Challenges

Reliably transfer loads between two or more power sources.

Service and maintain equipment without disrupting power to loads.

Transfer loads without impacting downstream equipment.

Reduce equipment space requirements.

Add capability for a “backup-to-the-backup”.

What do these challenges have in common?
All of them can be solved by using transfer switches.

ASCO Solutions

Healthcare

ASCO Transfer Switches make backup power possible. They enhance power availability by transferring electrical loads to alternate sources of power. From simple backup solutions to mission-critical facilities, transfer switches connect backup power to enhance safety and sustain operations.
ASCO Solutions
Critical Power Equipment for a Wide Range of Applications

Data Center
Maximum Uptime

Residential Healthcare Facilities
Occupant Safety & Comfort

Small Business/Critical Operations
Public Service

Commercial Building
Business Continuity

Telecom
Public Safety & Consumer Satisfaction

Water Treatment Plant
Environmental Protection

ASCO Solutions
Critical Power Equipment for a Wide Range of Applications
Transfer Switch Basics

Transfer switches are installed in power distribution systems between power sources and electrical loads. Transfer switches safely switch loads between two isolated sources of power.

Ratings

Automatic transfer switches provide the following essential functions without human intervention:

- Carry rated current continuously
- Detect power failure on primary source
- Start alternate power source
- Transfer load
- Sense restoration of power to primary power source
- Re-transfer load to primary source

Every ASCO Transfer Switch offers Withstand and Closing Ratings indicating that amount of current it can withstand under short circuit conditions. ASCO Transfer Switches offer Time-Based Ratings to support selective coordination of fault-clearing devices used in power distribution systems to obtain these ratings.

Supporting Information: Transfer Mechanism Basics

Automatic Transfer Switch Components

Enclosure

Available in a range of UL-rated types, rugged enclosures protect equipment and ensure promote reliability for a variety of indoor and outdoor environments.

Transfer Mechanism

Electrically operated and mechanically held, solenoid-powered operating mechanisms reliably transfer load quickly for even the most demanding applications.

Communications and Metering

From simple indicators to remote annunciators, from real-time monitoring and control to interfacing building automation systems, communication features increase usability and power availability.

Controller

Electronic controller stores operating criteria, senses electrical conditions, executes transfer sequences, and stores operational data.

Transfer switch models differ by type of operation:

Automatic

Automatic models switch loads to emergency power and back again whenever outages occur, without human intervention.

Non-Automatic

Non-Automatic models use operator initiated, local or remote electrical controls to transfer loads on command.

Manual

The simplest type, manual transfer switches require a person to operate a mechanical switching mechanism.

Listings

Every ASCO Transfer Switch is listed to UL 1008 – Standard for Safety – Transfer Switch Equipment. UL 1008 testing requires enduring high overload and fault currents for up to thousands of switching cycles to ensure the highest levels of safety, reliability, and longevity.

Supporting Information: UL 1008 Transfer Switch Withstand and Closing Ratings and Performance Testing for Transfer Switches

Supporting Information: ASCO Engineering Application Information

Supporting Information: Non-Automatic & Manual Transfer Switches for Backup Power Applications
Design and Integrations
Integrating functions extends transfer switch value

Reliably transfer electrical load between sources of power.

Bypass feature enables concurrent maintainability - Isolation of transfer mechanism facilitates service and repair.

Simplify design, procurement, and installation by incorporating service disconnect in a transfer switch enclosure or lineup.

Neutral Configurations
Transfer switches differ by neutral configurations

Standard configuration for power distribution systems with a single grounding electrode.

Switched neutral for transferring load between separately grounded systems.

Overlapping neutral for transferring load between separately derived systems without interrupting neutral connectivity.

Supporting Information: Switching the Neutral Conductor

“With nine hospitals on the line, ASCO helps me sleep well at night.” Tom M., Facility Engineering Director

Supporting Information: Application & Design Factors for Transfer & Bypass-Isolation Switches Part 1 and Part 2
Applications for Service Entrance Automatic Transfer Switches
Transition Modes
Switch mechanisms differ by transfer sequence

Open Transition
- “Break-Before-Make” Operation
- Popular for Resistive & Mixed Loads
- Used Across a Wide Range of Facilities & Industries
- Standard In-Phase Transfer Capability

Delayed Transition
- “Break-Wait-Make” Operation
- Inductive & Motor Load Applications
- Allows Residual Voltages of Motors & Inductive Devices to Decay Prior to Avoid Damaging Transient Currents

Closed Transition
- “Make-Before-Break” Transfers without Momentary Power Interruption
- Reduces Electrical Disturbance to Downstream Loads when Transferring Between Two Live Sources
- For Mission-Critical Operations, Healthcare Facilities, & Data Centers

Soft Load Transition
- Ramps Down One Source While Increasing Power from a Source
- Avoids Excessive Block Loading of Generators
- Useful Where Load Exceeds 80% of Generator Capacity

Custom-Engineered Transfer Switch and Distribution
“Value-Added Transfer Switches”
Custom switches increase value by integrating service, distribution, and control features in custom-engineered designs.

Customization options include:
- Integrated Distribution Breakers
- Source Fusing
- Bus Riser

Custom-Engineered Transfer Switches can offer:
- Reduced Space Requirements
- Reduced Lead and Construction Times
- Reduced Installation Labor
- Enhanced Quality Control

Supporting Information:
Transition Modes for Automatic Transfer Switches Part 1 and Part 2
Supporting Information: Benefits of Custom-Engineered Transfer Switches
Transfer Switch Product Lines

### 7000 SERIES
- Custom engineered for healthcare, data center, and mission critical facilities. They are the industry leading technology for the widest range of applications.

- Hospitals
- Data Centers
- Mission Critical Facilities

![Image of 7000 SERIES Transfer Switch]

### 4000 SERIES
- Sophisticated control for large commercial and industrial loads. 4000 SERIES switches have premium features in a configured-to-order solution.

- Large Commercial Applications
- Large Industrial Facilities
- Water Treatment Plants

![Image of 4000 SERIES Transfer Switch]

### SERIES 300
- Standard designs for commercial and light industrial facilities that are simple to procure, install and commission.

- Outpatient Healthcare Facilities
- Small & Midsize Businesses
- Light Industrial Applications
- Integrated & Stand-Alone Quick Connects

![Image of SERIES 300 Transfer Switch]

### SERIES 185
- Economical designs for homes and small businesses.

- Small Businesses
- Residential Applications

![Image of SERIES 185 Transfer Switch]

### Product Range

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<th>Product SERIES</th>
<th>7000</th>
<th>4000</th>
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### Designs
- Standard Transfer Switch
- Bypass-Isolation Transfer Switch
- Service Entrance Transfer Switch
- Custom Engineered Transfer Switch

| Range of Accessories | XXXXX | XXX | XXX | X |

### Transition Modes
- Open Transition
- Delayed Transition
- Closed Transition
- Soft-Load Transition

| X | X | X | X |
| X | X | X | - |
| X | X | - | - |
| X | X | - | - |

### Neutral Configurations
- Solid Neutral
- Switched Neutral
- Overlapping Neutral

| X | X | X | X |
| X | X | X | - |
| X | X | - | - |

### Quick Connects
- Integrated Panel
- Stand-Alone Panel

| - | - | X | - |
| - | - | X | - |

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Resource Finder

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