

Earth-Rite® RTR™

Static Grounding for Tank Trucks



The Earth-Rite II RTR is designed to ground a road tanker during loading and unloading operations in order to dissipate any static electricity which could accumulate on a road tanker during these processes.

NFPA 77 “Recommended Practice on Static Electricity” highlights tank trucks as being capable of accumulating electrostatic charge during product transfer operations.

To mitigate against the accumulation of static on the body of the road tanker, it recommends that trucks be grounded during the transfer procedure.

The **Earth-Rite® II RTR™** static grounding system is designed to provide grounding of tank trucks to mitigate against static discharges from the main body of truck.

The system consists of a red/green LED ground status indicator and dry contacts that can be interlocked with the process or an additional strobe light.



Earth-Rite® II RTR™
Road Tanker Grounding System



The Earth-Rite® II RTR includes:

- **Flameproof and GRP Enclosures**
incorporating Intrinsically safe static ground monitoring system.
- **Ground Connection Junction Box**
with clamp stowage point and quick release connector.
- **Heavy Duty Stainless Steel Universal Grounding Clamp**
with Hytrel™ extendable cable and quick connectors.



Earth-Rite® II RTR™

Static Grounding for Tank Trucks

Patented Tri-Mode Technology Explained

MODE 1 and 2

With the grounding clamp and cable attached to the designated earth point on the road tanker through its patented circuitry the **Earth-Rite® II RTR™** detects the presence of the road tanker by its capacitance and not by impedance, resistance or the presence of a diode on the road tanker.

At the same time the patented circuitry ensures that it has a connection to the general mass of the earth. This is a critical step as a connection to earth is the only means by which the static electricity can be transferred from the teeth of the clamp on the road tanker to earth thereby mitigating the accumulation of static electricity during the transfer.

MODE 3

Once Modes 1 and 2 have been completed successfully the patented circuitry monitors the loop resistance from between the teeth of the clamp on the road tanker to the designated general mass of the earth through the **Earth-Rite® II** systems G1 and G2 connections. The circuitry will monitor the loop resistance and if it exceeds 10 Ohms it will stop the transfer.

This 10 Ohms loop monitoring requirement is detailed in the following standard/s and recommendations:

IEC TS 60079-32-1:2017

Clauses 7.3.2.3.3, 7.11.2, 8.8.4, 10.1.2, 10.1.4, 13.2.2, 13.3.1.1, 13.3.1.4, 13.4.1 & G.11.2

NFPA 77:2019 Clause 7.4.1.3.1

API RP 2003 8th Edition Clause 4.2.2

* Always check for and read the latest version of the International Standards, Guidance and/or Recommended Practices.

The repeatability of the 10 Ohm loop monitoring has been-
Third Party validated by CSA/SIRA

All metal components on the road tanker should have an electrical continuity not exceeding 10 Ohms. Isolated metal components should not be present on the road tanker. If isolated metal components are present on the road tanker they could possess a capacitance similar to that of the main road tanker body.

Pulsing LEDs confirm positive ground connection



Dry Contacts

Earth-Rite II system output contacts can be interlocked with process equipment and/or strobes. Interlocking the grounding system with the process equipment can enhance the Standard Operating Procedures (SOP) before the movement of material can take place. Interlocking with strobes provides personnel with a wider field of view that the grounding SOP is underway.

On rare occasions grounding clamps can be removed by operators or lose contact with equipment due to unstable connections being made initially or overstretching of the cable connected to the grounding clamp. The grounding system, can, via the output contacts, halt the process. However, it should be borne in mind that the movement of the product may not stop even though the equipment (pump / impeller) has halted. This could lead to the continued generation of static charge. In such circumstances it is the responsibility of the site operator to ensure their SOPs cater for such scenarios. This assumes the grounding system has been installed in accordance with the Instruction Manual. If you do not have access to an Instruction Manual contact Newson Gale

ATTENTION: Driver / operator training is essential for the correct use of the grounding system. The first action in the material transfer process is grounding of the road tanker. The Earth-Rite II RTR clamp should be connected directly to the designated earthing point of the road tanker. The grounding clamp should NOT be removed until all other procedures in the material transfer process are complete.