

case
study

Why High-Resistance Grounding Systems Should Become an Industry Standard

One of the major customers for Resource Engineering in Oregon, USA is a world leader in silicon innovation. This company develops technologies, products and initiatives that continually advance how people work and live. Founded in 1968 to build semiconductor memory products, this company introduced the world's first microprocessor in 1971.

unparalleled protection

Industry

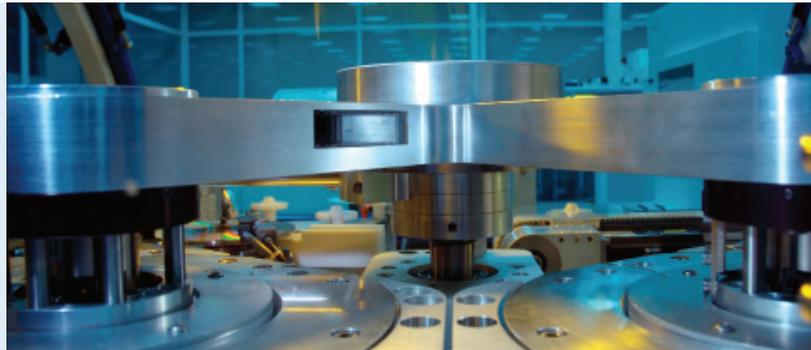
Hi-Tech

Need

Need to reduce risk

Benefit

Reduction of incident energy levels, runs critical processes when 2nd fault occurs, reduce amount of repairs



Electrical Injuries

Electric Shock - Voltage as low as 50V between two body parts blocking electrical signals from the brain and the muscles.

Electric Burn - Current passes through the human body heating the tissue along the way.

Loss of Muscle Control - Shock causing muscle spasms that dislocate joints and even break bones.

Thermal Burns - Faulty electrical equipment when heated explodes causing serious fires and burns.

About I-Gard

I-Gard provides both industrial and commercial customers with the products and application support they need to protect their electrical equipment and the people that use them. Since 1982, I-Gard is committed to electrical safety and reliability.

One of the constant issues facing all industry manufacturers and developers is electrical reliability. While significant focus, attention and capital are applied to backup power systems including generators, battery and UPS to protect critical processes and power factor correction equipment, an often overlooked issue is electrical ground faults. A single electrical accident can cost the company up to \$1 million or more in lost productivity, equipment damage, lost time, medical expenses, as well as liability exposure.

To assist its clients in ensuring process continuity, even under single ground fault conditions, Resource Engineering partnered with I-Gard to provide the Sleuth high-resistance grounding system. Not only does the I-Gard Sleuth provide resistance grounding, ensuring that the process remains protected under a single ground fault and does not require to be isolated, but the integral pulsing feature allows for the fault to be quickly located and corrective action to be taken.

SLEUTH

SLEUTH



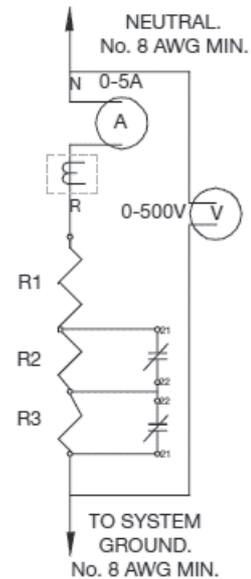
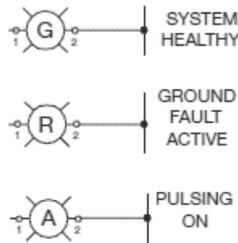
NEMA 2R enclosure containing current limiting resistor and ground fault relay

Available with artificial neutral for use on delta systems

Visual indication of system normal, active ground fault and pulsing active

Available for 480V, 600V and 4160V distribution systems

SLEUTH



FEATURES

BENEFITS

High-Resistance Grounding Resistor

This resistor is connected to the wye point of the transformer or generator supplying the facility. Its function is to limit ground fault currents to non-damaging levels under a single line-to-ground fault condition. This provides the user an opportunity to retain process continuity and to detect and clear the fault.

Hand-held Pulse-tracing Sensor

This device, similar to a clamp-on ammeter, allows the user to follow the pulses from their source at the Sleuth unit through to the specific location of the line-to-ground fault.

Automatic Pulsing System

Once the pulsing feature on the Sleuth system is selected and activated, the system will cyclically limit the fault to 100%, 75% and 50% of the available ground fault current. The cyclical pulsing combined with the hand-held pulse-tracing sensor empowers the user to trace the fault circuit to the point of the fault, even in complex distributions systems without de-energizing the load.

Ground Fault Sensing Transformer and Relay

This microprocessor-based digital relay measures ground fault current using a 1:1 zero sequence current transformer. It maintains accuracy over a range of 45Hz to 65Hz and filters out harmonics to eliminate nuisance tripping.