



PARALLEL OPERATION

General

Parallel operation is the connection of two or more power sources of the same size and output volt-ages to obtain a higher output cur-rent. When connecting in parallel the outputs must be connected together keeping polarity in mind. The output voltage remains the same, but the current increases. For example, two 5 KVA units with 120 volt output can be paralleled together to deliver 10 KVA to the load. Special care is needed when two power sources are connected together. They must be connected with the same phase relationship, meaning that the positive terminal of one unit must be connected with the positive terminal on the other unit, and the same with the negative terminals. On three phase units, the same phases must be connected together.

Where Parallel Operation is Used

Parallel operation is useful when larger units are not available for the input voltage and load required. For instance, if you have 120 volts coming into your building and a load that draws 50 amps, you would need a 6 kVA unit (120 volts times 50 amps). However, the 5 kVA unit is the largest *Power Purifier* available that has a 120 volt input. Therefore, you would need to buy two 3 kVA *Power Purifiers* to provide the 6 kVA rating. One 3 kVA unit provides 25 amps at full load, so two units in parallel would provide 50 amps. This isn't the only solution. You could buy a transformer to increase the voltage and buy a 6 kVA unit (if it is available in this size) to provide the required power. Either way, two units will be purchased to do the same job, however the first option is lower in cost.

Another way parallel operation is useful is when you want to in-crease the availability of load cur-rent to the unit you already have. If this load will overload the existing unit, a larger unit is needed to provide enough power. Instead of purchasing a larger unit and seting the smaller one aside, you could buy another unit the same size as the one you currently have and connect them in parallel. This option will save you hundreds or even thousands of dollars.

Power Purifier

The sizes of the *Power Purifier* range from 250 VA to 25 KVA. Therefore, if a larger KVA rating is needed, two or more units can easily be connected together to provide the desired size. The *Power Purifier* will still provide line voltage regulation, harmonic attenuation, electrical noise attenuation, power factor correction, and protect against spikes while operated in parallel.

