

**Duct sensor CO<sub>2</sub>**

Active sensor (0...10 V) for measuring CO<sub>2</sub>.  
Dual channel CO<sub>2</sub> technology. IP65 / NEMA 4X  
rated enclosure.



5-year warranty


**Type Overview**

Type	Output signal active CO <sub>2</sub>
22DC-51	0...5 V, 0...10 V

**Technical data**

<b>Electrical Data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage range	AC 19...29 V / DC 15...35 V
	Power consumption AC	4.3 VA
	Power consumption DC	2.3 W
	Electrical connection	Pluggable spring loaded terminal block max. 2.5 mm <sup>2</sup>
	Cable entry	Cable gland with strain relief Ø6...8 mm (1/2" NPT conduit adapter included)
<b>Functional Data</b>	Sensor Technology	CO <sub>2</sub> : NDIR (non dispersive infrared) dual channel
	Application	air
	Voltage output	1x 0...5 V, 0...10 V, min. load 10 kΩ
	Output signal active note	output 0...5/10 V with jumper adjustable
<b>Measuring Data</b>	Measured values	CO <sub>2</sub>
	Measuring range CO <sub>2</sub>	0...2000 ppm
	Accuracy CO <sub>2</sub>	±(50 ppm + 3% of measured value)
	Long-term stability	±50 ppm p.a.
	Time constant τ (63%) in air duct	CO <sub>2</sub> : typical 33 s @ 1 m/s
<b>Materials</b>	Cable gland	PA6, black
	Housing	Cover: PC, orange Bottom: PC, orange Seal: NBR70, black UV resistant
	Probe material	PA6, black
<b>Safety Data</b>	Ambient humidity	Max. 95% RH, non-condensing
	Fluid humidity	Max. 95% RH, non-condensing
	Ambient temperature	30...120°F [0...50°C]
	Fluid temperature	30...120°F [0...50°C]
	Operating condition air flow	min. 1 ft/s [0.3 m/s] max. 40 ft/s [12 m/s]
	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1

<b>Safety Data</b>	Certification UL	cULus acc. to UL60730-1A/-2-9, CAN/CSA E60730-1/-2-9
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Enclosure	UL Enclosure Type 4X
	Quality Standard	ISO 9001
	Mode of operation	Type 1
	Pollution degree	3
	Rated impulse voltage supply	0.8 kV
	Construction	Independently mounted control

**Safety Notes**


This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorized modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

**Remarks**

**General Remarks Concerning Sensors** Sensing devices with a transducer should always be operated in the middle of the measuring range to avoid deviations at the measuring end points. The ambient temperature of transducer electronics should be kept constant. The transducers must be operated at a constant supply voltage ( $\pm 0.2$  V). When switching the supply voltage on/off, onsite power surges must be avoided.

**Information self-calibration feature CO<sub>2</sub>** All CO<sub>2</sub> sensors are subject to drift caused by the aging process of the components, resulting in regular re-calibration or replacement of units. However, the dual channel technology integrates automatic self-calibration technology vs. common used ABC-Logic sensors. Dual channel self-calibration technology is ideally suited for applications operating 24/7 hours such as those in hospitals or other commercial applications. Manual calibration is not required.

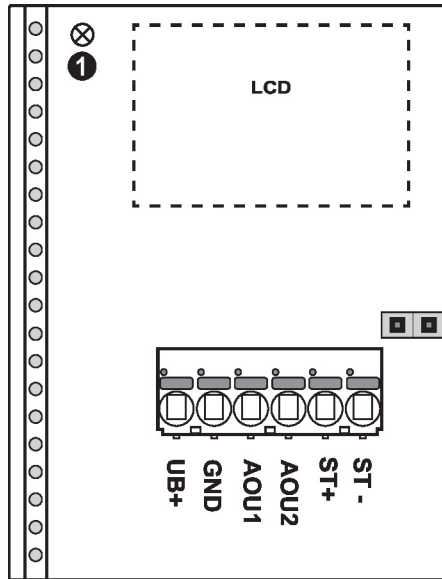
**Scope of delivery**

Scope of delivery	Description	Type
	Mounting flange for duct sensor 19.5 mm, up to max. 120°C [248°F], Plastic	A-22D-A34
	1/2" NPT conduit adapter	

**Accessories**

Optional accessories	Description	Type
	Replacement filter, wire mesh, Stainless steel	A-22D-A06
	Mounting plate L housing	A-22D-A10

Wiring Diagram

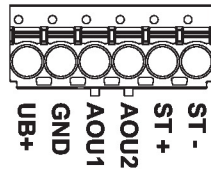


0...10 V



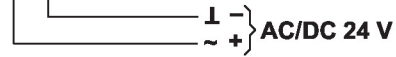
0...5 V

**DC 0...5/10 V**

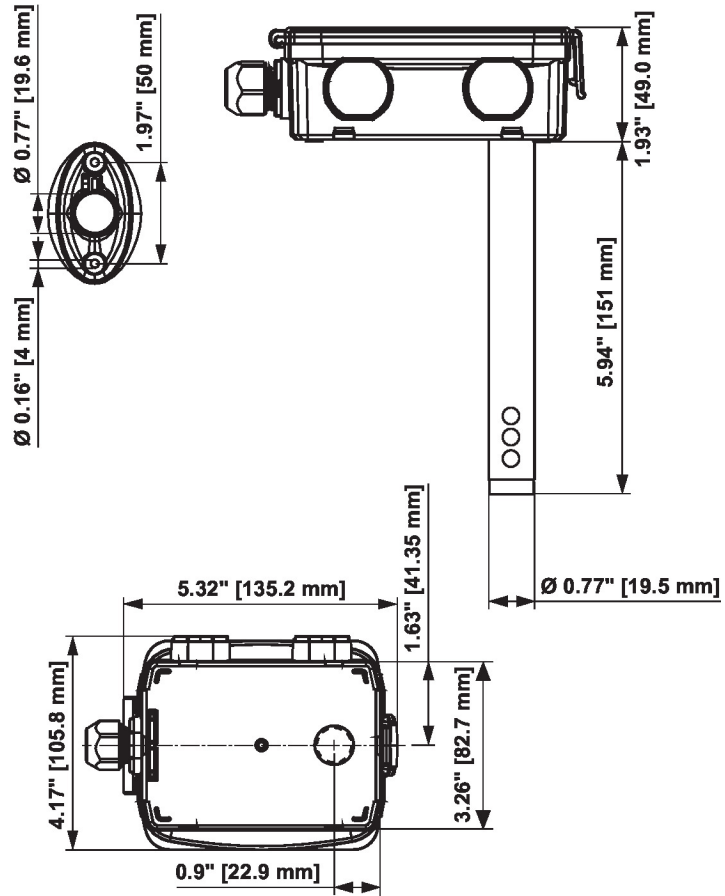


DC 0...5/10 V (CO2)

① Status LED



Dimensions



Type	Probe length	Weight
22DC-51	6" [150 mm]	0.57 lb [0.26 kg]