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APPLICATION NOTE

Jupiter-Series UPS / Frequency Converters / Inverters In Redundant Configuration

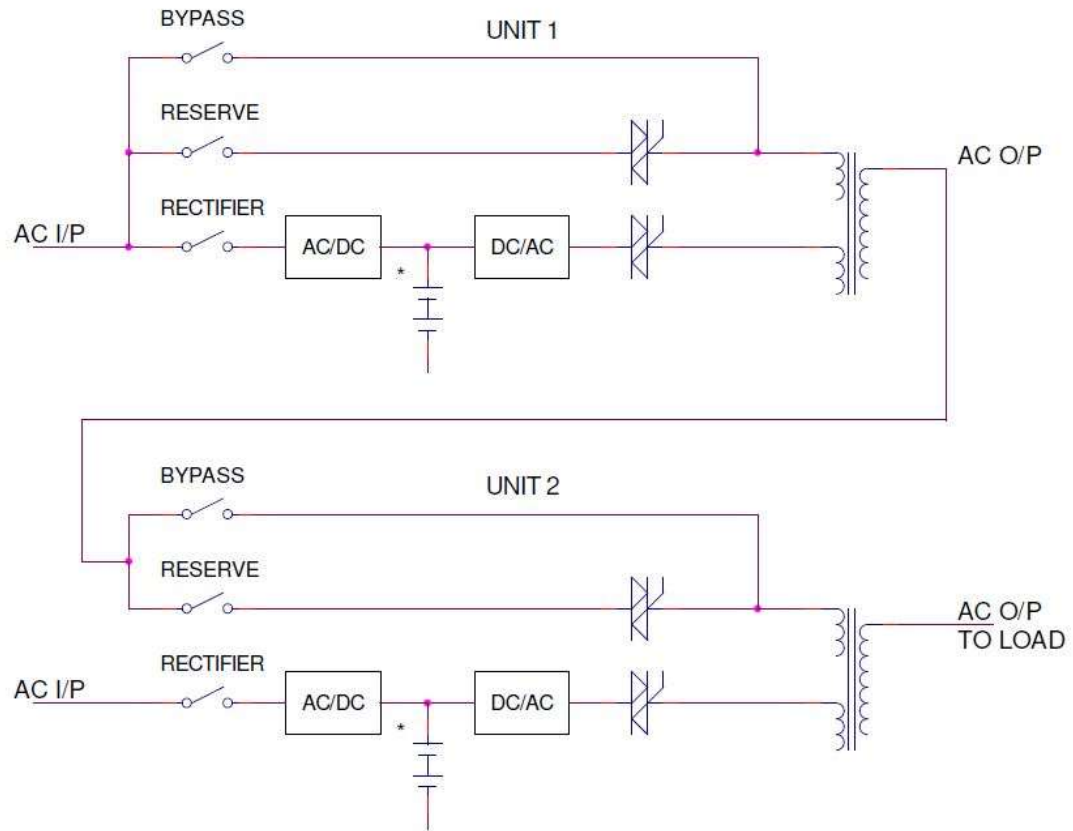
This application note discusses the application of Nova Jupiter™ Series systems in redundant configuration. Redundancy of Jupiter systems can be divided into two types: Serial Redundancy (Hot Standby) and Parallel Redundancy (Active Connection.) Nova Electric recommends Serial Redundancy over Parallel Redundancy due to reliability issues. The possibility of a failure of one Jupiter while in Parallel Redundancy mode may cause a disturbance of the AC output load. Parallel redundancy requires additional cabinet inter-wiring as a minimum, and in some cases paralleling inductors, resulting in increased floor space and increased cost.

By contrast, the Serial Redundancy (Hot Standby) configuration shown in **Figure 1** below consists of two Jupiter systems, with one of the Jupiter systems (Jupiter 1) connected to the Reserve/Bypass input of the other Jupiter system (Jupiter 2.) In this scenario, the two Jupiter systems are operating in normal mode and under normal conditions. If Jupiter 1 fails and Jupiter 2 is operating normally, the load is unaffected and is supplied from Jupiter 2. If Jupiter 2 was to fail, and Jupiter 1 is operating normally, Jupiter 2 will transfer the load to Jupiter 1.

If both of the Jupiter systems are running normally, Jupiter 2 supplies power to the entire load and Jupiter 1 does not have any load. As a result, Jupiter 1 will have a greater MTBF since it operates at no load. Over a period of time, the functions of Jupiter 1 and Jupiter 2 can be interchanged if desired. For this requirement, we offer an additional external “Cross Over Switch” which the end user can use to select which Jupiter system carries the load under normal running conditions.

As an added feature applicable to Jupiter UPSs, when a power failure occurs, Jupiter 2 will power the load until its battery system is exhausted. At that point, the load will transfer to Jupiter 1 without any interruption of power to the load, and the battery run time will effectively double.

Figure 1 - Jupiter-Series UPS / Frequency Converters / Inverters In Redundant Configuration



* BATTERIES USED WHEN UNITS ARE UPS SYSTEMS