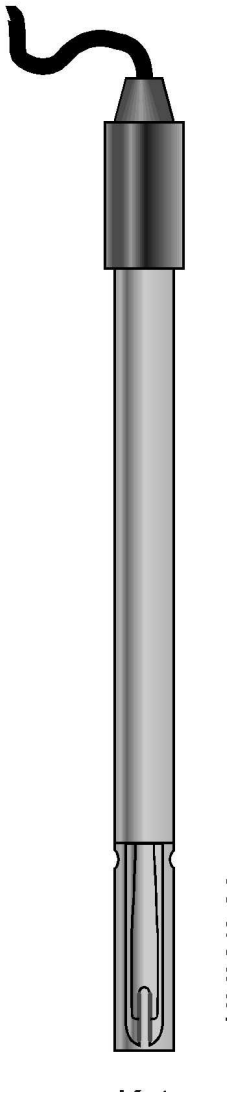
401Pxxxx0xxA

Conductivity cell, plastic body ∅12 mm, platinized platinum electrodes



Conductivity cells with plastic body and platinized platinum electrodes.
These cells are available with the following cell constants: K = 0.1 cm and K = 1 cm , they are therefore suitable to measure in a wide conductivity range, from 0 up to 500 mS. These cells can be supplied c/w integral temperature sensor Pt100, Pt1000, TC100 or other upon request, for measure thermo compensation.
Series 401P cells are designed for all typical laboratory applications and can be used in conjunction with portable conductivity meters for in field spot measurements.

Advantages

- **Standard dimensions, ∅ 12 mm, L.120 mm**
- **Suitable for the use with portable meters**
- **Operating temperature 0 ÷ 50 °C**
- **Available c/w integral temperature sensor, Pt100, other on request**
- **Platinized platinum electrodes**
- **Cell constants: K = 0,1 cm and K = 1 cm**
- **Measuring range 0 to 500 mS**

Operating principle and realization

These cells have PC, PVDF or SS body, ∅ 12mm L.120mm. Measuring electrodes are made of platinized platinum, are therefore unaffected by the polarization phenomenon, so assuring good linearity of the measure within all the measuring ranges. Measuring electrodes are two for the cells with K = 1 cm cell constant, three for the cell with K = 0.1 cm cell constant. These cells are available with integral cable and with screwed connector. Maximum cable length is always 10 m.
Series 401P cells are available with the options listed in the Order Code Breakdown.

Correspondence between measuring ranges and cell constants for Series 401Pxxxx0xxA cells

K = 0.1 cm.....2000÷500000 µS
K = 1 cm.....0÷20000 µS

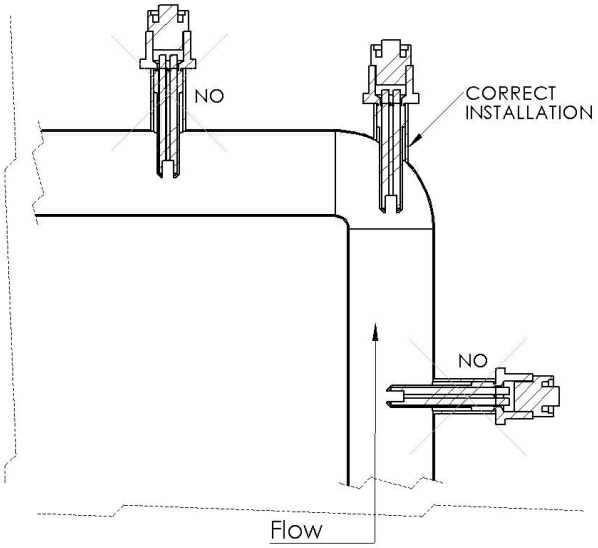
Technical Specifications

Cell body:.....Polycarbonate, PVDF or Stainless steel according to selected code
Measuring electrodes:.....3, platinized platinum, in the cell with K=0.1 cm cell constant,
.....2, platinized platinum, in the cells with K = 1 cm and K = 10 cm cell constant
Cell constants (cm):..... K = 0.1 , K = 1 , K = 10
Measuring ranges:.....(K = 0.1 cm) 2000÷500000 µS - (K = 1 cm) 0÷20000 µS - (K = 10 cm) 0÷1000 µS
Operating temperature limits:.....PC: 0÷60 °C; PVDF 0÷90°C; SS 0÷90°C
Dimensions : .....∅ 12mm, length. 120 mm
Minimum immersion depth:..... (K=0.1) 57 mm - (K=1) 30 mm - (K=10) 42 mm
Cable:.....screw connector (only for cells w/o integral temperature sensor) or sealed, max.10 m

401Pxxxx0xxA

Installation, Maintenance and Calibration

Series 401P cells should be immersed at the minimum depth indicated in figure, 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. Refer to the following drawing.



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.

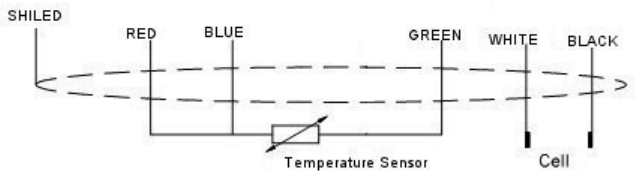
The cell K correction is the only calibration to be performed at start up.

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).

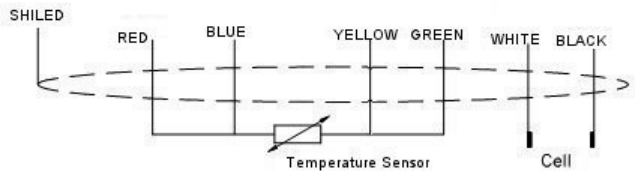
Conductivity cells Series 401P with platinum electrodes should be cleaned with water or with diluted acid or detergent, but never with mechanical cleaning, that could damage platinum electrodes.

Wiring, cell with integral temperature sensor

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

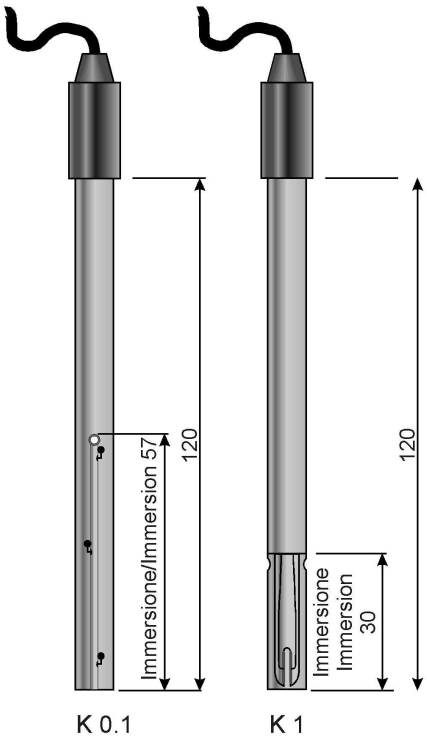


COLOR	ELEMENT
RED + BLUE	Pt 100
YELLOW + GREEN	Pt 100
WHITE	CELL
BLACK	CELL
SHIELD	GROUND



401Pxxxx0xxA

Outline Dimensions



Accessories

401P cells can be supplied c/w many type of cables and connectors on instrument side. Specify at order (or when asking for a quotation) the desired cable and connector.
Allowed choices are listed below; for different options pls contact Your supplier.

Cables for 401PxAxx0xxA cells WITHOUT integral temperature sensor
Integral cable, 1 m length; 5 m length; 10 m length.
Stainless steel head c/w flange and integral cable, 1 m; 5 m length; 10 m length.
Cell with S7 screwed connector, or with S7 screwed connector and PG13,5 threaded process connection: for both the cables to be used are:
Mod.CV/S7-1 Shielded cable, ∅ 5mm, length 1 m, c/w S7 connector (CN/10)
Mod.CV/S7-3 Shielded cable, ∅ 5mm, length 3 m, c/w S7 connector (CN/10)
Mod.CV/S7-5 Shielded cable, ∅ 5mm, length 5 m, c/w S7 connector (CN/10)
Mod.CV/S7-10 Shielded cable, ∅ 5mm, length 10 m, c/w S7 connector (CN/10)

Cables and connector for 401Px(B,C,D or Z)xx0xxA cells, C/W integral temperature sensor
Integral cable, 7 wires, shielded, length 3m, 5m, 10m.
Stainless steel head c/w flange and integral cable, 7 wires, shielded, 3m, 5m, 10m length;
Quadrupolar sealed connector for temperature compensate cells, CN/95

Cable connectors, instrument side, ONLY for 401PxAxxxxxA cells, W/O integral temperature sensor:
Mod.CN/1 coaxial, BNC
Mod.CN/7 Banana ∅ 4 mm
Mod.CN/8 Banana ∅ 2 mm

Cable connectors, instrument side, for 401Px(B,C,D or Z)xx0xxA cells, C/W integral temperature sensor:
Mod.CN/12 8 poles connector coaxial, BNC - cell 401Px(B,C,D or Z)xx0x4A
Mod.CN/40 Connector with linearizing circuit for HD2306 - cell 401Px(B,C,D or Z)xx0x5A

Optional accessories

All the 401/P cells can be supplied c/w threaded process connection, ½", upon request.
This process connection is fixed on the cell body in the position required by the customer.
If required, specify at order (or when asking for a quotation) the ½" threaded process connection and its position on the cell body.

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.

CLR Srl viaPapa Giovanni XXIII, 49 20090 Rodano Millepini, Milan, ITALY Ph.+39 (0)2 95328005 FAX +39 (0)2 95320020
mail@clritalia.com-www.clritalia.com

401Pxxxx0xxA

Order code breakdown

Conductivity cells	**401**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
Type of cell										
Plastic body, platinized platinum electrodes **401/P**		P								
Cell constant										
Reserved			0							
k = 0.1 cm			2							
k = 1 cm			3							
Special execution			9							
Temperature sensing element										
Not included				A						
Pt100 sensor				B						
Pt1000 sensor				C						
TC100 sensor				D						
Special execution				Z						
Cell construction material										
Polycarbonate					2					
PVDF					4					
Stainless steel					6					
Special execution					9					
Process connections										
Standard (no connection)						A				
PG 13,5 threaded process connection						P				
½" Gas M threaded process connection						Q				
Special execution						Z				
Fixed code							0			
Cable and connector										
Integral cable 1 m								A		
Integral cable 5 m								B		
Integral cable 10 m								C		
S7 screw connector (Nota 1)								E		
S7 screw connector c/w PG13.5 process connection) (Note 1)								F		
Quadrupolar connector for temperature compensated cells, CN/95								G		
SS head c/w flange, integral cable, 3 m								I		
SS head c/w flange, integral cable, 5 m								L		
SS head c/w flange, integral cable, 10 m								M		
SS sheath, threaded conn. ½", integral cable, 3 m								O		
SS sheath, threaded conn. ½", integral cable, 5 m								P		
SS sheath, threaded conn. ½", integral cable, 10 m								Q		
SS sheath, threaded conn. ½", S7 connector for cable (Note 1)								S		
SS sheath, threaded conn.½" NPT integral cable 3 m								T		
SS sheath, threaded conn.½" NPT integral cable 5 m								U		
SS sheath, threaded conn.½" NPT integral cable 10 m								V		
SS sheath, threaded conn.½" NPT S7 connector for cable (Note 1)								X		
Special execution								Z		
Connectors on instrument side										
None									0	
BNC coaxial (Note 1)									1	
Banana 2 mm (Nota 1)									2	
Banana 4 mm (Nota 1)									3	
Conn.CN/40 for HD2306									4	
8 poles connector (CN/12)									5	
Special execution									9	
Fixed Code										A

Note 1: not available for cells c/w integral temperature sensor