

Self-testing static grounding clamp increases safety in hazardous areas



The problem of achieving a good static earth bond in the presence of insulating layers was highlighted in issue two of ETTG ("Getting to the Point"). A unique intrinsically safe self-testing static grounding clamp has now been developed to enable static bonding connections to be continuously checked and verified in flammable atmospheres.

In many branches of the process industries, fires and explosions can result from electrostatic discharge in hazardous areas. Even relatively small static sparks have sufficient energy to ignite many flammable vapours, gases and even airborne dusts. In situations where this risk exists, International Safety Standards dictate that static grounding and bonding clamps are required wherever mobile or portable conductive plant items such as drums, containers and vessels are used. In these applications, it is necessary for the clamp to make a sufficiently low resistance contact with the object, to enable any static to be safely dissipated to ground earth via a suitable conductor before the energy available for discharge builds up to dangerous levels.

If the correct clamp has been selected for the application, and the object to be grounded does not have surface insulation, then it should be possible to make good enough contact to prevent static accumulation. However, in practice many drums, containers and other types of mobile plant have coated surfaces even when new, and this problem is compounded in use due to build up of further insulating layers. These insulating layers may include paint, resins, adhesives, dirt or other contamination inherent to the working environment, and may be found on either the surface of the plant unit to be grounded, the clamp contacts, or both.

In tests, many standard grounding clamps in use today show very high resistance readings when clamped onto conductive objects with insulating surfaces. Furthermore, the grounding clamp may sometimes be awkwardly or incorrectly fitted onto the plant unit. Either of these conditions may result in the clamp being physically attached in the eyes of the operator, but not actually performing its intended function which is to dissipate static safely.

Clearly, it is not practical to carry out repeated manual tests of static grounding clamps with separate resistance measurement instruments. Up to now, the only way of verifying a good static dissipation path has been to use a "hard wired" grounding system, which continuously proves the static earth path, and provides visual and interlock switch contacts. These systems are recommended for ultra safety critical applications such as Road Tanker filling or discharging, but the investment required tends to rule them out for the numerous other applications found in a typical processing plant.

Bond-Rite - a unique development

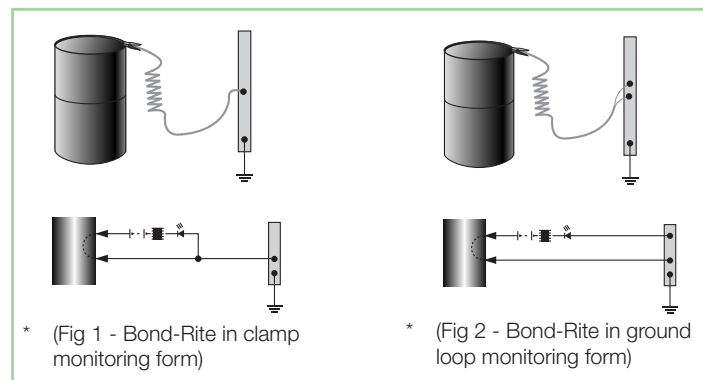
To solve this problem, the Bond-Rite has been developed. This unique product (European & US Patents Pending) is a "Self Testing Static Grounding Clamp", combining the benefits of a purpose designed grounding clamp with self contained monitoring electronics and feedback via visual indication. Available with a versatile range of options to make it suitable for most hazardous area static grounding applications, the Bond-Rite enhances safety and security, whilst it's affordable price level enables much wider usage across the whole plant.

An intense programme of technical development, field testing and customer consultation has resulted in many key features and user benefits being designed into the Bond-Rite as standard.

- Intrinsically Safe
- Self contained power supply
- Visual contact verification
- Stainless Steel Body
- Hard wearing tungsten carbide teeth
- Universal clamping action
- Patents pending (Europe & USA)

The Bond-Rite clamp may be used with either single or twin core grounding cables. In single core form, known as Clamp Monitoring, it verifies a positive low resistance connection onto the object to be grounded.

In twin core form, called Ground Loop Monitoring, it checks the complete clamp and cable loop thereby proving the connection onto the object as well as continuity back to the grounding point.



In either Clamp or Ground Loop Monitoring configurations, the Bond-Rite is available with a versatile range of options to make it universally suited to most static grounding applications. For ease of termination onto grounding bus bar or other designated earth, the Earth Connection Box is offered. This can also be supplied with quick release connectors, enabling the clamp to be swiftly disconnected for maintenance or battery replacement. This also means that multiple static earthing sockets can be located adjacent to wherever mobile plant objects need to be grounded, and Bond-Rite Clamps may then be taken to wherever they are required. All Earth Connection Boxes are supplied with Insulated Clamp Stowage Devices, which provide a convenient point onto which the clamp is attached when not in use, conserving battery life. The Bond-Rite clamp may be fitted with special Hytrel Coated Spiral Cables or Static Discharge Reels, or connected to existing grounding and bonding cables and reels.

The Bond-Rite self-testing static grounding clamp offers enhanced safety and security through affordable active monitoring.



The Bond-Rite forms part of the Cenelectrex® range of static control equipment for hazardous areas, which includes static grounding interlock systems and accessories. The Bond-Rite is manufactured and distributed in the UK by Newson Gale Ltd and is available worldwide through a network of specialist distributors.

Please contact Newson Gale for more information or to find your own local distributor.

www.newson-gale.co.uk