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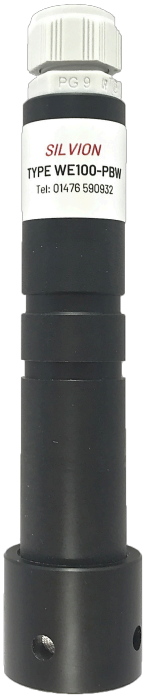
TYPE WE100-PBW Ag/AgCl 0.5M KCl
PERMANENT BRACKISH WATER REFERENCE ELECTRODE





The silver/silver chloride (Ag/AgCl) elements in all Silvion electrodes are manufactured using a "unique" and advanced technique that results in a porous silver matrix. The matrix is then coated with precise quantities of silver/chloride to ensure:

1). HIGH RELIABILITY;
2). HIGH STABILITY;
3). GREATER ACCURACY;
4). INCREASED LIFE PERFORMANCE.

NOTE:
The WE100-PBW is designed for permanent brackish water application and has a pre determined chloride ion concentration around the element that is maintained by using an inert electrolyte compatible with the silver/silver chloride element. Ionic continuity to the environment is via a micro-porous sintered disc that is protected by a perforated screw cap containing a woven E-glass.

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OUTER CASING

MATERIAL	Acetal body with porous ceramic sintered disc and nylon cable gland
DIMENSIONS	Length: 125mm (148mm w/ gland); Diameter: Body: 22mm; Cap: 30mm
WEIGHT (W/O CABLE)	80g

SILVER CHLORIDE ELEMENT

MATERIALS	Silver compounds are 99.90% pure
DIMENSIONS	Length: 50mm (+/- 2mm); Section: 5mm x 5mm
SURFACE AREA	Geometric: 10cm^2; Real: 500cm^2

ELECTROLYTE ..... Inert electrolyte with 0.5 Molar KCl

PERFORMANCE DATA

STABILITY (POTENTIAL DRIFT AT CONSTANT TEMP AND ENVIRONMENT)	+/- 1mV (24 Hrs) @ 5µA load
ACCURACY (Vs SCE IN 3% NaCl @20°C)	-5mV +/-5mV
TEMP COEFFICIENT	-0.65V/°C
TEMP RANGE	-5 to 70°C
INTERNAL RESISTANCE	Less than 500 Ohms
THEORETICAL DESIGN LIFE	30 years @ 0.1 µA load

QA/QC

All our electrodes are fully tested, calibrated and supplied complete with a calibration certificate. They are individually identified with a unique number to ensure full traceability. All dimensions +/-1mm unless otherwise stated.

NB: Under no circumstances should the reference electrode be connected directly to the structure or the electrode will self discharge and cease to operate. Minimum input impedance for the voltmeter when measuring the structure to electrolyte potential is 10 MOhm. Historical DNV guidelines have required Ag/AgCl electrodes to have a potential within the range of -5mV +/- 5mV against SCE at ambient temperatures in seawater (or 3 to 3.5% (0.5M) sodium or potassium chloride solutions). The DNV guidelines had been based on the value measured when the SCE electrode is connected to the positive terminal of the voltmeter and the Ag/AgCl electrode connected to the negative terminal. Silvion quote reference electrode potential values on this data sheet using the electrode connection arrangement originally adopted by DNV. However, it should be noted that the values of reference electrode potential often given in published literature for the Ag/AgCl electrode, when quoted with reference to or versus a SCE electrode are in fact +5mV +/- 5mV versus SCE. This is different to the value that has historically been used and quoted by DNV. The reason for the difference is the polarity of reference electrode connection affects the polarity of the potential measurement that is obtained but not its magnitude. When potential values are quoted with reference to or versus SCE, the electrode that is being used as the known voltage source e.g. SCE is connected to the negative terminal of the voltmeter and the Ag/AgCl electrode under test is connected to the positive terminal of the voltmeter. The potential obtained using the latter method of electrode connection will give a potential with reference to the SCE electrode and that value would be within the range +5mV +/- 5mV.