



## SI0Cxx0xx and SI0Dxx0xx

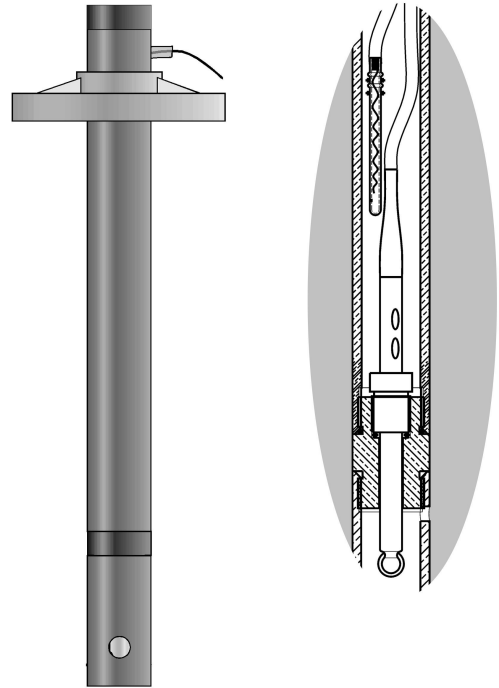
### Sensor fitting for immersion installation, 42 mm diameter, salt bridge, for separate pH and ORP electrodes

Sensor fitting for immersion installations of pH and ORP electrodes with separate reference electrode; 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 and in solutions containing highly poisoning substances. The SI0Q probe includes the chemical cleaning system.

Typical applications for SI0P and SI0Q sensor fittings are industrial wastewater treatment plants (e.g. waters from galvanic industry, from etching processes, from pickling processes), municipal wastewater treatment plants, processes where calcium hydroxide is used and wherever pH or ORP measures with very low maintenance requirements are needed.

#### Advantages

- Sturdy and compact execution
- High resistance against fouling
- High resistance against poisoning
- Easy to install and to use
- Suitable to house pH and ORP sensors with separate reference electrode
- Probe body can be completely filled with electrolyte, long operating life without refilling requirements
- Very easy electrolyte refilling through the upper cap
- Very low maintenance requirements
- Supplied c/w sliding fixing flange



#### Technical Specifications

Allowed measuring electrodes:..... 102N and 202N  
Allowed reference electrode:..... 301/Sb  
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  
Electrodes cable: ..... integral to the electrode, with silicone rubber sheath  
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:..... approx. 1,5 Kg (600 mm version)

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

# SIOPxx0xx and SIQxx0xx

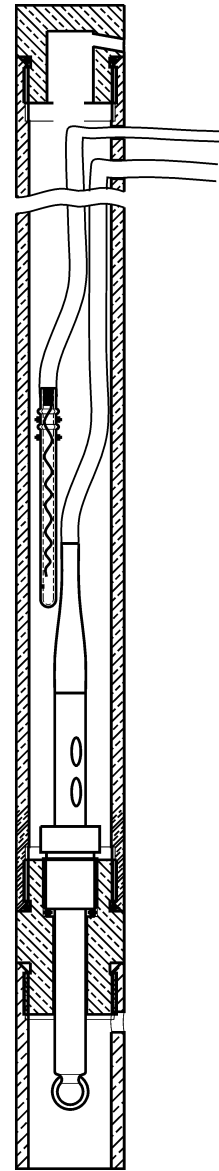
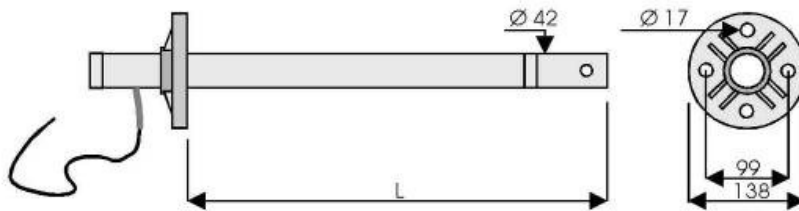
## Operating principle and realization

SIOP and SIQ sensor fittings include 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 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.SIQ 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  $\mu$ P transmitter connected to the probe.

Mod.SIOP and SIQ sensor fittings can house simple pH electrodes Mod.102N0Z0x0x0x and ORP electrodes Mod.201N0x0x0x0x with separate reference electrode Mod.301/Sb: these 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.



## 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 a inclined position, with a maximum deviation of  $75^\circ$  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 assure that the reference electrode is immersed, and 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.

# SIOPxx0xx and SI0Qxx0xx

## Order code breakdown

|  | SI0 | x | x | x | x | x | x |
|--|-----|---|---|---|---|---|---|
| Immersion fittings   | SI0 |   |   |   |   |   |   |
| <b>Type of sensor fitting</b>  |     |   |   |   |   |   |   |
| Ø 42 mm for pH/ORP; body filled with electrolyte; for 102N and 202N electrodes                         |     | P |   |   |   |   |   |
| Ø 42 mm for pH/ORP; body filled with electr. c/w chemical cleaning system for 102N and 202N electrodes |     | Q |   |   |   |   |   |
| <b>Probe length (measured under the flange)</b>  |     |   |   |   |   |   |   |
| Reserved   |     |   | 0 |   |   |   |   |
| 600 mm   |     |   | 2 |   |   |   |   |
| 1000 mm  |     |   | 4 |   |   |   |   |
| 1500 mm  |     |   | 5 |   |   |   |   |
| Special execution  |     |   | 9 |   |   |   |   |
| <b>Probe construction material</b>   |     |   |   |   |   |   |   |
| 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 |   |   |   |
| <b>Fixed Code</b>  |     |   |   |   |   | 0 |   |
| <b>Calibration vessel</b>  |     |   |   |   |   |   |   |
| Reserved   |     |   |   |   |   |   | A |
| For fittings Ø 42 mm   |     |   |   |   |   |   | C |
| Not included   |     |   |   |   |   |   | E |
| <b>Stainless steel mounting bracket</b>  |     |   |   |   |   |   |   |
| Reserved   |     |   |   |   |   |   | 0 |
| For fittings Ø 42 mm   |     |   |   |   |   |   | 2 |
| Not included   |     |   |   |   |   |   | 4 |

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

## 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 KNO<sub>3</sub> solution.....E/123-3x

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