APPLICATION
Onshore – Pipelines & Storage Tanks

Rustrol® Systems are designed to protect personnel and equipment from electrical disturbances. Rustrol® Systems effectively block cathodic protection DC voltages; all other electrical disturbances are freely conducted to ground, such as:

- AC Fault Currents
- Mitigation of induced AC Voltages
- Lightning

Rustrol® Polarization Cell Systems Data

The Rustrol® Polarization Cell Systems are rated for up to 100 kA AC fault current capacities, in 5 kA increments. Each Cell System is capable of blocking 1.7 volts DC. A full product line is available to meet the challenge of all applications.

Rustrol® Polarization Cell Systems are typically specified for earthing applications where major power disturbances are not the primary exposure. Some examples include: decoupling a structure from ground rods, casings or other isolated earths. AC power pulses, lightning surges, stray DC interference and induced AC voltages are all standard applications for the Rustrol® Polarization Cell. All Cells are rated to safely pass a second (30 cycle) AC fault current, with a terminal potential rise across the Cell, not exceeding 15 volts rms at 20°C.

Rustrol® Polarization Cells optimize the safety of personnel and equipment. Rustrol® Polarization Cell Systems are utilized to decouple massive metallic structures where electrical disturbances, caused by AC fault currents, present high-risk exposure. Typically, Rustrol® Polarization Cell Systems are specified for direct connections across isolation flange assemblies; between pipe-type cable systems and station ground; or between cathodically protected structures and the electrical grounding system neutral.

How Rustrol® Cells Work

Rustrol® Polarization Cells contain pairs of pure nickel plates immersed in KOH electrolyte. The surfaces of these plates instantly polarize when separated metallic structures are connected to opposite terminals. The polarizing film blocks DC, to contain cathodic protection current, while freely passing AC. Personnel are safely protected from shock hazards during AC faults. Insulating fittings and equipment are protected during electrical disturbances.

Separated underground or submerged metallic structures are efficiently protected. Isolated structures, which must remain effectively grounded to the AC utility network, are designed to meet this requirement in national electrical safety codes. Installations specifying Rustrol® Polarization Cells for cathodic isolation, are regularly accepted by North American electrical inspectors.

Quality With A Proven Track Record

- Rustrol® Polarization Cells and hardware are manufactured using only pure metals as electrical conductors. Components machined and assembled match Rustrol’s high quality assurance standards.
- Researched and developed models are fully acceptance-tested to the approval of independent high current test laboratories, prior to marketing.
- Worldwide users of Rustrol® Polarization Cells report that maintenance is minimal when operating at their operating temperature and rated exposure conditions.
- Service life of more than 25 years with minimal variance in the level of the electrolyte is reported.
RUSTROL® SYSTEM SELECTION GUIDE

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RUSTROL® SYSTEM OPTIONS

ENCLOSURES TO NEMA OR CUSTOM STANDARDS
STANDARD OR PREMIUM BUS
BUS IN SERIES OR PARALLEL
POTENTIAL METERS
DENSIMETERS
SS ENCLOSURES
LIQUID TIGHT CONNECTORS
SUNSHEILD
FILTERED OR ION CONTROL VENTS
CP POTENTIAL CONTROL SENSING
STATIC GROUNDING ELECTRODES
SHUNTS, LINK BOARDS
CUSTOM REQUIREMENTS

Technical guidance is promptly provided by qualified personnel.
Engineering services to design and commission a system for your application are available from professional consultants on request.