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EC Electrode Selection

The choice of the correct **conductivity cell is important** to be able to perform correct measurements. Each cell has certain specific properties that determine which values can be measured the best.

The cell with a constant of **1 cm⁻¹** is mostly for general use.

A cell with a constant of **0.1 cm⁻¹** is best for measurements of very low values such as pure, distilled or demineralised water, low-ionic solutions.

A cell with a constant of **10 cm⁻¹** is best for measurements of high values such as brine, saline solutions, strong acids, ...

The **glass cells** with a constant of 1 and 10 have Platinum measurement plates which are covered with Platinum black. This layer of Platinum black serves to reach higher measurement values. It is also susceptible to modification of the capabilities of the cell when the layer is touched mechanically. The glass cells provide the best results over the widest measurement range.

Epoxy cells with graphite measurement plates are mostly more limited in use of range and for use in organic solutions: check the chemical compatibility of the epoxy with the solution and with possible required cleaning solvents.

The standard electrodes can be obtained with or without integrated temperature compensator (**ATC**).

Mind also that we have **2 pole** and **4 pole** conductivity cells. The 4 pole cells are for use with only a limited range of devices.

Measurement ranges

The choice of the cell constant also determines the measurement ranges of the instrument. Each range is multiplied with the value of the cell constant. This results e.g. for a device of:

The C3000, C6000 and R3600 ranges:



CC	Lowest				Highest
1,0cm ⁻¹	0,00-20,00_μS/cm	0,0-200,0_μS/cm	0-2000_μS/cm	0,00-20,00_mS/cm	0,0-200,0_mS/cm
0,1cm ⁻¹	0,000-2,000_μS/cm	0,00-20,00_μS/cm	0,0-200,0_μS/cm	0-2000_μS/cm	0,00-20,00_mS/cm
10cm ⁻¹	0,0-200,0_μS/cm	0-2000_μS/cm	0,00-20,00_mS/cm	0,0-200,0_mS/cm	0-2000_mS/cm

The C1000 and C5000 ranges (only C1020 and C5020 accept also 0.1 and 1.0 cell constants!):






CC	Lowest			Highest
1,0cm ⁻¹	0,0-100,0_μS/cm	0-1000_μS/cm	0,00-10,00_mS/cm	0,0-100,0_mS/cm
0,1cm ⁻¹	0,00-10,00_μS/cm	0,0-100,0_μS/cm	0-1000_μS/cm	0,00-10,00_mS/cm
10cm ⁻¹	0-1000_μS/cm	0,00-10,00_mS/cm	0,0-100,0_mS/cm	0-1000_mS/cm

2 Pole EC Electrodes Selection table




EC Electrodes without built-in ATC

Code	CC ¹⁾	Body ²⁾	Range	Type	Applications ³⁾	Picture	Device ⁴⁾
SK10B	1,0 cm ⁻¹	Epoxy	Limited (<10 mS/cm)	Graphite	Regular use Environmental/ Drinking/ Waste water		C10xx C5010 C5020 C60xx C3xxx
SK20B	1,0 cm ⁻¹	Glass	Regular to high (<100 mS/cm)	Platinum	Regular use Brackish/ Ocean/Sea water		C10xx C5010 C5020 C60xx C3xxx

EC Electrodes with built-in ATC

Code	CC ⁵⁾	Body ⁶⁾	Range	Type	Applications ⁷⁾	Picture	Device ⁸⁾
SK10T	1,0 cm ⁻¹	Epoxy	Limited (<10 mS/cm)	Graphite	Regular use Environmental/ Drinking/ Waste water		C10xx C5010 C5020 C60xx C3xxx
SK12T	0,1 cm ⁻¹	Epoxy	Low (<2 mS/cm)	Graphite	Distilled/ Demineralised/ Deionised/ Mountain water		C1020 C5020 C60xx C3xxx
SK20T	1,0 cm ⁻¹	Glass	Regular to high (<100 mS/cm)	Platinum	Regular use Brackish/ Ocean/Sea water		C10xx C5010 C5020 C60xx C3xxx
SK21T	0,1 cm ⁻¹	Glass	Low (<2 mS/cm)	Platinum	Deionised/ Distilled/ Demineralised/ Pure water/ Low Ionic Solution		C1020 C5020 C60xx C3xxx
SK23T	10,0 cm ⁻¹	Glass	Regular to very high (up to 1000 mS/cm)	Platinum	Brine high ionic strength		C1020 C5020 C60xx C3xxx

4 Pole EC Electrodes Selection table (built-in ATC)

Code	CC ⁹⁾	Body ¹⁰⁾	Range	Type	Applications ¹¹⁾	Picture	Device ¹²⁾
SK40T	0,6 cm ⁻¹	Epoxy	Regular to very high	Graphite	Regular use Brine Industrial process water		C34xx K912
SK41T	1,0 cm ⁻¹	Glass	Regular to very high	Platinum	Brine, high ionic strength (Acid, Base)		C34xx K912
SK43T	10,0 cm ⁻¹	Glass	Regular to very high	Platinum	Brine, high ionic strength (Acid, Base)		C34xx

1) 5) 9)

Cell Constant. This is a typical value for the cell. The correct value needs to be obtained by calibration of the system.

2) 6) 10)

Check the chemical compatibility of the electrode body with the measurement solution!

3) 7) 11)

The use of the cells are not limited to the given applications here!

4) 8) 12)

xx, xxx → full range of the devices

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