

On the use of the Versatile Dual Three Phase Voltage Generator For Testing Transfer switch

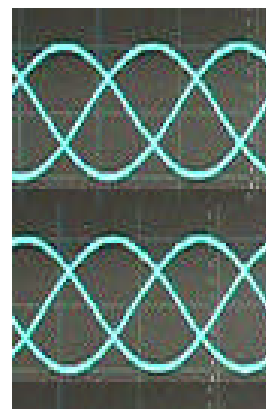
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In some building utility power shall be fault free. In such a case, a diesel power generator is used to provide a backup power source in case of grid power failure. Hospital operating block, computer room, and airline control tower to name a few are such buildings.

In these installations, a transfer switch is used to transfer the power distribution network from the fail grid to the backup generator and to re-transfer from the backup source to the grid when the power comes back. Transfer and re-transfer are automatically done according to both power source conditions.

Engineers developing these transfer switches shall manipulate two three phase sources to provide signals equivalent to what transfer switch sees in the field. Most obvious solution is to use the grid voltage. The various level required can be generated using autotransformers. This method is quite simple but not convenient and did not provide solution for all the conditions to be generated such as unbalance voltage condition.

Many transfer switches are synchronous, before switching from one source to the other the frequencies and phases of both sources shall be within a given small range; this is often required to avoid transformer and motor over current caused by instantaneous phase error at switching time. The simple test setup proposed in the preceding paragraph cannot simulate this situation.



The Alesco Technologies AT231 provides a very convenient solution for this purpose. The AT231 provides two three-phases sources and independent control of both sources. It also provides control of all sources parameters such as frequency, phase of each line and level of each line. On top of that the relative phase between source one and two is globally controlled. Windows Dialog in Figure 1 clearly shows which parameters could be controlled. Note that each phase angle could be controlled independently providing capability of simulating all sort of abnormal conditions.

The frequency of both sources is controlled independently, this feature is very convenient to test synchronous transfer switch. As example let say source #1 is at 60.0Hz and source #2 at 60.05Hz, that will produce a source set at almost the same frequency but with a slowly shifting phase, one cycle over twenty second. This type of arrangement facilitates the test of transfer switch and especially synchronous transfer switch.

Windows Dialog in Figure 1 clearly shows which parameters could be controlled. Note that each output #1 and output #2 frequencies are both independents.

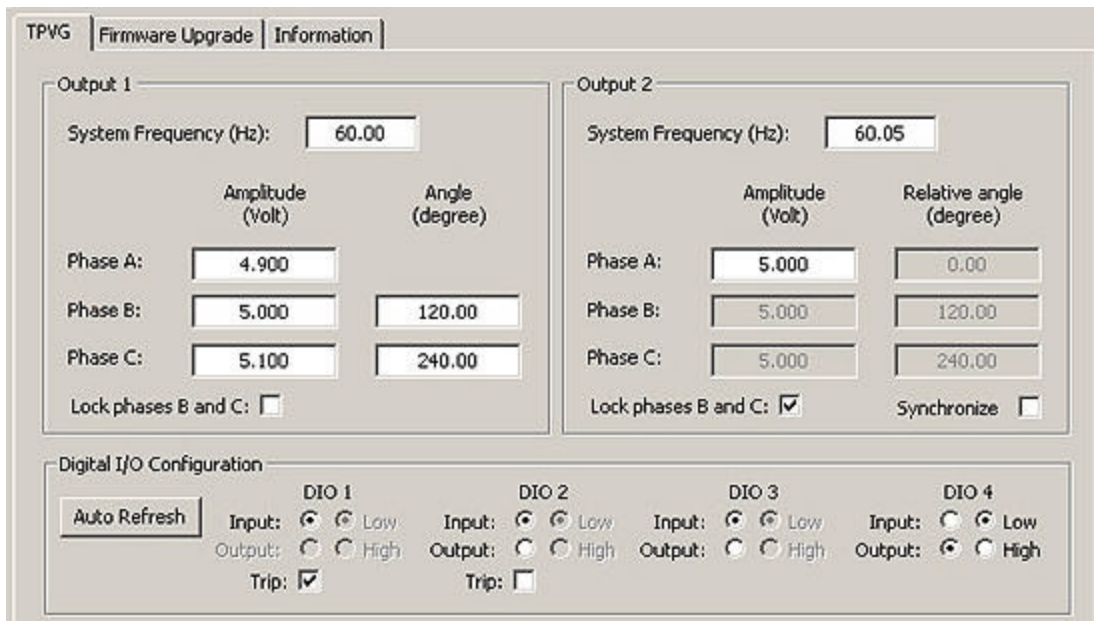


Figure 1, Windows Dialog

The AT231 clearly provides a valid and very competitive solution for those developing transfer switch. The AT231 fits very well on production line for testing transfer switch ensuring full compliance of your product. Attach it to a USB port and start testing.
