

InPro® 5500 i

Thermal Conductivity Carbon Dioxide (CO₂) Measurement Sensor

Technical Data



Short description

The InPro 5500 i CO₂ sensor provides reliable in-line measurement of dissolved carbon dioxide in liquids for a wide spectrum of food and beverage (brewery and carbonated soft drinks) processes. Intelligent Sensor Management (ISM) technology simplifies sensor handling and reduces sensor lifecycle cost.

The InPro 5500 i thermal conductivity sensor provides outstanding features:

- Direct process connection with three choices (Varivent™, Tri-Clamp®, 28 mm/M42)
- Integrated temperature sensor
- Hygienic design, capable of withstanding CIP procedures
- Stainless steel surfaces with highly polished finish
- Steam sterilisable up to 120 °C (248 °F)
- Wide CO₂ detection range 0...15 g/L CO₂
- O-rings with FDA approval
- Minimal and easiest membrane maintenance

ISM®

ISM technology provides unique advantages:

- “Plug and Measure”, the sensor is pre-calibrated and can be used out of the box
- Membrane integrity detection, for measurement chip protection
- Automatic sensor protection in event of purge gas failure
- Sensor shuts down during CIP/SIP cycles to prevent damage
- Predictive maintenance function (DLI, ACT)
- Dynamic Lifetime Indicator (DLI) determines the next Membrane change
- Advanced Calibration Timer (ACT) determines when the next calibration is scheduled

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METTLER TOLEDO

Specifications

Measurement principle thermal conductivity

Working conditions

Permissible pressure range during measurement 0 ... 20 bar absolute (0 ... 290 psi)

Mechanical pressure resistance = permissible pressure range

Permissible temperature range during measurement - 5 ... 50 °C (23 ... 122 °F)

Mechanical temperature range - 5 ... 121 °C (23 ... 250 °F)

Sensor performance

Operational range 0 ... 10 bar p (CO₂)/0 ... 145 psi p (CO₂)
0 ... 15 g/L CO₂
0 ... 7 V/V CO₂

Accuracy in fluids ± 1 % within ± 5 °C of calibration temperature
± 2 % over temperature range - 5 ... 50 °C (23 ... 122 °F)

Measurement cycle < 20 s

Flow requirements min. 0.5 m/s

Design features

Process connections - Varivent™ Type N
- Tri-Clamp® 2"
- 28 mm with cap nut M42

Temperature compensation automatic with built-in RTD

Cable connection (digital) 5 pin, RS 485 data cable

O-ring material EPDM* (wetted parts)
(other material on request)
*FDA approved

CO₂ selective membrane material PTFE / Silicone
(reinforced with steel mesh)

Material sensor body (wetted parts) 316L stainless steel

Surface roughness of wetted metal parts N5 (Ra = 0.4 µm [16 µin])

IP protection class IP 67

Certification (MaxCert™)

Material certificate 3.1 yes

Final inspection certificate yes

Ordering Information

Sensors	Order No.
InPro 5500 i/Varivent Type N	30 034 265
InPro 5500 i/Tri-Clamp-2"	30 034 266
InPro 5500 i/28 mm/M42	30 034 264

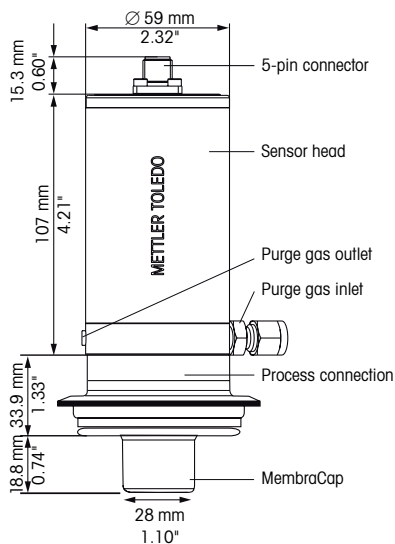
Accessories	Order No.
CalBox	52 300 400
Purge gas conditioner	30 034 319

Cables	Order No.
– Data cable (5-pin) for InPro 5500 i temperature range –30 ... 80 °C (–22 ... 176 °F)	
RS 485 data cable 2 m (6.6 ft)	52 300 379
RS 485 data cable 5 m (16.4 ft)	52 300 380
RS 485 data cable 10 m (32.8 ft)	52 300 381
RS 485 data cable 15 m (49.2 ft)	52 206 422
RS 485 data cable 25 m (82.0 ft)	52 206 529

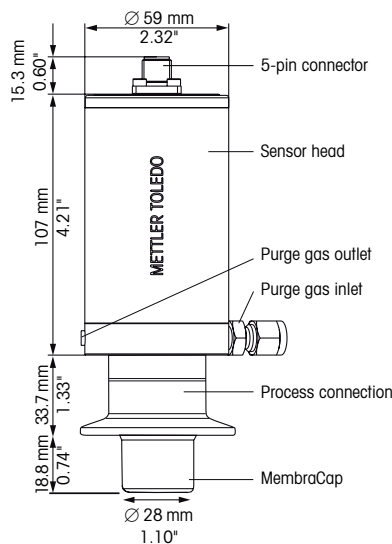
Spare parts	Order No.
MembraCap	30 034 318
O-ring set (Varivent)	30 038 616

Transmitters	Order No.
M400, Type 3	52 121 350
M800, 2-channel	52 121 813
M800, 4-channel	52 121 853

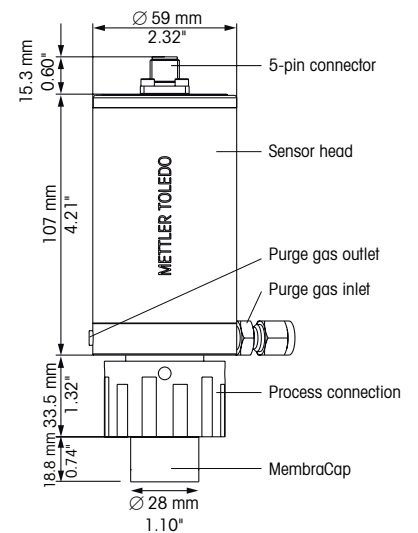
Drawings



InPro 5500 i/Varivent Type N



InPro 5500 i/Tri-Clamp-2"



InPro 5500 i/28 mm/M42

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Management System
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