



POLARIZATION CELL Vac



The key function of a polarization cell is to allow alternating current (AC) to pass through while blocking direct current (DC). This makes them a crucial safety and control component in cathodic protection systems.

APPLICATIONS

In the field of cathodic protection, polarization cells are used for several key purposes:

- **Protecting Insulating Joints:** They are installed across insulating joints on pipelines to maintain the DC cathodic protection current on one section of the pipe, while providing a path for hazardous AC currents (from lightning strikes or power line induction) to safely discharge to the ground.
- **AC Mitigation:** They help discharge induced AC currents on pipelines that run parallel to high-voltage power lines. This prevents dangerous voltages from building up on the pipeline and ensures the safety of personnel and equipment.
- **Mitigating AC Interference:** They protect structures from AC interference caused by railway traction systems, which can induce stray currents that compromise cathodic protection effectiveness.

The cell begins to conduct at voltages above 1.2 V. To increase this activation voltage, you can connect multiple cells in series. To handle higher current loads, you should connect multiple cells in parallel.

TECHNICAL SPECIFICATIONS

A polarization cell is made of an acid-resistant plastic container filled with a potassium hydroxide solution (the electrolyte). Submerged in this electrolyte are parallel-connected metal plates that are wired to terminals on an insulating cover.

The diagram below shows the direct current curve as a function of the voltage applied to the terminals. The graph illustrates that conduction begins at voltages above 1.2 V.



L = 210 mm ; H = 245 mm ; P = 100 mm

