

EQUIPMENT-GROUNDING SYSTEM

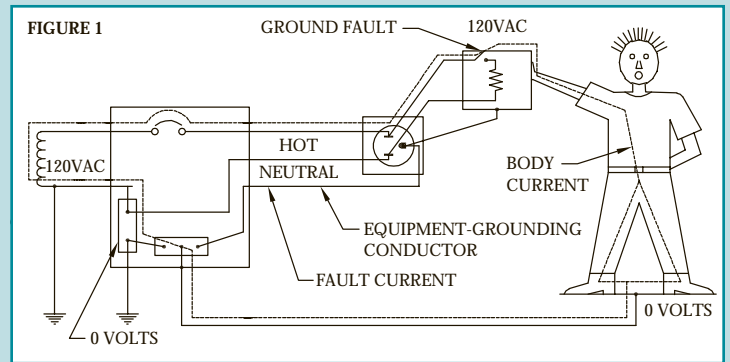
Equipment grounding serves several functions including:

- Protects personnel from serious shock or electrocution
- Protects equipment from damaging noise or faults
- Provides an intentional path of ample current carrying capacity and low-impedance to insure rapid operation of the circuit's over-current device protection during ground fault conditions
- Provides a common link for all equipment to operate at the same zero-voltage reference point

The National Electrical Code (NEC) Section 250, describes an effective grounding path as -- the path to ground from circuits, equipment, and metal enclosures for conductors -- shall;

1. Be permanent and continuous.
2. Have capacity to conduct safely any fault current likely to be imposed on it.
3. Have sufficiently low impedance to limit the voltage to ground and to facilitate the operation of the protective devices in the circuit.
4. The earth shall not be used as the sole equipment-grounding conductor.

Equipment-grounding systems must meet all NEC code requirements to be considered safe, effective grounding. Effective equipment-grounding conductors must have sufficient capacity to insure low impedance throughout the AC distribution system, enabling instantaneous operation of the over current



devices (fuses and circuit breakers) when a ground fault occurs. Figure 1 above illustrates a 120VAC circuit under a ground fault condition. Under normal operating conditions, the load current flows on the hot and neutral conductors, and no current flows on the equipment-grounding conductor. The equipment-grounding conductor to the equipment enclosure extends the zero-voltage reference established by the earth-grounding electrode at the main service supply. Maintaining zero volts on the equipment enclosure protects the operator against electrical shock. The equipment ground also provides a zero-voltage reference for the logic circuits in the equipment.

When a ground fault occurs, the equipment-grounding conductor becomes the return path for fault current to flow back to the source. The equipment enclosure will have a shock voltage resulting in a dangerous, potentially lethal current flowing through the operator's body until the fuse or circuit breaker opens the circuit.

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EPG Sales Representative Highlights

Charles Reich (pictured on the right), owner of the Reich Company, has provided treatment equipment for the landfill, remediation, air, and water and wastewater markets, for nearly thirty years. He and his team represent EPG Companies in Texas, New Mexico, Oklahoma, Arkansas, Louisiana, and Mississippi. His travels include educating sites about the advantages of using EPG equipment and reinforcing the fact that EPG equipment is built right, tested at the factory, shipped as a system to the site, is the best in the industry and lasts a long time if it is installed and maintained properly. In addition, Chuck offers his customers cost-effective EPG wireless data acquisition and control systems and maintains excellent customer communication.

Recent projects include the installation of a wireless system for Waste Management covering all aspects of operation, i.e. sump

level, storage tank shutdown, flow, bioreactor recirculation, and weather station. Thanks Chuck. Keep up the great work!



Jim Markgraf and Chuck Reich provide EPG equipment sales.