



SIORxx0xx and SIOSxx0xx

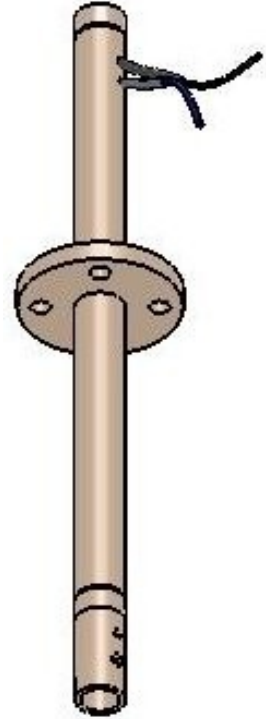
Sensor fitting for immersion installation, 42 mm diameter, c/w electrolyte reservoir, c/w integral temperature sensor, Pt100

Sensor fitting for immersion installations of pH and ORP electrodes; the probe body can be completely filled with electrolyte solution so assuring long operating periods without refilling requirements. The electrolyte level assures a good hydraulic head on the porous diaphragm so keeping it clean. These probes are designed for those processes where fouling substances may deposit on the electrodes. They include integral temperature sensor for measure thermocompensation. The SIOS probe includes the sensor chemical cleaning system.

Typical applications for SIOR and SIOS sensor fittings are drinking water plants (in sedimentation tanks, in flocculation processes), wastewater treatment plants and wherever pH or ORP measures with very low maintenance requirements are needed.

Advantages

- Sturdy and compact execution
- Includes integral temperature sensor, Pt100
- Suitable to house pH and ORP sensors
- Probe body can be completely filled with electrolyte
- Very easy electrolyte refilling through the upper cap
- Very low maintenance requirements
- Electrodes protection can be removed
- Easy to install
- Supplied c/w sliding fixing flange



Operating principle and realization

SIOR and SIOS sensor fitting includes a body with 42 mm diameter, 600, 1000 or 1500 mm standard length, a cap on the upper part of the fitting and an electrode holder c/w electrode protection. The fitting body is available in PP and PVDF; SS only upon request. The electrode holder allows easy electrode replacement and the electrode protection may be easily removed if not required. The probe includes integral temperature sensor, Pt100, for temperature visualization and measure thermocompensation.

The sensor fitting can be easily installed through a sliding flange, ISO/DIN DN32, that can be fixed in its position on the body with two screws (included).

Probe body can be completely filled with electrolyte solution, so assuring long operating periods without refilling requirements. The electrolyte level assures a good hydraulic head on the porous diaphragm so keeping it clean. Using large surface porous diaphragms the electrodes work well even in processes with high amounts of fouling substances.

Mod.SIOS probes include the sensor chemical cleaning device. (cleaning accessories are made of PP even in PVDF probes). The cleaning sequence is directly driven by the μ P transmitter connected to the probe.

Mod.SIOR and SIOS sensor fittings can house pH electrodes Mod.101NxZxx0xx and ORP electrodes Mod.201Nxxxx0xx: these two groups of electrodes can be directly immersed into the electrolyte inside the probe body since their integral cable is completely protected with a silicone rubber sheath. The electrolyte solution enters the electrodes through the two lateral holes and fills them up completely. The electrolyte, thanks to its hydraulic head inside the probe, establishes a good flow out of the porous diaphragm so keeping it clean. Electrodes with increased area porous diaphragm are best suited for the use in solutions including fouling substances.

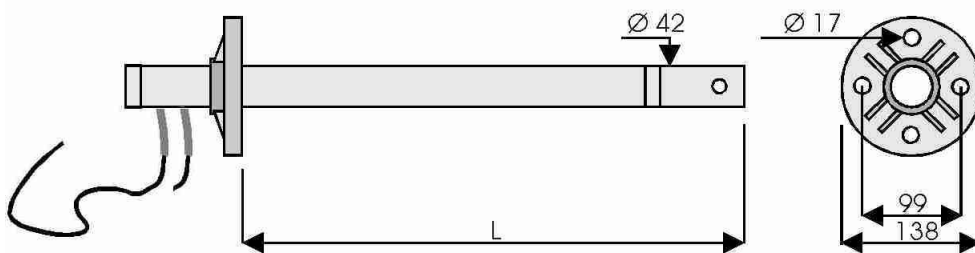
Probe body act as electrolyte reservoir so assuring long operating periods without refilling requirements.

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Technical Specifications

Allowed sensors:.....	101N and 201N
Body material:.....	PP or PVDF (SS upon request)
Cleaning accessories material:.....	PP even for PVDF probes
Operating temperature limits: (*).....	5 to 70°C (PP); 5 to 110 °C (PVDF); 5 to 120°C (SS)
Storage temperature limits:.....	0 to +60 °C
Temperature sensor:.....	Pt100, integral to the probe
Electrodes cable:	integral to the electrode, with silicone rubber sheath
Pt100 cable:	integral to the probe, with silicone rubber sheath, length accordin to order code
Max.allowed distance from sensor to instrument:.....	15 m
Mounting:	supplied c/w mounting flange ISO/DIN DN32
Dimensions:	Ø42 mm, 600 – 1000 – 1500 mm length
Weight:.....	appr.1,5 Kg (600 mm version)

(*) Operating temperature must always respect limits given for each sensor.



Outline dimension and section view

Installation, Calibration & Maintenance

The sensor fitting can be installed through the sliding flange in basins or tanks, in a vertical position; it may also be installed in an inclined position, with a maximum deviation of 75° from vertical axis. A stainless steel mounting bracket is available for probe mounting: order code SI0xxx0x2).

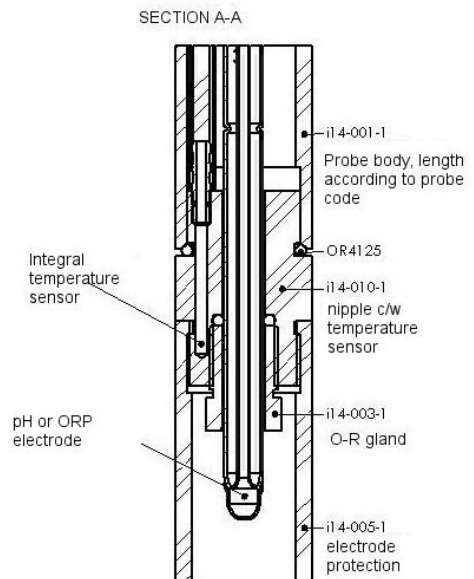
The immersion depth can be set by moving the position of the flange on the fitting body; the flange can then be fixed with the two screws. A 100 mm immersion depth is enough for correct sensor operation. Make sure the sensor protection cap has been removed before the start up.

This probe has very low maintenance requirements: it is recommended to clean the electrodes at periodical intervals defined by the operators on the basis of his own experience of the specific process. After the cleaning always operate a check of the sensitivity of the measuring chains.

The calibration can be operated either by comparison to properly calibrated portable instruments or extracting the probe from the process liquid, cleaning it and then immersing it into the solutions with known value of the parameter to be calibrated. Calibration frequency is to be defined by the operator according to specific process requirements.

A calibration vessel that can be screwed on the probe is available: this makes calibration procedure very easy even on long probes. Order code SI0xxx0Cx).

It is recommended to visually inspect the level of the electrolyte inside the probe body at periodical intervals and refill the electrolyte solution whenever needed. The electrolyte solution level must always be 10 cm higher than the level of the solution where the probe is immersed in order to assure the hydraulic head on the porous diaphragm and avoid electrode poisoning from outer solution.



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Order code breakdown

	SI0	x	x	x	x	x	x	
Immersion fittings	SI0							
Type of sensor fitting								
Ø 42 mm for pH/ORP; integral Pt100; body filled with electrolyte		R						
Ø 42 mm for pH/ORP; integral Pt100; body filled with electrolyte c/w chemical cleaning system		S						
Probe length (measured under the flange)								
Reserved			0					
600 mm			2					
1000 mm			4					
1500 mm			5					
Special execution			9					
Probe construction material								
Reserved				A				
Polypropylene, PP (standard)				B				
PVDF, Ø 42 mm fittings, length up to 1000 mm (Note 1)				D				
PVDF, Ø 42 mm fittings, length up to 1500 mm (Note 1)				G				
SS AISI 316, Ø 42 mm fittings, length up to 1000 mm (Note 1)				L				
Special execution				Z				
Fixed Code						0		
Calibration vessel								
Reserved							A	
For fittings Ø 42 mm							C	
Not included							E	
Stainless steel mounting bracket								
Reserved								0
For fittings Ø 42 mm								2
Not included								4
Length of integral cable for Pt100 (from the probe)								
Reserved								A
Cable length (from probe outlet point) 5 m								B
Cable length (from probe outlet point) 10 m								C
Cable length (from probe outlet point) 15 m								D
Cable length (from probe outlet point) 20 m								E
Other upon request								Z

Note 1: Chemical cleaning system is always made of PP.

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Accessories included in the supply

Sliding flange ISO/DIN DN32

Optional Accessories

Stainless steel bracket for wall installation Order probe with code SI0xxx0x2
Calibration vessel to be screwed on the electrode holder joint..... Order probe with code SI0xxx0Cx

pH 7,00 buffer solution..... T/101-7x

pH 4,00 buffer solution..... T/101-4x

pH 9 buffer solution..... T/101-9x

where x= A : 250 ml bottle; x = B : 500 ml bottle; x = C: 1000 ml bottle.

Known ORP value standard solution, 468 mV, 250 ml bottle..... T/201-468A

Known ORP value standard solution, 220 mV, 250 ml bottle..... T/201-220A

Refilling electrolyte, KCl solution saturated with AgCl E/123-1x

Refilling electrolyte, saturated KNO₃ solution..... E/123-3x

where x= A : 250 ml bottle; x = B : 500 ml bottle; x = C: 1000 ml bottle.