

InPro® 8600 i Series Turbidity Sensor

Hygienic turbidity system for the low to medium particle concentration range

Technical Data



InPro 8600 i/D*



M800 1-channel transmitter

Short description

The InPro 8600 i series turbidity sensor from METTLER TOLEDO are designed for reliable measurements of turbidity in the low to medium particle concentration range. The main applications are in the food and beverage industry, mainly in breweries.

The measuring principle is based on forward and forward/sideward scattering of light. The system is intended for inline detection of undissolved (suspended) substances in liquid media.

The InPro 8600 i/D3 also has a colour measurement function (with or without turbidity compensation). Absorption of blue light is measured for the colour measurement. The graduation of yellow is determined according the directive of "Mittleuropäische Brautechnische Analysenkommision e.V." (MEBAK) to measure turbidity and graduation of yellow with one instrument.

Outstanding sensor features are:

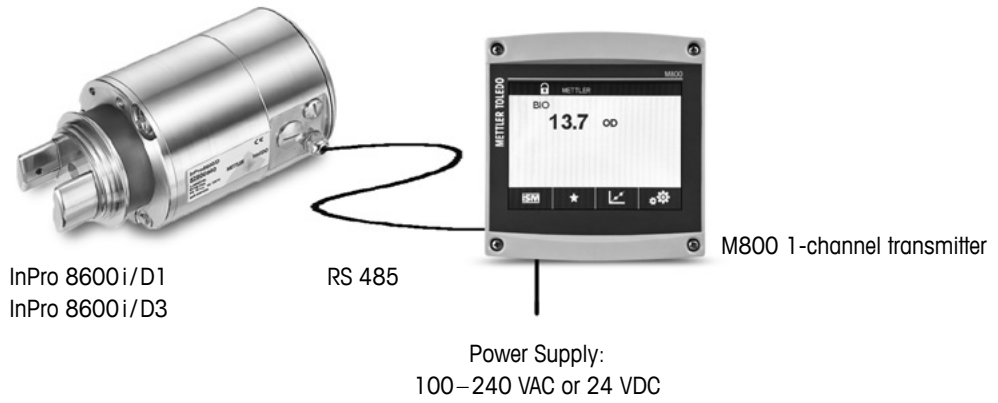
- Single/dual LED light sources (red and blue LED) for the turbidity and color measurement
- Pulse LED(s) for auto-zeroing before measurement to eliminate interference
- hygienic design with EHEDG approved
- stainless steel surfaces with highly polished finish
- High durability sapphire optical window to withstand roughest process condition
- Dust tight and water proof (IP65)
- Tuchenhagen-Varinline® process connection
- 12-points factory formazin calibration over the entire measurement range
- Plug & Measure and ISM® compatible
- for operation with METTLER TOLEDO M800 1-channel color touch screen transmitter

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METTLER TOLEDO

InPro 8600 i/D – Sensor with transmitter



Explanation of designations

- **InPro 8600 i/D1:** Single- angle version.
Forward and 25° scattered light for turbidity measurement.

- **InPro 8600 i/D3:** Dual- angle version.
Forward, 25° and 90° scattered light for turbidity measurement.
Blue LED light source is included for the color measurement.

Sensor specification InPro 8600 i Series

Turbidity (InPro 8600 i/D*)

Measuring principle	Scattered light, red light InPro 8600 i/D1: 25° (single-angle version) InPro 8600 i/D3: 25°/90° (dual-angle version)
Wavelength	650 nm (light-emitting diode [LED])
Measuring range	0 ... 400 FTU
Accuracy	0.01 FTU (measuring value <1 FTU) 1 % of the measured value (meas. value >1 FTU)
Repeatability	0.01 FTU
Resolution	0.01 FTU
Response time (T90)	<2 sec
Units	FTU, NTU, EBC, ASBC, ppm SiO ₂ , mg/L SiO ₂
Factory calibration	12-points-calibration over the entire measuring range, based on Formazin standards

Color (InPro 8600 i/D3)

Measuring principle	Absorption, blue light
Wavelength	460 nm (LED, light emitting diode)
Measuring range	0–30 EBC
Measurement accuracy	±2% of measured value
Repeatability	0.01 EBC
Resolution	0.01 EBC
Response time (T90)	3 sec at EBC change >10
Units	EBC
Factory calibration	6-points-calibration

Process conditions

Admissible pressure range	max. 16 bar (232 psi)
Temperature (process media)	InPro 8600 i/D1: 0...100 °C (32...212 °F) Max. 120 °C (248 °F), short time, 1 h InPro 8600 i/D3: 0...80 °C (32...176 °F), at 25 °C (77 °F) ambient temperature with air cooling 0...70 °C (32...158 °F), at 25 °C (77 °F) ambient temperature without air cooling Max. 120 °C (248 °F), short time, 1 h
Admissible temperature range (ambient)	0 ... 60 °C (32 ... 140 °F)

Sensor specifications InPro 8600

Materials and dimensions

Sensor head (wetted)	stainless steel (1.4404/316L)
Wetted measurement window	sapphire
Sensor housing	stainless steel (1.4404/316L))
O-ring (flange wetted)	EPDM
Sensor connection	in-line adaption (Varivent® or compatible Tuchenhagen N 50/40)
Surface finish	Ra ≤ 0.8 µm
Protection rating	IP 65
Cable lengths	5, 10 and 20 m (16.4, 32.8 and 65.6 ft) (RS485 communication)
Pipe diameter (process)	DN 40 ... DN 150

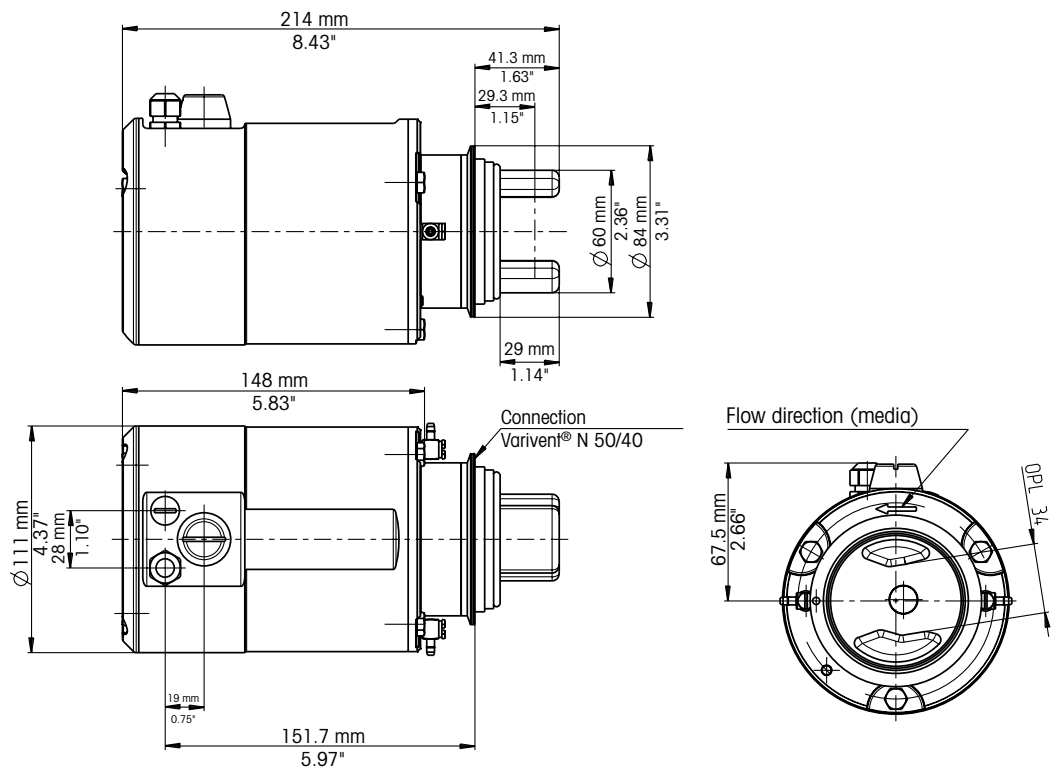
InPro 8600 / D / *

Communication with Trb 8300 D	digital (RS 485)
Power	24 VDC (± 2 V), reverse-polarity protected
Sensor power consumption	max. 300 mA

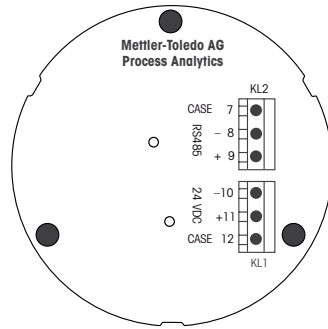
Certificates

Quality control and final inspection	•
PED	•
EHEDG	•
CE	•

Dimensional drawing InPro 8600 i/D*



Sensor and transmitter pin assignment



InPro 8600 i/D1 /D3

InPro 8600 i/D*

Terminal assignment	Terminal	Assignment	Cable lead
KL2	7	shield	–
	8	RS 485B (-)	green
	9	RS 485A (+)	yellow
KL1	10	24 V DC -	white
	11	24 V DC +	brown
	12	shield	green/yellow

M800 1-channel

Terminal assignment	Terminal	Function	Cable lead
TB3	2	GND 5V	green/yellow
	3	RS 485B	green
	4	RS 485A	yellow
	7	24 V	brown
	8	GND 24V	white

Note: The InPro 8600 i/D* turbidity sensor operates with a 24 VDC power supply only.

When only an AC power supply is available on site, the InPro 8600 i/D* turbidity sensor may connect to the 24 VDC terminals from the M800 1-channel transmitter.

However, when 24 VDC power supply is available on site, the InPro 8600 i/D* should be directly connected to the 24 VDC power source.

Ordering information

Sensors InPro 8600 i/D*		Order no.
InPro 8600 i/D1		30 104 626
InPro 8600 i/D3		30 104 627

Transmitter		
M800 1-channel, 100 ... 240 VAC, 24 VDC, IP 66		30 026 633

Accessories		
Verification Kit InPro 8600		52 800 982
5 m sensor cable (RS 485)		52 800 979
10 m sensor cable (RS 485)		52 800 981
20 m sensor cable (RS 485)		52 801 005
Air purge connector (1 piece)		52 800 891

Spare Parts		
O-ring EPDM for Tuchenhausen-Varivent® process connection		59 909 451
Varivent® blanking plate		52 800 984

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