

Datasheet

Subject to technical alteration
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» APPLICATION

The surface-mounted mixed gas sensor records air quality for demand-dependent ventilation of rooms. The sensor is suitable for the detection of cigarette smoke, exhalations, kitchen odors in living rooms, restaurants, kitchens, meeting rooms and similar. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a frame for surface-mounting, available as an accessory.

» SECURITY ADVICE – CAUTION



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

» APPLICATION NOTICE FOR AIR QUALITY SENSORS VOC

Unlike CO₂ sensors, which specifically measure CO₂, mixed gas sensors detect a wide range of gases. The sensor signal does not indicate the type of gas or its concentration in ppm. Mixed gas sensors detect gases and vapours consisting of carbohydrates, or more generally gases that can be oxidised (burnt): Odours, perfume, cleaning fluid scent, tobacco smoke, new materials fumigations (furniture, carpets, paint, glue ...).

Unlike CO₂, which humans cannot sense, the amount of odours (VOC) indicates the level of air quality. VOC sensors have proven their value in a multitude of applications for many years.

Measuring principle:

A heated tin dioxide semiconductor sensor burns (oxidizes) organic molecules that come into contact with it, thereby changing the resistance of the semiconductor. The change in resistance is characteristic for the type and concentration of the molecules. Gas mixtures such as air produce a mixed signal that can not be deduced from individual components. CO₂ can not be detected because it can not be burned.

Refrain from touching the sensor's element sensitive surface. Touching the sensitive surface element will void warranty.

» INFORMATION ABOUT CALIBRATION VOC

Similar to a catalyst, the sensitivity of the sensor decreases over time. The VOC sensor compensates for this decrease in sensitivity through regular auto-calibration.

The measured values are recorded over a period of 24 hours. The lowest value within this period is used as the reference value ("new zero level") for clean, fresh air. Measured thereafter, lower readings result in an immediate adjustment of the reference value.

» PRODUCT TESTING AND CERTIFICATION



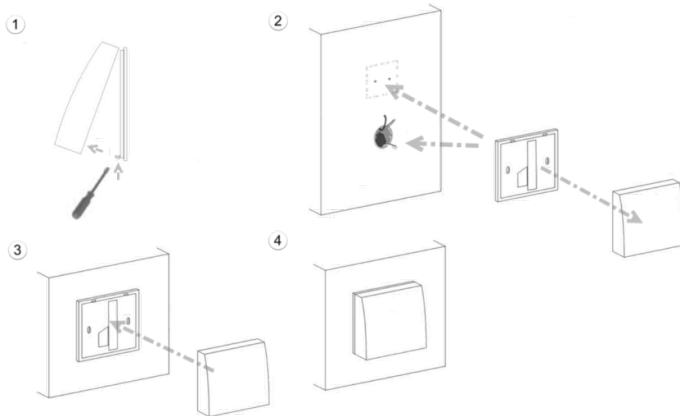
Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

» TECHNICAL DATA

Measuring values	VOC
Output voltage	0..10 V, min load 10 kΩ
Power supply	15..24 V = (±10%) or 24 V ~ (±10%) SELV
Power consumption	typ. 1,2 W (24 V =) 2,2 VA (24 V ~)
Calibration	self-calibration
Sensor	VOC sensor (heated metal oxide semiconductor)
Enclosure	PC, pure white
Protection	IP30 according to DIN EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 1,5 mm ²
Ambient condition	0..+50 °C, max. 85% non-condensing
Mounting	to be mounted flat onto the surface using adhesive foil or screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	mixed gas sensors detect gases and vapours which can be oxidised (burnt): Body odours, tobacco smoke, exhalations emitted by materials (furniture, carpets, paint, glue ...)

» MOUNTING ADVICES



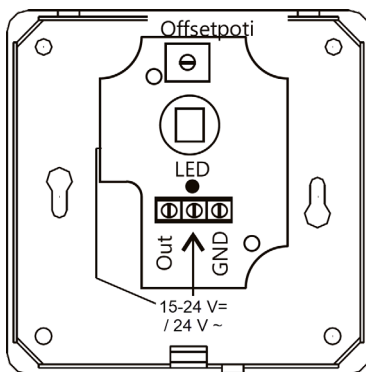
Only install and wire up the equipment in a de-energized condition!

The device can be installed on a smooth wall surface or a flush box. It should be selected a representative location for the measuring medias. The use of deep installation boxes is recommended due to the increased storage capacity for the cabling.

Sunlight and drafts e.g. in conduit must be avoided so that the measuring result is not distorted. If necessary, is the end of the installation tube seal

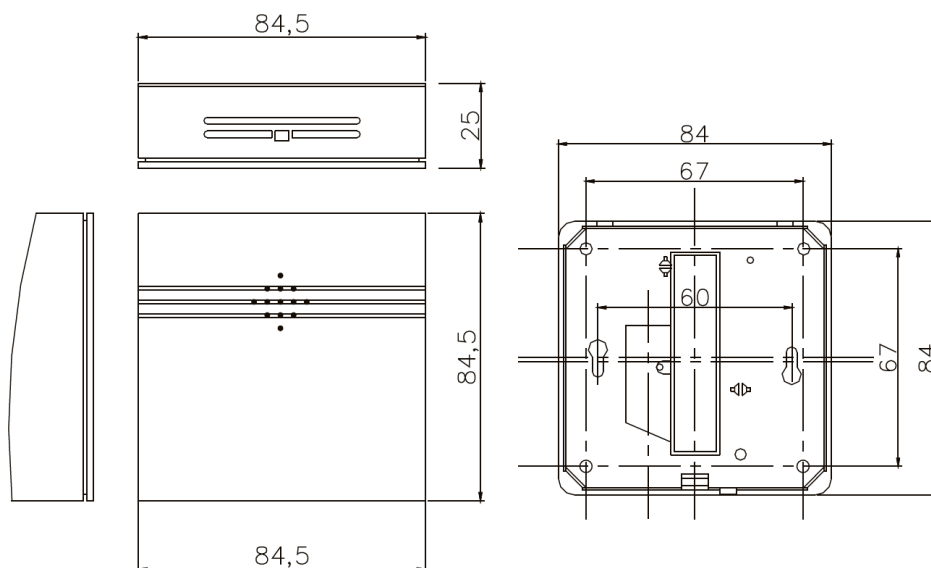
- (1) For wiring, the upper part of the base plate must be solved. Base plate and upper part are connected with each other by mounting clips.
- (2) The installation of the base plate to the smooth wall surface can be done with plugs and screws.
- (3) Then, the device is placed on the base plate.

» CONNECTION PLAN



- (1) Connect sensor and switch operating voltage on.
- (2) Ensure good air conditions close to the sensor.
- (3) The output signal has to be verified after an operating time of approx.30 minutes. The voltage level should be in range of 1-3V. Please correct a too high/too low voltage level by means of the trimming potentiometer on the circuit board: the potentiometer should be turned to the left until the red LED is almost extinguished. Now, the output signal amounts to approx. 0,7V.
- (4) The sensor is ready for operation - The operating voltage of the output signal increases upon air quality changes for the worse.

» DIMENSIONS (MM)



» ACCESSORIES (OPTIONAL)

Rawplugs and screws (2 pcs. each)
 PSU-UP24 – flush mount power supply 24 V (AC Input: 100..240 V ~ | DC Output 24 V = 0,5 A)
 Frame for surface mounting NOVOS 3/WRF04
 Ball stroke protection BS150, transparent (for series WRF04)

Item No. 102209
 Item No. 645737
 Item No. 111584
 Item No. 647007