



# SIEST1x1x0x

## Stainless Steel sensor fitting, retractable in line, for pH or ORP measures

Sensor fitting with stainless steel AISI 316L body, designed to fit pH or ORP electrodes. This probe allows to extract the electrodes for cleaning, calibration or maintenance while the process is running. Mod.SIEST sensor fitting can be installed in fermenters, reactors and in all those processes where operating conditions are very demanding (e.g. high pressures, high temperatures, CIP, in line sterilization). The sensor withdrawal can be operated either manually or automatically through a pneumatic system.

Typical applications of the SIEST sensor fittings are the measure of pH or ORP in reactors and fermenters, in the pharmaceutical industry, in food and beverage industry, in chemical processes. The use of this probe is also recommended in those processes with the tendency to rapidly poison the electrodes destroying them. With the SIEST probe the sensors can be inserted into the process only when the measure is strictly necessary, then the sensor can be retracted into the flushing chamber: this will dramatically increase the sensor life.

### Advantages

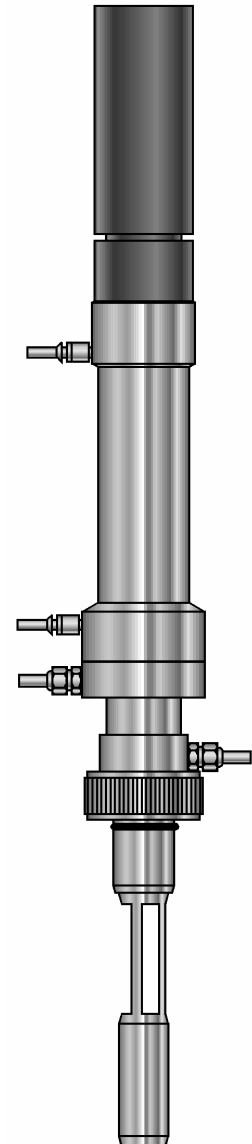
- Suitable to house pH or ORP sensors
- Sensors can be extracted and inserted while the process is running
- Sensor extraction/insertion can be automatically operated (pneumatic actuation)
- Operating temperature limits -10 to 130°C
- Operating pressure up to 6 bar
- No poisoning of the process during cleaning of the sensor nor during calibration
- Very little maintenance requirements
- Recommended for processes that tend to poison the sensor

### Operating principle and realization

Mod.SIEST sensor fitting is completely made of AISI316L stainless steel, with Viton seals. Process connections are weld-in socket with R 1 ¼" BSP threads or and flanged, DN50.

Flushing connections are 6 mm diameter. Compressed air connections are 4 mm diameter (Mod.SIEST1x1B0x).

For cleaning or calibrating, the electrode is retracted into the flushing chamber: when the electrode is retracted the weld-in socket is closed off flush with the inner reactor wall. In this position the electrode can be cleaned with water or with proper cleaning solution, can be calibrated with proper calibrating solutions or can be replaced, even while the process is running.



### Electrodes that can be installed into the SIEST1x1x0 sensor fitting

pH	Combined electrode.....	101ESTxZxx0xx
ORP	Combined electrode.....	201ESTxxx0xx

# SIEST1x1x0x

## Technical Specifications

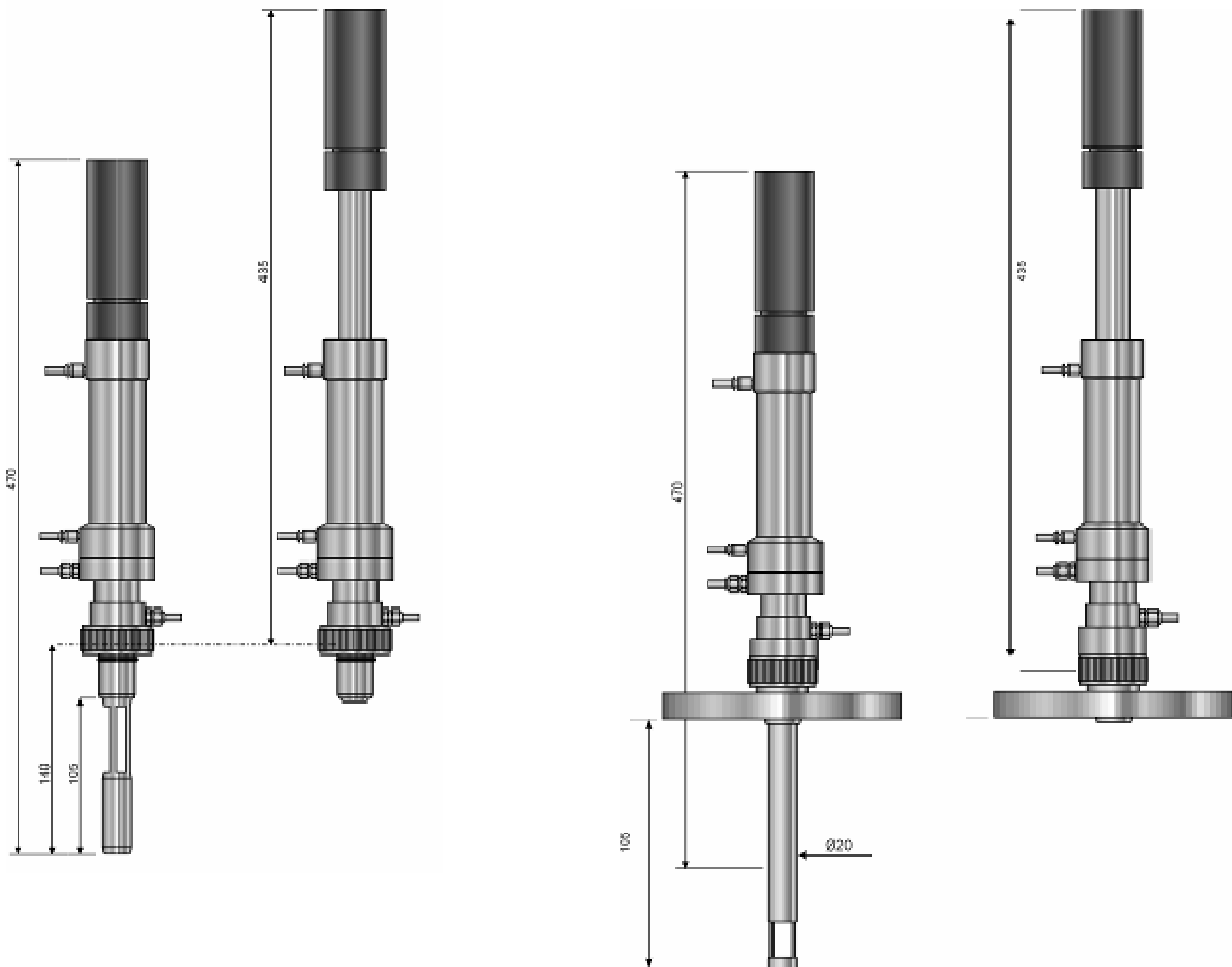
Allowed sensors:..... refer to the given list  
Body material:..... AISI 316L stainless steel, Viton seals  
Operating temperature limits: .....-10 to 130 °C  
Storage temperature limits:..... -10 to +70 °C  
Operating pressure limits:.....0 to 6 bar  
Process connections:..... according to selected model: nut for weld-in socket 1 ¼" BSP, flange DN5  
Insertion depth : .....105 mm  
Compressed air connections (SIEST1x1B0x) : .....q.ty 2 connections Ø 4  
Flushing solution connections: .....q.ty 2 hose connections Ø 6  
Cable outlet: .....integral cable or threaded connector  
Dimensions: ..... see figure  
Weight: ..... approx.1,5 Kg

## Installation, Calibration & Maintenance

Install the probe on the plant, then connect the hoses to the flushing connection and to the compressed air connections. Then install the electrode inside the sensor fitting.

Before calibrating the measuring chain or immersing the probe for the measure make sure the sensor protection cap has been removed.

The calibration of the measuring chain is operated by extracting the electrode from the process into the flushing chamber, where the calibration solution is allowed to flow. The calibration can be operated while the process is running.



# SIEST1x1x0x

## Order code breakdown

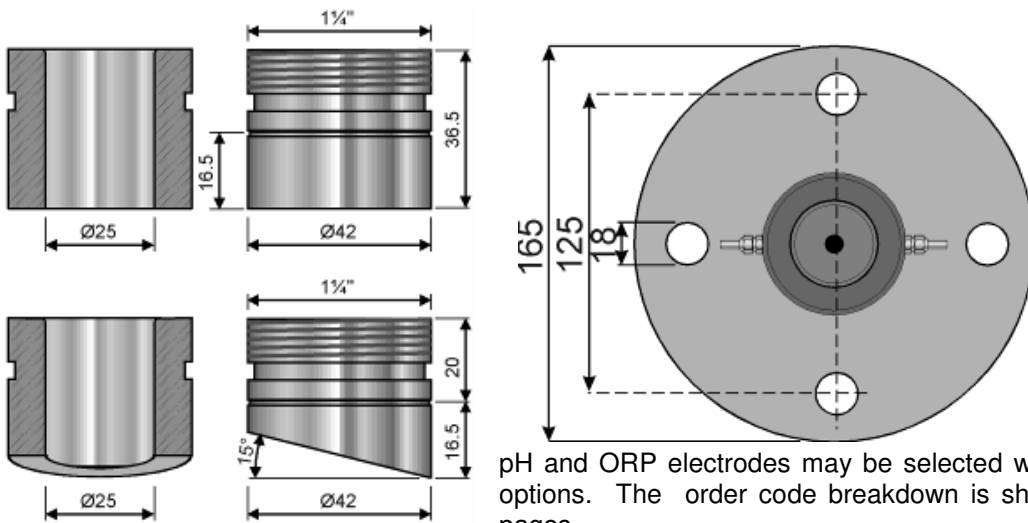
	SI/EST	x	x	x	x	x	x
<b>Stainless steel sensor fitting, retractable in line</b>							
SI/EST							
<b>Body construction material</b>							
AISI 316 SS		1					
Special execution		9					
<b>Wetted part construction material</b>							
AISI 316 SS			A				
Titanium			B				
Special execution			C				
<b>Process connections</b>							
sanitary type, 1 1/4"				1			
Special execution				9			
<b>Sensor extraction mode</b>							
Manual					A		
Pneumatic					B		
<b>Fixed code</b>							
0							
<b>AISI 316 SS Weld-in socket</b>							
Not required							A
Straight							B
Raking							C
Special execution							Z

## Optional Accessories

Calibration solutions, to be chosen according to measured parameter.

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



pH and ORP electrodes may be selected with a wide range of options. The order code breakdown is shown in the following pages.

# SIEST1x1x0x

## Order code breakdown for 101EST pH electrode

	101	EST	x	Z	x	x	0	x	x
<b>Industrial combined pH electrode</b>	101								
<b>Type of pH electrode</b> For installation in Mod.SI/EST probes		EST							
<b>Use at low/high temperature</b>									
Not suitable			0						
Suitable for 0°C ÷ -30°C			1						
Suitable for 0°C ÷ +130°C			2						
<b>Integral temperature sensor</b>									
Not included				Z					
<b>Reference version</b>									
Standard					0				
Salt bridge, external salt KCl					2				
Salt bridge, external salt KCl gel					4				
Salt bridge, external salt KNO <sub>3</sub>					5				
Salt bridge, external salt NaCl					6				
<b>Porous diaphragm version</b>									
Reserved						Z			
Standard (ceramic diaphragm Ø 1mm)						A			
Increased area porous diaphragm						B			
Synthetic annular diaphragm						C			
<b>Fixed code</b>							0		
<b>Cable and connector</b>									
Integral cable, 5 m length								C	
Integral cable, 10 m length								D	
Integral cable, 15 m length								E	
S7 Screw connector								F	
S7 Screw connector, PG13. 5								M	
SS head with flange, integral cable, 5 m length								Q	
<b>Plug</b>									
No plug									0
BNC, coaxial									1
DIN standard coaxial									2

# SIEST1x1x0x

## Order code breakdown for 201EST ORP electrode

	201	EST	x	x	x	x	0	x	x
<b>Combined industrial ORP electrode</b>	201								
<b>Type of ORP combined electrode</b> For installation in Mod.SI/EST probes		EST							
<b>Use at low/high temperature</b>									
Not suitable			0						
Suitable for 0°C ÷ -30°C			1						
Suitable for 0°C ÷ +130°C			2						
<b>Metal</b>									
Reserved				Z					
Gold				A					
Silver				B					
Platinum				C					
Platinum, annular				D					
<b>Reference version</b>									
Standard					0				
Salt bridge, external salt KCl					2				
Salt bridge, external salt KCl gel					4				
Salt bridge, external salt KNO <sub>3</sub>					5				
Salt bridge, external salt NaCl					6				
<b>Diaphragm version</b>									
Reserved						Z			
Standard (ceramic diaphragm Ø 1 mm)						A			
Increased area porous diaphragm						B			
Annular synthetic diaphragm						C			
<b>Fixed code</b>							0		
<b>Cable and connector</b> (Note 3)									
Integral cable, 1 m length								A	
Integral cable, 5 m length								C	
Integral cable, 10 m length								D	
Integral cable, 15 m length								E	
S7 Screw connector								F	
S7 Screw connector PG13.5								M	
SS head with flange, integral cable, 5 m length								Q	
<b>Plug</b>									
No plug									0
BNC coaxial									1
DIN standard coaxial									2