

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 to the directive of "Mittleuropäische Brautechnische Analysenkommision e.V." (MEBAK) to measure turbidity and graduation of yellow with one instrument.

Outstanding sensor features are:

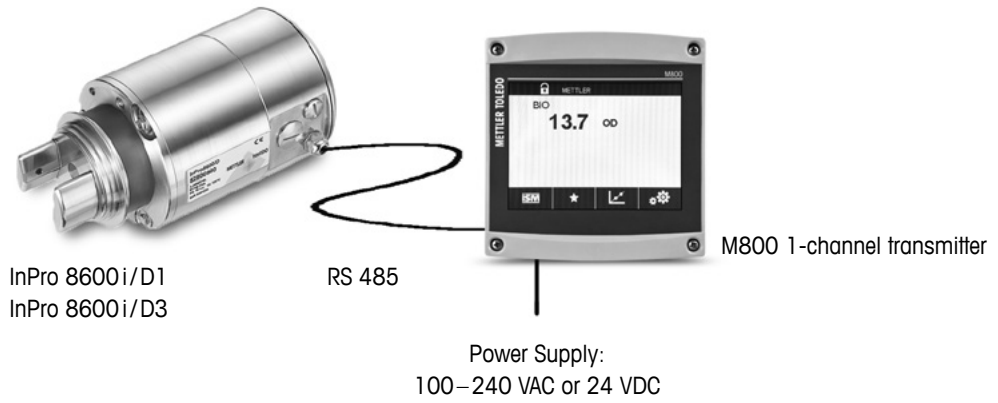
- Single/dual LED light sources (red and blue LED) for the turbidity and color measurement
- Pulse LED(s) for auto-zeroing before measurement to eliminate interference
- hygienic design with EHEDG approved
- stainless steel surfaces with highly polished finish
- High durability sapphire optical window 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

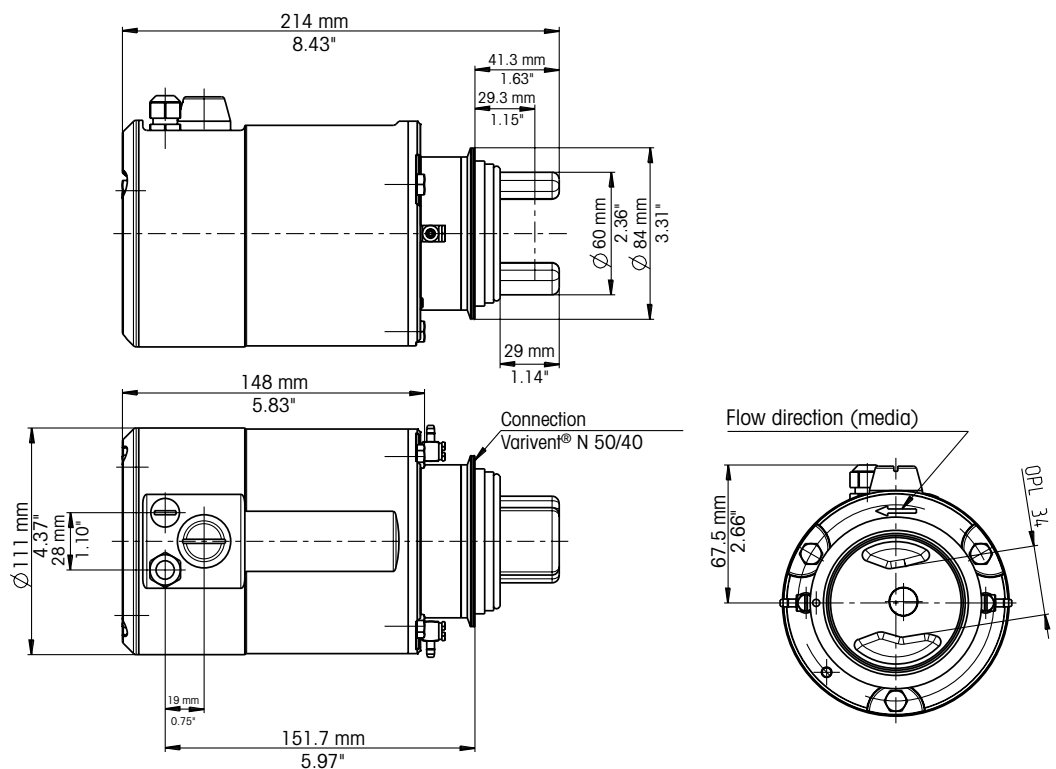
InPro 8600 / D / *

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

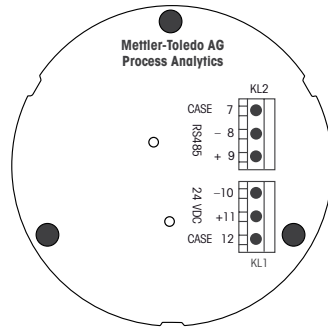
Certificates

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

METTLER TOLEDO Market Organizations

Sales and Service:

Australia

Mettler-Toledo Limited
220 Turner Street
Port Melbourne, VIC 3207
Australia
Phone +61 1300 659 761
e-mail info.mtaus@mt.com

Austria

Mettler-Toledo Ges.m.b.H.
Laxenburger Str. 252/2
AT-1230 Wien
Phone +43 1 607 4356
e-mail prozess@mt.com

Brazil

Mettler-Toledo Ind. e Com. Ltda.
Avenida Tamboré, 418
Tamboré
BR-06460-000 Barueri/SP
Phone +55 11 4166 7400
e-mail mtbr@mt.com

Canada

Mettler-Toledo Inc.
2915 Argenta Rd #6
CA-ON L5N 8G6 Mississauga
Phone +1 800 638 8537
e-mail ProlnsideSalesCA@mt.com

China

Mettler-Toledo International Trading
(Shanghai) Co. Ltd.
589 Gui Ping Road
Cao He Jing
CN-200233 Shanghai
Phone +86 21 64 85 04 35
e-mail ad@mt.com

Croatia

Mettler-Toledo d.o.o.
Mandlova 3
HR-10000 Zagreb
Phone +385 1 292 06 33
e-mail mt.zagreb@mt.com

Czech Republic

Mettler-Toledo s.r.o.
Trebohosticka 2283/2
CZ-100 00 Praha 10
Phone +420 2 72 123 150
e-mail sales.mtcz@mt.com

Denmark

Mettler-Toledo A/S
Naverland 8
DK-2600 Glostrup
Phone +45 43 27 08 00
e-mail info.mtdk@mt.com

France

Mettler-Toledo
Analyse Industrielle S.A.S.
30, Boulevard de Douaumont
FR-75017 Paris
Phone +33 1 47 37 06 00
e-mail mtpro-f@mt.com

Germany

Mettler-Toledo GmbH
Prozeßanalytik
Ockerweg 3
DE-35396 Gießen
Phone +49 641 507 444
e-mail prozess@mt.com

Great Britain

Mettler-Toledo LTD
64 Boston Road, Beaumont Leys
GB-Leicester LE4 1AW
Phone +44 116 235 7070
e-mail enquire.mtuk@mt.com

Hungary

Mettler-Toledo Kereskedelmi KFT
Teve u. 41
HU-1139 Budapest
Phone +36 1 288 40 40
e-mail mthu@axelero.hu

India

Mettler-Toledo India Private Limited
Amar Hill, Saki Vihar Road
Powai
IN-400 072 Mumbai
Phone +91 22 2857 0808
e-mail sales.mtin@mt.com

Indonesia

PT. Mettler-Toledo Indonesia
GRHA PERSADA 3rd Floor
Jl. KH. Noer Ali No.3A,
Kayuringin Jaya
Kalimalang, Bekasi 17144, ID
Phone +62 21 294 53919
e-mail
mt-id.customersupport@mt.com

Italy

Mettler-Toledo S.p.A.
Via Vialba 42
IT-20026 Novate Milanese
Phone +39 02 333 321
e-mail
customercare.italia@mt.com

Japan

Mettler-Toledo K.K.
Process Division
6F Ikenohata Nisshoku Bldg.
2-9-7, Ikenohata
Taiko-ku
JP-110-0008 Tokyo
Phone +81 3 5815 5606
e-mail helpdesk.ing.jp@mt.com

Malaysia

Mettler-Toledo (M) Sdn Bhd
Bangunan Electroscon Holding, U 1-01
Lot 8 Jalan Astaka U8/84
Seksyen U8, Bukit Jelutong
MY-40150 Shah Alam Selangor
Phone +60 3 78 44 58 88
e-mail
MT-MY.CustomerSupport@mt.com

Mexico

Mettler-Toledo S.A. de C.V.
Ejército Nacional #340
Polanco V Sección
C.P. 11560
MX-México D.F.
Phone +52 55 1946 0900
e-mail mt.mexico@mt.com

Norway

Mettler-Toledo AS
Ulvenveien 92B
NO-0581 Oslo Norway
Phone +47 22 30 44 90
e-mail info.mtn@mt.com

Poland

Mettler-Toledo (Poland) Sp.z.o.o.
ul. Poleczki 21
PL-Q2-822 Warszawa
Phone +48 22 545 06 80
e-mail polska@mt.com

Russia

Mettler-Toledo Vostok ZAO
Sretenskij Bulvar 6/1
Office 6
RU-101000 Moscow
Phone +7 495 621 56 66
e-mail inforus@mt.com

Singapore

Mettler-Toledo (S) Pte. Ltd.
Block 28
Ayer Rajah Crescent #05-01
SG-139959 Singapore
Phone +65 6890 00 11
e-mail
mt.sg.customersupport@mt.com

Slovakia

Mettler-Toledo s.r.o.
Hattalova 12/A
SK-831 03 Bratislava
Phone +421 2 4444 12 20-2
e-mail predaj@mt.com

Slovenia

Mettler-Toledo d.o.o.
Pot heroja Trtnika 26
SI-1261 Ljubljana-Dobrunje
Phone +386 1 530 80 50
e-mail keith.racman@mt.com

South Korea

Mettler-Toledo (Korea) Ltd.
1 & 4F, Yeil Building 21
Yangjaecheon-ro 19-gil
SeoCho-Gu
Seoul 06753 Korea
Phone +82 2 3498 3500
e-mail Sales_MTKR@mt.com

Spain

Mettler-Toledo S.A.E.
C/Miguel Hernández, 69-71
ES-08908 L'Hospitalet de Llobregat
(Barcelona)
Phone +34 902 32 00 23
e-mail mtemkt@mt.com

Sweden

Mettler-Toledo AB
Virkesvägen 10
Box 92161
SE-12008 Stockholm
Phone +46 8 702 50 00
e-mail sales.mts@mt.com

Switzerland

Mettler-Toledo (Schweiz) GmbH
Im Langacher, Postfach
CH-8606 Greifensee
Phone +41 44 944 47 60
e-mail ProSupport.ch@mt.com

Thailand

Mettler-Toledo (Thailand) Ltd.
272 Soi Soonvijai 4
Rama 9 Rd., Bangkokpi
Huay Kwang
TH-10320 Bangkok
Phone +66 2 723 03 00
e-mail
MT-TH.CustomerSupport@mt.com

Turkey

Mettler-Toledo Türkiye
Haluk Türksoy Sokak No: 6 Zemin ve 1.
Bodrum Kat 34662 Üsküdar-Istanbul, TR
Phone +90 216 400 20 20
e-mail sales.mttr@mt.com

USA

METTLER TOLEDO
Process Analytics
900 Middlesex Turnpike, Bld. 8
Billerica, MA 01821, USA
Phone +1 781 301 8800
Freephone +1 800 352 8763
e-mail mtprous@mt.com

Vietnam

Mettler-Toledo (Vietnam) LLC
29A Hoang Hoa Tham Street, Ward 6
Binh Thanh District
Ho Chi Minh City, Vietnam
Phone +84 8 35515924
e-mail
MT-VN.CustomerSupport@mt.com



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Mettler-Toledo GmbH, Process Analytics
Im Hackacker 15, CH - 8902 Urdorf, Switzerland
Phone + 41 44 729 62 11, Fax +41 44 729 66 36

www.mt.com/pro