



1 Conductivity measuring cell for 912/914

1.1 General

Immediately after receiving the electrode, check to make sure that it works properly. Electrodes that do not work properly must be sent back for warranty processing within two months (starting from the day of delivery). If the defect is proven to be due to a material or manufacturing defect, the electrode will be replaced at no charge. The transport costs are to the customer's account.

1.2 Measuring



CAUTION

Do not expose the sensor to concentrated mineral acids or to acetic acid ($c > 0.1\text{M}$).

Make sure that the green areas are completely immersed in the measuring solution and that no air bubbles adhere to the gray Pt electrodes during measurements. To ensure proper mixing with the sample, leave some millimeters of space underneath the measuring cell, e.g. for a stirring bar. For the measurement, however, the stirrer should be switched off.

Each conductivity measurement must be carried out at constant temperature. The temperature is recorded by a temperature sensor integrated into the conductivity measuring cell.

1.3 Storage

The measuring cell should be stored dry. It should be rinsed well with distilled water before use.

1.4 Cleaning



CAUTION

Do not use the ultrasonic bath for electrodes, as they may be damaged by such a treatment.

Clean the measuring cell by rinsing with distilled water or with ethanol. Alkaline solutions or diluted acids may also be used for cleaning. If necessary, the thick film may also be carefully cleaned with a soaked cotton swab. When doing so, however, make sure not to scratch the surface.

1.5 Calibration

The cell constant may change over time under certain circumstances (change in the active platinum surface, e.g. as a result of abrasion or contamination). The cell constant should therefore be redetermined at regular intervals.

To do this, use standard solutions of defined conductivity in accordance with the required measuring range (see Table 1), e.g. Metrohm 6.2301.060 conductivity standard (12.88 mS/cm at 25 °C) and 6.2324.x10 (100 µS/cm at 25 °C). Carry out this calibration at 25 °C or at the usual measuring temperature for which you know the conductivity of the standard solution being used. As the conductivity of a solution is strongly temperature-dependent, the temperature must be held constant to within ±0.1 °C.

The cell constant can be calculated as follows from the measured conductance:

$$c = \frac{K}{L}$$

c: Cell constant [1/cm]
K: Conductivity [S/cm]
L: Conductance [S]

Calibration and measurement at very low conductivities (< 20 µS/cm) should be carried out using a flow-through cell.

Table 1 Standards to be used for different measuring ranges

Measuring range [µS/cm]	Conductivity 25 °C [µS/cm]	Order number
1 - 1,000	100	6.2324.x10
> 1,000	12,880	6.2301.060

1.6 Additional information

Additional information about conductivity measurement can be found in the Metrohm monograph "Conductometry – Conductivity Measurement", which is available free of charge.