



Applications for AG and AGL Ground Fault Sensors

Since the late 1960's, the National Electric Code has required ground fault circuit protection in many areas; each revision cycle seems to add new requirements. The requirements for personnel protection in bathrooms, construction sites and for most outdoor mounted outlets has greatly reduced the number of deaths by electrocution. More recent versions have added requirements for equipment protection, which are designed to prevent damage from phase to earth faults.

Monitoring a three phase circuit for ground fault current requires more than comparing the hot and neutral loads. NK Technologies' sensors monitor all current carrying conductors at the same time. If more current is used at the load than is being returned to the source, there is earth leakage. This leakage can be detected by using our extremely sensitive ground fault detection products.

Ground Fault Monitoring

- **Snow Melting Mats**
Monitor for insulation deterioration
- **Heat Trace Cable**
Detect leakages before cable runs become dangerous
- **Industrial Heating**
Detect failing elements quickly
- **Submersible Pumps**
Monitor for moisture ingress or failing installation
- **Water Features**
Detect faults before they become hazardous
- **UV Light Systems**
Keep sanitization or curing processes safe
- **Pool Lighting**
Provide protection regardless of the circuit voltage
- **Soil Heating Mats**
Keep greenhouse systems safe
- **Semiconductor Fabrication**
Protect etch and cleaning processes

Ground Fault Sensors Can Prevent Costly Shutdowns in Industrial Processes

NK Technologies' ground fault sensors allow the system designer to choose what the sensor output will do if a fault to ground is sensed. The output contact can be selected to close, operating a shunt trip circuit breaker, or a contact can open the circuit to a contactor coil. Both would shut down the monitored load.

In many industrial processes, shutting down the process would create huge maintenance issues. For example, it is common to use heat trace to keep material flowing through a pipe at a consistent temperature. De-energizing the heat cable would likely damage the product. Using an NK Technologies' sensor to trip an alarm may prevent costly material losses and allow the system operator to take preventative action at a more convenient time.

