

Datasheet

Subject to technical alteration
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thevios[®]



» APPLICATION

The thevios HUB enables the seamless integration of up to eight satellites via the theGRID bus, thereby capturing a wide range of sensor data. Among other things, this data can be used for the intelligent control of lighting and air conditioning depending on occupancy and environmental conditions.

An illuminated LED ring serves as a display element for traffic light functions (TLF) and for status information from the building management system. Optional flush or surface mounting allows flexible integration into different interior scenarios.

With tool-free wiring and communication via BACnet/IP, the thevios HUB is already one of the most future-proof solutions for increasing energy efficiency, comfort, and productivity.

» TYPES AVAILABLE

Ceiling sensor (Hub) – BACnet IP

- thevios Hub OCC LUM rH BACnet IP
- thevios Hub OCC LUM CO2 rH BACnet IP
- thevios Hub OCC LUM CO2 VOC rH BACnet IP
- thevios Hub OCC LUM PM CO2 VOC rH BACnet IP
- thevios Hub OCC LUM PM CO2 VOC rH IR BACnet IP

» INTENDED USE

Ceiling/room sensor and hub for measuring type-dependent variables with BACnet IP (RJ45) interface. Must not be used in conjunction with devices that directly or indirectly serve health or life-saving purposes or whose operation may pose a risk to people, animals, or property.

Intended for use only as specified. Unauthorized modification or alteration is prohibited!

» SECURITY ADVICE – CAUTION



The installation and assembly of electrical devices (modules) may only be carried out by an authorized electrician. Devices with a power connection may only be connected when the connection cable is disconnected!

Always comply with:

- Laws, standards, and regulations
- The state of the art at the time of installation
- The technical data and operating instructions for the device

» NOTES ON TEMPERATURE SENSORS (ACTIVE)

Sensors with electronic components always have a dissipative power, which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power has to be considered when measuring temperature. In case of a fixed operating voltage ($\pm 0,2$ V) this is normally done by adding or reducing a constant offset value.

Thermokon transducers can be operated with variable operating voltages. The transducers are set at the factory with a reference operating voltage of 24 V =. At this voltage, the expected measuring error of the output signal will be the least. Other operating voltages, can cause a measurement deviation changing power loss of the sensor electronics.

A recalibration can be carried out directly on the unit or via a software variable (app or bus).

Remark: Occurring draught leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

» NOTES ON HUMIDITY SENSORS

At regular environmental condition, it is recommended to calibrate the sensor annually to check the compliance with the accuracy required in the application. The following conditions can damage the sensor element or lead in long term to loss of the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust / fingerprints)
- Aggressive chemicals
- Ambient conditions (e.g. condensation on measuring element)

Re-calibration or exchange of the sensor element are not subject of the general warranty.

» NOTES ON AIR QUALITY SENSORS CO₂

The measurement of CO₂ concentration uses an optical measuring principle (NDIR). Gas sensors are always subject to drift. Measuring elements with dual channel technology automatically compensate for this drift as far as technically possible. Sensors with this technology are therefore also suitable for continuous use (24/7) in situations where a regular return to the outside air concentration cannot be guaranteed (e.g., hospitals). In addition, manual calibration and adjustment is possible at any time.

CO₂-absorbing materials such as lime plaster, lime paints, or cementitious products (e.g., exposed concrete) chemically bind CO₂ from the room air. This reaction (carbonation) can lead to a local reduction in the measurable CO₂ concentration, even significantly below 400 ppm. This effect decreases as the distance between the sensor and the CO₂-absorbing material increases.

We recommend not installing CO₂ sensors directly on or in concrete walls, especially fresh ones. If this is not possible for structural reasons, we recommend using alternative mounting options—for example, pendulum sensors, sensors in the exhaust air duct, or ceiling sensors—provided that these can be mounted at a sufficient distance from CO₂-absorbing materials.

The following factors distort CO₂ measurements and can damage the measuring element:

- Contamination (e.g., dust/construction dust in or on the device)
- Exposure of optical components to aggressive chemicals in the air
- Extreme environmental conditions (e.g., high humidity, condensation, or severe temperature fluctuations)
- Mechanical stress during installation or operation

Damage to the measuring element caused by these factors is not covered by the statutory warranty or guarantee.

» NOTES ON AIR QUALITY VOC

Volatile organic compounds (VOC) are gaseous and vaporous substances of organic origin in the air. VOC-sensors monitor the significant part of humanly olfactory sensed air quality. (e.g. body odour | tobacco smoke | odour of materials, furniture, carpets, paint, adhesives, ...)

The VOC-Value is an application-specific indication for air quality and doesn't provide any information about individual components of VOC

A VOC sensor oxidises the organic molecules that collide with it, which results in changing the resistance of the semiconductor.

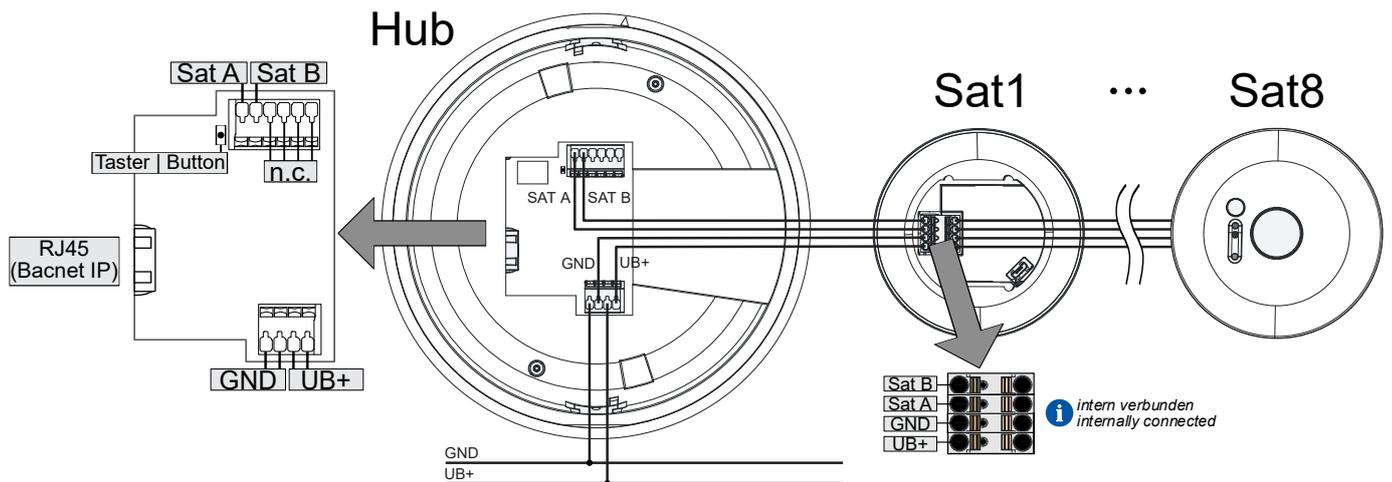
Any contact with the sensitive sensors must be avoided and will invalidate the warranty.

The VOC Sensor is factory calibrated and can be calibrated via NOVOSapp subsequently, if needed.

» TECHNICAL DATA

Measuring values	Movement, luminosity, optional: temperature, rel. humidity, radiation temperature (temp-IR), CO ₂ , VOC, CO ₂ / VOC mix, particle
Network technology	BACnet IP (RJ45) theGRID Bus (RS485 Master)
Power supply	24 V = (±10 %) SELV
Connection electrical	1,5mm ² lever terminal, loop-through wiring compatible
Connection BUS	BACnet IP: RJ45 theGRID: 2-wire RS485 BUS
Power consumption	3,6 W max.
Motion detection range	Detection angle 96°, with a ceiling height of 2.7 m, this results in a circular detection area with approx. D=6.0 m.
Measurement range brightness	0..1000 lux
Accuracy brightness	± (15 Lux +8% of measured value) Field calibration required
Measuring range temperature	0..+50 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)
Measuring range humidity	0..100% rH non condensing
Accuracy Humidity	±2% between 10..90% rH (typ. at 21 °C)
Measuring range radiation temperature (optional)	0..+50 °C
Accuracy radiation temperature (optional)	±0,5 K (typ. at 21 °C)
Measuring range CO ₂ (optional)	0..2000 0..5000 ppm
Accuracy CO ₂ (optional)	50 ppm ±3% of measured value typ. at 21°C/50% r.H.
Measuring range VOC (optional)	0..100 %
Particle size (optional)	1 µm 2,5 4 10 µg / m ³
Enclosure	PC V0, pure white
Protection	IP30 according to DIN EN 60529
Ambient condition	0..+50 °C, max. 85% rH non condensing
Mounting	Ceiling installation or surface mounting (with optional surface-mounted housing)

» CONNECTION PLAN THEVIOS HUB



» CONFIGURATION

Configuration is carried out via the device's own web interface.

Network connection with DHCP server (IP address assignment via DHCP)

As soon as the thevios Hub is connected to a network whose IP addresses are managed by a DHCP server, it is added to the network and assigned an IP address. The device is then displayed as a participant in the list of connected devices. This can be displayed via router or switch configuration menus.

Network connection without DHCP server (configuration IP address / IP address assignment by user)

Without a DHCP server, a configuration IP address can be activated. To communicate with this, the following settings must be made on the computer network adapter used:

IP address: 169.254.254.5

Subnet mask: 255.255.255.0

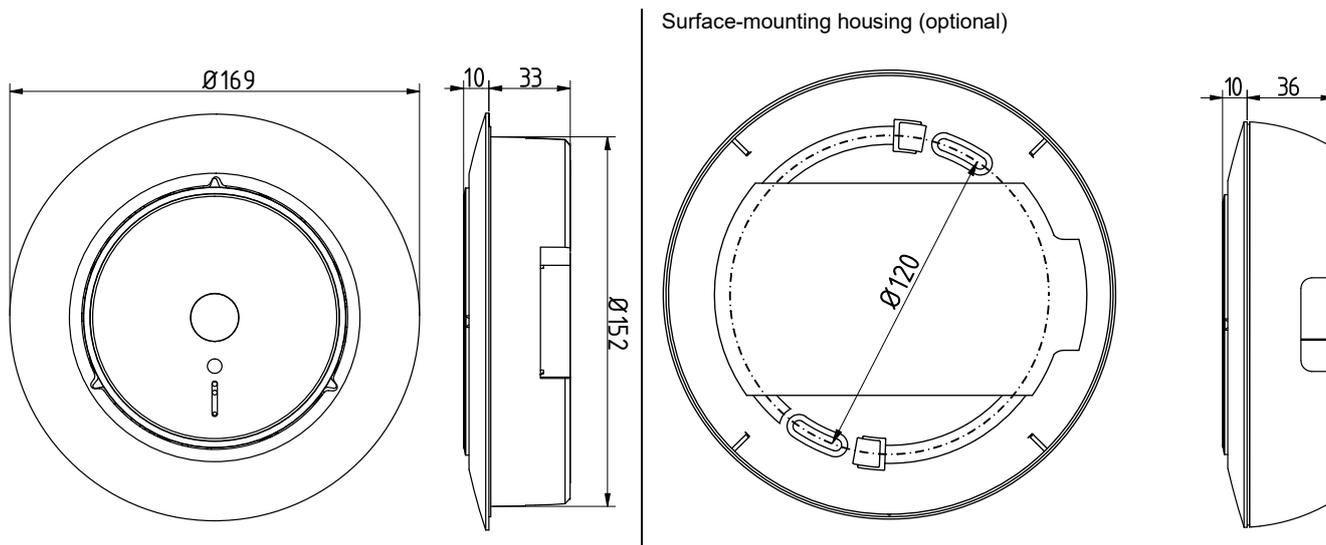
Once the green LED has gone out and the start sequence has ended, a configuration IP address can be set. To do this, press a button on the underside of the thevios Hub for more than 10 seconds.

The LED flashes blue twice; after releasing the button, a third short flash indicates that the device is restarting.

After restarting the thevios Hub, the web interface is accessed via the configuration IP address: **http://169.254.254.1/**

The web interface is password protected. **Access password: thevios25**

» DIMENSIONS



» ACCESSORIES (OPTIONAL)

Rawplugs and screws (2 pcs. each)
Surface mounting housing thevios 5 / thevios Hub

Item No. 102209
Item No. 826402

» ADDITIONAL DOCUMENTS



Installation instructions
<https://www.thermokon.de/direct/files/thevios-hub-mont-de-en-all.pdf>



Manual
<https://www.thermokon.de/direct/files/thevios-hub-sat-bacnet-ip-manual-en.pdf>

» PRODUCT CONFORMITY



Declaration of conformity
The declaration of conformity of the products are available on our website
<https://www.thermokon.de/direct/en-gb/categories/thevios-hub>

» NOTES ON DISPOSAL



The crossed-out wheeled bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com