

# LK-SX CO2

Sensor for detection of carbon dioxide (CO<sub>2</sub>) in air ducts

**thermokon**  
Sensortechnik GmbH

## Datasheet

Subject to technical alteration  
Issue date: 24.08.2015



## Application

Duct air quality sensor with hinged lid enclosure for detection of CO<sub>2</sub> with 0..10 V output. Designed for duct mounted applications.



## 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 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 the product 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<sub>2</sub>

EN 13779 defines several classes for indoor air quality:

Category	CO <sub>2</sub> content above the content in outdoor air in ppm		Description
	Typical range	Standard value	
IDA1	<400 ppm	350 ppm	High indoor air quality
IDA2	400.. 600 ppm	500 ppm	Mean indoor air quality
IDA3	600..1.000 ppm	800 ppm	Moderate indoor air quality
IDA4	>1.000 ppm	1.200 ppm	Low indoor air quality

## Information about Self-Calibration Feature CO<sub>2</sub>

All gas sensors are subject to drift caused by components. This fact results generally in the need to recalibrate the sensors regularly.

With dual channel technology Thermokon integrates automatic self-calibration for different fields of operation. In contrast to common used ABC-Logic sensors with self-calibration dual channel are suitable for applications operating 24 hours, 7 days a week as for example hospitals.

**Manual calibration is not necessary!**

## Technical Data

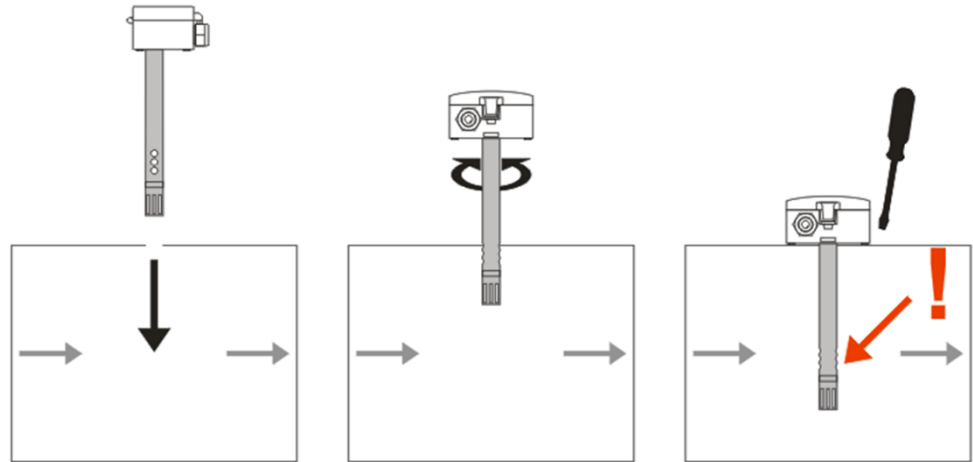
Measured values	CO <sub>2</sub>
Output voltage	1x 0..10 V (V), load min. 10 kΩ
Power supply	15..24 V = (±10%) or 24 V ~ (±10%)
Power consumption	max. 1,5 W (24 V =)   2,9 VA (24 V ~)
Measuring range CO <sub>2</sub>	0..2000 ppm
Accuracy CO <sub>2</sub>	±75 ppm or ±10% of measured value (typ. at 21 °C)
Calibration	Self calibration dual channel
Sensor	NDIR (non-dispersive, infrared)
Air speed	min 0,3 m/sec, max 10 m/sec
Enclosure	PA6, pure white
Protection	IP54 according to EN 60529, IP65 with bolted cover
Terminal block	plug-in terminal, max. 1,5 mm <sup>2</sup>
Cable entry size	M20
Pipe	PA6, black, Ø=19,5 mm, L=180 mm
Filter material	stainless steel, wire mesh
Ambient condition	0..+50 °C, max. 85% rH short term condensation
Weight	350 g
Delivery content	MF20 flange

## Mounting advices

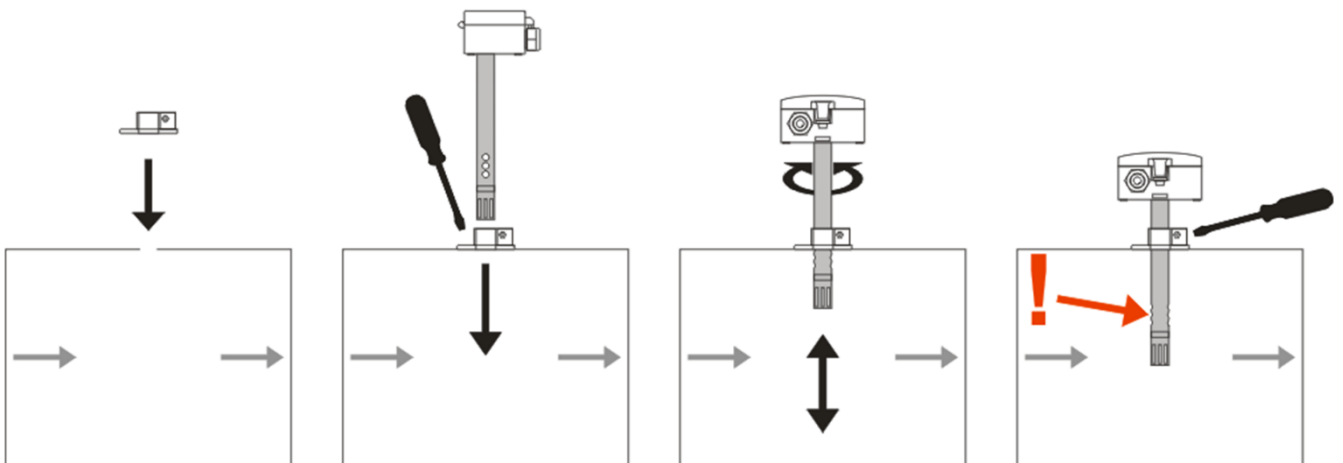
The sensor can be mounted on a flange (recommended) or directly into the ventilation duct.

**Please note during installation that the openings of the pipe are mounted in the direction of air flow!**

### Mounting without mounting flange:



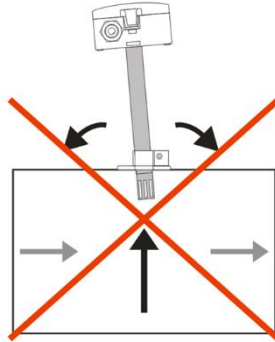
### Mounting with mounting flange:



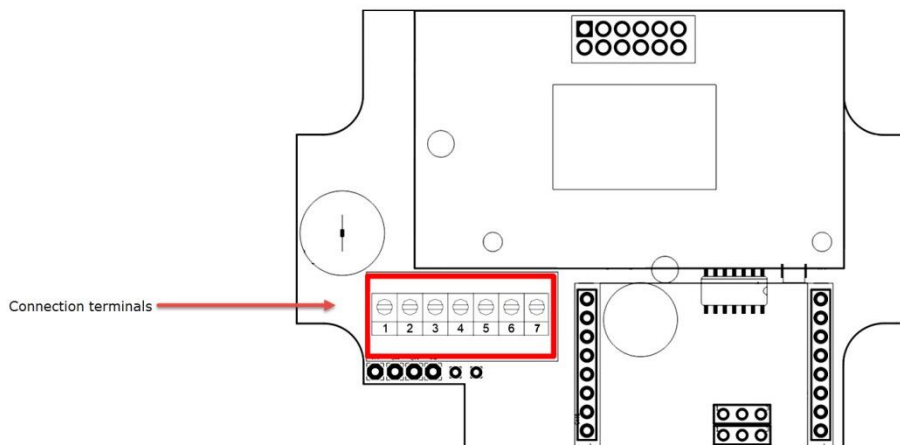
## Dismounting advice

Remove the lower section of the sensor carefully and pulling straight out.

**Pay close attention to the correct dismantling of the component!**



## Terminal Connection Plan



Connection clamps:

Clamp	Function
1	24 V
2	GND
3	not used
4	not used
5	not used
6	Output CO <sub>2</sub> 0..10 V
7	not used

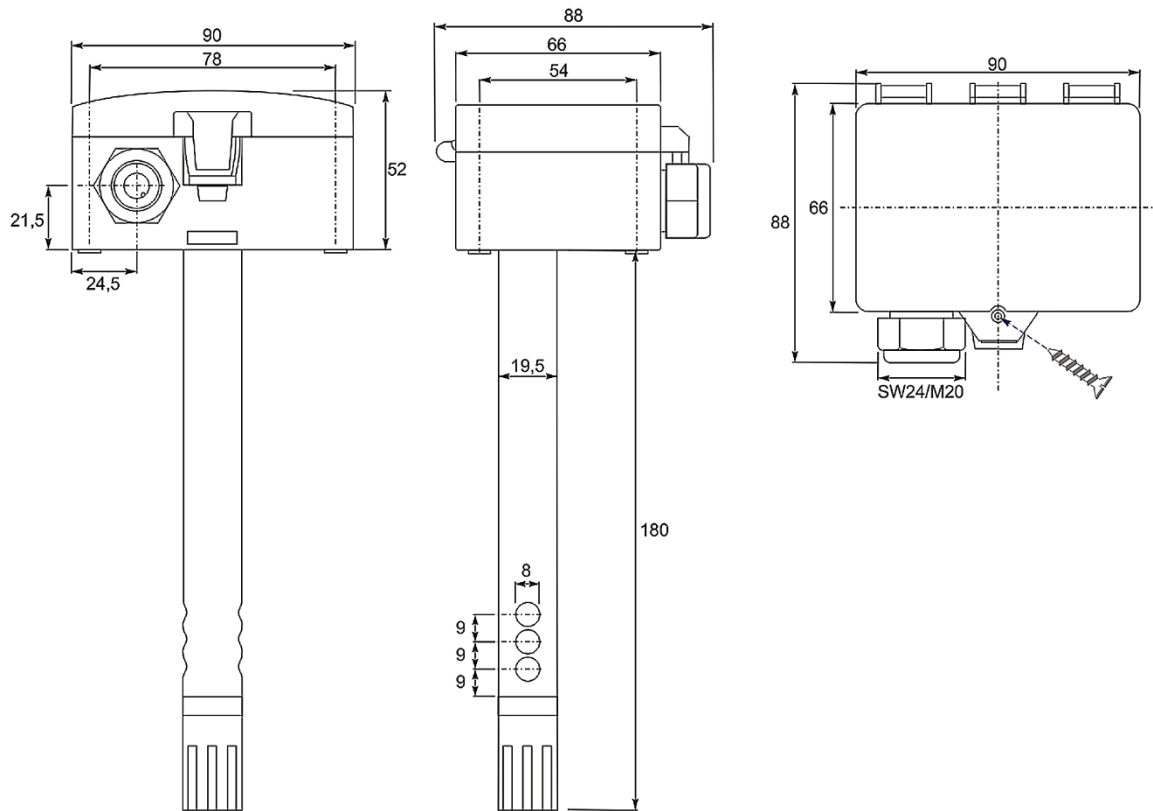
## Application notice

After a certain time, dirt in the air can collect on the filter and then adversely affect the operation of the sensor.

Under normal ambient condition an annual maintenance is recommended. Rinse the filter after cleaning with distilled water and dry it using clean oil-free air or nitrogen. Extremely contaminated filters should be replaced.

At extreme ambient conditions, e.g. corrosive gases, the humidity sensor may have to be changed.

## Dimension (mm)



## Accessories

Rawl plugs and screws (2 pcs each)  
 Filter stainless steel, wire mesh  
 Mounting flange MF20 TPO

Item No. 102209  
 Item No. 231169  
 Item No. 612562