

METOS[®]
BY PESSL INSTRUMENTS



Product Portfolio

Technical Catalogue

FEBRUARY 2025 EDITION

www.metos.global



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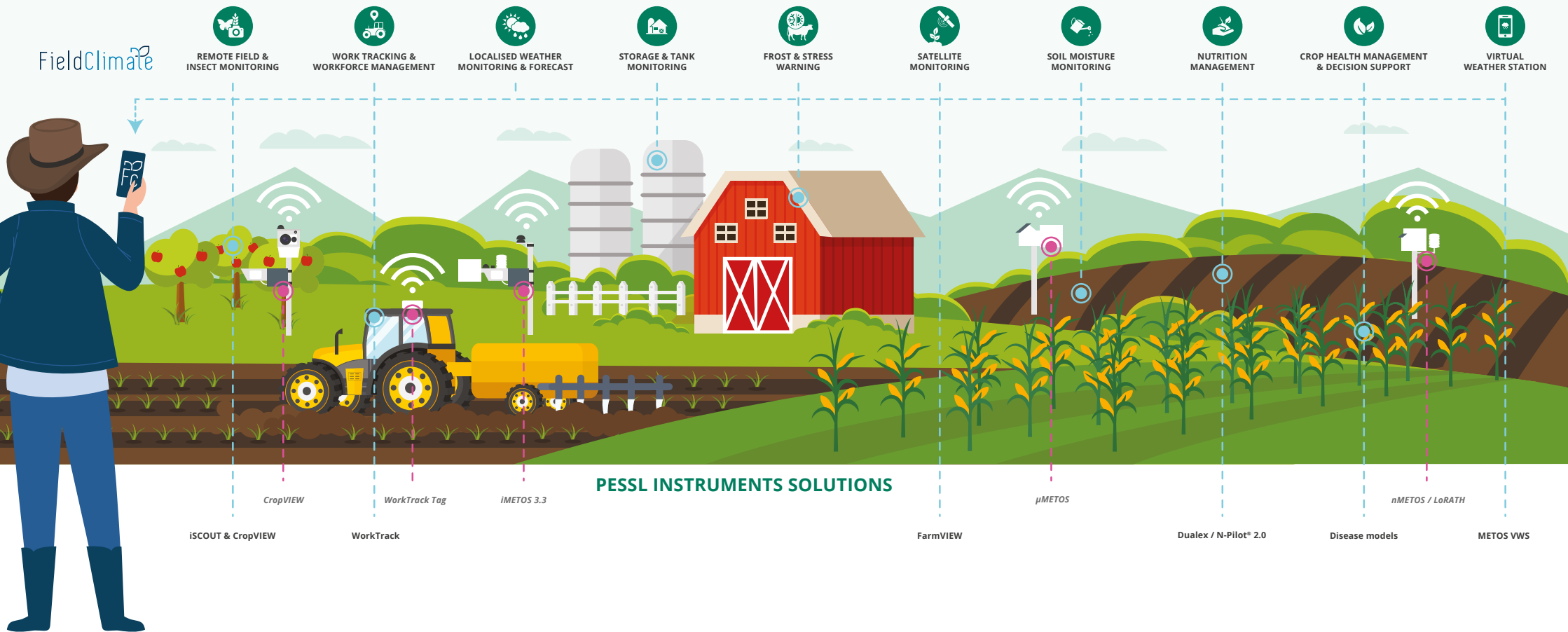
Nested Approach to IoT Agriculture

Agriculture has changed dramatically in the last two decades and fast developing technologies will continue to have a tremendous influence on the farming practices in the years to come. IoT in agriculture is gaining importance since it helps monitor multiple on-farm assets all at once. But how does it work?

The Nested or Holistic approach means connecting many different devices/ solutions that are strategically placed in fields. Pessl Instruments connects all the dots, makes it easier to control your farm and fields, so you don't have to worry

about important management decisions being overlooked. This way you avoid unnecessary trips to the field, know exactly what the conditions at any given time are, make timely decision about irrigation, fertilizing, pesticide application, harvesting, and more 24/7 all year round.

For the nested approach to work, you need multiple devices to monitor multiple issues in your field and around your farm; having just one weather station cannot provide enough data to respond to everything your farm needs.



METOS by Pessl Instruments - The Revolution of Decision Making for Your Farm

No matter which crop, soil, or part of the world is in question, digital IoT agriculture solutions will reduce guess work and enable data driven decisions for:

- improved quality of your yield
- enhanced productivity of your team and
- increased profit of your farm.

At the same time they will help:



- optimize input use (water, energy, fertilizers, chemicals, and workforce),
- reduce the overall impact on the environment.

Pessl Instruments has been serving growers, researchers and managers in 85 countries for more than 37 years. Customizable digital IoT agriculture hardware and software solutions cover all needs, pain points and challenges that boots on the ground face in their everyday work and we are proud to make the burden of decision making a bit lighter.

METOS IS APPLICABLE IN MULTIPLE SECTORS

| | | | | | | | |
|---|--|--|--|--|--|--|---|
|  |  |  |  |  |  |  |  |
| AGRICULTURE | HYDROPONICS AND GREENHOUSES | LANDSCAPE (GOLF AND TURF) | CITY CLIMATE | ANIMAL WELFARE | RESEARCH | HYDROLOGY AND FLOOD WARNING | METEOROLOGY |

PESSL INSTRUMENTS IN NUMBERS & FACTS

| | | | | | |
|--|---|---------------------------------|---|-----------------------------|-------------------|
|  | OVER 120 EXPERTS | 16 SUBSIDIARIES |  | 80.000+ | 1 MIO + |
| A global ecosystem with headquarters in Austria | All specialists, Satellite experts, Plant Pathologist, Entomologists, Modelers, Hardware and Software developers, Researchers | Global brand with local support | In-house development and manufacturing | Stations deployed worldwide | Sensors connected |

GLOBAL INTERFACE PARTNERS

| | | | |
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API PARTNERS

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TELECOMMUNICATION PARTNERS

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SENSOR PARTNERS

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INPUT INDUSTRY PARTNERS

| | | | | |
|---|---|---|---|---|
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Devices

METOS 5

iMETOS 3.3

μMETOS

nMETOS

nMETOS Frost

METOS FWT

METOS Level

miniMETOS

LoRAIN

LoRATH

METOS VWS - Virtual Weather Station

Hybrid Station Extension

iSCOUT

CropView

WorkTrack

WorkTrack Tag

DropSight®

Dualex

N-Pilot® 2.0

METOS 5

<https://metos.global/metos5/>



METOS 5 is a weather station that can utilize different connectivity options to deliver the measured sensor data to the FieldClimate Cloud. It is designed to support various different sensors for meteorological monitoring (rainfall, air temperature, relative humidity, ...), soil measurements (soil moisture, soil temperature, ...), irrigation systems monitoring (water pressure, water level, ...), etc. Thus, everything that the user needs, with the possibility for further expansion. Modularity provides its user the chance to get exactly what they need to get more yield from their fields.



By default, the sensor's data is consistently measured in 15-minute intervals and sent every 60 minutes to the FieldClimate Cloud, this can be changed to fit the specific monitoring needs.

To mitigate connectivity issues in remote areas, the station saves data from the last few months in its internal storage. Once the connectivity with the FieldClimate is restored, the stored measurements are automatically retransmitted. All data is synchronized and securely stored on the FieldClimate platform, where it is fully integrated with additional Pessl Instruments services and available for further integration via the API. Some communication modules also support an external antenna for enhanced connectivity and a built-in GPS sensor for precise location tracking.

TECHNICAL SPECIFICATIONS

| | |
|-------------------------------------|--|
| Housing | ABS (Protection class IP67) |
| Connectivity | Various, depending on the communication board |
| Battery | 6V 4.5A/20HR charging battery |
| Solar panel | Dimensions: 13.5 x 13.5 cm, 1,5 Watt solar panel |
| Dimensions (with rain gauge) | 50.6 cm L x 38.9 cm W x 22.5 cm H |
| Weight (with rain gauge) | 2.25 kg |

Product Variations

| | METOS 5 BASE | METOS 5 FROST | METOS 5 200 | METOS 5 90-USW | METOS 5 250 | METOS 5 280-MWS | METOS 5 300-MWS | METOS 5 280-USW | METOS 5 300-USW |
|--|-----------------|------------------|----------------|-------------------|----------------|--------------------|--------------------|--------------------|--------------------|
| Order number | 700283 | 700291 | 700284 | 700292 | 700289 | 700285 | 700287 | 700286 | 700288 |
| Precipitation | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Wet & Dry Bulb Temperature | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Air Temperature & Relative Humidity | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Leaf Wetness | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |
| Global Radiation | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Wind Speed | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Wind Direction | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Dew Point | ✗ | ✗ | calc. | calc. | calc. | calc. | calc. | calc. | calc. |
| VPD | ✗ | ✗ | calc. | calc. | calc. | calc. | calc. | calc. | calc. |
| Delta T | ✗ | ✗ | calc. | calc. | calc. | calc. | calc. | calc. | calc. |
| ETo | ✗ | ✗ | ✗ | ✗ | ✗ | calc. | calc. | calc. | calc. |

Connectivity Options

METOS 5 uses METOS 5 Communication boards for communication with the internet. There are several different communication options available and the client can select the one that fits his needs best.

| | Communication board | | | | | | |
|---------------------|---------------------|--------|--------|--------|--------|--------|--------|
| Order number | 600216 | 600224 | 600225 | 600223 | 600217 | 600227 | 600228 |
| 2G/GSM | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ |
| 3G/UMTS | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| 4G/LTE Cat 1 | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| LTE Cat M1 | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| LTE Cat NB1 | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| LTE Cat NB2 | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| LoRaWAN* | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ |
| WiFi* | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ |
| NTN* | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |

*Coming soon

iMETOS 3.3

iMETOS 3.3 is a special weather station product that supports many (> 600) different sensors. It is a powerful, durable and flexible data logger for all climatic and meteorological conditions or any other type of application users can think of.

BEST USED FOR:

- specific research projects,
- having multiple different sensors on one location,
- common agricultural needs:
 - Improving plant protection with disease models,
 - Soil moisture monitoring and irrigation management,
 - Frost monitoring, alarms etc.

SECTORS:

Agriculture, animal welfare, research, meteorology, hydrology, landscape (golf, turf, gardening), city climate



iMETOS 3.3

<https://metos.global/imetos33/>



A powerful, durable and flexible data logger for all climatic and meteorological conditions. They offer a complete solution for environmental monitoring, disease models, water management and more. Versatile, with the possibility to configure and connect many different sensors – over 600 sensors to choose from.



TECHNICAL SPECIFICATIONS

| | | |
|-----------------------------------|--|-------------------|
| Sensors layout | 1 wind speed, 1 leaf wetness, 1 rain gauge, 1 water-meter (reed), 2 hydroclips (air temperature and relative humidity) | |
| Extension connector | 5 digital inputs: automatic sensor recognition, supporting sensor chains (max. 600 sensors) | |
| GPS receiver | Sentek Drill & Drop or ultrasonic wind sensor or two extra chain connectors – Pessl Instruments bus cable nodes | |
| Memory | Yes | |
| Internet connectivity | 8 MB flash memory | |
| Alert | 2G, 3G, 4G (LTE class 1, LTE class M) | |
| Dimensions without sensors | SMS, user configurable via website | |
| Weight without sensors | 41 cm L x 13 cm W x 7 cm H | |
| Battery | 2.2 kg | |
| Solar panel | Rechargeable 6V, 4.5Ah, Operating range: -35°C to 80°C | |
| | Dimensions: 13.5 x 13.5 cm, 2 Watt solar panel | |
| | DEFAULT | FROST MODE |
| Measuring interval | 5 minutes | 5 minutes |
| Logging interval | 15 minutes | 10 minutes |
| Transmission interval | 60 minutes | 10 minutes |

iMETOS 3.3 base unit (no sensors included), internet based logger, battery 4.5Ah, solar panel, UMTS based, logger, mounting brackets

Product Variations

| | iMETOS IMT BASE | iMETOS IMT200 | iMETOS IMT280-MWS | iMETOS IMT280-USW | iMETOS IMT300-MWS | iMETOS IMT300-USW |
|--------------------------|--|---|---|---|---|---|
| Order number | 700120 (LTE RC7620) 700121 (CA LTE HL7688) 700122 (US LTE HL7618RD) | 700135 (LTE RC7620) 700136 (CA LTE HL7688) 700137 (US LTE HL- 7618RD) | 700140 (LTE RC7620) 700141 (CA LTE HL7688) 700142 (US LTE HL- 7618RD) | 700145 (LTE RC7620) 700146 (CA LTE HL7688) 700147 (US LTE HL- 7618RD) | 700150 (LTE RC7620) 700151 (CA LTE HL7688) 700152 (US LTE HL- 7618RD) | 700155 (LTE RC7620) 700156 (CA LTE HL7688) 700157 (US LTE HL- 7618RD) |
| Precipitation | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Air Temperature | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Relative Humidity | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Leaf Wetness | ✗ | ✓ | ✗ | ✗ | ✓ | ✓ |
| Global Radiation | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Wind Speed | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Wind Direction | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ |
| Dew Point | ✗ | calculated | calculated | calculated | calculated | calculated |
| VPD | ✗ | calculated | calculated | calculated | calculated | calculated |
| Delta T | ✗ | calculated | calculated | calculated | calculated | calculated |
| ETo | ✗ | ✗ | calculated | calculated | calculated | calculated |



iMETOS 3.3 in a vineyard

iMETOS IMT200



iMETOS IMT280-MWS



iMETOS IMT280-USW



iMETOS IMT300-USW



μMETOS

Monitor environmental parameters (rainfall, air temperature and humidity, frost, leaf wetness, solar radiation and wind speed), soil variables (soil moisture and soil temperature), as well as water level, water EC and pH.

BEST USED FOR:

- Soil moisture monitoring and irrigation management
- Improving plant protection with disease models
- Frost monitoring & alarms

SECTORS:

Agriculture, landscape (golf, turf, gardening), city climate

FAMILY MEMBERS: μMETOS variations



µMETOS

<https://metos.global/micrometos-nbiot/>



A mainstream weather station product fulfilling 99% of its users needs. It uses the LPWAN connectivity (NB-IoT NB1/Cat-M1/ GPRS), enabling low power consumption and long-distance connectivity. It supports monitoring of all weather variables (rain, temperature, ...), soil measurements (soil moisture, soil temperature, ...), plants and irrigation systems conditions (water pressure, ...), etc. Data is consistently measured in 5-minute intervals and sent to the server every 60 minutes (this can be changed to fit the specific needs). For mitigating mobile network connectivity issues, the station stores data of the last few days internally and resends the measured values to the cloud when the mobile network is back online. All the data is synchronized and stored on FieldClimate platform, integrated with all additional services from Pessl Instruments and available for further integrations via API. It supports an external antenna option and has a built-in GPS sensor. For any other non-listed sensor support or special connectivity needs, check with your local sales contact.



TECHNICAL SPECIFICATIONS

| | | |
|-------------------------------|--|-------------------|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) | |
| GPS receiver | Yes | |
| Dimensions | 30 cm L x 16 cm W x 19 cm H | |
| Weight | 1.6 kg | |
| Connectivity | NB-IoT NB1 / Cat-M1 / GPRS | |
| Battery | Rechargeable 6V, 4.5Ah, Operating range: -35°C to 80°C | |
| Solar panel | Dimensions: 13.5 x 13.5 cm, 2 Watt solar panel | |
| | DEFAULT | FROST MODE |
| Measuring interval | 5 minutes | 5 minutes |
| Logging interval | 15 minutes | 5 minutes |
| Communication interval | 60 minutes | 5 minutes |

Product Variations

| | µMETOS BASE | µMETOS FROST | µMETOS 90-USW | µMETOS 200 | µMETOS 280-MWS | µMETOS 300-MWS | µMETOS 280-USW | µMETOS 300-USW |
|--|----------------|-----------------|------------------|---------------|-------------------|-------------------|-------------------|-------------------|
| Order number | 700035 | 700036 | 700267 | 700037 | 700038 | 700040 | 700039 | 700041 |
| Precipitation | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Wet & Dry Bulb Temperature | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Air Temperature & Relative Humidity | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Leaf Wetness | ✗ | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ |
| Global Radiation | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Wind Speed | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ |
| Wind Direction | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ |
| Dew Point | ✗ | ✗ | calculated | calculated | calculated | calculated | calculated | calculated |
| VPD | ✗ | ✗ | calculated | calculated | calculated | calculated | calculated | calculated |
| Delta T | ✗ | ✗ | calculated | calculated | calculated | calculated | calculated | calculated |
| ETo | ✗ | ✗ | ✗ | ✗ | calculated | calculated | calculated | calculated |

Optional: you can add soil temperature sensors (Aquacheck, Sentek, Watermark, PI54-D). Note that there are limitations how many sensors can be connected. For more details contact your local METOS branch or your dealer.

nMETOS

Compact, cost effective, small, quick to install, and designed for large-scale deployment everywhere intelligent IoTs are needed.

BEST USED FOR:

- Field operations planning (workforce allocation, spray and irrigation planning)
- Improving plant protection with disease models
- Reducing the risk for animal health problems

SECTORS:

Agriculture, animal welfare, landscape (golf, turf, gardening), hydroponics and greenhouses, city climate, hydrology (county-wide rainfall networks)



nMETOS 100, 180, 180SM, 200



nMETOS is the latest generations of weather stations that operates on NB-IoT network and can be connected to any existing NB-IoT/CAT-M/GPRS network. nMETOS can measure rainfall, air and soil temperature, relative humidity, leaf wetness, and soil moisture. All the data is synchronized within FieldClimate.



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|---|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) |
| Dimensions | 22.5 cm L x 17 cm W x 18 cm H |
| Weight | 1,10 kg |
| Connectivity | NB-IoT NB1 / Cat-M1 |
| Power supply | 3.6V high capacity primary battery* with supercap and solar panel |
| DEFAULT | |
| Measuring interval | 5 minutes |
| Logging interval | 15 minutes |
| Communication interval | 60 minutes |
| SENSORS | |
| Rain Gauge | Sensitivity: 1 tip per 0.2 mm |
| Air Temperature | Operating temperature range: -40°C to +125°C Thermometer error -10°C to +85°C: +/- 0.3°C |
| Relative humidity | Precision 0 - 80%: +/- 2%; Precision 80 - 100%: +/- 3% |

*Battery is not included and needs to be ordered separately.

nMETOS 100, 180, 180SM, 200

nMETOS 100



nMETOS 180



nMETOS 180SM



nMETOS 200



| | nMETOS 100 | nMETOS 180 | nMETOS 180SM | nMETOS 200 |
|--|--------------------|--------------------|--------------------|--------------------|
| Order number | 700220 (HL7800) | 700222 (HL7800) | 700224 (HL7800) | 700228 (HL7800) |
| Precipitation | ✓ | ✓ | ✓ | ✓ |
| Wet & Dry Bulb Temperature | ✗ | ✗ | ✗ | ✗ |
| Air Temperature & Relative Humidity | ✗ | ✓ | ✓ | ✓ |
| Volumetric Water Content | ✗ | ✗ | ✓ | ✗ |
| Soil Temperature | ✗ | ✗ | ✓ | ✗ |
| Soil Water Tension | ✗ | ✗ | ✓ | ✗ |
| Leaf Wetness | ✗ | calculated | calculated | ✓ |
| Dew Point | ✗ | calculated | calculated | calculated |
| VPD | ✗ | calculated | calculated | calculated |
| Delta T | ✗ | calculated | calculated | calculated |

By using proprietary intelligent sensor handling, nMETOS provides additional calculated sensor of:

- Leaf wetness for disease forecast,
- VPD and Delta T for defining crop health and best weather for spraying window,
- Dew point for frost prediction.
- "Frost mode" is enabled from the FieldClimate app.

nMETOS 80, 80SM



The nMETOS 80 and nMETOS 80SM product variants are designed for monitoring indoor conditions where the precipitation monitoring is not needed.



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|---|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) |
| Dimensions | 14.8 cm L x 11.8 cm W x 9.3 cm H |
| Weight | 0.25 kg |
| Connectivity | NB-IoT NB1 / Cat-M1 |
| Power supply | 3.6V high capacity primary battery* with supercap and solar panel |
| Measuring interval | 5 minutes |
| Logging interval | 15 minutes |
| Communication interval | 60 minutes |
| SENSORS | |
| Air Temperature | Operating temperature range: -40°C to +125°C Thermometer error -10°C to +85°C: +/- 0.3°C |
| Relative humidity | Precision 0 - 80%: +/- 2%; Precision 80 - 100%: +/- 3% |

*Battery is not included and needs to be ordered separately.

nMETOS 80, 80SM

nMETOS 80



nMETOS 80SM



| | nMETOS 80 | nMETOS 80SM |
|---------------------------------|-----------------|-----------------|
| Order number | 700216 (HL7800) | 700218 (HL7800) |
| Precipitation | ✗ | ✗ |
| Air Temperature | ✓ | ✓ |
| Relative Humidity | ✓ | ✓ |
| Volumetric Water Content | ✗ | ✓ |
| Soil Temperature | ✗ | ✓ |
| Soil Water Tension | ✗ | ✓ |
| Dew Point | calculated | calculated |
| VPD | calculated | calculated |
| Delta T | calculated | calculated |

By using proprietary intelligent sensor handling, nMETOS provides additional calculated sensors of:

- VPD and Delta T for defining crop health and best weather for spraying window,
- Dew point for frost prediction.



nMETOS Frost

<https://metos.global/nmetos-frost/>


Spring frost can be a devastating experience for any farmer – not only can it damage the plants and/or crops in the field, it can completely destroy them. This way, a great deal of hard work, time and effort the farmer puts into planting and nurturing the fields are lost; in the worst case scenarios, it can mean an extreme financial loss as well.

nMETOS FROST is a product that helps you fight against frost damage in your field. It is a simple product made for one specific use case: monitoring dry and wet bulb temperature and informing clients about the risks in real time based on the integrated logic inside the product. Simple to use, next to zero user settings required, easy battery exchange.



nMETOS FROST

| Order number | 700252 (HL7800) |
|-------------------------------------|-----------------|
| Precipitation | ✗ |
| Wet & Dry Bulb Temperature | ✓ |
| Air Temperature & Relative Humidity | ✗ |
| Volumetric Water Content | ✗ |
| Soil Temperature | ✗ |
| Soil Water Tension | ✗ |
| Leaf Wetness | ✗ |
| Dew Point | ✗ |
| VPD | ✗ |
| Delta T | ✗ |

TECHNICAL SPECIFICATIONS

| | | | | | |
|-----------------------------------|--|--|------------------------------------|-------------------------------------|----------------|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) | | | | |
| Dimensions | 30 x 26 x 8 cm | | | | |
| Weight | 0,6 kg | | | | |
| Connectivity | NB IoT NB1 / Cat-M1 | | | | |
| Power supply | 2x 3.6V high capacity primary battery* | | | | |
| Work modes** | | | | | |
| Measuring interval | 5 min | 1 min | 1 min | 1 min | 5 min |
| Logging interval | 10 min | 5 min | 5 min | 5 min | 10 min |
| Communication interval | 60 min | 60 or 15 min when event*** (+/- 0.5°C) | 60 or 5 min when event (+/- 0.5°C) | 60 or 15 min when event (+/- 0.5°C) | 60 min |
| Wet bulb temperature value | lower than -8° C | between -8°C and up to -6°C | between -6°C and up to 4°C | between 4°C and up to 8°C | 8°C and higher |

SENSORS

| | |
|---|---|
| Wet bulb temperature, dry bulb temperature | Temperature sensor: DS18B20 Operating temperature range: -55°C to +125°C Thermometer error: -10°C to +85°C: ±0.3°C Drift: ±0.2°C |
|---|---|

*Battery is not included and needs to be ordered separately.

Communication interval: every 60 minutes with on-demand event driven additional communication. Measurement, logging and communication interval are fixed. They cannot be changed by the user from the FieldClimate Cloud platform.

***Event: happens, when a wet bulb temperature sensor value changes for 0.5°C or more between two measurement intervals. Example: when it measures 3.2°C and it detects 0.5°C change at 12:03 pm measurement (compared to the previous logging interval at 12:00), data will be uploaded at 12:05 pm.

Additional recommendation:

- We recommend using extra 3 month [weather forecast subscription](#).

Level Monitoring

Compact, cost effective, & quick to install ultrasonic height level monitoring device. Available in multiple variations, based on the application (e.g. monitoring water level height, water table level in rice fields, ...).

BEST USED FOR:

- Lakes water level monitoring
- Water tank level monitoring
- Evaporation pan level monitoring
- Irrigation trenches water level measurement
- Prevention, prevision, mitigation and flooding control
- Water table level monitoring and management in rice fields

SECTORS:

Agriculture, smart city



METOS FWT

<https://metos.global/metos-fwt/>



METOS FWT is an IoT device designed to monitor the water level depth in flooded rice fields in real time.

The solution supports farmers in the adoption of the Alternate Wetting and Drying (AWD) methodology or similar water-saving techniques. METOS FWT can be a very helpful tool supporting decisions to mitigate risks due to periods of water scarcity.

It is a ultrasonic height level monitoring device applicable in many different situations. The device comes with the top part and the tube needs to be sourced by the client or distributor locally to best fit the clients use case.



TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Dimensions | Cap diameter: 110 mm Box diameter: 98 mm Overall height: 110 mm |
| Weight | 152 g (without batteries) |
| Connectivity | NB IoT and CatM1 (HL7800) |
| Power supply | 2x 3.6V high capacity primary battery* |
| Measuring interval | every minute |
| Logging interval | every 15 minutes |
| Transmission interval | 1x per hour |
| SENSORS | |
| Ultrasonic distance sensor - Resolution | 1 mm |
| Ultrasonic distance sensor - Working temperature | -15°C to +60°C |

*Battery is not included and needs to be ordered separately.

Order number: 700248

A COMPACT SOLUTION FOR YOUR RICE FIELD



Save time



Reduce GHG emissions



Water savings (up to 20%)



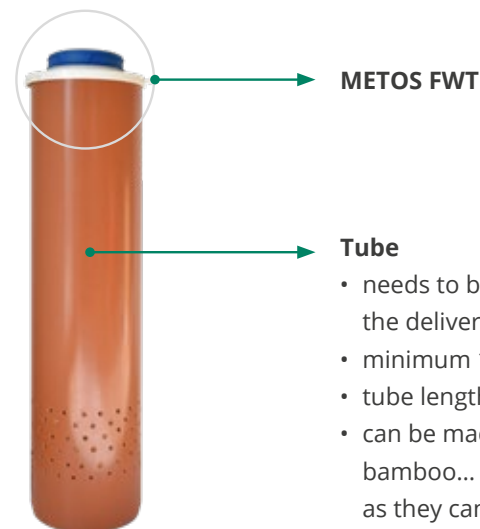
Potential for higher yield



Plant health

Alternate Wetting and Drying (AWD) is a water-saving technique for rice production. With the low-cost METOS FWT technology, the manual practice is digitalized and rice growers get real-time continuous monitoring that results in:

- Saved time and money,
- Precise water level monitoring applications,
- Decreased global warming potential thanks to the reduced GHG (methane) emission by healthier roots,
- Data that is automatically stored, sharable and accessible also for extension service field staff for better AWD knowledge transfer and management at the community level.



- Tube**
- needs to be sourced locally and is not part of the delivered product,
 - minimum 150 mm diameter,
 - tube length: minimum 60 to maximum 80 cm,
 - can be made from recycled materials, PLA, bamboo... (metal tubes are not recommended as they can influence the sensor readings).

METOS Level

<https://metos.global/metos-level/>



METOS Level is a device incorporating an ultrasonic level sensor to provide a cost-effective solution and an early warning system for remotely measuring water levels under extreme conditions. Monitoring and collecting data in sensitive areas can help to protect people and prevent big damages. The ultrasonic sensor provides non-contact measurements and is characterized by its high level of operating reliability, low energy consumption, fast installation, low maintenance cost and ease of use in the field.



TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|--|
| Dimensions | Cap diameter: 110 mm |
| | Box diameter: 98 mm |
| | Overall height: 110 mm |
| Weight | 152 g (without batteries) |
| Connectivity | NBLoT and CatM1 (HL7800) |
| Power supply | 2x 3.6V high capacity primary battery* |
| Measuring interval | every minute |
| Logging interval | every 15 minutes |
| Transmission interval | 1x per hour |
| SENSORS | |
| Measurement distance | up to 3 meters** |
| Measurement resolution | 1 mm |
| Operating temperature range | -15°C to +60°C |

*Battery is not included and needs to be ordered separately.

**Beam angle is 3° therefore we suggest providing at least 50 cm diameter of flat surface directly underneath when the product is installed at the maximum height of 3 meters.

Note: METOS Level needs to be installed parallel to the flat measured surface.

Order number: 700249

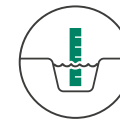
DIFFERENT APPLICATIONS



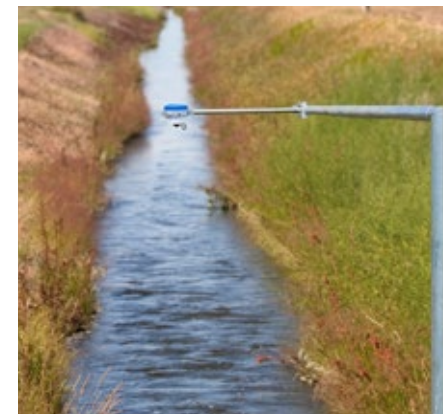
Lakes water level



Water tank level



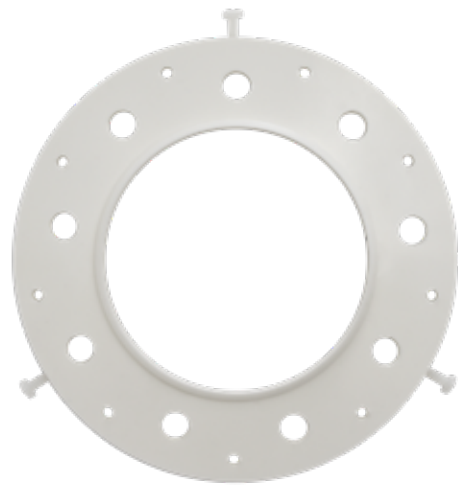
Water irrigation trenches



OPTIONAL MOUNTING KITS

Optimised ring for tubes:

Order number: 600198 / 900262



Optimised ring for water tanks:

Order number: 100228



| | |
|-----------------------|--------|
| Outer diameter | 172 mm |
| Hole diameter | 100 mm |
| Total height | 23 mm |

For irrigation trenches, lakes, irrigation pools:

Order number: 600199 / 900263



Pole length: 534 mm



miniMETOS

Compact, cost effective, small, quick to install, and designed for deployment where hardware needs to be hidden for aesthetic or operational reasons.

BEST USED FOR:

- Irrigation management
- Turf health monitoring

SECTORS:

Landscape (golf, turf, gardening), hydroponics and greenhouses, agriculture, city climate





miniMETOS is a combination of most essential sensors for irrigation and stress management. It permanently measures soil temperature & volumetric water content (VWC) with Pessl Instruments Soil Moisture Sensor PI54-D and Watermark (soil moisture tension) in near real-time wherever you want. The installation of a logger can be completely underground (invisible); therefore, it is a perfect installation for golf courses, parks, home & garden, as well as in agriculture where vandalism and theft could be a problem.

The device is battery powered with a lifespan between 6 to 12 months, and provides actionable data, such as the exact amount of soil moisture and the soil temperature in each inch/cm of the measurement area, to help you plan the irrigation event and to warn you about possible stress points in a timely fashion.



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|--|
| Housing | UV resistant polycarbonate plastic (Protection class IP67) |
| Dimensions | 14.8 cm L x 11.8 cm W x 9.3 cm H |
| Weight | 0.25 kg |
| Connectivity | NB-IoT NB1 / Cat-M1 |
| Power supply | 3.6V high capacity primary battery* |
| Measuring interval | 15 minutes |
| Logging interval | 15 minutes |
| Communication interval | 60 minutes |
| SENSORS | |
| PI54-D | see page 118 |
| Watermark | see page 124 |

*Battery is not included and needs to be ordered separately.

Order number: 7000047 (HL7800)

With miniMETOS all the potential issues and stress events can be identified before they occur or become visible.

KEY FEATURES:

- Permanent measurement of the soil moisture and soil temperature at any of your locations
- Invisible, so it doesn't affect the workers and the aesthetic of location (golf course, park etc.)
- No solar panel needed as long life battery powered based on the latest power harvesting technology
- 6 to 12 months of battery life and quick installation
- Cost-effective and durable
- Prevents possible vandalism



INSTALLATION ON GOLF COURSE

Laying the cable - inserting the sensors in the main turf root zone.



Preparation of the irrigation box for the data logger.



Re-installing the lawn tiles to cover the sensors. 14 days later - "invisible".

LoRAIN, LoRATH

Compact, cost effective, small, quick to install, and designed for large-scale deployment everywhere intelligent IoTs are needed.

BEST USED FOR:

- Field operations planning (workforce allocation, spray and irrigation planning)
- Improving plant protection with disease models
- Reducing the risk for animal health problems

SECTORS:

Agriculture, animal welfare, landscape (golf, turf, gardening), hydroponics and greenhouses, city climate, hydrology (county-wide rainfall networks)



LoRAIN

<https://metos.global/lorain/>



LoRAIN is a new generations of weather stations that operate on LoRaWAN® network. LoRAIN devices measures rainfall, air and soil temperature, relative humidity, leaf wetness, and soil moisture. All the data is synchronized within FieldClimate.



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|---|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) |
| Dimensions | 22.5 cm L x 17 cm W x 18 cm H |
| Weight | 1,10 kg |
| Connectivity | LoRaWAN® Frequency plans: EU863-870, RU864-870, US902-928, AU915-928 and AS920-925 |
| Power supply | Supercapacitor and solar panel |
| Measuring interval | 5 minutes |
| Logging interval | 15 minutes |
| Communication interval | 15 minutes |
| SENSORS | |
| Rain Gauge | Sensitivity: 1 tip per 0.2 mm |

! SPECIAL ORDERS ONLY

This product is available on special demand only. Contact your local METOS distributor or contact orders@metos.at for more information.

LoRAIN Rain only



| LoRAIN Rain only | |
|----------------------|---------------------|
| Order number | 700000 (EU 863-870) |
| | 700001 (US 902-928) |
| | 700002 (AU 915-928) |
| | 700003 (RU 864-870) |
| | 700004 (AS 920-925) |
| Precipitation | ✓ |

LoRAIN product uses LoRaWAN® communication technology and is by default using the TTN LoRaWAN® network. For any specific LoRaWAN network (other than TTN) the client needs to fill out the order document available at <https://metos.global/wp-content/uploads/2022/07/LPWAN-LoRaWAN-order-details-V1.4.pdf>

LoRATH

<https://metos.global/lorath/>



LoRATH is a new generation of a battery powered IoT data logger that operates on LoRaWAN network. It can be connected to any existing LoRaWAN® network. LoRATH measures air temperature, relative humidity, leaf wetness and soil moisture. All the data is synchronized within FieldClimate. The unit is prepared to be mounted mainly inside (tunnels, greenhouses, indoor applications).



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|---|
| Housing | UV resistant polycarbonate plastic (Protection class IP65) |
| Dimensions | 14.8 cm L x 11.8 cm W x 9.3 cm H |
| Weight | 0.25 kg |
| Connectivity | LoRaWAN® Frequency plans: EU863-870, RU864-870, US902-928, AU915-928 and AS920-925 |
| Power supply | Supercapacitor and solar panel |
| Measuring interval | 5 minutes |
| Logging interval | 15 minutes |
| Communication interval | 15 minutes |
| SENSORS | |
| Air Temperature | Operating temperature range: -40°C to +125°C Thermometer error -10°C to +85°C: +/- 0.3°C |
| Relative humidity | Precision 0 - 80%: +/- 2%; Precision 80 - 100%: +/- 3% |



SPECIAL ORDERS ONLY

This product is available on special demand only. Contact your local METOS distributor or contact orders@metos.at for more information.

LoRATH 80



LoRATH 80

| | |
|--------------------------|---|
| Order number | 700021 (EU 863-870) 700022 (US 902-928) 700023 (AU 915-928) 700024 (RU 864-870) 700025 (AS 920-925) |
| Air Temperature | ✓ |
| Relative Humidity | ✓ |
| Dew Point | calculated |
| VPD | calculated |
| Delta T | calculated |

LoRATH product uses LoRaWAN® communication technology and is by default using the TTN LoRaWAN® network. For any specific LoRaWAN network (other than TTN) the client needs to fill out the order document available at <https://metos.global/wp-content/uploads/2022/07/LPWAN-LoRaWAN-order-details-V1.4.pdf>

Weather Station Use

THIS IS WHAT YOU CAN DO:

- Plan the work week based on a localized weather forecast for your operations
- Plan your work day based on the actual rain, temperature data and the daily weather forecast for your field
- Plan your spray program based on disease models and check the quality of spray work online
- Plan your irrigation based on ET-crop and predicted plant water use
- Pass data directly into your management software and operations center via API



Precipitation shown in FieldClimate



24-hour rain map



7-day rain map



METOS VWS

The perfect entry point to precision agriculture. Use simulated data, calculated by highly reliable meteoblue weather models for any point on earth.

BEST USED FOR:

- Flat terrain monitoring
- No sensors = no maintenance
- Offers the same range of solutions as an actual weather station

SECTORS:

Agriculture, landscape, city climate

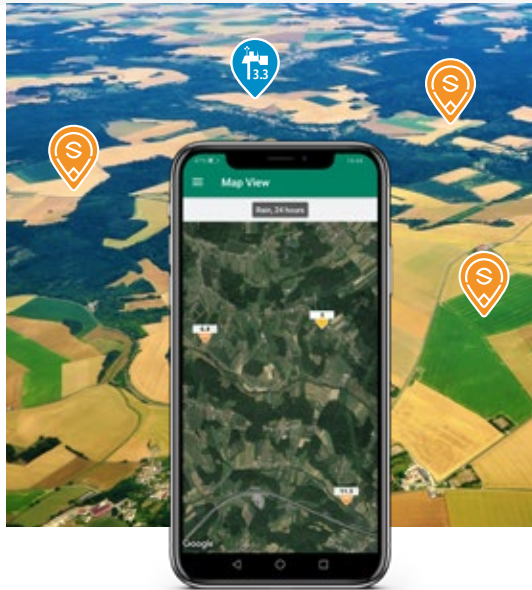


METOS VWS - Virtual Weather Station

Virtual Stations exist for any point on the earth, for which meteoblue can derive weather data. The data is not the result from an actual METOS station measurement, but consists of simulated data, calculated by highly reliable meteoblue weather models.

In some terrains, such as flatlands, the calculated data is highly accurate with minimal discrepancies to actual values, such as temperature or precipitation. These are the regions where virtual stations prove to be a great asset.

In cases where terrain is more complex or discrepancies from the actual values, we recommend installing a METOS station.



<https://metos.global/imetos-vws/>

Order number: 800005

DATA QUALITY

- Air temperature
- Relative humidity
- Solar radiation
- Wind speed
- Precipitation
- Leaf wetness
- Soil temperature

With actual case studies, METOS VWS is under continuous improvements.

VIEW RESULTS ON OUR WEBSITE:



MAIN FEATURES

Calculated sensor variables equal to iMETOS IMT300 sensor set: wind speed, solar radiation, soil temperature, air temperature, precipitation, relative humidity and leaf wetness, along with calculated values of Eto, vapor-pressure deficit (VPD) and Delta T. All data and decision support services are accessible online through FieldClimate platform.

METOS VWS vs METOS IoT STATION

| | Virtual station | METOS IoT Stations |
|--|---|--|
| Variables | Same parameters as iMETOS IMT300 + soil temperature | Based on sensor set |
| Precision | Limited | High |
| Availability | Anywhere in the world | Only where the station is installed |
| Terrain | Not complex terrain | Any terrain |
| Maintenance | No maintenance | Regular hardware maintenance necessary |
| Suitability for high value decisions (frost, water management etc.) | Limited | High |

THE ADVANTAGES



A perfect entry into precision agriculture with no maintenance cost



Offers the same range of solutions as an actual weather station



Very cost effective, simple to use and activated with just a few clicks on the computer or phone



Works as a complete decision support service - provides weather forecast, offers disease models and helps with work planning

Hybrid Station Extension

<https://metos.global/hybrid-station/>

You can make your physical METOS station a “Hybrid” by extending it with virtual sensors (METOS VWS full set available). The service is available via yearly subscription. The virtual sensors will be added to the chart and table, together with the physical sensors, but properly differentiated. The possible sensors to be added are:

- Air temperature (virtual)
- Relative humidity (virtual)
- Leaf wetness (virtual)
- Precipitation (virtual)
- Wind speed avg (virtual)
- Wind speed gust (virtual)
- Wind direction (virtual)
- Global solar radiation (virtual)
- Soil temperature (virtual)



Order number: 800065

WHERE VIRTUAL DATA COMES FROM?

- Virtual sensor data quality is the same as our other product METOS VWS (Virtual Weather Station) and comes from the best available weather simulation for the specific location.
- Various weather models are incorporated, which in turn are calculated from data measured by weather stations, observation data from satellites, and a number of other data sources.
- For locations with a nearby weather station, the station’s data are automatically used to further improve the quality.
- The precipitation virtual data is updated using radar data (if available) and satellite data is used to update the data for cloud cover and global solar radiation.

KEY FEATURES

- Hybrid station is the perfect solution to expand any physical METOS station at low price.
- Get access to advanced tools like Disease models, ETo.
- Virtual sensors are shown together with the physical sensors, but differentiated.



Camera Products

A remote monitoring system that provides time-lapse images that monitors insect pressure (iSCOUT) and growth of your crops for stage of development, germination, disease issues and size of fruit (CropVIEW).

BEST USED FOR:

- Preventing damage on crops and fields
- Reducing the use of pesticides or insecticides
- Early detection of diseases & insect pressure
- Yield forecast of fruit crops through AI on following crop growth

SECTORS:

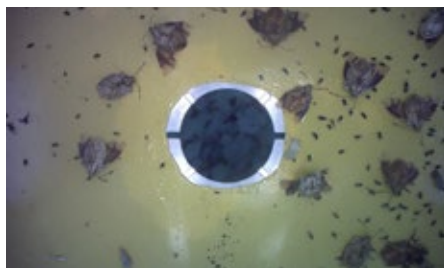
Agriculture, animal welfare, research, landscape (golf, turf, gardening)

FAMILY MEMBERS: iSCOUT variations & CropVIEW variations



iSCOUT - AI-Based Insect Scouting

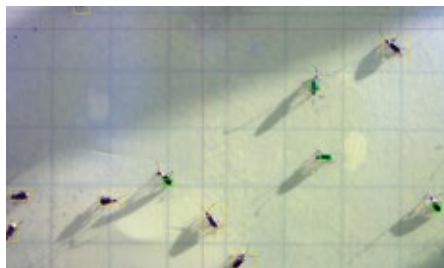
iSCOUT is a combination of hardware and software solutions for remote monitoring of different pest insects. It is an insect trap with integrated electronics and a sticky plate. Due to its low weight, it can be hung anywhere in the field. The device is self-sufficient, as it is powered by a solar panel and a battery. 10 MP camera takes high-resolution pictures of the sticky plate within the iSCOUT trap. Images are sent via LTE communications to an online platform where they are analyzed and counted by automatic pest detection framework, using AI and self-learning algorithms. All data from camera system and AI software is displayed online, within the FieldClimate. Camera devices (iSCOUT or CropVIEW) can be connected to control unit. Every power unit can also connect the following environmental sensors: rain, temperature and relative humidity (Hygroclip) and leaf wetness.



iSCOUT Bug



iSCOUT uses automatic recognition algorithm for recognizing pests.



iSCOUT Color Trap

<https://metos.global/iscout/>

TECHNICAL SPECIFICATIONS

| | | |
|--|---|--|
| Memory | 32 MB + 8 GB (for photos) | |
| Internet connectivity | LTE class 1 | |
| GPS receiver | Yes | |
| Dimensions of trap housing without control unit | 20 cm L x 15.5 cm W x 17 cm H | |
| Weight without control unit | 0.93 kg | |
| Battery | Rechargeable 6V, 12Ah, Operating range: -35°C to 80°C | |
| Solar panel dimensions | 17.5 x 17.5 cm, 7.2 Volt, 333 mA | |
| Camera | 10 megapixel camera | |

| | CONTROL UNIT - SENSORS | CAMERA - PHOTOS |
|------------------------------|------------------------|---|
| Measuring interval | 15 min | taking photos: selected by the user (1 to max 3 times per day*) |
| Logging interval | 30 min | |
| Transmission interval | 60 min | after photo is taken |

Internet based monitoring device, solar panel, rechargeable battery, GPRS Logger, GPS sensor

***Photo taking and transmission:** depending on mobile network type: max 1 photo per day when using the GPRS connectivity and max 3 photos per day when using LTE connectivity. On closed traps it should be set at night (between 23:00 - 3:00).

Camera Control unit base with interface to camera devices and opportunity to connect environmental sensors (not included). Following sensors can be connected: Rain gauge, temperature, relative humidity and leaf wetness.



Control Unit Board



iSCOUT Variations

iSCOUT PHEROMONE

Designed to catch insects with insect-specific pheromone lures. Target species include **codling moth, European grape berry moth, tomato leafminer, and many others**. The iSCOUT Pheromone includes a metal plate for attaching sticky paper and a pheromone lure.



Order numbers: 700160 (LTE RC7620) / 700161 (CA LTE HL7688) / 700162 (US LTE HL7618RD)

iSCOUT POPILLIA ADD-ON

Developed for monitoring the invasive **Japanese Beetle, *Popillia japonica***. This is a modification of the iSCOUT Pheromone, adding a pheromone holder and a slide mechanism that prevents beetles from escaping once caught. Requires the purchase of an iSCOUT Pheromone.



Order numbers: 600231 / 900272

iSCOUT FRUIT FLY

Suitable for trapping fruit flies, including **spotted wing drosophila, Mediterranean fruit fly, and many other species**. It features 3 mm netting over the entries to exclude larger flies (e.g., house flies). Includes a tank system for the lure and a metal plate for attaching sticky paper. The netting can be removed to catch and monitor larger flies.

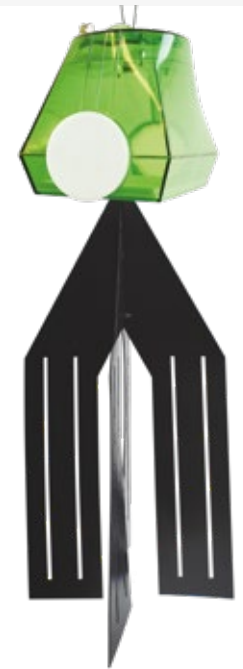


Order numbers: 700172 (LTE RC7620) / 700173 (CA LTE HL7688) / 700174 (US LTE HL7618RD)

iSCOUT BUG

Built to catch **marmorated stink bugs and other bugs**. It includes a metal bottom plate with black pyramid wings and closed side entries. Bugs enter the trap from the bottom and are trapped on the plate.

Order numbers:
700164 (LTE RC7620)
700165 (CA LTE HL7688)
700166 (US LTE HL7618RD)



iSCOUT COLOR TRAP

Intended for monitoring sticky traps of different colors. The device includes a high-resolution camera and a holder for a sticky plate.

The types of insects caught depend on the color of the plate used:

- Blue: **Flies, leafminers, and others**
- Yellow: **Leafminers, olive fruit fly, western corn rootworm, common pollen beetle, and others**
- White: **Apple sawfly, plum sawfly, plum fruit sawfly, raspberry beetle, and others**



Order numbers:
700168 (LTE RC7620)
700169 (CA LTE HL7688)
700170 (US LTE HL7618RD)

CropVIEW - AI-Based Crop & Growth Monitoring Solution

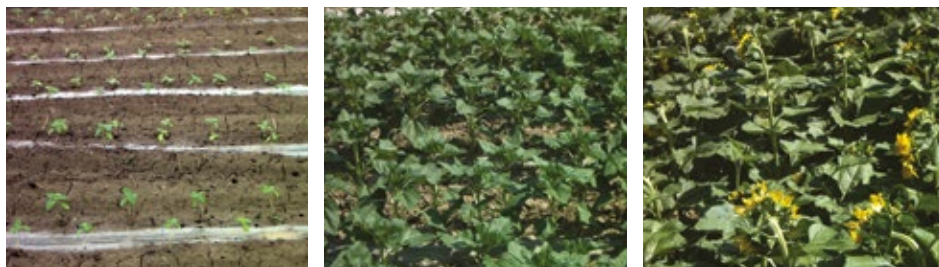
CropVIEW is an advanced agricultural information system designed to provide real-time insights into your crops and their growth. This innovative solution **captures high-resolution images of farmland, research plots, crop canopies, orchards, and more at regular intervals.** These images are automatically uploaded to FieldClimate, enabling continuous monitoring of crop quality and yield.



The high-resolution photos serve multiple purposes, such as assessing seed germination, tracking the impact of fertilizers and pesticides on crop development, and helping make informed decisions about the presence of diseases or pests that could affect profitability. What sets CropVIEW apart is its seamless and effortless operation. You can view and analyze these images daily over time with no additional effort on your part.

Operating year-round in most climatic zones, CropVIEW is powered by a rechargeable battery and a solar panel, ensuring uninterrupted service. Each power unit also supports a range of environmental sensors, including rain, temperature, relative humidity (Hygroclip), and leaf wetness.

With CropVIEW, you gain a powerful tool that not only simplifies crop monitoring but also enhances your ability to make data-driven decisions for better crop management.



Images, taken by CropVIEW.

<https://metos.global/cropview/>

TECHNICAL SPECIFICATIONS

| | |
|-------------------------------|--|
| Housing | Power supply and sensor support box: 41 cm L x 13 cm W x 7 cm H |
| GPS receiver | Yes |
| Weight without sensors | 2.2 kg |
| Camera module | Stainless steel base with IP65 box 27 cm L x 17 cm W x 9 cm H, weight: 1.5 kg |
| Battery | Rechargeable 6V, 12Ah, Operating range: -35°C to 80°C |
| Solar panel dimensions | 17.5 x 17.5 cm, 7.2 Volt, 333 mA |
| Model/Type | Cortex M4 processor module with integrated Communication model for UMTS/LTE operation MT9J003 10 Mega Pixel 2/3" CMOS sensors - Optics DSL377A-650-F2.8 2/3" Lens with 2.5 mm Focal length and DSL901J-650-F3.0 2/3" Lens with 12 mm Focal Length |
| Camera and optics | Camera Control unit base with interface to camera devices and opportunity to connect environmental sensors (not included). Following sensors can be connected: Rain gauge, temperature, relative humidity and leaf wetness. |

| | CONTROL UNIT - SENSORS | CAMERA - PHOTOS |
|------------------------------|------------------------|-------------------------------------|
| Measuring interval | 15 min | taking photos: selected by the user |
| Logging interval | 30 min | (1 to max 3 times per day*) |
| Transmission interval | 60 min | after photo is taken |

CropVIEW VARIATIONS:

CropVIEW Panorama

1x 10 MP wide angle lens

Order number:

700176 (LTE RC7620)

700177 (CA LTE HL7688)

700178 (US LTE HL7618RD)

CropVIEW Tele

One 10 MP tele lens

Order number:

700180 (LTE RC7620)

700181 (CA LTE HL7688)

700182 (US LTE HL7618RD)

CropVIEW Dual

2x 10 MP lens - wide angle + tele

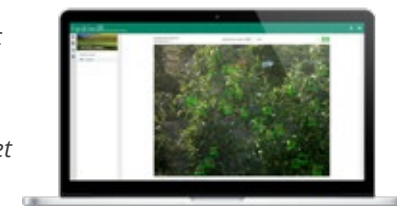
Order number:

700184 (LTE RC7620)

700185 (CA LTE HL7688)

700186 (US LTE HL7618RD)

A tool in FieldClimate enables you to select specific fruits on pictures taken in your orchard or field by a zoom lense in CropVIEW. If you know the precise distance between the camera and crop, you will get a reliable measurement of fruit diameter in mm.



APPLE ORCHARD USE CASE



Tele lens focusing on a tree and detecting the apples automatically (CropVIEW automatic detection).

Marking auto-detected apples manually and following their growth during the season.



The minimum, maximum and average diameter (in mm) of all selected fruits is shown on a graph, and the exact values in a table.

VITICULTURE USE CASE



Following the growth of shoots and developing leaves.

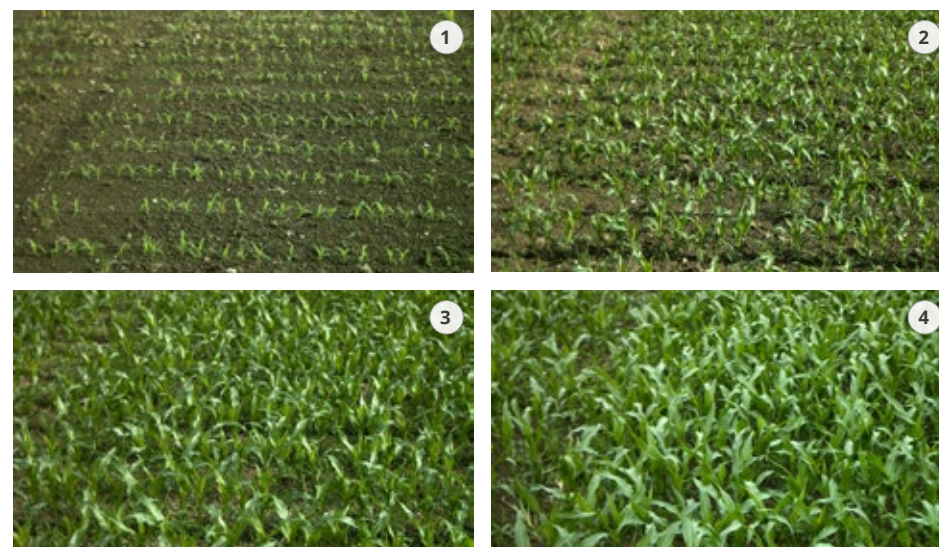
Inflorescence of grapes is clearly seen on the photos.

SERIES OF PICTURES IN MAIZE/WHEAT USE CASE



Germination and emergence of wheat.

Different BBCH stages of wheat, for example tillering stages.



Following the uniform emergence and growth of maize daily.

With CropVIEW you receive a time lapse of your crop growth. Check the time lapse of maize growth here:

https://youtu.be/V_ZXBSD_7XQ



WorkTrack

A battery-powered versatile tracking device that is easily mounted on any asset (sprayer, mower, utility vehicles, tractors, carts, ...).

BEST USED FOR:

- Detailed activity report about where, when, and how much an asset has been operational
- Optimisation and enhancement of work and workforce planning
- Knowing current position of all active machines

SECTORS:

Agriculture, landscape (golf courses, parks), city climate

FAMILY MEMBERS: WorkTrack, WorkTrack Tag



WorkTrack

<https://metos.global/imetos-trackers/>



With WorkTrack you have your fleet always under full control - you know exactly when your drivers are coming and going.

The WorkTrack agriculture GPS tracking unit combined with the WorkTrack Tags feature allows you the capability of both fleet tracking and asset tracking, to manage your entire farm from equipment to employees.

On our FieldClimate platform, you see your vehicles and implements and have all data stored about where and which operations you have running. Together with your connected METOS weather station, you can see the application of wet or dry fertilizer or chemical as well as any farm delivery, grain transport, over-the-road trucking, seed delivery, and equipment rental on the mobile phone/iPad or desktop. WorkTrack connects all farming equipment automatically and swiftly. Companies that have implemented the WorkTrack have improved their efficiency by 25-30% while decreasing fuel consumption by 15%. Most companies have seen these benefits within their first 30 days of activation.



TECHNICAL SPECIFICATIONS

| | |
|----------------------|--|
| Connectivity | LTE CAT M1/NB-IoT/GSM (FMM230) or 4G LTE Cat 1, GSM (FMC230) or GSM, Quad-band 2G network (FMB230) |
| GNSS | GPS, GLONASS, GALILEO, BEIDOU, accuracy < 3m, internal high gain GNSS antenna |
| Housing | UV resistant polycarbonate plastic (Protection class IP67) |
| Power | (+6...+30) V DC via car power plug |
| Communication | It uses UDP protocol for data delivery to FieldClimate platform |
| Dimensions | 72,5 x 73 x 27 mm |

Order number: 700212

WorkTrack:

- Records a GPS position and speed every 5 seconds and transfers the data every 30 seconds to FieldClimate.
- It is activated with vibration and movement and records the first position when the super capacitor is sufficiently charged.
- The super capacitor can hold charge when connected to a permanent power source (tractor battery).
- In sleep mode the current uptake is below 100µAmp. It can empty a fully charged 75Ah battery within 750 000 hours. When it is connected to a switched-on power source the super capacitor will discharge within 24 hours after being disconnected from power.

This is what you get with WorkTrack:

- A detailed activity report about where, when, and how much the machine has been running
- Current positions of all active machines



WorkTrack used on a golf cart.

WorkTrack Tag

The new WorkTrack Tag is a low-cost yet fast and easy to use device that connects your machines - to save time, resources, improve productivity and profitability. With WorkTrack Tag together with WorkTrack all your machines will be connected to the FieldClimate. You can track all your tractors, support vehicles and machines all in one place.



WorkTrack Tag comes with real-time views that include:

- GPS Location
- Hours & Mileage
- Location History
- Heading, Speed and more

Together with FieldClimate, we made it easy to monitor all your machines (tractors, support vehicles, fuel trucks, sprayers, and others). By attaching an WorkTrack Tag to whichever machine you like you'll be able to track:

- Maintenance of the device
- Work scheduling
- Fuel Logs and Automated Reporting
- Dispatching
- Movement and prevent theft

Order number: 100423

HOW DO WORKTRACK AND WORKTRACK TAG WORK TOGETHER?

The connection between the two is fast and they work together

- to maximise the efficiency of the workforce
- completely transparent fleet tracking

WorkTrack tags are automatically recognised by WorkTrack tracker and are transmitted to the FieldClimate.

You mount the WorkTrack on your tractor and each WorkTrack Tag to the device, vehicle or any other machine you want tracking.

1 WorkTrack = up to 20 WorkTrack Tags



Analysers

Analysers are a group of various devices that are used to determine the current state of plant's development, to determine what the plant needs and to help with spraying application management.

BEST USED FOR:

- measuring spray deposition efficiency
- determining nitrogen status of plants
- determining fertilization needs
- plant spraying and protection management

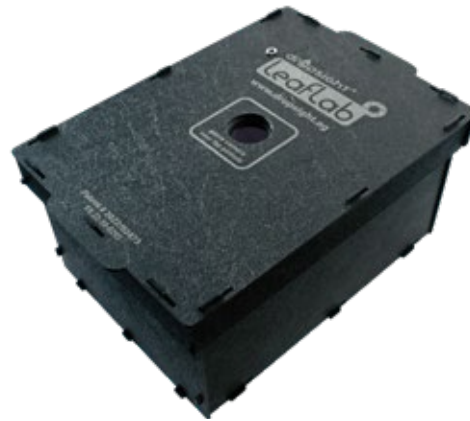
SECTORS:

Agriculture, research



DropSight® - Sprayer Calibration and Deposition Management

DropSight® is an easy-to-use, scientifically developed tool for measuring spray deposition efficiency of the formulation on natural plant surfaces. Through the specially designed photographic laboratory (LeafLab), UV fluid (UView) and the DropSight® app for a smartphone, one can stop guessing and make informed decisions based on quantitative measurements of spray deposition.



The DropSight® app, combined with LeafLab and UVIEW, offer the complete solution to a quantitative analyses of UV tracer deposition levels on leaf surfaces.

LeafLab is a portable, on-site laboratory, purposely developed for plant leaf UV photography with DropSight® to quantify the deposition efficiency onto a crop within minutes of application. UV led lightning with wavelength, intensity and uniformity to optimise fluorescence for smartphone photography when using UView tracer, completes the technical specification. The UView fluorescent fluid is recognised by DropSight® software and the deposition efficiency is measured and calculated.



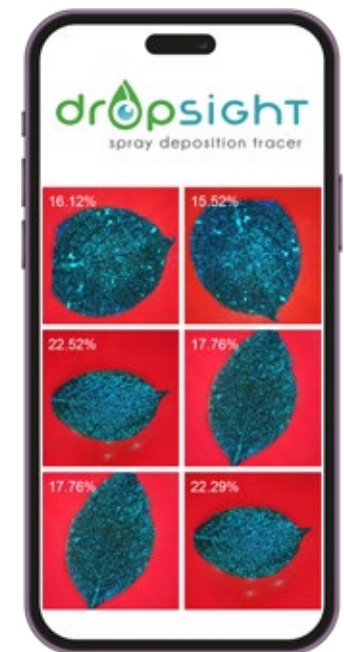
Typical DropSight® results

<https://metos.global/dropsight/>

Order number: 700255

VALUE PROPOSITION

- Reduce the risk of poor biological control outcomes due to poor sprayer set up and spray deposition.
- Reduce the risk of unacceptable residue levels due to accumulation and run off resulting from too high volume and/or too large droplet spectrum used.
- Reduce the chemical losses due to run off resulting from excessive spray volumes.
- Reduce the risk of soil and ground water contamination due to excessive spray volumes.
- Evaluate and quantify the risk of drift on neighbouring crops.
- Optimize the use of chemical formulations preventing over- and under application, minimizing crop loss and potential resistance development.
- Optimize the selection and use of adjuvants and additives to improve deposition efficiency.
- Optimize the design of sprayer performance.



Dualex - Instant, Non-Destructive Nitrogen and Chlorophyll Measurement

Dualex is a leaf-clip sensor designed to measure chlorophyll and polyphenols in plant leaves. Using patented optical technology, Dualex allows for simple, rapid, and non-destructive measurements of **chlorophyll**, **flavonols**, and **anthocyanins**.



ACCURATE MEASUREMENT OF CHLOROPHYLL

Chlorophyll plays a vital role in photosynthesis and overall plant development. Dualex quantifies chlorophyll by analyzing light transmitted through the leaf, delivering a measurement range of **0-150 $\mu\text{g}/\text{cm}^2$** .

UNIQUE LEAF-CLIP SENSOR FOR MEASURING FLAVONOLS AND ANTHOCYANINS

Flavonols are synthesized primarily in response to light exposure, making them an indicator of a plant's light interaction history. Dualex measures both flavonols and anthocyanins by analyzing their screening effect on chlorophyll fluorescence. Flavonols and anthocyanins are provided as relative indices (in the range of 0 to 2.5).

NBI®: NITROGEN BALANCE INDEX

Chlorophyll content alone is commonly used as an **indicator of plant nitrogen status**. However, research shows that polyphenols - specifically flavonols - are also reliable indicators of nitrogen allocation within leaves. The Nitrogen Balance Index (NBI®) combines chlorophyll and flavonol measurements to provide a robust, single-value indicator of nitrogen status, which correlates closely with leaf nitrogen content. Unlike chlorophyll alone, NBI® is less affected by environmental factors such as leaf age or thickness, making it a more stable and accurate metric for nitrogen management.

<https://metos.global/dualex/>

Order number: 700256

TECHNICAL SPECIFICATIONS

| | |
|---|--|
| Measured material | Plant leaves |
| Measuring system | Transmittance and screening effect on chlorophyll fluorescence |
| Measured parameters | Chl: Chlorophyll content ($\mu\text{g}/\text{cm}^2$) |
| | Flav: Flavonols (index) |
| | Anth: Anthocyanins (index) |
| | NBI: Nitrogen Balance Index , calculated from chlorophyll and flavonols |
| Accuracy (NRMSE) | Chl: 2.0%; Flav: 4.1%; Anth: 4.5% |
| Repeatability (sd) | Chl: 0.37; Flav: 0.005; Anth: 0.009 |
| Reproducibility (sd of repeated means) | Chl: 0.45; Flav: 0.013; Anth: 0.039 |
| Measurement process | Automatic or manual |
| Measurement area | 5 mm in diameter (19.6 mm ²) |
| Sample thickness (leaf) | 1 mm maximum |
| Measurement area access | 8.5 cm maximum |
| Acquisition time | < 1 s |
| Storage capacity | 10,000 multiparametric measurements |
| Data classification | 3 levels (file, group, measurement numbers) |
| Light sources | 5 LEDs: 1 UV-A, 1 green, 1 red, and 2 NIR (near-infrared) |
| User interface | LCD, sound warning |
| Data downloading | USB connection for data transfer |
| Battery | Li-ion rechargeable |
| Data output | .csv file |
| Total weight | 226 g (with battery) |
| Size | 207 x 66 x 54 mm |
| Positioning | Internal GPS |
| Languages | English, French, Spanish, German |
| Safety | Ring for leash |
| Updating | USB connection for manual firmware update |
| Operating temperature | 5 to 45°C |

N-Pilot® 2.0

<https://metos.global/n-pilot/>

N-Pilot® 2.0 by Pessi Instruments helps farmers optimize fertilizer use in cereals and rapeseed, enabling smarter decisions for higher yields with lower input costs. This handheld, portable reflectometer measures specific wavelengths of light in the visible and near-infrared spectrum, calculating the scientifically validated indices NDVI and GNDVI to estimate chlorophyll content and biomass.



MEASUREMENT PRINCIPLE:

N-Pilot® 2.0 measures reflectance from the crop canopy using red, green, and near-infrared wavelengths to calculate NDVI and GNDVI, providing insights into the nitrogen nutritional status of crops.

DEVICE ACTIVATION AND DATA TRANSFER:

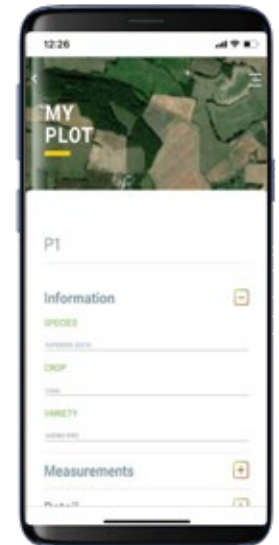
The N-Pilot® 2.0 is activated via a simple tap of the mobile phone's NFC chip, while Bluetooth (BLE) ensures smooth and uninterrupted data transfer.

Order number: 500171

MOBILE APP: EASY MEASUREMENTS FOR IMMEDIATE RESULTS

N-Pilot® 2.0 will work with a paid mobile app, to enable quick and easy assessments of nitrogen demand across the field. Each measurement will be completed in just a few seconds while moving through the field. The app is planned to offer nitrogen fertilization recommendations for various crops.

The app will be available in a limited number of countries (subject to change): Austria, Germany, France, Hungary, Bulgaria, Romania, UK, Czech Republic, and Slovakia.



KEY FACTS:

- Fast, reliable, and cost-effective nitrogen diagnosis.
- Planned app features will provide advice on nitrogen fertilization in the field.
- It helps optimize both yield and protein content.
- Fee-based service (mobile app).
- Robust and autonomous device.

Sensors

Precipitation

Temperature

Leaf

Light

Wind

Barometer

Soil Moisture

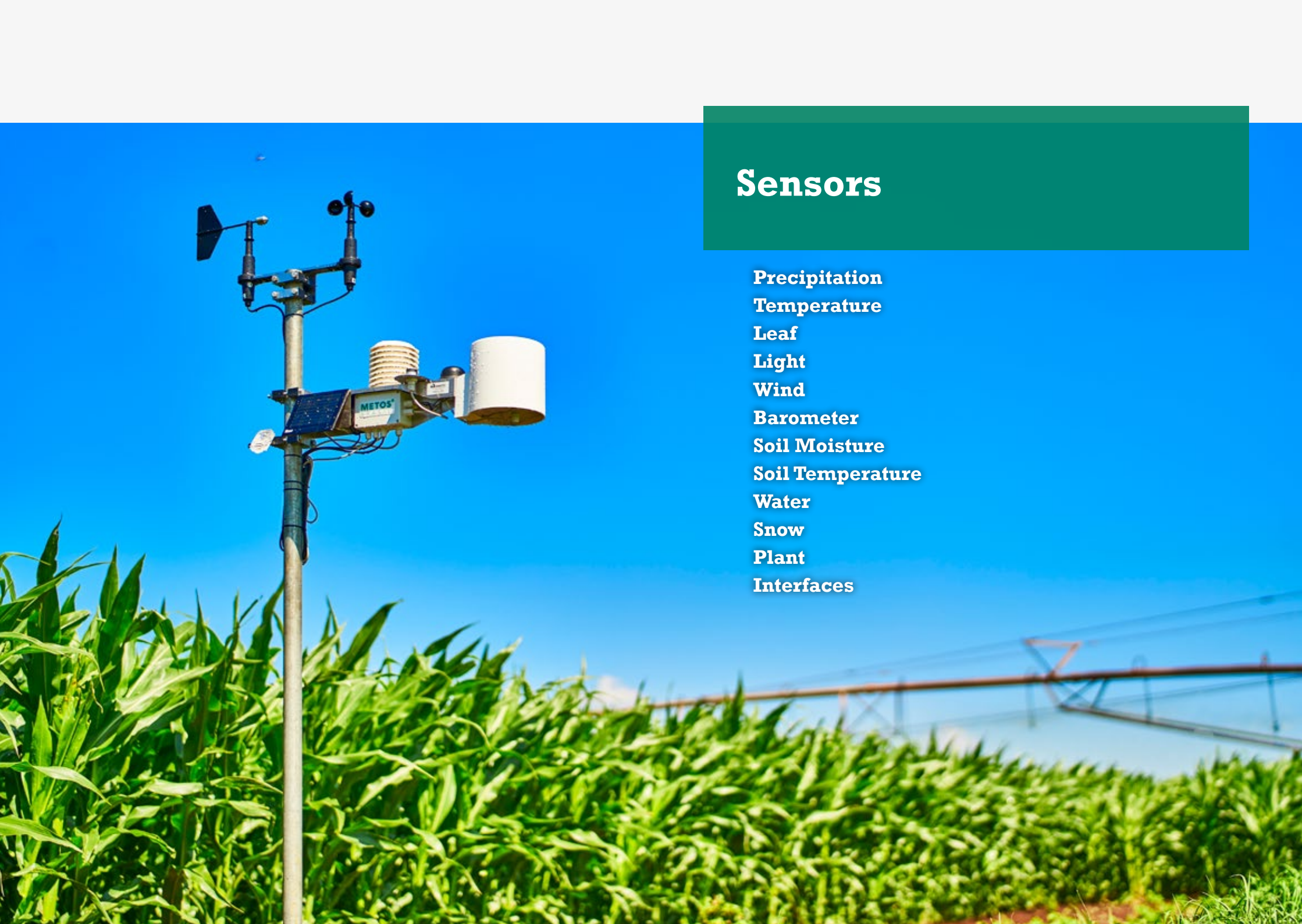
Soil Temperature

Water

Snow

Plant

Interfaces



Pessl Instruments Rain Gauge

The mechanic consists of a magnet, which moves past a reed switch and opens or closes the circuit. The double spoon tips left or right and does not lose any water due to a very fast switching mechanics. The resolution with a surface of 200 cm² is 0.2 mm, while the resolution with the 80 cm² is 0.5 mm. Heating for rain gauge can also be included.

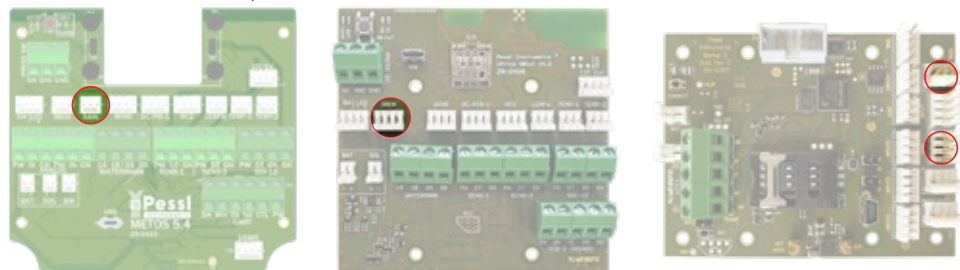


CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS

iMETOS 3.3



Order number: 600169 / 900208

TECHNICAL SPECIFICATIONS

| | |
|---------------------------|---|
| Sensor type | Double tipping bucket rain gauge |
| Output | Switch signal |
| Switch | Reed contact, solid state |
| Sensitivity | 1 tip per 0.2 mm or 1 tip per 0.5 mm |
| Collector surface | 200 cm ² |
| Evaluation | Digital |
| Maximum rain | 12 mm/minute |
| Dimensions | 159.6 mm (6.28") diameter x 160 cm (6.3") H |
| Catch surface size | 200 cm ² (31 square inch) |
| Cable length | 60 cm (23.62") |
| Accuracy | ±5% |

Protect your rain gauge from birds - add bird protection crown. Very easy to install and dismantle.

Order number: 900191



Note: The sensor can be connected to the REED input with an appropriate input reconfiguration.

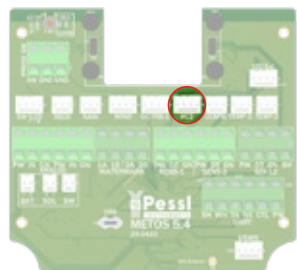
Hygroclip (Air temperature & Relative Humidity)

Measures relative humidity and temperature with outstanding accuracy and repeatability. It has an integrated data acquisition and calibration history. Dew point, VPD and delta T calculations available.

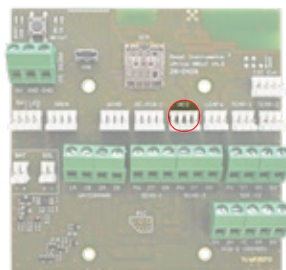


CONNECTION TO MOTHERBOARDS

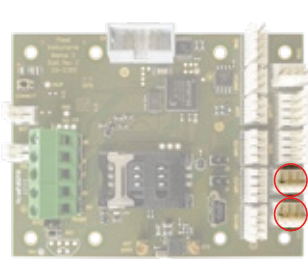
METOS 5



μMETOS



iMETOS 3.3



Order number: 600149 / 900074 (IMT), 600148 / 900073 (μMetos; EcoD3)

TECHNICAL SPECIFICATIONS

| | |
|--|--|
| Temperature sensor | PT1000 1/3 Class B |
| Humidity sensor | ROTRONIC Hygromer® IN-1 |
| Accuracy with standard adjustment profile | at 23°C and 10, 35, 80% rh ±0.8% rh / ±0.1°C |
| Accuracy with high precision adjustment profile | at 23°C and 10, 20, 30, 40, 50, 60, 70, 80, 90% rh ±0.5% rh / 0.1°C |
| Resolution, AirChip3000 | Typically 0.02% rh, 0.01°C |
| Long-term stability | < 1% rh, 0.1°C / year |
| Humidity response time t 63 | 3 seconds |
| Measurement range | 0...100% rh, -100...200°C |
| Electronics operating range | -50-100°C and 0-100% rh |
| Output signals | Serial port UART |
| Audit trail & electronic records | FDA 21CFR Part 11 and GAMP compliant |
| Power supply & consumption | 3.2 V / 4 mA |
| Housing/probe material | Polycarbonate |
| Filter | Polyethylene insert, polycarbonate cage |
| Standards | CE-compliant 2007/108/EG |

Pessl Instrument Air Temperature & Relative Humidity Sensor

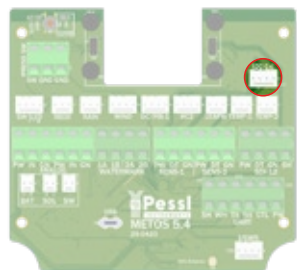
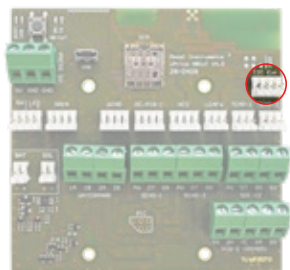
Measures air temperature and relative humidity and is used for low power consuming applications on μ METOS.

I2C Bus Considerations: I2C Bus is sensitive to the electromagnetic waves and can be distorted under certain conditions. On the contrary, Hygroclip is less sensitive. Recommended cable length: no longer than 1 m.



CONNECTION TO MOTHERBOARDS

METOS 5

 μ METOS

nMETOS/LoRAIN



Order number: 600019 / 900026 (μ Metos), 600009 / 900021 (LoRain)

TECHNICAL SPECIFICATIONS

| | |
|---------------------------------------|--|
| Sensor | HYT221 |
| Operating temperature range | -40°C to +125°C |
| Humidity range | 0% to 100% RH |
| Accuracy | $\pm 0.2^\circ\text{C}$ (0°C to +60°C) $\pm 2\%$ RH at +23°C (0% to 90% RH) |
| Operating voltage | 2.7V to 5.5V |
| Digital interface | I ² C, address 0x28 or alternative address |
| Operating voltage (limit data) | 0.3 V to +6 V |
| Storage conditions | -20°C to +50°C |

Pessl Instrument Air Temperature & Relative Humidity Sensor with a longer (5 m) cable

Measures air temperature and relative humidity with additional calculation of virtual sensors like dew point, VPD and delta T. The sensor is used for low power consuming applications on μ METOS.

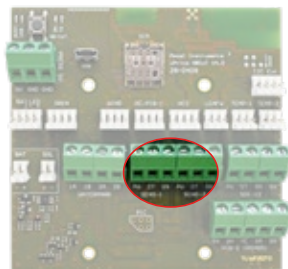
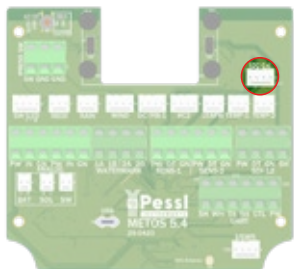
Application: when long distances up to 15 m from the main station are required i.e. in greenhouses in/out, when two or more sensors are needed.



CONNECTION TO MOTHERBOARDS

METOS 5

μ METOS



Order number: 600019 / 900026 (μ Metos), 600009 / 900021 (LoRAIN)

TECHNICAL SPECIFICATIONS

| | |
|---------------------------------------|--|
| Sensor | HYT221 |
| Cable length | 5 m |
| Operating temperature range | -40°C to +60°C |
| Humidity range | 0% to 100% RH |
| Accuracy | $\pm 0.2^\circ\text{C}$ (0°C to +60°C) $\pm 2\%$ RH at +23°C (0% to 90% RH) |
| Operating voltage | 2.7V to 5.5V |
| Digital interface | RS485 with PI-Bus, insertable in a chain |
| Operating voltage (limit data) | 0.3 V to +6 V |
| Storage conditions | -20°C to +50°C |

Pessl Instruments Wet and Dry Bulb Temperature

Order number: 600165 / 900134 (iMETOS 3.3), 600071 / 900014 (μMETOS)

Two highly reliable and tested PT1000 are built in a waterproof housing. One of them is covered with cotton tissue and wetted with water.



TECHNICAL SPECIFICATIONS

| | |
|-------------------------------------|--|
| Sensor | PT1000 |
| Supply voltage | 4.57-7 V for chain version |
| Supply current | max. 200 μA |
| Short circuit protection | Infinite (within supply voltage range) |
| Short circuit supply current | max. 40 mA |
| Operating temperature range | -30°C to +60°C |
| Accuracy | 0.1°C |
| Cable length | 5 m |

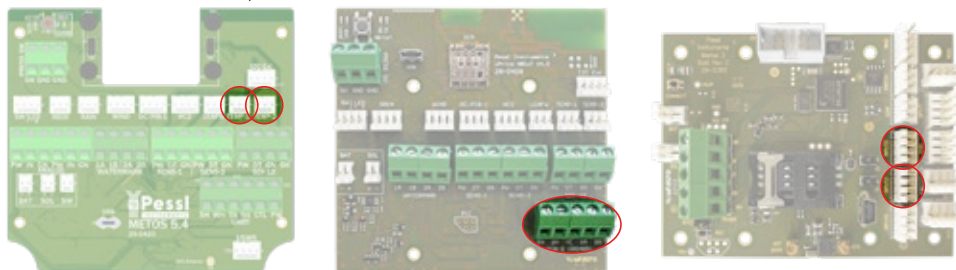
CONNECTION TO MOTHERBOARDS

Order number: 600165 / 900134 Order number: 600164 / 900132

METOS 5

μMETOS

iMETOS 3.3



Note: The Wet and Dry Bulb temperature sensors can be connected to the TEMP-1 and TEMP-2 inputs without the need for a middle interface board. Appropriate configuration of the inputs is made via a terminal menu.

Pessl Instruments Leaf Temperature

IM522CD is a highly accurate leaf temperature sensor. It measures the radiated temperature around the surface of a leaf or a canopy.



Order number: 600127 / 900169 (IMT), 600126 / 900171 (μ Metos)

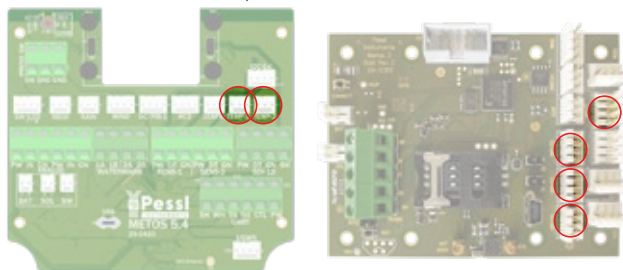
TECHNICAL SPECIFICATIONS

| | |
|-------------------------------------|--|
| Sensor | PT1000 |
| Accuracy | min. 0.1°C (-30°C to +99°C) |
| Supply current | max. 200 μ A |
| Short circuit protection | Infinite (within supply voltage range) |
| Short circuit supply current | max. 40 mA |
| Operating temperature range | -30°C to +99°C |
| Nonlinearity error | max. 0.2°C |
| Supply voltage sensitivity | max. 0.1°C/V |
| Repeatability | max. 0.2°C |
| Long term drift | max. 0.1°C |
| Output frequency | 1 to 4 kHz |
| Duty cycle | 0.320 (0°C), 0.00470°C |
| Evaluation | Analog |
| Cable length | 5 m |

CONNECTION TO MOTHERBOARDS

METOS 5

iMETOS 3.3



Note: The sensor can be connected to TEMP-1 or TEMP-2 input with an appropriate input reconfiguration.

Pessl Instruments IR Temperature

The infrared temperature sensor infers the temperature from a portion of thermal radiation (blackbody radiation) emitted by the object being measured. It is a non-contact temperature sensor. By measuring the amount of infrared energy emitted by the object and its emissivity, the object's temperature can be determined. Main use: canopy or leaf temperature measurements.



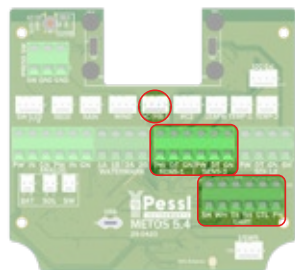
Order number: 600131 / 900066

TECHNICAL SPECIFICATIONS

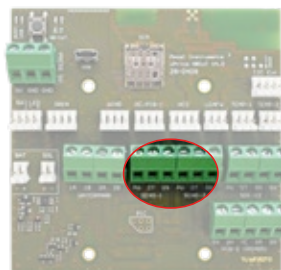
| | |
|-----------------------|-----------------------|
| Sensor | Melexis MLX90614-BCC |
| Resolution | 0.1°C |
| Interface | RS 485 PI Sensor Bus |
| Size | 20 mm (dia) x 24 mm |
| Sensor housing | Weather resistant PAS |
| Range | -40°C to +85°C |

CONNECTION TO MOTHERBOARDS

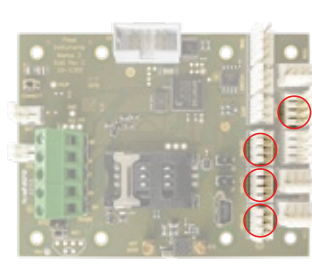
METOS 5



μMETOS



iMETOS 3.3



Pessl Instruments Leaf Wetness

The leaf wetness sensor works by measuring the conductivity on a filter paper, which is held between two stainless steel electrodes in a transparent holder. The use of transparent Lucite plastic as a holder reduces the warming up of the sensor when it is exposed to direct sunlight.



Order number: 600015 / 900025 (μ METOS / IMT); 600188/900245 (nMETOS - LoRAIN)

TECHNICAL SPECIFICATIONS

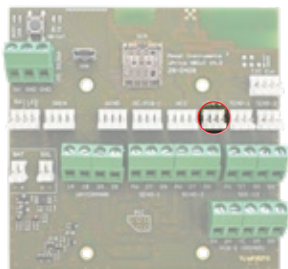
| | |
|---------------------------------|--|
| Supply voltage | 4.75-5.25 V |
| Supply current | max. 1500 μ A |
| Short circuit protection | Infinite (within supply voltage range) |
| Dry / Wet threshold | 220-390 kOhm |
| Output | Dry: max. 0.4 VDC Wet: min. VCC-0.4 VDC |
| Electronic | Totally plastic encapsulated - SMD |
| Dimensions | 42 mm x 78 mm x 15 mm |
| Cable length | 5 m |

CONNECTION TO MOTHERBOARDS

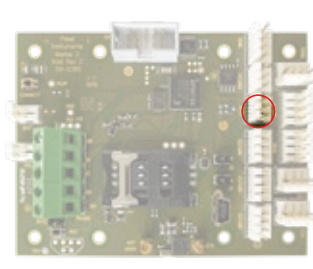
METOS 5



μ METOS

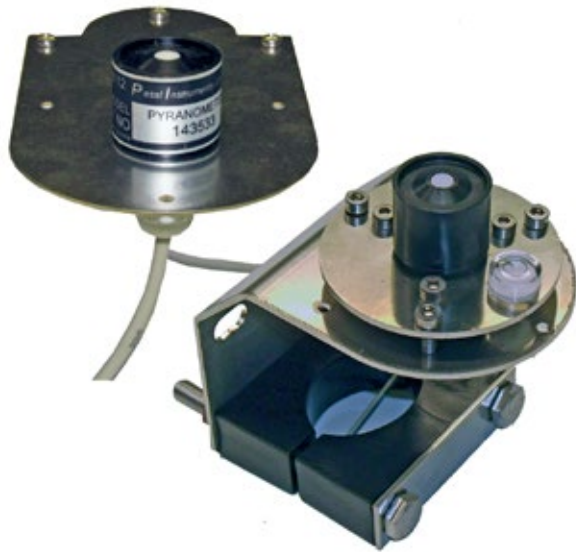


iMETOS 3.3



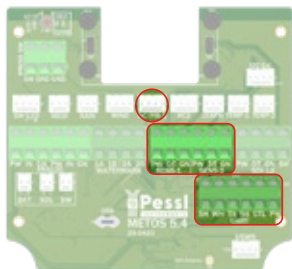
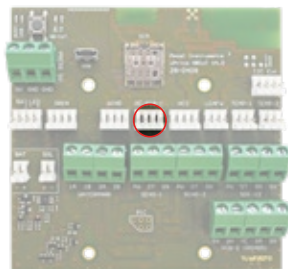
Pessl Instruments Pyranometer

The IM506D Pyranometer is designed for field measurements of global solar radiation in agricultural, meteorological, and solar energy studies. In clear, unobstructed daylight, the Pessl Instruments pyranometer has favorable results compared to the first class thermopile-type pyranometers, but is priced at just a fraction of the cost.

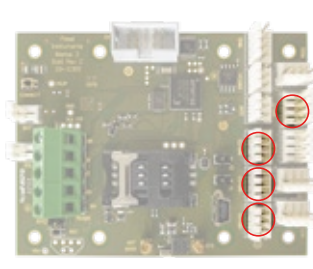


CONNECTION TO MOTHERBOARDS

METOS 5

 μ METOS

iMETOS 3.3



Order number: 600021 / 900002 (μ Metos), 600035 / 900000 (IMT)

TECHNICAL SPECIFICATIONS

| | |
|--|---|
| Sensor | VTB1112H |
| Calibration | Calibration against Kipp & Zonen CMP3 under daylight. Absolute error max. 5%, typically 3% |
| Stability | 2% drift on 2-year use |
| Time to measure | 10 μ s |
| Temperature dependency | 0.15% per°C |
| Cosines correction | Sensor corrects up to 80° degrees |
| Azimuth | 1% error over 360 degree at 45 degree elevation |
| Operating temperature range | -20°C to 65°C |
| Operating relative humidity range | 0 to 100% |
| Sensor | Photodiode |
| Housing | Weatherproof PAS case with acrylic diffuser, stainless steel hardware |
| Size | 35 mm diameter, 45 mm height |
| Weight | 114 g |
| Evaluation | Pulse Wide Modulation 0-80% = 0-2000 W/m ² |
| Spectral range | 320-1100 nm |

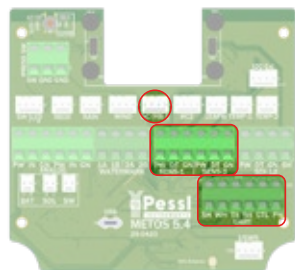
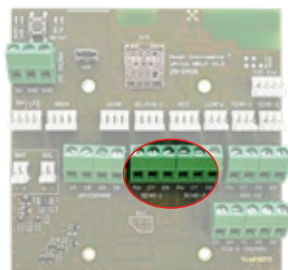
Pessl Instruments PAR Quantum

Photosynthetically Active Radiation (PAR) is typically measured as Photosynthetic Photon Flux Density (PPFD), which has units of quanta (photons) per unit of time per unit of surface. The units most often used are micromoles of quanta per second per square meter ($\mu\text{mol s}^{-1} \text{m}^{-2}$). Plant scientists, horticulturists, ecologists, and other environmental scientists use MD507D Quantum Sensors to accurately measure this variable.

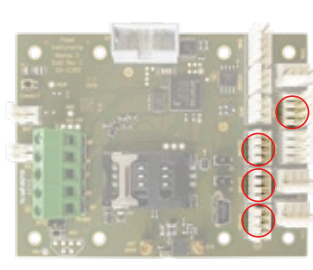


CONNECTION TO MOTHERBOARDS

METOS 5

 μ METOS

iMETOS 3.3



Order number: 600078 / 900005

TECHNICAL SPECIFICATIONS

| | |
|--|---|
| Sensor | EG&G VACTEC VTB1012B |
| Calibration | Calibration against LI-190SZ under daylight. Absolute difference max. 5%, typical 3% |
| Linearity | Maximum deviation of 1% up to 3000 W/m ² |
| Stability | 2% change over a 1-year period |
| Response time | 150 ms |
| Temperature dependency | 0.15% per°C |
| Cosines correction | Sensor corrects up to 80° degrees |
| Azimuth | 1% error over 360 degrees at 45 degree elevation |
| Operating temperature range | -20°C to 65°C |
| Operating relative humidity range | 0 to 100% |
| Sensor | Photodiode |
| Housing | Weatherproof PAS case with acrylic diffuser, stainless steel hardware |
| Size | 35 mm diameter, 45 mm height |
| Weight | 114 g |
| Evaluation | PWM: 0-80% duty cycle = 0-20 kJ/m ² |

Pessl Instruments Ultrasonic Wind Sensor

Pessl Instruments ultrasonic wind speed sensor is a two-dimensional sonic wind sensor, built specifically for agricultural, forestry, and environmental research applications. It calculates average and maximum (gust) wind speed and direction over 5 minutes interval.



Order number: "600023 / 900028 (μMetos), 600064 / 900047 (IMT)"

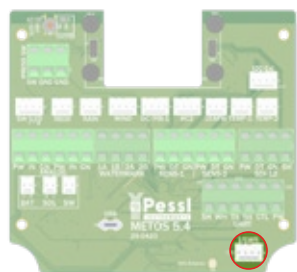
TECHNICAL SPECIFICATIONS

| | |
|--|--|
| Output data format | PI-bus |
| Information transmitted | Vectorial average wind direction, wind run speed and gust |
| Output rate | 1-10 min |
| Wind module sensitivity | 0.15 m/s |
| Wind module resolution | 0.1 m/s |
| Wind module dynamic | 0.5 to 40 m/s |
| Direction sensitivity | +/-1.5° |
| Direction resolution | 1° |
| Power supply | 3.7V to 6V with supercap |
| Electrical consumption | 0.5 mA Avg |
| Operating temperature without icing | -20°C to +55°C |
| Cable | 2.5 m / LIYCY |
| Connection | 4 wires for iMETOS 3.3 and reprogramming, 3 wires for μMETOS |
| Weight of the head | N/A |
| Weight of unit assembly | 200 g with mounting part |
| Mounting | Pessl Instruments clamp |

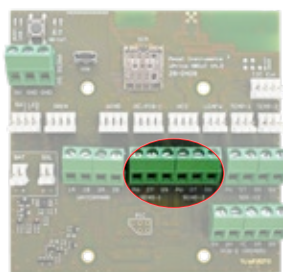
*weather station measurement interval needs to be set to 5 minute value

CONNECTION TO MOTHERBOARDS

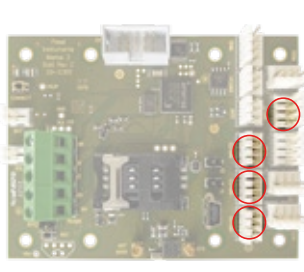
METOS 5



μMETOS

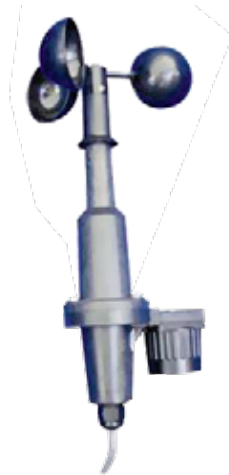


iMETOS 3.3



Pessl Instruments Wind Speed

IM512CD is a cup type anemometer for low cost and long term, accurate wind measurements for all kinds of use. It calculates average wind speed in the specific time period.



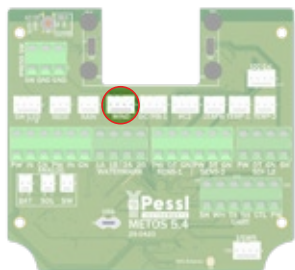
Order number: 600034 / 900040

TECHNICAL SPECIFICATIONS

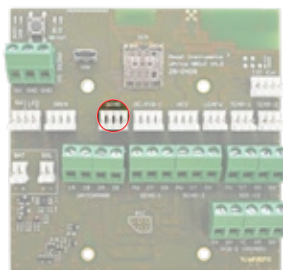
| | |
|---|--|
| Range | 0 to 50 m/s, gust survival 60 m/s |
| Sensor | 12 cm diameter cup wheel assembly, 40 mm diameter hemispherical cups |
| Turning factor | 75 cm |
| Distance constant (63% recovery) | 2.3 m |
| Threshold | 1.1 m/s |
| Transducer | Stationary Coil |
| Transducer output | AC sine wave signal induced by rotating magnet on cup wheel shaft. 100 mVpp at 60 rpm. 6 Vpp at 3600 rpm |
| Output frequency | 1 cycle per cup wheel revolution. 0.75 m/s per Hz |

CONNECTION TO MOTHERBOARDS

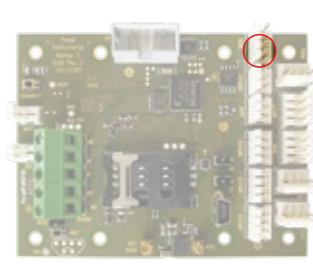
METOS 5



μMETOS



iMETOS 3.3



RM Young Wind Monitor

The wind monitor combines wind speed and wind direction. It is constructed of a four-blade helicoid propeller for highly accurate wind speed measurement with integrated wind direction sensor. It measures peak values.



Order number: 600129 / 900064

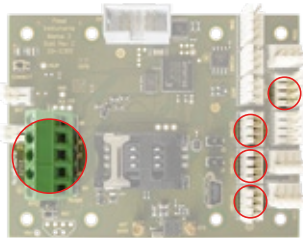
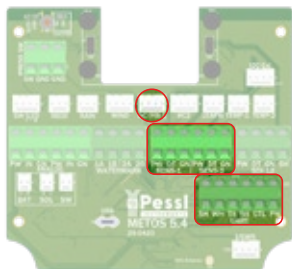
TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|--|
| Range | 0-100 m/s (224 mph), 0- 360° |
| Accuracy | Wind Speed: ± 0.3 m/s (0.6 mph) or 1% of reading Wind Direction: $\pm 3^\circ$ |
| Operating temperature range | -50 to 50°C |
| Threshold | Propeller: 1.0 m/s (2.2 mph) Vane: 1.1 m/s (2.4 mph) |
| Signal output | Wind speed: magnetically induced AC voltage, 3 pulses per revolution. 1800 rpm (90 Hz) = 8.8 m/s (19.7 mph) Wind direction: DC voltage from conductive plastic potentiometer – resistance 10K Ω , linearity 0.25%, life expectancy – 50 million revolutions |
| Power Requirement | Potentiometer excitation: 15 VDC maximum |
| Dimensions | 37 cm (14.6 in) H x 55 cm (21.7 in) L, Propeller: 18 cm (7 in) dia. Mounting: 34 mm (1.34 in) dia. (standard 1 inch pipe) |
| Weight | 1.0 kg |

CONNECTION TO MOTHERBOARDS

METOS 5

iMETOS 3.3



Pessl Instruments Barometer

Order number: 600157 / 900163

The Pessl Instruments barometric sensor measures the “absolute air pressure” of the atmosphere on site. It is designed for application of environmental protection, where high accuracy, quick response, long term stability and reliability are required. The instrument is suitable for indoor and outdoor use. A tempered piezoceramic sensor for absolute pressure is used, characterized by its thermal and mechanical stability.

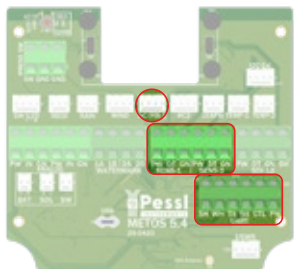


TECHNICAL SPECIFICATIONS

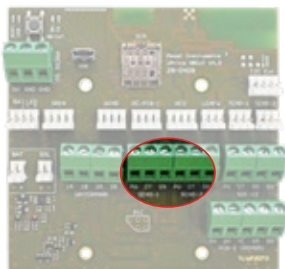
| | |
|--------------------------|-------------------------|
| Working range | 0-1150 mbar |
| Weight | ca. 50 g |
| Power supply | 5.0 VDC (6 VDC maximum) |
| Zero offset | 0.50 ±0.09 VDC |
| Power uptake | max. 20 mA |
| Precision | 0.1% max. Thrift |
| Temperature range | -40°C to 125°C |
| Measuring type | Serial (RS 485) |

CONNECTION TO MOTHERBOARDS

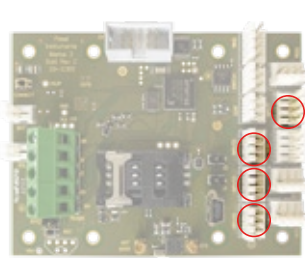
METOS 5



µMETOS



iMETOS 3.3



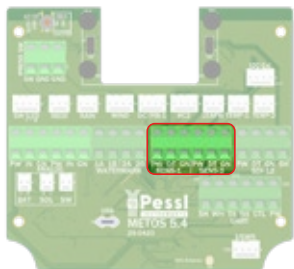
Pessl Instruments Soil Moisture & Soil Temperature Sensor PI54-D

The PI54-D soil moisture and soil temperature sensor has a larger volume of influence. It determines volumetric water content (VWC) by measuring the dielectric constant of the soil using capacitance technology and soil temperature. It is 10 cm long and thus measures 1 Liter of soil, while high frequency minimizes salinity and textural effects which makes PI54-D accurate in most soils.

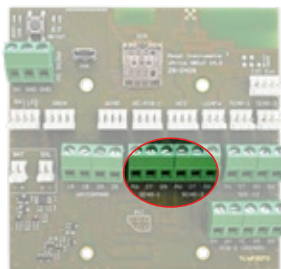


CONNECTION TO MOTHERBOARDS

METOS 5



μMETOS



nMETOS



Order number: 600118 / 900012

TECHNICAL SPECIFICATIONS

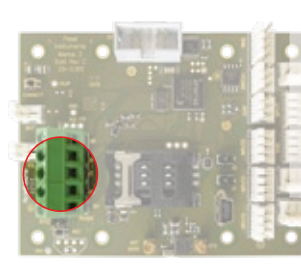
| | |
|---------------------------------------|--|
| | Range: 0–0.57 m ³ /m ³ (0%–57% VWC) |
| | Resolution: 0.0008 m ³ /m ³ (0.08% VWC) in mineral soils from 0–0.50 m ³ /m ³ (0%–50% VWC) |
| Volumetric water content (VWC) | Accuracy: With standard calibration equation, 0.03 m ³ /m ³ (3% VWC) typical in mineral soils that have solution electrical conductivity <10 dS/m NOTE: With soil-specific calibration, ±0.02 m ³ /m ³ (±2% VWC) is typical in any soil. |
| Dimensions | 16.0 cm (6.3 in) length; 3.3 cm (1.3 in) width; 0.8 cm (0.3 in) height |
| Prong length | 10 cm (3.94 in) |
| Cable length | 5/10 m |
| Supply voltage (VIN to GND) | Minimum: 3.6 VDC at 12 mA Maximum: 15 VDC at 20 mA |
| Measurement duration | Maximum 10 ms |
| Temperature accuracy | ±0.3°C in the soil temperature (range -5°C to +25°C approx.) |
| Output | Digital |

INTERFACE

Necessary Interface to connect this sensor with METOS:

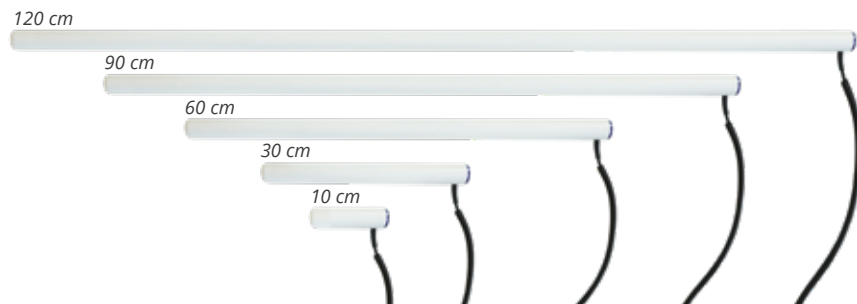
600069 / 900052, 600068 / 900051, 600167 / 900057 or 900173, 900174, 900175

iMETOS 3.3

miniMETOS, LoRATH soil,
LoRAIN soil

Sentek Drill & Drop and TriSCAN Probe

Sentek Drill & Drop probe provides the user with great flexibility for precision monitoring of temperature, water, and salinity (Triscan) at multiple depths in a soil profile. Available in five lengths: 10 cm, 30 cm, 60 cm, 90 cm and 120 cm with sensors fixed at every 10 cm increment.



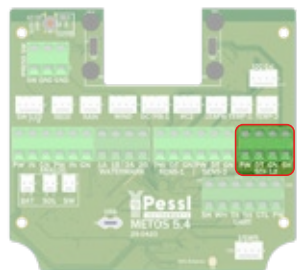
Order number: 600098 / 900104, 600099 / 900106, 600100 / 900107, 600101 / 900108, 600102 / 900109, 600103 / 900110, 600104 / 900111, 600105 / 900112, 600106 / 900113, 600107 / 900114

TECHNICAL SPECIFICATIONS

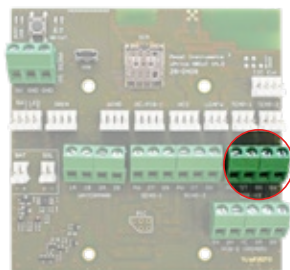
| | |
|--|--|
| Probe lengths | 10 cm (4") / 30 cm (12") / 60 cm (24") / 90 cm (36") / 120 cm (48") |
| Number of sensors | 1 / 3 / 6 / 9 / 12 |
| Outer probe diameter (top-bottom) | 24-24.5 mm / 28-29.5 mm / 27-29.5 mm / 26-30 mm / 24.5-29.5 mm |
| Moisture (VWC) range | Oven dry to saturation |
| Method | Capacitance based technology |
| Resolution | Moisture (VWC): 1:10000 Salinity (Triscan) (VIC, Volumetric Ion Content): 1:6000 Temperature: 0.3°C |
| Moisture precision | ±0.03% vol. |
| Temperature accuracy | ±2°C at 25°C |
| Operating temperature range | -20°C to 60°C |

CONNECTION TO MOTHERBOARDS

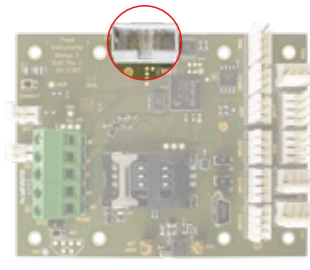
METOS 5



μMETOS



iMETOS 3.3



INTERFACE

Necessary Interface to connect this sensor with METOS:
600150/900105

PI-Profile Probe

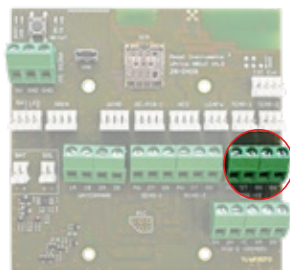
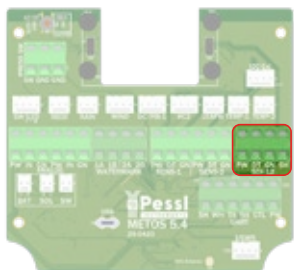
The PI-Profile Probe system is ideal for broad-acre row crops like corn, cotton, alfalfa and soybeans as well as all permanent crops. Due to its special design where the sensor and the cable are trenched below the surface there is no need for annual installation and removal of soil sensors from the field. The sensor comes with a 5-meter cable and watertight rapid connector so the In-field telemetry can be removed only during tillage, seeding or harvest and moved back in after that. Highly scalable with a low total cost of ownership; no annual installation and removal! The PI-Profile Probe is available with 60 cm and 6 sensors (every 10 cm) and with 90 cm and 6 sensors (every 15 cm) which measures soil moisture and soil temperature in the vertical profile.



CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS

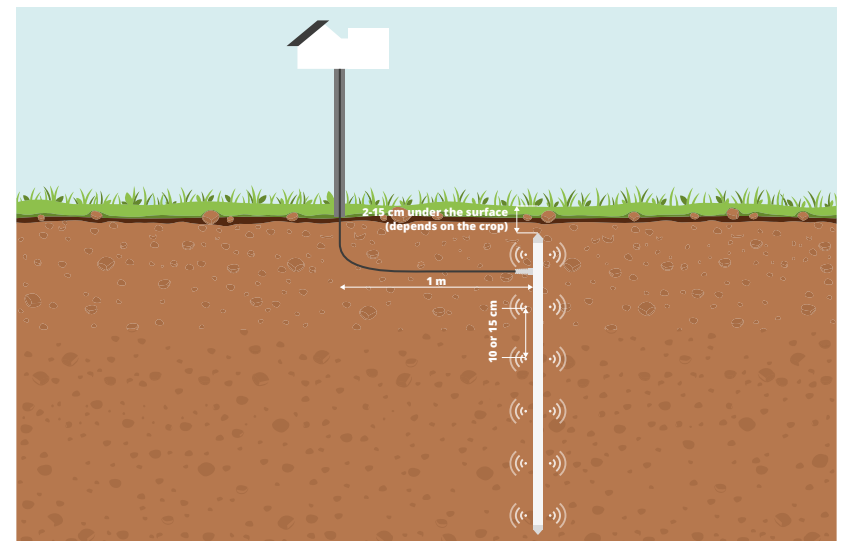


Order number - 60 cm: 600196 / 900260

Order number - 90 cm: 600197 / 900261

TECHNICAL SPECIFICATIONS

| | |
|--|--|
| Probe lengths | 60 or 90 cm |
| Probe diameter | 25 mm |
| Number of sensors | 6 |
| Separation of sensors | 60 cm probe: one sensor every 10 cm 90 cm probe: one sensor every 15 cm |
| Soil moisture range & accuracy | 0-100% (mm). Accurate to within 1% V/V. |
| Soil temperature range & accuracy | Soil temperature probe reading resolution: 0.0625°C Soil temperature probe reading accuracy: within 1°C in range 0°C to +64°C General temperature range that can be used: 0°C to 64°C |
| Method | FDR |
| Influence of salinity | Less than 1% over standard operating range |
| Environment | -15°C to 60°C air temperature; 0 to 90% relative air humidity 0°C to 65°C air temperature; 0 to 90% relative air humidity <i>Do not store in direct sunlight. Do not exposed to strong radiometric radiation (i.e. cell phone signal).</i> |
| Storage | |
| Cable length | 5 m |



Irrrometer Watermark Soil Moisture Sensor

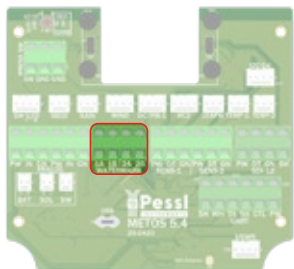
The Watermark Sensor consists of two concentric electrodes buried in a special reference matrix material that is held in place by a synthetic membrane. The matrix material has been selected to reflect the maximum change of electrical resistance over the growth range of crop production, as well as to neutralize the effect of soil salinity. In operation, soil moisture is constantly being absorbed or released and the electrical resistance between the electrode's changes. This resistance is read and logged by the weather station.

The sensor is manufactured from non-corrosive materials and lasts up to three years.

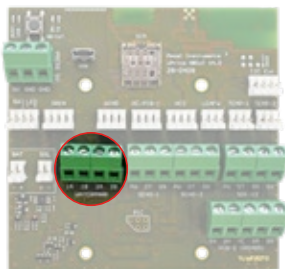


CONNECTION TO MOTHERBOARDS

METOS 5



μMETOS



nMETOS



Order number: 600120 / 900010

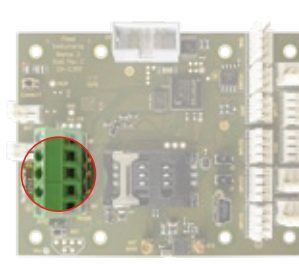
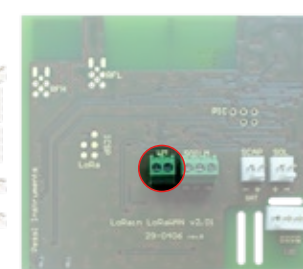
TECHNICAL SPECIFICATIONS

| | |
|----------------------------|---|
| Size | 2.2 cm diameter x 5 cm length |
| Measuring principle | Soil water tension correlated with electrical resistance in granular matrix |
| Working range | 0 to 200 kPa |
| Precision | 5% |
| Evaluation | Analog |
| Cable length | 3.5 m / 10 m |

INTERFACE

Necessary Interface to connect this sensor with METOS:
600068 / 900051, 600167 / 900057, 900174, 900175

iMETOS 3.3

miniMETOS, LoRATH soil,
LoRAIN soil

Irrrometer Tensiometer

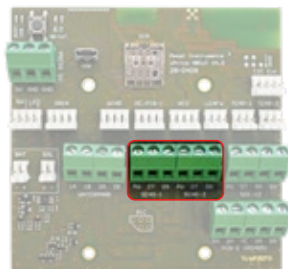
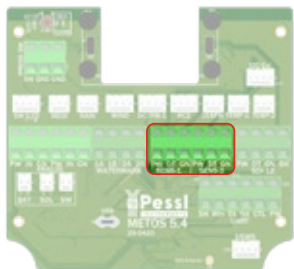
The instrument measures soil water tension (or suction). This value represents the energy a plant's root system uses to draw water from the soil. Understanding soil moisture dynamics helps the user make informed irrigation scheduling decisions, resulting in improved yield quantity and quality while reducing water, fertilizer, labor, and energy costs. Available in different lengths: 15 cm, 30 cm, 45 cm, 60 cm and 90 cm.



CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS



Order number: TNS101

TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|---|
| Instrument body materials | Butyrate body, ceramic tip, neoprene stopper |
| Weight | 30 cm weights 0.439 kg. It increases 0.114 kg per 30 cm |
| Ceramic tip | White tip – used for most soil types |
| Operating suction | 0-90 kPa |
| Operating temperature range | 0°C to 50°C |
| Reservoir dimensions | Height: 120-130 mm including cap; Diameter: 51-55 mm including cap |
| Body tube dimensions | Length: ranges from 15 to 90 cm; Diameter: 22 mm |

INTERFACE

Necessary Interface to connect this sensor with METOS:

600069 / 900052, 600068 / 900051, 600167 / 900057 or 900173, 900174, 900175

Pessl Instruments Soil Temperature

The Soil Temperature Sensor is a PT1000 in a waterproof stainless-steel housing. The sensor output is a duty-cycle signal.



Order number: 600159 / 900124 (iMETOS 3.3), 600020 / 900027 (μMETOS, ECHO)

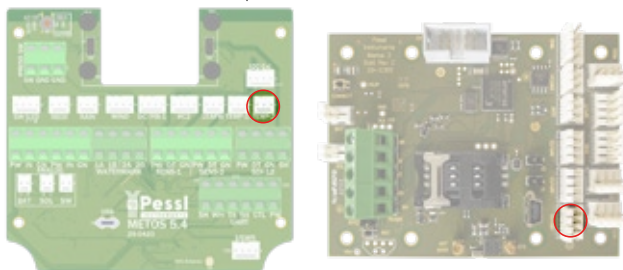
TECHNICAL SPECIFICATIONS

| | |
|-------------------------------------|--|
| Sensor SMT172 | Operating temperature range: -30°C to +75°C |
| | Accuracy: ±0.5°C (-30°C to +75°C) |
| Sensor PT1000 | Operating temperature range: -30°C to +75°C |
| | Accuracy: ±0.1°C (-30°C to +75°C) |
| Supply voltage | 4.57-7 V |
| Supply current | max. 200 μA |
| Short circuit protection | infinite (within supply voltage range) |
| Short circuit supply current | max. 40 mA |
| Calibration error | max. 0.25°C (23°C) |
| Nonlinearity error | max. 0.2°C |
| Supply voltage sensitivity | max. 0. 1°C/V |
| Repeatability | max. 0.2°C |
| Long term drift | max. 0.1°C |
| Output frequency | 1 to 4 kHz |
| Evaluation | Duty cycle |
| Cable length | 5 m |

CONNECTION TO MOTHERBOARDS

METOS 5

iMETOS 3.3



Note: The sensor can be connected also to the TEMP-1 input with an appropriate input reconfiguration.

Pessl Instruments Multiple Soil Temperature

SAR19/SAR19M provides soil temperature measurement from several centimeters to 15-meter deep by using the Pessl Instruments sensor BUS. The distance between the sensors can be chosen according to the application, but only up to 10 sensors can be attached to one sensor chain.



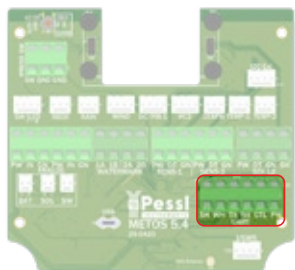
Order number: 60079/900058 (Sensor chain with box, holder and 3 sensors) / 900227 (Sensor chain with box, holder and 1 sensor) / 900226 (Additional sensor)

TECHNICAL SPECIFICATIONS

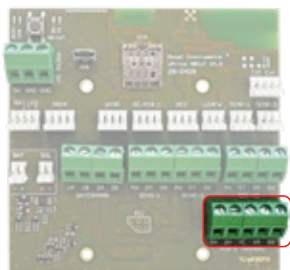
| | |
|---|---|
| Temperature sensor | DS18B20 |
| Operating temperature range | -55°C to +125°C |
| Supply DC voltage (range) | 3-5.5 V |
| Thermometer error -10°C to +85°C | ±0.3°C |
| Drift | ±0.2°C |
| Data transmission | Rs 485 Digital signal (temperature data sent on demand of METOS main board) |

CONNECTION TO MOTHERBOARDS

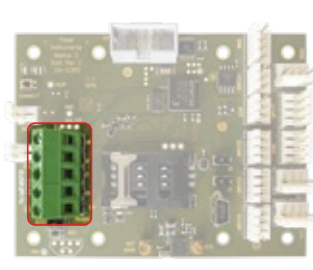
METOS 5



μMETOS



iMETOS 3.3



Pessl Instruments Single Soil Temperature

Order number: 600020 / 900027

WMTEMP is a soil temperature sensor.



TECHNICAL SPECIFICATIONS

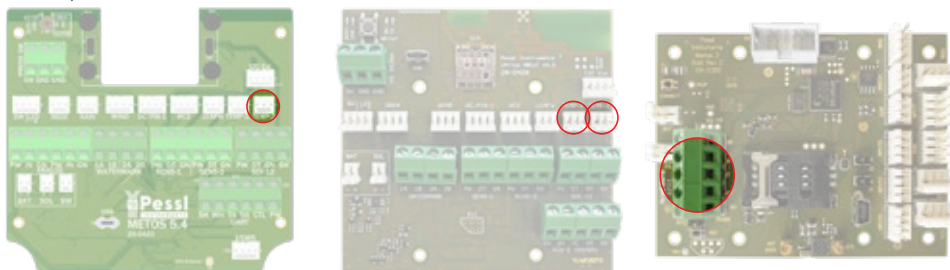
| | |
|---|---|
| Temperature sensor | DS18B20 |
| Operating temperature range | -55°C to +125°C |
| Supply DC voltage (range) | 3-5.5 V |
| Thermometer error -10°C to +85°C | ±0.3°C |
| Drift | ±0.2°C |
| Data transmission | Rs 485 Digital signal (temperature data sent on demand of METOS main board) |

CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS

iMETOS 3.3



Note: The sensor can be connected also to the TEMP-1 input with an appropriate input reconfiguration.

INTERFACE

Necessary Interface to connect this sensor with METOS:
ECH871EXT, ECH874EXT or ECH871INT, ECH874INT or RFRN09, RFRN12 or WM-BUS

Pessl Instruments Heavy Duty Multiple-temperature Probe

Multiple-temperature probe is a thermometer, designed to make measurements in extremely harsh conditions like temperature of waste on disposal sites, and chipped wood in storage rooms.

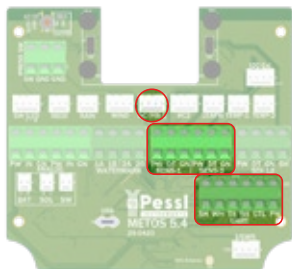


TECHNICAL SPECIFICATIONS

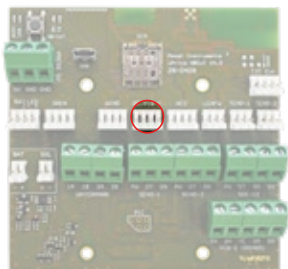
| | |
|---|---|
| Operating temperature range | -55°C to +125°C |
| Supply DC Voltage (range) | 3-5.5 V |
| Thermometer error -10°C to +85°C | ±0.3°C |
| Drift | ±0.2°C |
| Data transmission | Rs 485 Digital signal (temperature data sent on demand of METOS main board) METOS checks all sensors every 5 minutes |

CONNECTION TO MOTHERBOARDS

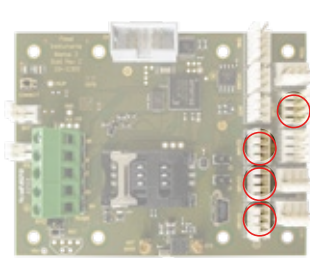
METOS 5



μMETOS

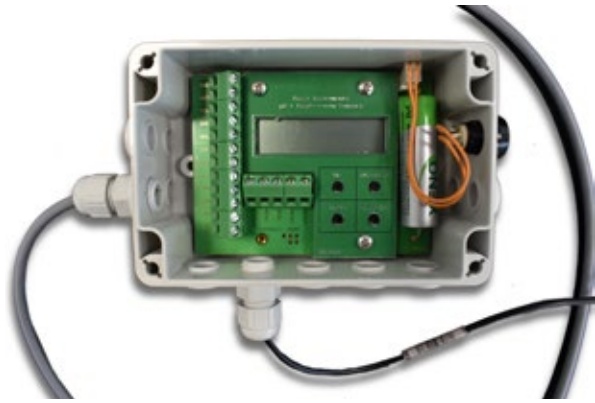


iMETOS 3.3



EC & pH Interface Box with Display in IP65 Box

The EC500PH EC & pH Interface box is a measuring device with display in IP65 Box to be integrated into any METOS sensor chain interface for continuous EC & pH measurements in water. It is compatible with most industry standard EC & pH sensors. The actual reading can be seen on the display. With the built-in calibration mode, all sensor readings can be calibrated and checked from time to time.



Connection Possibilities

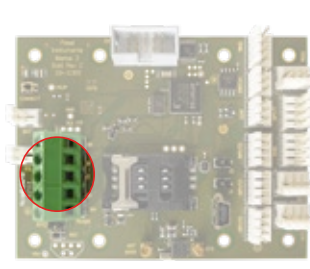
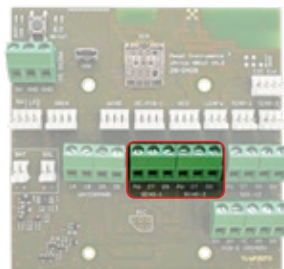
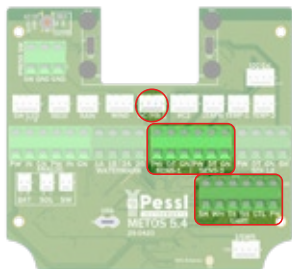
- 1 EC Sensor (Part.no. EC501)
- 1 pH Sensor (Part.no. PH501)

CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS

iMETOS 3.3



Order number: 600025 / 900029

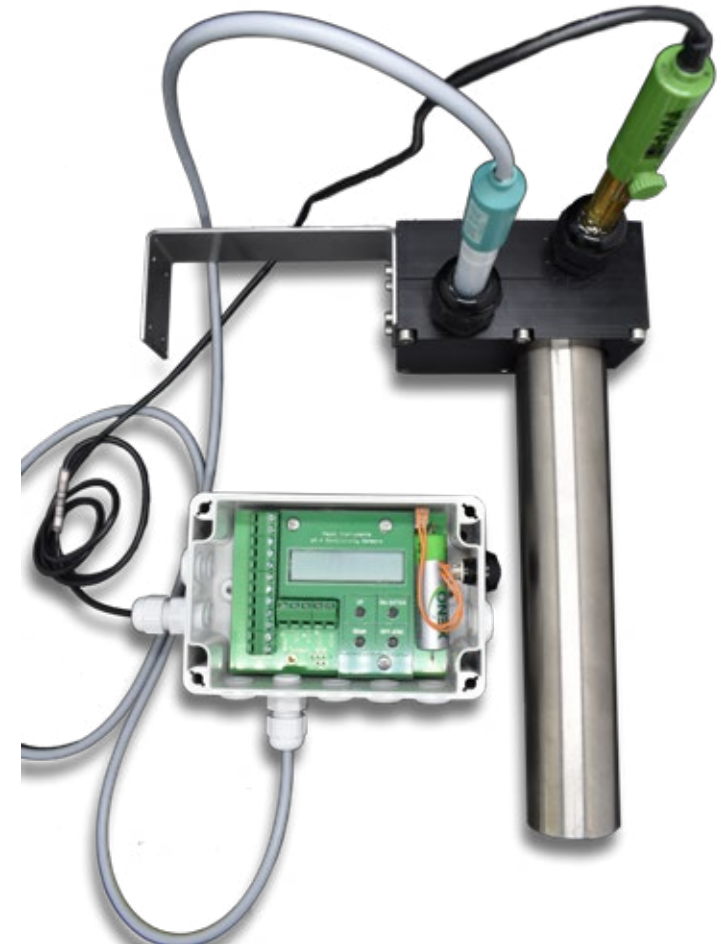
TECHNICAL SPECIFICATIONS

General information

Display shows actual data by pressing the button. It works with iMETOS 3.3 and μMETOS.

Cable length

5 m standard, custom cable lengths available upon request



Pessl Instruments Electrical Conductivity

Order number: 600145 / 900032

The conductivity sensor provides a complete self contained measurement. The sensor utilizes a reliable and robust sensor for conductivity measurement and a thermistor for temperature measurement. The sensor is ideal for hydrographical and environmental water monitoring, in agriculture and industrial applications. The durable design ensures suitability for the harshest environment applications.



TECHNICAL SPECIFICATIONS

| | |
|---------------------------------|----------------------------|
| Range | 0.1 μ S/m - 1000 mS/cm |
| Resolution | 0.1 μ S/cm |
| Temperature compensation | Automatic |
| Probe material | PP |
| Probe diameter | 12 mm |
| Min. immersion | 40 mm |

INTERFACE

Necessary Interface to connect this sensor with METOS:
600025 / 900029 Interface box with display

Pessl Instruments pH Sensor

Order number: 600144 / 900030

The pH sensor is a reliable and cost-effective sensor for measuring the pH value of various aqueous solutions. The pH scale covers values between 0 and 14.

Acids have pH values between 0 and 6; caustic solutions have pH values between 8 and 14. Value 7 is neutral.



TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|--|
| Range | pH 0.00 to 14.00 |
| Resolution | 0.001 pH |
| Accuracy | \pm 2% F.S. |
| Temperature deviation | 3% (range 5°C to 30°C) |
| pH probe | Standard up to 0.1 bar (other types on request), 3 m cable, 2-ring-flow-through (please specify type of application) |
| pH calibration | 2-point with automatic buffer (recognition pH 4.0 and pH 7.0) |
| Probe material | Glass |
| Probe diameter | 12 mm |
| Min. immersion | 35 mm |
| Operating temperature range | 15°C to 60°C |
| Response time | \leq 90 s |

INTERFACE

Necessary Interface to connect this sensor with METOS:
600025 / 900029 Interface box with display

Pessl Instruments Pressure Switch

Simple and robust design makes pressure switch suitable for use with compressed air, hydraulic oil, oil emulsions and water. Detection threshold is 0.5 bar (7.25 psi) and switch off is at 0.25 bar (3.62 psi) (other values on demand). The main purpose of this sensor is to control/check the performance of the irrigation system in different types of applications (resistance to high pressure makes it usable also for frost protection system).



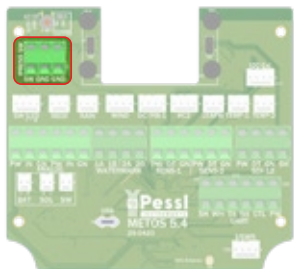
Order number: 600168 / 900198

TECHNICAL SPECIFICATIONS

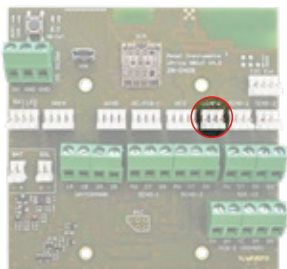
| | |
|--------------------------------------|--|
| Material | Zinc-plated steel (G 1/4") |
| Switching function | Open contact, closed contact, changeover |
| Media | Water, compressed air, hydraulic oil, oil emulsion |
| Maximum medium temperature | +85°C |
| Adjustment ranges | 1 to 10 bar (1.4-14 psi), 0-1 bar |
| Switching frequency | max. 200 /min |
| Switching pressure difference | 10 to 15% |
| Switching voltage | Open contact/closed contact 42V max. 2A; Changeover 250 V max. 2A |

CONNECTION TO MOTHERBOARDS

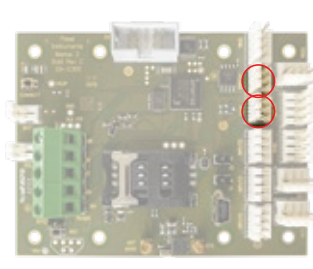
METOS 5



μMETOS



iMETOS 3.3



Pessl Instruments Water Counter Interfaces

Order number: 600155

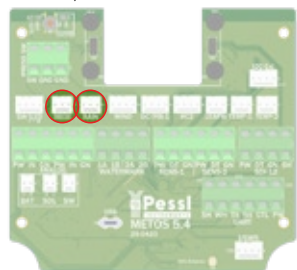
These interfaces support most of the water meters used in irrigation with a pulse output.

SECTORS: Irrigation management, irrigation consulting, smart irrigation, irrigation tractability and bookkeeping, alarms, and supervision. Used widely in open field crops, hydroponics, and green house.

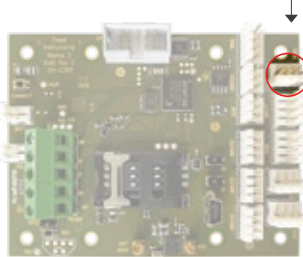
SW1000 pulse counter (Reed/Rain input)



METOS 5



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Note: The sensor can be connected to REED and RAIN input with an appropriate input reconfiguration.



Pessl Instruments Pipe Pressure (WPS)

This sensor enables continuous monitoring of the pressure in irrigation pipes (main pipe or sector pipes) and it measures up to 50 bar, so it can be used in all types of irrigation systems (drip irrigation, sprinkler, hydroponics ...).

Technical specification of the full scale and resolution can be changed in the benefit of the user.

SECTORS: Irrigation monitoring and supervision, identification of pressure loss in the installation.



Order number: 600154 / 900204

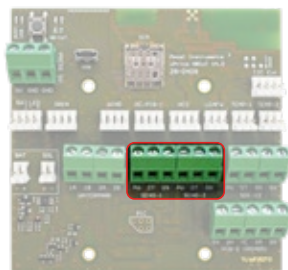
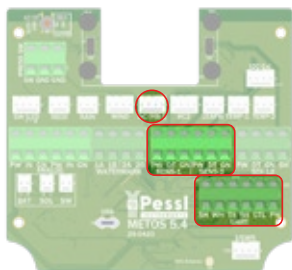
TECHNICAL SPECIFICATIONS

| | |
|------------------------------------|--------------------------------|
| Range | 0 to 500 m of water column |
| Resolution | 10 mbar |
| Accuracy | 0.3% |
| Operating temperature range | 0°C to 50°C |
| Storage temperature range | -20°C to 80°C |
| Weight | 300 g (including cable) |
| Housing | POM |
| Diaphragm | Ceramic |
| Cable sheath | Shielded PVC |
| Output signal | Voltage |
| Support | µMETOS Sens 1 and Sens 2 |
| Dimensions gauge shaft | 90 x 20 mm (height x diameter) |

CONNECTION TO MOTHERBOARDS

METOS 5

µMETOS



Pessl Instruments Water Level Sensor

The Water level sensor is an accurate and cost effective submersible water level sensor that can be connected to METOS stations with the precision of 3 mm within the measurement ranges. Sensor has an integrated barometric sensor module to increase precision. Pressure (Measuring) ranges: 0 mWC up to 5 mWC (other distances on request). Special cable is also available.

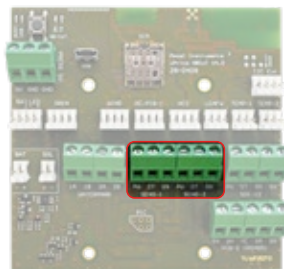
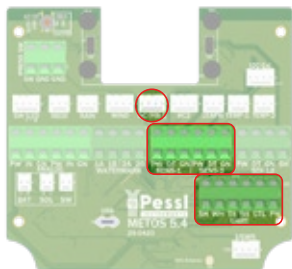
SECTORS: Depth or level measurement in wells and open waters (rivers and lakes) and ground water level measurement.



CONNECTION TO MOTHERBOARDS

METOS 5

μMETOS



Order number: 600026 / 900201, 600153

TECHNICAL SPECIFICATIONS

| | |
|--|--|
| Accuracy according to IEC 60770 | Limit point adjustment (nonlinearity, hysteresis and repeatability) within $\pm 3\%$ within the measurement ranges |
| Response time | ~ 5 ms |
| Range | 0 to 10 m of water column (other on request) |
| Resolution | 1 mm |
| Accuracy | 0.5% of maximum water level |
| Operating temperature range | 0°C to 50°C |
| Storage temperature range | -20°C to 80°C |
| Weight | 300 g (cable not included) |
| Housing | Stainless steel 1.4301 |
| Diaphragm | Ceramic |
| Seals | FKM |
| Cable sheath | Shielded PVC |
| Output signal | Analog voltage |
| Support | PI-bus only at the end of the chain |
| Dimensions gauge shaft | 90 x 38 mm (height x diameter) |



Pessl Instruments Ultrasonic Snow Height or Water Depth Sensor

Order number: 600173 / 900209

Ultrasonic snow depth sensor is used for non-contact measurements of snow depth and river levels in extreme weather conditions. The sensor is characterized by its high level of operating reliability, low energy consumption, fast installation and ease of use in the field.



TECHNICAL SPECIFICATIONS

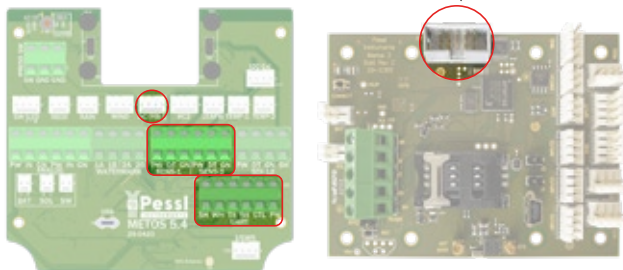
| | |
|--------------------------------------|---|
| Range | 0 to 10 m |
| Resolution | 10 mm |
| Accuracy | 0.5% (FS) |
| Measurement principle | Ultrasonic |
| Temperature measurement range | -40°C to +60°C |
| Digital RS-232 interface | Serial port protocol, distance or snow depth |
| Power supply | From the input of the METOS, in areas with limited sun extended battery is needed (ord. no. USH8-BATT-EXT). |
| Ingress protection | IP 66 |



CONNECTION TO MOTHERBOARDS

METOS 5

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To connect Snow Depth Sensor to the motherboard, you will need **MOD BUS** interface.

Pessl Instruments Dendrometer

Dendrometers are sensors for continuous measurement of plant growth (changes of the plant diameter). The dendrometer allows us to record the plant parameters using the same time interval as environmental parameters. The data allows the direct assignment of plant responses and stress to environmental influences. Dendrometers are a cost-effective and useful tool for Eco physiological studies.



Order number: 100358, 100359, 100361, 100360

TECHNICAL SPECIFICATIONS

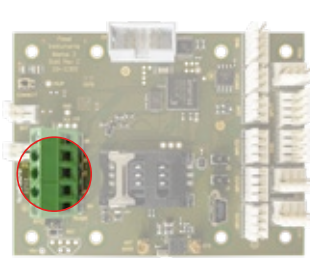
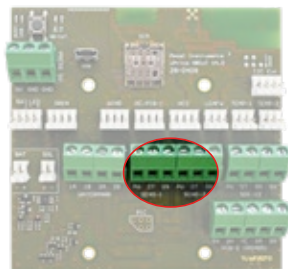
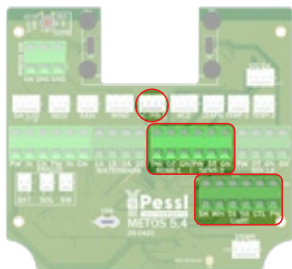
| | |
|--|---|
| To specify plant size range | Diameter 3-30 cm |
| Range of the sensor | 11 mm |
| Accuracy | $\pm 1.5 \mu\text{m} \pm 0.12\%$ (CR1000 Logger) |
| Resolution | 0.2-2.6 μm (dependent on used data logger) |
| Linearity | 1% |
| Thermal expansion coefficient of the sensor | $< 0.1 \mu\text{m/K}$ |
| Operating temperature range | -25 to 70°C |
| Operating relative humidity range | 0 to 100% |

CONNECTION TO MOTHERBOARDS

METOS 5

μ METOS

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INTERFACE

Necessary Interface to connect this sensor with METOS:
600170 / 900205

Chain Node Interface for 3 Pessl Instruments Sensors

Order number: 600069 / 900052 / 900173

This Interface enables the connection of up to 3 PI54-D sensors to a METOS weather station. The Interface can be an External box for iMETOS 3.3 (ECH870EXT).



YOU CAN CONNECT:

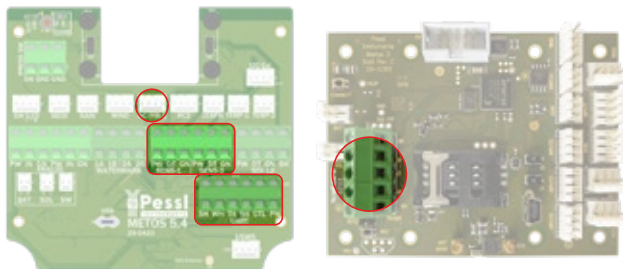
The following Pessl Instruments sensors:

- Vacuum Tensiometer
- Water Level Sensor
- PI54-D

CONNECTION TO MOTHERBOARDS

METOS 5

iMETOS 3.3



Chain Node Interface for 2 Pessl Instruments Sensors & 2 Watermark Sensors & 1 Soil Temperature Sensor

Order number: 600068 / 900051 / 900174

This Interface enables the connection of up to 5 soil sensors to a METOS weather station. It is possible to connect 2 PI54-D sensors, 2 Watermark sensors and 1 soil temperature sensor. The Interface can be an External box for iMETOS 3.3 (ECH871EXT).



YOU CAN CONNECT:

Two pieces of the following sensor:

- Watermark sensor

One piece of the following sensor:

- Soil Temperature (WMTEMP)

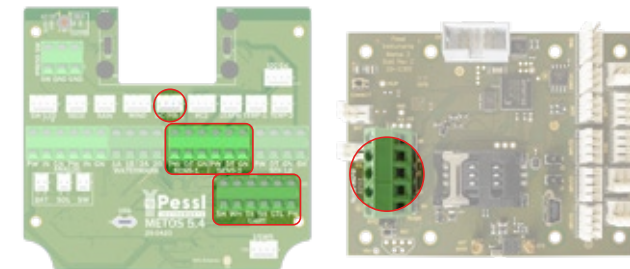
Two pieces of the following Pessl Instruments sensors:

- Vacuum Tensiometer
- Water Level Sensor
- PI54-D

CONNECTION TO MOTHERBOARDS

METOS 5

iMETOS 3.3



Chain Node Interface for 1 Pessl Instruments Sensor & 4 Watermark Sensors & 1 Soil Temperature Sensor

Order number: 600167 / 900057 / 900175

This Interface enables the connection of up to 6 soil sensors to a METOS weather station. It is possible to connect 1 PI54-D sensor, 4 Watermark sensors and 1 soil temperature sensor.

The Interface can be an External box for iMETOS 3.3 (ECH874EXT).



YOU CAN CONNECT:

Four pieces of the following sensor:

- Watermark sensor

One piece of the following sensor:

- Single Soil Temperature

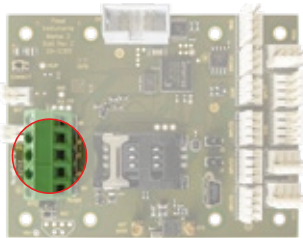
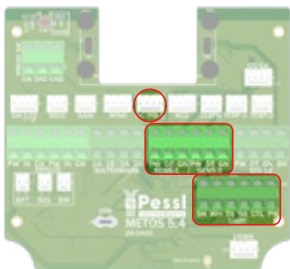
One piece of the following Pessl Instruments sensors:

- Vacuum Tensiometer
- Water Level Sensor
- PI54-D

CONNECTION TO MOTHERBOARDS

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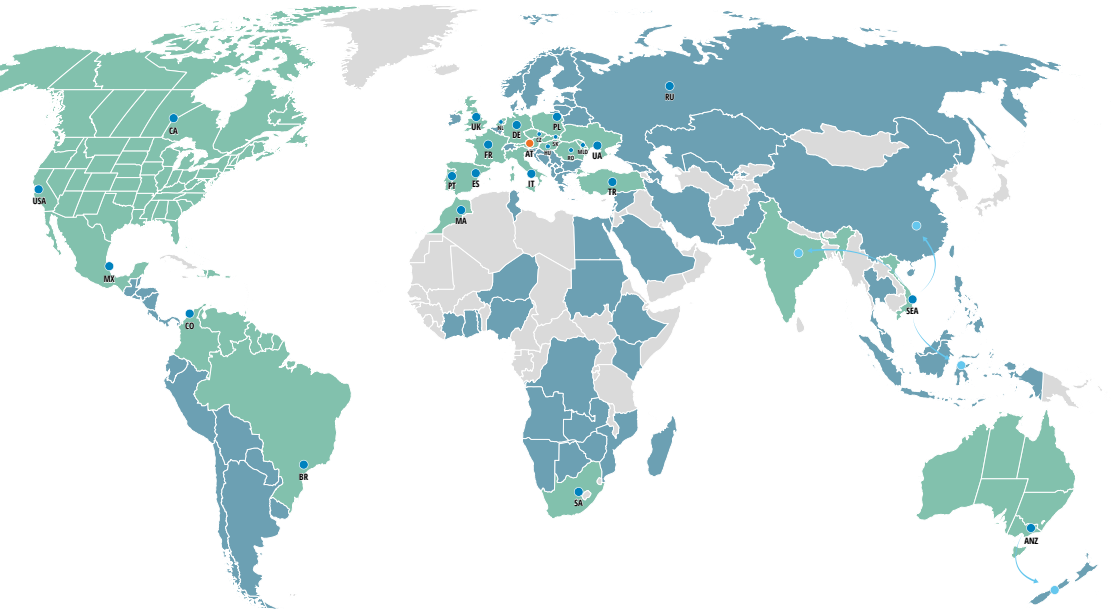
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