

InPro® 7000-VP / InPro® 7100-VP

New sensors with VP-connector for very low to medium/high conductivity

Technical data



InPro 7108-25/40-VP

InPro 7001/120-VP

Short description

InPro7000-VP Series

Superior 2-electrode sensors for water preparation in the food & beverage industry and in the chemical industry.

- Outstanding measurement accuracy.
- Optimal process safety due to Vario Pin connector and the quality of the materials used.
- MaxCert™: set of certificates incl. individually determined and documented cell constant, FDA suitable materials (certified).

InPro7100-VP Series

4-electrode sensors for medium/high conductivity values for applications such as phase separation or CIP/SIP cleaning in the food & beverage industry and the pharmaceutical industry.

- WideRange™-technology for wide measuring range and cost-efficient installation.
- Optimal process safety due to Vario Pin connector and the quality of the materials used.
- MaxCert™: set of certificates incl. individually determined and documented cell constant, FDA suitable materials (certified).

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METTLER TOLEDO



Specifications InPro 7000-VP Series

	InPro 7000-VP	InPro 7005-VP	InPro 7001/120-VP InPro 7001/225-VP	InPro 7002-VP
Measurement principle	2-electrode sensor	2-electrode sensor	2-electrode sensor	2-electrode sensor
Electrode material	Titanium	Titanium	SS 316L/1.4435	SS 316L/1.4435
Body material	PVDF	teflon-coated SS 316/1.4401	SS 316L/1.4435	SS 316L/1.4435
RTD	built-in Pt 1000	built-in Pt 1000	built-in Pt 1000	built-in Pt 1000
Sensor diameter	see drawings	see drawings	12 mm	see drawings
Insertion length	29 mm (1.15")	34 mm (1.35")	120/225 mm (4.71/8.86")	85/104 mm (3.35/4.09")
Max. sensor length	153.20 mm (6.03")	75 mm (2.95")	194/299 mm (7.64/11.77")	156/175 mm (6.14/6.88")
Process connection	¾" NPT 1" NPT Conduit	¾" NPT	Pg 13.5	Tri-Clamp 1.5" Tri-Clamp 2" Tuchenhagen Varivent DN 40 - DN 125
Measuring range	see separate table on page 6			
Cell constant nominal	0.1 cm ⁻¹	0.1 cm ⁻¹	0.1 cm ⁻¹	0.1 cm ⁻¹
Cell constant accuracy	± 1.0%	± 1.0%	± 1.0%	± 1.0%
System accuracy ^{a)}	± 3.0% or better	± 3.0% or better	± 3.0% or better	± 3.0% or better

Working conditions

Max. pressure at 25 °C (77 °F)	34 bar (500 psi)	17 bar (250 psi)	17 bar (250 psi)	31 bar (449.5 psi)
Max. pressure at 95 °C (203 °F) ^{b)}	7 bar (100 psi)	7 bar (100 psi)	7 bar (100 psi)	10 bar (145 psi)
Measuring temperature range	-10...100 °C (14...212 °F)	-10...100 °C (14...212 °F)	-10...100 °C (14...212 °F)	-10...120 °C (14...248 °F)
Temperature range (sterilization)	n/a	n/a	sterilizable -10...131 °C (14...268 °F)	sterilizable -10...155 °C (14...311 °F)
Temperature accuracy at 25 °C (77 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)

Design

Temperature compensation	Pt 1000 IEC class A	Pt 1000 IEC class A	Pt 1000 IEC class A	Pt 1000 IEC class A
Cable connection	Vario Pin (IP 68)	Vario Pin (IP 68) ^{c)}	Vario Pin (IP 68)	Vario Pin (IP 68)
Wetted parts:				
Metals	Titanium (Grade 2)	Titanium (Grade 2)	SS 316L/1.4435	SS 316L/1.4435
Plastics	PVDF (FDA)	teflon-coated SS 316/1.4401		
O-rings	Viton® (FDA)	Viton® (FDA)	Viton® (FDA)	Viton® (FDA)
Insulation	PEEK (FDA)	PEEK (FDA)	PEEK (FDA)	PEEK (FDA)
Surface roughness of wetted metal parts ^{d)}	n/a	n/a	polished Ra < 0,2 µm (< 8 µin)	electropolished Ra < 0,2 µm (< 8 µin)

Certificates

Cell constant	✓	✓	✓	✓
Material certificate				
EN 10204 3.1B	—	—	✓	✓
Material confirmation 2.1	✓	✓	✓	✓
Surface roughness	—	—	✓	✓
ATEX	✓	✓	✓	✓

a) The system accuracy depends on the measuring range and the particular transmitter.

c) The VP is at the end of an approx. 0.5 m long fixed cable.

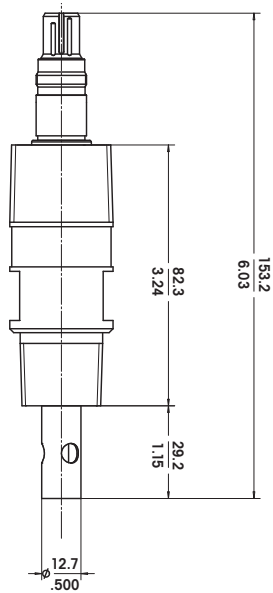
b) According to PED (Pressure Equipment Directive, 97/23/EC, Art. 3, Sec. 3).

d) Except at active electrode areas.

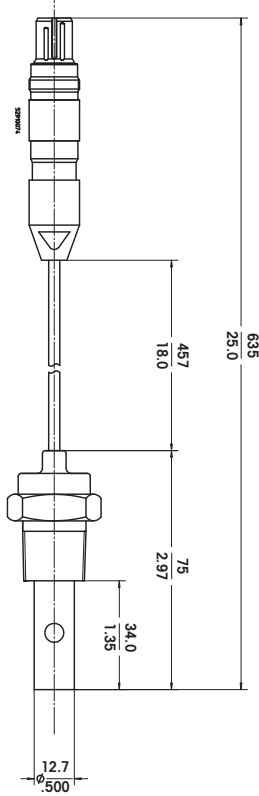
Drawings InPro 7000-VP Series

cm
inch

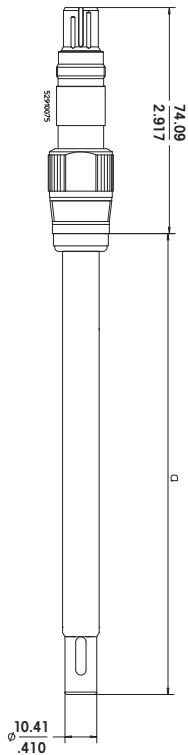
InPro 7000-VP



InPro 7005-VP

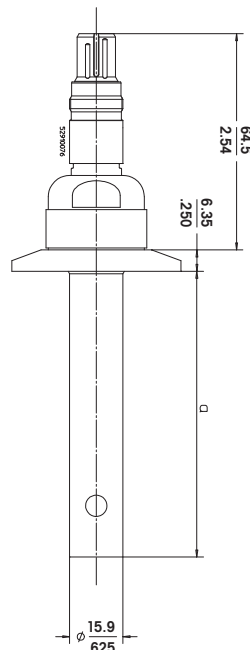


InPro 7001/120-VP
InPro 7001/225-VP

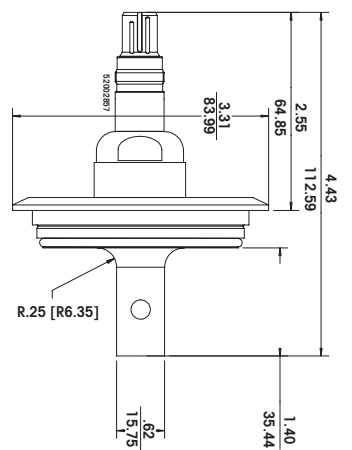


	a = Length
InPro7001/120-VP	120 mm/4.71"
InPro7001/225-VP	225 mm/8.86"

InPro 7002/1.5"-TC-VP
InPro 7002/2"-TC-VP



InPro 7002-VAR-VP



	a = Length
InPro7002/1.5"-TC-VP	85.1 mm/3.35"
InPro7002/2"-TC-VP	104.1 mm/4.09"
InPro7002-VAR-VP	35.4 mm/1.40"

Specifications InPro 7100-VP Series

	InPro 7108-VP/ CPVC	InPro 7108-VP/ PEEK	InPro 7108/25-VP	InPro 7108-TC-VP InPro 7108-VAR-VP
Measuring principle	4-electrode sensor	4-electrode sensor	4-electrode sensor	4-electrode sensor
Electrode material	316L/1.4435	sterilizable 316L/1.4435 or HA-C22	sterilizable 316L/1.4435 or HA-C22	sterilizable 316L/1.4435
Body material	CPVC	PEEK	PEEK	PEEK
RTD	built-in Pt 1000	built-in Pt 1000	built-in Pt 1000	built-in Pt 1000
Sensor diameter	see drawing	see drawing	see drawing	see drawing
Insertion length	28 mm (1.10")	28 mm (1.10")	40/65 mm (1.57/2.56")	25 mm (0.98")
Max. sensor length	151 mm (5.96")	126.7 mm (4.99")	123/148 mm (4.86/5.84")	105 mm (4.14")
Process connection	1" NPT 1" NPT Conduit	1" NPT	Cap nut G 1 1/4"	Tri-Clamp 1.5" Tri-Clamp 2" Tuchenhagen Varivent DN 40 - DN 125
Measuring range	see separate table on page 6			
Cell constant nominal	0.25 cm ⁻¹	0.25 cm ⁻¹	0.25 cm ⁻¹	0.25 cm ⁻¹
System accuracy ^{a)}	± 5.0% or better	± 5.0% or better	± 5.0% or better	± 5.0% or better

Working conditions

Max. pressure at 25 °C (77 °F)	7 bar (100 psi)	17 bar (250 psi)	17 bar (250 psi)	17 bar (250 psi)
Max. pressure at 95 °C (203 °F) ^{b)}	—	7 bar (100 psi)	7 bar (100 psi)	7 bar (100 psi)
Measuring temperature range	-10...80 °C (14...176 °F)	-10...140 °C ^{c)} (14...284 °F)	-10...140 °C ^{c)} (14...284 °F)	-10...140 °C ^{c)} (14...284 °F)
Temperature range (sterilization)	n/a	sterilizable -10...140 °C ^{c)} (14...284 °F)	sterilizable -10...140 °C ^{c)} (14...284 °F)	sterilizable -10...140 °C ^{c)} (14...284 °F)
Temperature accuracy at 25 °C (77 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)	± 0.25 °C (± 0.5 °F)

Design

Temperature compensation	Pt 1000 IEC class A	Pt 1000 IEC class A	Pt 1000 IEC class A	Pt 1000 IEC class A
Cable connection	Vario Pin (IP 68)	Vario Pin (IP 68)	Vario Pin (IP 68)	Vario Pin (IP 68)
Wetted parts:				
Metals	316L/1.4435	316L/1.4435 or HA-C22	316L/1.4435 or HA-C22	316L/1.4435
Plastics	CPVC	PEEK (FDA)	PEEK (FDA)	PEEK (FDA)
O-rings	n/a	n/a	EPDM (FDA)	n/a

Certificates

Cell constant	✓	✓	✓	✓
Material certificates				
EN 10204 3.1B	✓	✓	✓	✓
Material confirmation 2.1	✓	✓	✓	✓
ATEX	✓	✓	✓	✓

a) The system accuracy depends on the measuring range and the particular transmitter.

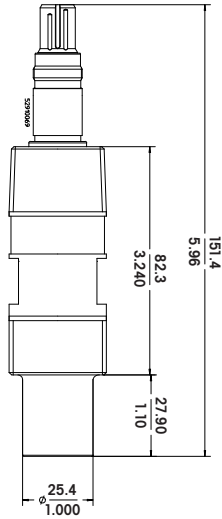
b) According to PED (Pressure Equipment Directive, 97/23/EC, Art. 3, Sec. 3).

c) Short term 150 °C (302 °F).

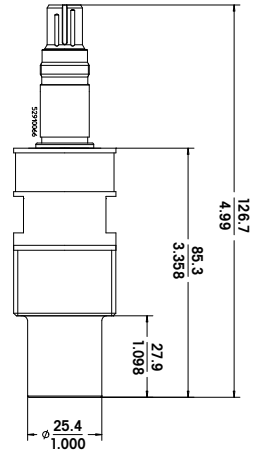
Drawings InPro 7100-VP Series

cm
inch

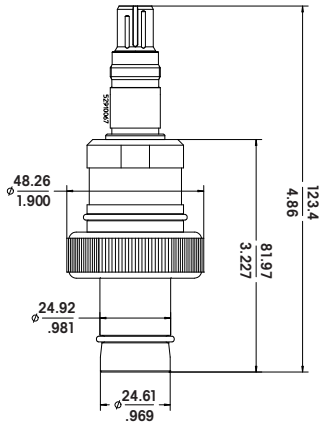
InPro 7108-VP/CPVC



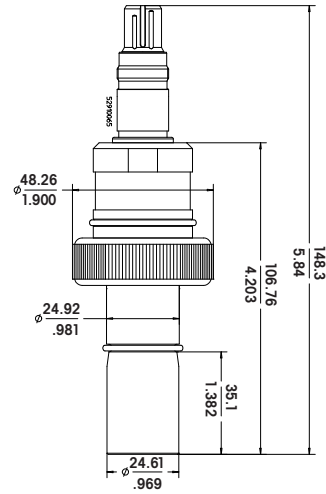
InPro 7108-VP/PEEK



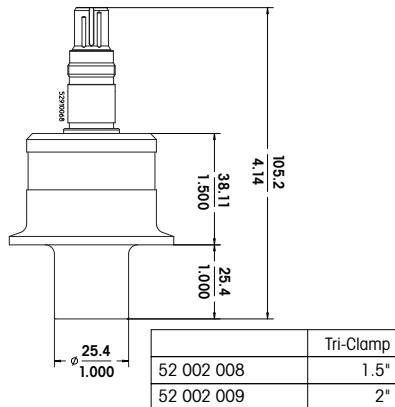
InPro 7108-25/40-VP



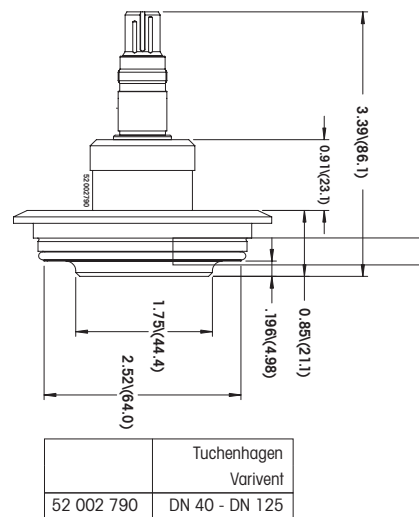
InPro 7108-25/65-VP



InPro 7108-TC-VP



InPro 7108-VAR-VP



Measuring ranges

2-electrode sensors (all numbers in $\mu\text{S/cm}$)

Sensor \ Transmitter	Cond7050 e	Cond7100 e	7220X	M 700
InPro7000-VP/7005-VP	0.02 - 200	0.02 - 10'000	0.02 - 2'000	0.02 - 10'000
InPro7001-VP	0.02 - 50	0.02 - 500	0.02 - 200	0.02 - 500
InPro7002-VP	0.02 - 100	0.02 - 2'000	0.02 - 500	0.02 - 2'000

4-electrode sensors (all numbers in mS/cm)

Sensor \ Transmitter	Cond7050 e	Cond7100 e	7220X	M 700
InPro7108-VP*	0.02 - 500	0.02 - 800	0.02 - 800	0.02 - 800

* all models

Recommended METTLER TOLEDO housings

Stationary housing	Order no.	Suitable sensor
InFit 761 e Series	various ^{e)}	InPro 7001/120-VP InPro 7001/225-VP
InFit 762 e Series	various ^{e)}	InPro 7001/120-VP
Retractable housing		
InTrac 777e	various ^{e)}	InPro 7001/225-VP
InTrac 798e	various ^{e)}	InPro 7001/120-VP
Immersion housing		
InDip 550 (not in US)/InDip 508 (US only)	various ^{e)}	InPro 7000-VP InPro 7108-VP/CPVC
Accessories		
Safety weld-in socket straight	52 400 518	InPro 7108-25/40-VP InPro 7108-25/65-VP
Safety weld-in socket inclined	52 400 462	InPro 7108-25/40-VP InPro 7108-25/65-VP

e) Please note that each housing is available in a wide variety of materials, process connections etc.
Please contact your distributor to get the right ordering information.

Ordering information

Designation 2-electrode sensors	Order no.
InPro 7000-VP	52 001 995
InPro 7005-VP	52 001 996
InPro 7001/120-VP 3.1B	52 001 997
InPro 7001/225-VP 3.1B	52 001 998
InPro 7002/1.5" TC-VP 3.1B	52 001 999
InPro 7002/2" TC-VP 3.1B	52 002 000
InPro 7002-VAR-VP 3.1B	52 002 857
Designation 4-electrode sensors	Order no.
InPro 7108-VP/CPVC 3.1B	52 002 001
InPro 7108-VP/PEEK 3.1B	52 002 002
InPro 7108-VP/PEEK/HA-C22 3.1B	52 002 003
InPro 7108-25/40-VP 3.1B	52 002 004
InPro 7108-25/40/HA-C22-VP 3.1B	52 002 005
InPro 7108-25/65-VP 3.1B	52 002 006
InPro 7108-25/65/HA-C22-VP 3.1B	52 002 007
InPro 7108/1.5" TC-VP 3.1B	52 002 008
InPro 7108/2" TC-VP 3.1B	52 002 009
InPro 7108-VAR-VP 3.1B	52 002 790
Designation patch cables	Order no.
1.5 m (5 ft)	58 080 201
3.0 m (10 ft)	58 080 202
4.6 m (15 ft)	58 080 203
7.6 m (25 ft)	58 080 204
15.2 m (50 ft)	58 080 205
22.9 m (75 ft)	58 080 206
30.5 m (100 ft)	58 080 207
Max. recommended cable length for all 2-electrode sensors:	60 m (200 ft)
Max. recommended cable length for 4-electrode sensors used with Cond 7050 e:	15 m (50 ft)
With all other transmitters:	60 m (200 ft)
Designation adapter	Order no.
Adapter from VP (female) to 8-pin Conxall connector (male), 0.9 m (3 ft)	58 080 101

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Management System
certified according to
ISO 9001 / ISO 14001

Subject to technical changes.
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