



## EP5000M air quality probe Installation manual

Ver	Date	Modification / Update
V1	16/12/2019	Initial Version

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## 1. Security



### WARNING

Danger of death, risk of electric shock and fire!

The installation should only be undertaken by a qualified electrician!

To apply for correct bus and power cables and to activate the device, comply with the state of the art and standards.

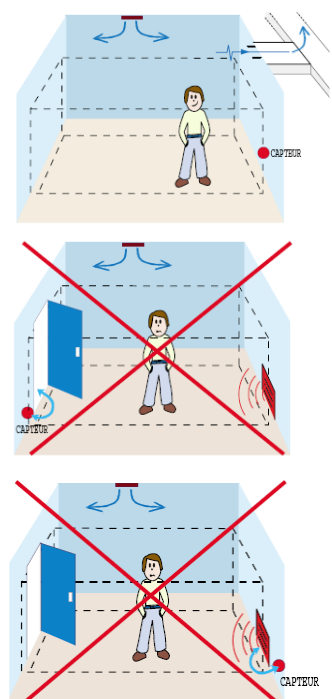
Any intervention or modification to the device will invalidate any warranty claim.

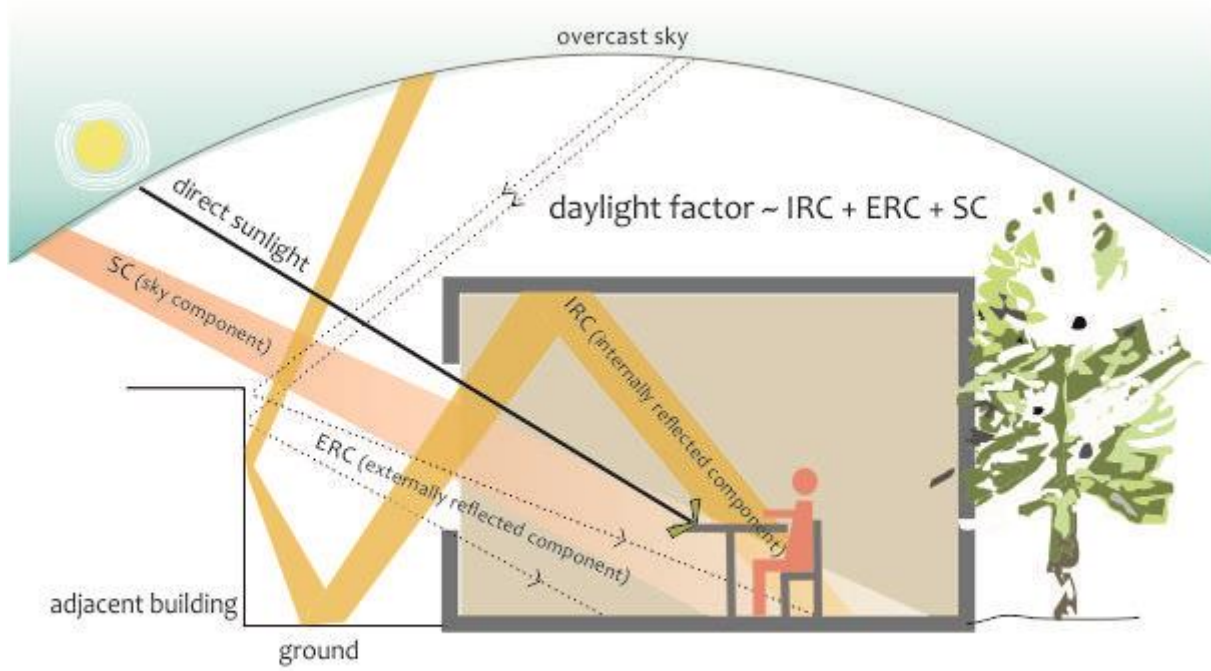
- Do not use this probe in environments with regular exposure to silicon vapors (HMDS) because this gradually alters the sensitivity of the VOC sensor.
- Do not use the sensors for measuring gas content relating to safety!
- Use the probe only with secured low voltages!

## 2. Positioning

The position of the probe is crucial vis-à-vis efficiency and energy savings for ventilation, heating and cooling.

- The probe is designed to ensure air quality; it must be placed in the area of occupancy of the premise served by outlet vents, on a wall at eyes level (breathing human level, between 1.5 and 1.8m).
- Avoid drafts (near openings, blowing air, doors, outlet vents) and dead zones (niche, shelves and curtains).
- Avoid orthogonal walls (corners of room in particular)
- Avoid heat sources and the proximity of occupants (radius of 1 m from workstation).
- Position the probe vertically on a wall or partition.  
This device is not intended for installation in duct or ceilings.
- Avoid direct exposure to sunlight. Consider all seasons sun positions
- The positioning must take into account the desired quality of the ambient light measurement.





Any work not in accordance with this documentation or changes to the device will invalidate all warranty claims.

### 3. Flush mounting

Use the backbox provided or an airtight insulated backbox with a waterproofing membrane through which the sheath passes. If the backbox passes through the sealing plane, seal between the backbox and the partition with a specific VOC free and silicone free sealant. If ordering the backbox separately:

- Make sure that the backbox doesn't contain Silicone.
- The internal depth of the case must be at least 40mm.
- The internal diameter (about 64mm) shall have a 40x40mm space free up to the bottom)
- The space between screws shall be 60mm
- The height of the screws heads shall be 2mm max)



### 4. Wiring

Be careful, wiring must be sealed. Incoming air, even slight, would seriously jam the temperature, humidity and air quality measures.

When the switchboard is located in the heated volume: caulk arrivals between cables and ducts at the switchboard level.

When the switchboard is out of the heated volume, caulk between cables and ducts before entering the heated volume. A sealing plug must also be placed between duct and cable reaching the EP5000 probe to prevent air entry.

When the sealing of the duct is not possible, use a specific sealant without silicone and VOC.

In case of use of electrical backbox, select an airtight case with sealing membrane from which the duct passes through. If the case crosses through the sealing plane (plasterboard), seal between the casing and panel with a special sealant without silicone and VOC.

Connectors are specified for rigid cable 18 to 24 AWG (1 to 0.5mm dia.) or twisted 20 to 22 AWG (0.8 to 0.65mm dia.)

The connectors accept two 0.8mm cables on the same terminal in order to chain several sensors. Beware of line losses, a 0.8mm cable has a resistance of 21Ω per Km.



### 5. Installation

It is recommended to install the probe at the end of the work (after painting and using silicone-based products).

Take the ModBus and the 24V DC Power Supply cables and connect both pair on the terminal block on the back of the product. Pay attention to marking: Modbus A & B and power supply + and -.

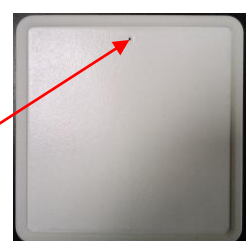
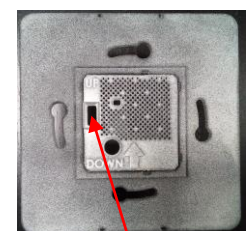
Just push the stripped ends (flexible or rigid) into the connector. In case of a multi-strand cable, make sure to well twist them before inserting them. In case of difficulty, push the release tab. Respect the polarity (non-destructive).

Make sure to respect the Up and down marking otherwise the temperature and humidity measurement will be jammed.

Screw the plate on the backbox.

Plug the front panel onto the plate. Pay attention to the position of the connector in the back of the front plate.

If well mounted, the transparent window of the light sensor shall be on top middle.



## 6. Power on

20 seconds after power-up, the blue status LED and the orange status LED flash together gradually 15 times, at the end of the cycle, the orange LED remains fixed for few seconds, the time to interrogate all sensors then, only the blue LED "breathes" if the air quality does not require ventilation. If the probe has not been powered recently, the LEDs may stay orange "breathing" for several minutes until the VOC sensor stabilizes. The start-up cycle includes built in tests and preheating of the VOC sensor and visual checks of LEDs

The cycle lasts about **5 minutes** in total.

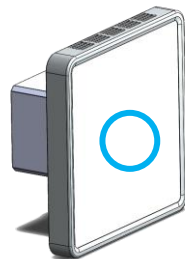
LEDs indicate faults as follows:

	<b>Led</b>
Sensor failure after startup	Red Fixed followed by blinking
End of Product Life (> 10 years)	Alternate Blue red
No power supply or reverse polarity.	Off

## 7. Indication of LEDs in normal operation

The LEDs show the overall synthesis of IAQ (physiological impacts on health cognitivity and quality of sleep which depend on the combined effects (cocktail effect) of CO<sub>2</sub>, VOCs, particles, noise and light, The building health is also synthesized and takes into account: risk of condensation, deposit of particles on cold parts)

This synthesis is materialized by a continuous gradual rising and then descending gradation of the breathing type.



<b>Sensor LED status</b>	<b>Description</b>
Blue cyclic variation 5s works perfectly	The air quality is ideal. The probe works perfectly Health > 90% Or Cognitivity > 80% Or Building health > 90%
Blue cyclic variation 2s	The air quality is acceptable. The probe works perfectly. Health > 70% Or Cognitivity > 70% Or Building health > 70%
Orange cyclic variation 2s	The air quality is poor. The probe works perfectly. Health > 60% Or

	Cognitivity > 60% Or Building health > 60%
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These thresholds can be adjustable by specific commands and the cognitive quality replaced by the quality of sleep for installation in a bedroom.

## 8. Connections

### 8.1. Power supply

The power supply must be continuous (DC) and between 12 and 32V (24V nominal).



## 9. NFC

Used for commissioning (See commissioning manual)