

# InPro 86X0i Turbidity Sensor

Hygienic turbidity system for the low to medium particle concentration range

## Technical Data



InPro 8610i/InPro 8630i

### Short description

The InPro® 86X0i turbidity sensors 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 8630i also has a color measurement function (with or without turbidity compensation). Absorption of blue light is measured for the color measurement. The graduation of yellow is determined according to the directive of "Mitteleuropäische Brautechnische Analysenkommision e.V." (MEBAK) to measure turbidity and graduation of yellow with one instrument.



M800 Process  
1-channel transmitter

### Outstanding sensor features are:

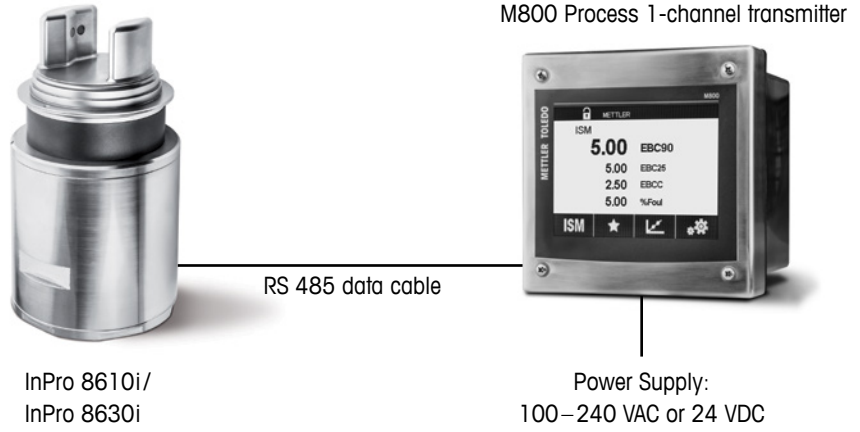
- Single/dual LED light sources (red and blue LED) for the turbidity and color measurement
- Pulse LED(s) for auto-zeroing before measurement to eliminate interference
- The sensor follows hygienic design best practices for efficient and effective sensor cleaning
- Stainless steel surfaces with highly polished finish
- High durability sapphire optical window to withstand roughest process condition
- Dust tight and waterproof protection (IP 66) make it the ideal solution for dusty and heavy wash-down conditions
- Tuchenhagen-Varinline® process connection
- Highest accuracy with 12-points factory formazine calibration over the entire measurement range
- ISM® compatible (digital) allows Plug and Measure
- For operation with METTLER TOLEDO M800 1-channel color touch screen transmitter
- Real-time window fouling surveillance and sensor diagnostic at a glance

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**METTLER TOLEDO**

InPro 86X0i – Sensor with transmitter



Explanation of designations

- **InPro 8610i:** Single- angle version.  
Forward and 25° scattered light for turbidity measurement.

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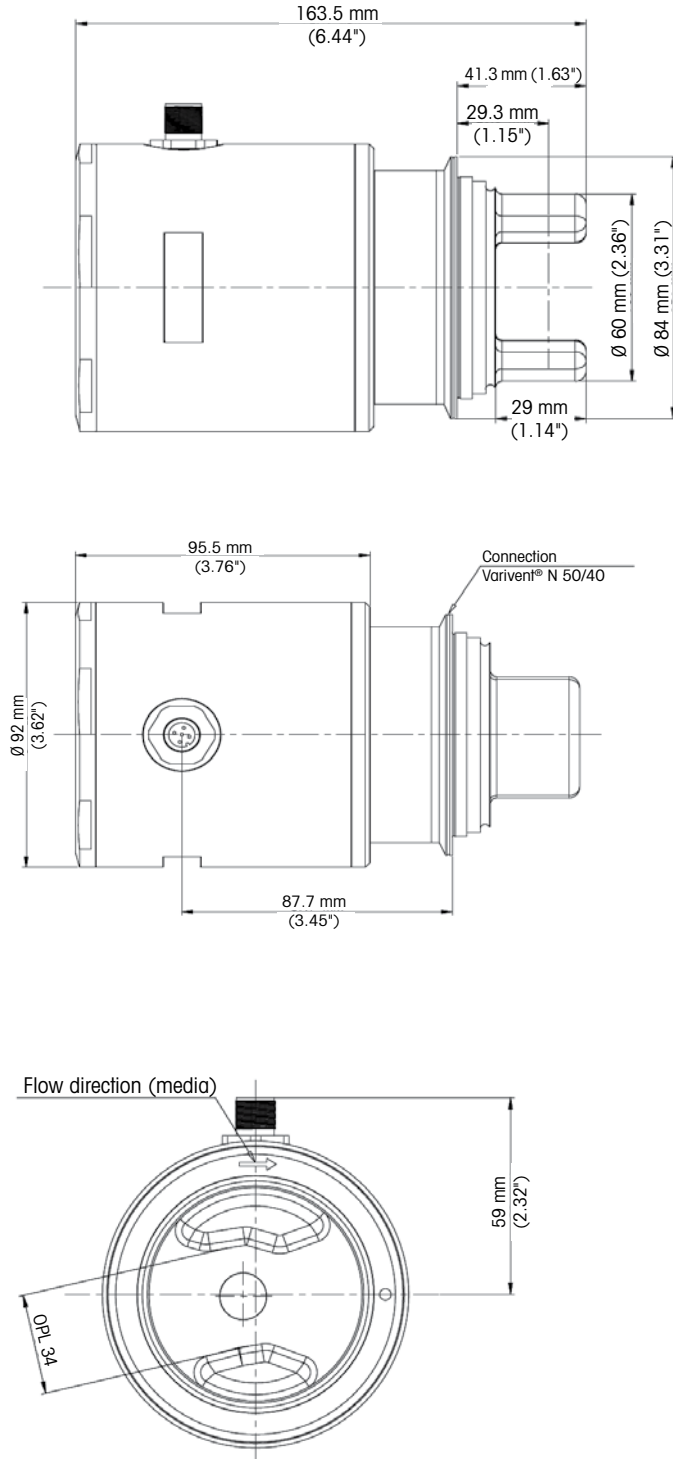
- **InPro 8630i:** Dual- angle version.  
Forward, 25° and 90° scattered light for turbidity measurement.  
Blue LED light source is included for the color measurement.

Sensor specification InPro 86X0i Series

Measuring principle	Turbidity: Scattered light (25°/90°**) Color**: Absorption measurement
Light source	Turbidity: 650 nm, LED (red light) Color: 430 nm, LED (blue light)
Measuring range	<b>InPro 8610i</b> 0 to 250 EBC 0 to 1000 FTU  <b>InPro 8630i</b> 0 to 1000 EBC 0 to 4000 FTU 0 to 50 EBC Color
Units	FTU, NTU, EBC, EBCC, g/l, mg/l, ppm, ASBC, %T, ICUMSA, % Foul
Resolution	0.001 EBC
Repeatability	Range: 0 to 1 FTU (0.01 FTU) Range: 1 to 4000FTU (±1%) Color: ±0.2EBC color
Respond time (T <sub>90</sub> )	<2sec.
Process connection	Tuchenhagen-VARINLINE Type N50/40
Pipe diameter (process)	DN40 to DN150
Surface finish (steel wetted)	N6/R <sub>a</sub> 32 (R <sub>a</sub> ≤0.8 μm/32 μin)
Sensor head (wetted)	stainless steel (1.4404/316L)
Sensor housing	stainless steel (1.4404/316L)
Wetted measurement window	sapphire
O-ring (flange wetted)	EPDM
Protection degree	IP66
Admissible process temperature	-10 °C to +120 °C (14 to 248 °F) (max. +150 °C/302 °F peak for 15 mins during SIP/CIP cleaning)
Admissible process pressure	up to 16 bar (232 psi)
Admissible ambient temperature	0 to 60 °C (32 to 140 °F)
Relative humidity	0 to 90% rel. (non-condensing)
Transportation and storage temperature	-10 to +70 °C (14 to 158 °F)
Communication	Digital (RS 485)
Power supply	24 VDC (± 15%), 1.5 W, supply by transmitter
Sensor power consumption	approx. 65 mA (max.)
Certificate and Approvals	METTLER TOLEDO Quality Certificate, CE, PED

\*\* InPro 8630i only

Dimensional drawing InPro 86X0i



**Cable connection to M800 Process 1-Channel transmitter**

The RS-485 data cable (5-pin) is available from METTLER TOLEDO in various length. Connect the data cable to the M800 Process 1-Channel transmitter as described below.

<b>M800 Process 1-Channel</b>	<b>TB3</b>	
<b>Terminal</b>	<b>Function</b>	<b>5-pin cable wire color</b>
1	1-Wire	–
2	GND 5V	Yellow
3	RS 485 B	Blue
4	RS 485 A	White
5	GND 5V	Grey
6	5V	–
7	24 V	Brown
8	GND 24 V	Black
9–16	Not used	–

In order to ensure optimum measurement results the following points must be considered:

- Run the connection cable through the cable gland.
- Connect the wires to the sensor.
- Hand-tighten the cable gland.

## Ordering information

<b>Sensors</b>		<b>Order no.</b>
InPro 8610i		30 421 360
InPro 8630i		30 421 361
<b>Transmitter</b>		
M800 Process 1-Channel		30 026 633
M800 Process 1-Channel SST (with stainless steel housing)		30 246 551
<b>Accessories</b>		
Verification Kit InPro 8600		52 800 982
RS485 data cable (2 m/6.6 ft)		52 300 379
RS485 data cable (5 m/16.4 ft)		52 300 380
RS485 data cable (10 m/32.8 ft)		52 300 381
RS485 data cable (15 m/49.2 ft)		52 206 422
RS485 data cable (25 m/82.0 ft)		52 206 529
<b>Spare parts</b>		
O-ring EPDM for Tuchenhausen-Varivent process connection		30 455 120
Varivent blanking plate		52 800 984



For addresses of METTLER TOLEDO  
Market Organizations please go to:  
**[www.mt.com/pro-MOs](http://www.mt.com/pro-MOs)**

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Management System  
certified according to  
ISO 9001 / ISO 14001



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