

Automatic Transfer Switch Option Dual Prime Source

Introduction

The Dual Prime Source option provides the operator with the ability to select the Preferred Source input to the automatic transfer switch (ATS). The power sources can be two generators or two utilities.

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 designated as the Preferred Source while the other is designated as the Alternate Source.

This control is done one of two ways, with the microprocessor controls or electromechanical controls.

Product Features

- PFR1 - Standard Undervoltage Relay on Source 1
- PFR2 - Standard Undervoltage Relay on Source 2
- PSS - Preferred Source Selector Switch, (U1 or U2) or (G1 or G2)

Operation Instructions

General operation of a DPS ATS will depend on the power source type.

If the DPS is Utility to Utility, the ATS will monitor both sources for standard automatic operation. No engine start signal is required.

If the DPS is Generator to Generator, the ATS will monitor both sources for standard automatic operation and provide an engine start signal for the alternate source. The preferred source must have its own controls for standard operation.

Microprocessor Controls, DPS

Microprocessor controls provide diversity of operation for the DPS option, with the basic configuration code of the ATS. Ease of programming the microprocessor is a key feature.

The selection of the preferred source is done with the HMI panel. The units' plant exerciser may then be programmed for specific times the operator requires the ATS to transfer from the preferred source to the alternate source. With the microprocessor controls, the plant exerciser is a fixed feature on the ATS and offers diversity for Dual Prime Source ATS operation.

If a failure of the preferred source occurs, the transfer switch will transfer to alternate source. When the faulted Preferred Source is returned to service, the transfer switch will then retransfer the load back to the preferred source power.

There are other key features available with this option. Please see the Microprocessor Standard and Factory Options Overview datasheet to determine all required features for the ATS.

Electromechanical Controls, 33

Electromechanical controls provide the ATS with operational stability when installed in a noise prone area; i.e.: prone to many electromagnetic fields (EMF) that could potentially interrupt the microprocessor operation.

The selection of the preferred source is done with a selector switch; location may be on the door or internal to the ATS enclosure. The basic controls will allow for automatic selection of a preferred source.

In the event that the preferred source is lost, the unit will then transfer to the alternate source. Basic controls will not include a plant exerciser. When the faulted Preferred Source is returned to service, the transfer switch will then retransfer the load back to the Preferred Source power.

If a plant exerciser option is order with this option, a programmable time clock will alternate which power source the Load is feed from on a set time, or multiple times, during a seven-day period.

Please review the Electromechanical Overview datasheet to determine all required features for the ATS. For Gen to Gen connection, Lake Shore Electric recommends P1 Control Board Selection, but P2, P4 and P7 are available for this option. For Utility to Utility connection, any version of the Positive Control Board may be used.

Typical Application of DPS for Redundant Onsite Power Systems

Specifying engineers may require two on-site power generation plants to ensure that an alternate power source will be available. In Figure 1 below, ATS-1 is a standard Utility to Emergency ATS. ATS-2 is a Dual Prime Source automatic transfer switch, Gen to Gen connection.

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 and its load transferred to the alternate source. ATS-2 will 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.

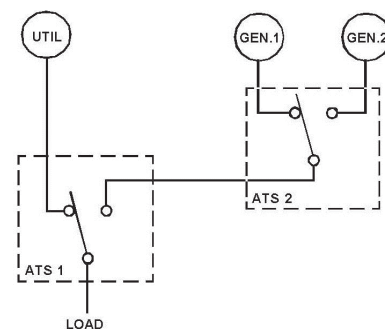


Figure 1

Order Guide

Part Number Examples:

1. ICFA32000BPSB/DPS - Insulated Case ATS, 3 pole, 2000 Amp, 120/208Vac, **24Vdc Microprocessor Controls**, 65kAIC @ 480Vac, NEMA 1 Free Standing Enclosure with Option Dual Prime Source.
2. MCDA30400CESA/33 - Molded Case ATS, 3 pole, 400 Amp, 277/480Vac, **Electromechanical Controls**, 35kAIC @ 480Vac, NEMA 1 Wall Mount Enclosure with Option Dual Prime Source.