

# InPro 8000 Series Turbidity Sensor

## Full range turbidity measurements

### Technical Data



M800 1-channel transmitter



InPro 8050 InPro 8200 InPro 8100

#### Short description

This fiber optic measuring system is based on the backscattered light principle and consequently provides the highest possible performance from low/medium turbidities right through to high suspended particle concentrations.

The InPro 8050 single optical fiber turbidity sensor utilizes a rugged polysulfone body and was developed specifically for accuracy and durability in the industrial waste water application.

The InPro 8100 single optical fiber turbidity sensor is available in stainless steel and is intended for use in cell culture monitoring, pharmaceutical production and industrial processes. Autoclavable sensor is available.

The InPro 8200 dual optical fiber turbidity sensor is designed for use in cell culture monitoring, crystallization control and industrial processes including liquid/ solid separation. The InPro 8200 turbidity sensor is available in stainless steel or Hastelloy sensor body.

#### Sensor features

- Wide measuring range from 5/10 FTU up to 4000 FTU.
- Small 12 mm sensor diameter, single/ dual optical fiber sensors made of polysulfone (PSU); DIN 1.4435 SS (316L) or Hastelloy (HA-C22) saves valuable space and for use in various application.
- PG 13.5 threads for interface into various housing.
- Various sensor lengths are available
- Sterilizable and uniform sensor structure reduces fouling and the needs of sensor cleaning maintenance.
- Suitable for installation in classified area (Ex-proof).
- for operation with METTLER TOLEDO M800 1-channel color touch screen transmitter

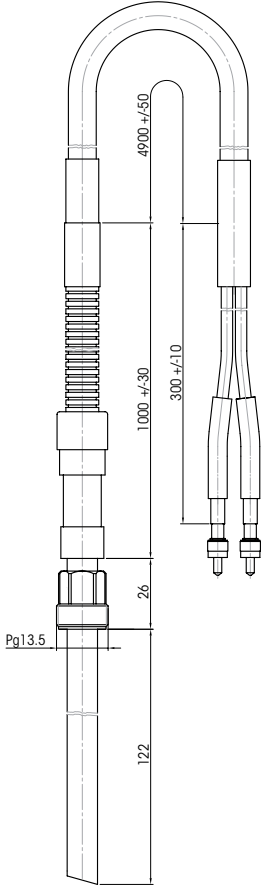
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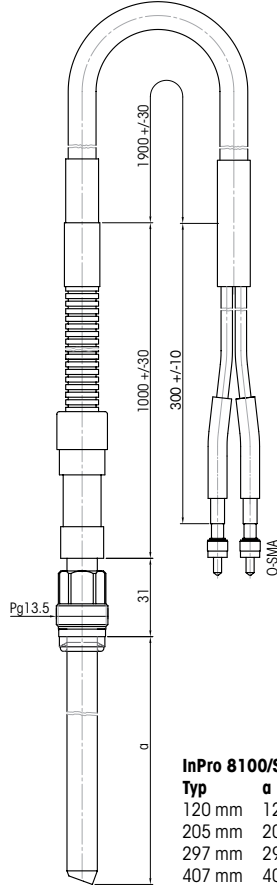
**METTLER TOLEDO**

Dimension drawing InPro 8000 series turbidity sensor

InPro 8050



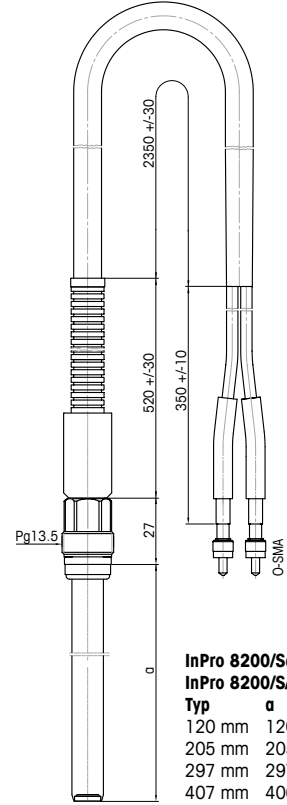
InPro 8100



**InPro 8100/S**

Typ	a
120 mm	122 mm
205 mm	207 mm
297 mm	299 mm
407 mm	409 mm

InPro 8200



**InPro 8200/S(H)/Epoxy**  
**InPro 8200/S/Kalrez®-FDA**

Typ	a
120 mm	120 mm
205 mm	205 mm
297 mm	297 mm
407 mm	406.5 mm

All dimensions in mm !

## Specifications

## InPro 8000 Series Turbidity Sensor

### Specifications InPro 8000 series turbidity sensor

	InPro 8050	InPro 8100	InPro 8200
Measuring principle	backscatter, 1-fiber	backscatter, 1-fiber	backscatter, 2-fiber
Sensor material	PSU (Polysulfone)	DIN 1.4435 (316L)	Din 1.4435 (316L) or HA-C22
Sensor diameter	12 mm	12 mm	12 mm
Insertion length	120 mm	120, 205, 297 or 407 mm	120, 205, 297 or 407 mm
Process connection	Pg 13.5	Pg 13.5	Pg 13.5

#### Measuring range:

Formazin Turbidity Units	10...4000 FTU	10...4000 FTU	5...4000 FTU
Suspended Solids (Diatomaceous earth as reference)	0...250 g/L	0...250 g/L	0...30 g/L

#### Design:

Cable connectors	SMA	SMA	SMA
Cable lengths	6 m (20 ft) optical	3 m (10 ft) optical	3 m (10 ft) optical
Cable type	duplex HCS fiber, fixed	duplex HCS fiber, fixed	duplex HCS fiber, fixed

#### Wetted parts:

Metals	none	DIN 1.4435 (316L)	DIN 1.4435 (316L) or Hastelloy (HA-C22)
Plastic	PSU	none	none
O-ring	Viton®-FDA	Viton®-FDA	Viton®-FDA
Sapphire spigot for fiber protection	yes	none	none
Sapphire window for fiber protection	none	none	Kalrez®-type: Kalrez®-FDA 6230 sealed Epoxy-type: Epoxy bonded

#### Working conditions:

Pressure range	0...2 bar (0...29 psi)	0...6 bar (0...87 psi)	Epoxy-type: 0...16 bar (0...232 psi) With Swagelok® adapter: 60 bar (0...870 psi) Kalrez®-type: 0...6 bar (0...87 psi)
Measuring temperature range	0...60 °C (32...140 °F)	-30...130 °C (-22...266 °F)	Epoxy-type: -30...130 °C (-22...266 °F) Kalrez®-type: -10...130 °C (14...266 °F)
Temperature range (sterilization)	n/a	0...130 °C (32...266 °F)	Kalrez® -type: 0...130 °C (32...266 °F) Epoxy type: n/a
<b>Certificate and Approval:</b>	n/a	☒ Ex II 1/2G Ex op is/op pr IIA 95 °C Ga/Gb ☒ Ex II 1/2G Ex op is/op pr IIB 38 °C Ga/Gb	☒ Ex II 1/2G Ex op is/ op pr IIA 95 °C Ga/Gb ☒ Ex II 1/2G Ex op is/ op pr IIB 38 °C Ga/Gb

**Specifications duplex fiber optic cable**

Cladding material	HCS (Hard Clad Silica)
Core diameter	600 ±10 µm
Attenuation @ 850 nm	≤ 8 dB/km
Long-term bend radius	≥ 94 mm
Outer jacket	PVC

**Ordering information**

Designation code	InPro 8100/S/xxx	S = shaft material DIN 1.4435 (316L)
	InPro 8200/S(H)/..../xxx	H = Hastelloy C22 .... = sealing for sapphire window xxx = insertion length in mm

Designation	Insertion lengths	Body material	Order no.
InPro 8050	120 mm (4.7")	PSU	52 800 209
InPro 8100/S/120	120 mm (4.7")	DIN 1.4435 (316L)	52 800 205
InPro 8100/S/205	205 mm (8.1")	DIN 1.4435 (316L)	52 800 206
InPro 8100/S/297	297 mm (11.7")	DIN 1.4435 (316L)	52 800 207
InPro 8100/S/407	407 mm (16.0")	DIN 1.4435 (316L)	52 800 208
InPro 8200/S/Epoxy/120	120 mm (4.7")	DIN 1.4435 (316L)	52 800 216
InPro 8200/S/Epoxy/205	205 mm (8.1")	DIN 1.4435 (316L)	52 800 217
InPro 8200/S/Epoxy/297	297 mm (11.7")	DIN 1.4435 (316L)	52 800 218
InPro 8200/S/Epoxy/407	407 mm (16.0")	DIN 1.4435 (316L)	52 800 219
InPro 8200/H/Epoxy/120	120 mm (4.7")	HA-C22 (Hastelloy)	52 800 220
InPro 8200/H/Epoxy/205	205 mm (8.1")	HA-C22 (Hastelloy)	52 800 221
InPro 8200/H/Epoxy/297	297 mm (11.7")	HA-C22 (Hastelloy)	52 800 222
InPro 8200/H/Epoxy/407	407 mm (16.0")	HA-C22 (Hastelloy)	52 800 223
InPro 8200/S/Kalrez-FDA/120	120 mm (4.7")	DIN 1.4435 (316L)	52 800 224
InPro 8200/S/Kalrez-FDA/205	205 mm (8.1")	DIN 1.4435 (316L)	52 800 225
InPro 8200/S/Kalrez-FDA/297	297 mm (11.7")	DIN 1.4435 (316L)	52 800 226
InPro 8200/S/Kalrez-FDA/407	407 mm (16.0")	DIN 1.4435 (316L)	52 800 227

**Accessories**

<b>Designation</b>	<b>Lengths</b>	<b>Order no.</b>
Fiber optic extension 3 m	3 m (10 ft)	52 800 228
Fiber optic extension 5 m	5 m (15 ft)	52 800 229
Fiber optic extension 6 m	6 m (18 ft)	52 800 230
Fiber optic extension 10 m	10 m (30 ft)	52 800 231
Fiber optic extension 15 m	15 m (45 ft)	52 800 232
Fiber optic extension 20 m	20 m (60 ft)	52 800 233
Fiber optic extension 25 m	25 m (75 ft)	52 800 234
Fiber optic extension 30 m	30 m (100 ft)	52 800 235
Fiber optic extension 75 m	75 m (230 ft)	52 800 177
Fiber optic extension 100 m	100 m (330 ft)	52 800 154
Couplings (2 included in each fiber kit)		52 800 240
Coupling Box IP 65/NEMA 4X		52 800 241
Swagelok adapter NPT 1/2"		52 800 242
"CaliCap" (calibration tool)		52 800 210

**O-rings**

<b>Designation</b>	<b>Size</b>	<b>Order no.</b>
Viton®-FDA	10.77 x 2.62 mm	59 905 680
Silicon-FDA	10.77 x 2.62 mm	59 905 678
Kalrez®-FDA	10.78 x 2.62 mm	59 905 789
EPDM-FDA	10.77 x 2.62 mm	59 905 768

**Transmitter**

<b>Designation</b>	<b>Order no.</b>
M800, 1-channel	30 026 633

## Housings for InPro 8050

Type of housing installation	Designation	Wetted part material	Insertion length (mm)	Sensor length (mm)	Process connection	O-ring	Order no.
Direct Inline	InFit761/NS/0070/PVDF/D00/Vi9-	PVDF	70	120	DN25	Viton®-FDA	52 400 311
Insertion	InFit761/NS/0070/PP_/D00/Vi9-	PP	70	120	DN25	Viton®-FDA	52 400 316
Open Basin	InDip550/1000 PVC Pg13.5	PVC	1000	120	N/A	Viton®-FDA	52 400 320
	InDip550/1500 PVC Pg13.5	PVC	1500	120	N/A	Viton®-FDA	52 400 582
	InDip550/2000 PVC Pg13.5	PVC	2000	120	N/A	Viton®-FDA	52 400 588
	InDip550/2500 PVC Pg13.5	PVC	2500	120	N/A	Viton®-FDA	52 400 594
	InDip550/3000 PVC Pg13.5	PVC	3000	120	N/A	Viton®-FDA	52 400 600

## Housings for InPro 8100 and InPro 8200

Type of housing installation	Designation	Wetted part material	Insertion length (mm)	Sensor length (mm)	Process connection	O-ring	Order no.
Direct Inline	InFit761/WS/0070/4435/D10/Vi2-	DIN 1.4435	70	120	DN25	Viton®	59 900 753
Insertion	InFit761/NS/0070/4435/D00/Si9-	DIN 1.4435	70	120	DN25	Silicon-FDA	59 900 796
	InFit761/NC/0070/4435/D00/Si9-	DIN 1.4435	70	120	DN25	Silicon-FDA	52 400 491
	InFit761/NC/0033/4435/V02/Si-	DIN 1.4435	33	120	Varivent	Silicon-FDA	52 400 502
	InFit761/NC/0070/4435/T01/Si-	DIN 1.4435	70	120	TC 1.5"	Silicon-FDA	52 400 494
	InFit761/NC/0070/4435/T02/Si-	DIN 1.4435	70	120	TC 2"	Silicon-FDA	52 400 495
	Retractable from the process	InTrac779M/070/4404/D00/Vi/A00	DIN 1.4404	70	205	DN25	Viton®-FDA
InTrac799M/100/4404/D00/Vi/A00		DIN 1.4404	100	297	DN25	Viton®-FDA	52 403 237

Note: Please consult your local METTLER TOLEDO representative for more option.



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