BASENNOVA

PRODUCT DATA SHEET

Permanent Cu/$CuSO_4$ Reference Electrode

The buried (Permanent) copper sulfate reference electrode (Cu/$CuSO_4$, CSE) establishes a stable half-cell potential based on the reversible redox equilibrium between metallic copper and its saturated sulfate solution (approx. +0.318 V vs. SHE; conventionally used as the –0.85 V benchmark in soil CP work). It utilizes a porous ceramic tip to form a liquid junction with moist soil, providing a reference potential that remains virtually constant regardless of the tested structure. Primarily used for CP "health checks," it pairs with test stations to measure pipe-to-soil (P/S) potentials and perform instant-off (IR-free) measurements to verify polarization criteria (typically –0.85 V CSE), as well as to locate coating defects and assess anode activity. Key installation requirements include tight coupling to the structure, maintaining adequate soil moisture, preventing desiccation, frost heave, and contamination from salts/oils, alongside periodic verification of potential drift.

KEY FEATURES

1.Fully Solid State Structure, Leakage Proof
2.High Stray Current Interference Testing
3.Maintenance Free
4.Stable and Accurate Reading
5.Low Resistivity Backfill for Less Leaking

PRODUCT SPECIFICATIONS

Electrode: Copper sulfate reference electrode
Backfill: Gypsum powder, bentonite and anhydrous sodium sulfate
Packaged Size: approx.Φ140×420mm
Accuracy: +/-5mV, @0.3mA input
Cable: 5m of 1×10mm² XLPE/PVC
Life: >20 years

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