PRODUCT BROCHURE

Cyberex® SuperSwitch®4 technology

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

SuperSwitch®4 technology
200A–4000A (3-pole) 200A–800A (4-pole)

SuperSwitch®4 redefines reliability
Forty years ago, Cyberex revolutionized power distribution with its invention of the digital static transfer switch (STS). Since then, building on the innovation of ABB engineering and the technological advancements and commissioning of the most extensive installed base of STSs worldwide, the SuperSwitch®4 has evolved. Designed with a 'true' fault-tolerant architecture, SuperSwitch®4 ensures there is truly no single point of failure through the use of our patented transfer algorithms and robust electrical components. With an increased MTBDE to an estimated 1.5 million hours, SuperSwitch®4 reliability is unmatched. SuperSwitch®4 redefines power reliability with its exceptional design, serviceability and user-interface.

Reliability through design excellence
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. We recognize that every customer has unique electrical requirements and we work closely with them to develop solutions that solve their most difficult challenges.

SuperSwitch®4 provides maximum reliability through its innovative design. The modular components, from the power stage to the redundant bus architecture, have been engineered to unprecedented standards.

The SuperSwitch®4 is available in select cabinet sizes that cater to your serviceability requirements. Its standard ultra-dense design maximizes physical floor space. Front access is required for operation and removal of serviceable components, while one side or rear access is required for installation and tightening of customer connections. A full front access cabinet design is also available for complete operation, maintenance, installation and IR scanning accessibility.

Fully rated hockey puck SCRs are employed to prevent system damage after load faults. The superior cooling design of the assembly enables higher current applications. Infrared scans are easily accomplished without removal of assembly. Connections and maintenance are made easier by staggered phase connections and ample gutter space. 100% of connections are torqued ensuring maximum reliability.

State of the art performance
- Expands SuperSwitch technology with enhanced platform and features
- 10.4" color TFT industrial use LED touchscreen GUI
- 25% faster transfer times
- 40% lower inrush limiting
- Enhanced power quality detection
- Field calibration support
- USB port for software upgrades; data and event downloads
- 16 user configurable alarm relays
- 10 user inputs for communications control
- Enhanced meters and trending
- 10 cycle waveshape captures of critical power events
- Improved circuit redundancy

Front access cabinet

Front and side access cabinet

SuperSwitch® 4 key applications

Engineered to protect critical loads
The SuperSwitch®4 is the cornerstone of redundant power for a wide range of applications including data centers, hospitals, semiconductor manufacturing and other installations where continuous power is critical to a facility's mission. Engineered to protect critical loads in both commercial and industrial environments, these switches can transfer power between any two sources of power, including any combination of utility, UPS and generators.

Primary switching architecture
Static Transfer Switches (STSs) are central components in data center power system configurations. The typical system design incorporates two separate uninterruptible power supplies (UPSs), Source 1 and Source 2 feeding the preferred and alternate sources of the STS. These devices are the bridge between the power sources UPSs and the power distribution units (PDUs) where a transformer is needed to typically switch the 480V side (primary) to the 208V side (secondary). The primary side switching (480V) is the most common and cost effective architecture to the customer in terms of smaller footprint and lower costs because only one transformer is needed. The alternative architecture would be to switch the secondary which would require each source to have its own fully rated transformer (208V).

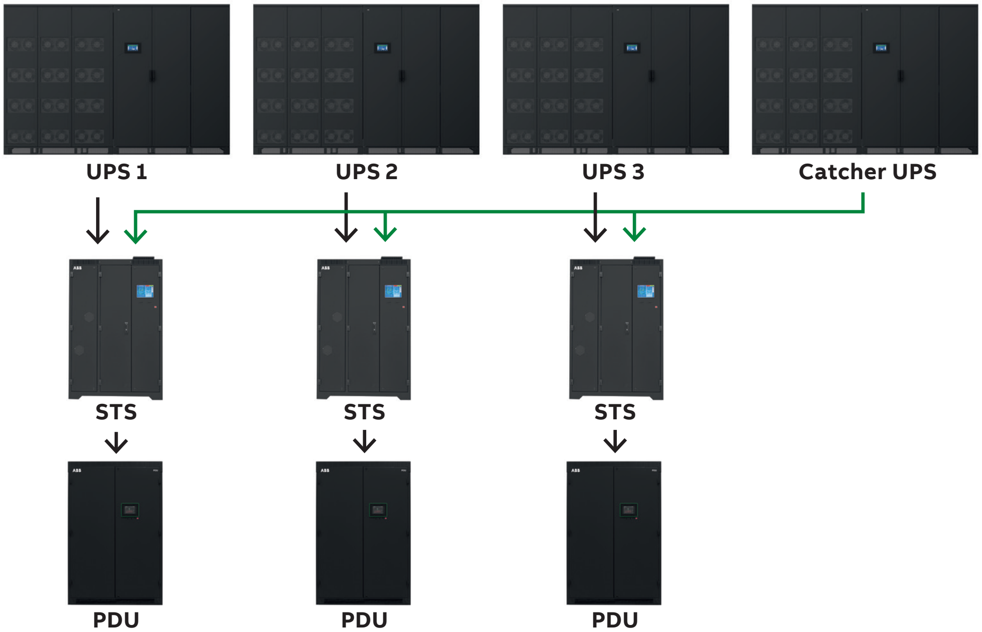
Data center: Mission critical facilities used to house computer, network, data storage, telecommunications, and other vital systems that require constant power with no interruptions.

Hospitals: Health care institutions that require constant power with no interruptions to data and records management.

Manufacturing/business operations:
Manufacturing and business operations that require constant power without interruptions due to the critical nature of their vital IT functions.

Flexible system architecture ready: N+1, 2N, 2N+1, N+N, 3N/2, and catcher systems. ABB catcher system configurations allow redundancy and reliability and improve total costs of ownership.

The SuperSwitch®4 is part of ABB's broad range of products and integrated solutions that ensure data centers operate with optimum reliability and efficiency. From power distribution units to static transfer switches and uninterruptible power supply systems, ABB can optimize your centralized power protection design.



Dynamic inrush restraint for applications with downstream transformers

Inrush currents degrade power quality
Static Transfer Switches (STSs) are essential components in data center power system configurations. Mainly relying on transformers primary side switching, these devices are the bridge between the power sources and the power distribution units. This architecture offers many advantages to the customer in terms of smaller footprint and lower costs; however, if not properly switched, high transient inrush in downstream transformers will occur.

The inrush currents produced degrade the power quality of the preferred source, overload upstream UPSs and trip protective circuit breakers. The inrush currents can also create intolerable forces in the windings, which in turn reduce the lifecycle of power transformers as these currents can reach the short circuit rated value and can last many cycles before they dissipate.

Real Time Flux Control™ for 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.

This technology is an intelligent proprietary method that makes no compromise to the voltage output for mission critical applications by providing a performance that exceeds the CBEMA and ITIC standards, regardless of phase drift between sources.

How does it work?
The STS constantly monitors the power quality of both sources taking into account the customer specified thresholds. In addition, three transfer modes are available to customers to choose from: A9, DIR always and DIR limited.

A9: this mode is a proprietary method that is to be used only when the phase difference between the sources is less than a user defined phase angle. The range of this setting is adjustable up to +/– 30 degrees, and is not recommended for larger phase differences.

DIR always: this mode allows the SuperSwitch®4 to permanently transfer using the Real Time Flux Control approach and should result in low inrush regardless of how far the two sources are out of phase.

DIR limited: this mode is the recommended setting for the SuperSwitch®4. In this mode, a hybrid approach of A9 and DIR is performed depending on the phase difference between the sources.

Most customers use the recommended setting of DIR limited because the STS will auto select when, and if, the DIR function is needed depending on the phase difference as illustrated by Figure 1 below.

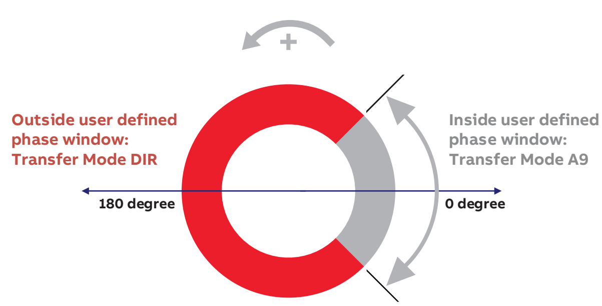


Figure 1: DIR limited vs phase angle

Best solution: A real time switching method

How does it perform?
The Real Time Flux Control™ is the optimal solution for inrush reduction, it cleanly disconnects the failing source and transfers the critical load to a more reliable power quality source. Figures 2 and 3 show an out of phase emergency transfer done on a 480 volt, 600 amp STS feeding our 225kVA PDU transformer, the two sources were 60 degrees and 180 degrees respectfully, and the transfer mode selected was the recommended "DIR limited." The outage time was measured to be 5.50 millisecond in the first case and 11.30 milliseconds in the second with no inrush observed.

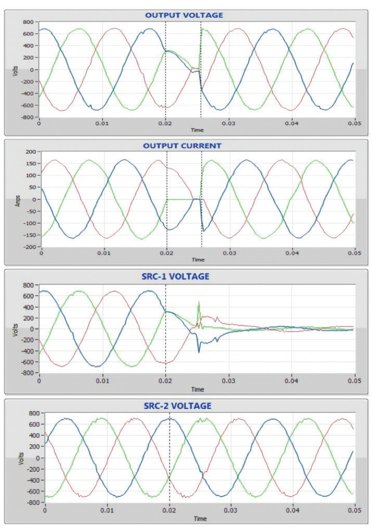


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Figure 2:
Phase: 60 degree
Outage Time: 5.50 ms
Condition: Loss of Source 1

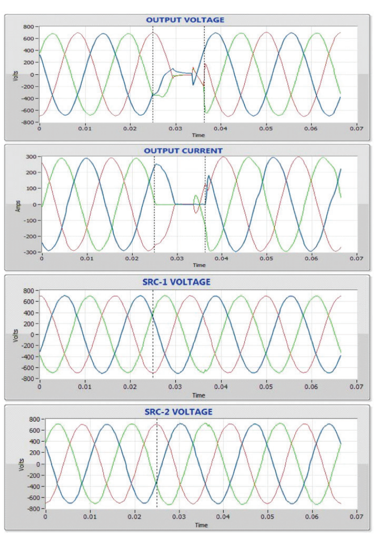

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Figure 3:
Phase: 180 degree
Outage Time: 11.30 ms
Condition: Manual Transfer

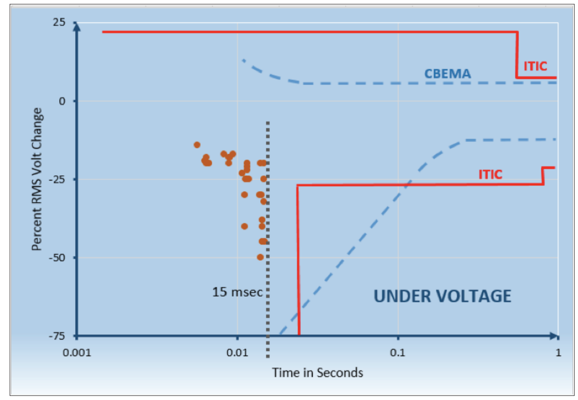

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Figure 4: 60Hz data for critical loads meeting CBEMA/ITIC curves.

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 4 above.
- Smoothly transfers the load without creating unnecessary voltage discontinuity and disturbances to the load.

Expert power management

The SuperSwitch®4 harnesses the power of touch with an innovative user interface that utilizes a 10.4" color TFT industrial use VGA LED touchscreen GUI for self-guided, serviceability with minimal engagement, and the latest communication protocols. The monitor module delivers best-in-class, high-resolution display of color images.

With ever-increasing power requirements and the necessity to ensure uptime, SuperSwitch®4 provides exceptional power management features such as:

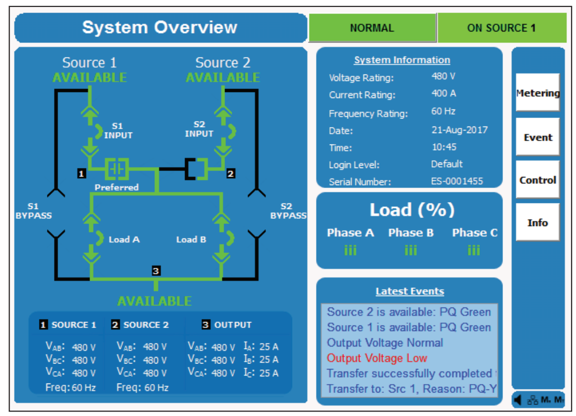
Waveform capture
SuperSwitch®4 is available with waveform capture. The waveform capture feature uses digital signal processors and high speed analog to digital converters to simultaneously sample sources and output voltages and currents. The waveform data is collected every 0.1 millisecond intervals as 12 bit samples to provide an extremely high level of accuracy.

The SuperSwitch®4 is capable of storing 20 waveform capture events for both transfer and non-transfer events. Each measurement contains a total of 10 cycles; 5 cycles prior to the event and 5 cycles after the event. The waveform can be downloaded as an image file from the display USB port for additional viewing and analysis.

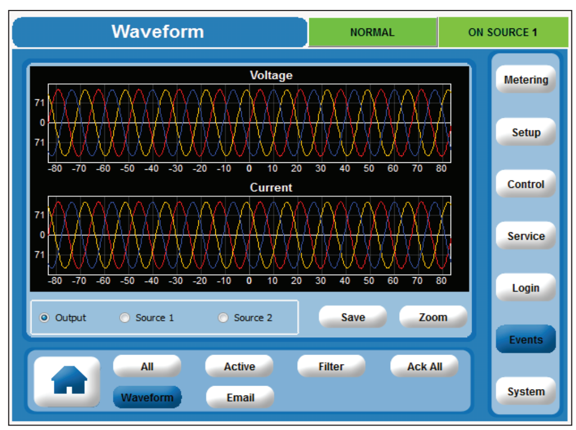
Software-guided breaker operation and bypass
Easy to follow commands and indicator lights eliminate the causes of human error.

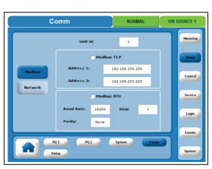
Data and alarm management
With over 100 warnings/alarms types, 5000 events can be stored or downloaded to a USB device for analysis.

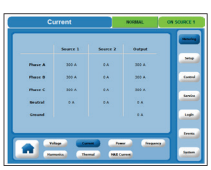
Remote access
Compatibility with building management systems provides access from any location at any time.

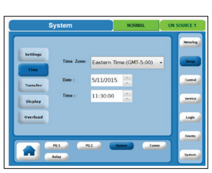


User-friendly control on all SS4 systems provide quick system configuration, power monitoring and response to alarms









3-pole and 4-pole offerings

3-pole offerings

							
Amp ratings	200A, 250A, 400A	600A	800A, 1000A, 1200A	1600A	2000A	3000A	4000A
Voltage ratings	208V, 380V, 400V, 415V, 480V, 600V	208V, 380V, 400V, 415V, 480V, 600V	208V, 380V, 400V, 415V, 480V, 600V	480V	480V	480V	480V
Frequency ratings	60Hz, 50Hz	60Hz, 50Hz	60Hz, 50Hz	60Hz	60Hz	60Hz	60Hz
SCCR ratings[1]	100kAIC	100kAIC	65kAIC	65kAIC, 100kAIC	100kAIC	65kAIC, 100kAIC	100kAIC
Cable entry[2]	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom
Cable exit[2]	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom	Top/Bottom
Installation and service access	Front only	Front and one side or rear	Front and one side or rear	Front only	Front and rear	Front only	Front only
Dimensions (WxDxH)	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"	180" x 36" x 90"

[1] Contact factory for 600V SCCRs.
[2] 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 SuperSwitch®4 offering has expanded to include models for 4-pole applications requiring switching of the neutral. For installations with separately derived systems, the SuperSwitch®4 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.

Technical specifications 200A–4000A (3-pole)

Components	
Power semiconductors[1]	Hockey puck type, type II fuseless design
User interface	10.4" color TFT industrial use VGA LED touchscreen GUI
Cooling	200A/250A – Convection cooled >=400A – Redundant fans
Power supplies	Redundant
Surge protection	SPD on each source
Control logic	No single point of failure
Output load switches	Redundant
Power wire and bus bar	Copper
Protection	UL 489 Molded Case Switches </= 1200A UL 1066 Non-Automatic Switches = 1600A, 3000A, 4000A UL 489 Insulated Case Switches = 2000A
Communications and software	
Alarm relays	16 form “C” relays
Building alarm inputs	10 dry contact inputs
EPO	Local or remote
Modbus	RTU over RS485, TCP over Ethernet
Service port	Accessible without opening doors or panels
Event alarm log	5000 events
Power quality and metering	
Loss of source detection	2ms, PLL detection per phase
Voltage	Each source and output. True RMS, up to 13th harmonic
Current	Each source and output. True RMS, up to 13th harmonic
Peak current detection	Each source, resettable
Source reacquisition	3 cycles

Electrical characteristics	
Amp ratings[2]	200A, 250A, 400A, 600A, 800A, 1000A, 1200A, 1600A, 2000A, 3000A, 4000A
Voltage ratings	208V, 380V, 400V, 415V, 480V, 600V
SCCR ratings[3]	65kAIC, 100kAIC
Frequency ratings[4]	60Hz, 50Hz
Overload capability	125% for 30 min, 150% for 1 min, 200% for 10 sec, 1000% for 3 cycles, 1500% for 1 cycle
Operational characteristics	
Full load efficiency	Up to 99.4% (480V), 98.7% (208V)
Bypass	System guided
Sense + transfer time (In phase)	< 4ms patented A9 transfer method
Sense + transfer time (out of phase)	< 15ms patented Real Time Flux Control™ method
Downstream transformer inrush[5]	< 1.2x nominal transformer rating
Operating temperature	0 to 40°C
Storage temperature	0 to 80°C
MTBDE	1.5 million hours
Standards	
Safety	ETL listed to UL 1008S cETL listed to CAN/CSA-22.2 No. 178
EMC	FCC compliant (part 15)
Enclosure	NEMA 1

[1] 3000A and 4000A models are hybrid Type I and Type III.
[2] Units rated 1600A or higher available in 480V only.
[3] Contact factory for 600V SCCRs.
[4] 600A in 50Hz is not available.
[5] Based on DIR transfer.

Standard cabinet (3-Pole)							Heat Output		
Amps	Voltage	SCCR[1]	Cable entry[2]	Cable exit[2]	Installation and service access[3]	Dim. (WxDxH)	BTU/Hr Full Load	kW	Estimated weight
200	208	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
	380	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
	400	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
	415	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
	480	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
	600	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	3250	0.95	1124
250	208	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
	380	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
	400	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
	415	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
	480	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
	600	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	4650	1.36	1124
400	208	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
	380	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
	400	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
	415	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
	480	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
	600	100	Top/Bottom	Top/Bottom	Front only	48"W x 34"D x 78"H	9028	2.65	1179
600[4]	208	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
	380	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
	400	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
	415	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
	480	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
	600	100	Top/Bottom	Top/Bottom	Front and one side or rear	34"W x 34"D x 78"H	9200	2.70	1100
800	208	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
	380	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
	400	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
	415	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
	480	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
	600	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	12250	3.60	1600
1000	208	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
	380	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
	400	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
	415	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
	480	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
	600	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	15300	4.50	1700
1200	208	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
	380	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
	400	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
	415	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
	480	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
	600	65	Top/Bottom	Top/Bottom	Front and one side or rear	46"W x 34"D x 78"H	22900	6.70	1750
1600	480	65	Top/Bottom	Top/Bottom	Front only	90"W x 36"D x 90"H	15300	11.75	4975
	480	100	Top/Bottom	Top/Bottom	Front only	90"W x 36"D x 90"H	15300	11.75	4975
2000	480	100	Top/Bottom	Top/Bottom	Front and Rear	120"W x 60"D x 77"H	22900	18.75	6560
3000	480	65	Top/Bottom	Top/Bottom	Front only	180"W x 36"D x 90"H	*** consult factory ***		
	480	100	Top/Bottom	Top/Bottom	Front only	180"W x 36"D x 90"H	*** consult factory ***		
4000	480	100	Top/Bottom	Top/Bottom	Front only	180"W x 36"D x 90"H	*** consult factory ***		

[1] Contact factory for 600V SCCRs.
[2] If cable Entry and Exit are from opposite sides (e.g. Bottom Entry and Top Exit), please consult with factory.
[3] 50Hz, 800A–1200A models only available with left side or rear access.
[4] 600A in 50Hz is not available.

Technical specifications 200A–800A (4-pole)

Components	
Power semiconductors	Hockey puck type, type II fuseless design
User interface	10.4" color TFT industrial use VGA LED touchscreen GUI
Cooling	Redundant fans with hall effect failure sensing
Power supplies	Redundant
Surge protection	SPD on each source
Control logic	No single point of failure
Output load switches	Redundant
Power wire and bus bar	Copper
Protection	UL 489 Molded Case Switches
Communications and software	
Alarm relays	16 form “C” relays
Building alarm inputs	10 dry contact inputs
EPO	Local or remote
Modbus	RTU over RS485, TCP over Ethernet
Service port	Accessible without opening doors or panels
Event alarm log	5000 events
Power quality and metering	
Loss of source detection	2ms, PLL detection per phase
Voltage	Each source and output. True RMS, up to 13th harmonic
Current	Each source and output. True RMS, up to 13th harmonic
Peak current detection	Each source, resettable
Source reacquisition	3 cycles

Electrical characteristics	
Amp ratings	200A, 400A, 600A, 800A
Voltage ratings	208V, 380V, 400V, 415V
SCCR ratings	65kAIC, 100kAIC
Frequency	60Hz
Overload capability	125% for 30 min, 150% for 1 min, 200% for 10 sec, 1000% for 3 cycles, 1500% for 1 cycle
Operational characteristics	
Full load efficiency	Up to 99.4% (415V), 98.7% (208V)
Bypass	System guided
Sense + transfer time (In phase)	< 4ms patented A9 transfer method
Sense + transfer time (out of phase)	< 15ms patented Real Time Flux Control™ method
Downstream transformer inrush[1]	< 1.2x nominal transformer rating
Operating temperature	0 to 40°C
Storage temperature	0 to 80°C
MTBDE	1.5 million hours
Standards	
Safety	ETL listed to UL 1008S cETL listed to CAN/CSA-22.2 No. 178
EMC	FCC compliant (part 15)
Enclosure	NEMA 1

[1] Based on DIR transfer.

Standard cabinet (4-Pole)							Heat Output		
Amps	Voltage	SCCR	Cable entry[1]	Cable exit[1]	Installation and service access	Dim. (WxDxH)	BTU/Hr Full Load	kW	Estimated weight
200	208	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	3250	0.95	1124
	380	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	3250	0.95	1124
	400	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	3250	0.95	1124
	415	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	3250	0.95	1124
400	208	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	9028	2.65	1179
	380	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	9028	2.65	1179
	400	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	9028	2.65	1179
	415	100kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	46"W x 34"D x 78"H	9028	2.65	1179
600	208	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	9200	2.70	1100
	380	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	9200	2.70	1100
	400	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	9200	2.70	1100
	415	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	9200	2.70	1100
800	208	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	12250	3.60	1600
	380	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	12250	3.60	1600
	400	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	12250	3.60	1600
	415	65kAIC	Top/Bottom	Top/Bottom	Front and right side or rear	60"W x 34"D x 78"H	12250	3.60	1600

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

ABB

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ABB Inc.
5900 Eastport Boulevard
Richmond, VA 23231-4453 USA
Tel: +1 800 292 3739
Fax: +1 804 236 4047

Additional information
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