» LA+ CO2

Outdoor sensor for air quality

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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»APPLICATION

Sensor for outdoor CO_2 measurement: cold rooms, greenhouses, production plants and warehouses. Designed for outdoor mounted applications with 0..10 V or 4..20 mA output.

»TYPES AVAILABLE

Outdoor sensor CO2 – active 0..10 V | 4..20 mA

LA+ CO2 V
LA+ CO2 A

»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

»PRODUCT TESTING AND CERTIFICATION

CE

Declaration of conformity

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

» 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

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.
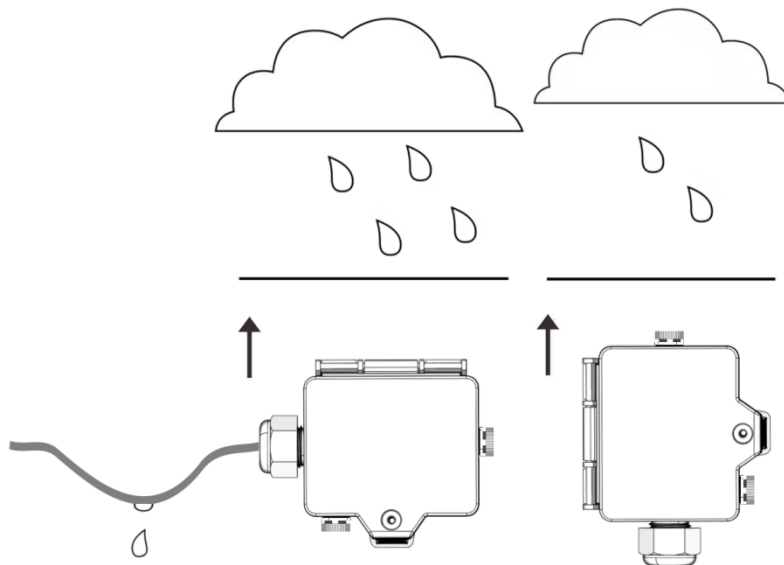
Manual calibration is not necessary!

» TECHNICAL DATA

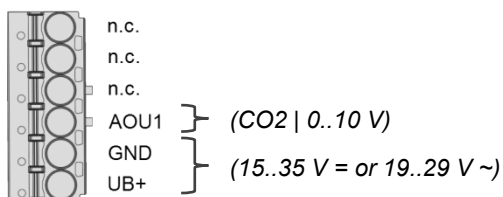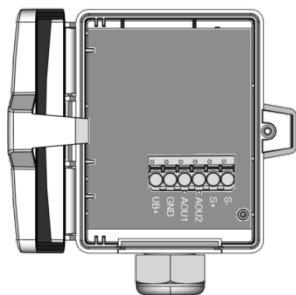|		
Measuring values	CO2	
Output voltage (type-dependent)	**LA+ CO2 V** 0..10 V, min. load10 kΩ	**LA+ CO2 A** 2x 0..10 V or 0..5 V, min load 10 kΩ (live-zero configuration via Thermokon USEapp)
Output ampere	**LA+ CO2 A** 4..20 mA, max. load 500 Ω	
Power supply (type-dependent)	**LA+ CO2 V** 15..35 V = or 19..29 V ~ SELV	**LA+ CO2 A** 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) | 4,3 VA (24 V ~)	
Measuring range CO2 (type-dependent)	**LA+ CO2 V** 0..2000 ppm	**LA+ CO2 A** 0..2000 ppm (Standard), 0..5000 ppm (optionally configured via Thermokon USEapp)
Accuracy CO2	±50 ppm +3% of reading (typ. at 70 °F, 50% rH)	
Calibration	self-calibration, Dual Channel	
Sensor	NDIR (non-dispersiv, infrared)	
Enclosure	enclosure USE-M, PC, pure white, with removable cable entry	
Protection	IP65 according to EN 60529	
Cable entry	Flextherm M20, for wire max. Ø=0.18..0.35 in., removable	
Connection electrical	removeable plug-in terminal, max. 14 AWG	
Ambient condition	+32..+122 °F, max. 85% rH short term condensation	
Mounting	installation is also possible using mounting base	

»MOUNTING ADVICES

In case of outdoor installation avoid direct rain and sun contact. Probably use sun respectively rain protection. Cable entry from bottom or side. For side cable routing set loop so that precipitation can drain defined. Observe permissible ambient condition.
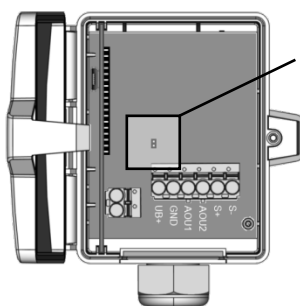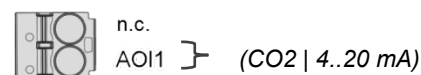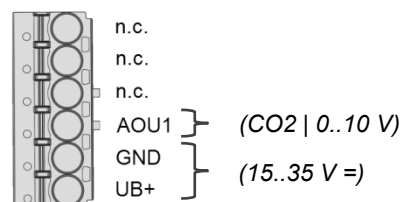

»CONNECTION PLAN

LA+ **CO2 V**

n.c.
n.c.
n.c.
AOU1 — (CO2 | 0..10 V)
GND
UB+ — (15..35 V = or 19..29 V ~)

LA+ **CO2 A**

0..5 V
0..10 V

n.c.
n.c.
n.c.
AOU1 — (CO2 | 0..10 V)
GND
UB+ — (15..35 V =)

n.c.
AOI1 — (CO2 | 4..20 mA)

» CONFIGURATION (POSSIBLE ONLY WITH TYPE LA + CO2 A)

The Thermokon bluetooth dongle with micro-USB is required for communication between USEapp and USE-M / USE L (Item No..: 668262). Commercial bluetooth dongles are not compatible.

Application-specific reconfiguration of the devices can be carried out using the Thermokon USEapp. The configuration is carried out in the voltage-supplied state.

The configuration-app and the app description can be found in the Google Play Store or in the Apple App Store.
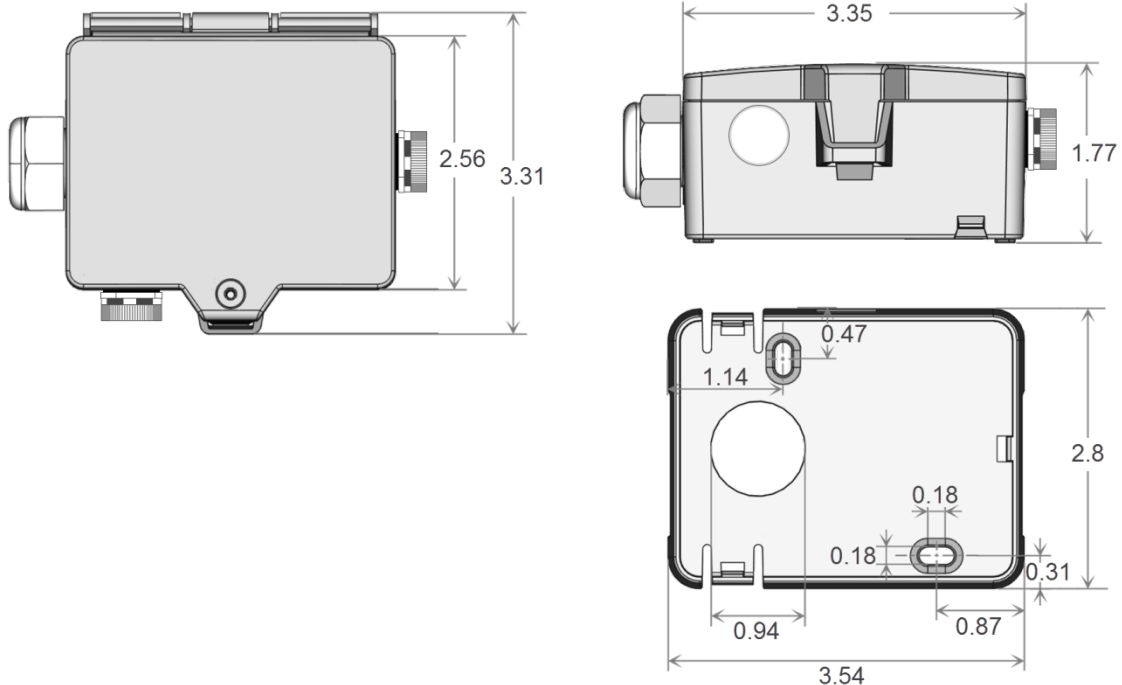
» APPLICATION NOTICE

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.

The Bluetooth dongle snaps into the socket easily. When removing, please fix the plug-in card (option PCB) so that it is not unintentionally pulled out.

» DIMENSIONS (IN.)

» ACCESSORIES (INCLUDED IN DELIVERY)

Mounting base	Item No. 631228
Mounting kit universal	Item No. 698511

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

» ACCESSORIES (OPTIONAL)

Sealing insert M20 USE white, 2x Ø=0.28 in. (for 2 wire; PU 10 pieces)   Item No. 641333