

MGE™ Epsilon™ STS

Redundant power supply and enhanced
distribution

200/400/600 A



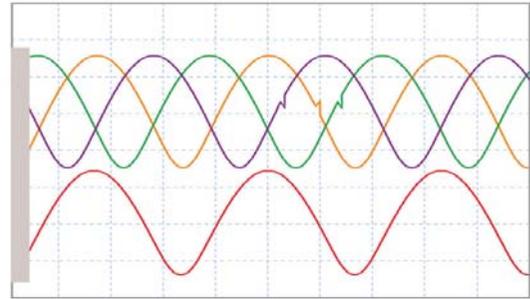
3-phase break-before-make ultra-rapid Static transfer switch meeting the requirement of TierIV datacenter architectures providing distribution redundancy and easy site management.

- > Simplifies installation and maintenance, while minimizing space requirements.
- > Independent control boards and dual cooling systems and power supplies ensure high reliability performance.
- > Text and mimic diagrams that display modes of operation, system parameters and alarms.
- > Allows isolation of a source for maintenance, without interrupting power to the protected loads.
- > Small footprint reduces required floor space.

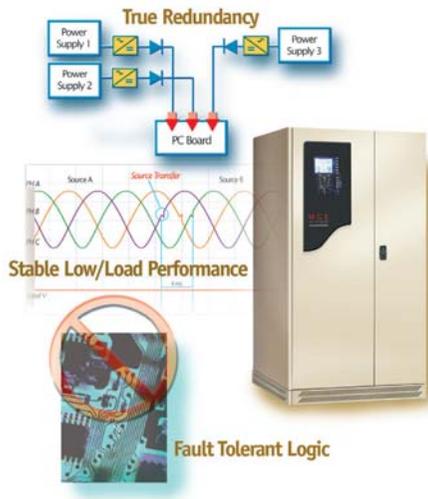
MGE Epsilon STS Features

Seamless Transfers:

Every time the MGE *Epsilon* STS detects a deteriorated power source, an automatic transfer is made to a stable alternate source in under 4ms under normal operating conditions. Even under worst cases conditions (when sources are 180 degrees out of phases) the MGE *Epsilon* STS will have detection and transfer times that are up to 10 times faster than many other switches. Time tested algorithms used for years on UPS static switches were applied in the MGE *Epsilon* STS to eliminate any risk of cross connecting sources and ensure the most seamless transfer possible.



The diagram to the right shows a normal transfer between sources with no interruption to the load current (Load V). The entire detection and transfer takes place in less than 4ms.



Redundant Isolated Power Supplies

The reliability of an STS centers on the integrity of the logic circuitry and the power supplies. Even traditional redundancy may not make a more reliable power supply as a common output bus from multiple power supplies is a single point of failure when shorted. The MGE *Epsilon* STS uses triple redundant power supplies, with each supply feeding one of three isolated buses on every circuit board. The result is true redundancy and exceptionally high reliability.

Stable Low Load Performance

Reliable performance under low or no load conditions has always been a challenge for many STSs as it is difficult to keep an SCR closed under light loads. The MGE *Epsilon* STS generates its own internal load under low/ no load conditions to keep the SCR open, assuring reliable low/ no load operation in all cases.

Fault Tolerant Logic

Fault Tolerant logic can be an ambiguous term but in the case of the MGE *Epsilon* STS, it means that any logic board or power supply board can fail without compromising the critical load. This is a feature of the STS's unparalleled reliability advantage considering the volume of circuitry found in any STS.

High Withstand Fuseless Current Path

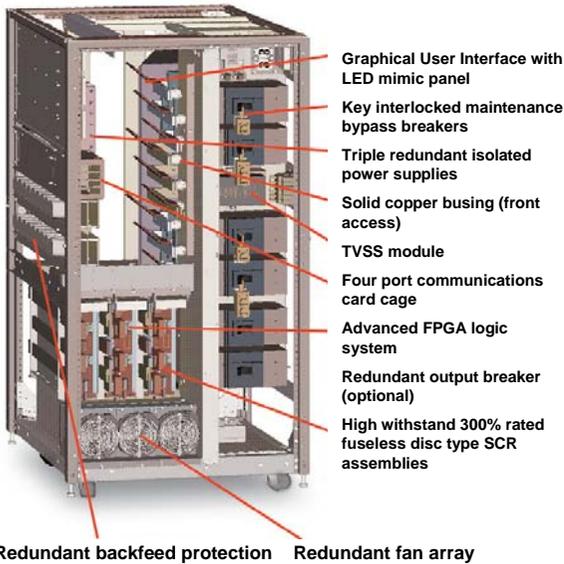
> **“Disc” type SCRs** are used on the MGE *Epsilon* STS due to their superior thermal dissipation capabilities allowing them to sustain significantly higher short circuit currents than “brick” SCRs. Oversized by 200%-600% (depending on the current rating), the MGE *Epsilon* STS SCRs will sustain high continuous and transient overloads without risk of stressing the semiconductors.

> **100 KAIC certified withstand:** The MGE *Epsilon* STS was certified by UL to safely sustain fault currents as high as 100 kAIC*. With most installations having available fault currents in excess of 45 kAIC, this makes the MGE *Epsilon* STS the obvious choice without being forced to pay costly KAIC upgrade adders.

> **Fuseless Current Path:** The entire MGE *Epsilon* STS current path is free of any fuses or thermal interruption devices, making it a stable current path even under fault conditions.



MGE Epsilon STS Features

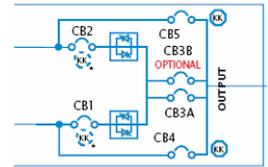


Full Frontal Access Design

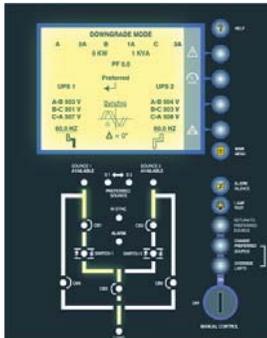


Full Frontal Access Design

STS Single Line Diagram



Solid Busing braced for 65-100KAIC



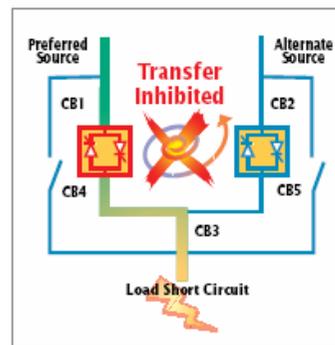
User Friendly Interface

The MGE *Epsilon* STS was designed with a user friendly graphical operator interface. Designed to simplify operation and mitigate the risk of operator error. The display also provides a simple tutorial that walks inexperienced operators safely through any situation.

- > 320 x 400 LCD screen
- > LED Mimic Diagram
- > Alarm / event log
- > Operator instructions
- > Customizable switching thresholds

Smart Fault Isolation Logic

MGE *Epsilon* STS's "smart sensing technology" detects the difference between voltage drops caused by short circuits on the load and voltage drops from a poor input source. In the case of a load short circuit sagging the input voltage, the MGE *Epsilon* STS will lock onto the source with the output fault, inhibiting transfer. This will effectively isolate the fault and preserve the integrity of the alternate source. Any additional STSs in the system can now safely transfer to the intact alternate source and not be affected by the load fault.



Technical characteristics

Standard Features

- > 5CB wraparound maintenance bypass with keyed interlock
- > Key lock password protection
- > Graphical 320x240 backlit LCD Interface
- > LED current flow mimic panel
- > 6 programmable dry contact outputs/2 inputs
- > RS232/RS485 serial port
- > Top and bottom cable access
- > Front maintenance access
- > Disc type SCRs (fuseless)
- > Casters with leveling feet
- > Redundant fans (on fan cooled models)
- > Triple redundant isolated logic power supplies
- > Logic driven and physical redundant backfeed protection
- > Copper bus bar power connections
- > Hinged access panels draw-out component assemblies

Options

- > Redundant output isolation CB
- > TVSS Network
- > Automatic (thermal and magnetic trip) breakers
- > Four key interlock
- > 6 Additional programmable dry contact outputs/2 inputs

Capacities (A)	200	400	600
Source Inputs			
Nominal voltages	208, 220, 240, 440, 480, 575,600 VAC (+/- 10% adj. up to +/- 15%)		
Nominal frequency	50/60 Hz (+/- 5% adjustable up to +/- 10%)		
Number of phases	3PH, 3 or 4 wire + ground		
Operation			
Permissible overloads	110% continuous, 150% 15 minutes, 1000% < 6 cycles		
Transfer time	3 ms (typical)		
Heat Rejection (BTU) max	5,600	11,400	16,700
Cooling (CFM)	convection	705	
Environment			
Operation	0°C to 40 °C		
Storage temperature	-40°C and +70°C		
Protection Class	NEMA 1 ,Seismic Zone 4 rated enclosure		
Noise level	< 52 dB		
Technical standards			
Construction and safety	IEC 60950 , JISC 6950		
EMC	IEC 61000-6-4 , IEC 61000-6-2 , JISC 1000		
Certifications	TÜV , CE		
Dimensions and weights			
Dimensions (30" D x 72" H)	25" W	39" W	
Weight (lbs.)	910	1375	