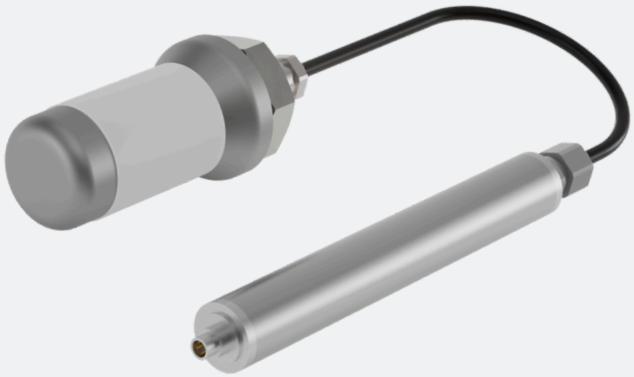
PRODUCT DATA SHEET

MicroSENS CO2 180-HS 0-20% Incubator Sensor



CO2

Art. no. 7210.01-A.01

NDIR gas sensor for CO_2 measurement in incubators, heat sterilizable at 180 °C.

The MicroSENS 180-HS 0-20% CO_2 gas sensor is an NDIR sensor for **measuring 5 vol.-% CO_2 in cell incubators to control ideal cell and tissue growth.** The sensor head is **placed in the incubation chamber** to measure gas concentration in the cell culture environment. Decontaminate the CO_2 diffusion sensor in an easy, effective and reliable way by **heat sterilization at typ. 180 °C**. The sensor head is designed for sterilization cycles in the four-digit range. It complies with DIN EN ISO 20857:2013, offering the highest number of sterilization cycles on the market. The heat sterilization with built-in sensor head eliminates the risk of cross-contamination. The sensor is **temperature and pressure compensated.** It features humidity compensation for best measurement results. Thanks to the **digital and analog interfaces**, the sensor is easy to integrate. Thanks to our **15-point calibration matrix (**five gas concentrations, at three temperatures each), the NDIR CO_2 sensor has an **improved linearity** compared to most sensors on the market. Achieve more precise measurements not only in the usual range of 5 vol.-%, but across the entire measurement range.

Applications

- Medical diagnostics - in-vitro diagnostics
- Tests in cellular processes
- Biotechnology
- Pharmaceutical industry and research

Product benefits

- High reliability
- Long service life
- Easy decontamination through high temperature sterilization cycle
- Low maintenance and minimal follow-up costs thanks to high-quality components

Features

- IR dual-beam technology
- Temperature and pressure compensated
- Heat sterilizable at typ. 180 °C (maximum up to 190 °C)
- Humidity compensation
- Digital and analog interface
- Application-specific core components and electronic modules manufactured in-house
- Sensor head made of resistant and durable metal

Technical data

Measurement performance

Technical parameter	Value	Unit
Measuring gas	CO_2	
Measuring range	0 ... 20	Vol.-%
Start-up time	< 15	s
Warm up time	< 5	min
IP protection class	IP20	
Repeatability	0.06	% FS
Accuracy	± (2 % of reading + 0.2 Vol.-%)	
Response time t90 with filter	< 45	s
Digital resolution	0.001	Vol.-%
Temperature influence	0.125	% FS / 10 K
Pressure influence	0.004	% FS / 10 hPa
Long-term stability	≤ ± 0.2 Vol.-% at 5 Vol.-% / year	

Inputs and outputs

Operating voltage analog connection	15 ... 24	V DC
Operating voltage digital connection	12 ... 24	V DC
Nominal power consumption	< 2	W
Digital output signal	RS232	

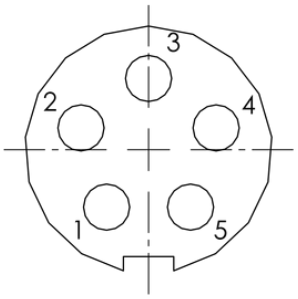
Operating environment

Technical parameter	Value	Unit
Operating temperature	0 ... 60	°C
Storage temperature	-20 ... 85	°C
Max. sterilization temperature [1]	190	°C
Humidity [1]	0 ... 95 % relative humidity (non condensing)	
Air pressure	600 ... 1200	hPa

[1] Sensor head only

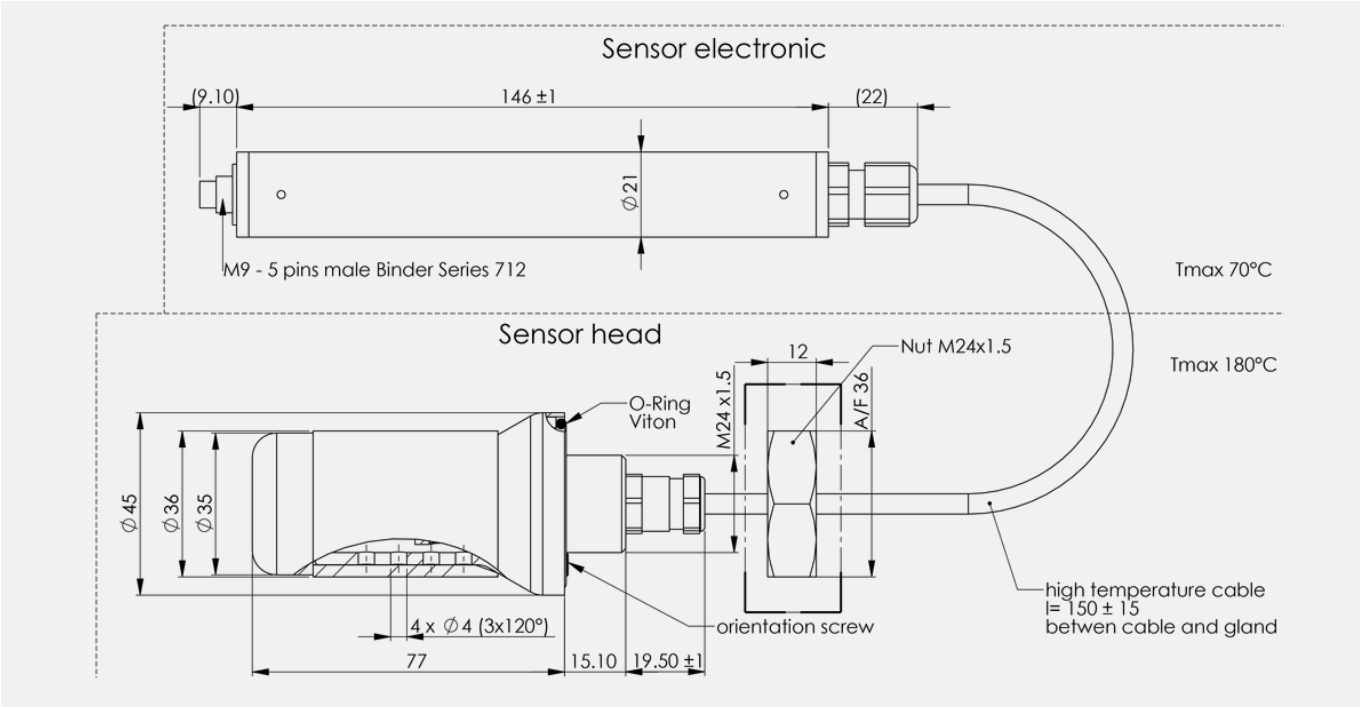
Typical operating characteristics

Pin out

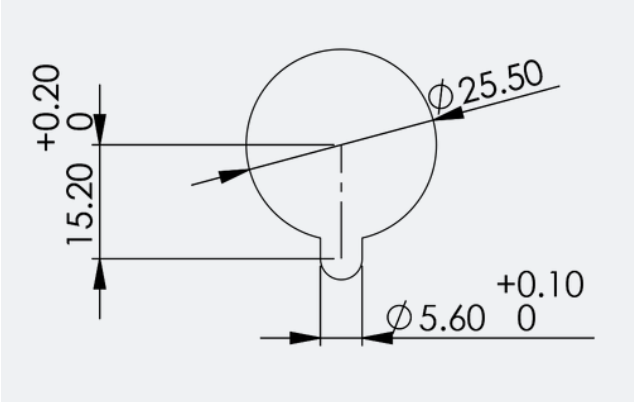


- Pin 1 – 24 V
- Pin 2 – RX
- Pin 3 – TX
- Pin 4 – GND
- Pin 5 – Current out

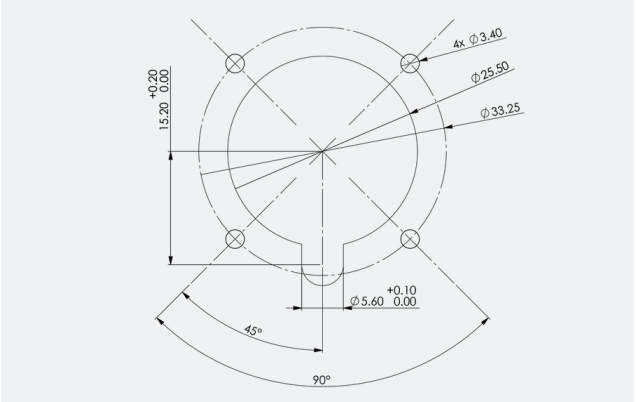
Sensor overview



Panel cut out



Combined panel cut out



All geometrical dimensions in mm

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