

# Automatic Transfer Switch Option Auxiliary Contact Before Transfer

## Introduction

This option provides two (2) sets of form “C” Contacts, which change state prior to transfer in either direction. The time delay between initiation of these contacts and switch transfer is field adjustable.

## Product Description for Microprocessor Controls (Option ACBT)

For this option, the automatic transfer switch (ATS) provides a pre-transfer signal called Time Delay Before Transfer (TDBT) and two sets of form “C” contacts called EC.

- **EC** - Two form “C” contacts are provided on the Relay Interface Board and labeled EC (Elevator Control).
- **Time Delay Before Transfer** - This timer is adjustable from 0 to 300 seconds and is FACTORY SET AT 10 SECONDS. It is initiated when the switch is ready to transfer and upon its completion the transfer will take place. This is typically used in elevator circuits.

When the controller is ready to begin a transfer in either direction, it picks up a relay (EC) and starts timer TDBT. Upon completion of timer TDBT, the controller actually starts the transfer. Upon completion of the transfer, the output relay (EC) is dropped out.

While this timer is timing out, its status will be displayed on the HMI LCD display. (See Example Below)

AUTO - EXERCISE W/LOAD  
Awaiting TDBT: 4 sec

**NOTE:** This timer is not initiated wherever there is a failure of either power source, since its implementation would only serve to delay a transfer to the available source.

## Product Description for Electromechanical Controls (Option 35)

### a. Single Motor Operation

For this option, the automatic transfer switch (ATS) provides pre-transfer signals called Elevator Control Timer on Normal ECTN and Elevator Control Timer on Emergency ECTE and two sets of form “C” contacts are provided; one is ECRN and one is ECRE.

When the transfer switch senses that the preferred power source is out of acceptable limits, a signal is sent by the transfer switch to start the on-site engine generator set. When the output of the engine generator set has attained an acceptable level, the automatic transfer switch energizes relay ECRE and timer ECTE.

When ECRE is energized, a set of dry contacts, one normally open and one normally closed, immediately change state. This sends a signal to the elevator controller that a transfer is about to occur.

The time delay between the change in state of these contacts and actual transfer of the switch is field adjustable through timer ECTE. Once this timer has timed out, the automatic transfer switch transfers the load from the normal to the emergency power source, and ECRE and ECTE are de-energized allowing the set of dry contacts to revert to their original state.

Once the normal source has returned to within acceptable limits and associated time delays have been timed out to prepare for a return of the load to the normal source, relay ECRN and timer ECTN are energized. When ECRN is energized, a set of dry contacts, one normally open and one normally closed, change state signaling the elevator controller that a transfer of the power source is about to occur. When ECTN times out, the ATS transfers the load from the emergency source to the normal source. Once the transfer is complete, ECRN and ECTN are de-energized and revert to their original state. Please note that the engine maintain timer (EMT) is necessary for this option to function.

- **ECTN and ECTE** - These timers are field adjustable from .03 seconds to 30 minutes
- **ECRN and ECRE** - Two form “C” contacts are provided in the controls section; one is labeled ECRN and one is ECRE (Elevator Control Relay for Normal and Emergency).

### b. Dual Motor Operation

Operation of the Elevator Control, Option 35, when applied on a Lake Shore Electric Corporation Dual Motor transfer switch is similar to that as described in section [a Single Motor Operation]. However, instead of transferring to the Normal or Emergency positions after the ECT timers have timed out, the transfer switch transfers to a neutral position, which starts the Time Delay to Transfer (TDT) timer.

At this time the ECRN and ECRE relays and the ECTN and ECTE timers are de-energized and revert to their original state. Once the TDT timer has timed out, the transfer switch completes the transfer operation.

## Order Guide

### Part Number Examples:

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