

PRODUCT BROCHURE

Cyberex® SuperSwitch®4

100A–4000A (3-pole) 200A–800A (4-pole)
digital static transfer switch



- Peak performance and reliability.
- Compartmentalized design for improved safety.
- Ultra-dense models when floorspace is minimal.
- 3-pole and 4-pole offerings.

The Cyberex[®] brand has been an industry leader in the design and development of mission critical systems that ensure uptime and business continuity for customers across the globe.

The Cyberex[®] SuperSwitch^{®4} provides an unrivaled combination of reliability, switching speed, and safety for ultra-fast, sub-cycle switching applications.

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The SuperSwitch®4 STS offering

Over forty years ago, Cyberex® revolutionized power distribution with its invention of the digital static transfer switch (STS). Since then, building on ABB's engineering innovation and the technological advancements and commissioning of the most extensive installed base of STSs worldwide, the SuperSwitch®4 has continued to evolve. SuperSwitch®4 provides maximum reliability through its innovative designs. The modular components, from the power stage to the redundant bus architecture, have been engineered to unprecedented standards to deliver state-of-the-art performance.

01



Peak performance and reliability

- $\leq 1/4$ cycle in-phase transfers.
- ≤ 16 ms out of phase transfers regardless of phase difference between sources.
- $\leq 1.2x$ inrush for out of phase transfers using.

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Improved safety and serviceability

- Sectionalized design for safety and ease of serviceability enables quicker troubleshooting and time to repair.
- Isolation of consumable components allows for easier replacement without need to de-energize equipment.

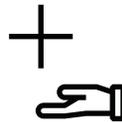
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Minimize risk of human error

- On-screen software guided bypass operation.
- Dedicated LED indicators coordinate with bypass instructions on HMI to ensure proper bypass sequence.

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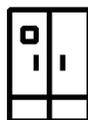
Comprehensive offering

- Covering wide power range from 100A up to 4000A in 208V through 480V.
- Ultra-dense optimized designs for low power applications.
- Optimized front access only designs for higher power ratings.



Improved sustainability

- Proven track record of design life exceeding 15 years.
- Designed to minimize usage of consumable components.



Key applications

- Data centers
- Healthcare facilities
- Financial institutions
- Colleges/Universities

01

Peak performance and reliability



Real Time Flux Control™ for Dynamic Inrush Restraint (DIR).

With state of the art digital signal processors and a newly developed algorithm, an innovative approach was created called Real Time Flux Control™ for dynamic inrush restraint (DIR.) Using advanced Real Time Flux Control, SuperSwitch®4 can dynamically monitor and adapt its transfer switching to account for any variation or condition that may occur during an upstream outage. Real Time Flux Control enables out of phase transfer times that are 25% faster and inrush currents that are 40% lower than previous generation systems. By controlling inrush currents, the SuperSwitch®4 protects upstream and downstream infrastructure from the harmful effects of excessive currents.

Adaptive DIR

For critical loads with more sensitive power supplies and less ride-through than limits traditionally defined by the CBEMA/ITIC curve, the advanced Adaptive DIR feature enables setting tighter transfer tolerances to provide another layer of fine tuning to more reliably support even the most sensitive applications.

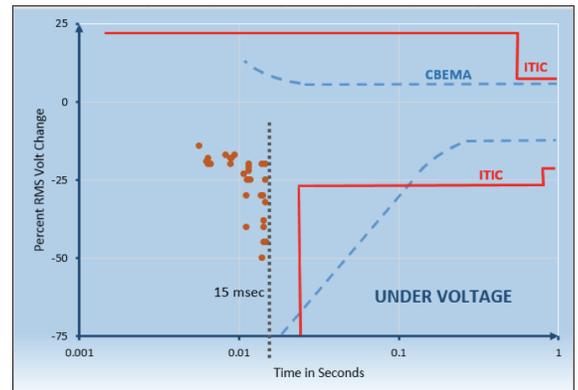
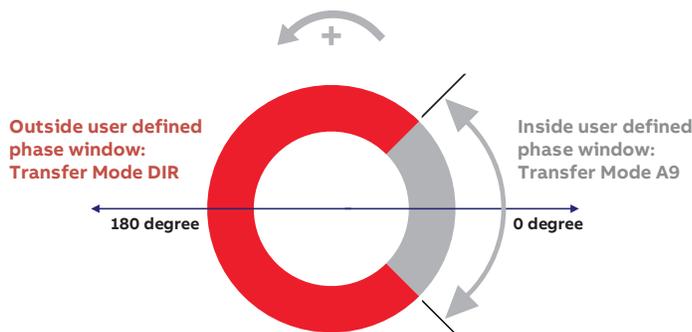


Figure 1: 60Hz data for critical loads meeting CBEMA/ITIC curves.

An intelligent method for Dynamic Inrush Restraint

- Makes secondary switching (one PDU transformer) reliable.
- Eliminates the need for complex inverter control schemes.
- Maintains true independence between UPS systems (higher reliability).
- Keeps inrush value lower than 1.2x.
- Exceeds the ITIC and CBEMA curves standards for critical loads, see figure 1 above.
- Smoothly transfers the load without creating unnecessary voltage discontinuity and disturbances to the load.

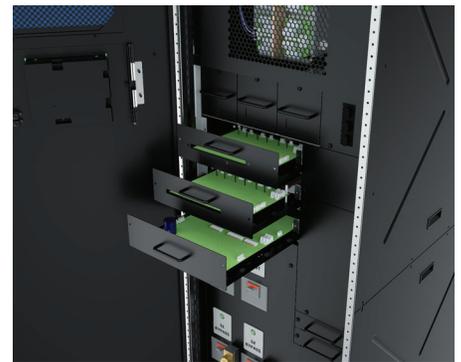
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Improved safety and serviceability



SuperSwitch®4 models are designed with increased compartmentalization. Dedicated doors and deadfronts for serviceable components improve safety.

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Draw-out PCB assemblies in select models provide isolation between PCBs and enable faster mean time to repair during service.



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Minimize risk of human error



Industry studies estimate that a majority of downtime events are due to human error. The SuperSwitch®4 is designed with enhanced safety features to help minimize risk of human error.

- Software guided bypass operation provides sequential instructions to safely switch to and from bypass
- Dedicated LED indicators for each breaker illuminate accordingly throughout guided bypass operation



Hinged display can swing inside to remain visible during software guided bypass operation for 250A models

04

Comprehensive offering



The SuperSwitch®4 is available in a wide variety of models designed to meet the diverse needs of critical loads in smaller enterprise/edge data centers up to larger colocation or hyperscale installments.



The ultra-dense, optimized 250A model is perfectly suited for applications with minimal available floorspace. The compact 24"W x 36"D frame requires only front access for installation, operation, and maintenance, thus eliminating the need for side or rear clearances.

For larger, high-power applications, optimized designs up to 4000A provide safe and reliable sub-cycle transfer performance with market leading power density.

Tested and trusted

Comprehensive testing is crucial, which is why companies routinely test individual products before they leave the factory.

But as our customers know, there are often unexpected operating conditions once devices are integrated into a real-life system. To address this, ABB maintains extensive customer witness testing programs at its Swiss and US manufacturing facilities.

ABB's customers have facility access for:

- Infrastructure flexible testing of up to 5MW.
- STS testing with associated equipment – such as UPS and power distribution systems – for smooth system integration and transition to on site infrastructure.
- Testing center designed to perform factory acceptance testing for customer orders. Factory witness testing is offered in-person and virtually.
- Customers can oversee the entire test process in a comfortable and secure high-power testing environment.



Services

With a presence in over 100 countries, ABB's service engineers are committed to supporting you wherever you are in the world.

The SuperSwitch®4 is available in a wide variety of models designed to meet the diverse needs of critical loads in smaller enterprise/edge data centers up to larger colocation or hyperscale installments.

We work closely with our team of R&D experts to develop the most advanced service technologies that ensure proactive product life-cycle management.

Our services include:

- Installation and commissioning
- Repairs
- Spares and consumables
- Extensions, upgrades and retrofits
- Replacement
- Training
- Service agreements
- Advanced services including predictive maintenance
- Factory evaluations

3-pole and 4-pole offerings

3-pole offerings

							
Amp ratings	100A, 250A	400A	600A	800A, 1000A, 1200A	1600A	2000A	3000A, 4000A
Voltage ratings	208V, 380V, 400V, 415V, 480V	480V	480V	480V			
Frequency ratings	60Hz, 50Hz	60Hz, 50Hz	60Hz	60Hz, 50Hz	60Hz	60Hz	60Hz
SCCR ratings	35kAIC, 65kAIC, 100kAIC	100kAIC	100kAIC	65kAIC	65kAIC, 100kAIC	100kAIC	3000A – 65kAIC, 100kAIC, 4000A – 100kAIC
Cable entry ¹	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom
Cable exit ¹	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom
Installation and service access	Front only	Front only	Front and one side or rear	Front and one side or rear	Front only	Front and rear	Front only
Dimensions (WxDxH)	24" x 36" x 78"	48" x 34" x 78"	34" x 34" x 78"	46" x 34" x 78"	90" x 36" x 90"	120" x 60" x 77"	180" x 36" x 90"

¹ If cable Entry and Exit are from opposite sides (e.g. Bottom Entry and Top Exit), please consult with factory.

SCR-based neutral switching

The Cyberex SuperSwitch⁴ offering has expanded to include models for 4-pole applications requiring switching of the neutral. For installations with separately derived systems, the SuperSwitch⁴ minimizes the potential for circulating neutral currents through the use of solid state switching technology.

4-pole offerings

		
Amp ratings	200A, 400A	600A, 800A
Voltage	208V, 380V, 400V, 415V	208V, 380V, 400V, 415V
Frequency	60Hz	60Hz
SCCR	100kAIC	65kAIC
Cable entry ¹	Top/Bottom	Top/Bottom
Cable exit ¹	Top/Bottom	Top/Bottom
Installation and service access	Front and right side or rear	Front and right side or rear
Dimensions (WxDxH)	46" x 34" x 78"	60" x 34" x 78"

¹ If cable Entry and Exit are from opposite sides (e.g. Bottom Entry and Top Exit), please consult with factory.



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