



iMETOS 3.3

USER MANUAL

Version 1.0, 02-2018



Thank you for choosing an iMETOS station for monitoring your agrometeorological and other environmental needs. The iMETOS 3.3 has been designed to monitor data with a wide variety of sensor sets. Like all products of the iMETOS family, it measures, logs and sends data to the FieldClimate cloud. The users have free access to data through web and mobile applications. Additional services (like plant disease models and hyper localized weather forecasts) are available upon a license fee. Web API is available for interface with other custom applications.

iMETOS 3.3 systems will be mainly used for:

- Meteorological monitoring.
- Site Specific weather forecast corrected with local measurements.
- Frost warnings via SMS.
- Plant disease models (depending on the configuration of the equipment).
- Soil moisture and irrigation systems monitoring.
- Crop monitoring.
- Hydrology and flood warning applications.
- Environmental monitoring.

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



YOUR iMETOS 3.3

The basic iMETOS consists of one stainless steel holder with the box containing the electronics, battery, solar panel and the dual antenna. In the package with the iMETOS station you will also find two clamps to attach it to the pole. If you ordered a wind speed sensor you will find the three-cup wheel and the allen key to attach it to the axis of the sensor. If you also purchased a wind direction sensor, you will find a "T" shaped holder with two clamps. Taped to the solar panel you will find a sticker with the unique serial number and keys that enable the access to the FieldClimate platform.



*On picture:
iMETOS IMT280*

1. Temperature and relative humidity sensor with radiation shield; 2. Global radiation sensor; 3. Dual antenna (GPS/communication); 4. Rain gauge; 5. Logger and modem; 6. Power supply (solar panel and battery); 7. Wind speed sensor.

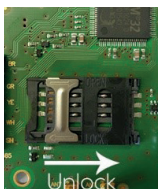
MAIN VARIATIONS

- iMETOS IMT80: Air Temperature sensor and Rain Gauge.
- iMETOS IMT200: Sensors for the calculation of most Disease Models: Air Temperature and Relative Humidity, Rain Gauge and Leaf Wetness.
- iMETOS IMT280: Rain Gauge and all the sensors for Evapotranspiration calculation: Air Temperature and Relative Humidity, Global Radiation and Wind Speed.
- iMETOS IMT300: Sensors for Evapotranspiration and Disease Models calculation: Air Temperature and Relative Humidity, Rain Gauge, Global Radiation, Wind Speed and Leaf Wetness.

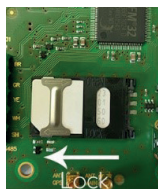
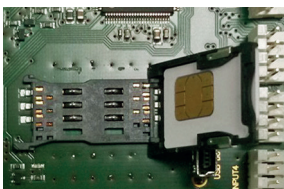
START-UP THE iMETOS 3.3

On GPRS, UTMS, LTE (i.e. G2, G3, G4) networks a SIM card from a provider is required. In CDMA network, you do not need a SIM card.

To insert the SIM card:



1. Slide the metal part of the SIM card holder to the right so the gold contacts on the SIM card face down on the board.



3. Lock the holder by sliding the metal lock.

Note: Check that the PIN request for the SIM is disabled and that you have data transfer service enabled.



4. Plug the battery cable (yellow circle) into the BAT connector on the PCB (red circle).

Your device is now up and running. The three LEDs on the motherboard will turn on for an instant indication that the station has reset (Insert a picture with a circle around LED lights). After this, the connection with FieldClimate will start and the LEDs will give you information about the communication process (for more details see *Blinking code and SIM card* sections on metos.at/home/imetos-3-3-manual/#leds-blinking-code). In case you need further support, please contact support@metos.at.

iMETOS 3.3 is a durable and flexible data logger for all weather conditions, but if you remove it during the winter months and store in a warehouse, please disconnect the battery to avoid discharge.

INSTALLING YOUR iMETOS

The iMETOS station is mounted to the pole with two clamps provided. Make sure that the pole is as vertical as possible, since this will effect rain measurements. Check the bubble level on the rain gauge or use a level to ensure the vertical installation of the pole. Sensors are positioned as depicted in the above figure iMETOS IMT280.

Temperature and relative humidity sensor should be mounted 1.5 m or 5 feet above the ground or depending on the crop height (Talk with your local Pessl Technician for installation requirements). In the northern hemisphere, the solar panel should be facing south, while the wind direction sensor should point towards north. In the southern hemisphere both elements will be facing north.

The leaf wetness sensor can be tied to a branch of the plant, attached to another pole or to the station holder (next to the rain gauge) slightly inclined with the filter paper looking up. Mount it in a position that allows the sensor to pick up early rain and to stay wet in the shade.

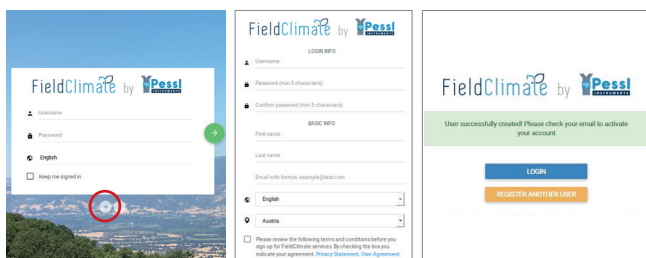
The soil moisture-temperature sensors are buried in the ground. The depth will depend on the application. To monitor root growth and nitrogen mineralization in vines or apples in early spring, it is best to install it at 10 (4 inches) to 20 cm (8 inches) depth. If you want to assess the emergence of seeds install it at the sowing depth. For annual deep rooted crops, sensors may need to extend from 10 cm (4 inches) to 120 cm (48 inches).

Note: 12 sensors can be connected directly to the iMETOS board; an extended set of sensors (up to 600) can be connected via RadioNodes or cable chain nodes. There is a connector on the top of the motherboard for the radio access point. An alternative use of this connector is to read up to two soil moisture profile probes. For detailed info about the installation of sensors refer to metos.at or the extended manual.

USE YOUR iMETOS

To see the data from your iMETOS station, you need to register on the FieldClimate Dashboard. This provides you with access to your station data in graph or table form. FieldClimate also provides a powerful decision support system for growing your crops (plant protection, irrigation, sowing, harvesting, fertilizing).

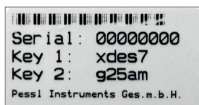
REGISTER AS A NEW USER ON ng.FieldClimate.com



1. Go to ng.fieldclimate.com/ and click the button data & e-mail “+”.
2. Insert your personal login
3. Check your e-mail and click on the link to activate the user account you created.

ADD YOUR iMETOS DEVICE TO YOUR ACCOUNT

Once registered, you can login to ng.FieldClimate.com. To add your iMETOS device, click on the icon in the top right corner **User Menu > Add/Remove station**. It will ask you for a Station Serial number (SN) and a station key. This information is found on the silver sticker (in the figure) which came with your iMETOS station. Key 1 gives you full (admin) access and enables you to change all the settings and set up the iMETOS (e.g. data transfer interval, SMS warning, etc.); with Key 2 the user is not allowed to change the station parameters, but you can access all the weather data.



Add Station ✕

Use the Station ID and key that came with your iMetos 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:

ADD STATION
DELETE STATION

It will ask you for a Station Serial number (SN) and a station key. This information is found on the silver sticker (in the figure) which came with your iMETOS station. Key 1 gives you full (admin) access and enables you to change all the settings and set up the iMETOS (e.g. data transfer interval, SMS warning, etc.); with Key 2 the user is not allowed to change the station parameters, but you can access all the weather data.

THE iMETOS DASHBOARD, STATION DATA AND SETTINGS

The new **Dashboard** is designed with a widgeted structure, which allows the user to customize access to the services of highest interest. On the top right corner, **Station List** allows the user to choose among all the iMETOS devices and select a single one.



On the left side, the **Station data** page displays the data measured by your iMETOS station. 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 image/table format.

In the **Soil Moisture** page you will find all your sensors connected to your iMETOS station displayed in graphs and tables. You can set lower and upper thresholds based on colored bands, which are visible on the graph indicating the range of acceptable soil moisture conditions.

With the activation of licenses for site specific localized **weather forecast** and plant **disease models**, it is possible to set these services for each of your iMETOS stations. To activate them please contact your local distributor or license@metos.at.

On **Station settings** page you can configure your iMETOS.

Station settings > Configuration: Under Time zone and location, you need to provide the precise information, as weather forecast and other services require it for accuracy. Under Logging and transfer settings, you can define how your iMETOS station logs and sends data. Please note that the iMETOS station is delivered with the default factory settings (as in the figure below). More options are available by clicking the “Advanced options” button.

Logging and transfer settings
Setup how your station is sending data

Logging settings
Logging interval

Scheduler

<input type="checkbox"/> 00:00	<input type="checkbox"/> 04:00	<input type="checkbox"/> 08:00	<input type="checkbox"/> 12:00	<input type="checkbox"/> 16:00	<input type="checkbox"/> 20:00
<input type="checkbox"/> 01:00	<input type="checkbox"/> 05:00	<input type="checkbox"/> 09:00	<input type="checkbox"/> 13:00	<input type="checkbox"/> 17:00	<input type="checkbox"/> 21:00
<input checked="" type="checkbox"/> 02:00	<input checked="" type="checkbox"/> 06:00	<input checked="" type="checkbox"/> 10:00	<input checked="" type="checkbox"/> 14:00	<input checked="" type="checkbox"/> 18:00	<input checked="" type="checkbox"/> 22:00
<input type="checkbox"/> 03:00	<input type="checkbox"/> 07:00	<input type="checkbox"/> 11:00	<input type="checkbox"/> 15:00	<input type="checkbox"/> 19:00	<input type="checkbox"/> 23:00

SELECT ALL DEFAULT SELECTION

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.

Station settings > Warnings: You can add phone numbers and set thresholds for each sensor, at which the warning SMS should be sent.

For further inquiries visit docs.metos.at/FieldClimate.

MAINTAINING THE iMETOS

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

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. Keep the solar panel and sensors clean and ensure correct rainfall measurements by making sure the rain gauge is levelled (check the bubble indicator), and not obstructed by leaves, insects or debris. Check if leaf wetness sensor has the appropriate filter paper intact and positioned correctly (it should be replaced once, preferably twice a year).

When the solar panel of the iMETOS is exposed to the sun and gets enough sunlight it should constantly recharge the battery of the system. The lifespan of the battery is expected to be 5 to 6 years with sufficient recharging from the solar panel. Deep discharge shortens its lifetime. The iMETOS will prevent this from happening and protect the battery by limiting the data transfer to the safe level of charge. In doing so, data is not lost and battery recovers faster.

UPDATING YOUR iMETOS

Every time the iMETOS 3.3 connects to FieldClimate, it checks for the latest firmware version. If it finds a newer version, it automatically downloads it and updates itself. iMETOS 3.3 can also be updated manually via the USB connection.

*For full user manual please visit:
metos.at/home/imetos-3-3-manual*



Visit metos.at/home/terms-of-use/ to view legal information for Pessl Instruments products and services.