

Duct CO₂ sensors respectively measuring transducers, including mounting flange, self-calibrating, with multi-range switching and active output

KCO₂

The self-calibrating microprocessor-controlled AERASGARD® KCO₂ is designed for duct installation and is used to detect the CO₂ content in air. This CO₂ sensor is optionally available with or without display. The measurement signals are converted into standard signals of 0-10V. Optionally, the CO₂ measuring transducer can be supplied with switching output. The CO₂ content in air is determined by a NDIR sensor (non-dispersive infrared technology). The detection range of this CO₂ sensor is calibrated for standard applications such as monitoring of residential rooms or conference rooms. Room ventilation on an as-needed basis, improvement of well-being and customer benefit, increased comfort as well as a reduction of operating costs by energy conservation are only some of the beneficial results of employing AERASGARD® KCO₂ sensors.

A measuring system based on NDIR (non-dispersive infrared sensor) technology for CO₂ measurement consists of a light source and a receptor. A certain range of wavelengths of light radiated off by the source is damped respectively absorbed by CO₂ molecules in the measured section. That damping is detected by the receptor.

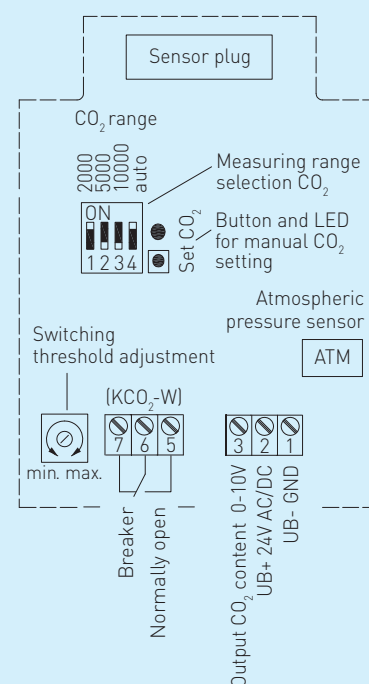
For more information please refer to beginning of this chapter.

TECHNICAL DATA:

Power supply:	24V AC/DC
Sensor:	optical sensor (NDIR), with automatic self-calibration , non-dispersive infrared technology including atmospheric pressure compensation
Measuring range:	multi-range switching (selectable via DIP switches) 0...2000 ppm; 0...5000 ppm; 0...10000 ppm
Output:	0-10V or with potential-free changeover contact (24V)
Measuring accuracy CO ₂ :	± 100ppm plus 5% of measured value
Pressure dependence:	< ± 0,5% of measured value/kPa at compensated versions (standard), otherwise ± 1,6% of measured value/kPa (referred to standard pressure)
Temperature dependence:	< 5 ppm/K (referred to 20 °C)
Long-term stability:	± 1% of final value per year
Service life:	> 12 years
Gas exchange:	by diffusion
Ambient temperature:	0...+50 °C
Electrical connection:	0.14 - 1.5 mm ² , via terminals on circuit board
Enclosure:	plastic, polyamide, 30% glass-globe-reinforced, with quick-locking screws, colour pure white (similar RAL9010)
Dimensions:	108 x 73.5 x 70 mm
Cable gland:	M16, including strain relief
Protective tube:	metal, Ø 20 mm, nominal length NL = 190 mm
Process connection:	by mounting flange, plastic (included in the scope of delivery), galvanised steel optional
Protection class:	III (according to EN 60730)
Protection type:	IP 65 (according to EN 60529)
Standards:	CE-conformity, electromagnetic compatibility according to EN 61326 + A1 + A2, EMC directive 2004/108/EC
Optional:	8-digit display, cutout 36x14 mm (WxH), for displaying actual CO ₂ content



Schematic diagram

KCO₂
KCO₂-W

Connecting diagram

KCO₂

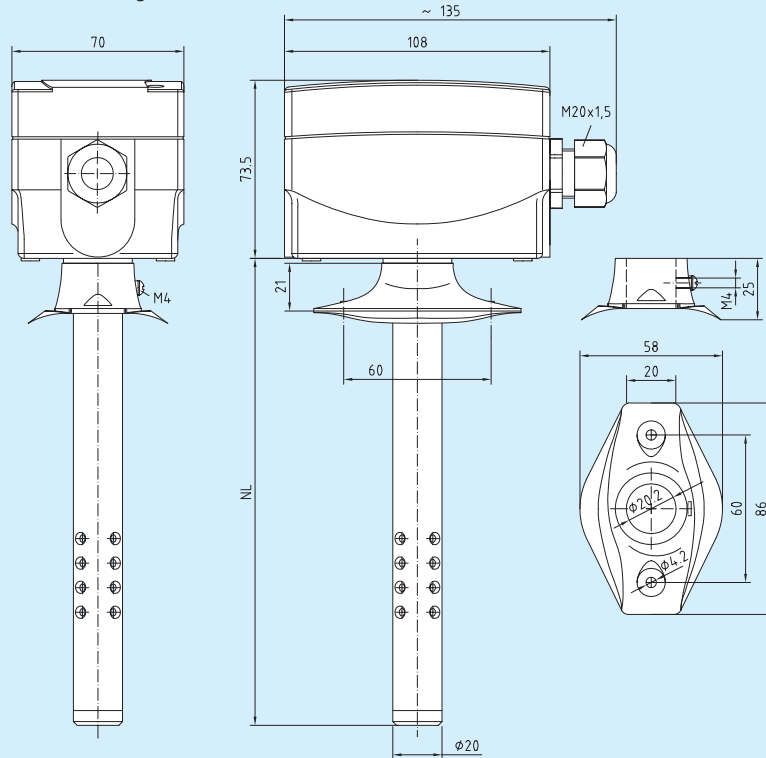
1	UB- GND
2	UB+ supply voltage 24V AC/DC
3	Output 0-10V CO ₂ -content in ppm

Connecting diagram

KCO₂-W

1	UB- GND
2	UB+ supply voltage 24V AC/DC
3	Output 0-10V CO ₂ -content in ppm
5	Normally open contact
6	
7	Breaker

Dimensional drawing

KCO₂

KCO₂
with display


CO ₂ content (Measuring range adjustable)	DIP 1	DIP 2	DIP 3
0 ... 2000 ppm (default)	ON	OFF	OFF
0 ... 5000 ppm	OFF	ON	OFF
0 ... 10000 ppm	OFF	OFF	ON
CO ₂ calibration mode	DIP 4		
Automatic self-calibration	ON		
Manual calibration	OFF		

AERASGARD® KCO₂, including mounting flange

Type / WG1	Measuring Range CO ₂ (switchable)	Output CO ₂	Temperature	Features
KCO ₂ -LC	0 ... 2000 ppm	0 - 10V	-	-
KTM-CO ₂ -LC	0 ... 2000 ppm	0 - 10V	0 - 10V	ATM
KCO ₂	0 ... 2000 ppm / 0 ... 5000 ppm / 0 ... 10000 ppm	0 - 10V	-	ATM
KCO ₂ -W	0 ... 2000 ppm / 0 ... 5000 ppm / 0 ... 10000 ppm	0 - 10V	-	ATM, Changeover contact
ATM = Sensor for atmospheric pressure compensation included				
xx-Display				
Note: This unit must not be used as safety-relevant device!				