

What does stray voltage look like?

Generally, for most electrical measurements, a high impedance multimeter is the best tool, since you don't want the meter loading the circuit and affecting the circuit measurements. However, when dealing with capacitive coupling, a high impedance meter between ground or neutral to the unconnected cable or open connection will indicate some amount of voltage present. Typically this measured voltage reading may be as high as 50 % of the energized voltage in the same proximity.

Is this voltage real? Yes, it is, but it's a static voltage, containing no real energy or current flow. When it comes to determining whether a circuit or connection is energized, this stray voltage reading presents a real source of confusion. Is the connection really hot or not?

The Fluke TL225 Stray Voltage Adapter Test Lead Set

The Fluke Stray Voltage Adapter Test Lead Set is an accessory that allows a high impedance multimeter to measure circuits, connections, cables or connectors subject to stray voltages. The adapter provides a low impedance load to the measured circuit, desensitizing the meter to low energy, spurious sources of interference. If the measurement points are energized with a "hard" voltage, the meter will simply display the voltage reading. If the measurement points contain a stray or ghost voltage, the meter will read very close to zero volts, indicating the circuit or connection is not energized.



Warning

The stray voltage adapter is designed to be used in conjunction with high impedance digital multimeters for measurements on power circuits, to help determine whether the circuit is energized or not. The adapter presents a 3 kΩ load to the circuit under test and thus will dissipate any stray voltage present if the circuit is not energized.

This adapter should not be used on low voltage control circuits or anywhere where the circuit under test could be adversely affected by this low impedance load. The adapter is designed to handle continuously applied power system voltages without damage, however proper use of this adapter is for intermittent use to determine whether a circuit is energized or not.