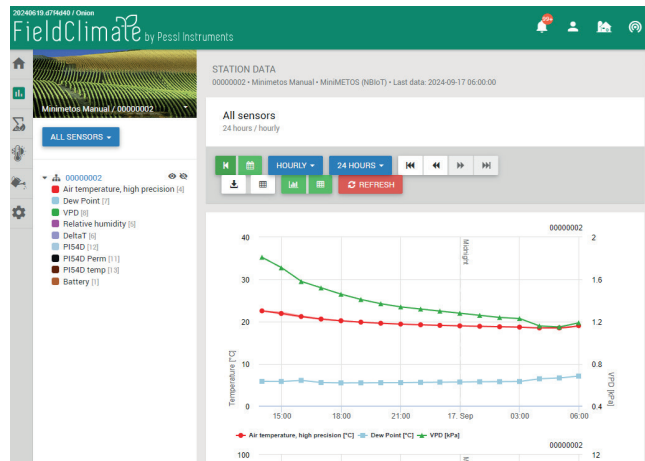
Station name

ADD STATION
CANCEL

### DASHBOARD, STATION DATA AND SETTINGS

In the new **Dashboard**, the user can manage fast access to the services of highest interest. On the top right corner, Station List allows you to choose among all registered devices.

On the navigation bar, the **Station data** page displays the data measured by 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/table. On the left side, you can see all the sensors connected to your nMETOS Tunnel.



With the activation of licenses for **localized weather forecast and plant disease models**, it is possible to access all data of these additional services (see figure above). To activate them, contact your local distributor or [license@metos.at](mailto:license@metos.at).

On **Station settings** page, you can configure your nMETOS Tunnel device.

**Station settings > Sensors and nodes:** You can define a custom name for your station and nodes connected to it. For convenient viewing of data, you can also rename each sensor and customize its color in the graph.

For further inquiries visit [metos.global/fieldclimate-manual](https://metos.global/fieldclimate-manual).



For full user manual please visit:  
[metos.global/manuals](https://metos.global/manuals)



Visit [metos.global/terms-of-use/](https://metos.global/terms-of-use/) to view legal information for Pessl Instruments products and services.

**Pessl Instruments GmbH**  
Werksweg 107, 8160 Weiz, Austria  
office@metos.at  
+43 317 255 21



## YOUR nMETOS Tunnel

The nMETOS Tunnel consists of one plastic casing containing the electronics, the battery and the other sensors. In the package with the nMETOS Tunnel, you will also find taped to the outer bottom of the housing, a sticker with a unique serial number and the keys that grants you the access to the FieldClimate platform.

On picture: nMETOS Tunnel

1. Temperature and relative humidity sensor with radiation shield;
2. Pessl Instruments soil moisture sensor PI54-d



### SUPPORTED NB-IoT NETWORKS:

The nMETOS Tunnel stations can be equipped with one of two possible modems:

#### • HL7800

The HL7800 module for Cat-M1/NB1 worldwide networks is fully compliant with the 3GPP Release 13. More about supported frequencies and countries can be found at: <https://www.sierrawireless.com/iot-solutions/products/hl7800/>

#### • HL7802

The HL7802 module for Cat-M1/NB1 worldwide networks with 2G fallback is fully compliant with the 3GPP Release 13 standard. More about supported frequencies and countries can be found at: <https://www.sierrawireless.com/iot-solutions/products/hl7802/>

### SUPPORTED SENSORS:

The nMETOS Tunnel consist of: Air temperature, Air humidity + Soil volumetric water content.

## START-UP THE nMETOS Tunnel

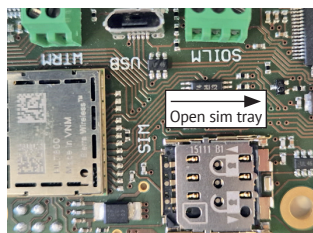
By default, the nMETOS Tunnel station comes with a disconnected battery and based on your order, it can come with or without a SIM card.

To start up the nMETOS Tunnel, it requires opening the housing, optionally inserting the SIM card and in special cases checking the settings via the USB cable connected to the PC with the PI-Terminal/ TeraTerm application and connecting the battery.

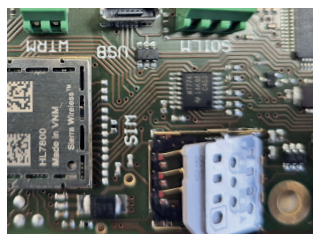
To use the NB-IoT or CAT-M1 connectivity you need a SIM card which is provisioned for the NB-IoT/Cat-M1 network from the network provider and sufficient signal from the radio tower.

1. Open the housing by unscrewing the 4 screws.
2. Remove the housing cover.

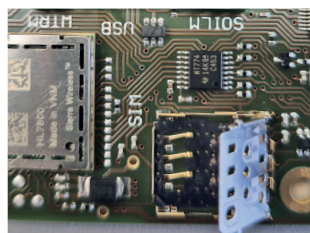
To insert a SIM card:



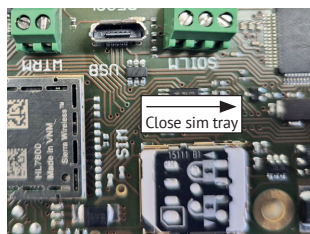
a) Slightly push the cover rightward of the PCB.



c) Insert the SIM card correctly (contacts should be on the bottom side and the marking corner in the upper left position).

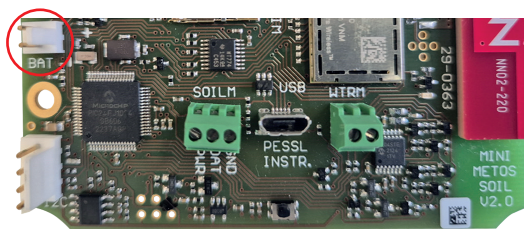


b) The cover should unlock and you can open it



d) Close the cover and push it gently leftwards so the cover gets locked.

3. Taped to the back of the closing housing cover is a battery holder with a battery. Plug the battery cable into the BAT connector on the PCB (red circle below).



4. Ensure that the battery connected cables are not exposed outside, close the cover to its final position and tighten with the screws.

## INSTALLING YOUR nMETOS Tunnel

The nMETOS Tunnel can be installed using cable ties and positioned closer to the crops as shown in the accompanying picture or mounted on a pole.

To mount on a pole, as part of the holder of the temperature and humidity sensor is a ring metal hole. Unscrew the small screws, pass the pole through the hole in the frame, and fix it with the long screws (to ensure a longer-lasting product, use the lining disk).

Ensure that all sensors are properly installed to guarantee accurate measurements and reliable data.



## USE YOUR nMETOS Tunnel

To start using the services we provide, you need to register on the FieldClimate platform, which gives you access to the data in graphs or tables. FieldClimate also provides a powerful decision support system for growing your crops (plant protection, irrigation, sowing, harvesting, fertilizing).

### REGISTER AS A NEW USER ON FieldClimate.com

1. Open [www.fieldclimate.com](http://www.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 the creation of your FieldClimate profile.



### ADD YOUR METOS DEVICE TO YOUR ACCOUNT

To add your METOS device, click on the icon in the top right corner **User Menu > Add/Remove station**. It will ask you for the **Station Serial number (SN)**, the **station key**, and a **name of your choosing**. Now the silver sticker which came with your station has to be used.

Key 1 gives you full (admin) access and enables you to change all the settings and set up the nMETOS Tunnel.

With Key 2 the user is not allowed to change the station parameters, but can access all the data.

Serial: 00000000  
Key 1: xdes7  
Key 2: g25am  
Pessl Instruments Ges.n.b.H.