



Product brochure

Cyberex[®] Cyberwave ISS

Inverter/static switch system

Single Phase 10kVA–112.5kVA

Cyberex® Cyberwave ISS – Inverter/Static Switch System

Cyberwave ISS

Cyberwave ISS, the world's first digitally controlled inverter/static switch system for custom applications, combines Cyberex's hallmark rugged electrical design with the versatility of digital signal processors, field-programmable gate arrays and EPROMs to set a new standard in ISS performance and reliability for industrial applications.

Cyberwave ISS standard features include real-time voltage harmonic control and PowerPad, a VGA, full-color touch screen monitor panel that measures 6" x 8". In addition, every Cyberwave ISS incorporates Cyberex's patented digital static transfer switch design for increased system redundancy and reliability.

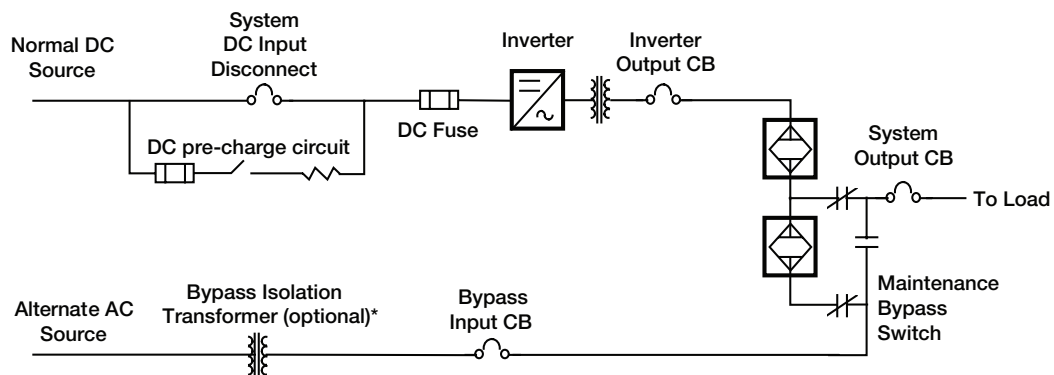
Standard features

- IGBT-based PWM inverter
- Full digital controls with DSPs
- Full isolation output transformer
- PowerPad – full-color touch screen monitor panel
- RS 232 communications port
- Bidirectional fully rated static switch
- Maintenance bypass switch
- Fiber optic datapaths
- Surface mount PCB technology

Hardware configurations

Input	M1	M2	M3	Inverter	M1	M2	M3	Bypass	M1	M2	M3
DC input breaker (non-auto)	X	X	X	Inverter input CB (non-auto)	■	■	X	Bypass CB	■	X	X
Input fuse	X	X	X	IGBT PWM inverter				Bypass isolation transformer	●	●	●
Input pre-charge circuit	X	X	X	(<5% VTHD for CF=3)	X	X	X	Bypass voltage regulator	●	●	●
				Internal IGBT fuses	X	X	X				
System	M1	M2	M3	Inverter output isolation transformer	X	X	X				
Maintenance bypass switch	X	X	X	Inverter output CB (non-auto)	■	■	X				
Static switch:											
fully rated, bi-directional	X	X	X								
System output CB (non-auto)	■	X	X								

X Standard feature ● Optional feature ■ Not Available



*When alternate line transformer is needed, an M2 or M3 configuration is recommended.

Product specifications

Environmental specifications

Acoustical noise level	Less than 60dBA at 3 feet
Operating temperature	32°–104°F (0°–40°C), 32°–122°F (0°–50°C) optional
Relative humidity	0-95% non-condensing
Access	No rear or side access required for operation or maintenance
Cooling	Forced air; optional redundant fan assemblies
Operating altitude	Up to 1000 m with no derating load
Standard paint	Light gray ANSI 61

DC input rating

DC voltage	Standard 240VDC, 120VDC optional
Input voltage	Nominal voltage +10% and -20%

AC output rating

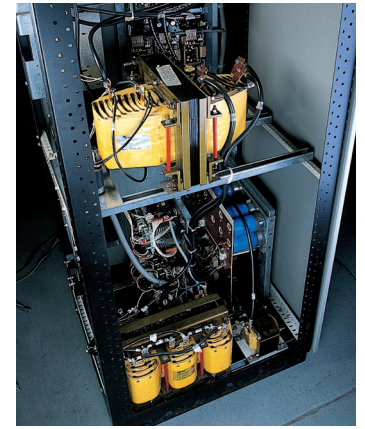
Inverter power	Rated at 0.8 power factor
Voltage	120V, 240V optional (international voltages available)
Voltage adjustability	+ 5% of nominal
Voltage regulation	< + 1.5% steady state for 0–100% load change
Transient response	< + 5% for a 100% load step < + 1% for loss or return of AC input power < + 5% for manual transfer to bypass and back @ 100% load
Voltage recovery	Return to within +2.5% of nominal value within 16 milliseconds (one cycle)
Voltage distortion	Linear loads: <2% at full load Non linear loads (crest factor = 3:1): max 5% at full Load
Overload: inverter	Up to 150% of rated output power for 15 minutes at min DC bus and input voltage at 40°C Up to 150% of rated output power for 5 minutes at 50°C
Overload: static bypass	10–20kVA: 1193A RMS symmetrical with XL/R=15 for one loop 25–30kVA: 1491A RMS symmetrical with XL/R=15 for one loop 40–75kVA: 5321A RMS symmetrical with XL/R=15 for one loop
Frequency	60Hz nominal, 50Hz optional
Frequency stability	+ .1% free running
Frequency slew rate	1.0 Hz/sec maximum

Product standards

In compliance to UL 1778



Inverter



Isolation Transformer



Product specifications

Metering		P1	P2	P3
Input	DC input voltage (A, B, C)	■	■	■
	DC input current (A, B, C)	■	■	■
Inverter	Voltage (RMS)		■	■
	Current (RMS)		■	■
	Frequency		■	■
Output	Voltage (RMS)	■	■	■
	Current (RMS)	■	■	■
	Frequency	■	■	■
	Real power (W)		■	■
	Apparent power (VA)		■	■
	% loading		■	■
	Crest factor			■
	Power factor			■
Alternate line	Line phase difference		■	■
	Input voltage	■	■	■
	Input frequency		■	■
Number of meters		6	13	16

Events/Alarms	Parameters	P1	P2	P3	
Input	DC input CB open	Optional	Optional	Optional	
	DC input fuse blown	Optional	Optional	Optional	
	DC bus OK	■	■	■	
	DC ground fault positive		■	■	
	DC ground fault negative		■	■	
	DC input available/failure			Optional	
	DC input voltage high/low			Optional	
	DC input current high		Optional	Optional	
	Inverter	OK	■	■	■
Failure		■	■	■	
Overload		■	■	■	
Current limit		■	■	■	
Sat trip event		■	■	■	
Overtemp		■	■	■	
Output voltage high				■	
Output voltage low				■	
Output frequency high				■	
Output frequency low				■	
Input CB open		Optional	Optional	Optional	
Output CB open		Optional	Optional	Optional	
Input fuse blown		Optional	Optional	Optional	
Bypass		Alternate line OK	■	■	■
		Alternate line fail	■	■	■
	Sync loss	■	■	■	
	STS on alternate	■	■	■	
	STS on preferred	■	■	■	
	Alternate line CB open	Optional	Optional	Optional	
Output	Load on inverter	■	■	■	
	Load on bypass	■	■	■	
	STS on preferred	■	■	■	
	STS on bypass	■	■	■	
	Output to ground fault			■	
	Output failure			■	
	MBS in normal position	■	■	■	
	MBS in bypass	■	■	■	
MBS in bypass isolate	■	■	■		
General	STS output CB open	Optional	Optional	Optional	
	Emergency power off			Optional	
	Inverter/rectifier normal	■	■	■	
	MBS position	■	■	■	
	Summary alarm	■	■	■	
	Fan failure		■	■	
	Cabinet overtemperature	■	■	■	
	Other	Event log	■	■	■
		STS test		■	■
		Mimic panel			■

For more information please contact:

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