ASCO 7000 SERIES Power Transfer Switch
World-Class Technology For Business-Critical Applications
Selecting Business-Critical Power Transfer Switches

It’s time to rediscover performance benchmarks and design innovations that separate power transfer switches

Life safety, financial loss, productivity, valuable information and convenience all are at stake when power fails. Time is money, so time without power is unacceptable because it can cripple an organization’s operations.

No matter what type of power source is selected for backup power protection, a reliable electrical device is needed to automatically sense the unacceptability of the primary power source and transfer the load to the secondary.

Although the backup power source may be functional only when the primary source fails, the transfer switch is the only link between the two power sources. So the automatic transfer switch is the “brain” of the power distribution system and is always carrying power to crucial loads, regardless of which power source is feeding the load.

Because so much hangs in the balance, there is no room for error. Making the right decision is the only option.

But what decision is the right one? That depends on a number of factors.

All transfer switches are not created equally. There are important differences that need to be weighed and new sophisticated power transfer switch technology that requires consideration.

Even if you feel you are up to speed on transfer switches, it’s time to look again because the stakes are so high.

Be certain you are making the right decision on such a critical matter as emergency and standby power. Then have peace of mind knowing you selected the best products in the industry to protect a facility.

THE DECISIONS YOU MAKE ON POWER TRANSFER SWITCHES FOR PROTECTING YOUR BUSINESS-CRITICAL OPERATIONS WILL AFFECT THOSE OPERATIONS FOR 20 OR MORE YEARS
Consider 13 points for performance and reliability.

Important information to help you make the right decision...

Would you put your reputation on the line with just any automatic power transfer switch?
Shouldn’t you depend on one with components designed specifically for transfer switch duty? Or one with components designed for other applications?
The design of each and every part in the product determines how reliably a power transfer switch transfers power. It also determines reliability of specific functions, such as making and breaking electrical connections, extinguishing arcs and others.

Every component of ASCO 7000 SERIES Power Transfer Switches has been designed for one purpose. They have ASCO’s reputation for legendary reliability built into every transfer switch. They have stood the test of time and are the benchmarks for today’s power transfer technology, as justified by their field proven performance.

Thirteen points of differentiation separate superior power transfer switches from all others. The points are:
• Providing fast, consistent and dependable power transfer
• Preserving power contact integrity and performance
• Extinguishing arcs safely and quickly
• Withstanding and closing on fault currents
• Overlapping switched neutral poles
• Designing quality and dependable components intelligently
• Controlling operation

• Transferring motor loads without abnormal inrush currents
• Providing the connection strategy for the needs of the load
  Open Transition Transfer
    – In phase
    – Delayed transition
  Closed Transition Transfer
    – High speed transfer
    – Soft Load transition transfer
• Meeting or exceeding minimum code requirements
• Capitalizing on innovative technology.
• Employing remote communications capability
• Providing 24/7 service and maintenance

ASCO doesn’t generate power, it controls, distributes, transfers, monitors, measures, manages, displays, maintains, services and communicates with it.

Every component and assembly, such as the transfer switch assembly on the right, has been designed exclusively for automatic power transfer switch duty.
Transferring Power

Requires a dependable mechanism.

The heart of all ASCO transfer switches is the single solenoid operator, unique in the transfer switch industry. Time and again, it provides repeatable, fast, true double-throw operation.

The operator has a proven track record for simplicity, dependability and easy maintainability because it has no motors, gears or complicated mechanisms.

Its design ensures that loads will never be unintentionally transferred to a dead or inadequate source as the solenoid is powered from the source to which the load is being transferred. The positive interlocking design helps keep the main contacts closed during short circuit conditions. Its true, double throw design ensures crucial loads are not connected to both power sources at the same time.

Importantly, the solenoid is never fused as some operators are. Fusing can render the transfer switch inoperable, an obviously undesirable feature for business critical uses.

ASCO designed and commercialized the first solenoid operated transfer switch.
Preserving Contact Integrity And Performance Between dissimilar power sources.

Transfer switches are responsible for transferring loads between dissimilar power sources that could be as much as 180° apart.

ASCO transfer switches manage this task with contacts designed specifically for transfer switch duty by ASCO engineers. The contacts are not adapted from other devices, such as circuit breakers, contactors or motor starters.

This dedicated design approach has produced a contact that solves the special demands of transferring critical loads reliably time after time.

Main contact alloy composition is specifically selected from a silver alloy. The alloy provides optimum contact integrity, high conductivity to the main contacts, and endurance to carry the full load continuously and still be capable of enduring damaging overloads and short circuit currents. The alloy also prevents excessive temperature rise that can deteriorate insulation and cause a breakdown.

Separate arcing contacts on transfer switches rated 800 Amps and larger protect the main contacts from arcing’s damaging effects by making first and breaking last.

Smaller transfer switches are designed with arc runners and arcing tips to preserve main contact surface integrity.

Segmented main contacts are part of larger transfer switches for business-critical applications. Segmented contacts provide multiple points to ensure ample contact surface area and to minimize heat rise.

Contacts designed for dedicated transfer switch duty provide long-term, reliable operation. This has been field proven by the hundreds of thousands of ASCO transfer switch products provided for installation in emergency and standby power systems.
Extinguishing Arcs
Prevents direct, source-to-source shorting.

Heat damage to contacts is one problem. Another is direct, source-to-source shorting if the arc is not extinguished before the switch closes in on the alternate source. This can result in a source-to-source short circuit, which can totally destroy transfer switch integrity.

ASCO power transfer switches extinguish arcs using an arc chute assembly specially designed for double-throw operation. The design moves the arc away from the main contacts quickly and safely by pulling it up into the chute assembly plates with magnetic force created by the current flow through the transfer switch pole structure. This also stretches and cools the arc, minimizing heat damage.

Consideration also must be provided for extinguishing arcs at reduced load currents. ASCO has the industry’s widest arc gap between fully opened contacts. A wide gap maintains the transfer switch’s low-connect interrupting effectiveness when it is lightly loaded and magnetic forces are not as strong.

Transfer switches using contacts designed for other devices, such as circuit breakers, have narrower gaps, since they are designed for interrupting currents in excess of their full load, continuous current rating (not below their rating).

ASCO has the industry’s widest arc gap between fully opened contacts.

Finite element analysis and 3-D computer models (above) create components that are specifically designed for transfer switch duty. Durability and reliability are built in. See page 27 for more information on ASCO design innovations.
Withstanding And Closing On Fault Currents

Demands robust withstand and close-on ratings.

Withstanding and closing on short circuit currents require transfer switches that can manage extremely high magnetic forces and thermal dynamics.

While circuit breakers and fuses are designed to open on short circuit currents, power transfer switches must withstand the short circuit current until the over-current device clears the fault.

ASCO power transfer switches integrate technology that employs those magnetic forces on larger switches. The forces close contacts more tightly, rather than letting them 'blow off,' or open, as a circuit breaker would do.

The power transfer switches use extremely powerful solenoids and mechanical advantages to firmly close on a fault and lock the contacts closed.

Contact material composition, pole and contact geometry, arcing contact design and the bulk of the current-carrying parts all affect the ability of the power transfer switch to withstand and close-on the damaging effects of high fault currents.

ASCO employs a variety of computer software modeling programs to determine the optimal combination of all these factors and create a superior transfer switch design.

ASCO power transfer switches include a full range of withstand and close-on ratings to accommodate a variety of over-current devices, such as circuit breakers and fuses, and their varying fault-clearing times.

In fact, ASCO transfer switches provide the industry’s most extensive solution to all withstand and close-on conditions. Ratings address all applications—any breaker ratings, specific breaker, current-limiting fuses and short time ratings.

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<table>
<thead>
<tr>
<th>Continuous Amps</th>
<th>“Any” Breaker (3 cycle)</th>
<th>“Specific” Breaker</th>
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<td>150 - 600</td>
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<tr>
<td>4000</td>
<td>100,000</td>
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</table>

*RMS Symmetrical Amp at 480 V

*ASCO commercialized the first three cycle “any breaker” withstand and close-on current rating capability.

Withstand and Close-On Ratings * (WCR) for ASCO 7000 SERIES Power Transfer Switches (150 - 4000 Amps)
Overlapping Switched Neutral Contact Poles

Provide solutions associated with grounding of separately derived systems.

‘Overlapping’ is the operative word. ASCO’s overlapping switched neutral design is all about timing. It makes before it breaks in advance of the breaking of the main and even arcing contacts. It’s a superior solution for a number of problems:

• Incomplete sensing of total fault current due to multiple paths.
• Load voltage imbalances during transfer that can damage sensitive electronic equipment.

• Increasing neutral conductor impedance and related voltage and heating issues caused by switching neutral currents with conventional power switching poles.
• Arcing and consequent deterioration of the contact surface on the neutral pole.

As with conventional four pole power switching, the ASCO overlapping switched neutral has the same full-load current, withstand ratings as the phase contacts. But the similarities end there.

Neutral switching contacts are not created equal. Those that do not overlap the main pole contact operation cannot prevent neutral conductor interruption, even if they are ‘adjusted’ to make before they break. ASCO overlapping neutral poles are designed to overlap. They are not a modification of a conventional pole design.

ASCO introduced the first true overlapping switched neutral.
Managing Single Utility Power
With a Service Entrance Rated Transfer Switch.

The ASCO 7000S Series Service Entrance Rated Transfer Switch combines automatic power switching with an overcurrent protected service disconnect device on the utility source.

The power transfer switch meets all National Electrical Code requirements for installation at a facility’s main utility disconnect device on the utility source.

When maintenance is completed, the switch can be returned to the test position and then racked back into its normal connected position. Importantly, these steps do not interrupt power to the load.

Designing transfer switches that comply with UL standards may require a larger enclosure for other transfer switches usually can be housed in the standard ASCO enclosure.

Crimp lugs, which are frequently specified for data centers where heat build up may be an issue, have a long barrel and two holes to prevent lugs from turning. They can be arranged in a variety of configurations, depending on point of access and cabling requirements.

Importantly, these steps do not interrupt power to the load. The reverse is true when the switch returns to the test position and then back into its normal connected position.

Increasing use of molded parts continues to help produce a more robust transfer switch. Their closer tolerances, increased strength and improved dimensional control combine to enhance quality, reliability, and simplify maintenance.

When the bypass switch handle is moved to the bypass to normal position, the unit will provide its intended function as a manual backup transfer switch. Once the engine starts, move the bypass switch handle from the bypass to emergency position.

The bypass switch provides bypass and can be operated as a manual bypass transfer switch. Once the engine starts, move the bypass switch handle from the bypass to normal position to the bypass to emergency position.

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Transferring Motor Loads

With minimal disruption to chillier drives and other loads.

Effective transfer solutions are needed to minimize large shock current and associated torque damage created when a motor, connected to a generator at the moment of transfer, experiences a load source that is not of phase or polarity disconnected source. To avoid three cycle hot to hot transfer forces in conjunction with in-phase transfer, large shock current and associated torque damage created when the transfer forces are not minimized at the completion of load.

ASCO’s single solenoid mechanism provides the speed and consistency to assure safe-phase transfer.

Key Components Of Bypass-Isolation Transfer Switch

Up- and lower doors open and close independently

Transfer/Bypass Status Panel (see page 20)

Front-mounted labels

External, permanently attached bypass handle, per UL 1008

Microprocessor controller

Quick-disconnect wiring

External, permanently attached isolation handle, per 45.4 of UL 1008

Mechanical isolation status indicator

Protective isolation barrier

Self-aligning power jaws

Easy-on, easy-off molded cover

Mechanical transfer switch indicators

Tabs for sliding out bypass rack

Transfer switch in test position

Transfer switch in isolated position

Transfer switch not in automatic

Normal source available

Emergency source available

Load connected

Emergency switch

Monitor Transfer/Bypass Status Panel

ASCO’s single solenoid mechanism provides the speed and consistency to assure safe-phase transfer.

ASCO introduced the first in-phase transfer in transfer switches and the first closed-transition transfer reach.

Two transfer solutions—in phase transfer and close-transition transfer—both require a fast and consistent transfer times. ASCO’s uniquely designed solenoid operates deliver the fast and repeatable transfer times. They transfer potential to synchronize the system load and the load current with the normal load current when they change the source.

Two-phase transfer requires the system to determine the normal and emergency power source. It transfers the motor when the two are approximately zero phase angle. No more than normal inrush current ever occurs. It is the most demanding business-critical applications, closed-transition transfer is the ultimate transfer solution. It momentarily parallels the two syn-chronized sources during hot to hot source transfers, using an overlapping transfer technique on all load paralleling power sources to eliminate momentary load interruptions.

Closed transition transfer is the only way to mitigate transformer energizing inrush current on transfer. It is a passive transfer mechanism that allows transfer only when the two sources are synchronized and within specific voltage and frequency tolerances. ASCO’s uniquely designed, close-transition transfer switch utilizes a patented four-bar linkage system that allows the sources to link and disconnect quickly. Permanently attached bypass and isolation handles prevent misplacement and help simplify the procedure for drawing out and reconnecting the transfer switch. Lift- ing handles facilitate easy switch removal.

A critical design innovation is a new bypass drawout mechanism. It sets the standard for ease of operation for load break bypass and transfer switch isolation. The drawout mechanism returns high horizontal pull force with low run-back torque. It’s based on ASCO’s reliable and field-proven four-bar linkage system that connects and isolates quickly. Permanently attached bypass and isolation handles prevent misplacement and help simplify the procedure for drawing out and reconnecting the transfer switch. Lift- ing handles facilitate easy switch removal.

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Easing Loads Onto the Power System

ASCO pioneered the first automatic bypass-isolation switch at the end of the 1940s.

Selecting Automatic Transfer Switches

ASCO offers two versions of the soft load switch.

Getting Ultimate Power Protection

Ensures 7/24 availability of your business-critical online power system and safety of maintenance personnel and equipment.

What do you do when you need to service an automatic transfer switch, but it is available only when the utility is on the power system? A CTTS enables you to maintain your power system and safely service the transfer switch. In addition, the transfer switch can be electrically isolated when the load is served by the utility to ensure safe maintenance.

Transferring Power Without Interruption

With the ASCO Closed Transition Transfer Switch, it offers a reliable solution to the problem of power interruption and to hot transfer.
Easing Loads Onto the Power System

In simple with the ASCO 7000 Series Soft Load Power Transfer Switch.

Getting Ultimate Power Protection

Ensures 7/24 availability of your business-critical onsite power system and safety of your personnel and equipment.

What do you do when you need to vary an automatic alternate power source in your system without switching power? A soft load transfer switch allows an automatic alternate power source to be engaged or disengaged on demand. The use of this type of switch makes it possible to transfer the load to the utility directly.

Getting Ultimate Power Protection

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What do you do when you need to vary an automatic alternate power source in your system without switching power? A soft load transfer switch allows an automatic alternate power source to be engaged or disengaged on demand. The use of this type of switch makes it possible to transfer the load to the utility directly.
Easing Loads Onto the Power System

Transfer switch is the basic heart of an automatic power transfer system. It provides the necessary protective function, which is the primary step in reducing the load on the utility source to the control to ramp the load allowing a generating loading extended parallel time to the soft load switch uses an extended parallel operational time as compared to a closed transition transfer switch. The effect of the block is to conserve generation, reduce fuel cost, and extend the life of the generator set.

ASCO developed the first automatic bypass-isolation transfer switch and continues to offer a complete line of products.

Selecting Automatic Transfer Switches

A load transfer switch transfers electrical power from one power source to another, thereby minimizing system interruptions. This can be done automatically or manually, depending on the type of load transfer switch selected.

Based on your needs:
- Transfer crucial loads safely, reliably and seamlessly
- Ease loads from one power source to another
- Have complete power transfer monitoring and control
- Get ultimate power protection
- Manage single utility feed and emergency power
- Reduce power consumption by using alternate power sources


Selecting Automatic Transfer Switches

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- Transfer crucial loads safely, reliably and seamlessly
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Getting Ultimate Power Protection

Ensures 7/24 availability of your business-critical onsite power systems and safety of maintenance personnel and equipment.

What do you need when you need to secure an automatic bypass-isolation transfer switch? There are many ways to achieve this goal, but the most reliable way is to use a load transfer switch designed specifically for this purpose. The load transfer switch is designed to automatically transfer power from one power source to another when the load exceeds the capacity of one power source. This allows the system to operate at full efficiency while maintaining a high level of reliability and safety.

In addition, the transfer switch can be designed to override the automatic bypass-isolation transfer switch. This is done by using a set of automatic load transfer switches to provide backup power when the primary power source fails. The transfer switch is designed to automatically transfer power from the primary power source to the backup power source when the primary power source fails. This allows the system to operate at full efficiency while maintaining a high level of reliability and safety.

ASCO offers a complete line of automatic bypass-isolation transfer switches, including single block and three block models. The single block models are designed to transfer power from one power source to another when the load exceeds the capacity of one power source. The three block models are designed to transfer power from one power source to another when the load exceeds the capacity of one power source and the load exceeds the capacity of both power sources.

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Controlling Transfer Operations

Four elements position ASCO as the leader in control technology:
1. Microprocessor Controller
2. Control and Indicator Panel
3. Operational Parameters
4. Power Manager

Microprocessor Controller

The ASCO 7000 Series microprocessor controller allows easy access to all data including operational status and running history. The controller is a single range, single phase, and three phase microprocessor controller, which controls the power and whether normal source or emergency source is connected to the emergency or normal source of power.

Control and Indicator Panels

The ASCO 7000 Series Standard and CTT User Control and Indicator Panels complement the microprocessor controller. They provide intuitive control and simple navigation standards noted below. Rigorous transient suppression is implemented to help assure compliance with operational standards noted below.

Operational Parameters

Multiple source sensing capabilities, a variety of operational parameters and flexible time delay settings ensure personnel get the information they need and the onsite power system operates properly.

Voltage and Frequency Sensing

The Power Manager uses digital signal processing to measure power system parameters. These parameters are continuously monitored for measuring power system disturbances such as voltage, frequency, and unequal phase angles. Power Manager reports include unbalanced power, reactive power, power factor, and monitoring data screens for determining phase currents and voltages.

Three Phases

• Higher start time delay
• Emergency source monitored
• Instantaneous decision to bypass the internal generator and all feeding

Three Phases Instantaneous

• Emergency source monitored
• Instantaneous decision to bypass the internal generator

Frequency Sensing

• Advanced launch transfer
• Frequency of both sources
• Frequency of both sources
• Frequency of both sources

Frequency Sensing

• Frequency drift
• Voltage
• Unbalance %: Voltage, Current, Apparent Power

Frequency Sensing

• Frequency: 45.0 to 66.0 Hz
• Real Energy: KWH
• Apparent Power: KVA
• Reactive Power: KVAR
• KVARHIMPORT, KVARB, KVARC, KVARNET

Voltage and

Frequency Sensing

• Adjustable deadtime
• Frequency of both sources
• Frequency of both sources
• Frequency of both sources

Frequency Sensing

• Frequency: 45.0 to 66.0 Hz
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Voltage and Frequency Sensing

• Adjustable deadtime
• Frequency of both sources
• Frequency of both sources
• Frequency of both sources

Power Manager

The microprocessor-based ASCO Power Manager provides real-time measurements of single and three phase power systems.

Power Manager

• Digital signal processing
• All measurements are made by digital signal processing
• Three phase voltage monitoring
• Line-Neutral: VAN, VBN, VANET
• Line-Line: VAB, VBC, VCA, KVAB, KVAC, KVANET
• Voltage: 100 to 480 V
• Frequency: 50.0 to 60.0 Hz
• Unbalance %: Voltage, Current, Apparent Power

Power Manager

• Digital signal processing
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• Unbalance %: Voltage, Current, Apparent Power
The microprocessor-based ASCO Power Manager provides real-time measurements of single and three phase power systems. The Power Manager uses digital signal processing to measure voltage, frequency, active and reactive power, power factor, energy, and harmonic distortion. All measurements can be displayed on a backlit liquid crystal display and/or printed via ASCO’s Downtown User Control/Indicator Panel (CTTS DCI) standard control panel and/or a remote host computer.

Power Manager Features:
- Real Power: KW
- Reactive Power: KVAR
- Apparent Power: KVA
- Power Factor: PF
- Frequency: 50 Hz or 60 Hz
- Voltage: 120VAC / 240VAC / 480VAC
- Current: 2.5 Amps

I/O and kW command and control modules can be added for monitoring remote sites (level 4). All data is generated on standard control panel and can be downloaded to remote computer.

The Power Manager measures basic electrical data and provides unparalleled features for monitoring and managing electrical systems. It includes pre-set parallel time delay and load shed feature, which can be used to prevent disturbances and instability on utility networks. It also includes a statistical ATS/system event log and historical data storage for monitoring and analyzing system performance.

### Operational Parameters

#### Utilization and Frequency Sensing

- Power Manager features include:
  - Advanced algorithm for fault detection, which can identify momentary 
  - Adjustable under and over frequency sensing on normal and emergency sources.
  - Setting between ‘combined’ and ‘individual’ function for monitoring separate or combined frequency difference.
  - Frequency display for monitoring real-time frequency difference.
  - Power Manager includes one discrete input for transfer switch position and another discrete input for bypass controller.

#### Voltage and Frequency Sensing

- Multiple source sensing capabilities, a variety of operational parameters and flexible time delay settings ensure personnel get the information they need and that the onsite power system operates properly.

#### Voltage

- Voltage settings: in three-phase voltage setting, adjustable for normal and emergency source.
- Voltage setting: in three-phase setting, adjustable for normal and emergency source.

#### Frequency

- Frequency settings: in three-phase setting, adjustable for normal and emergency source.
- Frequency setting: in three-phase setting, adjustable for normal and emergency source.

### Three Modes

- **High start time delay:**
  - Emergency source (utility) may not have the capability to support the load.
  - Delay is used to allow the generator to startup and ensure the generator is online and running at full speed before load is transferred.

- **Low start time delay:**
  - Generator may be capable of supporting the load.
  - Delay is used to allow the generator to startup and ensure the generator is online and running at full speed before load is transferred.

- **Continuous time delay:**
  - Delay is used to allow the generator to startup and ensure the generator is online and running at full speed before load is transferred.

### Control and Indicator Panels

- The ASCO 7000 Series Standard and CTTS User Control and Indicator Panels complement the microprocessor controller. They provide a user-friendly interface and are easy to operate and maintain.

#### Power Manager

- **Standard Power Manager Panel:**
  - Power Manager panel includes one discrete input for transfer switch position and another discrete input for bypass controller.
  - Setting between ‘combined’ and ‘individual’ function for monitoring separate or combined frequency difference.
  - Frequency display for monitoring real-time frequency difference.

- **CTTS Control and Indicator Panel:**
  - CTTS panel includes one discrete input for transfer switch position and another discrete input for bypass controller.
  - Setting between ‘combined’ and ‘individual’ function for monitoring separate or combined frequency difference.
  - Frequency display for monitoring real-time frequency difference.

### Microprocessor Controller

- The ASCO 7000 Series Microprocessor Power Manager allows users to select specific data display during normal or emergency operation.

- The ASCO 7000 Series Microprocessor Power Manager allows users to select specific data display during normal or emergency operation.

### Operational Parameters

- Multiple source sensing capabilities, a variety of operational parameters and flexible time delay settings ensure personnel get the information they need and that the onsite power system operates properly.

#### Voltage and Frequency Sensing

- Adjustable under and over voltage setting on normal and emergency source.
- Adjustable under and over frequency setting on normal and emergency source.

#### Power Manager

- The Power Manager uses digital signal processing to measure voltage, frequency, active and reactive power, power factor, energy, and harmonic distortion. All measurements can be displayed on a backlit liquid crystal display and/or printed via ASCO’s Downtown User Control/Indicator Panel (CTTS DCI) standard control panel and/or a remote host computer.

#### I/O and kW command and control modules can be added for monitoring remote sites (level 4). All data is generated on standard control panel and can be downloaded to remote computer.

- Real Power: KW
- Reactive Power: KVAR
- Apparent Power: KVA
- Power Factor: PF
- Frequency: 50 Hz or 60 Hz
- Voltage: 120VAC / 240VAC / 480VAC
- Current: 2.5 Amps

### Power Manager Features

- Real Power: KW
- Reactive Power: KVAR
- Apparent Power: KVA
- Power Factor: PF
- Frequency: 50 Hz or 60 Hz
- Voltage: 120VAC / 240VAC / 480VAC
- Current: 2.5 Amps
Controlling Transfer Operations

Four elements position ASCO as the leader in control technology:

1. Microprocessor Controller
2. Control and Indicator Panel
3. Operational parameters
4. Power Manager

The ASCO 7000 Series Microprocessor Controller allows easy access to data allowing operators to control a range of functions, including:

- Single range or dual range operational settings
- External power source current monitoring
- Sequence logic
- Logic or monitoring external power source
- Logic or monitoring external power source
- Logic or monitoring external power source
- Logic or monitoring external power source

Microprocessor Controller

The ASCO 7000 Series Microprocessor Controller can be specified for a specific application, allowing for the adaptation of the microprocessor to the operator's needs.

Control and Indicator Panels

The ASCO 7000 Series Standard and CTT User Control and Indicator Panels complement the microprocessor controller. They provide an intuitive operational status and control.

Operational Parameters

Multiple source sensing capabilities, a variety of operational parameters, and flexible time delay settings ensure personnel get the information they need and that the onsite power system operates properly.

Voltage and Frequency Sensing

- Adjustable under and over voltage sensing on normal and emergency sources.
- Adjustable time delay for use with selective load disconnecting technology.
- Adjustable time delay for use with selective load disconnecting technology.
- Adjustable time delay for use with selective load disconnecting technology.
- Adjustable time delay for use with selective load disconnecting technology.

The Power Manager

The microprocessor-based ASCO Power Manager provides real-time measurements of single and three phase power systems.

- Use digital signal processing and complex algorithms to measure power, current, and voltage parameters.
- Uses advanced signal processing and complex algorithms to measure power, current, and voltage parameters.
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Power Metering

- Voltage measurement (3-phase, 2-phase, single phase)
- Current measurement (3-phase, 2-phase, single phase)
- Power measurement (3-phase, 2-phase, single phase)
- Power measurement (3-phase, 2-phase, single phase)

ASCO debuted the first power manager with embedded microprocessor technology to measure electric energy.
Controlling Transfer Operations

The ASCO 7000 Series Standard and CTT Series User Control and Indicator Panels complement the microprocessor controller. They provide all necessary operational status and control functions.

The Power Manager

Enumerates position ASCO as the leader in control technology:

1. Microprocessor Controller
2. Control and Indicator Panel
3. Operational parameters
4. Power Manager

Microprocessor Controller

The ASCO 7000 Series Microprocessor Controller allows easy access to data logging, trend analysis, and remote monitoring of generator sets. It provides a simple, user-friendly interface for realistic, up-to-date analysis of generator set data. The controller includes an extensive library of functions for interfacing with external devices and monitoring various parameters.

Control and Indicator Panels

The Power Manager

Operational Parameters

Multiple source sensing options, a variety of operational parameters and flexible time delay settings ensure personnel get the information they need and that the onsite power system operates properly.

Voltage and Frequency Sensing

- Adjustable dead band on voltage sensing over normal range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead band on over frequency sensing on normal range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead band on under frequency sensing on normal range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead bands on over and under frequency sensing on emergency range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead band on over frequency sensing on emergency range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead band on under frequency sensing on emergency range, 1.0 Hz; accuracy ±0.02 Hz
- Adjustable dead band on voltage sensing on emergency range, 1.0 Hz; accuracy ±0.02 Hz

Time Delays

- Engine start time delays: engine start time delay with two settings: pre- and post-transfer delays. Engine start time delay with two settings: pre- and post-transfer delays.
- Pre- and post-transfer time delays for use with selective load disconnect time delay.
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Easing Loads Onto the Power System

In simple is with the ASCO 7000 Series Soft Load Power Transfer Switch. In minutes, loads that are too large for the engine-generator to handle in a single-transient block can be transferred to the system. This is especially critical when the block load is more than twice the capacity of the engine-generator system. The block load sharing feature allows load sharing between multiple units, ensuring that each generator is operating at its optimal power level. The system is designed to handle load transfers up to 10% of the engine-generator system's rating.

The ASCO 7000 Series Soft Load Power Transfer Switch features a closed transition soft load switch, which eliminates the need for a hard transition. This switch design ensures a smooth and uninterrupted transfer of power, reducing downtime and improving system reliability.

The ASCO 7000 Series Soft Load Power Transfer Switch is available with a variety of power ratings and can be customized to meet specific power transfer requirements. It is designed to handle a wide range of applications, from small office buildings to large industrial facilities.

Selecting Automatic Transfer Switches

Based on your need to:

- Transfer crucial large loads, safely, reliably and seamlessly
- Ease loads from one power source to another
- Have complete power transfer monitoring and control
- Get ultimate power protection
- Manage single utility feeds and emergency power
- Reduce power consumption by using alternate power sources

What do you need in business-critical power transfer and load management? Emergency Power? Load Prioritization? ASCO 7000 Series Automatic Transfer Switches can satisfy your business-critical requirements... whatever they are.

Select standard design, business-critical or highly customized power transfer solutions.

Evaluate the capabilities of the transfer switches on the following pages, then discuss the switch of them that best meets your onsite power system requirements.

The power is in your hands.

Transferring Power Without Interruption

With the ASCO Closed Transition Switch, it offers a reliable solution to the problem of power interruption and high transfer times.

A load transfer switch (CTTS) is engineered using a patented electronic feedback mode providing safe and reliable switching of power sources.

If the connected source is unacceptable, the power transfer is not initiated.

If the connected source is acceptable, the power transfer is initiated.

If the connected source is unacceptable, the power transfer is not initiated.

The difference in a soft load transfer switch, such as the ASCO 7000 Series Soft Load Power Transfer Switch, is that the load transfer takes place in the engine-generator control system. The system is designed to handle load transfers up to 10% of the engine-generator system's rating.

The ASCO 7000 Series Soft Load Power Transfer Switch is available with a variety of power ratings and can be customized to meet specific power transfer requirements. It is designed to handle a wide range of applications, from small office buildings to large industrial facilities.

Getting Ultimate Power Protection

Ensures 7/24 availability of your business-critical onsite power systems and safety of maintenance personnel and equipment.

The ASCO on-site power system is designed to ensure ultimate power protection. With a variety of features and options, the ASCO system is capable of handling a wide range of applications.

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ASCO has installed more than 600,000 automatic transfer switches worldwide. No other manufacturer comes close.

ASCO pioneered the first automatic transfer switches and continues today with unmatched innovation and service.

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ASCO pioneered the first automatic transfer switches and continues today with unmatched innovation and service.
Managing Single Utility Power Feeds
With a Service Entrance Rated Transfer Switch.

The ASCO 7000 Series Service Entrance Rated Transfer Switch combines automatic power switching with an overcurrent protected service disconnect device on the utility source.

Complete Isolation
Moving the isolation switch handle to the OPEN position opens all isolation contacts, isolating the ATS from the rest of the system.

No voltage is present at normal or emergency inputs, load output, the control system, or any other point on the transfer switch. The bypass switch now carries the entire load. The ATS can be safely inspected, serviced and removed from the cabinet.

The bypass switch provides bypass and can be operated as a manual bypass transfer switch. Once the engine starts, move the bypass switch handle from the bypass to normal position to the bypass to emergency position.

When maintenance is completed, the switch can be returned first to the test position and then moved back into its normal connected position.

Importantly, these steps do not interrupt power to the load and ensure the continued safety and sensitivity to disruptions. A C-15S with this bypass-isolation capability provides ultimate protection.

Designing Quality, Dependable Components Intelligently
Simplifies installation, maintenance and testing.

Designing transfer switches from the ground up has enabled ASCO to engineer them for ease of installation, maintenance and testing.

Utilizing components, for example, can be inspected while they’re in the front of the enclosure. Compr-halos, which are frequently specified for data centers where heat build up may be an issue, have a long barrel and two holes to prevent lugs from turning. They can be arranged in a variety of configurations, depending on point of access and cabling requirements.

Most special lug arrangements that typically may require a larger enclosure for other transfer switches usually can be housed in the standard ASCO enclosure.

Front-replaceable main switch contacts, to indicate transfer switch position, now are standard on most ASCO transfer switches. Their rugged construction and reliability, and simplify maintenance.

CUTOUTS in a molded pole cover, for example, allow access to key elements eliminating the need to remove the pole covers during cable installation.

Testing

When the bypass switch handle is moved to the OPEN position, the transfer switch contacts are closed.

The bypass switch handle in the AUTO (automatic) position and the isolation switch handle in the CLOSERD position, the unit will provide its intended automatic transfer operation. Both bypass contacts are open. The isolation switch contacts are closed.

Automatic Transfer Operation
With the bypass switch handle in the AUTO (automatic) position and the isolation switch handle in the CLOSERD position, the unit will provide its intended automatic transfer operation. Both bypass contacts are open. The isolation switch contacts are closed.

Operational Sequence
Bypass-Isolation
that since the isolation contacts never break load current, they do not subject to arc erosion or burning.

Importantly, these steps do not interrupt power to the load and ensure the continued safety and sensitivity to disruptions. A C-15S with this bypass-isolation capability provides ultimate protection.

ASCO debuted the first true service entrance transfer switch that integrates the switch and service disconnect.

The power transfer switch meets all National Electrical Code requirements for installation at a facility’s main utility service entrance. A true service entrance transfer switch generally is installed at facilities that have a single utility feed and a single emergency power source. A circuit breaker serves as the service disconnect and links are provided to disconnect both the normal and ground connections.

The product line in U.S. 8911 includes the transfer switch in U.S. 1008 listed and is available up to 4000 A and 4000A in standard, delayed, closed transition, soft load, and bypass-isolation configurations.

Designing Single Utility Power Feeds
With a Service Entrance Rated Transfer Switch.

An industry-leading manufacturer of transfer switches, ASCO has provided automatic and manual transfer switches, as well as emergency power systems to electric utilities, commercial and industrial users, and institutional and educational facilities for almost a century.

The ASCO 7000 Series Service Entrance Rated Transfer Switch combines automatic power switching with an overcurrent protected service disconnect device on the utility source.

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CUTOUTS in a molded pole cover, for example, allow access to key elements eliminating the need to remove the pole covers during cable installation.
Transferring Motor Loads
With minimal disruption to chiller drives and other loads.

Effective transfer solutions are needed to minimize large shock current and associated torsional damage created when a motor, usually connected to a generator, at the moment of transfer, presents a live source with a phase that is out of phase with the disconnection source. To avoid these costly outages in conjunction with in-phase transfer, ASCO recommends using a pre-transfer technique.

Two transfer solutions—phase transfer and closed-transition transfer—are both equally fast and consistent transfer techniques. ASCO’s uniquely designed solenoid operating devices can be used alone or in tandem with an overlapping transfer technique. They transfer potentially problematic transient loads reliably, and are the ideal disruptive power transfer solution.

In-phase transfer minimizes damage created when a motor becomes a source that is out of phase with the disconnection source. It momentarily parallels the two systems and synchronizes the engines before breaking the connection. The result: no load interruption and elimination of temporary load interruptions.

Closed transition transfer is the only way to mitigate transformer energizing current ever occurs. For the most demanding business-critical applications, closed-transition transfer is the ultimate in-phase transfer solution. It momentarily parallels the two systems, synchronizes the two systems, and reconnects the two sources during hot-to-hot source transfers, using an overlapping transfer technique on all systems. This technique solves high-voltage disconnect problems.

In-phase transfer monolithically transforms the motor when the two are approaching zero phase angle. No more than normal inrush current ever occurs. ASCO’s single solenoid transfer switch is the only closed-transition transfer switch on the market today. ASCO introduced the first closed-transition transfer switch and the first closed-transition transfer technique on all systems.

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Transferring Motor Loads

With minimal disruption to chiller drives and other loads.

**Effective transfer solutions are needed to minimize large system current and associated torque damage created when a motor is disconnected from the load at the completion of load isolation.**

ASCO’s single solenoid mechanism provides the speed and consistency to assure in-phase transition.

Two transfer solutions—phase transfer and closed-transition transfers—both require fast and consistent transfers. ASCO’s uniquely designed solenoid oper- ates to make these transfer solutions possible. ASCO’s design allows these transfer processes to be performed potentially independent of load rotation, and to the left disconnecting power transfer switches.

In-phase transfer minimizes system disruption and restores the normal and emergency power sources. It transfers the motor when the two are approaching zero phase angle. No more than normal inrush current ever occurs.

Closed transition transfers the load only to mitigate transformer energizing current since the load. It is a passive transfer method that allows transfer only when the two sources are synchronized and within specified voltage and frequency differences.

Soft load, closed transition transfers are available when block loading of the two are approaching zero phase angle. No more than normal inrush current ever occurs.

**For the most demanding applications, ASCO’s uniquely designed solenoid operates to make these transfer solutions possible.**

**ASC0 introduced the first in-phase motor-transfer switches and the first closed-transition transfer switches.**

**Key Components Of Bypass-Isolation Transfer Switch**

- Up- and lower doors open and close independently
- Monitor Transfer/Bypass Status Panel
- Front-mounted lugs
- External, permanently attached bypass handle, per UL 1008
- Microprocessor controller

**Simple bypass procedure is the new standard.**

**ASCO Transfer (Bypass) Status Panel**

**Monitor Transfer/Bypass Status**

Status panel provides at-a-glance information, control circuits disconnect automatically during isolation.

Another operator-friendly innovation is in the Transfer/Bypass Status Panel. It’s a real-time diagram of the transfer switch that uses LED indicators to show operational conditions. The panel coordinates at-a-glance information more quickly than multiple pilot lights and is an industry first. Indicated conditions are:

- Bypass to normal
- Bypass to emergency
- Load connected to normal
- Load connected to emergency

The bypass switch can be used to manually transfer the load to the generator, even though the transfer switch is disconnected.

**A critical design innovation is a new bypass drawer mechanism. It uses the standard for ease of operation for no load break bypass and transfer switch isolation.**

The closed mechanism produces high horizontal pull force with low torque handle perfor- mance. It is based on ASCO’s reliable and field-proven bias-bar linkage configuration. The contacts and isolates quickly. Permanently attached bypass and isolation handles prevent misplacement and help simplify the procedure for drawing out and reconnect- ing the transfer switch. Lift- ing handles facilitate easy switch removal.

**Another operator-friendly innovation is in the Transfer/Bypass Status Panel.**

The panel also includes monitoring and operating instructions.

**Transfer switch in isolated position**

- Transfer switch not in automatic
- Normal source available
- Emergency source available
- Load connected

The panel also includes an engine control switch and lamp test button. Operators can manually start the generator if normal source power fails while the transfer switch is in the isolated position. The bypass switch can then be used to manually transfer the load to the generator, even though the transfer switch is disconnected.
Managing Single Utility Power

With a Service Entrance Rated Transfer Switch.

The ASCO 7000 Series Service Entrance Rated Transfer Switch combines automatic power switching with an overcurrent protected service disconnect device on the utility source.

The power transfer switch meets all National Electrical Code requirements for installation at a facility’s main utility disconnect device on the utility source. A circuit breaker serves as the service disconnect and is UL rated and ground connection.

This product is UL 891 listed. The transfer switch is NEMA 1008 listed and is UL 1008 listed. The transfer switch is UL 1008 listed and is UL 1008 listed.

ASCO debuted the first true service entrance transfer switch that integrates the switch and service disconnect.

ASCO 7000 Series Service-Entrance Rated Transfer Switch

Designing Single Utility Power

Designing transfers switches from the ground up has enabled ASCO to engineer them for ease of installation, maintenance and reliability. Transfer switches usually can be installed without even a momentary interruption of power to the load. Note the isolation contacts in the closed position.

The bypass switch provides bypass and can be operated without interrupting power to the load. Note the isolation contacts in the closed position.

The total load current now is carried by the bypass contacts. The normal and emergency input terminals of the ATS are still connected to the normal and associated with the load terminal are open. The isolation switch contacts are closed.

The bypass switch handle in the AUTO (automatic) position and the isolation switch handle in the CLOSED position, the unit will provide its intended automatic transfer operation. Build bypass contacts are open. The isolation switch contacts are closed.

When the isolation switch handle is moved to the OPEN position, the isolation contacts never break load current, they are not subject to arc erosion or burning.

The bypass switch handle in the AUTO (automatic) and the isolation switch handle in the CLOSED position, the unit will provide its intended automatic transfer operation. Build bypass contacts are open. The isolation switch contacts are closed.

The bypass to normal source will be interrupted when the bypass switch handle is moved to the AUTO (automatic) position and the isolation switch handle in the CLOSED position, the unit will provide its intended automatic transfer operation. Build bypass contacts are open. The isolation switch contacts are closed.

Bypass to the normal source will be interrupted when the bypass switch handle is moved to the AUTO (automatic) position and the isolation switch handle in the CLOSED position, the unit will provide its intended automatic transfer operation. Build bypass contacts are open. The isolation switch contacts are closed.

Complete Isolation

Moving the isolation switch handle to the OPEN position opens all isolation contacts, isolating the ATS from the rest of the system.

No voltage is present at normal or emergency inputs, load output, the control system, or any other point on the transfer switch. The bypass switch now carries the entire load. The ATS can be safely inspected, serviced and even removed from the cabinet.

The bypass switch provides bypass and can be operated as a manual bypass-transfer switch. Once the engine starts, move the bypass switch handle from the bypass to normal position to the bypass to emergency position.

When maintenance is completed, the switch can be returned first to the test position and then racked back into its normal connected position.

Importantly, these steps do not interrupt power to the load, just as with any other transfer switch. Most special lug arrangements that typically may require a larger enclosure for other transfer switches usually can be housed in the standard ASCO enclosure.

Front replaceable main switch and links represent another industry-setting benchmark. Transfer switches rated 800 Amps and above facilitate maintenance of the main and arcing contacts, without disassembling or removing the transfer switch from the enclosure.

In addition, a block of eight sets of auxiliary contacts, include transfer switch position, now are standard on most ASCO 7000 transfer switches.
Ensuring Power with Multiple Standby Sources

By using special controls for managing prime, emergency and standby power.

The ASCO 7000 Series Three Source Transfer System provides all necessary controls to start both primary and secondary power sources upon the loss of the utility source.

Critical loads are automatically transferred to the first alternate power source that achieves acceptable voltage and frequency. The second alternate power source then is shutdown automatically after a time delay and cool down period.

If the first alternate power source fails, the second will be automatically restarted and the load will be transferred from the first alternate power source to the second alternate power source. When normal power is restored, the controls automatically retransfer the load to the utility source.

The Three Source Transfer System can be furnished in its own enclosure, or as a package with a standard transfer switch.

The package can include a separate enclosure for each transfer switch, or a single enclosure housing both transfer switches.

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One line diagram of a typical three source power design. The three source transfer switch (ATS #2) automatically connects to the power source that achieves acceptable voltage and frequency first.
Employing Remote Communications Capability
Can be efficient, economic and reliable.

That’s a frequently asked question. The answer has many challenging facets. They include remote monitoring and control. Seamless integration with building automation systems. Reliable, easily understood and real time information. Automatic alerts that eliminate ‘monitor watching.’

The solution is Web-enabled communications based on open protocols. The benefits are many fold. Existing Ethernet or other infrastructures can be used to practically eliminate communications wiring. Interfacing with legacy systems is easier because it minimizes costs for writing software code.

No investment in hardware, software, or additional staffing is needed. The entire emergency power system can be monitored and controlled remotely, 24/7.

The solution delivers these capabilities to a desktop computer, pager, fax, or cell phone. The information is straightforward, shrinking the time required to diagnose a situation.

When will these capabilities be available? They already are. The ASCO POWERQUEST® monitoring and control system and ASCO Thin Web server offer every capability described here, and more. They deliver efficiency, economy and reliability.

And they lead to one inescapable conclusion. As communications improve, so does the performance of emergency power systems.

ASCO developed the first communications and data-logging capability for transfer switches.
POWERQUEST® Is THE Connectivity Solution

POWERQUEST® is a client-server application that requires no installation of software on the client computer.

When combined with the ASCO Communication Interface Modules (Acc 72A, Acc 72E), the ASCO 5500 Series Thin Web Server and the ASCO 5200 Series Power Manager, as shown above, POWERQUEST® provides the most comprehensive Intranet and Internet communication system for monitoring and controlling power transfer switches and engine-generators. The POWERQUEST® communication system allows multiple client access from local or remote locations and enables monitoring of up to 64 power transfer switches and eight engine-generators. In addition, automatic paging is provided for all alarm signals.

ASCO introduced the first Ethernet/Web-enabled connectivity for transfer switches.
Because power failures can be life-threatening and costly, there is no room for error when it comes to testing and maintaining power transfer switches and paralleling control switchgear. Skilled ASCO Services technicians properly maintain and test transfer switches and power control systems coast to coast. Technicians check operation of engine-generator paralleling systems and transfer switches with a laptop computer. The computer tests multiple components quickly and accurately and can send maintenance results to a printer for hard-copy documentation. Technicians are available 24/7 in most areas. Fully stocked vans support the technicians during onsite visits, often eliminating the need to order parts. ASCO Services maintains and upgrades a range of transfer switches from a variety of manufacturers. Technicians resolve problems created by corrosion, contact erosion and a number of other causes. Besides maintaining equipment, ASCO Services can install and upgrade power transfer switches and power control systems.

Relying on 24/7 Service

Helps avert the most common cause of transfer switch failure: lack of regular maintenance.

Maintenance Programs

Two levels of maintenance programs can be customized to meet the needs of one facility or many networked facilities.

Level One includes annual scheduled maintenance during or after business hours, a discount on parts and a reduced hourly rate for additional labor that might be required.

Level Two includes Level One service, plus all parts, labor, expenses and emergency service calls. Emergency service is dispatched 24/7/365.

ASCO Services is the largest organization of its kind in the United States.
Meeting or Exceeding Code Requirements

Demands considerable record-keeping that too often can mean personnel spend many hours operating onsite power systems and recording data manually.

Weekly inspection sheets for an emergency power system can include 55 or more data points and require writing comments in long hand. Monthly testing logs can have nearly 40 or more data points. A third form, a generator load report, builds the pile of necessary paperwork.

It’s no wonder that errors can and do occur.

A solution to testing emergency power systems more efficiently is to automate the testing procedure and data recording. Automating the process facilitates compliance, substantiates insurance claims and defends against litigation arising from potentially life-threatening events. It also helps manage the facility’s energy consumption more effectively.

An automated Web-based communications system—POWERQUEST®—integrates the operation of monitoring and controlling, multiple engine-generator paralleling systems and automatic power transfer switches.

The 7000 SERIES Controller automatically exercises engine-generator systems and logs data on the exercise. POWERQUEST® can conduct transfer tests remotely that simulate a power failure, start the genset, transfer the load to the alternate power source and run the generator under load for the period specified in the codes and standards.

POWERQUEST® then initiates retransfers back to normal power and runs the generator through cool down. The system monitors the engine-generators throughout the test and automatically records readings.

Personnel can select from seven automatic test schedules. Code references for NFPA 99 emergency power systems testing are included in POWERQUEST®.

The transfer switch controller stores up to 99 events with time and date stamping. An optional printer interface produces hard-copy documentation.

An ASCO Power Manager module measures single and three phase power systems in real time. The bottom line is an integrated emergency power system that better equips maintenance and engineering staffs to meet the requirements of NFPA 110, NFPA 99 and, for healthcare organizations, the JCAHO*.

ASCO Technology Meets or Exceeds New Seismic Requirements


Regardless of the Occupancy Category, Seismic Design Category or Importance Factor specified for your project, ASCO offers qualified and thoroughly certified products to meet these requirements. A Certificate of Compliance, seismic nameplate and special drawings are furnished with the product.

Also standard is ASCO participation in your Quality Assurance program for facilitating code compliance, proper installation and commissioning.

The products all have been physically tested on tri-axial seismic simulators while fully cabled. Mounting bolts remain seated, doors remain shut and, the robust design of mechanically locked critical components, such as the main contacts, prevents jamming. Testing adhered strictly to AC 156 criteria.

They’ve all operated during and after testing. So even during an actual seismic event, they’re ready to sense loss of normal source, signal gensets to start and transfer power reliably.

ASCO technology eliminates the question of whether the power switching and controls equipment is properly certified, even for demanding rooftop installations.

Minimize your exposure to risk, liability, the potential for red-tagged equipment and insurance issues. Compare, then specify ASCO. Bottom line, it’s peace of mind. Yours.
Satisfies the needs of engineering decision makers responsible for on-site power systems. It’s one reason why ASCO Power Technologies is the number one manufacturer of power transfer switches on the planet.

Reliability is a product of innovative and proven design, configuration flexibility, quality, ease of operation and serviceability. ASCO Power Transfer Switches deliver it all.

For almost a century, every major advance in power transfer switching and control design and development has come from ASCO. ASCO pioneered the world’s:

- First automatic transfer switch in 1920
- First solenoid operated transfer switch
- First 1200 Amp transfer switch
- First solid state automatic transfer switch control panel
- First microprocessor automatic power transfer switch controller
- First 1600 and 2000 Amp transfer switches
- First overlapping switched neutral
- First inphase monitor employed on transfer switches and first advanced, self-regulating inphase power technology
- First 3000 and 4000 Amp transfer switches
- First integrated power transfer bypass-isolation switch
- First two-way bypass-isolation transfer switch
- First automatic bypass-isolation transfer switch with drawout design for serviceability
- First closed transition transfer switch
- First high-speed power transfer switch
- First three cycle “any breaker” withstand and close-on current rating capability
- First closed transition soft load power transfer switch qualified and listed to UL 1008
- First 18- and 30-cycle withstand current ratings for transfer switches
- First power manager with embedded I/O and kW command and control
- First communications and data-logging capability for transfer switches
- First Ethernet/Web enabled connectivity for transfer switches
- First U.L. approved, CE marked, IEC 60947-6-1 compliant and third-party Kema Keur marked automatic transfer switch
- First load shed optimization for power control systems
- First 6kA & 10kA UL main bus rating for engine paralleling switchgears.

ASCO also pioneered the world’s most advanced automatic transfer switch—the 7000 SERIES. The company developed the 7000 SERIES using a powerful array of human and technological resources. These innovative firsts evolved from the expressed needs of our customers.
Experienced engineers with decades of accomplishments and advanced degrees employ cutting-edge design to test and qualify innovative transfer switch technology.

Technological tools such as 3-D computer-aided modeling facilitate the design process. Finite element analysis helps engineering teams design components that manage magnetic and mechanical stresses dependably.

Teams evaluate prototypes with fused deposition modeling and a state-of-the-art power lab. The lab verifies performance under real conditions and qualifies designs to listing agency standards. High-speed video photography enables engineers to analyze how designs react to stress over time frames of a few milliseconds.

The result is a continuing stream of innovations in power transfer technology that meets the evolving needs of hospitals, data and financial centers, and other business-critical facilities.

Besides innovative technology, ASCO offers the security of a dependable company large enough to satisfy customers’ evolving need for application support, project management and 24/7 field service.

Whatever the challenge, ASCO can help facility engineers keep their power on.

A Case in Point

The world’s most sophisticated power transfer technology comes to life as the 7000 SERIES Automatic Transfer Switch family.

In terms of configuration flexibility, the family is based on a four-pole architecture and a single or dual solenoid operator. Also, one controller is utilized for all amperages, voltages, frequencies and transfer switch configurations (open transition, delayed transition, closed transition and soft load).

Quality is assured with the ISO 9001:2000 certification earned by ASCO for its production facilities.

ASCO Power Transfer Switches are easy to operate because information-rich, menu-driven and multi-language displays are intuitive for virtually any operator.