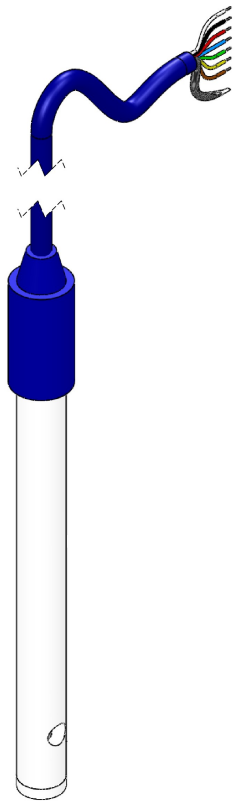
401J

Conductivity cell, PTFE body ∅12 mm, graphite electrodes

Conductivity cells with PTFE body and graphite electrodes.
These cells are available with K = 0.6 cm cell constant, they are therefore suitable to measure in a wide conductivity range, from 0 to 100 mS.
These cells can be supplied c/w integral temperature sensor Pt100, Pt1000, TC100 or other upon request, for measure thermo compensation.
Series 401J cells are designed for industrial application: they can be installed into immersion probes, through flow cells and into probes for direct installation in closed pipelines or vessels, can therefore be used in many different processes. They are also suitable for all typical laboratory uses.
Typical use of these cells are drinking water plants, industrial processes, laboratories.



Advantages

- **Std dimensions, ∅ 12 mm, L.120 mm**
- **Suitable for the insertion into immersion probes, through flow cells and probes for direct installation in closed pipelines or tanks**
- **Available c/w integral temperature sensor, Pt100, Pt1000, TC100 or other upon request**
- **Graphite measuring electrodes**
- **Cell constant K=0.6 cm, measuring range 0 to 100 mS**
- **Operating temperature -5 ÷ 100 °C**

Operating principle and realization

These cells have PTFE body, ∅ 12mm L.120mm.
These dimensions allow, besides typical laboratory use, to install these cells into immersion fittings Mod.SI0A, SI0B, SI0G and SI0H and into through flow cell Mod.D0G and D0H, into retractable probe SIEST and into SI16 fitting for direct installation into closed pipes.
Measuring electrodes are 2, made of graphite, are therefore unaffected by the polarization phenomenon, so assuring good linearity of the measure within all the 0÷100 mS measuring range. Cell constant is K = 0.6 cm.
401J8A0x0xxA cells w/o integral temperature sensor are available with integral cable and with screwed connector. 401J8(B,C,D or Z)0x0xxA cells c/w integral temperature sensor are only available with integral cable. Maximum cable length is always 10 m.
Series 401J cells are available with the options listed in the Order Code Breakdown.

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

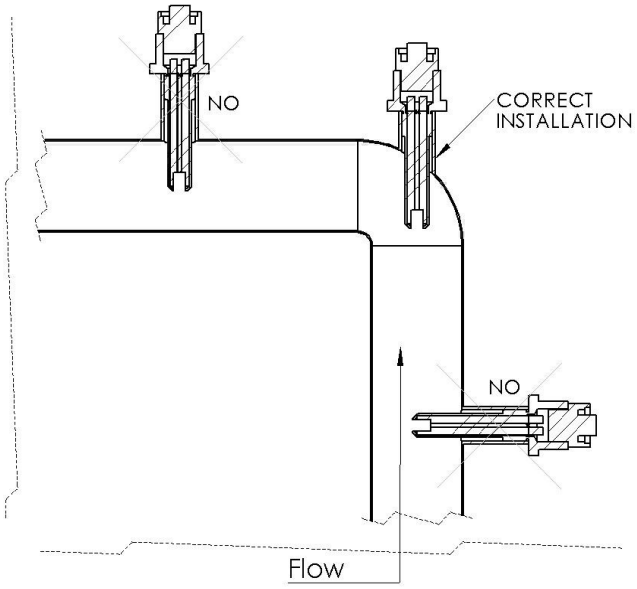
K = 0.6 cm.....0÷100 mS

Technical Specifications

Cell body:.....PTFE
Measuring electrodes:.....2, graphite
Cell constants (cm):.....K = 0.6 cm
Measuring ranges:.....0÷100 mS
Operating temperature limits:.....-5÷100 °C
Dimensions : ..... ∅ 12mm, length. 120 mm
Minimum immersion depth:.....25 mm
Cable:.....screw connector (only for cells w/o integral temperature sensor) or sealed, max.10 m

401J

Installation, Maintenance and Calibration



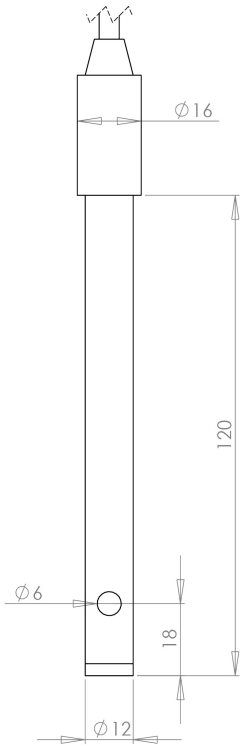
Series 401J cells should be installed at the minimum immersion depth indicated in figure, and the immersion depth should be kept reasonably constant. In process applications the sample flow should be directed against the cell bottom so that the liquid entering the cell can flow upwards and exit from 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.

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 401J with graphite electrodes can be mechanically cleaned with a brush they could also be cleaned with water or with diluted acid or detergent.



Outline Dimensions

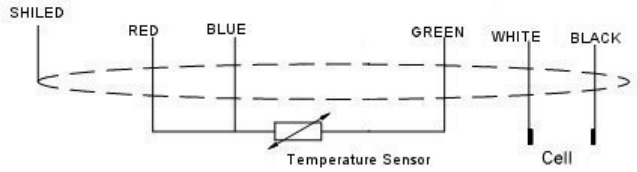
401J

Wiring, cell without temperature sensor

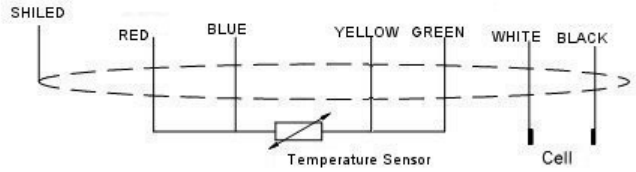
The cell has two wires, brown and blue. Connect them to the terminals for conductivity cell in the electronic unit in use.

Wiring, cell with 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



Accessories

401J 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 401J8A0x0xxE cells WITHOUT integral temperature sensor
Integral cable, 1 m, 5 m, 10 m length.
Stainless steel head c/w flange and integral cable, 3m, 5m, 10m 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 for 401J8(B,C,D or Z)0x0xxE 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, length 3m, 5m, 10m.

Cable connectors, instrument side, ONLY for 401J8A0x0xxE 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 401J8(B,C,D or Z)0x0xxE cells, C/W integral temperature sensor:
Mod.CN/12 8 poles connector - cell 401J8(B,C,D or Z)0x0x5E
Mod.CN/40 FConnector for HD2306 c/w linearizing circuit - cell 401J8(B,C,D or Z)0x0x4E

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.

401J

Order code breakdown

Conductivity cells 401	J	x	x	x	x	x	x	x	x
Type of cell									
PTFE body, ∅ 12 mm, graphite electrodes	J								
Cell constant									
Reserved		0							
k = 0.6 cm		8							
Special execution		9							
Temperature sensing element									
Not included			A						
Pt100 sensor			B						
Pt1000 sensor			C						
TC100 sensor			D						
Special execution			Z						
Cell construction material									
Standard (graphite/PTFE)				0					
Special execution				9					
Process connections									
Standard					A				
Threaded connection, PG 13,5					P				
Threaded ½" Gas M, plastic					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 (Note 1)							E		
S7 screw connector c/w PG 13,5 process connection (Note 1)							F		
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		
Special execution							Z		
Connector on instrument side									
None								0	
BNC coaxial (Note 1)								1	
Banana 2 mm (Note 1)								2	
Banana 4 mm (Note 1)								3	
Conn.CN/40 for HD2306								4	
8 poles connector (CN/12)								5	
Special execution								9	
Electrodes insulator material									
PTFE									E

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