PERMANENT SILVER / SILVER CHLORIDE REFERENCE ELECTRODE FOR SOIL

DATASHEET 3.19

AG/AGCL REFERENCE ELECTRODE

The silver/silver chloride (Ag/AgCl) elements in all 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 WE200 reference electrode consists of a highly stable silver/silver chloride element enclosed in an acetal housing and surrounded by a solid electrolyte (with 0.5M chloride ion concentration), an enlarged micro porous ceramic plug allows contact with the electrolyte and ionic conduction.

These electrodes can be directly installed into moist soil but in dry soils the electrode impedance and that can be very high in relation to the impedance of the measuring circuit. Thus, it would be essential that the reference electrode is bagged in a conductive backfill i.e. bentonite, gypsum and sodium sulphate and the measuring circuit has a high impedance, preferably 30MegOhm or greater.

OUTER CASING	
MATERIAL :	Acetal body with porous ceramic cylinder and nylon cable gland
DIMENSIONS:	Length: 260mm (283mm w/ gland); Diameter: 35mm
CERAMIC CYLINDER DIAMETER:	19mm
WEIGHT (W/O CABLE):	400g
SILVER CHLORIDE ELEMENT	
MATERIALS:	Silver compounds are 99.90% pure
DIMENSIONS: Length:	50mm (+/- 2mm); Section: 5mm x 5mm
SURFACE AREA: Geometric:	10cm2; Real: 500cm2
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 @20oC):	-5mV +/-5mV
TEMP COEFFICIENT:	-0.65V/ oC
TEMP RANGE:	-5 to 70oC
INTERNAL RESISTANCE:	Less than 500 Ohms
THEORETICAL DESIGN LIFE :	30 years @ 0.1 µA load

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