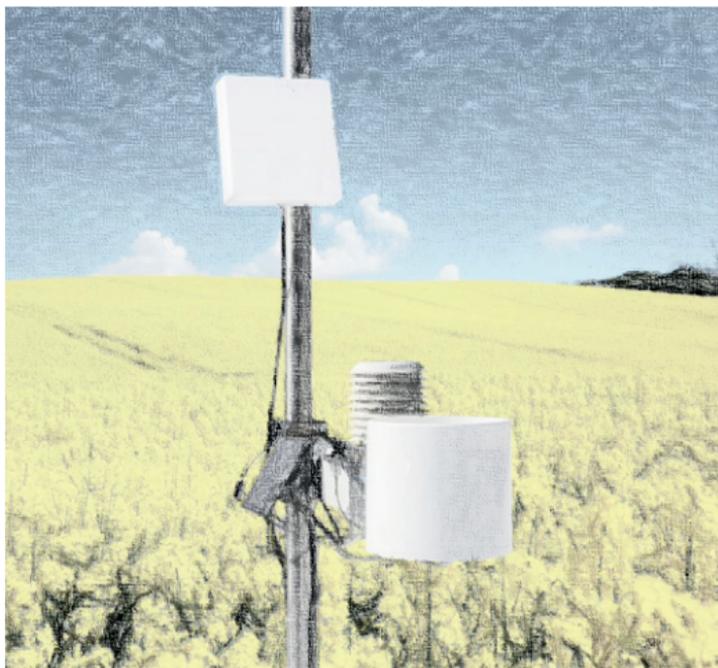




## iMETOS 3.3 WiFi

### USER MANUAL

Version 1.0, 05-2018



Thank you for choosing an iMETOS for monitoring agrometeorological variables and other environmental conditions. The iMETOS 3.3 WiFi has been designed to monitor data with a wide variety of sensor sets. It has the same powerful functions as iMETOS 3.3 – it measures, logs and sends (only via WiFi) data to the FieldClimate cloud. 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 license fee payment. Web API is available for interface with other custom applications.

#### **iMETOS 3.3 WiFi systems will be mainly used for:**

- Meteorological monitoring.
- Weather forecast corrected with local measurements.
- Plant disease models (depending on the configuration of the equipment).
- Soil moisture and irrigation systems monitoring.
- Eco-physiological 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 WiFi

The basic iMETOS consists of one stainless steel holder with the box containing the electronics, the battery, the solar panel, the WiFi antenna and one clamp for it. In the package with the iMETOS you will also find two clamps to mount it on the pole. If you ordered a wind speed sensor you will find the three cup wheels and the allen key to fix it to the axis of the sensor; if you also ordered the 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 the keys that enable the access to the *FieldClimate* platform.



On picture:

*iMETOS IMT280 WiFi*

1. Temperature and relative humidity sensor with radiation shield; 2. Rain gauge; 3. Logger; 4. Global radiation sensor; 5. Power supply (solar panel and battery); 6. WiFi external antenna.

### MAIN VARIATIONS

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

iMETOS 3.3 WiFi needs a WiFi access point. Ensure WiFi coverage of your iMETOS by placing it where the WiFi router's signal is strong enough. A WiFi directional antenna with cable is included; make sure to direct it to get a clear signal.



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

**Adjust the connectivity settings** to connect your device to your local WiFi network. To do this, please follow these steps:

1. Connect the USB cable to your PC.
2. Insert the jumper in *J1 position* to start the station in *Terminal Mode*.
3. In the menu select **(3) WiFi SETTINGS**.
4. In the next menu select **(1) SEE AVAILABLE NETWORKS** and choose the correct network. Please take a look at RSSI number – the higher the number is, the better the signal on the location.

```

=====
USER: \ MAIN MENU \ WiFi SETTINGS
=====
(1)     SEE AVAILABLE NETWORKS
(2)     CONFIGURE NETWORK
(3)     DISPLAY NETWORK CONFIGURATION
(4)     DISPLAY SAVED NETWORK CONFIGURATION
(5)     TEST CONNECTION
(ESC)   BACK
30/10/2017 17:17:38 >> Chosen function: SEE AVAILABLE NETWORKS
=====
USER: \ MAIN MENU \ WiFi SETTINGS \ SEE AVAILABLE NETWORKS
=====
Scanning, please wait...
  BSSID      SSID                Channel Type  RSSI Security
-----
46:d9:e7:cd:55:f3, Pessl WiFi      ,01, INFRA , -57 , WPA2-PERSONAL
00:1f:33:fb:b5:26, Pessl_Dev      ,06, INFRA , -86 , NONE
46:d9:e7:cd:53:30, Pessl WiFi      ,06, INFRA , -80 , WPA2-PERSONAL
46:d9:e7:cd:55:11, Pessl WiFi      ,11, INFRA , -76 , WPA2-PERSONAL
No.Of AP Found:4

```

5. In the menu select **(2) CONFIGURE NETWORK** and follow the on-screen instructions: insert the correct network name, type of security and password.

Your device is now up and running. The connection with FieldClimate will start and the LEDs will give information about the communication process (for more details visit [metos.at/home/imetos-imt-series/#leds-blinking-code](http://metos.at/home/imetos-imt-series/#leds-blinking-code)). In case you need further support, please contact [support@metos.at](mailto:support@metos.at).

iMETOS 3.3 WiFi is a durable and flexible data logger for all climatic conditions, but if you want to store it (e.g. during the winter) in a warehouse, disconnect the battery to avoid discharge.

## INSTALLING YOUR iMETOS

The iMETOS has to be mounted on the pole with two clamps. Make sure that the pole is as vertical as possible. Check the bubble level on the rain gauge to ensure the right installation verticality of the pole. Sensors are positioned as depicted in the *iMETOS IMT280 WiFi* figure on the previous page.

The temperature and relative humidity sensor should be mounted between 1.25 m and 2 m above the ground depending on the crop. 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 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.

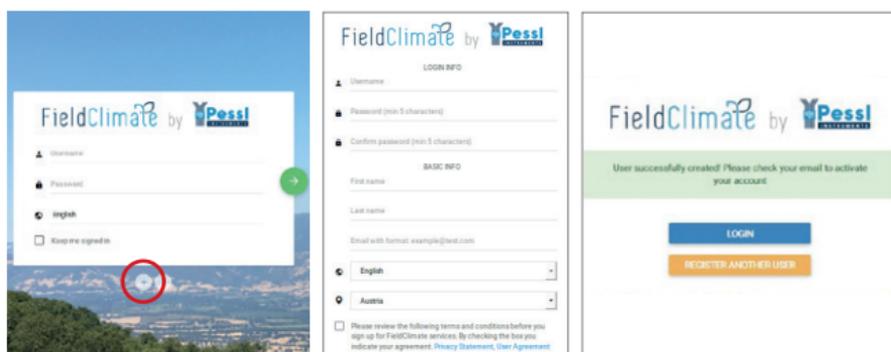
The soil moisture and temperature sensors have to be properly installed in the ground.

**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/home/imetos-int-series](http://metos.at/home/imetos-int-series).

## USE YOUR iMETOS

To start using services we provide, you need to register on the FieldClimate platform, which gives you the 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 [ng.FieldClimate.com](http://ng.FieldClimate.com)

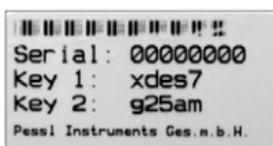


1. Go to [ng.fieldclimate.com/](http://ng.fieldclimate.com/) and click the button data & e-mail “+”.
2. Insert your personal
3. Check your e-mail and click on the link to activate the user account you created.

### ADD YOUR iMETOS DEVICE TO YOUR ACCOUNT

Now you can login to [ng.FieldClimate.com](http://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 the Station Serial number (SN) and the station key. Now the silver sticker (in the figure) which came with your iMETOS has to be used. Key 1 gives you full (admin) access and



**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**

enables you to change all the settings and set up the iMETOS (for example data transfer interval, SMS warning, etc.). With Key 2 the user is not allowed to change the station parameters, but can access all the data.

## THE iMETOS DASHBOARD, STATION DATA AND SETTINGS

In the **Dashboard** with a widgeted structure, the user can manage quick access to the services of the highest interest. On the top right corner, **Station List** allows you to choose among all the iMETOS devices and select a single one.



On the left side, **Station data** page displays the data measured by your iMETOS. 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.

In the **Soil Moisture** page you will find all your sensors connected to your iMETOS displayed in charts and tables. You can set the budget lines in the chart indicating different moisture conditions.

With the activation of licenses for highly precise localized **weather forecast** and plant **disease models**, you can access all data of these additional services. To activate them please contact your local distributor or [license@metos.at](mailto:license@metos.at).

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

**Station settings > Configuration:** Under Time zone and location, you need to provide precise information, as weather forecast and other services depend on it. Under Logging and transfer settings, you can define how your iMETOS device logs and sends data. Please note that the iMETOS 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.

For further inquiries visit [docs.metos.at/FieldClimate](https://docs.metos.at/FieldClimate).

## MAINTAINING THE iMETOS

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.

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 WiFi 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 WiFi can also be updated manually via the USB connection.

*For additional information please visit:  
[metos.at/home/imetos-imt-series](https://metos.at/home/imetos-imt-series)*



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