

## S411/4E Conductivity cell 4 platinum electrodes, Pt1000 Temp. sensor

Conductivity cells with glass or Polycarbonate body and 4 platinum electrodes on ceramic support.

Cell constant is  $K = 0.7 \text{ cm}^{-1}$  (same as  $K = 1,43 \text{ cm}$ ); the 4 electrodes measuring system allows to cover a wide measuring range, 0 to 500 mS, with excellent linearity features and good sensitivity even at very low conductivity values.

These cells include integral temperature sensor Pt1000 (also mounted on the ceramic support of the 4 electrodes) for measure thermo compensation.

Series S411/4E cells are designed for all typical laboratory applications; they have very little immersion depth requirement, so allowing measure in very small sample volumes.

Mod.S411/4E cells can also be installed into immersion probes, through flow cells and into probes for direct installation in closed pipelines or vessels, they can therefore be used also in many process applications.

Typical use of these cells are drinking water plants, industrial processes, laboratories.

### Advantages

- Std dimensions,  $\varnothing 12 \text{ mm}$ , L.120 mm
- Suitable for the insertion into immersion probes, through flow cells and probes for direct installation in closed pipelines or tanks
- Integral temperature sensor Pt1000 always included
- 4 Platinum measuring electrodes on a ceramic support
- Cell constant  $K=0.7 \text{ cm}^{-1}$  (same as  $K = 1,43 \text{ cm}$ )
- High linearity on the measuring range 0 to 500 mS
- High sensitivity even at low conductivity values

### Operating principle and realization

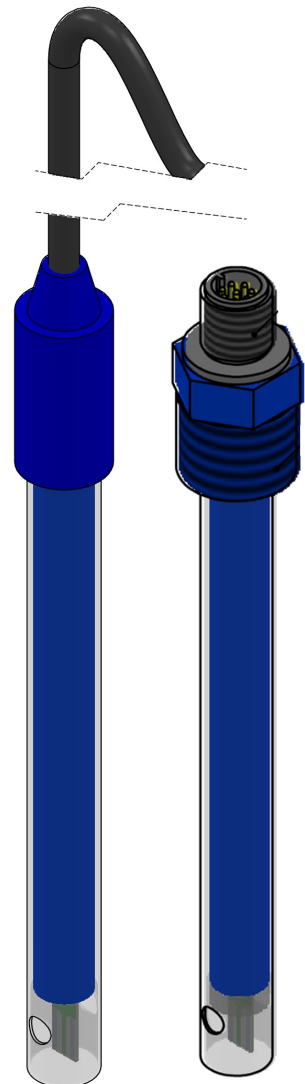
These cells have glass or polycarbonate body,  $\varnothing 12 \text{ mm}$  L.120mm, with a required immersion depth of 12 mm. This means these cells can measure very small samples, down to 1.5 ml volume.

These dimensions allow, besides typical laboratory use, to install these cells into immersion fittings, into through flow cell, and into fitting for direct installation into closed pipes.

Measuring electrodes are 4, made of platinum. The 4 electrodes configuration makes the cell unaffected by the polarization phenomenon, so assuring good linearity of the measure within the measuring range 0 to 500 mS, with high sensitivity even at very low conductivity values.

Cell constant is  $K = 0.7 \text{ cm}^{-1}$  (same as  $K = 1,43 \text{ cm}$ ).

Series S411/4E cells are available in various options.



### Correspondence between measuring ranges and cell constants for Series S411/4E cells

$K = 0.7 \text{ cm}^{-1}$  (same as  $K = 1,43 \text{ cm}$ ) ..... 0÷500 mS

## Installation, Maintenance and Calibration

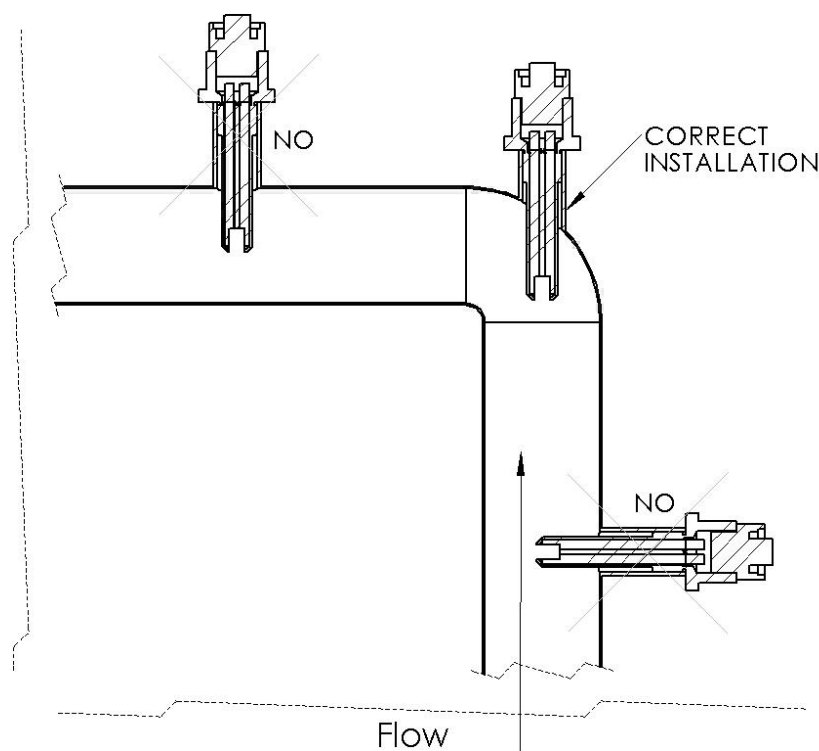
Series S411/4E cells have a very small immersion depth requirement: 12 mm immersion depth is enough. Therefore they can easily measure small volume samples, down to 1,5 ml.

Mod.S411/4E cells have to be installed at the minimum immersion depth indicated, and the immersion depth should be kept reasonably constant. In process applications the sample flow should be directed against the cell bottom so that the liquid entering the cell can flow upwards and exit from the upper hole (in this way no air bubble will get trapped into the cell). These cells should not be installed in locations with high turbulence. FS values, cell constant and set-point (min and max) of the instrument are factory calibrated. In any case all these values can be modified by the user, as stated in the user manual pertinent to conductivity transmitter.

The cell K correction is the only calibration to be performed at start up.

Insert the cell in a solution with known conductivity and calibrate the slope to obtain the correct reading (the instrument should read the calibration solution conductivity value) or, in the instruments provided with this option, insert the known value of the cell constant (it is indicated on the cell data tag).

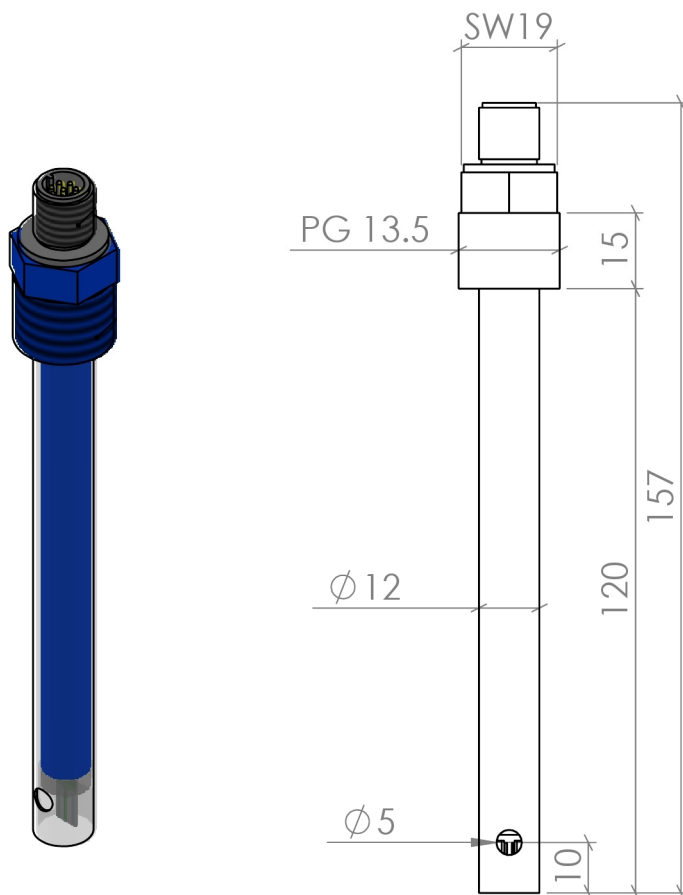
Conductivity cells Series S411/4E with platinum electrodes should be cleaned with water or with detergent, but never with mechanical cleaning, that will damage the sensor.



## Technical Specifications

Cell body: .....glass or Polycarbonate, according to Order Code selection  
 Measuring electrodes: .....4, platinum on ceramic support  
 Cell constants (cm): .....K =  $0.7 \text{ cm}^{-1}$  (same as K = 1,43 cm)  
 Measuring ranges: .....0÷500 mS  
 Temperature sensor: .....Pt1000 on ceramic support  
 Operating temperature limits: .....-5÷100 °C (glass body); 0÷100 °C (Polycarbonate body)  
 Dimensions : .....Ø 12mm, length. 120 mm  
 Minimum immersion depth: .....12 mm  
 Cable: .....according to order code breakdown

## Outline Dimensions



## Accessories

S411/4E cells can be supplied c/w many type of cables and connectors. Specify at order (or when asking for a quotation) the desired cable and connector.

Allowed choices are listed in the order code breakdown; for different options pls contact Your supplier.

Cells Mod.S411/4E8GxP0GxA c/w 8 poles connector are supplied with separate cable. Order 5 m multipolar cable c/w connector for the cell.

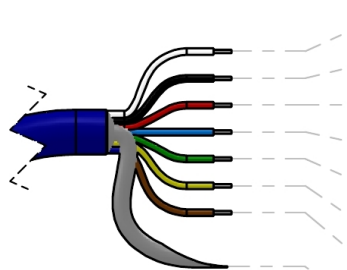
5 m multipolar cable c/w connector for cell.....

## Optional accessories

Known conductivity standard solution, 250 ml bottle .....

Specify desired conductivity value at order; typical values are: 1,278 mS @20°C (1,413 mS @25°C), 11,67 mS @20°C (12,88 mS @25°C) e 102,09 mS @20°C (111,80 mS @25°C), however solution with other conductivity values are available upon request.

## Wiring, cell with Pt1000 temperature sensor



| COLOUR | PIN CN | SENSOR            |
|--------|--------|-------------------|
| White  | 1      | INPUT signal (I)  |
| Black  | 3      | PT1000            |
| Red    | 6      | INPUT signal (I)  |
| Blue   | 5      | OUTPUT signal (V) |
| Green  | 4      | PT1000            |
| Yellow | NC     | NC                |
| Brown  | 2      | OUTPUT signal (V) |
| SCH    | 7      | SCH               |

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