

**mlu-recordum Environmental Monitoring
Solutions GmbH**

Werner Heisenbergstraße 4,
2700 Wiener Neustadt, Austria

Tel: +43[0]2236 22 5 71

Fax: +43[0]2236 22 5 71 – 30

Email: Info@mlu-recordum.com

www.mlu-recordum.com

www.airpointer.com

www.airpointer.tech

www.airpointer.sale

 **airpointer®**



QUICK START GUIDE

CONTENT

**SMART
COMPACT
FLEXIBLE
TURN-KEY
TYPE APPROVED**

AIR QUALITY MONITORING

**Thank you for purchasing
airpointer!**

- Safety Messages
- Step 1 – Unpacking
- Step 2 – Checking
- Step 3 – Mounting
- Step 4 – First Start Up
- Step 5 – User Interface
- Step 6 – Calibration
- The App

This is a quick start guide for your airpointer. It explains the important steps for the first operation of airpointer. Please read all the steps carefully before starting the installation of the instrument. If you need more detailed guidance and information please download the 'airpointer Manual' and/or check the website 'www.airpointer.tech' .



SAFETY MESSAGES

Throughout this guide please take the safety signs seriously. Here are the meanings of the safety signs you will see in this guiding book.



GENERAL SAFETY HAZARD: Refer to the instructions for details on the specific hazard.



CAUTION: Electrical shock hazard.



ATTENTION: Sharp surface.



ATTENTION: Device is heavy. To avoid personal injury, use several persons to lift and carry it.



CAUTION: Hot Surface Warning.



CAUTION: Ozone is a toxic gas.



CAUTION: Toxic gas! Take precautions!



ATTENTION: UV light! May cause injuries.



CAUTION: Vacuum inside the device!



ATTENTION: Do NOT dispose with ordinary trash!



RECYCLING

STEP

1



UNPACKING

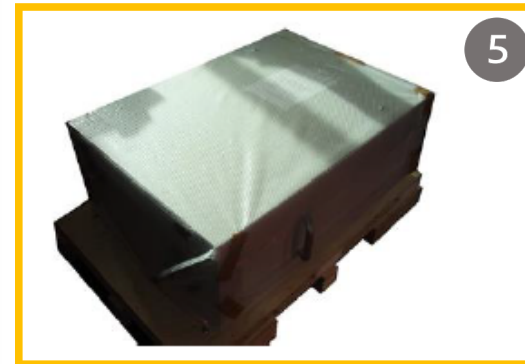




STEP 1: UNPACKING

- 1 Remove the protection foil and inspect the packages for external shipping damage.
- 2 Do NOT cut the multi-ply board box. It can be reused for later shipment. Open, lift and remove the multi-ply board box.
- 3 Store it together with wooden pallet for later reuse.
- 4 Unpack the airpointer and check for content of delivery inside the enclosed boxes.
- 5 Cut the plastic retaining bands that fixes the airpointer to the special wooden pallet
- 6 Remove the transparent plastic protection.

! Whenever you ship the airpointer, re-install the shipping screws and use the special wooden pallet and the multi-ply box which you got with the airpointer.





STEP 1 – UNPACKING

Before continuing with the next steps it is important to learn the layout of the airpointer. At various circumstances these steps will be explained over these components.

GET FAMILIAR - LAYOUT



Particle Matter Sample Inlet

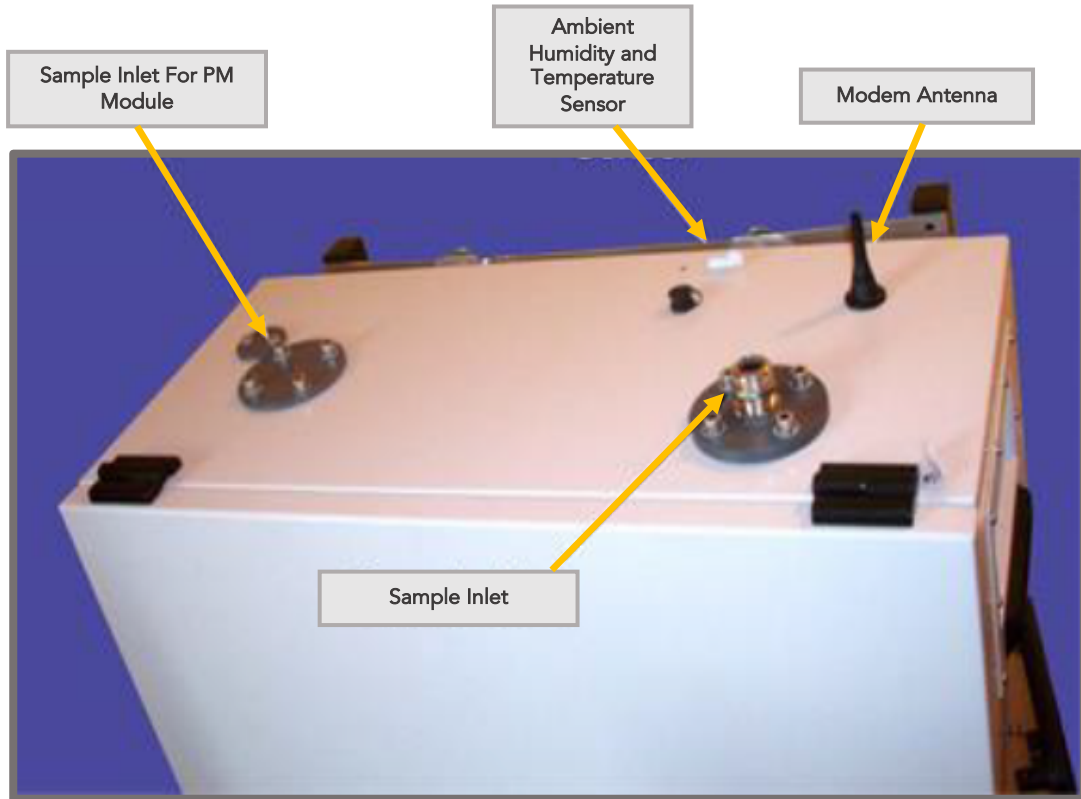
Sample Inlet

Wind Speed Wind Direction

Temperature Humidity

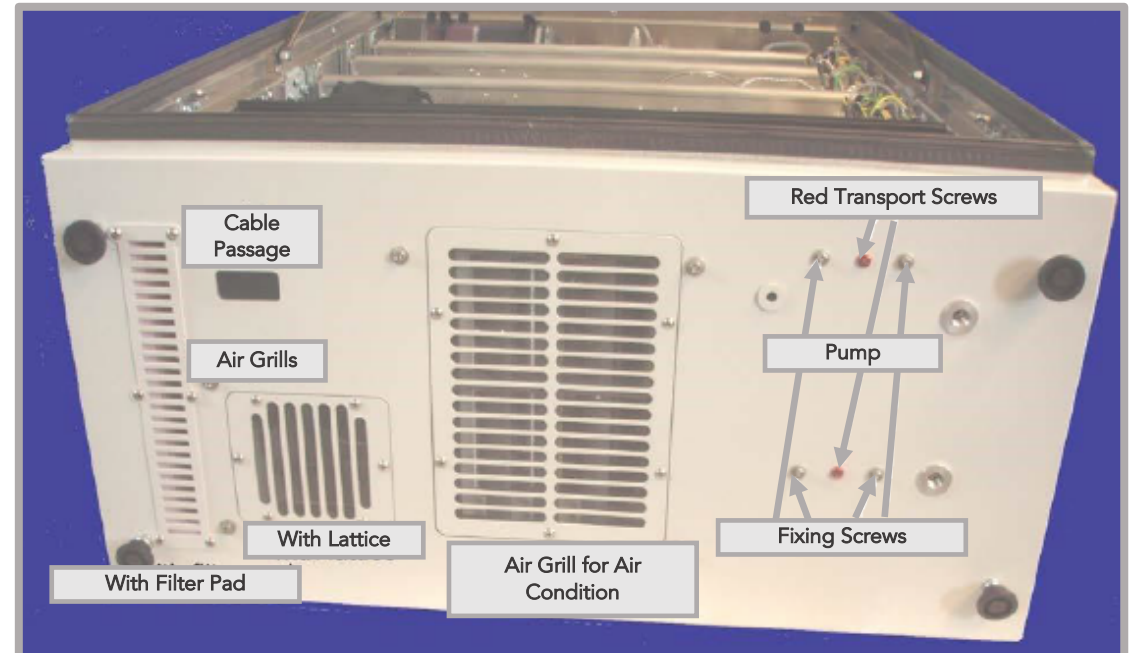


STEP 1 – UNPACKING



Top of the airpointer.

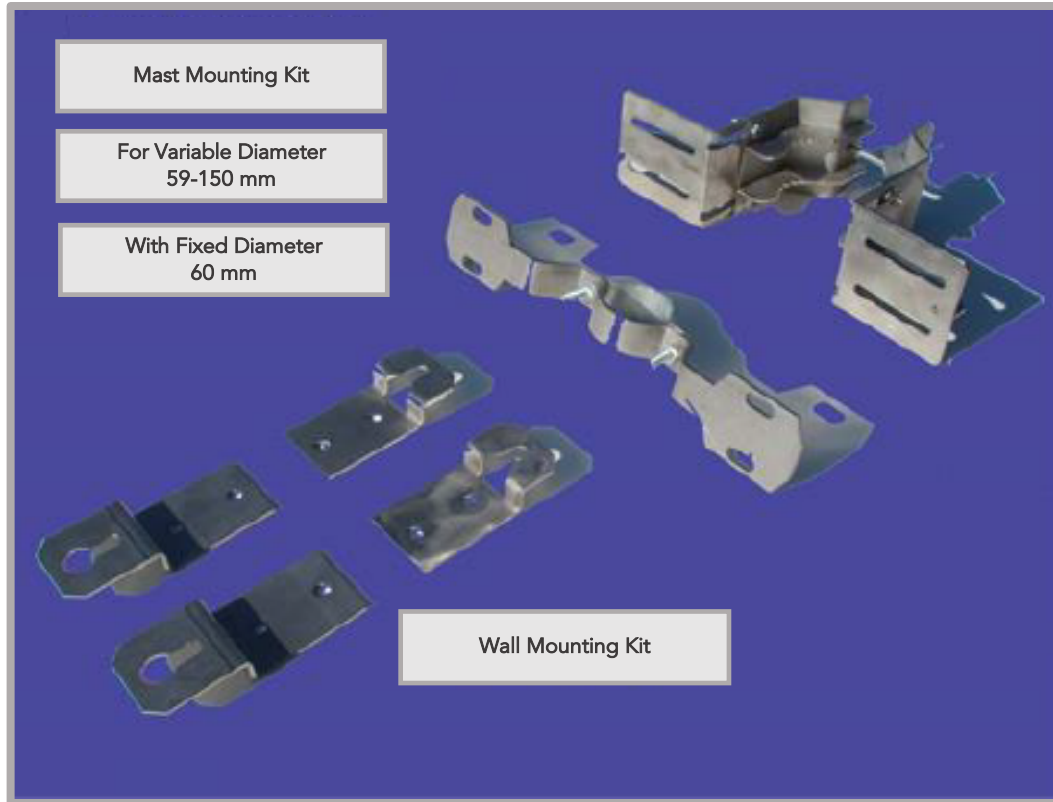
GET FAMILIAR - LAYOUT



Bottom of the airpointer.



STEP 1 – UNPACKING



Clamping claws and mounting brackets
Note: These are optional parts

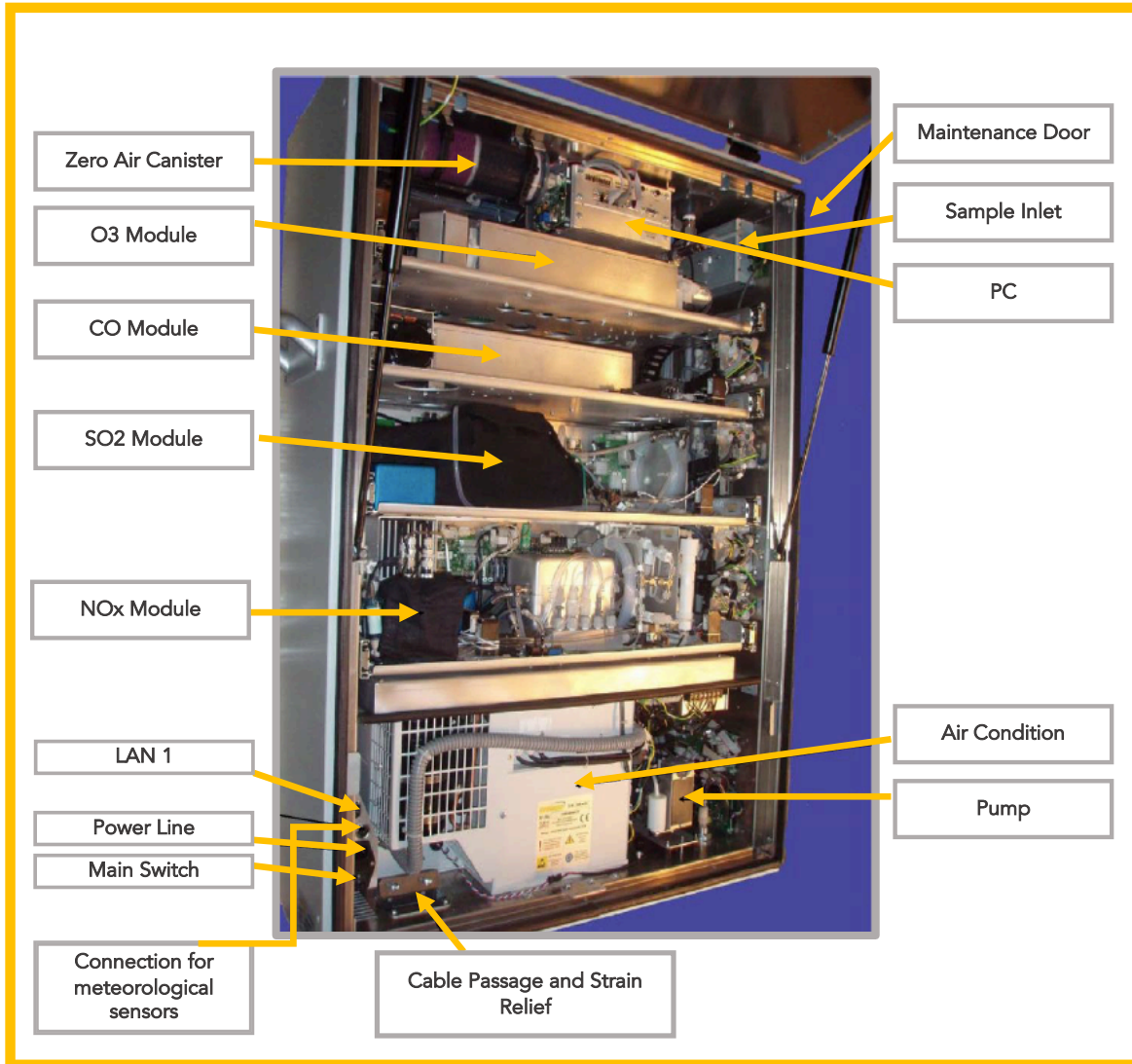
GET FAMILIAR - LAYOUT



Fixation of
mounting kit W
for wall
mounting on a
frame



STEP 1 – UNPACKING

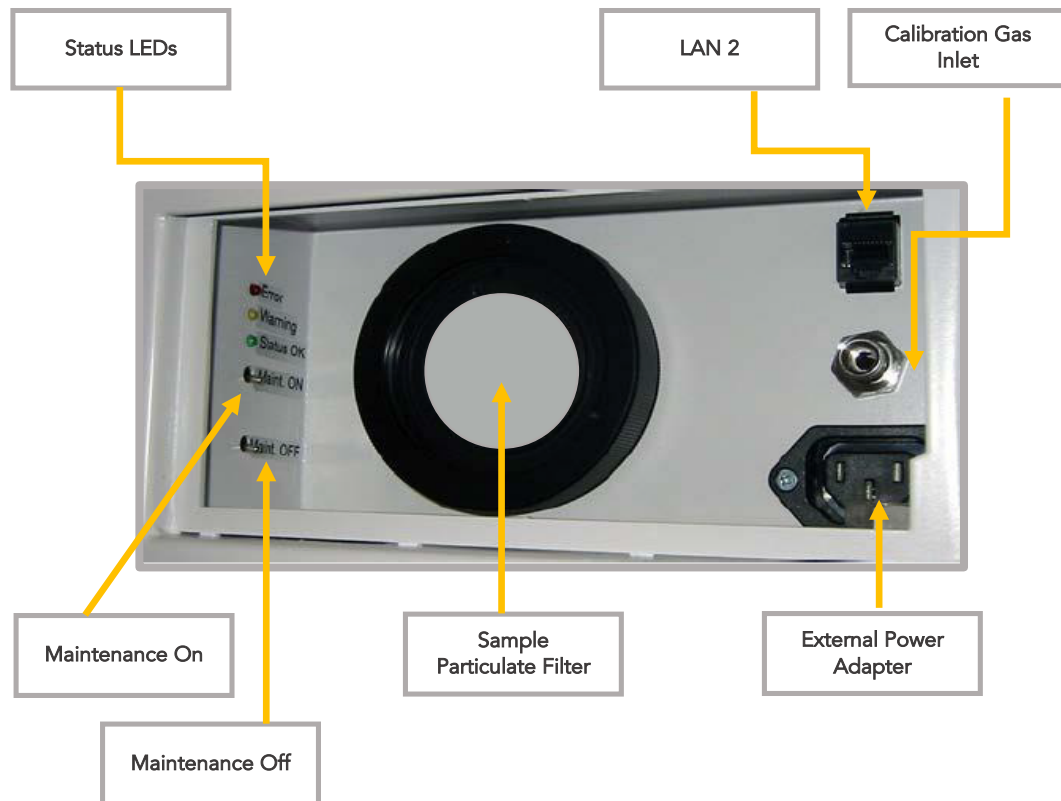


GET FAMILIAR - LAYOUT

Here the 4D airpointer model with four drawers is taken as an example. Depending on your configuration one or more of these components may not be installed.

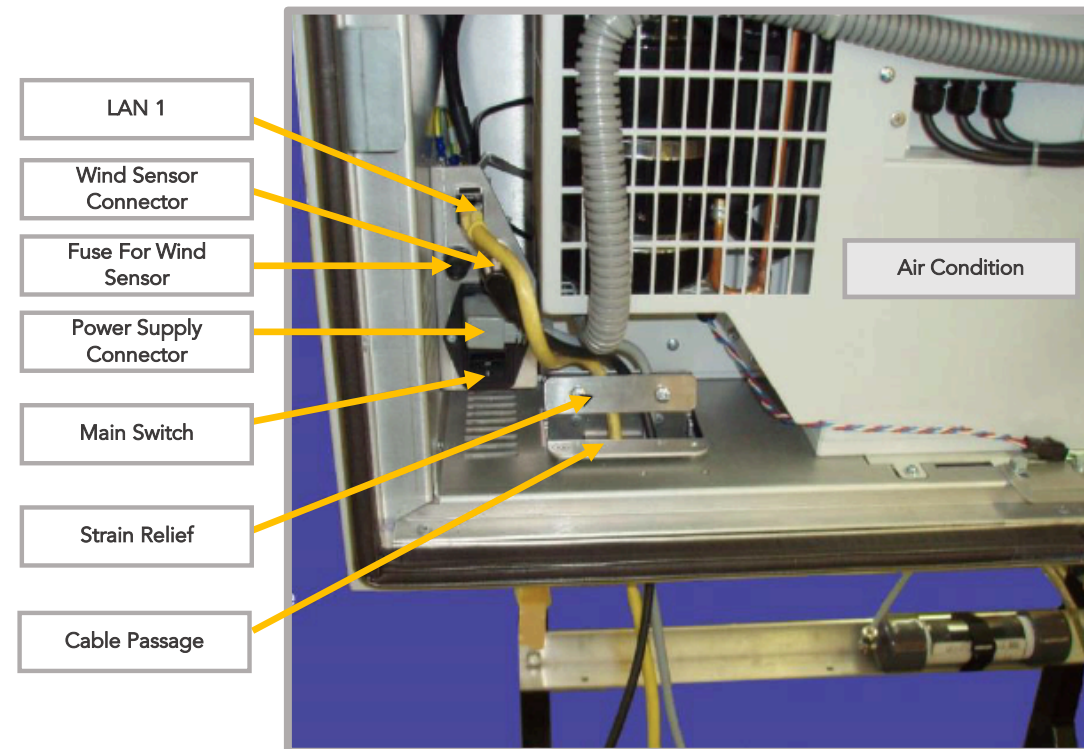


STEP 1 – UNPACKING



! The external power adapter is configured for maximum 100W and temporary use, only.

GET FAMILIAR - LAYOUT



Position of the Power Supply and Connector of the Master Switch, at the Left Bottom of the airpointer .

STEP

2



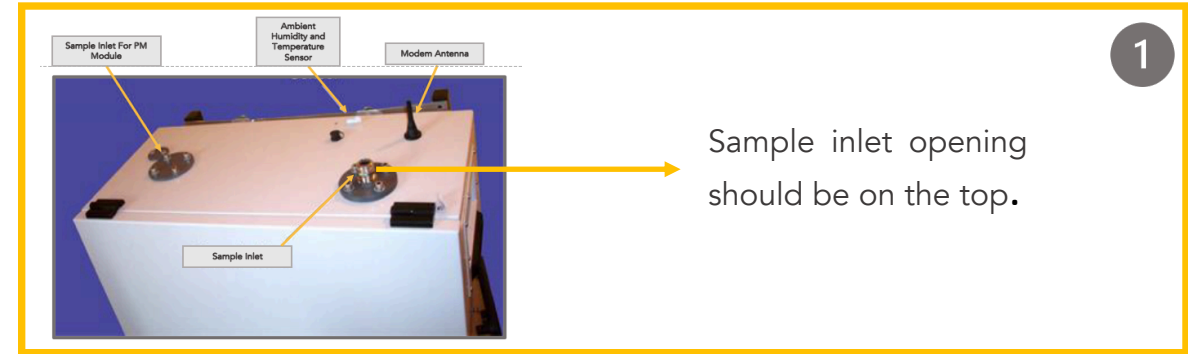
CHECKING





STEP 2 - CHECKING

- 1 The device should put in an upright position (e.g. the name 'airpointer' is readable and the sample inlet opening is on the top).
- 2 Open the main door and check for internal shipping damage.
- 3 Included with airpointer there is a printed record of the final performance characterization performed on your instrument at the factory. Preserve it.



CAUTION: The door opens with gas-pressure damper. Hold it down with one hand and open it slowly.

CAUTION: When opening the main door take care that you have enough space to open the door.

CAUTION: When an 2D or 4D airpointer with only a 1 or 2 drawers inside is opened, it could fall because the door is quite heavy.



! The included printed record is an important quality assurance and calibration record for this instrument. Please preserve it.

3



STEP 2 - CHECKING

- 4 Check the interior of airpointer to make sure all circuit boards and other components are in good shape and properly seated.
- 5 Check the connectors of the various internal wiring harnesses and pneumatic hoses to make sure they are firmly and properly seated. Verify that all optional hardware ordered with the unit has been installed. These are checked on the printed list shipped with the analyzer.
- 6 After making sure that there is no shipping damage exits, remove the two red colored shipping screws from the bottom of the pump from the outside of the airpointer before you switch on your airpointer. DO NOT reach inside the ventilation blades of the pump! Save these shipping screws.

! Close the main door and secure the airpointer if necessary.



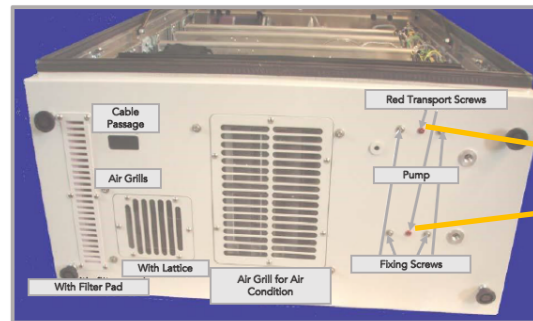
CAUTION: Printed Circuit Assemblies (PCA) are static sensitive. Electrostatic discharges, too small to be felt by humans, are large enough to destroy sensitive circuits. Before touching PCA, fasten a properly installed grounding strap to your wrist or touch a bare metal part of the housing to discharge any electrostatic potentials. Never disconnect electronic circuit boards, wiring harnesses or electronic sub-assemblies while the unit is under power.

4



CAUTION: If you modify anything inside the airpointer, check that the airpointer is unplugged!

5



Remove the red transport screws.

6

STEP

3



MOUNTING





STEP 3 - MOUNTING

! For air quality measurement, free air circulation is essential. Please refer to the requirements for selection of a good mounting site for the airpointer.

! Small corners are not recommended for the mounting area. This can cause airpointer to heat up!

! Power connection 115V/60 Hz or 230V/50 Hz, min 10A fused (depending on version) is needed at the installation site. Optionally, establishing internet connection for the airpointer preparations may be necessary.



CAUTION: Ensure the airpointer is operated in a sufficiently ventilated area. If the airpointer contains a NO_x module, its pump outlet gas contains NO₂ and – in case the ozone killer does not work properly– also ozone. If sufficient ventilation cannot be assured, connect the pump outlet via tubing to a well-ventilated area. If an airpointer with NO_x module is used indoors use a charcoal scrubber (part number: 800-201300).

! IMPORTANT

Required Ventilation Clearance and Maintenance Space:

Location	Required clearance minimum ¹
Above the instrument housing ²	≥70cm
Right side of the instrument (maintenance door) 2D/4D	≥30cm
Right side of the instrument (maintenance door) HC	≥50cm
Below the instrument 2D/4D ³	≥50cm
Below the instrument HC ³	-
In front of the airpointer 2D (main door) ³	≥88cm
In front of the airpointer 4D/HC (main door) ⁴	≥110cm

1. For air quality measurement free air-streams are essential. Please refer to local requirements for selection of a good site for the airpointer.

2. Minimum distance required for installation of the sampling head; for indoor use make sure that the clearance is large enough to allow undisturbed sampling.

3. If you have less front space, please contact your distributor for special solutions

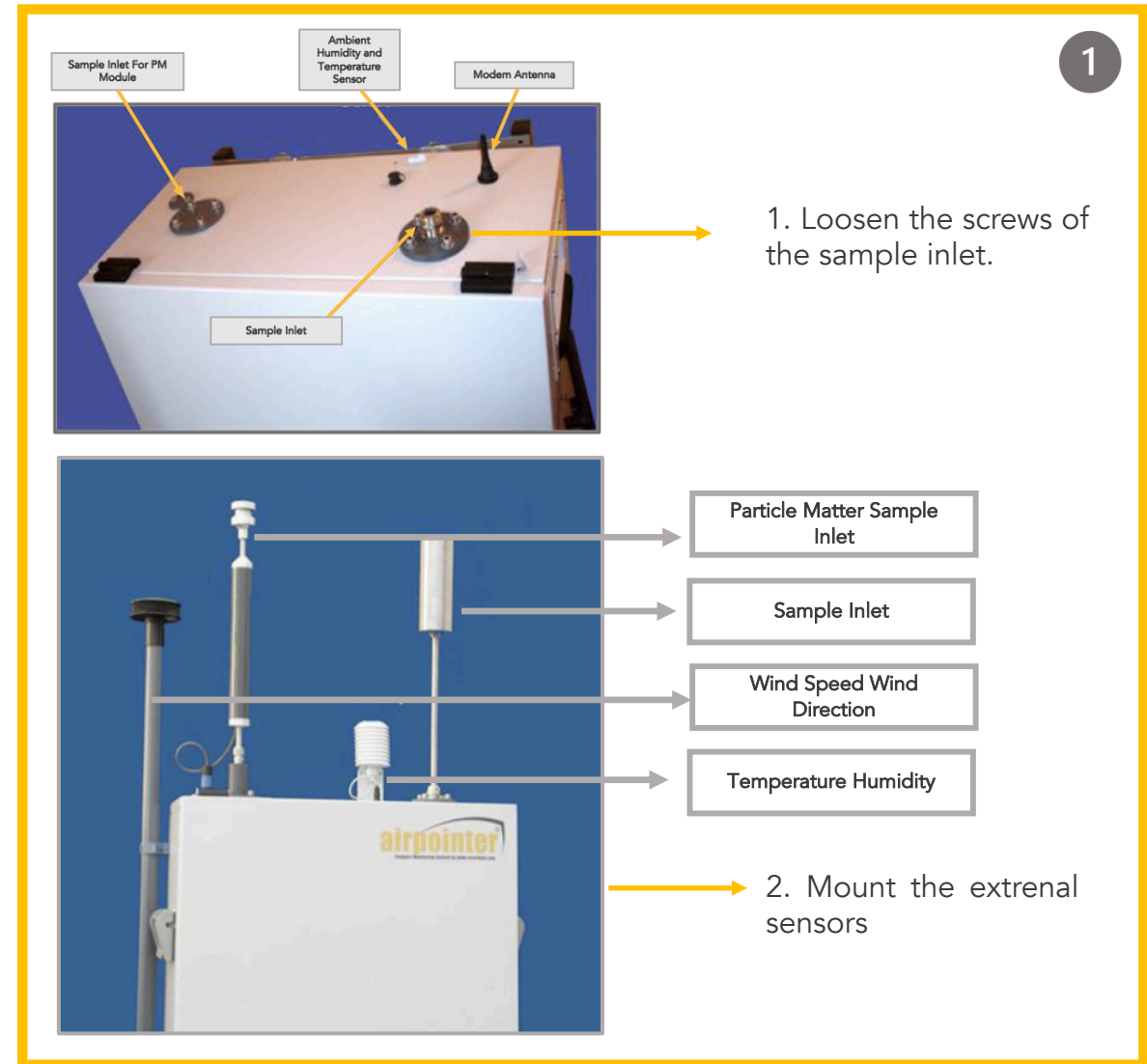


STEP 3 - MOUNTING

- 1 Loosen the screw for the sample inlet. Push the sample inlet into its final position and fasten the screw till the sample inlet cannot be rotated any more. Sample inlet location is shown on the photo on the right side. Mount all external sensors (optional) and connect them. The wind sensor is fixed with a collar on the left side, all other sensors (e.g.: humidity and temperature), the modem and the sample inlet for particle measurement are mounted and connected on the top of the airpointer.

! The Wind Sensor should be turned until it faces north.

! There are little marks on the different sensors that should face north





STEP 3 - MOUNTING

- 2 The airpointer should be mounted stationary. We recommend using one of three mounting kits available. Mounting Kit M for mast mounting (with variable or fixed diameter) and Mounting Kit W for wall mounting.

Wall Mounting Kit W: Place each of the four wall mounting kits vertically and fix them with 2 M10 washers and screws delivered with the kit.

Mast Mounting Kit M: Place each of the two mast mounting kits horizontally and fix them with 4 M10 washers and screws delivered with the kit.

Further Mounting possibilities: Please ask your distributor for additional mounting possibilities (e.g.: lift mounting and trolley).

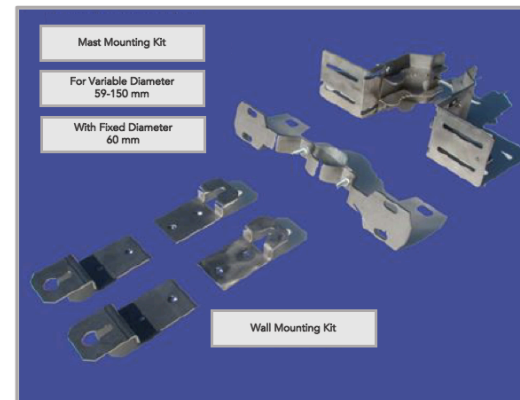
! Use the four M10 screws on the back side of the housing for Wall Mounting or Mast Mounting the airpointer, only.

! The two handles on the left and on the right side of the airpointer have only to be used for lifting the airpointer. DO NOT use these handles for permanent fixation.

! Check once again that the two red coloured shipping screws from the bottom of the pump room are already removed. If not, please do so now as showed in Step 2.



Fixation of mounting kit W for wall mounting on a frame



Clamping claws and mounting brackets

STEP

4



FIRST START UP





STEP 4 – FIRST START UP

The procedure in this section assumes that the airpointer is on site and all sensors are installed. In order to guarantee a safe and proper operation of the airpointer, several steps have to be taken before starting with Step 5 – First Start Up. For a safe installation;

! Place the airpointer always in an upright position (now the name airpointer is readable and the sample inlet opening is on the top (see also front page)).

! Let the airpointer acclimate for at least 1 hour in an upright position before Power-Up. This will avoid damaging the cooling aggregate.

SAFE INSTALLATION

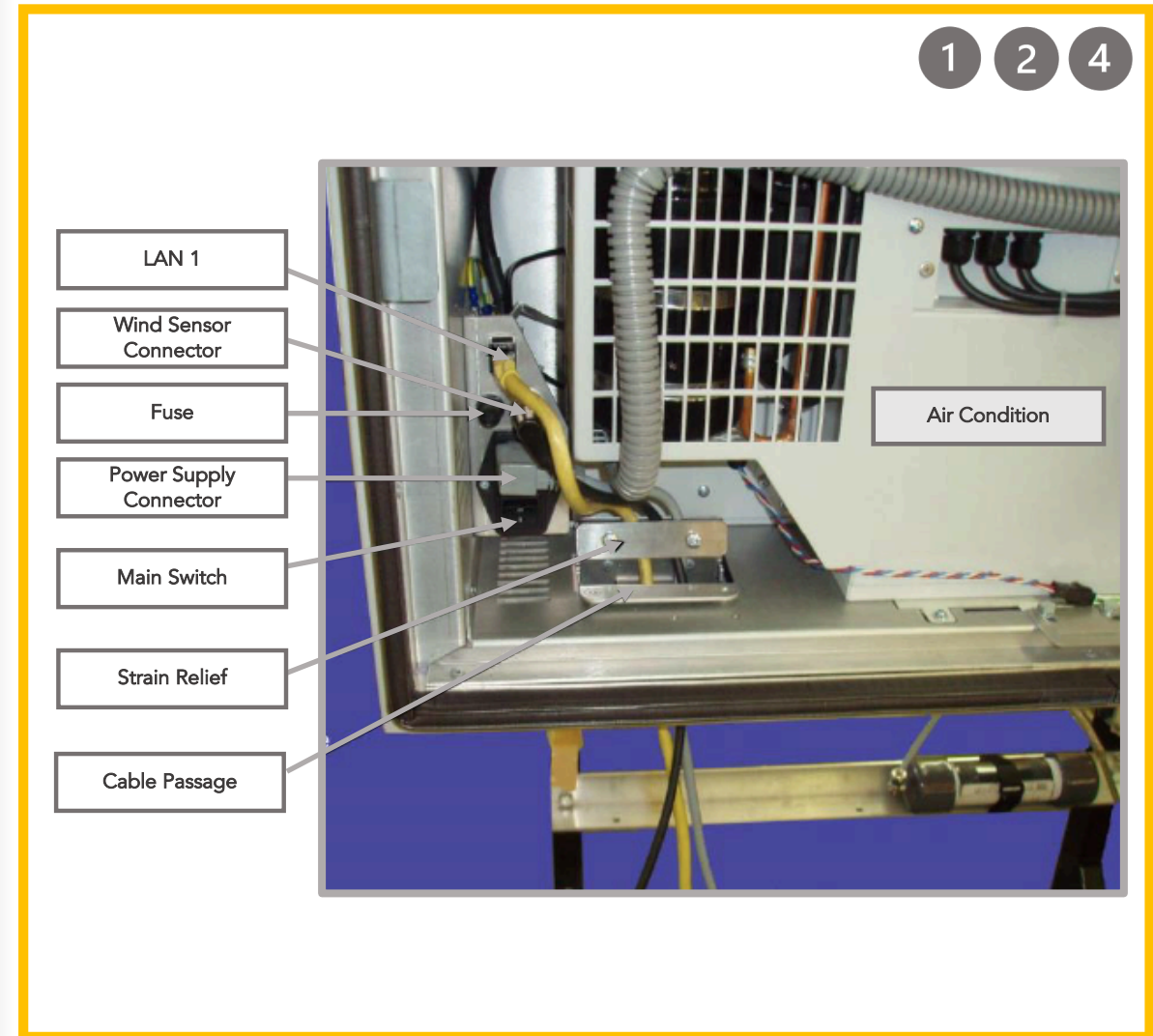
! Ensure sufficient space for air ventilation and maintenance access above, underneath, on the right side and in front of the device by following the installation hints as it is shown in Step 3 – Mounting.

! If the airpointer contains a NO_x module, its pump outlet gas releases harmful gases (NO₂, and if the scrubber does not work properly, ozone). If sufficient ventilation cannot be assured, connect the pump outlet via tubing to a well-ventilated area or use a charcoal cartridge.



STEP 4 – FIRST START UP

- 1 Open the main door. Open the cable passage and the strain relief. Lead the power line through the cable passage and connect it with the power adapter. Close the strain relief and the cable passage.
- 2 Check the power supply voltage. A power line 115V/60 Hz or 230V/50 Hz, min 10A fused (depending on version) is needed to operate the airpointer. Lead the power cord through the cable passage and connect it with the main power socket. The external power adapter in the maintenance access can be used to supply e.g. your notebook in the field (115VAC or 230VAC/1A maximum, depending on the version, max 100W).





STEP 4 – FIRST START UP

- 3 Make sure the airpointer is connected to an appropriate grounded line.
- 4 To power up the airpointer, press the Master Switch. The airpointer boots up when the internal temperature is above 5°C.
- 5 Wait a few minutes while observing the status diodes (yellow and red LEDs light) until only the green LED lights up. The LEDs are located on the left side of the maintenance access on the right side of the airpointer housing. The pump has started by now.

3



CAUTION: Do not install the airpointer in a way that emergency disruption of the power supply is obstructed.

4

! Two temperature sensors are checking the internal temperature of the airpointer. To protect the hard disk, the computer boots when the temperature is above 5°C.

5



LEDs



STEP 4 – FIRST START UP

- 6 When the **green LED** lights up, this means that the operating status is achieved.
- 7 Close main- and maintenance door.



CAUTION: When closing the main door make sure that the power cord is not crimped. Use the cable passage.

At this point the airpointer will already produce data which is stored on the internal hard disk memory.

Now the internet connection can be configured. For the first time this has to be done on site.

STATUS OF **LEDs**

At the left side of the maintenance access three Status LEDs are located. If the system is running the LEDs have a definite status.

Green: Everything is running normally, no warning.

Orange: There is at least one warning.

After the login you can see next to the name of your airpointer 'WARN' written in black letters. Click 'WARN' and a window with detail information will be open. Alternatively, you can open the 'LinSens Service Interface'. If you open a new window in the User Interface the sign is updated.

Red: There is at least one errors(fail).

After the login you can see next to the name of your airpointer 'FAIL' is written in black letters. Click 'FAIL' and a window with detail information will be open. Else you can open the 'LinSens Service Interface'. If you open a new window in the User Interface the sign is updated.

Flashing: The LEDs are flashing when the airpointer is operating in the maintenance mode. The color code is the same as described above.

All Three Light Up: The airpointer is shutting down.

STEP

5



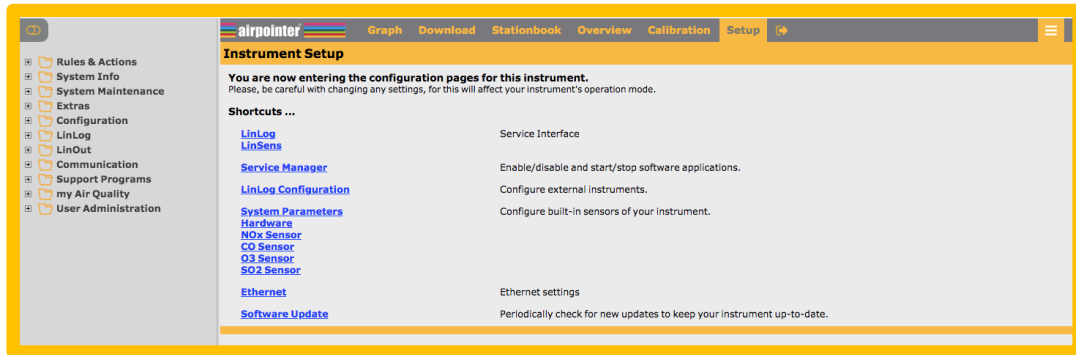
USER INTERFACE





STEP 5 – USER INTERFACE

The User Interface of your airpointer is completely implemented in the software and all you need is a web browser! In terms of networking, the airpointer can be regarded as a server providing special services by its various connectors.



The connection with airpointer ;

- ✓ can be established directly with a cross patch cable,
- ✓ can be established as member of a local network,
- ✓ or can be established over an Internet connection.

BEFORE STARTING

Supported web browsers are listed below:

For Microsoft Windows™

Internet Explorer (version 11 or above)
Mozilla Firefox (version 52 or above)
Google Chrome (version 57 or above)

For Linux

Mozilla Firefox (version 11 or above)

For Mac OS

Mozilla Firefox (version 11 or above)
Safari (version 9 or above)

! Java Script must be activated on your web browser.

! It might also be possible to use other browsers like e.g. Opera

! Older versions of the mentioned browsers might work as well, but these may not display the website 100% correctly.



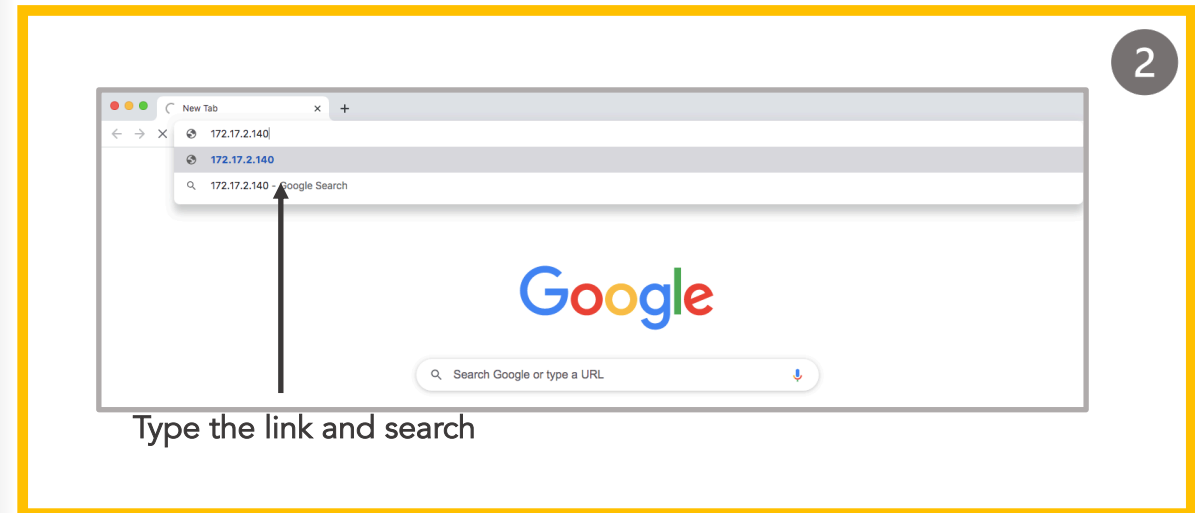
STEP 5 – USER INTERFACE

- 1 Make sure the airpointer is up for at least 3 minutes to have the internal computer running. Connect your Laptop with the delivered cross patch cable with the LAN connector in the maintenance door and power it up.



- 2 The Laptop will now receive an IP address from the airpointer. Open a browser and type in the address/URL bar:

172.17.2.140





STEP 5 – USER INTERFACE

- 3 For login to the 'user interface' you have a preconfigured username and password, which is:

User: admin Password: 1AQuality

IMPORTANT

! The login data are transmitted encoded to guarantee a save data handling. Now it is up to you to have your data safe.

! All airpointer users know this password and can connect to your airpointer and play around your instrument and its data. For safety reasons change the password for admin **IMMEDIATELY!!!**

How to change the admin password is explained in the next steps.

3

The screenshot shows the 'mlu-recordum airpointer' web interface. On the left, there is a 'Login to Station Garden Airpointer' form with fields for 'User' and 'Password'. Below the form is a small image of the airpointer device. On the right, there is a 'Product Details' section with the following information:

Software Version	2.4.106.a
LinSens	2.282c 26.Jan 2021
Analytical Module	1.001 22.Apr 2008
LinLog	2.264 20.Jan 2021

Installed Sensors	AQI Index Clima FCAC CO LinSched MultiGas_1 MultiPM NOx O3 SO2 System WS600-UMB
-------------------	---

Serial Number	2020-00723
Eth0	172.19.11.71
Current Time	11:46:07 (Feb, 14th 2021)

Below the screenshot, an arrow points from the text 'Username and Password' to the login form.

Username and Password



- ! Guidelines for the password are important. Please follow them when choosing a new password.

- 5 After changing the password , log out and relogin to activate the new password.

6. Relogin

! Guideline for the password



STEP 5 – USER INTERFACE

Connecting your laptop with the airpointer via the Recordum portal:

NOTE: This is available only after the you have configured the modem and/or the system LAN setup!

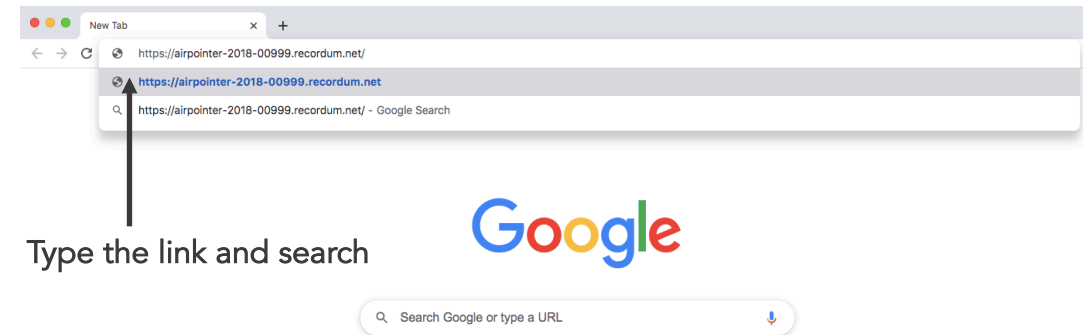
Write the link below on your web browser and search.
The link for the airpointer user interface is the following:

<https://airpointer-YYYY-00123.recordum.net/>

The first 4 digits show the year the airpointer was produced, and the following 5 are the serial number of your airpointer. For example for an airpointer that was produced in 2018 with the serial number '999', the link should look like;

<https://airpointer-2018-00999.recordum.net/>

! Make sure that you can log in as an administrator at your laptop and at the airpointer.





STEP 5 – USER INTERFACE

- 6 After the relogin to the interface, see the red error message that is on the top of the page. In the User Interface, deviations of the measurement values outside the chosen warning and failure limits are shown. Do not click on the error message at this point.

! The fail or warn sign is shown as red FAIL and orange WARN, respectively, overhead in the User Interface. (If you click the sign you will get to the LinSens Service Interface with further details (LinSens is later explained) . Failure messages are written in red and warn messages in orange.)

Message Colour Meanings:



FAILURE



WARNING

6

airpointer

There are errors! Click me to check the state.

Personal Settings

Ok, changes successfully saved; You need to relogin to activate changes

General Settings

Language: English

Default module for startup: Setup

Layout: Default

Set New Password

☐ Change password now?

Old password: *****

New password: *****

Retype password: *****

Save

Error Message in Red



STEP 5 – USER INTERFACE

- 7 Wait until all warn and fail signs cease in the interface. This might require 15 to 30 minutes depending on the configuration. Then the green LED in the maintenance door lights and the airpointer is ready for operation.

- 8 Check the measured values on the interface, whether they are plausible (especially the temperature). All values should be within the chosen limits.

Green LED: Status OK



7

! The value -9999,0 is equivalent to a non-existing or inoperative value, analogue to MS Excel.

8



STEP 5 – USER INTERFACE

You can read this part before or after the first operation of your airpointer and later explore the user interface. More information on the User Interface can be found on the <https://www.airpointer.tech/manuals/> or www.airpointer.tech.

In the User Interface you will find the modules below;

Graph: It enables the presentation of measurement signals

Download: In the module Download selected measurement data can be downloaded in chosen time frame. The download configuration can be saved locally.

Stationbook : This module provides a notepad for you.

Overview: This module is designed to give a quick summary of selected parameters. You can see your device's measurement data at a glance.

GET FAMILIAR - USER INTERFACE

Calibration: The module 'Calibration' provides you with the items "'Valve Control'" and "'Calibration'". With "'Valve Control'" the valves of the internal zero measurement and the internal span control (optional) can be controlled. In the menu "'Calibration'" the setpoints for the calibration can be set and the calibration can be tracked.

Setup: The module 'Setup' provides system information, configuration of sensors, system and interfaces of the airpointer. Furthermore, user management of the User Interface to the airpointer is available here.

Menu: Menu for each module can be found on the right top side of the page and it is shown with 3 lines.

Log Out: Click this tab to leave the User Interface of airpointer



STEP 5 – USER INTERFACE

Two important sub-sections on the User Interface are LinSens and LinLog. Let's get to know these two sections before moving forward.

1 We reach these two sub-sections from 'Setup'. LinLog Service Interface provides current data of airpointer's logger. Clicking the link displays the LinLog Service Interface in a new window. (You can also reach the site, if you write your airpointer's IP-address/linlog into your browser's address bar.) What you will find in LinLog's sub-sections:

Home : This is the homepage with reference to the manufacturer.

Raw Values : Read in current values, arranged in groups.

Actual Values: Computed current values, arranged in groups.

Calibration: Choose group of calibration values

Average 1: Averaging of the computed current values for average 1, arranged in groups.

Average 2

Average 3

Software: This page shows you some software parameters like software version number.

RS232: Here you can check the communication via the COM ports.

GET FAMILIAR - USER INTERFACE LINSSENS AND LINLOG

1

The screenshot shows the Airpointer web interface. The top navigation bar includes 'Graph', 'Download', 'Stationbook', 'Overview', 'Calibration', and 'Setup'. The 'Setup' menu is expanded, showing a list of sub-sections: 'LinLog', 'LinSens', 'Service Manager', 'LinLog Configuration', 'System Parameters', 'Hardware', 'NO₂ sensor', 'CO₂ sensor', 'O₃ sensor', 'SO₂ sensor', 'Ethernet', and 'Software Update'. Below the menu, there is a table with two columns: 'Shortcuts ...' and 'Description'. The table lists the following shortcuts and descriptions:

Shortcuts ...	Description
LinLog	Service Interface
LinSens	Enable/disable and start/stop software applications.
Service Manager	Configure external instruments.
LinLog Configuration	Configure built-in sensors of your instrument.
System Parameters	
Hardware	
NO ₂ sensor	
CO ₂ sensor	
O ₃ sensor	
SO ₂ sensor	
Ethernet	Ethernet settings
Software Update	Periodically check for new updates to keep your instrument up-to-date.

2.LinSens and LinLog

1.Setup

LinLog Service Interface,

Home Raw values Actual Calibration Average.1 Average.2 Average.3 Software RS232 USB List

Star Page

Welcome to the start page of the logging part of your device. This page gives the operator the opportunity to check raw and actual values, automatically updated every some seconds. If you are accidentally on this page, be aware that the values displayed here are not final values, they can be easily interpreted in a wrong way!

Software Version: 2.264 20.Jan 2021

This document is generated by Intlog, the logging part of the iOSy system
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Sub-sections in LinLog

LinLog



STEP 5 – USER INTERFACE

- 2 The LinSens Sensor Service Interface provides current sensors data of the airpointer. Clicking one of these links will open the LinSens Sensor Service Interface in a new window. The first line shows the operation mode of the airpointer. Normal operation in black letters means everything is functioning well. Normal operation in red letters additionally displays the values considered to be faulty.
- 3 Let's choose sensor NOx here (you can see all the sensors and also the system values in the same way). You will see the current data of the sensor module NOx. Colour codes in LinSens will inform you about the warnings, values that exceed the limit or maintenance warnings. If all the values are normal and there is no warning/error then you will see these data in green. Here are the meanings of the colours and examples:

Green	OK
Yellow	WARNING
Orange	MAINTENANCE
Red	ERROR

GET FAMILIAR - USER INTERFACE LINSSENS AND LINLOG

23

LinSens Service Interface [Garden Airpointer],

Home Actual Average Calibration NOx CO Q3 SO2 MultiPM MultiGas 1 System Values Status StatList Software Hardware RS232

Start Page

Welcome to the start page of the sensing part of your device. This page gives the operator the opportunity to check raw and actual values, automatically updated every some seconds
If you are accidentally on this page, be aware that the values displayed here are not final values, they can be easily interpreted in a wrong way!

Software Version: 2.282c 26 Jan 2020

This document is generated by linsens, the sensor part of the r05s system. Copyright by www.mlu-recordum.com

Sub-sections in LinSens

LinSens 1. NOx

LinSens Service Interface [Garden Airpointer], -> please check, you have warnings (1)

Home Actual Average Calibration NOx CO Q3 SO2 MultiPM MultiGas 1 System Values Status StatList Software Hardware RS232

WARNINGS

Note: "9999" is displayed for a missing value.

NO 16.7 ppb
NO2 16.9 ppb
NOx 33.6 ppb

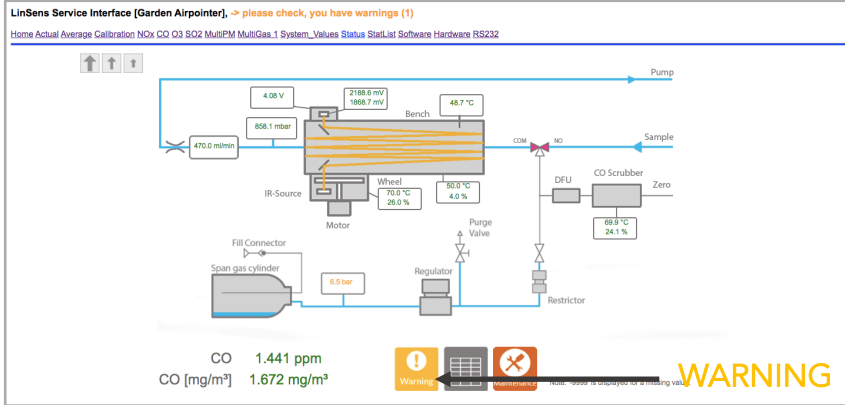
OK

MAINTENANCE

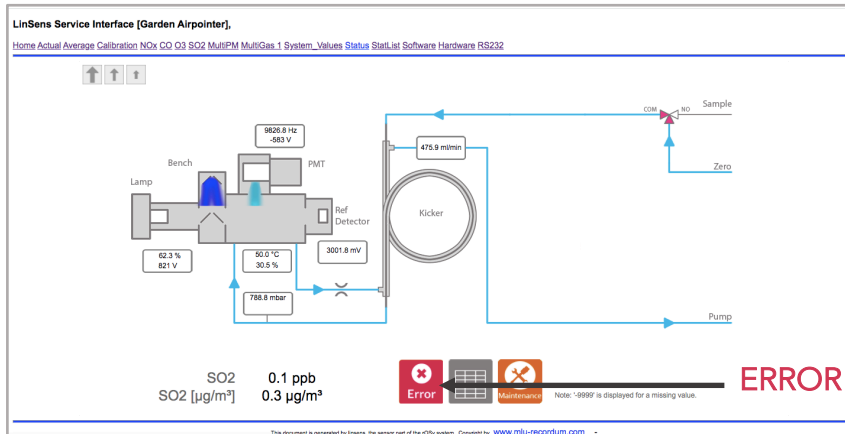
NOx data in green, OK
It's in the limits



STEP 5 – USER INTERFACE



Example:
CO
Sensor



Example:
SO2
Sensor

GET FAMILIAR - USER INTERFACE LINSSENS AND LINLOG

Some other sub-sections are in LinSens are 'Actual System Values', 'Average values' and 'Status'. Here you will see the real time or average data on your sensors.

LinSens Service Interface [Garden Airpointer], -> please check, you have warnings (1)

Home Actual Average Calibration NOx CO O3 SO2 MultiPM MultiGas 1 System_Values Status StatList Software Hardware RS232

Status

Number	Status	since	Parameter	Actual	Average	Unit	lower limit fail	lower limit warn	upper limit warn	upper limit fail
1	Warning	20210215 08:07:16	CO_cylinder	6.7	6.6	ppm		100	200.0	
2										
3										

Warning on CO sensor

Status

LinSens Service Interface [Garden Airpointer], -> please check, you have warnings (1)

Home Actual Average Calibration NOx CO O3 SO2 MultiPM MultiGas 1 System_Values Status StatList Software Hardware RS232

Actual Values

Number	Parameter	Value	Unit	Status	Time	N
CO1PM	NO	12.2	ppm	0.0	20210215 11:02:29	1
CO1PM	NO2	1.2	ppm	0.0	20210215 11:02:29	2
CO1PM	NOx	23.8	ppm	0.0	20210215 11:02:29	3
CO1PM	CO	1.482	ppm	0.0	20210215 11:02:27	4
CO1PM	CO [mg/m³]	1.881	mg/m³	0.0	20210215 11:02:27	252
CO1PM	O3	0.3	ppm	0.0	20210215 11:02:29	5
CO1PM	CO [µg/m³]	88.8	µg/m³	0.0	20210215 11:02:29	253
CO1PM	SO2	0.1	ppm	0.0	20210215 11:02:27	6
CO1PM	SO2 [µg/m³]	0.4	µg/m³	0.0	20210215 11:02:27	254
CO1PM	PM10	11.4	µg/m³	0.0	20210215 11:02:29	1118
CO1PM	PM2.5	27.8	µg/m³	0.0	20210215 11:02:27	1120
CO1PM	SO2	4.0	ppm	0.0	20210215 11:02:27	1200
CO1PM	NO	-1.0	ppm	0.0	20210215 11:02:27	1201
CO1PM	NO2	6.0	ppm	0.0	20210215 11:02:27	1202
CO1PM	O3	0.1	ppm	0.0	20210215 11:02:27	1203
CO1PM	O3 [µg/m³]	0.0	µg/m³	0.0	20210215 11:02:27	1204

Actual
Values

LinSens Service Interface [Garden Airpointer], -> please check, you have warnings (1)

Home Actual Average Calibration NOx CO O3 SO2 MultiPM MultiGas 1 System_Values Status StatList Software Hardware RS232

Average 1

Number	Parameter	Value	Unit	Status	Time	N
CO1PM	NO	12.2	ppm	0.0	20210215 11:02:29	1
CO1PM	NO2	1.2	ppm	0.0	20210215 11:02:29	2
CO1PM	NOx	23.8	ppm	0.0	20210215 11:02:29	3
CO1PM	CO	1.482	ppm	0.0	20210215 11:02:27	4
CO1PM	CO [mg/m³]	1.881	mg/m³	0.0	20210215 11:02:27	252
CO1PM	O3	0.3	ppm	0.0	20210215 11:02:29	5
CO1PM	CO [µg/m³]	88.8	µg/m³	0.0	20210215 11:02:29	253
CO1PM	SO2	0.1	ppm	0.0	20210215 11:02:27	6
CO1PM	SO2 [µg/m³]	0.4	µg/m³	0.0	20210215 11:02:27	254
CO1PM	PM10	11.4	µg/m³	0.0	20210215 11:02:29	1118
CO1PM	PM2.5	27.8	µg/m³	0.0	20210215 11:02:27	1120
CO1PM	SO2	4.0	ppm	0.0	20210215 11:02:27	1200
CO1PM	NO	-1.0	ppm	0.0	20210215 11:02:27	1201
CO1PM	NO2	6.0	ppm	0.0	20210215 11:02:27	1202
CO1PM	O3	0.1	ppm	0.0	20210215 11:02:27	1203
CO1PM	O3 [µg/m³]	0.0	µg/m³	0.0	20210215 11:02:27	1204

Average 2

Number	Parameter	Value	Unit	Status	Time	N
CO1PM	NO	12.2	ppm	0.0	20210215 11:02:29	1
CO1PM	NO2	1.2	ppm	0.0	20210215 11:02:29	2

Average
Values

STEP

6



CALIBRATION





STEP 6 – CALIBRATION

The airpointer must be calibrated at the time of installation and recalibrated as necessary.

! To ensure that high quality, accurate measurement information is obtained at all times, the airpointer must be calibrated prior to use.

! The airpointer should be in operation for at least several hours (preferably overnight) before calibration so that it is fully warmed up and its operation has stabilized.

! A calibration should only be carried out if you have sufficient time!

! Please check that you have administrator rights on the airpointer.

When should you perform calibration?

- ✓ upon initial installation
- ✓ following physical relocation
- ✓ after any repairs or service that might affect its calibration
- ✓ following an interruption in operation of more than a few days
- ✓ upon any indication of analyzer malfunction or change in calibration
- ✓ at some routine interval

Here we will only discuss the calibration upon initial installation which is the calibration of the modules. Initial Calibration, Hardware Calibration and PMT Calibration have already been factory made!



STEP 6 – CALIBRATION

- 1 You should be logged in to the User Interface. Select 'Calibration'. You will get two subsections as described below.

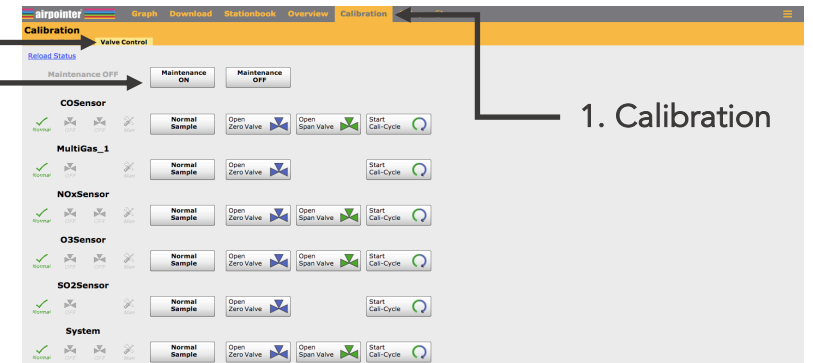
Valve control
Calibration

- 2 Select 'Valve Control' and press 'Maintenance On' button. You can also activate the maintenance mode by pressing the switch 'Maintenance On' that is in the maintenance door for 10 seconds, the respective status LEDs will change from constant to flashing light.

1

2

2. Valve Control
3. Maintenance On



1. Calibration

Alternative:
Maintenance
On



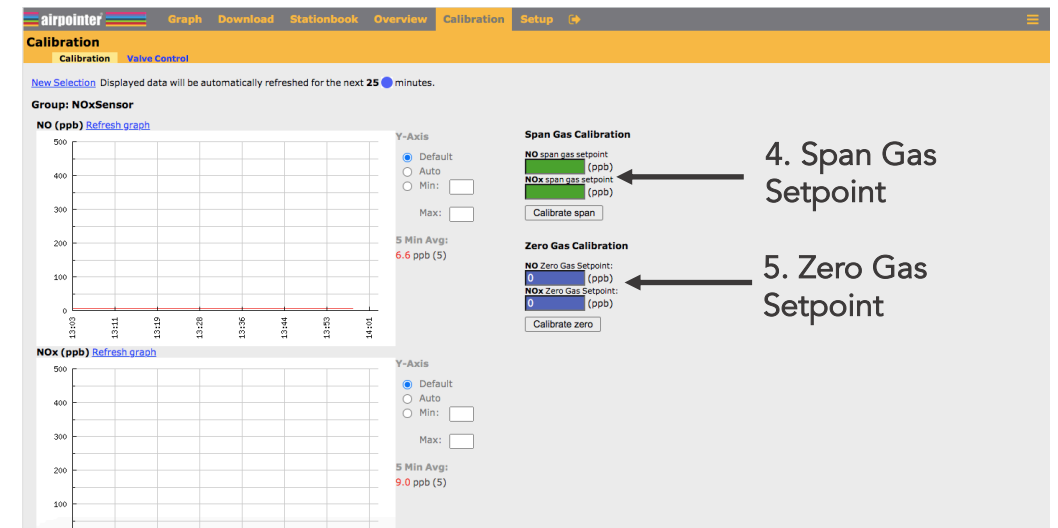
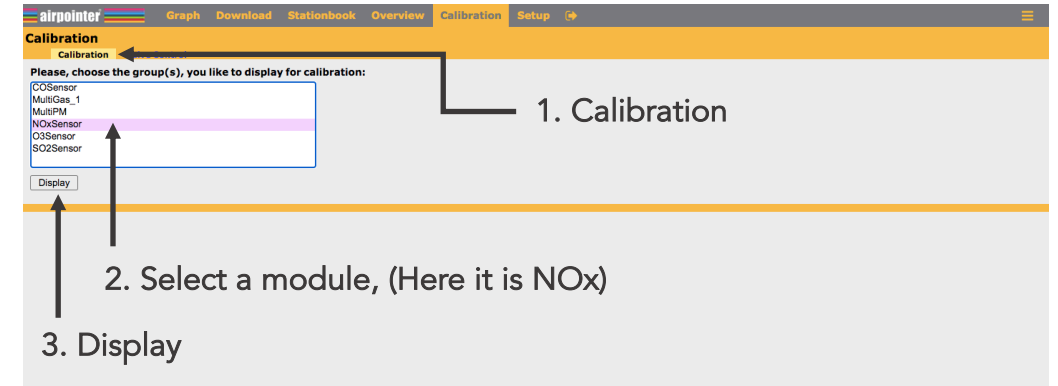


STEP 6 – CALIBRATION

3 After switching on the maintenance mode click on 'Calibration' button that is next to the 'Valve Control'. Here you can choose the gas module you want to do calibration on and then click 'Display'. Fill in the setpoint of your span gas in 'span gas setpoint' in given concentration. Fill in the setpoint of the external zero gas in 'zero gas setpoint' in given concentration.

! For zero point measurement use external zero air. It can be connected in the same way as span gas.

3





STEP 6 – CALIBRATION

- 4 Apply span gas to the airpointer according to the possibilities stated (**How to apply the span gas to the airpointer is explained in the next page**). Select the gas flow needed for your airpointer using the table on the right side. Apply each span gas, wait for a stable measurement signal (about 10 to 15 minutes). The measurement graph is shown on this site. When the measurement signal is stable, accept the calibration values by clicking 'calibrate span'.

Calculation: The sum of the required span gas flow is calculated by the sum of the flows for the modules installed in your airpointer plus the addition of an excess of 300ml/min. For example: Your airpointer has a O3 and SO2 module installed. The required span gas flow is therefore: 550 (O3) + 550 (SO2) + 300 (excess) = 1400ml/min. This value should be checked using your calibrated flow meter.

! In the LinSens Service Interface 'Actual' values are updated almost every second and therefore a more precise observation is possible there. The results of your settings can be observed immediately.

4

Module	Sample Flow [ml/min]
O3	1000
CO	500
SO2	500
NOx	1000
+Excess	300

Calibration Gas Flows



STEP 6 – CALIBRATION

How to apply span gas or zero air to the airpointer ?

External, using the span gas inlet at the maintenance door, Swagelok 1/4"

The span gas tube is screwed to the Swagelok 1/4". There is an internal T-piece for bypass for pressure compensation of the span gas. Thus, span gas flows through the T-piece to the sampling filter and further on to the sensors.

External, using the sampling hat

In this case, the complete sampling system is included. Applying span gas is done by a hood which is put on the sampling hat. *Please contact your distributor if you want to work in that way.*

For applying zero air you can also use airpointer's internal zero air supply but this is only for the use on function control.

! Dot NOT calibrate with the internal span sources ! The internal span sources are made for stability/function check only.

4

5



Applying Calibration Gas to the airpointer



STEP 6 – CALIBRATION

5 Next, apply zero air externally to the respective sensor. Again, wait for a stable measurement (about 10 to 15 minute) and then accept the calibration value (click 'calibrate zero'). Apply each span gas, wait for a stable measurement signal (about 10 to 15 minutes) and then accept the calibration values. Repeat this procedure until the zero point deviation is within the required calibration tolerance. Calibration values are automatically stored.

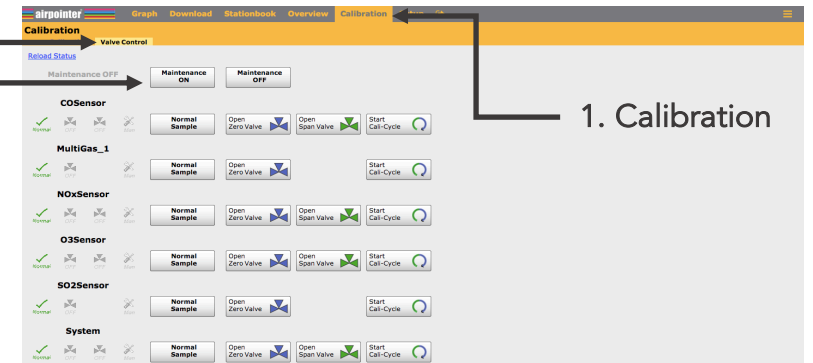
6 Set the Maintenance Mode to 'Off', either by pressing the switch Maintenance Off that is in the maintenance door for 10 seconds (until the LEDs do not blink but only light) or by selecting Calibration → Valve Control → Maintenance Off buttons in the User Interface.

Depending on your chosen calibration philosophy the person responsible for calibration will accept the calibration factors either on-site or remotely with the opportunity to access the airpointer using the Internet. To gain stable measurement values, the system should run at least five to ten minutes.

The calibration of the airpointer is finished. Now you can start measuring! If you also would like to learn how to use 'the airpointer App' continue with the next page.

5 6

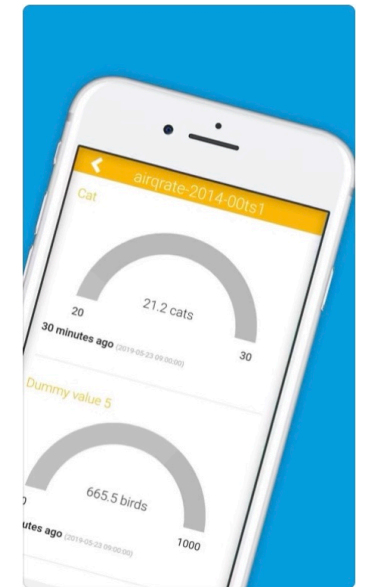
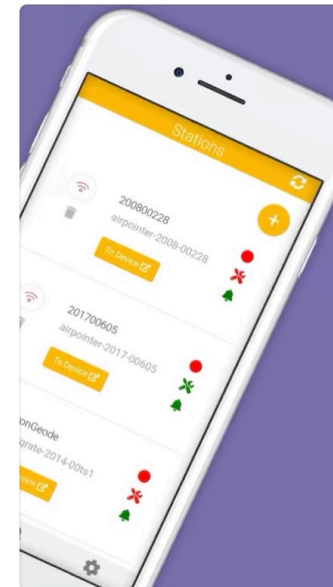
2. Valve Control
3. Maintenance Off



Alternative:
Maintenance Off



THE APP





THE AIRPOINTER APP

The airpointer App is a great tool for you that gives you the chance to monitor each of your airpointers, helping you to get an overview of the system status, all measurements and the potential alarms.

You should first download the app on Apple Store or Google Play Store.

How does it work?

- 1 Each user of the app has to be registered as user at the airpointer.
- 2 Each person needs to have their user account. For example if your name is John Franks create a new user as 'JohnF'. And then Log in on the User Interface with your new login (as in the example JohnF).
- 3 Next click on Setup > Menu > Supported Programms > Enroll in the App. You will see some debug messages and 'Successfully enrolled your station!' in the last line.

3

1.Setup

2.Menu

3.Support Programms

4.Enroll in the App



THE AIRPOINTER APP

4 Since you are an admin in the user interface you can choose which users at the airpointer interface can use the App. Go to User Administration > Groups > Selected > Allowed to use App Program > Save

5 Now let's connect the App on your smartphone with your airpointer. Follow the steps: > Support Programs > app_program_use

5

1.Support Programms

2. app_program_use

QR Code

System ID: airpointer-2020-00723

System Token: 9e7g14wpr12ru2ky31jqxbv13

Your User Token: symfhabqto2s9qr4eeagp3v1

4

1.User Administration

2.Groups

3. Selected

4. Allowed to use App Program

5. Save

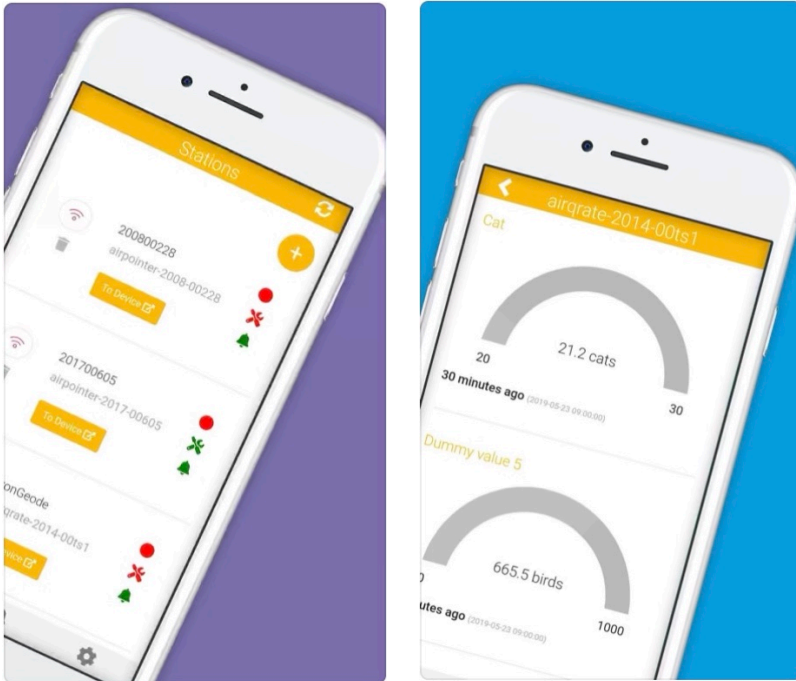


THE AIRPOINTER APP

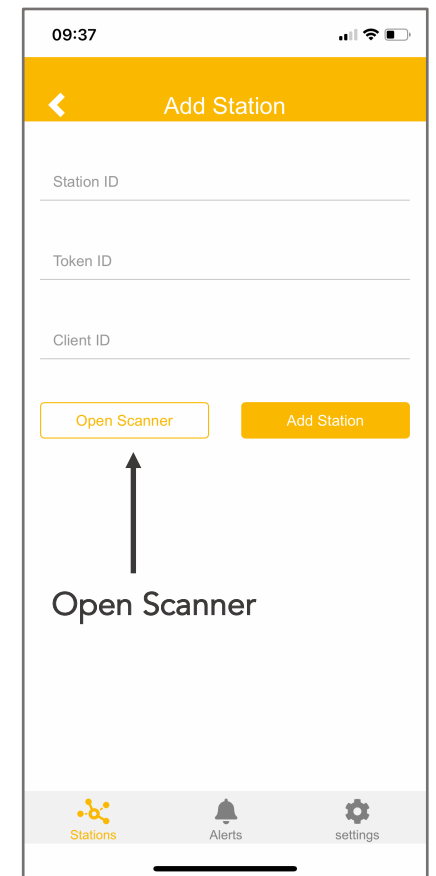
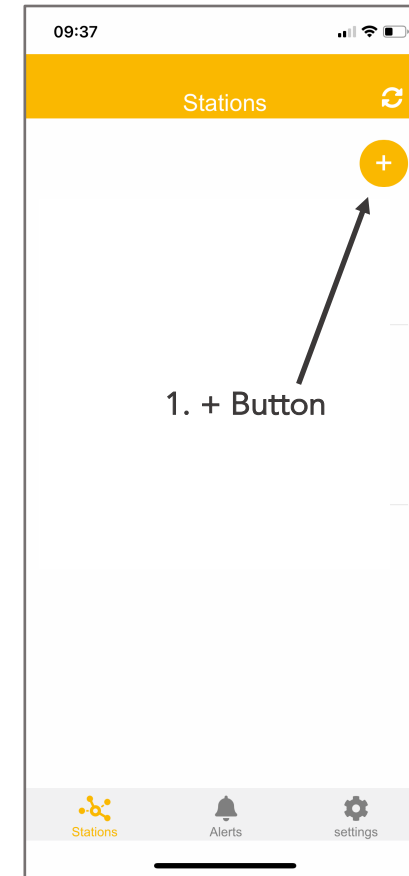
- 6 Using your smartphone hit the '+' button in the APP and press 'Open scanner'. can the QR Code and you are connected! In case you are using the browser version use copy-paste for the three strings.

For more details on how to use the App please check:

<https://www.airpointer.tech/setup-for-the-airpointer-app/>



6



FOR MORE DETAILS

For more information and guidance on the maintenance, calibration, operation, user interface and other technical themas please check the link below;

<https://www.airpointer.tech>

On this website you will find videos, tutorials and/or documents regarding your technical questions!

You can also download the detailed 'airpointer Manual';

<https://www.airpointer.tech/manuals/>

