



Leading the way in hazardous
area static control



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Technical Article

Passive or Active Grounding that is the Question?

For years now simple passive grounding has been used throughout industry as a low-cost safety measure and protection against fires and explosions caused by static electricity but is it as safe as you think?

Passive Grounding

Passive grounding clamps and cables are only suitable if the metallic object to be grounded has a bright clean surface. This allows even a poorly designed passive grounding clamp to make a low resistance connection to the metal object.

However, not every industrial environment can use a bright clean metal surface, as mild steel usually needs painting to prevent rust and corrosion. This is clearly a physical barrier between the metal surface and the passive grounding clamp.

Paint is the number one enemy of successful and reliable passive grounding. The other main enemy is the product itself causing a barrier between the metal and the clamp with passive grounding, even bright clean stainless steel can be affected by product coatings.



Active Grounding

So, what is the alternative to passive grounding clamps and cables? Well, it is active grounding clamps and cables. When you use passive grounding clamps how do you know that you have made a good low resistance connection to the metal object and the local site ground point? You do not, you just cross your fingers!

Active grounding clamps contain intrinsically safe circuits that measure the resistance from between its teeth and the local site ground point to be less than 10 Ohms. This metal to metal less than 10 Ohms resistance level is enshrined in International Standards (IEC TS 60079-32-1), Guidance (NFPA 77) and Recommended Practices (API RP 2003).



This less than 10 Ohms connection with an active grounding clamp is confirmed to the user by a high intensity flashing green LED. So use of active grounding clamps and cables, takes the guess work out of safety, allowing you to uncross your fingers and most importantly be safe.

So, what are the differences between passive and active grounding clamps and cables?

If you want to know more about how using active grounding clamps and cables can improve safety in your application, please contact Newson Gale.



Passive Monitoring

- A metallic earthing clamp designed to provide a resistance of 10 Ohms or less.
- If there is a 'break' in the connection or the resistance to earth rises above 10 Ohms, there is no way of knowing during the operation.
- Unable to confirm a good earth connection before the process begins.

Active Monitoring

- Provides a resistance of 10 Ohms or less as indicated via a high intensity flashing green LED within the system enclosure or on the Bond-Rite Clamp.
- The Green (GO) indication aids the SOP, e.g. do not proceed until the LED has gone green.
- Operators and plant personnel are accountable and secure about their working environment. Provides confidence that the process is reliably earthed before the operation commences.
- Performance is continuously monitored throughout the duration of the operation.

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