



## Ground Zero Electrostatics Installation of the Ground Zero Nylon CPG

The **GROUND ZERO Nylon Common Point Ground(CPG) Plate** must be connected to the outlet ground connection. A wire with a lug at the end is provided to do this.

First, turn off power to the outlet to prevent any shock or injury. Then remove the old outlet cover and set it aside. Loosen the screws at the top and bottom of the duplex outlet so you can pull it out far enough to get to the ground connection on the end. Loosen the ground screw and put the lug from the CPG plate under it and tighten the screw again. Push the outlet back into the box and tighten the mounting screws. Place the ground plate on the outlet and attach it with the mounting screws.



You are done and can turn the power back on now. Plug your ground connections into the banana jacks or under the ground terminals.

### Electrical Environments and Continuous ESD Monitors.

Continuous ESD monitors like the ST/DT series and the 920xD series operate by sensing fairly high impedance loads in the form of wriststraps and body capacitance on the operator connections and high resistance matting on the bench ports. Relatively small signals are used and sensed to detect the operators on the wriststraps and the bench mat grounding. Both of these things make them sensitive to the electrical environment that they are used in. Other equipment with similar characteristics like audio and measurement systems have the same problems.

The purpose of ESD monitors and matting is to drain off electrical charges slowly to eliminate damaging potentials. Low impedances like a direct ground connection let the current get too high when discharge occurs and that is what can cause ESD damage. High impedances allow only small currents that don't cause ESD damage.

The worst offenders are electrical motors. Many electrical motors put electrical noise that cannot be filtered because the signal levels are so high. Motors like these probably should not be included in an "ESD Safe" environment in the first place. The signal levels can be so high as to cause an ESD event all by themselves. Note that this noise can come through the air or be conducted through the power lines themselves. Conducted noise can be reduced by filtering the power lines. Electrical noise induced through the air can only be reduced by moving the noise source away from the affected equipment.

Fluorescent lamps can be a significant source of electrical noise also. They radiate noise as the tubes turn on and off. The electrical ballasts radiate magnetic signals that are difficult to filter.

Continuous ESD monitors should be used in a relatively benign electrical environment. That also applies to the equipment being assembled. If your electrical equipment is causing alarms in your ESD monitors, then you should question whether that equipment should be there. Clean, noise-free power and good ground systems are requirements for the ESD monitors as well as the equipment that is being assembled.

