



t h e e y e w i t h i n ...

T E C H N I C A L D A T A S H E E T

Electrode Type: Silver/Silver Chloride/Potassium Chloride (gel): pre-potted

Description

The CP10P is manufactured as a robust reference electrode (half-cell) ideal for embedding in reinforced concrete structures. A cementitious junction removes the need for pre-potting whilst ensuring intimate contact with the concrete or repair material.

Silver/Silver Chloride/Potassium Chloride cells are probably the only known true reference electrode for use in civil and building structures for the detection of, and protection from, corrosion. In the use of these electrodes the only known interference ion is the ammonium ion (NH_4^+). This will not be significant unless a high ionic concentration is anticipated. Natural concentrations of NH_4^+ pose no problem.

This cell will allow monitoring of corrosion potentials and aid in the application of cathodic protection criteria.

Compatibility with all known data-logging equipment and remote sensing is guaranteed. If extraordinarily long cable lengths are required then the user is advised to specify the type of screening for cables and contemplate the use of buffer amplification of signals.

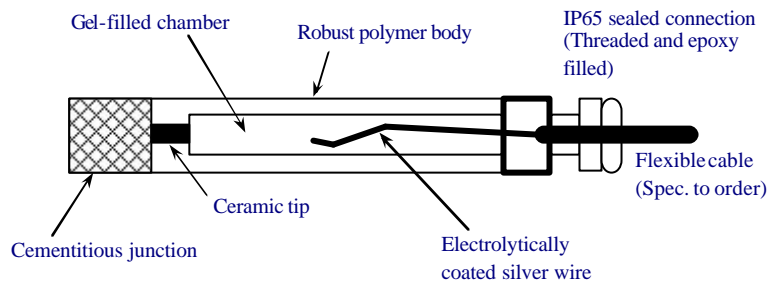
Dimensions

The CP10P cell is cylindrical of the dimensions 15mm dia. x 75mm in body length. The cementitious potted end is integral to the ceramic plug and adds further 15mm to the length. Any low diameter cable can be fitted at manufacture (guidance can be given on request).

Intended Use

The C-Probe electrode models CP10A and CP10P are designed to produce stable reference potentials for the assessment of corrosion and protection of steel in concrete or behind masonry and brickwork.

The electrodes have an internal silver/silver chloride element in equilibrium with a surrounding saturated chloride gel. This forms a stable and reversible half-cell. The limited movement of chloride within the gel minimises diffusion potentials, which can develop at a junction. The ceramic junction provides a conductive salt bridge between the internal element and the concrete, thus providing a measurement of the corrosion potential around that location.



Calibration

Each electrode is tested individually in a fixed high resistance and certified to an accuracy better than $\pm 3\text{mV}$ against a standard calomel electrode (SCE). The life expectancy is certified as at least 10 years, provided the product is handled correctly prior to and during installation.

Handling and Delivery

Electrodes are normally delivered with integral cable attached as shown in the photograph below. They are robust and can withstand rough handling.



CP10P c/w cable and rubber end cap

A rubber end cap containing a small

amount of salt water will cover the ceramic tip.

For best results the following operation procedures should be followed:

1. The ceramic tip must be kept moist at all times (the rubber end cap must be removed only immediately prior to installation).
2. For storage in excess of one week the solution within the wetting cap should be replenished with saturated KCl solution.

Note: In all applications a welded or drilled/tapped steel connection must be provided. These connections together with the electrode termination complete the measurement cell. As-installed calibration potentials can be performed using a digital voltmeter and noting the cell potential (in millivolts including polarity) and stability (typically variation should be no greater than $\pm 1\text{mV}$).