Duct Sensor CO_2

For CO_2 measurement in duct applications.
Dual channel CO_2 technology.
NEMA 4X / IP65 rated enclosure.

5 YEAR WARRANTY

Type Overview

Type	Output Signal Active CO_2	Output Signal Active Temperature
22DC-13	4...20 mA	-
22DTC-13	4...20 mA	4...20 mA

Technical Data

Electrical data	Power Supply DC	15...24 V, ±10%, 1.5 W
	Cable entry	Cable gland PG11 Ø6...10 mm, with strain relief Ø6...8 mm
Functional data	Sensor Technology	NDIR (non dispersive infrared) with stainless steel wire mesh filter
	Output signal active note	Current output: max. 500 Ω load
	Media	Air
Measuring data	Measured values	CO_2 Temperature
	Measuring range CO_2	0...2000 ppm
	Measuring range temperature	0...50 °C [32...120 °F]
	Accuracy CO_2	±(50 ppm + 3% of measuring value)
	Accuracy temperature passive	±0.5 °C @ 21 °C [±0.9 °F @ 70 °F]
	Operating condition air flow	min. 0.3 m/s max. 10 m/s
Materials	Cable gland	PA6, black
	Housing	Cover: Lexan, Belimo orange NCS S0580-Y6OR Bottom: Lexan, Belimo orange NCS S0580-Y6OR Seal: 0467 NBR70, black
	Probe material	PA6, black

Safety data		
	Ambient humidity	85% r.H., non-condensing
	Ambient temperature	0...50 °C [32...120 °F]
	Medium temperature	0...50 °C [32...120 °F]
	Operating condition air flow	min. 0.3 m/s max. 10 m/s
	Protection class IEC/EN	III Safety Extra-Low Voltage (SELV)
	Protection class UL	UL Class 2 Supply
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1
	Certification UL	cULus acc. to UL60730-1A/-2-9, CAN/CSA E60730-1:02/-2-9, CE acc. to 2004/108/EC and 2006/95/EC, NEMA 4X, IP65, UL Enclosure Type 4X
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Quality Standard	ISO 9001
	Weight	0.26 lbs

Safety notes

The installation and assembly of electrical equipment should only be performed by authorized personnel.

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 human, 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

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 the 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.

Build-up of Self-Heating by Electrical Dissipative Power

Temperature sensors with electronic components always have a dissipative power which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power should be taken into account when measuring temperature. In case of a fixed operating voltage (±0.2 V) this is normally done by adding or reducing a constant offset value. As Belimo transducers work with a variable operating voltage, only one operating voltage can be taken into consideration, for reasons of production engineering. Transducers 0...10 V / 4...20 mA have a standard setting at an operating voltage of DC 24 V. That means, that at this voltage, the expected measuring error of the output signal will be the least. For other operating voltages, the offset error will be increased by a changing power loss of the sensor electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board.

Information Self-Calibration Feature CO_2

All CO_2 sensors are subject to drift caused by the aging process of the components, resulting in regular re-calibration or replacement 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 hosiptals or other commerical applications. Manual calibration is not required.

Accessories

Scope of delivery

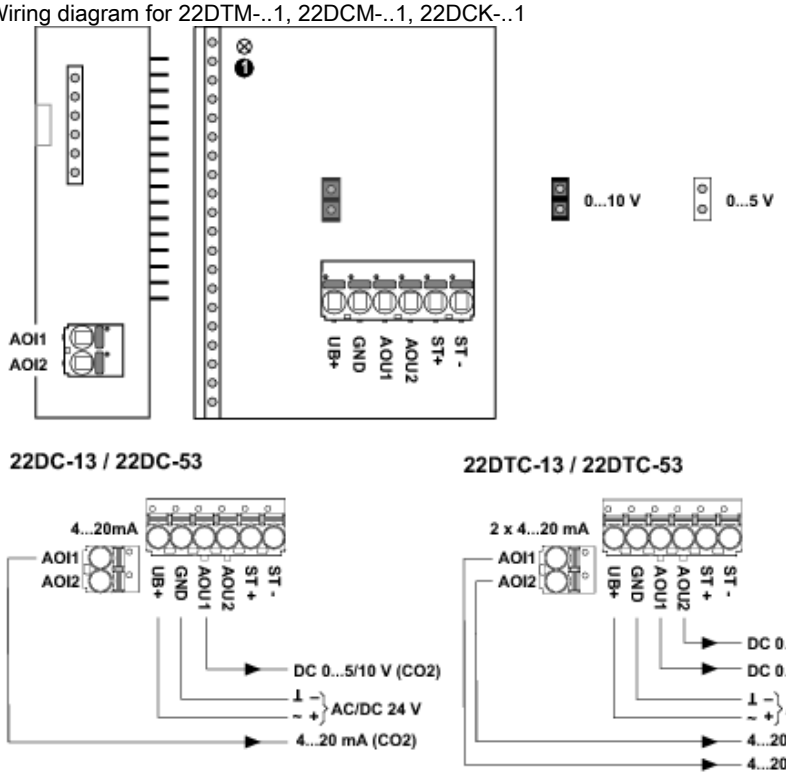
Mounting flange

Optional Accessories

Description	Type
Replacement filter Stainless steel, wire mesh	A-22D-A06

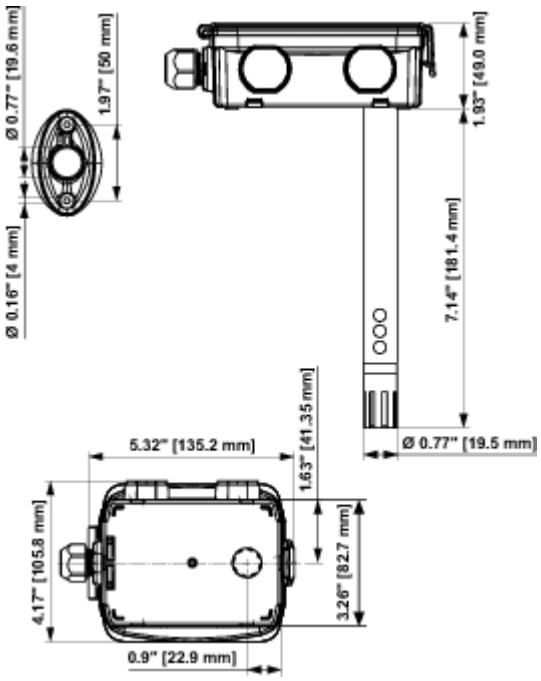
Wiring diagram

Wiring diagram for 22DTM-..1, 22DCM-..1, 22DCK-..1



① Status LED

Dimensions


Ø 0.77" [19.6 mm]
1.97" [50 mm]
Ø 0.16" [4 mm]
1.93" [49.0 mm]
7.14" [181.4 mm]
Ø 0.77" [19.5 mm]
1.63" [41.35 mm]
5.32" [135.2 mm]
4.17" [105.8 mm]
3.26" [82.7 mm]
0.9" [22.9 mm]