TYPE WE100-W
PORTABLE BRACKISH WATER REFERENCE ELECTRODE

Silver/Silver Chloride elements in all SILVION electrodes are manufactured using an advanced technique that results in a porous silver matrix being formed around a silver wire skeleton. The matrix is then coated with precise quantities of Silver/Chloride to ensure:

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

For brackish water application the WE100-W has a pre determined chloride ion concentration around the Ag/AgCl 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. The WE100-W is supplied c/w a threaded 300gm end weight (this has a 12mm hole for added weight to be attached if required) and a threaded protective end cap

OUTER CASING
MATERIAL …………………………………………… ACETAL
LENGTH …………………………………………….. 110mm
DIAMETER …………………………………………... 22mm
CERAMIC DISC DIAMETER …………………….... 20mm

END WEIGHT 140mmL x 30mmOD

SILVER CHLORIDE ELEMENT
LENGTH …………………………………………….... 50mm (+/- 2mm)
DIAMETER …………………………………………... 5 x 5mm
GEOMETRIC SURFACE AREA ……………………. $10cm^2$
REAL SURFACE AREA ……………………………. $500cm^2$
MATERIALS ………………………………………….. SILVER COMPOUNDS ARE 99.90% PURE

ELECTROLYTE …………………………………… INERT ELECTROLYTE WITH 0.5 MOLAR KCL

PERFORMANCE DATA
STABILITY (POTENTIAL DRIFT AT CONSTANT TEMP AND
ENVIRONMENT) ………………………. +/- 1mV (24Hrs) @ 5micro Amp load
ACCURACY (Vs SCE in 3% NaCl @ 20DegC) . -5mV +/- 5mV
TEMPERATURE COEFFICIENT……………………... -0.65mV/Deg C
DESIGN LIFE ……………………………… 30 YEARS @ 0.1μA load
TEMP RANGE ……………………………………… -5 to 70DegC

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. Keep in cool and dark storage with protective cap intact

The information provided in this document was accurate at the time it was published, however, we reserve the right to revise this document without prior warning

SILVION REFERENCE ELECTRODES
30 Years Service to the Corrosion Prevention Industry