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Find the *Mettler Toledo InPro 3250I/SG/120* at our website: *Click HERE*

InPro® 3250 and InPro® 3250 SG Series

Low-maintenance electrodes for precise pH measurements in the chemical, biotechnology and pharmaceutical industries

Technical data



InPro 3250



InPro 3250 SG

Short description

The new low-maintenance pH electrodes InPro 3250 Series from METTLER TOLEDO are supplied complete with factory-filled, prepressurized liquid electrolyte and suited to a wide scope of applications in the biotechnology, pharmaceutical and chemical process industries. These electrodes have been designed for use at medium operating pressures and in particular where reliable and highly accurate measurements are of special importance.

The new InPro 3250 Series is available with an expanded selection of different pH-sensitive glass membranes. This guarantees the best possible measurement performance under the most diverse operating conditions, both in chemical and biotech processes. The following features make the InPro 3250 Series of pH electrodes to dependable measurement tools in demanding applications:

The series overall

– Extended operating life and precise measurement values: Any ingress of process medium into the reference system is avoided by (pre-)pressurization of the liquid electrolyte. This permanent overpressure within the electrode ensures that the diaphragm is continuously subject to cleaning by the action of the constant outflow of small amounts of electrolyte through the diaphragm.
– Resistance to potential measurement problems at the diaphragm: The silver-ion barrier integrated in the reference system prevents contamination or plugging of the diaphragm by black silver sulfide during measurements in process media containing sulfides or amino acids.
– More accurate measurement values due to temperature compensation through a built-in temperature sensor.
– Measurement disturbances caused by earth potentials are avoided through employment of a "solution ground" option available with InPro 3250 SG and InPro 3253 SG. In addition, these electrodes are equipped with a small platinum contact near the tip, allowing measurement of the redox potential (ORP) as well as application of enhanced sensor diagnostic features.
– VarioPin (VP) connector (IP68) in heavy-duty PEEK design.
– Customized certificates for each application: MaxCert™.
All electrodes in this Series can be employed in hazardous zones and are certified according to the EC Pressure Equipment Directive (PED).

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METTLER TOLEDO

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Specifications

pH range	0…14 (InPro 3250)
pH range	0…12 (InPro 3253)
Temperature	0…100 °C (32…212 °F) in operation 0…140 °C (32…284 °F) for sterilization
Pressure resistance	up to an overpressure of 4 bar (58 psi)
Reference system	Argenthal (Ag/AgCl)
Reference electrolyte	pre-pressurized liquid electrolyte
Diaphragm	1 ceramic diaphragm
Glass membrane	special glass, highly resistant to alkaline media (InPro 3250) low temperature glass (InPro 3251) hydrofluoric acid-resistant glass (InPro 3252) sterilization-resistant glass (InPro 3253)
Connector	VarioPin (VP), IP68 Pg 13.5 thread
Platinum contact	grounding, diagnostics, redox measurement with InPro 3250 SG and InPro 3253 SG
EEx certification	II 1/2G EEx ia IIC/T6/T5/T4, SNCH 00 ATEX 3130X for the entire family
FM certification	IS CLI, Div1, GR ABCD
PED certification	Pressure Equipment Directive guidelines 97/23/EG, Art.3 para.3 for the entire family
EHEDG certification	InPro 3253
Biocompatibility certification	according EN ISO 10993-5 and USP 26, Chapter 87, 2003 for InPro 3253, InPro 3253 SG

Ordering information

InPro 3250 for chemical processes

– Designed for use in stirred vessels, tanks, open basins and pipes in the chemical industry under harsh process conditions, and now also for up to 4 bar (58 psi) overpressure.
– Optimal measurement performance even in strong alkaline media thanks to a tried and tested special glass membrane for applications in the field of chemical processes.

pH electrodes for chemical applications

Temperature compensation Pt100	**shaft length [a] in mm**	**Order no.**
InPro3250/120/Pt100	120	52 002 547
InPro3250/225/Pt100	225	52 002 552
InPro3250/325/Pt100	325	52 002 554
InPro3250/425/Pt100	425	52 002 556
– with platinum auxiliary electrode		
InPro3250SG/120/Pt100	120	52 002 558
InPro3250SG/225/Pt100	225	52 002 560
InPro3250SG/325/Pt100	325	52 002 562
InPro3250SG/425/Pt100	425	52 002 564
Temperature compensation Pt1000		
InPro3250/120/Pt1000	120	52 002 548
InPro3250/225/Pt1000	225	52 002 553
InPro3250/325/Pt1000	325	52 002 555
InPro3250/425/Pt1000	425	52 002 557
– with platinum auxiliary electrode		
InPro3250SG/120/Pt1000	120	52 002 559
InPro3250SG/225/Pt1000	225	52 002 561
InPro3250SG/325/Pt1000	325	52 002 563
InPro3250SG/425/Pt1000	425	52 002 565

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pH electrodes for applications at low temperatures

Temperature compensation Pt100	shaft length [a] in mm	Order no.
InPro3251/120/Pt100	120	52 002 585
InPro3251/225/Pt100	225	52 002 586

pH electrodes for applications in hydrofluoric acide containing media

Temperature compensation Pt100		
InPro3252/120/Pt100	120	52 002 587
InPro3252/225/Pt100	225	52 002 588
InPro3252/250/Pt100	250	52 002 589

Ordering information

InPro 3253 for biotechnological and pharmaceutical processes

– Sensor and connector are fully autoclavable or in-situ sterilizable.
– Improved measurement accuracy thanks to a specific pH-sensitive membrane glass specially developed for biotechnological and pharmaceutical processes, which minimizes shift of the zero point of the electrode during sterilization procedures.
– Designed for use in tanks, open basins or closed reactors as well as fermentation vessels at a process pressure of up to 4 bar (58 psi) overpressure.
– MaxCert™: EHEDG, 3A and biocompatibility certificate following EN ISO 10993-5, ISO 9363-1 and USP.

pH electrodes for biotechnological and pharmaceutical applications

Temperature compensation Pt100	shaft length [a] in mm	Order no.
InPro3253/120/Pt100	120	52 002 566
InPro3253/225/Pt100	225	52 002 568
InPro3253/250/Pt100	250	52 002 570
InPro3253/325/Pt100	325	52 002 571
InPro3253/425/Pt100	425	52 002 573
InPro3253/485/Pt100	485	52 002 575
– with platinum auxiliary electrode		
InPro3253SG/120/Pt100	120	52 002 576
InPro3253SG/225/Pt100	225	52 002 578
InPro3253SG/325/Pt100	325	52 002 580
InPro3253SG/425/Pt100	425	52 002 582
Temperature compensation Pt1000		
InPro3253/120/Pt1000	120	52 002 567
InPro3253/225/Pt1000	225	52 002 569
InPro3253/325/Pt1000	325	52 002 572
InPro3253/425/Pt1000	425	52 002 574
– with platinum auxiliary electrode		
InPro3253SG/120/Pt1000	120	52 002 577
InPro3253SG/225/Pt1000	225	52 002 579
InPro3253SG/325/Pt1000	325	52 002 581
InPro3253SG/425/Pt1000	425	52 002 583

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Cables (open ends)			
Standard temperature	**Order no.**	**Order no.**	**Order no.**
(–20…80 °C/–4…176 °F)	**VP6-ST/3 m (9.8 ft)**	**VP6-ST/5 m (16.4 ft)**	**VP6-ST/10 m (32.8 ft)**
	52 300 108	52 300 109	52 300 110
High temperature			
(–30…140 °C/–22…284 °F)	**VP6-HT/3 m (9.8 ft)**	**VP6-HT/5 m (16.4 ft)**	**VP6-HT/10 m (32.8 ft)**
	52 300 112	52 300 113	52 300 114

Buffer solutions			
	1 x 250 ml	**6 x 250 ml**	**1 x 1000 ml**
Buffer pH = 4.01 (red)	51 340 057	51 340 058	51 340 228
Buffer pH = 7.00 (green)	51 340 059	51 340 060	51 340 229
Buffer pH = 9.21 (blue)	51 300 193	51 300 194	51 340 230

Cleaning solutions			
Electrode cleaning solution	51 340 068	51 340 069	51 319 041
Diaphragm cleaning sol.	51 340 070	51 340 082	
Regeneration solution	25 ml	51 340 073	
Reactivation solution	6 x 30 ml	51 319 053	

Recommended housings

Applications areas	**Chemistry**	**Biotechnology**	
Shaft length [a]		**side-entry installation**	**top-entry installation**
120 mm	InFit 761-25-CP InFit 762 e	InFit 761-25BT(B)/70 InFit 761-25CIP/70	–
225 mm	InTrac 777 e-SL/100 InTrac 777 e-SPR/100	InFit 761-25BT(B)/175	InFit 761-19BT/175
325 mm	–	InTrac 797 e/100	InFit 761-19BT/275
425 mm	InTrac 777 e-SL/200 InTrac 777 e-SPR/200	–	InFit 761-19BT/375

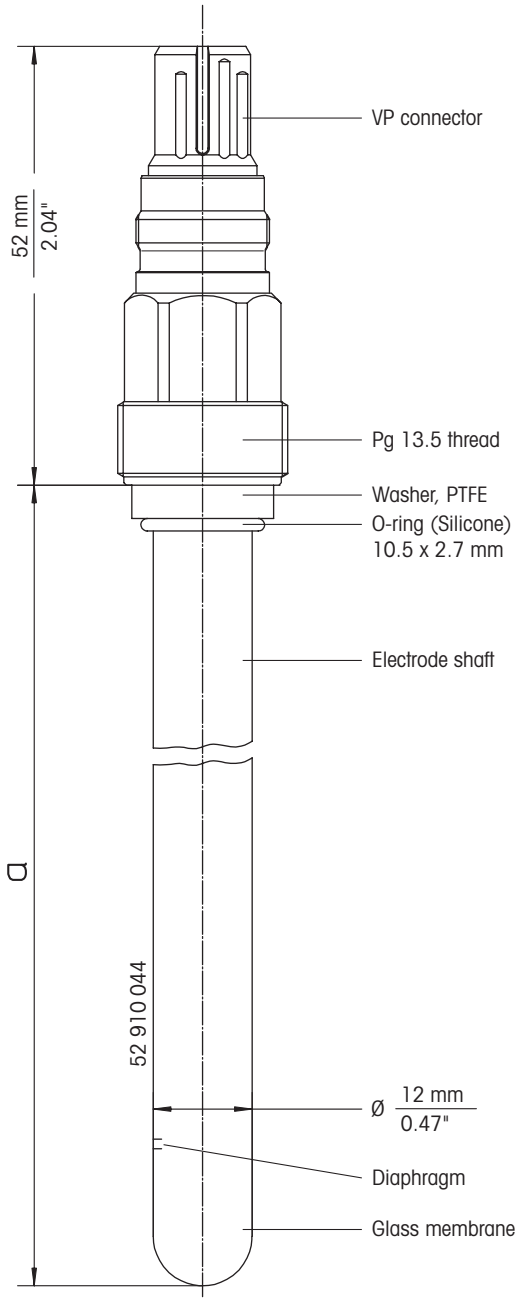
Transmitters

A wide range of transmitters can be offered to complete the METTLER TOLEDO measurement system, including a 4 wire version for universal AC/DC power supply, or alternatively in 2-wire versions, with HART®, FOUNDATION™ Fieldbus or Profibus® communication, of standard or explosion-proof (EEx) design.

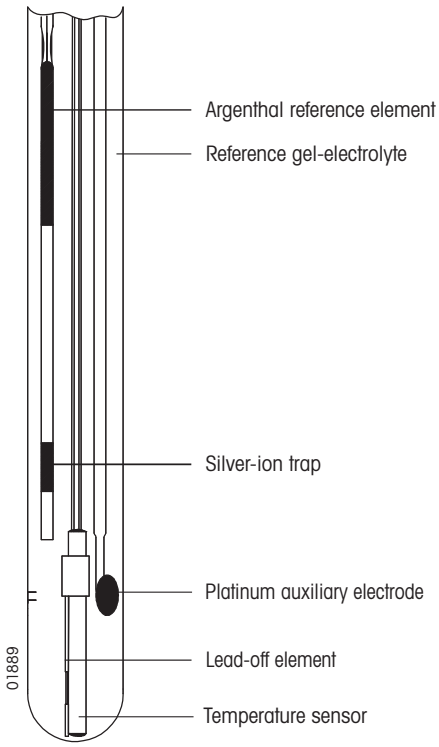
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Drawings

InPro 3250



InPro 3250 SG



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