

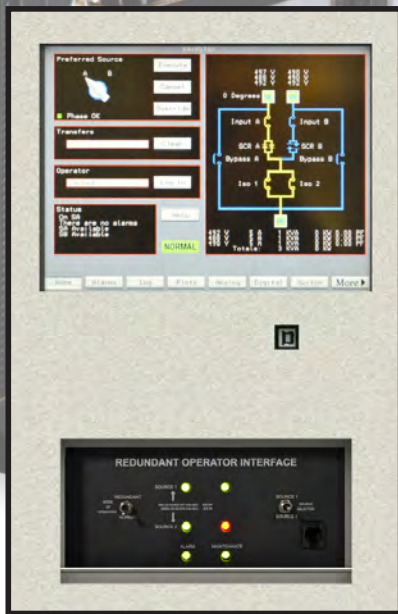
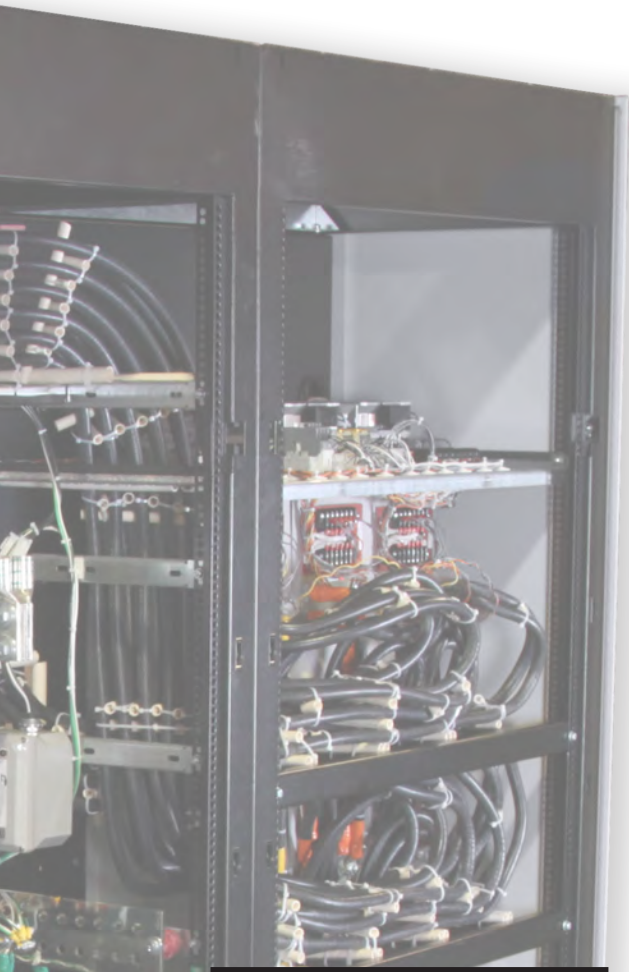
**WaveStar® Static Transfer Switch**  
Seamless Power Transfers for Critical Loads

# PDI WaveStar® Static Transfer Switch

Over 20 years of experience has allowed PDI to become the preferred supplier of static transfer switches to mission critical industries. The PDI static transfer switch 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.

- **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 2000Amp 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 PDI designed test equipment and procedures, (2) functional component testing, (3) component level tests in simulated STS environment, (4) module level test, and (5) verification of final product system performance.
- **VOLT SECOND SYNCHRONIZATION (VSS)** - the WaveStar® transfer algorithm is optimized to switch power sources quickly all while minimizing voltage disruptions and preserve 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.
- **COMMUNICATIONS PACKAGE** - 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 on-line maintenance of upstream equipment
  - Showing real time wave form captures on the color touch screen
  - Gathering power data from downstream BCMS devices (PDU, RPP).



WaveStar® Display and Redundant Operator Interface



Color Touch LCD Screen with Source Identification



Wave Form and Event Capture Screen

# 100A - 600A



CURRENT RATINGS	STAND ALONE			WITH ONE 9" SIDE FACING SIDE CAR			WITH ONE 21" FRONT/SIDE FACING SIDE CAR			WEIGHT POUNDS / KGS W/O SIDECARS
	width	depth	height	width	depth	height	width	depth	height	
250	36.5"	32.75"	74.75"	44.75"	32.75"	74.75"	56.75"	32.75"	74.75"	900 - 408
400	36.5"	32.75"	74.75"	44.75"	32.75"	74.75"	56.75"	32.75"	74.75"	900 - 408
600	36.5"	32.75"	74.75"	44.75"	32.75"	74.75"	56.75"	32.75"	74.75"	900 - 408
800	48.0"	32.75"	74.75"	56.25"	32.75"	74.75"	68.25"	32.75"	74.75"	1,100 - 499
1000-1200	84.0"	43.0"	74.75"							3,600 - 1,633
1600	89.25"	43.0"	74.75"							4,000 - 1,814
2000	90.0"	60.0"	84.0"							5,800 - 2,630

# 800A



**3X / Triple Redundancy**

**=**

**Ultimate System Reliability**

# 1000A - 1200A



# 1600A



# 2000A



# PDI WaveStar® Static Transfer Switch

## Product Profile

### 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 User 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

### PDI Service and Support

After your equipment has been installed, call on the PDI service team for 24/7 support. With 35 years of mission critical power experience and seasoned factory-trained service staff, PDI Global Services can maximize the benefit of your equipment investment.

#### About Power Distribution, Inc. (PDI)

Power Distribution, Inc. (PDI) designs, manufactures, and services mission critical power distribution, static switching, and power monitoring equipment for corporate data centers, alternative energy, industrial and commercial customers around the world. For over 35 years, PDI has served the data center and alternative energy markets providing flexible solutions with the widest range of products in the industry.

#### About Smiths Power

Smiths Power is a leading supplier of power distribution, conditioning, and monitoring solutions for data centers and other critical or high-value electrical systems.

As a family of brands, PDI and Onyx unite under one umbrella to Transform, Distribute, and Monitor™ power in global networks and systems. Our companies provide expertise in consulting, design and manufacturing of power transformers and distribution systems, static switching, power monitoring as well as power quality engineering services.



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