

ULTRASONIC INSPECTION ELECTRICAL PANELS & SERVICE



Arcing, Sparking, Corona
Detection

DESCRIPTION

When electrical apparatus such as switchgear, transformer, insulators or potheads and splices fail, the results can be catastrophic. This is just as true in industrial plants as it is in the power transmission and distribution side. Electrical discharges such as arcing, tracking or coronas are all potential for equipment failure. In addition, the problems of RFI and TVI impact on our valuable communication networks. All these conditions produce ultrasound and are detected with the Ultrasonic detection unit.



Switch Gear – Pot Heads -
Corona



Ceramic Stress
Tracking - Corona



Arcing – Sparking – Tracking
Corona

How Ultrasonic Electrical Detection Works

Arcing, tracking and corona all produce some form of ionization, which disturbs the air molecules around it. The Ultrasonic unit detects the high frequency noise produced by this effect and translates it, via heterodyning, down into the audible ranges. The specific sound quality of each type of emission is heard in headphones while the intensity of the signal is observed on a meter. Normally, electrical equipment should be silent; although some may produce a constant 60-cycle hum or some steady mechanical noises. These should not be confused with the erratic, sizzling frying, uneven and popping sound of an electrical discharge.

Detection Method

Before beginning any inspection of mid or high voltage equipment, be sure to review your plant or company's safety procedures. Essentially, as in generic leak detection, the area of inspection is scanned using a high sensitivity level. As the discriminate direction, reduce the sensitivity until this is possible. If it is not possible to remove covers, or plates, scan around the seams and vent slots. Any potentially damaging discharges should be detected.

TO FIX IT....FIRST YOU HAVE TO FIND IT!