



We Control Electrostatic

## VITAL ENGINEERING INSTRUMENTS

Plot : Plot 746/1/3 Makarpura GIDC, Vadodara, GUJARAT-

GST : 24DVPPP1558F1ZA PAN : DVPPP1558F WEB : [www.vitalengginstruments.com](http://www.vitalengginstruments.com) M : 8347269644

### OPERATIONAL GUIDE

Continuous Earth Monitoring System with **LAMP INDICATION**

GAS GROUP - IIA IIB



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### GENERAL OVERVIEW

The loading and unloading of tank trucks, containers, mixers etc containing flammable or combustible products has long been recognized as one of the most serious fire and explosion risks for hazardous industry operations.

A study conducted by the **American Petroleum Institute in 1967**, for example, identified static discharges as being responsible for more than 60 incidents in tank truck loading operations, Mixing Operations, Drum Filling etc..

Since then more stringent preventive standards have been developed and significant advancements have been made in the technology of static electric discharge prevention. Yet accidents traced to static electric discharges still occur, with sometimes tragic results.

The natural presence of static electricity during product transfer operations, combined with its associated ignition hazards, ensure that regulators take static control precautions for tank trucks very seriously. The primary guidelines are detailed in three primary standards: **NFPA 77, API RP 2003 and**

### WORKING PRINCIPLE

**THE System should be used to monitor the earthing of the vehicle, static equipments, once connected it shows the actual earthing status with GREEN & RED Indication**

**GREEN INDICATION** – HEALTHY EARTH – Loading / Unloading Process should Start or it gets automatically started through relay contacts

**RED INDICATION** – UNHEALTHY EARTH - Loading / Unloading Process should stop or it gets automatically stopped through relay contacts



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### TECHNICAL SPECIFICATION

Monitoring Range	:	4,6,8,10 Ohms Adjustable
Size	:	220*220 MM
Protection	:	Intrinsically Safe
Output	:	Control Relay
Contacts	:	Two Relay Change over NO & NC Contacts
Relay Contact Action	:	Relay Contacts to Change over when Equipment body is at Same potential as identified TRUE EARTH (Properly Earthed)
Indication	:	<b>GREEN</b> LED = Healthy Earth, <b>RED</b> LED = Unhealthy earth
Hooter	:	ON DURING EARTH FAULT OR OPEN CONDITION (Optional)
Relay Operation	:	<b>GREEN</b> LED = Relay NC State, <b>RED</b> LED = Relay NO
StatePower Supply	:	230 V AC Input
Circuit Protection	:	Fuses (Internal Protection)
Certification	:	CIMFR – FLP OR <b>PESO- FLP (Optional)</b>
Equipment marking	:	Ex D, Zone 1, 2 IIA IIB IP66 / <b>IIC(Optional)</b>
Ingress Protection	:	IP 66
<ul style="list-style-type: none"><li>- SS304 Clamp &amp; 1 nos. of PU Anti-Static Spiral Cable for the Safe Connection to the Equipment Body</li><li>- PCB Mounted in Hazardous area Certified FLP Enclosure (CIMFR or PESO)</li></ul>		



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### TEST & CALIBRATION CERTIFICATE

Test Report No :	Report Date :
Client : M/s -----	Invoice No - Invoice Date - PO NO -
Product : Static Discharge & Earthing / Grounding System Input : E2 (Reference True Earth) Output 1 : 02 C/0 Interlock Contacts Output : P1,E1 Two Core SS Tips PU Spiral 05 Meter  Aux Supply : 230 V AC Flame Proof Enclosure Type : Ex D, Zone 1,2 IIA IIB or IIC IP66, CIMFR or PESO	Calibration Details  MFR Resistance Tolerance - 1%  Calibration Display Console : 7 Segment 4 digit for Resistance Measurement & Calibration  Capacitance Calibration display Console 16 X 2 LCD Display with 4 Keypad
Serial NO : -----	Quantity : -----

Sr NO	Input Earthing Resistance	Actual Resistance Indication	Resistance Indication Internal Set to 8 Ohms	Interlock Contact	Visual LED Lamp Indication Green = Healthy Red = Unhealthy	Remarks
1	8 Ohms	7.92 Ohms	8 Ohms	ON	OK	OK
2	4 Ohms	4 Ohms	8 Ohms	ON	OK	OK
3	2.2 Ohms	2.2 Ohms	8 Ohms	ON	OK	OK
4	1 Ohms	0.99 Ohms	8 Ohms	ON	OK	OK



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