



A pair of medium voltage circuit breakers and an ASCO Group 5 Microprocessor Controller are the heart of ASCO Medium Voltage Power Transfer Systems.

## The Family of ASCO Medium Voltage Power Transfer Switches



ASCO Series 977 Medium Voltage Power Transfer System

While ASCO Medium Voltage Power Transfer Switches are functionally similar to low voltage transfer switches, they use a pair of medium voltage circuit breakers rather than an ASCO solenoid operating mechanism. An ASCO 7000 Series Power Control Center manages the breaker operation to transfer critical loads between power sources.

There are three standard base model switches available that can be provided with most options and accessories that are often required. Custom modifications can also be accommodated.

We build the switches under strict quality control in a factory-controlled environment, then conduct testing that complies with ANSI C37.20.2 Production Tests guidelines.

Medium voltage switches can be specified by selecting one of the base models shown in the chart below, then define specifics and options.

Base models include a complete transfer system comprising a structure, controls, circuit breakers and potential transformers. They provide basic functionality at the nominal amperage and voltage.

Specify your system by selecting one of the base models shown in the chart below, then define specifics and options.

Model	Voltage	Interrupting Capacity	Breaker Amperage Rating	Construction
977	15kV	25kAIC 40kAIC 50kAIC	1200A	Metal-clad switchgear per ANSI C37.20.2 and UL 1008A Listed, with drawout vacuum circuit breakers and utility grade transformers.
977	15kV	25kAIC 40kAIC 50kAIC	2000A	Metal-clad switchgear per ANSI C37.20.2 with drawout vacuum circuit breakers and utility grade transformers. UL Recognized switchgear.
974	5kV	40kAIC 50kAIC	1200A	Metal-clad switchgear per ANSI C37.20.2 and UL 1008A Listed, with drawout vacuum circuit breakers and utility grade transformers.
974	5kV	40kAIC 50kAIC	2000A	Metal-clad switchgear per ANSI C37.20.2 with drawout vacuum circuit breakers and utility grade transformers. UL Recognized switchgear.
973	5kV	25kAIC 31kAIC	600A	IEC fixed-mount breakers in a single section metal-clad structure with utility grade transformers. Not UL Listed or Recognized.



Compare ASCO Medium Voltage Power Transfer Systems for reliability, ease of maintenance, code compliance and seismic certification.

## ASCO Series 977 Medium Voltage Power Transfer System



Series 977 Medium Voltage Power Transfer System, single section



Series 977 Medium Voltage Power Transfer System, two-section enclosure with right door open

The ASCO Series 977 Medium Voltage Automatic Transfer System provides high reliability and ease of maintenance. This model complies with requirements of the:

- UL 1008A Standard For Medium Voltage Power Transfer Systems (1200A Models)
- American National Standards Institute, Inc. (ANSI)
- Institute of Electrical & Electronic Engineers (IEEE), C37.20.2 Switchgear Assemblies, C57.13 Standard Requirements for Instrument Transformers National Fire Protection Association (NFPA)
- NFPA 70-1999 National Electrical Code

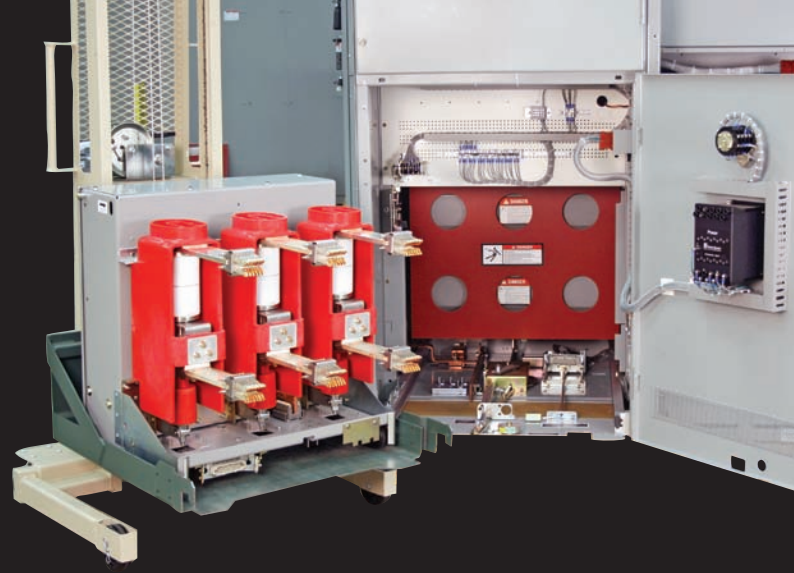
The Series 977 is rated at 15 kV, 1200 amps, 25 kAIC, 3 phase, 3 wire, 50 or 60 Hz. An ampere rating of 2000 amps and 40 kAIC and 50 kAIC also are available.

The indoor medium voltage power transfer system comprises two vertical sections. They combine to form an enclosure that meets the

Seismic requirements of the International Building Code. Contained in the enclosure are three, 1200 amp, 25 kAIC draw out vacuum bottle circuit breakers. They are electrically interlocked in the open transition mode, with auxiliary contacts as required.

Besides circuit breakers and microprocessor controller, other primary system components include:

- Potential transformers, normal feed, 95 kV BIL
- Potential transformers, emergency feed, 95 kV BIL
- 3 phase, 1200 amp insulated copper main bus
- Protective barriers that isolate major components.



Base models include a complete transfer system comprising a structure, controls, circuit breakers and potential transformers.

They provide basic functionality at the nominal amperage and voltage.

You can configure them for open, closed, or delayed transition power transfer.

Soft load transition requires an optional controller.

## ASCO Medium Voltage Power Transfer Switches

### Base Model Features:

	977		974		973
Breaker Ampacity	1200A	2000A	1200A	2000A	600A
Number of sections	2	3	2	3	1
NEMA 1 Footprint (Inches)	72Wx91D	108Wx91D	72Wx91D	108Wx91D	36Wx72D
UL 1008A	Yes	No	Yes	No	No
ANSI C37.20.2	Yes	Yes	Yes	Yes	No
Seismic Certification	Yes	Yes	Yes	Yes	No
Insulation Level (BIL)	95kV	95kV	60kV	60kV	60kV
Insulated Bus	Yes	Yes	Yes	Yes	Yes
Cable Barriers	Yes	Yes	Yes	Yes	No
11 GA Steel	Yes	Yes	Yes	Yes	Yes
Drawout Breakers	Yes	Yes	Yes	Yes	No
Distribution Available	Yes	Yes	Yes	Yes	No
Protective Relays Available	Yes	Yes	Yes	Yes	Yes
NEMA 3R available	Yes	Yes	Yes	Yes	Yes
NEMA 4X available	No	No	No	No	Yes

### Ratings

The 977 and 974 models with 1200A breakers are Listed to UL 1008A; these switches are suitable for use in emergency power systems for hospitals, per NFPA 99, and NEC Article 700.

Switches based on 2000A breakers are not UL 1008A Listed, but are manufactured to the similar requirements of ANSI C37.20 and utilize UL Recognized cubicle constructions.

All ASCO Medium Voltage Power Transfer Switches are built using the same ASCO/Underwriters Laboratories manufacturing procedures

as those used for ASCO generator paralleling control switchgear, under UL File # E231663.

The 973 model uses an IEC rated breaker for international applications, and therefore is not UL certified.

### Transfer Switch Controller

The ASCO 7000 Series Control Center provides refined and proven transfer control.

This is the same controller used on low voltage switches, and is described in detail later in this brochure.

### Circuit Breakers: 977 and 974

Circuit breakers provide superior reliability and maintainability compared to contactors. Each circuit breaker contains three separately mounted vacuum interrupters with an integral contact wear gap indicator. Stored energy devices allow fast operation to interrupt and isolate faults.

Breakers can be removed easily for inspection and maintenance. Bypass functions are not required since breakers can be replaced while the loads are fed from the alternate source.

### Capacitors

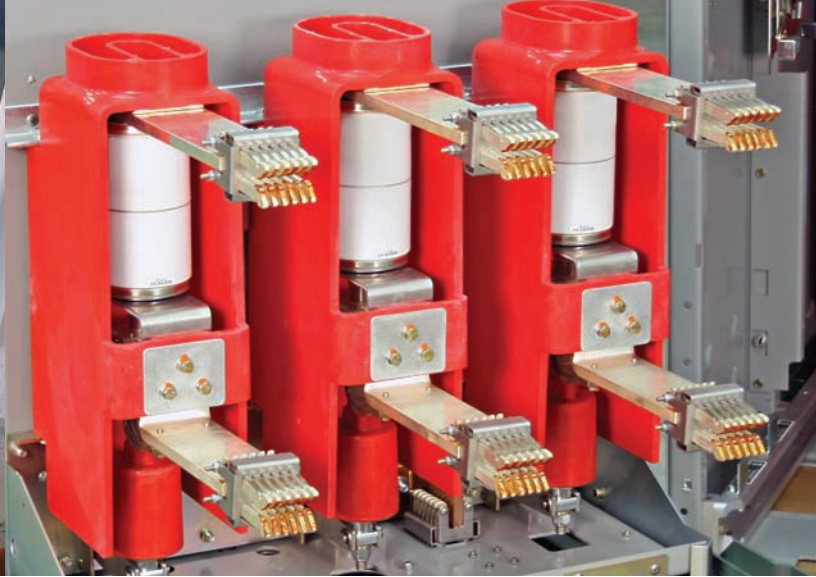
Capacitor trip devices provide the power to trip the breakers open in the event of a power outage, protecting loads from potential transients.

### Instrument Transformers

Transformers are chosen to provide accurate waveforms to control and protect your loads.

ASCO uses ANSI metering class transformers which are built per ANSI C57.13 standards to assure the highest reliability.

The transformers are protected by oversized Class E fuses to assure no malfunctions could cause loads to be unprotected.



## ASCO Series 974 Medium Voltage Power Transfer System

Like the Series 977, the Series 974 Medium Voltage Power Transfer System comprises two vertical sections.

The Series 974 is rated at 5 kV, 1200 Amps, 40kAIC, 3 phase, 3 wire, 50 or 60 Hz and compliant with UL1008A.

Contained in the enclosure are three, 1200 amp, 40 kAIC drawout vacuum bottle circuit breakers. They are electrically interlocked in the open transition mode, with auxiliary contacts as required.

An ampere rating of 2000 amps and a short circuit rating of 50 kAIC also is available.

This system also has a drawout

vacuum bottle breaker configuration, is available in open, closed and delayed power transfer modes of operation and features the Group 5 Controller for dependable operation.

The system is available in a NEMA 3R enclosure and is UL listed for medium voltage.

Other primary components include:

- Potential transformers, normal feed, 4160 volts, 60 kV BIL
- Potential transformers, emergency feed, 4160 volts, 60 kV BIL
- 3 phase, 1200 amp insulated copper main bus
- Protective barriers that isolate major components.



## ASCO Series 973 Medium Voltage Power Transfer System

The ASCO Series 973 Medium Voltage Power Transfer System is a single-section configuration. The Series 973 is rated at 5 kV, 600 amps, 25 kAIC, 3 phase, 3 wire, 50 or 60 Hz. A 31 kAIC is optional.

The Series 973 features fixed-mounted LF1 circuit breakers using SF-6 gas. It is available in open, closed and delayed power transition modes of operation. The Group 5 Controller is standard and the system is available in a NEMA 3R enclosure.

