



401IXXX0B0A and 401GXXX0B0A

Stopper type conductivity cell for industrial applications, stainless steel or graphite electrodes

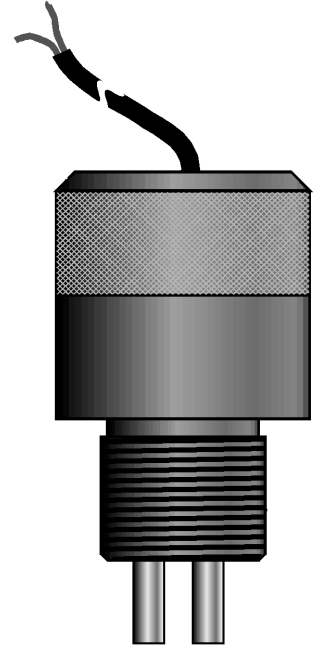
Conductivity cells with PVDF or glass fiber filled PP (PP 30% GF) body and stainless steel (401I) or graphite (401G) electrodes.

These cells are available with the following cell constants: K = 1 cm, K = 5 cm, K = 10 cm, are therefore suitable to measure in a wide conductivity range, from 0 up to 5000 μ S.

These cells can be supplied c/w integral temperature sensor Pt100, TC100 or other upon request, for measure thermo compensation.

These cells have a very simple design that makes them quite easy to install; their body is threaded (3/8", 1/2" and 3/4" gas) for direct installation into closed pipelines and tanks, even pressurized (up to 5 bar at ambient temperature).

Typical use of these cells are drinking water plants, wastewater plants, water softeners, boiler feed water.



Advantages

- Simple, compact and sturdy execution
- Simplified installation
- Suitable for direct installation in closed pipelines or tanks
- No maintenance requirement
- Stainless steel or graphite electrodes
- Available c/w integral temperature sensor, Pt100, TC100 or other upon request
- Operating pressure up to 5 bar at room temperature
- Operating temperature 5 ÷ 100 °C
- Cell constants: K = 1, K = 5, K = 10
- Measuring ranges from 0 to 5000 μ S

Operating principle and realization

The 401I and 401G cells have PVDF (only up to the end of stock) or glass fiber filled PP (PP 30% GF) body, dimensions are shown in figure. The body itself is threaded for direct process connection (3/8", 1/2" and 3/4" gas). The electrodes are cylindrical, in stainless steel (401I) or graphite (401G) dimensioned and shaped in order to have the following cell constants: K = 1 cm, K = 5 cm, K = 10 cm.

Cable for the connection to the electronic unit is integral, 5 m standard length (other lengths upon request).

These cells can be supplied c/w integral temperature sensor Pt100, or other upon request, for measure thermo compensation. When the temperature sensor is installed into the SS sheath the sheath itself is used as the solution ground pin.

Series 401I and 401G cells are available with the options listed in the Order Code Breakdown.

Correspondence between measuring ranges and cell constants for Series 401I cells

K = 1 cm.....	0÷1000 μ S
K = 5 cm.....	2÷100 μ S
K = 10 cm.....	2÷100 μ S

Correspondence between measuring ranges and cell constants for Series 401G cells

K = 1 cm.....	0÷5000 μ S
K = 5 cm.....	2÷100 μ S
K = 10 cm.....	2÷100 μ S

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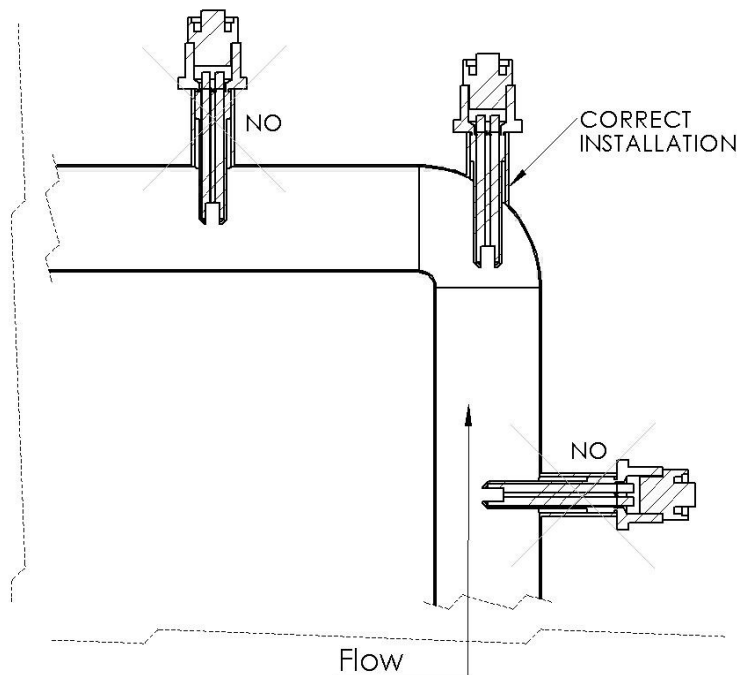
Installation, Maintenance and Calibration

Thanks to their design these cells are extremely easy to install and do not require any special positioning. The cells should not be installed in locations with high turbulence. Refer to the following drawing.

FS values, cell constant and set-points (min and max) of the instrument are laboratory 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. Install the cell in the process, then measure process liquid conductivity with a portable conductivity meter recently calibrated and with proper accuracy, then calibrate the slope to obtain the correct reading.

If the portable conductivity meter is not available 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). (Keep in mind that the cell constant value can vary a little when the cell is not installed into its working position).

The electrodes of this sensors are very sturdy and can be mechanically cleaned with a brush.



Technical Specifications

Cell body:.....PVDF (only up to the end of stock), glass fiber filled PP (PP 30% GF)
Measuring electrodes:.....2, cylindrical, stainless steel (401/I) or graphite (401/G)
Cell constants (cm):.....K = 1, K = 5, K = 10
Measuring ranges:.....(K = 1 cm) 0÷1000 μ S - (K = 5 cm) 2÷100 μ S - (K = 10 cm) 2÷100 μ S
Operating temperature limits:.....PP 30% GF: 5÷100°C; PVDF 0÷110 °C
Operating pressure limits:.....5 bar at room temperature
Integral temperature sensor:.....Pt100 or other upon request
Process connections:.....threaded, 3/8", 1/2", 3/4" Gas
Dimensions : see drawing
Cable:.....integral, standard length 5 m, additional length on request

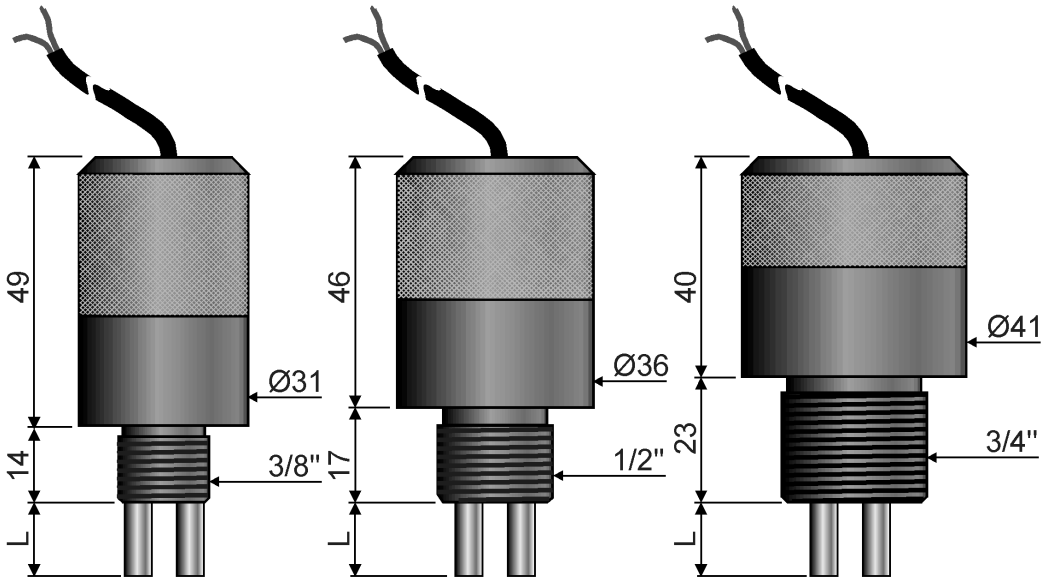
Wiring, cell without temperature sensor

The cell has two wires, brown and blue. Connect them to the terminals for conductivity cell in the electronic unit in use.

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Outline Dimensions

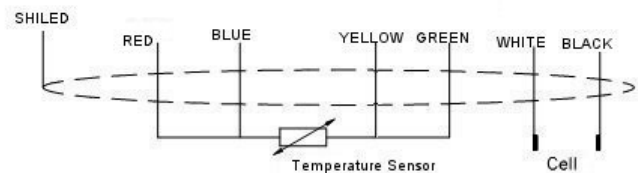
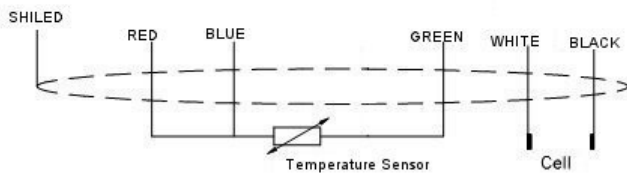
K=1 L = 2 mm
 K=5 L = 15 mm
 K=10 L = 20mm



Wiring, cell with temperature sensor embedded into cell body, 3 or 4 wires

COLOR	ELEMENT
RED + BLUE	Pt 100
GREEN	Pt 100
WHITE	CELL
BLACK	CELL
SHIELD	GROUND

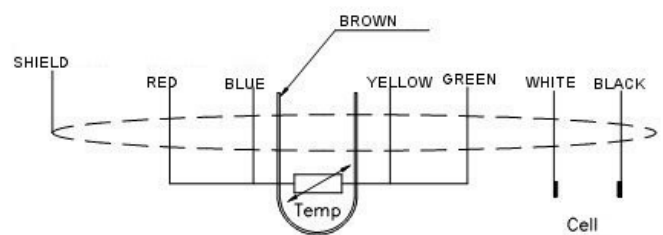
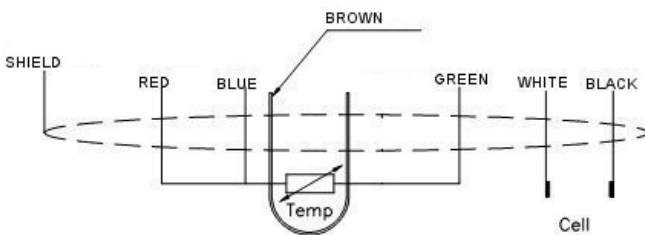
COLOR	ELEMENT
RED + BLUE	Pt 100
YELLOW + GREEN	Pt 100
WHITE	CELL
BLACK	CELL
SHIELD	GROUND



Wiring, cell with temperature sensor into stainless steel sheath, 3 or 4 wires

COLOR	ELEMENT
RED + BLUE	°C/°F
GREEN	°C/°F
WHITE	CELL
BLACK	CELL
BROWN	EARTH
SHIELD	GROUND

COLOR	ELEMENT
RED + BLUE	°C/°F
GREEN + YELLOW	°C/°F
WHITE	CELL
BLACK	CELL
BROWN	EARTH
SHIELD	GROUND



Brown wire is connected to the SS sheath of the temperature sensor. It can be used for solution ground contact by wiring it to the instrument ground terminal.

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Order code breakdown

Conductivity cells	401	x	x	x	x	x	x	x	x	x
Type of cell										
Stopper type, graphite electrodes 401/G		G								
Stopper type stainless steel electrodes 401/I		I								
Cell constant										
k = 1 cm			3							
k = 5 cm			4							
k = 10 cm			5							
Special execution			9							
Temperature sensing element										
Not included				A						
Pt100 sensor into Stainless Steel sheath				B						
Pt1000 sensor into Stainless Steel sheath				C						
TC100 sensor into Stainless Steel sheath				D						
Pt100 sensor embedded into cell body				E						
Pt1000 sensor embedded into cell body				F						
TC100 sensor embedded into cell body				G						
Other temp.sensor into Stainless Steel sheath (if feasible)				Z						
Other temperature sensor embedded into cell body				X						
Cell construction material										
PVDF (until end of stock) then PP30%GF					4					
PP 30% GF					5					
Special execution					9					
Process connections										
Threaded 3/8" GAS M						B				
Threaded 1/2" GAS M						C				
Threaded 3/4" GAS M						D				
Special execution						Z				
Fixed code										
								0		
Cable and connector										
Integral cable, 5 m									B	
Special execution									Z	
Connector on instrument side										
None										0
Special execution										9
Fixed Code										
										A

Optional accessories

Known conductivity standard solution, 250 ml bottle.....T/401-A

Specify desired conductivity value at order; typical values are: 1,278 mS, 11,67 mS e 102,09 mS, however solution with other conductivity values are available upon request.