TECNOCORR Marine & Industry Cathodic Protection

# Portable Cu/$CuSO_4$ Reference Electrode

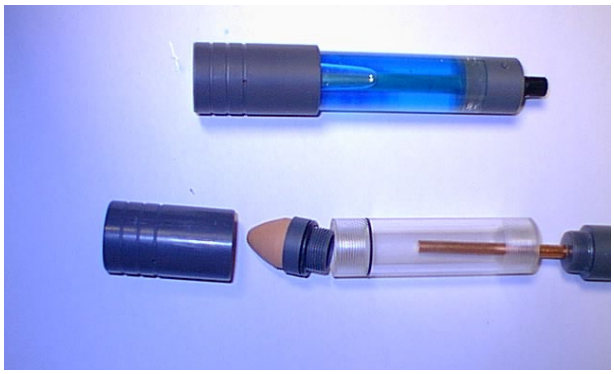
Datasheet DS 016A

Rev.00

Portable Cu/CuSO4 reference electrodes are used as sensing elements to measure "*pipe-to-soil*" potentials of cathodically protected structures in natural soil or sand.

Our standard portable reference electrode is composed by a transparent tubular casing filled with a saturated solution of distilled water and Cu/CuSO4 crystals. The casing is transparent to allow visual check of the electrolyte level, which can be refilled through the sealed threaded cap. The internal pure Copper rod is connected with a 4 mm banana plug for easy connection with voltmeter terminals.

The reading end of the electrode is made of porous ceramic, with pointed shape to allow good contact with soil. A cover plug will prevent damages to the tip during transportation.



| Pos | Characteristic | Value |
|---|---|---|
| 01 | Body | Lexan, transparent (see-through) |
| 02 | Overall dimensions | 33mm (Ø) X 200mm (L) |
| 03 | Plug | PVC, with O-ring seal and 4mm plug for electrical connection |
| 04 | Copper element | 99.99% Copper, Ø=8mm, L= 80mm |
| 05 | Sensing tip | White porous ceramic, pointed, with O-ring seal |
| 06 | Filling solution | Over-saturated solution of Cu/$CuSO_4$ crystals in demineralized water<br>OPTIONAL 1: Liquid antifreeze solution<br>OPTIONAL 2: Gelled antifreeze solution |

A good maintenance routine, with regular cleaning of the internal Copper rod and replacement of the Cu/CuSO4 solution will guarantee over 5 years of operating lifetime.

Refill kits and field carry bag are available for purchase.

To avoid polarization of the Copper element, pipe-to-soil potentials shall be measured with a digital multimeter having input impedance equal or greater than 10MΩ.

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