

MicroSENS CO₂ 0-20% 180-HS- PFAS-free gas sensor

CO₂



Art. no. 7213.01-A

NDIR gas sensor for CO₂ measurement in incubators, heat sterilizable at 180 °C.

This MicroSENS CO₂ 0-20% 180-HS is a PFAS-free NDIR CO₂ gas sensor with a robust metal filter, designed for precise CO₂ control in cell incubators. The heat-resistant sensor head enables reliable 180 °C sterilization and minimum of 1000 cycles according to DIN EN ISO 20857:2013. Temperature, pressure, and humidity compensation ensure stable measurements, while digital and analog interfaces simplify integration. A 15-point calibration matrix (five gas concentrations at three temperatures each) delivers superior linearity and accuracy across the full 0-20% 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



PRODUCT DATA SHEET

Gas Sensors / MicroSENS 180-HS 0-20% CO₂ gas sensor PFAS free



Technical data

Measurement performance

Technical parameter	Value	Unit
Measuring gas	CO ₂	
Measuring range	0 ... 20	Vol.-%
Start-up time	< 10	s
Warm-up time	< 5	min
IP protection class	IP44	
Repeatability	<0.005	% FS
Accuracy	± (2 % of reading + 0.2 Vol.-%)	
Response time t90 with filter	< 45	s
Digital resolution	0.001	Vol.-%
Temperature influence	0.155	% 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	
Analog output signal	4-20	mA



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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	500 ... 1200	hPa

¹ Sensor head only



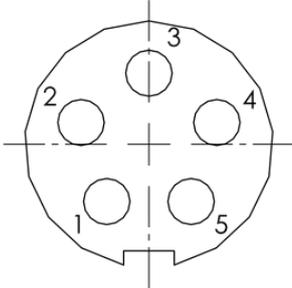
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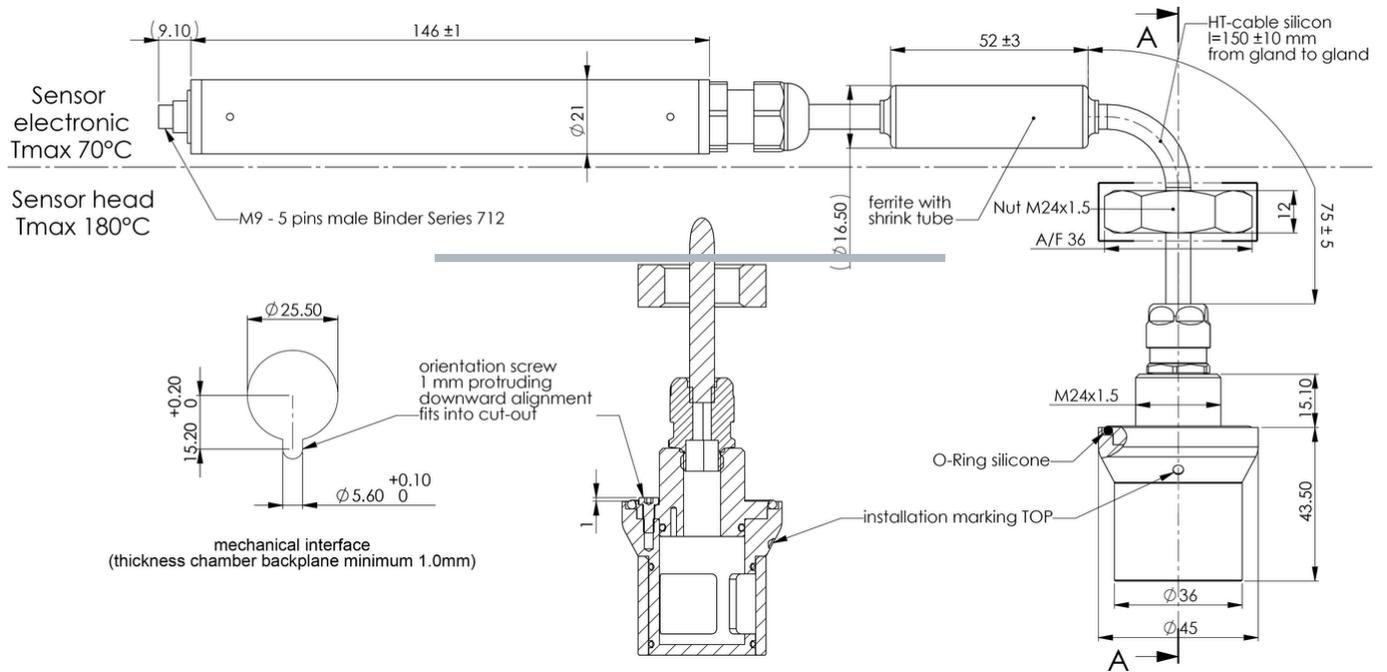
Typical operating characteristics

Pin out



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

Sensor overview



Panel cut out

All geometrical dimensions in mm



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