ELECTROQUIP

Complete Automation Solution Under One Roof

Earth Monitoring System

Safeguarding Industries Against Static Hazards

In India's rapidly growing Oil & Gas, Pharmaceutical, Chemical, and Powder Processing industries, static electricity buildup remains a major cause of fires, explosions, and equipment damage. Even small charging events during filling, mixing, or material transfer can ignite flammable vapors or powders. The **EMS** (Earth Monitoring System) provides a reliable safety layer by continuously checking and verifying the earthing integrity of multiple equipment points at once, ensuring that all connected vessels, drums, reactors, and processing systems remain safely grounded throughout operation.

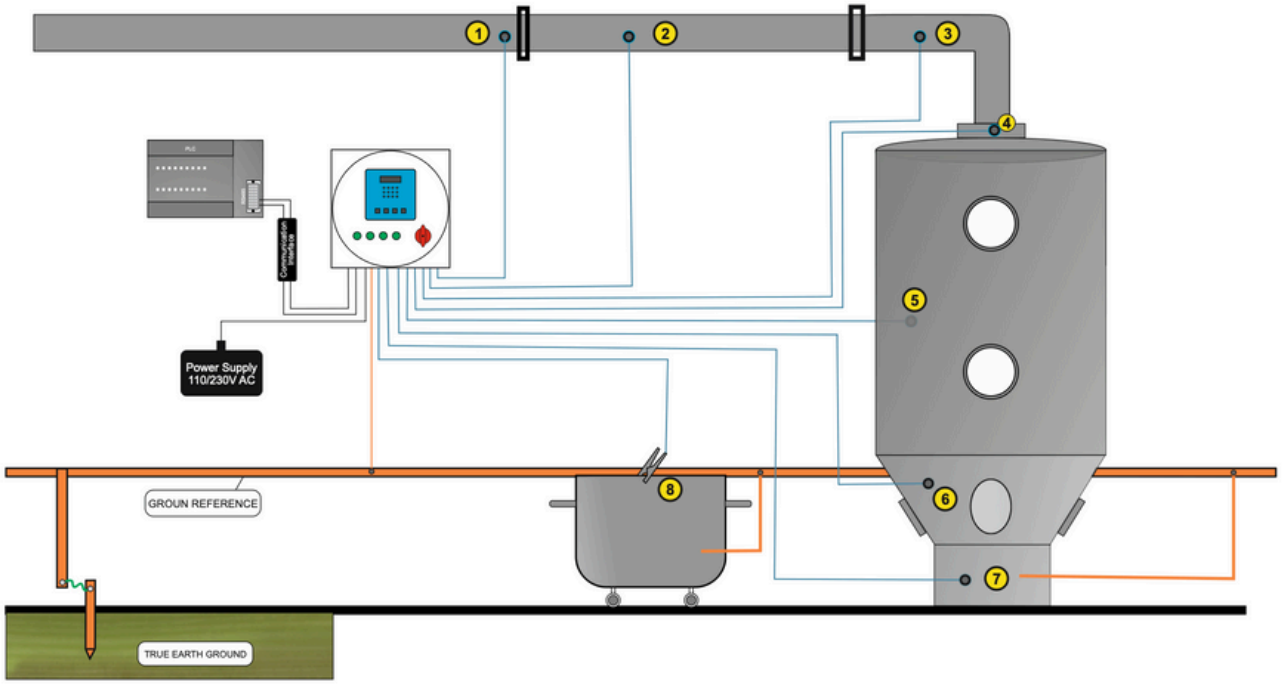
Features

- 6-digit bright LED display
- 8 individual channel status LEDs
- Indicators for Earth Ok & Earth Fault
- Adjustable resistance set-point
- Remote communication Interface
- Heavy-duty potential-free relays
- Safe interlocking compatibility with valve, starters

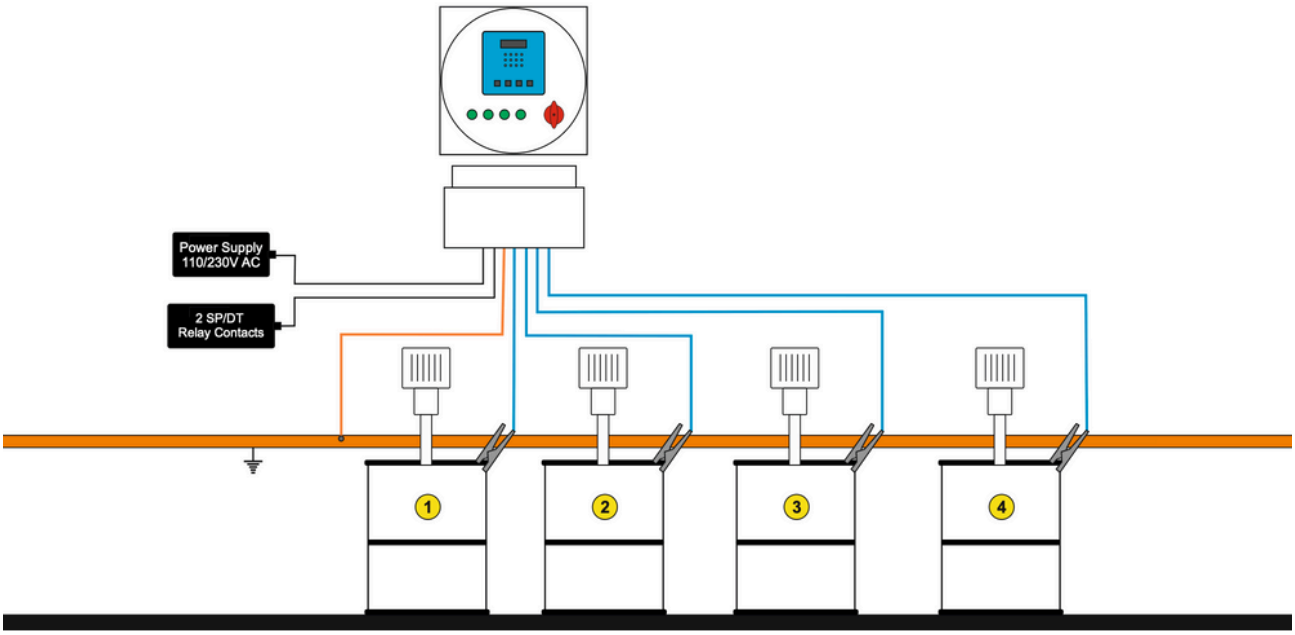
Applications

- Road Tanker Loading/Unloading Terminals
- Rail Wagon Loading Racks
- Drum & Barrel Filling Stations
- IBC/Tote Container Filling Operations
- Pharmaceutical Solvent Handling Areas
- Fluid bed dryers / Jet mill
- Powder Processing Equipment
- LPG Cylinder Filling & Bottling Plants
- Paint & Coating Manufacturing Stations
- Storage Tank Farm Loading Manifolds

Protecting People, Processes, and Plants from Static Hazards.



In this setup, EMS monitors grounding for a fluid bed dryer system. A marshalling enclosure distributes signals from seven channels to permanent grounding points installed on ducts, hoppers, and processing sections. Eight channels feed permanent grounding points on interconnected equipment, with all channels grouped to control powder flow only when proper grounding is confirmed. The system is connected to the PLC via modbus communication to monitor the status remotely.



The EMS monitoring unit can be configured to ground and monitor multiple types of equipment across a facility. In a typical setup, the system may be assigned to supervise four mixing stations. Each mixer operates through its own dedicated relay linked to the corresponding monitoring channel, ensuring the equipment runs only when a proper earth connection is detected. For the filling stations, single channel can be combined through the group relay, enabling a common permissive signal. If grounding is lost on either filling point, the pump supplying the station is instantly shut down, preventing static charge buildup and ensuring safe operation during liquid transfer.

TECHNICAL SPECIFICATIONS

System Configuration

- Monitoring Channels: 8/4 independent channels
- Resistance Threshold: Settable 1Ω to 10Ω (adjustable)
- Standard Setting: 10Ω (IEC TS 60079-32-1 & NFPA 77 compliant)
- Operating Voltage: 230V AC ±10%, 50 Hz / 110V / 440V AC optional
- Power Consumption: < 25W
- Enclosure Rating: IP65 (harsh industrial environments)
- Class: I, Div 1 / Zone 1
- Enclosure: Flame Proof / SS / MS

Indication System

- 6-digit Red LED display (0–10Ω)
- 8 Green channel LEDs
- *Status Indicators*: Earth OK, Earth Fault, Mains ON

Output Contacts

- Interlock Relay
  - 1 C/O Potential-Free
  - Rating: 25A @ 250V AC (Heavy-duty)

- Starter Interlock Relay (Optional)
  - 1 Potential-Free
  - 7A rating

- Alarm Relay Output
  - 1 Potential-Free
  - 7A rating

Communication (Optional)

- Protocol
  - Modbus RTU (RS-485)

Unit No. 104/ 124/ 130, Bldg. No. 1, New Sonal Link Ind. Est., Link Road, Opp Sai Palace Grand Hotel, Malad West, Mumbai – 400 064

nikhil@electroquip.com
admin@electroquip.com
www.electroquip.com
+91 8080818877