

ACCESSORY 33 DUAL PRIME SOURCE

Lake Shore Electric Corporation offers a Dual Prime Source option that allows the designation of one of two power sources as a Preferred Source for the Automatic Transfer Switch operation. The power sources can be two generators, two utilities or a generator and utility.

As in a conventional transfer switch, the Dual Prime Source Transfer Switch is designed to transfer a load between two power sources with one power source being designated as the Preferred Source while the other is designated as the Alternate Source. In the Manual system, selection of the Preferred Source is accomplished by a door mounted selector switch provided. In the Automatic system, a time clock alternates which power source is the Preferred Source at a set time or multiple times during a seven day period.

If a failure of the Preferred Source occurs, the transfer switch will start the Alternate Source and transfer the load to it. When the faulted Preferred Source is returned to service, the transfer switch will then retransfer the load back to the Preferred Source power.

GENERATOR TO GENERATOR

The Dual Prime Source accessory for a Generator to Generator system provides:

<u>Accessory</u>	<u>Description</u>
PFR	1 or 3 phase close differential undervoltage sensing on both sources
TDC	Time Delay Control timer for both sources to allow engine to attain speed
EMT	Engine Maintain Timer for both sources to allow engine cool down
PSS	Preferred Source Selector switch to choose the preferred (Normal) source
PL	Pilot lights to indicate the source to which the load is connected
PE	A fourteen day time clock which will automatically alternate the generator set selected as the Preferred Source at a chosen interval to ensure even running time on both engine generator sets. (Automatic only)

UTILITY TO UTILITY

The Dual Prime Source accessory for a Utility to a Utility system provides:

<u>Accessory</u>	<u>Description</u>
PFR	1 or 3 phase close differential undervoltage sensing on both sources
TDC	Time Delay Control timer for both sources
ODT	Outage Delay Timer for both sources
PSS	Preferred Source Selector switch to choose the preferred (Normal) source
PL	Pilot lights to indicate the source to which the load is connected
PE	A fourteen day time clock which will automatically alternate the utility selected as the Preferred Source at a chosen interval to ensure balanced use of both sources. (Automatic only)



TYPICAL APPLICATION OF DUAL PRIME SOURCE OPTION FOR REDUNDANT ON-SITE POWER SYSTEMS

In many critical applications it is imperative that the standby power system operate without fail. As a result, specifying engineers may require two on-site power generation plants to insure that an alternate power source will be available. In this scenario the Lake Shore Electric Dual Prime Source option is ideally suited. In the figure below ATS-1 is a standard Utility to Emergency automatic transfer switch. ATS-2 is a Dual Prime Source automatic transfer switch.

Upon a Utility power outage, ATS-1 will signal ATS-2 to start the Preferred Source generator. ATS-2 will start the generator and provide power to ATS-1 which will transfer the load to the generator. If a failure occurs on the Preferred Source generator, the Alternate Source generator will be started by ATS-2. ATS-2 will then transfer to the Alternate Source generator and continue to supply power to the load through ATS-1.

When Utility power returns, ATS-1 will return to the utility position and the load transferred to the utility. ATS-2 will then stop the running generator after the Engine Maintain Timer has timed out.

