LK+ CO2 V

Duct sensor for air quality

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

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Application

Duct air quality sensor for detection of CO2. Designed for duct mounted applications with 0..10 V output.

Types Available

Duct sensor CO2 – active 0..10 V

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Options: additional passive temperature sensor
eg: PT100/PT1000/NI1000/NI1000TK5000/NTC10K... and other sensors on request.

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.

Information about Indoor Air Quality CO_2

EN 13779 defines several classes for indoor air quality:

Category	CO_2 content above the content in outdoor air in ppm		Description
	Typical range	Standard value	
IDA1	<400 ppm	350 ppm	Good indoor air quality
IDA2	400.. 600 ppm	500 ppm	Standard indoor air quality
IDA3	600..1.000 ppm	800 ppm	Moderate indoor air quality
IDA4	>1.000 ppm	1.200 ppm	Poor indoor air quality

Information about Self-Calibration Feature CO_2

Virtually all gas sensors are subject to some sort of drift. The degree of drift is partially dependent on the use of quality components and good design. But even with good components and excellent design, a small amount of drift can still occur in the sensor that may ultimately result in the need for a sensor to be recalibrated.
The natural drift of the sensor is caused by:

• Dust/dirt • Aggressive chemicals absorbed inside chamber / optical elements • Corrosion inside chamber (high rh, condensation) • Temperature cycles causing mechanical stress • Electron/hole migration in the photo detector's semiconductor • Drift of photo amplifiers • External mechanical stress on chamber • Light source wear-off

Most of the effects listed above will be compensated by the automatic self-calibration of the sensor's dual channel technology. In contrast to commonly used ABC-Logic self-calibrating sensors with dual channel technology are suitable for all applications including those operating 24 hours, 7 days a week, for example hospitals.

However some effects cannot be compensated automatically and may result in a very gradual natural drift of a few ppm per month. This natural drift is not covered by Thermokon's 5-year warranty.

Technical Data

Measuring values	CO2
Output voltage	0..10 V, min. load 10 kΩ
Output passive	**passive** Options: additional passive temperature sensor eg: PT100/PT1000/NI1000/NI1000TK5000/NTC10K... and other sensors on request
Power supply	15..35 V = or 19..29 V ~
Power consumption	max. 2,3 W (24 V =) | max. 4,3 VA (24 V ~)
Measuring range temp.	**passive** depending on used sensor
Measuring range CO2	0..2000 ppm
Accuracy temperature	**passive** depending on used sensor
Accuracy CO2	±50 ppm +3% of reading (typ. at 21 °C, 50% rH)
Air speed	min. 0,3 m/s, max. 12 m/s
Calibration	self-calibration, Dual Channel
Sensor	NDIR (non-dispersiv, infrared)
Enclosure	enclosure USE-M, PC, pure white, cover PC, transparent, with removable cable entry
Protection	IP65 according to EN 60529
Cable entry	Flextherm M16, for wire Ø=3..7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm²
Pipe	PA6, black, Ø=19,5 mm, length 177 mm
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Mounting	installation is also possible using mounting base

Declaration of conformity

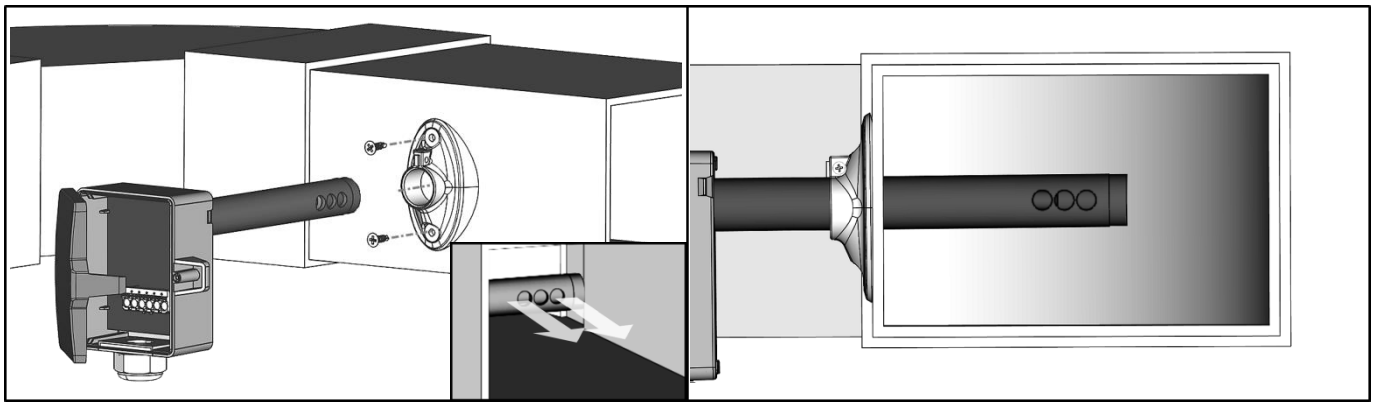
The declaration of conformity of the products can be found on our website https://www.thermokon.de/.

Application notice

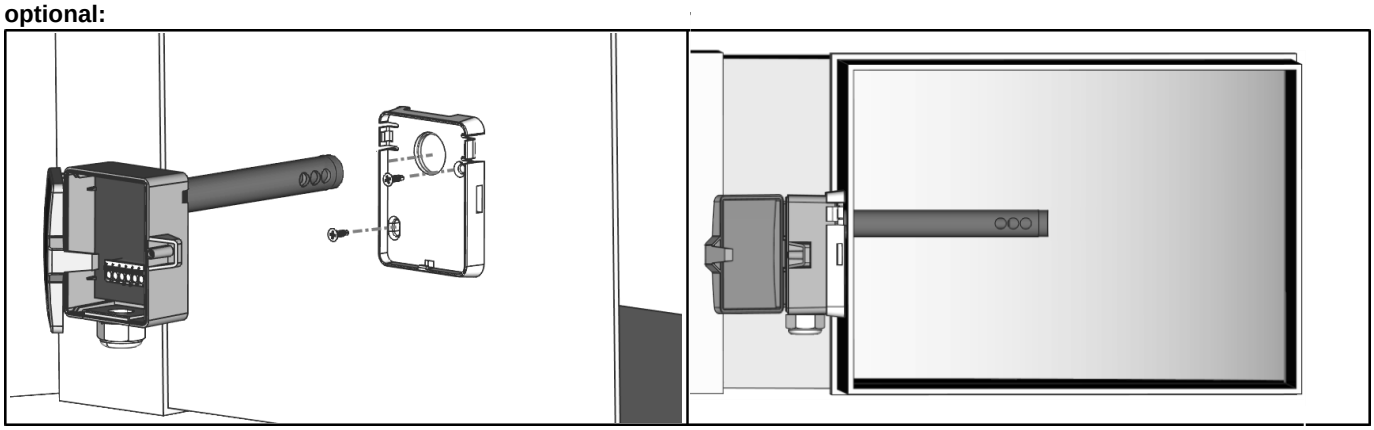
The housing cover must be completely closed in order to ensure the accuracy and reproducibility of the measured values during a test or service log via USEapp.

Mounting Advices

The sensor can be mounted on the ventilation duct by means of the mounting flange MF20 TPO (optional with mounting base). Align the openings on the sensor tube according to the flow direction.



optional:



Connection Plan

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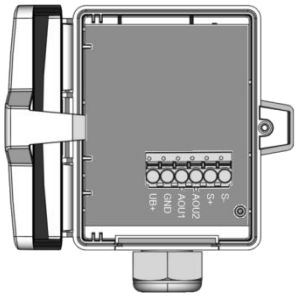
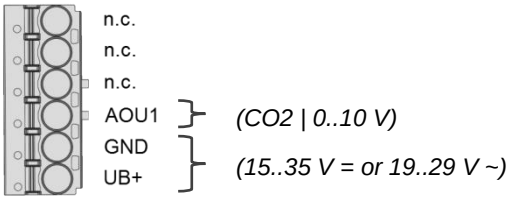
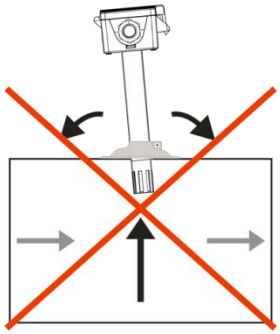


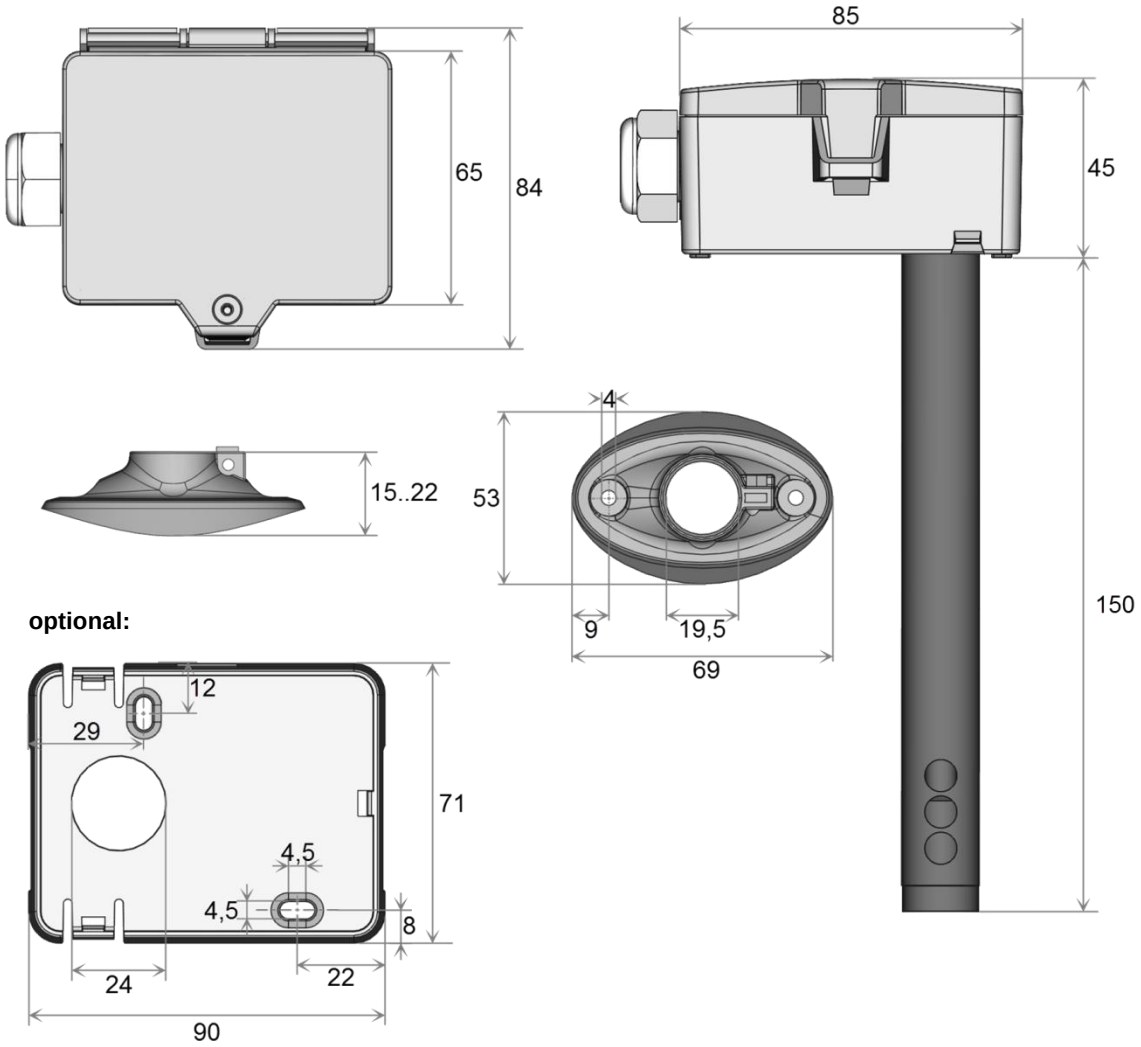


Dismounting Advices

Remove the lower section of the sensor carefully and pulling straight out. **Pay close attention to the correct dismantling of the component!**



Dimensions (mm)



Accessories (included in delivery)

Mounting flange MF20	Item No. 612562
Mounting kit universal	Item No. 698511

• Cover screw + screw cover• 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

Accessories (optional)

Mounting base	Item No. 631228
Filter stainless steel, wire mesh	Item No. 231169
M16 Sealing inserts cable entry (packaging unit 10 pcs.) for wire with Ø 8 mm	Item No. 641340