Product brochure

WaveStar STS Static Transfer Switch

Seamless power transfers for critical loads

Powering Business Worldwide

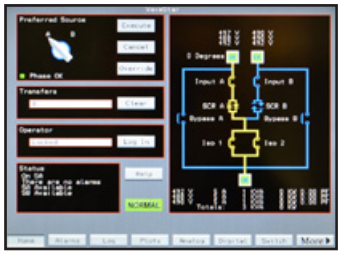
Mission-critical static transfer switch

The Eaton static transfer switch (STS) supplies critical loads with a choice between two available sources of electrical power. By continually monitoring power quality, the WaveStar switch automatically transfers to an alternate source within a quarter cycle and without interruption of power to even your most sensitive critical loads.

WaveStar STS provides the highest performance power switching solution available.

WaveStar display and redundant operator interface

Wave form and event capture screen



Color touch LCD screen with source identification

Triple redundancy

True system redundancy provides the ultimate in power system reliability.

Compact enclosure and modular interior design

Modular interior design results in higher quality throughout the product line and the new 2000-amp model has the smallest footprint in the industry.

Line-and-match with our power distribution unit (PDU)

To provide a system of power switching and distribution.

Rigorous five-step quality process

1. Vendor quality partnership using Eaton-designed test equipment and procedures
2. Functional component testing
3. Component level tests in simulated STS environment
4. Module level test
5. Verification of final product system performance

Volt second synchronization (VSS)

The WaveStar transfer algorithm is optimized to switch power sources quickly while minimizing voltage disruptions and preserving transformer flux balance. This is achieved by rapidly firing the SCRs to establish a balance point as quickly as possible by analyzing the voltage disruption and volt-second balance. The result is a faster and cleaner transfer of power with typically 1X unit rating or less in rush current regardless of the load make up and size.

Dual redundant display

In the event of a touchscreen display failure, the WaveStar STS can be operated via the **Redundant Operator Interface**. This manual interface enables the operator to select **Mode of Operation** and **Source** (1 or 2) enabling continuous operation and maximize uptime.

TVSS/SPD surge protection

The WaveStar communication package enhances the overall reliability and availability of power to your facility by:

- Providing instantaneous access to redundant sources of power
- Enabling online maintenance of upstream equipment
- Showing real time wave form captures on the color touch screen
- Gathering power data from downstream BCMS devices (PDU, RPP)

100A – 600A

800A

1000A – 1200A

1600A

2000A

3X/triple redundancy = Ultimate system reliability

	Stand alone	With one 9″ side facing side car	With one 21″ front/side facing side car	Without side cars
Ratings (A)	Dimensions W x D x H (in.)	Dimensions W x D x H (in.)	Dimensions W x D x H (in.)	Weight (lb.)
250	36.5 x 32.75 x 74.75	44.75 x 32.75 x 74.75	56.75 x 32.75 x 74.75	900–408
400	36.5 x 32.75 x 74.75	44.75 x 32.75 x 74.75	56.75 x 32.75 x 74.75	900–408
600	36.5 x 32.75 x 74.75	44.75 x 32.75 x 74.75	56.75 x 32.75 x 74.75	900–408
800	48 x 32.75 x 74.75	56.25 x 32.75 x 74.75	68.25 x 32.75 x 74.75	1,100–499
1000–1200	84 x 43 x 74.75			4,000–1,814
1600	89.25 x 43 x 74.75			3,600–1,633
2000	90 x 60 x 84			5,800–2,630

Technical specifications

Redundancy

- Fail safe dual redundant display
- Triple redundant logic
- Triple redundant power supplies
- Dual redundant gate drivers for SCRs
  – Two gate drivers for each SCR
- Two output switches available

Logic

- Power or Gate Mode (POG)
- Volt Second Synchronization Mode (VSS) limits in-rush for 480 volt systems during:
  – Initial start up, restarts and transfers
- VSS Soft Start Up, restart or transfer limits to 1.5 times in-rush up to 180 degrees out of phase, typically less than 1 time

Security

- Layered security through log on access
- User log-on ID and PIN number required for STS operation
- All log-ins are time and date stamped for future reference
- Event/alarm memory is 2MB

Installation and maintenance

- "Hot Swap" capability for Printed Circuit Boards (PCB)
  – Bypass allows for replacement of PCB while STS is powered and connected to the load
- "Hot Swap" capability for touch screen Graphical User Interface (GUI)
  – By engaging the Redundant Analog Control Panel, the GUI may be replaced without interrupting power
- Front access only required for I/R scans of all terminations
- SCR Module is on draw-out slides for ease of service
- Logic Module is on draw-out slides for ease of service and greater access for I/R scans

Monitoring

- Fail safe dual redundant display
  – Redundant control panel
- All status, event and alarm logs may be viewed via web browser (STS may NOT be operated via the Internet)
- Events will continue to record up to 10 seconds after loss of power
- "Real Time" capture of wave forms
- Branch Circuit Monitoring System (BCMS) available
- Graphic depiction of load trends
- Graphic depiction of voltage and current harmonics
- All STS stored data is captured and available at the switch
- Voice assistance for alarms and help

Graphical Use Interface (GUI)

- Fully functional touch screen
- 10.4" LCD touch screen
- 640 X 480 resolution
- 262K color
- Redundant fail safe control panel

Communications protocol

- Modbus TCP/IP
- Modbus RTU through RS 422/485 port
- SNMP
- Web enabled through web browser (TCP/IP)
- Email alerts
- NTP time setting
- Alarm log download via USB

Customization

Eaton is dedicated to providing customized solutions to meet the specific requirements of your application. Contact us at +1.800.225.4838 for further information and support.

Service and support

After your equipment has been installed, call on the Eaton service team, at 1.800.225.4838, for 24/7 support.

For more information, please visit:
Eaton.com/sts

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