



# 401M7x0x0xxA

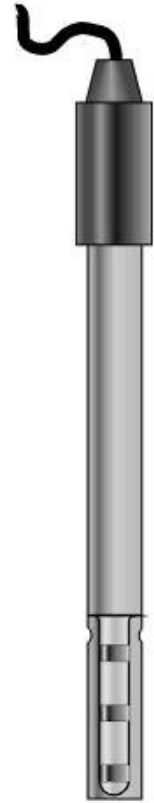
## Conductivity cell, glass body Ø12 mm, 3 annular platinized platinum electrodes

Conductivity cell with glass body and 3 annular platinized platinum electrodes. This cell is available with K = 1 cm cell constant and, thanks to its configuration, covers with good linearity the 0 to 200 mS measuring range.

Series 401M cells can be supplied c/w integral temperature sensor Pt100, Pt1000, TC100 or other upon request, for measure thermo compensation.

This cell is designed for all typical laboratory applications; it can also be installed into immersion probes, through flow cells and into probes for direct installation in closed pipelines or vessels, can therefore be used also in many process applications.

Typical use of 401M cell are drinking water plants, industrial processes, laboratories.



### Advantages

- Standard dimensions, Ø 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 or other upon request
- Operating temperature -5 ÷ 90 °C
- 3 annular platinized platinum measuring electrodes
- Very wide measuring range, with good linearity
- Cell constant 1 cm
- Measuring range 0 to 200000 µS

### Operating principle and realization

This cell has glass body, Ø 12mm L.120mm. These dimensions allow, besides typical laboratory use, to install the cell into immersion fittings Mod.SI0A, SI0B, SI0G or SI0H, into through flow cell Mod.D0H and D0G, and into SI16 fitting for direct installation into closed pipes.

Measuring electrodes are made of 3 platinized platinum rings, are therefore unaffected by the polarization phenomenon, so assuring good linearity of the measure within all the measuring range (0÷200000 µS).

401M cells are available with integral cable and with screwed connector. Maximum cable length is 10 m.

401M cells are available with the options listed in the Order Code Breakdown.

### Correspondence between measuring ranges and cell constants for Series 401M7x0x0xxA cells

K = 1 cm.....0÷100000 µS

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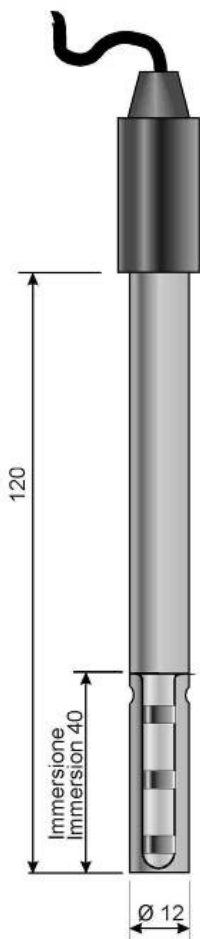
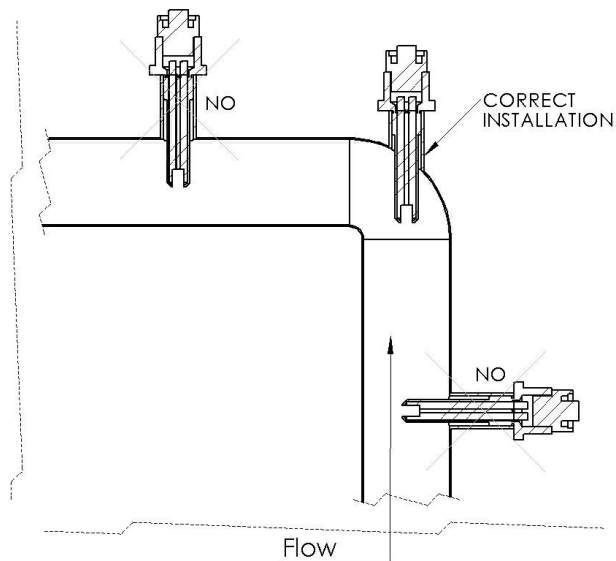
## Installation, Maintenance and Calibration

The Series 401M 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. Refer to 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 401M should be cleaned with water or with diluted acid or detergent, but never with mechanical cleaning, that could damage platinum electrodes.



## Technical Specifications

Cell body:	glass
Measuring electrodes:	3, annular, platinized platinum
Cell constant (cm):	K=1 cm
Measuring range:	0÷200000 µS
Operating temperature limits:	-5÷90 °C
Dimensions :	Ø 12mm, length. 120 mm
Minimum immersion depth:	40 mm
Cable:	according to order code selection, maximum length 10 m

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## Accessories

401M. 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 401M7A0x0xxA cells W/O integral temperature sensor

Integral cable, 1m, 5m, 10m length;

Stainless steel head c/w flange and integral cable, 3 m, 5m, 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, Ø 5mm, length 1 m, c/w S7 connector (CN/10)

**Mod.CV/S7-3** Shielded cable, Ø 5mm, length 3 m, c/w S7 connector (CN/10)

**Mod.CV/S7-5** Shielded cable, Ø 5mm, length 5 m, c/w S7 connector (CN/10)

**Mod.CV/S7-10** Shielded cable, Ø 5mm, length 10 m, c/w S7 connector (CN/10)

### Cables for 401M7(B,C,D or Z)0x0xxA cells, C/W integral temperature sensor

Integral cable, 7 wires, shielded, length 1 m, 5 m, 10 m, 15 m.

Stainless steel head c/w flange and integral cable, shielded, length 3m, 5m, 10m.

Quadrupolar sealed connector for temperature compensated cells, CN/95

### Cable connectors, instrument side, ONLY for 401M7A0x0xxA cells, W/O integral temperature sensor:

**Mod.CN/1** coaxial, BNC; **Mod.CN/7** Banana Ø 4 mm; **Mod.CN/8** Banana Ø 2 mm

### Cable connectors, instrument side, for 401M7(B,C,D or Z)0x0xxA cells, C/W integral temperature sensor:

**Mod.CN/12** 8 poles connector - cell 401M7(B,C,D or Z)0x0x5A

**Mod.CN/40** connector with linearizing circuit for HD2306 portable conductivity meter  
 - cell 401M7(B,C,D or Z)0x0x4A

## Optional accessories

All the 401M cells can be supplied c/w threaded process connection, 1/2", upon request.

This process connection is made in PP and 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 1/2" PP threaded process connection and its position on the cell body.

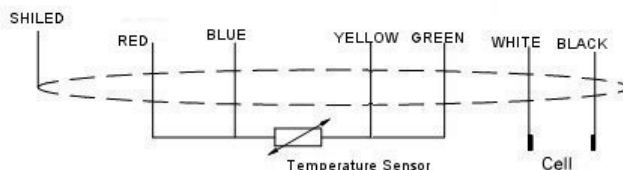
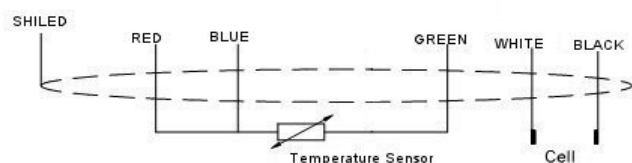
Known conductivity standard solution, 250 ml bottle.....T/401-A

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.

## 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



# 401M7x0x0xxA

## Order code breakdown

Conductivity cells	401	x	x	x	x	x	x	x	x
<b>Type of cell</b> Pt/glass 3 annular electrodes <b>401/L-K1-3A</b>		M							
<b>Cell constant</b> k = 1 cm (three annular electrodes)			7						
<b>Temperature sensing element</b> Not included Pt100 sensor Pt1000 sensor TC100 sensor Special execution				A B C D Z					
<b>Cell construction material</b> Standard (platinized platinum/glass) Special execution						0 9			
<b>Process connections</b> Standard (no connection) PG 13,5 threaded connection ½" Gas M threaded connection plastic Special execution							A P Q Z		
<b>Fixed code</b>								0	
<b>Cable and connector</b> Integral cable 1 m Integral cable 5 m Integral cable 10 m S7 screw connector (Nota 1) S7 screw connector c/w PG13.5 process connection) (Note 1) Quadrupolar connector for temperature compensated cells, CN/95 SS head c/w flange, integral cable, 3 m SS head c/w flange, integral cable, 5 m SS head c/w flange, integral cable, 10 m SS sheath, threaded conn. ½", integral cable, 3 m SS sheath, threaded conn. ½", integral cable, 5 m SS sheath, threaded conn. ½", integral cable, 10 m SS sheath, threaded conn. ½", S7 connector for cable (Note 1) SS sheath, threaded conn. ½" NPT integral cable 3 m SS sheath, threaded conn. ½" NPT integral cable 5 m SS sheath, threaded conn. ½" NPT integral cable 10 m SS sheath, threaded conn. ½" NPT S7 connector for cable (Note 1) Special execution									A B C E F G I L M O P Q S T U V X Z
<b>Connector on instrument side</b> None BNC coaxial (Note 1) Banana 2 mm (Note 1) Banana 4 mm (Note 1) Conn.CN/40 for HD2306 8 poles connector (CN/12) Special execution									0 1 2 3 4 5 9

Note 1: not available for cells including temperature sensor