

# Transmitter Trb 8300 F/S & InPro® 8400/InPro® 8500 Sensor Series

Turbidity measurement system for low to medium concentrations

## Technical Data



Trb 8300 F/S

### Short description

The measuring system functions according to the principle of forward scattering of light, and consists of a transmitter Trb 8300 F/S and a sensor from the InPro 8400 family. The system is intended for inline detection of undissolved (suspended) substances in liquid media. Supplementary measurement of the scattered light at an angle of 90° using InPro 8500 sensors also provides information on a tendency basis about the possible size distribution of the particles responsible for the turbidity. The systems have been designed for measurement applications in industrial pipelines and provide important data for optimization, control and monitoring of production processes in the chemical, pharmaceutical, biotechnology and food & beverage industries.



InPro 8400

### Transmitter features

- Suitable for use in conjunction with the sensors InPro 8400 and InPro 8500
- Factory-defined, process and multipoint calibration routines
- Full text guided menu in three languages, including online help texts
- Three configurable and storable parameter sets with remote access
- Power requirement: 100...240 VAC or 24 VDC version
- RS232 interface for rapid programming with factory-defined sensor calibration data, as well as for updating of software
- Four galvanic isolated current outputs 0/4...20 mA according to NAMUR NE 43 Guideline
- Two programmable limit contacts, one alarm contact, wash contact and «HOLD» input



InPro 8500

### Sensor features

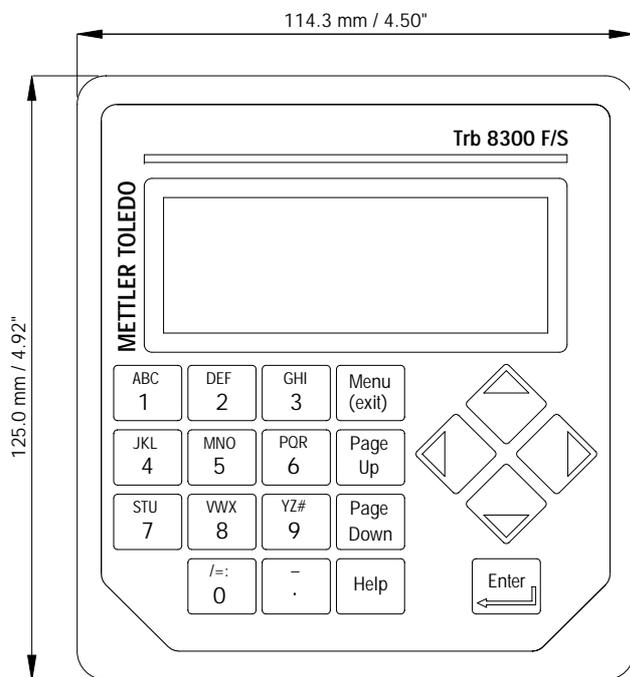
- Forward scattered light sensor with automatic color compensation (InPro 8400)
- Combined forward and 90° scattered light sensor with automatic color compensation (InPro 8500)
- Flow-through housing for installation in pipes DN25...DN100
- Rugged design in stainless steel
- Wide range of process adaptation methods
- Dirt-repellent sapphire window, suitable for CIP and SIP procedures
- Suited for installation in hazardous areas, Zones 1 and 2, Class 1, Div. 1 and 2 (certificate pending)
- Multipoint factory-defined calibration based on international turbidity standard using Formazin

## Contents

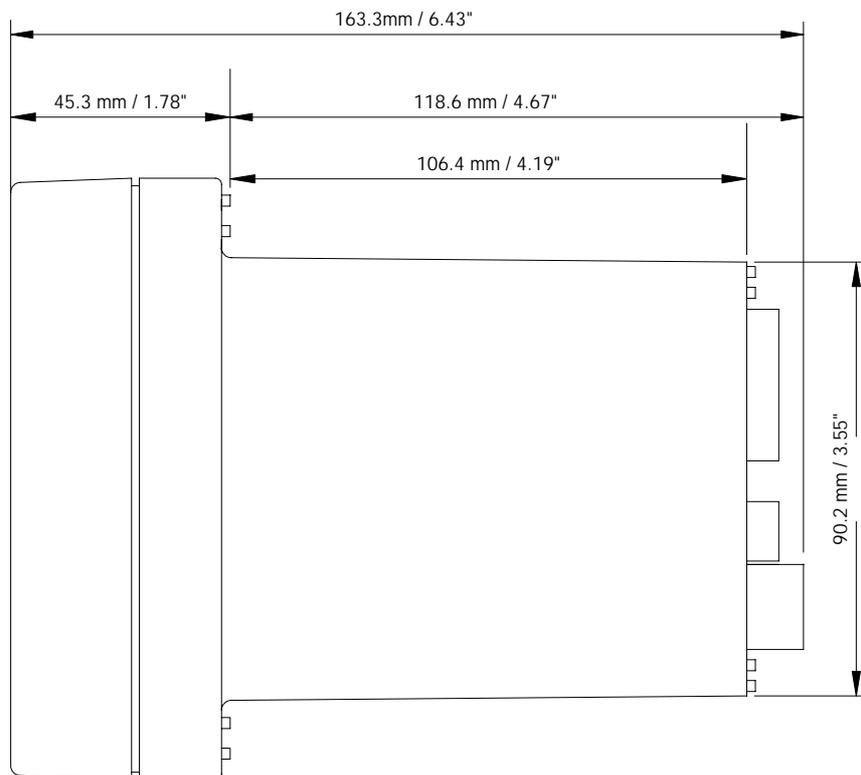
Dimensional and installation drawings for transmitter Trb 8300 F/S	2
Technical specifications for transmitter Trb 8300 F/S	4
Ordering information for transmitter Trb 8300 F/S	6
Wiring diagram for transmitter Trb 8300 F/S	7
Dimensional and installation drawings for InPro 8400 / InPro 8500 sensors	10
Technical specifications for InPro 8400 / InPro 8500 sensors	13
Ordering information for InPro 8400 / InPro 8500 sensors	14

**METTLER TOLEDO**

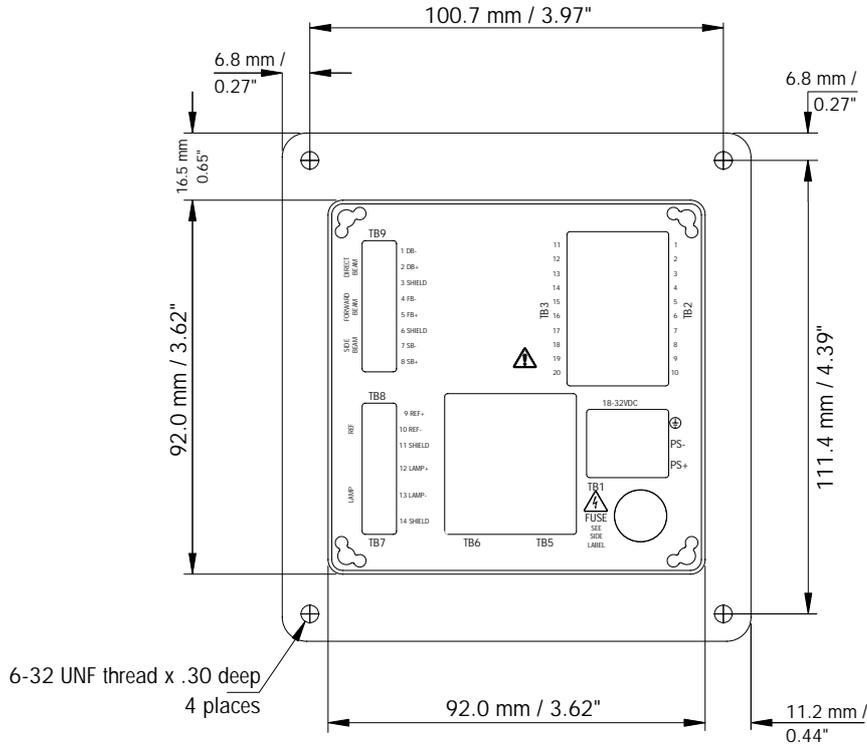
Front



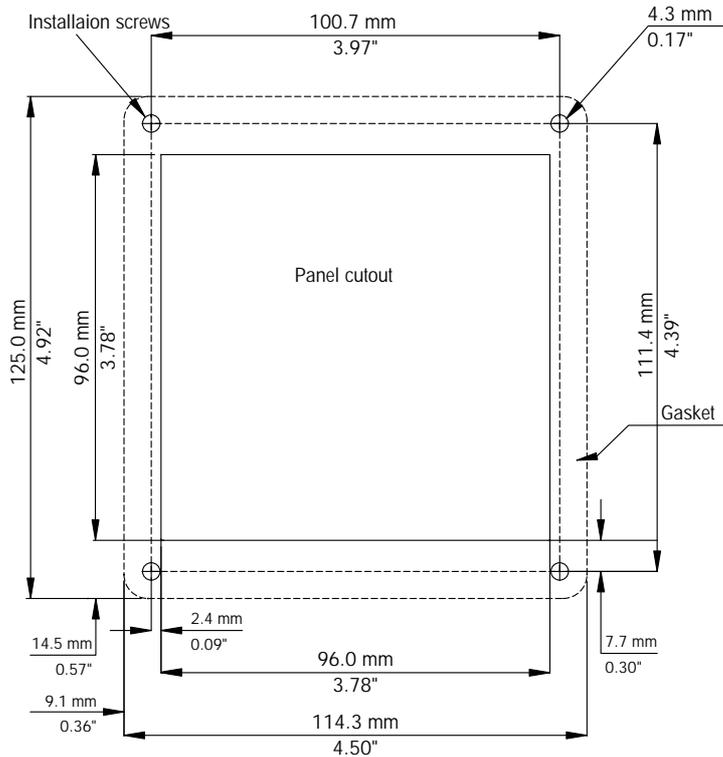
Side



Rear panel



Cutout for panel installation



Transmitter Trb 8300 F/S

<b>Power requirement</b>	100...240 V AC, max. 25 Watt, 47...63 Hz or 20...32 V DC, max. 25 Watt Data storage in non-battery supported EPROM in the event of power failure. Clock does not function without power supply.
<b>Sensor connections</b>	Input / output (approx. 5 V DC for sensor lamp) for optical sensors InPro 8400 or InPro 8500.
<b>Measuring range</b>	selectable: 0...400 FTU (Formazin Turbidity Units) 0...400 NTU (Nephelometric Turbidity Units) 0...100 EBC (Turbidity scale acc. to European Brewery Convention) 0...1000 ppm (Parts per millions solids content) 0...1.0 g/l (Solids content)
<b>Measurement accuracy</b>	≤ 1.0 %
<b>Reproducibility of measured value</b>	≤ 1.0 %
<b>Resolution</b>	0.01 FTU
<b>Parameter sets</b>	Three configurable parameter sets (A-C), storable and retrievable via software menu or by remote access via digital inputs.
<b>Digital inputs</b>	4 buffered digital inputs (0...5 V) – 1 digital input for «HOLD» function – 3 digital inputs for activating stored parameter sets A to C
<b>System calibration</b> (operational modes)	
Factory-defined calibration	Specific factory-set sensor data can be imported via RS232 interface or manually via keypad.
Process calibration	Single-point calibration simultaneously with sampling (adjustment of offset or slope, user-defined).
Multipoint calibration	Automatic 2, 3, 4 or 5 point calibration using calibration solutions of defined concentration in order to linearize the measurement curve.
Preset calibration parameter	Software reset restores calibration data to factory-set sensor data.
<b>Password protection</b>	Password-protected menu access for different operator levels (Master, User 1 and 2), able to be activated.
<b>Sensor diagnostics</b>	Lamp: indication on display of length of time switched on Sensor: indication on display of the photoelectric currents for transmitted light. 12° forwards scattered light and 90° scattered light (InPro 8500 only)
<b>Current outputs</b>	Four analog outputs 0/4...20 mA. Burden max. 500 Ω, galvanic isolated. Accuracy ± 0.05 mA. The outputs can be freely assigned to individual parameter sets, with choice of scaling in linear, bi-linear, logarithmic or dual-range format.

Transmitter Trb 8300 F/S

<b>Alarm contact</b>	Relay contact, SPDT, floating
Contact capacity	AC < 250 V / < 5 A DC < 30 V / < 5 A
Contact function	N/C (fail-safe type)
Alarm delay	000...600 s
<b>Wash contact</b>	Relay contact, SPDT, floating
Contact capacity	AC < 250 V / < 5 A DC < 30 V / < 5 A
Contact function	N/O or N/C
Cleaning interval	0.0...999.9 h (0.0 h = cleaning function switched off)
Duration of cleaning	000...600 s
<b>Limit values (2)</b>	2 relay contacts, SPDT, floating
Contact capacity	AC < 250 V / < 5 A DC < 30 V / < 5 A
Contact function	N/O or N/C
Delay	000...600 s
Switching point	hi-hi / hi-lo / lo-lo
Hysteresis	0.0...50.0%
<b>Digital interface</b>	For programming with factory-defined sensor calibration coefficients, updating of main program software and for printing of instrument configuration.
RS232 standard	max. cable length 15 m
Baud Rate	1200, 2400, 4800, 9600, 19.2k and 38.4k
Parity	odd, even or none
<b>Display</b>	Liquid cristal display (LCD), 20 alphanumerical characters x 4 lines, backlit
<b>Keypad</b>	20 keys, membrane-type keypad
<b>Languages</b>	Selectable via software: German, English or French for menu and Help texts
<b>Diagnostic functions</b>	Sensor Lamp mA outputs Display Keypad Instrument Serial interface Contacts Self-test

Transmitter Trb 8300 F/S

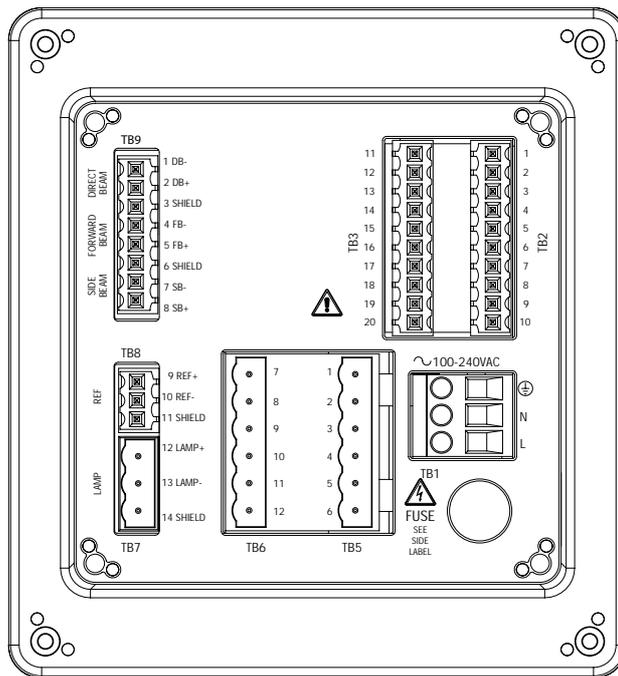
<b>Data retention</b>	Configuration and calibration data in non-battery supported, non-volatile storage.
<b>CE</b>	
Emission:	EN 55011 Group I, Class A ISM emissions.
Immunity:	EN 50082-2 EMC heavy industrial generic immunity standard.
Safety:	IEC 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use
<b>US UL</b>	3111-1 Electrical Measuring and test Equipment
<b>CAN / CSA</b>	C22.2, No. 1010.1
<b>Nominal operating conditions</b>	
Ambient temperature	-10...+55 °C (14...131 °F)
Transport and storage temperature	-20...+80 °C (-4...176 °F)
Relative humidity	0...80 % at 31 °C (88 °F), linear decline to 50 % at 40 °C (122 °F)
<b>Enclosure</b>	
Composite:	ABS-PC, resistant to UV and chemicals
Cutout:	for panel installation: 96 x 96 mm (3.78" x 3.78") 1/4 DIN
Dimensions:	H: 125 mm x W: 114 mm x L: 162 mm (H: 4.92" x W: 4.50" x L: 6.39")
Protection:	sealed face, IP 65
Weight:	0.9 kg (2 lbs.)

Ordering information

Designation	Order no.
<b>Transmitter</b>	
Transmitter Trb 8300 F/S, 100...240 V AC version	52 800 865
Transmitter Trb 8300 F/S, 20...32 V DC version	52 800 866
<b>Accessory</b>	
IP 66 field-type enclosure for wall mounting, incl. 5 pcs. PG11 cable gland (H = 200, W = 250, L = 230 mm / H = 7.87", W = 9.84", L = 9.10")	52 800 867
<b>Spare parts</b>	
10-terminal plug-in connector (TB2 and TB3)	52 800 251
6-terminal plug-in connector (TB5 and TB6)	52 800 252
Fuse, 0.5 A slow-blow, 5 x 20 mm (Littlefuse 215.500 or equivalent)	52 800 253
Screw for panel mounting (6...32 x 7/16", total 4 pcs. necessary)	52 800 254
Screw for front panel (total 2 pcs. necessary)	52 800 255
Lock washer for front panel (2 pcs.)	52 800 256
Liquid crystal display module (spacer(s) to be ordered separately)	52 800 257
Display standoffs (4 pcs.)	52 800 258

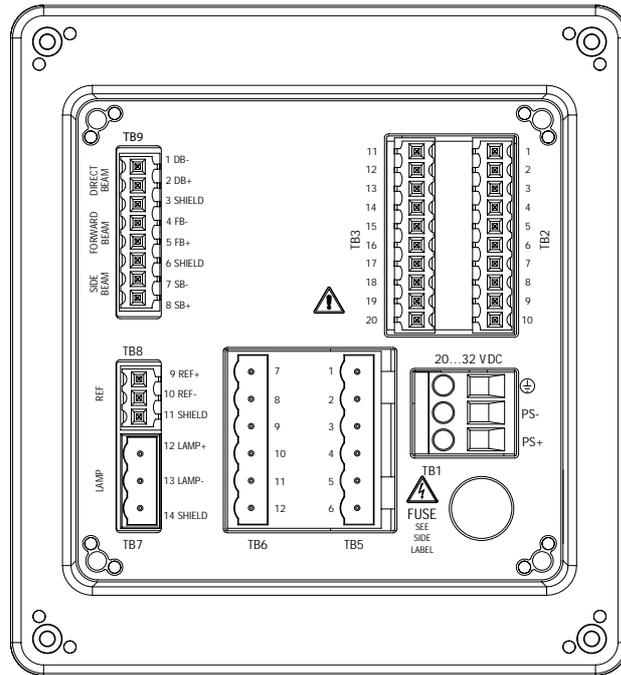
Terminal assignment

Strip	Terminal	Connection
TB1	⊕	Ground
	N	Neutral
	L	Phase



Terminal assignment Trb 8300 F/S 20...32 V DC

Strip	Terminal	Connection
TB1	⊕	Ground
	PS-	DC minus
	PS+	DC plus



Sensor connections

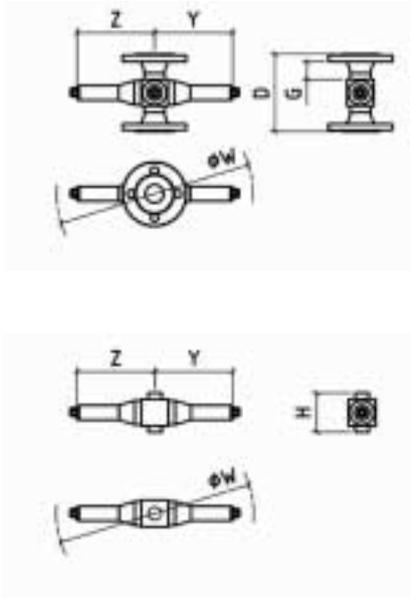
Strip	Terminal	Connection
TB7	12	Lamp voltage plus (grey/rose)
	13	Lamp voltage minus (blue/red)
	14	Shielding
TB9	1	Photoelectric current transmitted light (brown)
	2	Photoelectric current transmitted light (white)
	3	Shielding (black)
	4	Photoelectric current forward scattered light (yellow)
	5	Photoelectric current forward scattered light (green)
	6	Shielding (black)
	InPro 8500 only	
	7	Photoelectric current 90° scattered light (yellow)
	InPro 8500 only	
	8	Photoelectric current 90° scattered light (green)
	InPro 8500 only	

Other

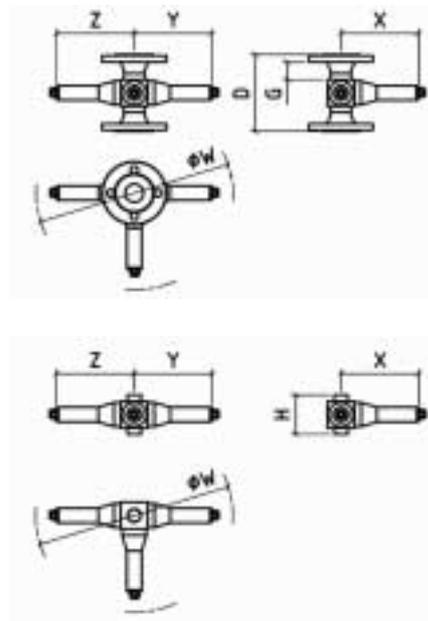
Strip	Terminal	Connection
TB2	1	Not to be used!
	2	Parameter sets A, B and «HOLD» (Digital 2)
	3	Not to be used!
	4	Parameter set B (Digital 1)
	5	Not to be used!
	6	«HOLD» (Digital 1)
	7	Parameter set A (Digital 1)
	8	RS 232 ground
	9	RS 232, receive
	10	RS 232, transmit
TB3	11	Not to be used!
	12	Parameter set C (Digital 2)
	13	Parameter set C (Digital 1)
	14	Not to be used!
	15	Current output 4+
	16	Current output 3+
	17	Current output –
	18	Current output –
	19	Current output 2+
	20	Current output 1+
TB5	1	Alarm, normally closed
	2	Alarm «Common»
	3	Alarm, normally open
	4	Wash, normally closed
	5	Wash, «Common»
	6	Wash, normally open
TB6	7	Limit value 1, normally closed
	8	Limit value 1, «Common»
	9	Limit value 1, normally open
	10	Limit value 2, normally closed
	11	Limit value 2, «Common»
	12	Limit value 2, normally open

Sensor drawings

InPro 8400 MT



InPro 8500 MT



All dimensions in mm, subject to changes!

Dimensions InPro 8400/InPro 8500 MT and process pressures

InPro 8400/InPro 8500 MT flange

DIN 2633/PN 16, DN25...DN50 = 16 bar, > DN50 = 10 bar

± 1 mm	Z	Y	X	D	G	W
DN25	184	184	184	169	34.5	800
DN40				177	38.5	
DN50				183	39.5	
DN65	193	193	193	180	42.0	
DN80	199	199	199	190	45.0	
DN100	212	212	212	194	47.0	

InPro 8400/InPro 8500 MT – milk fitting

DIN 11851, 10 bar

± 1 mm	Z	Y	X	D	W
DN25	184	184	184	151	800
DN40				159	
DN50				163	
DN65	193	193	193	170	
DN80	199	199	199	180	
DN100	212	212	212	198	

InPro 8400/InPro 8500 MT flange

ANSI B 16.5 / 150 lb in<sup>2</sup>, 1"...2" = 16 bar, > 2" = 10 bar

± 1 mm	Z	Y	X	D	G	W	
1"	184	184	184	204.2	53.9	800	
1 1/2"				217.0	57.0		
2"				220.0	56.9		
3"	199	199	199	229.8	61.0		
4"	212	212	212	242.4	67.3		900

InPro 8400/InPro 8500 MT APV flange

10 bar

± 1 mm	Z	Y	X	D	G	W
DN25	184	184	184	141	26.5	800
DN40				141	26.5	
DN50				141	26.5	
DN65	193	193	193	138	29.0	
DN80	199	199	199	138	29.0	
DN100	212	212	212	138	29.0	

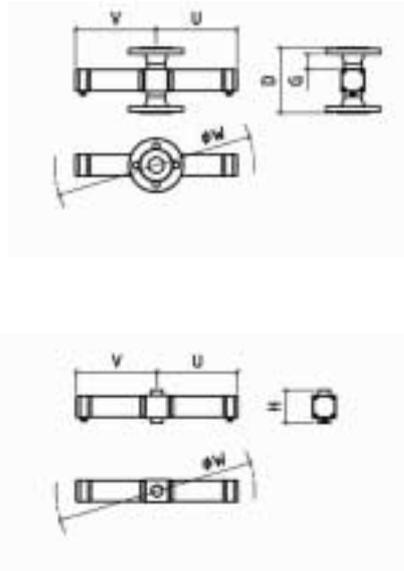
InPro 8400/InPro 8500 MT NPT thread

150 lb in<sup>2</sup>

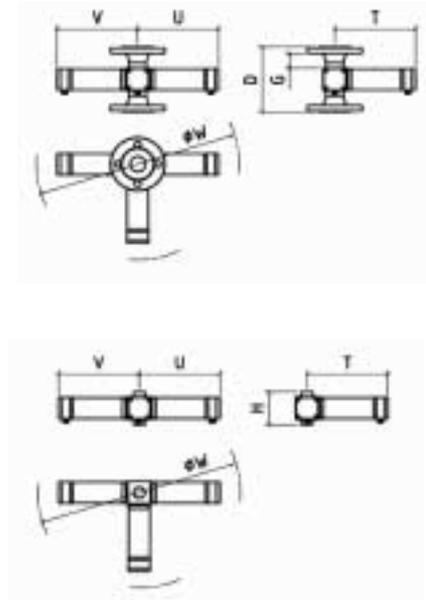
± 1 mm	Z	Y	X	H	W
1/2"	184	184	184	110.7	800
1"	184	184	184	124.7	800

Sensor drawings

InPro 8400 MT (Ex version)



InPro 8500 MT (Ex version)



All dimensions in mm, subject to changes!

Dimensions InPro 8400/8500 MT (Ex version) and process pressures

InPro 8400/InPro 8500 MT flange

DIN 2633/PN 16, DN25...DN50 = 10 bar, > DN50 = 10 bar

± 1 mm	V	U	T	D	G	W
DN25	226	226	226	169	34.5	800
DN40				177	38.5	
DN50				183	39.5	
DN65	235	235	235	180	42.0	
DN80	241	241	241	190	45.0	
DN100	254	254	254	194	47.0	

InPro 8400/InPro 8500 MT – milk fitting

DIN 11851, 10 bar

± 1 mm	V	U	T	D	W
DN25	226	226	226	151	800
DN40				159	
DN50				163	
DN65	235	235	235	170	
DN80	241	241	241	180	
DN100	254	254	254	198	

InPro 8400/InPro 8500 MT flange

ANSI B 16.5 / 150 lb in<sup>2</sup>, 1"...2" = 10 bar, > 2" = 10 bar

± 1 mm	V	U	T	D	G	W	
1"	226	226	226	204.2	53.9	800	
1 1/2"				217.0	57.0		
2"				220.0	56.9		
3"				241	241		241
4"	254	254	254	242.4	67.3		900

InPro 8400/InPro 8500 MT APV flange

10 bar

± 1 mm	V	U	T	D	G	W
DN25	226	226	226	141	26.5	800
DN40				141	26.5	
DN50				141	26.5	
DN65	235	235	235	138	29.0	
DN80	241	241	241	138	29.0	
DN100	254	254	254	138	29.0	

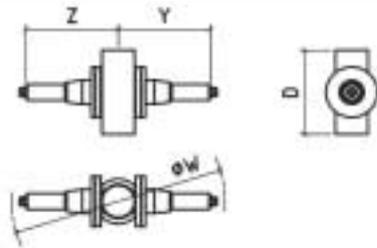
InPro 8400/InPro 8500 MT NPT thread

150 lb in<sup>2</sup>

± 1 mm	Z	Y	X	H	W
1/2"	226	226	226	110.7	800
1"	226	226	226	124.7	800

Dimensions InPro 8400 T, N, TC and process pressures

InPro 8400 T (Tuchenhagen Varivent®-inline)

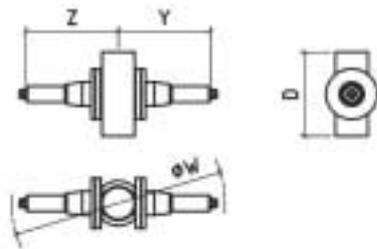


Attention: Dimensions do not include adaptations

DN40...DN50 = 25 bar, DN65...DN80 = 16 bar, DN100 = 10 bar

± 3 mm	Z	Y	D	W
DN 40/1.5" OD	190	190	180	800
DN 50/2" OD	197	197		
DN 65	205	205	250	
DN 80/3" OD	213	213		
DN 100/4" OD	222	222		

InPro 8400 N (Neumo BioControl®)

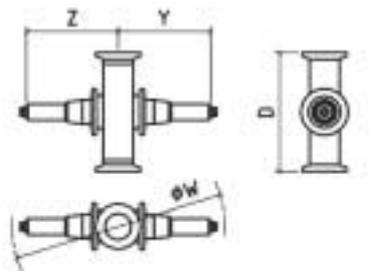


Attention: Dimensions do not include adaptations

16 bar

± 1 mm	Z	Y	D	W
DN 40	202	202	180	800
DN 50	208	208		
DN 65	216	216	200	
DN 80	222	222		
DN 100	235	235		

InPro 8400 TC (Tri-Clover Tri-Clamp)



3/4"...3" = 16 bar, 4" = 13 bar

± 1 mm	Z	Y	D	W
3/4"	185	185	152.4	800
1"	191	191		
1 1/2"	194	194	165.1	
2"	200	200		
3"	213	213	228.6	900
4"	216	216		

All dimensions in mm, subject to changes!

Sensor

	InPro® 8400	InPro® 8500
<b>Measuring principle</b>	Forward light scattering (12°)/ transmitted light (Ratio measurement to compensate for color influences)	Forward light scattering (12°)/ transmitted light and 90° scattered light/ (Ratio measurement to compensate for color influences)
<b>Measuring range</b>	0...400 FTU  0...100 EBC 0...1000 ppm or 0...1.0 g/l solid matter, diatomaceous earth as reference	0...400 FTU 0...400 NTU 0...100 EBC 0...1000 ppm or 0...1.0 g/l, solid matter, diatomaceous earth as reference
<b>Process adaptation, alternatives:</b>	<p><b>InPro 8400 MT:</b> Flange DIN 2633 Flange ANSI B 16.5 Flange APV Milk fitting DIN 11851 or NPT thread</p> <p><b>InPro 8400 T:</b> Tuchenhagen Varivent inline housing with welding ends</p> <p><b>InPro 8400 N:</b> Neumo BioControl Flow-through housing with welding ends</p> <p><b>InPro 8400 TC:</b> Tri-Clover housing with Tri-Clamp connections</p>	<p><b>InPro 8500 MT:</b> Flange DIN 2633 Flange ANSI B 16.5 Flange APV Milk fitting DIN 11851 or NPT thread</p>
<b>Nominal diameters</b>	see tables on pages 10 to 12	see tables on pages 10 to 12
<b>Wetted parts</b>	<p><b>InPro 8400 MT/InPro 8400 T/ InPro 8400 N:</b> Sensor housing: 1.4404 Meas. window: Sapphire Seals: Viton®-FDA, Kalrez®-FDA or EPDM-FDA</p> <p><b>InPro 8400 TC:</b> Sensor housing: 316 SS Meas. window: Sapphire Seals: Viton®-FDA, Kalrez®-FDA or EPDM-FDA</p>	<p><b>InPro 8500 MT:</b> Sensor housing: 1.4404 Meas. window: Sapphire Seals: Viton®-FDA, Kalrez®-FDA or EPDM-FDA</p>
<b>Surface roughness wetted parts made of stainless steel</b>	<p>InPro 8400 MT: ≤ 3.2 µm InPro 8400 T: ≤ 0.8 µm InPro 8400 N: ≤ 0.8 µm InPro 8400 TC: ≤ 32 Ra (≤ 0.8 µm)</p>	InPro 8500 MT: ≤ 3.2 µm

Sensor

	InPro® 8400	InPro® 8500
<b>Operating conditions</b>		
Pressure range	depending upon process adaptation, see tables on pages 10 to 12	depending upon process adaptation, see tables on pages 10 to 12
Temperature range	0...140 °C (284 °F)	0...140 °C (284 °F)
Steam-sterilizable	yes (140 °C [284 °F]/ 15 min. / day)	yes (140 °C [284 °F]/ 15 Min. / day)
Suited for CIP	yes	yes
Protection rating	IP 65	IP 65
Cable lengths	5...100 m in 5 m intervals	5...100 m in 5 m intervals
<b>Options</b>		
Ex-classified	according to ATEX or FM (pending)	according to ATEX or FM (pending)

Ordering information

For the configuration of a sensor with exact specifications such as relative to process adaption, pipe line size, seal materials and other options, please use the following configuration data sheets:

Configuration data sheet

**InPro 8400 MT: METTLER TOLEDO flow-through housing**

Field	Code	Specification
<b>Line size of sensor with metric connections</b>		
C	0	DN25
C	2	DN40
C	3	DN50
C	4	DN65
C	5	DN80
C	6	DN100
<b>or line size diameter of sensor housing with inch-system connections</b>		
C	8	1/2"
C	B	1"
C	C	1 1/2"
C	D	2"
C	E	3"
C	F	4"
<b>D</b>	<b>0</b>	<b>Not applicable</b>
<b>Metric process connection</b>		
E	0	Flange DIN 2633
E	1	Milk fitting DIN11851
E	2	APV flange (flat)
<b>or inch-system process connection</b>		
E	4	ASA-(ANSI) flange
E	5	NPT thread (only available in 1/2" or 1" version)
<b>Optical windows</b>		
F	0	Standard, sapphire window
<b>Seals for windows / FDA-compliant</b>		
G	0	Viton®
G	2	EPDM
G	3	Kalrez®
<b>Electrical specification</b>		
H	0	Non-(Ex)-proof
H	2	Hazardous areas, Zone 1 and 2 (ATEX certification)
H	3	Hazardous areas, Class 1, Div. 1 and 2 (FM certification, pending)
<b>I</b>	<b>0</b>	<b>Not applicable</b>
<b>Cable (max.100 m in 5 m intervals, cable sets for lamps and detector)</b>		
J	0	5 m (16.4 ft) , standard
J	9	For cable sets longer than 5 m, total length: ... m
<b>Standard specification</b>		
K	2	Air-purge connection for optical system (for process temperatures T < 15 ° C [59 °F] or > 100 °C [212 °F])
K	3	Product certificates (calibration, CE, Ex-classified documentation, ...)

**Ordering code**

InPro 8400 MT –		<b>0</b>	<b>2-3</b>						
Field	C	D	E	F	G	H	I	J	K

Configuration data sheet

**InPro 8400 T: Tuchenhausen inline Varivent housing**

Field	Code	Specification
<b>Line size of sensor housing according to DIN11850</b>		
C	2	DN40
C	3	DN50
C	4	DN65
C	5	DN80
C	6	DN100
<b>or line size of sensor housing according to OD</b>		
C	C	1 1/2"
C	D	2"
C	E	3"
C	F	4"
<b>Surface finish of wetted parts made of stainless steel</b>		
D	1	Standard, ≤ 0.8 µm
<b>Process connection</b>		
E	B	Standard, welding ends
<b>Optical window</b>		
F	0	Standard, sapphire window
<b>Seals for windows / FDA-compliant</b>		
G	0	Viton®
G	2	EPDM
G	3	Kalrez®
<b>Electrical specifications</b>		
H	0	Non-(Ex)-proof
H	2	Hazardous areas, Zone 1 and 2 (ATEX certification)
H	3	Hazardous areas, Class 1, Div. 1 and 2 (FM certification, pending)
<b>Material of seals of Varivent connection plates, FDA-compliant</b>		
I	0	EPDM
I	1	FPM (Viton®)
<b>Cable (max.100 m in 5 m intervals, cable sets for lamps and detector)</b>		
J	0	5 m (16.4 ft), standard
J	9	For cable sets longer than 5 m, total length: ... m
<b>Standard specifications</b>		
K	2	Air-purge connection for optical system (for process temperatures T < 15 °C [59 °F] or > 100 °C [212 °F])
K	3	Product certificates (calibration, CE, 3.1B material certificate,...)

**Ordering code**

InPro 8400 T –		<b>1</b>	<b>B</b>	<b>0</b>					<b>2-3</b>
Field	C	D	E	F	G	H	I	J	K

Configuration data sheet

**InPro 8400 N: Neumo BioControl housing**

Field	Code	Specification
<b>Line size of sensor housing according to DIN11866 line A, DIN11850</b>		
C	2	DN40
C	3	DN50
C	4	DN65
C	5	DN80
C	6	DN100

<b>Surface finish of wetted parts made of stainless steel</b>		
D	0	Standard, ≤ 0.8 µm

<b>Process connections</b>		
E	B	Standard, welding ends

<b>Optical windows</b>		
F	0	Standard, sapphire window

<b>Seals for windows / FDA-compliant</b>		
G	0	Viton®
G	2	EPDM
G	3	Kalrez®

<b>Electrical specifications</b>		
H	0	Non-(Ex)-proof
H	2	Hazardous areas, Zone 1 and 2 (ATEX certification)
H	3	Hazardous areas, Class 1, Div. 1 and 2 (FM certification, pending)

<b>Material of seals of BioControl connection plates, FDA-compliant</b>		
I	0	EPDM
I	1	FPM (Viton®)

<b>Cable (max. 100 m in 5 m intervals, cable sets for lamps and detector)</b>		
J	0	5 m (16.4 ft.), standard
J	9	For cable sets longer than 5 m, total length: ... m

<b>Standard specifications</b>		
K	2	Air-purge for optical system (for process temperatures T < 15 °C [59 °F] or > 100 °C [212 °F])
K	3	Product certificates (calibration, CE, 3.1B material certificate,...)

**Ordering code**

InPro 8400 N –		<b>0</b>	<b>B</b>	<b>0</b>					<b>2-3</b>
Field	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>

Configuration data sheet

**InPro 8400 TC: Tri-Clover sight-glass housing**

Field	Code	Specification
<b>Line size of sensor housing</b>		
C	A	3/4"
C	B	1"
C	C	1 1/2"
C	D	2"
C	E	3"
C	F	4"

**Surface finish of wetted parts made of stainless steel**

D	0	Standard, ≤ 32 Ra (≤ 0.8 μm)
D	1	Special, ≤ 15 Ra (≤ 0.4 μm)

**Process connections**

E	A	Standard, Tri-Clamp connection L 14 AM 7
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**Optical windows**

F	0	Standard, sapphire window
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**Seals for windows / FDA-compliant**

G	0	Viton®
G	2	EPDM
G	3	Kalrez®

**Electrical specifications**

H	0	Non-(Ex)-proof
H	2	Hazardous areas, Zone 1 and 2 (ATEX certification)
H	3	Hazardous areas, Class 1, Div. 1 and 2 (FM certification, pending)

**Material of seals of Tri-Clamp connection plates, FDA-compliant**

I	0	EPDM
I	2	PTFE

**Cable (max. 100 m in 5 m intervals, cable sets for lamps and detector)**

J	0	5 m (16.4 ft.), standard
J	9	For cable sets longer than 5 m, total length: ... m

**Standard specifications**

K	2	Air-purge connection for optical system (for process temperatures T < 15 °C [59 °F] or > 100 °C [212 °F])
K	3	Product certificates (calibration, CE, Ex-classified documentation,...)

**Ordering code**

InPro 8400 TC -			A	O					2-3
Field	C	D	E	F	G	H	I	J	K

Configuration data sheet

**InPro 8500 MT: METTLER TOLEDO flow-through housing**

Field	Code	Specification
<b>Line size of sensor housing with metric connections</b>		
C	0	DN25
C	2	DN40
C	3	DN50
C	4	DN65
C	5	DN80
C	6	DN100
<b>or line size of sensor housings with inch-system connections</b>		
C	8	1/2"
C	B	1"
C	C	1 1/2"
C	D	2"
C	E	3"
C	F	4"
<b>D</b>	<b>0</b>	<b>Not applicable!</b>
<b>Metric connections</b>		
E	0	Flange DIN 2633
E	1	Milk fitting DIN11851
E	2	APV flange (flat)
<b>or inch-system connections</b>		
E	4	ASA-(ANSI) flange
E	5	NPT thread (only available in 1/2" or 1" versions!)
<b>Optical window</b>		
F	0	Standard, sapphire window
<b>Seals for windows / FDA-compliant</b>		
G	0	Viton®
G	2	EPDM
G	3	Kalrez®
<b>Electrical specifications</b>		
H	0	Non(Ex)-proof
H	2	Hazardous areas, Zone 1 and 2 (ATEX certification)
H	3	Hazardous areas, Class 1, Div. 1 and 2 (FM certification, pending)
<b>I</b>	<b>0</b>	<b>Not applicable</b>
<b>Cable (max. 100 m in 5 m intervals, cable sets for lamps and detector)</b>		
J	0	5 m (16.4 ft.), standard
J	9	For cable sets longer than 5 m, total length: ... m
<b>Standard specifications</b>		
K	2	Air-purge connection for optical system (for process temperatures T < 15 °C [59 °F] or > 100 °C [212 °F])
K	3	Product certificates (calibration, CE, 3.1B material certificate, Ex-classified documentations,...)

**Ordering code**

<b>InPro 8500 MT –</b>		<b>0</b>	<b>0</b>				<b>0</b>		<b>2 - 3</b>
<b>Field</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>

## Sensor spare parts

Designation	Bestell-Nr.
InPro8400/InPro8500 measuring lamp	52 800 889
InPro8400/InPro8500 sapphire window	52 800 890
Window sealing, O-ring, Viton®	52 750 136
Window sealing, O-ring, EPDM	52 750 137
Window sealing, O-ring, Kalrez®	52 750 138
InPro8400/InPro8500 lamp kit	52 800 886
InPro8400/InPro8500 detector kit FW (12°)	52 800 887
InPro8500 detector kit SW (90°)	52 800 888







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