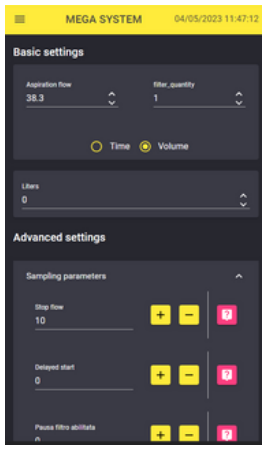
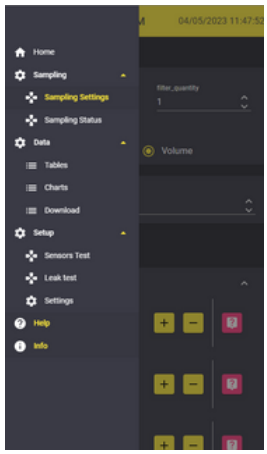
SAMPLING SOLUTIONS

MEGA SYSTEM

CALIBRATION & METROLOGY

# AITHER PMS


- Compliant with **EN 12341:2023**
- **TÜV certificate** in progress
- Option to program sampling with **unlimited duration**
- **Full remote management** of the instrument and alarms via router
- Sensors easily accessible for **calibration**
- **Lightweight** and **easily transportable** by a single operator

# AITHER PMS

Thanks to our newest reference PM10-PM2,5 sampler "AITHER PMS" you can now reliably perform gravimetric samplings fully satisfying the newest EN 12341:2023 requirements with unparalleled precision and ease of operation.

The sequential system for sampling fine dust particles is incredibly **compact**, **easy to move and resistant to weather conditions**. It has been engineered specifically with a **main control unit** and a **separate pump unit** in order to make the setup operations more comfortable and feasible even for just one operator. The sampler support system transforms into a secure transport case for both pump and control unit by simple 180° rotation, allowing a safe delivery of the instrument on vans or smaller vehicles.

The instrument can also be mounted on mobile laboratories or in air quality control stations as it is rack compatible (19"). To ensure compliance with industry standards, the sampler must be equipped with a 3m (maximum length) ventilated tube.

## TECHNICAL FEATURES

The **automatic filter change** mechanism is the result of almost 20 years of experience and continuous improvements focused on offering the highest reliability of the system.

Multiple sensors control the opening, closing and loading of the system, preventing jamming and mechanical damage. Monitoring of atmospheric particulate matter is carried out continuously using the standard reference method (gravimetric method) on a 47-mmØ filter membrane (**up to 21-filter capacity**).

Capacity can be increased because used filters can be easily accessed and replaced with clean ones without interrupting the sampling. Volatile fraction loss is minimized via an integrated and efficient **Peltier cooling of the sampled filters** according to the EN 12341:2023 (cooling temperature ≤ 23°C).

Sensors are the heart of our sampler and play an important role in assuring that the data quality objectives for PM measurements are satisfied:

- The extremely **precise and improved electronic flow control** system manages sampling with high precision and ensures suction flow stability under 2,0% during sampling (average flow) and less than 5.0% of setpoint for instantaneous flow.

- All temperature and pressure sensors (filter temperature, ambient temperature, ambient pressure, sampled filters temperature, vacuum sensor) are **easily accessible** and **calibration curves can be performed by the user**, while historic data is visible on the front panel

# AITHER PMS

The sampling ventilation ramp system ensures a variation in temperature within 5 °C between the filter and sampling point with an ambient temperature above or equal to 20 °C.

Pump capabilities far exceed the standard sampling flow, which ensures a longer duration of internal components and reduces maintenance costs. Moreover, reduced sound emissions permit night time use of air quality control stations in residential areas.
The unit's modem remotely manages sampling and alarms by email (4G SIM required), and allows for integration with data management systems for automatic upload and registration of data. This allows for a complete control of the sampling even by remote.

All sensors, on request, can be certified according to EN 17025.

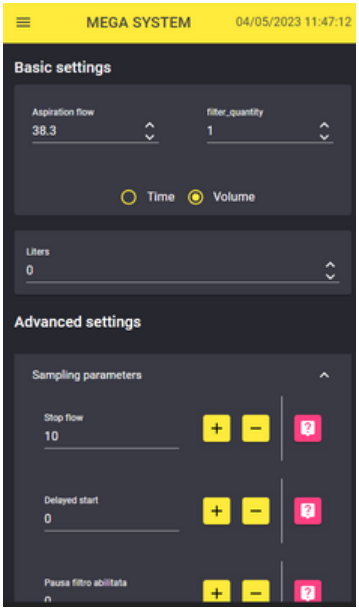
## SOFTWARE FEATURES

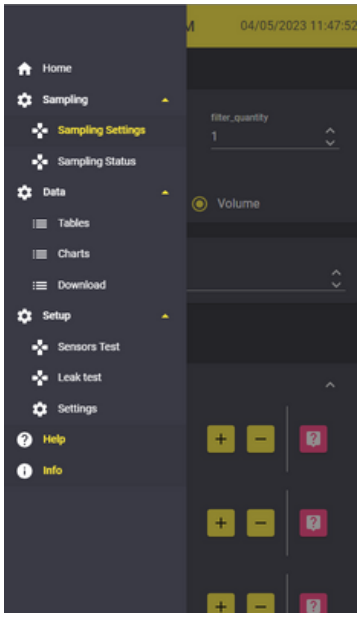
User interface has been dramatically improved with respect to all solutions currently on the market:

- Big and responsive 7" touch screen
- Incredibly easy setup of the sampling
- Prevention of mistakes due to lack of understanding of the different operational parameters: on-board guide and integrated manual

While the instrument is easy to use, it is still possible to fully customize the sampling thanks to a dedicated and advanced software:

- Time based or volume based program
- Personalized time configuration of sampling and pauses for each filter
- Automatic start at midnight
- Constant flow rate with automatic compensation
- If there is a significant pressure loss on the filter, the system registers the event and transfers the sample to the next filter, without interruption
- Optimal memory management for all sampling data; a backup battery to restart sampling in the case of power failure and to record the event also allows to avoid any data loss



# AITHER PMS

## TECHNICAL SPECIFICATIONS

| • GENERAL | |
|---|---|
| Filter storage capacity | Up to 21 filters |
| Filters diameter | 47 mm |
| **• PERFORMANCES** | |
| Pump type | Rotary vane |
| Flow rate range | 12 ÷ 70 L/min |
| Maximum vacuum | > 600 mmHg |
| Pump cooling system | Forced convection |
| Gas meter | Mass Flow Meter |
| Flow: Resolution / Accuracy | 0,01 L/min / 1,5% |
| Sampling time | Uncertainty: < 30 s/gg |
| **• USER INTERFACE AND MEMORY** | |
| Display | 7" touch screen |
| Data download interface | USB - .xlsx format |
| Interconnectivity | Router / Modem - 4G - WiFi - Ethernet port- Rest Api* |
| **• ELECTRICAL** | |
| Power supply | 230 ± 10 Vac<br>50 ÷ 60 Hz |
| Power on (standby, no sampling) | 57 W |
| Power absorbed (standby) | 840 W total |
| Power absorbed (sampling) | 420 W (Peltier On)<br>130 W (Peltier off) |
| Average daily consumption | 24 h : 3,8 kWh |
| Acoustic power | <45 dB / 8 mt |
| **• FEATURES** | |
| Protection level | IP55 |
| Control unit weight | 20 kg |
| Pump weight | 21 kg |
| **• OPTIONS** | |
| Weather parameter sensors (speed and wind direction) | |
| Stand for fixed position installation | |
| Wheels for stand | |
| Mass Flow Meter LAT certificate | |
| Automatic leak test | |

*Rest Api for connecting to third part's systems

| • SUPPLIED WITH | | | |
|---|---|---|---|
| Technical manual | | | |
| Test report | | | |
| **• TEMPERATURE SENSOR** | | | |
| | Range | Resolution | Accuracy |
| Environment | -20 ÷ +50 °C | 0,1°C | ±1°C |
| Filters | | | |
| Filters storage | | | |
| **• PRESSURE SENSOR** | | | |
| | Range | Resolution | Accuracy |
| Barometric | 800 ÷1100 mbar | 0,1 mbar | ±2 mbar |
| Vacuum (line load loss) | 0÷760 mmHg | 1 mmHg | 1% FS |

## AITHER PMS