

Mitigation Method III

Static Transfer Switch and fast transfer switches

The Static Transfer Switch provides break-before-make switching between two independent AC power sources for uninterrupted power to sensitive electronic equipment. When used with redundant AC power sources, the switch permits maintenance without shutting down critical equipment.

The switch utilizes solid-state switching devices close to the critical load, thus producing high levels of power availability and power system tolerance. The switch is suited for data processing, distributed computing, telecommunications equipment, and high-tech manufacturing applications.

Features include:

- 0.25 cycle maximum transfers between AC power sources;
- Manual and automatic transfers;
- Selectable preferred input sources;
- AccuVar TVSS for both AC inputs;
- Clear LCD monitoring panel with on-screen instructions;

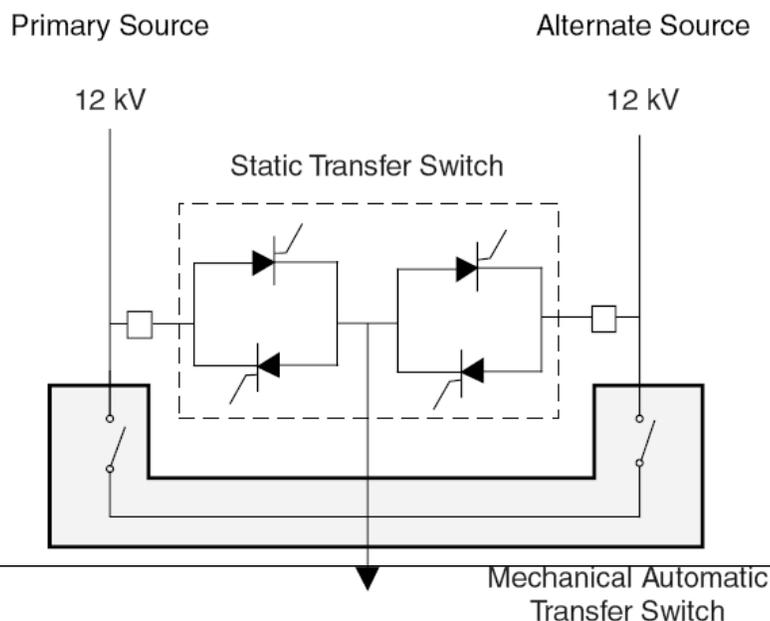


Figure 2.13 Configuration of a static transfer switch used to switch between a primary supply and a backup supply in the event of a disturbance. The controls would switch back to the primary supply after normal power is restored.

2.4.6 Series connected voltage source converter

A device and a method for controlling the flow of electric power in a transmission line carrying alternating current, in which a first voltage source converter is connected to the transmission line at a first point and a second voltage source converter is connected to the transmission line at a second point. Further, the first and second voltage source converters have their direct current sides connected to a common capacitor unit.

Also included is a by-pass switch connected to the transmission line between the first point and the second point in parallel with the first and second voltage source converters so that the first and second voltage source converters will operate as a back-to-back station when the by-pass switch is open and as two parallel static var compensators when the by-pass switch is closed.

2.4.7 Shunt connected back - up source

A shunt connected energy stabilizing system with isolation switching for providing stored energy to loads or to a utility or industrial electrical distribution system or source of electrical power. An energy backup and recovery system stores energy in a superconducting magnet and releases the energy to a real power/reactive power (VARs) generator which in turn delivers energy to either the loads or to both the loads and the source of electrical power.

During periods of voltage sag or power outage, an isolation switch provide a means for isolating the loads from the source of power so that energy can be supplied to the loads only to provide "ride-thru". In effect, the isolation of the load sheds this load from the power system, thereby boosting the rest of the electrical distribution to a level so that other loads on the power system are not disturbed by the voltage sags. By supplying energy to the loads only, small superconducting magnets can be used thereby providing economic and size advantages.

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