

PORTABLE CU/CUSO₄ REFERENCE ELECTRODES IN ANTIFREEZE GEL FOR ASPHALT, CONCRETE, AND SOIL.

Portable Saturated Copper/Copper Sulfate (Cu/CuSO₄) electrodes for monitoring Cathodic Protection systems, equipped with a plastic container, ceramic porous plug, and high-purity Copper rod, for use on asphalt, concrete, and soil surfaces, with a flat porous plug, filled with gel solution;



GENERAL INFORMATION

- Dimensions: Approximately 140x70mm (LxØ)
- Weight: Approximately 1.5 kg
- Usage: Asphalt, concrete and soil surfaces
- Temperature Range: 0 ÷ 55°C
- Storage Period: Indefinite if stored empty, approximately 6 months if stored with gel charge

Portable Copper/Copper Sulfate (CSE) reference electrodes with antifreeze gel charge are used as sensors to read the polarization values of buried metallic structures where Cathodic Protection is applied. They're essential when measurements are needed in locations not covered by fixed electrodes. Specifically, the model for measurements on asphalt or concrete, charged with antifreeze gel, allows for readings even on hard, poorly conductive surfaces. It eliminates solution leakage during transport and doesn't require frequent cleaning or refilling, unlike liquid-filled electrodes. Moreover, the gel has a significantly lower freezing point than liquid solutions, which can be crucial for measurements in particularly cold environments.

When the electrode's porous septum is placed on an asphalt or concrete surface over a buried metallic structure (typically, a pipeline), an electrical potential difference is created between the electrode's measuring terminal and the structure's surface. This difference can be measured with a common high-impedance multimeter, and its value relates to the protection status of the structure. Portable electrodes don't require external power, are simple to use, and offer a long operational life if properly maintained.