

Duct sensor CO₂

Active sensor (0...10 V) for measuring CO₂. Dual channel CO₂ technology. IP65 / NEMA 4X rated housing.



Type Overview

Type	Output signal active CO ₂
22DC-11	0...5 V, 0...10 V

Technical data

Electrical data	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 ²
	Cable entry	Cable gland with strain relief ø6...8 mm
Functional data	Medium	Air
	Voltage output	1 x 0...5 V, 0...10 V, min. resistance 10 kΩ
	Output signal active note	Output 0...5/10 V with Jumper adjustable
Measuring data	Measured values	CO ₂
Specification CO₂	Sensing element technology	Non-dispersive infrared (NDIR) dual channel
	Measuring range	0...2000 ppm
	Accuracy	±(50 ppm + 3% of measured value)
	Long term stability	±50 ppm p.a.
	Time constant τ (63%) in the air duct	Typical 33 s @ 1 m/s
Safety data	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Housing	UL Enclosure Type 4X
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1
	Quality Standard	ISO 9001
	UL Approval	cULus acc. to UL60730-1A/-2-9, CAN/CSA E60730-1/-2-9
	Type of action	Type 1
	Rated impulse voltage supply	0.8 kV
	Pollution degree	3
	Ambient humidity	Max. 95% RH, non-condensing

Technical data

Safety data	Ambient temperature	0...50°C [32...122°F]
	Fluid humidity	Max. 95% RH, non-condensing
	Fluid temperature	0...50°C [32...122°F]
	Operating condition airflow	min. 0.3 m/s max. 12 m/s
Materials	Housing	Cover: PC, orange Bottom: PC, orange Seal: NBR70, black UV resistant
	Cable gland	PA6, black
	Probe material	PA6, black

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. Unauthorised 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 authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with 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.

Product Features

CO₂ dual channel technology

All CO₂ sensors are subject to drift, which is caused by the ageing process of the components and requires regular calibration and adjustment or replacement of the sensors. The dual-channel technology minimises this drift by compensating for the majority of the ageing effects of the measuring channel through adjustment with a reference channel. This makes it possible to use dual-channel sensors in applications with 24/7 occupancy. Regular calibration with fresh outdoor air, as is the case with sensors with ABC logic, is not necessary with dual-channel sensors. It is recommended to recalibrate the sensor after 5 years of operation.

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 (± 0.2 V). When switching the supply voltage on/off, onsite power surges must be avoided.

Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

Requirements to be met by the medium

To ensure the ongoing and optimal functioning of the sensor, it is imperative that the air being measured is free of dust or other contaminants that could accumulate on the sensor element.

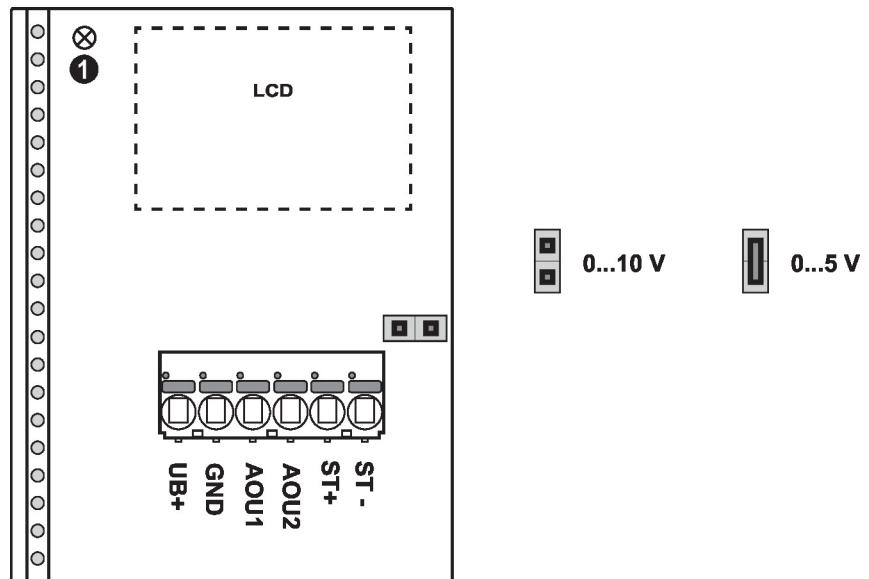
Parts included

Description	Type
Mounting flange for duct sensor 19.5 mm, up to max. 120°C [248°F], Plastic	A-22D-A35

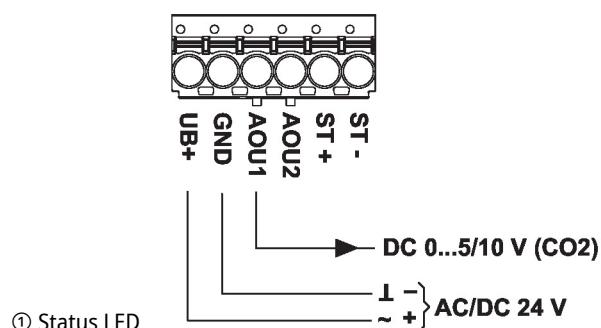
Accessories

Optional accessories	Description	Type
	Replacement filter sensor probe tip, wire mesh, Stainless steel	A-22D-A06
	Connection adapter flex conduit, M20x1.5, for cable gland 1x 6 mm, Multipack 10 pcs.	A-22G-A01.1
	Mounting plate L housing	A-22D-A10

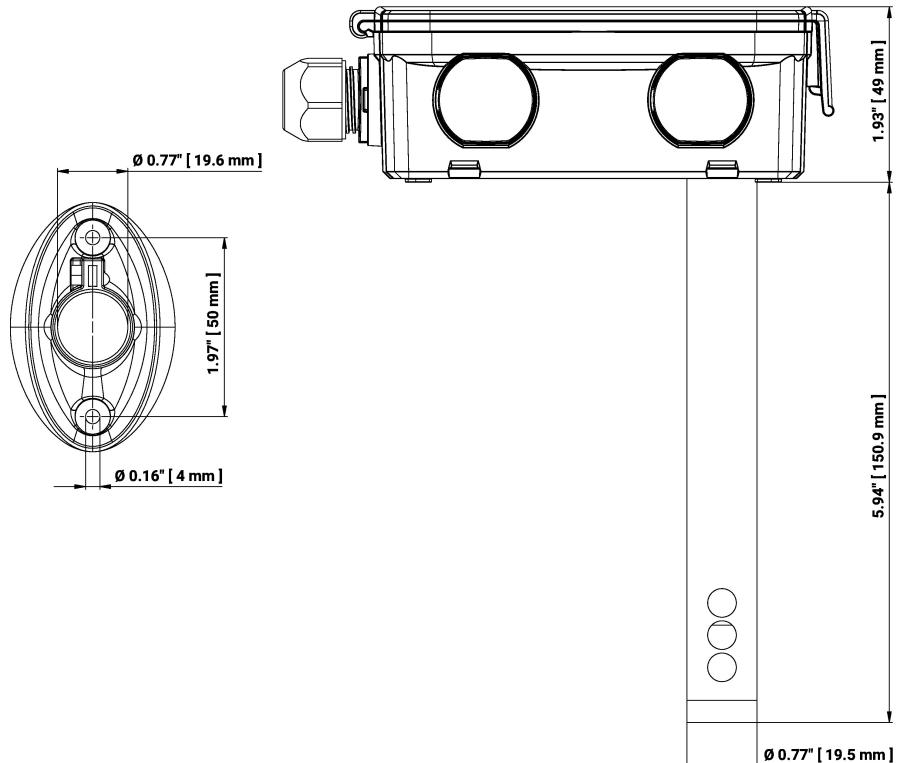
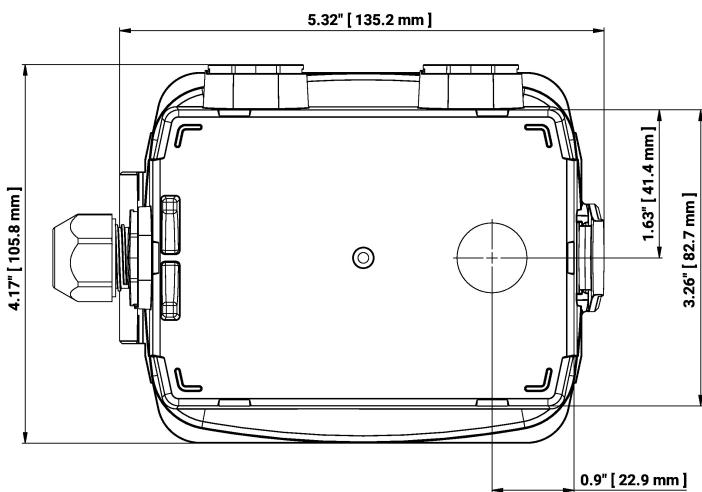
Wiring diagram



DC 0...5/10 V



Dimensions



Type	Probe length	Weight
22DC-11	150 mm	0.26 kg

Further documentation

- Installation instructions