Examples of DNA Filter Installation

Introduction

DNA Filters are used to reduce Dirty Electricity (DE) on the AC power lines.
There are 2 basic varieties of DNA Filters:
-- DNA Parallel Filters: that reduce DE between 5:1 to 60:1 and sometimes greater
-- DNA Line Inductors: that reduce DE between 500:1 to 2000:1 and sometimes greater, when used in concert with DNA Parallel Filters.

DNA Parallel Filters

These are a "plug-in-the-wall" type of appliance. They do not require any special talent in Electrical Engineering or the Electrical Trades to install this filter type per se.

However one of the best installation locations for a Parallel Filter is right at the main Circuit Breaker Box and there may or may not be outlets available there for connection of the Parallel Filter.

Therefore it may be required to hire an Electrician to install 2 outlets (residential US application) right at the Circuit Breaker Box to allow filtering on each Phase (see below). This Electrician task is a small amount of work.

The first image below shows the installation of 2 Parallel Filters at the main Circuit Breaker Box. The installation of the Parallel Filters here will reduce DE from the incoming power utility, any DE from a solar or wind inverter, and to a degree, any DE that is generated internally within the facility (home, office, etc).

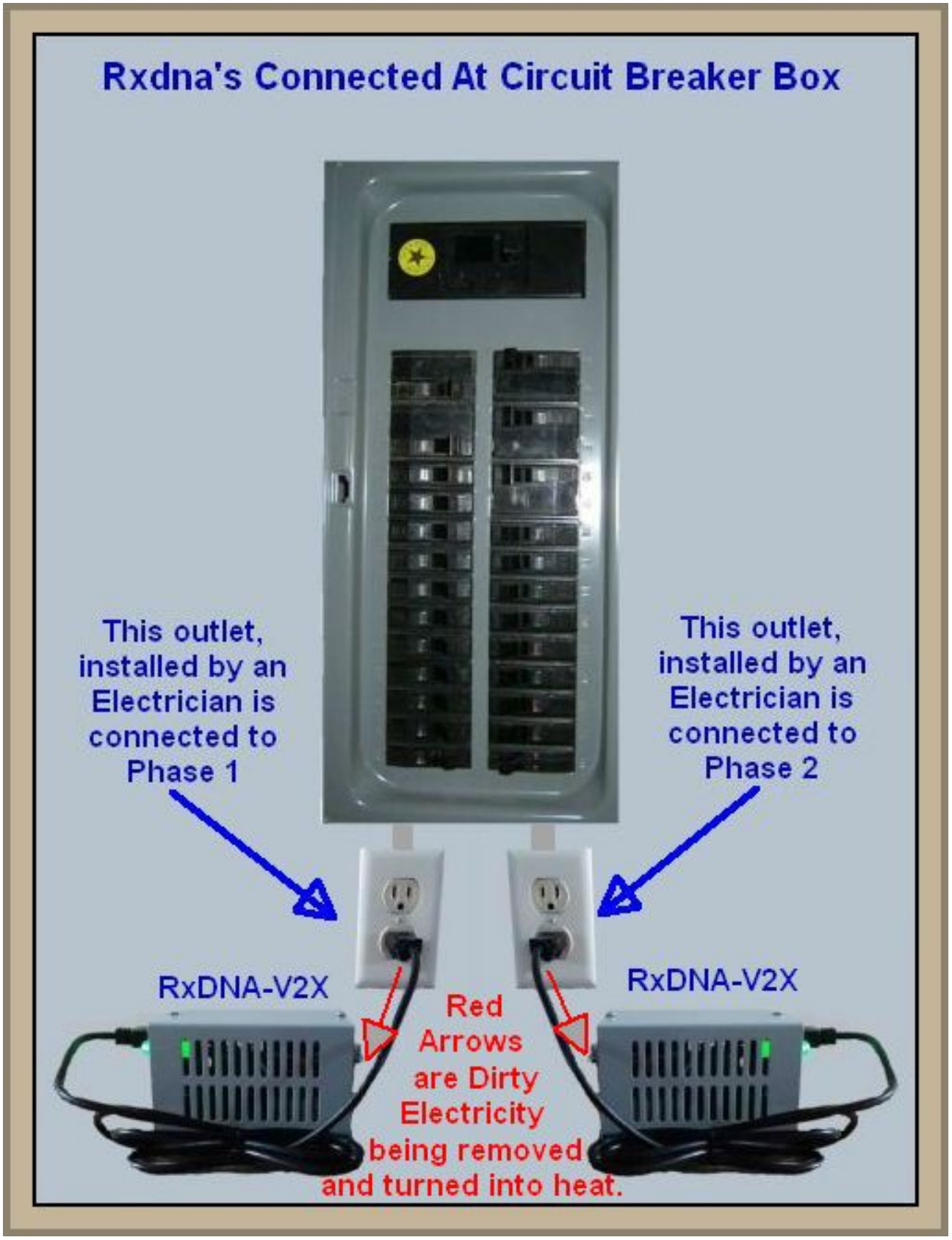
DNA Line Inductors

These are installed in a way to carry all of the AC power that it is filtering. They require an Electrician to install them and it is a significant amount of work to accomplish this.

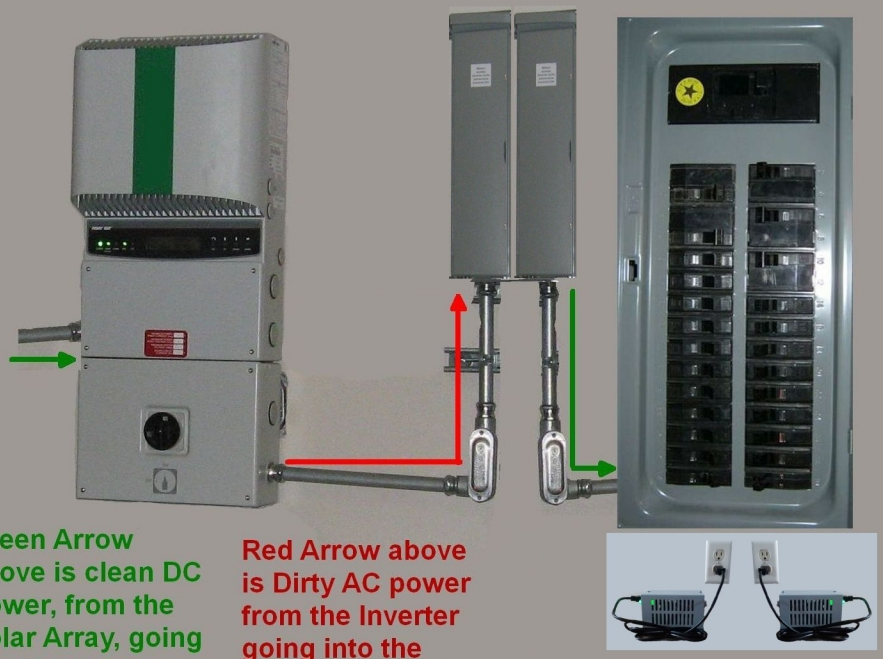
DNA Line Inductors can be applied to filter the DE from an inverter, such as a solar inverter. In addition, DNA Line Inductors can be applied to remove DE from the incoming AC power as delivered by the local power utility company.

In the (second) example below, an annotated image is given of a DNA Line Inductor installation, with RxDNA-V2X Parallel Filters, for a solar inverter DE reduction application.

Rxdna's Connected At Circuit Breaker Box



DNA Line Inductor With RxDNA-V2X



Green Arrow above is clean DC Power, from the Solar Array, going into the solar Inverter to be converted into AC Power.

Red Arrow above is Dirty AC power from the Inverter going into the DNA Line IND to be cleaned.

2 ea RxDNA-V2X's. One on each line. Provides filtering in concert with DNA Line Inductor

Operational Note For Line Inductors

The DNA Line Inductors are massive inductors. As with all inductors and transformers there is some humming and buzzing associated with this device.

Humming and buzzing from an inductor is caused by stray magnetic fields, emanating from the inductor, causing the enclosure and accessories to vibrate. In addition, Magnetostriction is a second source of vibration (and thereby humming and buzzing), where the iron core of the inductor changes shape minutely when exposed to magnetic fields.

The humming and buzzing will depend upon the load current placed on this device. If the humming/buzzing seems loud, then it is possible that there are loads, within the facility (residential, commercial, industrial) that are drawing current in a pulsed fashion.

An example is a portable electric heater that has a pulse-width-modulation controller to set the amount of heat being produced.

While most heaters have a simple on-off thermostat to regulate the heat, a few heaters have a pulse-width-modulation scheme and will be turning the power off-on-off-on at the power line frequency (50/60 Hz). These pulses of current will often be considerable (10 to 12 amperes) and this will result in loud humming/buzzing in the inductor.

While this humming/buzzing will not affect the filtering performance of the DNA Inductor, the sound may be objectionable.

In the cases where humming or buzzing does occur, and if the user finds humming or buzzing objectionable, the DNA Line Filter can be mounted outdoors, in a weatherproof enclosure, on a pedestal, i.e. not mounted on the building that is occupied. The weatherproof enclosure and pedestal can be provided by the installing electrical contractor.

It is important to note that the idea of installing the DNA Line filter is to reduce DE in the facility. A heater that pulses on-off-on-off at the power line frequency, will be generating DE within the facility and it will be very powerful DE, that likely will extend up to the hundreds of kilohertz in range. Users who want low DE in their facility, would be well advised to not use such potent "DE generators" (the pulsed heater).