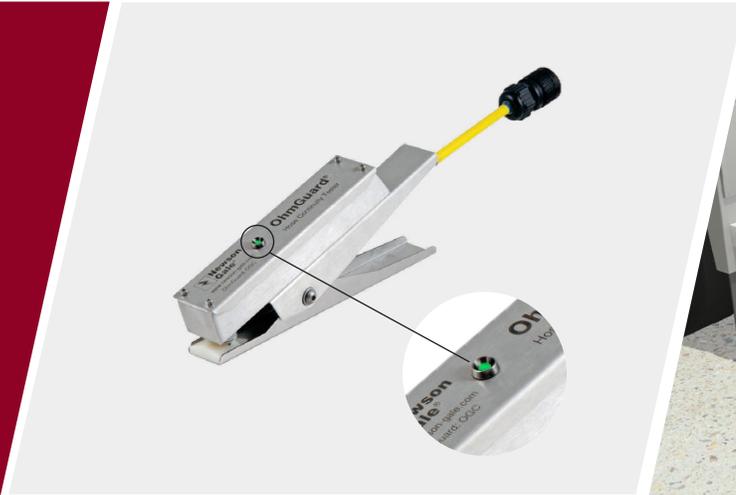
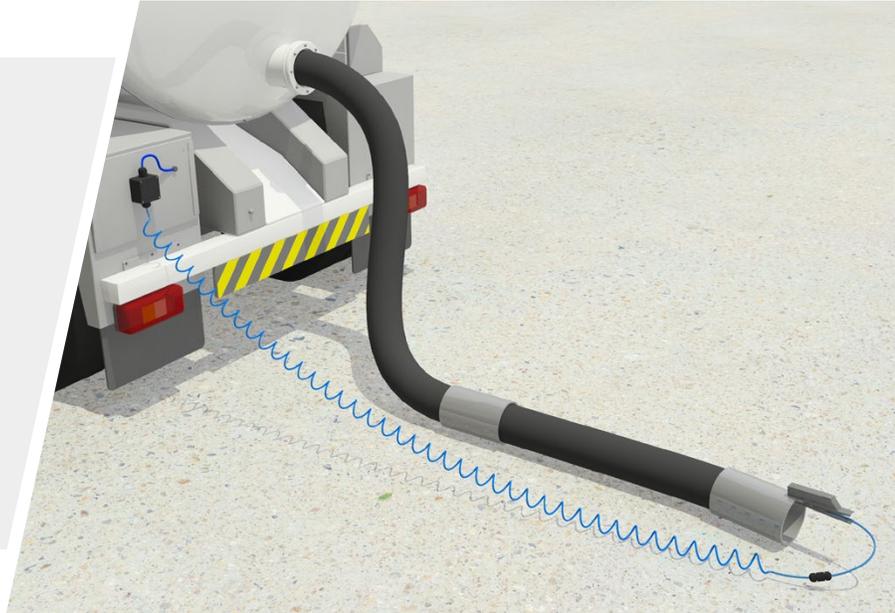


OhmGuard®

Intrinsically Safe Electrical Continuity Tester



OhmGuard Intrinsically Safe Electrical Continuity Tester



The OhmGuard is easy to operate and does not require any specialist training

The OhmGuard® electrical continuity tester is designed to test hoses used on vacuum trucks, road tankers and plant equipment prior to the transfer of flammable or combustible products. It can also be used as an effective method of checking static bonding assemblies and conductors relative to verified grounding points.

The OhmGuard indicates if the resistance through the metal components of hoses (e.g. internal wire helices, metal couplings) are below specified resistance thresholds.

The OhmGuard is easy to operate however operator training is essential and is the responsibility of the customer / end user facility.

Basic clamps and cables can be regularly tested to indicate continuity between grounded equipment and locally verified ground sources.



Rugged Stainless Steel housing with Tungsten Carbide Teeth

Applications:

- Testing vacuum truck hoses prior to spill cleanup or material recovery operations
- Testing bulk road tanker hoses prior to the delivery of flammable products (e.g. solvents) to storage tank farms
- General resistance testing of chemical and petrochemically compatible hoses
- Spot testing of bonding assemblies and conductors in the field

OhmGuard®

OhmGuard Benefits:

- Proves the hoses have **good electrical continuity** with the grounded truck
- Ensures potentially isolated components of **plant equipment** are identified and remedied
- One time test with **visual GO / NO GO** indication
- Enables **early detection of faults** without the need to wait for scheduled periodic testing
- **Easy to operate**. Drivers do not need specialist training
- **Intrinsically Safe** certification for EX / HAZLOC requirements
- **Lower cost** than equivalent EX / HAZLOC approved multimeters
- Robust Stainless Steel construction and **more robust than multimeters** in the field
- **Tungsten carbide teeth** help penetrate any slurries or deposits caked onto the hose end fitting

The OhmGuard indicates if the resistance through the metal components of hoses (e.g. internal wire helixes, metal couplings) are below specified resistance thresholds.

The metal helical wires that reinforce hoses against discharge and suction pressures are commonly used to provide an electrical bond between the end fittings or couplings of hoses.

The OhmGuard resistance tester can help with the identification of breaks in continuity.

It should be noted that the OhmGuard indicates if the electrical continuity of the metal helix, bonding wires and couplings are below the specified resistance threshold. (See page 5 for options).

Correct grounding of these components is the responsibility of the end user / customer.



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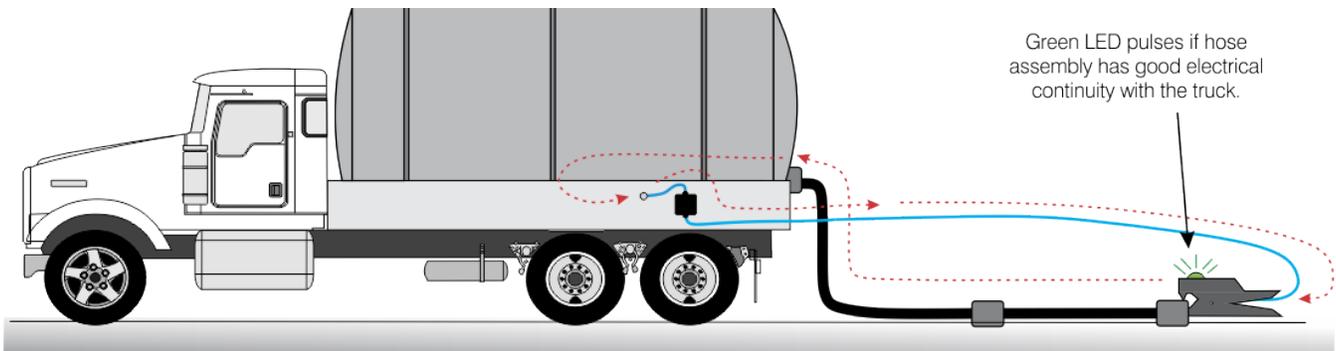
Example

Truck hose testing with an OhmGuard connected via a truck mounted junction box:

The OhmGuard passes an Intrinsically Safe signal through the assembled sections of hoses and through the truck body to the junction box fitted to the truck. If the signal returns to the OhmGuard via the blue cable a green LED will pulse continuously indicating that the hoses have good electrical continuity with the truck.

PLEASE NOTE:

It is assumed that the truck itself has a verified connection to earth, otherwise static charges will accumulate on, and potentially discharge from, the hoses connected to the truck. Mobile truck ground verification can be achieved with Newson Gale's [Earth-Rite® MGV mobile ground verification system](#).



Permissive resistance range: Why select 100 Ohms?

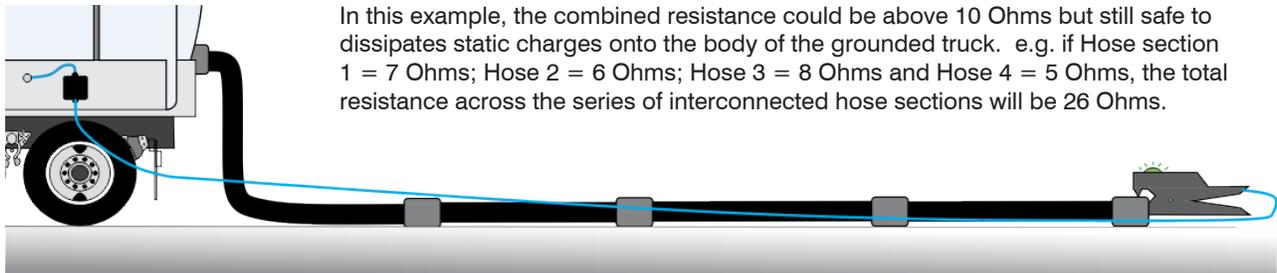
There are many hoses with different materials of construction supplied to the oil & gas, petrochemical and chemical industries. The most commonly used hose in road tanker and vacuum truck operations are those that have a mechanical wire helix that supports the hose tubing material. On the majority of hoses that incorporate a metal wire helix, the helix is used to bond the hose couplings together to ensure neither coupling is electrically isolated, thereby mitigating the accumulation of static electricity.

Dependant on company policy, the most commonly accepted value of end-to-end resistance is 10 Ohms per hose section. However, in order to provide drivers and operators with the capability to determine if multiple sections of interconnected hoses are bonded to together and are bonded to a grounded truck, the OhmGuard looks for a combined resistance of 100 Ohms or less.

It is possible to specify an OhmGuard that will limit the resistance PASS level to 10 Ohms, however, it must be borne in mind that hoses connected in series are likely to have a combined end-to-end resistance of over 10 Ohms.

100 Ohms is the maximum resistance recommended for conductive hoses in IEC/TS 60079-32-1 "Explosive atmospheres, Part 32-1: Electrostatic hazards, guidance".

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



OhmGuard®

Technical Specification

North American Certification Details

Maximum ambient temperature	-40°F to +140°F (-40°C to +60°C)
Certification	Class I Div 1, Groups, A, B, C, D Class II Div 1, Groups, E, F, G Class III Div 1
Approval authority	CSA
Monitored loop resistance (0-100 Ohm Clamp)	100 Ohm maximum
Monitored loop resistance (0-10 Ohm Clamp)	10 Ohm maximum
Indicator lamp LED	1 green (Hose Continuity Good)

IECEX & ATEX Certification Details

Ingress protection	IP64
Maximum ambient temperature	-40°C to +60°C
Certification	Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da, Ex II 1 GD
Approval authority	ExVeritas Test & Certification
Monitored loop resistance (0-100 Ohm Clamp)	100 Ohm maximum
Monitored loop resistance (0-10 Ohm Clamp)	10 Ohm maximum
Indicator lamp LED	1 green (Hose Continuity Good)



The extension assembly consists of an alligator clip, a test probe and stainless steel plate. It is ideal for testing equipment that does not have a large enough surface to connect to with the OhmGuard clamp. The person performing the test simply connects the OhmGuard's clamp contacts to the plate and then connects the probe or alligator clip to the equipment being tested.

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Leading the way in hazardous area static control



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