Create Healthy Homes

Environmental Design and Inspection Services

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Instructions to Create a Blue Box For Measuring Continuity of Conductors in Wiring Errors

As for the "blue box", that is a blue plastic junction box that we drill holes into in order to fit a 120V to 6V transformer, a 6V automotive light, and dimmer switch. This is shown to students at our advanced Electromagnetic Radiation (EMR) 312 building biology training seminar.

We use a 120V to 6V transformer with standard 14 gauge lamp cord wires for the hot and neutral connected to the 120V side of the transformer. You can hardwire those wires into a panel, putting the hot wire to an open breaker or lifting the hot from an exiting breaker and then inserting the hot wire of this transformer and flipping that breaker on, while all other breakers are turned off. Put the neutral wire on the neutral bus.

An alternative is to use a portable 120 V battery-operated generator with an outlet for a 120 V plug. Connect your 14 gauge hot and neutral to a standard plug and plug that into the generator. That way, you can shut off the main breaker in the panel and all the metal will be dead and safe to work near, because you are getting your power from the portable 120 V battery-operated generator on the floor.

Then, you need two wires to come out of the 6 V side of the transformer with alligator clips on each end. One wire gets clipped to a ground wire or the ground bus in the panel, while the other wire is your test lead that you connect to each neutral wire that you lift off the neutral bus, one at a time, as is explained in the handouts. It does not matter which wire is clamped to the ground bus and which wire is used to test the lifted neutral.

Blue Box Instructions

We also put a dimmer connected to a 6V light bulb on the 6V side of the transformer. It is wired in series to one of the test leads. When we connect one test lead to the ground bus in the panel, and the other test lead is clipped to a neutral lifted off the bus that has a wiring error on it somewhere in the branch circuitry, the test light will light up. If the light is dark, the neutral is considered "good" and will not have a wiring error on it.

The dimmer is used to dim the light and create electrical "noise" on the neutral wire going into the house on a circuit with an error. That noise can be heard anywhere along the route of that circuit using a "buzz stick" that has an electrical pick-up for magnetic fields. The buzz stick is available at LessEMF, at http://www.aitsafe.com/go.htm?go=www.lessemf.com/gauss.html&afid=51307&tm=90&im=#175-B . This helps you trace the route of the wiring error. See the handout for details of how to trace and repair wiring errors.